



DYNAMIC SEALING TECHNOLOGIES

I N C O R P O R A T E D



We Don't Just Provide Rotary Unions...

We Provide Solutions

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Useful Application Info

Number of passages
 Passage size/thread type
 Media(s)
 Temperature
 Pressure
 Operating RPM
 Duty Cycle
 Operating environment



Company Info

Introduction

Dynamic Sealing Technologies (DSTI) specializes in designing and manufacturing rotary unions and **RotaRing™** combination rotary union/electrical slip ring assemblies. DSTI's rotary union products are used to transfer hydraulic oil, chemicals, water, air and numerous other liquids and gasses from stationary inlets to rotating outlets. When supplied with one of the many electrical slip ring options, the **RotaRing™** assemblies can transfer electrical power, signals and data. DSTI offers a comprehensive line of standard rotary union and **RotaRing™** products. They also provide complete custom rotary union design & manufacturing services.

Focus

The people behind DSTI are dedicated exclusively to the design & manufacture of superior quality rotary union products. The engineers, production staff and assembly technicians are committed to providing rotary unions and **RotaRing™** rotary union/slip ring assemblies that offer unmatched performance and value. By concentrating on a single type of product, DSTI has become a leader in the design and production of rotary union assemblies.

Flexibility

"We don't just provide Rotary Unions....we provide solutions." DSTI's slogan is a sincere expression of their dedication to customer service. If the customer has an application that does not fit one of the many standard designs, numerous modifications can be made to better suit the specific use. If the application requires a completely custom product, DSTI's experienced engineering staff will design a custom rotary union assembly that fits the customer's needs.

Technology

DSTI is dedicated to designing & manufacturing their high quality products completely in-house. In the spring of 2004, DSTI re-located to their brand new state-of-the-art facility in Minneapolis, MN. The engineering department works with the latest in 2-D and 3-D computer software to design new products. The manufacturing department exclusively uses the latest generation CNC manufacturing equipment. Our exclusive **DynaSeal™** high performance seals are manufactured in-house to assure strict quality control. DSTI's commitment to technology ensures the high quality standards in place will continue to be met.

Warranty:

DSTI Warrants, for a period of one year from the date of original delivery, it's products to be free from defects in material and workmanship. DSTI's obligation under this warranty is limited to repair or replacement at it's 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 it's 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.



Product Family Introduction

GP Series (General Purpose) Rotary Unions

The GP Series multiple passage rotary unions are available in 2,3,4,6,8,10 & 12 passage versions. Modified or custom configurations are also available. All GP Series rotary unions incorporate DSTI's exclusive **DynaSeal™** seals, which are suitable for vacuum & bi-directional pressures up to 7500 psi. All passages are individually sealed to allow use with dissimilar medias. Many of the GP Series rotary unions can also be ordered as **RotaRing™** rotary union/electrical slip ring combination assemblies. Please see page 11 for more information.



SE Series Rotary Unions

The SE Series rotary unions are designed for applications with high pressure requirements and limited space. Originally designed for machine tool workholding applications, these versatile rotary unions are currently used in a number of industries. The SE Series rotary unions are available in 2,4,6,8 & 12 passage versions. All SE Series rotary unions incorporate DSTI's exclusive **DynaSeal™** seals, which are suitable for vacuum & bi-directional pressures up to 7500 psi. The SE Series rotary unions can also be ordered as **RotaRing™** rotary union/electrical slip ring combination assemblies. Please see page 17 for more information.



LT Series Rotary Unions

The LT Series rotary unions are small, lightweight rotary unions available in 2, 4, 8 and 12 passage versions. The LT Series rotary unions feature all-aluminum construction and low-torque seals that are suitable for pressure or vacuum use. The LT Series rotary unions can also be ordered as **RotaRing™** rotary union/electrical slip ring combination assemblies. Many electrical slip ring configurations are available. Please see page 22 for more information.



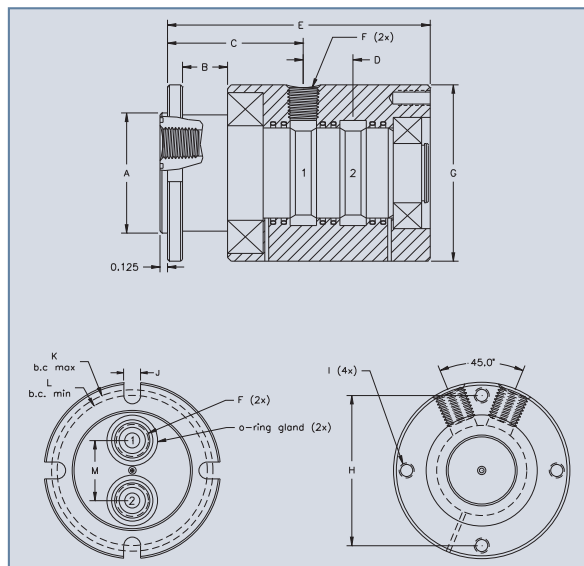
Custom Rotary Unions

DSTI offers complete custom rotary union design and manufacturing services. Custom rotary union assemblies can be designed for a variety of applications; from miniature unions for the semiconductor industry to large heavy-duty designs for industrial applications. Numerous material, seal, and bearing types can be utilized, depending on application requirements. Custom **RotaRing™** rotary union/electrical slip ring combination assemblies are also available. Please see pages 24-26 for information and examples of various custom union designs.



2-Passage (GP Series) General Purpose Rotary Union

The GP Series 2-passage rotary unions are commonly used to connect supply & return lines to rotating equipment. They are suitable for water, hydraulic, pneumatic and other medias. Many GP Series products are also available as **RotaRing™** rotary union/slip ring assemblies.



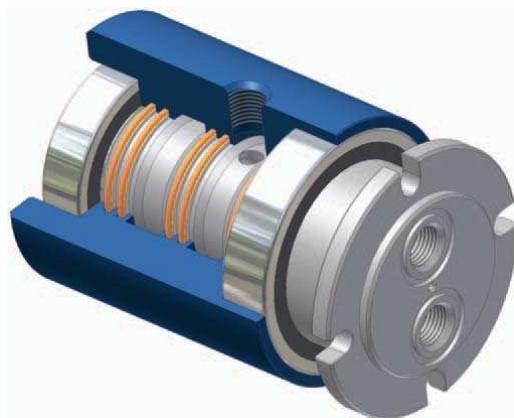
Part#	A	B	C	D	E	F	G	H	I	J	K	L	M	thru-bore	slip ring
120	1.625	.625	1.829	0.549	3.347	1/8npt	2.437	1.875	10-24	.203	2.250	2.000	.812	—	—
121	2.187	.750	2.033	0.549	3.637	1/8npt	2.937	2.375	1/4-20	.281	2.750	2.500	1.312	.500	√
220	2.000	.750	2.262	0.828	4.374	1/4npt	2.937	2.500	1/4-20	.281	2.687	2.500	1.000	—	—
221	2.750	.812	2.504	0.828	4.773	1/4npt	3.750	3.250	5/16-18	.343	3.437	3.250	1.750	.750	√
320	2.375	.750	2.362	0.950	4.706	3/8npt	3.187	2.750	1/4-20	.281	2.937	2.750	1.187	—	—
321	3.000	.812	2.645	1.030	5.312	3/8npt	4.187	3.625	5/16-18	.343	3.875	3.500	1.875	.750	√
420	2.750	.875	2.706	1.106	5.392	1/2npt	3.875	3.250	5/16-18	.343	3.500	3.188	1.437	—	—
421	3.625	1.250	3.207	1.186	6.220	1/2npt	4.937	4.125	5/16-18	.343	4.625	4.125	2.250	.750	√

√ These units are available with integrated electrical slip rings, please see page 11 for more information.

Operating Parameters

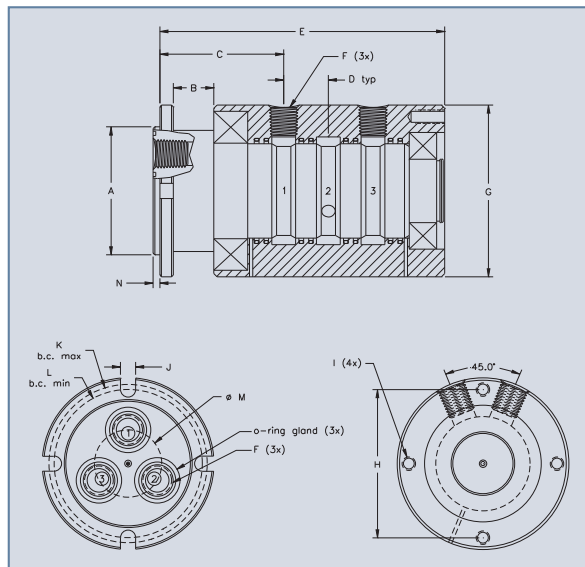
Max. Pressure: 7500 psi
 Max. Vacuum: 30 Hg
 Max. Rotational Speed: up to 850 RPM
 Max. Temperature: 350 F

*Operating Parameter information should only be used as a general guideline. Please contact DSTI to discuss your specific application.



