



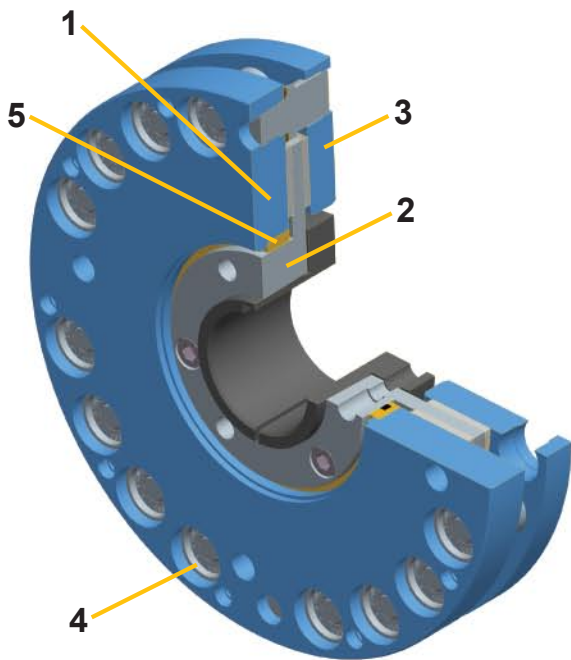
SLQ Series

Friction Torque Limiters

- Single Disk
- QD bushing mounted

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.



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 #2 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 thru 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.

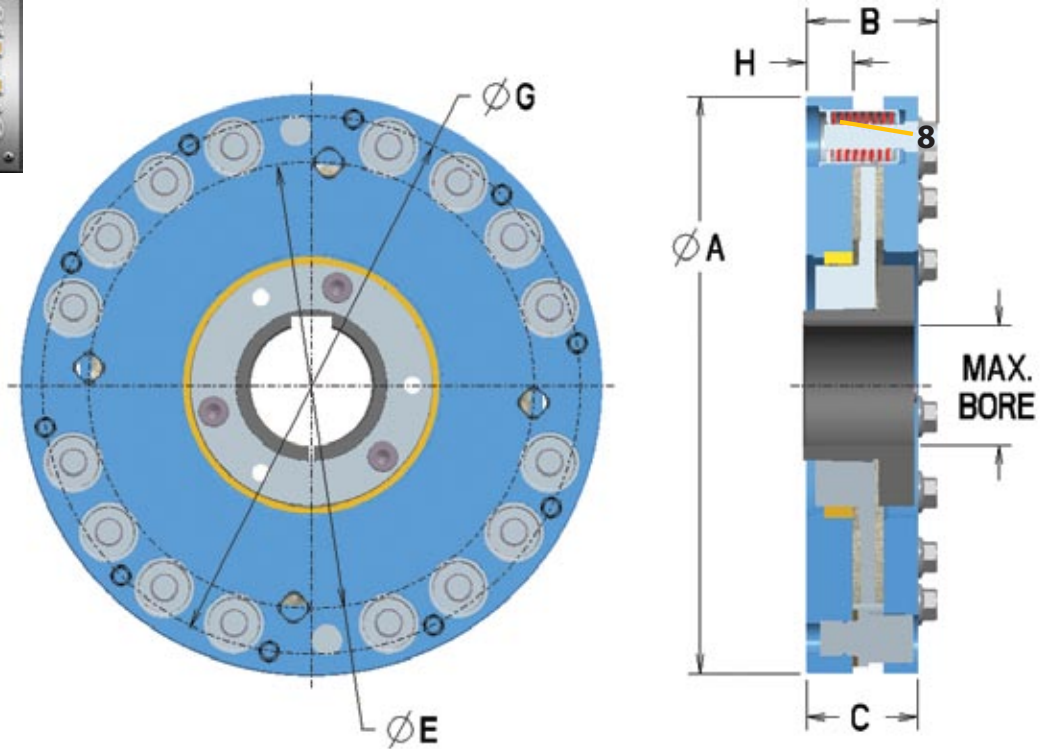


Table #1

DIMENSIONAL DATA ¹					
SLQ CLUTCH SIZE		15	19	28	35
A Outside Diameter ²	inches	9.055	11.024	14.370	17.480
	mm	230	280	365	444
B Overall Length	inches	2.95	2.95	3.25	3.35
	mm	74.9	74.9	82.6	85.1
C Length of Body	inches	2.47	2.47	2.77	2.87
	mm	62.7	62.7	70.4	72.9
E Bolt Circle (for Centaflex Coupling)	inches	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	inches	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	inches	2.125	2.25	2.875	3.81
	mm	54	57	73	97
Max Bore - Shallow Key ⁶	inches	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 cup bolt	lb-ft	73	95	131	174
RED	Nm	99	129	178	236
	lb-ft	44	57	79	104
BLUE	Nm	60	77	107	141
	lb-ft	31	40	55	73
WHITE	Nm	42	54	75	99
	lb-ft	12	16	22	28
SILVER	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 Centaflex Coupling

