Flexident Z

Flexident Z according to French steel industry standard (S45604-A)

Other couplings

Flexident Senior

Flexacier T

OPIS Engineering k.s.
CZ 61400 BRNO, Selská 64
http://opis.cz

winflex®

Flexible grid coupling

CMD

Winflex couplings:

the best cost-effective and reliable solution, years of use to achieve and to prove this fully optimised coupling!

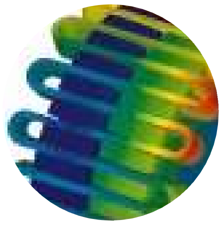
The hub

- Thanks to the very special design of the teeth, the contact surface between the grid and the hub teeth increases proportionally to the torque to keep the same contact pressure at any time.
- As contact is on numerous teeth, this efficiently absorbs the torque thus avoiding damage.
- No resulting reaction forces on shafts.

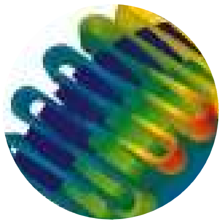
The grid

- The grid always works in the direction of the material, within its elastic field.
- A new surface treatment prevents oxidation, friction and wear.
- The grid has been manufactured to ensure durability.

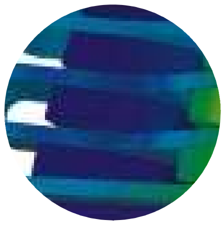
Normal load



Heavy Shocks



and Excessive Overloads



A complete range!

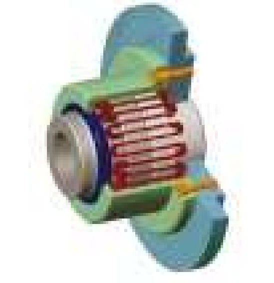
Only one grid for each execution of the same size

T.TL.TL2
Vertical or Horizontal Position

T.TL.NPE
Spacer type

TDF
Disc brake type

BSAT
Single cover type



BSA
Single cover type for Flywheel, pulley application etc…

CPF
Brakewheel type

S
Heavy duty type

Consult CMD

Overrunning clutch

Application
with torque limiter :

AUTOGARD

Consult CMD

Selection

1) DETERMINE THE CALCULATED TORQUE

$$\text{Calculated Torque (Nm)} = \text{Absorbed Torque (Nm)} \times SF = \frac{9550 \times \text{Absorbed power (kW)} \times SF}{\text{Speed (rpm)}}$$

Selection of Service Factor SF:see table below.

2) SELECT

The size of coupling whose rated torque is equal or higher than the calculated.

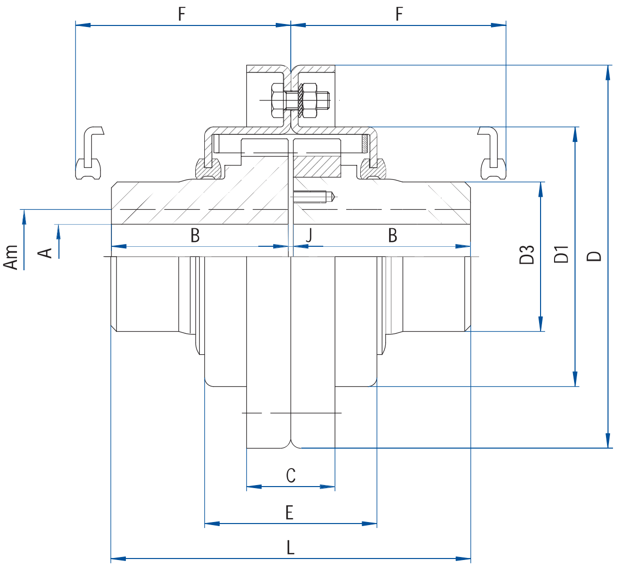
3) CHECK

That selected coupling is compatible with speeds and bores as mentioned on the tables.

APPLICATIONS	SF	APPLICATIONS	SF
AGITATORS *	1	**LUMBER INDUSTRY**	
		Circular ripsaw	1.75
CEMENT INDUSTRY		Ban ripsaw	1.5
Balls and rods	2	Edger, Head rig Hog	2
Hammer mill or hog	1.75	Log haul	2
Grizzly	2	Rolls, reversing	2
		Trimmer	1.75
COMPRESSORS			
Centrifugal	1	**MACHINE TOOLS**	
Rotary	1.25	Miscellaneous, auxiliary*	1
Reciprocating (1 cylinder, single acting)	3	Notching press	1.75
" (1 cylinder, double acting)	3	Planer	1.75
" (2 cylinder, single acting)	3	Main drive	1.5
" (2 cylinder, double acting)	3		
" (3 cylinder, single acting)	3	**PAPER INDUSTRY**	
" (3 cylinder, double acting)	2	Calender	1.75
" (4 cylinder more, single acting)	1.75	Super-calender	1.75
" (4 cylinder more, double acting)	1.75	Line shaft	1.5
		Cylinder, dryer, couch, press	1.75
CRUSHERS		Chipper	2.5
Minerals	2.5	Reel, rewinder, winder	1.5
Stone	2.5	Beater, pulper	1.75
		Jordan	2
CONVEYORS		Barking drums (final gearing machined)	2
Belt/screw conveyors	1	Barking drums (cast teeth gear)	2
Apron conveyors	1	Felt stretcher	1.25
Scraper	1.5		
Buckets conveyors	1.25	**PUMPS**	
		Centrifugal	1
CRANES, HOISTS, ELEVATORS*		Gear. Rotary or vane	1.25
Main hoist	1.75	Reciprocating (1 cyl. Dble or single act)	3
Bridge, travel or trolley	1.75	" (2 cyl. Dble act)	1.75
Mach, tools, warehouse	2	" (3 cyl. Dble act)	1.5
Grab-buckets, casting, scraps	2.5		
Filler, pits, strips, ingots	2.5	**RUBBER INDUSTRY**	
Cranes for general handling	1.75	Calender	2
Cranes for harbor and grab-buckets	2.0	Mixer (Banbury-Werner)	2.5
		External mixer, mixing mill	2.5
FANS		Super calender	2.5
Blowers centrifugal*	1		
Cooling tower fan	2	**STEEL WORKS**	
Forced draft with slip clutch*	1	Draw bench, wire drawing	2
Induced draft with damper control	1.25	Coilers, uncoilers (at max.torque)	1.5
Induced draft without control	2	Strengtheners flattening	2
		Wire mills	2
FLOUR MILLING		Rod mills	2.5
Various type	1.75	Feed rolls, Blooming mills	3
		Tube conveyor rolls	2
FOOD INDUSTRY			
Beet slicer	1.75	**SUGAR INDUSTRY**	
Bottling, can filling mach	1	Cane knife and crusher	2
Cookers, continuous duty	1.25	Mill stands turbines driven with helical gears	1.5
		Mill stands turbines driven with any other prime mover	2
GENERATORS			
Even load	1	**TEXTILE**	
With overload	2	Miscellaneous	1.5
Welder load	2	Calender, Card machine	1.5
A.C dynamo with hyd. turbine*	1	Printing cylinder	2
		WOOD WORKING MACH.	
		Miscellaneous	1.25

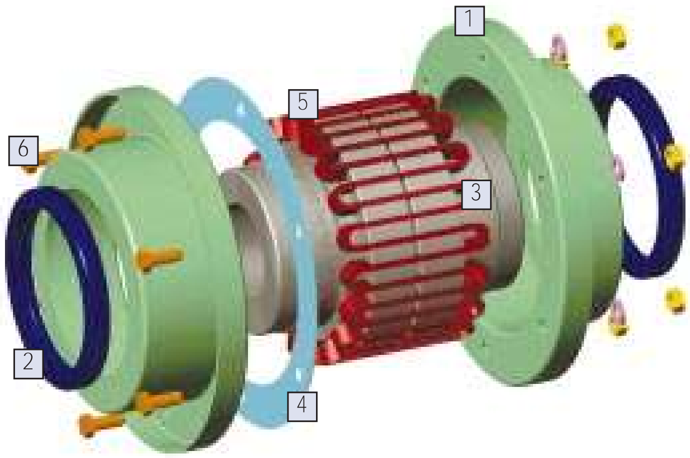
* Only Applicable to installations with Maximum Torque less than 1.5 x Coupling Basic Torque.

Type T - TL - TL2 Horizontal or Vertical Working position



Hub Z to 16 Hub 28 to 95

F: Clearance for grid spring assembly and removal



Item	Designation
1	Halfcover
2	Seal
3	Hub
4	Gasket
5	Spring
6	Bolts & Screws

SIZE		Z	000	00	0	1	2	5	9	16	28	43	70	95
Nominal Torque (Nm)		**90**	**190**	**380**	**950**	**1900**	**3800**	**8500**	**12500**	**24000**	**48000**	**70000**	**120000**	**160000**
Am	Keyway	28	38	55	55	80	110	105	130	180	230	230	230	270
	Shrink fit	-	-	45	45	60	100	90	110	170	200	220	220	250
A	Rough bore	-	-	-	-	-	-	30	30	60	75	85	95	105
B**	T	50	60	60	60	80	80	110	110	130	155	180	200	230
	TL,TL2	-	-	-	110	110	110	170	195	195	225	260	280	300
C		20	30	30	30	30	30	36	36	42	44	50	50	50
D		92	130	158	165	200	250	265	307	395	494	595	595	670
D1		68	88	113	120	154	203	212	253	330	427	522	528	598
D3		39	51	76	76	110,5	158	146	183	253	330	330	330	380
E		57	58	58	77	77	78	123	123	124	125	125	200	206
F		58	59	59	78	78	79	125	125	125	126	126	201	201
J		$2^{+1}_{-0,5}$	$2^{+1}_{-0,5}$	$2^{+2}_{-0,5}$	$2^{+2}_{-0,5}$	3^{+1}_{-1}	3^{+1}_{-1}	3^{+1}_{-1}	3^{+1}_{-1}	3^{+1}_{-1}	4^{+2}_{-2}	4^{+2}_{-2}	4^{+2}_{-2}	4^{+2}_{-2}
L (type T)		102	122	122	122	163	163	223	223	263	314	364	404	464

Weight type T (kg)		1.84	3.7	6.6	7.8	16.6	31	42	63	125	245	327	409	579
J Solid hub type T (kgm²)		0.0011	0.0037	0.0105	0.0135	0.04	0.14	0.20	0.45	1.5	4.65	8.25	11.5	20.25
Max. speed (Rpm)	Without balance	4500	4500	3650	3450	2640	1880	1880	1570	1200	920	750	750	650
	Dynamically Balanced	-	-	4500	4500	4000	3600	3200	3000	2500	2000	1500	1500	1250

**Types: T = 2 short hubs
TL = 1 short hub, 1 long hub
TL2 = 2 long hubs

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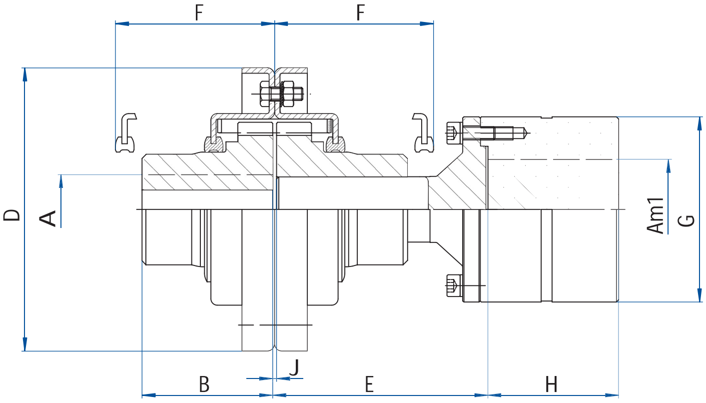
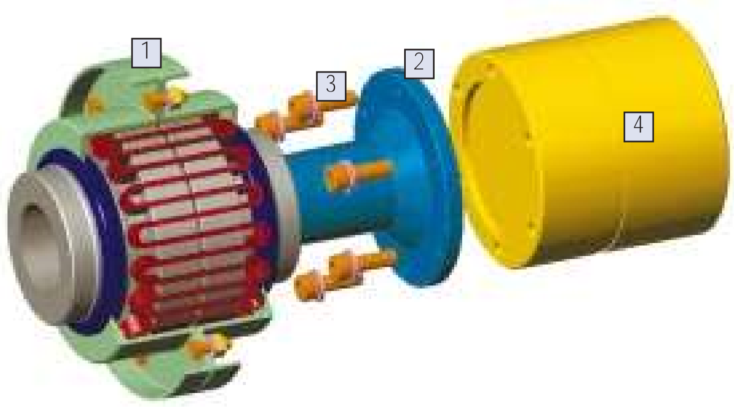
Type T - TL NPE





F: Clearance for grid spring assembly and removal

Item	Designation
1	Winflex
2	Spacer
3	Screws
4	Rigid hub

SIZE		Z	000	00	0	1	2	5	9
Nominal Torque (Nm)		**90**	**190**	**380**	**950**	**1900**	**3800**	**8500**	**12500**
Am	keyway	28	38	55	55	80	110	105	130
Am1	keyway	42	48	65	65	90	120	120	140
B*	T	50	60	60	60	80	80	110	110
	TL	-	-	-	110	110	110	170	195
D		92	130	158	165	200	250	265	307
F		58	59	59	78	78	79	125	125
G		75	85	107	107	156	185	185	230
$J^{+0,3}_{0}$		3	3	4	4	4	4	4	4
H		60 / 80	60 / 110	80 / 110 / 140	80 / 110 / 140	110 / 140	140 / 170 / 210	140 / 170 / 210	170 / 210
E		80 to 160	80 to 160	80 to 200	100 to 180	110 to 190	140 to 210	160 to 210	180 to 250

		Z	000	00	0	1	2	5	9
Weight (kg) type T Being average for E and H		4	7	13	14.5	33.7	58.5	69	97
J (kgm^2)** Being average for E and H		0.0025	0.0075	0.0225	0.025	0.1	0.3	0.3	0.85
Max speed (Rpm)	Without balance	3600	3600	3600	3000	2400	1700	1700	1500
	Dynamically balanced	-	-	-	3600	3600	3600	3000	3000

*Types: T = 2 short hubs
TL = 1 short hub + 1 long hub
**Solid hub type T

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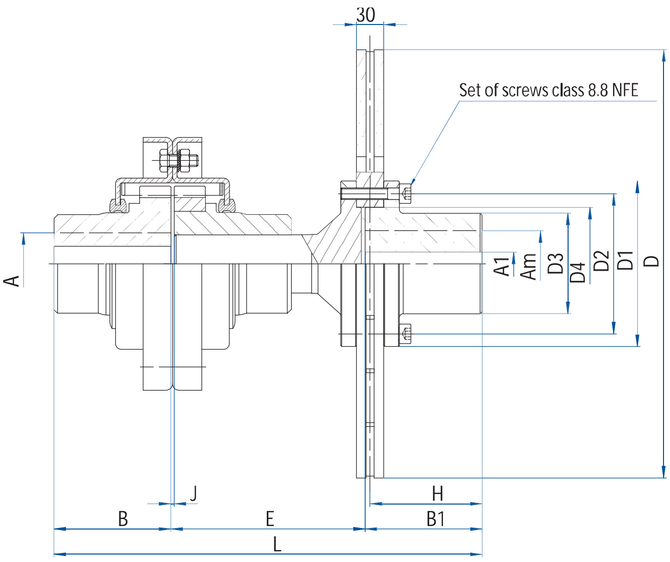
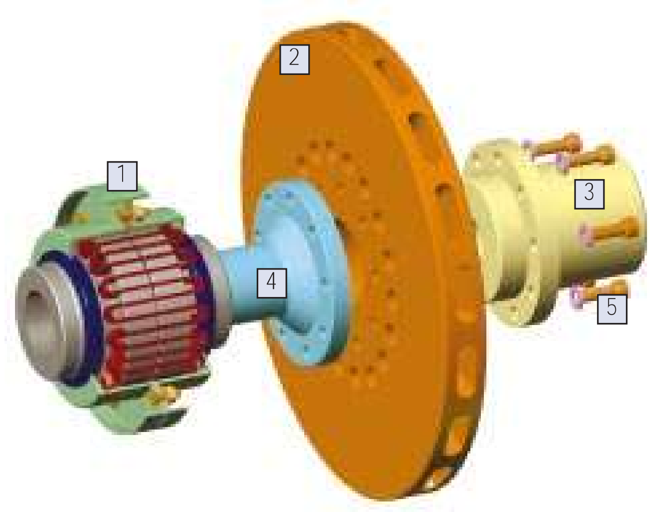
Type TDF for Disc Brake Application





Item	Designation
1	Winflex
2	Disc brake
3	Rigid hub
4	Spacer
5	Screws

Coupling with ventilated disc brake,
Designed to permit mounting and dismounting of the disc
Without necessity of moving connecting machines.

SIZE		0			1		2				5					9			16
D		315	355	395	395	445	445	495	550	625	495	550	625	705	795	625	705	795	795
Maximum Peak Torque (Nm)		950			1900		3800				8500					12500			24000
Am	Keyway fitting	55	55	55	80	80	110	110	110	110	105	105	105	105	105	130	130	130	180
	Shrink fit	45	45	45	60	60	100	100	100	100	90	90	90	90	90	110	110	110	170
Am1	Keyway fitting	55	70	75	75	80	80	110	110	120	110	110	120	135	150	120	135	150	150
	Shrink fit	50	60	70	70	70	70	100	100	105	100	100	105	120	135	105	120	135	135
A1		-	-	-	-	-	-	30	30	30	30	30	30	30	30	30	30	30	30
B		60	60	60	80	80	80	80	80	80	110	110	110	110	110	110	110	110	130
B1		107	107	107	107	140	140	140	140	140	140	140	140	140	140	140	140	140	140
D1		124	145	165	165	175	175	218	218	238	218	218	238	268	300	238	268	300	300
D2		105	125	140	140	146	146	190	190	205	190	190	205	230	260	205	230	260	260
D3		82	100	110	110	112	112	155	155	168	155	155	168	190	216	168	190	216	216
D4		85	105	115	115	120	120	160	160	170	160	160	170	195	220	170	195	220	220
Number of Screws		9	9	9	9	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Set screws diameter		M10	M12	M14	M14	M16	M16	M18	M18	M20	M18	M18	M20	M22	M24	M20	M22	M24	M24
Tightening Torque (Nm)		49	86	135	135	210	210	290	290	410	290	290	410	550	710	410	550	710	710
$J^{+0,3}_{0}$		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
E		117	115	115	115	115	115	127	127	127	162	162	162	162	167	169	169	169	187
L		284	282	282	302	335	335	347	347	347	412	412	412	412	417	419	419	419	457
X		102	102	102	102	135	135	135	135	135	135	135	135	135	135	135	135	135	13

Weight (kg) with Rough bore*	15.2	18.2	20.5	29.7	31.7	44	61.5	61.5	67.5	74	74	80	90	105	103	111	125	187
J Solid hub type T (kgm^2)*	0.02	0.03	0.04	0.07	0.08	0.17	0.27	0.27	0.33	0.33	0.33	0.40	0.51	0.70	0.65	0.76	0.95	2

Check that Maximum Peak Torque is larger than installation Peak Torque

* Without Disc

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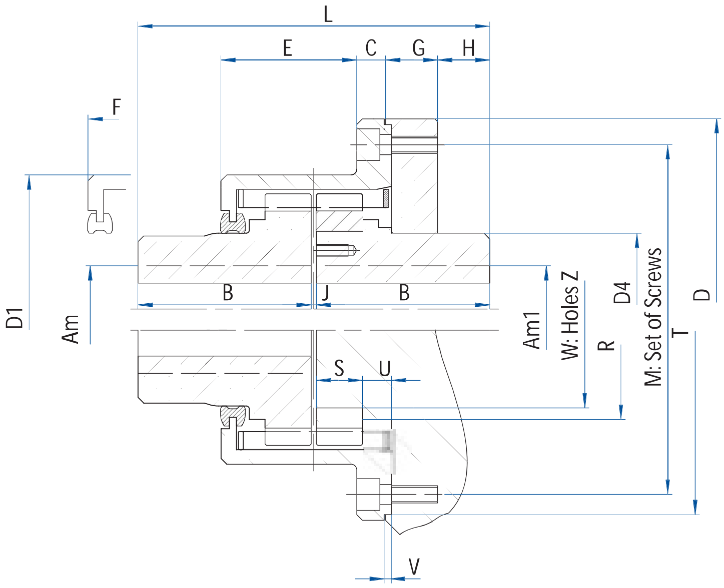
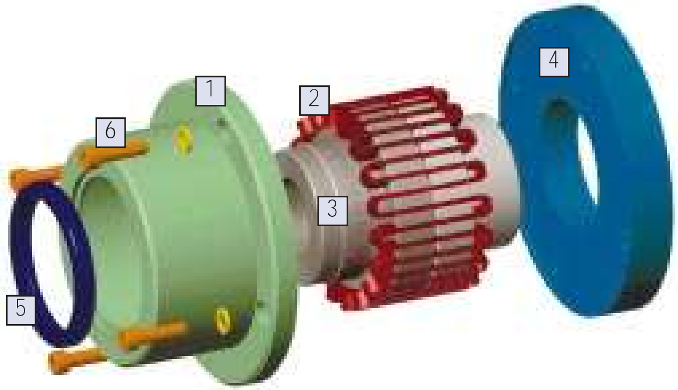
Type BSAT - BSATL - BSATL2





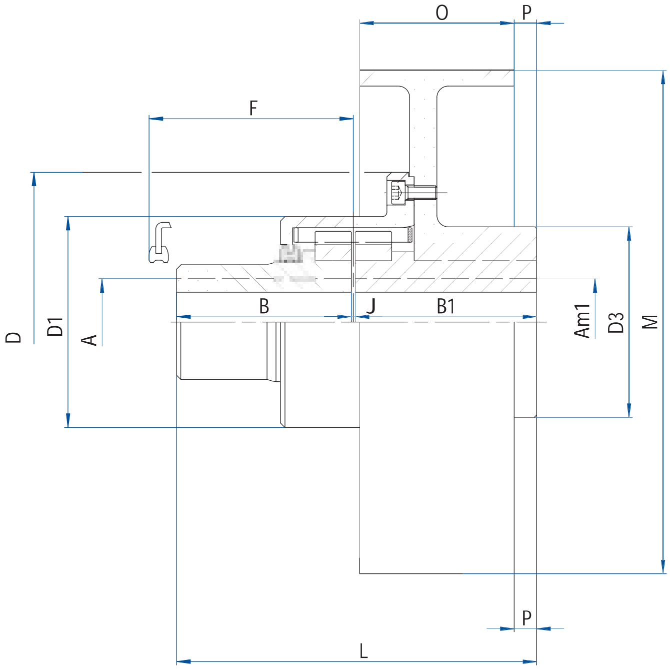
Item	Designation
1	Cover
2	Spring
3	Hub
4	Flange
5	Seal
6	Screws

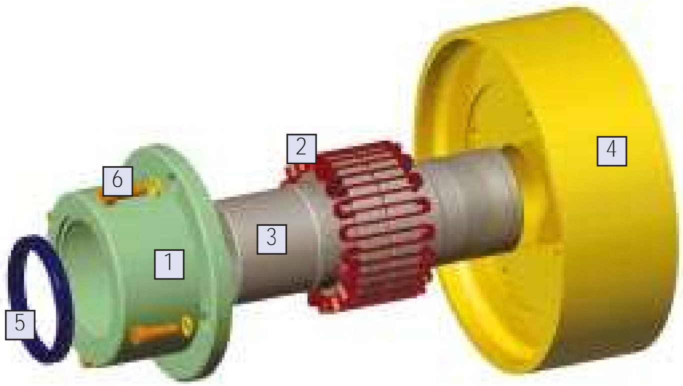
Suitable mounting of pulley or flywheel
F: Clearance for grid spring assembly and removal

SIZE		0	1	2	5	9	16	28	43	70	95
Nominal Torque (Nm)		**950**	**1900**	**3800**	**8500**	**12500**	**24000**	**48000**	**70000**	**120000**	**160000**
Am	Keyway	55	80	110	105	130	180	230	230	230	270
Am1	Keyway	50	75	110	100	120	180	230	230	230	270
Am shrink fit for hub without flange		45	60	100	90	110	170	200	220	220	250
B	T	60	80	80	110	110	130	155	180	200	230
	TL, TL2	110	110	110	170	195	195	225	260	280	300
C		13.5	13	13	19	22	27	11	10	11	13
D		170	205	250	286	340	425	515	616	630	700
D1		127	162	209	222	266	344	440	536	545	615
D4		75	109	157	145	182	250	326	326	326	376
E		62	62,5	62,5	102	99	94	112	113	188	187
F		120	120	120	187	187	187	187	187	314	315
J		$2^{+2}_{-0,5}$	3^{+1}_{-1}	3^{+1}_{-1}	3^{+1}_{-1}	3^{+1}_{-1}	3^{+1}_{-1}	4^{+2}_{-2}	4^{+2}_{-2}	4^{+2}_{-2}	4^{+2}_{-2}
G		25.5	28	28	33	35	38	38	45	50	55
H		19.9	19.9	19.9	22.7	20.7	37.7	62.7	80.7	58.7	83.7
L		122	163	163	223	223	263	314	364	404	464
M		144	178	225	248	296	376	468	565	578	648
Set screws diameters		4xM8	6xM8	6xM8	6xM10	6xM12	6xM12	8xM12	12xM12	12xM12	12xM12
R		-	-	-	$153^{+0,1}_{-0,1}$	$191^{+0,1}_{-0,1}$	$263^{+0,1}_{-0,1}$	$350^{+0,1}_{-0,1}$	$445^{+0,1}_{-0,1}$	$410^{+0,2}_{-0,2}$	$480^{+0,2}_{-0,2}$
S		-	-	-	35	35	35	35	35	57	57
T (H7)		-	-	-	276	330	415	505	605	620	690
U		-	-	-	21.5	21.5	21.5	20.5	20.5	36.5	36.5
V		-	-	-	3	3	3	3	3	4	4
W (t7)		-	-	-	120	165	240	335	430	390	460
Z		-	-	-	4xM12	4xM12	6xM12	6xM14	8xM14	8xM16	8xM18

BSAT Weight (kg) With Rough bore		12	22	39	56	85	157	290	411	518	721
BSAT **J** (kgm^2)Solid hub		0.0325	0.0825	0.2125	0.4	0.825	2.45	6.75	13.5	18.75	31.75
Maximum speed (Rpm)	Without balance	3600	2800	2000	2000	1700	1300	1000	800	800	700
	Dynamically balanced	5000	5000	4500	4200	3600	3000	2400	1800	1800	1500

Type CPF with Brake Drum





Item	Designation
1	Cover
2	Spring
3	Hub
4	Brake Drum
5	Seal
6	Screws

F: Clearance for grid spring assembly and removal

SIZE	0		1	2		5		9			16			28	
Nominal Torque (Nm)	**950**		**1900**	**3800**		**8500**		**12500**			**24000**			**48000**	
Am Keyway	55		80	110		105		130			180			230	
Am1 Keyway	50		70	110		100		115			150			220	
Am Shrink Fit ✦	45		60	100		90		100			170			200	
B	110		110	110		170		195			195			225	
B1	110		110	110		170		195	210	250	210	250	300	250	300
D	170		205	250		286		340			425			515	
D1	127		162	209		222		266			344			440	
D3	120		160	225		220		185			255			330	
F	120		120	120		187		187			187			190	
J	$2^{+2}_{-0,5}$		3^{+1}_{-1}	3^{+1}_{-1}		3^{+1}_{-1}		3^{+1}_{-1}			3^{+1}_{-1}			4^{+2}_{-2}	
L	222		223	223		343		393	408	448	408	448	498	479	529
M	200	250	250	250	350	350	450	450	530	600	530	600	750	600	750
O	80	90	90	90	130	130	170	170	195	210	195	210	230	210	230
P	0	0	0	12	0	40	0	25	15	40	15	40	70	40	70

Weight (kg) ✧	25	33	42	61	76	87	116	169	198	242	272	322	421	462	588
J (kgm²) with brake and solid hub	0.09	0.192	0.235	0.41	0.785	0.857	2.015	3.07	5.45	2.08	6.9	10	22.5	14.1	27.7
Maximum speed (Rpm) Without balance	2400	1910	1910	1910	1360	1360	1060	1060	900	635	900	635	510	635	510

✦ Valid only for bore opposite to the brake.
✧ Total weight with rough bore and inclusive of the brake drum.