3-Passage (GP Series) General Purpose Rotary Union

The GP Series 3-passage rotary unions are commonly used for applications that require a supply/return line plus an additional line for a separate media. DSTI's exclusive DynaSeal™ seals allow all GP Series products to be used to safely pass multiple medias.



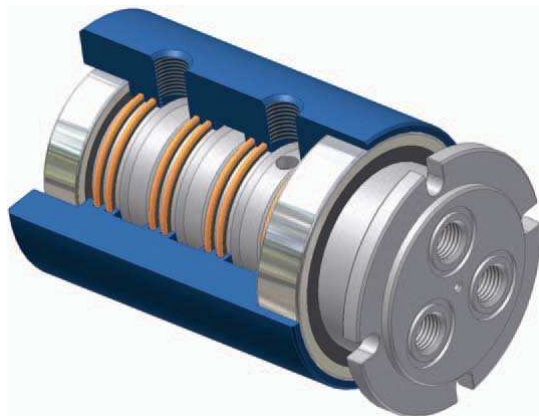
Part#	A	B	C	D	E	F	G	H	I	J	K	L	M	N	thru-bore	slip ring
130	1.875	.750	1.994	.549	4.147	1/8npt	2.687	2.125	1/4-20	.281	2.500	2.250	1.000	.125	—	—
131	2.187	.750	2.033	.549	4.186	1/8npt	2.937	2.375	1/4-20	.281	2.750	2.500	1.312	.125	.500	✓
230	2.375	.750	2.301	.828	5.290	1/4npt	3.187	2.750	1/4-20	.281	2.937	2.750	1.250	.125	—	—
231	2.750	.812	2.504	.828	5.601	1/4npt	3.750	3.250	5/16-18	.343	3.437	3.250	1.750	.125	.750	✓
330	2.625	.875	2.628	.950	6.030	3/8npt	3.875	3.250	5/16-18	.343	3.562	3.187	1.375	.125	—	—
331	3.000	.812	2.645	1.030	6.342	3/8npt	4.187	3.625	5/16-18	.343	3.875	3.500	1.875	.125	.750	✓
430	3.125	1.000	2.974	1.186	7.061	1/2npt	4.250	3.625	5/16-18	.343	3.937	3.625	1.750	.187	—	—
431	3.625	1.250	3.207	1.186	7.406	1/2npt	4.937	4.125	5/16-18	.343	4.625	4.125	2.250	.187	.750	✓

✓ These units are available with integrated electrical slip rings, please see page 11 for more information.

Operating Parameters

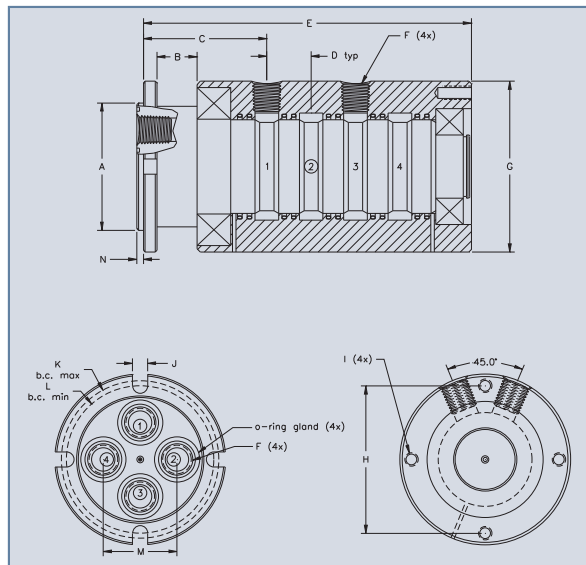
Max. Pressure: 7500 psi
 Max. Vacuum: 30 Hg
 Max. Rotational Speed: up to 850 RPM
 Max. Temperature: 350 F

*Operating Parameter information should only be used as a general guideline. Please contact DSTI to discuss your specific application.



4-Passage (GP Series) General Purpose Rotary Union

The GP Series 4-passage rotary unions are commonly used to connect hydraulic & pneumatic lines to rotary tables. All steel construction & dual ball bearings allow the GP Series products to be used in demanding applications.



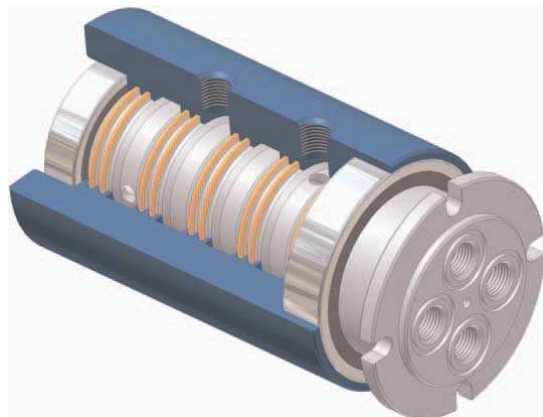
Part#	A	B	C	D	E	F	G	H	I	J	K	L	M	N	thru-bore	slip ring
140	1.875	.750	1.994	.549	4.696	1/8npt	2.687	2.125	1/4-20	.281	2.500	2.250	1.062	.125	—	—
141	2.187	.750	2.033	.549	4.735	1/8npt	2.937	2.375	1/4-20	.281	2.750	2.500	1.312	.125	.500	✓
240	2.375	.750	2.301	.828	6.118	1/4npt	3.187	2.750	1/4-20	.281	2.937	2.750	1.375	.125	—	—
241	2.750	.812	2.504	.828	6.327	1/4npt	3.750	3.250	5/16-18	.343	3.437	3.250	1.750	.125	.750	✓
340	2.625	.875	2.628	.950	6.980	3/8npt	3.875	3.250	5/16-18	.343	3.562	3.187	1.500	.125	—	—
341	3.000	.812	2.645	1.030	7.372	3/8npt	4.187	3.625	5/16-18	.343	3.875	3.500	1.875	.125	.750	✓
440	3.125	1.000	2.974	1.186	8.247	1/2npt	4.250	3.625	5/16-18	.343	3.937	3.625	1.750	.187	—	—
441	3.625	1.250	3.207	1.186	8.592	1/2npt	4.937	4.125	5/16-18	.343	4.625	4.125	2.250	.187	.750	✓

✓ These units are available with integrated electrical slip rings, please see page 11 for more information.

Operating Parameters

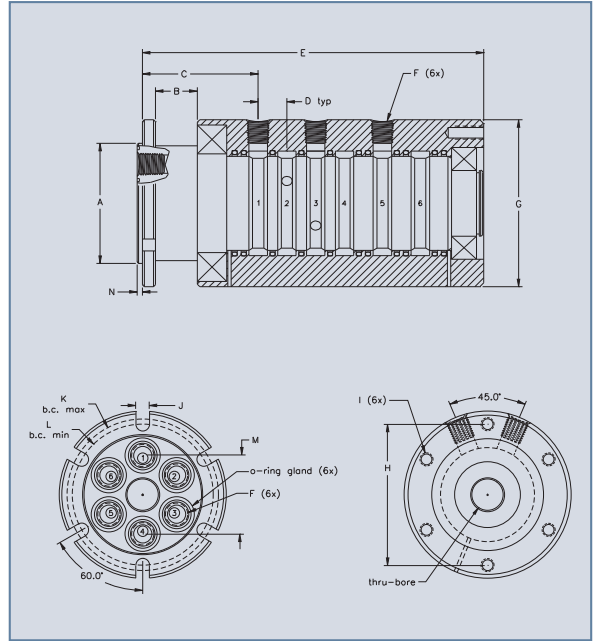
Max. Pressure: 7500 psi
 Max. Vacuum: 30 Hg
 Max. Rotational Speed: up to 850 RPM
 Max. Temperature: 350 F

*Operating Parameter information should only be used as a general guideline. Please contact DSTI to discuss your specific application.



6 Passage (GP Series) General Purpose Rotary Union

The GP Series 6-passage union designs are available with a number of options that allow easy integration into many types of equipment. All GP Series products feature both female tapped & o-ring face seal shaft connections for increased mounting flexibility.



