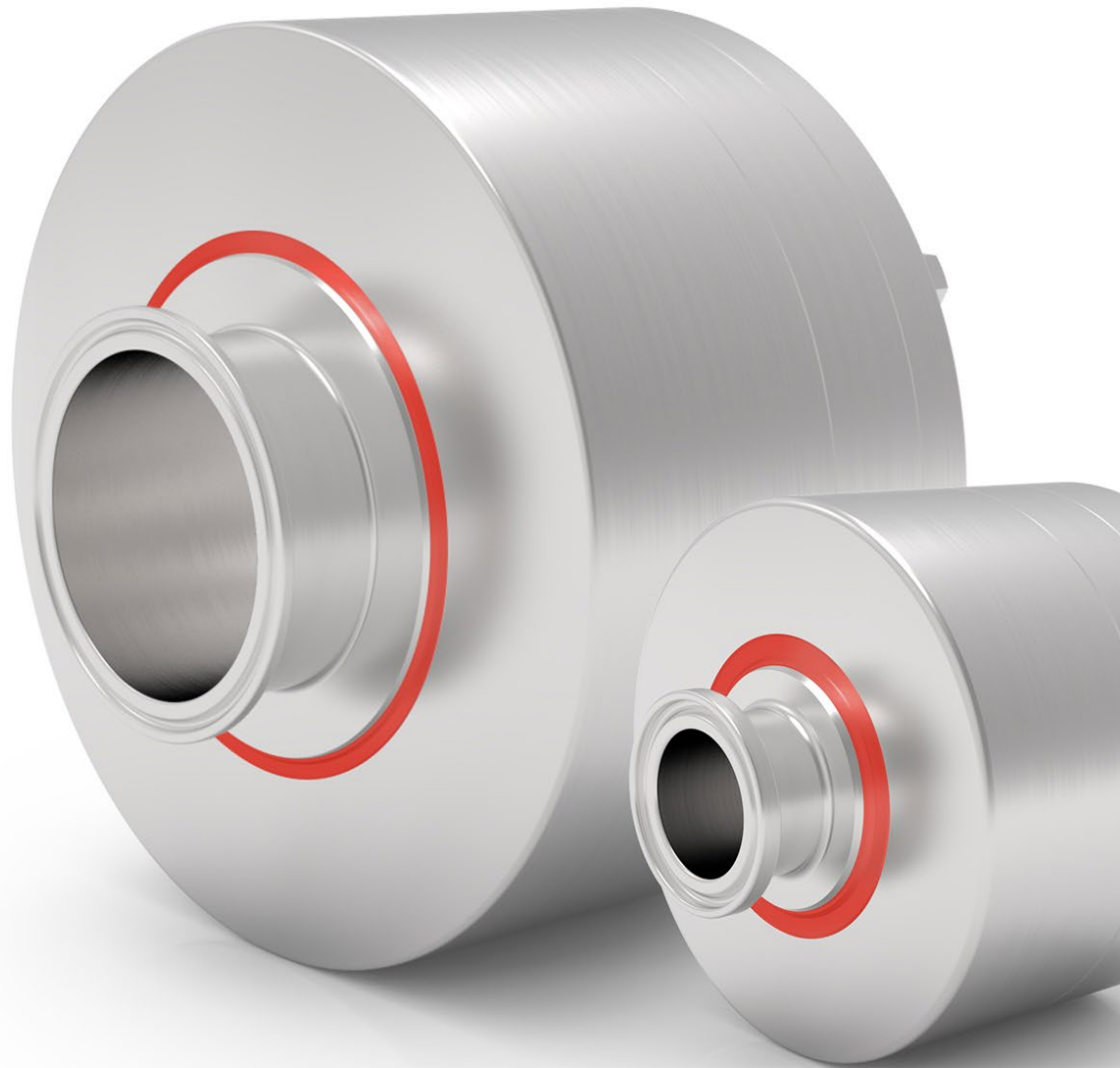




DYNAMIC SEALING TECHNOLOGIES, INC



Large Rotary Unions

HYGIENIC CLAMP FERRULE CONNECTION OPTIONS

- 3/4"
- 1"
- 1 1/2"
- 2"
- 2 1/2"
- 3"
- 4"



## What is a Rotary Union?

Overview

How To Order

Hygienic Clamp Ferrule Connection Types

Specifications & Operating Information

Performance Data

SCS ¾" Connection Dimensions

SCS 1" Connection Dimensions

SCS 1½" Connection Dimensions

SCS 2" Connection Dimensions

SCS 2½" Connection Dimensions

SCS 3" Connection Dimensions

SCS 4" Connection Dimensions

Installation & Mounting

Warranty

Dynamic Sealing Technologies, Inc. (DSTI) serves a wide range of global industries as a leader in engineered fluid sealing and transfer solutions for rotating applications.

DSTI core business segments are fluid rotary unions, electrical slip rings, and value-added products and services—providing customers with a single-source solution from design and manufacturing through to testing and qualification—all under one roof. Located in North America and Europe with a team of distribution partners and technical support specialists worldwide.

Learn more at

### **DID YOU KNOW?**

DSTI Exports Products to  
Over 60 Countries.



A rotary union (or swivel joint) is a mechanism used to transfer fluid (under pressure or vacuum) from a stationary inlet to a rotating outlet, preserving and isolating the fluid connection.

Rotary unions are engineered to endure a wide range of temperatures and pressures for a variety of conditions and environments. In addition, rotary unions may integrate multiple passages and handle different types of fluid simultaneously.

See examples at

## **HOW DO I CHOOSE THE BEST ROTARY UNION FOR MY APPLICATION?**

*Tell us about your requirements so we can make a recommendation:*

- Type of media(s) / fluid(s) to be transferred
- Number of independent flow channels (passages)
- Operating pressure
- Operating temperature
- Operating speed
- Shaft & housing connection type
- Flow channel (passage) size
- Torque & load requirements
- Duty cycle

*Does the temperature, speed or pressure fluctuate or change during operation? If so, please provide the detailed ranges for each parameter and time durations of each condition.*



Hygienic Clamp Ferrule Connections

FDA Compliant Materials

Food Grade Seals and Bearing Lubricant

Engineered to Minimize Fluid Stagnation Points

Exclusive DSTI Sealing Technology

316 Stainless Steel Shaft and Housing

ASME-BPE Connections



The single passage SCS Series rotary unions feature hygienic, tri-clamp ferrule connections, food grade seals and bearing lubricant, and a FDA-approved design.

To help minimize fluid stagnation points, smooth flow lines are engineered into the design to allow a clear passage for fluid. Specialized bearings fit inside a sealed chamber to keep lubricants in and contaminants out.

The all-stainless steel SCS Series utilize high performance DSTI sealing technology and come standard with ASME-BPE connections.

If needed, DSTI can make modifications to meet each application's specific requirements including changes to the SCS Series mounting configuration, connections, sealing system, and housing or shaft dimensions.

