

Ball Screws & Nuts

Features & Benefits

Duff-Norton has been manufacturing ball screws and nuts for our actuator products for decades, and is now applying those years of experience to bring you an expanded assortment of ball screws and nuts for your application requirements. Consider these advantages:

Performance – Excellent load ratings; Over 90% efficient with low torque and power requirements. Long and predictable life ratings.

Quality – Excellent quality, all screws are precision rolled, heat-treated, inspected, and then manganese phosphate or black oxide coated. Good lead accuracy.

Delivery – In stock on the most popular sizes

Broad Assortment – We offer a very broad assortment of ball diameters and leads

System Integration – Duff-Norton can provide you with an entire screw and nut system: mounting components, drive components, controls, and protective coverings.

Customer Service – Talk to one of our knowledgeable customer service agents or application engineers



Multiple Leads



Multiple Diameters

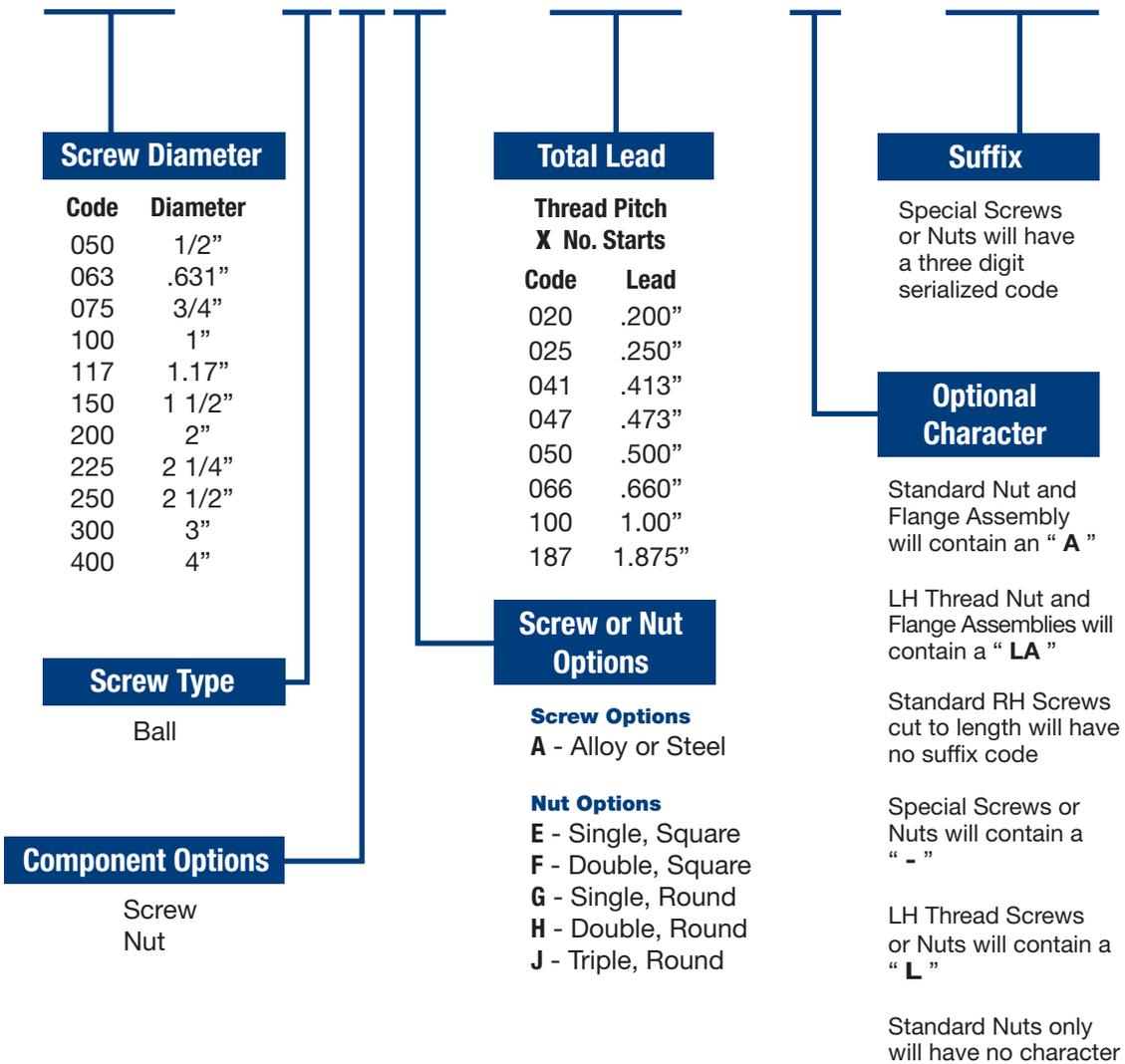
Ball Screw and Nut Selection Overview

Screw Diameter	Ball Screw Part#	Screw Lead (in)	Turns Per Inch	Thread Starts	Standard Length	Root Diameter	Ball Nut Part#	Ball Nut Description	Flange Part#
1/2"	050BSA020	.200	5	Single	6 ft.	.360	050BNH020	Round, 2 Circuit	FL0937
	050BSA050	.500	2	Double	6 ft.	.360	050BNH050	Round, 2 Circuit	FL0937
.631"	063BSA020	.200	5	Single	6 ft.	.480	063BNE020	Square, 1 Circuit	FL0937
	063BSA020L	.200	5	Single LH	6 ft.	.480	063BNE020L	Square, 1 Circuit	FL0937
	063BSA100	1.00	1	Double	6 ft.	.480	063BNH100	Round, 2 Circuit	FL0937
3/4"	075BSA020	.200	5	Single	6 ft.	.660	075BNG020	Round, 1 Circuit	FL1173
	075BSA020	.200	5	Single	6 ft.	.660	075BNH020	Round, 2 Circuit	FL1173
	075BSA050	.500	2	Double	6 ft.	.630	075BNH050	Round, 2 Circuit	FL1173
1"	100BSA025	.250	4	Single	16 ft.	.840	100BNE025	Square, 1 Circuit	FL1563
	100BSA025	.250	4	Single	16 ft.	.840	100BNF025	Square, 2 Circuit	FL1563
	100BSA100	1.00	1	Double	16 ft.	.840	100BNF100	Square, 2 Circuit	FL1563
1.17"	117BSA041	.413	2.421	Single	16 ft.	.870	117BNH041	Round, 2 Circuit	FL1967
1 1/2"	150BSA047	.473	2.114	Single	20 ft.	1.14	150BNH047	Round, 2 Circuit	FL2548
	150BSA100	1.00	1	Double	20 ft.	1.14	150BNF100	Square, 2 Circuit	FL2250
	150BSA100	1.00	1	Double	20 ft.	1.14	150BNH100	Round, 2 Circuit	FL2250
	150BSA187	1.875	.53	Double	20 ft.	1.19	150BNF187	Square, 2 Circuit	FL2250
2"	200BSA050	.500	2	Single	12 ft.	1.72	200BNH050	Round, 2 Circuit	FL3000
	200BSA100	1.00	1	Double	12 ft.	1.72	200BNH100	Round, 2 Circuit	FL3000
2 1/4"	225BSA050	.500	2	Single	20 ft.	1.85	225BNH050	Round, 2 Circuit	FL3137
	225BSA050L	.500	2	Single LH	20 ft.	1.85	225BNH050L	Round, 2 Circuit	FL3137
	225BSA100	1.00	1	Double	20 ft.	1.85	225BNH100	Round, 2 Circuit	FL3137
3.00"	300BSA066	.660	1.515	Single	20 ft.	2.48	300BNJ066	Round, 3 Circuit	FL4325
4.00"	400BSA100	1.00	1	Single	20 ft.	3.34	400BNJ100	Round, 3 Circuit	FL5497

NOTE: Unless otherwise specified all dimensions are in Inches.



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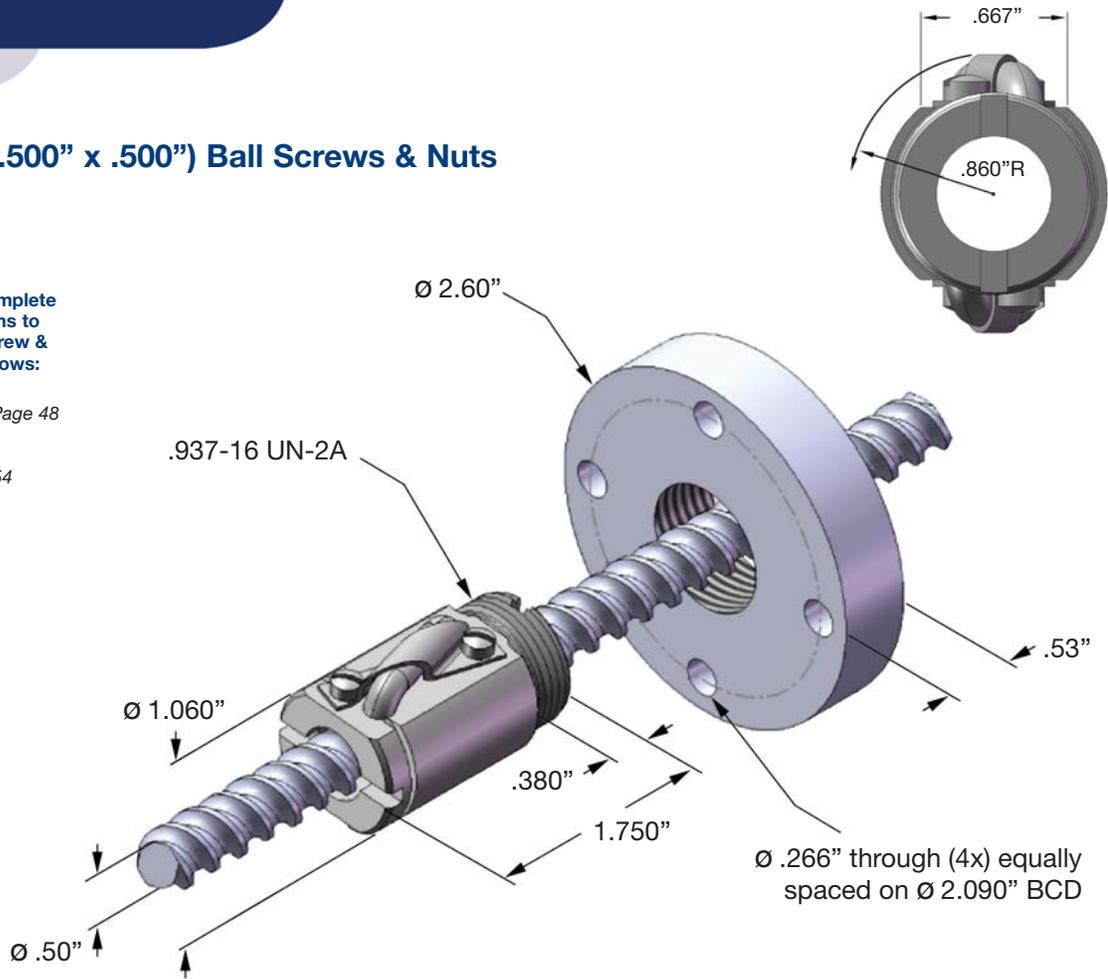


Ball Screws & Nuts Specifications

1/2" x .500" (.500" x .500") Ball Screws & Nuts

Duff-Norton offers complete close mounted systems to complement these screw & nut assemblies as follows:

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- Motor Flanges - Page 54
- Gearmotors - Page 60
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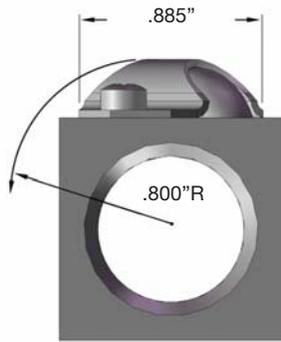
Ball Screw	Screw Diameter	Lead	Pitch	No. Starts	Root Diameter	Thread Form	Material	Max. Backlash	36"	Standard Lengths		
050BSA050	.500	.500	.250	2	.410	Ball RH	Alloy	.002 to .015	Yes	Yes	72"	144"
Ball Nut	*Static Load	*Dynamic Load	*Max Speed	T.P.I.	Efficiency	Torque to Raise 1 Lb. (in/lb)	Material	Mounting Thread	Mounting Length	Nut Length	Nut Diameter	
050BNH050	4,150	929	3000.00	2	+90%	0.088	Steel	.937-16 UN-2A	.380	1.750	1.060	
Flange	Overall Diameter	Bolt Cir. Diameter	Bolt Hole Diameter	No. Holes	Flange Width	Treated	Material	Mounting Thread	Nut Return Tubes	Return Tube Width	Nut Radius w/ Tubes	
FL0937	2.60	2.090	.266	4	.53	Black Oxide	Steel	.937-16 UN-2B	1	.667	.860	

NOTE: Unless otherwise specified, all capacities are in Pounds, all dimensions are in Inches, and all speeds are in Inches per Minute.