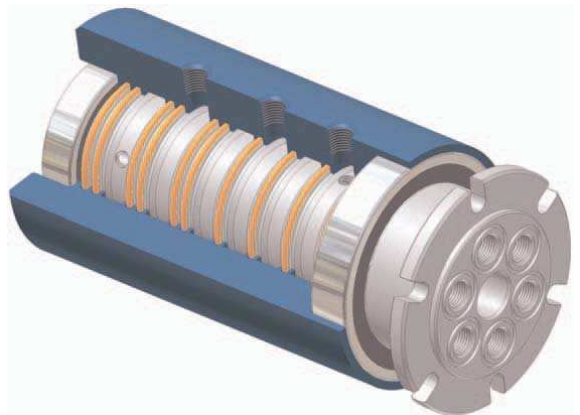
Part#	A	B	C	D	E	F	G	H	I	J	K	L	M	N	thru-bore	slip ring
161	2.375	.875	2.438	.549	6.483	1/8npt	3.187	2.625	1/4-20	.281	3.000	2.750	1.562	.125	.625	✓
261	2.875	1.00	2.772	.689	8.175	1/4npt	4.000	3.375	5/16-18	.343	3.625	3.375	1.875	.125	.750	✓
361	3.250	1.00	2.833	.811	8.963	3/8npt	4.250	3.625	5/16-18	.343	3.937	3.687	2.125	.125	.750	✓
460	3.812	1.25	7.294	.967	10.307	1/2npt	4.937	4.125	5/16-18	.343	4.625	4.375	2.437	.187	—	✓

✓ These units are available with integrated electrical slip rings, please see page 11 for more information.

Operating Parameters

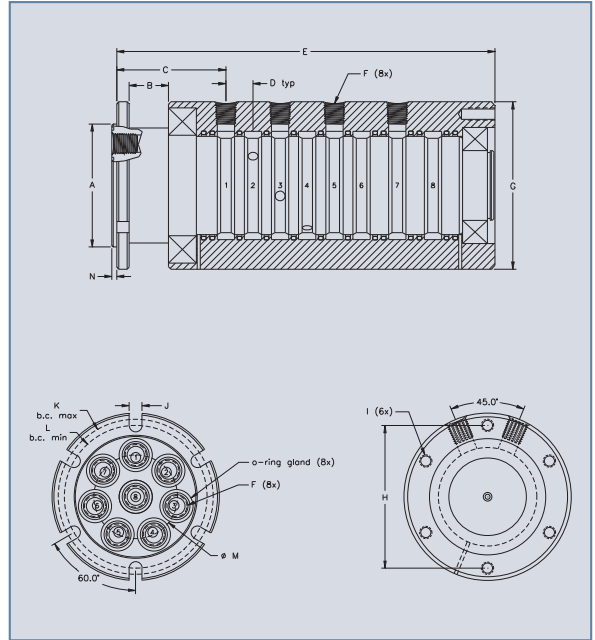
Max. Pressure: 7500 psi
 Max. Vacuum: 30 Hg
 Max. Rotational Speed: up to 850 RPM
 Max. Temperature: 350 F

*Operating Parameter information should only be used as a general guideline. Please contact DSTI to discuss your specific application.



8-Passage (GP Series) General Purpose Rotary Union

The GP Series 8-passage rotating union was designed to transfer (8) independent lines to rotating equipment. When supplied with one of the many available electrical slip ring options, the **RotaRing™** assembly offers equipment designers an off-the-shelf solution for many automation requirements.



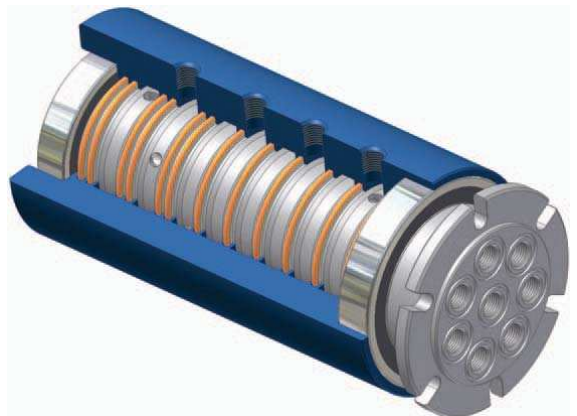
Part#	A	B	C	D	E	F	G	H	I	J	K	L	M	N	thru-bore	slip ring
180	2.625	0.875	2.320	.549	7.488	1/8npt	3.437	3.000	1/4-20	.281	3.250	3.000	1.812	.125	—	✓
280	3.125	1.000	2.772	.689	9.609	1/4npt	4.250	3.625	5/16-18	.343	3.937	3.625	2.125	.125	—	✓
380	3.625	1.250	3.067	1.030	10.931	3/8npt	4.937	4.312	5/16-18	.343	4.624	4.187	2.500	.187	—	✓
480	4.250	1.250	3.287	.967	12.450	1/2npt	5.625	5.000	5/16-18	.343	5.250	4.750	2.875	.187	—	✓

✓ These units are available with integrated electrical slip rings, please see page 11 for more information.

Operating Parameters

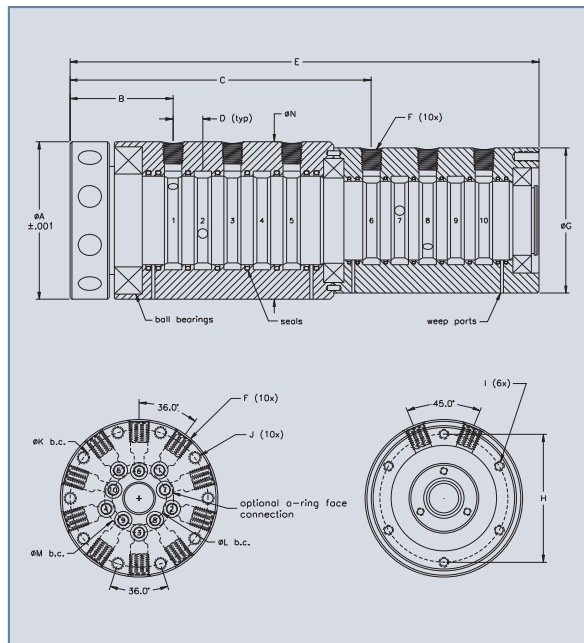
Max. Pressure: 7500 psi
 Max. Vacuum: 30 Hg
 Max. Rotational Speed: up to 850 RPM
 Max. Temperature: 350 F

*Operating Parameter information should only be used as a general guideline. Please contact DSTI to discuss your specific application.



10-Passage (GP Series) General Purpose Rotary Union

The GP Series 10-passage rotary union shafts feature both radial & face connections for maximum mounting flexibility. The two-stage housing also minimizes the space requirements for this design. Standard port sizes are 1/4" & 3/8", other sizes available upon request.



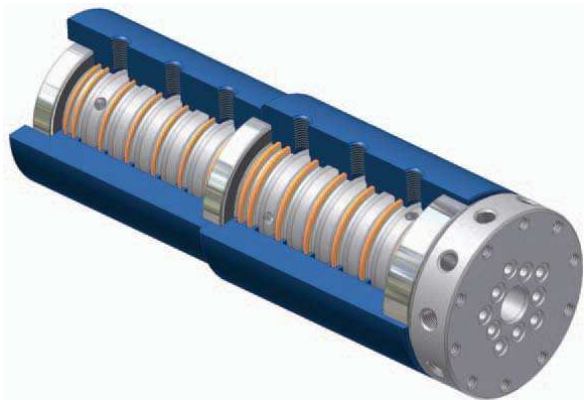
Part#	A	B	C	D	E	F	G	H	I	J	K	L	M	thru-bore	slip ring
201-10	4.000	2.617	7.642	.753	11.912	1/4 npt	3.687	3.25	1/4-20	5/16-18	3.50	1.375	1.750	.750	✓
301-10	4.937	2.849	8.580	.875	13.623	3/8 npt	3.937	3.25	1/4-20	5/16-18	4.50	1.500	2.375	.750	✓

✓ These units are available with integrated electrical slip rings, please see page 11 for more information.

Operating Parameters

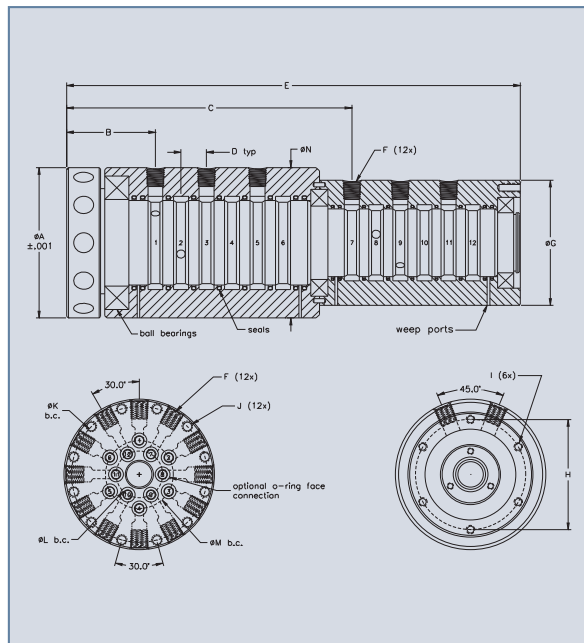
Max. Pressure: 7500 psi
 Max. Vacuum: 30 Hg
 Max. Rotational Speed: up to 850 RPM
 Max. Temperature: 350 F

*Operating Parameter information should only be used as a general guideline. Please contact DSTI to discuss your specific application.



