

**MODERN ENGINEERING WORKS**

AN ISO 9001 - 2008 Certified Organization



# GEAR COUPLING



## Flexible Full Gear Coupling



Full Gear Curved Couplings are suitable for any conceivable mechanical power transmission drives in all industries, large/medium/ small. It is compact and tighter and thus suitable for installation where space is a constraint.

Full Gear Couplings mainly comprises two Hubs with external machine-cut teeth of specially designed configuration, two flanged sleeves with internal teeth to match the two Hubs and a set of machine finished fasteners to both the two Flanged Sleeves when in installed position. Specially designed sealing arrangement is provided to prevent leakage of grease and ingress of outside dirt / water.

Full Gear Couplings have its components manufactured out of properly treated steels of quality which are best suited for all industrial mechanical power-transmission systems. Teeth profile are of specially designed configuration to provide ample mechanical flexibility and compensation of parallel, angular and axial misalignment of the corrected shafts.

### Selection :-

Select the Full Gear Coupling of size that will accommodate the diameter of the larger shaft of a drive.

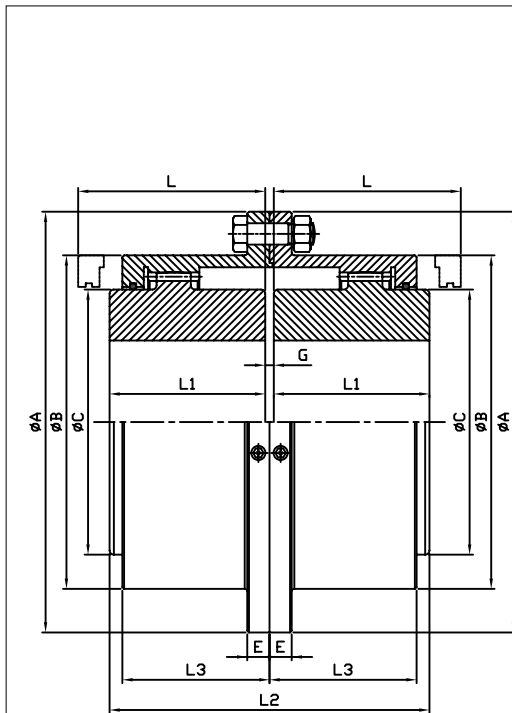
To ensure above coupling so selected has the required rating capacity :

- Check the Service Factor applicable to the drive from the service Factor Chart.
- Find out the Rating HP/100 RPM of the drive as per the following formula :

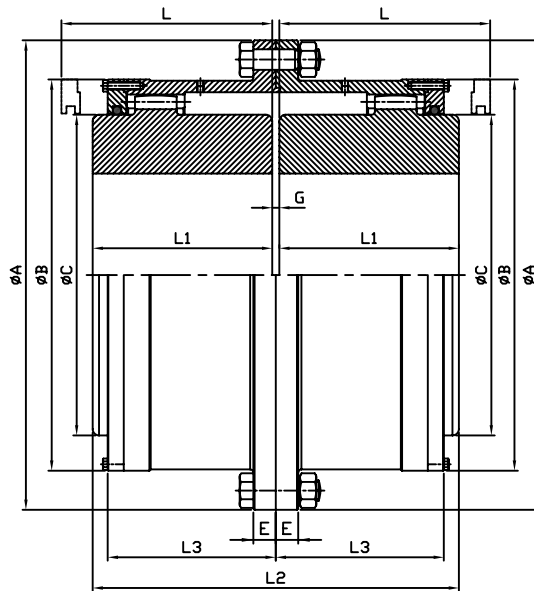
$$\frac{\text{HP} \times \text{Service Factor} \times 100}{\text{RPM}} = \text{HP}/100 \text{ RPM}$$

### Full Gear Coupling are available in following execution :

- Full Geared Flexible Type
- Half Geared Flexible Type
- Mill Motor Type
- Spacer Type
- Floating Shaft Type
- Break Drum Type
- Vertical Type



