

DEUBLIN[®]
Engineered for Performance



ROTATING UNIONS

For Machine Tools, Machining Centers and Transfer Lines

4 STEPS TO FINDING THE CORRECT UNION SERIES FOR YOUR MACHINE TOOL APPLICATION

- 1** Does the machine have a single supply connection (for example, coolant) or multiple connections (such as a combination of coolant, air, and hydraulic oil)?
- 2** What fluid or fluids must be transferred by the rotating union?
- 3** What is the maximum pressure required?
- 4** What is the maximum spindle speed required?

| 1 No of Inputs | 2 Fluid(s) to Transfer | 3 Max. Pressure | 4 Maximum Speed (rpm) | | | | |
|--|--|---|---|--|-----------------|-----------------|-------------|
| | | | up to 12,000 | up to 15,000 | up to 20,000 | up to 36,000 | over 36,000 |
| Single | Coolant or MQL (always present during rotation) | up to 105 bar | 1116 series (p. 13) up to 70 bar | 1101 series (p. 12) 1005 series (p. 11) | Contact DEUBLIN | | |
| | | up to 200 bar | 1117 series (p. 24) | | | | |
| | | up to 210 bar | 1108 series (p. 14-15, 23) | | | Contact DEUBLIN | |
| | Coolant or MQL - dry run possible - (rotation with no coolant is possible) | up to 150 bar | 902 series (p. 20) up to 70 bar | 1109 series (p. 16, 17) | | | |
| | | | | 1121 series (p. 26), 1151 series (p. 28) | | | |
| | Coolant or MQL or Compressed Air - dry run possible - (operation without coolant possible) | up to 150 bar | 1114 series (p. 18, 19, 23) | | | Contact DEUBLIN | |
| | | | 1124 series (p. 27), 1154 and 1139 series (p. 29, 30), 1159 (p. 31) | | | | |
| Compressed Air only (and Vacuum – 7000 series) | up to 10 bar | 1115 and 7000 series (p. 21) up to 18,000 rpm | | | Contact DEUBLIN | | |
| Multipassage Hydraulic, Coolant, Lubricant, MQL, Compressed Air (for defined dry run cycles) | up to 70 bar | 1005 and 1101 series (p. 22) up to 10,000 rpm 1116 series (p. 22) | Contact DEUBLIN | | | | |
| No of Inputs | Fluid(s) to Transfer | Max. Pressure | up to 7,000 | up to 12,000 | over 12,000 | | |
| Multiple | Hydraulic Oil + Hydraulic Oil | up to 100 bar | 2620-00x-xxx (p. 34) | | Contact DEUBLIN | | |
| | | up to 140 bar | 2620-04x-xxx (p. 35) | | | | |
| | Hydraulic Oil + Compressed Air | up to 40 bar | 2620-30x-xxx 2620-32x-xxx (p. 34) | | Contact DEUBLIN | | |
| | | up to 70 bar | 2620-10x-xxx 2620-12x-xxx (p. 34) | 2620-34x-xxx 2620-36x-xxx (p. 35) | | | |
| | | up to 140 bar | 2620-14x-xxx, 2620-16x-xxx (p. 35) | | | | |
| | Coolant or MQL + Compressed Air | up to 40 bar | 2620-40x-xxx 2620-42x-xxx (p. 34) | | Contact DEUBLIN | | |
| | | up to 70 bar | 2620-20x-xxx 2620-22x-xxx (p. 34) | 2620-44x-xxx 2620-46x-xxx (p. 35) | | | |
| | | up to 140 bar | 2620-24x-xxx 2620-26x-xxx (p. 35) | | | | |
| | Coolant + Hydraulic Oil (no mixture of fluids) | up to 140 bar | 2630-1xx-xxx (p. 35) up to 10,000 rpm | | | Contact DEUBLIN | |
| | Compressed Air + Compressed Air | up to 10 bar | 2620-5xx-xxx (p. 34) | | | | |
| Coolant + Oil + Compressed Air | up to 140 bar | 2630, 2640, 2650 series (p. 36) up to 10,000 rpm | | | | | |
| Multipassage Hydraulic, Coolant, Cooling Water, MQL, Compressed Air, Vacuum | up to 200 bar | 260x (p. 37) hybrid-multi-channel series up to 2,500 rpm (p. 38) | | | | | |

Bearing-supported (one-piece) unions
 Bearingless (two-piece) unions
 Multi-passage unions

SUBJECT TO BOTH TECHNICAL AND DIMENSIONAL CHANGES WITHOUT PRIOR NOTICE – UNLESS SPECIFICALLY TOLERANCED ALL DIMENSIONS ARE FOR REFERENCE. ALL DIMENSIONS IN MM, EXCEPT AS NOTED OTHERWISE.

HOW TO GET THE MOST VALUE FROM THIS CATALOG

If you are less familiar with machine tool applications of rotating unions, or if you would like a quick review, please read the “Information” sections first. These sections contain important details about designing, installing, and using rotating unions in machine tools.

If you understand the principles of designing machines to use rotating unions completely, please use either the Selection Chart on the inside cover or Table of Contents to find the appropriate product page. These pages contain dimensions, performance data, and other necessary application information.

If you don't see what you need, please contact your local DEUBLIN office directly. Telephone, email, and address information are shown on the back cover of this catalog. Unions in this catalog are representative of most common applications, but other variations are available. DEUBLIN can customize the interface between machine and union, such as hose connections or rotor threading, to your specifications. Also, DEUBLIN easily can develop complete unions to meet special pressure, speed, or media requirements.

*“If you don't see it, we probably have it.
If we don't have it, we can create it.”*



DEUBLIN 1109 on vertical machining center

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Bearing-Supported Unions

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Please see page 6 for further explanations to the individual series.

INFORMATION FOR DESIGNERS OF MACHINE TOOLS

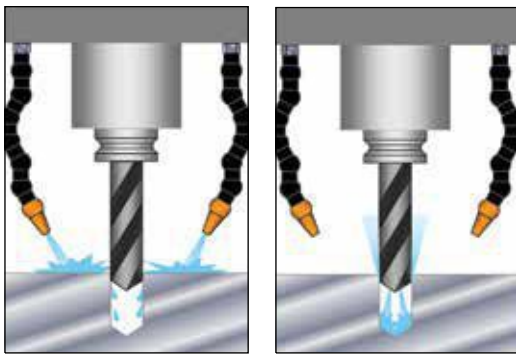
OPERATING PRINCIPLES OF ROTATING UNIONS

Advantage of Through-Spindle Coolant (TSC)

Nearly all modern machine tools and machining centers are equipped with so-called "flood coolant". High-speed cutting tools require both cooling and lubrication to reduce the rate of tool wear and to prevent overheating, which degrade the tool's strength. Flood coolant systems spray coolant fluid onto the work piece near the cutting tool. But for many machining operations, such as milling or hole drilling, these systems are less effective at getting coolant fluid to the cutting edge.

Without coolant, the flutes of the cutting tool can become packed with chips and the cutting edge loses hardness due to overheating. This leads to excessive wear and short tool life. Poor chip removal also can cause a poor surface finish on the work piece.

In machining centers with through-spindle coolant (TSC), coolant fluid is conducted directly through the cutting tool to cool the cutting edge, reduce friction, and remove chips. Coolant flows axially through a rotating union into the spindle and tool holder directly to the heat source. Compared to flood coolant systems, TSC pays for itself in terms of lower operating costs for tools and coolant. Better control of tool overheating also allows faster feed rates and higher productivity.



Flood Coolant

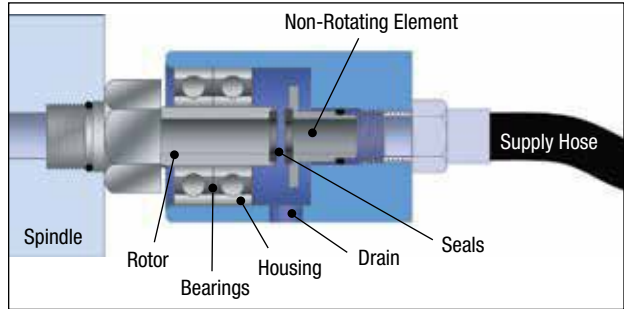
Through-Spindle Coolant

How Rotating Unions Work

A rotating union is a precision mechanical device used to transfer coolant fluid or media from a stationary source, such as a pump, into a rotating device, such as a spindle with cutting tool. The typical coolant fluid is water-based, consisting of approximately 85-95% water for cooling, 2-12% oil for lubricating the cutting edge, and a small amount of other chemicals for keeping the water and oil mixed and for other purposes. *DEUBLIN* Rotating Unions also can transfer air/oil mist, known as Minimum Quantity Lubrication (MQL), cutting oils, and even dry air. The exact capabilities vary by model number, so please consult the product pages of this catalog for details.

In certain machine tool applications, rotating unions also are used to transfer hydraulic fluid or air for clamping or sensing.

Parts of a Rotating Union



As shown in the picture above, a typical rotating union consists of a rotor that spins at the same speed as the machine tool spindle, a non-rotating element that closes precisely against the rotor, a housing that connects the supply hose to the non-rotating element, and seals that contain the coolant fluid. Bearing-supported unions connect the rotor to the housing with one or more bearings. Bearingless unions omit these bearings. Depending on the application, the housing may have one or more drain connections.

Seals are the heart of the rotating union. They must contain very high pressures while rotating at very high speeds. At 20,000 rpm, for example, the seals of a *DEUBLIN* 1129 series coolant union are moving at a relative speed of nearly 16 feet per second (5 meters per second), while containing 2030 psi (140 bar) of fluid pressure!



Micro-lapped *DEUBLIN* seal

For positive sealing, smooth rotation, and long service life, all *DEUBLIN* seals are micro-lapped with proprietary machines and compounds to achieve an optical flatness of 2 light bands (23 millionths of an inch, or 0.58 microns). In addition, all *DEUBLIN* coolant unions use seals made from special grades of silicon carbide. *DEUBLIN* seals therefore have superior resistance to wear and heat accumulation, compared to lesser materials.

Finally, *DEUBLIN* Rotating Unions are designed with balanced mechanical seals. With this technology, seal contact pressure and thrust load on the spindle are minimized, regardless of operating pressure. This reduces seal wear even further, resulting in longer life and more reliable performance.

***DEUBLIN* Balanced Mechanical Seal**
Partial line pressure is applied to seal face.



INFORMATION FOR DESIGNERS OF MACHINE TOOLS

SELECTING THE RIGHT UNION FOR YOUR APPLICATION

Bearing-supported Rotor-mounted



Example: DEUBLIN 1109 series

Bearing-supported Bore-mounted



Example: DEUBLIN 1109 series

Bearingless



Example: DEUBLIN 1139 series

Bearing or Bearingless?

Rotating unions for machine tool applications are available in bearing-supported and bearingless configurations. Each kind has advantages and disadvantages for the machine tool designer.

Bearing-supported unions are easy to install and replace, because of their one-piece design. DEUBLIN makes two different mounting styles. The **rotor-mounted** style attaches to the machining center with a threaded rotor. The **bore-mounted** style slides into a precisely machined counterbore at the end of the spindle. A second advantage of both styles is that any leakage is channeled by the housing into a drain line. A third advantage is that rotor-mounted, bearing-supported unions absorb nearly all axial forces (thrust load) on the spindle caused by coolant pressure. For both bore-mounted and bearingless unions, however, coolant pressure creates a certain thrust load on the spindle.

Bearingless unions provide the machine tool designer with several advantages. First, eliminating bearings reduces cost while allowing an increase in maximum rpm. Second, since only a small rotor is directly attached to the spindle, there is no possibility for the union's housing to be a source of vibration. Third, without bearings the union is immune to side loading from, for example, too much tension in the coolant supply hose. Fourth, bearingless unions can be very small, ideal for applications with multiple, closely spaced spindles. However, bearingless unions must be installed in two pieces – the rotor and a small housing containing the non-rotating element and connection to the coolant supply. So, during installation, the micro-lapped seal faces are exposed and must be handled carefully.



DEUBLIN 1116 Bearing-Supported Unions on Automotive Transfer Line



DEUBLIN 1117 Bearingless Unions on Automotive Transfer Line

INFORMATION FOR DESIGNERS OF MACHINE TOOLS

SELECTING THE RIGHT UNION FOR YOUR APPLICATION

Which DEUBLIN® Seal Technology?

DEUBLIN offers **five** different seal technologies, in order to provide the best solution for every machining application. Only DEUBLIN can offer such flexibility to the machine tool designer.

Closed Seal: As the name indicates, the seals stay closed with or without coolant pressure. Therefore, drain lines generally are not required. However, all rotating unions operate with a thin film of media between the seals. Over time, small, nearly invisible quantities of media can migrate across the seal faces. Therefore, proper venting provisions should be made. Closed seal unions generally are less affected by extremely contaminated coolant than other designs. However, closed seal unions should not be rotated for an extended time if coolant fluid is not present.

Controlled Leakage: The opposite of closed seals, controlled leakage seals always have a small gap between the seals, even when pressure is applied. For this reason, controlled leakage unions are excellent for high-speed applications with pressurized dry air. Controlled leakage unions generally are not suitable for coolant fluid applications.

Pop-Off™: This kind of seal closes only when pressure is applied. When pressure is removed, the seal faces separate by a very small distance. This eliminates friction and seal wear during operation without coolant, and therefore allows unlimited “dry running” at high speeds. Pop-Off™ designs should be considered when machining will occur with and without through-spindle

coolant (TSC). Because the seals separate during tool changes when coolant pressure is off, residual coolant in the supply hose and spindle can drain through the seal faces. Therefore, a Pop-Off™ union generally requires a downward-pointing drain line to direct such residual coolant into the sump. Also note that Pop-Off™ unions are not intended for extended operation with pressurized dry air.

AutoSense™: The latest in a series of DEUBLIN innovations, this technology combines the best features of Pop-Off™ and controlled leakage designs. Like Pop-Off™ designs, AutoSense™ seals close when coolant pressure is applied to contain the coolant fluid, and “pop” apart in the absence of coolant pressure to allow unlimited dry running. Like controlled leakage designs, AutoSense™ seals handle pressurized dry air by creating a microscopic gap between the seal faces. AutoSense™ unions handle coolant, MQL, and dry air by sensing the kind of media and automatically changing seal operation in response. As with Pop-Off™ seals, a drain line generally is required.

All-Media: This technology gives the machine designer complete control over seal opening and closing. By controlling how the pressure is applied to the union’s multiple connections, the machine designer can cause the seals to separate when necessary (for example, to transfer pressurized dry air) or close when appropriate (to transfer coolant fluid or oil mist). A drain line generally is required.

The table below summarizes the operation of each seal technology with different media.

| Media | Seal Technology | | | | |
|-----------------|---|---|--|--|---|
| | Closed Seal (1005, 1101, 1108, 1116, 1117 Series) | Pop-Off™ (902, 1109, 1121, 1151 Series) | All-Media (1139 Series) | AutoSense™ (1114, 1124, 1154, 1159 Series) | Controlled Leakage (1115, 7000 Series) |
| No pressure | Dry run possible depending on model | Seals open automatically to prevent dry running | | | |
| Pressurized air | | Not recommended with rotation | Micro-gap between seals to prevent dry running | | |
| MQL | Seals are closed | | | | |
| Coolant | | | | | |

DEUBLIN engineers can help you choose the best technology for your application.

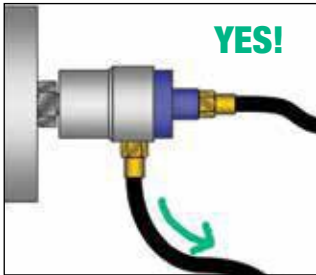
INFORMATION FOR DESIGNERS OF MACHINE TOOLS

DRAIN AND SUPPLY HOSE CONNECTIONS

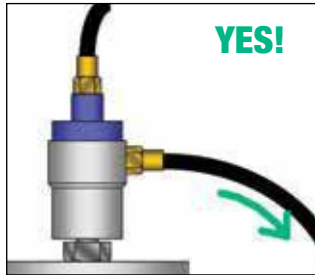
Drain Connection

All unions, even closed-seal designs, can experience migration of minimal amounts of media across the seal faces. Such media migration keeps the seals well lubricated and avoids the permanent seal damage that comes from dry running. In addition, even the best unions eventually will need replacement. Therefore, the machine tool designer should provide adequate drainage to prevent costly spindle damage.

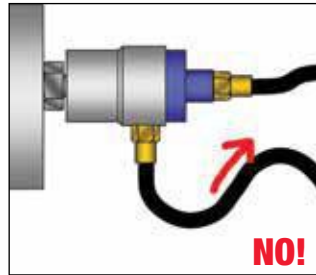
DEUBLIN designs are very advanced, but even *DEUBLIN* must obey the law of gravity! Therefore, it is critical that all drainage hoses and paths slope downward continuously, as shown in the diagrams to the right.



