

GEAR COUPLING

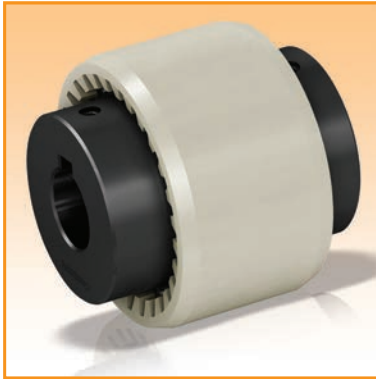
Up to 5000 Nm of torque and 125 mm bore

GD



ComInTec[®]
Technology for Safety

GD - gear coupling: introduction



- Hubs made in steel fully turned with standard treatment of phosphating.
- Polyamide sleeve.
- Statically balanced.
- Maintenance and lubrication free.
- Compact and simple to be assembled.
- Vibrations dampening.

ON REQUEST

- Various hub connection type available.
- Version with sleeve in steel, circlip and seals.
- Version with sleeve directly integrated in one hub.
- Specific surface treatments possible.

The GD coupling is composed of two hubs in steel UNI EN 10083/98 fully turned, externally toothed with rounded profile and assembled only with a sleeve in polyamide stabilized resin, toothed internally.

Due to the tooth profile with which the hubs and the sleeve are connected, you can obtain a high contact surface also in presence of misalignments, in order to reduce the contact pressures and promote a longer life.

The connection polyamide/steel assures silent and reliable functioning, in absence of maintenance and lubrication.

This kind of coupling represents a reliable and economic kind of connection, for medium and big power industrial purposes.

DESCRIPTION OF THE SLEEVE

The standard sleeve is made in polyamide 6.6 stabilized resin and its properties are as follows:

- Resistant to all common lubricants and hydraulic fluids
- Suitable to operate in a continuous way on temperatures from -25°C up to 90°C and for short periods up to 125°C
- Optimum sliding properties
- High insulating capacities
- Optimum mechanical properties

DIMENSIONING

For pre-selection of the coupling's size you can use the generic formula indicated on page 6.

Having established the coupling's size to be used, it is possible to make other checks considering further parameters:

$$C_{nom} > C_{mot} \cdot f_T \cdot f_R$$

Where:

C_{nom} = nominal torque of the coupling [Nm]
 C_{mot} = nominal torque motor side [Nm]
 C_{max} = maximum torque of the coupling [Nm]
 C_{SU} = starting torque motor side [Nm]
 C_{SM} = starting torque motor side [Nm]
 f_A = starting frequency factor
 f_R = thermic factor
 f_T = inertia motor side
 J_{mot} = inertia motor side [Kgm²]
 J_{uti} = inertia user side [Kgm²]
 K = shock factor

thermic factor (f_T)

1 = -40 ÷ +60 °C
 1,2 = +70 °C
 1,4 = +80 °C
 1,6 = +90 °C

Shock factor (K)

1 = light shock
 1,5 = medium shock
 1,8 = hard shock

Starting frequency factor (f_A)

1 = 0 ÷ 120 starting each hour
 1,2 = 240 starting each hour
 1,4 = 400 starting each hour
 1,6 = 800 starting each hour
 1,8 = 1600 starting each hour

Considerando la coppia di spunto:

$$C_{nom} = C_{SM} \cdot \frac{J_{uti}}{J_{mot} + J_{uti}} \cdot K \cdot f_T \cdot f_A + C_{mot} \cdot f_T \cdot f_R$$

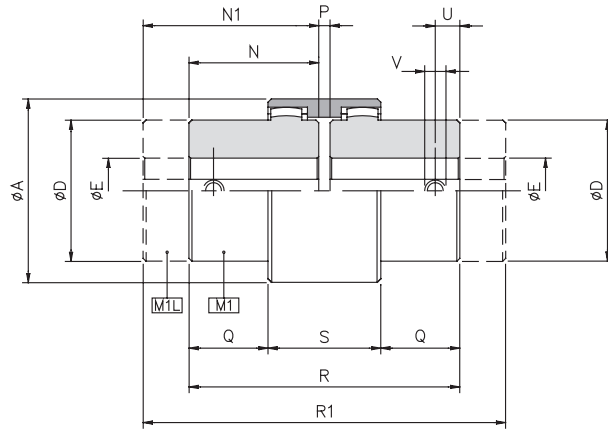
$$C_{nom} = C_{SU} \cdot \frac{J_{uti}}{J_{mot} + J_{uti}} \cdot K \cdot f_T \cdot f_A + C_{mot} \cdot f_T \cdot f_R$$

It is important to consider that misalignments, axial, angular and parallel, must be considered paired together, as inversely proportional (one reduces when the other increases). If all types of misalignments occur then it is necessary that the sum in percentage respect to the maximum value doesn't exceed 100%.