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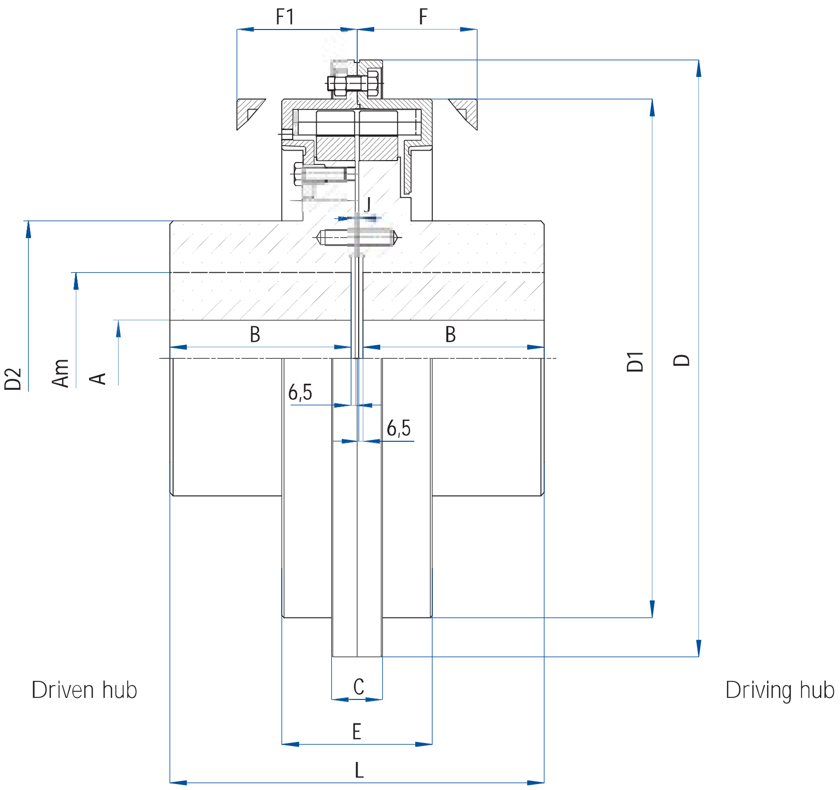
Type S



Item	Designation
1	Grid
2	Hub
3	Cover
4	Bolts & screws

F & F1: Clearance for grid spring assembly and removal

SIZE	150	220	300	380	480
Nominal Torque (Nm)	**270 000**	**400 000**	**540 000**	**700 000**	**800 000**
Am	270	300	340	370	390
A (Rough bore)	120	165	180	180	180
B	270	300	340	370	400
C	76	80	92	92	92
D1	773	910	1050	1195	1220
D2	410	450	550	600	620
E	224	220	224	224	265
F	210	210	210	210	250
F1	215	215	215	215	255
J	4^{+2}_{-2}	5^{+2}_{-3}	5^{+2}_{-3}	5^{+2}_{-3}	6^{+2}_{-3}
L	557	618	698	758	819
2 Withdrawal holes diameter	360 M24	380 M24	450 M30	500 M30	-

		150	220	300	380	480
Weight (kg) with Rough bore		990	1260	1860	2390	2830
Weight of grease (kg)		12	22	27	30	45
J (kgm^2) Solid hub		64.5	110.75	206.25	340	415.75
Max speed (Rpm)	Without balance	500	400	370	320	320
	Dynamically balanced	950	800	700	600	600

Am: Maximum permissible bore corresponding to the hub dimensions **which may be increased if it is required.**

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Miscellaneous

SIZE		Z	000	00	0	1	2	5	9	16	28	43	70	95
	Weight (kg) Rough bore (mm)	0.69 -	1.35 -	2.7 -	3 -	7.2 -	13.8 -	17.8 30	27 30	56 60	113 75	150 85	182 95	263 105
	Weight (kg) Rough bore (mm)	- -	- -	- -	4.8 -	9.5 -	18.6 -	25.4 30	44 30	80 60	158 75	200 85	231 95	320 105
	COMPLETE GRID Weight (kg) segments Layers	0.075 1 1	0.105 1 1	0.140 1 1	0.480 2 1	0.620 2 1	0.840 2 1	2.6 4 2	3.7 4 2	5 4 2	6.5 6 2	8 8 2	22 8 2	25 8 2
	Weight (kg) Kit (cover, bolts, screws and seals)	0.38	0.85	1.07	1.32	1.6	2.5	4	5	7.8	12.2	19	23	28
	Weight (kg) Grease	0.06	0.09	0.11	0.17	0.3	0.35	1	1.3	1.6	1.8	2	4.5	8

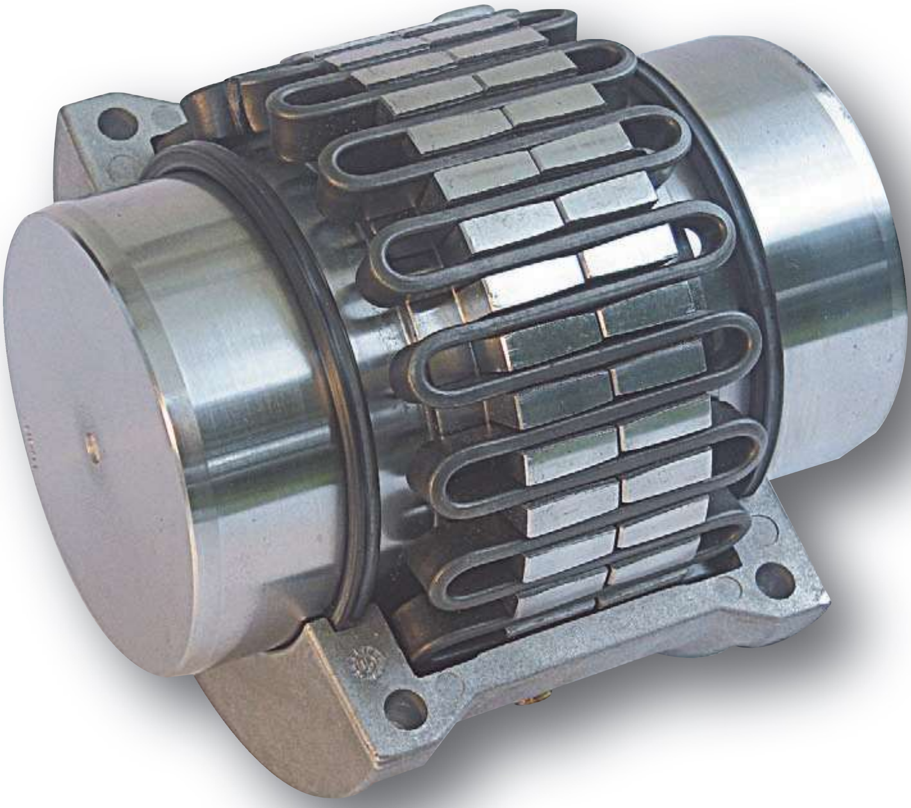
Special grease

- **Long life grease (*) HPLD 9000**
- Extreme-pressure grease, unleaded high temperature NLGI 1 lithium soap-base grease. Made with a high viscosity oil and an extremely effective, heavy-duty additive package.
- Formulated to provide low bleed properties critical to modern couplings as well as high temperature stability.
- **Maintains its excellent performance characteristics in ambient temperatures up to 110°C.**

(*) based on average period of 40 000 H. without greasing.

winflex® DG

Tapered grid coupling



Hub
Forged steel
accurately machined

Grid
Chrome
Vanadium Steel,
heat treated

Seals
Durable synthétic
material

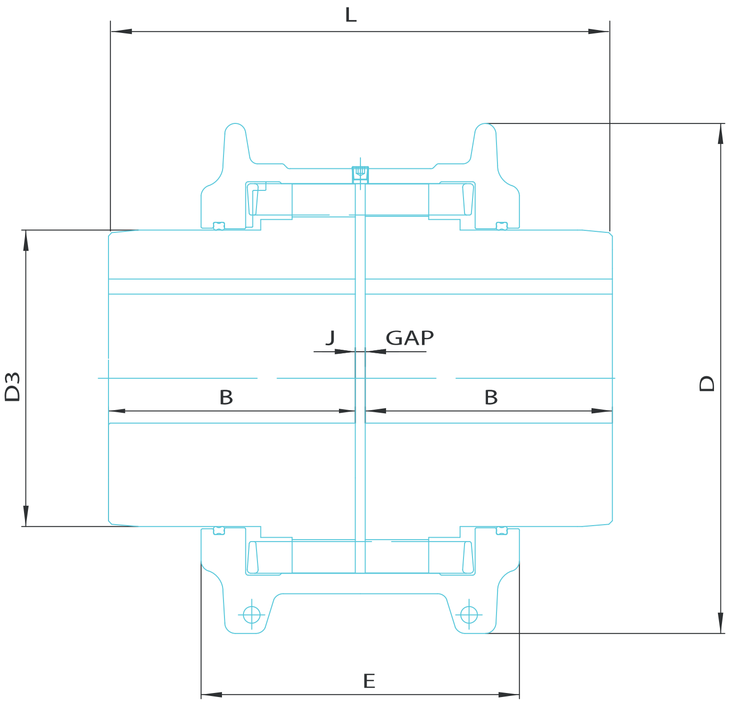
Cover
Aluminium alloy

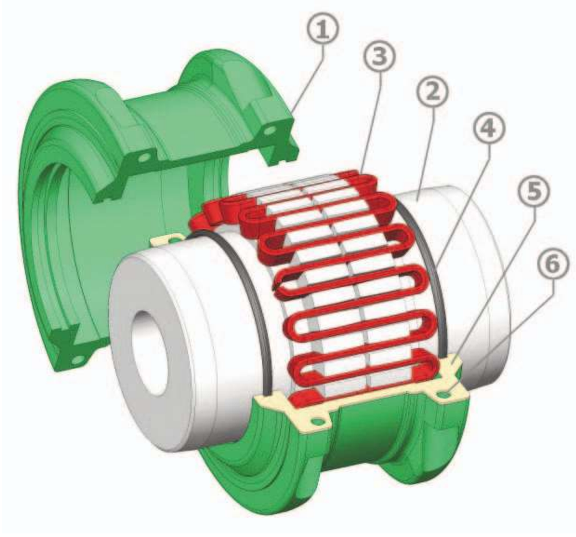
	SF Applications*
1	Agitators, pumps, centrifugal fans and compressors, even load generators ...
1.25	Rotary compressors, buckets conveyors, rotary pumps, elevators ...
1.50	Paper industries, rewinders, scrapers, conveyor, mills stand with turbines driven with helical gears ...
1.75	Hammer mills, general handling, notching press, press circular resaw, planer, calander, super calander, couch press ...
2.00	Small and medium cement kilns, wire mills, calanders with overload generators, edger, log, haul, rolls, harbour and grad-buckets crane, draw bench, wire drawing, straighteners, flattening cane knife, and crushers, fans for cooling tower ...
2.50	Rod mills, chippers, ball mills, mixers, external mixers, mills, big kilns, fillers, strips, lingots ...
3.00	Feeds rolls, one cyl. Pumps ...

* For information only. Please contact CMD for further details.

Interchangeable chart

CMD	FALK
1020 DGH	1020 T 10
1030 DGH	1030 T 10
1040 DGH	1040 T 10
1050 DGH	1050 T 10
1060 DGH	1060 T 10
1070 DGH	1070 T 10
1080 DGH	1080 T 10
1090 DGH	1090 T 10
1100 DGH	1100 T 10
1110 DGH	1110 T 10
1120 DGH	1120 T 10
1130 DGH	1130 T 10
1140 DGH	1140 T 10
1150 DGH	1150 T 10
1160 DGH	1160 T 10
1170 DGH	1170 T 10
1180 DGH	1180 T 10
1190 DGH	1190 T 10
1200 DGH	1200 T 10





Item	Désignation
1	Cover
2	Hub
3	Grid
4	Seal
5	Gasket
6	Fasteners

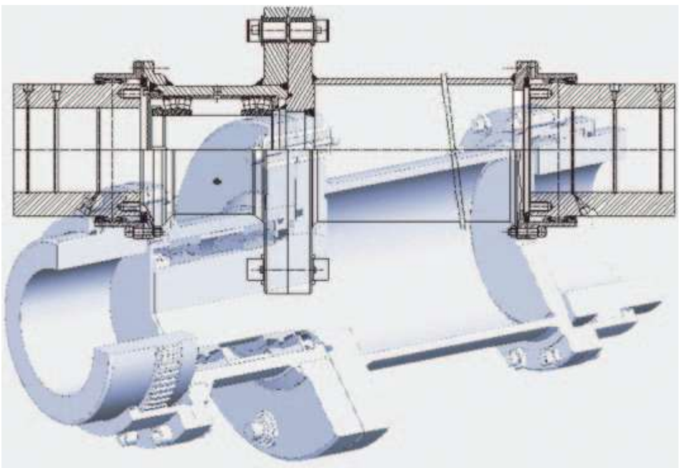
Sizes	Torque rating (Nm)	Maximum bore* (mm)	Dimensions						Lube weight (kg)	Coupling weight (kg) •	Allow speed (Rpm)
			B	D	D3	E	J	L			
1020 DGH	52	28	47	88	39,5	68	3	97	0,03	1,8	4500
1030 DGH	149	35	47	99	49	70	3	97	0,03	2,4	4500
1040 DGH	249	42	50	107	57	71	3	103	0,06	3,2	4500
1050 DGH	435	50	60	130	66,5	85	3	123	0,06	5,1	4500
1060 DGH	684	56	63	139	76	92	3	129	0,09	7,2	4350
1070 DGH	994	65	76	150	87	95	3	155	0,11	10,1	4125
1080 DGH	2 050	80	88	176	104,5	117	3	179	0,17	17,8	3600
1090 DGH	3 730	95	98	196	123,5	123	3	199	0,25	25	3600
1100 DGH	6 280	110	120	251	142	156	5	245	0,43	43	2440
1110 DGH	9 320	120	127	270	160	162	5	259	0,51	56	2250
1120 DGH	13 700	137	149	308	179	192	6	304	0,74	81,2	2025
1130 DGH	19 900	165	162	346	217	195	6	330	0,91	121	1800
1140 DGH	28 600	184	182	384	254	201	6	374	1,2	178	1650
1150 DGH	39 800	215	182	453	269	271,5	6	372	1,95	234	1500
1160 DGH	55 900	240	198	504	305	278	6	402	2,18	317	1350
1170 DGH	74 600	280	216	567	356	307	6	439	3,49	448	1225
1180 DGH	103 000	300	239	629	394	321	6	524	3,76	619	1110
1190 DGH	137 000	335	259	757	437	355	6	565	4,40	776	1050
1200 DGH	186 000	360	279	845	498	432	6	623	5,62	1058	900

* For rectangular section keys (ISO)
When severe loading conditions exist be advise to reduce by 10% the table maximum bore capacities for hubs
• Values are for hubs without bore
Note: all dimensions are subject to change without notification

Other Products

Flexible couplings

Flexident Senior Gear coupling



Customized coupling

ISO 9001

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Phone: +33(0) 1 34 63 12 24 - Fax: +33(0) 1 34 63 12 45
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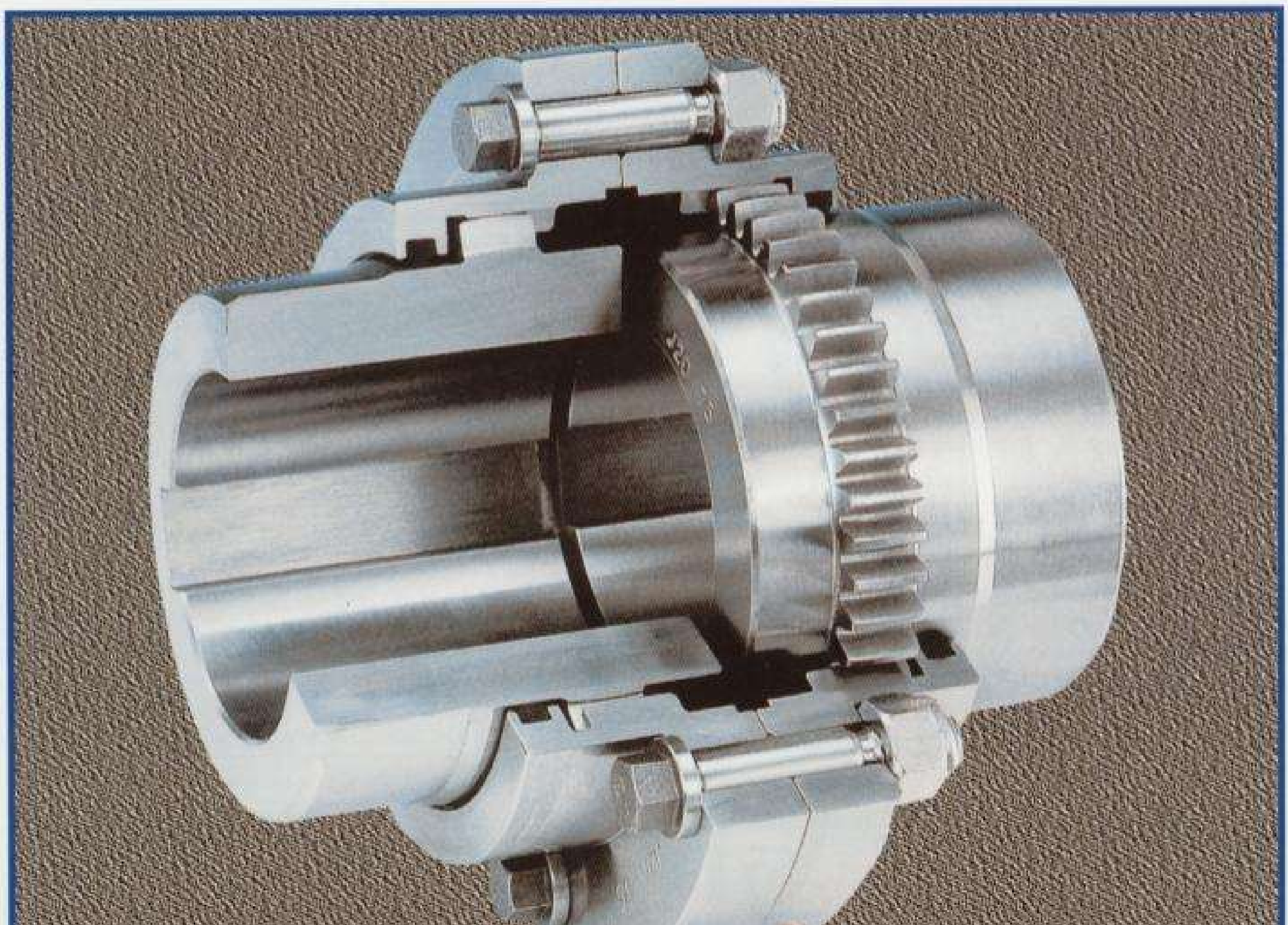


CMD

ENGRENAGES & REDUCTEURS

THE FLEXIDENT ALL STEEL COUPLINGS, machined with precision comprise two flanged sleeves with internal spur gear teeth. They are linked by a set of heat treated alloy steel fasteners and mesh with two accurately machined crowned teeth hubs, with a carefully studied profile and minimum float to obtain the best aligments.

THE BASE RATINGS are given for couplings used in poor angular misalignment conditions which can reach 0°30' per tooth. They can also absorb accidental misaligments of 1°30' maximum per tooth.

The standard seals together with the quality of the lubricants* allow the couplings to be used in temperatures between −20°C and +120°C.

* See maintenance sheet ZJ 07.

BEI DEN ZAHNKUPPLUNGEN FLEXIDENT HANDELT ES SICH UM GANZSTAHLKUPPLUNGEN, die mit großer Präzision gefertigt sind. Sie bestehen aus zwei Gehäusehälften mit gerader Innenverzahnung, die durch vergütete Schrauben vergunden sind. Zwei Kupplungsnaben mit einer balligen Evolventenverzahnung, im Zahnkopf und Zahnfuß gewölbt, greifen in die Kupplungshälften ein. Das Profil ist sorgfältig ausgelegt mit einem minimalen Spiel und gestattet den Ausgleich von Ausrichtungsfehlern.

DIE ANGEGEBENEN NENNDREHMOMENTE gelten für Winkelabweichungen bis 0°30' pro Verzahnung. Die maximal zulässigen Winkelabweichungen betragen 1°30' pro Verzahnung.

Die Standarddichtungen sowie die Schmierstoffqualität ermöglichen den Einsatz der Kupplungen in einem Temperaturbereich von −20°C bis +120°C.*

* *Siehe Schmieranweisung ZJ 07.*

WE OFFER TWO RANGES

WIR BIETEN ZWEI BAUREIHEN AN

J range FLEXIDENT

"ECONOMICAL" range without affecting quality and performance. The grease reserve is through seals placed in housing built into the flanged sleeves.

These couplings with METRIC dimensions and bolts ARE INTERCHANGEABLE BY HALF COUPLINGS WITH THOSE TO AGMA 516-01 STANDARD as applied to couplings with exposed bolts.

However, the dimensions must be checked according to our method.

FLEXIDENT J

Die "WIRTSCHAFTLICHE" Baureihe mit hoher Qualität und Leistungfähigkeit. Zur Abdichtung sind Dichtringe an den Enden der Gehäusehälften eingebaut.

Die Kupplungen haben METRISCHE Abmessungen und Verschraubungen und SIND AUSTAUSCHBAR MIT KUPPLUNGSHÄLFTEN, DIE DEM STANDARD AGMA 516-01 für außenliegende Verschraubungen entsprechen.

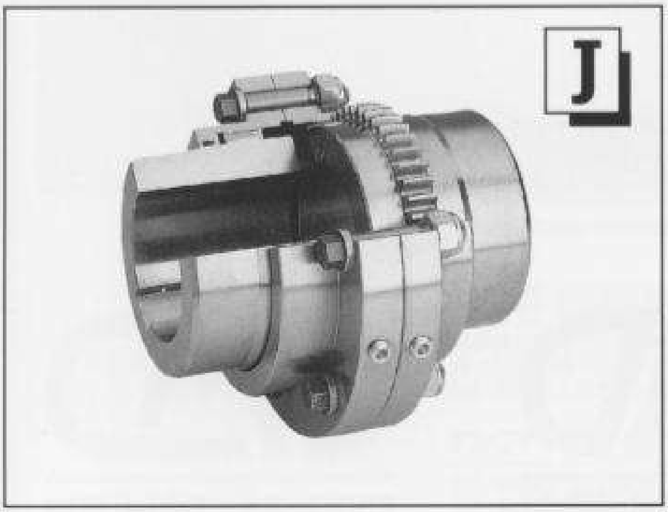
Es empfiehlt sich trotzdem eine Überprüfung der Baugröße nach unserer Auswahlmethode.

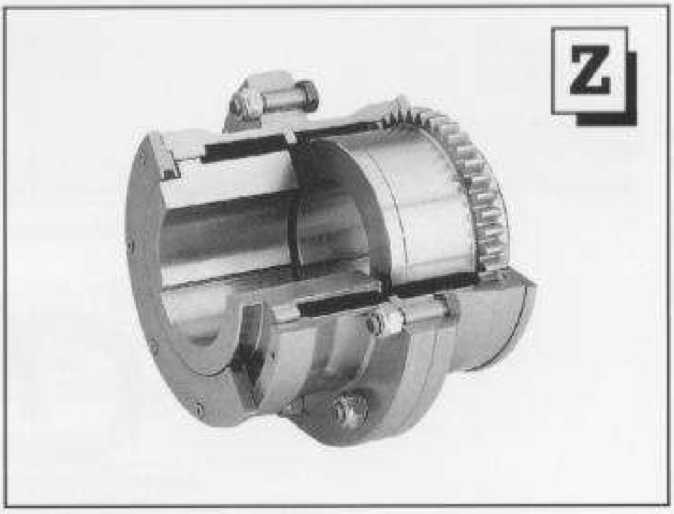
Z range FLEXIDENT

Couplings in accordance to FRENCH STEEL INDUSTRIES, with such a wide range of choice for pitch and number of teeth to ensure reliability and strength with large bore capacities. The cover, fitted with seals, provide the lubricant reserve which is contained in the sleeves and is necessary for the good running of the coupling.

FLEXIDENT Z

Die Kupplungen entsprechen der FRANZÖSISCHEN STAHLWERKSNORM, wobei Modul und Zähnezahl optimiert sind und so Zuverlässigkeit, Robustheit und große Aufnahmebohrungen garantieren. Die mit Dichtringen versehenen, vorgesetzten Deckel garantieren eine zuverlässige Abdichtung des Schmiermittels innerhalb des Kupplungsgehäuses.





CMD **flexident**

ENGRENAGES & REDUCTEURS

1. Standard catalogue models for general application

- Horizontal or vertical operation
- Linking of two shafts close or distant
- Brake device

J RANGE max shaft ∅ 180 (pages 6-7)

J and Z RANGE for brake disc (pages 8-9)

Z RANGE max shaft ∅ 290 (pages 10-11)

Z RANGE max shaft ∅ 820 (page 12)

2. Ex catalogue models for special applications

• THERE ARE MANY VARIATIONS OF THE BASIC COUPLING PROVIDING FEATURES SUCH AS

- Limited end float
- Insulated
- Disconnected
- Axial bravel
- Wit brake drum
- Continuous lubrication (force feed)
- Flanged, **ZE 1B - ZE 2B**
- Combined with **autogard** or **safeset** torque limitor
- For high ambient temperatures
- For extreme temperatures

• SPECIAL MODELS

- High speed
- Important permanent misaligment

FREE STUDIES AND QUOTATIONS ON REQUEST

3. Technical information

- Selection .... page 4
- Transmissible torque if shrink fit is used .... page 13
- Graph showing the limitations of couplings with slave rings: **JE 21** .... page 14; **ZE** .... page 15
- Assembly-maintenance-lubrication (see note **ZJ 07**)

All data and dimensions are for reference only and subject to change without notice.

1. Standardausführungen nach Katalog für allgemeine Anwendung

- *Horizontaler oder vertikaler Einbau*
- *Kupplungen mit und ohne Zwischenstück*
- *Mit Bremsscheibe*

SERIE J max. Wellen *∅ 180* *(Seite 6.7)*

SERIE J und Z mit Bremsscheibe *(Seite 8.9)*

SERIE Z max. Wellen *∅ 290* *(Seite 10.11)*

SERIE Z max. Wellen *∅ 820* *(Seite 12)*

2. Sonderausführungen für außergewöhnliche Anwendungen

• MODIFIZIERTE KATALOGAUSFÜHRUNGEN

- *Begrenztes Axialspiel*
- *Elektrische Isolierung*
- *Im Stillstand schaltbar*
- *Mit Längenausgleich*
- *Mit Bremstrommel*
- *Mit Einspritzschmierung*
- *Mit Flansch,* ***ZE 1B, ZE 2B***
- *Kombiniert mit Drehmomentbegrenzer* ***autogard*** *oder* ***safeset***
- *Für aggressive Medien*
- *Für extreme Temperaturen*

• SONDERKONSTRUKTIONEN UND SPEZIALAUSFÜHRUNGEN

- *Hohe Drehzahlen*
- *Großer Wellenversatz*

KOSTENLOSE AUSLEGUNG UND ANGEBOT AUF JEDE ANFRAGE

3. Technische Informationen

- *Größenbestimmung* .... *Seite 4*
- *Übertragbares Drehmoment bei Schrumpfmontage* .... *Seite 13*
- *Anwendungsgrenzbereich der Kupplungen mit Zwischenstück:* ***JE 21*** .... *Seite 14;* ***ZE*** .... *Seite 15*
- *Betriebsund Wartungsanleitung, Schmierung (Siehe Blatt* ***ZJ 07****)*

Alle Angaben und Abmessungen sind unverbindlich und können bei Weiterentwicklungen geändert werden.

HOW TO SELECT YOUR FLEXIDENT

A. CALCULATE CORRECTED TORQUE

Corrected torque da Nm = Abs T × SF = $\frac{955 \times \text{Abs P (kW)}}{\text{Speed (RPM)}}$ × SF

Choice of SF - See table below.

