Couplings
catalogue

SD
CONSULTING







Gear coupling – Giunti a Denti

General info – Informazioni Generali

Datasheet

Pin & Bush coupling – Giunti a Pioli

General info – Informazioni Generali

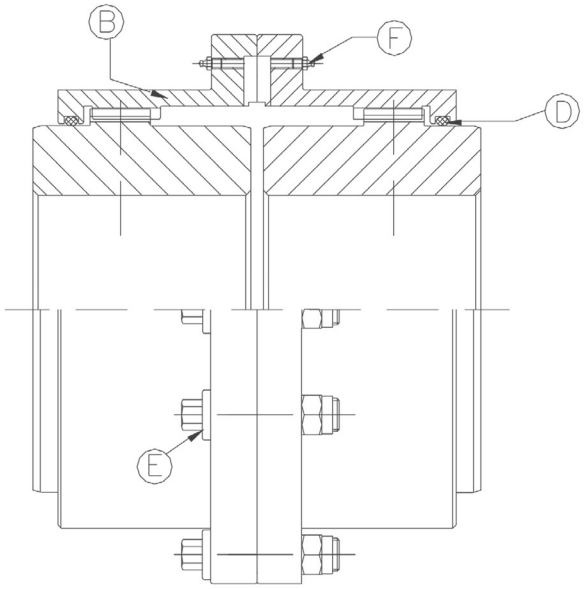
Datasheet

Special coupling – Giunti Speciali

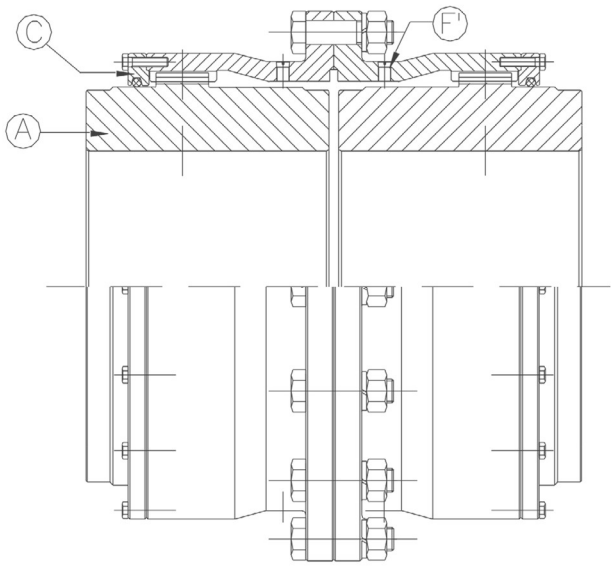
General info – Informazioni Generali

Datasheet

GEAR COUPLINGS – GC/GC-SP/GC-SPX



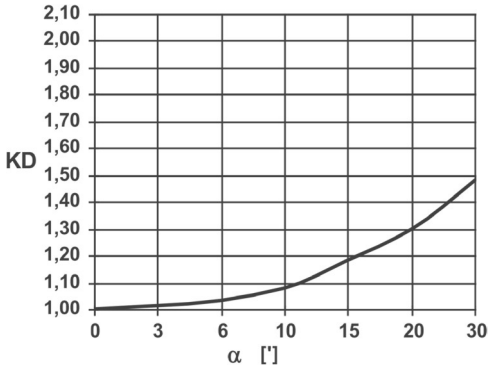
SIZE 00–110



SIZE 120–270

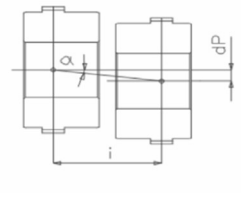
- A Hub
- B Coupling bell
- C Seal flange
- D O-ring o V seal
- E High strenght fitted bolts
- F Grease nipple
- F' Lube plug

SERVICE FACTOR	"SF"
Agitators for pure liquids	
Electric generators	
Fans	1.5
Centrifugal pumps	
Belt conveyors	
Cas-work pumps	
Double acting pumps	
Gear pumps	
Bucket belt conveyors	1.75
Chain belt conveyors	
Screw belt conveyors	
Centrifugal compressors	
Reciprocating compressors	
Cold strip mills	
Calenders	2.0
Travelling cranes	



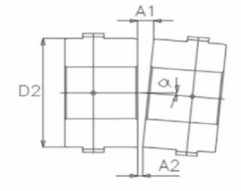
Compute from **graphic 1** torque factor **KD**, depending by operating misalignment α:

Operating misalignment α may be computed by following formulas:



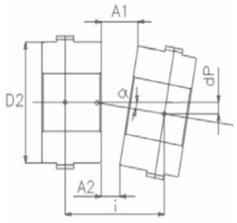
Operating misalignment

$$\alpha := \arctan\left(\frac{dP}{i}\right)$$



Angular misalignment

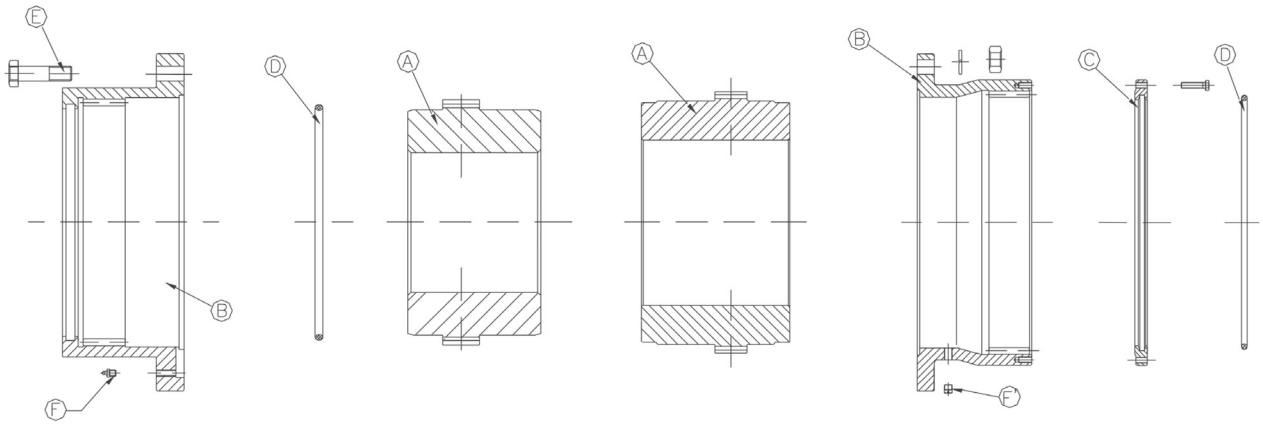
$$\alpha := \frac{1}{2} \cdot \arcsin\left(\frac{A2 - A1}{D2}\right)$$