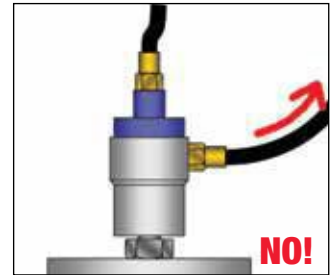
Drain hose always slopes downward



Drain hose always slopes downward



Part of drain hose slopes up



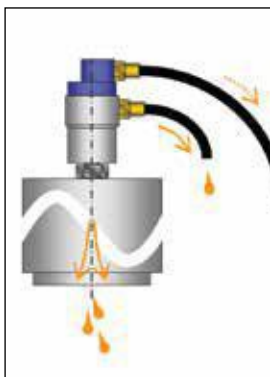
Drain hose slopes up from union

Supply Connection

DEUBLIN Pop-Off™, AutoSense™, and All-Media unions offer unlimited “dry running” at high speeds. By allowing the seal faces to separate when coolant pressure is removed, seal wear during unpressurized operation is completely eliminated. One consequence is that the seals separate during tool changes,

allowing residual coolant in the supply hose and spindle to drain through the seal faces. Careful orientation of the coolant supply hose can dramatically reduce this effect, as shown in the diagrams below.

Supply Hose Slopes Down From Union



Tool change with vertical spindle

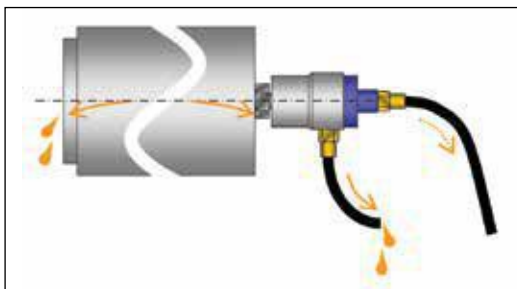
When the supply line runs down from the rotating union, any coolant between union and control valve will remain in the hose during tool change. This reduces the amount of drainage from both the spindle nose and the union drain line.

Supply Hose Slopes Up From Union

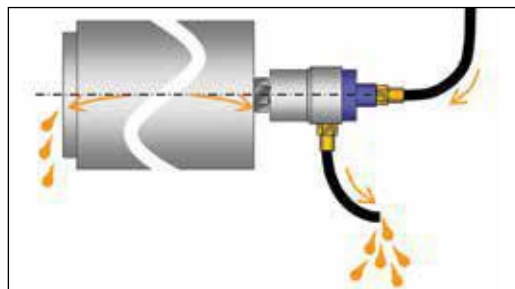


Tool change with vertical spindle

When the supply line runs up from the rotating union, any coolant between union and control valve will flow down during tool change. This increases the amount of drainage from both the spindle nose and the union drain line.



Tool change with horizontal spindle



Tool change with horizontal spindle

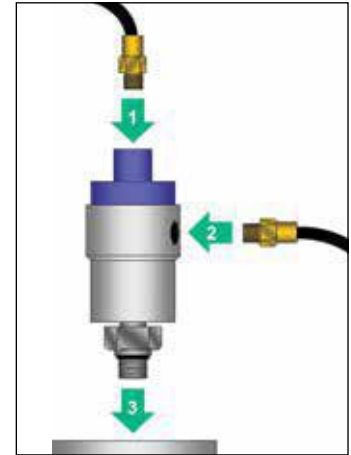
INFORMATION FOR USERS OF MACHINE TOOLS

INSTALLATION TECHNIQUES

Installing a *DEUBLIN* Rotating Union is as easy as 1-2-3. For maximum life and reliability, maintenance engineers and service technicians need only to follow a few simple rules.

1. For bearing-supported, rotor-mounted unions, connect both supply and drain hoses to the union before mounting the union on the spindle. Otherwise, bearings in the union may become brinnelled or galled when the hose connections are tightened.
2. Clean the mounting surfaces of the spindle thoroughly before mounting the union. The spindle pilot must be clean, with no chips, no burrs, and no dents. Otherwise, the union may exhibit runout and vibrate during rotation.
3. Make sure the drain hose runs downward continuously, with no “roller coaster” rises that could prevent proper drainage. If the spindle is horizontal, make sure that the union’s drain hole is at 6 o’clock, pointing directly down. unions can do many things, but they can’t break the law of gravity!

Following are examples of **correct** and incorrect installations, with an explanation of what is correct or **incorrect** about each example.



Examples of **CORRECT** Installations



YES!
WHAT'S RIGHT: Elbow fitting is used to avoid a tight bend in supply hose. Drain hose slopes downward.



YES!
WHAT'S RIGHT: Flexible hose between rigid supply pipe and union. Drain hose runs straight down.



YES!
WHAT'S RIGHT: Flexible hose between rigid supply pipe and union. Drain hose runs straight down.



YES!
WHAT'S RIGHT: Elbow prevents excessive side load on bearings when supply hose is pressurized.

Examples of **INCORRECT** Installations



NO!
WHAT'S WRONG: Drain line points up, which can flood the union's bearings.



NO!
WHAT'S WRONG: Union points up. Coolant contaminants will collect at the bottom and interfere with proper sealing.



NO!
WHAT'S WRONG: Union housing is rigidly attached to the spindle. Without 100% perfect alignment, this creates a large side load leading to early bearing failure.



NO!
WHAT'S WRONG: Bend in supply hose is too tight. When pressurized, the supply hose may create a large side load on the union's bearings.

INFORMATION FOR USERS OF MACHINE TOOLS

COOLANT FILTRATION AND MAINTENANCE

DEUBLIN unions are designed to handle the various coolant contaminants found in most manufacturing facilities. To ensure long union life and maximum productivity, however, coolant filtration should conform to ISO 4406:1999 Code 17/15/12, SAE 749 Class 5, or NAS 1638 Class 8, with a maximum particle size of 60 microns. For comparison, pumps (both fixed piston and variable volume) such as those used in coolant systems typically require ISO 4406 Code 16/14/11 or better – in other words, half as much contamination as *DEUBLIN*.

Only pure water should be used to make up for coolant evaporation. Calcium and magnesium salts in most tap water shorten coolant life, by depleting the chemicals in the coolant, by breaking down the water-oil emulsion, and by encouraging bacterial growth. These salts also can cause residue to build up

inside the rotating union, leading to premature failure. One rule of thumb is that each additional “grain of hardness” (equivalent to 17 ppm or 17 mg/l of calcium carbonate) increases your annual coolant consumption by one percent. Proper coolant maintenance also prolongs tool life and improves the surface finish of your parts.



Unacceptable
(ISO 21/19/17 at 100x)



Acceptable
(ISO 16/14/11 at 100x)

| ISO 4406:1999 Code 17/15/12 | |
|-----------------------------|---------------------|
| Particle size (µm) | Particles per 100ml |
| 4 – 6 | ≤ 130,000 |
| 6 – 14 | ≤ 32,000 |
| 14 – 60 | ≤ 4,000 |

| NAS 1638 Class 8 | |
|--------------------|---------------------|
| Particle size (µm) | Particles per 100ml |
| 5 – 15 | ≤ 64,000 |
| 15 – 25 | ≤ 11,400 |
| 25 – 50 | ≤ 2,025 |
| 50 – 60 | ≤ 360 |

| SAE 749-1963 Class 5 | |
|----------------------|---------------------|
| Particle size (µm) | Particles per 100ml |
| 5 – 10 | ≤ 87,000 |
| 10 – 25 | ≤ 21,400 |
| 25 – 50 | ≤ 3,130 |
| 50 – 60 | ≤ 430 |

THREAD EQUIVALENCE

Parallel or “straight” threads are indicated in this catalog by the symbol “G”. British Standard Parallel threads are known by several other names in different parts of the world. Common symbols for this thread style include: BSP, BSPP, BSSPI, BSPF, BSPG, PF, Rp, and G. British Standard parallel threads also may be referred to as British Gas, British Pipe Parallel or Parallel Fastening Thread. The reference standards are described in ISO 228/1 and JIS B0202.

American Standard Unified threads, indicated by UN or UNF, also are parallel. However, they are not the same as and do not mate with G threads, since the thread angle and shape are different.

The following examples are equivalent parallel threads:

G 1/4"
G 1/4" cyl
PF 1/4"
R 1/4" Tr
1/4" BSP

Tapered threads are indicated in this catalog by the symbols “PT” and “NPT”. British Standard Taper threads are known by several other names, including: BSPT, BSPT_r, PS, PT, R, and Rc. British Standard taper threads also may be referred to as Pipe Taper or Conical Thread. The reference standards are described in ISO 7/1 and JIS B0203.

American Standard NPT threads also are tapered, but not the same as PT threads. Both the thread angle and shape are different, so mating NPT with PT may not create a reliable seal.

The following examples are equivalent tapered threads:

R 1/4" keg
G 1/4" co
PT 1/4"
R 1/4"
Rc 1/4"
1/4" BSPT

DEUBLIN

1005 Series "Closed Seal" Rotating Unions for Continuous Coolant Service

- Single passage for coolant or MQL
- Closed seals for transfer line and similar applications
- Full-flow design has no obstructions to trap chips or debris
- Bearing-supported with threaded rotor for easy installation
- Labyrinth system and vents to protect ball bearings
- Balanced mechanical seals made from silicon carbide for long life even under difficult operating conditions
- Anodized housing and stainless steel rotor resist corrosion

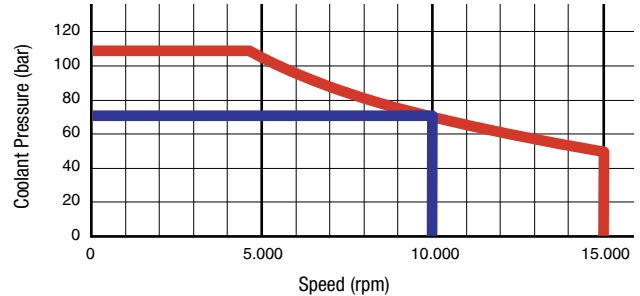


Operating Data

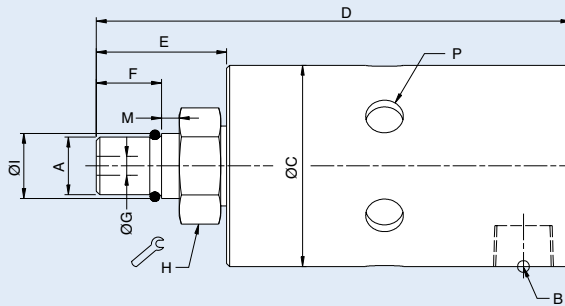
| | |
|---------------------|--|
| Media | Water-based Coolant MQL (oil mist) up to 10 bar (145 psi) |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron |
| Maximum Speed | 15,000 min ⁻¹ 15,000 rpm |
| Maximum Pressure | 105 bar 1,520 psi |
| Maximum Flow | 6.7 l/min 1.8 gpm |
| Maximum Temperature | 71°C 160°F |



DO NOT RUN DRY



Other 1005 models are available for use with oil or dry air. Please refer to the **DEUBLIN Engineering Catalog 2600**.



| Ordering Number | B Supply Connection | C Overall Diameter | D Overall Length | P Vent Size \emptyset (6 x 60°) | A Rotor Connection | E Rotor Length | F Thread Length | G Bore Diameter | H Across Flats | I Pilot Diameter | M Pilot Length |
|-----------------|---------------------|--------------------|------------------|-----------------------------------|--------------------|----------------|-----------------|-----------------|----------------|------------------|----------------|
| 1005-402-401 | 1/8" NPT Radial | 34 | 80 | 6.4 | M10 x 1 RH | 22 | 11 | 3.2 | 17 | 10.994 / 10.989 | 3 |
| 1005-402-448 | 1/8" NPT Radial | 34 | 80 | 6.4 | M10 x 1 LH | 22 | 11 | 3.2 | 17 | 10.994 / 10.989 | 3 |
| 1005-704-434* | 1/8" NPT Radial | 34 | 80 | 3 x Rp 1/8" | M10 x 1 RH | 22 | 11 | 3.4 | 17 | 10.994 / 10.989 | 5 |

* Also allowed for hydraulics, compressed air and defined dry run cycles. For further information please contact **DEUBLIN**.

DEUBLIN

1101 Series "Closed Seal" Rotating Unions for Continuous Coolant Service

- Single passage for coolant or MQL
- Closed seals for transfer line and similar applications
- Full-flow design has no obstructions to trap chips or debris
- Bearing-supported with threaded rotor for easy installation
- Deep groove radial ball bearings for smooth operation
- Labyrinth system and large vents to protect ball bearings
- Balanced mechanical seals made from silicon carbide for long life even under difficult operating conditions
- Anodized aluminum components resist corrosion

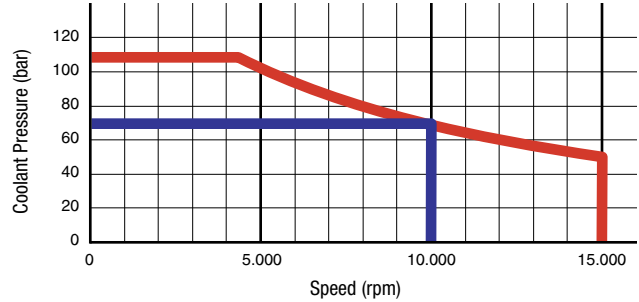


Operating Data

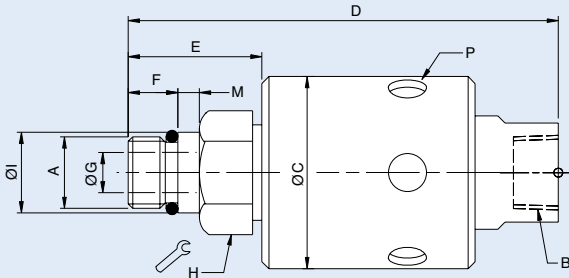
| | | |
|---------------------|--|------------|
| Media | Water-based Coolant MQL (oil mist) up to 10 bar (145 psi) | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | |
| Maximum Speed | 15,000 min ⁻¹ | 15,000 rpm |
| Maximum Pressure | 105 bar | 1,520 psi |
| Maximum Flow | 20 l/min | 5.3 gpm |
| Maximum Temperature | 71°C | 160°F |



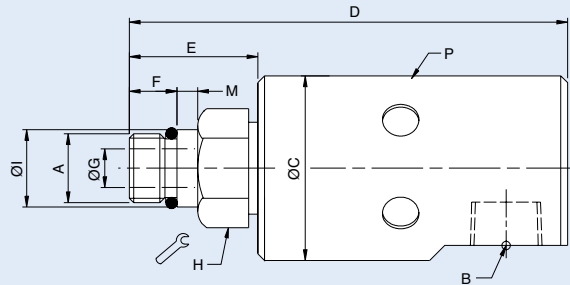
DO NOT RUN DRY



Axial Connection



Radial Connection



| Ordering Number | B Supply Connection | C Overall Diameter | D Overall Length | P Vent Size Ø (6 x 60°) | A Rotor Connection | E Rotor Length | F Thread Length | G Bore Diameter | H Across Flats | I Pilot Diameter | M Pilot Length |
|-----------------|---------------------|--------------------|------------------|-------------------------|--------------------|----------------|-----------------|-----------------|----------------|-------------------|----------------|
| 1101-235-238 | 3/8" NPT Axial | 43 | 100 | 9 | 5/8" -18 UNF LH | 33 | 14 | 6 | 15/16" | 0.6555" / 0.6553" | 5 |
| 1101-235-239 | 3/8" NPT Axial | 43 | 100 | 9 | 5/8" -18 UNF RH | 33 | 14 | 6 | 15/16" | 0.6555" / 0.6553" | 5 |
| 1101-235-343 | 3/8" NPT Axial | 43 | 96 | 9 | M16 x 1.5 LH | 30 | 11 | 6 | 24 | 17.993 / 17.988 | 5 |
| 1101-235-424 | 3/8" NPT Axial | 43 | 93 | 9 | M10 x 1 LH | 27 | 11 | 3.2 | 24 | 10.994 / 10.989 | 3 |
| 1101-359-343 | G 3/8" Axial | 43 | 96 | 9 | M16 x 1.5 LH | 30 | 11 | 6 | 24 | 17.993 / 17.988 | 5 |
| 1101-195-343 | G 3/8" Radial | 43 | 102 | 9 PT | M16 x 1.5 LH | 30 | 11 | 6 | 24 | 17.993 / 17.988 | 5 |
| 1101-632-343* | PT 3/8" Radial | 43 | 103 | 3 x PT 1/8" | M16 x 1.5 LH | 30 | 11 | 6 | 24 | 17.993 / 17.988 | 5 |
| 1101-265-343* | G 1/4" Radial | 43 | 95 | 3 x PT 1/8" | M16 x 1.5 LH | 30 | 11 | 6 | 24 | 17.993 / 17.988 | 5 |
| 1101-265-644* | G 1/4" Radial | 43 | 91 | 3 x PT 1/8" | Flange TK-Ø 21 | 26 | 14.5 | 6 | 4 x M4 | Ø 30.01 H6 | 8 |

* Also allowed for hydraulics, compressed air and defined dry run cycles at reduced operating conditions. For further information please contact DEUBLIN or see page 22.

