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INDIA

murugappa

Gear Coupling

From the house of TIDC INDIA

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Gear Couplings

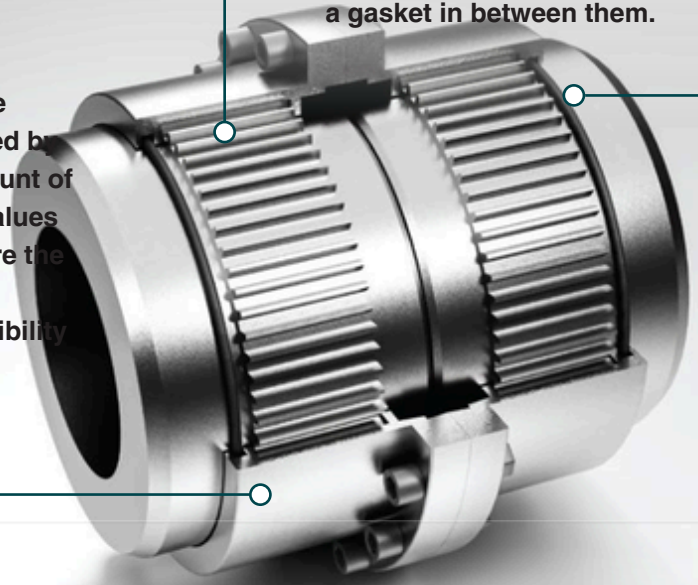
TIDC INDIA Gear Couplings are crowned on the root, tip and face to articulate freely and minimize wear caused by m eliminating tip-loading while reducing backlash and radial clearances it can be easily adapted to a wide variety of ap

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.

HUBS

Theteeth 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.



'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 up to 120°C.

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.

Features of Gear Couplings

- **Compact assembly**
- **High power to weight ratio**
- **Less backlash**
- **Accommodates angular, parallel & axial misalignments**
- **Generally used up to 120°C**
- **Can be used for higher temperatures by using proper grade of oil or grease**

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Seal Carriers

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

Power Ratings

Thenormal 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 TIDC INDIA with full details.

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Lubrication

Thecoupling must be filled with grease or oil. It is recommended to use grease up to the temperature of 80°C,above 80°C temperature oil should be used.

When using grease it is suggested to fill the coupling completely with Lithium based grease with EP additives. 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

01 Type of driven machine.

02 Power absorbed by the driven machine and Peak load.

03 Speed and Diameter of the connecting shafts and space available for accommodating the coupling.

04 Maximum misalignment to be compensated.

05 Surrounding temperature.

06 Any other special feature of the drive system.

Example

Agearcoupling 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.

Service factor	2 (for heavy duty application)
Peak load	180% of full load
Design power	250 x 180/100 x 2 = 900 KW
Power to be transmitted at 100 rev/min	900 x 100 / 730 = 123.3 KW
Coupling size	By referring to the Table, coupling size TDTGC5, has got a rating of 150 kW at 100 rev/min which exceeds the required power of 123.3 kW. The bore range is 60 mm to 110 mm. Hence, size TDTGC5 is selected for the application

