

# Curved Tooth Flexible Gear Couplings



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.

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.

**Fenner**

**POWERTRAN**

## Curved Tooth Flexible Gear Couplings



### 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 produced in gear shaper ensuring the correct profile. These teeth are also generated by involute system.

The coupling sleeves are joined together with high tensile steel (class 8.8 IS : 1367) fitted bolts 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 above NGC4 to facilitate inspection and replacement of 'O' rings without disturbing the alignment.

## Curved Tooth Flexible Gear Couplings

### 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:

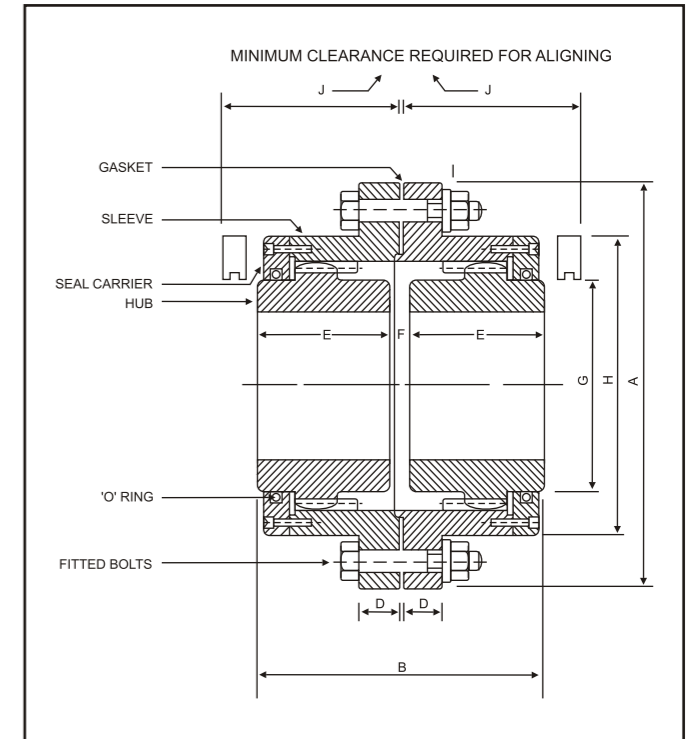
The coupling must be filled with grease or oil. It is recommended to use grease where the maximum temperature is within 80°C and for temperature above 80°C, oil should be used.

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 Oild - Servogem - EP 1 or equivalent.

