

CMP Nut Series

Features a compact anti-backlash nut assembly for light load applications. The CMP Series anti-backlash assembly utilizes a general purpose self-compensating nut in an exceptionally compact package. This allows equipment designers to utilize smaller assemblies without sacrificing stroke length. The CMP anti-backlash nut design is also ideally suited for applications using grease or oil. The standard CMP Series assembly utilizes a self-lubricating acetal nut, axially preloaded, on a 303 stainless steel screw. End machining of screw to customer specifications and Kerkote® or Black Ice® TFE screw coating are optional. Various axial compression springs are also available, depending on application requirements. Please consult factory for details.



CMP Series Nut Assembly

■ Grease Compatibility

| Coatings | Compatible |
|------------------------|------------|
| Kerkote® TFE Coating | YES |
| Black Ice® TFE Coating | YES |
| Grease | YES |

■ Anti-Backlash Life

| Without Kerkote® TFE Coating inch (cm) | With Kerkote® TFE Coating inch (cm) |
|---|--|
| 40 to 60 million (100 to 150 million) | 150 to 200 million (380 to 500 million) |

Anti-backlash life is defined as the nut's ability to compensate for wear while maintaining its zero backlash properties. Above life data is based on 25% of the dynamic load rating. Life will vary with loading, operating environment, and duty cycle. The longer screw leads generally provide longer life.

■ Technical Data

| Material | Polyacetal, Lubricant Additive |
|---|---|
| Tensile Strength | 9,700 psi |
| Coefficient of Expansion | 6.0 x 10 ⁻⁵ in/in/°F |
| Coefficient of Friction Polyacetal Nut to Screw | Static = .08 .08 ** Dynamic = .15 .09 ** |
| Standard Operating Temperature Range | 32 - 200° F* (0 - 93° C)* |

* Very high or low temperatures may cause significant changes in the nut fit or drag torque. Please call the HKP Engineering Team at 603 213 6290 for optional temperature range materials.

** with Kerkote® TFE Coating.

■ Identifying the CMP Series Nut Part Number Codes when Ordering

| CMP | A | K | R | 018 | 0020 | XXXX |
|--------|--|--|--|---|--|---|
| Prefix | Nut Mounting Style | Lubrication | Thread Direction | Diameter Code | Nominal Thread Lead Code | Unique Identifier |
| CMP | A = Flanged (Triangular) P = Flange (Triangular with pilot) T = Threaded X = Custom | S = Uncoated K = Kerkote® TFE Coating G = Grease N = Nut only B = Black Ice® TFE Coating | R = Right hand L = Left hand (Not Available for Micro Series) (Refer to leadscrew charts for availability) | 018 = .188 in (5 mm) 025 = .250 in (6 mm) 031 = .313 in (8 mm) 037 = .375 in (10 mm) | (Refer to LEAD CODE Specifications charts, pages 3 to 4) | Proprietary suffix assigned to a specific customer application. The identifier can apply to either a standard or custom part. |

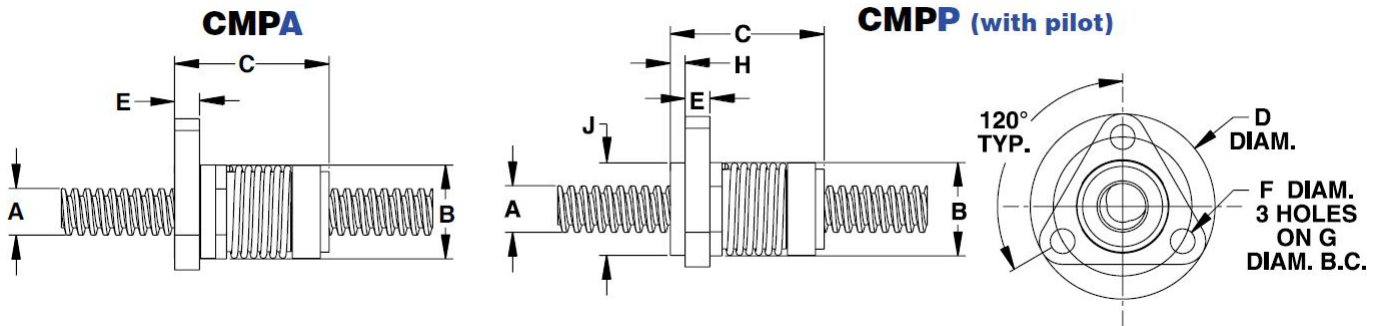
NOTE: Dashes must be included in Part Number (-) as shown above. For assistance call our Engineering Team at 603 213 6290.