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com



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1116 Series "Closed Seal" Rotating Unions for Continuous Coolant Service

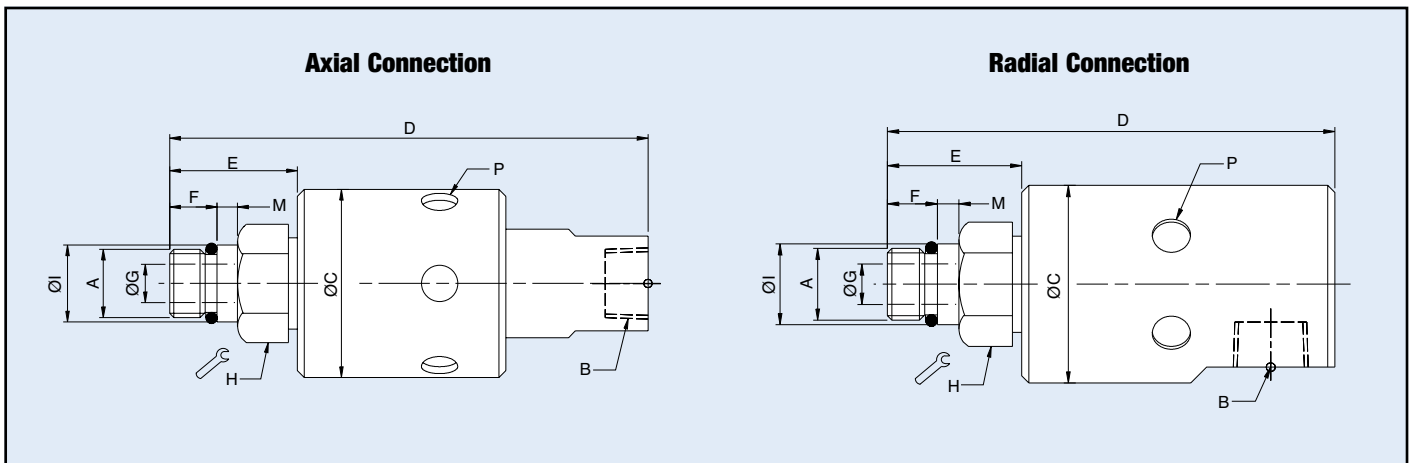
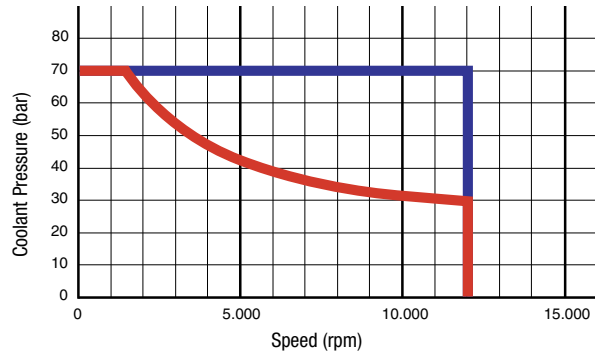
- Single passage for coolant or MQL
- Closed seals for transfer line and similar applications
- Full-flow design has no obstructions to trap chips or debris
- Bearing-supported with threaded rotor for easy installation
- Deep groove radial ball bearings for smooth operation
- Labyrinth system and large vents to protect ball bearings
- Balanced mechanical seals made from silicon carbide for long life even under difficult operating conditions
- Anodized aluminum housing resists corrosion

Operating Data

| | | |
|---------------------|--|------------|
| Media | Water-based Coolant MQL (oil mist) up to 10 bar (145 psi) | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | |
| Maximum Speed | 12,000 min ⁻¹ | 12,000 rpm |
| Maximum Pressure | 70 bar | 1,015 psi |
| Maximum Flow | 82 l/min | 21.6 gpm |
| Maximum Temperature | 71°C | 160°F |



DO NOT RUN DRY



| Ordering Number | B Supply Connection | C Overall Diameter | D Overall Length | P Vent Size Ø (6 x 60°) | A Rotor Connection | E Rotor Length | F Thread Length | G Bore Diameter | H Across Flats | I Pilot Diameter | M Pilot Length |
|-----------------|---------------------|--------------------|------------------|-------------------------|--------------------|----------------|-----------------|-----------------|----------------|-------------------|----------------|
| 1116-048-064 | 1/4" NPT Axial | 44 | 115 | 9 | 5/8"-18 UNF RH | 33 | 14 | 9 | 15/16" | 0.6555" / 0.6553" | 5 |
| 1116-048-463 | 1/4" NPT Axial | 44 | 112 | 9 | M16 x 1.5 LH | 30 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| 1116-485-463 | G 1/4" Axial | 44 | 112 | 9 | M16 x 1.5 LH | 30 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| 1116-580-343 | 3/8" PT Axial | 44 | 112 | 9 | M12 x 1.25 LH | 30 | 11 | 6 | 24 | 13.994 / 13.989 | 5 |
| 1116-600-059 | 3/8" NPT Axial | 44 | 115 | 9 | 5/8"-18 UNF LH | 33 | 14 | 9 | 15/16" | 0.6555" / 0.6550" | 5 |
| 1116-600-463 | 3/8" NPT Axial | 44 | 112 | 9 | M16 x 1.5 LH | 30 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| 1116-610-463 | G 3/8" Axial | 44 | 112 | 9 | M16 x 1.5 LH | 30 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| 1116-090-059 | 3/8" NPT Radial | 44 | 106 | 9 | 5/8"-18 UNF LH | 33 | 14 | 9 | 15/16" | 0.6555" / 0.6553" | 5 |
| 1116-090-064 | 3/8" NPT Radial | 44 | 106 | 9 | 5/8"-18 UNF RH | 33 | 14 | 9 | 15/16" | 0.6555" / 0.6553" | 5 |
| 1116-090-463 | 3/8" NPT Radial | 44 | 102 | 9 | M16 x 1.5 LH | 30 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| 1116-516-463* | G 3/8" Radial | 44 | 102 | 9 | M16 x 1.5 LH | 30 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| 1116-555-463 | G 3/8" Radial | 44 | 103 | 9 | M16 x 1.5 LH | 30 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| 1116-987-463* | G 3/8" Radial | 44 | 102 | 9 | M16 x 1.5 LH | 30 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |

* Also allowed for hydraulics, compressed air and defined dry run cycles at reduced operating conditions. For further information please contact DEUBLIN or see page 22.

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com

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1108 Series "Closed Seal" Rotating Unions for Continuous Coolant Service

- Single passage for coolant or MQL
- Closed seals for transfer line and similar applications
- Full-flow design has no obstructions to trap chips or debris
- Bearing-supported with threaded rotor for easy installation
- Dual ABEC 7 (ISO class P4) angular contact ball bearings
- Labyrinth system and large vents to protect ball bearings
- Balanced mechanical seals made from silicon carbide for long life even under difficult operating conditions
- Anodized aluminum housing resists corrosion

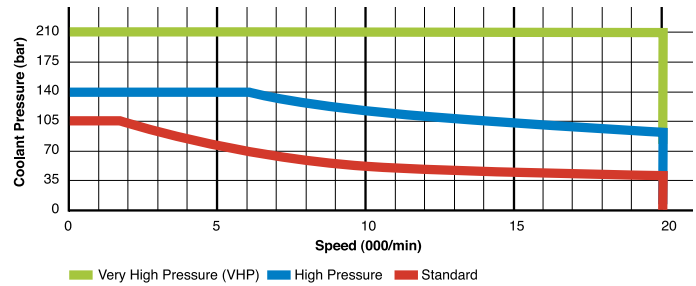


Operating Data

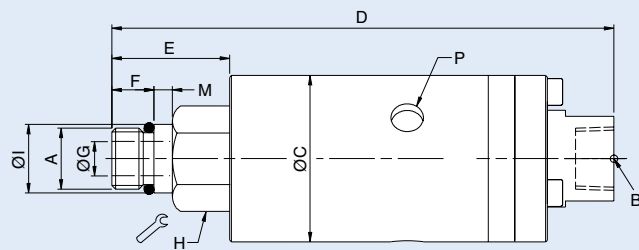
| | | | |
|---------------------|--|----------|--------------------------|
| Media | Water-based Coolant MQL (oil mist) up to 10 bar (145 psi) | | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | | |
| Maximum Speed | 20,000 min ⁻¹ 20,000 rpm | | |
| Maximum Pressure | See chart | | |
| Maximum Flow | 82 l/min | 21.6 gpm | Standard |
| | 24.3 l/min | 6.4 gpm | High Pressure |
| | 2.7 l/min | 0.7 gpm | Very High Pressure (VHP) |
| Maximum Temperature | 71°C | 160°F | |



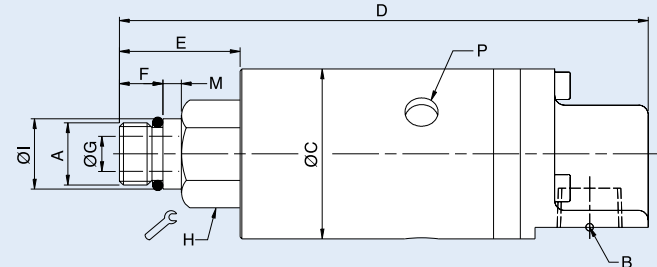
DO NOT RUN DRY



Axial Connection



Radial Connection



| | Ordering Number | B Supply Connection | C Overall Diameter | D Overall Length | P Vent Size (3 x 120°) | A Rotor Connection | E Rotor Length | F Thread Length | G Bore Diameter | H Across Flats | I Pilot Diameter | M Pilot Length |
|--|-----------------|---------------------|--------------------|------------------|------------------------|--------------------|----------------|-----------------|-----------------|----------------|-------------------|----------------|
| | 1108-002-102 | 3/8" NPT Axial | 44 | 132 | 9 | 5/8"-18 UNF LH | 34 | 14 | 9 | 15/16" | 0.6555" / 0.6553" | 5 |
| | 1108-002-153 | 3/8" NPT Axial | 44 | 132 | 9 | M16 x 1.5 LH | 31 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 1108-001-102 | 3/8" NPT Radial | 44 | 138 | 9 | 5/8"-18 UNF LH | 34 | 14 | 9 | 15/16" | 0.6555" / 0.6553" | 5 |
| | 1108-011-153 | G 3/8" Radial | 44 | 135 | 9 | M16 x 1.5 LH | 30 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 1108-034-212 | G 1/4" Axial | 53 | 129 | G 1/4" | M16 x 1.5 LH | 30 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 1108-058-212 | G 1/4" Radial | 53 | 135 | G 1/4" | M16 x 1.5 LH | 30 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 1108-093-559 | 1/4" NPT Axial | 44 | 132 | 9 | M16 x 1.5 LH | 30 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com



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1108 Series "Closed Seal" Bore-Mounted Rotating Unions for Coolant Service

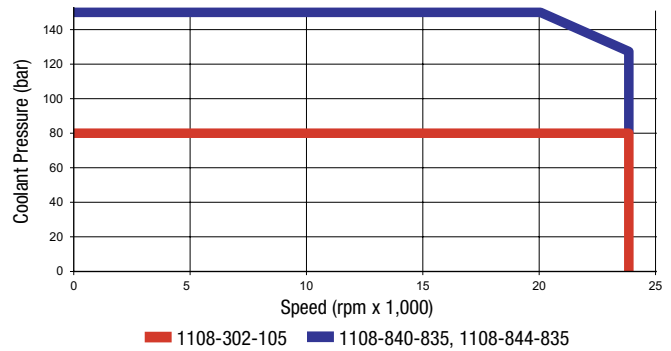
- Single passage for coolant or MQL
- Closed seals
- Accepts up to 19 mm of draw bar movement
- Full-flow design has no obstructions to trap swarf or debris
- Labyrinth system and large vents to protect ball bearing
- Dry run cycles possible depending on model
- Balanced mechanical seals made from silicon carbide for long life even under difficult operating conditions
- Stainless steel housing and rotor
- Anodised aluminum end cap

Operating Data

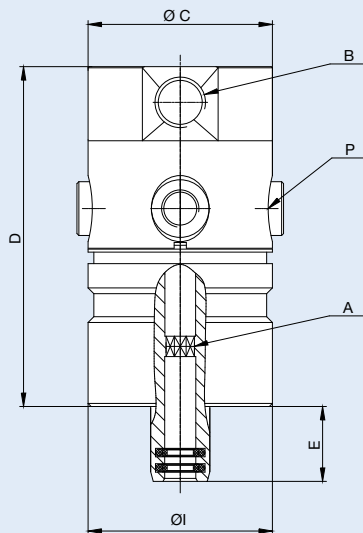
| | | |
|------------------|--|-----------|
| Media | Water-based Coolant MQL (oil mist) up to 10 bar (145 psi) | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | |
| Max. Speed | see graph/table | |
| Max. Pressure | 150 bar | 2,176 psi |
| Max. Flow | 24,3l/min | 6.4 gpm |
| Max. Temperature | 71 °C | 160 °F |



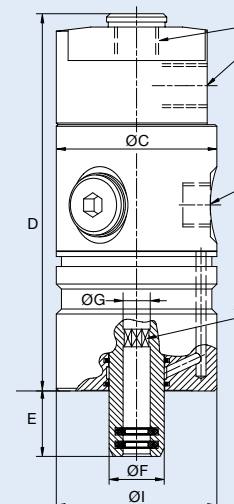
DEFINED DRY RUN



1108-302-105



1108-840-835 / 1108-844-835



| Ordering Number | B Supply Connection | C Overall Diameter | D Housing Length | P Vent Size Ø (3 x 120°) | A Rotor Connection | E Rotor Length | F Rotor Overall Diameter | G Bore Diameter | I Pilot Diameter | Maximum Speed (rpm) | Max. Pressure (bar) |
|-----------------|-----------------------|--------------------|------------------|--------------------------|--------------------|----------------|--------------------------|-----------------|------------------|---------------------|---------------------|
| 1108-302-105 | G 1/4" Radial | 48 | 88.5 | G 1/8 (4x90°) | Octagon 7.4 D10 | 19.5 | 15.4 | 8.1 F9 | 48 h7 | 24,000 | 80 |
| 1108-840-835 | G 1/4" Axial & Radial | 48 | 112 | G 1/4 (3x120°) | Octagon 7.4 D10 | 19.5 | 15.9 | 8.1 F9 | 48 g6 | 24,000 | 150 |
| 1108-844-835 | G 1/4" Axial & Radial | 48 | 112 | 4 mm (12x30°) | Octagon 7.4 D10 | 19.5 | 15.9 | 8.1 F9 | 44 g6 | 24,000 | 150 |

This series includes additional models. For more information, contact **DEUBLIN** at +1-847-689-8600 or www.deublin.com

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1109 Series Pop-Off™ Rotor-Mounted Rotating Unions for Coolant Service with Dry Running

- Single passage for coolant or MQL
- Pop-Off™ technology allows unlimited dry running without media pressure
- Full-flow design has no obstructions to trap chips or debris
- Bearing-supported with threaded rotor for easy installation
- Dual ABEC 7 (ISO class P4) angular contact ball bearings
- Labyrinth system and large vents to protect ball bearings
- Balanced mechanical seals made from silicon carbide for long life even under difficult operating conditions
- Anodized aluminum housing resists corrosion

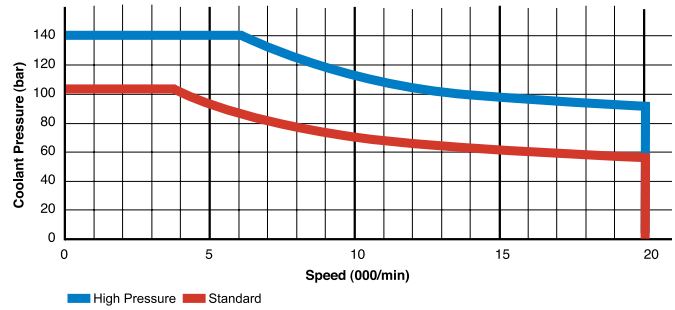


Operating Data

| | | | |
|---------------------|--|----------|---------------|
| Media | Water-based Coolant MQL (oil mist) up to 10 bar (145 psi) | | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | | |
| Maximum Speed | 20,000 min ⁻¹ 20,000 rpm | | |
| Maximum Pressure | See chart | | |
| Maximum Flow | 82 l/min | 21.6 gpm | Standard |
| | 24.3 l/min | 6.4 gpm | High Pressure |
| Maximum Temperature | 71°C | 160°F | |