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



Coupling Size	Power at 100 rev/min in Kw	Maximum Torque in Nm	Bore (mm)		Maximum Speed rev/min	Dimensions (mm)									Approx. Weight in Kg.	Approx. GD <sup>2</sup> Value in Kg M <sup>2</sup>	Clamping Bolt Size	No. of Bolts	Misalignment Capacity (Maximum)			Amount of Grease / Oil	
			Min.	Max		A	B	D	E	F		G	H	J					Parallel (mm)	Axial Float (mm)	Angular per Gear Mesh	Kg.	Ltr.
										Normal	Hubs reversed												
NGC 1	11.5	1100	20	50	6700	170	115	10	55	5	7	70	110	65	9	0.092	M10 x 45	8	0.80	± 0.5°	± 1.5°	0.28	0.16
NGC 2	28.5	2720	30	60	6100	190	145	10	70	5	9	85	135	85	14	0.200	M10 x 45	10	0.95			0.59	0.36
NGC 3	51.5	4920	40	75	5200	220	175	15	85	5	7	105	160	105	24	0.440	M12 x 50	8	1.10			0.91	0.55
NGC 4	96.5	9220	50	90	4500	250	215	15	105	5	9	130	190	125	40	0.980	M12 x 50	10	1.30			1.30	0.78
NGC 5	150	14320	60	110	3950	290	240	20	115	10	12	150	225	140	58	1.950	M12 x 60	12	1.45			2.50	1.50
NGC 6	230	21960	70	125	3500	330	262	20	125	10	14	175	250	155	81	3.470	M16 x 60	10	1.55	± 1.0	± 1.5°	2.96	1.80
NGC 7	390	37250	90	140	3250	350	290	20	140	10	16	200	270	175	102	4.982	M16 x 60	12	1.80			3.50	2.00
NGC 8	515	49180	100	160	3000	380	330	20	160	10	18	230	305	200	145	8.600	M16 x 60	14	1.90			4.50	2.70
NGC 9	644	61500	120	200	2600	430	340	20	165	10	20	250	330	210	175	12.850	M20 x 60	10	2.25	± 2.0	± 1.5°	5.70	3.40
NGC 10	930	88800	140	220	2300	490	370	20	180	10	20	300	390	230	270	26.470	M20 x 60	12	2.60			8.20	5.00
NGC 11	1265	120800	150	260	2100	545	410	25	200	10	30	350	450	270	400	49.950	M20 x 70	14	3.30	± 3.0	± 1.5°	10.00	6.00
NGC 12	1600	152800	170	300	1900	590	490	25	240	10	30	400	490	300	600	88.230	M20 x 70	16	3.50			10.70	6.50
NGC 13	2880	275000	190	320	1550	680	535	35	260	15	35	420	555	325	860	165.640	M24 x 90	12	6.65			10.80	6.80
NGC 14	3980	380000	210	340	1400	730	575	35	275	25	45	470	595	350	1050	232.810	M24 x 90	14	7.35	± 3.0	± 1.5°	12.90	7.80
NGC 15	4765	455000	230	360	1350	760	635	35	305	25	45	510	640	375	1300	320.840	M24 x 90	16	8.15			15.70	9.50
NGC 16	6800	650000	260	450	1150	900	725	40	350	25	45	630	750	425	2120	727.420	M30 x 105	12	8.55			23.00	14.00
NGC 17	8375	800000	300	490	1050	1000	815	40	395	25	45	700	855	470	3040	1315.580	M30 x 105	16	9.15	± 3.0	± 1.5°	31.70	19.20
NGC 18	10730	1025000	320	540	950	1100	920	40	440	40	50	750	955	525	4140	2196.300	M36 x 105	12	9.65			55.30	30.00
NGC 19	12700	1200000	400	600	825	1250	1000	50	475	50	60	840	1050	560	5400	3597.750	M36 x 120	16	10.25	56.00	33.00		

All dimensions are subject to alteration without notice

### MISALIGNMENT :

The crowing of the teeth allows the coupling to withstand parallel misalignment upto a maximum of 10.25 mm and angular misalignment upto a maximum of  $\pm 1.5^\circ$  per gear mesh. The coupling can also absorb axial displacement of the shafts upto a maximum of  $\pm 3$  mm.

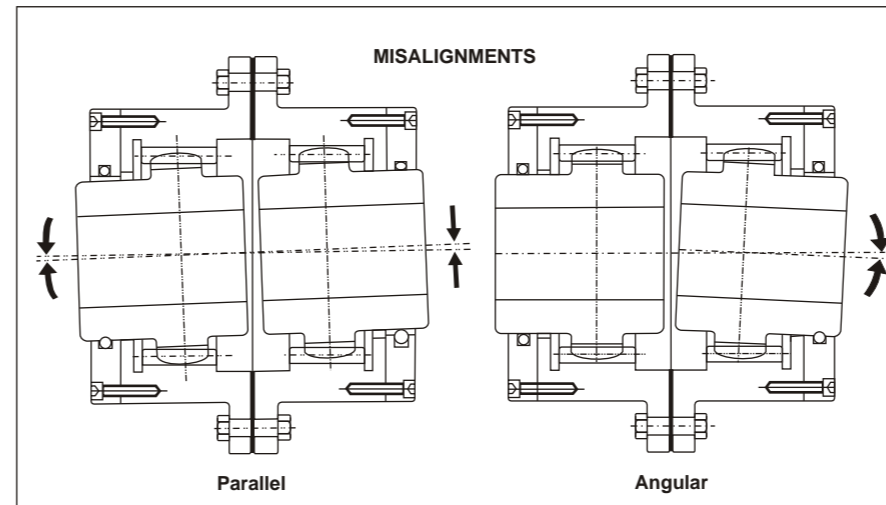
### FOR SELECTION OF THE COUPLINGS, THE FOLLOWING DETAILS ARE REQUIRED :