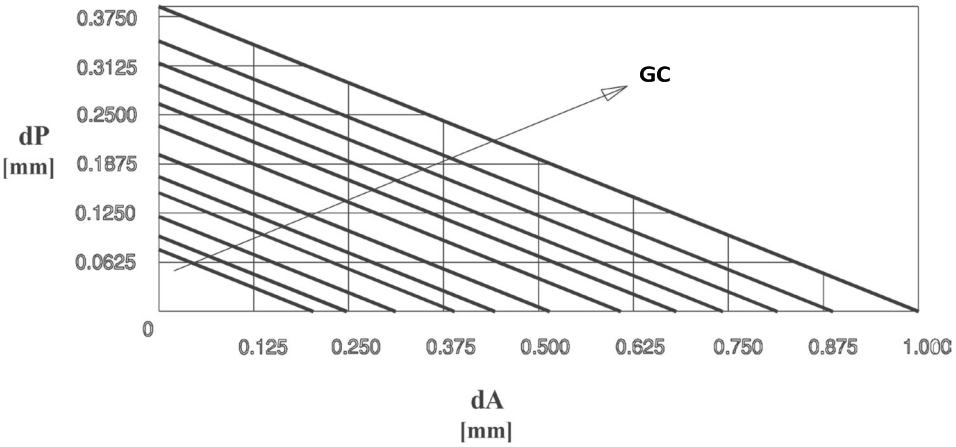
Angular and offset misalignment

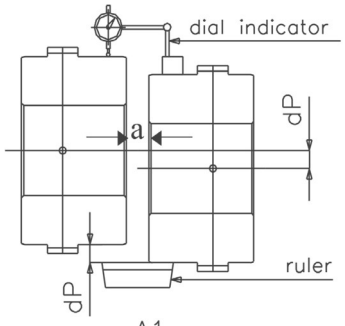
$$\alpha := \arctan\left(\frac{dP}{i}\right) + \frac{1}{2} \cdot \arcsin\left(\frac{A2 - A1}{D2}\right)$$

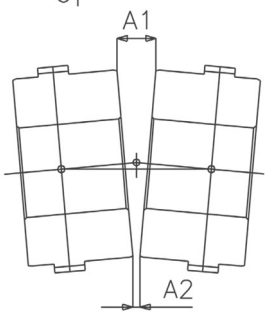
Assembly instruction



- ✓ Be sure that all parts are clean
- ✓ Apply a light coat of grease to the O-rings D and check if they areproperly assembled into their grooves.
- ✓ Place sleeves B or seal flanges Cover shaft ends. Care should be taken not to damage O-rings D.
- ✓ Fit hubs A on their respective shafts
- ✓ Install the sleeves if separate seal flanges coupling is provided.
- ✓ Install units to be connected in place and check the distance between hubs“a”. The dimension “a” is showed in the technical tables for standard type couplings or in the assembly drawing for special one.
- ✓ Align the two shafts, check alignment using a dial indicator.
- ✓ It should do a complete rotation paying attention to put the feeler on the adjacent hub: the indicator reading divided by two, defines the assembly offset misalignment, which must be in accord with value dP reported in graphic 3. If you cannot use a dial indicator, coaxiality can be checked by putting a rule on the cylindrical part of the hubs; shafts will be aligned only when the rule rests on both surfaces at 90° four intervals.
- ✓ As for angular misalignment, check with a bar the difference of the free gap between the hubs, always at 90° four intervals: the differences between maximum and minimum measurements must not exceed the dA limit specified in graphic 3.
- ✓ Coat hubs and sleeves teeth with the recommended grease.
- ✓ Slide sleeves B over hubs A.
- ✓ Insert and tighten fitted bolts E uniformly to the recommended tightening torque reported on table 2.
- ✓ Add grease using one of the four grease nipples F (sizes 00/110) or remove both lube plugs F’ of one sleeve B for greater sizes coupling and add grease by lower hole in sufficient amount to overflow it by upper hole. Re-install the plugs.
- ✓ Dimension and ratings shown in this catalogue are preliminary and can be adjusted according to customer needs



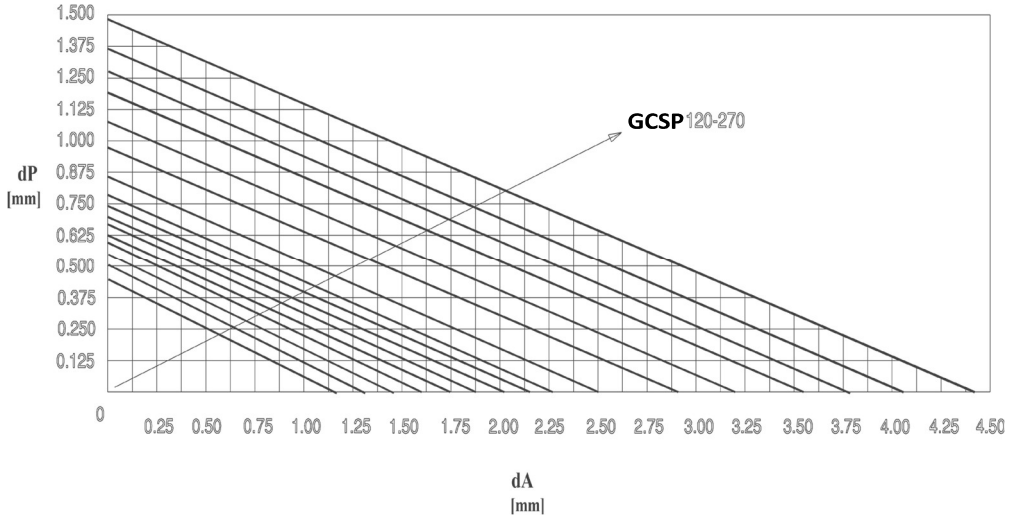




dA = A1−A2

SIZE OF COUPLING GC SERIE - Tightening torque [Nm]

00	10	20	30	40	50	60	70	80	90	100	110
20	35	35	65	65	145	145	145	225	395	395	515



SIZE OF COUPLING GC-SP SERIE - Tightening torque [Nm]

120	130	140	150	160	170	180	190	200	210	220	230	240	250	260	270
660	660	1200	1200	1200	2150	2150	2150	3450	3450	5200	5200	5200	8200	8200	8200



Maintenance and Lubrication

- ✓ Periodically replenish grease following the procedure as laid down in the assembly instruction, point 11.
- ✓ Withdraw sleeves and check grease conditions, alignment and general condition of teeth every 12 months. High ambient temperature, high speed and/or frequent reversing applications may necessitate more frequent inspection and grease replenishment.
- ✓ Clean coupling of all lubricant and replenish every 2 years or 7,000 working hours.

