# JOURNALS & END BLOCKS

## Screw Journals

Duff-Norton offers the traditional style Type 1 & 3 journal end screws with and without keyed drive ends. These traditional styled journals coordinate well with the Duff-Norton End Blocks and can be delivered quickly.

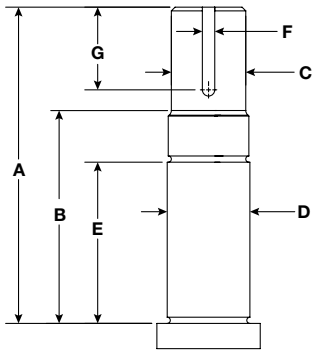
Additionally, Duff-Norton does have the machining capability to provide custom journal ends.

### FEATURES & BENEFITS

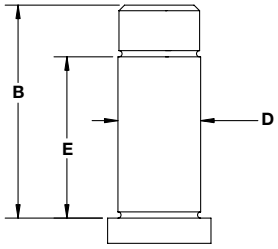
**Journal End Features**

- Common Type 1 and 3 journal ends for Acme or Ball Screws
- Close bearing journal tolerances, for simple bearing installation
- Specialty journals integrate with Duff-Norton Drive and Control components
- Integrate with standard self-locking lock nuts
- Custom journals available for many applications

## Fixed Journal Ends

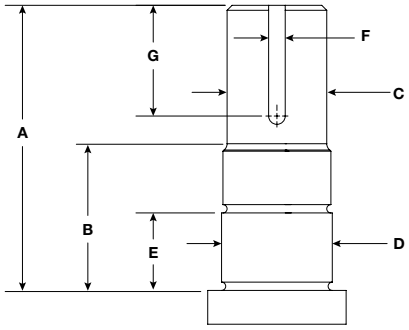



Type 3A - with Drive End

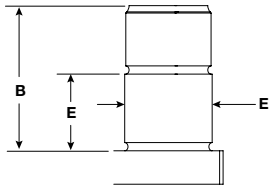



Type 3B - without Drive End

## Simple Journal Ends




Type 1A - with Drive End




Type 1B - without Drive End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## Journals & End Blocks Dimensions - Simple and Fixed

### Fixed Journal Ends

| Acme Screw & Lead | Ball Screw & Lead | Type 1A, Type 1B - Fixed Ends | | | | | Motor Flange Fixed "A" | Common Dimensions | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | E | End Block # | Bearing Number | | C | D** | F | G | Lock Nut # |
| 1/2 - All* | 1/2 - All* | 2.90 | 1.62 | 1.26 | EB000F | 7200 | Special | 0.313 | 0.3936 | 1/8 | 1.25 | BN-00 |
| 0.63 - All*, 3/4 - All* | 0.63 - All* | 3.29 | 2.00 | 1.56 | EB001F | 7301 | | 0.406 | 0.4723 | | | BN-01 |
| 1 - All* | 3/4 - All* | 3.65 | 2.38 | 1.84 | EB003F | 7303 | | 0.562 | 0.6692 | | | BN-03 |
| 1 x .100 | 1, 1.17 - All* | 4.03 | 2.73 | 2.14 | EB004F | 7304 | | 0.625 | 0.7873 | 3/16 | | BN-04 |
| 1-1/2 x .375 | 1-1/2 x .047, 1-1/2 x 1.00 | 4.45 | 2.93 | 2.29 | EB005F | 7305 | | 0.875 | 0.9842 | | | BN-05 |
| 1-1/2 - All*, 2 x .500 | 1-1/2 x .250, 1-1/2 x .500, 1-1/2 x 1.875 | 4.86 | 3.05 | 2.42 | EB006F | 7306 | | 1.00 | 0.1810 | 1/4 | | BN-06 |
| 2 x .500, 2-1/4 x .500 | 2 - All* | 6.37 | 4.13 | 3.50 | EB008S | 7308 | | 1.375 | 1.5747 | 5/16 | 1.88 | BN-08 |
| 2-1/4 x .250 | 2-1/4 - All* | 6.68 | 4.60 | 3.87 | EB009S | 7309 | | | 1.7716 | | | BN-09 |
| 2-1/2 - All* | — | 7.75 | 4.75 | 4.04 | EB010S | 7310 | | 1.75 | 1.9684 | 3/8 | 2.75 | BN-10 |
| 3 - All* | 3 - All* | 9.22 | 5.65 | 4.86 | EB012S | 7312 | | 2.25 | 2.3621 | 1/2 | 3.38 | BN-12 |
| 3-3/4, 4-1/2 - All* | 4 - All* | 10.25 | 5.63 | 4.94 | EB016F | 7316 | | 3 | 3.1500 | 3/4 | 3.25 | BN-16 |