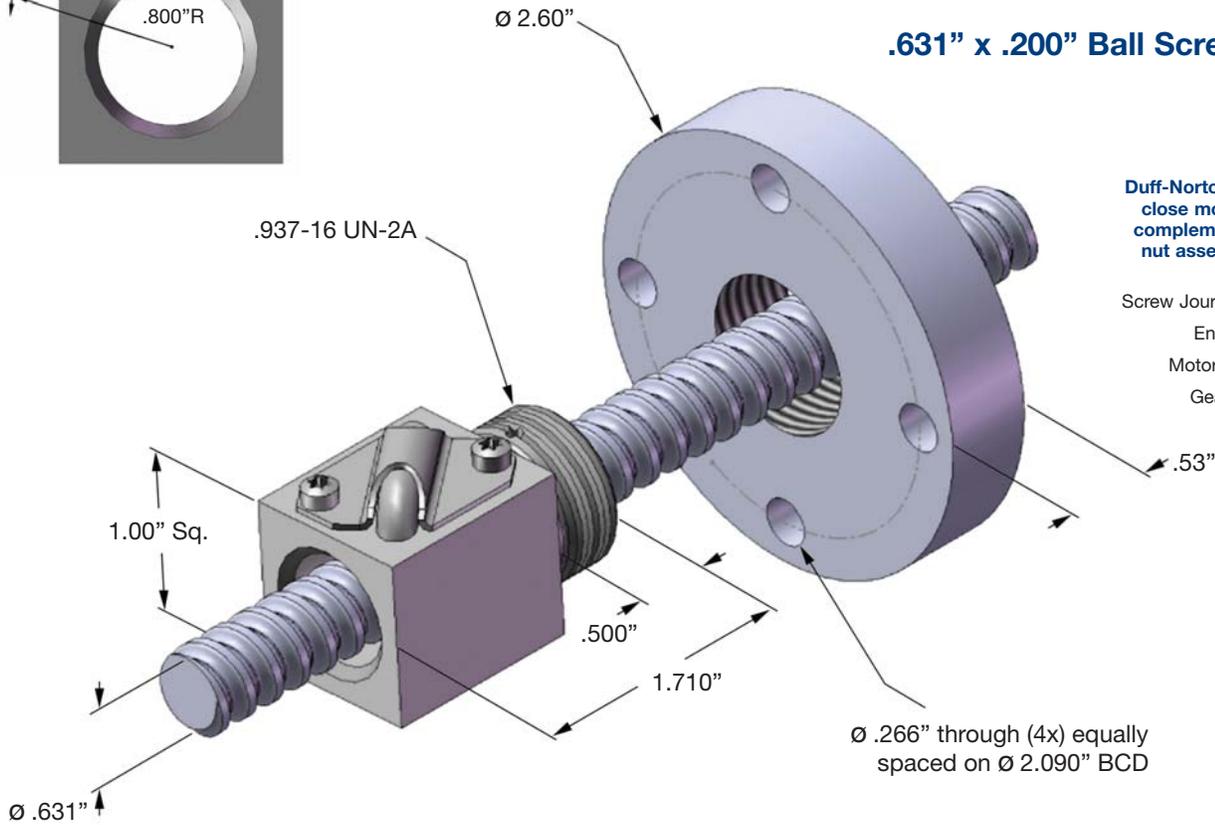
*Load ratings are based on what the screw & nut assembly is capable of achieving. Actual load performance for a given screw and nut assembly will vary from application to application.

*Speed ratings are based on a DN spec of 3000, actual speeds will vary from application to application.

Ball Screws & Nuts Specifications



.631" x .200" Ball Screws & Nuts



Duff-Norton offers complete close mounted systems to complement these screw & nut assemblies as follows:

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Right Hand Ball Screw & Nut

Ball Screw	Screw Diameter	Lead	Pitch	No. Starts	Root Diameter	Thread Form	Material	Max. Backlash	36"	Standard Lengths		
063BSA020	.631	.200	.200	1	.500	Ball RH	Alloy	.002 to .015	Yes	Yes	Yes	144"
Ball Nut	*Static Load	*Dynamic Load	*Max Speed	T.P.I.	Efficiency	Torque to Raise 1 Lb. (in/lb)	Material	Mounting Thread	Mounting Length	Nut Length	Nut Diameter	
063BNE020	6,384	800	951.00	5	+90%	0.035	Steel	.937-16 UN-2A	.500	1.710	1.00 Sq.	
Flange	Overall Diameter	Bolt Cir. Diameter	Bolt Hole Diameter	No. Holes	Flange Width	Treated	Material	Mounting Thread	Nut Return Tubes	Return Tube Width	Nut Radius w/ Tubes	
FL0937	2.60	2.090	.266	4	.53	Black Oxide	Steel	.937-16 UN-2B	1	.797	.800	

Left Hand Ball Screw & Nut

Ball Screw	Screw Diameter	Lead	Pitch	No. Starts	Root Diameter	Thread Form	Material	Max. Backlash	36"	Standard Lengths		
063BSA020L	.631	.200	.200	1	.500	Ball LH	Alloy	.002 to .015	Yes	Yes	Yes	144"
Ball Nut	*Static Load	*Dynamic Load	*Max Speed	T.P.I.	Efficiency	Torque to Raise 1 Lb. (in/lb)	Material	Mounting Thread	Mounting Length	Nut Length	Nut Diameter	
063BNE020L	6,384	800	951.00	5	+90%	0.035	Steel	.937-16 UN-2A	.500	1.710	1.00 Sq.	
Flange	Overall Diameter	Bolt Cir. Diameter	Bolt Hole Diameter	No. Holes	Flange Width	Treated	Material	Mounting Thread	Nut Return Tubes	Return Tube Width	Nut Radius w/ Tubes	
FL0937	2.60"	2.090"	.266"	4	.53	Black Oxide	Steel	.937-16 UN-2B	1	.797	.800	

NOTE: Unless otherwise specified, all capacities are in Pounds, all dimensions are in Inches, and all speeds are in Inches per Minute.

*Load ratings are based on what the screw & nut assembly is capable of achieving. Actual load performance for a given screw and nut assembly will vary from application to application.

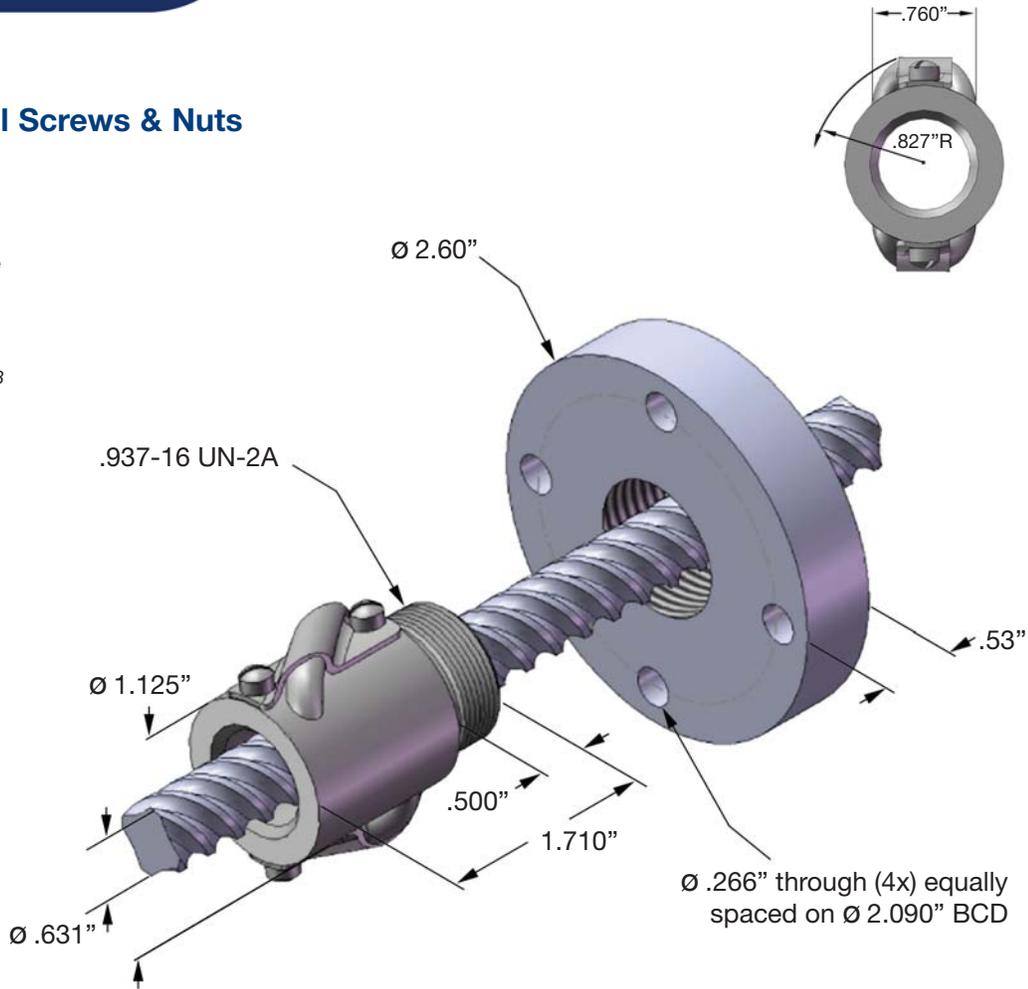
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Ball Screws & Nuts Specifications

.631" x 1.00" Ball Screws & Nuts

Duff-Norton offers complete close mounted systems to complement these screw & nut assemblies as follows:

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Ball Screw	Screw Diameter	Lead	Pitch	No. Starts	Root Diameter	Thread Form	Material	Max. Backlash	Standard Lengths		
									36"	72"	144"
063BSA100	.631	1.00	.500	2	.480	Ball	Alloy	.002 to .015	Yes	Yes	-
Ball Nut	*Static Load	*Dynamic Load	*Max Speed	T.P.I.	Efficiency	Torque to Raise 1 Lb. (in/lb)	Material	Mounting Thread	Mounting Length	Nut Length	Nut Diameter
063BNH100	2,425	578	2377.00	1	+90%	0.177	Steel	.937-16 UN-2A	.500	1.710	1.125
Flange	Overall Diameter	Bolt Cir. Diameter	Bolt Hole Diameter	No. Holes	Flange Width	Treated	Material	Mounting Thread	Nut Return Tubes	Return Tube Width	Nut Radius w/ Tubes
FL0937	2.60	2.090	.266	4	.53	Black Oxide	Steel	.937-16 UN-2B	2	.760	.827

NOTE: Unless otherwise specified, all capacities are in Pounds, all dimensions are in Inches, and all speeds are in Inches per Minute.