■ Dimensional Drawings

CMPPA and CMPP Series Flange Mount and with Pilot

| | Screw Diam. | Nut Diam. | Nut Length | Flange Diam. | Flange Thickness | Mounting Hole Diam. | Bolt Circle Diam. | Hub Length | Hub Diam. | Dynamic Load | Drag Torque (max.) |
|---|----------------|----------------|----------------|----------------|------------------|---------------------|-------------------|----------------|----------------|--------------|--------------------|
| | A inch (mm) | B inch (mm) | C inch (mm) | D inch (mm) | E inch (mm) | F inch (mm) | G inch (mm) | H inch (mm) | J inch (mm) | lbs (Kg) | oz-in (N-m) |
| CMPPA Flange Mount CMPP (with pilot) | 3/16 (4) | 0.625 (16) | 1.05 (26.6) | 1.125 (28.6) | 0.160 (4.1) | 0.143 (3.7) | 0.875 (22.2) | 0.08 (2.04) | 0.625 (15.9) | 5 (2.3) | 4 (.03) |
| | 7/32 (5) | 0.625 (16) | 1.05 (26.6) | 1.125 (28.6) | 0.160 (4.1) | 0.143 (3.7) | 0.875 (22.2) | 0.08 (2.04) | 0.625 (15.9) | 5 (2.3) | 4 (.03) |
| | 1/4 (6) | 0.625 (16) | 1.05 (26.6) | 1.125 (28.6) | 0.160 (4.1) | 0.143 (3.7) | 0.875 (22.2) | 0.08 (2.04) | 0.625 (15.9) | 5 (2.3) | 4 (.03) |
| | 5/16 (8) | 0.750 (19) | 1.32 (33.5) | 1.5 (38.1) | 0.200 (5.08) | 0.200(5.08) | 1.125 (28.6) | 0.120 (3.05) | 0.750 (19.1) | 8 (3.6) | 5 (.04) |
| | 3/8 (10) | 0.750 (19) | 1.32 (33.5) | 1.5 (38.1) | 0.200 (5.08) | 0.200(5.08) | 1.125 (28.6) | 0.120 (3.05) | 0.750 (19.1) | 8 (3.6) | 5 (.04) |
| | | | | | | | | | | | |

Metric numbers are for reference only.



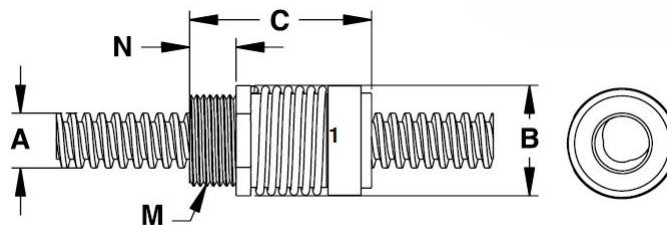
CMPT Thread Mount

| | Screw Diam. | Nut Diam. | Nut Length | Thread M* | Thread Length N | Dynamic Load** | Drag Torque (max.)** |
|----------------------|----------------|----------------|----------------|-----------|-----------------|----------------|----------------------|
| | A inch (mm) | B inch (mm) | C inch (mm) | | inch (mm) | lbs (Kg) | oz-in (N-m) |
| CMPT Thread Mount | 3/16 (4) | 0.625 (16) | 1.05 (26.6) | 9/16 - 18 | 0.240 (6.1) | 5 (2.3) | 4 (.03) |
| | 7/32 (5) | 0.625 (16) | 1.05 (26.6) | 9/16 - 18 | 0.240 (6.1) | 5 (2.3) | 4 (.03) |
| | 1/4 (6) | 0.625 (16) | 1.05 (26.6) | 9/16 - 18 | 0.240 (6.1) | 5 (2.3) | 4 (.03) |
| | 5/16 (8) | 0.750 (19) | 1.32 (33.5) | 5/8 - 18 | 0.320 (8.1) | 8 (3.6) | 5 (.04) |
| | 3/8 (10) | 0.750 (19) | 1.32 (33.5) | 5/8 - 18 | 0.320 (8.1) | 8 (3.6) | 5 (.04) |

Metric numbers are for reference only.