**NO AIR PRESSURE
WITH ROTATION**



| | Axial Connection | | | | Radial Connection | | | | | | | |
|---------------|------------------|---------------------|--------------------|------------------|------------------------|--------------------|----------------|-----------------|-----------------|----------------|-------------------|----------------|
| | Ordering Number | B Supply Connection | C Overall Diameter | D Overall Length | P Vent Size (3 X 120°) | A Rotor Connection | E Rotor Length | F Thread Length | G Bore Diameter | H Across Flats | I Pilot Diameter | M Pilot Length |
| Standard | 1109-011-165 | 3/8" NPT Axial | 53 | 132 | 1/4" NPT | 5/8"-18 UNF LH | 34 | 14 | 9 | 15/16" | 0.6555" / 0.6553" | 5 |
| | 1109-021-188 | G 3/8" Axial | 53 | 129 | G 1/4" | M16 x 1.5 LH | 31 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 1109-041-188 | 3/8" PT Axial | 53 | 129 | 1/4" PT | M16 x 1.5 LH | 31 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 1109-010-165 | 3/8" NPT Radial | 53 | 138 | 1/4" NPT | 5/8"-18 UNF LH | 34 | 14 | 9 | 15/16" | 0.6555" / 0.6553" | 5 |
| | 1109-020-188 | G 3/8" Radial | 53 | 135 | G 1/4" | M16 x 1.5 LH | 31 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 1109-040-188 | 3/8" PT Radial | 53 | 135 | 1/4" PT | M16 x 1.5 LH | 31 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| High Pressure | 1109-014-196 | 1/4" NPT Axial | 53 | 132 | 1/4" NPT | 5/8"-18 UNF LH | 34 | 14 | 9 | 15/16" | 0.6555" / 0.6553" | 5 |
| | 1109-024-212 | G 1/4" Axial | 53 | 129 | G 1/4" | M16 x 1.5 LH | 31 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 1109-044-212 | 1/4" PT Axial | 53 | 129 | 1/4" PT | M16 x 1.5 LH | 31 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 1109-013-196 | 1/4" NPT Radial | 53 | 138 | 1/4" NPT | 5/8"-18 UNF LH | 34 | 14 | 9 | 15/16" | 0.6555" / 0.6553" | 5 |
| | 1109-023-212 | G 1/4" Radial | 53 | 135 | G 1/4" | M16 x 1.5 LH | 31 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 1109-043-212 | 1/4" PT Radial | 53 | 135 | 1/4" PT | M16 x 1.5 LH | 31 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com

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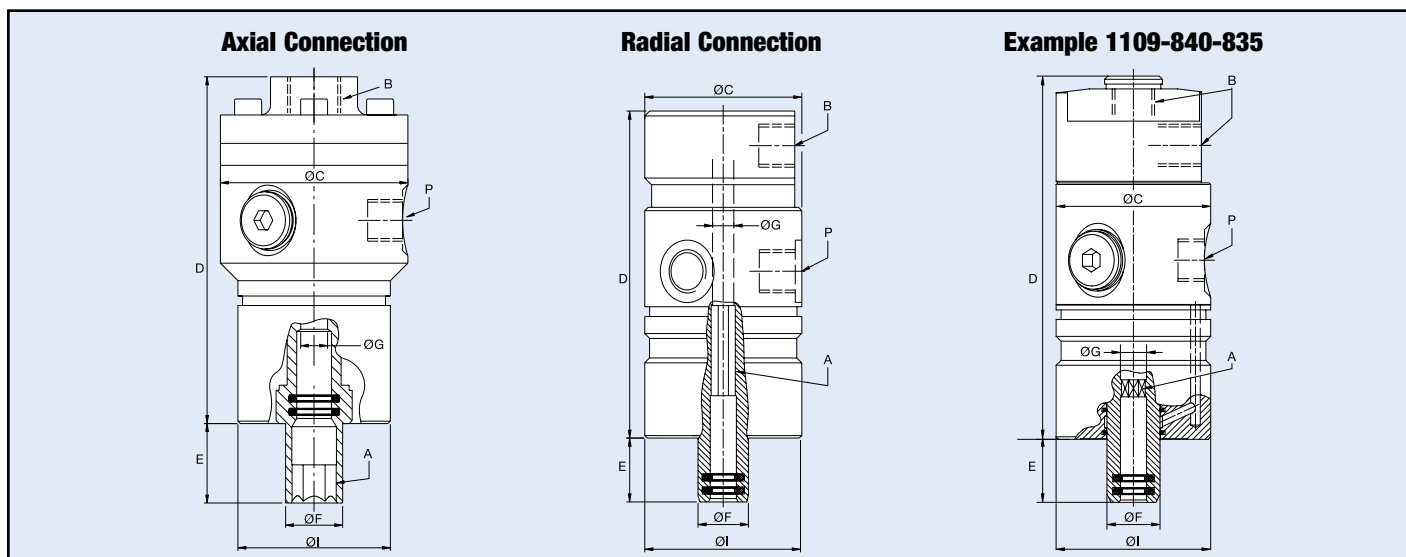
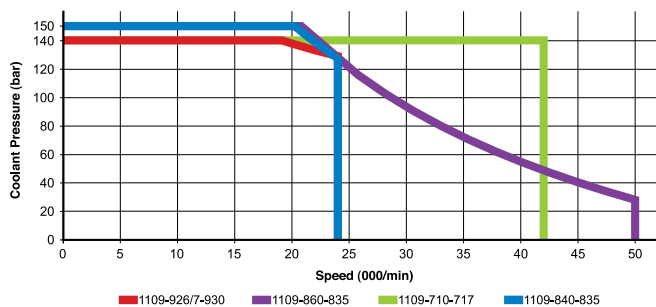
1109 Series Pop-Off™ Bore-Mounted Rotating Unions for Coolant Service with Dry Running



- Single passage for coolant or MQL
- Pop-Off™ technology allows unlimited dry running without media pressure
- Accepts up to 19 mm of axial drawbar movement
- Full-flow design has no obstructions to trap chips or debris
- Bore-mounted design for easy installation
- Matched, ISO class P4 hybrid ball bearings for smooth operation at high speeds
- Labyrinth system and large vents to protect ball bearings
- Balanced mechanical seals made from silicon carbide for long life even under difficult operating conditions
- Anodized aluminum and stainless steel parts resist corrosion

Operating Data

| | | | |
|---------------------|--|-----------|--------------------------------------|
| Media | Water-based Coolant | | |
| | MQL (oil mist) up to 10 bar (145 psi) | | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | | |
| Maximum Speed | See chart | | |
| Maximum Pressure | 140 bar | 2,030 psi | NO AIR PRESSURE WITH ROTATION |
| Maximum Flow | 24.3 l/min | 6.4 gpm | |
| | 1109-710-717 | 82 l/min | 21.6 gpm |
| Maximum Temperature | 71°C | 160°F | |



| Ordering Number | B Supply Connection | C Overall Diameter | D Housing Length | P Vent Size \emptyset (3 x 120°) | A Rotor Connection | E Rotor Length | F Rotor Overall Diameter | G Bore Diameter | I Pilot Diameter | Maximum Speed (rpm) | Max. Pressure (bar) |
|-----------------|-----------------------|--------------------|------------------|------------------------------------|--------------------|----------------|--------------------------|-----------------|------------------|---------------------|---------------------|
| 1111-002-105* | G 1/4" Radial | 48 | 88.5 | 4 x G 1/8" | Octagon 7.4 D10 | 19.5 | 15.4 | 8.1 F9 | 48 h7 | 24,000 | 140 |
| 1109-710-730 | G 3/8" Radial | 59 | 109 | G 1/4" | Octagon 9.25 D10 | 19.5 | 20 | 10 F9 | 48 g6 | 24,000 | 140 |
| 1109-710-717 | G 3/8" Axial | 59 | 109 | G 1/4" | Hexagon 12 D10 | 25.0 | 18.0 | 11 H7 | 48 g6 | 24,000 | 140 |
| 1109-840-835 | G 1/4" Axial & Radial | 48 | 112 | G 1/4" | Octagon 7.4 D10 | 19.5 | 15.9 | 8.1 F9 | 48 g6 | 24,000 | 150 |
| 1109-842-730 | G 3/8" Axial & Radial | 48 | 116 | G 1/4" | Octagon 9.25 D10 | 19.5 | 16 | 10 F9 | 48 g6 | 24,000 | 150 |
| 1109-926-930 | G 1/4" Radial | 48 | 93 | G 1/4" | Octagon 7.4 D10 | 19.5 | 15.4 | 8.1 F9 | 48 h7 | 42,000 | 140 |
| 1109-927-930 | G 1/4" Axial | 48 | 93 | G 1/4" | Octagon 7.4 D10 | 19.5 | 15.4 | 8.1 F9 | 48 h7 | 42,000 | 140 |
| 1109-860-835 | G 1/4" Axial & Radial | 48 | 109 | G 1/4" | Octagon 7.4 D10 | 19.5 | 16.5 | 8.1 F9 | 48 g6 | 50,000 | 150 |

* Ultra-short (0.1 mm) pop-off stroke restricts drainage of residual coolant during tool change.

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com

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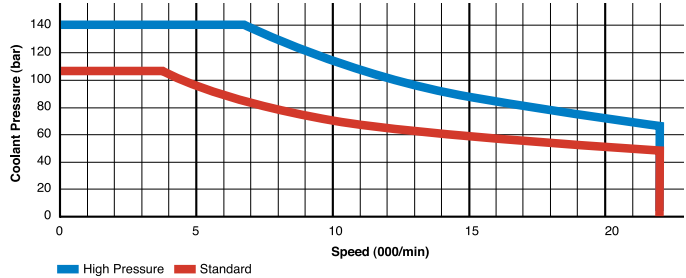
1114 Series AutoSense™ Rotor-Mounted Rotating Unions for Coolant and Air Service with Dry Running

- Single passage for both coolant and dry air
- Patented AutoSense™ technology automatically changes between closed seals and controlled leakage operation in response to the kind of media
- Dual ABEC 7 (ISO class P4) angular contact ball bearings
- Threaded rotor for easy installation
- Full-flow design has no obstructions to trap chips or debris
- Labyrinth system and large vents to protect bearings
- Balanced mechanical seals made from silicon carbide for long life even under difficult operating conditions
- Anodized aluminum housing resists corrosion



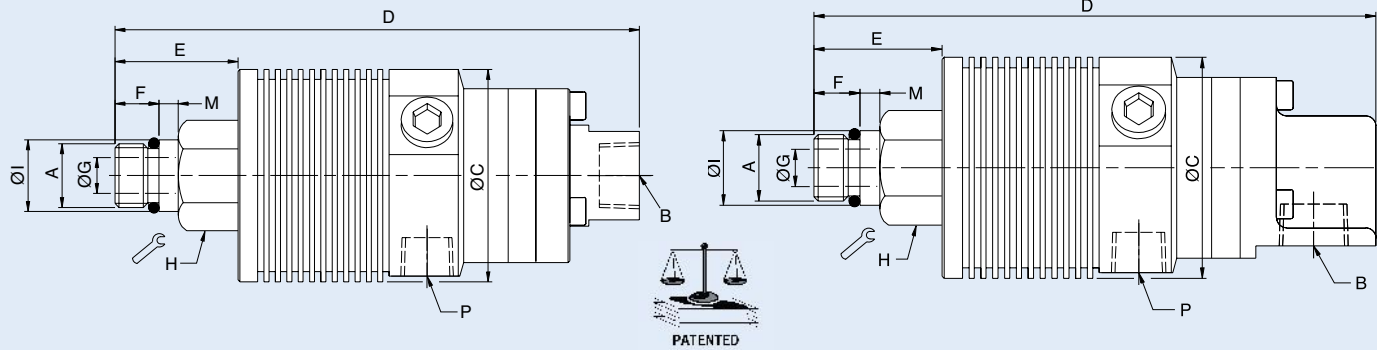
Operating Data

| | | | |
|---------------------|--|----------|---------------|
| Media | Water-based Coolant MQL (oil mist) up to 10 bar (145 psi) Air up to 10 bar (145 psi) | | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | | |
| Maximum Speed | 22,000 min ⁻¹ 22,000 rpm | | |
| Maximum Pressure | See chart | | |
| Maximum Flow | 82 l/min | 21.6 gpm | Standard |
| | 24.3 l/min | 6.4 gpm | High Pressure |
| Maximum Temperature | 71°C | 160°F | |



Axial Connection

Radial Connection



| | Ordering Number | B Supply Connection | C Overall Diameter | D Overall Length | P Vent Size (3 X 120°) | A Rotor Connection | E Rotor Length | F Thread Length | G Bore Diameter | H Across Flats | I Pilot Diameter | M Pilot Length |
|---------------|-----------------|---------------------|--------------------|------------------|------------------------|--------------------|----------------|-----------------|-----------------|----------------|-------------------|----------------|
| Standard | 1114-011-165 | 3/8" NPT Axial | 53 | 134 | 1/4" NPT | 5/8"-18 UNF LH | 34 | 14 | 9 | 15/16" | 0.6555" / 0.6553" | 5 |
| | 1114-021-188 | G 3/8" Axial | 53 | 131 | G 1/4" | M16 x 1.5 LH | 31 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 1114-041-188 | 3/8" PT Axial | 53 | 131 | 1/4" PT | M16 x 1.5 LH | 31 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 1114-010-165 | 3/8" NPT Radial | 53 | 140 | 1/4" NPT | 5/8"-18 UNF LH | 34 | 14 | 9 | 15/16" | 0.6555" / 0.6553" | 5 |
| | 1114-020-188 | G 3/8" Radial | 53 | 137 | G 1/4" | M16 x 1.5 LH | 31 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 1114-040-188 | 3/8" PT Radial | 53 | 137 | 1/4" PT | M16 x 1.5 LH | 31 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| High Pressure | 1114-024-212 | G 1/4" Axial | 53 | 131 | G 1/4" | M16 x 1.5 LH | 31 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 1114-023-212 | G 1/4" Radial | 53 | 137 | G 1/4" | M16 x 1.5 LH | 31 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 1114-044-212 | 1/4" PT Axial | 53 | 131 | 1/4" PT | M16 x 1.5 LH | 31 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 1114-043-212 | 1/4" PT Radial | 53 | 137 | 1/4" PT | M16 x 1.5 LH | 31 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com

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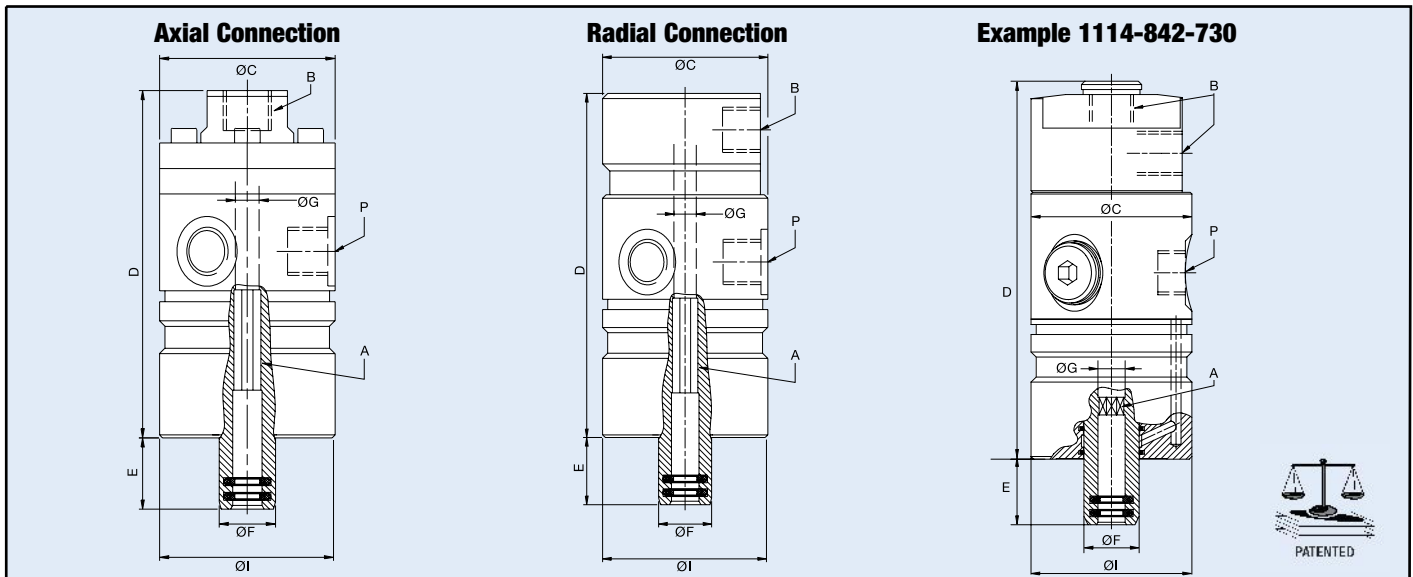
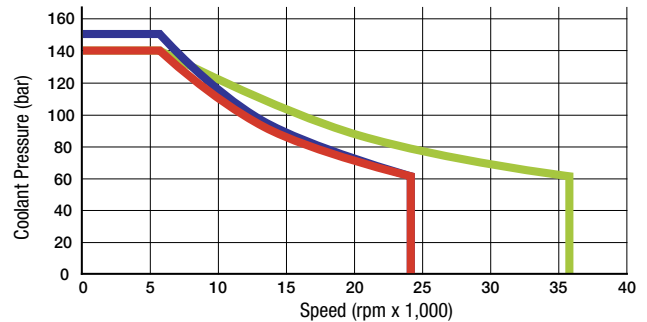
1114 Series AutoSense™ Bore-Mounted Rotating Unions for Coolant and Air Service with Dry Running



