



SLQ SERIES

Friction Torque Limiters

How the SLQ Works

The SLQ series friction-type torque limiters require no adjustment at installation or throughout their entire wearlife. They require no lubrication and no resetting after slip has occurred. Wear can be accurately and readily measured without disturbing the unit.

SLQ torque limiters have four major components; drive flange (Item #1), output hub (item #2), pressure plate (Item #3) and a complement of spring cup bolts (Item #4). The drive flange is connected to a prime mover (typically an electric motor) using a coupling (See table #3 & #4 for compatible couplings). The output hub is held concentric to the drive flange by a self-lubricating bronze brushing (Item #5). The spring cup bolts create an accurate clamping force between the drive flange and the pressure plate. Spring cup bolts are color coded depending on their force. A torque setting is attained through the combinations of spring cup bolts used. The output hub is typically mounted to the input shaft of a gearbox.

A SLQ Series torque setting is preset at the factory. When the drive system torque exceeds the torque setting, the torque limiter will slip while continuing to transmit torque equal to the setting. This is possible because the static and dynamic coefficient of friction of the disc pack is almost identical due to proprietary design.

The SLQ series torque limiter is designed to operate at motor speed. In most drive systems the prime mover represents approximately 90-95% of the equivalent inertia. The SLQ series will generally provide excellent inertial shockload protection when located at the prime mover.

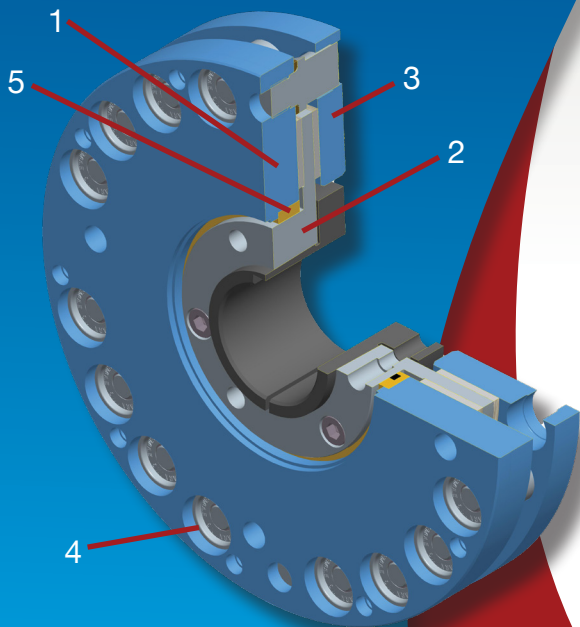
For more complete information on inertial shockloads, request PT Tech's "Torque Protection for Electric Motor Driven Equipment" brochure.

PT Tech's SLQ series is a friction torque limiter designed for standard torque and energies. This is an economical way to protect your expensive drive train from shockload damage, while allowing your equipment to continue to perform. No resetting is required after shockloads occur and torques are pre-set by your design staff.

PT Tech has other model torque limiters for applications requiring greater torque capacity within the same diameter as the SLQ series. Data sheets available upon request.

Disk to Disk

QD bushing mounted



Preliminary Selection Procedure*

- 1) Determine Running Torque (TR - lb - ft)
 $TR = (HP \times 5,250) / RPM$
- 2) Determine Max Torque
 This information can be obtained from motor manufacturer. Typically, NEMA "B" motors have a max torque that is 250% greater than TR
- 3) Determine Torque Setting (TS)
 $TS = \text{Max Torque} \times 1.50$
- 4) Preliminary Selection Based on
 - a. Torque Setting (TS)
 - b. Bore requirement
 - c. Max Torque
- 5) Consult with PT Tech
 to correctly match application energy requirement and clutch energy capacity
- 6) For diesel or turbine applications
 consult PT Tech