12-Passage (GP Series) General Purpose Rotary Union

The GP Series 12-passage rotary union shafts feature both radial & face connections for maximum mounting flexibility. All GP Series rotary unions housings feature staggered connection ports to minimize overall length.



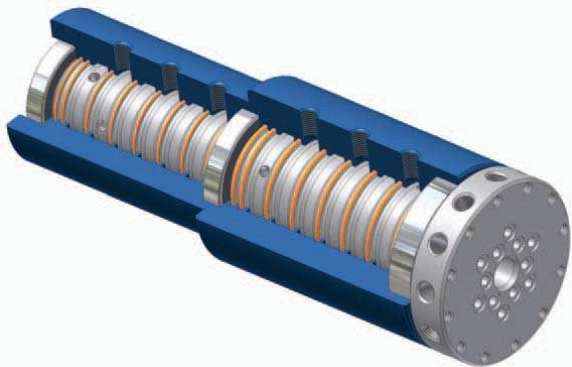
Part#	A	B	C	D	E	F	G	H	I	J	K	L	M	thru-bore	slipping
201-12	4.437	2.617	8.411	.753	13.378	1/4 npt	3.687	3.25	1/4-20	5/16-18	4.00	1.375	2.000	.750	✓
301-12	4.937	2.849	9.455	.875	15.373	3/8 npt	3.937	3.25	1/4-20	5/16-18	4.50	1.500	2.375	.750	✓

✓ These units are available with integrated electrical slip rings, please see page 11 for more information.

Operating Parameters

Max. Pressure: 7500 psi
 Max. Vacuum: 30 Hg
 Max. Rotational Speed: up to 850 RPM
 Max. Temperature: 350 F

*Operating Parameter information should only be used as a general guideline. Please contact DSTI to discuss your specific application.



GP Series Product Options

A number of options are available for the GP Series products. These allow the user to customize the standard products for their specific application.

RotaRing™ union/electrical slip ring assemblies:

The GP Series unions are available with a number of slip ring options for power, signal and data transfer. The RotaRing™ assembly is available with an aluminum cover to protect the slip ring during use in demanding environments.



sample P/N configuration	union P/N	slip ring P/N	slip ring cover
121-ES12-C	121	-ES12	-C

The standard options for the GP Series products are listed below. Other modifications may be available. Please contact DSTI to discuss your specific application requirements.

Standard Passage Sizes:	1/8", 1/4", 3/8", 1/2" Other sizes available upon request
Connections Threads:	NPT threads standard. SAE, BSPP, NPTF, and other thread options are available.
Plating and Coatings:	Black oxide plating is standard. Anodized, E-Nickel, Chrome, QPQ, Ceramic and other specialty platings are available.
Materials:	Carbon steel is the standard material for the GP Series. Stainless steel, Aluminum, Brass, and other materials are available on a custom basis.
Mounting Options:	The GP series unions have a unique shaft configuration that consists of individual female tapped passages with an o-ring gland around each for optional flange mounting. There are also tapped holes on the end of the housing for mounting the assembly.
Slip Ring Cover:	Aluminum bolt on cover protects slip ring assembly. (add -C to part # to specify this option)

Available Slip Ring Configurations

Slip ring P/N (add to end of union P/N)	-ES6A	-ES12A	-ES12	-ES18	-ES24	-ES36	-ES56	-ESM312	-ESM36	-ESM428	-ESM420	-ESM448	-ESM440	-EST6	-EST12	-EST18	-EST24
# of circuits	6	12	12	18	24	36	56	15	9	32	24	52	44	6	12	18	24
Max. Amps Per Circuit	2	2	2	2	2	2	2	(3x) 5A (12x) 2A	(3x) 10A (6x) 2A	(4x) 5A (28x) 2A	(4x) 10A (20x) 2A	(4x) 5A (48x) 2A	(4x) 10A (40x) 2A	10	10	10	10
Max. Volts Per Circuit	120	120	210	210	210	210	210	210	210	210	210	210	210	210	600	600	600
Lead wire length from slip ring	24"	24"	36"	36"	36"	36"	36"	36"	36"	36"	36"	36"	36"	36"	36"	36"	36"

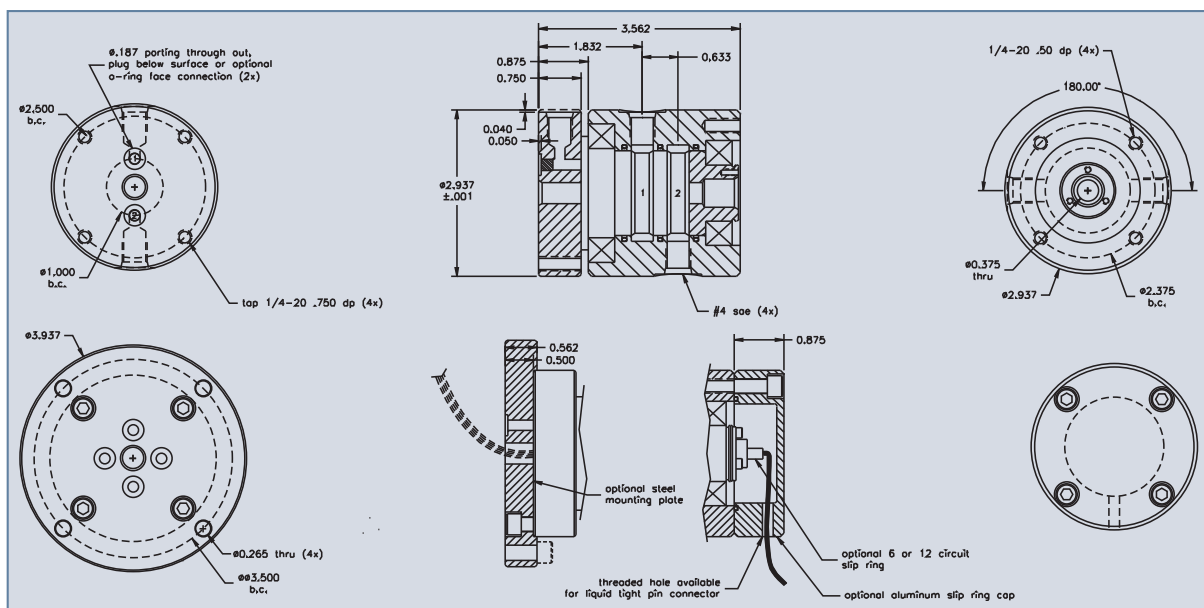
* Certain GP Series products may not be available with all slip ring options listed, please contact DSTI to discuss your specific electrical slip ring requirements.

Wire Gauge Conversion Chart

Amp Rating	Wire Gauge
2	26
5	20
10	16

SE Series 2-Passage P/N 1121 Rotary Unions With SAE-4 Connections

The SE Series 2-passage rotary unions are suitable for hydraulic, coolant, pneumatic and vacuum applications. All SE series unions are designed with both o-ring face and female SAE-4 connections on the shaft for increased mounting flexibility. Compact size and multiple mounting options make the SE Series a popular choice for many industrial applications.



