



2 boots, one on either side of the acme or ball nut are recommended for most applications. Either a collar or flange end can be supplied as needed. Adjustable hose clamps are provided to secure the boots to the nut.

Duff-Norton highly recommends the use of a bellows boot for most screw & nut applications. Duff-Norton can provide bellows boots for the most stringent application requirement.

## Features

### Some of the more important features are:

- New compact O.D. to I.D. dimensions
- Protects the lifting screw from: dust, dirt, moisture.
- Standard bellows boots are made of 33NN neoprene coated nylon with sewn construction, and are thicker than most boots provided by other sources.
- Special bellows boots can be provided with a variety of materials for applications:
  - High temperatures,
  - Corrosive atmospheres
  - UV / Outdoor environments
  - Bacteria resistance
- Bellows boots can also be provided with internal or external guides to prevent sagging, and with zippers for easy installation or removal.
- Flange End boots are provided with an aluminum back-up plate of the same OD to ensure secure mounting.
- Helps maintain the proper lubrication.

## Application Example

To accurately determine the ratio for expanded boot length versus compressed boot length follow this example.

**Expanded sleeve boot length – 2 ft.**  
**Compressed sleeve boot length –  $\frac{3}{4}$ " per foot**  
**Total compressed sleeve boot length is 1 1/2 inches**

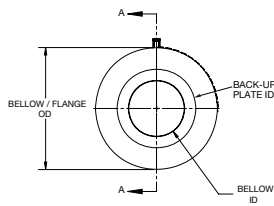
**Expanded zipper boot length – 2 ft.**  
**Compressed zipper boot length – 2" per foot**  
**Total compressed sleeve boot length is 4 inches**

Duff-Norton sleeve and zipper boots are sold in standard 1 ft. increments

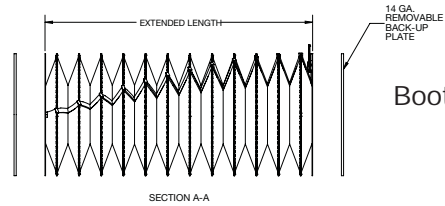




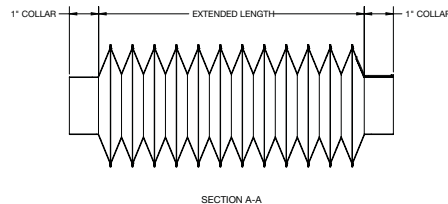
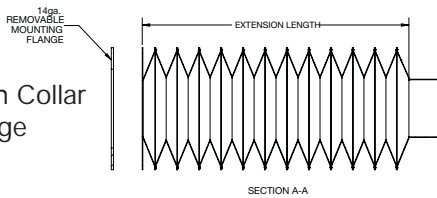
Boot End View



Boot with Flanges



Boot with Collar and Flange



Boot with Collars

## Acme Screw & Nut Boot Selection and Dimensions

Sleeve Boots Acme Nut #	Boot Part# Prefix	Acme Nut Diameter	Screw Diameter	Boot I.D.	Boot O.D	Collar End Length	Flange Diameter	Boot Compression
050AN----	BTS125----	1.25	0.50	1.25	3.75	1"	3.75	3/4" per Foot
063AN----	BTS125----	1.25	0.63	1.25	3.75	1"	3.75	3/4" per Foot
075AN----	BTS125----	1.25	0.75	1.25	3.75	1"	3.75	3/4" per Foot
100AN----	BTS150----	1.50	1.00	1.50	4.00	1"	4.00	3/4" per Foot
150AN----	BTS225----	2.25	1.50	2.25	4.75	1"	4.75	3/4" per Foot
200AN----	BTS275----	2.75	2.00	2.75	5.25	1"	5.25	3/4" per Foot
225AN----	BTS350----	3.38	2.25	3.50	6.00	1"	6.00	3/4" per Foot
250AN----	BTS350----	3.38	2.50	3.50	6.00	1"	6.00	3/4" per Foot

Boots for larger size Acme Nuts are available - contact Customer Service for assistance.