B. SELECTION : choose size with basic Cb torque ⩾ corrected torque.

C. CHECK that speeds and bores are acceptable see characteristics tables.

GRÖSSENBESTIMMUNG IHRER FLEXIDENT - KUPPLUNG

A. BERECHNEN DES KORRIGIERTEN DREHMOMENTS

Korrigiertes Drehm da Nm = absorbiertes Drehm x SF = $\frac{955 \times \text{Abtriebsleistung} \times \text{P(kW)}}{\text{Drehzahl (min-1)}}$ x SF

Wahl des Betriebsfaktors SF - Siehe folgende Tabelle

B. BESTIMMUNG : *wählen Sie die Größe, deren Nenndrehmoment Cb gleich oder größer dem korrigierten Drehmoment ist.*

C. PRÜFEN SIE, *ob die gewählte Bauform die Drehzahl übertragen und den erforderlichen Wellendurchmesser aufnehmen kann.*

SERVICE FACTOR MACHINES DRIVEN	*BETRIEBSFAKTOR* *ARBEITSMASCHINE*	SF △	SF □	SF ○
Uniform load, no shocks. C maxi ⩽ 1,5 C . Few start-up. - Generators, centrifugal pumps and compressors, small fans...	*Sehr gleichmäßiger Betrieb, ohne Stöße, ohne Überlastungen.* *C max. ⩽ 1,5 C. Sehr seltene Anläufe.* *- Lichtgeneratoren, Zentrifugalpumpen und Kompressoren, kleine Ventilatoren...*	1	1,12	** 1,25
Uniform load, light shocks. C maxi ⩽ 1,8 C . Light and short overload. - Agitators and mixers for liquid or senn liquid, light textile machinery, rotary machine tools ; light duty conveyors...	*Gleichmäßiger Betrieb, seltene, geringe Stöße.* *C max. ⩽ 1,8 C, Geringe, kurzzeitige Überlastungen* *- Mischer und Rührwerke für flüssige und halbflüssige Produkte, leichte Textilmaschinen, Werkzeugmaschinen mit drehender Bewegung, horizontale Förderbänder mit gleichmäßiger Belastung...*	1,12	1,25	** 1,40
Non uniform load, moderate shocks, rather frequently. C maxi ⩽ 2,2 C . - Agitators and mixers liquid + solid ; bucket elevators ; overhead crane ; cranes in machining shops ; cranes ; winches ; card machine, dry can, loom, cloth finishing machine ; extruder, plastic* ; hammer mill ; tumbling mill* ; auxiliary drives for rolling mills ; wire drawing machine...	*Ungleichmäßiger Betrieb, ziemlich häufige, mittlere Stöße.* *C max. ⩽ 2,2 C. Ziemlich starke, kurzzeitige Überlastungen.* *- Mischer und Rührwerke für flüssige bis feste Produkte ; ansteigende Förderbänder, horizontale Förderbänder mit ungleichmäßiger Belastung ; Kettenförderer ; Elevatoren ; Laufkräne für Kraftwerke und Werkstätten ; Hebezeuge ; Lastaufzüge, Winden... ; große Textilmaschinen, Webstühle, Zentrifugen ; Drehöfen ; Kugelmühlen ; Schlagbolzenmühlen ; Kollergänge, Kalander und Stangpressen für Gummi und Kunststoffe* ; Hilfsantriebe für Walzwerksanlangen* ; Planiermaschinen ; kontinuerliche Walzwerke, Walzwerke für Fertigwalzen mit geringer Anstichhäufigkeit.*	1,25	1,40	** 1,60
Non uniform load, heavy shocks, frequently. C maxi ⩽ 3 C . High overload, reverse motion. - Compressors with flywheel, reciprocating ; drawbench ; cold mill banbury mixers, mixing mills ; tire building machine, washers* ; barking drums ; chippers ; generators... , welder load...	*Ungleichmäßiger Betrieb, starke, häufige Stöße.* *C max. ⩽ 3 C. Hohe, häufige Überlastungen.* *Häufige, schnelle Drehrichtungsumkehrungen.* *- Kolbenpumpen und kompressoren mit Schwungrad (Ungleichförmigkeitsgrad < 1/100) ; Personenschwebebahnen ; Förderkübel ; Laufkräne für Stahlwerke ; Stangenund Drahtziehpressen ; Walzwerke und Mischer für die Verarbeitung von Gummi und Kunststoffen ; Grubenlüfter ; Antriebe für Papiermaschinen* ; Ansaugzylinder, Pressen, Trockenzylinder... ; Feinmühlen...*	1,60	1,80	** 2
Very heavy shock load, very frequently. C maxi from 3 to 3,5 C . Very high overload reverse motion. - Conveyors ; live roll ; shaker and reciprocating ; skelp mills ; gang raw (reciprocating) ; vibrating screen...	*Sehr ungleichmäßiger Betrieb, sehr starke, wiederholte Stöße.* *C max 3 bis 3,5 C , Sehr starke Überlastungen.* *Sehr häufige, schnelle Drehrichtungsumkehrungen.* *- Schweißgeneratoren ; Kolbenpumpen und Kompressoren ohne Schwungrad (Ungleichförmigkeitsgrad > 1/100 ; Walzwerke ; Vorstraßen, Reversier Walzwerke, doppeltwirkende Scheren, Knüppelscheren ; Brecher ; Schwingsiebe ; Kranschaufler ; Zerfaserer...*	2	2,25	*** 2,5

Drive per motor: △ Electric or turbine; □ Hydraulic; ○ Multi-cylinders internal combustion

* Refer to factory.
** Mass elastic study advised.
*** Mass elastic study necessary.

Antriebsmachine: △ Elektromotor oder Turbine; □ Hydraulikmotor; ○ Kolbenmaschine mit mehreren Zylindern

** Die Bestimmung muß entsprechend der genauen Betriebsbedingungen vorgenommen werden. Wir bitten um Rückfrage.*
*** Die Ermittlung der kritischen Drehzahl ist ratsam.*
**** Die Ermittlung der kritischen Drehzahl ist notwendig.*

CMD **flexident**®

ENGRENAGES & REDUCTEURS

QUICK SELECTION TABLE

The table below describes :

- The torque transmittable by the couplings in accordance with the SF for the application it will be used for.
- The bore capacity.
- The maxi speeds which only apply to : **Z, ZV, Z1D, Z2D, J20, JV26**.

TABELLE ZUR SCHNELLAUSWAHL

Die folgende Tabelle gibt in direkter Gegenüberstellung Auskunft über :

- *Das von der Kupplung übertragbare Drehmoment mit den jeweiligen Betriebsfaktoren entsprechend dem Anwendungsfall.*
- *Die Maximalbohrung.*
- *Die Maximaldrehzahl, gütig nur für die Ausführungen :* ***Z, ZV, Z1D, Z2D, J20, JV26.***

flexident®		Max bore *Maxi-Bohrung*			Torque capacity *Übertragbares Drehmoment*					Max speed *Maxi-Drehzahl*	
J		*	**	***	FS = 1	FS = 1,12	FS = 1,25	FS = 1,6	FS = 2		γ
42			38	42	70	62	56	44	35	5300	10000
60			55	60	170	152	136	106	85	4000	8000
75			65	75	320	286	256	200	160	3200	6400
90			80	90	520	464	416	325	260	2700	5400
100			95	104	900	804	720	563	450	2400	4800
120			110	120	1300	1160	1040	813	650	2000	4000
140			130	142	2130	1900	1700	1330	1065	1800	3600
160			150	160	2920	2610	2340	1825	1460	1660	3300
180			160	180	4150	3705	3320	2590	2075	1470	3000
Z	SID△										
51	30	40	50	50	120	107	96	75	60	4300	9800
61	40	50	60	65	210	187	168	130	105	3500	8800
71	50	60	70	75	340	300	270	210	170	3000	7800
81	60	70	80	85	520	465	415	325	260	2700	6800
91	70	80	90	100	780	700	625	490	390	2300	5900
101	80	90	100	110	1120	1000	895	700	560	2000	5200
111	90	100	110	120	1500	1340	1200	940	750	1900	4900
126	100	110	125	130	2050	1830	1640	1280	1020	1700	4400
141	110	125	140	150	2800	2500	2240	1750	1400	1500	3900
152	125	140	160	170	3800	3400	3040	2380	1900	1400	3500
162	140	160	180	190	5300	4730	4240	3310	2650	1250	3200
182	160	180	200	210	7200	6430	5760	4500	3600	1100	2900
202	180	200	230	240	10000	8930	8000	6250	5000	1000	2600
232	200	220	250	260	12600	11250	10080	7880	6300	900	2300
252	230	250	270	290	16000	14290	12800	10000	8000	900	1650
282	250	280	300	320	24000	21430	19200	15000	12000	850	1500
312	280	310	340	360	35000	31250	28000	21870	17500	770	1400
352	310	350	380	400	46700	41700	37360	29200	23350	700	1250
402	350	400	420	440	66500	59380	53200	41560	33250	620	1100
452	400	450	480	500	96700	86300	77400	60400	48350	550	1000
502	450	500	530	560	125000	111600	100000	78100	62500	500	900
552	500	550	600	640	182300	162800	145800	113900	91100	450	800
602	550	600	650	700	250000	223200	200000	156200	125000	400	750
652	600	650	720	780	320000	285700	256000	200000	160000	350	680
702	650	700	760	820	373300	333300	298600	233300	186600	300	640

△ Size names according to French Steel Industry Standards.
* Max. bore according to Steel Industry.
** Max. bore shrink fit assembly.
*** Max. bore for assembly with keyway.
γ Dynamically balanced.

△ Bezeichnung nach den franz. Stahlwerksnormen.
** Maximalbohrung nach Stahlwerksnormen.*
*** Maximalbohrung bei Schrumpfmontage.*
**** Maximalbohrung mit Paßfederbefestigung.*
γ Dynamisch ausgewuchtet.

CMD flexident® J

ENGRENAGES & REDUCTEURS

STANDARD MODELS

CHARACTERISTICS

Horizontal mounting

STANDARDAUSFÜHRUNGEN

MERKMALE

Horizontalbetrieb

	Parts list		*Stückliste*
1	Flex Hubs	*1*	*Ballig verzahnte Nabe*
2	Flanged sleeve	*2*	*Gehäusehäfte*
3	Centre ring*	*3*	*Zentnerring**
4	Seal	*4*	*Rundschnurring*
5	Gasket	*5*	*Dichtring*
6	Fasteners	*6*	*Verbindungsschrauben*
7	Lube plugs	*7*	*Verschlußschraube*
8	Rigid Hub	*8*	*Starre Nabe*
9	Floating shaft	*9*	*Zwischenwelle*
10	Centre plate	*10*	*Zwischenscheibe*
11	Thrust Button	*11*	*Stützkern*
12	Floating spager tube	*12*	*Zwischenrohrverbindung*

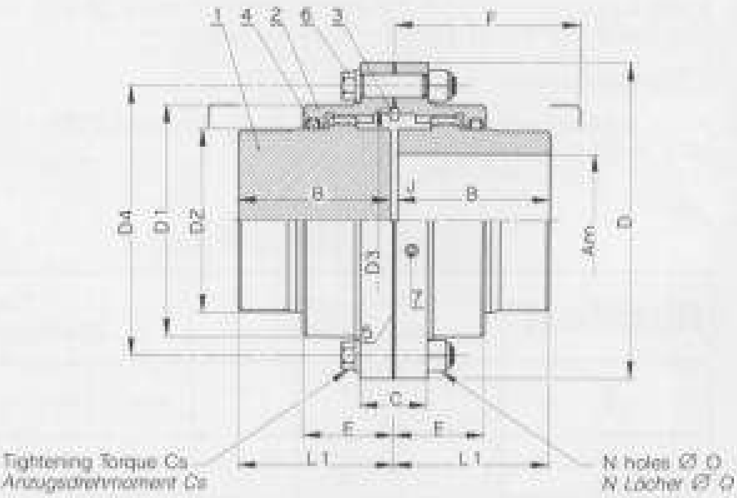
* supplied only with dynamically balanced coupling

** wird nur geliefert wenn die Kupplung dynamisch ausgewuchtet ist*

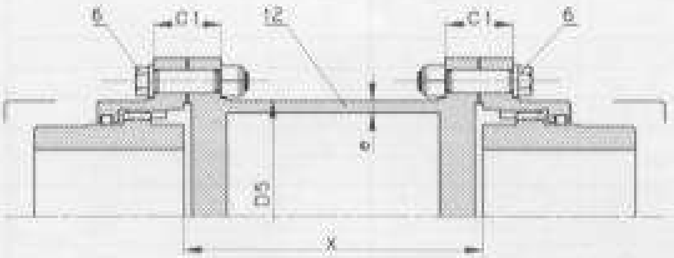
F : Clearance for shrink fitting

F : Versetzen des Gehäuses nur für Aufschrumpfmontage

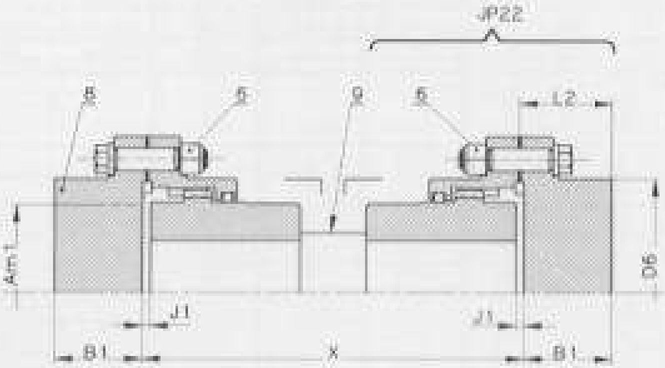
J20



JE21



JP22 - JP24



1 JP 24 coupling = 2 JP22 coupling + Floating shaft

1 Kupplung JP 24 = 2 Kupplungen JP22 + Zwischenwelle

X : Distance between shafts ends according to installation

X : Entfernung zwischen den beiden Wellenenden je nach den Bedürfnissen

Vertical Mounting / *Vertikale Wellen*

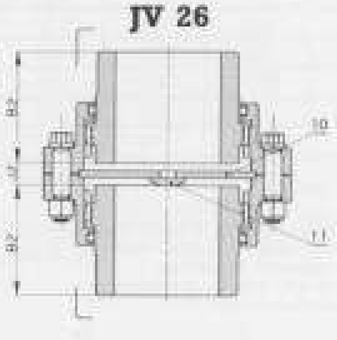
JE 21V

JP 24V

Models based on JE 21 and JP 24, where the floating part is supported by a plate device such as plate ring or thrust button.

Beim Einsatz der JE 21 und JP 24 in vertikaler Ausfürung wird ein Stützring mit Stützkern zur Fixierung der Gehäuseteile eingesetzt.

JV 26



CMD **flexident**

ENGRENAGES & REDUCTEURS

SIZE / *GRÖSSE*		42	60	75	90	100	120	140	160	180
Basic rating *Nenndrehmoment*	daNm	70	170	320	520	900	1300	2130	2920	4150
Bore *Bohrung* maxi	Am†	42	60	75	90	104	120	142	160	180
	Am*	38	55	65	80	95	110	130	150	160
J 20	B	50	70	80	100	110	130	150	170	190
	C	32	38	38	44	44	57	57	57	76
	D	108	145	178	212	240	280	315	345	390
	D1	77,5	106	129,5	156	181	207	245	270	302
	D2	61	85	105	124	149	166	200	225	251
	D3	75	106	125	150	175	195	230	255	290
	D4	90,5	122,24	149,23	181	206,4	241,3	279,4	304,8	342,9
	E	38,5	44	46	60	67	71	78	85	91
	J	3	3	3	5	5	6	6	8	8
	L1	51,5	71,5	81,5	102,5	112,5	133	153	174	194
	F	65	85	95	120	130	150	175	195	215
	O	7,94	9,5	12,7	15,9	15,9	19,05	19,05	19,05	22,2
	N◇	6	8	6	6	8	8	8	10	8
	Cs (daNm)	2	3	10	15	15	30	30	30	60
JE 21	C1	31,5	37,5	37,5	44	44	55,5	55,5	55,5	75
	D5	70	102	114	140	168	194	219	245	273
	e	5	6,3	8	6,3	8	10	10	12,5	12,5
JP 22	Am1†	55	75	90	110	130	145	170	190	210
	Am1*	50	70	85	100	120	135	160	180	200
	B1	50	70	80	100	110	130	150	170	190
	D6	77,5	106	129,5	156	181	207	245	270	302
	J1	4	4	4,5	5,5	6,5	8	8	10	10
	L2	52,5	72,5	83	103	114	135	155	176	196
JV 26	B2	47	67	76	97	105	125	145	165	185
	J2	9	9	11	11	15	16	16	18	18

• Weight kg • *Gewicht kg*	J20	4	10	16,5	30	42,5	67	102	140	200
	JP22	4,5	11	18,5	33	45	75	114	155	221
	JV26	4,1	10	16,6	30,2	43	68	103	142	202
	JE21 #	14	29	44	62	88	136	183	246	343
	JE21 //	0,8	1,5	2,1	2,1	3,2	4,5	5	7	8

• *MD² kg m²*	J20	0,017	0,076	0,18	0,45	0,85	1,8	3,4	5,5	10,2
	JP22	0,02	0,085	0,21	0,52	0,94	2,05	4	6,4	11,7
	JV26	0,017	0,077	0,18	0,46	0,86	1,82	3,4	5,6	10,3
	JE21 #	0,061	0,25	0,52	1,1	2,1	4,3	7,2	11,5	20,5
	JE21 //	0,004	0,012	0,024	0,04	0,08	0,16	0,24	0,4	0,56

Weight of grease kg *Fettmenge kg*	J20-JV26	0,05	0,1	0,13	0,23	0,35	0,46	0,7	0,9	1,25
	JP22	0,04	0,07	0,1	0,16	0,3	0,4	0,55	0,75	1
	JE21	0,08	0,14	0,2	0,32	0,6	0,8	1,1	1,5	2

SPEED MAX RPM *MAX ZUL. DREHZAHL U/min*

J 20 JV 26X		5300	4000	3200	2700	2400	2000	1800	1660	1470
	γ	10000	8000	6400	5400	4800	4000	3600	3300	3000

† Bore with keyway
* Shrink fitting
◇ Multiply by two for JE and JP 24
• Solid hubs
\# For complete coupling with spacer X = 1000
// Increment X = 100
γ Dynamically balanced
X Other models : refer to factory JE 21 see page 14

† *Bohrung für Paßfedermontage*
* *Bohrung für Aufschrumpfmontage*
◇ *Doppelte Anzahl bei JE und JP 24*
• *Vollnaben*
\# *Für gesamte Kupplungslänge X = 1000*
// *Längenunterschied X = 100*
γ *Dynamisch ausgewuchtet*
X *Weitere Ausführungen auf Anfrage, JE 21 siehe Seite 14*

STANDARD MODELS FOR BRAKE DISC

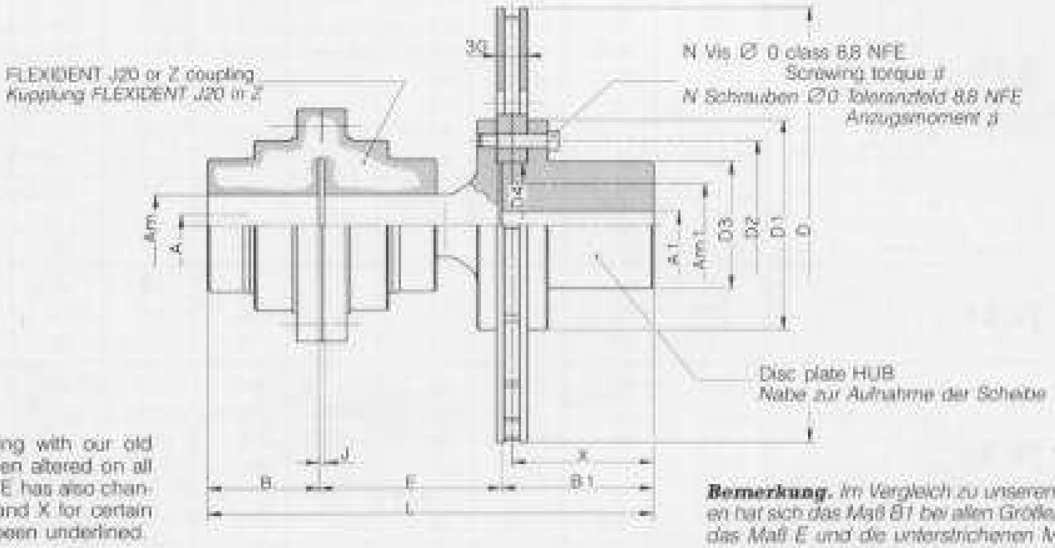
CHARACTERISTICS

COUPLING WITH VENTILATED BRAKE DISC, design to permit mounting and dismouting of the disc without moving connected machines.

STANDARDAUSFÜHRUNGEN MIT BREMSSCHEIBE

MERKMALE

KUPPLUNG MIT BELÜFTETER BREMSSCHEIBE, konstruiert zur Montage und Demontage der Scheibe, ohne daß angeschlossene Maschinenteile bewegt werden müssen. Patente in mehreren Staaten.



Notes. If comparing with our old supply, B1 has been altered on all sizes, and therefor E has also changed as well as L and X for certain sizes which have been underlined.

Bemerkung. *Im Vergleich zu unseren früheren Lieferungen hat sich das Maß B1 bei allen Größen verändert, ebenso das Maß E und die unterstrichenen Maße L und X.*

DISC PLATE HUB / *NABE ZUR AUFNAHME DER SCHEIBE*									
D	**315**	**355**	**395**	**445**	**495**	**550**	**625**	**705**	**795**
V. Maxi 1/min γ	3000	2700	2400	2100	1900	1800	1500	1300	1200
A1					30	30	30	30	30
Am1**	50	60	70	70	100	100	105	120	135
Am1*	55	70	75	80	110	110	120	135	150
B1	107	107	107	140	140	140	140	140	140
D1	124	145	165	175	216	216	238	268	300
D2	105	125	140	146	190	190	205	230	260
D3	82	100	112	112	155	155	168	190	216
D4	85	105	115	120	160	160	170	195	220
N	9	9	9	12	12	12	12	12	12
O	M10	M12	M14	M16	M18	M18	M20	M22	M24
daNm μ	4,9	8,6	13,5	21	29	29	41	55	71
X	102	102	102	135	135	135	135	135	135

- Couplings details see page 6 or 10,
- Complete the coupling selection generally chosen according to brake disc and shafts diameters CHECK that MAX PEAK TORQUE C.D.P. is larger than installation PEAK TORQUE.

γ : Max speed allowed by disc ; it may vary with manufacturer. For faster speeds refer to factory.

- *Kupplungsabmessungen siehe Seite 6 oder 10.*
- *Kupplungswahl grundsätzlich nach den Daten der Bremsscheibe und den Wellendurchmessern. DABEI PRÜFEN, ob das SPITZENDREHMOMENT C.D.P. größer als das SPITZENDREHMOMENT der Anlage ist.*

γ : Maximal zulässige Drehzahl der Bremsscheibe, sie kann je nach Fabrikat unterschiedlich sein. Bei höheren Drehzahlen bitten wir um Rückfrage.

SIZE *GRÖSSE*	D	CDP ✱ daNm	A	Am*	Am**	B	J	E	L	Weight o *Gewicht* kg	○ MD2 kgm²	□ MG kg

JDF23

60	315 355 395 445	150 180 180 180	—	60	55	70	3	117 117 117 117	294 294 294 327	17 20 22,4 23,4	0,108 0,15 0,21 0,22	0,09
75	395 445 495 550	220 300 300 300	—	75	65	80	3	117 130 145 145	304 350 365 365	29 30 47 47	0,31 0,33 0,69 0,69	0,13
90	445 495 550 625	590 590 590 590	—	90	80	100	5	145 164 164 164	385 404 404 404	44 61 61 68	0,6 0,97 0,97 1,23	0,23
100	495 550 625 705	940 940 940 940	—	104	95	110	5	180 180 180 180	430 430 430 430	75 75 81 92	1,4 1,4 1,7 2,2	0,35
120	625 705 795	1380 1380 1380	—	120	110	130	6	196 196 196	466 466 466	105 115 137	2,6 3,1 4	0,46
140	625 705 795	2070 2530 2530	—	142	130	150	6	223 223 223	513 513 513	141 157 173	4,2 4,8 5,7	0,7
160	705 795	2920 3670	—	160	150	170	8	238 238	548 548	196 210	6,9 7,8	0,9

ZDF

51	315 355	120 120	14	50	50	60	3	108 108	275 275	14,2 16,3	0,1 0,13	0,25
61	315 355 395 445	150 200 200 200	19	65	60	68	4	117 117 117 117	292 292 292 325	20 22 24 26	0,19 0,23 0,28 0,3	0,35
71	445 495 550	330 330 330	23	75	70	80	5	130 145 145	350 365 365	34,5 46 46	0,48 0,81 0,81	0,6
81	445 495 550 625	540 540 540 540	28	85	80	90	6	145 164 164 164	375 394 394 394	45 56 56 62	0,7 1,04 1,04 1,19	0,75
91	495 550 625 705	880 880 880 880	30	100	90	105	7	180 180 180 180	425 425 425 425	74 74 79 86	1,64 1,64 1,88 2,32	0,9
101	625 705 795	1250 1250 1250	38	110	100	120	8	196 196 196	456 456 456	98 105 120	2,74 3,2 4,1	1,4
111	625 705 795	1860 1860 1860	45	120	110	135	9	212 212 212	487 487 487	126 133 147	4 4,5 5,3	1,8
126	625 705 795	2070 2340 2340	48	130	125	150	10	223 223 223	513 513 513	152 174 174	5,9 6,5 7,2	2,3
141	705 795	2900 3240	52	150	140	165	10	238 238	543 543	213 213	9,3 10	2,7

Max bore { * Bore with keyway
** shrink fitting
○ Solid hub without disc
✱ CDP = maxi peak torque
□ MG = lube weight

Maxi Bohrung { ** Paßfedermontage*
*** Aufschrumpfmontage*
○ *Vollnaben ohne Bremsscheibe*
✱ *CDP = Maxi Spitzendrehmoment*
□ *MG = Fettmenge*

STANDARD MODELS

CHARACTERISTICS

Horizontal mounting

STANDARDAUSFÜHRUNGEN

MERKMALE

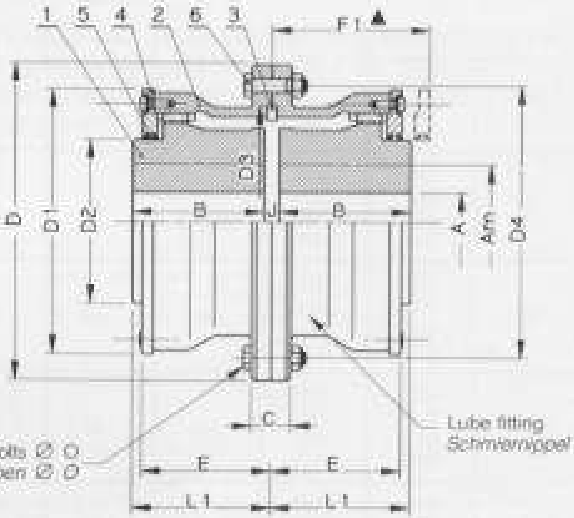
Horizontalbetrieb

	Parts list		*Stückliste*
1-1D	Flex hub	*1-1D*	*Ballig verzahnte Nabe*
2	Flanged sleeve	*2*	*Gehäusehälfte*
3	Centre ring	*3*	*Zentrierring*
4	End plate	*4*	*Abschlußdeckel*
5	Seal	*5*	*Dichtring*
6	Fasteners	*6*	*Verbindungsschraube*
7	Spacer tube	*7*	*Zwischenrohr*
8	Hub with plate	*8*	*Flanschnabe*
9	Floating shaft	*9*	*Zwischenwelle*
10	Center plate	*10*	*Zwischenscheibe*
11	Thrust Button	*11*	*Stützkern*

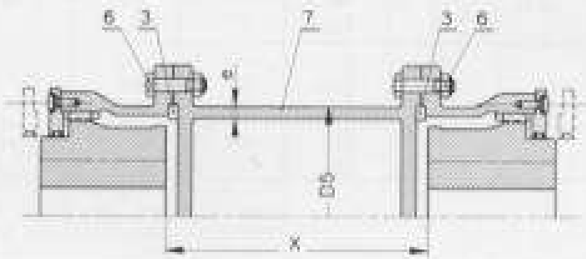
F1-F2 : Clearance of assembly

F1-F2 : Platzbedarf bei Montage und Einstellung

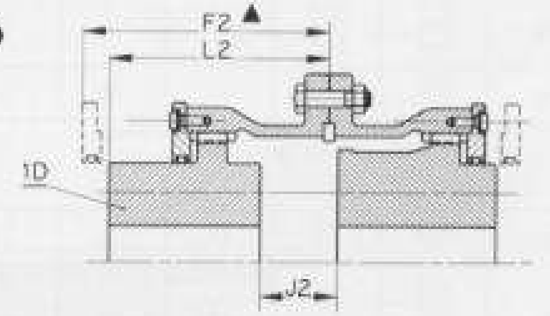
Z



ZE

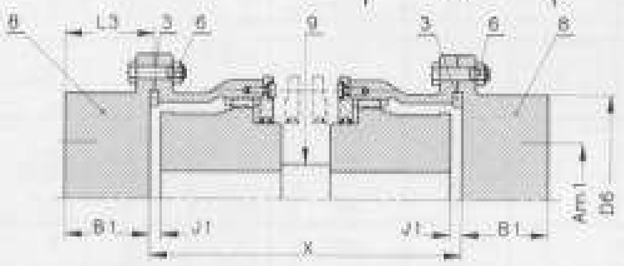


Z1D



ZP-2ZPA

ZP



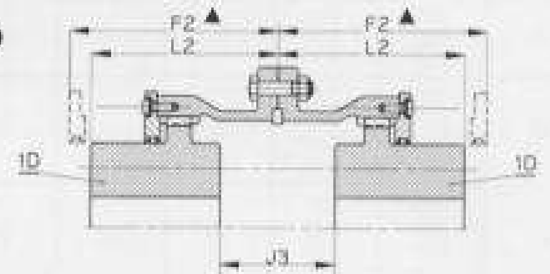
1 Coupling 2ZPA = 2ZP + Floating shaft

1 Kupplung 2ZPA = 2ZP + Zwischenwelle

X : Distance between shafts ends according to installation

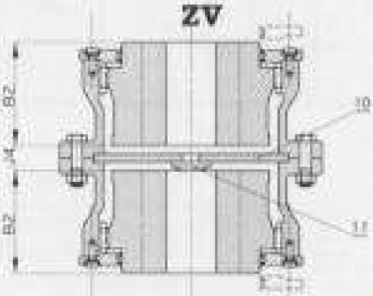
X : Entfernung zwischen den Wellenenden

Z2D



Vertical mounting / *Vertikaler Einbau*

ZEV **2ZPAV** **ZV**



Models based on ZE and 2ZPA, where the floating part is supported by the thrust button ref. 11 which is supported on lower shaft.

Beim Einsatz der ZE und 2ZPA in vertikaler Ausführung wird ein Stützring Pos. 11 mit Stützkern zur Fixierung der Gehäuseteile eingesetzt.