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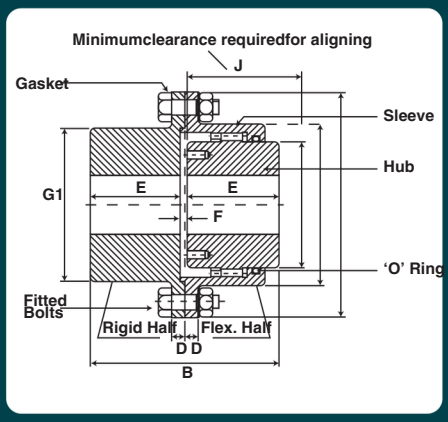
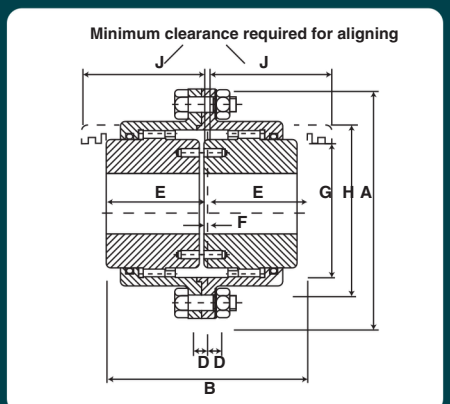
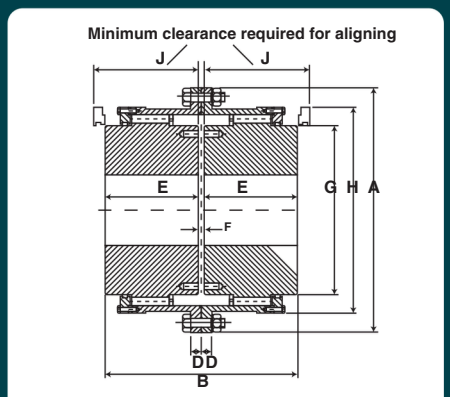
Gear Couplings



Half Flexible Couplings



Couplings: Size TDTGC 1 to TDTGC 10



Couplings: Size TDTGC 11 to TDTGC 19

TABLE 1

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	G1	H	J
TDTGC 1	11.5	1100	14	55	60	171	115	17	55	5	78	90	110	65
TDTGC 2	28.5	2720	20	60	75	186	145	17	70	5	85	110	125	85
TDTGC 3	51.5	4920	30	75	90	221	175	20	85	5	107	130	150	105
TDTGC 4	96.5	9220	40	100	110	251	215	20	105	5	138	160	178	125
TDTGC 5	150.0	14320	46	120	130	291	240	25	115	10	166	180	204	140
TDTGC 6	230.0	21960	50	125	150	321	260	25	125	10	176	215	230	155
TDTGC 7	390.0	37250	60	145	170	351	290	25	140	10	208	240	260	175
TDTGC 8	515.0	49180	70	165	200	381	330	25	160	10	230	285	290	200
TDTGC 9	644.0	61500	80	200	220	431	340	25	165	10	270	315	332	210
TDTGC 10	930.0	88800	100	230	260	491	370	25	180	10	315	370	390	230
TDTGC 11	1265.0	120800	110	260	280	546	410	30	200	10	350	380	445	270
TDTGC 12	1600.0	152800	150	300	310	591	490	30	240	10	404	420	490	300
TDTGC 13	2880.0	275000	160	330	340	681	535	35	260	15	442	480	555	320
TDTGC 13A	3980.0	380000	200	340	370	731	575	35	275	25	470	520	595	350
TDTGC 14	3980.0	380000	200	370	370	731	575	35	280	15	500	520	610	340
TDTGC 14A	4765.0	455000	230	360	400	781	635	35	305	25	510	560	640	375
TDTGC 15	4765.0	455000	230	410	400	781	655	35	320	15	540	560	660	385
TDTGC 16	6800.0	650000	260	450	460	901	720	45	350	20	630	650	755	425
TDTGC 16A	8375.0	800000	300	490	530	1001	815	40	395	25	700	750	855	470
TDTGC 17	9000.0	850000	300	520	530	1001	820	45	400	20	720	750	855	490
TDTGC 17A	10730.0	1025000	320	540	580	1101	920	40	440	40	750	820	955	525
TDTGC 18	11800.0	1120000	320	620	580	1101	920	55	450	20	820	820	950	535
TDTGC 18A	12700.0	1200000	400	600	700	1251	1000	55	475	50	840	920	1050	560
TDTGC 19	15500.0	1470000	400	710	700	1251	1000	55	485	30	915	920	1050	560

All dimensions are subject to alteration without notice.