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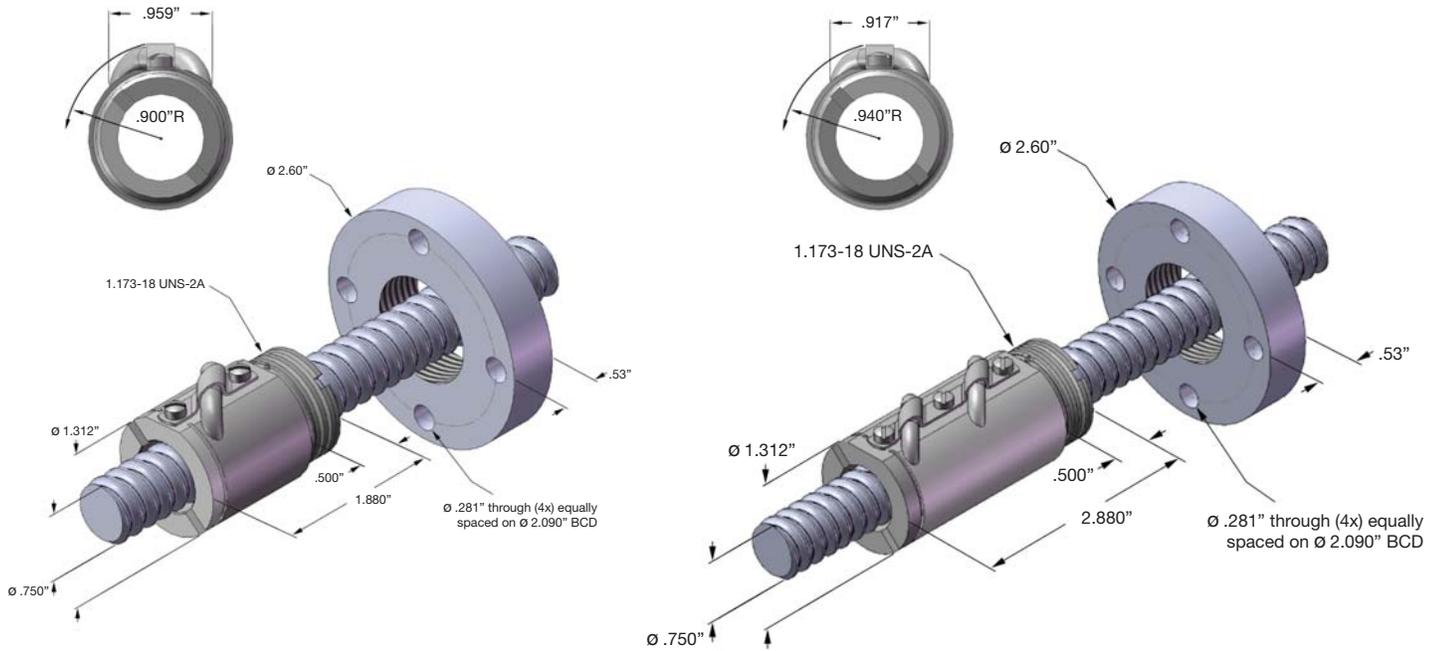
*Speed ratings are based on a DN spec of 3000, actual speeds will vary from application to application.

Ball Screws & Nuts Specifications

Duff-Norton offers complete close mounted systems to complement these screw & nut assemblies as follows:

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3/4" x .200" (.750" x .200") Ball Screws & Nuts



Ball Screw and Single Return Tube Ball Nut

Ball Screw	Screw Diameter	Lead	Pitch	No. Starts	Root Diameter	Thread Form	Material	Max. Backlash	36"	Standard Lengths	72"	144"
075BSA020	.750	.200	.200	1	.660	Ball RH	Alloy	.002 to .015	Yes	Yes	-	-
Ball Nut	*Static Load	*Dynamic Load	*Max Speed	T.P.I.	Efficiency	Torque to Raise 1 Lb. (in/lb)	Material	Mounting Thread	Mounting Length	Nut Length	Nut Diameter	
075BNG020	7,750	950	800.00	5	+90%	0.035	Steel	1.173-18 UNS-2A	.500	1.880	1.312	
Flange	Overall Diameter	Bolt Cir. Diameter	Bolt Hole Diameter	No. Holes	Flange Width	Treated	Material	Mounting Thread	Nut Return Tubes	Return Tube Width	Nut Radius w/ Tubes	
FL1173	2.60	2.090	.281	4	.53	Black Oxide	Steel	1.173-18 UNS-2B	1	.959	.900	

Double Return Tube Ball Nut

Ball Nut	*Static Load	*Dynamic Load	*Max Speed	T.P.I.	Efficiency	Torque to Raise 1 Lb. (in/lb)	Material	Mounting Thread	Mounting Length	Nut Length	Nut Diameter	
075BNH020	18,800	1,900	800.00	5	+90%	0.035	Steel	1.173-18 UNS-2A	.500	2.880	1.312	
Flange	Overall Diameter	Bolt Cir. Diameter	Bolt Hole Diameter	No. Holes	Flange Width	Treated	Material	Mounting Thread	Nut Return Tubes	Return Tube Width	Nut Radius w/ Tubes	
FL1173	2.60	2.090	.281	4	.53	Black Oxide	Steel	1.173-18 UNS-2B	2	.917	.940	

NOTE: Unless otherwise specified, all capacities are in Pounds, all dimensions are in Inches, and all speeds are in Inches per Minute.

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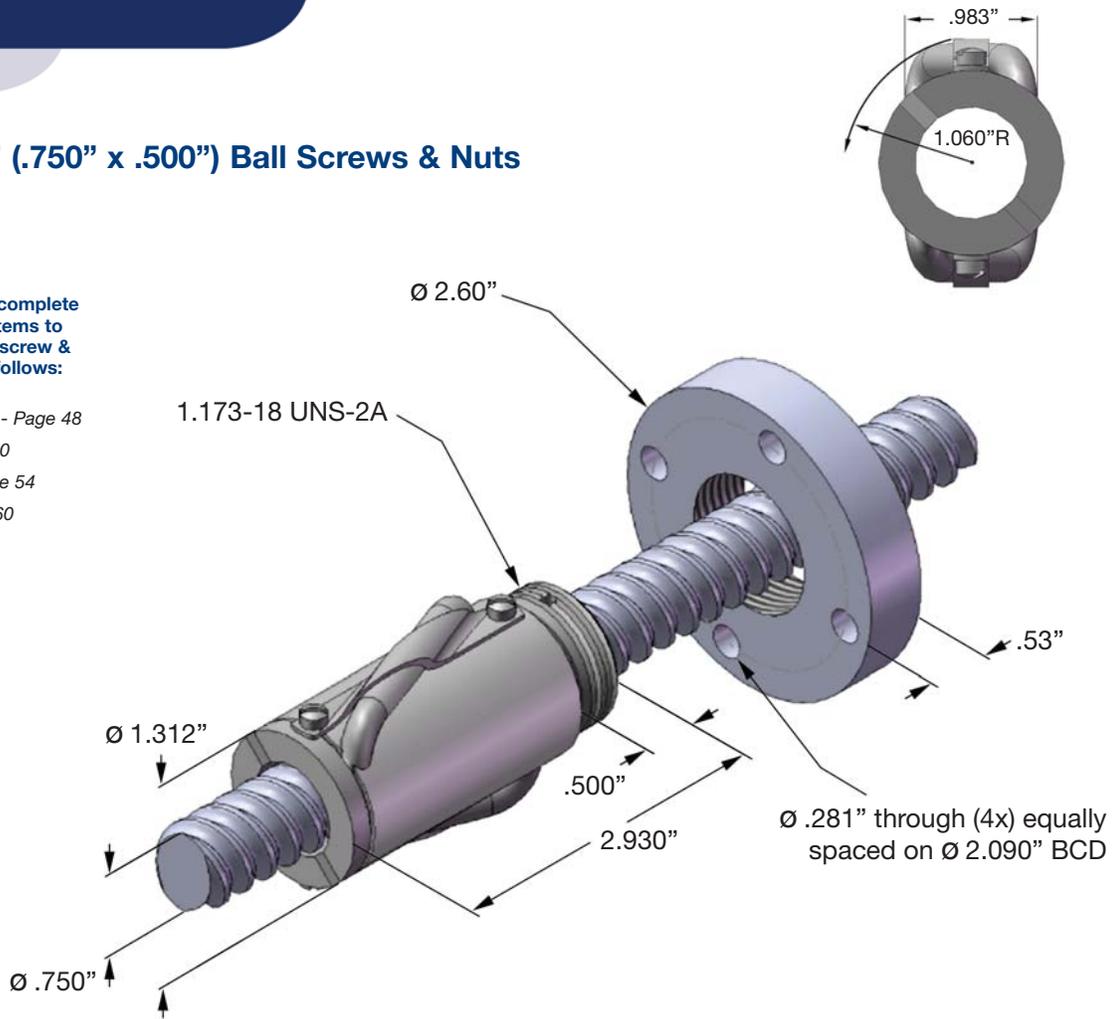
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Ball Screws & Nuts Specifications

3/4" x .500" (.750" x .500") Ball Screws & Nuts

Duff-Norton offers complete close mounted systems to complement these screw & nut assemblies as follows:

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Ball Screw	Screw Diameter	Lead	Pitch	No. Starts	Root Diameter	Thread Form	Material	Max. Backlash	36"	Standard Lengths		
075BSA050	.750	.500	.250	2	.630	Ball RH	Alloy	.002 to .015	Yes	Yes	72"	144"
Ball Nut	*Static Load	*Dynamic Load	*Max Speed	T.P.I.	Efficiency	Torque to Raise 1 Lb. (in/lb)	Material	Mounting Thread	Mounting Length	Nut Length	Nut Diameter	
075BNH050	24,200	3,450	800.00	2	+90%	0.088	Steel	1.173-18 UNS-2A	.500	2.930	1.312	
Flange	Overall Diameter	Bolt Cir. Diameter	Bolt Hole Diameter	No. Holes	Flange Width	Treated	Material	Mounting Thread	Nut Return Tubes	Return Tube Width	Nut Radius w/ Tubes	
FL1173	2.60	2.090	.281	4	.53	Black Oxide	Steel	1.173-18 UNS-2B	2	.983	1.060	