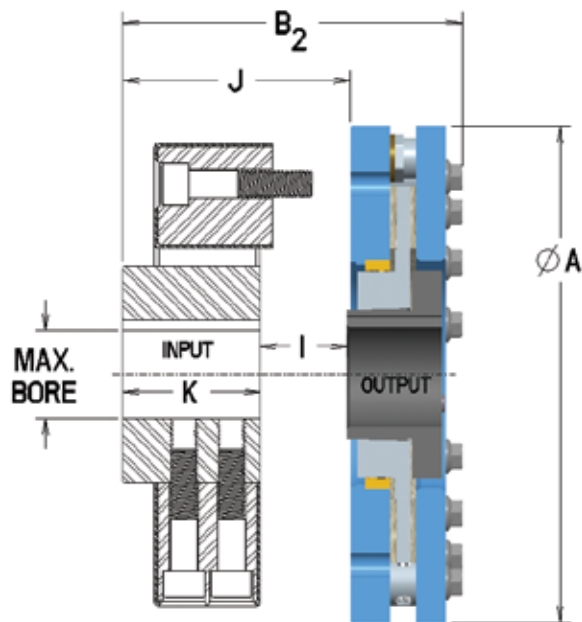


Table #3

SLQ CLUTCH SIZE				
SLQ SERIES		15	19	28
A Outside Diameter	inches	9.055	11.024	14.370
	mm	230	280	365
B Overall Length ²	inches	5.94	6.57	7.50
	mm	150.9	165.9	190.6
I Length	inches	31	31	31
	mm	8	8	8
J Coupling Length	inches	2.99	3.62	4.25
	mm	76	92	108.0
K Hub Length	inches	2.68	3.15	3.94
	mm	68	80.0	100.0
Max Bore	inches	2.56	3.35	4.35
	mm	65	85	115
Centraflex Coupling Size**		30	140	250

*DBSE - Distance between shaft ends

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

SLQ with Renold Hi-Tec Coupling

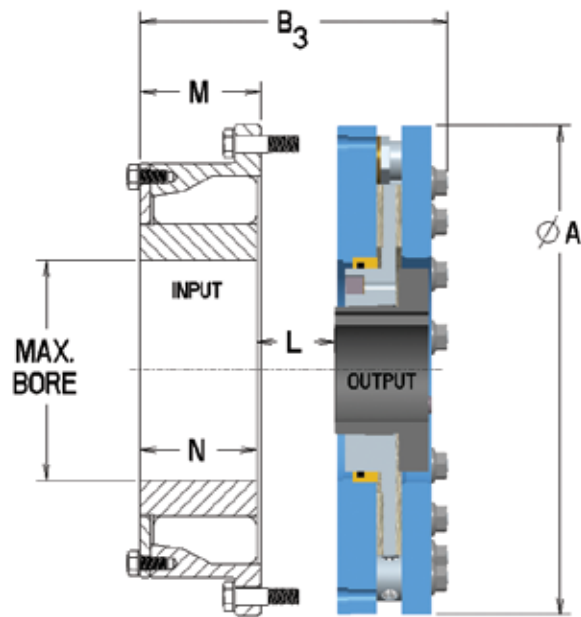
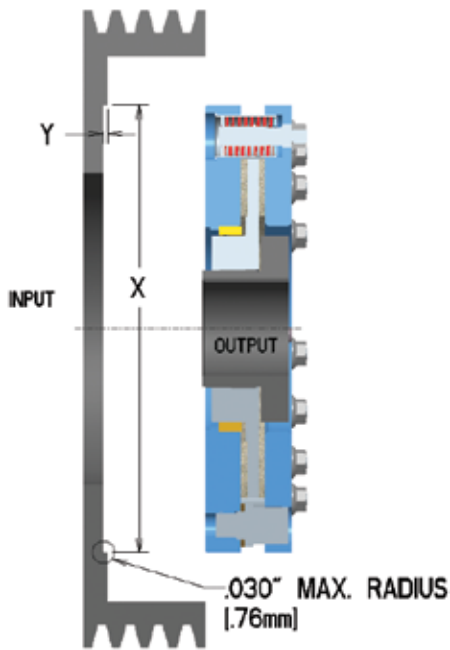


Table #4

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

*DBSE - Distance between shaft ends

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



PILOTING INFORMATION			
CLUTCH SIZE		X*	Y
15	inches <i>mm</i>	9.056 <i>230</i>	.125 <i>3.175</i>
19	inches <i>mm</i>	11.025 <i>280</i>	.125 <i>3.175</i>
28	inches <i>mm</i>	14.371 <i>365</i>	.125 <i>3.175</i>
35	inches <i>mm</i>	17.481 <i>444</i>	.125 <i>3.175</i>

* +.001 - .000

Use either bolt circle (see dimensions E and G, front page) to secure sprocket or pulley to clutch input frange.

Preliminary Selection Procedure*

1) Determine Running Torque (T_R - lb-ft)

$$T_R = (HP \times 5,250) / RPM$$

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 T_R

3) Determine Torque Setting (T_S)

$$T_S = \text{Max Torque} \times 1.50$$

4) Preliminary Selection Based on

- Torque setting (T_S)
- Bore requirement
- Max speed

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 guideline. Consult PT Tech to finalize selection.

Application Engineering Assistance

PT Tech has analyzed hundreds of drive systems in many types of equipment and industries. Our torque control 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.



1441 Wolf Creek Trail • P.O. Box 305
Sharon Center, OH 44274

PT Tech USA: +1 330 239 4933

sales@pttech.com • www.pttech.com

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* Brochure content subject to change without notice.

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