** This procedure is strictly intended as a general guild line. Consult PT Tech to finalize selections.*

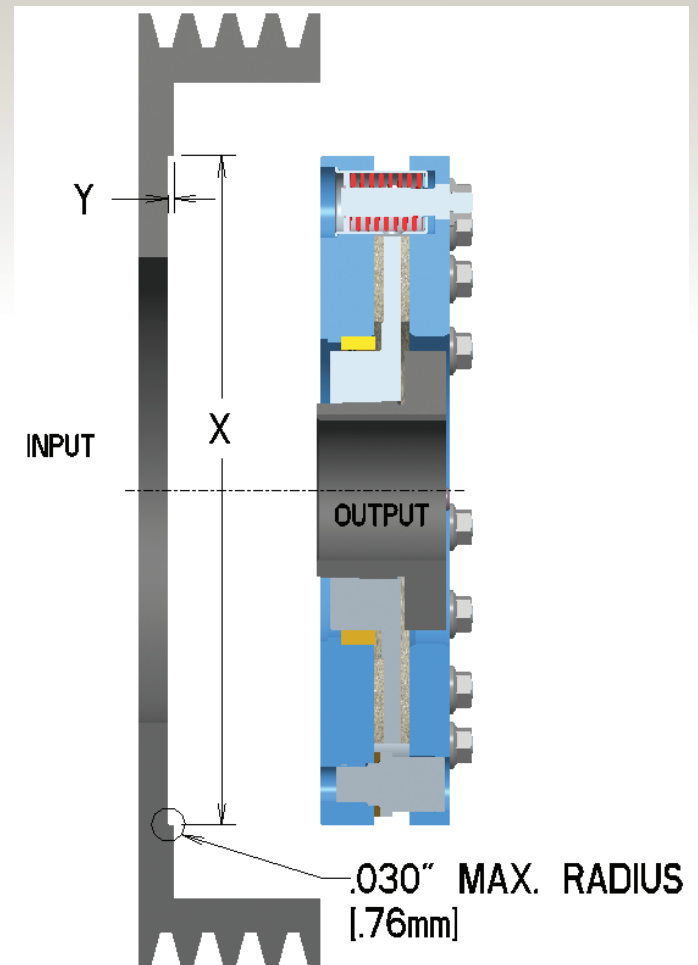
Application Engineering Assistance

PT Tech has analyzed hundreds of drive systems in many types of equipment and industries. Our torque controls expertise is available to our customers at no charge to help engineer possible torque protection.

PT Tech can provide a computerized report that analyzes your drive system and helps determine the need for torque protection. The computer generates a torque analysis graph comparing the maximum torque in the drive system, with and without a TLC torque limiter, under various jam conditions.

Also, PT Tech has developed a unique test stand that can simulate shockloads generated by the inertia of motors up to 2,500 HP.

Custom solutions available, contact PT Tech today.



PILOTING INFORMATION

Clutch Size		X*	Y
15	in mm	9.056 230	.125 3.175
19	in mm	11.025 280	.125 3.175
28	in mm	14.371 365	.125 3.175
35	in mm	17.481 444	.125 3.175

*+.001-.000

Use either bolt circle (see dimensions E and G, Front page) to secure sprocket of pulley to clutch input flange.