FITTING

Specific procedures to assemble this coupling are not required.

- 1) Achieve radial and axial alignment as precisely as possible to have the maximum absorption of possible misalignments and longer life of the coupling.
- 2) Having pre-assembled the coupling, insert the external half-hub on one shaft. Check that the external parts of the two shafts don't exceed the relevant half-hub's surface (quote "N") and fix this one to the shaft with its relevant fixing system.
- 3) Insert the sleeve on the two half-hubs being careful to respect the distance of the same half-hubs, quote "P" on the catalogue.
- 4) Before starting transmission be sure that the sleeve can move freely.



DIMENSIONS

Size	A	D	E H7		N	N1	P	Q	R	R1	S	U	V
			pilot	max									
1 (14)	40	24	-	14	23	40	4	6,5	50	84	37	6	M5
2 (19)	48	30	-	19	25	40	4	8,5	54	84	37	6	M5
3 (24)	52	36	-	24	26	50	4	7,5	56	104	41	6	M5
4 (28)	66	44	-	28	40	55	4	19	84	114	46	10	M8
5 (32)	76	50	-	32	40	55	4	18	84	114	48	10	M8
6 (38)	83	58	-	38	40	60	4	18	84	124	48	10	M8
7 (42)	92	65	-	42	42	▲ 60	4	19	88	▲ 124	50	10	M8
8 (48)	95	67	-	48	50	▲ 60	4	27	104	▲ 124	50	10	M8
9 (55)	114	82	-	55	52	▲ 65	4	29,5	108	▲ 134	58	20	M10
10 (65)	132	96	-	65	55	▲ 70	4	36	114	▲ 144	68	20	M10
▲ 11 (80)	175	124	25	80	90	-	6	46,5	186	-	93	20	M10
▲ 12 (100)	210	152	35	100	110	-	8	63	228	-	102	30	M12
▲ 13 (125)	270	192	45	125	140	-	10	78	290	-	134	40	M16

TECHNICAL CHARACTERISTICS

Size	Torque [Nm]		Weight [kg]			Inertia [kgm ²]			Max speed [rpm]	Operating temperature [°C]	Misalignments		
	nom	max	M1	M1L	Manicotto	M1	M1L	Manicotto			Angular α [°]	Axial X [mm]	Radial K [mm]
1 (14)	11,5	23	0,10	0,13	0,022	0,000010	0,000013	0,000007	14000	-25 ÷ +80	2°	±1	±0,3
2 (19)	18,5	36,5	0,18	0,28	0,028	0,000018	0,000032	0,000013	11800		2°	±1	±0,4
3 (24)	23	46	0,23	0,42	0,037	0,000036	0,000076	0,000020	10600		2°	±1	±0,4
4 (28)	51,5	103,5	0,54	0,73	0,086	0,000122	0,000187	0,000068	8500		2°	±1	±0,5
5 (32)	69	138	0,66	0,90	0,104	0,000207	0,000328	0,000116	7500		2°	±1	±0,5
6 (38)	88	176	0,93	1,42	0,131	0,000394	0,000787	0,000171	6700		2°	±1	±0,4
7 (42)	110	220	1,10	1,46	0,187	0,000510	0,001223	0,000286	6000		2°	±1	±0,4
8 (48)	154	308	1,50	1,83	0,198	0,000744	0,001445	0,000327	5600		2°	±1	±0,4
9 (55)	285	570	2,30	3,26	0,357	0,001962	0,003378	0,000741	4800		2°	±1	±0,6
10 (65)	420	840	3,17	3,95	0,595	0,004068	0,007586	0,001519	4000		2°	±1	±0,6
▲ 11 (80)	700	1400	8,40	-	1,130	0,015292	-	0,006471	3150		2°	±1	±0,7
▲ 12 (100)	1200	2400	15,37	-	1,780	0,040213	-	0,015696	3000		2°	±1	±0,8
▲ 13 (125)	2500	5000	31,19	-	3,880	0,137141	-	0,054469	2120		2°	±1	±1,1

▲ On request

NOTES

- The weights refer to the coupling with minimum bore.
- Inertias refer to the coupling with maximum bore.
- For choice and availability of different hub connection type see pages 4 and 5.

GD - gear coupling: additional information

ORDER EXAMPLE

GEAR COUPLING						
Model	Size	Version	Bore 1	Locking type bore 1	Bore 2	Locking type bore 2
GD	size 8	M1 - M1	bore Ø40 H7	A1	bore Ø40 H7	A1

Size	Version
From 1 to 13	M1 - M1
	M1 - M1L
	M1L - M1
	M1L - M1L

Model	Locking type
GD gear coupling	see hub connection type list at page 4