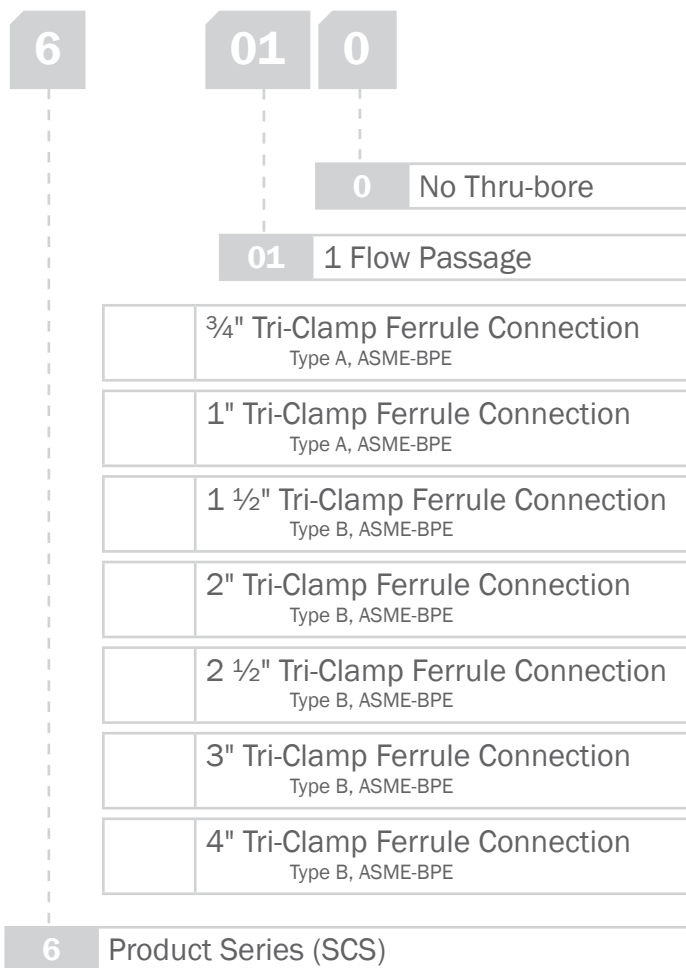


#### **PRODUCT DOWNLOADS**

For Catalogs, Brochures, Models and Drawings visit



# Create your Part Number



Thru-bore option is not available.

All SCS Series models contain 1 passage.

SCS Series (Type A or B, ASME-BPE Connection)

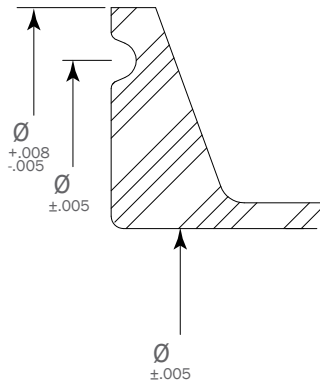
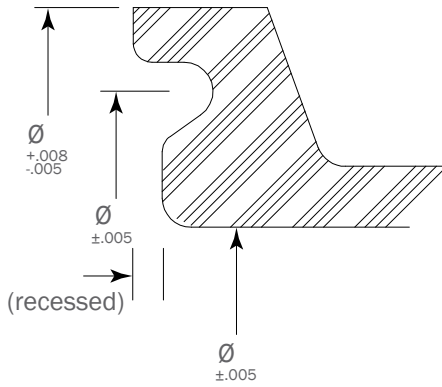
**SCS-605010**  
SCS 1-Passage, 3/4" Type A ASME-BPE Connections

**SCS-613010**  
SCS 1-Passage, 4" Type B ASME-BPE Connection passage



TRI-CLAMP FERRULE CONNECTION  
Install this end up to meet 3A requirements





SIZE	A	B	C
	0.620" [15.75mm]	0.984" [25mm]	0.800" [20.32mm]
1"	0.870" [22.1mm]	1.339" [34mm]	1.160" [29.46mm]

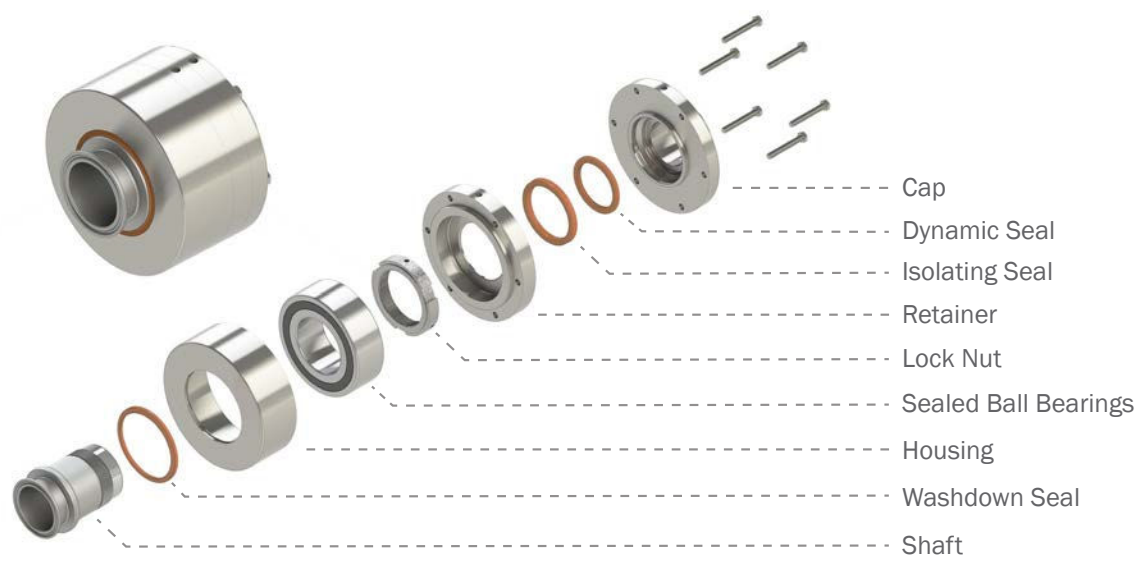
SIZE	D	E	F
	1.37" [34.8mm]	1.984" [50.39mm]	1.718" [43.64mm]
2"	1.87" [47.5mm]	2.516" [63.91mm]	2.218" [56.34mm]
	2.37" [60.2mm]	3.047" [77.4mm]	2.781" [70.64mm]
3"	2.87" [72.9mm]	3.579" [90.91mm]	3.281" [83.34mm]
	3.834" [97.4mm]	4.682" [119mm]	4.344" [110.3mm]