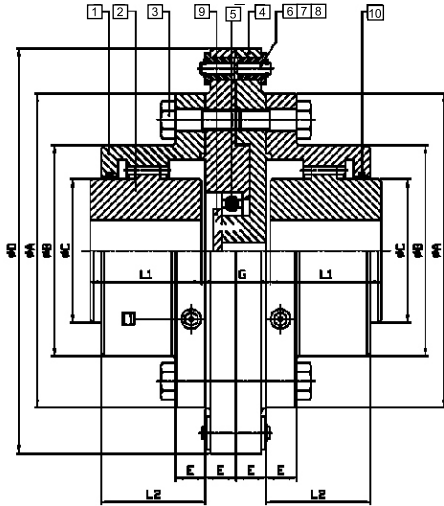
Model : MGC 00 to MGC 100



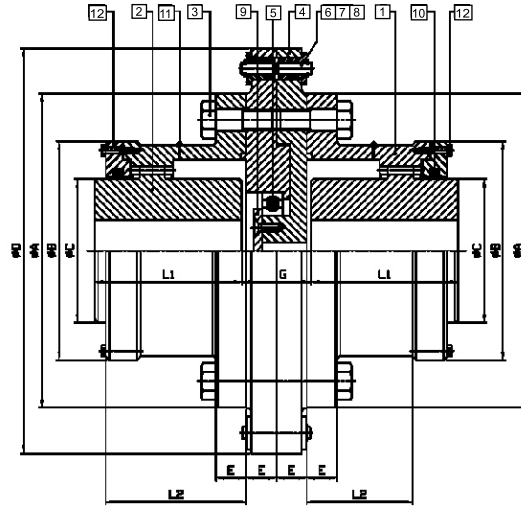
Model : MGC 110 to MGC 190

## Full Geared Coupling

Coupling Size	HP/100 RPM Rating	Max Torque Kg M	Max Speed RPM	Bore		Approx Wt Kg	GD <sup>2</sup> Kg M <sup>2</sup>	Dimensions (mm)								
				Pilot	Max			A	B	C	E	G	L	L1	L2	L3
MGC 00	7	50	8000	10	35	4.2	0.03	122	76	50	16	3	50	45	93	40
MGC 10	15	107	6350	15	50	11	0.140	174	111	65	19	5	60	56	117	50
MGC 20	34	243	5100	20	60	16	0.206	188	126	85	19	5	85	66	137	62
MGC 30	63	451	4050	30	75	27	0.484	224	151	105	22	5	110	87	179	80
MGC 40	120	859	3300	35	90	41	0.943	253	176	130	22	5	130	106	217	97
MGC 50	182	1303	2850	40	110	62	1.902	294	201	155	27	10	140	112	234	106
MGC 60	279	1998	2575	45	125	86	3.055	320	231	175	27	10	160	126	262	118
MGC 70	484	3465	2160	50	140	122	5.254	354	261	205	27	10	180	142	294	135
MGC 80	628	4496	1980	60	160	181	8.523	384	291	230	27	10	192	156	322	147
MGC 90	786	5628	1725	70	180	212	15.054	435	331	250	27	10	210	166	342	157
MGC 100	1150	8234	1450	100	220	292	30.506	494	391	310	27	10	220	182	374	172
MGC 110	1540	11026	1250	110	260	553	56.825	548	446	350	31	10	250	202	414	190
MGC 120	2052	14692	1130	120	300	712	88.604	594	491	400	31	10	290	241	492	227
MGC 130	2793	19998	980	140	330	982	138.802	683	556	440	36	10	320	263	536	240
MGC 140	3992	28583	890	200	370	1323	291.308	734	611	500	36	10	340	280	570	262
MGC 150	4854	34754	800	250	410	1703	353.108	784	661	540	36	15	385	321	657	302
MGC 160	8380	60000	730	275	455	2551	690.706	904	756	625	46	20	425	352	724	333
MGC 170	11916	85318	640	325	520	3622	1235.307	1005	856	720	46	20	490	403	826	385
MGC 180	15781	112992	580	350	610	4862	1965.710	1104	951	810	56	20	535	452	924	428
MGC 190	20840	148956	510	400	710	6383	3012.308	1254	1051	910	56	30	560	486	1002	456