Operating Parameters

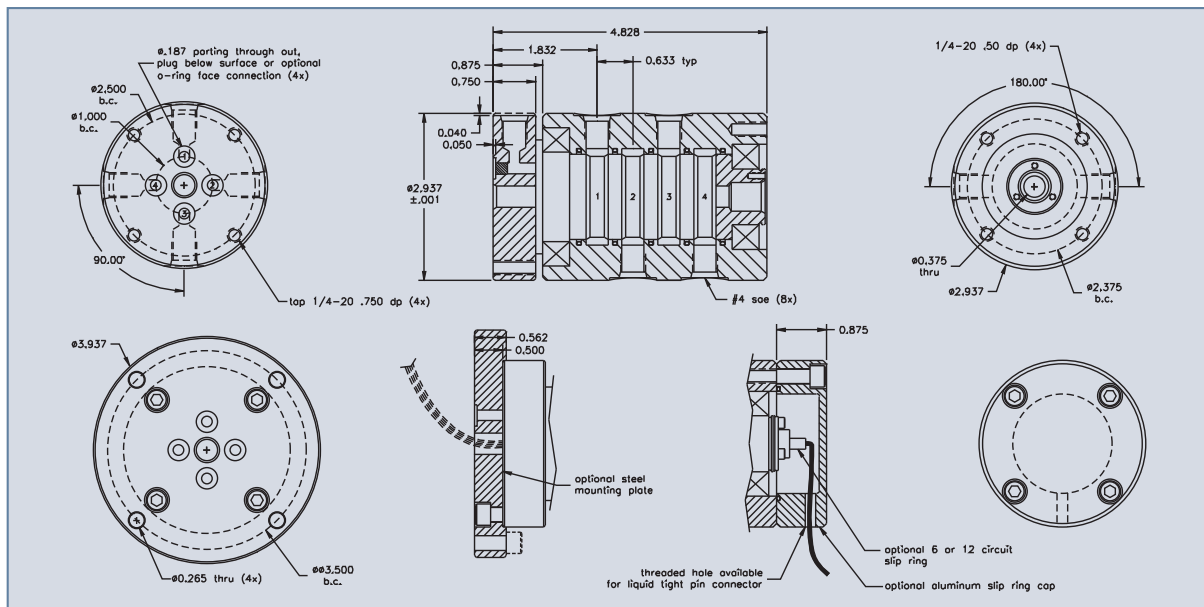
Max. Pressure: 7500 psi
Max. Vacuum: 30 Hg
Max. Rotational Speed: up to 300 RPM
Max. Temperature: 350 F

*Operating Parameter information should only be used as a general guideline. Please contact DSTI to discuss your specific application.



SE Series 4-Passage P/N 1141 Rotary Unions With SAE-4 Connections

The SE Series 4-passage rotary unions are suitable for hydraulic, coolant, pneumatic and vacuum applications. All SE series unions are designed with both o-ring face and female SAE-4 connections on the shaft for increased mounting flexibility. High quality DynaSeal™ seals used in all the SE Series products can be run "dry" and are suitable for low and high pressure use.



Operating Parameters

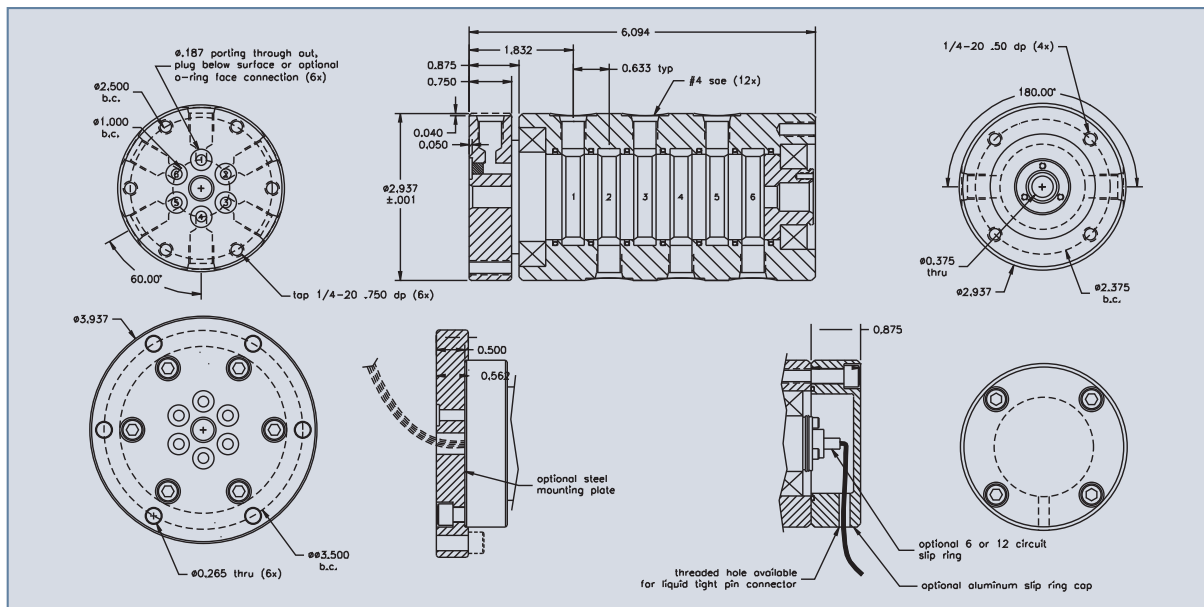
Max. Pressure: 7500 psi
Max. Vacuum: 30 Hg
Max. Rotational Speed: up to 300 RPM
Max. Temperature: 350 F

*Operating Parameter information should only be used as a general guideline. Please contact DSTI to discuss your specific application.



SE Series 6-Passage P/N 1161 Rotary Unions With SAE-4 Connections

The SE Series 6-passage rotary unions are suitable for hydraulic, coolant, pneumatic and vacuum applications. All SE series unions are designed with both o-ring face and female SAE-4 connections on the shaft for increased mounting flexibility. Carbon steel construction and precision ball bearings make the SE Series rotating unions ideal for heavy duty use.



Operating Parameters

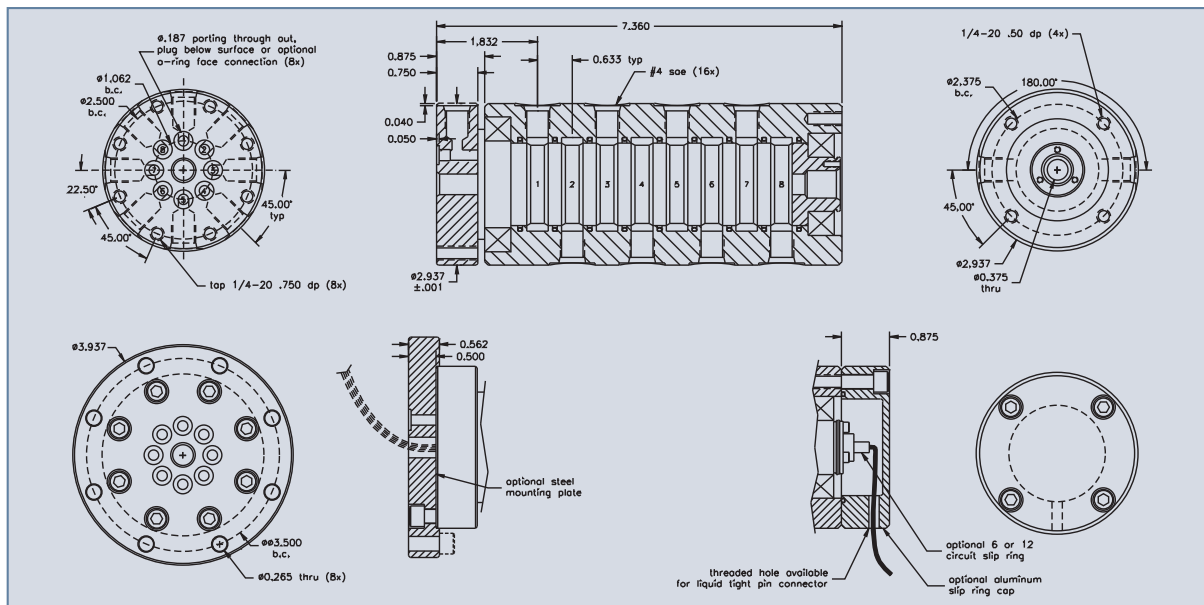
Max. Pressure: 7500 psi
Max. Vacuum: 30 Hg
Max. Rotational Speed: up to 300 RPM
Max. Temperature: 350 F

*Operating Parameter information should only be used as a general guideline. Please contact DSTI to discuss your specific application.



SE Series 8-Passage P/N 1181 Rotary Unions With SAE-4 Connections

The SE Series 8-passage rotary unions are suitable for hydraulic, coolant, pneumatic and vacuum applications. All SE series unions are designed with both o-ring face and female SAE-4 connections on the shaft for increased mounting flexibility. The 8-passage SE products are commonly used to supply hydraulic fluid to workholding fixtures for machine tool applications.



