

Flexible Fabric Couplings



The original “Hardy Type Disc”



Drive couplings for use in -

- Vintage and Classic Cars
- Buses
- Lorries
- Boats
- Industrial Drives
- Generators and Pumps
- Mining Machinery



GMS Flexible Fabric Drive Couplings

Using the original jigs and moulds purchased from Hardy Spicer, we custom make fabric and rubber flexible drive couplings, ranging in size from 50mm diameter up to 500mm. These parts are still widely used when a special coupling is required and the volumes required do not warrant expensive tooling. We offer these couplings as single units, or as in all our moulding operations they are also available in volume.

Technical information.

The discs are normally intended to cater for a continuous running angle of up to 2° and the torque rating is calculated from an average stress in the fabric of 560 lbs per square inch (3.86 Newtons per mm) for most applications.

Couplings are generally supplied with triangular or rectangular plates riveted through the vulcanised fabric. If necessary the holes may be supplied bushed. Some discs used on light applications may not need to have plates fitted. Running angles of over 2° impose limitations on the thickness to diameter ratio and type of support plates used.

Although we supply some standard sizes many couplings are custom made to individual customer specifications. The information that we require to enable us to manufacture these accurately include:- internal and external diameters (ID & OD), thickness, PCD and bolt size (please see back page for more information). Our enquiry form can be downloaded from our website or please feel free to contact us for further information or assistance.

Gradient	GMS Part No.s	Maximum RPM	O/D (mm)	I/D (mm)	PCD (mm)	Bolt Nominal Size ins	Thickness (mm)	Mean Operating Torque (Nm)	Max momentary torque (Nm)
V	65/005744	2500	131	48	98	M12	16	140	280
	20						215	430	
	65/005746					7/16"	25.4	280	560
W	65/005747	1800	177	65	133	M14	16	355	710
	20						495	990	
	65/005749					8/16"	25.4	710	1420
X	65/005750	1500	222	81	165	M20	20	850	1700
	33						1130	2260	
	65/005752					3/4"	40	1425	2850
Y	65/005753	1200	270	98	204	M22	38	1780	3560
	42						2145	4290	
	65/005755					7/8"	52	2490	4980
Z	65/005756	1000	320	117	240	M24	43	2845	5690
	50						3560	7120	
	65/005758					1"	60	4270	8540

The first step in establishing the disc size required for a given application is to decide:-

- A) The actual torques to be transmitted
- B) The speed at which these torques are transmitted
- C) The type of duty
- D) The type of motive unit, i.e. Electric motor, petrol engine/ Diesel engine

The output continuous torque figure should be multiplied by the factor for the type of duty and motive unit. This resultant figure should then be plotted against the graph below. In cases where the plotted point falls between the two lines, the larger disc should be used.

Loading factors:-

Power source factor: f_n

Electric motor	$f_{n1} = 1$
Petrol engine	$f_{n2} = 1.15$
Diesel engine	$f_{n3} = 1.35$