**SCS-605010**

SCS 1-Passage, 3/4" Type A ASME-BPE Connections

**SCS-613010**

SCS 1-Passage, 4" Type B ASME-BPE Connections

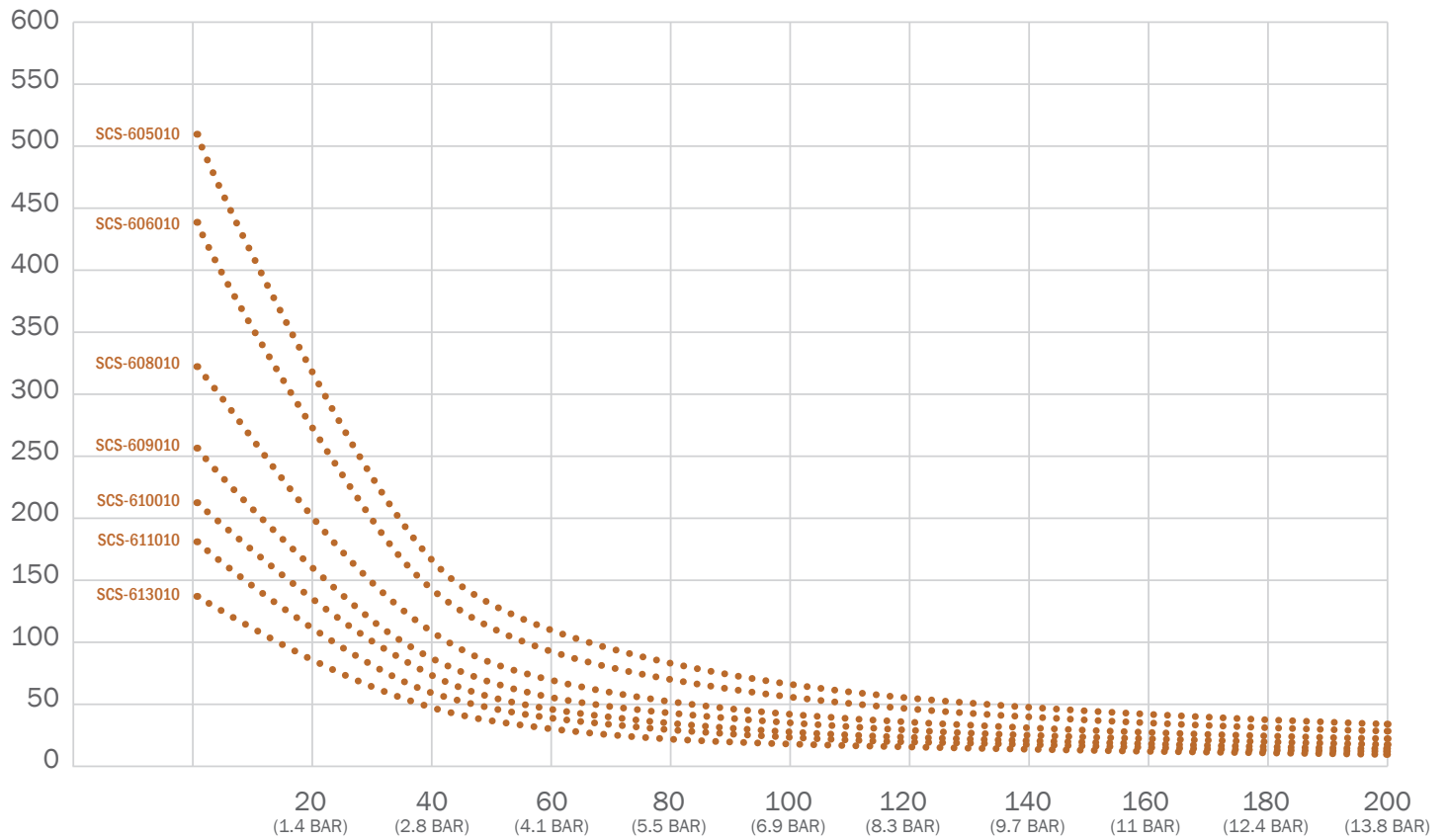


Media Types	Air/Gas, Chemical , DI/Tap Water, Food-Grade, Water/Glycol
Passage Sizes	3/4", 1", 1 1/2", 2", 2 1/2", 3", 4"
Connection Type	Type A or B ASME BPE-2009
Max. Operating Pressure	200 PSI (14 BAR) <sup>1</sup>
Max. Vacuum	24 HG
Max. Rotational Speed	500 RPM <sup>2</sup>
Operating Temperature	0° F to 220° F (-18° C to 105° C)
Body Material Type	316 Stainless Steel
Slip Ring Options	Not Applicable
Mounting Options	The SCS Series rotary unions connect at the ferrule clamp connection inlet and outlet.

Values are dependent on a combination of all application parameters. Please consult with DSTI.  
 Consult with DSTI for specific speed and pressure evaluation based on application.  
 High temperature applications may require alternative seal materials. Please consult with DSTI.  
 Some applications using Chemical media may require alternative sealing materials. Please consult with DSTI.



# Pressure vs. Allowable Speed



This data is to be used as a general guideline. Data based on generic liquid food grade media as the media type. Please consult DSTI about your specific application.





# Pressure vs. Torque

PRESSURE PSI (BAR)						
MODEL	0	20 (1.4 BAR)	40 (2.8 BAR)	60 (4.1 BAR)	80 (5.5 BAR)	100 (6.9 BAR)
	14.5 [1.64]	14.8 [1.67]	15.2 [1.72]	15.6 [1.76]	16.0 [1.81]	16.4 [1.85]
SCS-606010	28.5 [3.22]	28.8 [3.25]	29.2 [3.30]	29.6 [3.34]	30.0 [3.39]	30.4 [3.43]
	44.3 [5.01]	44.7 [5.05]	45.1 [5.10]	45.5 [5.14]	45.9 [5.19]	46.3 [5.23]
SCS-609010	43.6 [4.93]	44.0 [4.97]	44.4 [5.01]	44.8 [5.06]	45.2 [5.12]	45.6 [5.15]
	55.3 [6.25]	55.7 [6.29]	56.0 [6.33]	56.4 [6.37]	56.8 [6.42]	57.2 [6.46]
SCS-611010	79.3 [8.96]	79.7 [9.00]	80.1 [9.05]	80.5 [9.09]	80.9 [9.14]	81.2 [9.17]
	89.3 [10.08]	89.7 [10.13]	90.1 [10.18]	90.5 [10.23]	90.9 [10.27]	91.3 [10.32]
PRESSURIZED TORQUE (INCH POUND [NEWTON METER])						

PRESSURE PSI (BAR)					
MODEL	120 (8.3 BAR)	140 (9.7 BAR)	160 (11 BAR)	180 (12.4 BAR)	200 (13.8 BAR)
	16.8 [1.90]	17.2 [1.94]	17.6 [1.99]	18.0 [2.03]	18.4 [2.08]
SCS-606010	30.8 [3.48]	31.2 [3.53]	31.6 [3.57]	32.0 [3.62]	32.4 [3.66]
	46.6 [5.27]	47.0 [5.31]	47.4 [5.36]	47.8 [5.40]	48.2 [5.45]
SCS-609010	45.9 [5.19]	46.3 [5.23]	46.7 [5.28]	47.1 [5.32]	47.5 [5.37]
	57.6 [6.51]	58.0 [6.55]	58.4 [6.60]	58.8 [6.64]	59.2 [6.69]
SCS-611010	81.6 [9.23]	82.0 [9.26]	82.4 [9.31]	82.8 [9.36]	83.2 [9.40]
	91.7 [10.36]	92.0 [10.39]	92.4 [10.44]	92.8 [10.48]	93.2 [10.53]
PRESSURIZED TORQUE (INCH POUND [NEWTON METER])					

This data is to be used as a general guideline. Torque data represents the minimum torque required to rotate based on all passages (ports) pressurized with oil/hydraulic media. Required torque to rotate may be greater when using other media types or dry running. For specific torque requirements, please contact DSTI to discuss your application.