## Journals & End Blocks Dimensions - Simple and Fixed

### Simple Journal Ends

| Acme Screw & Lead | Ball Screw & Lead | Type 1A, Type 1B - Simple Ends | | | | | Common Dimensions | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | A | B | E | End Block # | Bearing Number | C | D** | F | G | Lock Nut # |
| 1/2 - All* | 1/2 - All* | 1.92 | 0.64 | 0.35 | EB000S | 6200 | 0.313 | 0.3936 | 1/8 | 1.25 | SN-00 |
| 0.63 - All*, 3/4 - All* | 0.63 - All* | 2.13 | 0.84 | 0.47 | EB001S | 6301 | 0.406 | 0.4723 | | | SN-01 |
| 1 - All* | 3/4 - All* | 2.35 | 1.00 | 0.55 | EB003S | 6303 | 0.562 | 0.6692 | | | SN-02 |
| 1 x .100 | 1, 1.17 - All* | 2.44 | 1.13 | 0.59 | EB004S | 6304 | 0.625 | 0.7873 | 3/16 | | SN-04 |
| 1-1/2 x .375 | 1-1/2 x .047, 1-1/2 x 1.00 | 2.78 | 1.26 | 0.67 | EB005S | 6305 | 0.875 | 0.9842 | | | SN-05 |
| 1-1/2 - All*, 2 x .500 | 1-1/2 x .250, 1-1/2 x .500, 1-1/2 x 1.875 | 3.11 | 1.30 | 0.75 | EB006S | 6306 | 1.00 | 0.1810 | 1/4 | | SN-06 |
| 2 x .500, 2-1/4 x .500 | 2 - All* | 3.71 | 1.47 | 0.91 | EB008S | 6308 | 1.375 | 1.5747 | 5/16 | 1.88 | SN-08 |
| 2-1/4 x .250 | 2-1/4 - All* | 3.76 | 1.68 | 0.98 | EB009S | 6309 | | 1.7716 | | | SN-09 |
| 2-1/2 - All* | — | 4.69 | 1.69 | 1.06 | EB010S | 6310 | 1.75 | 1.9684 | 3/8 | 2.75 | SN-10 |
| 3 - All* | 3 - All* | 5.50 | 1.93 | 1.22 | EB012S | 6312 | 2.25 | 2.3621 | 1/2 | 3.38 | SN-12 |
| 3-3/4, 4-1/2 - All* | 4 - All* | 6.75 | 2.13 | 1.44 | EB016F | 6316 | 3 | 3.1500 | 3/4 | 3.25 | BN-16 |

Note: Unless otherwise specified all dimensions are in Inches.

Duff-Norton does not warrant that each journal's drive end is capable of lifting the full rated load capacity - actual results may vary from application to application.

Bearing journals for some screws may show a slight thread trace along the journal diameter; this is not detrimental, and has been designed this way to fit each screw into the largest bearing support possible.

*All leads for that diameter screw except where noted*

**Standard journal tolerances are as follows - Journals 00 - 04 are +.0000 / - .0004, Journals 05 - 10 are +.0000 / -.0005, Journal 12 is +.0000 / -.0006**

Duff-Norton's End Blocks and Screw End Journals are the key to assembling a complete screw and nut system from the Drive End all the way through to Control End. Our End Blocks follow the conventional style, and together with a special journal design allow the user to integrate the following Duff-Norton components:

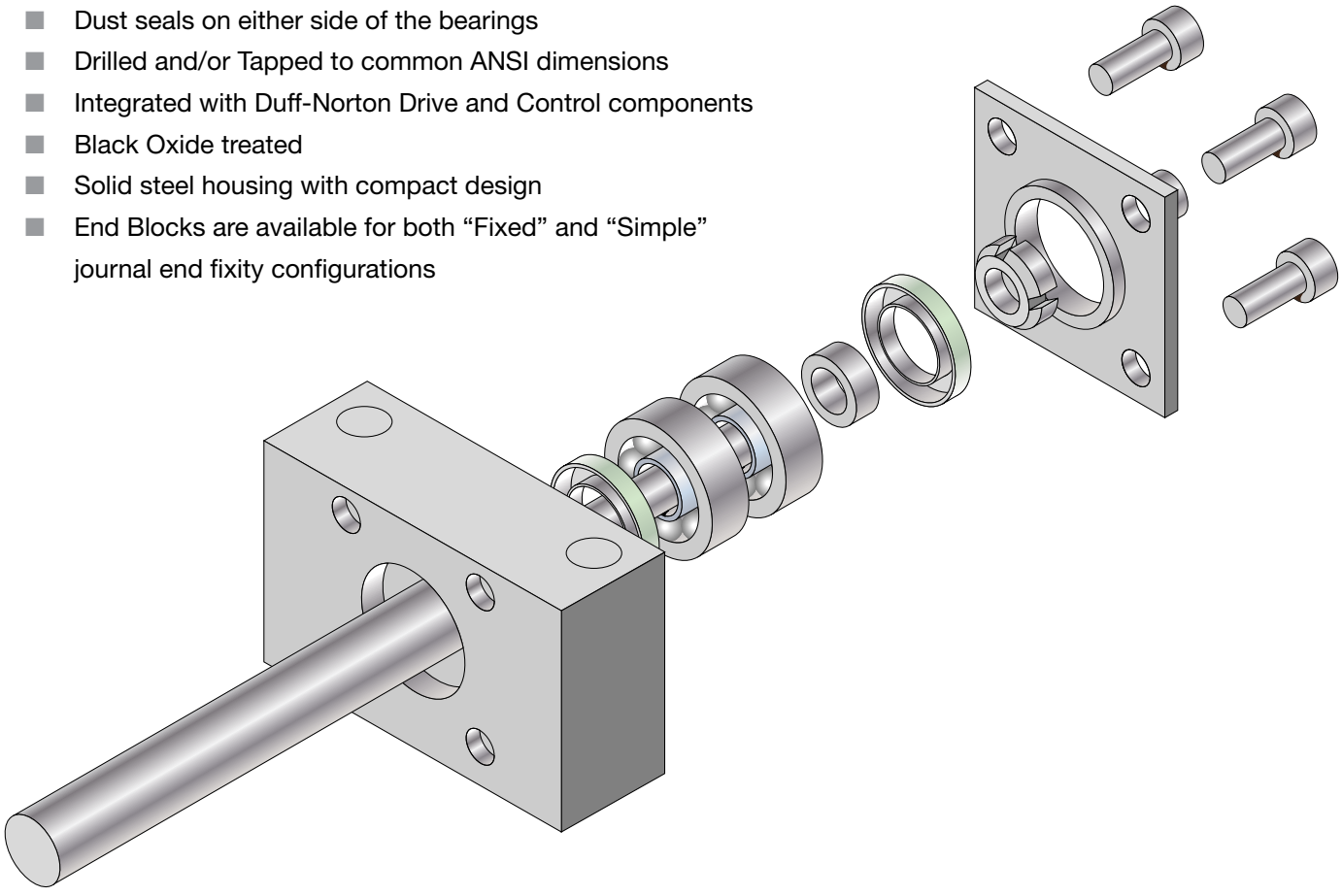
- Motor Flanges: Servo, IEC, NEMA frame motors
- Gearmotors: brake, non-brake, IEC, NEMA gearmotors closely coupled with Duff-Norton Motor Flanges
- Ring Kit Encoders: coupled between Duff-Norton motor flanges and motors or gear motors
- Limit Switches and Potentiometers
- Control panels – custom designed for each application

## How does this work?

Simply remove the bolts from the End Block's face plate, and use the longer bolts provided in the Duff-Norton kit for that drive or control component for mounting that component to the block face. All mounting holes and surfaces have been designed for proper fit. Duff-Norton specialty screw end journals have also been specifically designed to properly mate with each of these control and drive components.