Operating Parameters

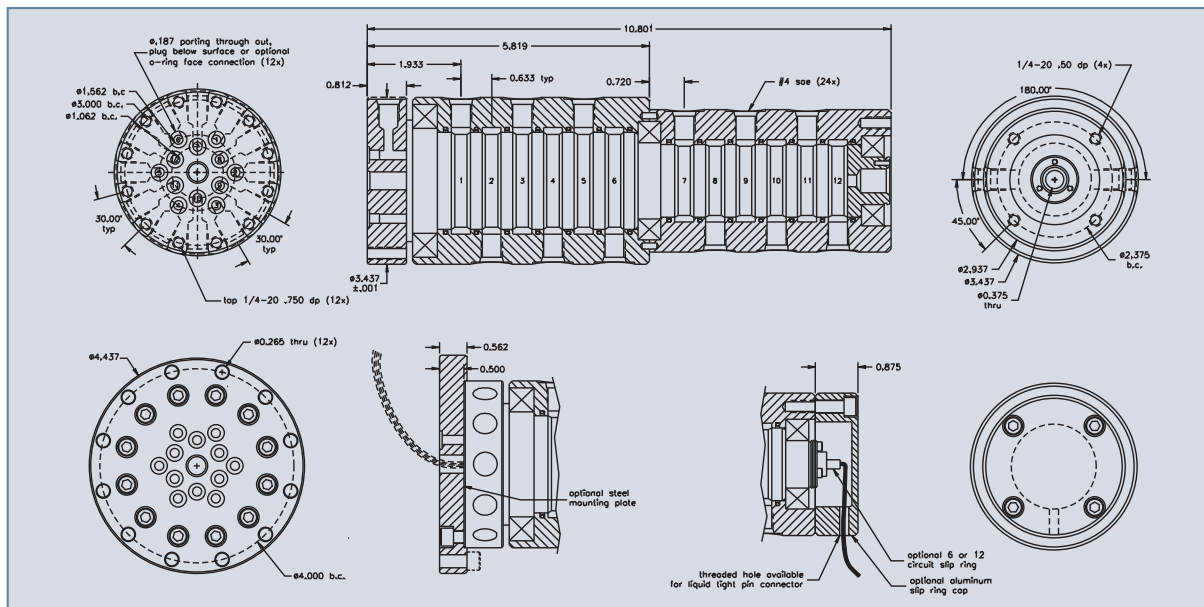
Max. Pressure: 7500 psi
Max. Vacuum: 30 Hg
Max. Rotational Speed: up to 300 RPM
Max. Temperature: 350 F

*Operating Parameter information should only be used as a general guideline. Please contact DSTI to discuss your specific application.



SE Series 12-Passage P/N 11121 Rotary Unions With SAE-4 Connections

The SE Series 12-passage rotary unions are suitable for hydraulic, coolant, pneumatic and vacuum applications. All SE series unions are designed to offer o-ring face or female SAE-4 connections on the shaft for increased mounting flexibility. In order to minimize space requirements, the 12-passage SE Series rotary union features a compact two-stage housing design.



Operating Parameters

Max. Pressure: 7500 psi
Max. Vacuum: 30 Hg
Max. Rotational Speed: up to 300 RPM
Max. Temperature: 350 F

*Operating Parameter information should only be used as a general guideline. Please contact DSTI to discuss your specific application.



SE Series Product Options

A number of options are available for the SE Series products. These allow the user to customize the standard products for their specific application.

RotaRing™ union/electrical slip ring assemblies:

The SE Series unions are available with six or twelve circuit slip ring options for power, signal and data transfer. The RotaRing™ is available with an aluminum cover to protect the slip ring during use in demanding environments.



Part Shown Below:

sample P/N configuration	union P/N	slip ring P/N	slip ring cover	mounting flange
1141-ES12A-CF	1141-	ES12A	-C	-F



Standard options for the SE Series products are listed below. Other modifications may be available. Please contact DSTI to discuss your specific application requirements.

Standard Passage Sizes:	SAE-4 (Other sizes available upon request)
Plating:	Black Oxide
Materials:	Carbon Steel
Mounting Options:	Tapped holes are provided on both the housing and shaft for mounting the assembly.
Mounting Flange:	Available Steel flange can be bolted onto the shaft end of the assembly for optional o-ring face mounting.
Slip Ring Cover:	Aluminum bolt on cover seals and protects slip ring assembly. (add -C to part # to specify this option)

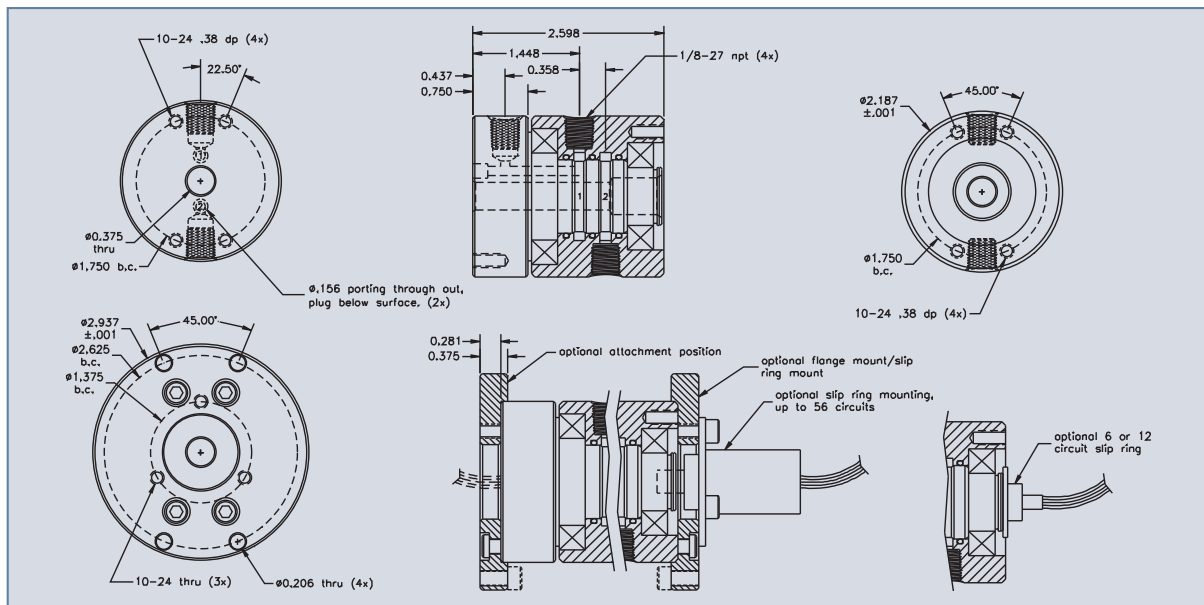
Available Slip Ring Configurations

Slip ring part# (add to end of P/N)	-ES6A	-ES12A
# of circuits	6	12
Max. Amps Per Circuit	2	2
Max. Volts Per Circuit	120	120
Lead wire length from slip ring	24"	24"

* The SE Series products may be available with other slip ring options, please contact DSTI to discuss your specific electrical slip ring requirements.

LT Series 2-Passage P/N 2121 Lightweight, Compact Rotary Union

Designed for air, vacuum and fluid use, the 2-passage LT Series rotary unions are ideal for a number of automation and robotic applications. All LT Series rotating union designs feature aluminum construction for low weight and excellent durability.



Operating Parameters

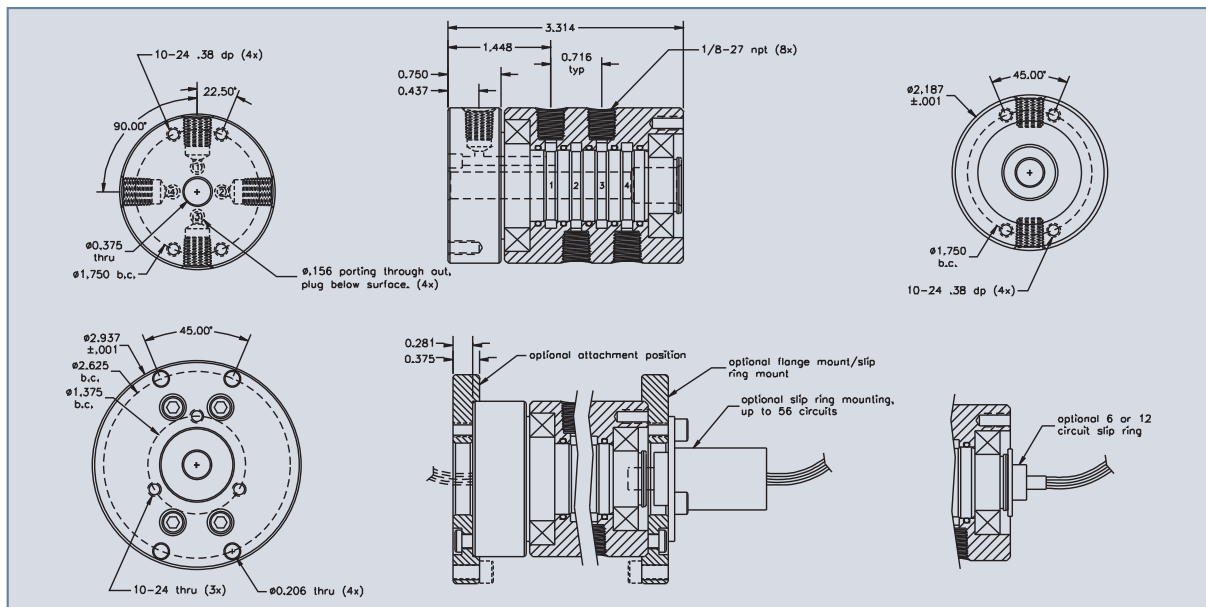
Max. Pressure: 200 psi
Max. Vacuum: 30 Hg
Max. Rotational Speed: up to 100 RPM
Max. Temperature: 350 F

*Operating Parameter information should only be used as a general guideline. Please contact DSTI to discuss your specific application.