Zipper Boots Acme Nut#	Boot Part# Prefix	Acme Nut Diameter	Screw Diameter	Boot I.D.	Boot O.D	Collar End Length	Flange Diameter	Boot Compression
050AN----	BTZ125----	1.25	0.50	1.25	3.75	1"	3.75	2" per Foot
063AN----	BTZ125----	1.25	0.63	1.25	3.75	1"	3.75	2" per Foot
075AN----	BTZ125----	1.25	0.75	1.25	3.75	1"	3.75	2" per Foot
100AN----	BTZ150----	1.50	1.00	1.50	4.00	1"	4.00	2" per Foot
150AN----	BTZ225----	2.25	1.50	2.25	4.75	1"	4.75	2" per Foot
200AN----	BTZ275----	2.75	2.00	2.75	5.25	1"	5.25	2" per Foot
225AN----	BTZ350----	3.38	2.25	3.50	6.00	1"	6.00	2" per Foot
250AN----	BTZ350----	3.38	2.50	3.50	6.00	1"	6.00	2" per Foot

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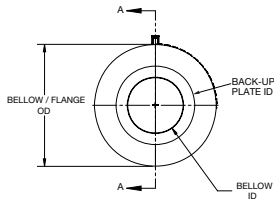
NOTE: Unless otherwise specified all dimensions are in Inches.

NOTE - Boots with internal guides can be supplied for horizontal applications to ensure smooth nut translating with out interference from fabric sagging - both the boots' ID and OD might need to be enlarged to accommodate the guides. Please contact out customer service for more information.

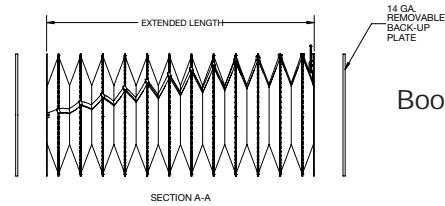
NOTE - Collar ID and Boot ID are the same dimension

# Linear Motion Components

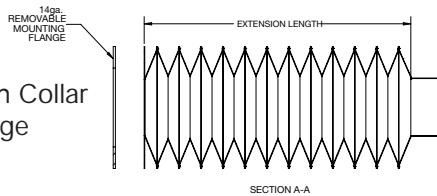
Boot End View



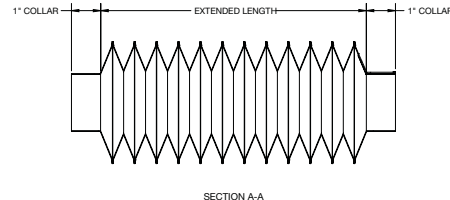
Boot with Flanges



Boot with Collar and Flange



Boot with Collars



## Ball Screw & Nut Boot Selection and Dimensions

Sleeve Boots Ball Nut #	Boot Part# Prefix	Ball Nut Diameter	Screw Diameter	Boot I.D.	Boot O.D.	Collar End Length	Flange Diameter	Boot Compression
050BNH020	BTS150----	1.38	0.50	1.50	4.00	1"	4.00	3/4" per Foot
050BNH050	BTS175----	1.72	0.50	1.75	4.25	1"	4.25	3/4" per Foot
063BNE020	BTS175----	1.60	0.63	1.75	4.25	1"	4.25	3/4" per Foot
063BNE020L	BTS175----	1.60	0.63	1.75	4.25	1"	4.25	3/4" per Foot
063BNH100	BTS175----	1.65	0.63	1.75	4.25	1"	4.25	3/4" per Foot
075BNG020	BTS175----	1.56	0.75	1.75	4.25	1"	4.25	3/4" per Foot
075BNH020	BTS175----	1.56	0.75	1.75	4.25	1"	4.25	3/4" per Foot
075BNH050	BTS225----	2.12	0.75	2.25	4.75	1"	4.75	3/4" per Foot
100BNE025	BTS225----	2.14	1.00	2.25	4.75	1"	4.75	3/4" per Foot
100BNF025	BTS225----	2.14	1.00	2.25	4.75	1"	4.75	3/4" per Foot
100BNF100	BTS225----	2.13	1.00	2.25	4.75	1"	4.75	3/4" per Foot
117BNH041	BTS250----	2.31	1.17	2.50	5.00	1"	5.00	3/4" per Foot
150BNH047	BTS300----	2.93	1.50	3.00	5.50	1"	5.50	3/4" per Foot
150BNF100	BTS350----	3.44	1.50	3.50	6.00	1"	6.00	3/4" per Foot
150BNR100	BTS400----	3.92	1.50	4.00	6.50	1"	6.50	3/4" per Foot
150BNF187	BTS350----	3.36	1.50	3.50	6.00	1"	6.00	3/4" per Foot
200BNH050	BTS400----	3.90	2.00	4.00	6.50	1"	6.50	3/4" per Foot
200BNH100	BTS475----	4.58	2.00	4.75	7.25	1"	7.25	3/4" per Foot
225BNH050	BTS400----	3.95	2.25	4.00	6.50	1"	6.50	3/4" per Foot
225BNH050L	BTS400----	3.95	2.25	4.00	6.50	1"	6.50	3/4" per Foot
225BNH100	BTS475----	4.60	2.25	4.75	7.25	1"	7.25	3/4" per Foot

