

Torque Limiters

SELECTION PROCEDURE

1. Determine the required slip torque required for the machine. If the slip torque is not known then set the torque limiter to 1.5 ~ 2 times the torque that the motor produces on the shaft where the torque limiter is to be mounted.
2. From the Torque Range column, select a torque limiter that has sufficient torque. Also ensure that the chosen size can accommodate the required bore.
3. Based on the thickness of the center member to be inserted between the friction discs, determine the required bush length. Always choose a bush, which will not exceed the width of the center member. The maximum width of the center member that can be accommodated is shown as "S max." in the dimension table.

CENTER MEMBER INFORMATION

1. So as to obtain the rated torque release and re-engagement, Challenge recommend that the center member should be machined on its rubbing surfaces. The recommended surface finish is Ra1.6. It should also be flat, parallel, square with the bore and free from rust, scale, and oil. If these recommendations are not adhered to, the slip torque could be erratic.
2. The recommended bore that the center member should be machined to, is shown in the table below. Also, provided is the minimum number of sprocket teeth to be used, together with the suggested bush length.

Bore Sizes, Minimum Recommended number of Sprocket Teeth and Bush Lengths

Size	Bore of Center Member (mm)	Sprocket Pitch and Number of Teeth													
		9.525 - (06B)		12.7 - (08B)		15.875 - (10B)		19.05 - (12B)		25.4 - (16B)		31.75 - (20B)		38.1 - (24B)	
		Sprocket Min Teeth	Bush Length (mm)	Sprocket Min Teeth	Bush Length (mm)	Sprocket Min Teeth	Bush Length (mm)	Sprocket Min Teeth	Bush Length (mm)	Sprocket Min Teeth	Bush Length (mm)	Sprocket Min Teeth	Bush Length (mm)	Sprocket Min Teeth	Bush Length (mm)
50	30	20	3.8	16	6										
65	41			20	6	17	8								
89	49			26	6	21	8	18	9.5	15	14.5				
127	74			35	6	29	8	25	9.5	19	14.5				
178	105					39	8	33	9.5	26	14.5	21	17	18	22

SETTING THE TORQUE

Setting the torque on the limiter is achieved by tightening or loosening the adjustment nut and/or the adjustment bolts. An adjustment nut is provided for torque adjustment on the size 50 through to size 89. On the sizes 127 and 178, the adjustment is accomplished by adjusting the provided bolts.

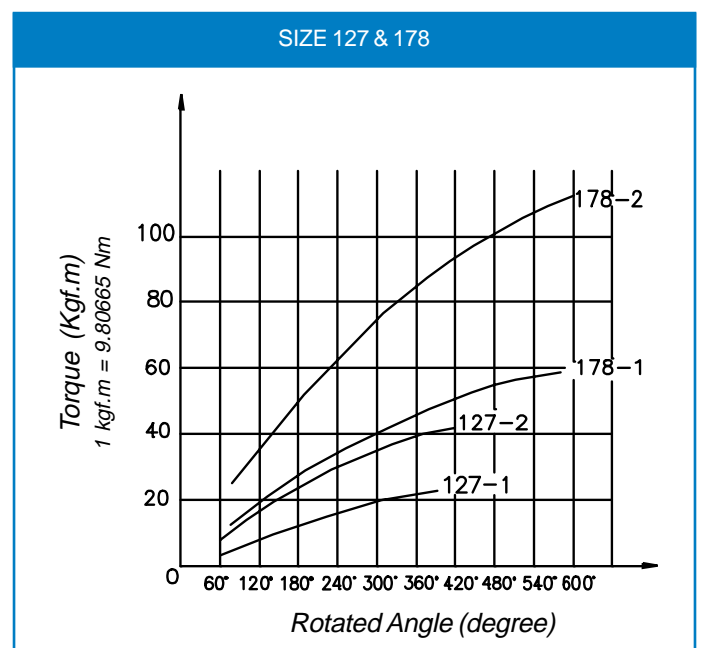
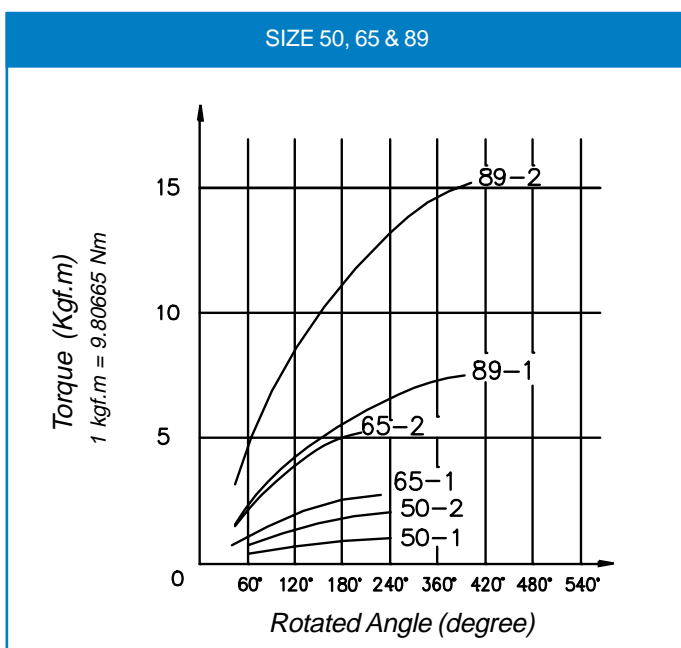
If the torque limiter slips under normal loading conditions, tighten the nut (for size 50 ~ size 89) or the bolts (for size 127 ~ size 178) gradually until the torque limiter stops slipping.

Always tighten (or loosen) the bolts or nut evenly. Try this adjustment several times, so as to find the proper torque setting for the machine.

ROTATED ANGLE AND SETTING TORQUE

The chart below shows the relation between the effective rotated angle and preset torque and can be used as guidance. As an example, size 127-2 at 30kgf.m (294Nm) needs a rotated angle of +260 degrees of adjustment on the bolts.

To get the precise torque setting, Challenge recommends the run-in of the torque limiter.



All dimensions in millimetres unless otherwise stated. Every effort has been taken to ensure that the data listed in this catalogue is correct. Challenge accepts no liability for any inaccuracies or damage caused