Recommended Greases

- ✓ Se lithium grease having extreme pressure (E.P.) characteristic. AGIP GR-MU/EP0 o EP1
- ✓ IP ATHESIA-EP0 o EP1 ESSO SEACOM EP0 o EP1 MOBIL MOBILTEMP 78
- ✓ Use EP1 grade or MOBILTEMP 78 for ambient temperature +30°C
- ✓ +80°C.
- ✓ The above greases have characteristics required, but these should not be considered as exclusive.

Safety

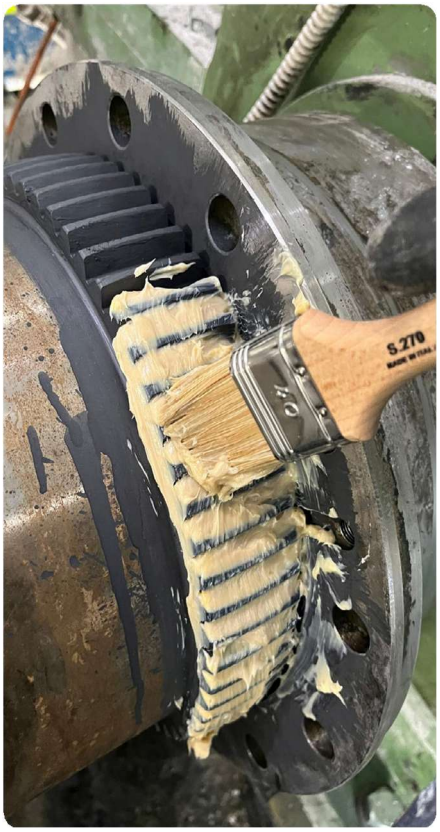
- ✓ All rotating parts must be guarded to prevent accidents. Couplings should be installed according to national and local safety rules.

GEAR COUPLING Special Coating Available

- ✓ All our gear couplings can be supplied with the SD-CO surface treatment. This special coating provides enhanced protection and performance in demanding working environments.







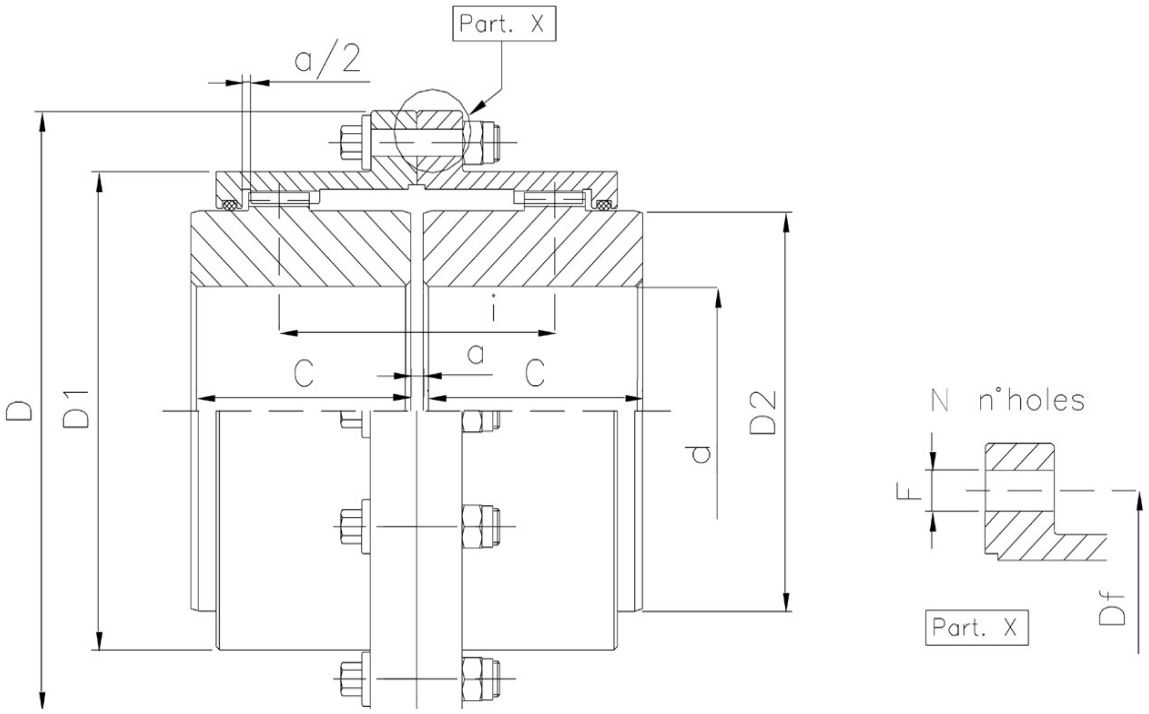
Corrosion resistance: Significantly improves protection against rust and chemical agents, especially in humid or aggressive environments

Improved wear resistance: Reduces friction between moving parts, minimizing surface degradation and extending the life of components

Lower maintenance: helps preserve mechanical integrity over time, reducing the need for frequent inspections and replacements

Enhanced surface hardness: Increases maintains resistance to scratches using processes and micro-abrasions caused by contact or contaminants