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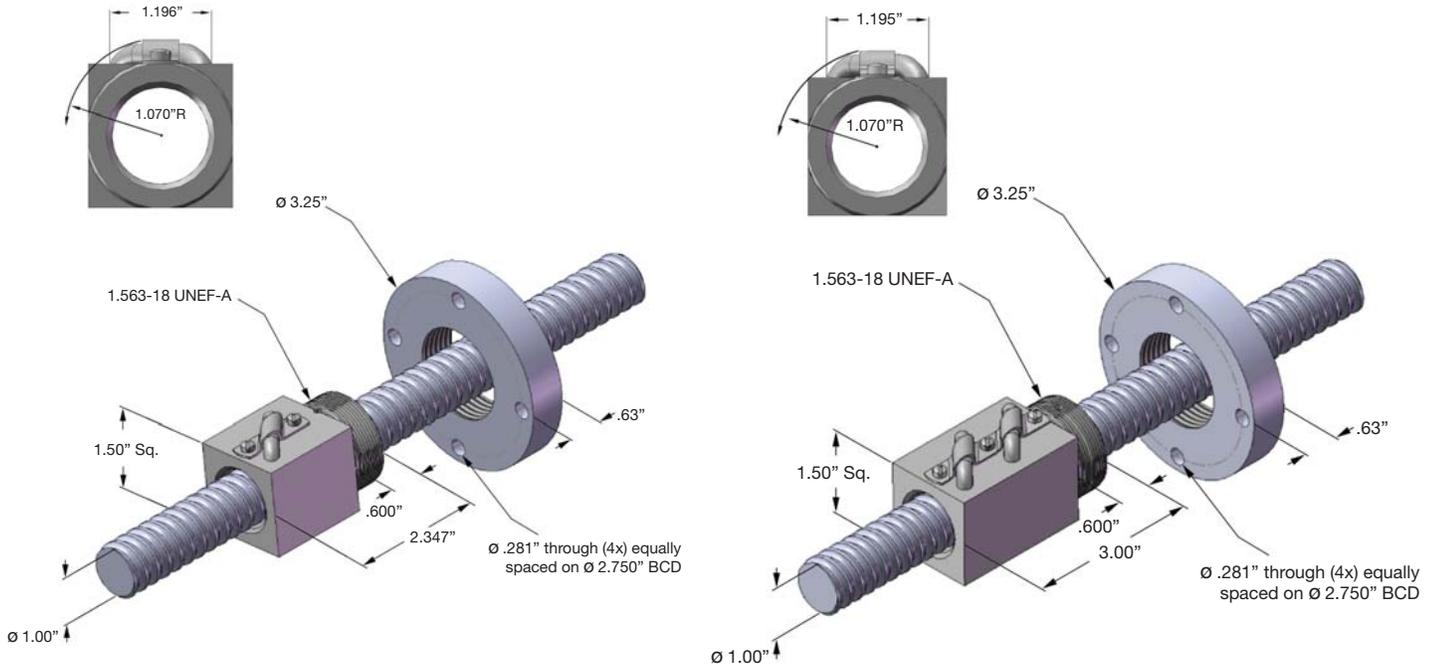
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Ball Screws & Nuts Specifications

Duff-Norton offers complete close mounted systems to complement these screw & nut assemblies as follows:

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1" x .250" (1.00" x .250") Ball Screws & Nuts



Ball Screw and Single Return Tube Ball Nut

Ball Screw	Screw Diameter	Lead	Pitch	No. Starts	Root Diameter	Thread Form	Material	Max. Backlash	36"	72"	144"
100BSA025	1.00	.250	.250	1	.840	Ball RH	Alloy	.002 to .015	Yes	Yes	Yes
Ball Nut	*Static Load	*Dynamic Load	*Max Speed	T.P.I.	Efficiency	Torque to Raise 1 Lb. (in/lb)	Material	Mounting Thread	Mounting Length	Nut Length	Nut Diameter
100BNE025	15,300	1,612	1200.00	4	+90%	0.044	Steel	1.563-18 UNEF-A	.600	2.347	1.500 Sq.
Flange	Overall Diameter	Bolt Cir. Diameter	Bolt Hole Diameter	No. Holes	Flange Width	Treated	Material	Mounting Thread	Nut Return Tubes	Return Tube Width	Nut Radius w/ Tubes
FL1563	3.25	2.750	.281	4	.63	Black Oxide	Steel	1.563-18 UNEF-B	1	1.195	1.070

Double Return Tube Ball Nut

Ball Nut	*Static Load	*Dynamic Load	*Max Speed	T.P.I.	Efficiency	Torque to Raise 1 Lb. (in/lb)	Material	Mounting Thread	Mounting Length	Nut Length	Nut Diameter
100BNF025	30,750	3,350	1200.00	4	+90%	0.044	Steel	1.563-18 UNEF-A	.600	3.00	1.500 Sq.
Flange	Overall Diameter	Bolt Cir. Diameter	Bolt Hole Diameter	No. Holes	Flange Width	Treated	Material	Mounting Thread	Nut Return Tubes	Return Tube Width	Nut Radius w/ Tubes
FL1563	3.25	2.750	.281	4	.63	Black Oxide	Steel	1.563-18 UNEF-B	2	1.196	1.070

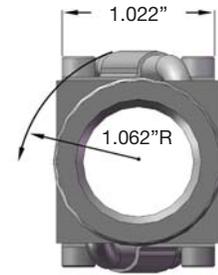
NOTE: Unless otherwise specified, all capacities are in Pounds, all dimensions are in Inches, and all speeds are in Inches per Minute.

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Ball Screws & Nuts Specifications

1" x 1.00" (1.00" x 1.00") Ball Screws & Nuts



Duff-Norton offers complete close mounted systems to complement these screw & nut assemblies as follows:

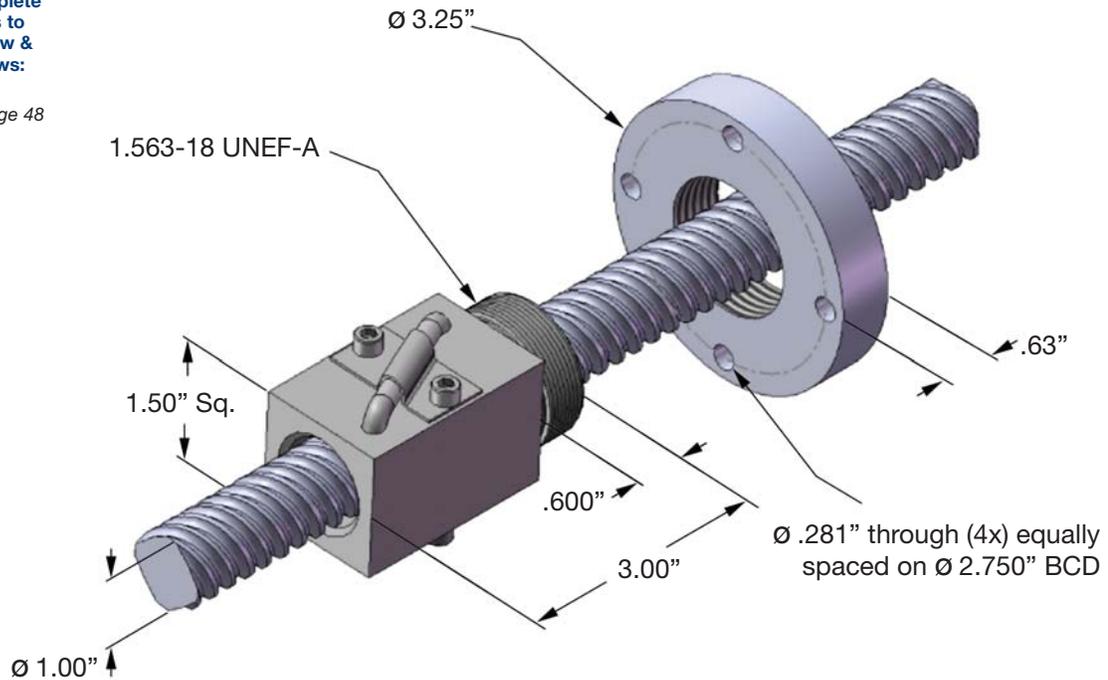
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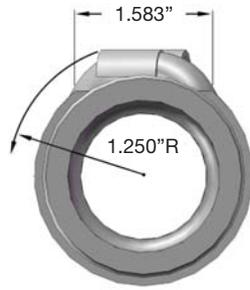
Ball Screw	Screw Diameter	Lead	Pitch	No. Starts	Root Diameter	Thread Form	Material	Max. Backlash	Standard Lengths		
									36"	72"	144"
100BSA100	1.00	1.00	.250	4	.840	Ball RH	Alloy	.002 to .015	Yes	Yes	Yes
Ball Nut	*Static Load	*Dynamic Load	*Max Speed	T.P.I.	Efficiency	Torque to Raise 1 Lb. (in/lb)	Material	Mounting Thread	Mounting Length	Nut Length	Nut Diameter
100BNF100	13,600	2,400	750.00	1	+90%	0.177	Steel	1.563-18 UNEF-A	.600	3.000	1.500
Flange	Overall Diameter	Bolt Cir. Diameter	Bolt Hole Diameter	No. Holes	Flange Width	Treated	Material	Mounting Thread	Nut Return Tubes	Return Tube Width	Nut Radius w/ Tubes
FL1563	3.25	2.750	.281	4	.63	Black Oxide	Steel	1.563-18 UNEF-B	2	1.022	1.062

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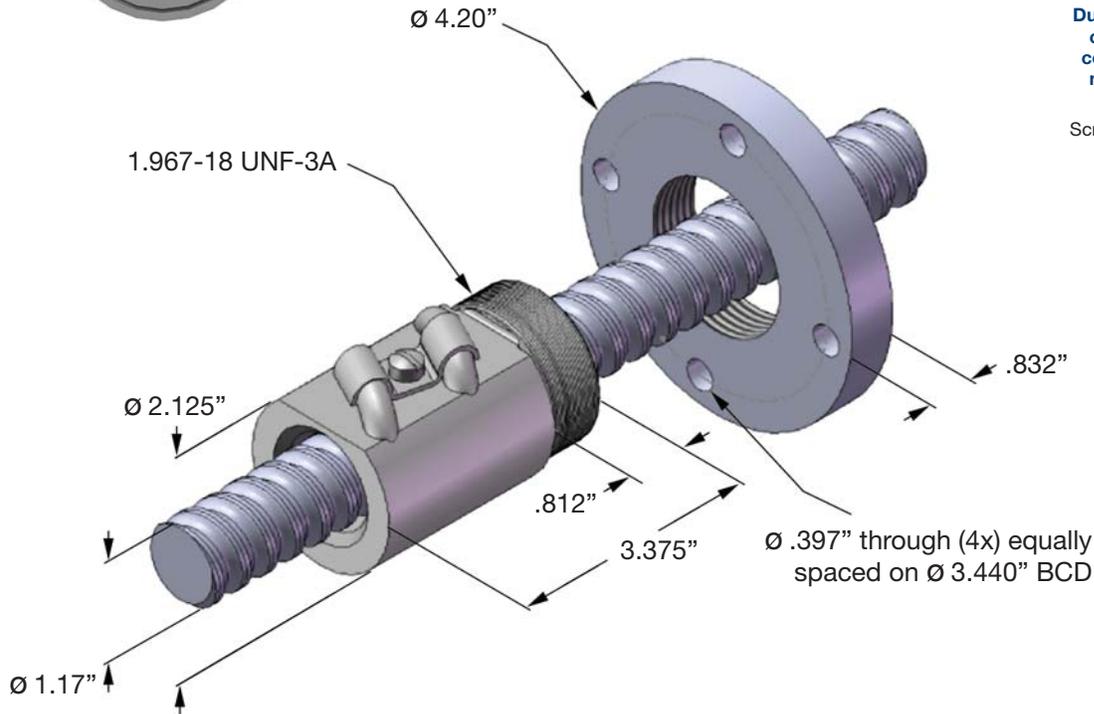
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Ball Screws & Nuts Specifications



