GBC Couplings

Quality Guaranteed

Economy
Design of the GBC coupling has been optimised so that power capacities are balanced to the appropriate shaft diameters.

Resilience
Transient peak loads are reduced by a flexible element, deflection of which is a prime design consideration.

Misalignment
Incidental parallel angular and axial displacement of the connected shafts can be accommodated.

Taper Bushes
Are fitted to the complete standard coupling range. Bored to size flanges are also available.

Installation
Is quick and easy without special tools, only a hexagon wrench is required.

Maintenance
Is virtually eliminated and no lubricant required.

Environment
The elastometric element makes it suitable for use in most conditions. An option of urethane element is also available.

Positive
In the unlikely event of the flexible element being destroyed, drive will be maintained by inner-action of the integrally cast driving dogs.

Selection

Couplings may be selected in either of two ways

1. Where the prime mover is an electric motor and demand power or demand torque unknown, select the coupling using table 2 opposite. This selection will give a minimum service factor of 1.6.
2. Where the driven machine demand power (or torque) and operating duty are known, select the coupling using the following procedure.

(a) service factor
Determine appropriate service factor from table 1.
(b) Design Power
Multiply running of driven machine by the service factor. This gives the Design Power which is used as a basis for coupling selection.
(c) Coupling Size
Refer to table 3 and read across from the appropriate speed until an power equal to or greater than the design power is found. The size of the coupling required is given at the head of that column.
(d) Bore Size
From dimension table 4 check that the required bores can be accomodated

EXAMPLE
A shaft coupling is required to transmit 70kW between a 1200 rev/min DC electric motor and a Banbury Mixer running 8Hrs/day. Motor shaft is 70mm and the mixer shaft is 75mm.
(a) service factor
From table 1 the service factor is 2,5.
(b)Design Power
Design Power is 70 x 2,5 – 175kW
(c) Coupling size
Reading across from 1200 rev/min in the speed column of Table 3; 251kW is the first power to exceed the required 175kW (Design Power). The size of the coupling at the head of this column is 230.
(d) Bore Size
Table 4 shows that both shaft diameters are within the bore range available.

TABLE 1 : SERVICE FACTORS

SPECIAL CASES For applications where substantial shock, vibration and torque fluctuation occur, and for reciprocating machines, e.g. internal combustion engines, piston type pumps and compressors, refer to GB Power Transmission with full machine details for torsional analysis.	Type of Driving Unit					
	Electric Motors Steam Turbines			Internal Combustion Engines Steam Engines Water Tubines		
	Hours per day duty			Hours per day duty		
Driven Machine Class	8 and under	over 8 to 16 inclusive	over 16	8 and under	over 8 to 16 inclusive	over 16
UNIFORM Agitators, Brewing Machinery, Centrifugal Compressors ~ , Conveyors, Centrifugal Fans and pumps, Generators, Sewage Disposal Equipment.	1,00	1,12	1,25	1,25	1,40	1,60
MODERATE SHOCK* Clay working machinery, Crane Hoists, Laundry machinery, Wood working machinery, Machine Tools, Rotary Mills, Paper Mill machinery, Textile machinery.	1,60	1,80	2,00	2,00	2,24	2,50
HEAVY SHOCK* Reciprocating converyors, Crushers, Shakers, Metal Mills, Rubber machinery. (Banbury Mixers and Mills, Reciprocating Compressors.)	2,50	2,80	3,12	3,12	3,55	4,00

* It is recommended that top clearance keys are fitted for applications where load fluctuation is expected.

~ For Centrifugal Compressor multiply Service Factor by an additional 1,15.

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TABLE 2 : SELECTION - from power to I.E.C Motors.

(1) Opposite motor frame size under the applicable speed find motor power.

(2) Selection of Taper Bush (H or F) or Bored to size (B) is shown in column headed.

