



# Fenner



Gear  
Couplings

## Gear Couplings

09



**Fenner Curved Tooth Flexible Gear Couplings** are the result of many years of experience in the field of Mechanical Power Transmission.

These Gear Couplings are distinguished by their mechanical flexibility and compensation of Angular, Parallel and Axial misalignments of the connected shafts. They are made for extensive use in Metal Rolling Mills, Paper Machinery, Cranes, Dredgers, Rubber and Plastic Industries, Cement Plants, Conveyors and Elevators, Compressors, Fans and Blowers, Screens and other general industries.

09-01

# F Fenner Gear Couplings

Flexible Gear Couplings basically consist of two hubs, with crowned external teeth and two outer sleeves with internal spur teeth.

Gear Hubs and the outer sleeves are manufactured from carbon steel and are hardened to the required degree. They are machined to fine tolerances for proper meshing of the gears as well as for inter-changeability.

## HUBS :

The teeth of Gear Hubs are crowned and are generated by involute system. The amount of crowning and backlash values are so chosen as to ensure the best results in torque transmission, greater flexibility and smooth operations.

## SLEEVES :

The internal teeth of the sleeves are generated to ensure correct profile. The coupling sleeves are joined together with high tensile steel bolts (class 8.8 IS : 1367) fitted using a gasket in between them.

## 'O' RINGS :

The setting of special 'O' Rings at the ends of coupling hubs prevents leakage of lubricants and entry of dust. The 'O' rings can also withstand high degree of temperature upto 120°C

## SEAL CARRIERS :

Seal carriers have been provided for sizes from FGC 11 to FGC 19 to facilitate inspection and replacement of 'O' rings without disturbing the alignment.

## POWER RATINGS :

The normal power ratings are given in the Table. For selection of the correct size of couplings, proper service factor depending on the type of machines and the peak load should be considered.

## SERVICE FACTOR :

Generally, for medium duty use a service factor of 1.5. For heavy duty use a factor of 2 and for extra heavy duty a factor of 3 should be used. **For special applications please contact Fenner with full details.**

## LUBRICATION :

The coupling must be filled with grease or oil. It is recommended to use grease where the maximum temperature is within 80°C and for temperature above

80°C, oil should be used. When using grease it is suggested to fill the coupling completely with Lithium based grease with EP additives (NLGI-No.1 consistency). When the coupling is to be filled with oil, fill half the coupling with EP Gear Oil.

## RECOMMENDATION FOR GREASE & OIL:

**Grease :** Indian Oil - Servogem  
EP 1 or equivalent

**Oil :** Indian Oil - Servomesh  
SP 680 or equivalent

## SELECTION OF THE COUPLINGS:

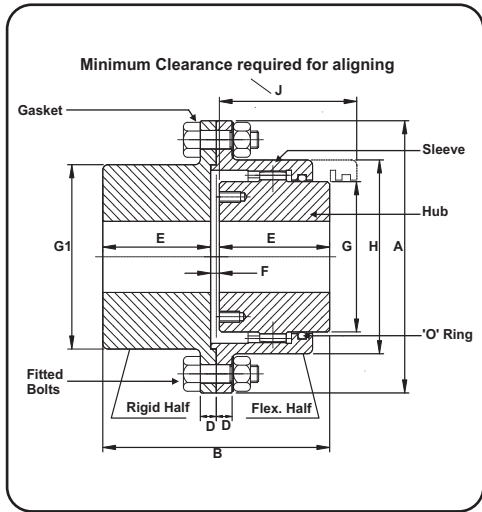
The following details are required for selection of the coupling :

1. Type of driven machine.
2. Power absorbed by the driven machine and Peak load.
3. Speed and Diameter of the connecting shafts and space available for accommodating the coupling.
4. Maximum misalignment to be compensated.
5. Surrounding temperature.
6. Any other special feature of the drive.

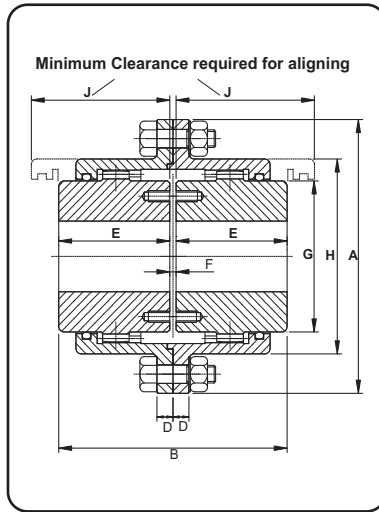
Example : A gear coupling is required to transmit 250 KW from an Electric Motor running at 730 rev/min to a Pulper Machine. Considering the peak load as 180% of full load, the Motor shaft as 100 mm and the Pulper shaft as 110 mm, select a suitable gear coupling.