TABLE 2

Coupling No / Size	Approx. Weight in Kg.		Approx. Gd² Value in Kg M²		Maximum Speed RPM	Calamping 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.
TDTGC 1	11	10.5	0.1	0.1	6700	M12 X 50	6	0.8	0.5	1.5°	0.2	0.2
TDTGC 2	16	15.0	0.2	0.2	6100	M12 X 50	6	0.9			0.5	0.4
TDTGC 3	26	26.0	0.4	0.4	5200	M16 X 60	6	1.1			0.8	0.6
TDTGC 4	41	42.0	1.0	0.9	4500	M16 X 60	8	1.3			1.0	0.8
TDTGC 5	63	63.0	1.9	1.9	3950	M20 X 75	8	1.4			1.8	1.5
TDTGC 6	86	87.0	3.0	3.1	3500	M20 X 75	8	1.5	1.0		2.4	2.0
TDTGC 7	120	120.0	5.2	5.2	3250	M20 X 75	10	1.8			3.5	3.0
TDTGC 8	165	170.0	8.5	8.6	3000	M20 X 75	12	1.9			4.0	4.0
TDTGC 9	210	220.0	15.0	15.0	2600	M24 X 80	10	2.2			5.5	5.0
TDTGC 10	310	320.0	28.7	29.0	2300	M24 X 80	12	2.6			8.5	8.0
TDTGC 11	454	430.0	52.0	46.2	2100	M24 X 90	12	3.3	2.0		12.5	12.0
TDTGC 12	630	590.0	88.6	76.6	1900	M24 X 90	14	3.5			14.0	16.0
TDTGC 13	887	850.0	155.0	140.0	1550	M30 X 110	14	6.6			16.0	20.0
TDTGC 13A	1050	1050.0	215.0	203.0	1400	M30 X 110	16	7.3	3.0		18.0	24.0
TDTGC 14	1097	1050.0	230.0	203.0	1400	M30 X 110	16	7.3			18.0	24.0
TDTGC 14A	1310	1350.0	300.0	305.0	1350	M30 X 110	18	8.1			25.0	33.0
TDTGC 15	1440	1350.0	352.0	305.0	1350	M30 X 110	18	8.1			25.0	33.0
TDTGC 16	2120	2000.0	670.0	611.2	1150	M36 X 130	18	8.5			40.0	49.0
TDTGC 16A	3057	2900.0	1210.0	1132.0	1050	M36 X 120	20	9.1			55.0	64.0
TDTGC 17	3100	2900.0	1275.0	1132.0	1050	M36 X 130	20	9.1			55.0	64.0
TDTGC 17A	4196	4050.0	2030.0	1913.0	950	M36 X 120	20	9.6			60.0	72.0
TDTGC 18	4370	4050.0	2198.0	1913.0	950	M36 X 150	20	9.6			60.0	72.0
TDTGC 18A	5430	5200.0	3410.0	3179.0	825	M48 X 165	20	10.2			70.0	80.0
TDTGC 19	5590	5200.0	3588.0	3179.0	825	M48 X 165	20	10.2			70.0	80.0
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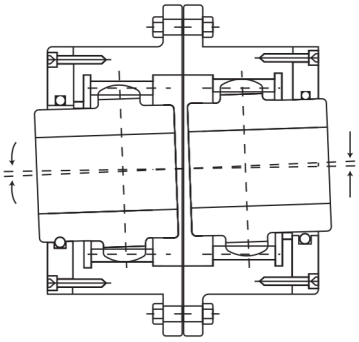
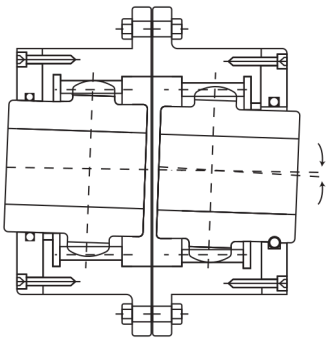
Misalignment

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.



Parallel



Angular

Note:
Custom built Gear Spacer Couplings and Torsion Shaft Gear Couplings are also manufactured & supplied as per customer requirements.

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