- Single passage for both coolant and dry air
- Patented AutoSense™ technology automatically changes between closed seals and controlled leakage operation in response to the kind of media
- Bore-mounted design for easy installation
- Accepts up to 19 mm of axial drawbar movement
- Matched, ISO class P4 hybrid ball bearings for smooth operation at high speeds
- Labyrinth system and large vents to protect ball bearings
- Full-flow design has no obstructions to trap swarf or debris
- Balanced mechanical seals made from silicon carbide for long life even under difficult operating conditions
- Anodised aluminium and stainless steel parts resist corrosion

Operating Data

| | | |
|------------------|--|----------|
| Media | Water-based Coolant MQL (oil mist) up to 10 bar (145 psi) Air up to 10 bar (145 psi) | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | |
| Max. Speed | see chart/table | |
| Max. Pressure | see chart/table | |
| Max. Flow | | |
| 1114-710-xxx | 82 l/min | 21.6 gpm |
| 1114-842-730 | 82 l/min | 21.6 gpm |
| 1114-331-105 | 24,3 l/min | 6.4 gpm |
| 1114-92x-930 | 24,3 l/min | 6.4 gpm |
| Max. Temperature | 71 °C | 160 °F |



| Ordering Number | B Supply Connection | C Overall Diameter | D Housing Length | P Drain Size Ø (3 x 120°) | A Rotor Connection | E Rotor Length | F Rotor Overall Diameter | G Bore Diameter | I Pilot Diameter | Max. Speed (rpm) | Max. Pressure (bar) |
|-----------------|-----------------------|--------------------|------------------|---------------------------|--------------------|----------------|--------------------------|-----------------|------------------|------------------|---------------------|
| 1114-331-105 | G 1/4" Radial | 48 | 88.5 | 4x G 1/8" | Octagon 7.4 D10 | 19.5 | 15.4 | 8.1 F9 | 48 h7 | 24,000 | 140 |
| 1114-710-730 | G 3/8" Axial | 59 | 111 | G 1/4" | Octagon 9.25 D10 | 19.5 | 20 | 10 F9 | 48 g6 | 24,000 | 140 |
| 1114-710-717 | G 3/8" Axial | 59 | 111 | G 1/4" | Hexagon 12 D10 | 25 | 18 | 11 H7 | 48 g6 | 24,000 | 140 |
| 1114-842-730 | G 1/4" Axial & Radial | 48 | 120 | G 1/4" | Octagon 9.25 D10 | 19.5 | 16 | 10 F9 | 48 g6 | 24,000 | 150 |
| 1114-927-930 | G 1/4" Axial | 48 | 95 | G 1/4" | Octagon 7.4 D10 | 19.5 | 15.4 | 8.1 F9 | 48 h7 | 36,000 | 140 |
| 1114-926-930 | G 1/4" Radial | 48 | 95 | G 1/4" | Octagon 7.4 D10 | 19.5 | 15.4 | 8.1 F9 | 48 h7 | 36,000 | 140 |

This series includes additional models. For more information, contact **DEUBLIN** at +1-847-689-8600 or www.deublin.com

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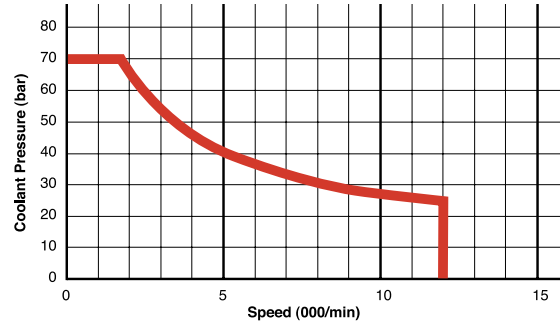
902 Series Pop-Off™ Rotating Unions for Coolant Service with Dry Running

- Single passage for coolant or MQL
- Pop-Off™ technology allows unlimited dry running without media pressure
- Full-flow design has no obstructions to trap chips or debris
- Bearing-supported with threaded rotor for easy installation
- Deep groove radial ball bearings for smooth operation
- Labyrinth system and large vents to protect ball bearings
- Balanced mechanical seals made from silicon carbide for long life even under difficult operating conditions
- Anodized aluminum housing resists corrosion

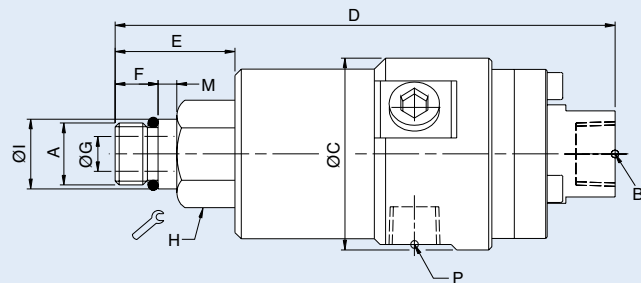


Operating Data

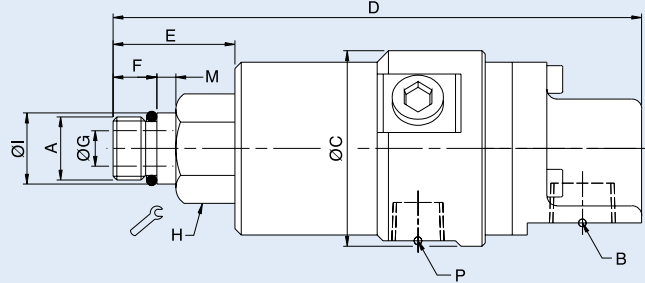
| | | |
|---------------------------|--|------------|
| Media | Water-based Coolant MQL (oil mist) up to 10 bar (145 psi) | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | |
| Maximum Speed | 12,000 min ⁻¹ | 12,000 rpm |
| Maximum Pressure | 70 bar | 1,015 psi |
| Maximum Flow | 82 l/min | 21.6 gpm |
| Maximum Flow ¹ | 24.3 l/min | 6.4 gpm |
| Maximum Temperature | 71°C | 160°F |



Axial Connection



Radial Connection



| | Ordering Number | B Supply Connection | C Overall Diameter | D Overall Length | P Vent Size (3 X 120°) | A Rotor Connection | E Rotor Length | F Thread Length | G Bore Diameter | H Across Flats | I Pilot Diameter | M Pilot Length |
|-------------------|--------------------------|---------------------|--------------------|------------------|------------------------|--------------------|----------------|-----------------|-----------------|----------------|-------------------|----------------|
| Axial Connection | 902-111-165 | 3/8" NPT | 49.5 | 132 | 1/4" NPT | 5/8"-18 UNF LH | 36 | 15 | 9 | 15/16" | 0.6555" / 0.6553" | 5 |
| | 902-121-188 | G 3/8" | 49.5 | 129 | G 1/4" | M16 x 1.5 LH | 33 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 902-138-188 ¹ | G 3/8" | 49.5 | 129 | G 1/4" | M16 x 1.5 LH | 33 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 902-141-188 | 3/8" PT | 49.5 | 129 | 1/4" PT | M16 x 1.5 LH | 33 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| Radial Connection | 902-110-165 | 3/8" NPT | 49.5 | 138 | 1/4" NPT | 5/8"-18 UNF LH | 36 | 15 | 9 | 15/16" | 0.6555" / 0.6553" | 5 |
| | 902-120-188 | G 3/8" | 49.5 | 135 | G 1/4" | M16 x 1.5 LH | 33 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 902-137-188 ¹ | G 3/8" | 49.5 | 135 | G 1/4" | M16 x 1.5 LH | 33 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 902-140-188 | 3/8" PT | 49.5 | 135 | 1/4" PT | M16 x 1.5 LH | 33 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 902-225-101* | G 3/8" | 49.5 | 135 | G 1/4" | Two-Flat 12 | 26 | NA | 9 | NA | 11.984 / 11.966 | 16 |
| | 902-120-104 ¹ | G 3/8" | 49.5 | 137 | G 1/4" | Female 12 | 34 | NA | 9 | 24 | 12.027 / 12.000 | 32 |
| | 902-253-220 | G 3/8" | 46.8 | 139 | G 1/4" | Hexagon 11 | 34 | NA | 9 | NA | 12.984 / 12.957 | 21 |

* This union is a bore-mounted design.

This series includes additional models. For more information, contact at +1-847-689-8600 or www.deublin.com



DEUBLIN

7000 and 1115 Series "Controlled Leakage" Rotating Unions for Dry Air or Vacuum at High Speed

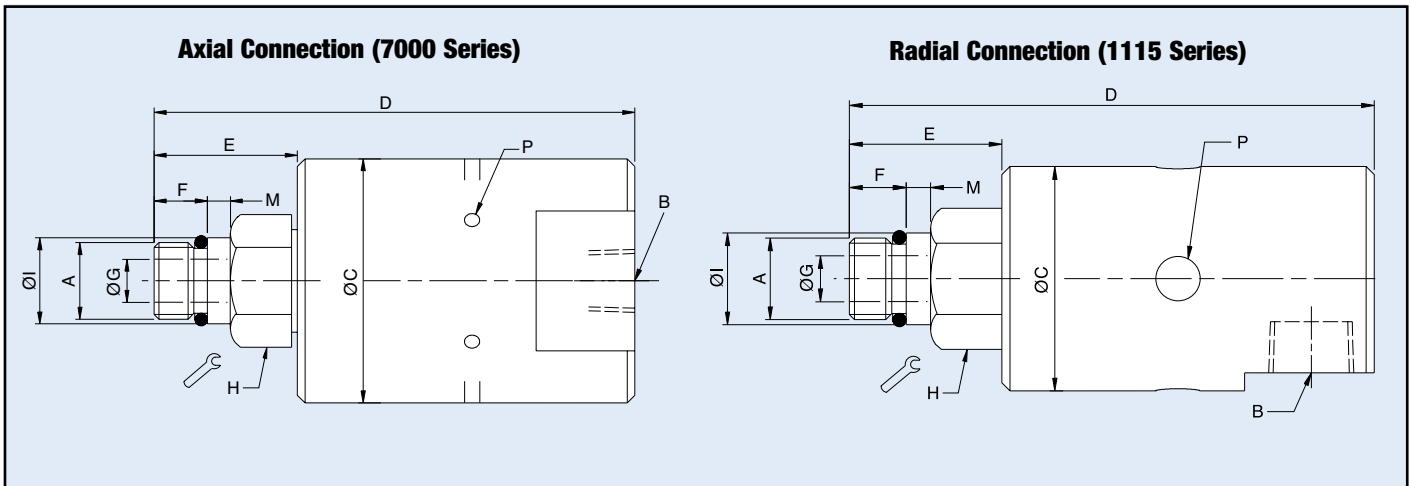
- Single passage for dry or lubricated air
- Bearings are lubricated for life
- Full-flow design has no obstructions to trap chips or debris
- Threaded rotor for easy installation
- Balanced mechanical seals made from silicon carbide for long life even under difficult operating conditions
- Anodized aluminum and stainless steel parts resist corrosion

Operating Data

| | | |
|---------------------|---|-------------------------------------|
| Media | Air (dry or lubricated) Vacuum (7000-027-468 only) | |
| Maximum Speed | 1115-114-xxx | 15,000 min ⁻¹ 15,000 rpm |
| | 1115-680-xxx | 15,000 min ⁻¹ 15,000 rpm |
| | 7000-xxx-xxx | 18,000 min ⁻¹ 18,000 rpm |
| Maximum Pressure | 10 bar | 145 psi |
| Maximum Flow | 1115-114-xxx | 2,460 l/min 87 SCFM |
| | 1115-680-xxx | 2,460 l/min 87 SCFM |
| | 7000-xxx-xxx | 1,060 l/min 37 SCFM |
| Maximum Temperature | 121°C | 250°F |

OK

DRY AIR SERVICE



| | Ordering Number | B Supply Connection | C Overall Diameter | D Overall Length | P Vent Size (6 X 90°) | A Rotor Connection | E Rotor Length | F Thread Length | G Bore Diameter | H Across Flats | I Pilot Diameter | M Pilot Length |
|-------------------|-----------------|---------------------|--------------------|------------------|-----------------------|--------------------|----------------|-----------------|-----------------|----------------|-------------------|----------------|
| Axial Connection | 7000-003-117 | 1/4" PT | 51 | 97 | 3 | M16 x 1.5 RH | 26 | 11 | 6 | 24 | 17.993 / 17.988 | 5 |
| | 7000-003-118 | 1/4" PT | 51 | 97 | 3 | M16 x 1.5 LH | 26 | 11 | 6 | 24 | 17.993 / 17.988 | 5 |
| | 7000-003-224 | 1/4" PT | 51 | 100 | 3 | 5/8"-18 UNF RH | 30 | 14 | 6 | 15/16" | 0.6555" / 0.6553" | 5 |
| | 7000-003-225 | 1/4" PT | 51 | 100 | 3 | 5/8"-18 UNF LH | 30 | 14 | 6 | 15/16" | 0.6555" / 0.6553" | 5 |
| | 7000-027-468* | 3/8" NPT | 51 | 100 | 3 | 5/8"-18 UNF LH | 30 | 14 | 9 | 15/16" | 0.6555" / 0.6553" | 5 |
| | Ordering Number | B Supply Connection | C Overall Diameter | D Overall Length | P Vent Size (4 X 90°) | A Rotor Connection | E Rotor Length | F Thread Length | G Bore Diameter | H Across Flats | I Pilot Diameter | M Pilot Length |
| Radial Connection | 1115-114-402 | G 3/8" | 44 | 106 | 9 | 5/8"-18 UNF LH | 33 | 14 | 9 | 15/16" | 0.6555" / 0.6553" | 5 |
| | 1115-114-556 | G 3/8" | 44 | 106 | 9 | M16 x 1.5 LH | 30 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 1115-680-402 | 3/8" NPT | 44 | 106 | 9 | 5/8"-18 UNF LH | 33 | 14 | 9 | 15/16" | 0.6555" / 0.6553" | 5 |
| | 1115-680-403 | 3/8" NPT | 44 | 106 | 9 | 5/8"-18 UNF RH | 33 | 14 | 9 | 15/16" | 0.6555" / 0.6553" | 5 |

* Model 7000-027-468 is for vacuum and air service.

Note: Special two-passge unions for air and oil (used for MQL mixed in the spindle) may be found on page 33.