Motor		3000 rev/min			1500 rev/min			1000 rev/min			750 rev/min		
Frame Size	Shaft Dia	Motor Power (kW)	Size Flange Type H or F	Size Flange Type B	Motor Power (kW)	Size Flange Type H or F	Size Flange Type B	Motor Power (kW)	Size Flange Type H or F	Size Flange Type B	Motor Power (kW)	Size Flange Type H or F	Size Flange Type B
63	11	0,18	70	70	0,12	70	70	-	-	-	-	-	-
		0,25	70	70	0,18	70	70	-	-	-	-	-	-
71	14	0,37	70	70	0,25	70	70	-	-	-	-	-	-
		0,55	70	70	0,37	70	70	-	-	-	-	-	-
80	19	0,75	70	70	0,55	70	70	0,37	70	70	-	-	-
		1,1	70	70	0,75	70	70	0,55	70	70	-	-	-
90S	24	1,5	70	70	1,1	70	70	0,75	70	70	-	-	-
90L	24	2,2	70	70	1,5	70	70	1,1	70	70	-	-	-
100L	28	3	90	70	2,2	90	70	1,5	90	70	0,75	90	70
					3	90	70				1,1	90	70
112M	28	4	90	70	4	90	90	2,2	90	90	1,5	90	70
132S	38	5,5	130	90	5,5	130	90	3	130	90	2,2	130	90
		7,5	130	90									
132M	38	-	-	-	7,5	130	90	4	130	90	3	130	90
								5,5	130	110			
160M	42	11	130	90	11	130	90	7,5	130	110	4	130	110
		15	130	90							5,5	130	110
160L	42	18,5	130	110	15	130	110	11	130	130	7,5	130	110
180M	48	22	150	110	18,5	150	130	-	-	-	-	-	-
180L	48	-	-	-	22	150	130	15	150	130	11	150	130
200L	55	30	180	110	30	180	130	18,5	180	130	15	180	130
		37	180	130				22	180	130			
225S	60	-	-	-	37	180	150	-	-	-	18,5	180	150
225M	55*	45	180	130	45	180	150	30	180	150	22	180	150
	60												
250M	60*	55	180	130	55	230	150	37	230	150	30	230	180
	70												
280S	65*	75	-	150	75	280	180	45	280	180	37	280	180
	80												
280M	65*	90	-	180	90	280	180	55	280	180	45	280	180
	80												
315S	65*	110	-	180	110	280	230	75	280	230	55	280	230
	85												
315	65*	132	-	180	132	280	230	90	280	230	75	280	230
	85												

* 3000 rev/min only.

TABLE 3: POWER RATINGS (Kw)

Speed rev/min	Coupling Size							
	70	90	110	130	150	180	230	280
100	0,33	0,84	1,68	3,30	6,28	9,95	20,9	33,0
200	0,66	1,68	3,35	6,6	12,6	19,9	11,9	65,0
400	1,32	3,35	6,70	13,2	25,1	39,8	83,8	132
600	1,98	5,03	10,1	19,8	37,7	59,7	126	198
720	**2,37**	**6,03**	**12,1**	**23,8**	**45,2**	**71,6**	**151**	**238**
800	2,64	6,70	13,4	26,4	50,3	79,6	168	264
960	**3,17**	**8,04**	**16,1**	**31,7**	**60,3**	**95,5**	**201**	**317**
1200	3,96	10,1	20,1	39,6	75,4	119	251	396
1440	**4,75**	**12,1**	**24,1**	**47,5**	**90,5**	**143**	**302**	**475**
1600	5,28	13,4	26,8	52,8	101	159	335	528
1800	5,94	15,1	30,2	59,4	113	179	377	594
2000	6,60	16,8	33,5	66,0	126	199	419	660
2200	7,26	18,4	36,9	72,6	138	219	461	726
2400	7,92	20,1	40,2	79,2	151	239	503	-
2600	8,58	21,8	43,6	85,8	163	259	545	-
2880	**9,50**	**24,1**	**48,3**	**95**	**181**	**286**	**-**	**-**
3000	9,90	25,1	50,3	99	188	298	-	-
3600	11,9	30,1	60,3	118	226	-	-	-

