



Installation & Maintenance Manual

MECHANICAL FRICTION TORQUE LIMITERS WITH FLEXIBLE COUPLING



Catalog Products:

[T3H2H-STL](#)

[T4H2H-STL](#)

[T5H2H-STL](#)

[T6H1G-STL, T6H2G-STL](#)

And non-catalog variations of this clutch design.

CLICK on product numbers above to obtain the product detail sheet which includes dimensional data helpful during installation.

Mach III Technical Support

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www.machiii.com

Detail sheets and 3D models are available on the Mach III website:

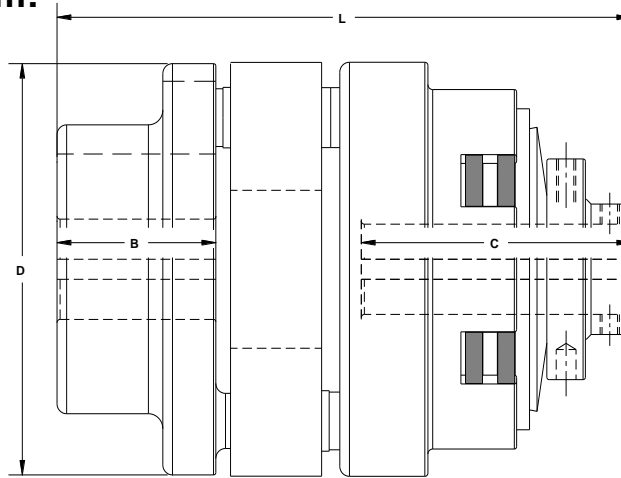
<http://www.machiii.com/Products/Torque-Limiter/Flexible-Mechanical-Torque-Limiter-Couplings.asp>

Please contact Mach III to obtain assembly and parts list drawings.



These products include rotating equipment and should be guarded according to OSHA requirements and other Federal, State and local regulations. It is the responsibility of the user to provide the necessary guarding.

Reference Diagram:



<i>Product#</i>	<i>MAX BORE WITH SQUARE KEY</i>	<i>B</i>	<i>C</i>	<i>D</i>	<i>L</i>
T3H2H-STL	0.875	1.75	2.79	4.00	6.27
T4H2H-STL	1.125	2.06	3.50	5.13	7.44
T5H2H-STL	1.375	2.06	3.75	5.69	7.70
T6H1G-STL	2	2.37	4.25	7.34	9.91

I. Torque Setting

Mach III torque limiters are typically shipped to the customer with the torque value they have specified. (Note: All torque settings are +/- 10%.) If a torque limiter requires setting or re-setting in the field, please refer to section VII of this document.

II. Installation

A. SHAFT PREPARATION & MOUNTING

Mach III Clutch products are bored to fit a precision plug gauge for the specified bore size and should slide fit the mating shaft. Make certain that the shaft is free of burrs or nicks. It may be necessary to file or sand the shaft to assure a slide fit. Never hammer the torque limiter onto the shaft. Hammering on the torque limiter may cause evident damage or subtle injury that will shorten the wear life of the unit, and will void the warranty.

- (1) Apply the anti-seize (E-Z Break®) lubricant from the packet provided, or equivalent, to the shaft.
- (2) Insert key (customer supplied) onto the shaft.
- (3) Slide torque limiter over key on the shaft, align the sprocket or pulley.
- (4) Tighten set screws to secure the torque limiter to the shaft.

B. FINAL INSPECTION & TESTING

After a short run, check set screws and alignment.

III. Operation:

This is a manually adjusted torque limiter. Torque is proportional to the amount of spring compression.