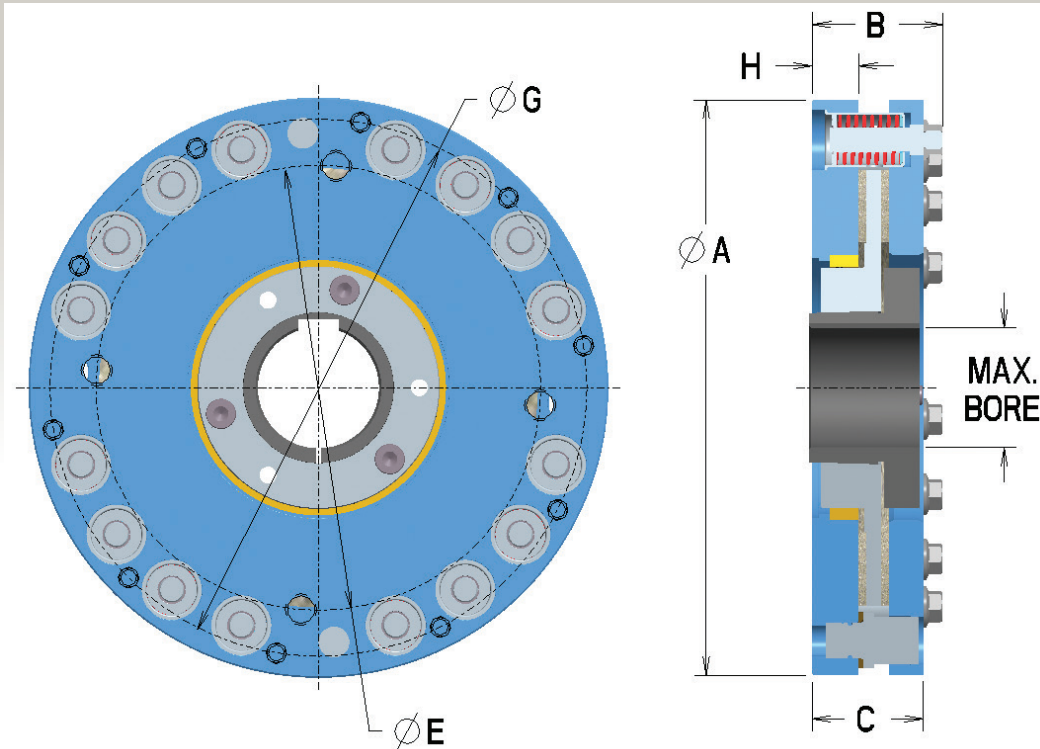


Table #1

DIMENSIONAL DATA¹					
SLQ Clutch Size		15	19	28	35
A Outside Diameter ²	in	9.055	11.024	14.370	17.480
	mm	230	280	365	444
B Overall Length	in	2.95	2.95	3.25	3.35
	mm	74.9	74.9	82.6	85.1
C Length of Body	in	2.47	2.47	2.77	2.87
	mm	62.7	62.7	70.4	72.9
E Bolt Circle (For Lovejoy Coupling)	in	6.496	8.464	11.024	
	mm	165	215	280	
	Bolt Qty & Size	3-M16	4-M20	4-M20	
G Bolt Circle (for Renold hi- Tec Coupling) ⁴	in	8.374	9.528	13.307	12.750
	mm	212.7	242	338	323.85
	Bolt Qty & Size	6-M10	6-M10	10-M12 ³	10-M12
QD Bushing	size	SK	SF	E	J
Max Bore- Sq Key ⁵	in	2.125	2.25	2.875	3.81
	mm	54	57	73	97
Max Bore- Shallow Key ⁶	in	2.50	2.88	3.50	4.50
	mm	108	73	89	114

¹ All dimensions are subject to change without notice

² OD Tolerance = +.000-.001" (+0.00-.025mm)

³ 6 holes on 8 hole pattern key.

⁴ Consult PT Tech.

⁵ Metric key meets ISO standards. They are rectangular in shape.

⁶ No metric equivalent QD bushings available

Table #2

PERFORMANCE DATA					
SLQ Clutch Size		15	19	28	35
Maximum Torque	lb-ft	438	950	2096	3828
	Nm	594	1288	2842	5190
No. of Spring-Cup Bolts		6	10	16	22
Torque per Spring-Cups Bolt					
Red	lb-ft	73	95	131	174
	Nm	99	129	178	236
Blue	lb-ft	44	57	79	104
	Nm	60	77	107	141
White	lb-ft	31	40	55	73
	Nm	42	54	75	99
Silver	lb-ft	12	16	22	28
	Nm	16	21	30	38
Maximum Speed	RPM	3600	3000	2500	2000
Inertia Total	lb-ft ²	2.32	5.1	16.94	40.32
	kgm ²	.0977	.2147	.7133	1.699
Inertia Output	lb-ft ²	.16	.43	1.75	6.81
	kgm ²	.0067	.0181	.0737	.287
Weight	lbs	27	45	84	170
	kg	12.3	20.5	38.2	77