## Frictional Loss at Allowable Speed at Pressure (btu/min)

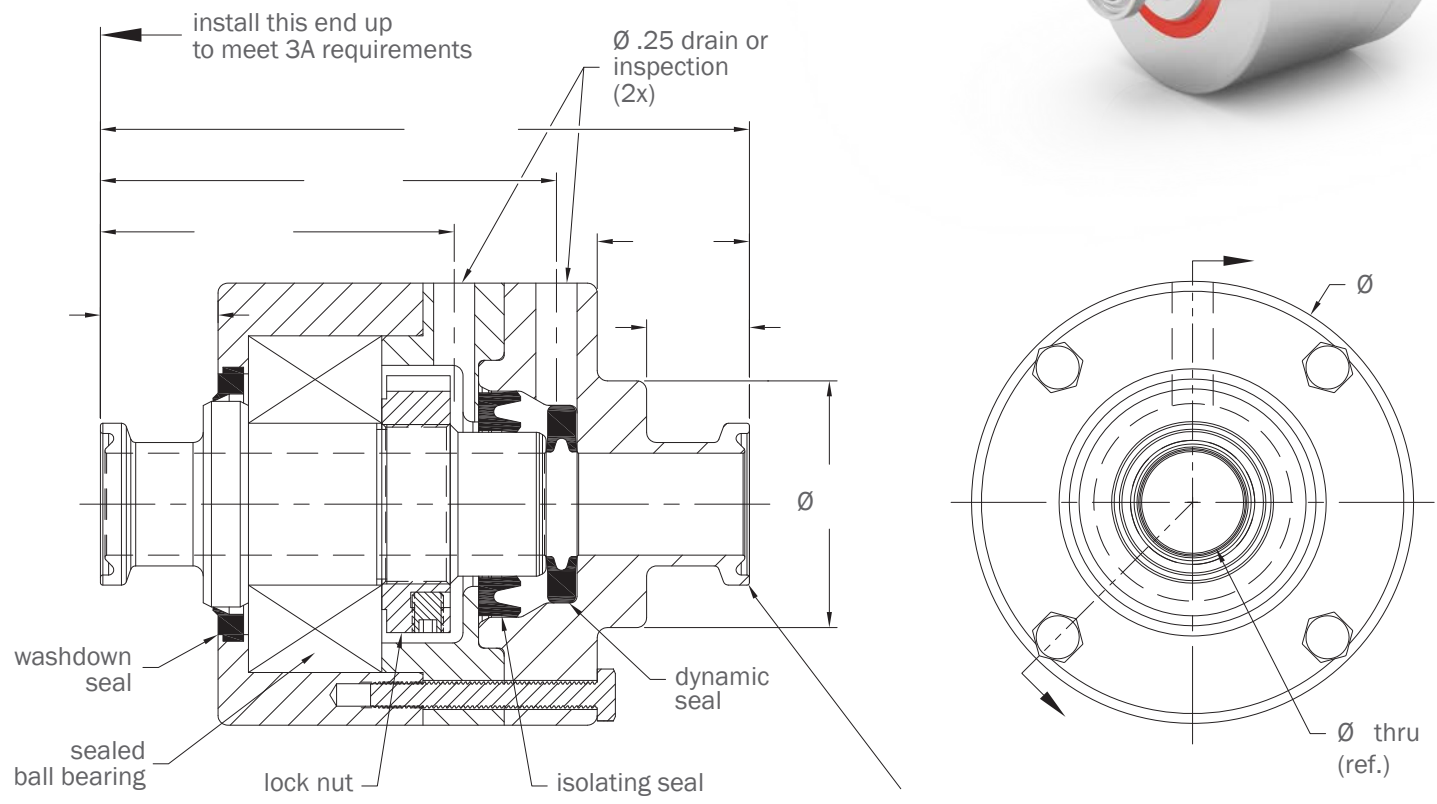
MODEL	PRESSURE PSI (BAR)					
	0	20 (1.4 BAR)	40 (2.8 BAR)	60 (4.1 BAR)	80 (5.5 BAR)	100 (6.9 BAR)
	5.01 [87.14]	3.22 [55.93]	1.65 [28.70]	1.13 [19.62]	0.87 [15.08]	0.71 [12.36]
SCS-606010	8.45 [146.97]	5.36 [93.12]	2.71 [47.19]	1.83 [31.88]	1.39 [24.22]	1.13 [19.63]
	9.70 [168.66]	6.12 [106.34]	3.09 [53.63]	2.07 [36.06]	1.57 [27.78]	1.27 [22.01]
SCS-609010	7.56 [131.41]	4.77 [82.87]	2.40 [41.80]	1.62 [28.11]	1.22 [21.27]	0.99 [17.16]
	7.93 [137.83]	4.99 [86.75]	2.51 [43.68]	1.69 [29.32]	1.27 [22.14]	1.03 [17.84]
SCS-611010	9.70 [168.66]	6.09 [105.93]	3.06 [53.22]	2.05 [35.65]	1.55 [26.87]	1.24 [21.60]
	8.31 [144.51]	5.22 [90.71]	2.62 [45.55]	1.75 [30.50]	1.32 [22.97]	1.06 [18.46]
FRICTIONAL LOSS (BTU PER MINUTE [WATTS])						

MODEL	PRESSURE PSI (BAR)				
	120 (8.3 BAR)	140 (9.7 BAR)	160 (11 BAR)	180 (12.4 BAR)	200 (13.8 BAR)
	0.61 [10.55]	0.53 [9.25]	0.48 [8.28]	0.43 [7.52]	0.40 [6.92]
SCS-606010	0.95 [16.57]	0.83 [14.38]	0.73 [12.74]	0.66 [11.47]	0.60 [10.44]
	1.06 [18.50]	0.92 [15.99]	0.81 [14.10]	0.73 [12.64]	0.66 [11.47]
SCS-609010	0.83 [14.97]	0.72 [12.91]	0.63 [11.38]	0.57 [10.18]	0.51 [9.22]
	0.86 [14.97]	0.74 [12.91]	0.65 [11.38]	0.59 [10.18]	0.53 [9.22]
SCS-611010	1.04 [18.09]	0.90 [15.58]	0.79 [13.69]	0.70 [12.23]	0.64 [11.06]
	0.89 [15.45]	0.76 [13.30]	0.67 [11.68]	0.60 [10.43]	0.54 [9.43]
FRICTIONAL LOSS (BTU PER MINUTE [WATTS])					