1.17" x .413" Ball Screws & Nuts



Duff-Norton offers complete close mounted systems to complement these screw & nut assemblies as follows:

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Ball Screw	Screw Diameter	Lead	Pitch	No. Starts	Root Diameter	Thread Form	Material	Max. Backlash	Standard Lengths		
117BSA041	1.171	.413	.413	1	.870	Ball RH	Alloy	.002 to .015	36"	72"	144"
Ball Nut	*Static Load	*Dynamic Load	*Max Speed	T.P.I.	Efficiency	Torque to Raise 1 Lb. (in/lb)	Material	Mounting Thread	Mounting Length	Nut Length	Nut Diameter
117BNH041	22,917	3,894	1058.00	2.421	+90%	0.073	Steel	1.967-18 UNF-3A	.812	3.375	2.125
Flange	Overall Diameter	Bolt Cir. Diameter	Bolt Hole Diameter	No. Holes	Flange Width	Treated	Material	Mounting Thread	Nut Return Tubes	Return Tube Width	Nut Radius w/ Tubes
FL1967	4.20	3.44	.397	4	.832	Black Oxide	Steel	1.967-18 UNF-3B	2	1.583	1.250

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*Speed ratings are based on a DN spec of 3000, actual speeds will vary from application to application.

Ball Screws & Nuts Specifications

1 1/2" x .473" (1.50" x .473") Ball Screws & Nuts

Duff-Norton offers complete close mounted systems to complement these screw & nut assemblies as follows:

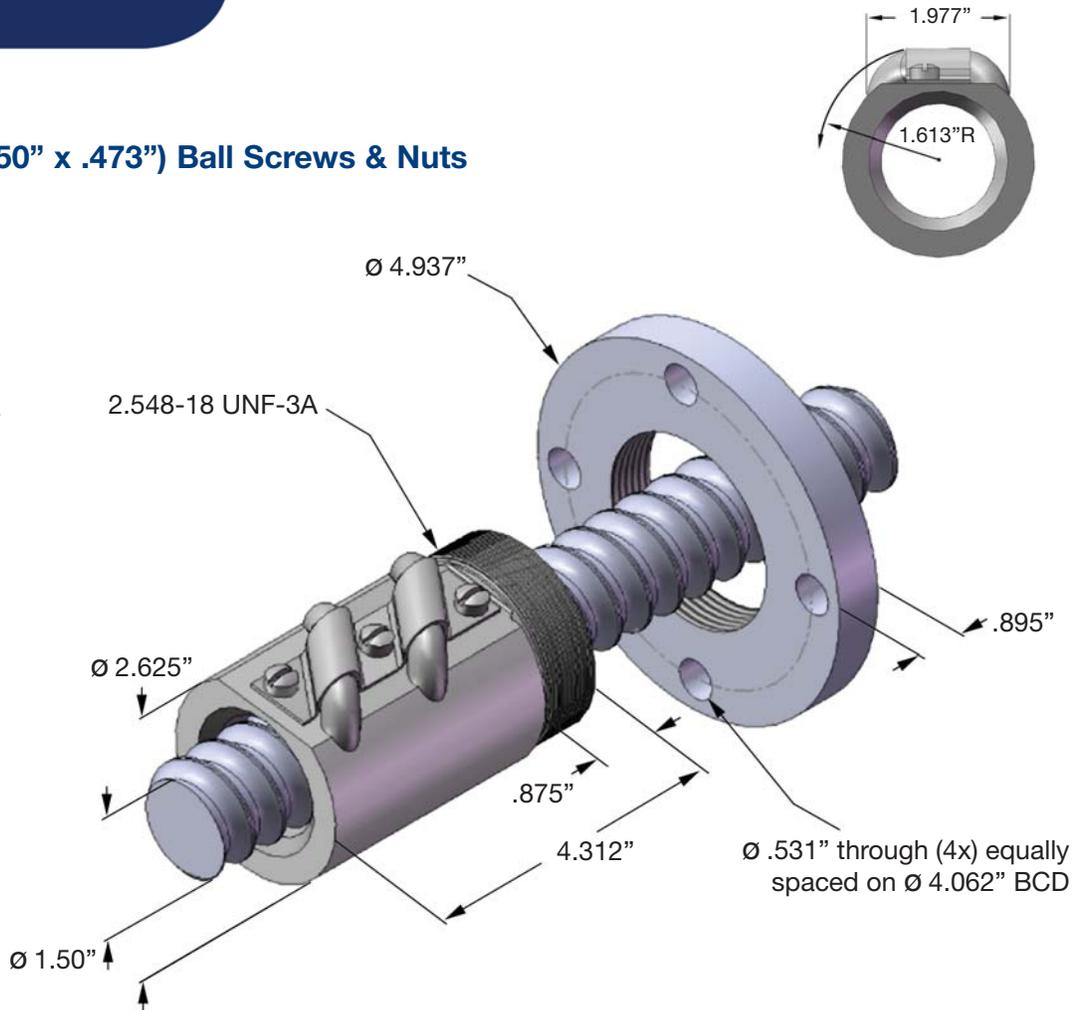
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Ball Screw	Screw Diameter	Lead	Pitch	No. Starts	Root Diameter	Thread Form	Material	Max. Backlash	Standard Lengths		
150BSA047	1.500	.473	.473	1	1.140	Ball RH	Alloy	.002 to .015	36"	72"	144"
Ball Nut	*Static Load	*Dynamic Load	*Max Speed	T.P.I.	Efficiency	Torque to Raise 1 Lb. (in/lb)	Material	Mounting Thread	Mounting Length	Nut Length	Nut Diameter
150BNH047	57,770	10,050	946.00	2.114	+90%	0.084	Steel	2.548-18 UNF-3A	.875	4.312	2.625
Flange	Overall Diameter	Bolt Cir. Diameter	Bolt Hole Diameter	No. Holes	Flange Width	Treated	Material	Mounting Thread	Nut Return Tubes	Return Tube Width	Nut Radius w/ Tubes
FL2548	4.94	4.062	.531	4	.895	Black Oxide	Steel	2.548-18 UNF-3B	2	1.977	1.613

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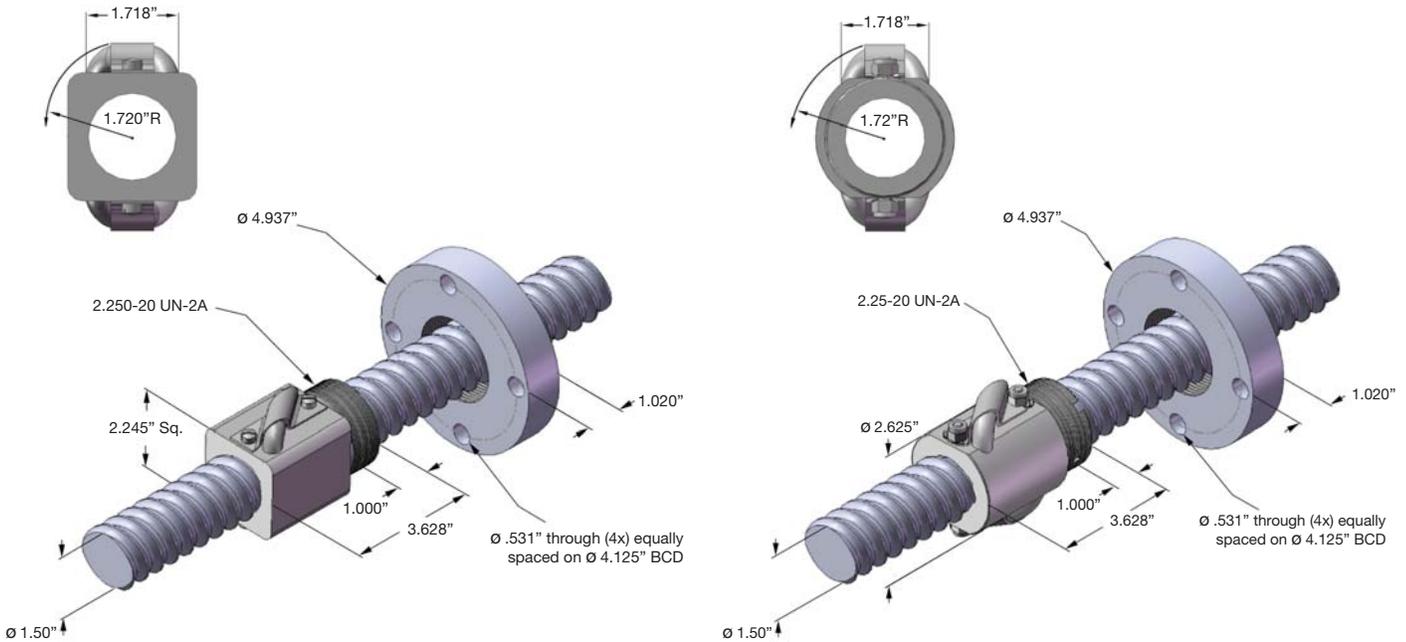
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Ball Screws & Nuts Specifications

Duff-Norton offers complete close mounted systems to complement these screw & nut assemblies as follows:

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1 1/2" x 1.00" (1.50" x 1.00") Ball Screws & Nuts



Ball Screw and Square Ball Nut

Ball Screw	Screw Diameter	Lead	Pitch	No. Starts	Root Diameter	Thread Form	Material	Max. Backlash	36"	Standard Lengths		
150BSA100	1.500	1.000	.500	2	1.140	Ball RH	Alloy	.002 to .015	Yes	Yes	Yes	Yes
Ball Nut	*Static Load	*Dynamic Load	*Max Speed	T.P.I.	Efficiency	Torque to Raise 1 Lb. (in/lb)	Material	Mounting Thread	Mounting Length	Nut Length	Nut Diameter	
150BNF100	34,662	8,250	2000.00	1	+90%	0.176	Steel	2.250-20 UN-2A	1.00	3.628	2.245 Sq.	
Flange	Overall Diameter	Bolt Cir. Diameter	Bolt Hole Diameter	No. Holes	Flange Width	Treated	Material	Mounting Thread	Nut Return Tubes	Return Tube Width	Nut Radius w/ Tubes	
FL2250	4.94	4.125	.531	4	1.020	Black Oxide	Steel	2.250-20 UN-2B	2	1.718	1.720	

Round Ball Nut

Ball Nut	*Static Load	*Dynamic Load	*Max Speed	T.P.I.	Efficiency	Torque to Raise 1 Lb. (in/lb)	Material	Mounting Thread	Mounting Length	Nut Length	Nut Diameter
150BNH100	34,662	8,250	2000.00	1	+90%	0.176	Steel	2.250-20 UN-2A	1.00	3.633	2.627
Flange	Overall Diameter	Bolt Cir. Diameter	Bolt Hole Diameter	No. Holes	Flange Width	Treated	Material	Mounting Thread	Nut Return Tubes	Return Tube Width	Nut Radius w/ Tubes
FL2250	4.94	4.125	.531	4	1.020	Black Oxide	Steel	2.250-20 UN-2B	2	1.718	1.720

NOTE: Unless otherwise specified, all capacities are in Pounds, all dimensions are in Inches, and all speeds are in Inches per Minute.