TECHNICAL DATASHEET GC

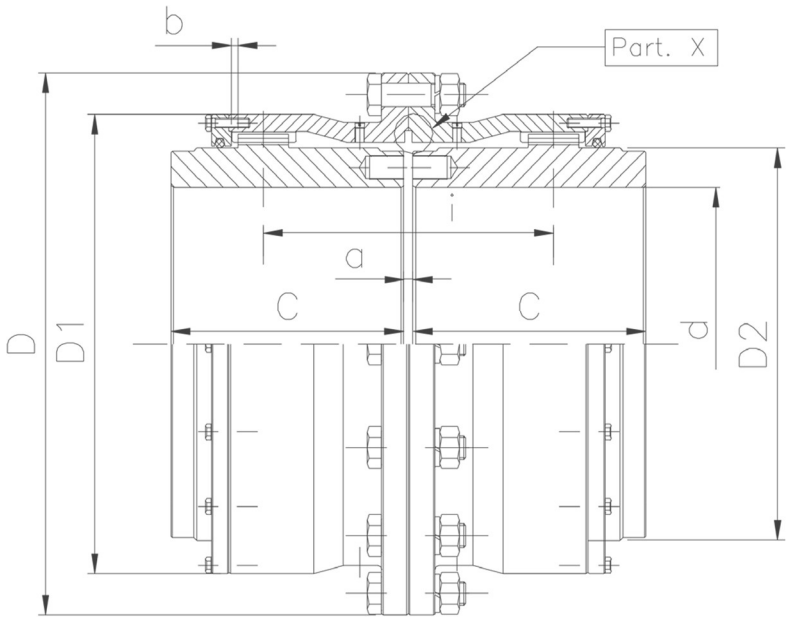


	NOMINAL TORQUE	MAX TORQUE	MAX SPEED	WEIGHT				INERTIA	TORS. STIFFNESS	GREASE
SIZE	Tnom [kN·m]	Tmax [kN·m]	Nmax [rpm]	AC [kg]	ACP1 [kg]	ACP2 [kg]	ACC [kg]	J [kg·m2]	K [N·m/rad]·106	G [kg]
00	1.5	3	6000	4.3	6.1	7.9	4.4	0.0036	4.63	0.05
10	2.6	6.5	5000	7.1	9.9	12.7	7.4	0.010	7.85	0.08
20	5	13	4400	12.6	17	21	13.2	0.028	12.42	0.13
30	9	23	4100	23	30	38	24	0.078	23.83	0.22
40	13	32	3800	35	45	55	37	0.172	30.37	0.47
50	20	43	3600	56	70	84	58	0.325	44.96	0.62
60	32	72	3200	88	111	134	92	0.754	80.83	0.98
70	43	100	2650	115	147	180	121	1.234	90.15	1.42
80	60	136	2200	159	209	260	167	2.120	139.04	2.02
90	80	192	2000	214	265	317	225	4.251	171.33	2.25
100	105	232	1800	269	325	382	285	5.203	200.31	3.20
110	155	355	1600	424	485	546	446	10.671	310.58	4.60

		Dmax [mm]		DIMENSIONS [mm]									FORAT. FLANGE Flange dimensions			X - COATING
SIZE	dmin [mm]	d [mm]	d1 [mm]	D [mm]	D1 [mm]	D2 [mm]	C [mm]	C1 [mm]	a [mm]	t [mm]	i [mm]	x [mm]	Df [mm]	F [mm]	N	
00	15	53	60	111	82.5	65	43	105	3	7	48	14	96	8	6	Small
10	15	62	75	142	104.5	85	50	115	3	13	58	17	122	10	8	Small
20	25	77	90	168	130.5	107	62	130	3	25	76	24	148	10	10	Small
30	35	99	110	200	158.5	133	76	150	5	19	88	27	178	12	10	Small
40	45	111	130	225	183.5	152	90	170	5	43	114	38	203	12	12	Small
50	55	131	150	265	211.5	177	105	185	6	48	132	45	236	16	12	Small
60	65	155	175	300	245.5	209	120	215	6	58	152	51	270	16	14	Small
70	80	174	195	330	275	233	135	245	8	66	172	59	300	16	14	Small
80	90	190	220	370	307	255	150	295	8	92	200	70	335	18	14	Small
90	105	210	240	406	335	280	175	300	8	98	228	82	368	22	14	Small
100	115	230	260	438	367	305	190	305	8	108	248	90	400	22	14	Small
110	125	280	300	505	423	355	220	310	10	134	292	105	460	24	16	Small