Model : MGSP 00 to MGSP 100



Model : MGSP 110 to MGSP 150

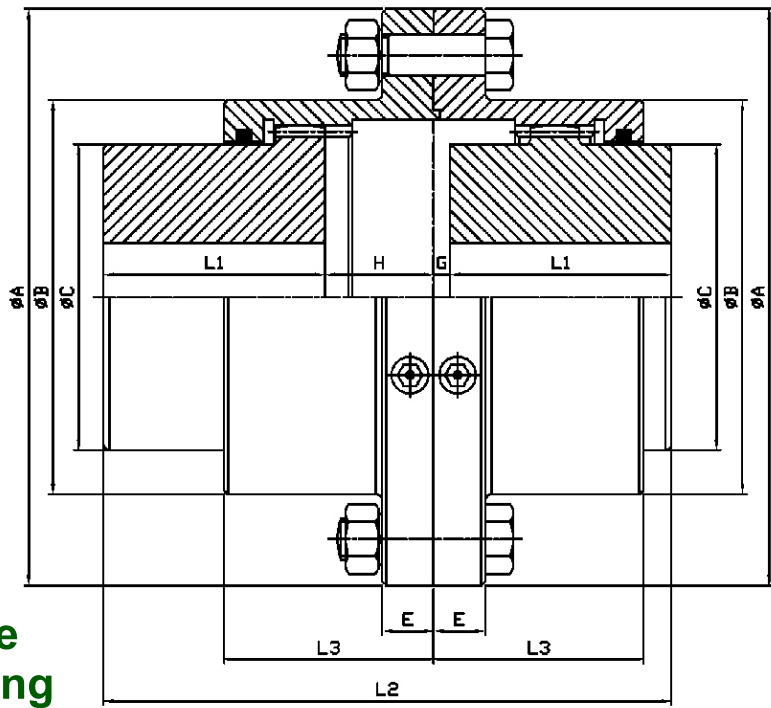
## Shear Pin Type Geared Coupling

Coupling No.	HP/100 RPM Rating	Max Torque Kg M	Max Speed RPM	Shear Torque Kg M	Bore		Dimensions (mm)							
					Pilot	Max	A	B	C	D	E	G	L1	L2
MGSP 00	7	50	8000	37	10	35	122	76	50	220	16	33	45	40
MGSP 10	15	107	6350	80	15	50	174	111	65	272	19	41	56	50
MGSP 20	34	243	5100	182	20	60	188	126	85	285	19	41	66	62
MGSP 30	63	451	4050	338	30	75	224	151	105	320	22	47	87	80
MGSP 40	120	859	3300	644	35	90	253	176	130	350	22	47	106	97
MGSP 50	182	1303	2850	977	40	110	294	201	155	390	27	62	112	106
MGSP 60	279	1998	2575	1498	45	125	320	231	175	420	27	62	126	118
MGSP 70	484	3465	2160	2599	50	140	354	261	205	480	27	62	142	135
MGSP 80	628	4496	1980	3372	60	160	384	291	230	510	27	62	156	147
MGSP 90	786	5628	1725	4221	70	180	435	331	250	565	27	62	166	157
MGSP 100	1150	8234	1450	6175	100	220	494	391	310	620	27	62	182	172
MGSP 110	1540	11026	1250	8270	110	260	548	446	350	680	31	70	202	190
MGSP 120	2052	14692	1130	11019	120	300	594	491	400	725	31	70	241	227
MGSP 130	2793	19998	980	14998	140	330	683	556	440	815	36	80	263	240
MGSP 140	3992	28583	890	21437	200	370	734	611	500	860	36	80	280	262
MGSP 150	4854	34754	800	26065	250	410	784	661	540	910	36	80	321	302

SI No.	Description	Malt	Qty	SI No.	Description	Malt	Qty
1	Geared Sleeve	CS IS:2707 Gr-1	2	7	Circlip	Bought Out	-
2	Geared Hub	C 45 IS:1570	2	8	Bearing End Cover	MS IS:2062	1
3	Fastners	IS:1367 Gr-8.8	Lot	9	"O" Ring	SYN Rubber	2
4	Shear Pin Plate	MS IS:2062	2	10	Grease Nipple	Bought Out	2
5	Ball Bearing	Bought Out	1	11	End Cover	MS IS:2062	2
6	Shear Pin	C45 IS:1570	-	12	Hex Bolt	Bought Out	Lot
7	Shear Pin Bush	C45 IS:1570	-	13			