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com

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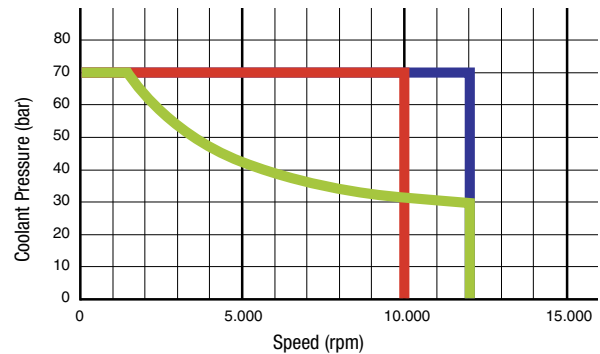
1005/1101/1116 Series Rotating Unions for Multi-Media-Application

- Single passage for clamping, unclamping, lubricating, cooling and sensing applications
- Special design closed seals for multi-media-applications and dry run cycles
- All-purpose design; one model for various applications
- Full-flow design has no obstructions to trap swarf or debris
- Rotor-mounted design for easy installation
- Deep groove radial ball bearings for smooth operation
- Labyrinth system and large vents to protect ball bearings
- Anodised aluminium housing resists corrosion



Operating Data

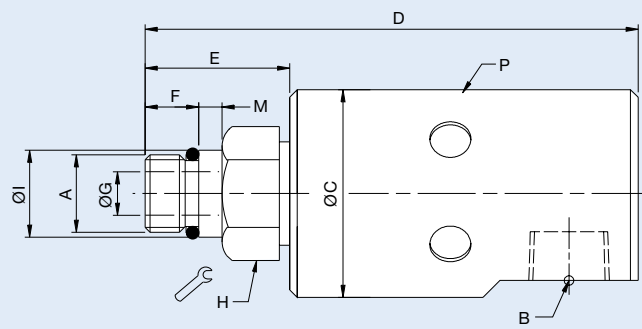
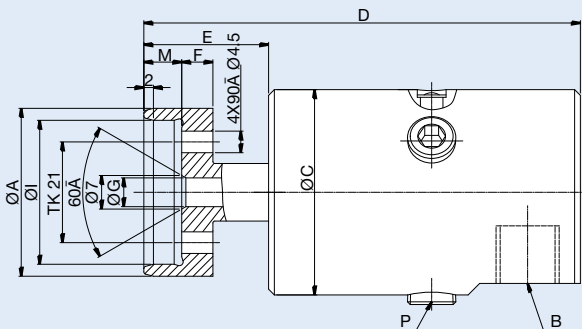
| | | |
|------------------|---|------------|
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | |
| Max. Speed* | 10.000 min ⁻¹ | 10,000 rpm |
| Max. Pressure | | |
| Hydraulic | 70 bar | 1,015 psi |
| Coolant | 70 bar | 1,015 psi |
| Lubricant | 70 bar | 1,015 psi |
| MQL | 10 bar | 145 psi |
| Compressed Air | 6 bar | 87 psi |
| Dry run | defined dry run cycles | |
| Max. Flow | Coolant see table | |
| Max. Temperature | 71 °C | 160 °F |



* 1116 series: max. 3,500 rpm for compressed air and hydraulic service

1101-265-644

Radial Connection



| Ordering Number | B Supply Connection B | Flow Coolant l/min | D Overall Length | C Overall Diameter | P Drain Size Ø (6 x 60°) | A Rotor Connection | E Rotor Length | F Thread Length | G Bore Diameter | H Across Flats | I Pilot Diameter | M Pilot Length |
|-----------------|-----------------------|--------------------|------------------|--------------------|--------------------------|--------------------|----------------|-----------------|-----------------|----------------|------------------|----------------|
| 1005-704-434 | 1/8" NPT Radial | 11 | 80 | 34 | 3xRp 1/8" | M10x1 RH | 22 | 11 | 3.4 | 17 | 10.994/10.989 | 5 |
| 1101-265-239 | G 1/4" Radial | 20 | 98 | 43 | 3xRp 1/8" | 5/8-18 UNF RH | 33 | 14.3 | 6.4 | 24 | 0.6555"/0.6553" | 5 |
| 1101-265-343 | G 1/4" Radial | 20 | 95 | 43 | 3xRp 1/8" | M16x1.5 LH | 30 | 11.1 | 6 | 24 | 17.993/17.988 | 5 |
| 1101-265-644 | G 1/4" Radial | 20 | 91 | 43 | 3xRp 1/8" | Flange 35 h8 | 26 | 6.5 | 6 | 4xM4 | 30.01 H6 | 8 |
| 1116-987-463 | G 3/8" Radial | 82 | 102 | 44 | 6x 8.5 | M16x1.5 LH | 30 | 11 | 8.5 | 24 | 17.993/17.998 | 5 |
| 1101-632-343 | PT 3/8" Radial | | 103 | 43 | 3 x PT 1/8" | M16 x 1.5 LH | 30 | 11 | 6 | 24 | 17.993/17.998 | 5 |
| 1116-516-463* | G 3/8" Radial | 82 | 102.4 | 44 | 6x 8.5 closed | M16x1.5 LH | 30 | 11 | 8.5 | 24 | 17.993/17.998 | 5 |
| 1116-063-463* | G 3/8" Axial | 82 | 112 | 44 | 6x 8.5 | M16x1.5 LH | 30 | 11 | 9 | 24 | 17.993/17.998 | 5 |

* Not allowed for operation with hydraulic oil.

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com

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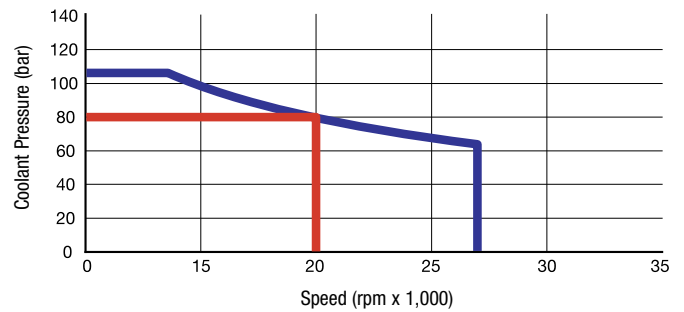
Rotating Unions Flange Design Bore-Mounted for Various Media



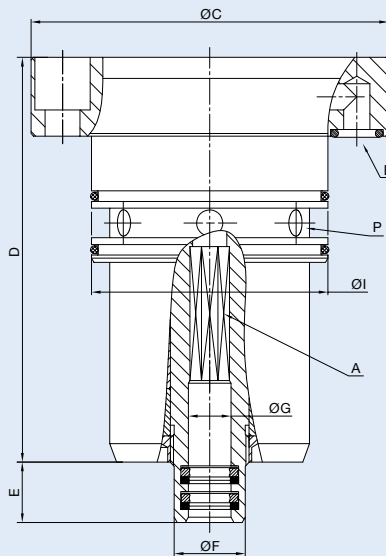
- Single passage available with all sealing technologies
- Accepts up to 19 mm of drawbar movement
- Full-flow design has no obstructions to trap swarf or debris
- Labyrinth system and large vents to protect ball bearings
- Balanced mechanical seals made from silicon carbide for long life even under difficult operating conditions
- Anodised end cap and stainless steel housing and rotor resist corrosion
- Dry run capability depending on sealing technology and materials possible

Operating Data

| | | |
|--|---|------------|
| Sealing Technology (depending on model) | AutoSense™, Closed Seal, Pop-Off™ | |
| Media (depending on model) | Coolant – water based; Cutting Oil Compressed Air up to 10 bar, up to 145 psi MQL (oil mist) up to 10 bar, up to 145 psi | |
| Max. Speed | 27.000 min ⁻¹ | 27,000 rpm |



Flange Connection



| Ordering Number | Sealing Technology | B Supply Connection | C Overall Diameter | D Overall Length | P Drain Size Ø | A Rotor Connection | E Rotor Length | F Rotor OD | G Bore Diameter | I Pilot Diameter | Max. Speed (rpm) | Max. Pressure (bar) |
|-----------------|--------------------|---------------------|--------------------|------------------|----------------|--------------------|----------------|------------|-----------------|------------------|------------------|---------------------|
| 1108-310-304 | Closed Seal | Ø5 Flange | 84 | 84 | 4x Ø5 | Hexagon 11 | 34 | 24 | 14.1H7 | 49 f7 | 20,000 | 80 |
| 1114-935-793 | AutoSense™ | Ø5 Flange | 68 | 77 | 6x Ø5 | Octagon 7.4 D10 | 11.5 | 13.5 | 8.1F9 | 45 h7 | 27,000 | 105 |

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com

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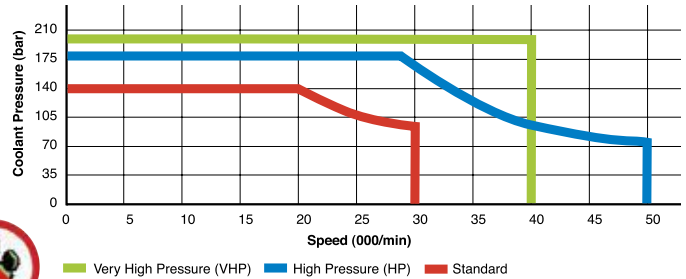
1117 Series Bearingless "Closed Seal" Rotating Unions for Continuous Coolant Service

- Single passage for coolant or MQL
- Closed seals for transfer line and similar applications
- Full-flow design has no obstructions to trap chips or debris
- Balanced mechanical seals made from silicon carbide for long life even under difficult operating conditions
- Compact size can be adapted for custom installations
- Anodized aluminum housing resists corrosion

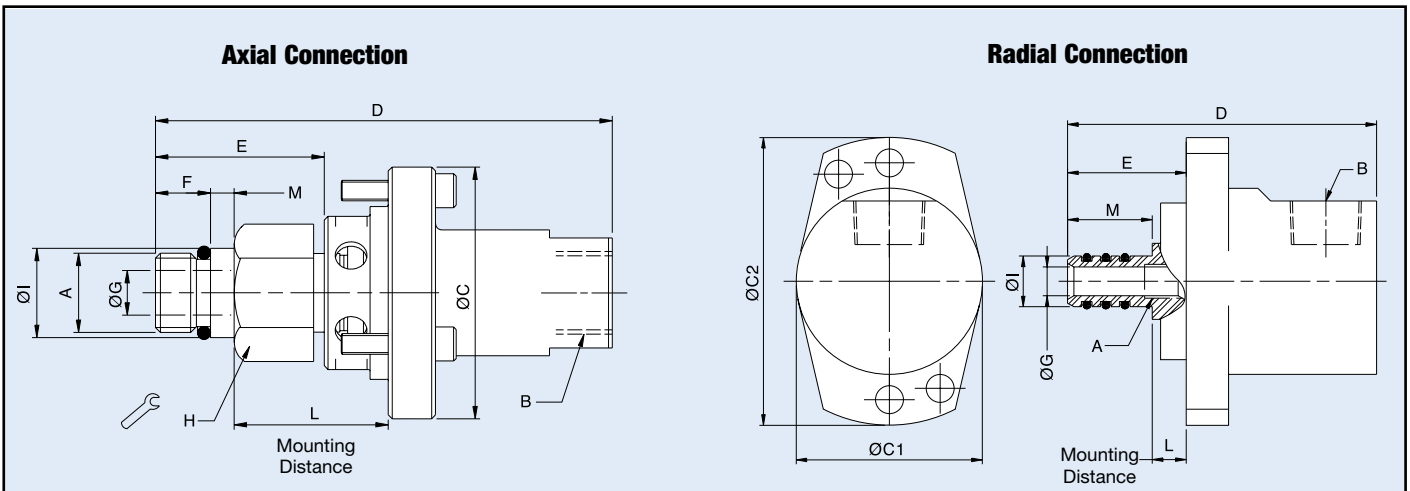


Operating Data

| | | | |
|---------------------|--|----------|--------------------------|
| Media | Water-based Coolant MQL (oil mist) up to 10 bar (145 psi) | | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | | |
| Maximum Speed | See table | | |
| Maximum Pressure | See Chart | | |
| Maximum Flow | 82 l/min | 21.6 gpm | Standard |
| | 24.3 l/min | 6.4 gpm | High Pressure (HP) |
| | 2.7 l/min | 0.7 gpm | Very High Pressure (VHP) |
| Maximum Temperature | 71°C | 160°F | |



DO NOT RUN DRY



| | Ordering Number | B Supply Connection | C Overall Diameter | D Overall Length | L Mounting Distance | A Rotor Connection | E Rotor Length | G Bore Diameter | H Across Flats | I Pilot Diameter | M Pilot Length | Max Speed (rpm) |
|------------------------------|-----------------|---------------------|--------------------|------------------|---------------------|--------------------|----------------|-----------------|----------------|-------------------|----------------|-----------------|
| Radial | 1117-706 | G 3/8" | 44 | 72 | 7.5 / 7.0 | 12f7 | 21 | 7 | NA | 11.984 / 11.966 | 20 | 10,000* |
| | 1117-711 | 3/8" NPT | 44 x 68 | 73 | 8.0 / 7.5 | 12f7 | 28 | 7 | NA | 11.984 / 11.966 | 20 | 10,000* |
| | 1117-792 | G 3/8" | 44 | 72 | 7.5 / 7.0 | 12f7 | 21 | 7 | NA | 11.984 / 11.966 | 20 | 30,000 |
| Standard Axial Connection | 1117-002-110 | 3/8" NPT | 51 | 95 | 31.7 / 30.5 | 5/8"-18 UNF RH | 37 | 9 | 15/16" | 0.6555" / 0.6553" | 5 | 30,000 |
| | 1117-002-111 | 3/8" NPT | 51 | 95 | 31.7 / 30.5 | 5/8"-18 UNF LH | 37 | 9 | 15/16" | 0.6555" / 0.6553" | 5 | 30,000 |
| | 1117-002-116 | 3/8" NPT | 51 | 92 | 31.7 / 30.5 | M16 x 1.5 LH | 34 | 9 | 24 | 17.993 / 17.988 | 5 | 30,000 |
| | 1117-058-116 | G 3/8" | 51 | 92 | 31.7 / 30.5 | M16 x 1.5 LH | 34 | 9 | 24 | 17.993 / 17.988 | 5 | 30,000 |
| HP Axial Connection | 1117-490-493 | 3/8" PT | 54 | 105 | 39.6 / 38.6 | M12 x 1.25 LH | 40 | 5 | 18 | 14.000 / 13.995 | 5 | 50,000 |
| VHP Axial Connection | 1117-063-294 | G 1/4" | 51 | 92 | 31.7 / 30.5 | M16 x 1.5 LH | 34 | 5 | 24 | 17.993 / 17.988 | 5 | 40,000 |

* Union includes integral lip seal for added spindle protection.

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com



DEUBLIN

Bearingless Rotating Union Cartridge Design Compact Bearingless Rotating Union for smallest installation space

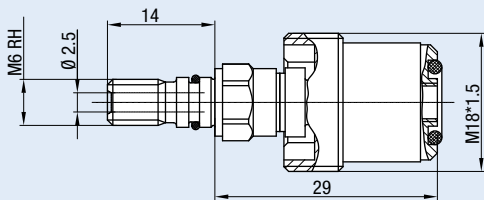
- Single passage available with almost all sealing technologies
- Design with additional functions: e.g. long stroke stator with hub to allow drawbar movement even when rotating union is mounted onto the clamping unit
- Full-flow design has no obstructions to trap swarf or debris
- Balanced mechanical seals made from silicon carbide / carbon graphite for timed dry run for long life
- Anodised aluminium housing resists corrosion
- Dry run capability depending on sealing technology and materials
- Closed seal, Pop-Off, and AutoSense sealing technologies available depending on model

Operating Data

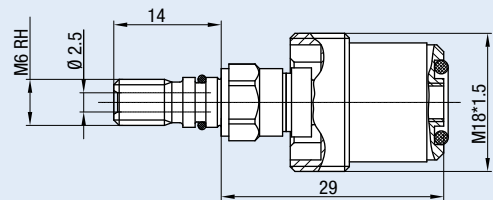
Sealing Technology (depending on model) AutoSense™, Closed Seal, Pop-Off™
 Media (depending on model) Coolant – water-based; Cutting Oil
 Compressed Air up to 10 bar, up to 145 psi
 MQL (oil mist) up to 10 bar, up to 145 psi

Examples

1121-251-434



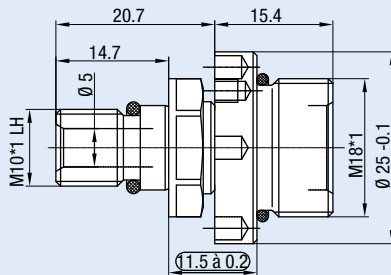
1117-593-589



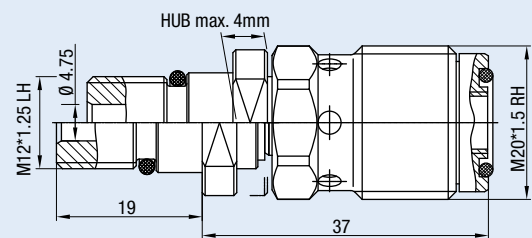
| Features | Operating Data |
|------------------|-----------------------------|
| • Pop-Off™ | Speed 150,000 rpm |
| • Single passage | Pressure 180 bar |
| • Seals SIC/SIC | Media Coolant / Cutting Oil |
| | Dry run Yes |
| | Max. Flow 7.4 l/min |

| Features | Operating Data |
|------------------|-----------------------------|
| • Closed Seal | Speed 30,000 rpm |
| • Single passage | Pressure 140 bar |
| • Seals CG/SIC | Media Coolant / Cutting Oil |
| | Dry run No |
| | Max. Flow 7.4 l/min |