For any information not mentioned in the catalogue please contact our team

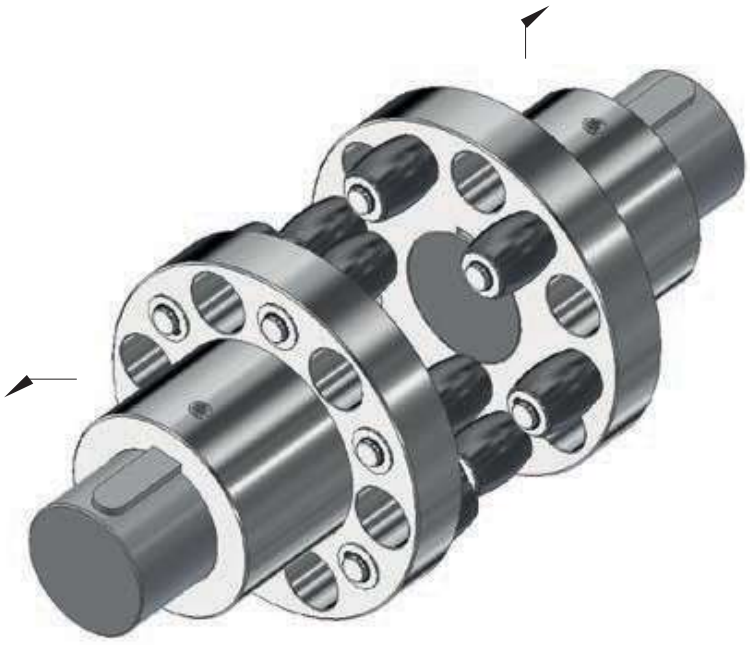
TECHNICAL DATASHEET GC-SP/GC-SPX



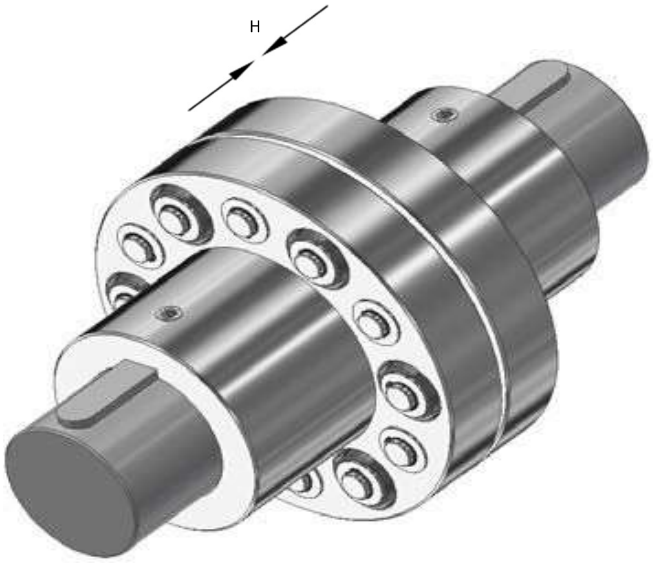
	GC-SP SERIES			GC-SPX SERIES						
	NOMINAL TORQUE	MAX TORQUE	MAX SPEED	NOMINAL TORQUE	MAX TORQUE	MAX SPEED	INERTIA	TORS. STIFFNESS	WEIGHT	GREASE
SIZE	T_{nom} [kN·m]	T_{max} [kN·m]	N_{max} [rpm]	T_{nom} [kN·m]	T_{max} [kN·m]	N_{max} [rpm]	J [kg·m2]	K [N·m/rad]·106	P [kg]	G [kg]
120	275	550	1130	410	820	1935	15	399.5	632	5
130	380	760	925	560	1120	1580	24	516.2	839	6
140	490	980	900	740	1480	1545	48	899.5	1266	8
150	660	1320	780	980	1960	1330	77	1261.3	1668	10
160	835	1670	700	1230	2460	1200	100	1497.8	1945	12
170	990	1980	645	1450	2900	1110	138	1789.3	2373	18
180	1190	2380	620	1780	3560	1050	188	2250.4	2866	21
190	1550	3100	540	2280	4560	920	276	2953.7	3567	25
200	1810	3620	510	2660	5320	860	369	3188.9	4254	38
210	2500	5000	480	3780	7560	810	616	4605.2	5793	48
220	3530	7060	400	5260	10520	690	1131	6848.8	8236	60
230	4430	8860	360	6530	13060	620	1769	8818.2	10770	85
240	5920	11840	315	8745	17490	540	2855	11333.9	14230	105
250	7170	14340	295	10570	21140	500	3946	13951.8	17310	120
260	8490	16980	265	12530	25060	460	5429	17257	20990	135
270	10580	21160	245	15600	31200	425	8066	22351.4	26410	160
SIZE	D [mm]	Dmax [mm]	D [mm]	D1 [mm]	D2 [mm]	C [mm]	A [mm]	B [mm]	I [mm]	X - COATING
120	150	305	580	490	400	250	12	9	310	Medium
130	170	345	630	535	450	275	12	9	350	Medium
140	190	385	690	585	500	305	12	9	380	Medium
150	210	420	750	640	550	330	12	9	410	Medium
160	240	460	815	705	600	355	12	9	430	Medium
170	250	495	885	745	645	380	20	15	460	Medium
180	260	530	930	805	695	410	20	15	480	Medium
190	290	570	1010	872	740	430	20	15	510	Medium
200	300	600	1080	920	780	460	30	22	540	Big
210	340	660	1180	1024	865	510	30	22	590	Big
220	390	770	1335	1160	1000	560	30	22	670	Big
230	420	845	1435	1262	1100	610	40	30	740	Big
240	470	940	1570	1396	1220	660	40	30	820	Big
250	500	1000	1690	1490	1300	710	40	30	880	Big
260	540	1070	1790	1592	1395	760	40	30	940	Big
270	590	1170	1920	1728	1520	810	40	30	1020	Big

For any information not mentioned in the catalogue please contact our team

PIN & BUSH COUPLINGS - PB



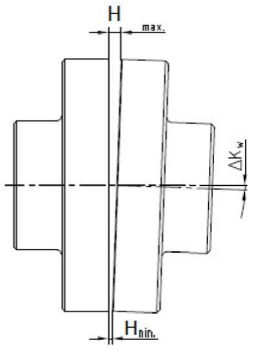
- ✓ Clean the shafts surfaces and the hubs bored in tolerance.
- ✓ Mount the hubs: the head of the shafts must be aligned with the internal surface of the hubs.
- ✓ Lock the hubs on the shafts tightening the fixing screws or the head washers



- ✓ Place the motor considering the quote H, sliding the pins into their place. Then proceed to the coupling alignment as follow described.

Angular misalignment*

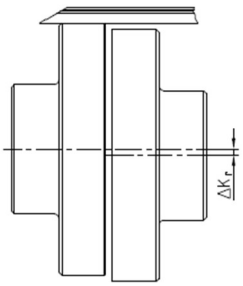
- ✓ Making a complete rotation (360°), find the greatest deviation H min and H max
- ✓ Find the angular misalignment as
  H max - H min = ΔH



Angular displacement

Radial/Parallel misalignment*

- ✓ Making a complete rotation (360°), find the greatest deviation Kr min and Kr max
- ✓ Find the angular misalignment as
  Kr max - Kr min = ΔKr

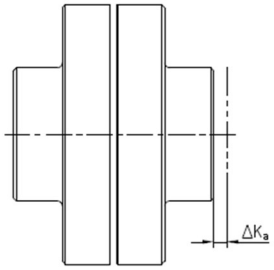


Radial/parallel displacement

Axial misalignment*

- ✓ Measure the axial gap ΔKa as indicate and compare with the indicate value on tab. Below