Disc capacity $T(Nm)$

$T_n \times f_n \times f_s$

T_1 = Engine output torque
 f_n = Power source factor
 f_s = Start ups factor

Start ups/Hr factor: f_s

Up to 30	$f_{s1} = 1$
Up to 60	$f_{s2} = 1.2$
Up to 120	$f_{s3} = 1.5$

T_1 can be calculated from the following formula:-

$$T_1 = \frac{9545 \times P \text{ (KW)}}{n \text{ (RPM)}}$$

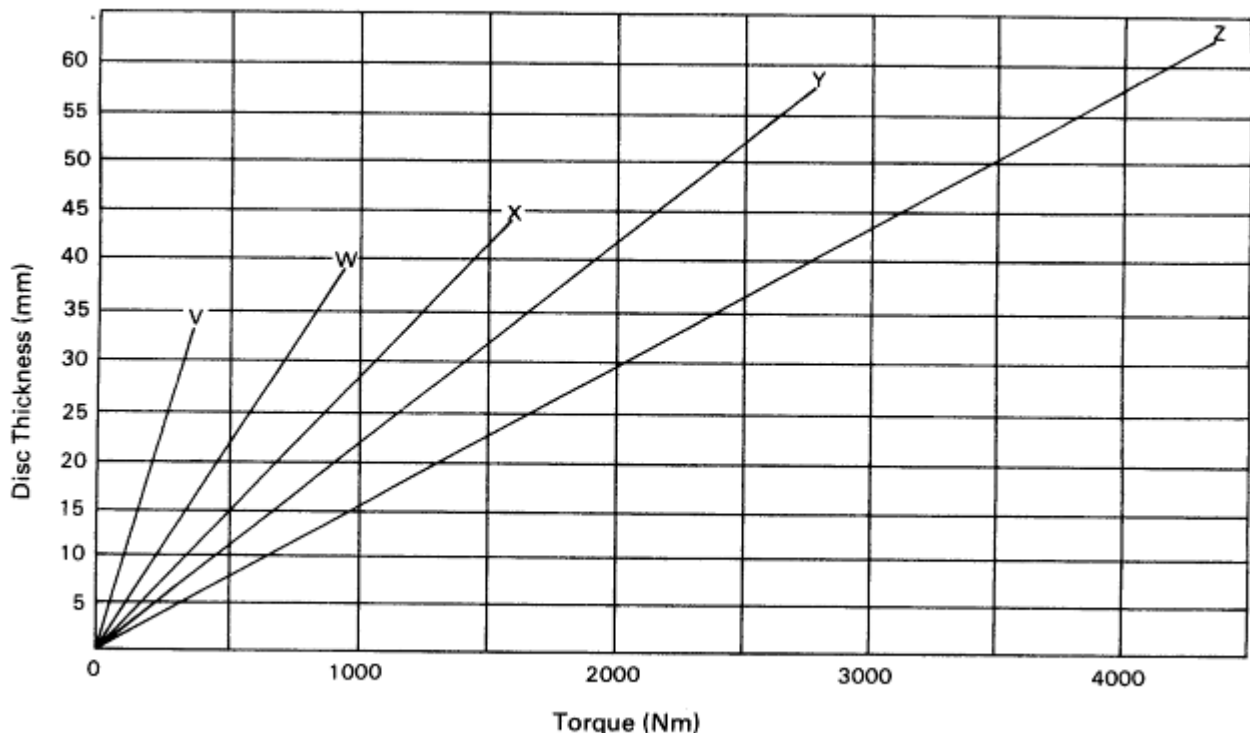
T_1 = Torque (Nm)

P = Power (Kw)

n = RPM

$$\text{Alternative} = \frac{7026 \times P \text{ (HP)}}{n \text{ (RPM)}}$$

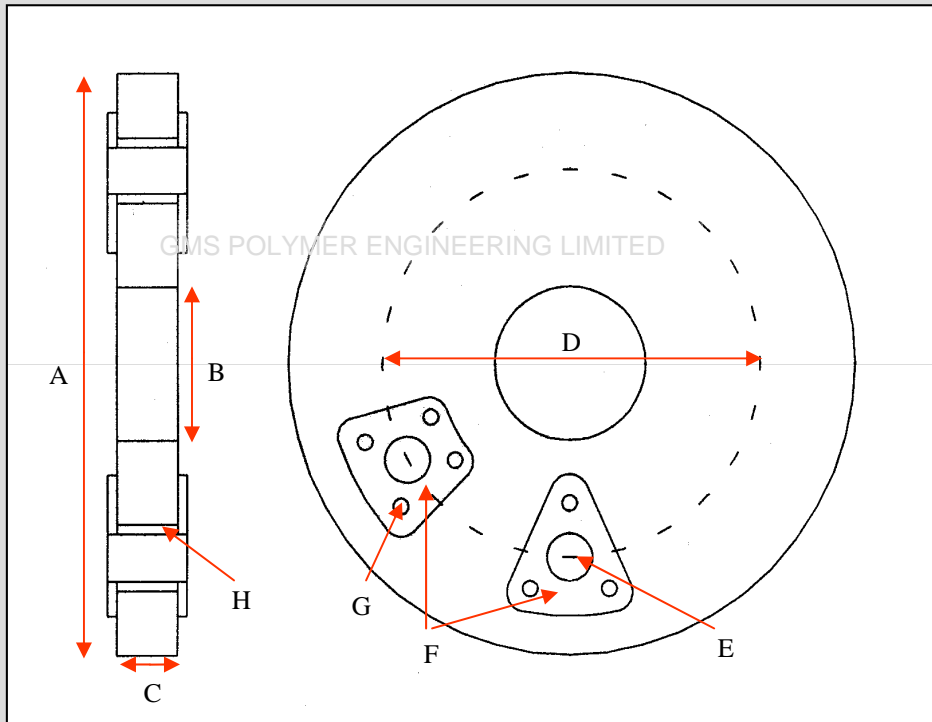
The graph gives some indication between mean torque and disc thickness for the five standard diameter discs indicated.



Note:-Two discs close coupled are used when thicknesses of over 50 mm are necessary.

GMS

Polymer Engineering Ltd



A	OUTSIDE DIAMETER
B	INSIDE DIAMETER
C	FABRIC THICKNESS
D	PITCH CIRCLE DIAMETER
E	BOLT HOLE DIAMETER
F	PLATES
G	RIVETS
H	BUSH (OPTIONAL)



GMS Polymer Engineering Ltd

175 Booth Street
Handsworth
Birmingham
B21 0NU

Phone: +44 (0)121 551 5440

Fax: +44 (0)121 554 5344

E-mail: enquiries@gmspolymer.co.uk