- a) Service factor : 2 (for heavy duty application)
- b) Peak load : 180% of full load.
- c) Design power :  $250 \times 180 / 100 \times 2 = 900 \text{ KW}$
- d) Power to be transmitted at 100 rev/min :  
 $900 \times 100 / 730 = 123.3 \text{ KW}$
- e) Coupling size : By referring to the Table, coupling size FGC 5, has got a rating of 150 KW at 100 rev/min which exceeds the required power of 123.3KW. The bore range is 60 mm to 110 mm. Hence, size FGC 5 is selected for the application.

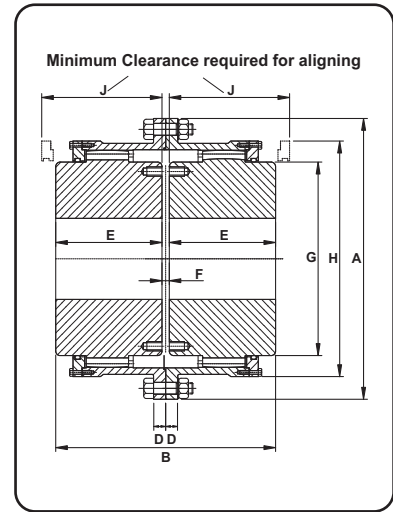
# Fenner Gear Couplings



Half Flexible Coupling



Couplings  
Size 1 To 10



Couplings  
Size 11 To 19

Table : 09-01

Coupling No / Size	Power at 100 rpm in Kw	Maximum Torque in Nm	Hub Bore (mm)			Dimensions (mm)								
			Min.	Max Flex	Max Rigid	A	B	D	E	F	G	G 1	H	J
FGC 1	11.5	1100	14	55	60	170	115	17	55	5	78	90	110	65
FGC 2	28.5	2720	20	60	75	185	145	17	70	5	85	110	125	85
FGC 3	51.5	4920	30	75	90	220	175	20	85	5	107	130	150	105
FGC 4	96.5	9220	40	100	110	250	215	20	105	5	138	160	178	125
FGC 5	150	14320	46	120	130	290	240	25	115	10	166	185	204	140
FGC 6	230	21960	50	125	150	320	260	25	125	10	176	215	230	155
FGC 7	390	37250	60	145	170	350	290	25	140	10	208	240	260	175
FGC 8	515	49180	70	165	200	380	330	25	160	10	230	285	290	200
FGC 9	644	61500	80	200	220	430	340	25	165	10	270	315	332	210
FGC 10	930	88800	100	230	260	490	370	25	180	10	315	370	390	230
FGC 11	1265	120800	110	260	280	545	410	30	200	10	350	380	445	270
FGC 12	1600	152800	150	300	310	590	490	30	240	10	404	420	490	300
FGC 13	2880	275000	160	330	340	680	535	35	260	15	442	480	555	320
FGC 13A	3980	380000	200	340	370	730	575	35	275	25	470	520	595	350
FGC 14	3980	380000	200	370	370	730	575	35	280	15	500	520	610	340
FGC 14A	4765	455000	230	360	400	780	635	35	305	25	510	560	640	375
FGC 15	4765	455000	230	410	400	780	655	35	320	15	540	560	660	385
FGC 16	6800	650000	260	450	460	900	720	45	350	20	630	650	755	425
FGC 16A	8375	800000	300	490	530	1000	815	40	395	25	700	750	855	470
FGC 17	9000	850000	300	520	530	1000	820	45	400	20	720	750	855	490
FGC 17A	10730	1025000	320	540	580	1100	920	40	440	40	750	820	955	525
FGC 18	11800	1120000	320	620	580	1100	920	55	450	20	820	820	950	535
FGC 18A	12700	1200000	400	600	700	1250	1000	55	475	50	840	920	1050	560
FGC 19	15500	1470000	400	710	700	1250	1000	55	485	30	915	920	1050	560

All dimensions are subject to alteration without notice.