This data is to be used as a general guideline. Please consult DSTI about your specific application.  
1 foot pound per minute (ft-lb/min) = 0.0013 btu per minute (btu/min) [0.023 watts (W)]



# Dimensions

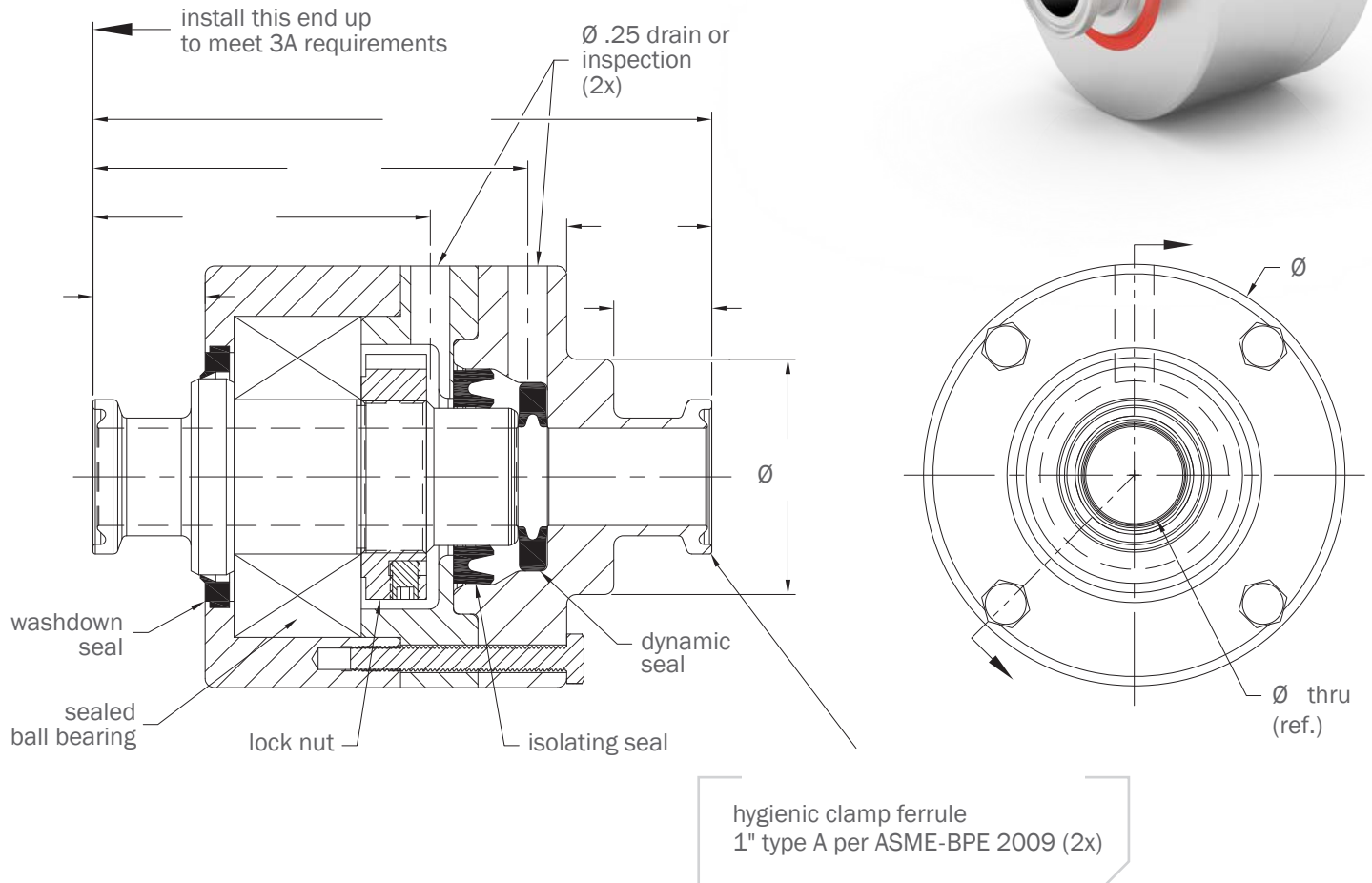


hygienic clamp ferrule  
 3/4" type A per ASME-BPE 2009 (2x)

PART #	A	B	C	D	E	F	G	H	I
	3.95"	2.77"	2.15"	.72"	.93"	.63"	1.50"	2.69"	.62"