*Load ratings are based on what the screw & nut assembly is capable of achieving. Actual load performance for a given screw and nut assembly will vary from application to application.

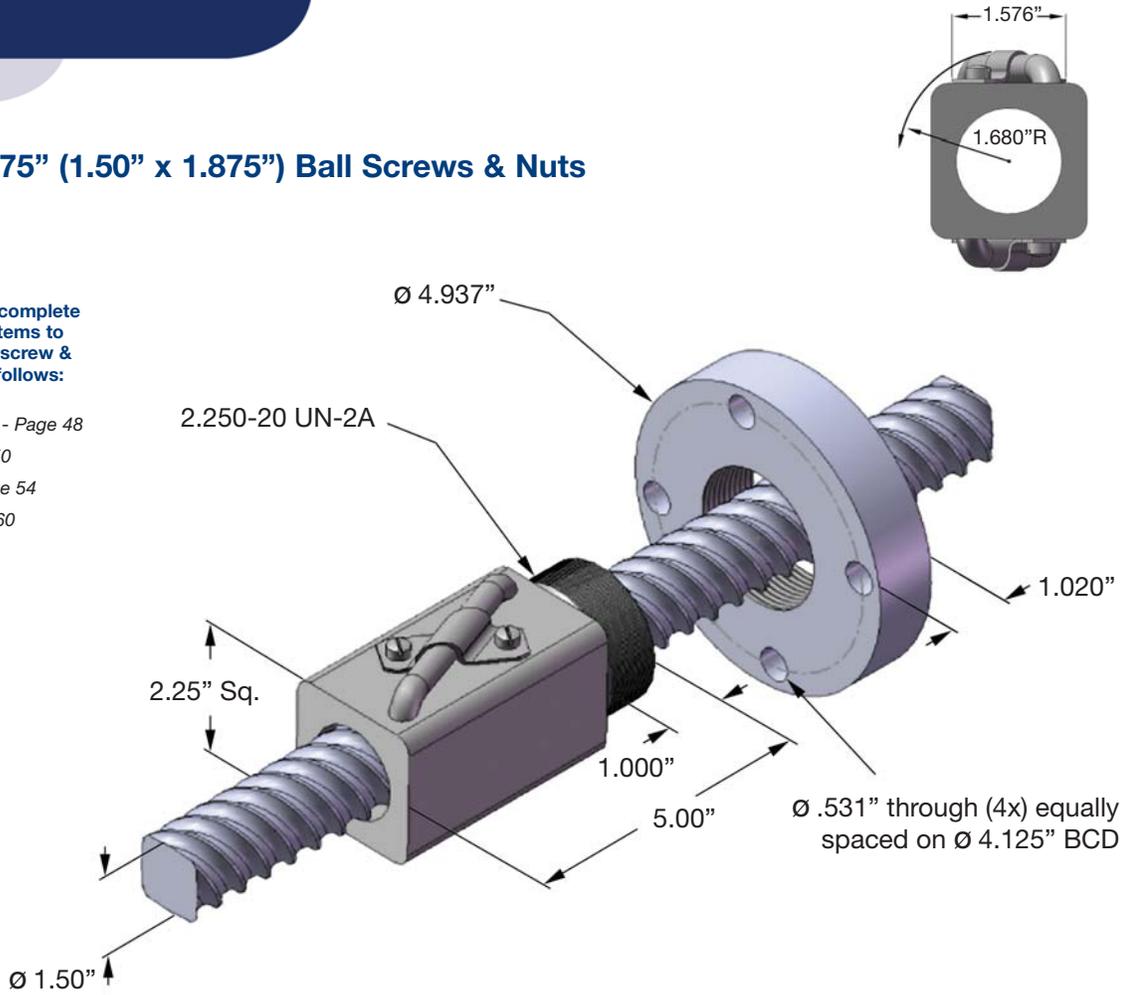
*Speed ratings are based on a DN spec of 3000, actual speeds will vary from application to application.

Ball Screws & Nuts Specifications

1 1/2" x 1.875" (1.50" x 1.875") Ball Screws & Nuts

Duff-Norton offers complete close mounted systems to complement these screw & nut assemblies as follows:

- Screw Journal Ends - Page 48
- End Blocks - Page 50
- Motor Flanges - Page 54
- Gearmotors - Page 60
- Controls - Page 79



Ball Screw	Screw Diameter	Lead	Pitch	No. Starts	Root Diameter	Thread Form	Material	Max. Backlash	Standard Lengths		
									36"	72"	144"
150BSA187	1.500	1.875	.468	4	1.190	Ball	Alloy	.002 to .015	Yes	Yes	Yes
Ball Nut	*Static Load	*Dynamic Load	*Max Speed	T.P.I.	Efficiency	Torque to Raise 1 Lb. (in/lb)	Material	Mounting Thread	Mounting Length	Nut Length	Nut Diameter
150BNF187	29,895	7,242	3750.00	0.53	+90%	0.332	Steel	2.250-20 UN-2A	1.000	5.000	2.245 Sq.
Flange	Overall Diameter	Bolt Cir. Diameter	Bolt Hole Diameter	No. Holes	Flange Width	Treated	Material	Mounting Thread	Nut Return Tubes	Return Tube Width	Nut Radius w/ Tubes
FL2250	4.94	4.125	.531	4	1.020	Black Oxide	Steel	2.250-20 UN-2B	2	1.576	1.680

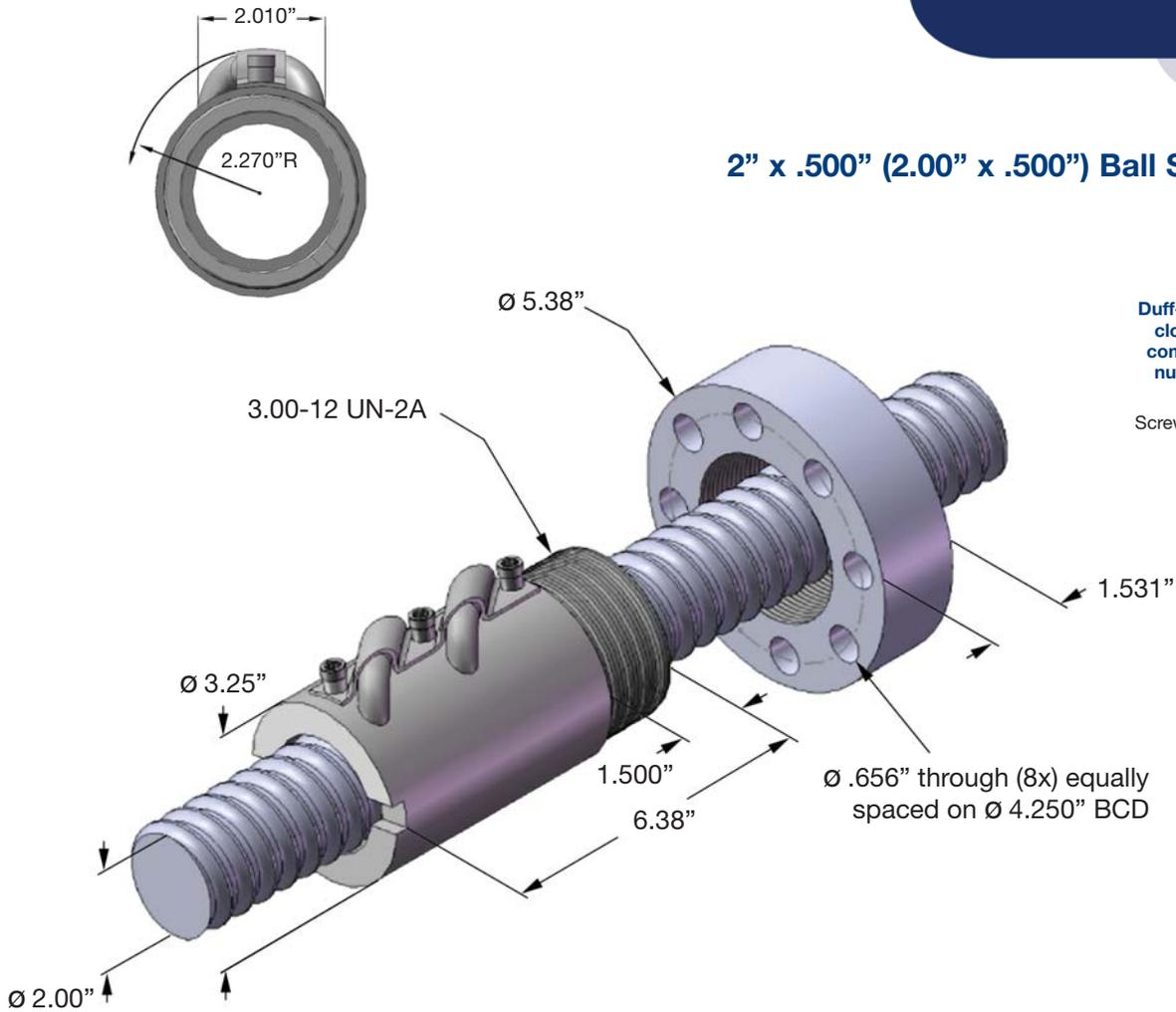
NOTE: Unless otherwise specified, all capacities are in Pounds, all dimensions are in Inches, and all speeds are in Inches per Minute.

*Load ratings are based on what the screw & nut assembly is capable of achieving. Actual load performance for a given screw and nut assembly will vary from application to application.

*Speed ratings are based on a DN spec of 3000, actual speeds will vary from application to application.

Ball Screws & Nuts Specifications

2" x .500" (2.00" x .500") Ball Screws & Nuts



Duff-Norton offers complete close mounted systems to complement these screw & nut assemblies as follows:

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- End Blocks - Page 50
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Ball Screw	Screw Diameter	Lead	Pitch	No. Starts	Root Diameter	Thread Form	Material	Max. Backlash	36"	72"	144"
200BSA050	2.000	.500	.500	1	1.720	Ball RH	Alloy	.002 to .015	Yes	Yes	Yes
Ball Nut	*Static Load	*Dynamic Load	*Max Speed	T.P.I.	Efficiency	Torque to Raise 1 Lb. (in/lb)	Material	Mounting Thread	Mounting Length	Nut Length	Nut Diameter
200BNH050	143,400	18,500	750.00	2	+90%	0.088	Steel	3.00-12 UN-2A	1.500	6.380	3.250
Flange	Overall Diameter	Bolt Cir. Diameter	Bolt Hole Diameter	No. Holes	Flange Width	Treated	Material	Mounting Thread	Nut Return Tubes	Return Tube Width	Nut Radius w/ Tubes
FL3000	5.38	4.250	.656	8	1.531	Black Oxide	Steel	3.00-12 UN-2B	2	2.010	2.270

NOTE: Unless otherwise specified, all capacities are in Pounds, all dimensions are in Inches, and all speeds are in Inches per Minute.

*Load ratings are based on what the screw & nut assembly is capable of achieving. Actual load performance for a given screw and nut assembly will vary from application to application.

*Speed ratings are based on a DN spec of 3000, actual speeds will vary from application to application.