CMD ENGRENAGES & REDUCTEURS **flexident**®

SIZE / *GRÖSSE*	Z Sid∆	51 30	61 40	71 50	81 60	91 70	101 80	111 90	126 100	141 110	152 125	162 140	182 160	202 180	232 200	252 230
Basic Rating *Nenndrehmoment*	da Nm	120	210	340	520	780	1120	1500	2050	2800	3800	5300	7200	10000	12600	16000
Bore maxi *Bohrung*	Am†	50	65	75	85	100	110	120	130	150	170	190	210	240	260	290
	Am*	50	60	70	80	90	100	110	125	140	160	180	200	230	250	270
	A**	14	19	23	28	30	38	45	48	52	58	70	78	88	98	170
Z	B	60	68	80	90	105	120	135	150	165	185	210	240	270	300	275
	C	20	24	28	32	32	36	36	40	44	50	56	64	72	80	80
	D	150	180	210	240	260	290	310	345	380	410	455	510	570	630	630
	D1	120	140	162	185	212	240	260	287	317	337	362	409	455	503	527
	D2	74	90	106	119	138	161	168	187	220	240	266	304	342	380	409
	D3	105	125	145	170	190	210	230	255	280	310	340	385	430	480	475
	D4	125	150	175	200	220	245	265	295	330	355	390	440	490	545	555
	E	61	69,5	81,5	91	105	118	129	142	151	175	186	210	232	271	281
	J	3	4	5	6	7	8	9	10	10	12	14	16	18	20	22
	L1	61,5	70	82,5	93	108,5	124	139,5	155	170	191	217	248	279	310	286
	F1	75	84	98	111	126	142	160	175	190	215	240	270	300	340	320
Bolts / *Schrauben*	ØΣ	8	10	12	12	12	14	14	16	16	18	20	22	24	27	30
Quantity / *Anzahl*	N◇	6	8	8	10	10	12	12	12	12	12	12	12	12	12	16
Z1D Z2D	J2	27	35	45	42	53	62	67	74	71	88	82	92	102	114	157
	J3	51	66	85	78	99	116	125	138	132	164	150	168	186	208	292
	L2	85,5	101	122,5	129	154,5	178	197,5	219	231	267	285	324	363	404	421
	F2	100	115	140	151	176	200	220	244	253	290	310	350	385	435	455
ZE	D5	108	133	140	168	194	194	219	245	273	273	324	368	406	419	457
	e	5	6,3	6,3	6,3	6,3	6,3	6,3	6,3	8	12,5	10	10	10	12,5	20
ZP 2ZPA	Am1†	75	90	105	120	135	150	160	180	200	220	240	270	300	340	350
	Am1*	70	80	90	110	120	140	150	170	180	200	220	250	280	320	320
	B1	45	60	75	90	105	120	135	150	165	185	210	240	270	300	275
	D6	105	125	147	170	190	210	230	255	280	312	340	385	430	480	490
	J1	4	5	5,5	7	7,5	9	9,5	11	11	13	15	17	20	22	22
	L3	47,5	63	78	94	109	125	140	156	171	192	218	249	281	312	286
ZV	B2	57	65	77	86	100	115	130	145	160	180	205	235	260	290	265
	J4	9	10	11	14	17	18	19	20	20	22	24	26	38	40	42

• Weight kg • *Gewicht kg*	Z	7	12	19	28	40	57	79	98	125	164	206	310	430	605	602
	Z1D	7	12	18	27	38	56	75	93	123	159	201	302	422	589	602
	Z2D	6,5	11	17	26	36	55	70	88	121	154	196	294	414	573	602
	ZE #	22	37	46	65	82	104	132	166	217	300	363	506	672	930	1025
	ZE //	1,3	2	2,1	2,5	3	3	3,3	3,7	5,2	8	7,7	8,8	9,7	12,5	21,5
	ZP	7	11	16	26	37	51	70	90	119	159	207	305	425	583	576
	ZV	7	12	20	29	41	59	81	102	129	169	211	315	446	625	622

• MD^2 kg m^2	Z	0,065	0,15	0,32	0,53	1,1	1,95	3	4,9	7,5	11,5	17,8	33	60	99	107
	Z1D	0,065	0,15	0,31	0,53	1,1	1,9	3	4,8	7,4	11,2	17,4	32	59	97	107
	Z2D	0,06	0,15	0,30	0,52	1	1,85	2,9	4,7	7,3	10,9	17	31	58	95	107
	ZE #	0,23	0,55	0,85	1,5	2,5	3,5	5,3	8,2	13	21	33	58	98	159	188
	ZE //	0,013	0,033	0,039	0,066	0,102	0,102	0,15	0,21	0,37	0,54	0,76	1,13	1,53	2,07	4,1
	ZP	0,059	0,143	0,32	0,58	1,07	1,85	2,8	4,7	7,4	11,8	18,7	34,5	62	102	106
	ZV	0,065	0,15	0,32	0,54	1,12	1,98	3,1	5	7,7	12	18	36	61	101	109

Lube weight kg *Fettmenge kg*	Z ZV	0,25	0,35	0,6	0,75	0,9	1,4	1,8	2,3	2,7	3,5	4	7,5	9	12,5	14
	Z1D	0,4	0,6	1,1	1,3	1,9	2,8	3,7	4,8	5,7	8	9	14,5	19	26	34
	Z2D	0,5	0,9	1,6	1,9	2,9	4,3	5,6	7,6	8,7	12,5	14	21,5	29	40	54
	ZE	0,3	0,4	0,7	0,8	2	1,5	2	2,4	2,8	4	5	9	11	15	17
	ZP	0,15	0,2	0,35	0,4	0,5	0,75	1	1,2	1,4	2	2,5	4,5	5,5	7,5	8,5

SPEED MAX RPM — *MAX. ZUL DREHZAHL 1/min*

Z-ZV-Z1D-Z2DX		4300	3500	3000	2700	2300	2000	1900	1700	1500	1400	1250	1100	1000	900	900
	γ	9800	8800	7800	6800	5900	5200	4900	4400	3900	3500	3200	2900	2600	2300	1650

∆ Size names according to french steel industry standards.
† Bore with Keyway
* Shrink fitting
** Rough bore
◇ Multiply by two for ZE and 2ZPA
● For max. bore Am* or Am1*
\# For complete coupling with spacer X = 1000
// Increment X = 100
γ Dynamically balanced
X Other models : refer to factory — ZE see page 10

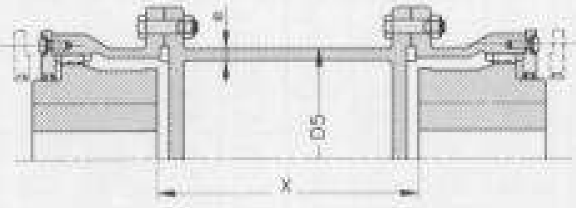
∆ *Bezeichnung nach den franz. Stahlwerksnormen.*
† *Bohrung mit Paßfederbefestigung*
* *Montage über Schrumpfsitz, bitte angeben*
** *Vorbohrung ab Lager*
◇ *Doppelte Anzahl bei ZE und 2ZPA*
● *Für Maximalbohrung Am* oder Am1**
\# *Für gesamte Kupplungslänge X = 1000*
// *Längenunterschied X = 100*
γ *Dynamisch ausgewuchtet*
X *Weitere Ausführungen auf Anfrage — ZE siehe Seite 15.*

STANDARD MODELS

CHARACTERISTICS

Horizontal mounting

ZE, ZEL, ZEL2



X : Distance between shaft ends according to installation
X : Entfernung der zu verbindenden Wellenenden

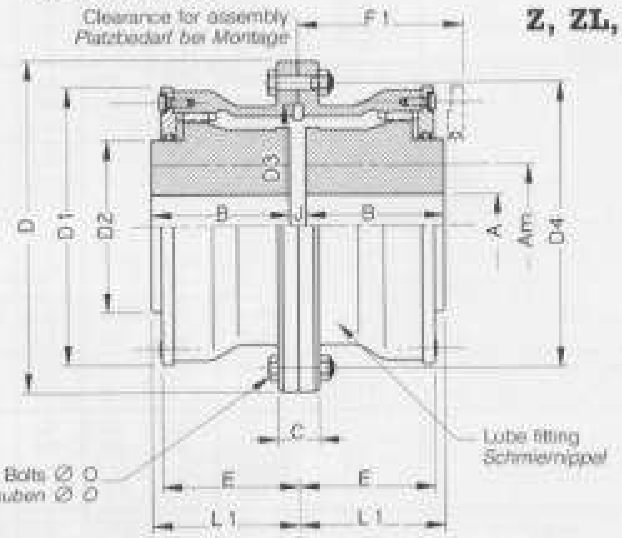
OPTIONS : long hubs
Z ou ZEL : 1 long hub
Z ou ZEL 2 : 2 long hubs

STANDARDAUSFÜHRUNGEN

MERKMALE

Horizontalbetrieb

Z, ZL, ZL2



Wahlweise : Verlängerte Naben
Z o ZEL : 1 verlängerte Nabe
Z o ZEL 2 : 2 verlängerte Naben

SIZE / *GRÖSSE*	Z / SidΔ	282 / 250	312 / 280	352 / 310	402 / 350	452 / 400	502 / 450	552 / 500	602 / 550	652 / 600	702 / 650
Basic Rating / *Nenndrehmoment*	da Nm	24000	35000	46700	66500	96700	125000	182300	250000	320000	373300
Bore max / *Bohrung*	Am†	320	360	400	440	500	560	640	700	780	820
	Am*	300	340	380	420	480	530	600	650	720	760
	A**	190	210	240							
Standard	B	310	350	390	420	455	495	535	575	610	650
Long / *Verlängerte Naben*	B	470	470	550	650	650	650	800	800	800	800
	C	88	100	112	104	110	120	140	140	150	150
	D	665	745	825	910	1020	1160	1260	1370	1500	1620
	D1	600	680	735	830	930	1020	1115	1245	1355	1410
	D2	440	490	545	615	695	765	875	955	1065	1120
	D3	524	594	664	744	838	952	1060	1160	1270	1370
	D4	605	678	754	840	940	1060	1170	1270	1395	1495
	E	299	344	377	402	441	451	510	555	583	607
	J	24	28	30	35	40	45	50	55	60	65
	L1	322	364	405	437,5	475	517,5	560	602,5	640	682,5
	F1	370	415	460	490	530	560	620	670	700	740
Bolts / *Schrauben*	ØO	30	33	36	42	45	48	52	56	60	64
Quantity / *Anzahl*	NO	16	18	18	18	22	24	24	24	24	24
ZE	D5	508	609	660	700	813	914	1016	1118	1270	1320
	e	20	20	20	25	25	25	30	35	35	35

• Weight kg / • *Gewicht kg*	Z	820	1160	1530	2100	2900	3920	5000	6800	8460	9940
	ZE #	1270	1750	2270	3000	4060	5400	7000	9260	11480	13400
	ZE //	24	29	32	42	48	55	73	93	106	110

• MD² kg m²	Z	180	320	510	870	1530	2500	4030	6590	9770	12850
	ZE #	290	510	790	1260	2180	3540	5730	9050	13500	17600
	ZE //	5,7	10	13	19	30	44	71	110	162	183

Lube weight / Fettmenge kg	Z	19	25	27	30	45	65	110	140	170	210
	ZE	23	31	34	40	57	64	136	172	217	262

SPEED MAX RPM — *MAX ZUL. DREHZAHL U/min*

ZX		850	770	700	620	550	500	450	400	350	300
	γ	1500	1400	1250	1100	1000	900	800	750	680	640

Δ Size names according to french steel industry standards.
† Bore with keyway
* Shrink fitting
** Rough bore
○ Multiply by two for ZE
● For maxi bore Am*
\# For complete coupling with spacer X = 1000
// Increment X = 100
γ Dynamically balanced
X ZE refer to factory

Δ Bezeichnung nach den franz. Stahlwerksnormen.
† Bohrung mit Paßfederbefestigung
** Montage über Schrumpfsitz, bitte angeben*
*** Vorbohrung ab Lager*
○ Doppelte Anzahl bei ZE
*● Für Maximalbohrung Am**
\# Für gesamte Kupplungslänge X = 1000
// Längenunterschied X = 100
γ Dynamisch ausgewuchtet
X ZE auf Anfrage

TRANSMITTABLE TORQUE BY SHRINK FIT

In the case of SHRINK FITTING of the FLEXIDENT couplings hubs, the table below enables to determine the torque allowable for this type of fitting.

For this, we have shown the torques at the start of the slide Tg in da Nm for each coupling size according to possible bores, calculated with the following :
- Friction coefficient = 0,15
- Interference 1‰
- Length of hubs completely used, corrected by 0,9 to take into account for hydraulic dismounting.

In practice, Tg is corrected according to Mini tightening, and possibly the friction coefficient, and we check that Tg when corrected is larger than maxi peak torque multiplied by selected security factor.

Eg : FLEXIDENT Z51 mounted on ⌀ 50 SHAFTS

The table below shows Tg = 207 da Nm, in accordance with NFE 22-620, standard mini tightening is 0,86‰. Tg becomes

207 × 0,86 = 178 daNm

if we choose a security factor of 2, this assembly will be able to cope with max peak torque of

178 : 2 = 89 daNm

ÜBERTRAGBARES DREHMOMENT BEI SCHRUMPFMONTAGE

Wenn die Naben der FLEXIDENT-Kupplung mit Schrumpfmontage befestigt werden, ermöglicht nachfolgende Tabelle die Bestimmung der übertragbaren Drehmomente.
Hierin sind die Drehmomente unterhalb der Rutschmomente Tg in da Nm für jede Kupplungsgröße in Abhängigkeit der möglichen Bohrungen mit folgenden Grundlagen angegeben :
- *Gleitfaktor : 0,15*
- *Schrumpfung : 1 ‰*
- *Gesamte Nabenlänge korr. mit 0,92 zur Berücksichtigung der Radien und Nuten für die hydraulische Demontage.*

In der Praxis ist Tg in Abhängigkeit der minimalen Schrumpfung und eventuell des Gleitfaktors zu korrigieren und dann zu überprüfen, ob der zo korrigierte Tg-Wert größer ist als das maximale Spitzenmoment, multipliziert mit dem gewünschten Sicherheitsfaktor.
Beisp. FLEXIDENT Z51 mit Wellen ⌀ 50
Die nachfolgende Tabelle gibt an Tg = 207 daNm, gemäß Norm NFE 22.620 ist die korrigierte Schrumpfung mini 0,86 ‰, Tg ergibt sich als

207 x 0,86 = 178 daNm

wenn ein Sicherheitsfaktor von 2 gewählt wird, kann mit dieser Montage ein Spitzendrehmoment von maximal

178 : 2 = 89 daNm

übertragen werden.

⌀ Shrink Fitting *Schrumpf.*	FLEXIDENT J 20 Size / *Größe*									FLEXIDENT Z Size / *Größe*														
	42	**60**	**75**	**90**	**100**	**120**	**140**	**160**	**180**	**51**	**61**	**71**	**81**	**91**	**101**	**111**	**126**	**141**	**152**	**162**	**182**	**202**	**232**	**252**
25	58																							
28	70																							
30	77									105														
35	92	160								134														
38	100	183								150														
40		196								163	203													
42		210								173	220													
45		230								188	244	310												
48		248	330							200	267	345												
50		256	347							207	282	367												
55		274	393								315	424	506											
60			435	620							341	476	578											
65			465	685								523	647	815										
70				750	940							563	711	910	1100									
75				800	1040								768	1000	1230									
80				840	1130	1450							815	1090	1350	1600								
85					1210	1560								1160	1470	1750								
90					1270	1670								1230	1580	1900	2230							
95					1320	1770	2350								1680	2050	2420							
100						1860	2530								1770	2180	2600	3020						
110						1980	2850	3530								2420	2950	3480						
120							3120	3960	4770								3240	3910	4640					
125							3200	4130	5020								3370	4110	4910					
130							3280	4300	5290									4300	5160	6230				
140								4560	5740									4610	5640	6890				
150								4740	6150										5040	7510	9430			
160									6490										6340	8040	10290			
170																				8490	11100	13520		
180																				8800	11820	14590		
190																					12440	15600	18760	
200																					12940	16520	20110	
210																						17330	21380	20170
220																						18000	22550	21373
230																						18500	23610	22480
240																							24530	23470
250																							25270	24330
260																								25040
270																								25540

Tg : TORQUE AT START OF SLIDE da Nm
directly proportional to interference and friction coefficient

Tg : DREHMOMENT FÜR RUTSCHGRENZE in da Nm
direkt proportional zur Schrumpfung und dem Gleitfaktor

Note : The present french standards recommend a max tightening of 1,6‰ for shafts over 48, which according to IT6 or IT7 represent the min. interference. We recommend to keep those values. However our technical Dept. remains at your disposal for any advice or special studies.

Bemerkung : *Die gültigen französischen Normen empfehlen eine max. Schrumpfung von 1,6 ‰ für Wellen größer als ⌀ 48 wobei die angewandten Toleranzklassen IT6 oder IT7 die mini Schrumpfung bestimmen. Wir empfehlen, sich nach diesen Werten zu richten. Für weitere technische Auskünfte stehen wir Ihnen gerne zur Verfügung.*

MODELS WITH SPACER TUBE

CHECKING

For ZE or JE21 models, ie coupling combined with spacer tube, we have standardised the tube diameters and thicknesses for the whole range, in accordance with the dimensions on pages 7 and 11, which cover most applications.
However, the max lengths allowed are dependant on the tube thickness which can create either a critical bending speed or an angle on the ends, affecting the correct operating of the coupling and it is therefore recommended to complete the selection of the coupling by checking that the spacer is outside those areas.

To do this, simply check that the distance between shafts ends X, associated with the speed is lower than the one on the graphs below for JE 21 and the one page 15 for ZE.

The dots on the graphs indicate the speed from which we recommend to dynamically balance the complete coupling + spacer. For low speeds, the balancing may be necessary according the level of sensivity of the machines driven, or the balancing of the spacer only may prove to be sufficient.

AUSFÜHRUNGEN MIT ZWISCHENROHR

ÜBERPRÜFUNG

Bei den Ausführungen ZE oder JE21, Kupplungen, die mit kombiniertem Zwischenrohr sind, haben wir die Durchmesser und Wandstäken der Rohre für das gesamte Programm gemäß der Größenabmessungen auf Seite 7 und 11 standardisiert, die den meisten Anwendungen entsprechen. Die maxi Längen sind abhängig von der Durchbiegung der Rohre, die eine kritische Drehzahl verursachen kann und dadurch erhebliche Winkelabweichungen an den Enden bewirkt, die der Funktionstüchtigkeit und der Lebensdauer der Kupplung schaden.
Es wird daher empfohlen, bei der Auswahl der Kupplung zu überprüfen, ob sie außerhalb der kritischen Zone liegt.

Dazu ist zu überprüfen, ob die Entfernung zwischen den Wellenenden X in Abhängigkeit der Drehzahl unterhalb der Kurve auf der untenstehenden Tabelle für die JE21 liegt, bei ZE siehe Tabelle auf Seite 15.

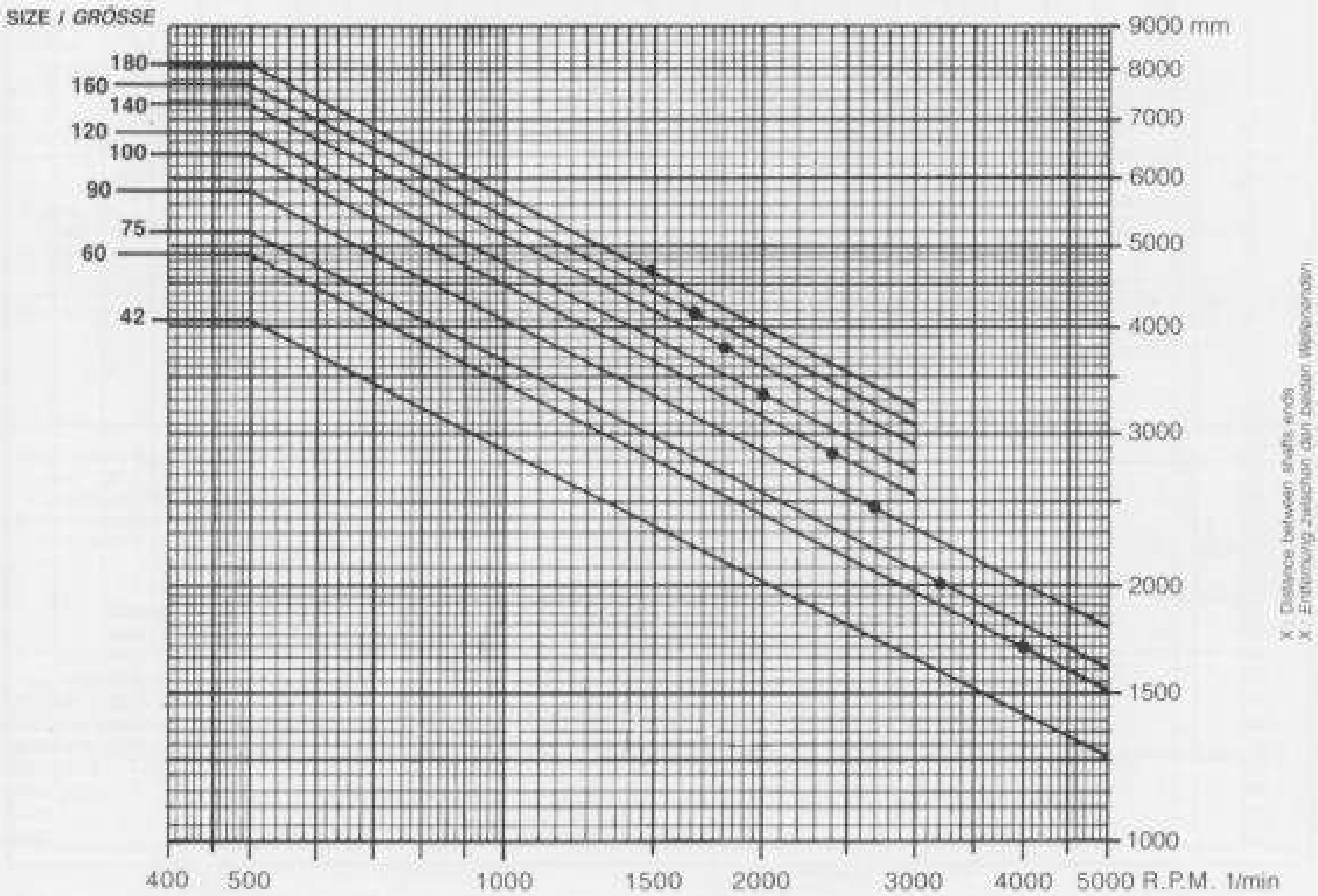
Der Punkt auf den Kurven gibt die Drehzahl an, ab der wir eine dynamische Auswuchtung der gesamten Kupplung empfehlen.

Bei niedrigeren Drehzahlen kann eine Auswuchtung je nach Empfindlichkeit der angetriebenen Maschinen erforderlich sein, ebenso kann das dynamische Auswuchten des Zwischenrohrs allein notwendig und ausreichend sein.

JE21

CRITICAL BENDING SPEEDS FOR SPACER TUBES :

GRENZDREHZAHLEN BEIM EINSATZ VON ZWISCHENROHREN :



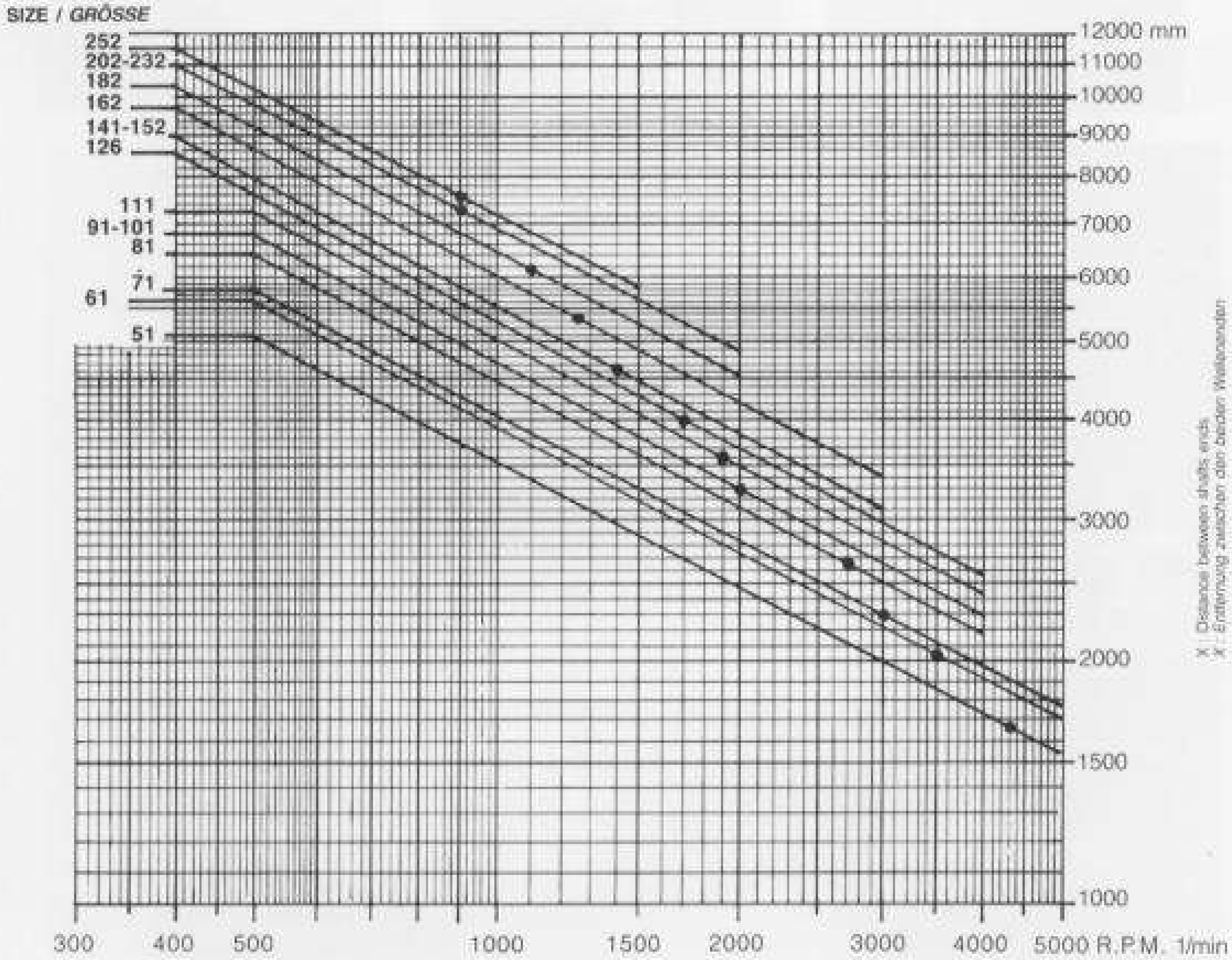
Note : When a JE21 coupling is dynamically balanced, remember to use center rings. Refer to factory for all speeds or lengths over those on the graph.

Anmerkung : *Wenn die Kupplung JE21 dynamisch ausgewuchtet wird, vergessen Sie bitte nicht, die Zentrierringe zu bestellen und anzubringen. Für alle Drehzahlen und Längen, die größer sind als die im Schaubild dargestellten, bitten wir um Rückfrage.*

ZE

CRITICAL BENDING SPEEDS
FOR SPACER TUBES

GRENZDREHZAHLEN BEIM EINSATZ
VON ZWISCHENROHREN



Example : limitation of a ZE252 coupling according to dimensions of spacer tube given on page 11 : external diameter 457, thickness 15, the maxi distance X possible will be 11500 mm for a speed lower or equal to 400 rpm.

For a speed of 1000 rpm, the maxi distance X possible will be 7200 mm.

Note : From the dot on the graph, it is recommended to dynamically balance the complete coupling with spacer.

Beispiel : *Anwendungsbegrenzung einer Kupplung ZE252 in Abhängigkeit der Zwischenrohrgröße auf Seite 11 : Außendurchmesser 457, Wandstärke 15, die maximale Entfernung X zulässig beträgt 11500 mm bei einer Drehzahl kleiner oder gleich : 400 1/min.*

Bei einer Drehzahl von 1000 1/min ist die max. Entfernung X = 7200 mm.

Anmerkung : *Der Punkt auf der Kurve gibt an, daß eine dynamische Auswuchtung der gesamten Kupplung empfehlenswert ist.*

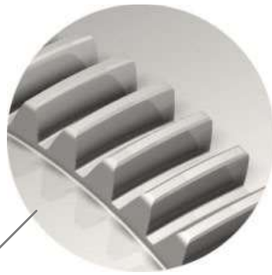
flexident®
senior

CMD

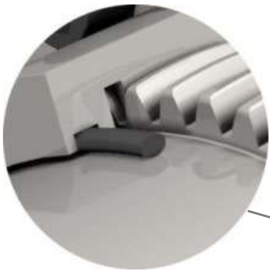
flexident® senior

Fasteners class 12.9 allow torque transmission by adhesion.