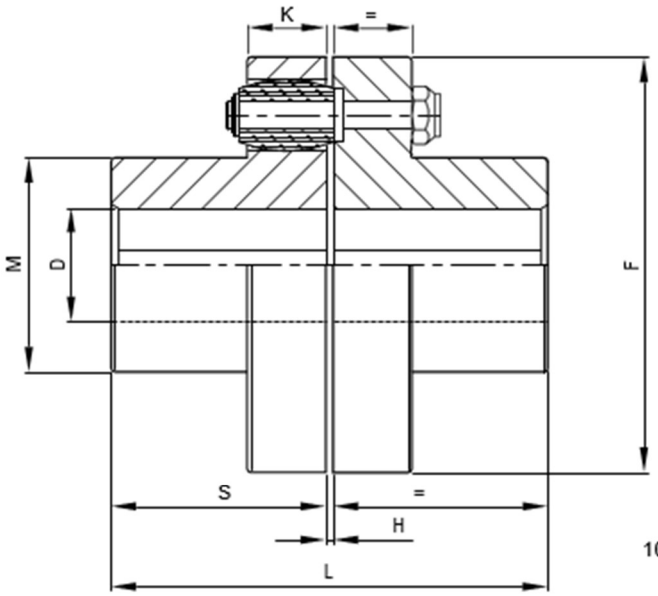
*Max misalignment values



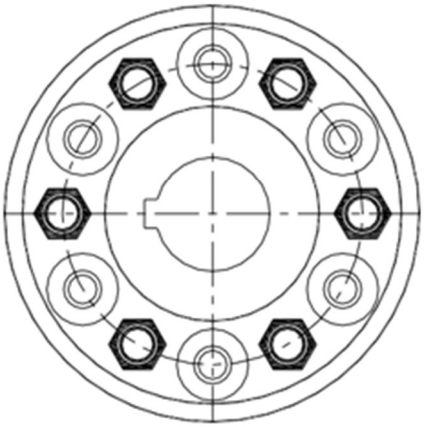
Axial displacement

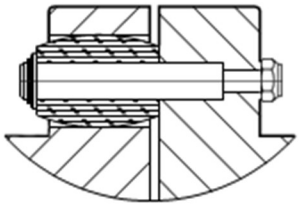
Tipo / *Type*	ΔKw		ΔKr	ΔKa	Tipo / *Type*	ΔKw		ΔKr	ΔKa
	mm	°	mm	± mm		mm	°	mm	± mm
100	0,6	0,3	0,1	1	**350**	2,0	0,3	0,4	1
120	0,7		0,1		**400**	2,3		0,4	
140	0,8		0,1		**450**	2,6		0,4	
160	0,9		0,2		**500**	2,9		0,5	
180	1,0		0,2		**550**	3,2		0,5	
200	1,2		0,2		**630**	3,6		0,6	
225	1,3		0,2		**680**	3,9		0,7	
250	1,5		0,3		**800**	4,6		0,8	
300	1,7		0,3		**900**	5,2		0,9	

TECHNICAL DATASHEET PB



100÷550





630÷1100

Tipo / *Type*	Coppia *Torque* Nm	D Max	Foro grezzo *Rough bore*	F	L	H	K	M	S	PD² Kgm²	Peso *Weight* Kg	Perni *Pins* no.	Rpm max.
100	220	32	-	100	123	3	20	55	60	0,019	4,5	8	6050
120	350	45	-	120	143	3	20	71	70	0,021	6	10	6000
140	600	55	-	140	163	3	20	85	80	0,062	9	14	5300
160	900	60	-	160	183	3	20	102	90	0,11	14	16	4500
180	1300	65	-	180	204	4	25	103	100	0,17	17	12	4000
200	1800	75	-	200	234	4	25	116	115	0,35	27	14	3600
225	2600	90	40	225	264	4	25	145	130	0,92	47	16	3200
250	4600	95	45	250	305	5	38	147	150	1,29	55	14	3000
300	6500	110	50	300	365	5	38	182	180	2,87	85	16	2500
350	10500	120	60	350	406	6	60	200	200	5,33	130	12	2200
400	14500	140	70	400	446	6	60	232	220	12,31	190	14	1800
450	21000	160	75	445	487	7	72	253	240	21,30	260	12	1600
500	28000	180	75	495	527	7	72	288	260	36,50	350	14	1400
550	36000	210	75	545	567	7	72	322	280	60,00	450	16	1200
630	75000	250	90	625	567	7	90	375	280	112,00	710	14	1000
680	95000	270	90	680	567	7	90	405	280	163,00	980	16	900
800	146000	280	130	795	607	7	90	420	300	220,00	1100	20	760
900	200000	300	130	900	607	7	90	448	300	268,30	1250	22	680

Note: The indicated torque is to be considered a standard operating torque, as a starting or a transient torque considering the nominal torque twice.

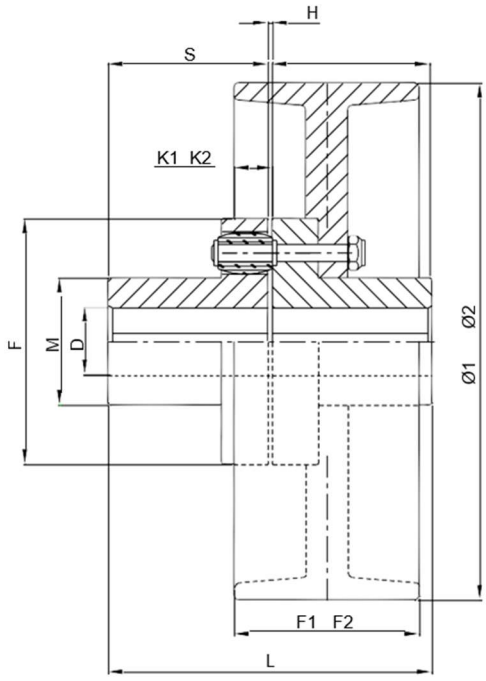
*ATTENTION: the misalignment values are max. if the others are zero. In hazardous zone are permitted only half of the indicated values.

Weight with un-bored hubs. Information given in this catalogue are subject to change without notice.

ACCESSORIES

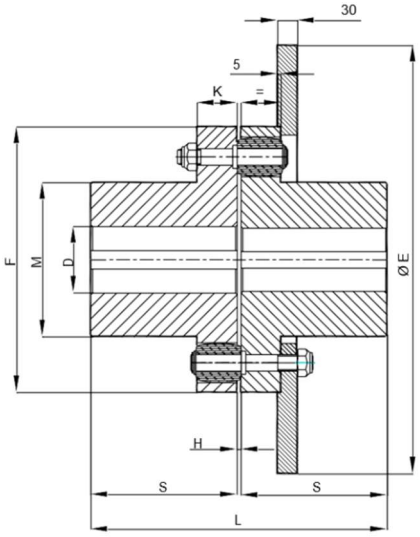
with brake drum PBFF

Tipo/ *Type*	Coppia *Torque* Nm	D Max	L	S	H	Ø$_2$	F$_2$
120 FF	350	45	143	70	3	160	70
140 FF	600	55	163	80	3	200	75
160 FF	900	60	183	90	3	250	95
180 FF	1300	65	204	100	4	315	118
200 FF	1800	75	234	115	4	315	118
225 FF	2600	90	264	130	4	400	150
250 FF	4600	95	305	150	5	400	150
300 FF	6500	110	365	180	5	500	190
350 FF	10500	120	406	200	6	500	190
400 FF	14500	140	446	220	6	630	236
450 FF	21000	160	487	240	7	630	236
500 FF	30000	180	527	260	7	710	265



With brake disk PBDF

Tipo / *Type*	Coppia *Torque* Nm	D Max	L	S	Perni *Pins* no.	Rpm max.	E1	Peso *Weight* Kg	E2	Peso *Weight* Kg
120 DF	350	45	143	70	10	6000	200	10	250	12
140 DF	600	55	163	80	14	5300	200	13	250	15
160 DF	900	60	183	90	16	4500	250	20	315	23
180 DF	1300	65	204	100	12	4000	250	23	315	26
200 DF	1800	75	234	115	14	3600	315	36	400	42
225 DF	2600	90	264	130	16	3200	315	56	400	62
250 DF	4600	95	305	150	14	3000	400	70	450	73
300 DF	6500	110	365	180	16	2500	400	100	450	103
350 DF	10500	120	406	200	12	2200	450	148	500	153
400 DF	14500	140	446	220	14	1800	500	213	560	218
450 DF	21000	160	487	240	12	1600	560	288	630	296
500 DF	28000	180	527	260	14	1400	630	386	710	395
550 DF	36000	210	567	280	16	1200	710	495	800	510



SPECIAL ELASTIC PIN COUPLING – DOUBLE ROW COUNTER INSTALLED ELASTIC ELEMENTS

This component must be considered the upgrade of the classic elastic pin coupling.