### FEATURES & BENEFITS

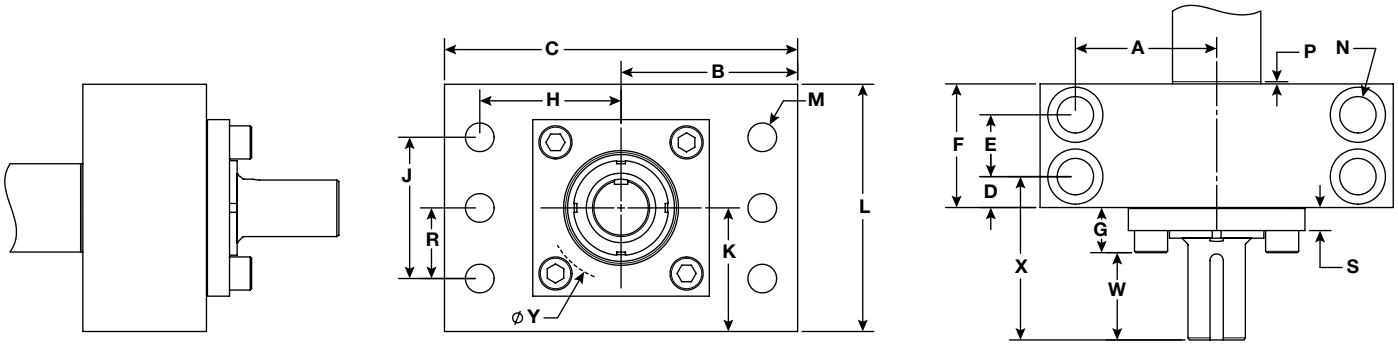
- Angular Contact Bearings for excellent radial and thrust load ratings
- Dust seals on either side of the bearings
- Drilled and/or Tapped to common ANSI dimensions
- Integrated with Duff-Norton Drive and Control components
- Black Oxide treated
- Solid steel housing with compact design
- End Blocks are available for both "Fixed" and "Simple" journal end fixity configurations



## End Block Performance Specifications - Fixed

| End Block Part Number | Acme Screw & Lead | Ball Screw & Lead | Bearing Bore (mm) | Basic Dyn. Cap. | Basic Stat. Cap. | Locknut |
|---|---|---|---|---|---|---|
| EB000F | 1/2 - All* | 1/2 - All* | 10 | 1972 | 2179 | BN-00 |
| EB001F | 5/8 - All*, 3/4 - All* | 0.63 - All* | 12 | 4141 | 4280 | BN-01 |
| EB003F | 1 - All* | 3/4 - All* | 17 | 5837 | 6917 | BN-03 |
| EB004F | 1 x .100 | 1, 1.17 - All* | 20 | 6823 | 8344 | BN-04 |
| EB005F | 1-1/2 x .375 | 1-1/2 x .047, 1-1/2 x 1.00 | 25 | 9623 | 12623 | BN-05 |
| EB006F | 1-1/2 - All*, 2 x .500 | 1-1/2 x .250, 1-1/2 x .500, 1-1/2 x 1.875 | 30 | 12226 | 17725 | BN-06 |
| EB008F | 2 x .250, 2-1/4 x .500 | 2 - All* | 40 | 17747 | 26371 | BN-08 |
| EB009F | 2-1/4 x .250 | 2-1/4 - All* | 45 | 23072 | 34585 | BN-09 |
| EB010F | 2-1/2 - All* | — | 50 | 26818 | 41502 | BN-10 |
| EB012F | 3 - All* | 3 - All* | 60 | 35495 | 57065 | BN-12 |
| EB016F | 3-3/4, 4-1/2 - All* | 4 - All* | 80 | 53242 | 94243 | BN-16 |

*All leads for that diameter screw except where noted  Note: Unless otherwise specified all dimensions are in inches.