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Zipper Boots Ball Nut#	Boot Part# Prefix	Ball Nut Diameter	Screw Diameter	Boot I.D.	Boot O.D.	Collar End Length	Flange Diameter	Boot Compression
050BNH020	BTZ150----	1.38	0.50	1.50	4.00	1"	4.00	2" per Foot
050BNH050	BTZ175----	1.72	0.50	1.75	4.25	1"	4.25	2" per Foot
063BNE020	BTZ175----	1.60	0.63	1.75	4.25	1"	4.25	2" per Foot
063BNE020L	BTZ175----	1.60	0.63	1.75	4.25	1"	4.25	2" per Foot
063BNH100	BTZ175----	1.65	0.63	1.75	4.25	1"	4.25	2" per Foot
075BNG020	BTZ175----	1.56	0.75	1.75	4.25	1"	4.25	2" per Foot
075BNH020	BTZ175----	1.56	0.75	1.75	4.25	1"	4.25	2" per Foot
075BNH050	BTZ225----	2.12	0.75	2.25	4.75	1"	4.75	2" per Foot
100BNE025	BTZ225----	2.14	1.00	2.25	4.75	1"	4.75	2" per Foot
100BNF025	BTZ225----	2.14	1.00	2.25	4.75	1"	4.75	2" per Foot
100BNF100	BTZ225----	2.13	1.00	2.25	4.75	1"	4.75	2" per Foot
117BNH041	BTZ250----	2.31	1.17	2.50	5.00	1"	5.00	2" per Foot
150BNH047	BTZ300----	2.93	1.50	3.00	5.50	1"	5.50	2" per Foot
150BNF100	BTZ350----	3.44	1.50	3.50	6.00	1"	6.00	2" per Foot
150BNR100	BTZ400----	3.92	1.50	4.00	6.50	1"	6.50	2" per Foot
150BNF187	BTZ350----	3.36	1.50	3.50	6.00	1"	6.00	2" per Foot
200BNH050	BTZ400----	3.90	2.00	4.00	6.50	1"	6.50	2" per Foot
200BNH100	BTZ475----	4.58	2.00	4.75	7.25	1"	7.25	2" per Foot
225BNH050	BTZ400----	3.95	2.25	4.00	6.50	1"	6.50	2" per Foot
225BNH050L	BTZ400----	3.95	2.25	4.00	6.50	1"	6.50	2" per Foot
225BNH100	BTZ475----	4.60	2.25	4.75	7.25	1"	7.25	2" per Foot

Boots for larger size Ball Nuts are available - contact Customer Service for assistance.

NOTE: Unless otherwise specified all dimensions are in Inches.

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## Bellows Boot Model Numbering System

# BTZ150 – CC048X

### Boot Type

BTS - Sleeve Boot  
BTZ - Zipper Boot

### Boot I.D.

(Inches)

Characters are shown without decimals for example:

1.25" I.D. shown as 125

2.00" I.D. shown as 200

### End Types

C = Collar

F = Flange

Both spaces should be represented

### Boot Length

(Inches)

Boot Lengths are available in 1 ft. extended length increments

Characters are shown without decimals for example:

36" extended length shown as 036

144" extended length shown as 144

### Optional Character

G - will appear in this space if internal guides are required.

X - will appear in this space if internal guides are not required.

Bellows Boots made with specialty fabrics or other non standard design features will have serialized suffix numbers such as - 0123.

