

Cross & Morse Torque Limiters



Cross & Morse Torque Limiters are low cost protection devices that limit torque in a drive system by slipping when a preset value is exceeded, in order to:-

***Prevent machine and drive damage.
Eliminate costly machine downtime.***

The Torque Limiter is a protective device that limits torque transmitted in a drive system by slipping when a preset value is exceeded as a result of shock load, overload or machine jam. It automatically re-engages, when the overload is removed, no setting being required, Torque is transmitted by spring loaded friction faces, the value being preset by adjustment of the spring force by simple setting of the adjustment nuts and bolts. The Torque Limiter is suitable to use with sprockets, gears, pulleys or a flange plate as the centre member clamped between the friction facings. The Torque Limiter is not a new product with Cross & Morse. In 1949 Morse introduced the first spring loaded, friction type protective device which was developed to today's line of products consisting of 7 sizes, the models 200M to 700M being the most popular units. To further extend the capabilities of our products a new metric series of clutches, consisting of 6 sizes from M30 to M280 has been added, to cater for higher torque applications, and areas where space is limited. As originator of the Torque Limiter, Morse gained vast experience in the design and application of these units as trouble free and long lasting protective devices. Many thousand units have been fitted to conveyors, mechanical handling equipment and agricultural machines.

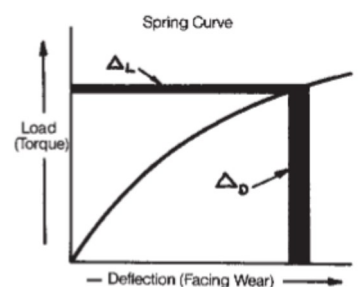
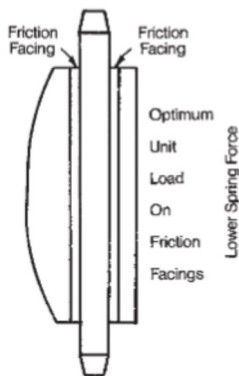


Morse Torque Limiters incorporate design features for long life and reliability.

Correct Spring Selection and Ratings

Torque Limiter capacities are directly proportional to the spring force applied to the friction surfaces and it is a simple matter to increase capacity by increasing spring force - but not without a sacrifice. The higher the unit load or pressure (psi) on the friction surfaces, the quicker the friction facings will deteriorate as they slip against the pressure plates and centre member. Morse ratings are realistic and are consistent with optimum spring loads and face pressures that permit longer slip time, maintain re-engagement at pre-set torque, and provide long-lasting protection.

The spring is designed so that its force varies little over a wide deflection range at the rated capacity of the torque limiter. This assures load re-engagement near the pre-set torque level as the friction facing wears. It is characteristic of a disc spring that it is more unstable and erratic in the lower end of its load vs. deflection curve; Morse therefore established minimum torque ratings consistent with spring characteristics.



Cross & Morse Torque Limiters offer you the following Benefits:

- ***Simple Design***
- ***Minimum Maintenance***
- ***Economical***
- ***Durable***
- ***Easy Adjustment***
- ***Corrosion Resistant***
- ***Compact***
- ***Low Cost***
- ***Wide Torque Range***
- ***Infinite Torque Adjustment Settings***
- ***Dependable***

Conclusion

The incorporation of an inexpensive Cross & Morse Torque Limiter improves machine design, safeguards production, and minimises the downtime so ensuring increased productivity and profits.