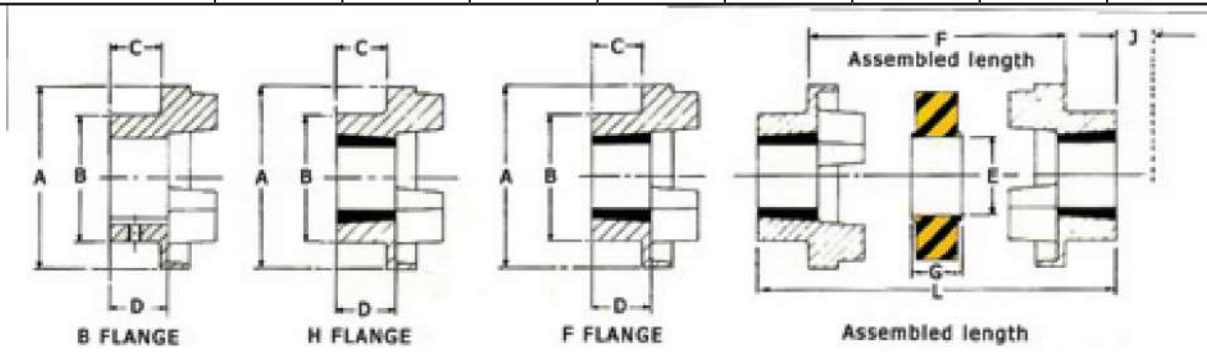

TABLE 4: DIMENSIONS

Size	Bush	Bore		C	D	Bored to Size				DIA A	DIA B	DIA C	F	G	L 1	L 2	L 3	J t
		Max	Min			Bore+ Max	Bore+ Min	C	D									
70	1008	25	9	19.0	23.5	32	8	21	25	69	60	31	27	18	65	66.5	68	29
90	1108	28	9	18.5	23.5	38	8	26	30	85	65	32	32.5	22.5	69.5	75	82.5	29
110	1610	42	11	18.5	26.5	55	8	37	45	112	100	45	45	29	82	100.5	119	38
130	1610	42	14	17.5	26.5	60	36	47	55	130	105	50	54	36	89	117.5	145	38
150	2012	50	14	23.0	33.5	65	40	50	60	150	115	62	61	40	107	133.5	160	42
180	2517	60	16	34.0	46.5	80	46	58	70	180	125	77	74	49	142	165.5	189	48
230	3020	75	25	39.5	52.5	100	52	77	90	225	155	99	85.5	59.4	164.5	202	239.5	55
280	3535	90	35	74.0	90.5	115	62	90	105	275	185	119	107.5	74.5	255.5	270	284.5	67

L 1 is the length with assembly combinations F.F - H.H F.H.

L 2 is the length with assembly combinations F.B - H.B

L 3 is the length with assembly combinations B.B

J t is the wrench clearance required for tightening and loosening the bush on the shaft. the use of a shortened key will allow this dimension to be reduced.

+ Bore limit H8 unless specified otherwise.

TABLE 5 : PHYSICAL CHARACTERISTICS

Size	Power Rating per 100 rev/min	Maximum speed* (rev/min)	Torque Rating (Nm)		Moment of Inertia MR2 (kgm2)	Torsional Stiffness (Nm/o)	Maximum Misalignment		Mass (kg)
			Normal	Maximum			Parallel	Axial	
70	0,33	9100	31.5	72	0,00085	10,2	0,3	+0,20	1,00
90	0,84	7400	80	180	0,00115	25,5	0,3	+0,49	1,17
110	1,168	5630	160	360	0,00400	48,0	0,3	+0,61	5,00
130	3,30	4850	315	720	0,00780	84,0	0,4	+0,79	5,46
150	6,28	4200	600	1500	0,01810	176	0,4	+0.92	7,11
180	9,95	350	950	2350	0,04340	240	0,4	+1,09	16,60
230	20,9	2800	2000	5000	0,12068	336	0,5	+1,32	26,00
280	33,0	230	3150	7200	0,44653	960	0,5	+1,70	50,00

* Maximum Coupling speeds are calculated using an allowable periperal speed for hub material. For selection of smaller sizes with speeds in exess of 3600 rev/min - GB Power Transmission.

Mass is for Coupling with mid range bore Taper Bushes.
For speeds below 100rpm or inttermediate speeds use normal torque rating.