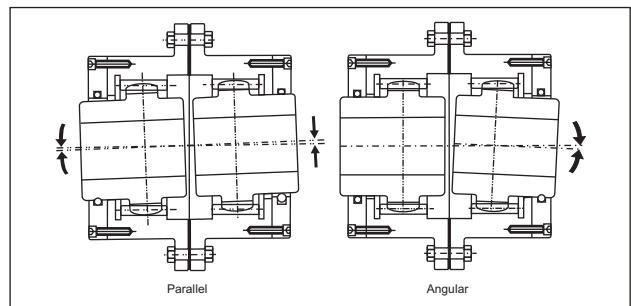
# Fenner Gear Couplings

Coupling No. / Size	Approx. Weight in Kg.		Approx. Gd <sup>2</sup> Value in Kg M <sup>2</sup>		Maximum Speed RPM	Clamping Bolt Size	No. of Bolts	Max. Misalignment Capacity			Amount of Grease / Oil	
	Full Flex	Half Flex	Full Flex	Half Flex				Parallel (mm)	Axial Float (mm)	Angular per Gear Mesh	Kg.	Ltr.
FGC 1	11	10.5	0.14	0.11	6700	M12 X 50	6	0.80	0.5	1.5°	0.25	0.20
FGC 2	16	15	0.21	0.18	6100	M12 X 50	6	0.95			0.50	0.40
FGC 3	26	26	0.45	0.44	5200	M16 X 60	6	1.10			0.80	0.60
FGC 4	41	42	0.98	0.88	4500	M16 X 60	8	1.30			1.00	0.80
FGC 5	63	63	1.90	1.90	3950	M20 X 75	8	1.45			1.80	1.50
FGC 6	86	87	3.05	3.06	3500	M20 X 75	8	1.55	1.0		2.40	2.00
FGC 7	120	120	5.25	5.20	3250	M20 X 75	10	1.80			3.50	3.00
FGC 8	165	170	8.52	8.63	3000	M20 X 75	12	1.90			4.00	4.00
FGC 9	210	220	15.00	15.00	2600	M24 X 80	10	2.25			5.50	5.00
FGC 10	310	320	28.67	29.00	2300	M24 X 80	12	2.60	2.0		8.50	8.00
FGC 11	454	430	52.00	46.18	2100	M24 X 90	12	3.30			12.50	12.00
FGC 12	630	590	88.60	76.57	1900	M24 X 90	14	3.50	3.0		14.00	16.00
FGC 13	887	850	155.00	140.00	1550	M30X110	14	6.65			16.00	20.00
FGC 13A	1050	1050	215.00	203.00	1400	M30X110	16	7.35			18.00	24.00
FGC 14	1097	1050	230.00	203.00	1400	M30X110	16	7.35			18.00	24.00
FGC 14A	1310	1350	300.00	305.00	1350	M30X110	18	8.15			25.00	33.00
FGC 15	1440	1350	352.00	305.00	1350	M30X110	18	8.15			25.00	33.00
FGC 16	2120	2000	670.00	611.20	1150	M36X130	18	8.55			40.00	49.00
FGC 16A	3057	2900	1210.00	1132.00	1050	M36X120	20	9.15			55.00	64.00
FGC 17	3100	2900	1275.00	1132.00	1050	M36X130	20	9.15		55.00	64.00	
FGC 17A	4196	4050	2030.00	1913.00	950	M36X120	20	9.65	60.00	72.00		
FGC 18	4370	4050	2198.00	1913.00	950	M36X150	20	9.65	60.00	72.00		
FGC 18A	5430	5200	3410.00	3179.00	825	M48X165	20	10.25	70.00	80.00		
FGC 19	5590	5200	3588.00	3179.00	825	M48X165	20	10.25	70.00	80.00		

All dimensions are subject to alteration without notice.

## MISALIGNMENT :

The crowning of the teeth allows the coupling to withstand parallel misalignment upto a maximum of 10.25 mm and angular misalignment upto a maximum of 1.5° per gear mesh. The coupling can also absorb axial displacement of the shafts upto a maximum of 3 mm.



**Note:** Custom built Gear Spacer Couplings and Torsion Shaft Gear Couplings are also manufactured & supplied as per requirements. Please contact Fenner with all details.