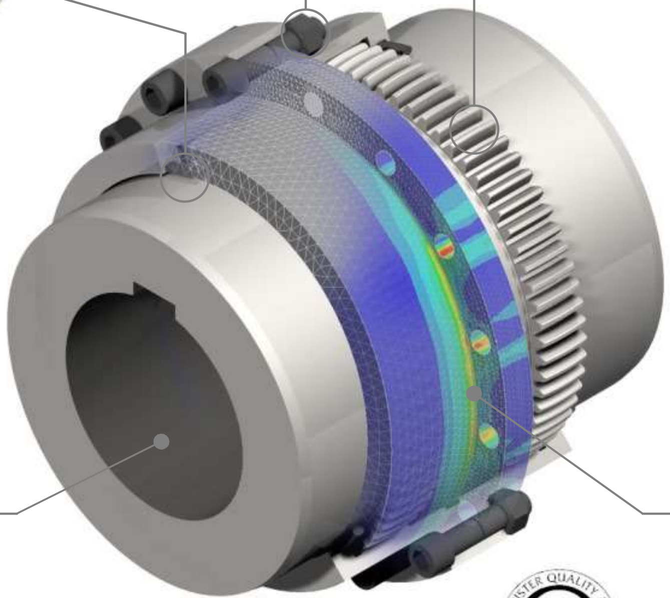
Special gear teeth realized in order to increase the contact surface and to limit the superficial pressure.



Tightness with standard o-rings that guarantee the long life of couplings.

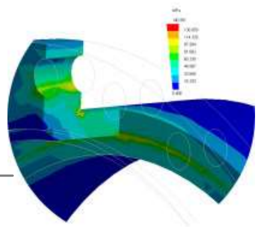


Special Shape of tooth in order to limit noise and vibrations interferences.



Gear Hub:
Bore hub capacity up to 800 mm optimization by finite elements.

Ring Gear:
Gear Teeth optimized by finite elements.



ISO 9001

Available according ATEX standards

High misalignment 1°30' for sizes 50 to 280
Misalignment of 1° by meshing for sizes 310 up to 800

-20°C
+100°C

Working temperature

24 Sizes of entire steel coupling from 1 200 to 4 500 000 Nm.

Coupling Selection

A) Calculation of Corrected Torque: Corrected Torque= Absorbed T x SF $= \frac{9550 \times P\ Abs\ (kW)}{Speed\ \ rpm} \times FS$

(Choice of the Service Factor SF – See following Data)

B) Selection: Choose the coupling size that has a nominal torque equal or superior to the Corrected Torque.

C) Checking: Check the maximum boring and speed capacities

Service Factors Table	FS Δ	FS	FS O
Uniform load, no shocks **T max ≤ 1,5 T. Few start-up.** - Generators, centrifugal pumps and compressors, small fans...	1	1,12	** 1,25
Uniform load, light shocks. **T max < 1,8 T. Light and short overload.** - Agitators and mixers for liquid or semi liquid, light textile machinery, rotary machines tools, light duty conveyors…	1,12	1,25	** 1,40
Non uniform load, moderate shocks. **T max ≤ 2,2 T. Short time quite heavy overload.** - Agitators or mixers for liquid and solid, elevators, overhead cranes, cranes in machining shops, cranes winches, card machine, dry can, loom, cloth finishing machine, extruder, hammer mill, tumbling mill, auxiliary drives for rolling mills, wire drawing machines…	1,25	1,40	** 1,60
Non uniform load, heavy shocks frequently. **T max≤ 3 T. High overload, reverse motion.** - Compressors with flywheel, reciprocating, draw bench, cold mill ban bury mixers, mixing mills, tire building machine, washers, barking drums, chippers, generators…, welder load...	1,60	1,80	** 2
Non uniform load, very heavy shocks, very frequently. **T max from 3 to 3,5 T. Very high overload.** **Reverse motion** - hot mill application, , conveyors, live roll, shaker and reciprocating, skelp mills, gang raw (reciprocating), vibrating screen…	2	2,25	*** 2,5

Δ : Drive per motor Electric or turbine

: Drive per motor Hydraulic

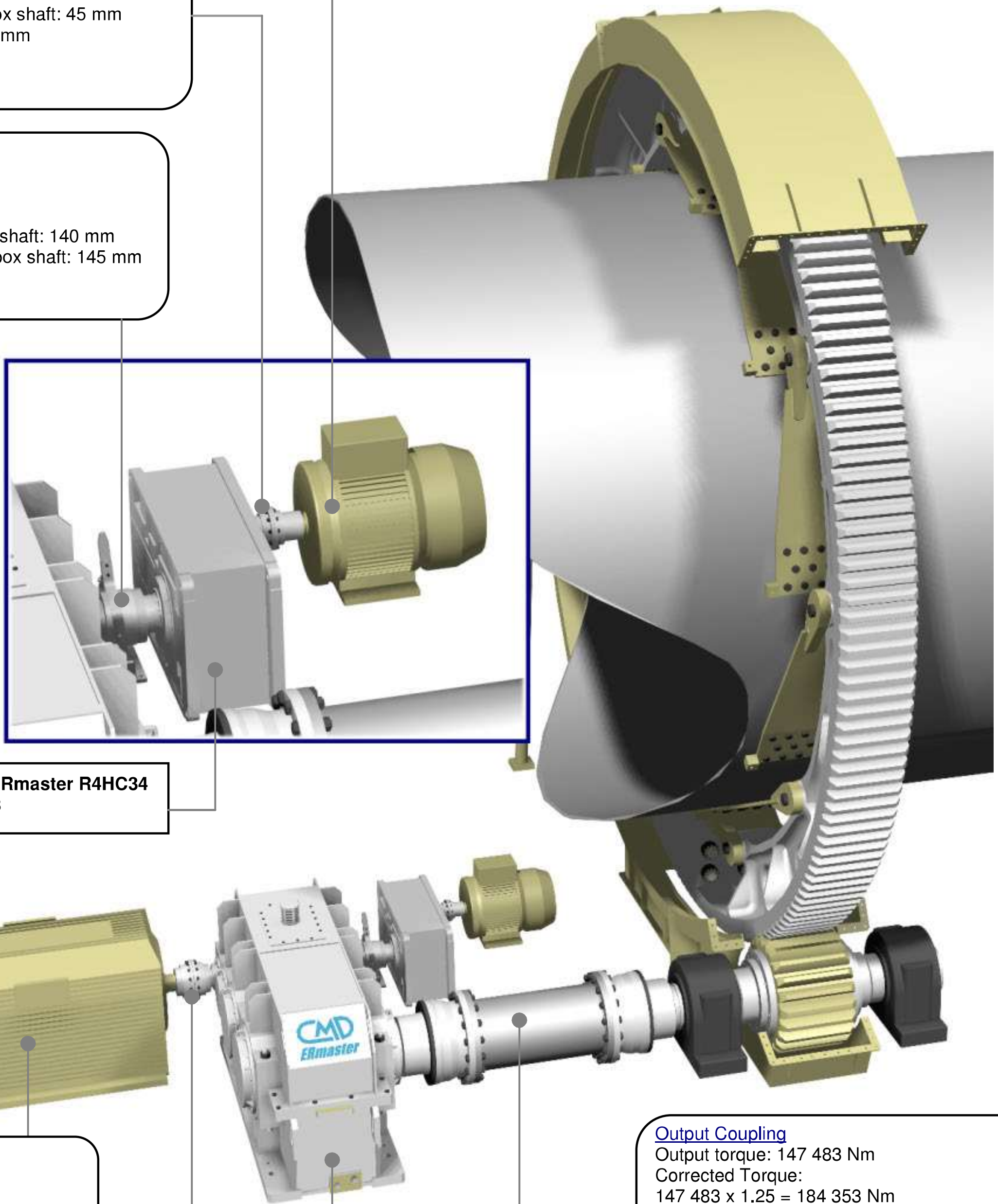
O : Drive per motor multi cylinders internal combustion

** *Mass elastic study advised*

*** *Mass elastic study necessary*

Example of Selection

Application : Cement Crusher
Service Factor (Sf) = 1.25



Electric motor of inching drive
P = 30 kW
Speed = 1450 rpm
Application: Cement crusher
Sf: 1.25 (according table page 3)

Input Coupling
Input torque: 197 Nm
Corrected torque: 197 x 1.25 = 246.25 Nm
Diameter of auxiliary gearbox shaft: 45 mm
Diameter of motor shaft: 55 mm
Coupling selection: **S68**
Page 6

Output Coupling
Output Torque: 27 705 Nm
Corrected Torque:
27 705 x 1.25 = 34 632 Nm
Ø Diameter of main gearbox shaft: 140 mm
Ø Diameter of auxiliary gearbox shaft: 145 mm
Coupling selection: **S170DB**
Page 19

Inching drive reducer **ERmaster R4HC34**
Reduction ratio: 140.23

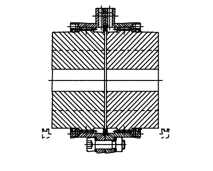
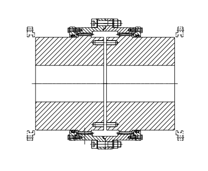
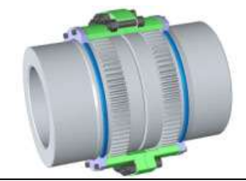
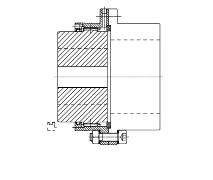
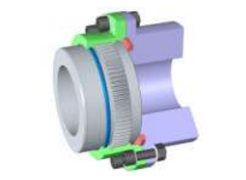
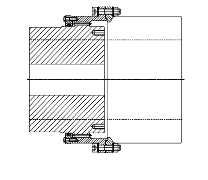
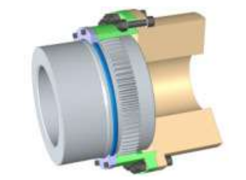
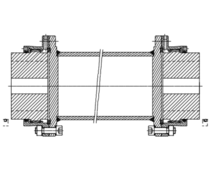
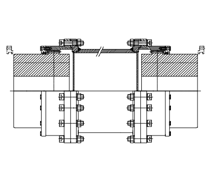
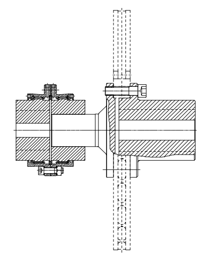
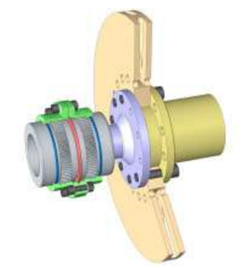
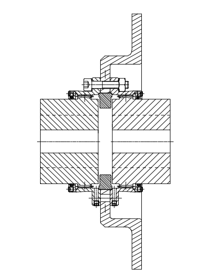
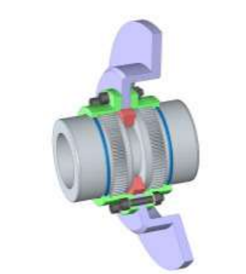
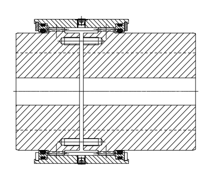
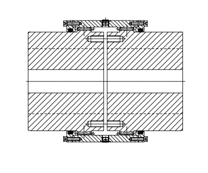
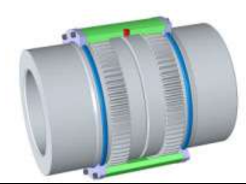
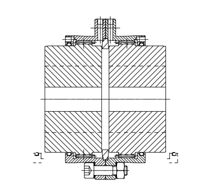
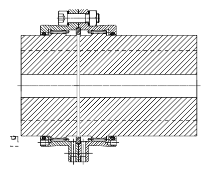
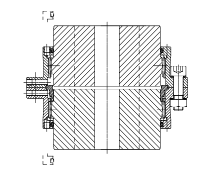
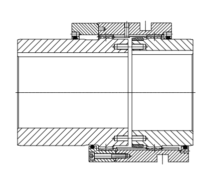
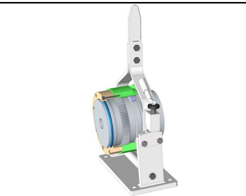
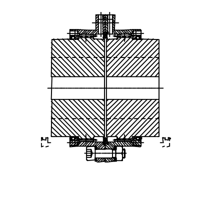
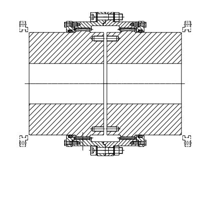
Main electric motor
Power = 2400 kW
Speed = 980 rpm
Application: Cement plant crusher
Sf 1.25 (according table page 3)

Input coupling
Input Torque: 23 387 Nm
Corrected Torque:
23 387 x 1.25 = 29 233 Nm
Diameter of gearbox shaft: 140 mm
Diameter of motor shaft: 130 mm
Coupling selection: **S150**
Page 6

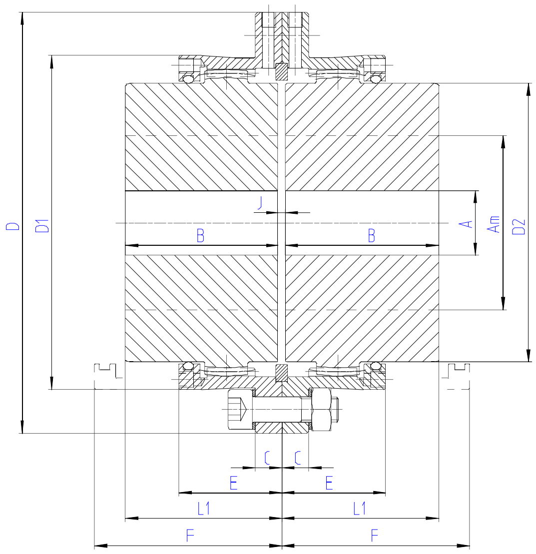
Output Coupling
Output torque: 147 483 Nm
Corrected Torque:
147 483 x 1.25 = 184 353 Nm
Diameter of gearbox shaft: 250 mm
Diameter of pinion shaft: 260 mm
Distance between end shafts 5000 mm
Coupling selection: **S280 E 5000**
Page 10

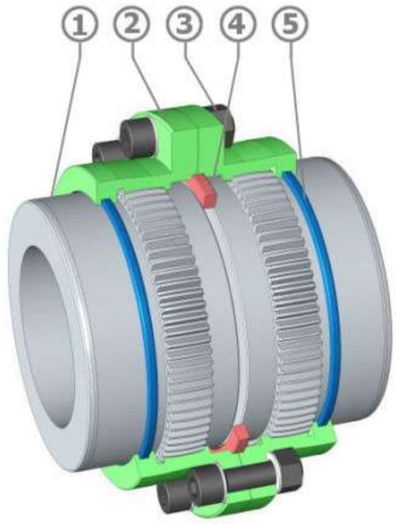
Main gearbox: **ERmaster R2HC50**
Ratio: **6.306**

Standard models for general applications

	Type **S** page 6 Nominal Torque: 1 200 up to 190 000 Nm Max bore : 50 up to 280 mm			Type **S** page 7 Nominal torque: 255 000 up to 4 950 000 Nm Max bore : 310 up to 800 mm	
	Type **S PA** page 8 Nominal torque: 1 200 up to 190 000 Nm Max bore : 50 up to 280 mm			Type **S PA** page 9 Nominal torque: 255 000 up to 4 950 000 Nm Max bore : 310 up to 800 mm	
	Type **S E** page 10 Nominal torque: 1 200 up to 190 000 Nm Max bore : 50 up to 280 mm			Type **S E** page 11 Nominal torque: 255 000 up to 4 950 000 Nm Max bore : 310 up to 800 mm	
	Type **S DF** page 12 Application for brake disc Nominal torque: 3 000 up to 43 000 Nm Max bore : 68 up to 170 mm			Type **S DFC** page 13 Application for brake disc elbow Nominal torque: 1 200 up to 190 000 Nm Max bore : 50 up to 280 mm	
	Type **S BM** page 14 Monobloc cover Nominal torque: 1 200 up to 190 000 Nm Max bore : 50 up to 280 mm			Type **S BM** page 15 Monobloc cover Nominal torque: 255 000 up to 4 950 000 Nm Max bore : 310 up to 800 mm	
	Type **S JL** page 16 Limited end float Nominal torque: 1 200 up to 190 000 Nm Max bore : 50 up to 280 mm			Type **S ML-ML2** page 17 Long hub Nominal torque: 1 200 up to 138 000 Nm Max bore : 50 up to 250 mm	
	Type **S V** page 18 Vertical mounting Nominal torque: 1 200 up to 190 000 Nm Max bore : 50 up to 280 mm			Type **S DB** page 19 Clutch system Nominal torque: 1 200 up to 138 000Nm Max bore : 50 up to 250 mm	
	Type **S R** page 20 Reinforced Coupling Nominal torque: 1 855 up to 302 450 Nm Max bore : 50 up to 280 mm			Type **S R** page 21 Reinforced Coupling Nominal torque: 400 000 up to 7 780 000 Nm Max bore : 310 up to 800 mm	

Type S – Horizontal working position





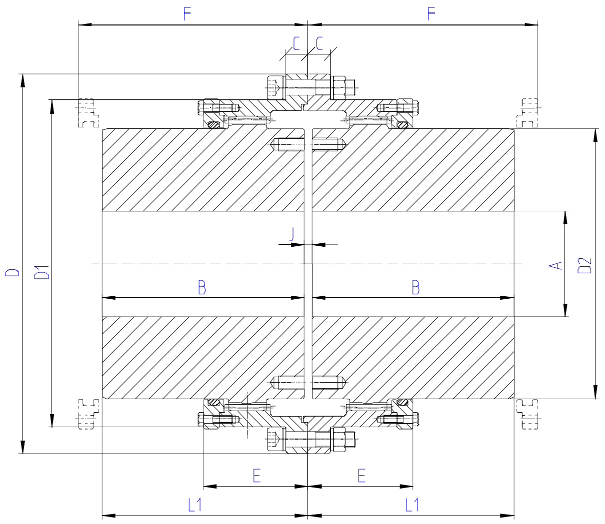
Item	Designation
1	Gear Hub
2	Half cover
3	Screws & Bolts
4	Centering ring supplied only if vertical or balanced execution
5	Seal

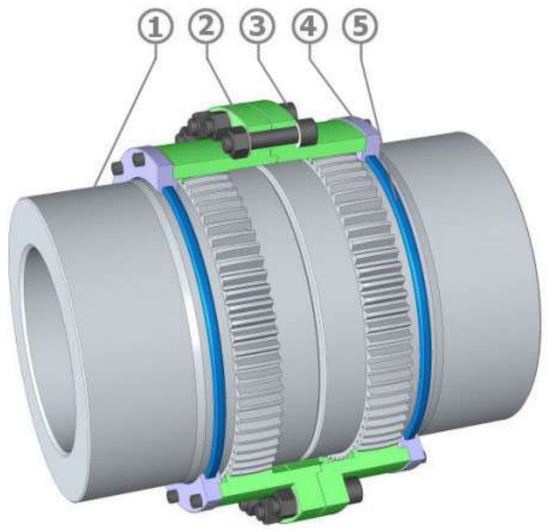
Example of designation **S80**
SENIOR coupling size 80

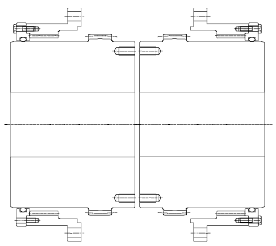
Size		**50**	**68**	**80**	**100**	**115**	**135**	**150**	**170**	**190**	**215**	**230**	**250**	**280**
Nominal Torque	**Nm**	**1200**	**3000**	**5200**	**9000**	**13700**	**21300**	**29200**	**43000**	**60700**	**88200**	**105000**	**138000**	**190000**
Max Bore	**Am***	50	68	80	100	115	135	150	170	190	215	230	250	280
	Am**	46	63	75	92	106	125	140	160	175	200	210	230	250
Rough bore	**A**	18	18	26	35	35	58	68	83	98	108	118	128	128
	B	43	50	62	76	90	105	120	135	150	175	190	220	310
	C	10	10	11	11	14	18	20	20	24	24	30	30	30
	D	105	140	169	200	228	266	298	330	368	410	440	473	498
	D1	83,6	112,6	134	164	188	219	245	277	309	351	374	407	432
	D2	69,4	95	112	138	159	188	209	238	263	302	319	349	374
	E	30,5	36	42	52	63,5	74	82	91	100	110,5	122	135,5	139
	J	3	3	3	5	5	6	6	8	8	8	8	10	10
	F	55	63	75	93	112	130	145	163	180	205	220	253	343
	L1	44,5	51,5	63,5	78,5	92,5	108	123	139	154	179	194	225	315
Weight •	**Kg**	3,7	7,7	13,2	23,5	36,7	59	84	119	164	243	300	406	616
Moment of Inertia J •	**Kgm²**	0,004	0,012	0,030	0,079	0,166	0,368	0,649	1,141	1,962	3,63	5,18	8,08	13,07
Max speed (rpm)		5400	4000	3400	2700	2400	2000	1800	1600	1500	1300	1200	1100	1000
	y	14000	10500	8900	7200	6300	5400	4800	4200	3800	3300	3100	2900	2700
Weight of grease ∇	**Kg**	0,04	0,08	0,12	0,26	0,38	0,6	0,8	1	1,7	2,2	2,9	3,8	4

* Bore with keyway according ISO R 773 or DIN 6885/1 standards
** Shrink fitting
• Solid hubs
y Dynamically balanced
∇ Per coupling

Type S – Horizontal working position







Inspection of the gear teeth is possible without having to remove the covers

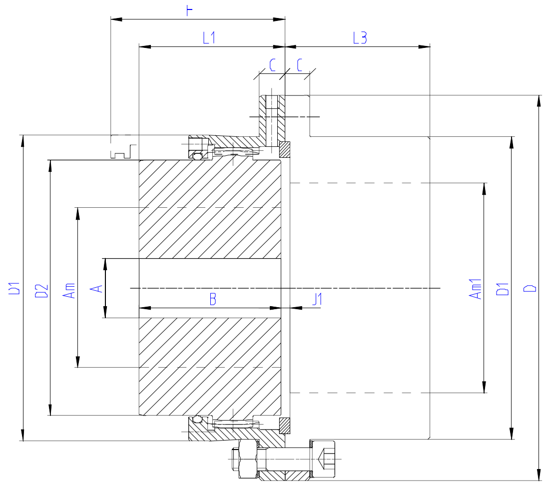
Item	Designation
1	Gear Hub
2	Half cover
3	Screws & Bolts
4	Cover
5	Seal

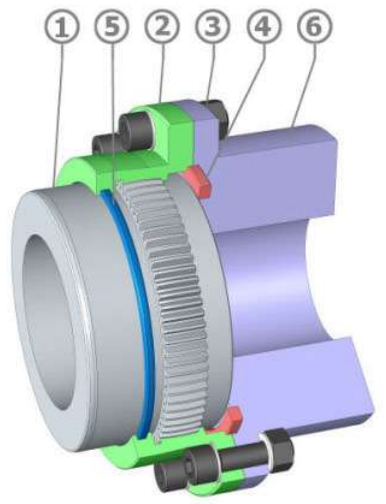
Example of designation **S310**
SENIOR coupling size 310

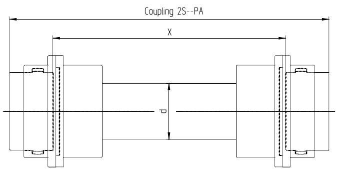
Size		310	330	370	400	430	475	510	550	610	650	710	750	800
Nominal Torque	**Nm**	**255000**	**320000**	**410000**	**525000**	**670000**	**850000**	**1100000**	**1400000**	**1800000**	**2400000**	**3200000**	**3750000**	**4950000**
Max Bore	**Am***	310	330	370	400	430	475	510	550	610	650	710	750	800
	Am**	310	330	370	400	430	475	510	550	610	650	710	750	800
Rough bore	**A**	163	176	191	240	257	279	304	329	358	394	434	457	501
	B	310	330	350	370	430	480	505	515	535	575	610	650	700
	C	34	34	39	43	47	56	56	55	65	70	70	70	75
	D	575	608	676	735	793	940	990	1100	1225	1285	1395	1450	1555
	D1	494	518	576	637	695	785	840	910	1000	1060	1170	1225	1295
	D2	411	438	492	535	581	645	700	770	835	890	975	1030	1095
	E	155	166	166	190.5	204	212	250	250	270	305	335	345	385
	J	12	12	12	15	15	16	20	20	25	25	30	30	30
	F	350	370	395	420	478	550	570	575	600	640	680	720	770
	L1	316	336	356	377.5	437.5	488	515	525	547,5	587,5	625	665	715
Weight •	**Kg**	805	957	1261	1613	2191	3091	3825	4676	5833	7101	9025	10522	12927
Moment of Inertia J•	**Kgm²**	21.9	29.1	47.6	74.1	116.9	215.3	307.4	449.9	687.4	936	1419.4	1795.7	2512.1
Max speed (rpm)		903	857	760	696	643	573	542	495	446	418	377	358	341
	y	2409	2285	2026	1857	1714	1528	1445	1320	1188	1114	1005	955	909
Weight of grease ∇	**Kg**	6.2	6.6	7.9	11	13.5	18.2	22.3	23.8	30.5	37.1	48.5	62.2	73.5

* Bore with keyway according ISO R 773 or DIN 6885/1 standards
** Shrink fitting
• Solid hubs
y Dynamically balanced
∇ Per coupling

Type P-PA – Horizontal working position



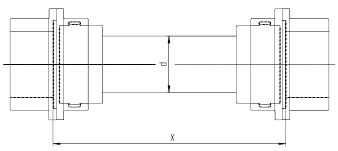




Ex Mounting

X: Distance between end shafts
X and d are defined according the needs

Item	Designation
1	Gear Hub
2	Half cover
3	Screws & Bolts
4	Centering ring supplied only if vertical or balanced execution
5	Seal
6	Solid hub



In Mounting

Example of designation **2 S 80 PA 1000 In SENIOR** size **80**, composed with two half couplings **S80 P** with a shaft spacer whose length X = 1000
In Mounting (rigid hubs set up at the ends)
Ex Mounting (gear hubs set up at the ends)

Size		50	68	80	100	115	135	150	170	190	215	230	250	280
Nominal Torque	Nm	1200	3000	5200	9000	13700	21300	29200	43000	60700	88200	105000	138000	190000
Max Bore	Am*	50	68	80	100	115	135	150	170	190	215	230	250	280
	Am**	46	63	75	92	106	125	140	160	175	200	210	230	250
	Am1*	60	80	95	115	135	155	175	190	220	250	265	290	310
	Am1**	55	75	85	110	125	145	160	180	205	230	250	270	280
Rough bore	A	18	18	26	35	35	58	68	83	98	108	118	128	128
	B	43	50	62	76	90	105	120	135	150	175	190	220	310
	C	10	10	11	11	14	18	20	20	24	24	30	30	30
	D	105	140	169	200	228	266	298	330	368	410	440	473	498
	D1	83,6	112,6	134	164	188	219	245	277	309	351	374	407	432
	D2	69,4	95	112	138	159	188	209	238	263	302	319	349	374
	J1	3,5	4	4	5	6	7	8	9	10	10	11,5	12,5	12,5
	F	55	63	75	93	112	130	145	163	180	205	220	253	343
	L1	44,5	51,5	63,5	78,5	92,5	108	123	139	154	179	194	225	315
	L3	45	52.5	64.5	78.5	93.5	109	125	140	156	181	197.5	227.5	317.5
Weight •	Kg	4,5	9,1	15,6	27,6	43,5	70	99	139	193	281	352	472	712
Moment of Inertia J•	Kgm²	0,005	0,017	0,041	0,106	0,220	0,484	0,861	1,493	2,6	4,74	6,85	10,6	17,16
Max speed (rpm)		5400	4000	3400	2700	2400	2000	1800	1600	1500	1300	1200	1100	1000
	y	14000	10500	8900	7200	6300	5400	4800	4200	3800	3300	3100	2900	2700
Weight of grease ∇	Kg	0,028	0,058	0,085	0,17	0,26	0,41	0,57	0,73	1,15	1,50	2,10	2,60	3

* Bore with keyway according ISO R 773 or DIN 6885/1 standards
** Shrink fitting
• For couplings S..P - Solid hubs
y Dynamically balanced
∇ Per coupling S..P

