



# Torsional Anti-Backlash (TAB) K-Style

- High Stiffness
- Low Torque
- Low Friction
- Wear Compensating
- Full Size Range Ø 1/4" - 3/4" screws

### The Helix K-Style anti-backlash nut

This is the newest design in our series of zero backlash and wear compensating nuts. The Torsional Anti-Backlash (TAB) nut design offers high axial stiffness and extremely low drag torque. The nuts are rated for moderate to high dynamic and static load ratings.

Made from our Helix® proprietary self-lubricating polyacetal with Teflon® micro powder, this nut is available in a full range of leadscrew sizes from 1/4" (6mm) to 3/4" (20mm) diameters on an extensive list of leads from less than .039" (1mm) to greater than 2.00" (50mm). The leadscrews for these nuts are made from 300 series stainless or 4140 alloy steel with optional

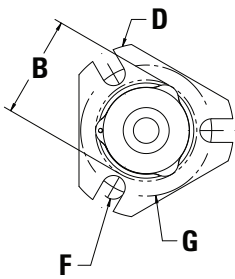
Teflon® coating finish for reduced friction, increased efficiency and longer nut life. This nut offers reduced components and ease of assembly with flanges and thread mounts interchangeable with the competition.

Custom mounting configurations are also available. The design has a shortened nut length to reduce the OAL or increase stroke length for a given leadscrew. Modifications can be made as required and this low torque/high axial stiffness design includes a unique machined version for applications that require a smaller nut size due to space limitations.

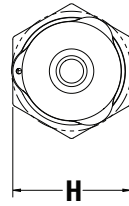
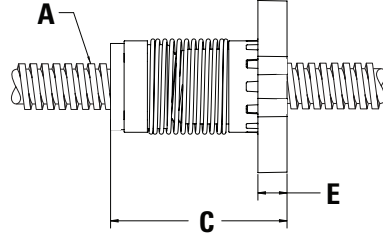
### Nut Selection Guide

| NUT STYLE               | COST   | LOAD   | STIFFNESS | TORQUE   |
|-------------------------|--------|--------|-----------|----------|
| Axial Anti-backlash     | low    | medium | low       | medium   |
| Radial Anti-backlash    | low    | medium | medium    | low      |
| Torsional Anti-backlash | medium | high   | high      | very low |

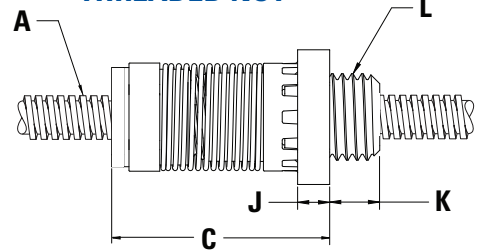
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### FLANGED NUT