## End Block Dimensions - Fixed

| End Block Part No. | Bearing ID (mm) | A & H | B | C | D | E | F | G | J | K | L | M | N | P | R | S | W | X | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EB000F | 10 | 1.125 | 1.50 | 3.00 | 0.63 | — | 1.25 | 0.47 | 1.375 | 1.375 | 2.38 | 4 Holes 0.281 Diameter | 2 Holes 0.281 Dia. thru 0.50 C-bore x 0.56 DP | 0.03 | 0.688 | 0.22 | 1.28 | 2.375 | 1.40 |
| EB001F | 12 | 1.50 | 2.00 | 4.00 | 0.75 | — | 1.50 | 0.48 | 1.500 | 1.313 | 2.50 | 4 Holes 0.281 Diameter | 2 Holes 0.406 Dia. thru 0.625 C-bore x .875 DP | 0.03 | 0.750 | 0.23 | 1.27 | 2.500 | 1.40 |
| EB003F | 17 | 1.75 | 2.38 | 4.50 | 0.875 | — | 1.75 | 0.65 | 1.500 | 1.750 | 3.13 | 4 Holes 0.406 Diameter | 2 Holes 0.531 Dia. thru 0.81 C-bore x 1.125 DP | 0.03 | 0.750 | 0.40 | 1.22 | 2.750 | 2.00 |
| EB004F | 20 | 1.75 | 2.38 | 5.00 | 1.00 | — | 2.00 | 0.65 | 1.750 | 1.750 | 3.13 | 4 Holes 0.469 Diameter | 2 Holes 0.656 Dia. thru 1.00 C-bore x 1.312 DP | 0.03 | 0.875 | 0.40 | 1.35 | 3.000 | 2.00 |
| EB005F | 25 | 2.38 | 3.25 | 6.5 | 1.00 | — | 2.00 | 0.71 | 2.000 | 2.500 | 4.38 | 4 Holes 0.656 Diameter | 2 Holes 0.906 Dia. thru 1.375 C-bore x 2.00 DP | 0.06 | 1.000 | 0.40 | 1.66 | 3.375 | 2.53 |
| EB006F | 30 | 2.50 | 3.50 | 6.50 | 1.00 | — | 2.00 | 0.90 | 2.500 | 2.500 | 4.75 | 4 Holes 0.656 Diameter | 2 Holes 0.906 Dia. thru 1.375 C-bore x 2.00 DP | 0.06 | 1.250 | 0.53 | 1.72 | 3.625 | 2.94 |
| EB008F | 40 | 4.00 | 5.00 | 10.00 | 0.75 | 1.50 | 3.00 | 1.28 | 4.000 | 3.500 | 7.00 | 6 Holes 0.656 Diameter | 4 Holes 0.781 Dia. thru 1.188 C-bore x 2.00 DP | 0.06 | 2.000 | 0.65 | 1.85 | 3.875 | 4.31 |
| EB009F | 45 | 4.00 | 5.00 | 10.00 | 0.90 | 1.75 | 3.50 | 1.28 | 4.000 | 3.500 | 7.00 | 6 Holes 0.812 Diameter | 4 Holes 1.031 Dia. thru 1.562 C-bore x 2.00 DP | 0.06 | 2.000 | 0.65 | 1.97 | 4.125 | 4.31 |
| EB010F | 50 | 4.00 | 5.00 | 10.00 | 1.10 | 1.75 | 3.50 | 1.28 | 4.000 | 3.500 | 7.00 | 6 Holes 0.812 Diameter | 4 Holes 1.031 Dia. thru 1.562 C-bore x 2.00 DP | 0.06 | 2.000 | 0.65 | 2.72 | 4.875 | 4.31 |
| EB012F | 60 | 4.00 | 5.00 | 10.00 | 1.00 | 2.35 | 4.00 | 1.28 | 4.000 | 3.500 | 7.00 | 6 Holes 0.812 Diameter | 4 Holes 1.031 Dia. thru 1.562 C-bore x 2.00 DP | 0.06 | 2.000 | 0.65 | 3.22 | 5.500 | 5.41 |
| EB016F | 80 | 5.00 | 6.25 | 12.50 | 1.00 | 3.00 | 5.00 | 1.62 | 5.500 | 4.500 | 8.50 | 6 Holes 0.812 Diameter | 4 Holes 1.031 Dia. thru 1.562 C-bore x 2.00 DP | 0.06 | 2.750 | 0.75 | 3.63 | 6.250 | 6.75 |

Note: Unless otherwise specified all dimensions are in Inches.