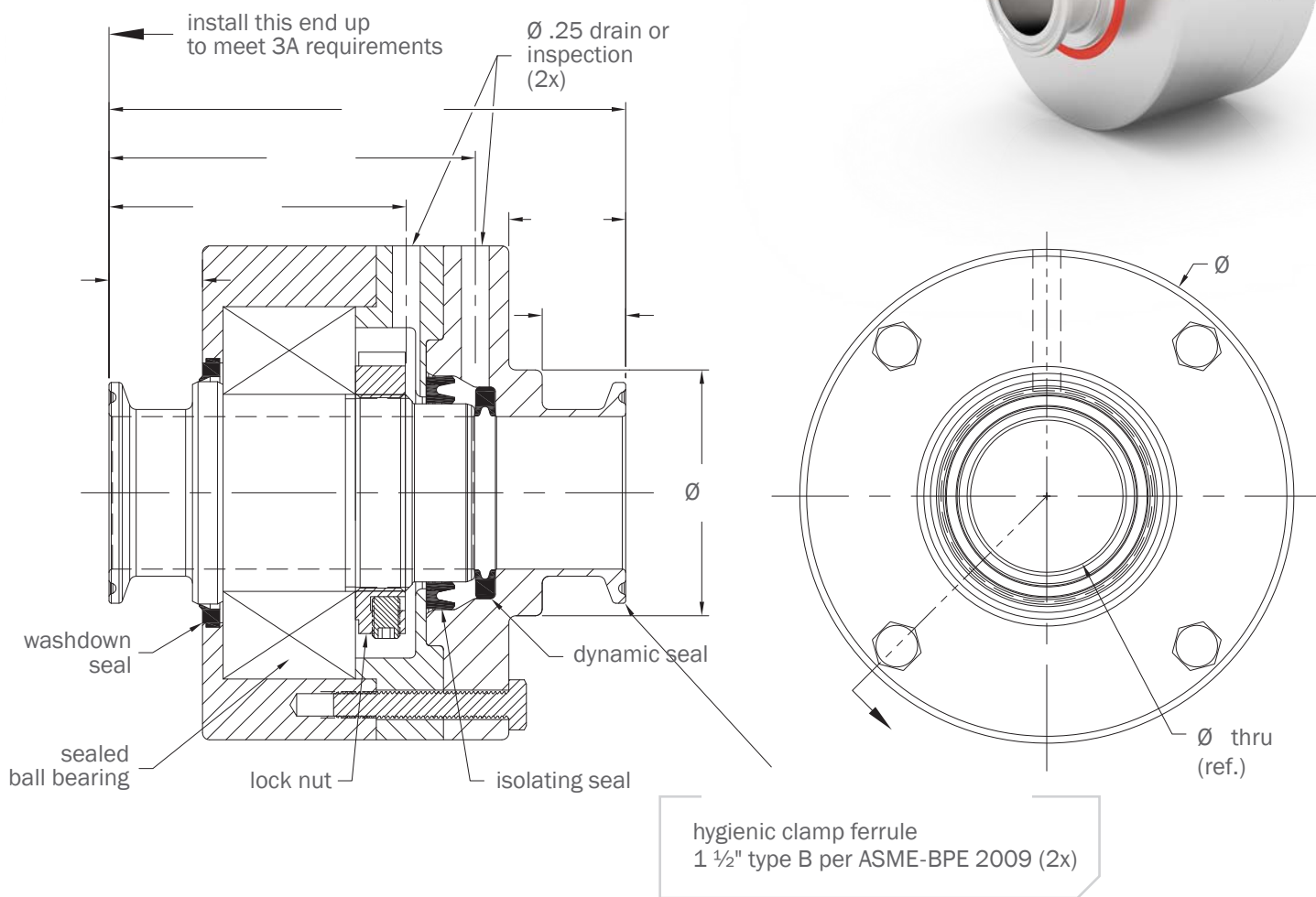
# Dimensions



PART #	A	B	C	D	E	F	G	H	I
	4.10"	2.87"	2.25"	.72"	.92"	.63"	1.75"	3.44"	.87"



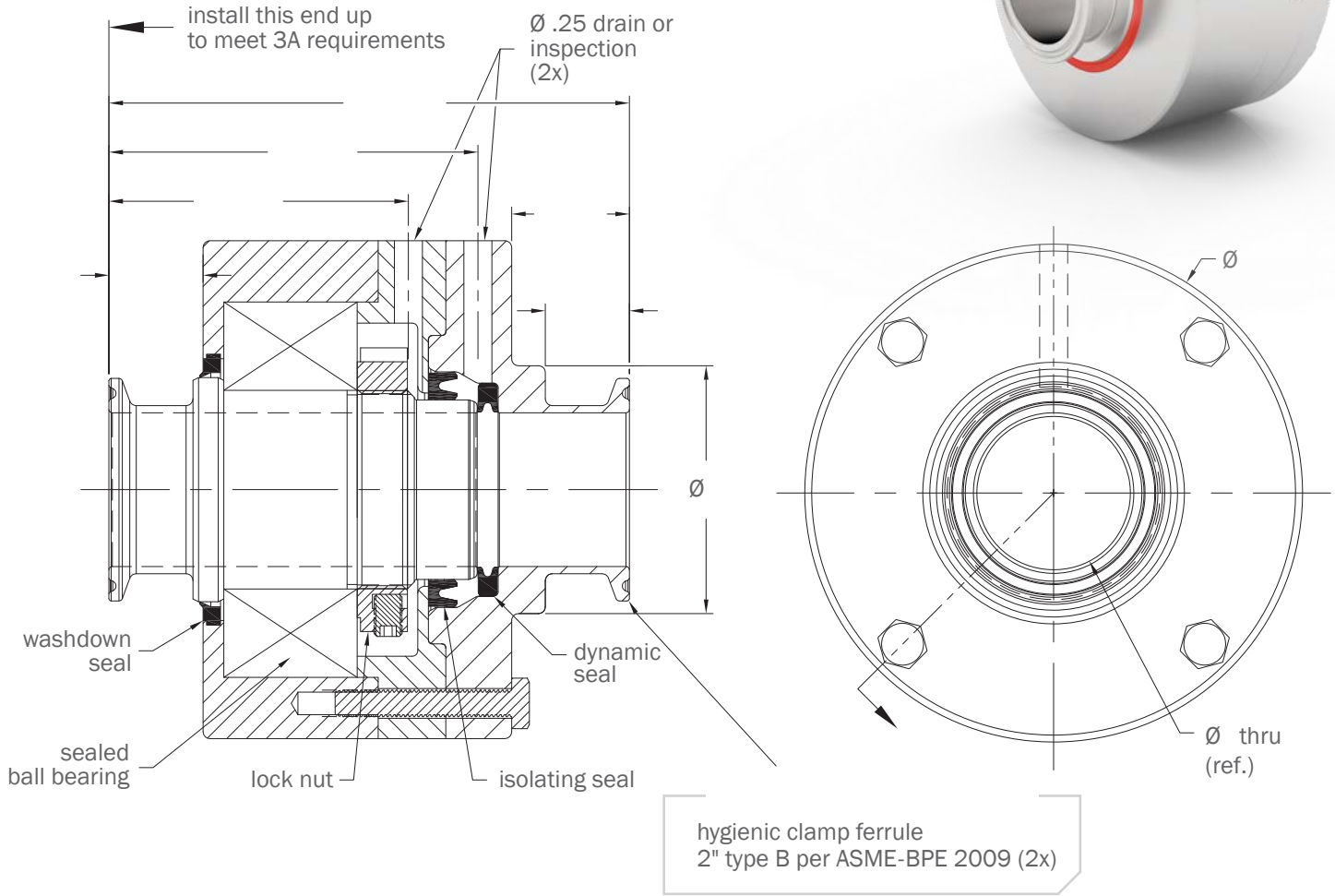
# Dimensions



PART #	A	B	C	D	E	F	G	H	I
	4.64"	3.29"	2.67"	.84"	1.05"	.75"	2.21"	4.44"	1.37"