### THREADED NUT



| <b>FLANGED (inch)</b>    | Screw Ø (A) in. | Nut Ø (B) in. | Nut Length (C) in. | Flange Ø (D) in.           | Flange Thickness (E) in. | Mounting Hole Ø (F) in. | Bolt Circle Ø (G) in. | Dynamic Load (lbs.) in. | Max. Drag Torque (OZ-IN) |
|--------------------------|-----------------|---------------|--------------------|----------------------------|--------------------------|-------------------------|-----------------------|-------------------------|--------------------------|
|                          | .250            | .70           | 1.6                | 1.12                       | .18                      | .144                    | .875                  | 20                      | 3                        |
|                          | .312            | .87           | 1.8                | 1.50                       | .25                      | .203                    | 1.125                 | 30                      | 3                        |
|                          | .375            | .87           | 1.8                | 1.50                       | .25                      | .203                    | 1.125                 | 30                      | 3                        |
|                          | .437            | 1.06          | 2.1                | 1.75                       | .25                      | .220                    | 1.406                 | 50                      | 6                        |
|                          | .500            | 1.06          | 2.1                | 1.75                       | .25                      | .220                    | 1.406                 | 75                      | 6                        |
|                          | .562            | 1.30          | 2.5                | 1.75                       | .31                      | .220                    | 1.750                 | 90                      | 6                        |
|                          | .625            | 1.30          | 2.5                | 1.75                       | .31                      | .220                    | 1.750                 | 150                     | 6                        |
| .750                     | 1.63            | 2.8           | 2.38               | .31                        | .220                     | 2.000                   | 250                   | 7                       |                          |
| <b>THREADED (inch)</b>   | Screw Ø (A) in. | Nut Ø (B) in. | Nut Length (C) in. | Hex Across Flats Ø (H) in. | Hex Thickness (J) in.    | Thread Length Ø (K) in. | Thread Size (L) in.   | Dynamic Load (lbs.) in. | Max. Drag Torque (OZ-IN) |
|                          | .250            | .70           | 1.6                | .69                        | .18                      | .25                     | 9/16-18               | 20                      | 3                        |
|                          | .312            | .87           | 1.8                | .88                        | .25                      | .37                     | 3/4-20                | 30                      | 3                        |
|                          | .375            | .87           | 1.8                | .88                        | .25                      | .37                     | 3/4-20                | 30                      | 3                        |
|                          | .437            | 1.06          | 2.1                | 1.00                       | .25                      | .37                     | 15/16-16              | 50                      | 6                        |
|                          | .500            | 1.06          | 2.1                | 1.00                       | .25                      | .37                     | 1 1/8-16              | 75                      | 6                        |
|                          | .562            | 1.30          | 2.5                | 1.25                       | .31                      | .37                     | 1 1/8-16              | 90                      | 6                        |
|                          | .625            | 1.30          | 2.5                | 1.25                       | .31                      | .37                     | 1 1/8-16              | 150                     | 6                        |
| .750                     | 1.63            | 2.8           | 1.56               | .32                        | .37                      | 1 3/8-16                | 250                   | 7                       |                          |
| <b>FLANGED (metric)</b>  | Screw Ø (A) mm  | Nut Ø (B) mm  | Nut Length (C) mm  | Flange Ø (D) mm            | Flange Thickness (E) mm  | Mounting Hole Ø (F) mm  | Bolt Circle (G) mm    | Dynamic Load (kg.)      | Max. Drag Torque (N-m)   |
|                          | 6               | 17.8          | 40.6               | 28.6                       | 4.8                      | 3.7                     | 22.2                  | 9                       | .025                     |
|                          | 8               | 22.1          | 45.7               | 38.1                       | 6.4                      | 5.2                     | 28.6                  | 13                      | .025                     |
|                          | 10              | 22.1          | 45.7               | 38.1                       | 6.4                      | 5.2                     | 28.6                  | 13                      | .025                     |
|                          | 12              | 26.9          | 53.3               | 44.5                       | 6.4                      | 5.6                     | 35.7                  | 34                      | .040                     |
|                          | 14              | 33.0          | 63.5               | 44.5                       | 8.0                      | 5.6                     | 44.5                  | 41                      | .040                     |
|                          | 16              | 33.0          | 63.5               | 44.5                       | 8.0                      | 5.6                     | 44.5                  | 68                      | .040                     |
|                          | 18              | 41.4          | 71.1               | 60.5                       | 8.0                      | 5.6                     | 50.8                  | 113                     | .040                     |
| 20                       | 41.4            | 71.1          | 60                 | 8.0                        | 5.6                      | 50.8                    | 113                   | .050                    |                          |
| <b>THREADED (metric)</b> | Screw Ø (A) mm  | Nut Ø (B) mm  | Nut Length (C) mm  | Hex Across Flats (H) mm    | Hex Thickness (J) mm     | Thread Length (K) mm    | Thread Size (L) mm    | Dynamic Load (kg.)      | Max. Drag Torque (N-m)   |
|                          | 6               | 17.8          | 40.6               | 17.5                       | 4.8                      | 6.4                     | 9/16-18               | 9                       | .025                     |
|                          | 8               | 22.1          | 45.7               | 22.4                       | 6.4                      | 9.5                     | 3/4-20                | 13                      | .025                     |
|                          | 10              | 22.1          | 45.7               | 22.4                       | 6.4                      | 9.5                     | 3/4-20                | 13                      | .025                     |
|                          | 12              | 26.9          | 53.3               | 25.4                       | 6.4                      | 9.5                     | 15/16-16              | 34                      | .040                     |
|                          | 14              | 33.0          | 63.5               | 31.8                       | 8.0                      | 9.5                     | 1 1/8-16              | 41                      | .040                     |
|                          | 16              | 33.0          | 63.5               | 31.8                       | 8.0                      | 9.5                     | 1 1/8-16              | 68                      | .040                     |
|                          | 18              | 41.4          | 71.1               | 39.6                       | 8.0                      | 9.5                     | 1 3/8-16              | 113                     | .040                     |
| 20                       | 41.4            | 71.1          | 39.6               | 8.0                        | 9.5                      | 1 3/8-16                | 113                   | .050                    |                          |

*Additional materials are available for higher loads and special applications.*