Ball Screws & Nuts Specifications

2" x 1.00" (2.00" x 1.00") Ball Screws & Nuts

Duff-Norton offers complete close mounted systems to complement these screw & nut assemblies as follows:

- Screw Journal Ends - Page 48
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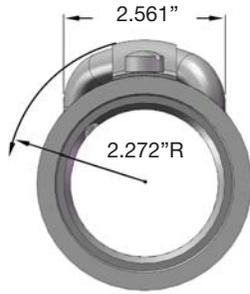
Ball Screw	Screw Diameter	Lead	Pitch	No. Starts	Root Diameter	Thread Form	Material	Max. Backlash	36"	Standard Lengths	
200BSA100	2.000	1.000	.500	2	1.720	Ball RH	Alloy	.002 to .015	Yes	Yes	144"
Ball Nut	*Static Load	*Dynamic Load	*Max Speed	T.P.I.	Efficiency	Torque to Raise 1 Lb. (in/lb)	Material	Mounting Thread	Mounting Length	Nut Length	Nut Diameter
200BNH100	134,500	21,200	1500.00	2	+90%	0.176	Steel	3.00-12 UN-2A	1.500	6.380	3.250
Flange	Overall Diameter	Bolt Cir. Diameter	Bolt Hole Diameter	No. Holes	Flange Width	Treated	Material	Mounting Thread	Nut Return Tubes	Return Tube Width	Nut Radius w/ Tubes
FL3000	5.38	4.250	.656	8	1.531	Black Oxide	Steel	3.00-12 UN-2B	2	2.330	2.290

NOTE: Unless otherwise specified, all capacities are in Pounds, all dimensions are in Inches, and all speeds are in Inches per Minute.

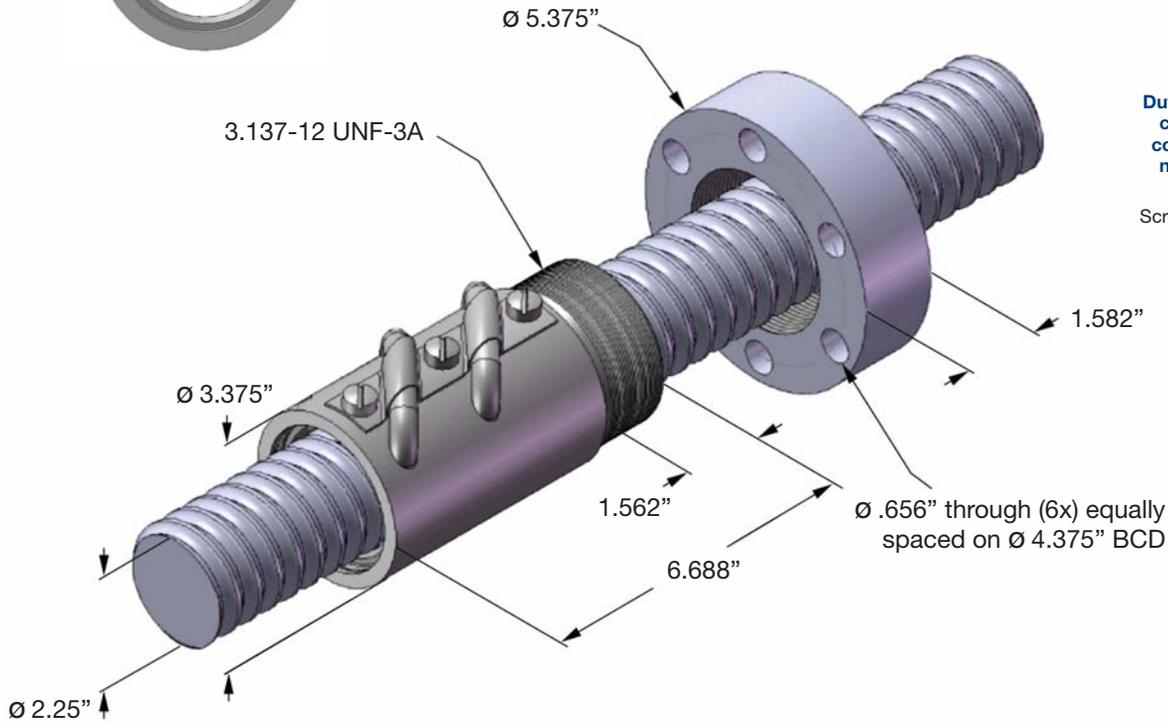
*Load ratings are based on what the screw & nut assembly is capable of achieving. Actual load performance for a given screw and nut assembly will vary from application to application.

*Speed ratings are based on a DN spec of 3000, actual speeds will vary from application to application.

Ball Screws & Nuts Specifications



2 1/4" x .500" (2.25" x .500") Ball Screws & Nuts



Duff-Norton offers complete close mounted systems to complement these screw & nut assemblies as follows:

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Right Hand Ball Screw & Nut

Ball Screw	Screw Diameter	Lead	Pitch	No. Starts	Root Diameter	Thread Form	Material	Max. Backlash	36"	Standard Lengths		
225BSA050	2.250	.500	.500	1	1.850	Ball RH	Alloy	.002 to .015	Yes	Yes	72"	144"
Ball Nut	*Static Load	*Dynamic Load	*Max Speed	T.P.I.	Efficiency	Torque to Raise 1 Lb. (in/lb)	Material	Mounting Thread	Mounting Length	Nut Length	Nut Diameter	
225BNH050	161,150	21,306	667.00	2	+90%	0.088	Alloy	3.137-12 UNF-3A	1.562	6.688	3.375	
Flange	Overall Diameter	Bolt Cir. Diameter	Bolt Hole Diameter	No. Holes	Flange Width	Treated	Material	Mounting Thread	Nut Return Tubes	Return Tube Width	Nut Radius w/ Tubes	
FL3137	5.375	4.375	.656	6	1.582	Black Oxide	Steel	3.137-12 UNF-3B	2	2.561	2.272	

Left Hand Ball Screw & Nut

Ball Screw	Screw Diameter	Lead	Pitch	No. Starts	Root Diameter	Thread Form	Material	Max. Backlash	36"	Standard Lengths		
225BSA050L	2.250	.500	.500	1	1.850	Ball LH	Alloy	.002 to .015	Yes	Yes	72"	144"
Ball Nut	*Static Load	*Dynamic Load	*Max Speed	T.P.I.	Efficiency	Torque to Raise 1 Lb. (in/lb)	Material	Mounting Thread	Mounting Length	Nut Length	Nut Diameter	
225BNH050L	161,150	21,306	667.00	2	+90%	0.088	Alloy	3.137-12 UNF-3A	1.562	6.688	3.375	
Flange	Overall Diameter	Bolt Cir. Diameter	Bolt Hole Diameter	No. Holes	Flange Width	Treated	Material	Mounting Thread	Nut Return Tubes	Return Tube Width	Nut Radius w/ Tubes	
FL3137	5.375	4.375	.656	6	1.582	Black Oxide	Steel	3.137-12 UNF-3B	2	2.561	2.272	

NOTE: Unless otherwise specified, all capacities are in Pounds, all dimensions are in Inches, and all speeds are in Inches per Minute.

*Load ratings are based on what the screw & nut assembly is capable of achieving. Actual load performance for a given screw and nut assembly will vary from application to application.

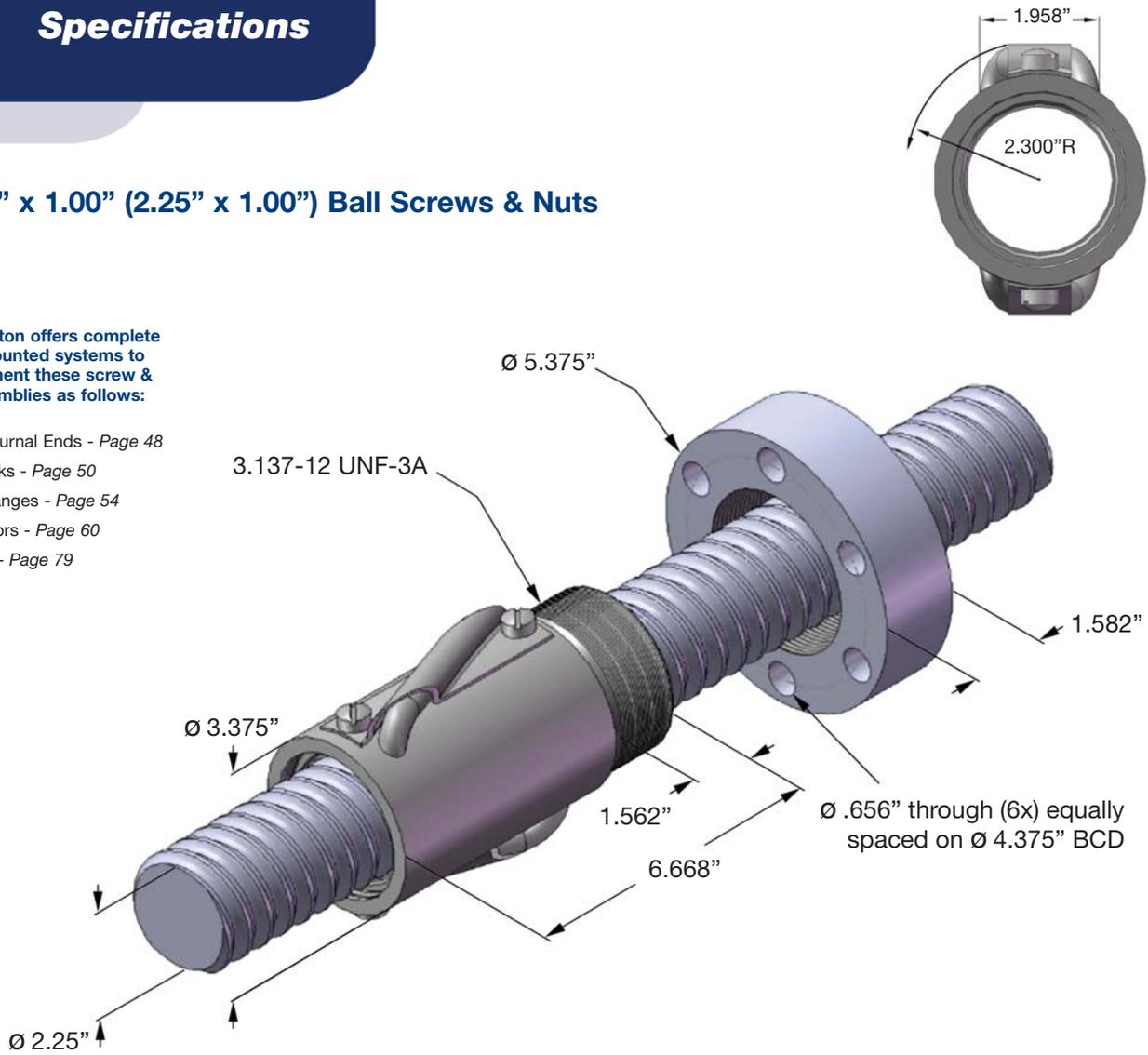
*Speed ratings are based on a DN spec of 3000, actual speeds will vary from application to application.