Note: Duff-Norton does not warrant that these typical Journal End and End Block combinations are capable of accepting the amount of torque and axial load required to drive their respective screw and nut assembly to its full rated capacity. Careful analysis by the customer should be done to ensure the Duff-Norton journal end meets the application requirements.

Note: Duff-Norton always recommends driving the screw and nut system from the fixed end. The “Fixed” - “Simple” screw end configuration and End Block combination is the recommended configuration for most applications.

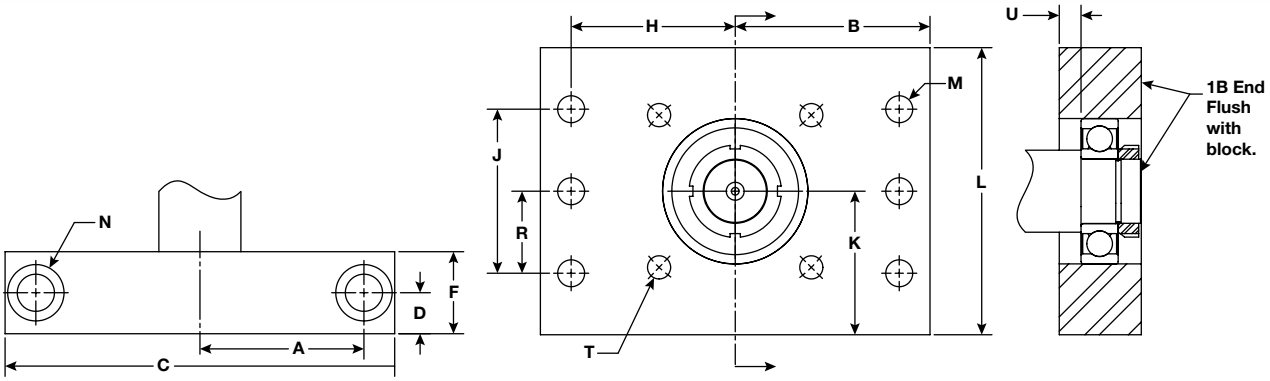
# PERFORMANCE SPECIFICATIONS & DIMENSIONS - SIMPLE

## End Block Performance Specifications - Simple

| End Block Part Number | Acme Screw & Lead | Ball Screw & Lead | Bearing Bore (mm) | Locknut |
|---|---|---|---|---|
| EB000S | 1/2 - All* | 1/2 - All* | 10 | BN-00 |
| EB001S | 0.63 - All*, 3/4 - All* | 0.63 - All* | 12 | BN-01 |
| EB003S | 1 - All* | 3/4 - All* | 17 | BN-03 |
| EB004S | 1 x .100 | 1, 1.17 - All* | 20 | BN-04 |
| EB005S | 1-1/2 x .375 | 1-1/2 x .047, 1-1/2 x 1.00 | 25 | BN-05 |
| EB006S | 1-1/2 - All*, 2 x .500 | 1-1/2 x .250, 1-1/2 x .500, 1-1/2 x 1.875 | 30 | BN-06 |
| EB008S | 2-1/4 x .500 | 2 - All* | 40 | BN-08 |
| EB009S | 2 x .250 | 2-1/4 - All* | 45 | BN-09 |
| EB010S | 2-1/4 X .250, 2-1/2 - All* | — | 50 | BN-10 |
| EB012S | 3 - All* | 3 - All* | 60 | BN-12 |
| EB016F | 3-3/4, 4-1/2 - All* | 4 - All* | 80 | BN-16 |

*All leads for that diameter screw except where noted

Note: Unless otherwise specified all dimensions are in inches.