* metric available as required

** other spring pre-loads available



CMP Nut Series - Low Tech Anti-Backlash Nut

■ Lead Screw Compatibility: CMP Series

| Diameter | | Diameter Code | Lead | | LEAD CODE | Left Hand Available | Outside Diameter (for reference) | | Root Diameter (for reference) | | Efficiency %* |
|-------------|------------|---------------|---------|-------|-------------|---------------------|----------------------------------|------|-------------------------------|------|---------------|
| inches | mm | | inches | mm | | | inches | mm | inches | mm | |
| 3/16 | 5.6 | 018 | 0.020 | 0.50 | 0020 | | 0.188 | 4.78 | 0.163 | 4.14 | 30 |
| | | | 0.025 | 0.64 | 0025 | | 0.188 | 4.78 | 0.150 | 3.81 | 39 |
| | | | 0.039 | 1.00 | 0039 | | 0.188 | 4.78 | 0.144 | 3.66 | 47 |
| | | | 0.050 | 1.27 | 0050 | | 0.188 | 4.78 | 0.124 | 3.15 | 58 |
| | | | 0.100 | 2.54 | 0100 | | 0.188 | 4.78 | 0.136 | 3.45 | 69 |
| | | | 0.1875 | 4.76 | 0188 | | 0.188 | 4.78 | 0.167 | 4.24 | 78 |
| | | | 0.200 | 5.08 | 0200 | | 0.188 | 4.78 | 0.124 | 3.15 | 82 |
| | | | 0.375 | 9.53 | 0375 | | 0.188 | 4.78 | 0.161 | 4.09 | 84 |
| | | | 0.400 | 10.16 | 0400 | | 0.188 | 4.78 | 0.124 | 3.15 | 84 |
| | | | 0.427 | 10.85 | 0427 | | 0.188 | 4.78 | 0.162 | 4.11 | 85 |
| | | | 0.500 | 12.70 | 0500 | | 0.188 | 4.78 | 0.142 | 3.61 | 86 |
| 1/4 | 6 | 025 | 0.024 | 0.61 | 0024 | | 0.250 | 6.35 | 0.218 | 5.54 | 28 |
| | | | 0.025 | 0.64 | 0025 | | 0.250 | 6.35 | 0.214 | 5.44 | 30 |
| | | | 0.03125 | 0.79 | 0031 | | 0.250 | 6.35 | 0.208 | 5.28 | 34 |
| | | | 0.039 | 1.00 | 0039 | | 0.250 | 6.35 | 0.190 | 4.83 | 40 |
| | | | 0.048 | 1.22 | 0048 | | 0.250 | 6.35 | 0.190 | 4.83 | 45 |
| | | | 0.050 | 1.27 | 0050 | • | 0.250 | 6.35 | 0.191 | 4.85 | 46 |
| | | | 0.059 | 1.50 | 0059 | | 0.250 | 6.35 | 0.172 | 4.37 | 52 |
| | | | 0.0625 | 1.59 | 0063 | | 0.250 | 6.35 | 0.170 | 4.32 | 52 |
| | | | 0.079 | 2.00 | 0079 | | 0.250 | 6.35 | 0.170 | 4.32 | 59 |
| | | | 0.096 | 2.44 | 0096 | | 0.250 | 6.35 | 0.190 | 4.83 | 61 |
| | | | 0.100 | 2.54 | 0100 | | 0.250 | 6.35 | 0.190 | 4.83 | 62 |
| | | | 0.118 | 3.00 | 0118 | | 0.250 | 6.35 | 0.175 | 4.45 | 68 |
| | | | 0.125 | 3.18 | 0125 | | 0.250 | 6.35 | 0.190 | 4.83 | 67 |
| | | | 0.197 | 5.00 | 0197 | | 0.250 | 6.35 | 0.172 | 4.37 | 72 |
| | | | 0.200 | 5.08 | 0200 | | 0.250 | 6.35 | 0.170 | 4.32 | 65 |
| | | | 0.250 | 6.35 | 0250 | • | 0.250 | 6.35 | 0.168 | 4.27 | 79 |
| | | | 0.3125 | 7.94 | 0313 | | 0.250 | 6.35 | 0.184 | 4.67 | 81 |
| | | | 0.333 | 8.46 | 0333 | | 0.250 | 6.35 | 0.170 | 4.32 | 82 |
| | | | 0.394 | 10.00 | 0394 | | 0.250 | 6.35 | 0.170 | 4.32 | 78 |
| | | | 0.400 | 10.16 | 0400 | | 0.250 | 6.35 | 0.170 | 4.32 | 84 |
| 0.500 | 12.70 | 0500 | • | 0.250 | 6.35 | 0.169 | 4.29 | 85 | | | |
| 0.750 | 19.05 | 0750 | | 0.250 | 6.35 | 0.170 | 4.32 | 86 | | | |
| 1.000 | 25.40 | 1000 | • | 0.250 | 6.35 | 0.170 | 4.32 | 84 | | | |
| 5/16 | 8 | 031 | 0.039 | 1.00 | 0039 | | 0.315 | 8.00 | 0.261 | 6.63 | 34 |
| | | | 0.057 | 1.44 | 0057 | | 0.315 | 8.00 | 0.243 | 6.17 | 43 |
| | | | 0.0741 | 1.88 | 0074 | | 0.312 | 7.92 | 0.211 | 5.36 | 51 |
| | | | 0.111 | 2.82 | 0111 | | 0.312 | 7.92 | 0.232 | 5.89 | 60 |
| | | | 0.167 | 4.24 | 0167 | | 0.312 | 7.92 | 0.211 | 5.36 | 69 |
| | | | 0.250 | 6.35 | 0250 | | 0.312 | 7.92 | 0.234 | 5.94 | 76 |
| | | | 0.500 | 12.70 | 0500 | | 0.312 | 7.92 | 0.232 | 5.89 | 83 |
| | | | 0.800 | 20.32 | 0800 | | 0.306 | 7.77 | 0.243 | 6.17 | 86 |