SLQ With Lovejoy Coupling

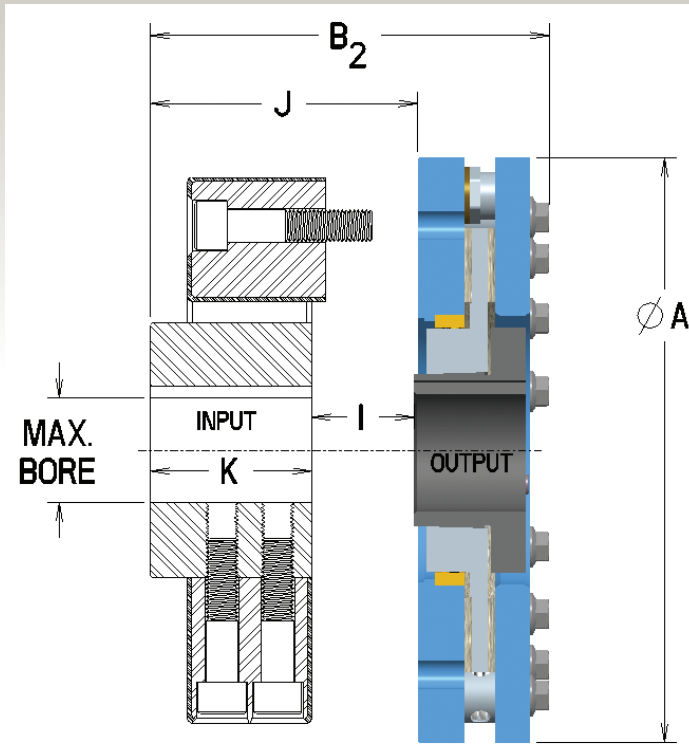


Table #3

SLQ with Renold Hi-Tec Coupling

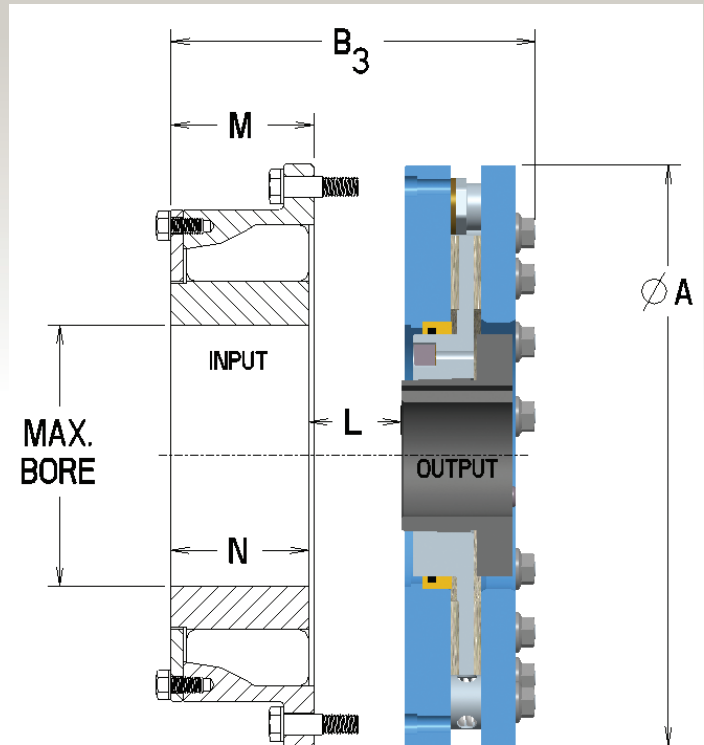


Table #4

SLQ CLUTCH SIZE

SLQ Series		15	19	28
A Outside Diameter	in mm	9.055 230	11.024 280	14.370 365
B Overall Length ²	in mm	5.94 150.9	6.57 165.9	7.50 190.6
I Length	in mm	31 8	31 8	31 8
J Coupling Length	in mm	2.99 76	3.62 92	4.25 108.0
K Hub Length	in mm	2.68 68	3.15 80	3.94 100
Max Bore	in mm	2.56 65	3.35 85	4.35 115
Lovejoy Coupling Size**		30	140	250

* DBSE - Distance between shaft ends

**Refer to Lovejoy Model 1 Rubber Coupling for all sizes
Lovejoy Mfg. National Sales Offices, (630) 852-0500

SLQ CLUTCH SIZE

SLQ Series		15	19	28	35
A Outside Diameter	in mm	9.055 230	11.024 280	14.370 365	17.480 444
B Overall Length ²	in mm	5.45 138.4	5.70 144.8	7.12 181.0	7.22 212.7
L D.B.S.E*	in mm	.125 3.2	.125 3.2	.125 3.2	.125 3.2
M Coupling Length	in mm	2.500 63.5	2.750 69.9	3.875 98.4	3.875 98.4
N Hub Length	in mm	2.375 60.33	2.625 66.7	3.75 95.3	3.875 95.3
Max Bore	in mm	2.95 75	3.35 85	4.50 115	4.50 115
Renold Hi-Tec Coupling Size**	part no.	+P 75 U10351/01	+P 85 U10352/02	+P 115 U10354/04	+P 115 U10377/00

* DBSE - Distance between shaft ends

**Refer to Renold Hi-Tec Coupling Flew Half for all sizes
Renold Hi-Tec Engineering Co., 1-800-850-8141