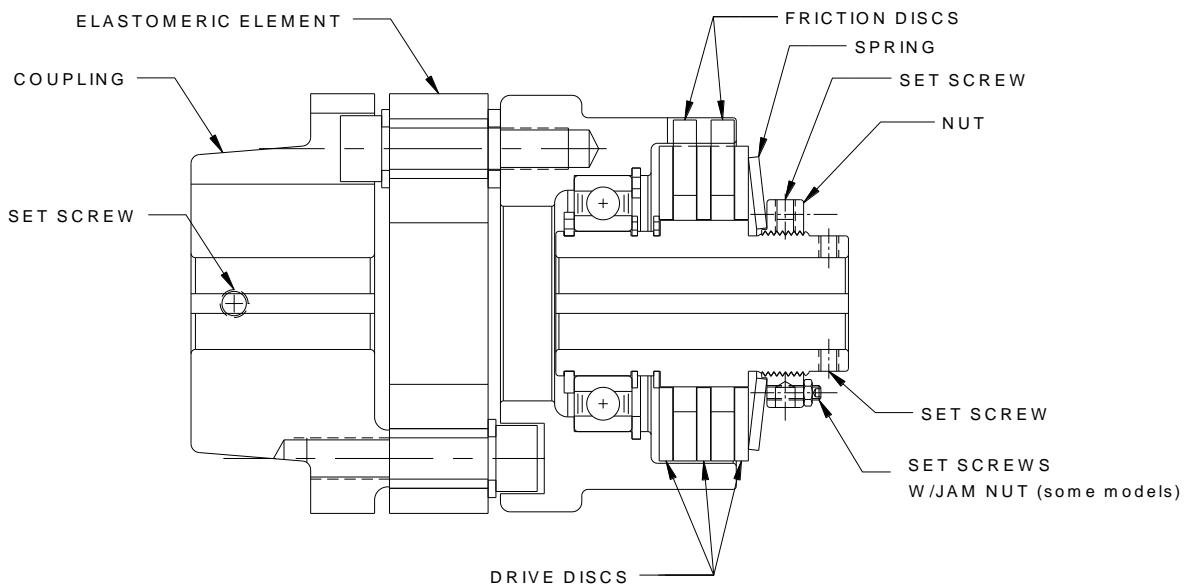
Special Note Regarding Friction Disc Contamination:

The friction material used in this product will absorb oil, water, chemicals and other contaminants. Depending on the type of contamination, torque limiter may either seize up entirely or lose torque capacity. If friction discs become contaminated, they should be replaced. See repair kit ordering information below.

IV. Routine Maintenance

When installed and operated according to the preceding guidelines, Mach III Clutch products should require little or no routine maintenance. A repair kit is available which contains all parts subject to typical wear: friction discs, springs.

V. Parts Diagram



Kits Available	Contents	Part Numbers
Facing Kit	Friction Disc	T3H2H-STL-FCGK, T4H2H-STL-FCGK, Etc. . . .
Repair Kit	Friction Disc, Spring(s)	T3H2H-STL-RPRK, T4H2H-STL-RPRK, Etc. . . .

For part numbers of components not included in the kits above, please contact Mach III Clutch, Inc. or your distributor. Factory repair is also available. A return materials authorization (RMA) number must be obtained prior to sending any unit in for repair. Mach III Clutch is not responsible for products returned without authorization.



VI. Repair Kit Installation Procedure

Tools Needed	Compounds Required
Hex wrench set Retainer (snap) ring pliers Spanner Wrench	Anti-Seize Lubricant

A. DISASSEMBLY

Loosen set screws using appropriate hex wrench and slide the clutch off of the shaft. Place the clutch on a work surface with the adjustment nut facing upward. Loosen the set screw in the adjustment nut and set screws and jam nuts (some models) and remove nut using a wrench or channel lock pliers. The spring, drive discs and friction discs can now be removed.

B. DRIVE SURFACE INSPECTION & FRICTION DISC REPLACEMENT

Inspect the surface of the steel or iron drive discs. This surface must be free from grooves, burrs and foreign materials in order for the clutch to operate properly. If damage is pronounced, please contact Mach III Clutch or your distributor about replacing the drive discs. In addition, clutch should be inspected for discoloration (turning blue). If discoloration is present, the unit is being operated beyond its capacity and Mach III Clutch should be contacted for assistance.

C. INSPECTION OF BEARINGS

Check bearings for external damage (missing seals, etc.). Make sure the bearings rotate freely and smoothly by hand. If bearing replacement is necessary, consult Mach III or your distributor for the bearing sizes and replacement procedures.