Model : MMG 00 to 100



## Mill Motor Type Geared Coupling

Coupling No.	HP/100 RPM Rating	Max Torque Kg M	Max Speed RPM	GD <sup>2</sup> Kg M <sup>2</sup>	Bore		Dimensions (mm)								
					Pilot	Max	A	B	C	L1	L2	L3	E	G	H
MMG 00	7	50	8000	0.03	10	35	122	76	50	45	101.5	40	16	1.5	10
MMG 10	15	107	6350	0.140	15	50	174	111	65	56	129.5	50	19	2.5	15
MMG 20	34	243	5100	0.206	20	60	188	126	85	66	159.5	62	19	2.5	25
MMG 30	63	451	4050	0.484	30	75	224	151	105	87	211.5	80	22	2.5	35
MMG 40	120	859	3300	0.943	35	90	253	176	130	106	259.5	97	22	2.5	45
MMG 50	182	1303	2850	1.902	40	110	294	201	155	112	284.0	106	27	5	55
MMG 60	279	1998	2575	3.055	45	125	320	231	175	126	317.0	118	27	5	60
MMG 70	484	3465	2160	5.254	50	140	354	261	205	142	359.0	135	27	5	70
MMG 80	628	4496	1980	8.523	60	160	384	291	230	156	397.0	147	27	5	80
MMG 90	786	5628	1725	15.054	70	180	435	331	250	166	422.0	157	27	5	85
MMG 100	1150	8234	1450	30.506	100	220	494	391	310	182	464.0	172	27	5	90





## Information Required for Coupling Selection

HP & RPM to be transmitted.  
 Torque at transmitted RPM, both normal & maximum.  
 Types of driving and driven machines.  
 Normal diameters & length of shaft extension of both driving & driven machines.  
 Usable shaft length, i.e. length of keys on both shafts.  
 Dimensional detail of finished bores & keyways, if required.  
 Installation management-horizontal & vertical.  
 Any other details as may be relevant to the selection of couplings.

## Additional Information Required

### Mill Motor

Counter Bore dimensions.  
 Spacer  
 Distance between ends of two shaft to be connected in installed position.

### Limited End Float

Amount of thrust on either or both shafts.  
 Amount of end float required

### Other Type

Detailed required will be furnished on receipt of specific requests.

### Lubrication

Indian Oil "Servogem 2", or any equivalent grease is recommended for use under normal working conditions.

## Service Factor

### Typical Service Factors Electric Motor Driven

The Correct service factor to be applied to your application should be selected from experience with your equipment. The following chart may be used as a guide.

<b>AGITATORS</b>		<b>DREDGES</b>		<b>MIXERS</b>	
Pure Liquid	1.0	Conveyors	2.0	Concrete Mixer, Continuous	1.5
Liquid-Variable Density	1.0	Cutter Head Drives	2.0	Concrete Mixer, Intermittent	1.5
<b>BLOWERS</b>		Maneuvering Winches	2.0	<b>OIL INDUSTRY</b>	
Centrifugal	1.0	Pumps	2.0	Oil Well Pumping	2.0
Lobe	1.2	<b>ELEVATORS</b>		Rotary Kilns	2.0
Can Filling Machines	1.0	Bucket	2.0	<b>PUMPS</b>	
Car Dampers	2.0	<b>FANS</b>		Centrifugal Reciprocating	1.0
Car Pullers, Intermittent Duty	1.5	Centrifugal	1.0	Single Action 3 or more Cyl	1.5
<b>COMPRESSORS</b>		Cooling Towers Forcd Draft	1.5	Double Action 2 or more Cyl	2.0
Centrifugal	1.0	<b>FEEDERS</b>		Rotary, Gear Type, Lube Vane	1.5
Reciprocating	2.2	Screw	1.5	<b>PAPER MILLS</b>	
Multy-Cylinder	2.0	Generators, not welding	1.0	Agitators, Mixers	1.5
Single-Cylinder	2.0	Welding	1.0	Barker, Mechanical	2.0
<b>CONVEYORS UNIFORMLY LOADED OR FED</b>		Hammer Mills	2.0	Braking Drum spur Gear Only	2.0
Assembly	1.2	Laundry Washers Reversing	1.5	Beater & Pulper	2.0
Belt	1.2	<b>LAUNDRY INDUSTRY</b>		Calenders	1.5
Screw	1.2	Barkers, Hydraulic Mechanical	2.0	Calenders, Super	1.5
<b>CONVEYORS HEAVY DUTY NOT UNIFORMLY FED</b>		Edger Feed	2.0	Converting Machines, Except	
Assembly	1.5	Live Rolls	2.0	Cutter, Platters	1.5
Belt	1.5	<b>MACHINE TOOLS</b>		Conveyors	1.5
Oven	1.5	Bending Roll	2.0	Dryers	1.5
Reciprocating	2.0	Punch Press	2.0	Jordans	2.0
Screw	1.5	Tapping Machines	2.0	Log Haul	2.0
Shaker	1.5	Main Drives	1.5	Presses	1.5
<b>CRANES &amp; HOIST</b>		Auxilliary Drives	1.5	Reel	1.5
Main Hoists	2.0	<b>METAL MILLS</b>		Winders	1.5
Reversing Hoists	2.0	Draw Bench, Carriage	2.0	<b>RUBBER INDUSTRY</b>	
Skip Hoists	2.0	Draw Bench, Main Drive	2.0	Mixing	2.0
Trolley Drive	2.0	Slitters	2.0	Rubber Calender	2.0
Bridge Drive	2.0	Non Reversing	2.0	<b>SCREENS</b>	
<b>CRUSHER</b>		Wire Drawing & Flattering Machine	2.0	Rotary Coal or Sand	1.5
Ores	3.0	Wire Winding Machine	2.0	Steering Gear	1.0
Stone	3.0	<b>MILLS, ROTARY TYPE</b>		Stockers	1.0
		Ball	2.5	<b>TEXTILE INDUSTRY</b>	
		Cement Kilns	2.5	Dryers	1.5
		Dryers & Coolers	2.5	Dyeing Machinery	1.5
		Kilns	2.5	<b>WINDLASS</b>	2.0