1124-259-260



1154-170-137



| Features | Operating Data |
|------------------|--------------------------------|
| • AutoSense™ | Speed 30,000 rpm |
| • Single passage | Pressure 140 bar / 10 bar |
| • Seals SIC/SIC | Media Coolant / Compressed Air |
| | Dry run Yes |
| | Max. Flow 7.4 l/min |

| Features | Operating Data |
|-------------------|--------------------------------|
| • AutoSense™ | Speed 40,000 rpm |
| • Single passage | Pressure 140 bar / 10 bar |
| • Seals SIC/SIC | Media Coolant / Compressed Air |
| • Max Stroke 4 mm | Dry run Yes |
| | Max. Flow 7.4 l/min |

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com

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1121 Series Bearingless Pop-Off™ “Micro Stroke” Rotating Unions for Coolant Service

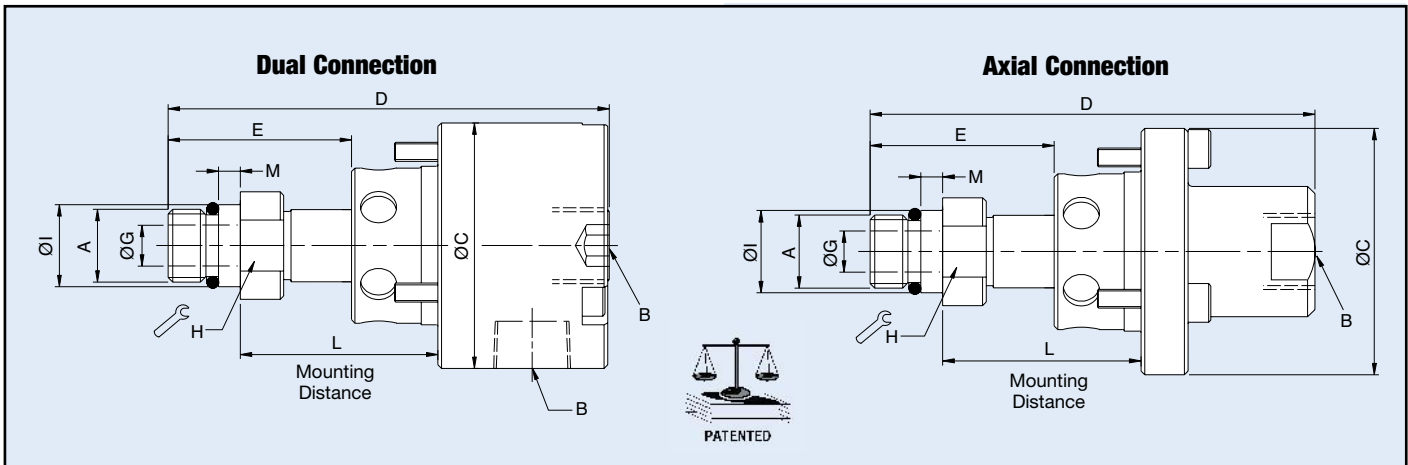
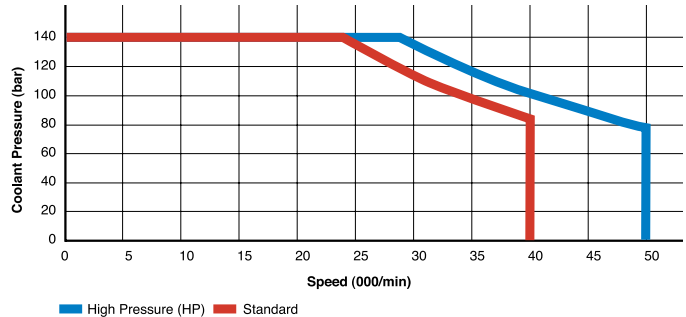
- Single passage for coolant or MQL
- Patented Pop-Off™ technology allows unlimited dry running without media pressure
- Ultra-short 0.1 mm pop-off stroke restricts drainage of residual coolant during tool change
- Full-flow design has no obstructions to trap chips or debris
- Balanced mechanical seals made from silicon carbide for long life even under difficult operating conditions
- Anodized aluminum housing resists corrosion

Operating Data

| | |
|---------------------|--|
| Media | Water-based Coolant MQL (oil mist) up to 10 bar (145 psi) |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron |
| Maximum Speed | 40,000 min ⁻¹ 40,000 rpm Standard 50,000 min ⁻¹ 50,000 rpm High Pressure (HP) |
| Maximum Pressure | 140 bar 2,030 psi |
| Maximum Flow | 24.3 l/min 6.4 gpm 1121-330-327 38.7 l/min 10.2 gpm 1121-330-345 82 l/min 21.6 gpm |
| Maximum Temperature | 71°C 160°F |



**NO AIR PRESSURE
WITH ROTATION**



| | Ordering Number | B Supply Connection | C Overall Diameter | D Overall Length | L Mounting Distance | A Rotor Connection | E Rotor Length | G Bore Diameter | H Across Flats | I Pilot Diameter | M Pilot Length | Max Speed (rpm) | |
|----------|------------------|---------------------|--------------------------------|------------------|---------------------|--------------------|----------------|-----------------|----------------|------------------|-----------------|-----------------|--------|
| Standard | Dual Connection | 1121-300-327 | 3/8" PT | 54 | 94 | 39.6 / 38.6 | M12 x 1.25 LH | 37 | 6 | 18 | 14.000 / 13.995 | 5 | 40,000 |
| | | 1121-300-345 | 3/8" PT | 54 | 97 | 44.0 / 43.0 | M16 x 1.5 LH | 40 | 9 | 21 | 17.993 / 17.988 | 5 | 40,000 |
| | | 1121-330-327 | 3/8" PT | 54 | 94 | 39.6 / 38.6 | M12 x 1.25 LH | 37 | 6 | 18 | 14.000 / 13.995 | 5 | 40,000 |
| | Axial Connection | 1121-330-345 | 3/8" PT | 54 | 97 | 44.0 / 43.0 | M16 x 1.5 LH | 40 | 9 | 21 | 17.993 / 17.988 | 5 | 40,000 |
| | | 1121-380-327 | G 3/8" Radial 1/4" PT Axial | 54 | 98 | 39.6 / 38.6 | M12 x 1.25 LH | 37 | 6 | 18 | 14.000 / 13.995 | 5 | 40,000 |
| | | 1121-380-345 | G 3/8" Radial 1/4" PT Axial | 54 | 102 | 44.0 / 43.0 | M16 x 1.5 LH | 40 | 9 | 21 | 17.993 / 17.988 | 5 | 40,000 |
| HP | Dual Connection | 1121-400-327 | 3/8" PT | 54 | 94 | 39.6 / 38.6 | M12 x 1.25 LH | 37 | 6 | 18 | 14.000 / 13.995 | 5 | 40,000 |
| | | 1121-400-345 | 3/8" PT | 54 | 98 | 44.0 / 43.0 | M16 x 1.5 LH | 40 | 9 | 21 | 17.993 / 17.988 | 5 | 40,000 |
| | Axial Connection | 1121-410-493 | 3/8" PT | 54 | 105 | 39.6 / 38.6 | M12 x 1.25 LH | 40 | 5 | 18 | 14.000 / 13.995 | 5 | 50,000 |
| | | 1121-430-431 | 3/8" PT | 54 | 108 | 44.0 / 43.0 | M16 x 1.5 LH | 43 | 5 | 21 | 17.993 / 17.988 | 5 | 50,000 |

**This series includes additional models. For more information,
contact DEUBLIN at +1-847-689-8600 or www.deublin.com**



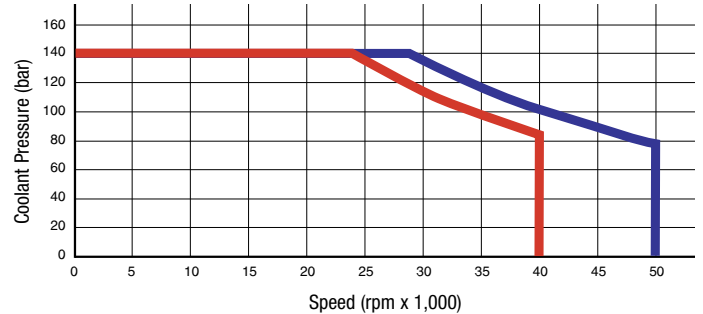
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1124 Series Bearingless AutoSense™ Rotating Unions for Coolant and Air Service with Dry Running

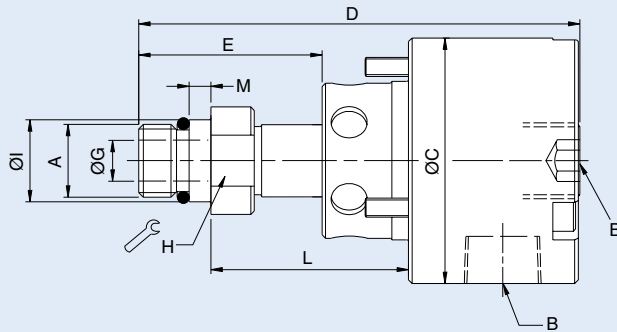
- Single passage for coolant and compressed air
- Patented AutoSense™ technology, changes automatically between closed seals and controlled leakage, depending on media
- Full-flow design has no obstructions to trap swarf or debris
- Balanced mechanical seals made from silicon carbide for long life even under difficult operating conditions
- Anodised aluminium housing, resists corrosion
- Available with threaded rotor only

Operating Data

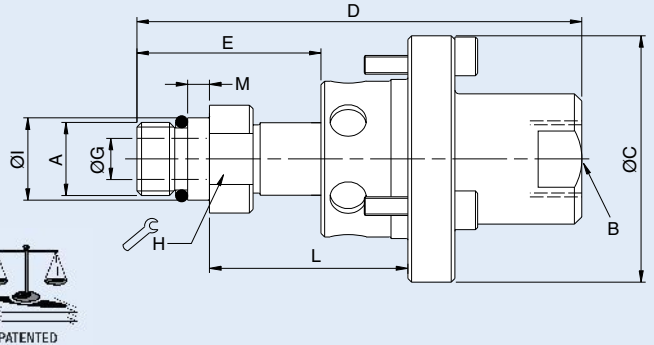
| | | |
|------------------|--|---------|
| Media | Water-based Coolant MQL (oil mist) up to 10 bar (145 psi) | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | |
| Max. Speed | see graphic/table | |
| Max. Pressure | see graphic/table | |
| Max. Flow | 37.5 L/min | 9.9 gpm |
| 1124-014-015 | 21.8 L/min | 5.8 gpm |
| 1124-800-780 | 21.8 L/min | 5.8 gpm |
| 1124-850-847 | 19.0 L/min | 5.0 gpm |
| Max. Temperature | 71 °C | 160 °F |



Dual Connection



Axial Connection



| Ordering Number | B Supply Connection | C Overall Diameter | D Overall Length | L Mounting Distance | A Rotor Connection | E Rotor Length | G Bore Diameter | H Across Flats | I Pilot Diameter | M Pilot Length | Max. Speed (rpm) |
|-----------------|---------------------|--------------------|------------------|---------------------|--------------------|----------------|-----------------|----------------|------------------|----------------|------------------|
| 1124-850-847 | G 1/4" Radial | 68 | 101 | 2 | M8 x 0.5 LH | 28 | 4 | 13 | 8.995 / 8.991 | 20 | 40,000 |
| 1124-031-590 | G 3/8" Radial | 58 | 76 | 21.5 | M16 x 1.5 LH | 25 | 9 | 19 | 17.993 / 17.988 | 5 | 40,000 |
| 1124-036-301 | PT 3/8" Axial | 54 | 97 | 44.0 / 43.0 | M16 x 1.5 LH | 40 | 9 | 24 | 17.993 / 17.988 | 5 | 40,000 |
| 1124-400-327 | PT 3/8" Axial | 54 | 94 | 39.6 / 38.6 | M12 x 1.25 LH | 37 | 6 | 18 | 14.000 / 13.995 | 5 | 40,000 |
| 1124-300-327 | PT 3/8" Radial | 54 | 94 | 39.6 / 38.6 | M12 x 1.25 LH | 37 | 6 | 18 | 14.000 / 13.995 | 5 | 40,000 |
| | PT 3/8" Axial | | | | | | | | | | |
| 1124-300-301 | PT 3/8" Radial | 54 | 97 | 44.0 / 43.0 | M16 x 1.5 LH | 40 | 9 | 24 | 17.993 / 17.988 | 5 | 40,000 |
| | PT 3/8" Axial | | | | | | | | | | |
| 1124-800-780 | G 3/8" Radial | 54 | 106 | 41.5 | M16 x 1.5 LH | 16 | 5 | 19 | 17.993 / 19.988 | 5 | 40,000 |
| | G 3/8" Axial | | | | | | | | | | |
| 1124-014-015 | G 1/4" Axial | 45 | 63 | 14 | M10 x 1 LH | 29 | 5 | 14 | 10.994 / 10.989 | 7 | 50,000 |

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com

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1151 Series Bearingless Pop-Off™ "Long Stroke" Rotating Unions for Coolant Service

- Single passage for Coolant and MQL
- Patented Pop-Off technology allows unlimited dry running without media pressure
- Non-rotating element has "stroke" (axial movement) of up to 13.5 mm, to track drawbar movement even when the union is mounted on the clamping device
- Full flow design has no obstructions to trap chips or debris
- Balanced mechanical seals made from silicon carbide for long life even under difficult operating conditions

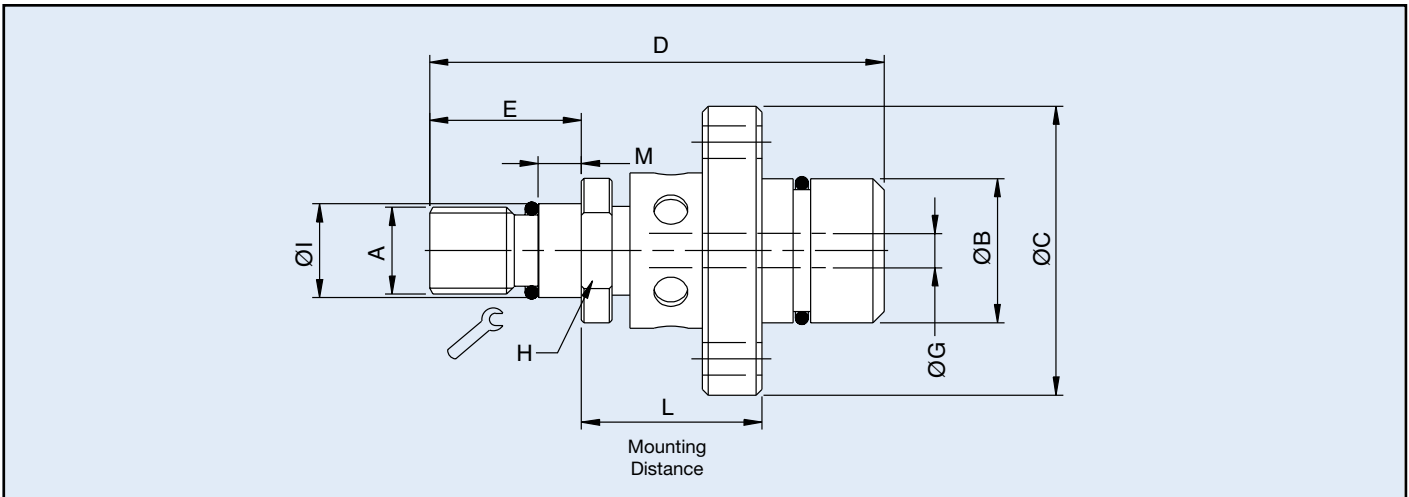
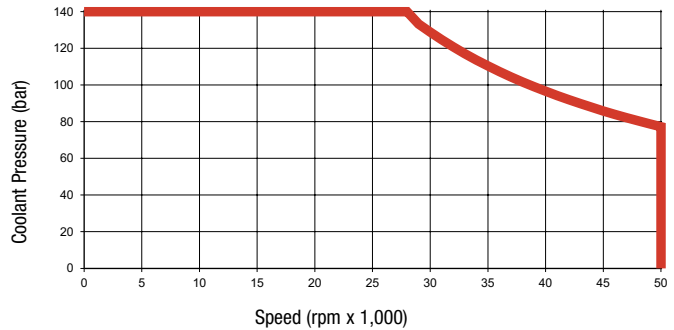


Operating Data

| | | |
|---------------------|---|------------|
| Media | Water-based Coolant MQL | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | |
| Maximum Speed | 50,000 min ⁻¹ | 50,000 rpm |
| Maximum Pressure | 140 bar | 2030 psi |
| Maximum Flow | 33 l/min (6 mm bore) | |
| Maximum Temperature | 71°C | 160°F |



