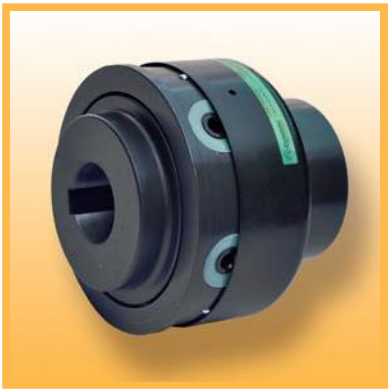
GEC - compact elastic coupling: introduction



- Made in steel fully turned with standard treatment of phosphating.
- Maintenance possible without moving hubs.
- Suitable for high operating temperature.
- Statically balanced and vibration dampening
- Maximum grade of protection.
- Optimum ratio of torque / dimensions.

ON REQUEST

- Two different elastomeric elements types for different temperatures.
- Specific surface treatments or in aluminium fully turned version possible.
- Customized manufacturing for specific needs, hub-flange or flange-flange.

- Connection to ComInTec TORQUE LIMITERS range possible.

The GEC coupling is composed of two hubs in steel UNI EN10083/98 fully turned. These two hubs are connected by radial pins, made in steel with high resistanceand seated within the elastomeric elements.
These pins, with their relevant elastomeric elements, are protected by an external band, allowing the coupling a high grade of protection.
This construction feature allows the user to be able to perform maintenance, by substituting the elastic elements, without the need to move the two transmission hubs/shafts, reducing maintenance times and optimizing the plant productivity.
Particularly suitable to connect Pelton turbines, for the coupling between engines and worm compressors and in general for transmission where safety is highly required without compromising the quality and effectiveness of the same transmission.

DESCRIPTION OF THE ELASTOMERIC ELEMENT

Two different kind of elastomeric element are available, distinguished by the colour. The main features are:

- Good resistance to all common lubricants and hydraulic fluids.
- Optimum mechanical properties.
- Green element suitable to operate for short periods up to 170 °C.

DIMENSIONING

For pre-selection of the coupling's size you can use the generic formula indicated on page 5.
Alternatively it is possible to determine the coupling's nominal torque using several correction factors:

$$C_{nom} > C_{mot} \cdot f \cdot K \cdot f_T \cdot f_A$$

Where:

C_{nom} = theoretic nominal torqueof the coupling [Nm]
C_{mot} = nominal torque motor side [Nm]
f = service factor (vedi pagina 5)
f_A = starting frequency factor
f_T = thermic factor
K = shock factor

Thermic factor (f_T)	
1	-36 ÷ 60 °C
1,2	> 80 °C
1,4	> 100 °C
1,6	> 120 °C

Shock factor (K)	
1,2	light shock
1,5	medium shock
1,8	hard shock

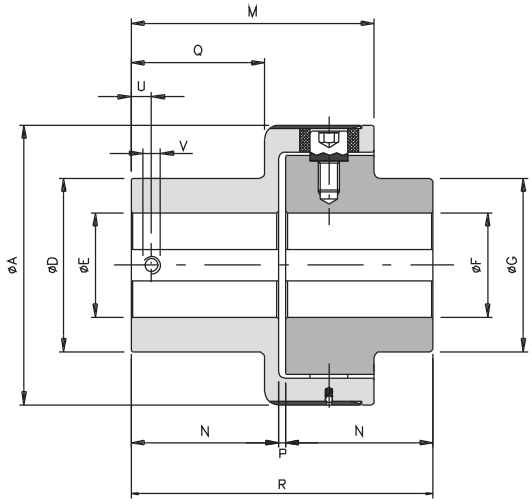
Starting frequency factor (f_A)	
1	0 ÷ 120 starting each hour
1,2	> 120 ÷ 240 starting each hour
1,4	> 240 ÷ 400 starting each hour
1,6	> 400 ÷ 800 starting each hour

