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# Electromechanical Components

Gears, shafts, washers, and ball bearings

## **Pinions:**

### **Standard precision 64 pitch pinions for .0785" (2mm) shafts.**

Hardened steel with nickle alloy plating Rc50 for use with composite gears listed below or with plastic gears. Plating provides superior solderability and corrosion resistance as well as low friction and wear resistance. Face width .160" AGMA 9 precision. Available in 9,10,11,12,13,and 14 teeth. Part number N323-(number of teeth). Price is \$36.90 for a package of 10.

### **Standard precision 64 pitch pinions for.0785" (2mm) shafts to mesh with metal gears.**

Hardened steel with nickle alloy plating Rc50 for use with steel or bronze gears. Steel underneath plating is harder then the above gears providing longer wear life when meshed with metal gears. Can also be used with composite and plastic gears. Teeth are coated with a red low friction coating which further reduces friction and also prevents solder from getting into teeth. Face width .160" AGMA 8 precision. Available in 8,9,10 teeth. Part number N407-(number of teeth). Price is \$99.80 for a package of 10.

### **Extra precision 64 pitch pinions for .0785" (2mm) shafts.**

Hardened steel with nickle alloy plating Rc50 for use with composite gears listed below or with plastic gears. Plating provides superior solderability and corrosion resistance as well as low friction and wear resistance. A thin unmeltable low friction Teflon based coating provides even lower friction and prevents solder from sticking to the teeth when soldering pinion to a shaft. Face width .160" AGMA 10 precision. Available in 8,9,10 teeth. Part number N427-(number of teeth). Price is \$79.80 for a package of 10.

### **Standard precision 48 pitch pinions for .0785"(2mm) shafts.**

Hardened steel with nickle alloy plating Rc50 for use with plastic gears. Plating provides superior solderability and corrosion resistance as well as low friction and wear resistance. Face width .160" AGMA 7 precision. Available in 8,9,10 teeth. Part number N450-(number of teeth). Price is \$28.00 for a package of 10. -

## **Spurs:**

### **Standard precision 64 pitch spur for 3/32" shafts.**

Molded reinforced composite spur with aluminum 4-40 set screw hub. Overall width is .250". Will operate at pinions speeds up to 200,000 rpm without external lubrication with pinions above. Wear life at high speed approx 10x that of steel or bronze gears. High strength material will handle high torque and impact. Approx. 7x the strength of standard plastic gears. Available in 37, 38,39 teeth. AGMA 8 precision. Part number N219-(number of teeth). Price is \$30.90 for a package of 10.

### **Extra precision 64 pitch spur for 3/32" shafts.**

Molded reinforced composite spur with aluminum 4-40 set screw hub. Overall width is .250". Will operate at pinions speeds up to 200,000 rpm without external lubrication with pinions above. Wear life at high speed approx. 10x that of steel or bronze gears. High strength material will handle high torque and impact. Approximately 7 times the strength of ordinary plastic gears. Available in 37, 38 teeth. AGMA 9 precision. Part number N428-(part number). Price is \$69.80 for a package of 10.

### **Super precision 64 pitch spur for 3/32" axle.**

Molded reinforced composite spur with magnesium 4-40 set screw hub. Overall width is .250". Will operate at pinions speeds up to 200,000 rpm without external lubrication with pinions above. Wear life at high speed approx 10x that of steel or bronze gears. Extra high strength. Available in 39 teeth. AGMA 10 precision. Part number N549-39. Price is \$10.95 ea.

## **Precision washers:**

### **.007" phosphorus bronze for .0785", 2mm, 5/64" shafts.**

.125±.002 outside diameter, .079±.0005, .007"±.001" thick. High precision washers completely flat and debured. Part number N265 (pk. of 250 pc.) - \$41.46pk.

### **.003" phosphorus bronze for .0785", 2mm, 5/64" shafts.**

.125±.002 outside diameter, .079±.0005, .003"±.001" thick. High precision washers completely flat and debured. Part number N266 (pk. of 250 pc.) - \$41.46pk.

### **.007" aluminum for .0785", 2mm, 5/64" shafts.**

.125±.002 outside diameter, .079±.0005, .007"±.001" thick. High precision washers completely flat and debured. Part number N249 (pk. of 250 pc.) - \$41.46pk.

### **.010" phosphor bronze for 3/32", 2.5mm shafts.**

.125±.002 outside diameter, .094±.0005, .010"±.001". High precision washers completely flat and debured. Part number N296 (pk. of 250 pc.) - \$35.21pk.

**.010" phosphorous bronze for 3mm and 1/8" shafts.**

.125±.002 outside diameter, .079±.0005 ID, .007"±.001". High precision washers completely flat and debured. Part number N296 (pk. of 250 pc.) - \$43.33pk.

**.020" stainless for 3mm and 1/8" shafts.**

.175±.002 outside diameter, .1254±.0005 ID, .020"±.001" thick. High precision washers completely flat and debured. Part number N477 (pk. of 250 pc.) - \$46.88pk.

## **Shafts**

**.0785" (fits 2mm bb) x 1.580" long.**

Hardened high speed steel shaft with hardened (Rc70) nickle alloy plating for superior corrosion resistance. Diameter ±.0001". Part N101 (pk 20) - \$20.50 pk.

**.0785" (fits 2mm bb) x 1.835" long.**

Hardened high speed steel shaft with hardened (Rc70) nickle alloy plating for superior corrosion resistance. Diameter ±.0001". Part N102 (pk 10) - \$20.50 pk.

**.0934" (fits 3/32 ball bearings) x 2.090" long.**

Hardened high speed steel shaft with hardened (Rc70) nickle alloy plating for superior corrosion resistance. Diameter ±.0001". Part N103 (pk 10) - \$54.90 pk.

**.1179" (fits 3mm ball bearings) x 2.425" long.**

Hardened 416 stainless Rc50. Diameter ±.0001". Part N104 (pk 10) - \$20.50 pk.

**.1245" (fits 1/8" ball bearings) x 2.625" long.**

Hardened high speed steel shaft Rc60-63 Diameter ±.0001". Part N105 (pk 10) - \$18.00 pk.

## **Ball Bearings**

**2mm bore x 5mm x1.5mm wide unflanged open ABEC7 stainless.**

High speed ribbon retainer, oil lube, 200,000 rpm max. N185 - \$14.40 ea.

**2mm bore x 6mm x 3mm wide unflanged double sheilded ABEC3 stainless.**

Grease lube, crown retainer, 50,000 rpm max.N186 - \$12.95 ea.

**3/32" bore x 3/16" flanged stainless steel double sheilded ABEC 7 stainless**

Oil lube, ribbon retainer, 100,000 rpm max. N187 - \$16.28 ea.

**3mm bore unflanged chrome steel double sheilded ABEC 3**

grease lube 50,000 rpm max. N188 - \$7.00 ea. 1/8" bore x 3/16" od x 5/32 wide double sheilded ABEC 3

chrome steel grease lube, ribbon retainer 50,000 rpm max. N189 - \$7.00 ea.

**Payment accepted by Visa or Master Card minimum \$30.00. Applications accepted for open accounts, minimum purchase \$75.00.**

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