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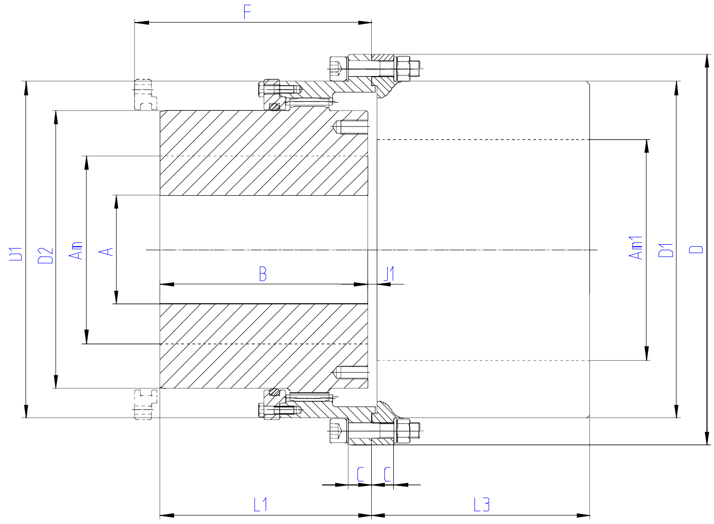
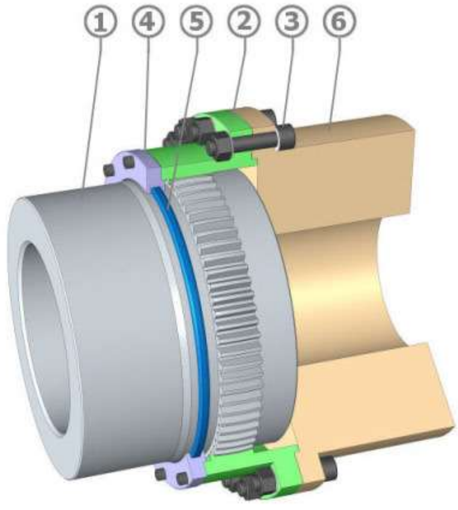
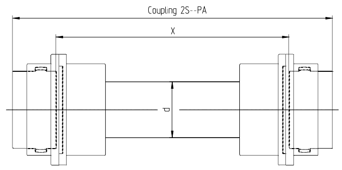
Type P-PA – Horizontal working position





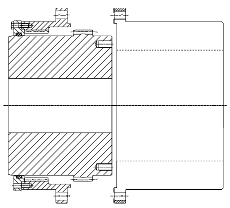


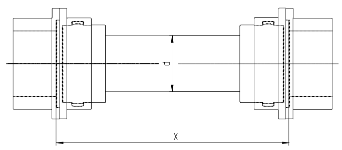
Ex Mounting

X: Distance between end shafts
X and d are defined according the needs

Item	Designation
1	Gear Hub
2	Half cover
3	Screws & Bolts
4	Cover
5	Seal
6	Solid hub

Inspection of the gear teeth is possible without having to remove the covers





In Mounting

Example of designation **2 S 310 PA 1000 In SENIOR** size **310**, composed with two half couplings **S310 P** with a 1000 mm shaft spacer.
In Mounting (rigid hubs set up at the ends)
Ex Mounting (gear hubs set up at the ends)

Size		310	330	370	400	430	475	510	550	610	650	710	750	800
Nominal Torque	**Nm**	**255000**	**320000**	**410000**	**525000**	**670000**	**850000**	**1100000**	**1400000**	**1800000**	**2400000**	**3200000**	**3750000**	**4950000**
Max Bore	**Am***	310	330	370	400	430	475	510	550	610	650	710	750	800
	Am**	310	330	370	400	430	475	510	550	610	650	710	750	800
	Am1	Consult CMD												
Rough bore	**A**	163	176	191	240	257	279	304	329	358	394	434	457	501
	B	310	330	350	370	430	480	505	515	535	575	610	650	700
	C	34	34	39	43	47	56	56	55	65	70	70	70	75
	D	575	608	676	735	793	940	990	1100	1225	1285	1395	1450	1555
	D1	494	518	576	637	695	785	840	910	1000	1060	1170	1225	1295
	D2	411	438	492	535	581	645	700	770	835	890	975	1030	1095
	J1	16	16	16	20	20	20	24	28	30	30	32	32	32
	F	350	370	395	420	478	550	570	575	600	640	680	720	770
	L1	316	336	356	377.5	437.5	488	515	525	547,5	587,5	625	665	715
	L3	320	340	360	382	442	492	519	531	552	592	628	668	718
Weight •	**Kg**	891,5	1049	1381.1	1774,4	2428,7	3476.1	4223,5	5118.7	6442,7	7794,4	9954,4	11582,7	14105,5
Moment of Inertia J•	**Kgm²**	26,46	34,5	56,4	88,2	141,6	265,4	367,7	530,6	819	1106.4	1693.7	2142,2	2947,8
Max speed (rpm)		903	857	760	696	643	573	542	495	446	418	377	358	341
	y	2409	2285	2026	1857	1714	1528	1445	1320	1188	1114	1005	955	909
Weight of grease ∇	**Kg**	3.1	3.31	3.95	5.5	6.75	9.1	11.15	11.9	15.25	18.55	24.25	31	36.75

* Bore with keyway according ISO R 773 or DIN 6885/1 standards
** Shrink fitting
• For couplings S..P - Solid hubs
y Dynamically balanced
∇ Per coupling S..P

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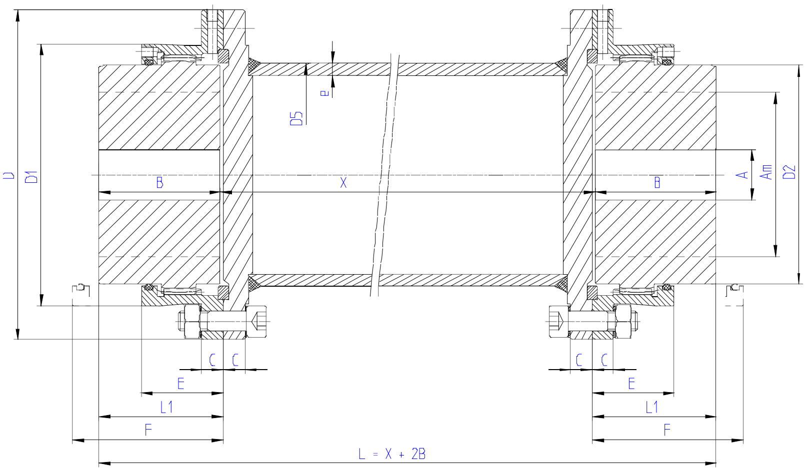
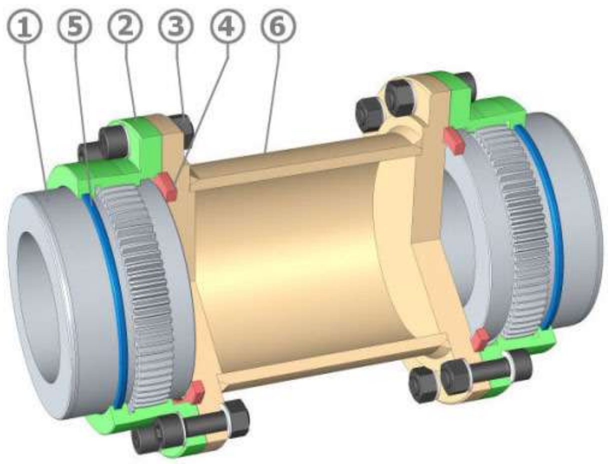
Type SE – Horizontal working position





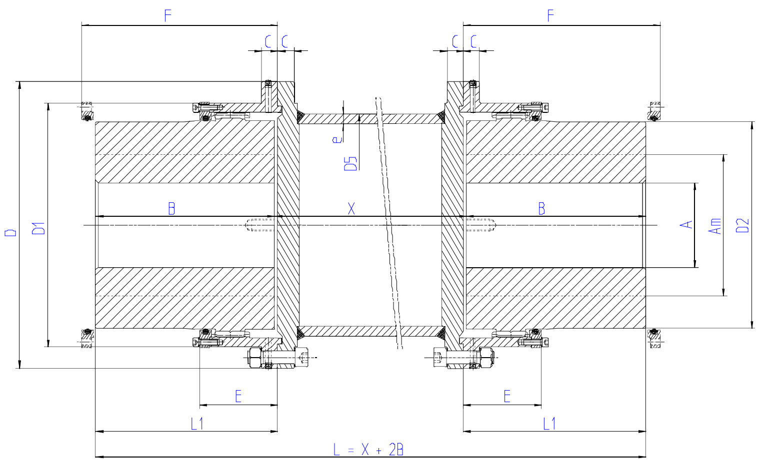
Item	Designation
1	Gear Hub
2	Half cover
3	Screws & Bolts
4	Centering ring supplied only if vertical or balanced execution
5	Seal
6	Spacer

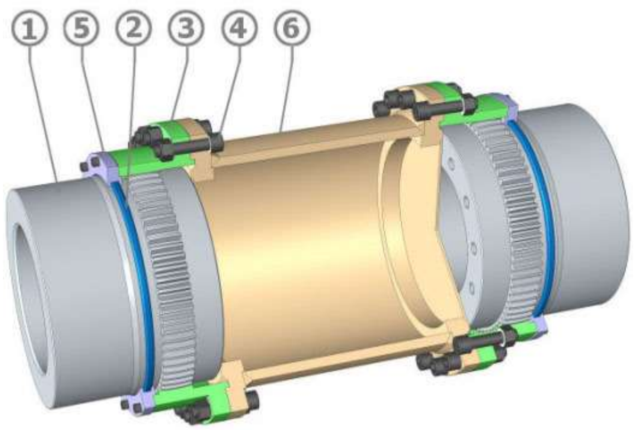
Example of designation **S 80 E 1000**
SENIOR size **80**, composed with two half couplings **S80** joined by a tubular spacer with distance between shafts ends X =1000 mm

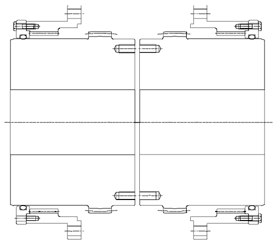
Size		50	68	80	100	115	135	150	170	190	215	230	250	280
Nominal Torque	**Nm**	**1200**	**3000**	**5200**	**9000**	**13700**	**21300**	**29200**	**43000**	**60700**	**88200**	**105000**	**138000**	**190000**
Max Bore	**Am***	50	68	80	100	115	135	150	170	190	215	230	250	280
	Am**	46	63	75	92	106	125	140	160	175	200	210	230	250
Rough bore	**A**	18	18	26	35	35	58	68	83	98	108	118	128	128
	B	43	50	62	76	90	105	120	135	150	175	190	220	310
	C	10	10	11	11	14	18	20	20	24	24	30	30	30
	D	105	140	169	200	228	266	298	330	368	410	440	473	498
	D1	83,6	112.6	134	164	188	219	245	277	309	351	374	407	432
	D2	69.4	95	112	138	159	188	209	238	263	302	319	349	374
	E	30.5	36	42	52	63,5	74	82	91	100	110,5	122	135,5	139
	D5	70	101,6	114,3	139,7	168,3	193,7	203	244,5	273	323,9	355,6	368	406,4
	e	4	5	6,3	8	7,1	10	12,5	12,5	12,5	12,5	12,5	16	16
	F	55	63	75	93	112	130	145	163	180	205	220	253	343
	L1	44.5	51.5	63,5	78,5	92,5	108	123	139	154	179	194	225	315
Weight •	**Kg**	11.6	22.1	34	55	75	121	165	218	285	390	480	628	870
Moment of Inertia J•	**Kgm²**	0.013	0.045	0.093	0.218	0.407	0.883	1.42	2.45	4	7	10	15.6	21.8
Weight △	**Kg**	0.65	1.19	1.67	2.59	2.81	4.5	5.9	7.1	8	9.6	10.5	13.8	15.3
Moment of Inertia J △	**Kgm²**	0.0007	0.0028	0.005	0.0113	0.0183	0.0383	0.0533	0.096	0.136	0,232	0.31	0.43	0.59
Weight of grease ∇	**Kg**	0.04	0.08	0.12	0.26	0.38	0.6	0.8	1	1.70	2.20	2.90	3.80	4

* Bore with keyway according ISO R 773 or DIN 6885/1 standards
** Shrink fitting
• For couplings with spacer X=1000 mm: Solid hubs
△ Correction for variation X=100 mm
∇ Per coupling

Type SE – Horizontal working position







Inspection of the gear teeth is possible without having to remove the covers

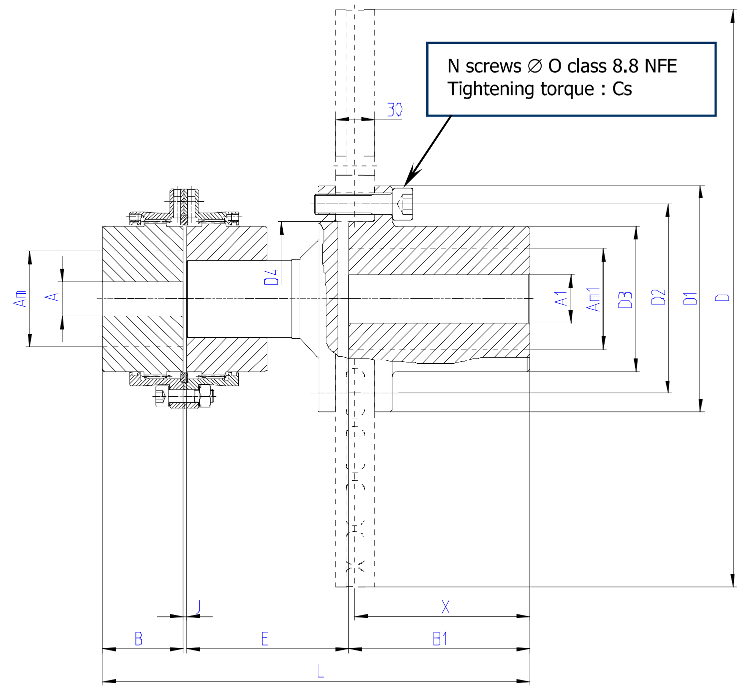
Item	Designation
1	Gear Hub
2	Seal
3	Half cover
4	Screws & Bolts
5	Cover
6	Spacer

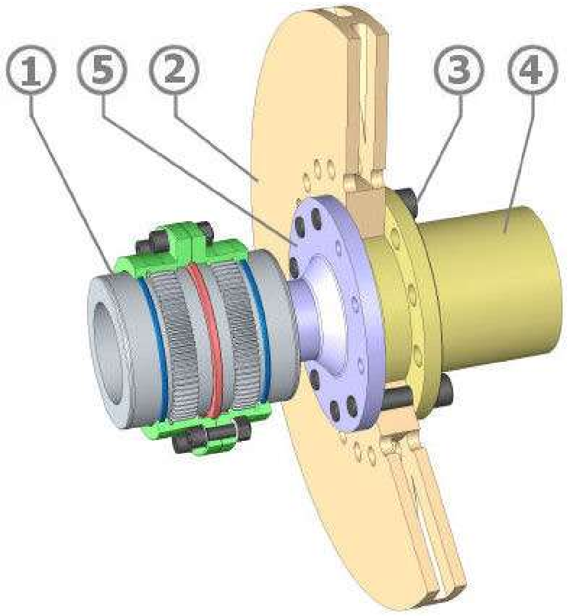
Example of designation **S 310 E 1000**
SENIOR size **310**, composed with two half couplings **S310** joined by a tubular spacer with distance between shafts ends X =1000 mm

Size		310	330	370	400	430	475	510	550	610	650	710	750	800
Nominal Torque	Nm	255000	320000	410000	525000	670000	850000	1100000	1400000	1800000	2400000	3200000	3750000	4950000
Max Bore	Am*	310	330	370	400	430	475	510	550	610	650	710	750	800
	Am**	310	330	370	400	430	475	510	550	610	650	710	750	800
Rough bore	A	163	176	191	240	257	279	304	329	358	394	434	457	501
	B	310	330	350	370	430	480	505	515	535	575	610	650	700
	C	34	34	39	43	47	56	56	55	65	70	70	70	75
	D	575	608	676	735	793	940	990	1100	1225	1285	1395	1450	1555
	D1	494	518	576	637	695	785	840	910	1000	1060	1170	1225	1295
	D2	411	438	492	535	581	645	700	770	835	890	975	1030	1095
	D5	470	470	559	610	665	760	815	880	990	1030	1130	1185	1255
	e	20	20	20	20	25	25	25	30	30	40	45	45	55
	E	155	166	166	190.5	204	212	250	250	270	305	335	345	385
	F	350	370	395	420	478	550	570	575	600	640	680	720	770
	L1	316	336	356	377.5	437.5	488	515	525	547,5	587,5	625	665	715
Weight •	Kg	1185	1348	1770	2223	2983	4180	5017	6176	7841	9588	12001	13723	16841
Moment of Inertia J •	Kgm²	38.26	46.76	78.47	117.5	183.14	337.78	457.43	676.75	1059.44	1437.35	2131.3	2626.1	3667.77
Weight △	Kg	22.1	22.1	26.5	29	39	49.4	57.7	62.1	69.8	86.7	107.7	127.9	151.3
Moment of Inertia J △	Kgm²	1.1	1.1	1.9	2.5	3.9	5.6	8.9	11.1	15.7	22.0	32.4	42.9	57.5
Weight of grease ∇	Kg	6.2	6.62	7.9	11	13.5	18.2	22.3	23.8	30.5	37.1	48.5	62.15	73.5

* Bore with keyway according ISO R 773 or DIN 6885/1 standards
** Shrink fitting
• For couplings with spacer X=1000 mm: Solid hubs
△ Correction for variation X=100 mm
∇ Per coupling

Type SDF – Horizontal working position





Item	Designation
1	Coupling Senior S
2	Brake disc
3	Screws & Bolts
4	Solid hub
5	Spacer

Π : max speed allowed by the disc according the manufacturer. For higher speed, please consult us.

SUPPORTING DISC HUB

D	Π Min^{-1}	A1	Am1*	Am1**	B1	D1	D2	D3	D4	N	O	Cs Nm	X
315	3000	/	50	55	107	124	105	82	85	9	M10	49	102
355	2700	/	60	70	107	145	125	100	105	9	M12	86	102
395	2400	/	70	75	107	165	140	112	115	9	M14	135	102
445	2100	/	70	80	140	175	146	112	120	12	M16	210	135
495	1900	30	100	110	140	218	190	155	160	12	M18	290	135
550	1800	30	100	110	140	218	190	155	160	12	M18	290	135
625	1500	30	105	120	140	238	205	168	170	12	M20	410	135
705	1300	30	120	135	140	268	230	190	195	12	M22	550	135
795	1200	30	135	150	140	300	260	216	220	12	M24	710	135

Example of designation **S80 DF 550**
SENIOR coupling size **80** with a **550** diameter brake disc

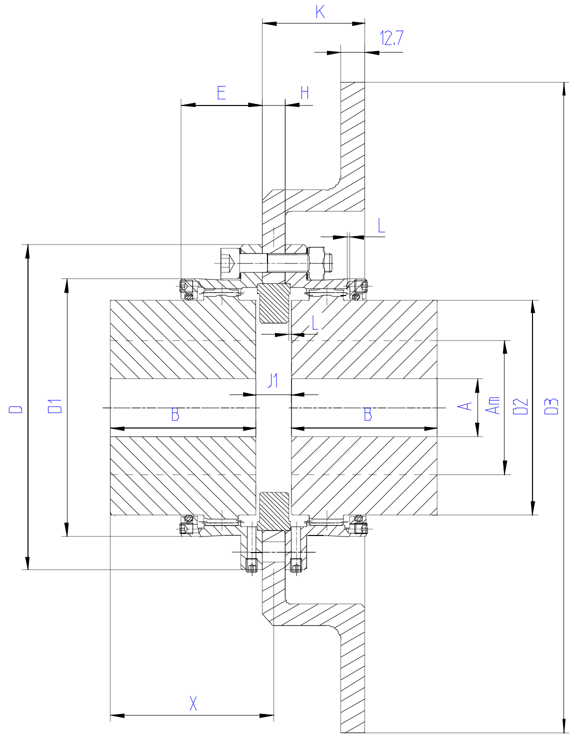
SIZE		68				80				100				115				135			150			170	
Disc diameter		315	355	395	445	395	445	495	550	445	495	550	625	495	550	625	705	625	705	795	625	705	795	705	795
Peak torque Max	Nm	1500	2200	2200	2200	2200	3800	3800	3800	6000	6000	6000	6000	9400	9400	9400	9400	13800	13800	13800	20700	25300	25300	29200	36700
Rough bore	A	18				26				35				35				58			68			83	
Max Bore	Am*	68				80				100				115				135			150			170	
	Am**	63				75				92				106				125			140			160	
	B	50				62				76				90				105			120			135	
	J	3				3				5				5				6			6			8	
	E	117	117	117	117	117	130	145	145	145	164	164	164	180	180	180	180	196	196	196	223	223	223	238	238
	L	274	274	274	307	286	332	347	347	361	380	380	380	410	410	410	410	441	441	441	483	483	483	513	513
Weight •	Kg	15	18	20,5	24	26	30	45	45	40	56	56	63	71	71	77	87	99	110	123	127	137	150	173	185
Moment of Inertia J •	Kgm^2	0,02	0,03	0,04	0,05	0,06	0,07	0,16	0,16	0,12	0,21	0,21	0,27	0,3	0,3	0,36	0,48	0,559	0,68	0,862	0,846	0,965	1,148	1,463	1,642
Weight of grease	Kg	0,08				0,12				0,26				0,38				0,60			0,80			1	

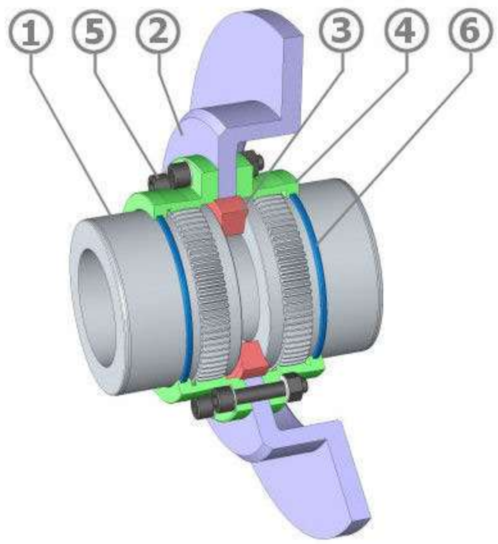
* Bore with keyway according ISO R 773 or DIN 6885/1 standards
** Shrink fitting
• Solid hubs
y Dynamically balanced
∇ Per coupling

Check that the max peak torque of the coupling is superior than the peak torque of the installation

CMD flexident senior

Type SDFC – Horizontal working position

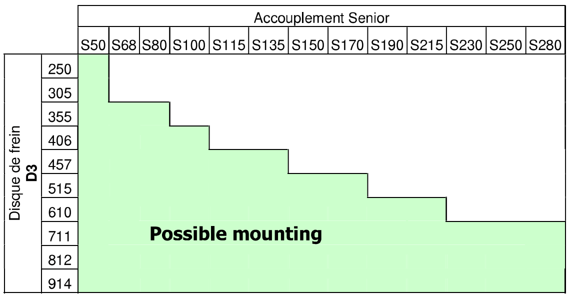




Item	Designation
1	Gear Hub
2	elbow shape brake disc
3	Centering ring spéciale
4	Half cover
5	Screws & Bolts
6	Seal

Brake disc dimensions

D3	250	305	355	406	457	515	610	711	812	914
H	6	13	16	13	16	16	16	19	25	25
K	36	41	54							
Weight (kg)	4	7.3	10.9	14.1	19.1	22.7	33	52.3	85.5	110.9

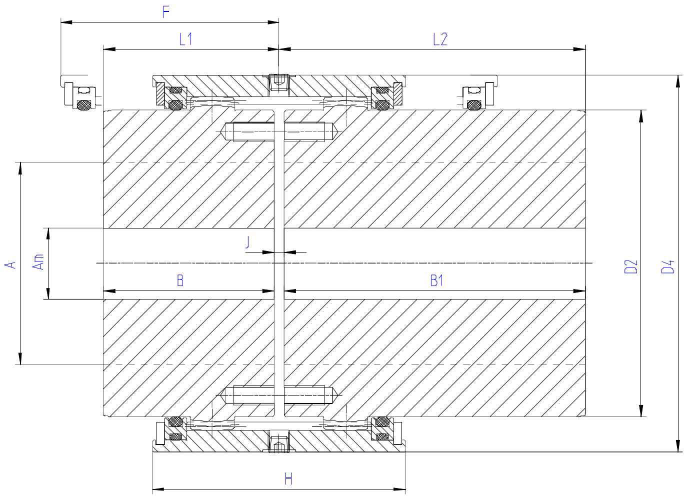


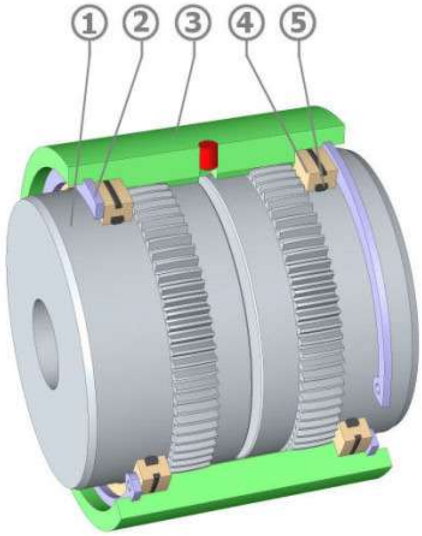
Example of designation **S80 DFC 305**
SENIOR coupling size **80** with a 305 mm diameter elbow disc

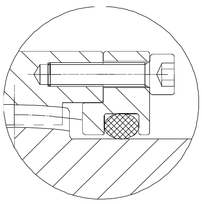
Size		50	68	80	100	115	135	150	170	190	215	230	250	280
Nominal Torque	Nm	1200	3000	5200	9000	13700	21300	29200	43000	60700	88200	105000	138000	190000
Max Bore	Am*	50	68	80	100	115	135	150	170	190	215	230	250	280
	Am**	46	63	75	92	106	125	140	160	175	200	210	230	250
Rough bore	A	18	18	26	35	35	58	68	83	98	108	118	128	128
	B	43	50	62	76	90	105	120	135	150	175	190	220	310
	D	105	140	169	200	228	266	298	330	368	410	440	473	498
	D1	83,6	112,6	134	164	188	219	245	277	309	351	374	407	432
	D2	69,4	95	112	138	159	188	209	238	263	302	319	349	374
	E	30,5	36	42	52	63,5	74	82	91	100	101,5	122	135,5	139
	J1	J1 = H + 2 L												
	L	1.3	1.5	2	2.5	2.8	3.2	3.5	4	4.5	5	5	5.8	7.3
	X	X = B + (J1/2)												
Weight •	Kg	3,7	7,7	13,2	23,5	36,7	59	84	119	164	243	300	406	616
Moment of Inertia J •	Kgm²	0,004	0,012	0,030	0,079	0,166	0,368	0,649	1,141	1,962	3,63	5,08	8,08	13,07
Max speed (rpm)		5400	4000	3400	2700	2400	2000	1800	1600	1500	1300	1200	1100	1000
	y	14000	10500	8900	7200	6300	5400	4800	4200	3800	3300	3100	2900	2700
Weight of grease ∇	Kg	0,04	0,08	0,12	0,26	0,38	0,6	0,8	1	1,7	2,2	2,9	3,8	4

* Bore with keyway according ISO R 773 or DIN 6885/1 standards
** Shrink fitting
• Solid hubs without brake disc
y Dynamically balanced
∇ Per coupling

Type SBM – Horizontal working position







For sizes 215 up to 280

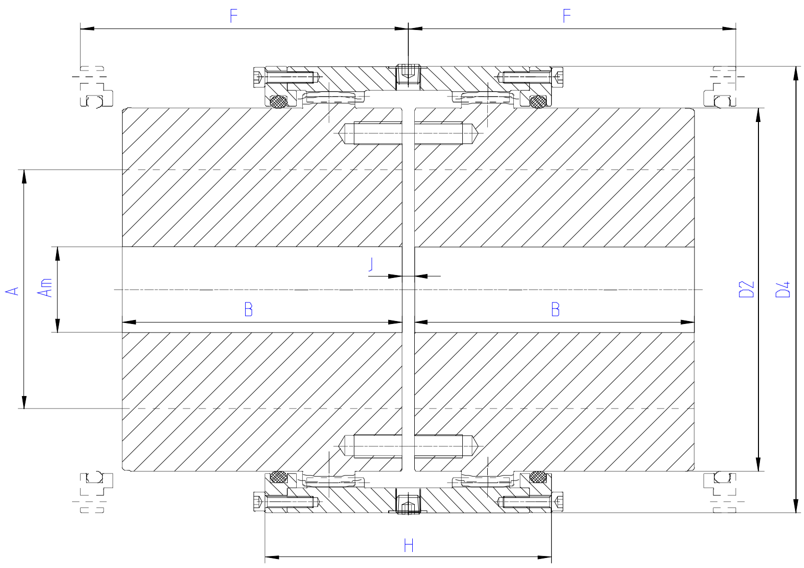
Item	Designation
1	Gear Hub
2	Stop ring
3	Monobloc ring gear cover
4	Cover
5	Seal

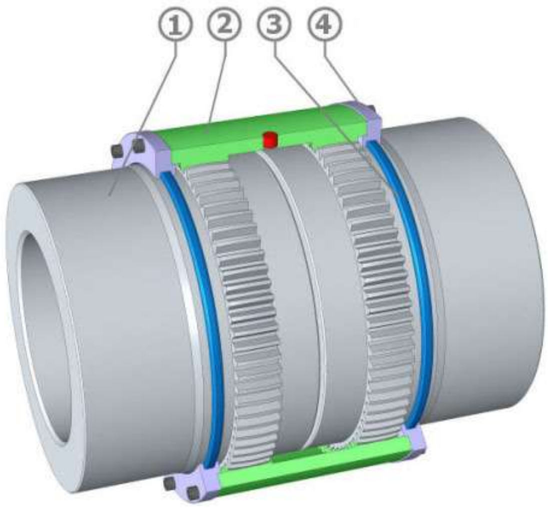
Example of designation **SBM80**
SENIOR coupling size 80 with monobloc cover