Shaded areas have been translated from their designed inch or mm dimension to an equivalent mm or inch dimension.

* Listed efficiencies are theoretical values based on Kerkote® TFE coated lead-screw

** Listed efficiencies for Micro screws are theoretical values based on non-coated lead-screws

CMP Nut Series - Low Tech Anti-Backlash Nut

Lead Screw Compatibility: CMP Series

| Diameter | | Diameter Code | Lead | | LEAD CODE | Left Hand Available | Outside Diameter (for reference) | | Root Diameter (for reference) | | Efficiency %* |
|----------|-------|---------------|---------|-------|-----------|---------------------|----------------------------------|-------|-------------------------------|------|---------------|
| inches | mm | | inches | mm | | | inches | mm | inches | mm | |
| 3/8 | 10 | 037 | 0.025 | 0.64 | 0025 | | 0.375 | 9.53 | 0.337 | 8.56 | 21 |
| | | | 0.039 | 1.00 | 0039 | | 0.394 | 10.01 | 0.350 | 8.89 | 28 |
| | | | 0.04167 | 1.06 | 0042 | | 0.375 | 9.53 | 0.320 | 8.13 | 34 |
| | | | 0.050 | 1.27 | 0050 | • | 0.375 | 9.53 | 0.301 | 7.65 | 36 |
| | | | 0.055 | 1.40 | 0055 | | 0.375 | 9.53 | 0.303 | 7.70 | 38 |
| | | | 0.059 | 1.50 | 0059 | • | 0.389 | 9.88 | 0.313 | 7.95 | 38 |
| | | | 0.0625 | 1.59 | 0063 | • | 0.388 | 9.86 | 0.295 | 7.49 | 41 |
| | | | 0.068 | 1.73 | 0068 | | 0.388 | 9.86 | 0.295 | 7.49 | 42 |
| | | | 0.079 | 2.00 | 0079 | | 0.375 | 9.53 | 0.264 | 6.71 | 47 |
| | | | 0.0833 | 2.12 | 0083 | | 0.375 | 9.53 | 0.293 | 7.44 | 48 |
| | | | 0.100 | 2.54 | 0100 | • | 0.375 | 9.53 | 0.266 | 6.76 | 53 |
| | | | 0.125 | 3.18 | 0125 | • | 0.375 | 9.53 | 0.295 | 7.49 | 59 |
| | | | 0.157 | 4.00 | 0157 | | 0.375 | 9.53 | 0.274 | 6.96 | 65 |
| | | | 0.1667 | 4.23 | 0167 | | 0.371 | 9.42 | 0.261 | 6.63 | 61 |
| | | | 0.197 | 5.00 | 0197 | | 0.375 | 9.53 | 0.266 | 6.76 | 69 |
| | | | 0.200 | 5.08 | 0200 | • | 0.375 | 9.53 | 0.266 | 6.76 | 69 |
| | | | 0.250 | 6.35 | 0250 | | 0.375 | 9.53 | 0.268 | 6.81 | 70 |
| | | | 0.300 | 7.62 | 0300 | | 0.375 | 9.53 | 0.255 | 6.48 | 76 |
| | | | 0.333 | 8.46 | 0333 | | 0.375 | 9.53 | 0.245 | 6.22 | 78 |
| | | | 0.363 | 9.22 | 0363 | • | 0.375 | 9.53 | 0.260 | 6.60 | 79 |
| | | | 0.375 | 9.53 | 0375 | | 0.375 | 9.53 | 0.265 | 6.73 | 79 |
| | | | 0.394 | 10.00 | 0394 | | 0.375 | 9.53 | 0.260 | 6.60 | 79 |
| | | | 0.400 | 10.16 | 0400 | | 0.375 | 9.53 | 0.293 | 7.44 | 79 |
| | | | 0.472 | 12.00 | 0472 | | 0.388 | 9.86 | 0.287 | 7.29 | 82 |
| | | | 0.500 | 12.70 | 0500 | • | 0.388 | 9.86 | 0.265 | 6.73 | 81 |
| | | | 0.667 | 16.94 | 0667 | | 0.375 | 9.53 | 0.273 | 6.93 | 83 |
| 0.667 | 19.05 | 0750 | | 0.388 | 9.86 | 0.273 | 6.93 | 84 | | | |
| 0.984 | 25.00 | 0984 | | 0.375 | 9.53 | 0.262 | 6.65 | 84 | | | |
| 1.000 | 25.40 | 1000 | | 0.383 | 9.73 | 0.254 | 6.45 | 84 | | | |
| 1.200 | 30.48 | 1200 | • | 0.383 | 9.73 | 0.254 | 6.45 | 84 | | | |
| 1.250 | 31.75 | 1250 | | 0.375 | 9.53 | 0.278 | 7.06 | 84 | | | |
| 1.500 | 38.10 | 1500 | | 0.375 | 9.53 | 0.264 | 6.71 | 83 | | | |