LT Series 4-Passage P/N 2141 Lightweight, Compact Rotary Union

The 4-passage LT Series rotary unions can be used to transfer air, vacuum and fluid to rotating and indexing equipment. All LT Series rotary union designs feature dual precision sealed ball bearings for consistent performance and long seal life.



Operating Parameters

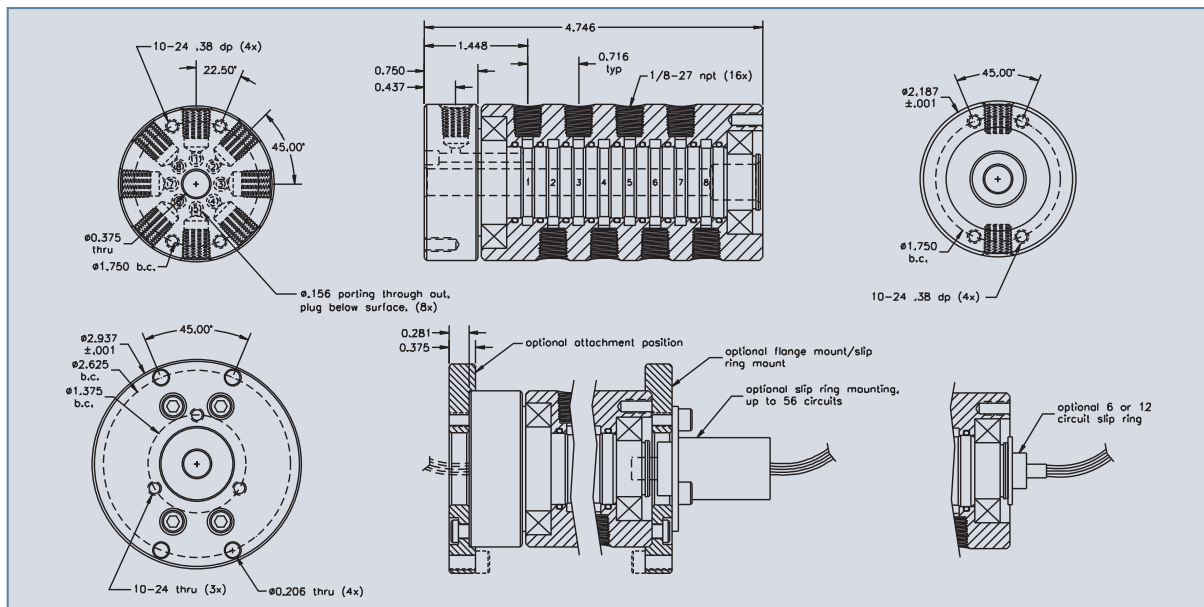
Max. Pressure: 200 psi
Max. Vacuum: 30 Hg
Max. Rotational Speed: up to 100 RPM
Max. Temperature: 350 F

*Operating Parameter information should only be used as a general guideline. Please contact DSTI to discuss your specific application.



LT Series 8-Passage P/N 2181 Lightweight, Compact Rotary Union

The 8-passage LT Series rotary unions are designed for air, vacuum and fluid use. The compact size and low rotational torque requirements make the LT Series products a popular choice for many types of industrial automation applications.



Operating Parameters

Max. Pressure: 200 psi
Max. Vacuum: 30 Hg
Max. Rotational Speed: up to 100 RPM
Max. Temperature: 350 F

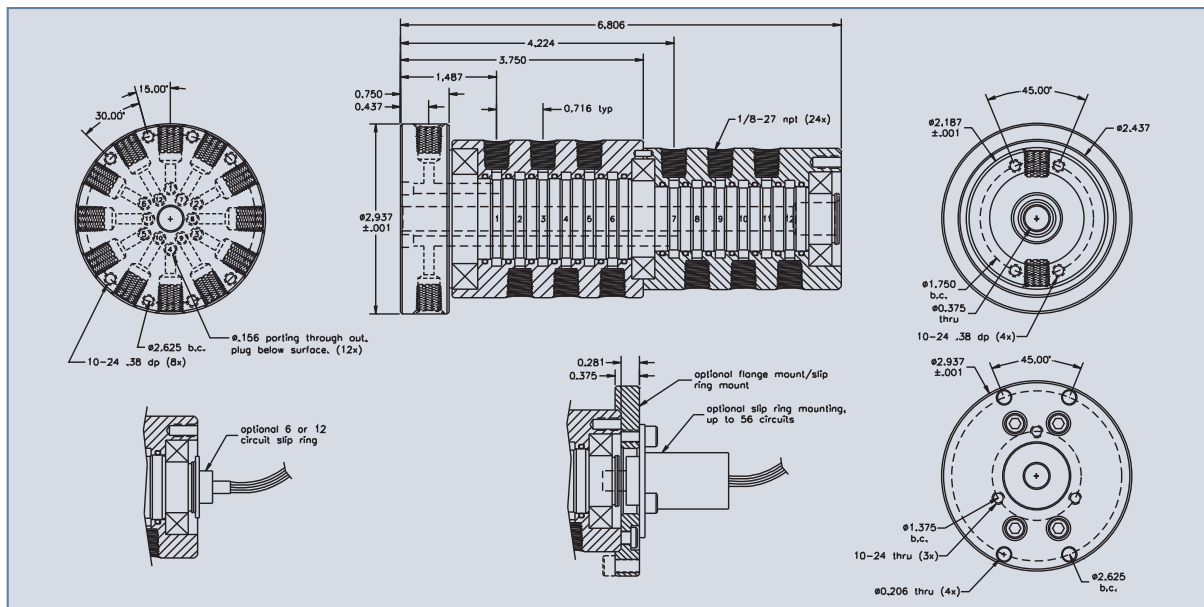
*Operating Parameter information should only be used as a general guideline. Please contact DSTI to discuss your specific application.



LT Series 12-Passage P/N 21121

Lightweight, Compact Rotary Union

The 12-passage LT Series rotary unions provide (12) independent passages for air, vacuum and fluid transfer. When equipped with one of the many electrical slip ring options, the 12-passage LT Series rotary union products offer an economical solution for a number of complex automation requirements.



Operating Parameters

Max. Pressure: 200 psi
 Max. Vacuum: 30 Hg
 Max. Rotational Speed: up to 100 RPM
 Max. Temperature: 350 F

*Operating Parameter information should only be used as a general guideline. Please contact DSTI to discuss your specific application.



LT Series Product Options

A number of options are available for the LT Series products. These allow the user to customize standard products for their specific application.

RotaRing™ union/electrical slip ring assemblies:

The LT Series unions are available as RotaRing™ combination assemblies. A number of slip ring options are available for power, signal and data transfer.



sample P/N Configuration	union P/N	slip Ring P/N	mounting Flange
2181-ES24-F	2181	ES24	-F

Standard options for the LT Series products are listed below. Other modifications may be available. Please contact DSTI to discuss your specific application requirements.

Standard Passage Sizes:	1/8" npt (Other sizes available upon request)
Plating:	Shaft: E-Nickel Housing: Blue Anodize
Materials:	Aluminum
Mounting Options:	Tapped holes are provided on both the housing and shaft for mounting the assembly.
Mounting Flange:	Available Aluminum flange can be bolted onto the end of the housing assembly for optional electrical slip ring mounting. The flange can also be bolted to the shaft end for additional mounting configurations. To request this option add -F to end of product part number

Available Slip Ring Configurations

Slip ring P/N (add to end of union P/N)	-ES6A	-ES12A	-ES12	-ES18	-ES24	-ES36	-ES56	-ESM312	-ESM36	-ESM428	-ESM420	-ESM448	-ESM440
# of circuits	6	12	12	18	24	36	56	15	9	32	24	52	44
Max. Amps Per Circuit	2	2	2	2	2	2	2	(3x) 5A (12x) 2A	(3x) 10A (6x) 2A	(4x) 5A (28x) 2A	(4x) 10A (20x) 2A	(4x) 5A (48x) 2A	(4x) 10A (40x) 2A
Max. Volts Per Circuit	120	120	210	210	210	210	210	210	210	210	210	210	210
Lead wire length from slip ring	24"	24"	36"	36"	36"	36"	36"	36"	36"	36"	36"	36"	36"

* Certain GP Series products may not be available with all slip ring options listed, please contact DSTI to discuss your specific electrical slip ring requirements.