Size		50	68	80	100	115	135	150	170	190	215	230	250	280
Nominal Torque	Nm	1200	3000	5200	9000	13700	21300	29200	43000	60700	88200	105000	138000	190000
Max Bore	Am*	50	68	80	100	115	135	150	170	190	215	230	250	280
	Am**	46	63	75	92	106	125	140	160	175	200	210	230	250
Rough bore	A	18	18	26	35	35	58	68	83	98	108	118	128	128
	B	43	50	62	76	90	105	120	135	150	175	190	220	310
	B1	105	115	130	150	170	185	215	245	295	300	305	350	-
	D2	69,4	95	112	138	159	188	209	238	263	302	319	349	374
	D4	95	125	144	177	204	246	265	292	324	360	383	417	442
	L1	44,5	51,5	63,5	78,5	92,5	108	123	139	154	179	194	225	-
	L2	106,5	116,5	131,5	152,5	172,5	188	218	249	299	304	309	355	-
	J	3	3	3	5	5	6	6	8	8	8	8	10	10
	F	63	72	86	104	122	145	161	177	193	199	219	252	342
	H	78	92	106	128	152	181	198	216	234	195	218	245	252
Weight Kg •	SBM	3.9	8.3	13.6	24.9	39.5	67	88.5	122.5	165	237.6	287.7	394.3	605.3
	SBML	5.8	11.9	18.9	33.5	51.8	84.2	114	160.6	226.6	307.4	359.5	491.6	-
	SBML2	7.6	15.5	24.1	42.2	64.1	101.5	139.5	198.7	288.2	377.1	431.4	588.8	-
Moment of Inertia J •	SBM	0.004	0.015	0.032	0.09	0.19	0.47	0.71	1.18	1.95	2.85	3.86	6.31	10.94
Kgm^2	SBML	0.075	0.12	0.16	0.26	0.41	0.78	1.15	1.86	3.03	4.54	5.87	9.49	-
	SBML2	0.15	0.22	0.28	0.43	0.63	1.10	1.59	2.54	4.1	6.22	7.87	12.66	-
Max speed (rpm)		5400	4000	3400	2700	2400	2000	1800	1600	1500	1300	1200	1100	1000
	y	14000	10500	8900	7200	6300	5400	4800	4200	3800	3300	3100	2900	2700
Weight of grease ∇	Kg	0,04	0,08	0,12	0,26	0,38	0,6	0,8	1	1,7	2,2	2,9	3,8	4

* Bore with keyway according ISO R 773 or DIN 6885/1 standards
** Shrink fitting
• Solid hubs
y Dynamically balanced
∇ Per coupling

Type SBM – Horizontal working position





Item	Designation
1	Gear Hub
2	Monobloc ring gear cover
3	Seal
4	Cover

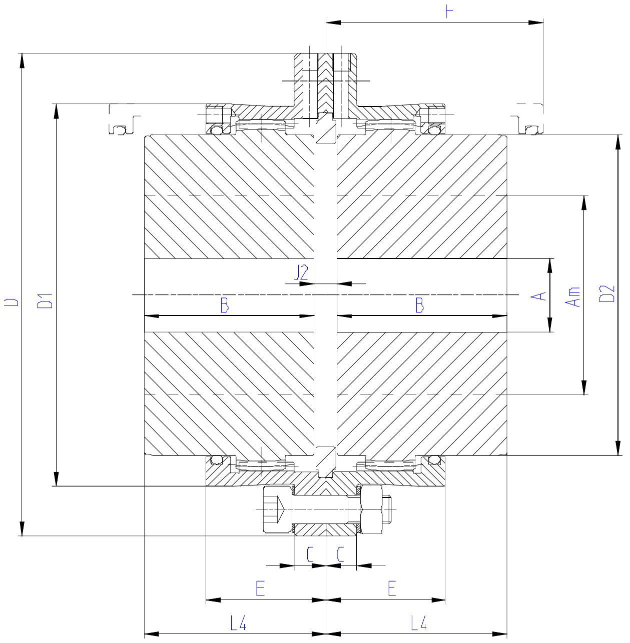
Example of designation **SBM310**
SENIOR coupling size **310** with monobloc cover

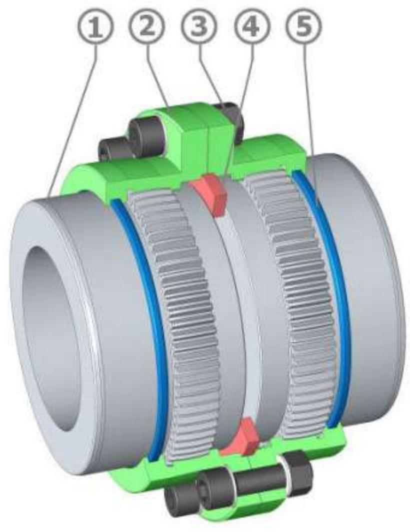
Size		310	330	370	400	430	475	510	550	610	650	710	750	800
Nominal Torque	**Nm**	**255000**	**320000**	**410000**	**525000**	**670000**	**850000**	**1100000**	**1400000**	**1800000**	**2400000**	**3200000**	**3750000**	**4950000**
Max Bore	**Am***	310	330	370	400	430	475	510	550	610	650	710	750	800
	Am**	310	330	370	400	430	475	510	550	610	650	710	750	800
Rough bore	**A**	163	176	191	240	257	279	304	329	358	394	434	457	501
	B	310	330	350	370	430	480	505	515	535	575	610	650	700
	D2	411	438	492	535	581	645	700	770	835	890	975	1030	1095
	D4	494	518	576	637	695	785	840	910	1000	1060	1170	1225	1295
	J	12	12	12	15	15	16	20	20	25	25	30	30	30
	F	350	370	395	420	478	550	570	575	600	640	680	720	770
	H	310	332	332	381	408	424	500	500	540	610	670	690	770
Weight •	**Kg**	761	908	1190	1531	2083	2882	3605	4372	5374	6559	8411	9867	12056
Moment d'Inerie J•	**Kgm²**	18	24	39.3	60.8	97.1	167.3	244.1	353.9	520.3	719.5	1117.3	1447.5	1983.5
Max speed (rpm)		903	857	760	696	643	573	542	495	446	418	377	358	341
	y	2409	2285	2026	1857	1714	1528	1445	1320	1188	1114	1005	955	909
Weight of grease ∇	**Kg**	6.2	6.6	7.9	11	13.5	18.2	22.3	23.8	30.5	37.1	48.5	62.2	73.5

* Bore with keyway according ISO R 773 or DIN 6885/1 standards
** Shrink fitting
• Solid hubs
y Dynamically balanced
∇ Per coupling

CMD flexident® senior

Type JL – Horizontal working position
Limited end float model





Item	Designation
1	Gear Hub
2	Half cover
3	Screws & Bolts
4	Specific centering ring
5	Seal

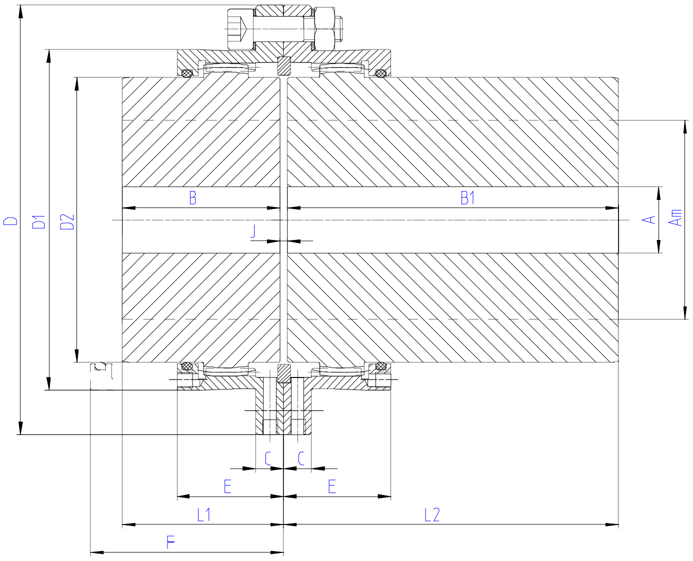
Example of designation **S 80 JL**
SENIOR coupling size **80** whose axial movement is reduced by a specific centering ring between the two hubs.
The misalignment capacities are reduced

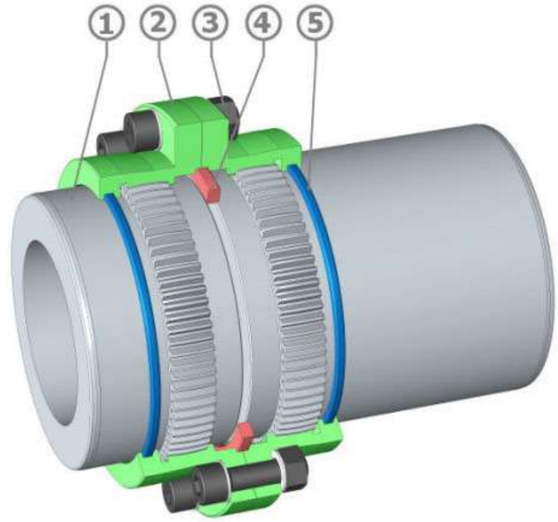
Size		50	68	80	100	115	135	150	170	190	215	230	250	280
Nominal Torque	**Nm**	**1200**	**3000**	**5200**	**9000**	**13700**	**21300**	**29200**	**43000**	**60700**	**88200**	**105000**	**138000**	**190000**
Max bore	**Am***	50	68	80	100	115	135	150	170	190	215	230	250	280
	Am**	46	63	75	92	106	125	140	160	175	200	210	230	250
Rough bore	**A**	18	18	26	35	35	58	68	83	98	108	118	128	128
	B	43	50	62	76	90	105	120	135	150	175	190	220	310
	C	10	10	11	11	14	18	20	20	24	24	30	30	30
	D	105	140	169	200	228	266	298	330	368	410	440	473	498
	D1	83,6	112,6	134	164	188	219	245	277	309	351	374	407	432
	D2	69,4	95	112	138	159	188	209	238	263	302	319	349	374
	E	30,5	36	42	52	63,5	74	82	91	100	110,5	122	135,5	139
	J2	4,6	5,4	6	9	9,6	11,4	12	14	15	16	16,6	19,6	22,6
Jeu axial	**+/-**	1	1	1	1	1	1	1	2	2	2	2	2	2
	F2	57	65	78	97	117	135	150	170	190	215	230	263	355
	L4	45,3	52,7	65	80,5	94,8	110,7	126	142	157,5	183	198,3	229,8	321,3
Weight •	**Kg**	3,7	7,7	13,2	23,6	37	60	85	120	165	244	302	408	619
Moment of Inertia J•	**Kgm²**	0,004	0,012	0,030	0,080	0,167	0,371	0,655	1,151	1,978	3,66	5,22	8,14	13,16
Max speed (rpm)	**y**	5400	4000	3400	2700	2400	2000	1800	1600	1500	1300	1200	1100	1000
		14000	10500	8900	7200	6300	5400	4800	4200	3800	3300	3100	2900	2700
Weight of grease ∇	**Kg**	0,04	0,09	0,14	0,30	0,46	0,73	1	1,20	2	2,70	3,50	4,60	5

* Bore with keyway according ISO R 773 or DIN 6885/1 standards
** Shrink fitting
• Solid hubs
y Dynamically balanced
∇ Per coupling

flexident senior

Type ML – ML2 – Horizontal working position





Item	Designation
1	Gear Hub
2	Half cover
3	Screws & Bolts
4	Centering ring supplied only if vertical or balanced execution
5	Seal

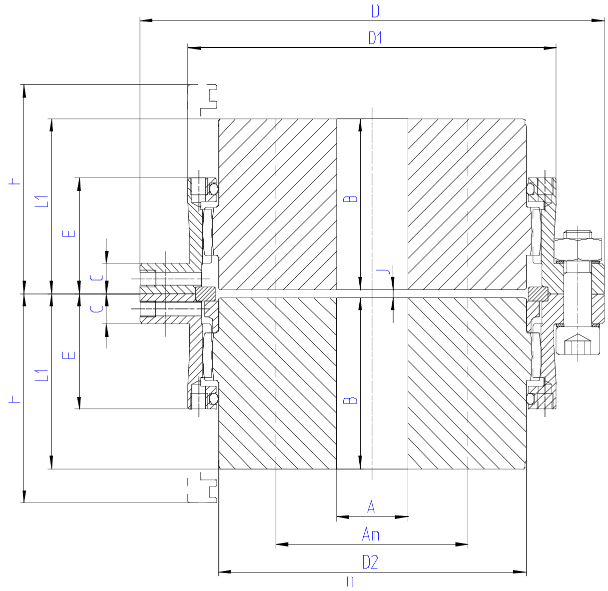
Example of designation **S 80 ML**
SENIOR coupling size **80** with long hub

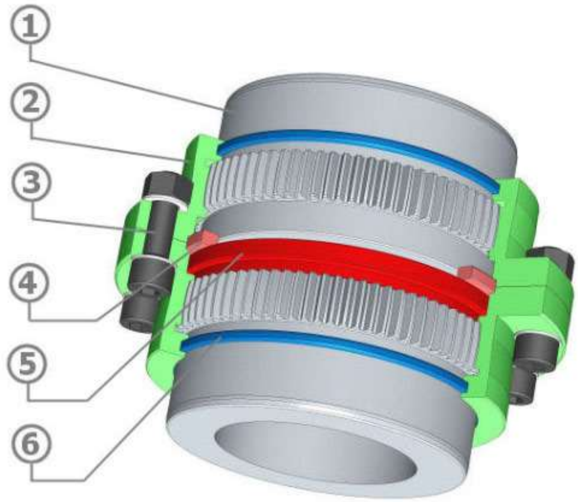
Size		50	68	80	100	115	135	150	170	190	215	230	250
Nominal Torque	**Nm**	**1200**	**3000**	**5200**	**9000**	**13700**	**21300**	**29200**	**43000**	**60700**	**88200**	**105000**	**138000**
Max Bore	**Am***	50	68	80	100	115	135	150	170	190	215	230	250
	Am**	46	63	75	92	106	125	140	160	175	200	210	230
Rough bore	**A**	18	18	26	35	35	58	68	83	98	108	118	128
	B	43	50	62	76	90	105	120	135	150	175	190	220
	B1	105	115	130	150	170	185	215	245	295	300	305	350
	C	10	10	11	11	14	18	20	20	24	24	30	30
	D	105	140	169	200	228	266	298	330	368	410	440	473
	D1	83,6	112,6	134	164	188	219	245	277	309	351	374	407
	D2	69,4	95	112	138	159	188	209	238	263	302	319	349
	E	30,5	36	42	52	63,5	74	82	91	100	110,5	122	135,5
	J	3	3	3	5	5	6	6	8	8	8	8	10
	F	55	63	75	93	112	130	145	163	180	205	220	253
	L1	44,5	51,5	63,5	78,5	92,5	108	123	139	154	179	194	225
	F	117	128	143	167	192	210	240	273	325	330	335	383
	L2	106,5	116,5	131,5	152,5	172,5	188	218	249	299	304	309	355
Weight Kg•	**SML**	5,5	11,2	18,4	32	49	77	110	157	226	313	373	503
	SML2	7,3	14,7	23,6	40,5	61,3	95	136	195	288	382	446	600
Moment d'Inerie J•	**SML**	0,005	0,016	0,038	0,099	0,204	0,443	0,785	1,407	2,485	4,42	6,08	9,54
	SML2	0,006	0,020	0,046	0,119	0,242	0,518	0,921	1,673	3,008	5,21	6,98	11
Max speed (rpm)		5400	4000	3400	2700	2400	2000	1800	1600	1500	1300	1200	1100
	y	14000	10500	8900	7200	6300	5400	4800	4200	3800	3300	3100	2900
Weight of grease ∇	**Kg**	0,04	0,08	0,12	0,26	0,38	0,60	0,80	1	1,70	2,20	2,90	3,80

* Bore with keyway according ISO R 773 or DIN 6885/1 standards
** Shrink fitting
• Solid hubs
y Dynamically balanced
∇ Per coupling

CMD flexident® senior

Type V – Vertical working position





Item	Designation
1	Gear Hub
2	Half cover
3	Screws & Bolts
4	Centering ring
5	Maintening ring
6	Seal

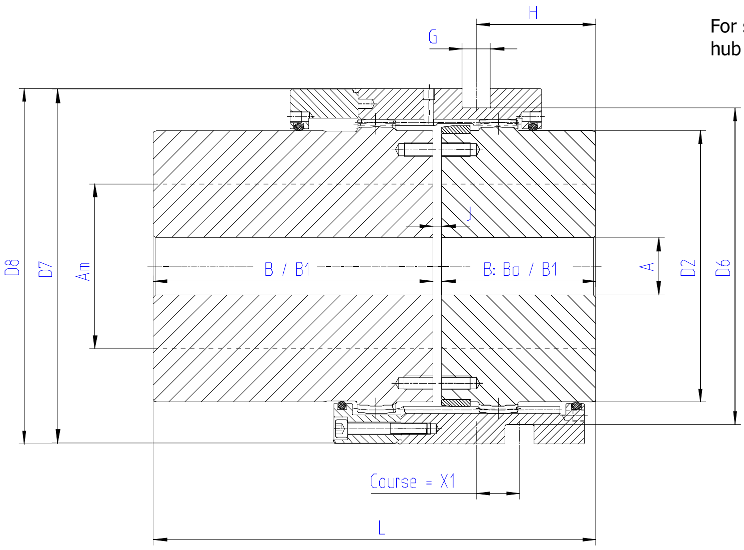
Example of designation **S 80 V**
SENIOR coupling size **80** which is maintaining in vertical position due to a maintain ring.
This ring is available for all the models
Ex : **S 80 E 1000 V, 2 S 80 PA 1000 In. V**

Size		50	68	80	100	115	135	150	170	190	215	230	250	280
Nominal Torque	**Nm**	**1200**	**3000**	**5200**	**9000**	**13700**	**21300**	**29200**	**43000**	**60700**	**88200**	**105000**	**138000**	**190000**
Max bore	**Am***	50	68	80	100	115	135	150	170	190	215	230	250	280
	Am**	46	63	75	92	106	125	140	160	175	200	210	230	250
Rough bore	**A**	18	18	26	35	35	58	68	83	98	108	118	128	128
	B	43	50	62	76	90	105	120	135	150	175	190	220	310
	C	10	10	11	11	14	18	20	20	24	24	30	30	30
	D	105	140	169	200	228	266	298	330	368	410	440	473	498
	D1	83,6	112,6	134	164	188	219	245	277	309	351	374	407	432
	D2	69,4	95	112	138	159	188	209	238	263	302	319	349	374
	E	30,5	36	42	52	63,5	74	82	91	100	110,5	122	135,5	139
	J	3	3	3	5	5	6	6	8	8	8	8	10	10
	F	55	63	75	93	112	130	145	163	180	205	220	253	343
	L1	44,5	51,5	63,5	78,5	92,5	108	123	139	154	179	194	225	315
Weight •	**Kg**	3,7	7,7	13,3	23,7	37	60	85	121	166	245	304	410	621
Moment of Inertia J•	**Kgm²**	0,004	0,012	0,030	0,08	0,169	0,374	0,659	1,161	1,997	3,69	5,28	8,23	13,26
Max speed (rpm)		5400	4000	3400	2700	2400	2000	1800	1600	1500	1300	1200	1100	1000
	y	14000	10500	8900	7200	6300	5400	4800	4200	3800	3300	3100	2900	2700
Weight of grease ∇	**kg**	0,03	0,07	0,10	0,22	0,34	0,50	0,70	0,90	1,40	1,90	2,50	3,20	3,4

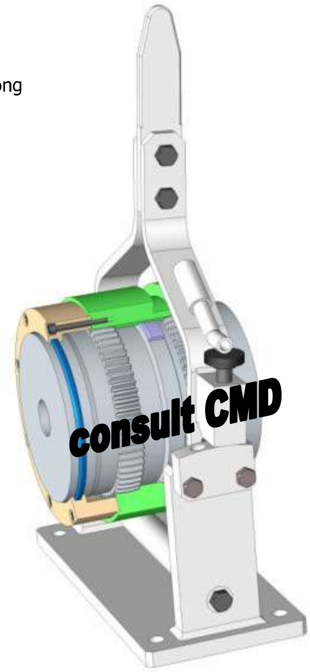
* Bore with keyway according ISO R 773 or DIN 6885/1 standards
** Shrink fitting
• Solid hubs
y Dynamically balanced
∇ Per coupling

flexident®
senior

Type SDB – Horizontal working position



For sizes 50 & 68, the long hub is b this side

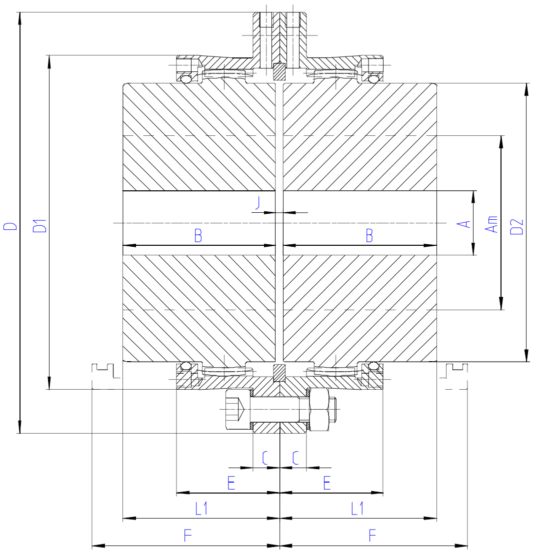


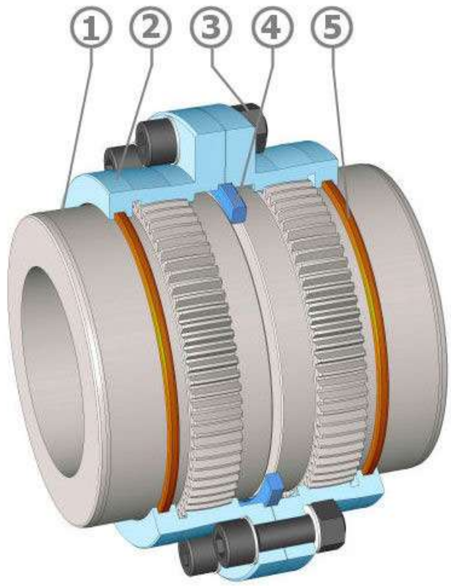
Example of designation **S 80 MLDB**
SENIOR clutch coupling size **80** with one long hub.

		Manual		With acting system									
Size		**50**	**68**	**80**	**100**	**115**	**135**	**150**	**170**	**190**	**215**	**230**	**250**
Nominal Torque	**Nm**	**1200**	**3000**	**5200**	**9000**	**13700**	**21300**	**29200**	**43000**	**60700**	**88200**	**105000**	**138000**
Max Bore	**Am***	50	68	80	100	115	135	150	170	190	215	230	250
	Am**	46	63	75	92	106	125	140	160	175	200	210	230
Rough bore	**A**	18	18	26	35	35	58	68	83	98	108	118	128
	B : Ba	43 : 62	50 : 72	62	76	90	105	120	135	150	175	190	220
	B1	105	115	130	150	170	185	215	245	295	300	305	350
	D2	69,4	95	112	138	159	188	209	238	263	302	319	349
	D6	/	/	132	164	189	222	246	278	312	353	376	406
	D7	100	128	148	190	210	240	270	310	330	390	10	440
	D8	102	130	148	188	213	246	280	312	346	397	420	450
	G	/	/	12	18	18	18	25	25	25	32	32	32
	H	/	/	50	60	70	82	90	105	115	135	145	170
	J	3	3	3	5	5	6	6	8	8	8	8	10
	X1	11	14	19	22	25	29	32	38	40	48	50	55
Models S..DB	**L**	108	125	127	157	185	216	246	278	308	358	388	450
Models S..MLDB	**L**	151 : 170	168 : 190	195	231	265	296	341	388	453	483	503	580
Models S..ML2DB	**L**	213	233	263	305	345	376	436	498	598	608	618	710
Weight Kg•	**S..DB**	-	-	14.4	26.1	43.5	68.1	97	138.7	185			
	S..MLDB	-	-	19.7	34.7	55.9	85.5	122.5	177	246.6			
	S..ML2DB	-	-	25	43.8	68.3	102.9	148	215.6	308.2			
Moment of Inertia J•	**S..DB**	-	-	0.036	0.108	0.227	0.489	0.854	1.540	2.469			
	S..MLDB	-	-	0.044	0.128	0.366	0.565	0.993	1.810	3.001			
	S..ML2DB			0.052	0.196	0.405	0.641	1.132	2.082	3.533			
Max speed (rpm)	**Ω**	2500	2000	1300	1100	890	780	680	610	550	480	450	420
Weight of grease ∇	**Kg**	0,04	0,08	0,12	0,26	0,38	0,60	0,80	1	1,70	2,20	2,90	3,80

* Bore with keyway according ISO R 773 or DIN 6885/1 standards
** Shrink fitting
• Solid hubs
Ω for higher speed, please consult us
∇ Per coupling

Type SR – Horizontal working position





Item	Designation
1	Gear Hub
2	Half cover
3	Screws & Bolts
4	Centering ring supplied only if vertical or balanced execution
5	Seal

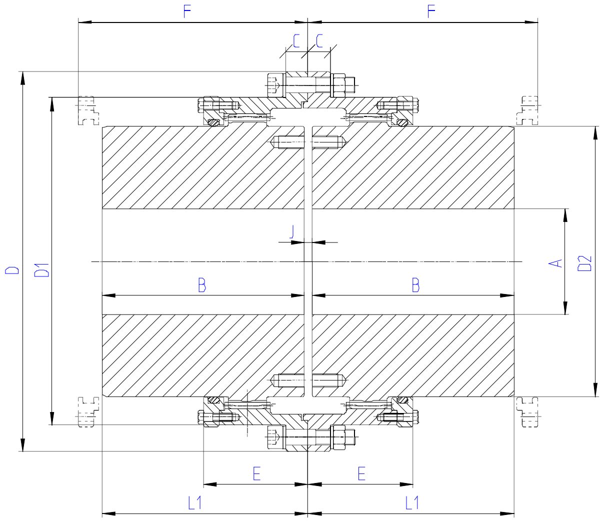
Example of designation **S80R**
SENIOR coupling Reinforced (42 CrMo4) size **80**

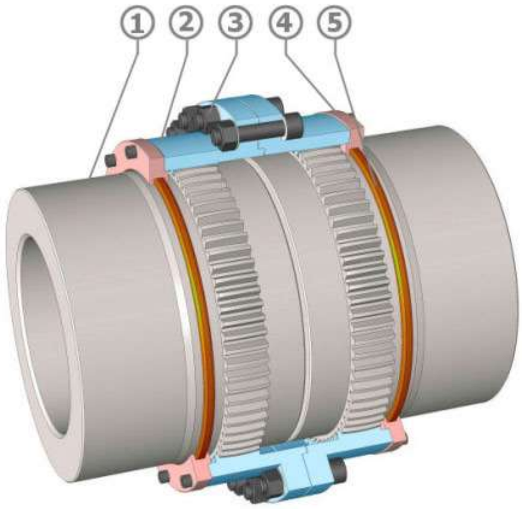
Size		50	68	80	100	115	135	150	170	190	215	230	250	280
Nominal Torque	Nm	1855	4570	7910	13635	20740	32220	44000	65110	91865	133490	159160	207000	302450
Max Bore	Am*	50	68	80	100	115	135	150	170	190	215	230	250	280
	Am**	46	63	75	92	106	125	140	160	175	200	210	230	250
Rough bore	A	18	18	26	35	35	58	68	83	98	108	118	128	128
	B	43	50	62	76	90	105	120	135	150	175	190	220	310
	C	10	10	11	11	14	18	20	20	24	24	30	30	30
	D	105	140	169	200	228	266	298	330	368	410	440	473	498
	D1	83,6	112,6	134	164	188	219	245	277	309	351	374	407	432
	D2	69,4	95	112	138	159	188	209	238	263	302	319	349	374
	E	30,5	36	42	52	63,5	74	82	91	100	110,5	122	135,5	139
	J	3	3	3	5	5	6	6	8	8	8	8	10	10
	F	55	63	75	93	112	130	145	163	180	205	220	253	343
	L1	44,5	51,5	63,5	78,5	92,5	108	123	139	154	179	194	225	315
Weight •	Kg	3,7	7,7	13,2	23,5	36,7	59	84	119	164	243	300	406	616
Moment of Inertia J •	Kgm^2	0,004	0,012	0,030	0,079	0,166	0,368	0,649	1,141	1,962	3,63	5,08	8,08	13,07
Max speed (rpm)		5400	4000	3400	2700	2400	2000	1800	1600	1500	1300	1200	1100	1000
	y	14000	10500	8900	7200	6300	5400	4800	4200	3800	3300	3100	2900	2700
Weight of grease ∇	Kg	0,04	0,08	0,12	0,26	0,38	0,6	0,8	1	1,7	2,2	2,9	3,8	4

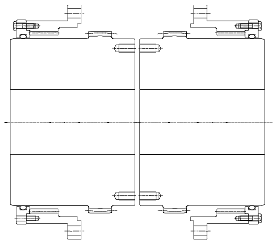
* Bore with keyway according ISO R 773 or DIN 6885/1 standards
** Shrink fitting
• Solid hubs
y Dynamically balanced
∇ Per coupling

flexident® *senior*

Type SR – Horizontal working position







Inspection of the gear teeth is possible without having to remove the covers

Item	Designation
1	Gear Hub
2	Half cover
3	Screws & Bolts
4	Cover
5	Seal

Example of designation **S310R**
SENIOR coupling Reinforced (42 CrMo4) size **310**

Size		310	330	370	400	430	475	510	550	610	650	710	750	800
Nominal Torque	Nm	400000	500850	637500	848540	1078000	1356400	1714000	2211000	2830000	3770000	5000100	5890000	7780000
Max Bore	Am*	310	330	370	400	430	475	510	550	610	650	710	750	800
	Am**	310	330	370	400	430	475	510	550	610	650	710	750	800
Rough bore	A	163	176	191	240	257	279	304	329	358	394	434	457	501
	B	310	330	350	370	430	480	505	515	535	575	610	650	700
	C	34	34	39	43	47	56	56	55	65	70	70	70	75
	D	575	608	676	735	793	940	990	1100	1225	1285	1395	1450	1555
	D1	494	518	576	637	695	785	840	910	1000	1060	1170	1225	1295
	D2	411	438	492	535	581	645	700	770	835	890	975	1030	1095
	E	155	166	166	190.5	204	212	250	250	270	305	335	345	385
	J	12	12	12	15	15	16	20	20	25	25	30	30	30
	F	350	370	395	420	478	550	570	575	600	640	680	720	770
	L1	316	336	356	377.5	437.5	488	515	525	547,5	587,5	625	665	715
Weight •	Kg	805	957	1261	1613	2191	3091	3825	4676	5833	7101	9025	10522	12927
Moment of Inertia J•	Kgm²	21.9	29.1	47.6	74.1	116.9	215.3	307.4	449.9	687.4	936	1419.4	1795.7	2512.1
Max speed (rpm)		903	857	760	696	643	573	542	495	446	418	377	358	341
	y	2409	2285	2026	1857	1714	1528	1445	1320	1188	1114	1005	955	909
Weight of grease ∇	Kg	6.2	6.6	7.9	11	13.5	18.2	22.3	23.8	30.5	37.1	48.5	62.2	73.5

* Bore with keyway according ISO R 773 or DIN 6885/1 standards
** Shrink fitting
• Solid hubs
y Dynamically balanced
∇ Per coupling

Reasons to choose Flexident Senior

1 High definition

FLEXIDENT SENIOR is an entire steel coupling, manufactured with precision. It is composed with two half covers with inside gear teeth. They are joined with a set of treated screws and bolts and are connected with two bombed geared hubs. The design of the gear teeth is calculated to have a maximum contact surface and allows a high misalignment up to 1 degree and 30 min.