SD Consulting develop it with the specific scope to help the systems to reduce as much as possible the transmittable vibrations on all the systems in general and specifically for the mills /pinions/girth gears for all the different applications

In order to increase the anti-vibration effect, it is development of a specific configuration with double row counter installed elastic elements.
This system will allow to work with a lower specific pressure (N/mm^2) on each pin and increase the elastic elements surface contact.



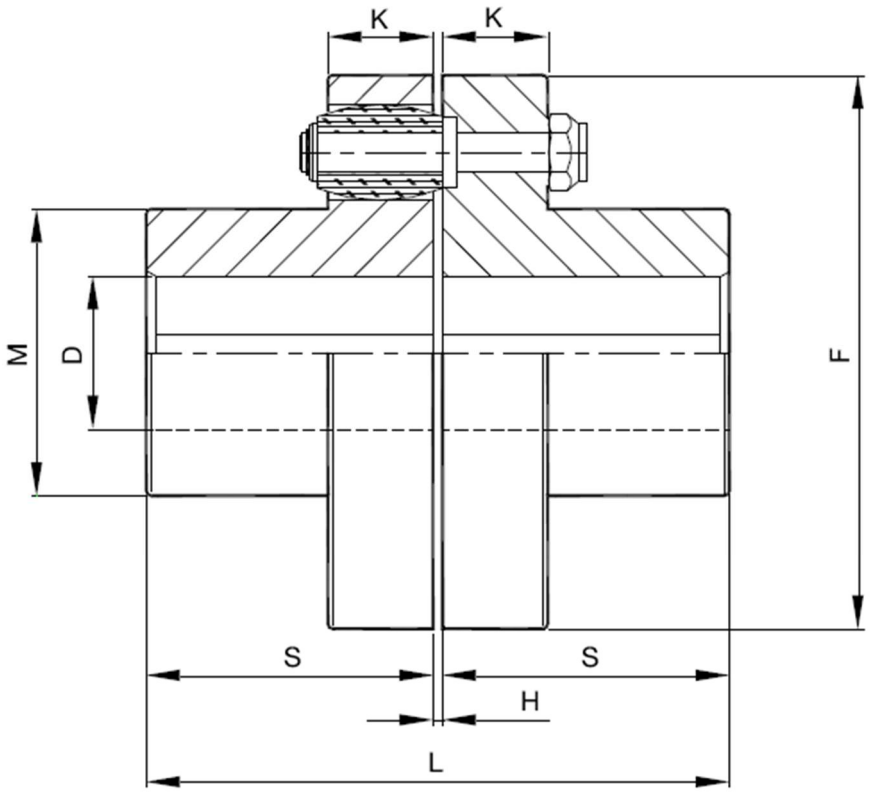
Coupling material: Steel or Cast Iron
Pin material: Steel
Elastic material: Polymer
PIN Hardness : 75-80 shore or >90 shore

SD Consulting for the first installation recommend including in the scope the additional pin kit with the different shore and test on the field which is the best for the specific application.
Con le dovute informazioni, sarebbe anche possibile effettuare delle valutazioni teoriche con dei calcoli basati su frequenze vibratorie e optare per il kit pioli di ricambio, evitando i test sul campo.

One of the biggest advantages of this coupling is the maintenance aspect; pins are the only wear parts and can be changed during an ordinary maintenance because you can do it without acting on the other drive components.

As per all the wear parts it is strongly recommended to have regular checks and change it every 6-8.000 working hrs (in case of order SD Consulting will provide a specific calculation with the estimation of the specific lifetime according to the specific working conditions).

TECHNICAL DATASHEET PB-DR



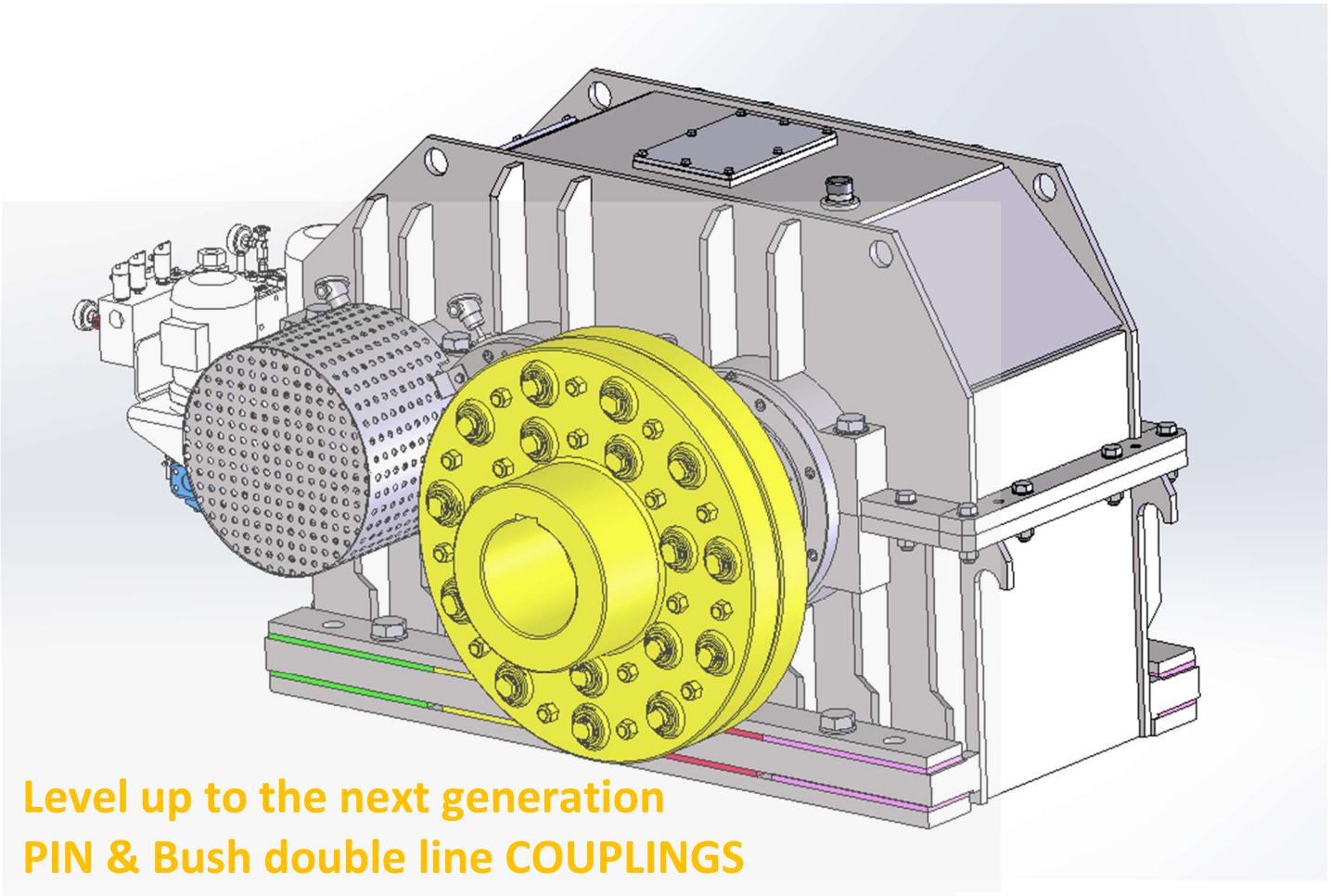
TYPE	Nominal Torque (Nm)(*)	D Max (mm)	F	L	H	K	M	S	Rpm Max.
900-DR-GG	270.000(**)	250	900	607	7	90	410	300	680
900-DR- St	300.000(**)	300	900	607(§)	7	90	410	300	680

