

Type GF Gear Couplings



Low cost, gear couplings for lower power applications, available in 10 sizes with torque capacity to 410Nm and shaft speeds up to 14,000 rpm. The GF Coupling consists of two steel hubs with external crowned and barrelled gear teeth, phosphated for corrosion protection, connected by a synthetic resin sleeve. The sleeve is manufactured from high molecular weight polyamide, thermally conditioned and impregnated with solid lubricant to provide a long maintenance-free life. This sleeve has high resistance to atmospheric humidity and an operating temperature range of -20°C to +80°C with ability to withstand 120°C for short durations.



The GF Series Couplings are made with two hub lengths; a standard hub suitable for most applications, and a longer hub (ref GFL) designed to fit full length of shaft on standard motors. Hubs of different lengths can be combined in coupling, being identified by coupling reference as following examples:

- GF - Has two standard hubs - e.g. GF 14
- GFL - Has one long hub - e.g. GFL 28
- GFL - Has both long hubs - e.g. GFL 42

Gear Coupling Selection Procedure

Using factors from page 1 and below determine selection parameters by:-

a) Determine design power in kW from transmitted power by formula:-

$$\text{Design Power } P_d = P, f_1, f_2, f_3 \text{ kW}$$

Divide design power P_d by shaft speed, rpm to give kW/rpm and use to select suitable coupling giving consideration also to shaft speed and misalignment.

b) Alternatively, if only shaft torque is know, design torque can be determined:-

$$\text{Design Torque } T_d = T, f_1, f_2, f_3, \text{ Nm}$$

Service Life Factor f_2

Gear Couplings are designed for a working life of 3,800 hours under normal conditions of torque, misalignment and speed. Where a longer life is required use factor f_2 when selecting coupling.

Life in hours	3800	4000	6000	8000	12000	20000
Factor f_2	1.0	1.6	1.17	1.26	1.39	1.58

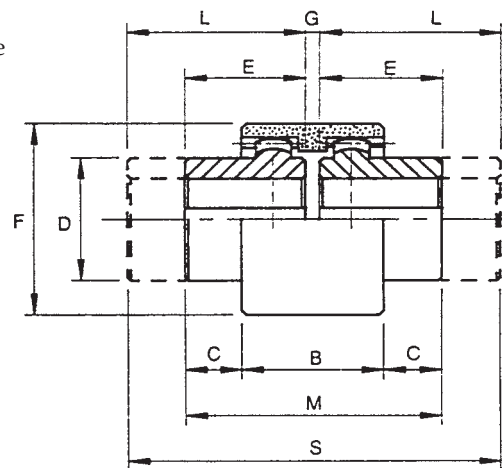
Misalignment Factor f_3

The maximum operating speed indicated in the tables for each coupling is based on applications where the angular misalignment does not exceed 5 minutes angle. Where values on angular misalignment exist, both the catalogue torque capacity and the maximum speeds will have to be reduced. Where angles of misalignment and operating speeds are close to catalogue values, the selecting service factor should be increased by misalignment factor f_3 of 1.12.

GF Series Couplings - Capacities and Dimensions (mm)

Couplings should be selected to requirements of motor power, shaft sizes and type of load. Under no circumstances should maximum motor torque exceed twice coupling rated torque.

Coupling Size	Torque Nm ⁽³⁾	Power Cap kW/1000 rpm	Power Capacity in kW at selected shaft speeds			Max. Speed rpm	Inertia kg-cm ² ⁽¹⁾	Maximum misalignment capabilities ⁽²⁾		
			1000	1500	3000			Angular	Radial	Axial mm
GF-14	11.0	1.1	1.1	1.7	3.4	14,000	0.27	±2°	0.7	±1
GF-19	18.5	1.9	1.9	2.9	5.8	12,000	0.64	±2°	0.8	±1
GF-24	22.0	2.3	2.3	3.4	6.9	10,000	0.92	±2°	0.8	±1
GF-28	51.5	5.4	5.3	8.1	16.1	8,000	3.45	±2°	1.0	±1
GF-32	69.0	7.2	7.2	10.8	21.6	7,100	5.03	±2°	1.0	±1
GF-38	88.0	9.2	9.2	13.8	27.6	6,300	9.59	±2°	0.9	±1
GF-42	108.0	11.3	11.3	16.9	33.9	6,000	13.06	±2°	0.9	±1
GF-48	154.0	16.1	16.1	24.0	48.3	5,600	18.15	±2°	0.9	±1
GF-55	285.0	29.8	29.8	44.7	89.5	4,800	49.44	±2°	1.2	±1
GF-65	410.0	42.9	42.9	64.3	128.7	4,000	106.34	±2°	1.3	±1



Coupling Size	Finished Bore Size		Standard Length Hubs							Long Hubs		Weights kg ⁽⁶⁾		
	Min.	Max.	B	C	D	E	F	G ⁽³⁾	M ⁽³⁾	L	S ⁽³⁾	Sleeve	Standard Hub	Long Hub
GF-14	6	14	38	6.5	25	23	40	4	51	30	64	0.022	0.10	0.13
GF-19	8	19	38	8.5	32	25	48	4	55	40	84	0.028	0.18	0.28
GF-24	10	24	42	7.	36	26	52	4	57	50	104	0.037	0.23	0.42
GF-28	10	28	48	19	45	41	68	4	86	60	124	0.086	0.54	0.79
GF-32	12	32	48	18	50	40	75	4	84	60	124	0.104	0.66	0.97
GF-38	14	38	50	17	60	40	85	4	84	80	164	0.131	0.93	1.83
GF-42	20	42	50	19	63	42	95	4	88	110	224	0.187	1.10	2.76
GF-48	20	48	50	27	68	50	100	4	104	110	224	0.198	1.50	3.21
GF-55	25	55	65	29.5	82	60	120	4	124	110	224	0.357	2.63	5.12
GF-65	25	65	72	36	95	70	140	4	144	140	284	0.595	4.02	7.92

(1) Inertia refers to standard couplings bored to maximum bore size.

(2) Angular misalignment relates to total angle between shafts.

(3) Dimensions G, M & S relate to couplings correctly positioned on shafts.

(4) Max. Torque = 2 x Rated Torque.

(5) Stock hubs are all unbored.

(6) Weights are for unbored coupling hubs.

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