Wire Gauge Conversion Chart

Amp Rating	Wire Gauge
2	26
5	20
10	16

Slip Ring Information

Many of the rotary union designs offered by DSTI are available as **RotaRing™** rotary union/slip ring combinations. Standard slip rings are useful for power, signal and data transfer. In addition to the standard slip rings listed below, DSTI can also supply rotary unions with custom slip rings ranging from high current to ultra low noise.



Electrical Slip ring Features

- High quality gold on gold contacts
- Low electrical noise
- Compact size
- Transfers analog and digital signals
- Compatible with Remote I/O
- Standard designs with up to 56-circuits
- Custom designs with 100+ circuits

Standard slip ring options are listed below. Other slip ring configurations are available. Please contact DSTI to discuss your specific slip ring requirements.



Available Slip Ring Configurations

Slip ring P/N (add to end of union P/N)	# Of Circuits	Max. Amps Per Circuit	Max. Volts Per Circuit	Lead Wire Gauge	Lead Wire Length from slip ring	GP Series	SE Series	LT Series
-ES6A	6	2	120	26	24"	X	X	X
-ES12A	12	2	120	26	24"	X	X	X
-ES12	12	2	210	26	36"	X	A	X
-ES18	18	2	210	26	36"	X	A	X
-ES24	24	2	210	26	36"	X	A	X
-ES36	36	2	210	26	36"	A	A	X
-ES56	56	2	210	26	36"	A	A	X
-ESM312	(3x)10A (12x)2A	5 / 2	210	20 / 26	36"	A	A	X
-ESM36	(3x)10A (6x)2A	10 / 2	210	16 / 26	36"	A	A	X
-ESM428	(4x)5A (28x)2A	5 / 2	210	20 / 26	36"	A	A	X
-ESM420	(4x)10A (20x)2A	10 / 2	210	16 / 26	36"	A	A	X
-ESM448	(4x)5A (48x)2A	5 / 2	210	20 / 26	36"	A	A	X
-ESM440	(4x)10A (40x)2A	10 / 2	210	16 / 26	36"	A	A	X
-EST6	6	10	600	16	36"	A		
-EST12	12	10	600	16	36"	A		
-EST18	18	10	600	16	36"	A		
-EST24	24	10	600	16	36"	A		

X: standard option for this P/N

A: available with slight modifications to union assembly

Custom Rotary Unions - General Information

DSTI offers complete custom rotary union design and build services. An experienced engineering staff is available to discuss your application in detail to make suggestions as to the best design for your specific needs. After learning about your application, they will design a custom rotating union that will fit into your space envelope, transfer your medias, handle your system pressures and operate at your rotational speeds.

Capabilities: DSTI designs, manufactures, assembles and tests all products in house.

Response time: DSTI typically responds to all inquiries within 24 hours. Proposals include a print or CAD file for better customer understanding of the proposed design.

CAD Drawing: DSTI can provide 2-D and 3-D CAD drawing downloads to all customers for custom designs.

Ultra Pure and Food Grade Unions: DSTI currently supplies a number of custom unions for specialized applications in the Semiconductor, food packaging and pharmaceutical industries. Custom rotary union designs can be used to transfer food grade products, pharmaceutical medias, ultra pure gasses, acids, slurries and more.

Large Custom Assemblies: DSTI specializes in large, custom rotary union assemblies. Custom rotary unions are available with 30"+ through bores, high flow volumes, 20+ passages, and more.



Examples of Industries Served:

Semiconductor
Custom Assembly Equipment
Construction and Off Road Equipment
Plastic Molding
Food and Beverage Processing
Paper Processing
Packaging Equipment
Robotics
Raw Material Processing

Product Options:

Materials: Carbon Steel, Stainless Steel, Brass, Alloys, Tool Steels, Hastalloy, Titanium, PEEK®, Teflon®, and other specialty materials.

Platings and Coatings: Black Oxide, Anodized, Standard, Modified and Teflon® impregnated E-Nickel, QPQ, Ceramic coated and others.

Seal Types: Standard and specialized O-ring seals, Mechanical face seals, DynaSeal™ seal bands, FDA approved seals for foodservice, Energized Lip seals, Controlled Leakage designs.

Integrated Electrical Slip Ring: Slip rings can be added to rotary unions to allow for electrical power, data and signal transfer. Multiple circuits and power capacities are available.

Design Integration: Our custom unions can be designed to also function as a drive shaft, bearing block, distribution manifold, mounting surface, and more.



Examples of Custom Products

Custom 1

This 6-port custom stainless steel rotary union / electrical slip ring assembly was designed for a 65 rpm, 1500 psi application. This custom assembly includes dual side mounted manifolds used to route coolant through the union housing. This design also includes a 12-circuit electrical slip ring for signal and data transfer.



Custom 2

This large, custom rotary union assembly was designed for gas, vacuum, abrasive media and fluid transfer. This assembly was designed as (2) separate unions which bolt together to meet customer size and flow requirements. Total assembly is 24" long, 12" diameter, weighs over 450 lbs and rotates at 10 rpm.



Custom 3

This 3-passages custom stainless steel union assembly was designed for 6000 psi nitrogen gas transfer. The package included a bolt on manifold to transfer the nitrogen to the customer's equipment. Designed for the aerospace industry, DSTI was designated as the single source supplier for this critical component.



Custom 4

This custom 1-passages shaft-mounted rotary union assembly was designed to transfer air directly into the customers existing 6" O.D. shaft. Features of this design include steel and aluminum construction and dual bearing covers due to the harsh operating environment.



Custom 5

This miniature custom union assembly was designed for a robotic application in the semiconductor industry. All aluminum design has (4) passages for air and vacuum, plus a (5) circuit electrical slip ring for signal and data transfer. The entire assembly is 4" long and weighs less than one pound.



Custom 6

This Custom 9-passages union assembly was designed for hydraulic fluid, air and coolant transfer. Assembly included an integrated (4) circuit electrical slip ring for signal and data transfer. The shaft of this rotary union was designed to be a load bearing portion of the customer's equipment and supports in excess of 700 lbs.



Custom 7

This unique custom 2-passages assembly was designed for water transfer. The shaft of this custom union assembly was designed to fit directly into customer's drive system and required our production department to hold tolerances within .0001". A gear is mounted to the union shaft, which is used to rotate the entire assembly.



Custom 8

This large 2-passages union is used in a water treatment facility, and operates at 15 rpm while completely submerged in dirty water. This design incorporates an internal bearing system that is supplied with grease using automated lubrication system.



Examples of Custom Products

Custom 9

This custom stainless steel 3-passage assembly was designed for a customer in the semiconductor industry. This compact design uses both mechanical face seals and DynaSeal™ Teflon seals, and was designed for intermittent 650 rpm duty.



Custom 10

This custom stainless steel 2-passage assembly was designed for a robotic application in a medical manufacturing environment. The shaft end of this assembly was designed to directly mount a specific gripper type. The gripper bolts onto the flange end of the shaft and the opposite end has an extension which is used to drive the assembly.



Custom 11

This 4-port stainless steel custom rotary union was designed for clean room service. This assembly operates at 65 rpm and is used to transfer vacuum. This design included several tapped supply ports between each vacuum channel to supply a pad gas to the area between the seals. An 18-circuit integrated electrical slip ring for signal and data transfer was also required for this application.



Custom 12

This large, complex custom rotating union assembly was designed to transfer multiple passages of coolant into customer's equipment. The union fits precisely into equipment design, and is used as a significant load bearing portion of the assembly. This custom rotary union has a diameter of 13.5" and weighs over 350 lbs. (Pictured with LT Series P/N 2121)



Custom 13

These small, light weight custom unions are used for a 100 psi air, indexing table application. These simple, inexpensive units were designed to fit the customers existing equipment. Low torque seals and all aluminum construction are two of the features incorporated into this design.



Custom 14

These 2-passage stainless steel and brass custom rotary unions were designed for the car wash industry. Simple yet robust design has proven effective for this 10 rpm, 1100 psi water and chemical transfer application.



Custom 15

This Custom 12-passage rotary union assembly was designed for water, hydraulic fluid and air transfer. The air and water pass through the blue aluminum housing at 100 psi, while the hydraulic is transferred through the black steel housing at 5000 psi. Integrated 24-circuit electrical slip ring was included for signal and data transfer.



Custom 16

This 4-passage custom rotary union was designed as a direct replacement for an existing product. The customer required higher hydraulic pressures than the original unit was capable of. This custom union assembly was designed to fit into the same space envelope, yet offers a max. pressure rating of 7500 psi versus 3600 psi.



JKE

JKE ROBOTICS

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