# MANUAL FOR INSTALLATION, COMMISSIONING MAINTENANCE OF FULL GEAR COUPLING

## 1.0 Installing Aligning the coupled equipment :

(a) Given that foundations of coupled equipment are good enough, mount the equipment on to foundation and 'mildly' tighten the foundation bolts. Ensure that the axial gap between faces of driving and driven shafts is as prescribed in the catalogue / drawing within a variation of  $\pm 10\%$  by suitably manipulating the coupled equipment axially and in horizontal / vertical planes, and checking by inserting a flat gauge of thickness same as specified gap, in - between the hub faces at four quarterly points along hub boss circumference.

(b) Check the co - axiality between the axes of coupled shafts by placing a straight edge commonly above the hub bosses and suitably manipulating the levels and angularities of hubs such that a feeler gauge of thickness of about 0.1% of larger of the coupled shaft dia's refuse to enter in-between hub boss and the gauge. Repeat the process at four quarterly points along periphery of hub boss.

## 2.0 Lubrication :

(a) The couplings are recommended to be grease lubricate.

(b) Manually rotate the coupling such that its four lube plugs are at  $45^\circ$  on both sides of vertical, in top and bottom half of coupling. Remove all the four lube plugs, fill grease through any of the lube holes in upper half of the coupling till the excess grease flows out from the two lube holes in bottom half of the coupling. Tighten the four lube plugs and ensure against grease leakages from flanges joints and 'O' ring seal locations.

## 3.0 Installing and aligning the coupled equipment :

(a) Once in three months, top-up grease inside the coupling, in same manner as was initially done.

(b) Once in a year replace the 'O' ring seals and gasket after withdrawing the coupling from the shafts. Use MEW spare 'O' rings for the purpose. Handle the load bolts carefully and avoid dents on ground body and threading. Do not substitute bolts procured from market.

(c) Ample size tapped holes of sufficient depth may be provided if required on hub face to enable extraction of hub from shaft. The hub is advised to be extracted from the shaft by employing a screw type puller and extraction screws with thread length more than tapped hole depth. Hub may also be extracted out using a horizontal type hydraulic press, in which case, the pulling force must be supplied on hub face (and not on hub tooth face). Attempting to heat the hub for expansion of bore is prohibited as the same is bound to temper down hardness on teeth flanks, besides simultaneously heating up and expanding the shaft.

(d) Users are advised to replace the entire coupling when desired. Replacing only certain parts of a coupling should be avoided as the same result in the new parts being damaged by worn out parts retained from old coupling.





## **OUR OTHER PRODUCT**



**SHEET METAL PRODUCT**



**WHEEL & AXLES**



**GEAR BOX**



**HOPPER**



**HEAT EXCHANGER**



**PRESSURE VESSEL**

## OUR OTHER PRODUCT



CONVEYOR PULLEY WITH RING FEEDER



SHAFT



ROPE DRUM



NUT & BOLT



IMPELLER CASING



IMPELLER

**OUR OTHER PRODUCT  
FOR MATERIAL HANDLING EQUIPMENT  
CONVEYOR PULLEY & IDLER**



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