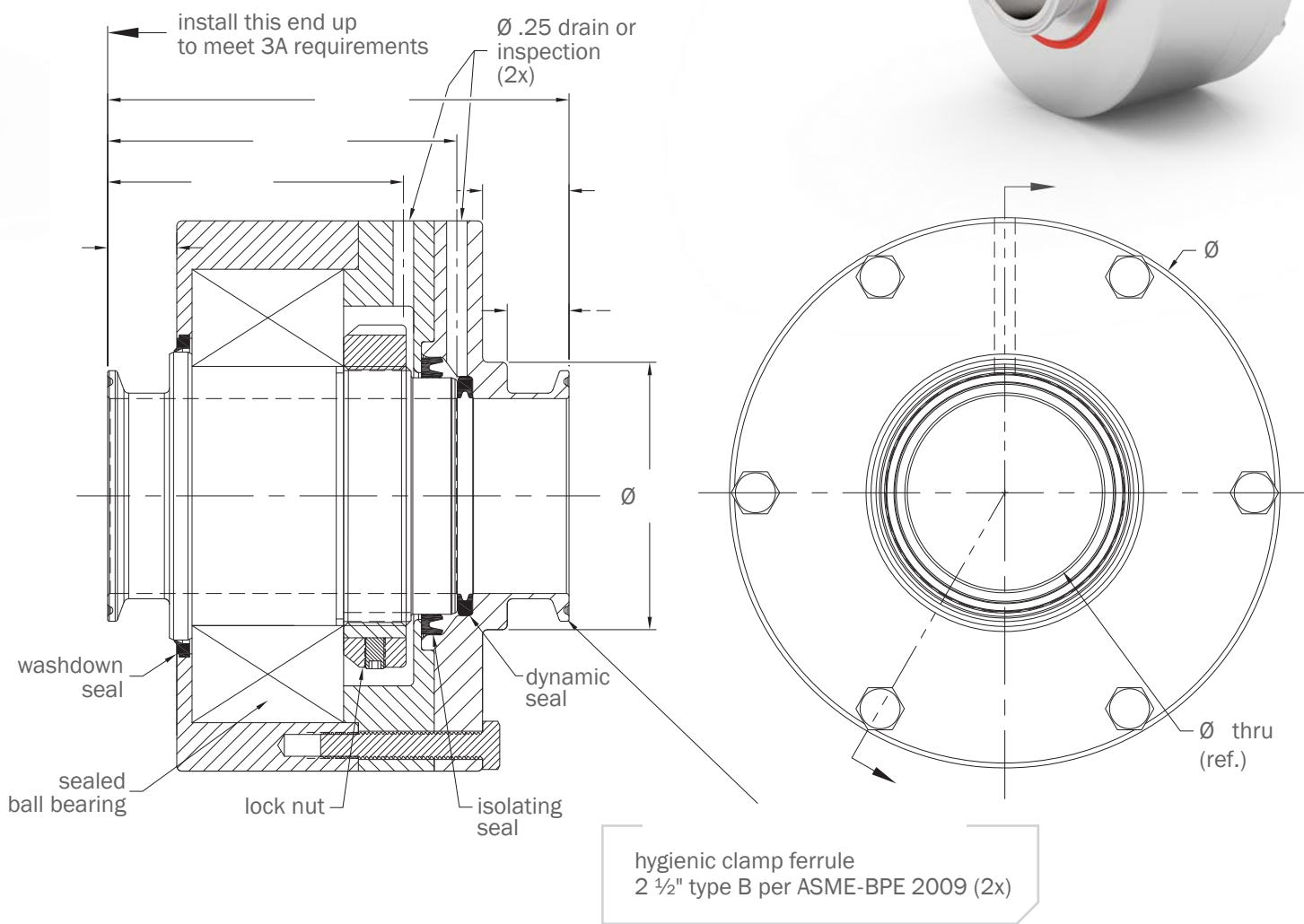
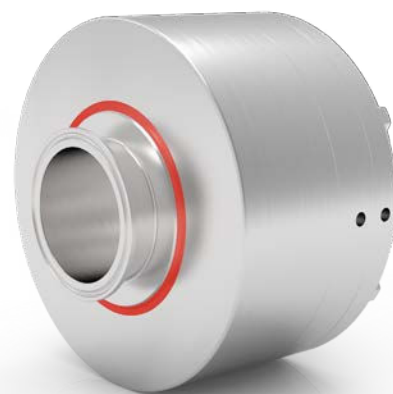
# Dimensions



PART #	A	B	C	D	E	F	G	H	I
	4.99"	3.63"	2.98"	.84"	1.05"	.75"	2.75"	5.44"	1.87"



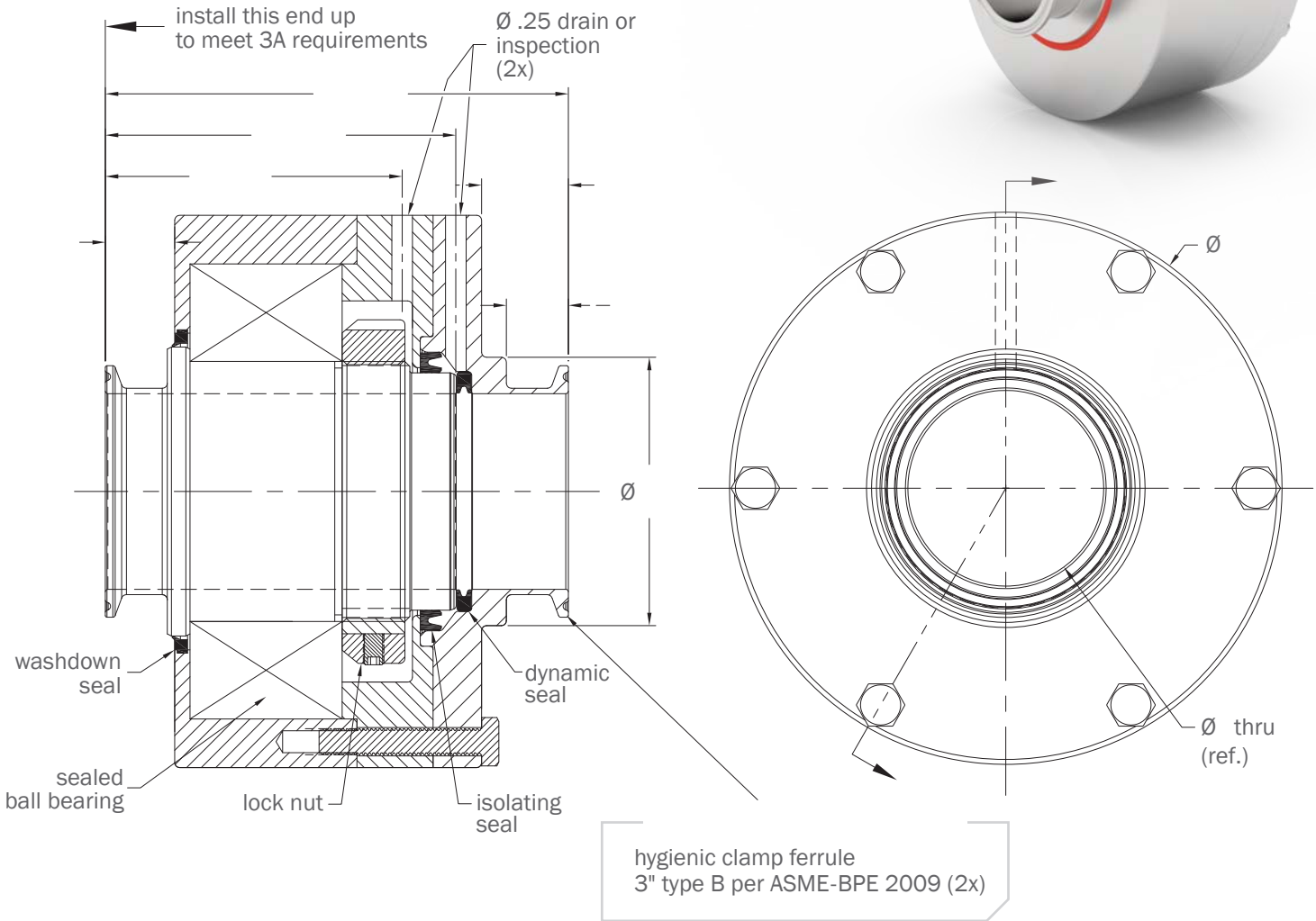
# Dimensions



PART #	A	B	C	D	E	F	G	H	I
	5.61"	4.24"	3.59"	.84"	1.05"	.75"	3.25"	6.69"	2.37"