2 Reliability

The high definition of the manufacturing and the design of the coupling calculated by the most efficient finite elements calculation software guarantee to the FLEXIDENT SENIOR couplings a high reliability and a quite long lifetime.

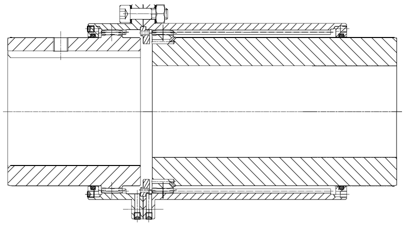
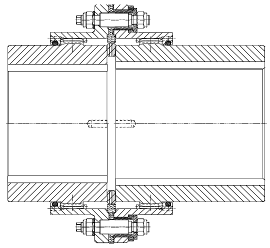
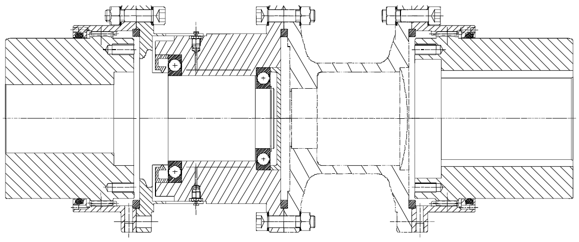
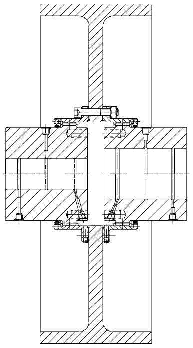
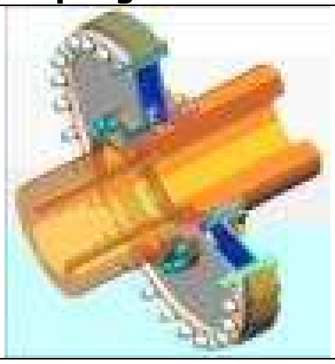
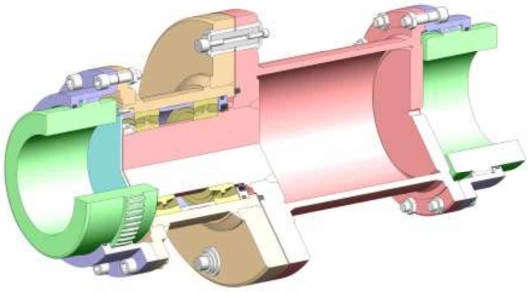
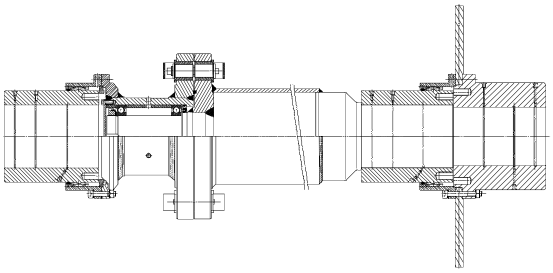
3 Reactivity & short delivery time

FLEXIDENT SENIOR couplings are series manufactured. All the spare parts are stocked in big quantities in the CMD warehouse, and warehouses of CMD distributors who are present all over the world.

4 Quality of Service

CMD has installed an organisation ISO 9001 and has the powers to answer to all the requests of our customers.
Experimented and competent Engineers and technicians.
A design department equipped with the new and most efficient CAD and finite elements calculation software.
A test bench where our new products and innovations are tested.
An efficient after sales service.
A big distribution network.

The CMD Coupling department can also design or modify couplings dedicated to specific applications. We are at your disposal for any requests, technical studies… Here there are some examples:

	
Coupling with sliding hub	**Coupling electrically insulated**
	
Coupling with safeset	**Coupling with pulley brake**
	
Coupling with high axial misalignment	**Coupling with shear pin**
	
Coupling with spacer and brake disc	**Mill gear spindle**

flexacier® 9000

L'accouplement élastique
The flexible coupling

CMD

CMD flexacier® 9000

La gamme Flexacier® 9000

- 8 tailles en stock : 950 à 26 500 Nm
- Capacité d'alésage améliorée
- Boîtier aluminium en deux pièces à plan de joint horizontal permettant un démontage aisé
- Meilleur échelonnement de la gamme.

La capacité d'alésage et l'échelonnement des tailles permettent une sélection optimale et une réduction des coûts.

Flexacier® 9000 range

- *8 standard sizes in stock: 950 to 26 500 Nm*
- *Maximum bores sizes enlarged thanks to a new hub design*
- *Two pieces aluminium cover with horizontal split which allows an easy dismantling*
- *More sizes to improve the current range.*

Bore capacity and additionned sizes gives an optimized selection and reduces cost.

Sélection

A. Calculer le couple corrigé :

$$\text{Couple corrigé (Nm)} = \text{Couple absorbé} \times FS = \frac{9\,550 \times \text{puissance absorbée (en kw)}}{\text{Vitesse en tr/min.}} \times FS$$

Choix du facteur de service FS - Voir tableau ci-dessous.

B. Sélectionner :

La taille dont le couple nominal est égal ou supérieur au couple corrigé.

C. Vérifier :

Que l'exécution choisie soit compatible avec les vitesses et alésages indiqués dans le tableau ci-dessous.

Selection

A. To determine the calculated torque:

$$\text{Selection torque (Nm)} = \text{absorbed torque} \times SF = \frac{9\,550 \times \text{absorbed power (kw)}}{\text{Shaft speed (rpm)}} \times SF$$

Selection of Service Factor SF - see table below.

B. To select:

The size of coupling whose rated torque is equal to or higher than the calculated torque.

C. To check:

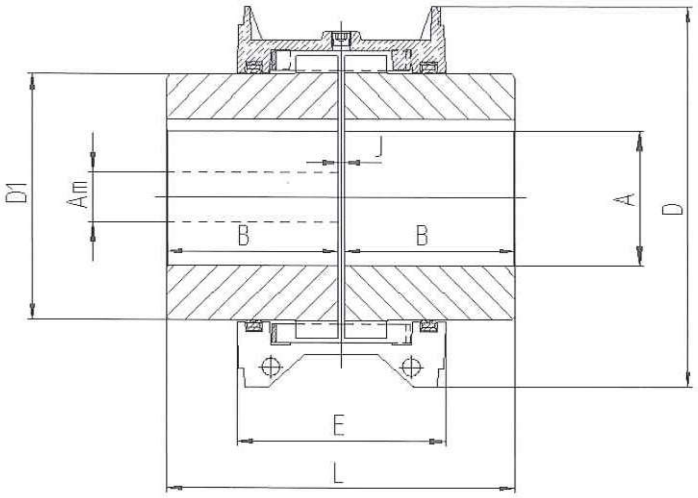
That selected coupling is compatible with speeds and bores as mentioned in the opposite table.

FS / SF	Applications	*Applications*
1*	Agitateurs, pompes, ventilateurs et compresseurs centrifuges groupes convertisseurs sans surcharge...	*Agitators, pumps, centrifugal fans and compressors, even load generators...*
1,25	Compresseurs rotatifs, transporteurs à godets, tendeurs de feutre, pompes volumétriques, élévateurs...	*Rotary compressors, buckets conveyors, felt stretcher, rotary pumps, elevators...*
1,50	Papeteries, enrouleuses, dérouleuses, transports à raclettes, moulins à canne avec turbines et réducteurs de vitesse...	*Paper industries, rewinders, winders, scrapers, conveyors, mills stands with turbines driven with helical gears...*
1,75	Broyeurs à marteau, grues de manutention, poinçonneuses, presses, scies circulaires, raboteuses, calandres, super calandres, coucheuses...	*Hammer mills, general handling, notching press, press, circular resaw, planer, calander, super calander, couch press...*
2,00	Petits et moyens fours de cimenterie, laminoirs à fil, calandres boudineuses, groupes convertisseurs avec surcharge, trancheuses, convoyeurs de grumes, rouleaux, grues de port et à benne preneuse, bancs à étirer et à tréfiler, cisailles de rive, raffineurs coniques, coupe-racines, broyeurs, ventilateurs pour tour de réfrigération...	*Small and medium cement kilns, wire mills, calanders with overload, generators, edger, log haul, rolls, harbour and grab-buckets cranes, draw bench, wire drawing, straighteners, flattening, cane knife and crushers, fans for cooling tower...*
2,50	Laminoirs à bande, défibreurs, broyeurs à boulets, mélangeurs internes, mélangeurs externes, laminoirs, fours de cimenterie, chargeurs de fours, strippeurs, lingotières...	*Rod mills, chippers, ball mills, mixers, external mixers, mills, big kilns, fillers, strips, lingots...*
3,00	Rouleaux pinceurs, pompes à piston...	*Feeds rolls, one cylinder pumps...*

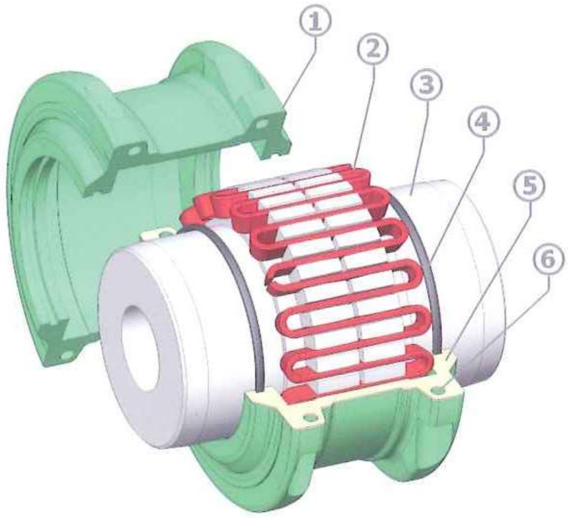
* Uniquement applicable pour installation avec couple maxi. inférieur à 1,5 x Couple de base accouplement I *Only valid torque for installations with maximum torque less than 1,5 Coupling basic torque.*

flexacier® 9000

Tailles 9000 à 9016



Sizes 9000 to 9016



Item	Désignation	*Designation*
1	Boîtier	*Cover*
2	Ressort	*Grid*
3	Moyeu	*Hub*
4	Bague d'étanchéité	*Seal*
5	Joint d'étanchéité	*Gasket*
6	Boulons	*Fasteners*

Fonctionnement horizontal ou vertical/*Horizontal or vertical working position*

Tailles/Sizes		**9000**	**9001**	**9002**	**9004**	**9007**	**9009**	**9011**	**9016**
Couple nominal *Nominal torque*	Nm	950	1 900	3 800	5 700	9200	12 700	18 400	26 500
Alésage *Bore* Maxi	Am[1]	67	92	110	125	135	145	175	200
	Am[2]	60	80	100	110	120	135	160	180
Avant trou de stock *Rough bore*	A								
	B	76	88	98	120	127	149	162	184
	D	161	195	243	259,6	285,1	313,7	352,7	389,7
	D1	92	126	174	179,5	184,5	204	243	279
	E	107	107	107	158,8	158,8	163,2	163,2	163,2
	J	3	3	3	5	5	6	6	6
	L	155	179	199	245	259	304	330	374
Masse accouplement[3] *Coupling weight*[3]	Kg	10,9	21	41,6	56,6	67,4	93	132	193
Masse ressort + boîtier *Weight of grid + cover*	Kg	1,9	2,4	3,2	5,6	9	11,2	13	15
Vitesse maxi. tr/min. *Maxi speed Rpm*		3 100	2700	2200	1 800	1 700	1 500	1 350	1 240
	γ	4 125	3 600	3 000	2 440	2 250	2025	1 800	1 650
Moment d'inertie[4] *Moment of inertia*[4]	kg.m² ≤	0,017	0,054	0,176	0,281	0,412	0,666	1,292	2,332

[1]Montage avec clavette/*Bore with keyway* ; [2]Montage par frettage sur arbre lisse/*Shrink Fitting* ; [3]Moyeux en stock/*Stock Hubs* ; [4]Moyeux pleins/*Solid Hubs*.
γ Equilibré dynamiquement/*Dynamically balanced*

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Barrel drum coupling

Execution NTT

CMD

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TONOFLEX® barrel drum coupling

The TONOFLEX® drum coupling has an unmatched reputation in Engineering Departments specialised in the hoisting and handling;this coupling has specially been designed to eliminate the needs for considerable adjustment normally associated with rigid transmissions.

DESCRIPTION

The hardened steel barrels are used as power transmission elements, which are located between the hub and the ring.

From size 2, the NTT design provides great safety when the TONOFLEX® is used at the limits of its misalignment capacity. This is achieved by axially locating the barrels by means of heat treatment steel rings and circlips.

ADVANTAGES

•Acceptance of large radial forces.

•Possible angular misalignment up to ± 1°30' max.

•Axial displacement from ± 3 mm to ± 8 mm can be absorbed according to the sizes.

•Minimum movement of slipping the teeth, thanks to the barrel being balanced.

•High safety against the overloads.

•High wear resistance.

•The design excludes the risk of tooth breakage due to the bending stress.

•External control of wear is permitted thanks to an index fixed on the outer cover without coupling dismantling.Thanks to this index and appropriate marks on the coupling hub, the axial positioning of the cover into the hub is easier.

DESIGN

NTT basic design for fitting with parallel or taper keyway (see table 2).

ANTT special construction with deviating dimensions to the table (e.g. modified hub length, for mounting on splined or conical shaft).

SNTT identical to NTT, but designed for shrink fit without keyway.

ASNTT identical to ANTT, but designed for shrink fit without keyway.

SELECTION

1) From the motor power NTr in kW and the rope drum speed n_{Tr} in Rpm.

K_{erf} = required factor for the selection of the coupling size

N_{Tr} = required power

C_{erf} = service factor for the different drive groups depending to the running time and load (see table 1).

Calculate $K_{erf} = \dfrac{N_{Tr} \times C_{erf}}{n_{Tr}} \leq K_{zul}$

Kzul = admissible value, please refer to the table 2.

2) From the nominal torque on the drum M_{Tr} in Nm:

M_{derf} = corrected torque with the service factor coefficient (C_{erf})

Calculate $M_{derf} = M_{Tr} \times C_{erf}$

TABLE 1:SERVICE FACTOR

Category of the drive Groups according to DIN 15 020 FEM 1001	1_{Bm} M3	1_{Am} M4	2_m M5	3_m M6	4_m M7	5_m M8
C_{erf}	1.12	1.25	1.4	1.6	1.8	2.0

Select

- the coupling with an admissible value (Kzul) or the torque M noted on the table 2 is above than K_{erf} or M_{derf}.

Check

- the radial Fr load capacity, noted on the table is superior to the radial effective load in the middle of the barrel.

- the selected coupling allows the bore corresponding to the shaft.

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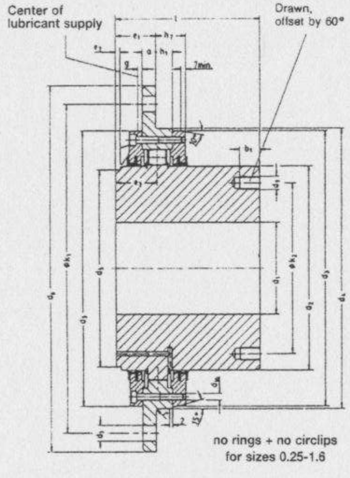
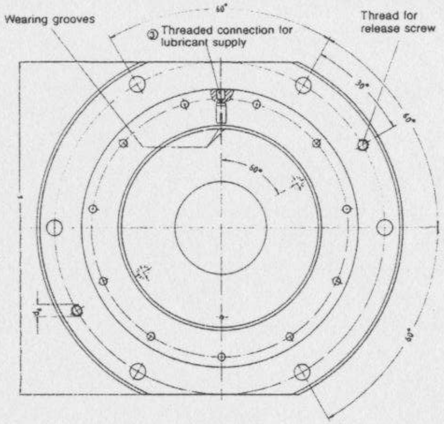
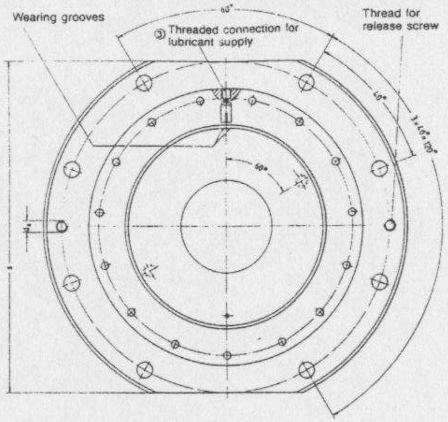
Barrel drum coupling – TONOFLEX® - NTT design – Table 2



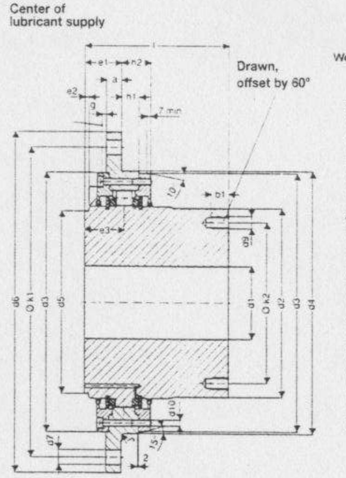
Sizes 0.25-26



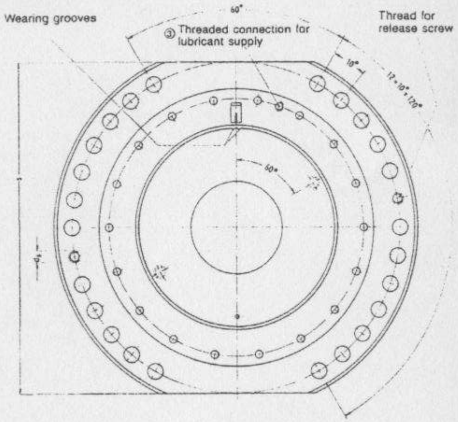
Sizes 0.25-6



Sizes 10+15



Sizes 34-62



Sizes 26+62

SIZE	SERIE SEB	Kzul [Nkw/n]	M [Nm] max.	F [N] max.	d_1 min. H7	d_1 max.	a	b_1	d_2	d_3	d_4 h_6	d_5	d_6	d_7	Boring Thread	Quantity	d_8	d_9	e_1	e_2	e_3	g	h_1	h_2	k_1	k_2	l	r	s h_9	Axial clearance max.	Weight ≈ kg Δ	Inertia moment MR 2 ≈ kgm² Δ	Sizes
0.25		0.46	4 500	14 500	40	65	12	-	95	159	160	92	250	15	M 12	6	M 12	-	42	5	44	7.5	16	31	220	-	95	2.5	220	3	11	0.06	0.25
0.50		0.62	6 000	16 500	50	75	12	-	110	179	180	107	280	15	M 12	6	M 12	-	42	5	44	7.5	16	31	250	-	100	2.5	250	3	18	0.13	0.50
0.75		0.77	7 500	18 500	60	85	15	-	125	199	200	121	320	19	M 16	6	M 16	-	45	5	46	7.5	17	32	280	-	110	2.5	280	4	22	0.17	0.75
1		0.92	9 000	20 000	60	95	15	-	140	219	220	136	340	19	M 16	6	M 16	-	45	5	46	7.5	17	32	300	-	125	2.5	300	4	25	0.28	1
1.3		1.60	15 500	31 000	80	105	15	-	160	239	240	156	360	19	M 16	6	M 16	-	45	5	47	7.5	19	34	320	-	130	2.5	320	4	31	0.35	1.3
1.6		2.00	19 500	35 000	80	120	15	-	180	259	260	174	380	19	M 16	6	M 16	-	45	5	47	7.5	19	34	340	-	145	2.5	340	4	38	0.46	1.6
2	SG 130	2.47	24 000	38 500	100	135	15	24	200	279	280	190	400	19	M 16	6	M 16	M 16	45	4	48	8	20.5	37	360	165	170	2.5	360	4	45	0.62	2
3		2.88	28 000	42 000	100	145	15	24	220	309	310	210	420	19	M 16	6	M 16	M 16	45	5	50	8	25	40	380	180	175	2.5	380	4	56	0.86	3
4	SG 140	3.90	38 000	49 000	100	175	20	30	260	339	340	250	450	24	M 20	6	M 20	M 20	60	9	60.5	9	21	39	400	215	185	2.5	400	4	73	1.4	4
6	SG 185	7.20	70 000	115 000	120	205	20	30	310	419	420	295	550	24	M 20	6	M 20	M 20	60	7	64.5	10	29	49	500	260	240	2.5	500	6	138	3.7	6
10	SG 200	12.3	120 000	125 000	140	230	20	36	350	449	450	335	580	24	M 20	8	M 20	M 24	60	7	64.5	10	29.5	49.5	530	290	260	2.5	530	6	168	5.3	10
15	SG 240	18.5	180 000	150 000	160	280	25	36	410	529	530	400	650	24	M 20	8	M 20	M 24	65	7	68.8	10	31.5	51.5	600	350	315	2.5	580	6	256	10.5	15
26	SG 270	32.0	310 000	250 000	170	300	25	45	440	559	560	430	680	24	M 20	24	M 20	M 30	65	6	77.5	10	50	70	630	375	350	4	600	6	323	15.0	26
34	SG 315	41.0	400 000	300 000	200	315	35	45	470	599	600	450	710	28	M 24	24	M 24	M 30	81	10	87.5	10	38	68	660	395	380	4	640	8	410	22.0	34
42	SG 355	51.5	500 000	340 000	230	355	35	45	530	669	670	510	780	28	M 24	24	M 24	M 30	81	10	89.5	10	40	72	730	445	410	4	700	8	543	35.5	42
62	SG 400	70.5	685 000	380 000	260	400	35	45	580	729	730	580	850	28	M 24	24	M 24	M 30	81	10	89.5	10	42	72	800	500	450	4	760	8	716	56.5	62

Dimensions in mm
** Up to size 1.6 – R = 1/8", from size 2 R = 1/4", the lubricator is not included in the scope of supply.*

Bore and keyway dimensions to be specified at the order
Δ For maximum Bore
+ For size 26, the tapped holes for release screws are machined symmetrically to the drawing
Technical modifications reserved

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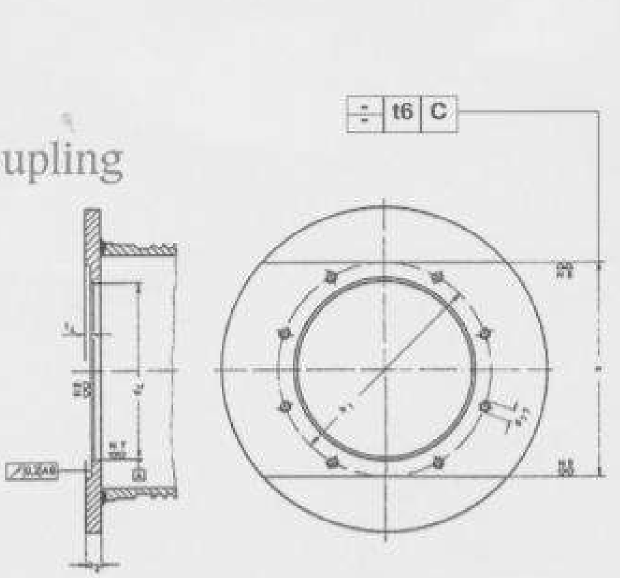
APPLICATION

1) Drum assembly with a TONOFLEX® Coupling

- The torque is transmitted to the rope drum through the flat machined sides on the coupling flanges and the drum. Consequently we recommend to make an ajustment as accurate as possible with a maximum clearance equals to the ones mentioned in the table 3.
- The drum flange is in accordance with drawing 1 and the dimensions of the table 3. The steel tensile strength is 550/650 N/mm²;
- To remove the clearance it is recommended to use taper wedges welded onto the drum (leaflet supplied on request).
- Bolt quality is according to class 8.8.

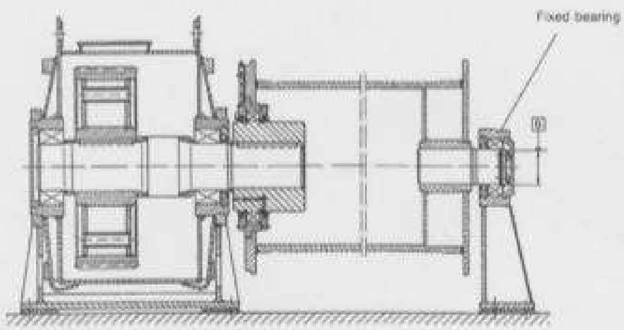


Drawing 1

TABLE 3

Sizes	Serie SEB	a2 min	d4 F 8	d17 Thread n	d17 Quantity	kl	s F 8	t4 min	t6
0.25		25	160	M 12	6	220	220	10	0.08
0.5		25	180	M 12	6	250	250	10	0.08
0.75		25	200	M 16	6	280	280	10	0.08
1		25	220	M 16	6	300	300	10	0.08
1.3		25	240	M 16	6	320	320	10	0.10
1.6		25	260	M 16	6	340	340	10	0.10
2	SG 130	25	280	M 16	6	360	360	10	0.10
3		25	310	M 16	6	380	380	10	0.10
4	SG 140	30	340	M 20	6	400	400	10	0.10
6	SG 185	30	420	M 20	6	500	500	10	0.15
10	SG 200	40	450	M 20	8	530	530	20	0.15
15	SG 240	50	530	M 20	8	600	580	25	0.20
26	SG 270	50	560	M 20	24	630	600	25	0.20
34	SG 315	60	600	M 24	24	660	640	35	0.20
42	SG 355	60	670	M 24	24	730	700	35	0.20
62	SG 400	60	730	M 24	24	800	760	35	0.20

ASSEMBLY PRINCIPLE

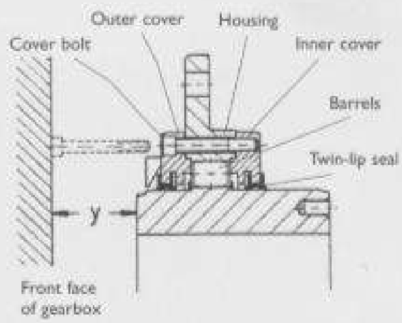


2) Mounting and dismounting of cover bolts

If there is not enough space (Y) (table 4, drawing 2) available to insert the bolts then the bolts should be positioning in the holes of the outer cover before assembly.

TABLE 4

Sizes	0.25/0.5	0.75-1.6	2-3	4-10	15	26-62
Y Spaces	50	55	60	70	80	95



Drawing 2

3) Drum bearing

IMPORTANT: TONOFLEX® couplings are not suitable for the absorption and the transmission of axial loads. Consequently the axial loads resulting from the system must be taken up by the opposite bearing.