Having completed and checked the coupling's choice, in accordance to the torque to be transmitted, it is necessary now, to take into consideration, the necessary flexibility comparing the misalignments allowed from the kind of coupling selected, with the real ones, seen by the shafts to be connected.
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, 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 for maximum absorption of possible misalignments and the maximal duration of the coupling.
2) Having the coupling pre-assembled, 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) Close the second shaft inserting it into the internal half-hub for a quantity not higher than the length of the bore (quote “N”). If the insertion should be difficult, due to an accentuated misalignment, it is opportune to release all the connection pins, obtaining in this way a higher flexibility between the two half-hubs.
4) After having inserted and fixed the hubs, take away each connection pin, damp them with loctite threadlocker, and reassemble and tighten them carefully in progressive way following a cross sequence.
5) Cover the pins with the protection band, making the holes of the band coincide with the relevant locking spheres.

GEC - compact elastic coupling: technical data:



DIMENSIONS

Size	Code		A	D	E H7		F H7		G	M	N	P	Q	R	U	V
	Coupling with BLACK element	Coupling with GREEN element			pilot	max	pilot	max								
00	200650000000	200655000000	63	42	5	20	5	20	42	52	25	3.5	18	61,5	8	M4
0	200660000000	200665000000	78	50	10	28	10	28	50	63.5	32	3.5	28	67,5	10	M5
1	200670000000	200675000000	108	70	12	38	12	38	70	89	49	4	44	102	12	M6
2	200680000000	200685000000	130	80	15	45	15	45	80	111	65	4	59	134	15	M8
3	200690000000	200695000000	161	100	15	60	15	60	100	140	85	4	77	174	15	M8
4	200700000000	200705000000	206	120	20	70	20	70	120	168	105	4	97	214	20	M10
5	200710000000	200715000000	239	135	30	80	30	80	135	201	130	4	120	264	20	M10
6	-	200725000000	315	215	40	150	40	110	175	260	165	5	150	335	25	M12
7	-	200735000000	364	240	40	180	40	140	210	310	205	5	185	415	25	M12

TECHNICAL CHARACTERISTICS

Size	Torque *[Nm]*		Weight *[Kg]*	Inertia *[Kgm²]*	Max speed *[Rpm]*	Max temperature *[°C]*		Elastic element hardness *[Sh-A]*	Misalignments					
	Nom	Max				BLACK elastic element	GREEN elastic element		angular α *[°]*		axial X *[mm]*		radial K *[mm]*	
									continuous	intermittent	continuous	intermittent	continuous	intermittent
00	35	50	0,8	0,00045	6000	100 ±10	170 ±10	80	1°	1° 30'	±0,7	±1,5	0,5	0,7
0	70	110	1,5	0,00124	5500				1°	1° 30'	±0,7	±1,5	0,5	0,7
1	280	420	4,2	0,00633	5000				0° 48'	1°	±0,7	±1,5	0,5	0,7
2	570	860	7,7	0,01592	4500				0° 36'	0° 48'	±0,7	±1,5	0,6	0,7
3	980	1500	14,2	0,04666	4000				0° 30'	0° 42'	±0,8	±1,6	0,6	0,8
4	2340	3600	22,6	0,12546	3100				0°24'	0° 30'	±0,8	±1,6	0,6	0,8
5	3880	5800	36,0	0,26035	2800				0°24'	0° 30'	±0,8	±1,6	0,6	0,8
6	15000	20000	78,1	0,88951	2000	-			0°24'	0° 30'	±0,8	±1,6	0,6	0,8
7	30000	35000	128,4	1,77108	1500				0°24'	0° 30'	±0,8	±1,6	0,6	0,8

NOTES

- **Code:** the 7th, 8th, 9th digits of the code indicate the Finished Bore diameter of an **EXTERNAL** half-hub in mm (000 = pilot bore).
- **Code:** the 10th, 11th,12th digits of the code indicate the Finished bore diameter of an **INTERNAL** half-hub in mm (000 = pilot bore).
- **Technical characteristics:** the weights refer to the coupling with pilot bore; inertias refer to the coupling with maximum bore.