Shaded areas have been translated from their designed inch or mm dimension to an equivalent mm or inch dimension.

* Listed efficiencies are theoretical values based on Kerkote® TFE coated lead-screw

** Listed efficiencies for Micro screws are theoretical values based on non-coated lead-screws

■ Material & Teflon TFE Coating Options

| Materials | | Teflon TFE Coatings | |
|--|---|-------------------------------|--|
| Kerkite® Composite Polymer Nuts | <p>In addition to the Kerk® self-lubricating acetal nut material, we offer a variety of custom compounded Kerkite composite polymers. Kerkite polymers are a family of high performance materials that offer exceptional wear properties with the cost and design advantages afforded through injection molding. Kerkite polymers offer a variety of mechanical, thermal and electrical properties and are compatible with many chemicals and environmental conditions. Each member of the Kerkite family is compounded with lubricants, reinforcements and thermoplastic polymers formulated to provide optimum performance in its target conditions and applications.</p> | Kerkote® TFE Coating | <p>Soft coating that is a long-term, maintenance-free, dry lubricant, optimized for softer plastics like acetals and nylons, with or without mechanical reinforcement. Lubrication to the nut/screw interface occurs by the nut picking up Kerkote® TFE particles from the coating as well as from the migration of the internal lubricant within the plastic nut. The transfer of TFE to the nut continues throughout the operating life of the assembly as long as the nut periodically travels over areas with Kerkote® TFE coating. The lubricant, although solid, also has some “spreading” ability as in fluid lubricants. Kerkote® TFE coated screws provide the maximum level of self-lubrication and should not be additionally lubricated or used in environments where oils or other lubricant contamination is possible.</p> |
| Special Materials | <p>Kerk® has rolled screws in many materials, including 316 stainless, 400 series stainless, precipitate hardening materials, carbon steel, aluminum, and titanium. Kerk® nuts have been produced in many alternative plastics including PEEK, polyester, Torlon®, Vespel®, PVDF, UHMW, Ertalyte®, customer-supplied specialty materials, and metal nuts made from bronze, brass, and stainless steel. If the material can be molded, machined, ground, or rolled, we can likely process it.</p> | Black Ice® TFE Coating | <p>Hard coating that is long term, maintenance-free and is exceptionally durable in all types of environments, with virtually any type of polymer nut. Black Ice® TFE coating remains on the screw, offering a low friction surface upon which the nut travels. Rather than acting as a dry lubricant, Black Ice® TFE is an anti-friction coating whose surface properties displace the metal to which it is applied. Though it is not intended for use with metal or glass fiber reinforced nuts, Black Ice® TFE is bonded securely to the screw’s surface and can withstand abrasion from contamination, rigid polymer systems, fluid impingement and wash down applications. Black Ice® TFE can be used in more aggressive environment conditions, or anywhere reduced friction and a permanent coating is desired. Not intended to be used with additional lubricants.</p> |

Note: There are certain applications where external lubrication may be desired. These include the use of nut materials such as glass reinforced plastic or metal. Greases, when used properly can provide unique capabilities and Haydon Kerk Motion Solutions does offer a selection of greases developed specifically for these applications. Please contact a sales engineer for assistance selecting the best lubricant for your requirements.