1. Type of driven machine.
2. Power absorbed by the driven machine and Peak load.
3. Speed and Diameter of the connecting shafts 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 couplings 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 :  $250 \times 180/100 \times 2 = 900$  KW
- d) Power to be transmitted at 100 rev/min :  $900 \times 100 / 730 = 123.3$  KW
- e) Coupling size : By referring to the Table coupling size NGC 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 NGC 5 is selected for the application.



**For custom built Gear Spacer Couplings and Torsion Shaft Gear Couplings which are also manufactured & supplied as per requirements please contact Fenner with all details**



## Fenner (India) Limited (An associate company of the J.K.Organisation)

**Corporate Office:** Khiviraj Complex II, V Floor, 480, Anna Salai, Chennai-600 035 Tel: 24312450 to 58 Fax: 044 -24349016, 24320193, E.mail: ptd\_mhq@fennermail.com Website: www.fennerindia.com

**Registered Office:** 3, Madurai - Melakkal Road, Kochadai, Madurai - 625 016. Tel: 2383801, 2383802 Fax : 0452 -2383822.

### Customer Care Centres at :

**Ahmedabad :** Shreeji House, 3rd Floor, Behind M.J.Library, Ellis Bridge, Ahmedabad - 386 006. Tel: 6578572, 6578590. **Bangalore :** 29/A,First Floor, Kengal Hanumanthaiah Road, Bangalore - 560 027. Tel: 2225223, 2297193 Fax: 080 - 2225223. **Chennai :** 137, Peters Road, Royapettah, Chennai - 600 014, Tel : 8228921, 8267143 Fax : 044 - 8265462. **Guwahati :** G.S.Road, Ulubari, Opp. Ulubari High School, Guwahati - 2781 007. Tel :2455452, 2526573, 2451758 Fax: 0361 - 2459057. **Indore:**24, Sitabagh Colony, DhenuMarket, Indore - 452 001, Tel: 538248. **Jaipur :** 6-A, Acharya Kriplani Marg, Adarsh Nagar, Near Moti Dungari Thana, Jaipur - 302 004, Tel : 607046, Fax : 0141 - 603169. **Kanpur :** 112/371 (A), Swaroop Nagar, Kanpur - 208 002, Tel :2292304, 2294615, Fax: 0512-2290471. **Kochi :** 35/926 C, Baskar Villa, Power House Road, Palarivattom, Kochi - 682 025 Tel : 342715. **Kolkata :** 56-D, Mirza Ghalib Street, Kolkata - 700 016. Tel : 22298784, 22298791 Fax : 033 - 22457341, 22297880. **Ludhiana :** G.T. Road, Miller Ganj, Ludhiana - 141 003. Tel :2530071, 2532167, Fax : 0161 -2532167. **Madurai :** 117/6E, Madurai - Usilampatti Road, Meenakshipuram, Madurai - 625 016. Tel : 2383920 Telefax : 0452 - 2383921. **Mumbai :** 19/21, Manohardas Street, P.B. No.1307, Opp. G.P.Fort, Mumbai - 400 001. Tel : 22695040, 22696329, 22697041, Fax : 022 - 22695199. **New Delhi :** 7th Floor, 'Hansalaya', 15, Barakhamba Road, New Delhi - 110 001. Tel : 23314053, 23312816, 23314428, Fax : 011 -2 3314429. **Secunderabad :** 9-1-87, S.D.Road, P.B. No.46, Secunderabad - 500 003. Tel : 27703042, 27804038, Fax : 040-27703770.