(§) can be produce according to customer needs
(*) it refere to nominal component working torque @ service factor 1 based on the wickest part
(**) special key is required in 39NiCrMo3 or 42CrMo4

TYPE	PD^2 (Kgm^2)	Weight (Kg)	Material
900-DR-GG	268,3	1250(***)	Cast iron
900-DR- St	268,3	1250(***)	Steel (casted or forged)

(***) approx. weight with pilot bore

OTHER SIZES AVAILABLE ON REQUEST // altre taglie disponibili su richiesta

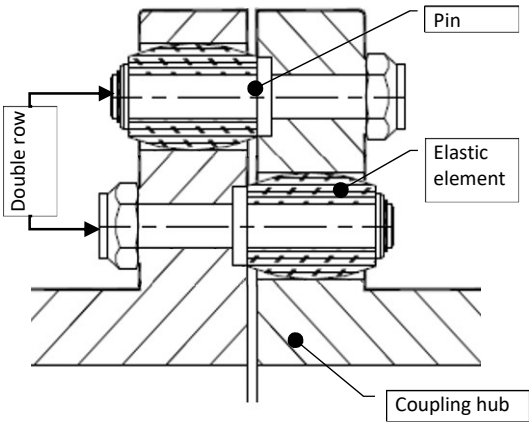


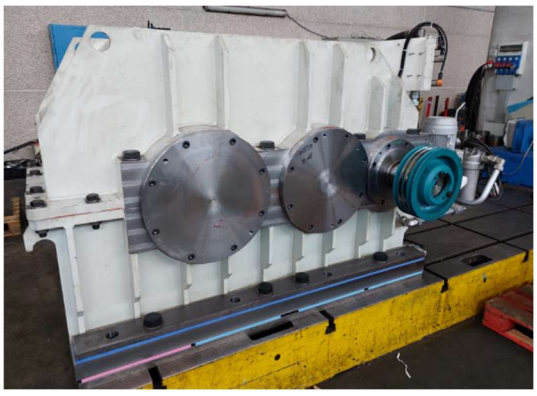
Level up to the next generation
PIN & Bush double line COUPLINGS

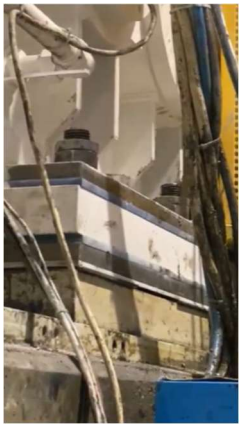
Vibrations are the main driver for premature failures on drive train components involved to run a mill such as motor, couplings, and gears. Our specialists at SD CONSULTING Gear Systems developed for this specific purpose a Pin Coupling designed to reach lowest vibration levels in the drive system.

Pin & Bush Couplings offer the possibility of shifting critical speeds outside the operating range when used to equip first installations or as upgrade kit on drive trains affected by high vibrations. Due to the use of spherical shaped elastic elements (buffers), the Pin & Bush couplings compensate shaft misalignments in angular, radial, and axial directions.

Another unique advantage of this Couplings is the maintenance aspect. Buffers are the only wear parts in the coupling and can be replaced during any ordinary maintenance interval without having to remove the other equipment in the drive train.







The positive dumping effect goes in line with the surface contact area of the elastic elements and consequently with the specific pressure (N/mm^2) acting on each pin. To take advantage of this effect we increased the surface contact area by choosing a configuration with smaller, counter installed elastic elements, arranged on double row. The selection of balancing quality and buffer hardness can be based on numerical evaluated data for new installations or based on received field data. In case of doubts various sets of buffers in different hardness are supplied with the main scope to allow final optimization during commissioning on the field.
This service is not only limited to the couplings but can also be extended to provide complete engineered solutions including the drive support frame too. Yes antivibration system on the gearbox! ***(MZ)***

Coupling hub material	Upon request in casted or forged steel or cast iron
Pin material	Alloyed steel
Buffer (elastic element) material	Perbunan (NBR) or natural rubber (NR)*
Buffer hardness spectrum	75 to 80 Shore A (or if required by the case > 90 Shore A)
Sizes**	Customizable for torques of up to 300kNm

**(Selection depending on environmental conditions. Operating temp. range NBR -30° - +80°C, NR -50 - +70°C)*
***(Nominal figures @SF 1.0 and max. 680 rpm with static balancing class G 6.3. Other sizes available on request)*

OTHERS SPECIAL COUPLINGS ON REQUEST





SD

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SD Consulting SRL: Eccellenza tecnica e soluzioni all'avanguardia per le trasmissioni meccaniche nell'industria pesante.

Contatti

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Legal

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