## End Block Dimensions - Simple

| End Block Part No. | Bearing ID (mm) | A & H | B | C | D | F | J | K | L | M | N | R | T | U |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EB000S | 10 | 1.125 | 1.50 | 3.00 | 0.38 | 0.75 | 1.375 | 1.375 | 2.38 | 4 Holes 0.281 Diameter | 2 Holes 0.281 Dia. thru 0.50 C-bore x 0.56 DP | 0.688 | 4 Holes 1/4-20 Tap 1.78" B.C. | 0.10 |
| EB001S | 12 | 1.50 | 2.00 | 4.00 | 0.50 | 1.00 | 1.500 | 1.313 | 2.50 | 4 Holes 0.281 Diameter | 2 Holes 0.406 Dia. thru 0.625 C-bore x .875 DP | 0.750 | 4 Holes 1/4-20 Tap 1.78" B.C. | 0.15 |
| EB003S | 17 | 1.75 | 2.38 | 4.75 | 0.50 | 1.00 | 1.500 | 1.750 | 3.13 | 4 Holes 0.406 Diameter | 2 Holes 0.531 Dia. thru 0.81 C-bore x 1.125 DP | 0.750 | 4 Holes 5/16-18 Tap 2.375" B.C. | 0.00 |
| EB004S | 20 | 1.75 | 2.38 | 4.75 | 0.63 | 1.25 | 1.750 | 1.750 | 3.13 | 4 Holes 0.469 Diameter | 2 Holes 0.656 Dia. thru 1.00 C-bore x 1.312 DP | 0.875 | 4 Holes 5/16-18 Tap 2.375" B.C. | 0.13 |
| EB005S | 25 | 2.38 | 3.25 | 6.50 | 0.88 | 1.75 | 2.000 | 2.500 | 4.38 | 4 Holes 0.656 Diameter | 2 Holes 0.906 Dia. thru 1.375 C-bore x 2.00 DP | 1.000 | 4 Holes 5/16-18 Tap 3.00" B.C. | 0.50 |
| EB006S | 30 | 2.50 | 3.50 | 7.00 | 0.88 | 1.75 | 2.500 | 2.500 | 4.75 | 4 Holes 0.656 Diameter | 2 Holes 0.906 Dia. thru 1.375 C-bore x 2.00 DP | 1.250 | 4 Holes 3/8-16 Tap 3.50" B.C. | 0.45 |
| EB008S | 40 | 4.00 | 5.00 | 10.00 | 1.25 | 2.00 | 4.000 | 3.500 | 7.00 | 6 Holes 0.656 Diameter | 2 Holes 0.781 Dia. thru 1.188 C-bore x 2.00 DP | 2.000 | 4 Holes 5/8-11 Tap 5.25" B.C. | 0.53 |
| EB009S | 45 | 4.00 | 5.00 | 10.00 | 1.25 | 2.50 | 4.000 | 3.500 | 7.00 | 6 Holes 0.812 Diameter | 2 Holes 1.031 Dia. thru 1.562 C-bore x 2.00 DP | 2.000 | 4 Holes 5/8-11 Tap 5.25" B.C | 0.38 |
| EB010S | 50 | 4.00 | 5.00 | 10.00 | 1.25 | 2.50 | 4.000 | 3.500 | 7.00 | 6 Holes 0.812 Diameter | 2 Holes 1.031 Dia. thru 1.562 C-bore x 2.00 DP | 2.000 | 4 Holes 5/8-11 Tap 5.25" B.C | 0.75 |
| EB012S | 60 | 4.00 | 5.00 | 10.00 | 1.25 | 2.50 | 4.000 | 3.500 | 7.00 | 6 Holes 0.812 Diameter | 2 Holes 1.031 Dia. thru 1.562 C-bore x 2.00 DP | 2.000 | 4 Holes 5/8-11 Tap 6.36" B.C. | 0.62 |
| EB016S | 80 | 5.00 | 6.25 | 12.50 | 1.25 | 2.50 | 5.000 | 4.500 | 8.50 | 6 Holes 0.812 Diameter | 2 Holes 1.313 Dia. thru 1.562 C-bore x 2.00 DP | 2.750 | 4 Holes 7/8-9 Tap 8.00" B.C. | 0.37 |

Note: Unless otherwise specified all dimensions are in Inches.

Note: Duff-Norton does not warrant that these typical Journal End and End Block combinations are capable of accepting the amount of torque and axial load required to drive their respective screw and nut assembly to its full rated capacity. Careful analysis by the customer should be done to ensure the Duff-Norton journal end meets the application requirements.

Note: Duff-Norton always recommends driving the screw and nut system from the fixed end. The “Fixed” - “Simple” screw end configuration and End Block combination is the recommended configuration for most applications.