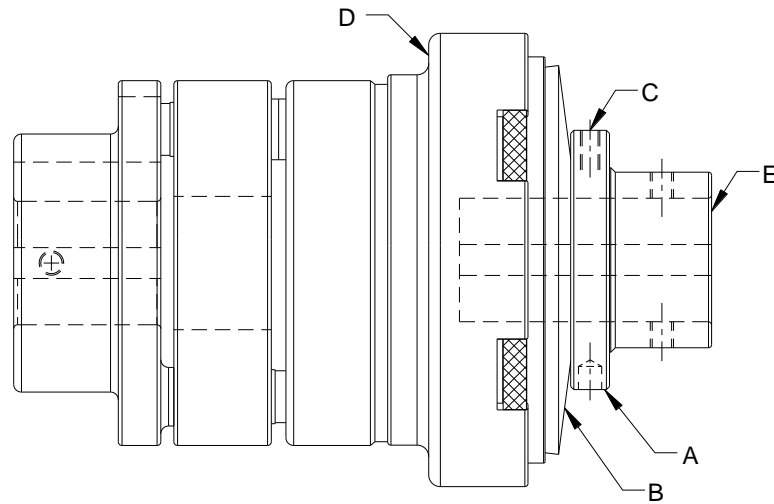
D. REASSEMBLY

Place drive discs, friction discs and spring over drive hub in their proper order making sure they slide freely on the hub and in the slots. Replace adjustment nut with the shoulder fitting into the bore of the spring. Adjust torque and tighten set screw.

See "torque Limiter Installation" portion of these instructions for the proper procedure for reinstalling the clutch.

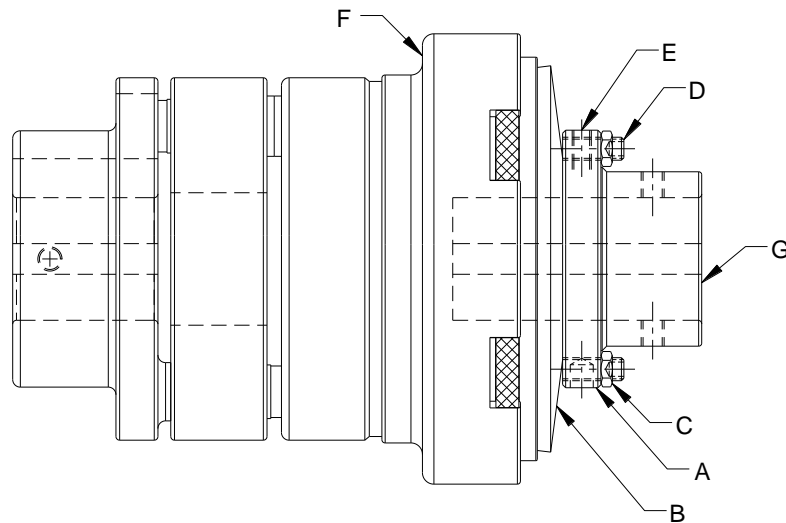
VII. Torque Setting Instructions

- A. Product Numbers: T3H2H-STL, T4H2H-STL, T5H2H-STL and non-catalog variations of this torque limiter design.



- (1) Make sure the nylon-tipped set screw (REF. C) in the outside diameter of the adjustment nut (REF. A) is loose.
- (2) Make sure the adjustment nut (REF. A) is snug against the disc spring (REF. B).
- (3) Using a spanner wrench, tighten the adjustment nut (REF. A) against the disc spring
- (4) Check torque value after each 1/4-turn increment of the adjustment nut (REF. A) while holding adapter/sleeve (REF. D) stationary and turning drive hub (REF. E) with a torque wrench.
- (5) Tighten the nylon-tipped set screw (REF. C) in the outside diameter of the adjustment nut (REF. A).

B. Product Numbers: T6H1G-STL, T6H2G-STL and non-catalog variations of this torque limiter design.



- (1) Make sure the adjustment nut (REF. A) is snug against the disc spring (REF. B).
- (2) Make sure the six jam nuts (REF. C) mounted on the six set screws (REF. D) which are placed axially in adjustment nut (REF. A) are loose.
- (3) Screw the six set screws (REF. D) in the adjustment nut (REF. A) until they contact the disc spring (REF. B).
- (4) Using a circular pattern, tighten the six set screws (REF. D) in the adjustment nut (REF. A) one 1/4-turn each.

NOTE: If needed, fine tune the torque value of the unit in 1/8-turn increments of the six set screws (REF. D).

- (5) Check torque value after each 1/4-turn increment of all six set screws (REF. D) while holding adapter/sleeve (REF. F) stationary and turning drive hub (REF. G) with a torque wrench.

NOTE: A torque wrench with a multiplier may be needed for higher torque settings.

- (6) Once desired torque is reached, confirm each of the six set screws (REF. D) are in contact with the disc spring (REF. B).
- (7) Tighten the jam nuts (REF. C) mounted on the six set screws (REF. D) firmly against the adjustment nut (REF. A).
- (8) Tighten the nylon-tipped set screw (REF. E) in the outside diameter of the adjustment (REF. A).



Technical assistance is available by contacting Mach III Clutch, Inc.

Mach III Product Warranty

<http://www.machiii.com/Resources/Warranty-Info.asp>

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