Ball Screws & Nuts Specifications

2 1/4" x 1.00" (2.25" x 1.00") Ball Screws & Nuts

Duff-Norton offers complete close mounted systems to complement these screw & nut assemblies as follows:

- Screw Journal Ends - Page 48
- End Blocks - Page 50
- Motor Flanges - Page 54
- Gearmotors - Page 60
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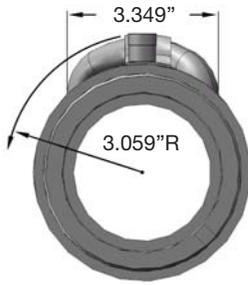
Ball Screw	Screw Diameter	Lead	Pitch	No. Starts	Root Diameter	Thread Form	Material	Max. Backlash	36"	Standard Lengths		
225BSA100	2.250	1.000	.500	2	1.850	Ball RH	Alloy	.002 to .015	Yes	Yes	72"	144"
Ball Nut	*Static Load	*Dynamic Load	*Max Speed	T.P.I.	Efficiency	Torque to Raise 1 Lb. (in/lb)	Material	Mounting Thread	Mounting Length	Nut Length	Nut Diameter	
225BNH100	161,150	26,538	1333.00	2	+90%	0.176	Steel	3.137-12 UNF-3A	1.562	6.688	3.375	
Flange	Overall Diameter	Bolt Cir. Diameter	Bolt Hole Diameter	No. Holes	Flange Width	Treated	Material	Mounting Thread	Nut Return Tubes	Return Tube Width	Nut Radius w/ Tubes	
FL3137	5.375	4.375	.656	6	1.582	Black Oxide	Steel	3.137-12 UNF-3B	2	1.958	2.300	

NOTE: Unless otherwise specified, all capacities are in Pounds, all dimensions are in Inches, and all speeds are in Inches per Minute.

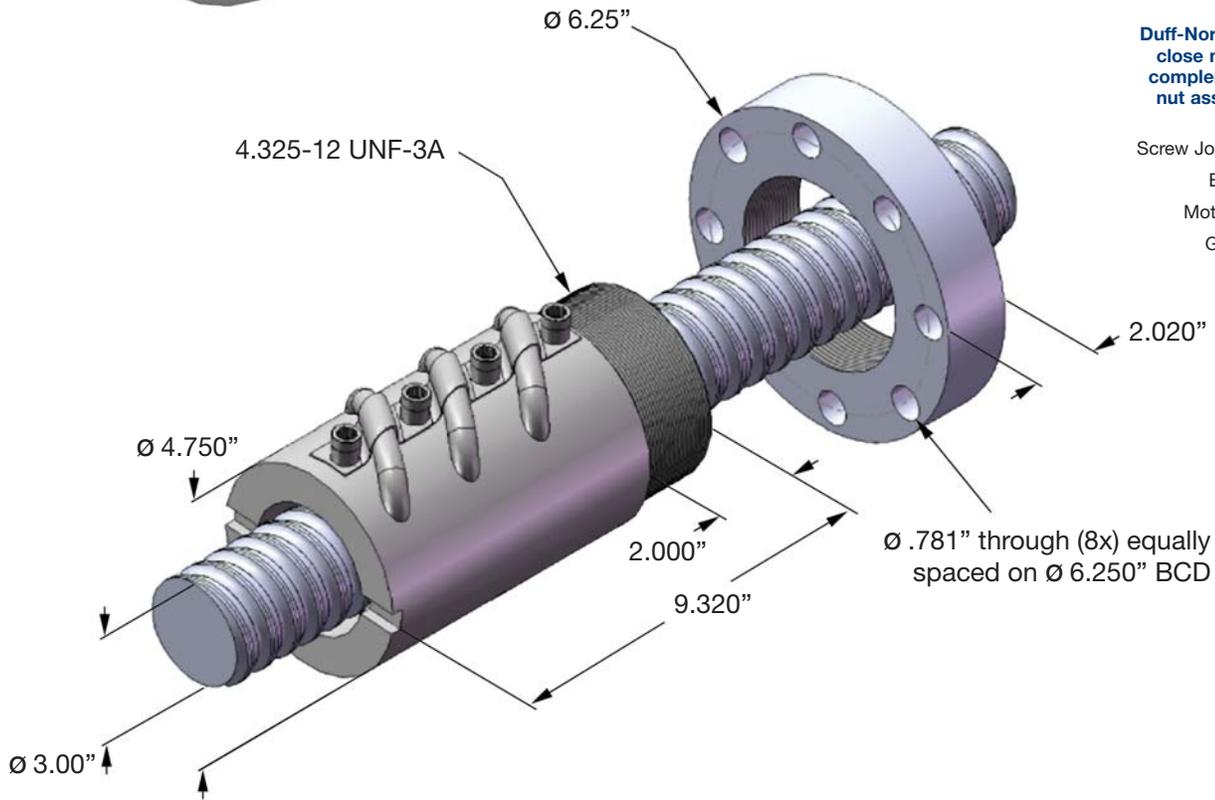
*Load ratings are based on what the screw & nut assembly is capable of achieving. Actual load performance for a given screw and nut assembly will vary from application to application.

*Speed ratings are based on a DN spec of 3000, actual speeds will vary from application to application.

Ball Screws & Nuts Specifications



3" x .660" (3.00" x .660") Ball Screws & Nuts



Duff-Norton offers complete close mounted systems to complement these screw & nut assemblies as follows:

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- End Blocks - Page 50
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Ball Screw	Screw Diameter	Lead	Pitch	No. Starts	Root Diameter	Thread Form	Material	Max. Backlash	Standard Lengths		
									36"	72"	144"
300BSA066	3.000	.660	.660	1	2.480	Ball RH	Alloy	.002 to .015	Yes	Yes	Yes
Ball Nut	*Static Load	*Dynamic Load	*Max Speed	T.P.I.	Efficiency	Torque to Raise 1 Lb. (in/lb)	Material	Mounting Thread	Mounting Length	Nut Length	Nut Diameter
300BNJ066	323,950	44,316	660.00	1.515	+90%	0.116	Alloy	4.325-12 UNF-3A	2.000	9.320	4.750
Flange	Overall Diameter	Bolt Cir. Diameter	Bolt Hole Diameter	No. Holes	Flange Width	Treated	Material	Mounting Thread	Nut Return Tubes	Return Tube Width	Nut Radius w/ Tubes
FL4325	7.375	6.250	.781	8	2.020	Black Oxide	Steel	4.325-12 UNF-3B	3	3.356	3.340

NOTE: Unless otherwise specified, all capacities are in Pounds, all dimensions are in Inches, and all speeds are in Inches per Minute.

*Load ratings are based on what the screw & nut assembly is capable of achieving. Actual load performance for a given screw and nut assembly will vary from application to application.

*Speed ratings are based on a DN spec of 3000, actual speeds will vary from application to application.

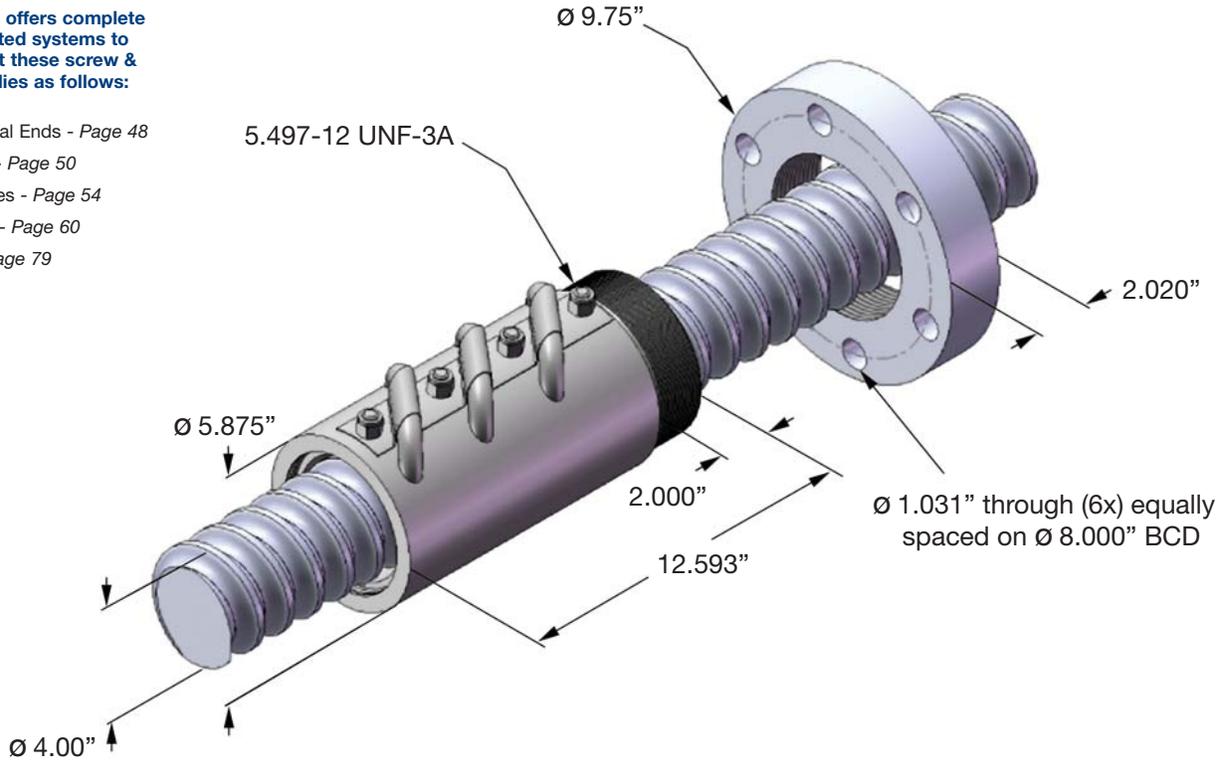
Ball Screws & Nuts Specifications

4" x 1.00" (4.00" x 1.00") Ball Screws & Nuts



Duff-Norton offers complete close mounted systems to complement these screw & nut assemblies as follows:

- Screw Journal Ends - Page 48
- End Blocks - Page 50
- Motor Flanges - Page 54
- Gearmotors - Page 60
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Ball Screw	Screw Diameter	Lead	Pitch	No. Starts	Root Diameter	Thread Form	Material	Max. Backlash	Standard Lengths		
									36"	72"	144"
400BSA100	4.000	1.000	1.000	1	3.340	Ball RH	Alloy	.002 to .015	Yes	Yes	Yes
Ball Nut	*Static Load	*Dynamic Load	*Max Speed	T.P.I.	Efficiency	Torque to Raise 1 Lb. (in/lb)	Material	Mounting Thread	Mounting Length	Nut Length	Nut Diameter
400BNJ100	476,970	85,758	750.00	1	+90%	0.176	Steel	5.497-12 UNF-3A	1.995	12.593	5.875
Flange	Overall Diameter	Bolt Cir. Diameter	Bolt Hole Diameter	No. Holes	Flange Width	Treated	Material	Mounting Thread	Nut Return Tubes	Return Tube Width	Nut Radius w/ Tubes
FL5497	9.75	8.000	1.031	6	2.020	Black Oxide	Steel	5.497-12 UNF-3B	3	4.029	3.756

NOTE: Unless otherwise specified, all capacities are in Pounds, all dimensions are in Inches, and all speeds are in Inches per Minute.

*Load ratings are based on what the screw & nut assembly is capable of achieving. Actual load performance for a given screw and nut assembly will vary from application to application.

*Speed ratings are based on a DN spec of 3000, actual speeds will vary from application to application.