Tel: + 44 121 360 0155

Fax: + 44 121 325 1079

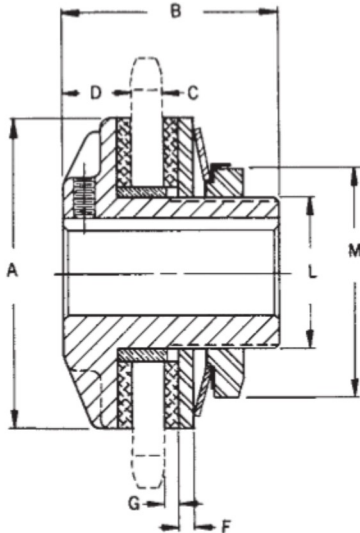
Email: sales@crossmorse.com

Standard Torque Limiters

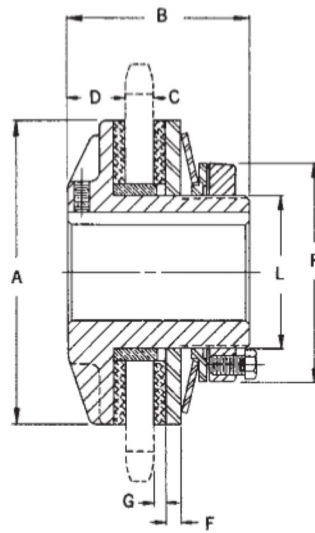


Original Morse Series Torque Limiters

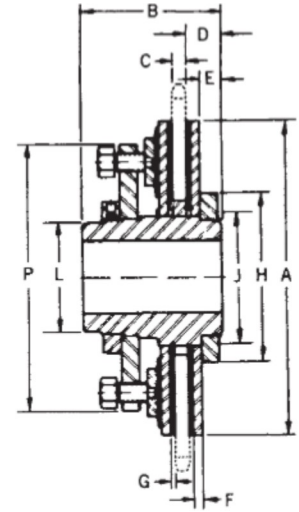
Developed from the original Torque Limiters produced in 1949, these well proven units are based on Imperial dimensions. Imitated by many over the years these units provide the ideal low cost solution to overload protection for torques between 3 & 1500 Nm. For Torque Limiter selection refer to page 6.



Models 200M, 250M & 350M



Models 500M & 700M



Models 13 & 20

Dimensions

*Model	Torque min	Torque max	Stock min plain bore	Stock Finish bores	Max Bore with Std Keyway	†Standard Bush Lengths (Ref.)	Set Screw	A	B	C (max)	D	F	G	L	M A/F	P	Weight
	Nm	Nm	mm	mm	mm			mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
200M1	3	13	9.5	19	22	(275, 365, 480, 551)	M5	52	48	9	16	4.0	3.5	34.9	46		0.4
200M2	6	25		20		7.0, 9.5, 11.5, 13.4											
250M1	7	34	9.5	15	22	(275, 365, 480, 551)	M5	64	48	9	16	4.0	3.5	34.9	46		0.5
250M2	12	67		19 20		7.0, 9.5, 11.5, 13.4											
350M1	20	100	18	20	25	(365, 480, 551, 628, 829)	M6	89	62	16	19	4.0	3.5	42.9	60		1.1
350M2	34	200		24 25		9.5, 11.5, 13.4, 16.0, 20.3											
500M1	48	283	22	25	41	(480, 551, 628, 829)	M8	127	76	16	22	6.5	3.5	63.5	-	92	3.0
500M2	88	566		30 35 38 40		11.5, 13.4, 16.0, 20.3											
700M1	110	770	24	40	64	(520, 580, 667, 868, 966, 1187, 1375)	M10	178	98	29	24	8.0	5.0	95.3	-	133	6.8
700M2	224	1540		45 50 60		13.2, 14.7, 16.9, 22.3, 24.6, 30.2, 34.9											
13-8 ⁽¹⁾	678	1966	38.1		82	(375, 500, 562)	-	330	146	22	36	9.5	4.8	114.3	-	279	38.6
13-16 ⁽¹⁾	1356	3120		9.5, 12.7, 14.3													
20-5 ⁽¹⁾	2135	4270	50.8		124	(500, 625)	-	508	184	24	46	12.5	4.8	165.1	-	413	115.0
20-10 ⁽¹⁾	4270	8540		12.7, 15.9													

*M1 Torque Limiters Fitted One Disc Spring.
M2 Torque Limiters Fitted Two Disc Springs.

†Torque Limiter supplied standard without Bush, which is supplied with Platewheel.
If Bush required, specify on order which length (size) required.

For procedure to select Torque Limiters refer to page 6.
For range of standard platewheels refer to page 7.

⁽¹⁾ Sizes 13 & 20 Torque Limiters for replacement purposes only
Refer Metric sizes M200 - M280 for new applications.

Tel: +44 121 360 0155

Fax: +44 121 325 1079

Email: sales@crossmorse.com