# Dimensions

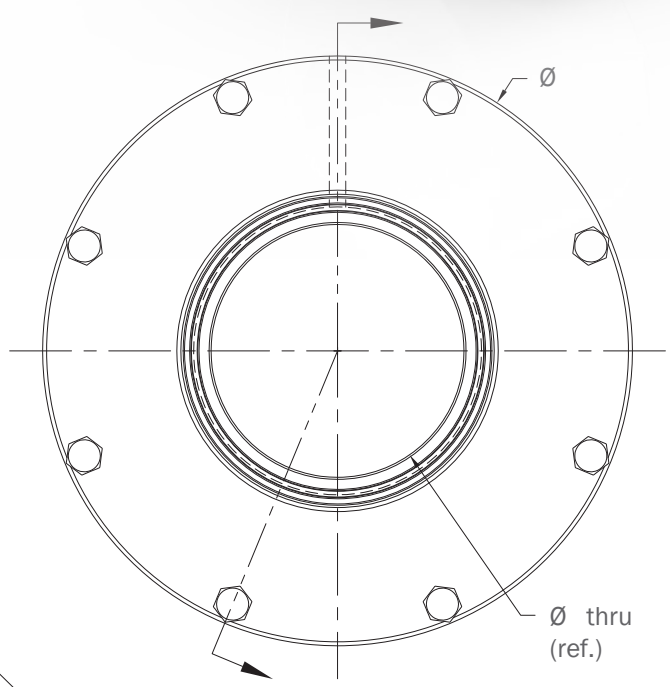
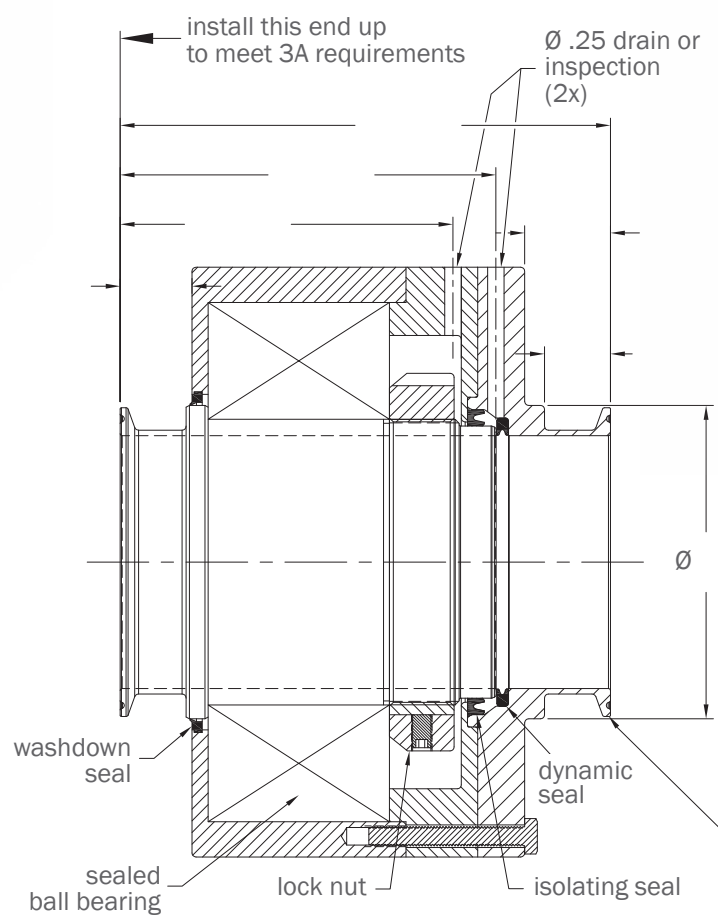


PART #	A	B	C	D	E	F	G	H	I
	6.81"	5.20"	4.56"	1.25"	1.30"	1.00"	4.25"	7.94"	2.87"





# Dimensions



hygienic clamp ferrule  
4" type B per ASME-BPE 2009 (2x)

PART #	A	B	C	D	E	F	G	H	I
	7.43"	5.70"	5.05"	.109"	1.30"	1.00"	4.75"	8.94"	3.83"



### **PREPARATION:**

Remove the rotary union from the shipping container. Inspect the entire assembly, including all passage connections to make sure that they are clean and no visual damage occurred during transport.

### **RECOMMENDED INSTALLATION PRACTICE:**

As this device is mounted inline between two pipes, alignment of the pipes is critical. These pipes may have a wide variation of temperature during normal operation and cleaning, some flexibility must be included in the installation to absorb thermal expansion of the piping system. The sanitary flanged connections are the “torque arm” in this design. Make sure adequate / compatible gasket seals are installed between the flange connections. Orient drain / inspection ports as required. If the union is installed with a vertical centerline, note orientation mark, “this end up” and the arrow, in the etch on the union. Make sure clamp collars are tightened to factory recommendations.

### **INITIAL START-UP:**

After rotary union is installed, a dry run is recommended to assure proper mounting of the rotating union assembly. Begin rotation of the equipment, and verify that while rotating at the maximum operating speed there is no visible movement of the rotary union assembly due to misalignment.

FIGURE 1





DSTI Warrants, for a period of 2 years from the date of original delivery, its products to be free from defects in material and workmanship. DSTI's obligation under this warranty is limited to repair or replacement at its factory of any part or parts of said products which shall be returned to DSTI with transportation charges prepaid and which DSTI's examination shall disclose to its satisfaction to have been defective. Under no circumstances shall DSTI be held liable for loss, damage, cost of repair of consequential damages of any kind in connection with the sale, use or repair of any product purchased from DSTI. Warranty is subject to change.

At DSTI, our product solutions are directly influenced by the industries we serve. If an existing product isn't a perfect fit for our customers' applications, we provide specialized design and manufacturing services to meet the needs of their specifications.

To see examples of our customized solutions, please visit:



## PRODUCT DOWNLOADS

For Catalogs, Brochures,  
Models and Drawings visit:



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