**NO AIR PRESSURE
WITH ROTATION**



| Ordering Number | B Supply Connection | C Overall Diameter | D Overall Length | L Mounting Distance | A Rotor Connection | E Rotor Length | G Bore Diameter | H Across Flats | I Pilot Diameter | M Pilot Length | Max Speed (rpm) |
|-----------------|---------------------|--------------------|------------------|---------------------|--------------------|----------------|-----------------|----------------|------------------|----------------|-----------------|
| 1151-030-137 | 20.0 mm Counterbore | 40.2 | 62 | 27.0 / 23.0 | M12 x 1.25 LH | 32.1 | 6 | 17 | 13.000 / 12.995 | 6 | 50,000 |
| 1151-031-137 | 20.0 mm Counterbore | 40.2 | 62 | 27.0 / 23.1 | M12 x 1.25 LH | 32.1 | 6 | 17 | 13.000 / 12.996 | 6 | 50,000 |
| 1151-002-140 | 16.4 mm Counterbore | 31 | 63 | 37.0 / 30.0 | M12 x 1.25 LH | 28 | 5 | 15 | 12.994 / 12.989 | 6 | 40,000 |
| 1151-020-127 | 16.0 mm Counterbore | 31.8 | 42 | 21.5 / 19.5 | M10 x 1 LH | 23 | 5 | 14 | 10.994 / 10.989 | 4 | 50,000 |
| 1151-002-133 | 20.0 mm Counterbore | 38.5 | 79 | 30.0 / 23.0 | M12 x 1.25 LH | 26.9 | 5 | 15 | 12.994 / 12.990 | 6 | 40,000 |

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com

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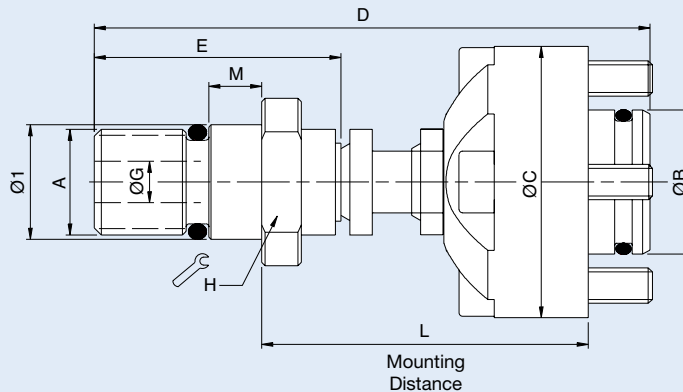
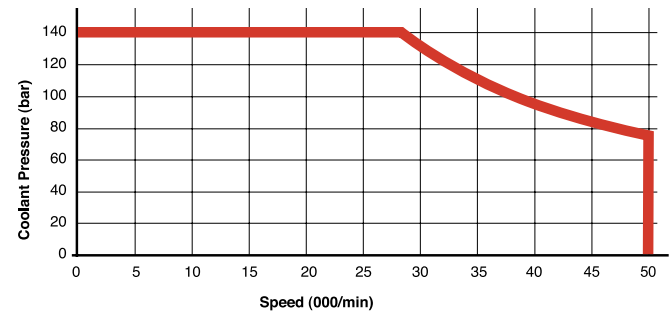
1154 Series Bearingless AutoSense™ “Long Stroke” Rotating Unions for Coolant and Air Service with Dry Running



- Single passage for coolant or MQL
- Patent-pending AutoSense™ technology automatically changes between closed seals and controlled leakage operation in response to the kind of media
- Non-rotating element has a “stroke” (axial movement) of more than 8 mm, to track drawbar movement even when union is mounted on the clamping device
- Full-flow design has no obstructions to trap chips or debris
- Balanced mechanical seals made from silicon carbide for long life even under difficult operating conditions
- Anodized aluminum housing resists corrosion

Operating Data

| | | |
|---------------------|--|------------|
| Media | Water-based Coolant MQL (oil mist) up to 10 bar (145 psi) Air up to 10 bar (145 psi) | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | |
| Maximum Speed | 40,000 min ⁻¹ | 40,000 rpm |
| Maximum Pressure | 140 bar | 2,030 psi |
| Maximum Flow | 24.3 l/min | 6.4 gpm |
| Maximum Temperature | 71°C | 160°F |



| | Ordering Number | B Supply Connection | C Overall Diameter | D Overall Length | L Mounting Distance | A Rotor Connection | E Rotor Length | G Bore Diameter | H Across Flats | I Pilot Diameter | M Pilot Length | Max Speed (rpm) |
|-------|-----------------|---------------------|--------------------|------------------|---------------------|--------------------|----------------|-----------------|----------------|------------------|----------------|-----------------|
| Axial | 1154-002-105 | 16.4 mm Counterbore | 31 | 72 | 49.0 / 42.0 | M8 x 1 RH | 37 | 4 | 15 | 8.995 / 8.991 | 3.5 | 40,000 |
| | 1154-002-109 | 16.4 mm Counterbore | 31 | 63 | 37.0 / 30.0 | M12 x 1 RH | 28 | 5 | 15 | 12.994 / 12.989 | 6 | 40,000 |
| | 1154-002-133 | 16.4 mm Counterbore | 31 | 65 | 37.0 / 30.0 | M16 x 1.5 LH | 30 | 4 | 19 | 17.994 / 17.989 | 6 | 40,000 |
| | 1154-002-140 | 16.4 mm Counterbore | 31 | 63 | 37.0 / 30.0 | M12 x 1.25 LH | 28 | 5 | 15 | 12.994 / 12.989 | 6 | 40,000 |
| | 1154-003-107 | 20 mm Counterbore | 39 | 71 | 40.0 / 33.0 | M12 x 1.25 LH | 36 | 5 | 15 | 12.994 / 12.989 | 6 | 40,000 |
| | 1154-003-137 | 20 mm Counterbore | 38.5 | 62 | 31.0 / 25.0 | M12 x 1.25 LH | 27 | 5 | 15 | 12.994 / 12.989 | 6 | 40,000 |
| | 1154-004-109 | 30 mm Counterbore | 48.5 | 69 | 40.5 / 33.5 | M12 x 1 RH | 28 | 5 | 15 | 12.994 / 12.989 | 6 | 40,000 |
| | 1154-005-109 | 16.4 mm Counterbore | 31 | 87 | 49.0 / 42.0 | M12 x 1 RH | 28 | 5 | 15 | 12.994 / 12.989 | 6 | 40,000 |
| | 1154-012-109* | 16.4 mm Counterbore | 31 | 63 | 37.0 / 30.0 | M12 x 1 RH | 28 | 5 | 15 | 12.994 / 12.989 | 6 | 40,000 |
| | 1154-012-133* | 16.4 mm Counterbore | 31 | 65 | 37.0 / 30.0 | M16 x 1.5 RH | 30 | 5 | 19 | 17.994 / 17.989 | 6 | 40,000 |

* 1154-012-xxx include a spring to fully retract the non-rotating element when pressure is discontinued.

Note: Overall Length (D) is at maximum Mounting Distance (L).

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com

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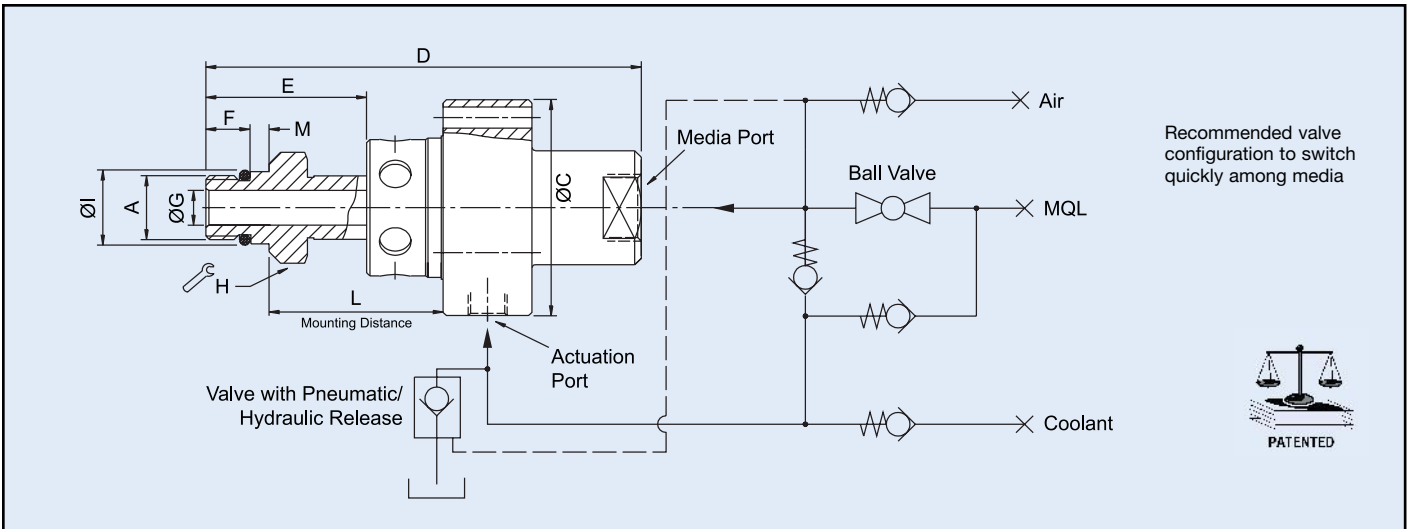
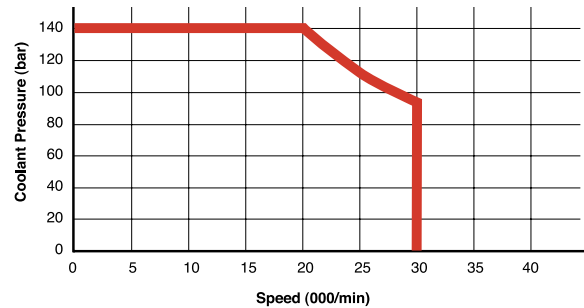
1139 Series Bearingless "All-Media" Rotating Unions for Coolant, MQL, and Air Service

- Single passage for all media
- Patented technology operates with closed seals for coolant, as a Pop-Off™ when pressure is removed, and as with a microscopic gap between the seals ("controlled leakage") with pressurized dry air
- Non-rotating element has a "stroke" (axial movement) of 0.7-3.0 mm, for reliable sealing even with thermal expansion of spindle and variations in drawbar position
- Full-flow design has no obstructions to trap chips or debris
- Balanced mechanical seals made from silicon carbide for long life even under difficult operating conditions
- Anodized aluminum housing resists corrosion



Operating Data

| | | | |
|---------------------|---|-----------|----------|
| Media | Water-based Coolant MQL (oil mist) Air, dry or lubricated | | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | | |
| Maximum Speed | 30,000 min ⁻¹ 30,000 rpm | | |
| Maximum Pressure | 140 bar | 2,030 psi | Coolant |
| | 10 bar | 145 psi | MQL, Air |
| Maximum Flow | 28 l/min | 7.4 gpm | |
| Maximum Temperature | 71°C | 160°F | |



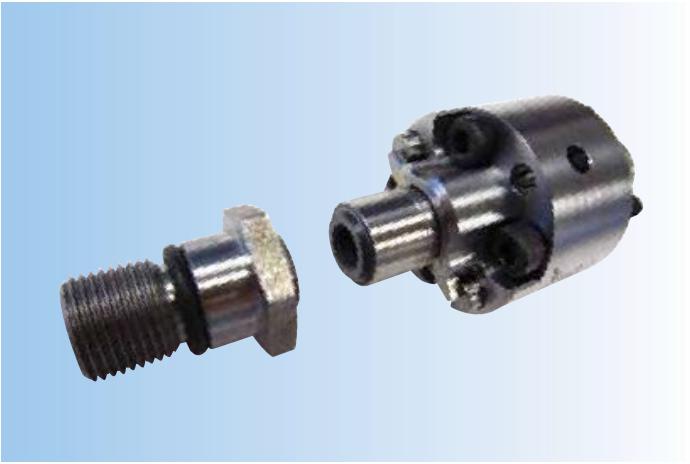
| | Ordering Number | B Supply Connection ^A | C Overall Diameter | D Overall Length | L Mounting Distance | A Rotor Connection | E Rotor Length | F Thread Length | G Bore Diameter | H Across Flats | I Pilot Diameter | M Pilot Length |
|------------------|-----------------|-----------------------------------|--------------------|------------------|---------------------|--------------------|----------------|-----------------|-----------------|----------------|------------------|----------------|
| Axial Connection | 1139-020-116 | 3/8" NPT Axial 1/8" NPT Radial | 51 | 97 | 31.6 / 30.6 | M16 x 1.5 LH | 28 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 1139-032-301 | 3/8" PT Axial 1/8" PT Radial | 54 | 109 | 44.0 / 43.0 | M16 x 1.5 LH | 40 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 1139-032-327 | 3/8" PT Axial 1/8" PT Radial | 54 | 106 | 39.6 / 38.6 | M12 x 1.25 LH | 37 | 12 | 6 | 21 | 14.000 / 13.995 | 5 |
| | 1139-041-301 | 3/8" PT Axial 1/8" PT Radial | 54 | 109 | 44.0 / 43.0 | M16 x 1.5 LH | 40 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 1139-744-301 | G 3/8" Axial G 1/8" Radial | 54 | 101 | 44.0 / 43.0 | M16 x 1.5 LH | 40 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| Radial | 1139-746-301 | G 3/8" Radial G 1/8" Radial | 54 | 108 | 44.0 / 43.0 | M16 x 1.5 LH | 40 | 11 | 9 | 24 | 17.993 / 17.988 | 5 |
| | 1139-746-327 | G 3/8" Radial G 1/8" Radial | 54 | 105 | 44.0 / 43.0 | M12 x 1.25 LH | 37 | 12 | 6 | 24 | 14.000 / 13.995 | 5 |

Note: All 1139 series have a 1/8" radial connection for the actuation port.

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com

DEUBLIN

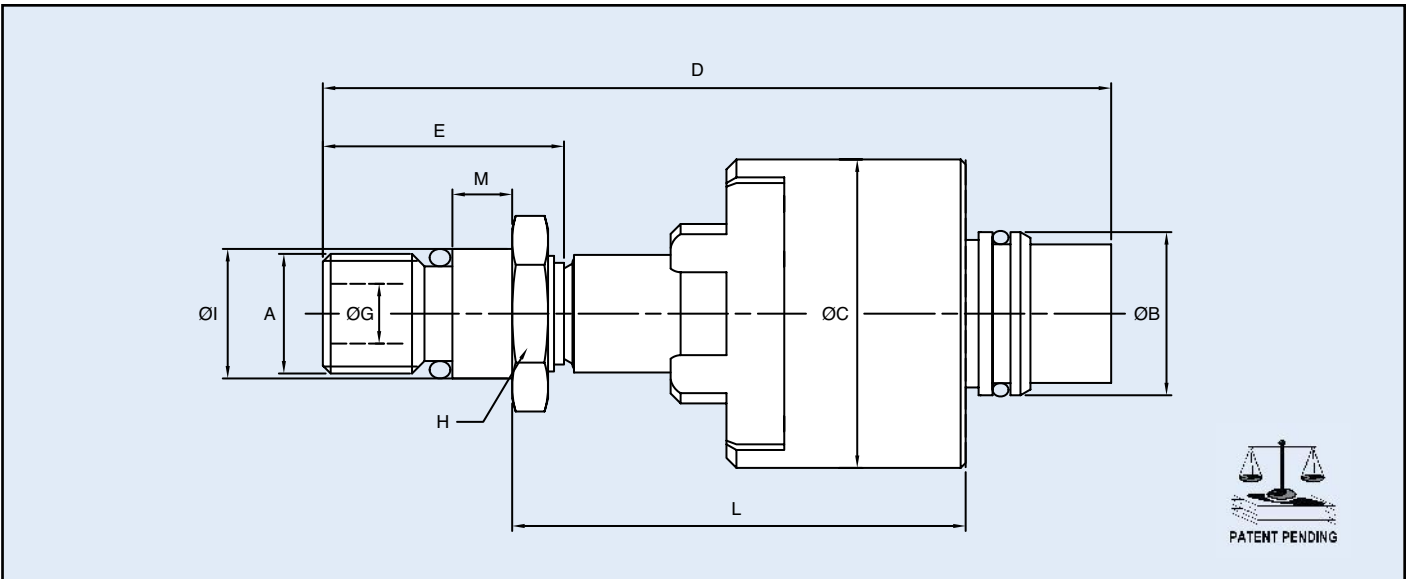
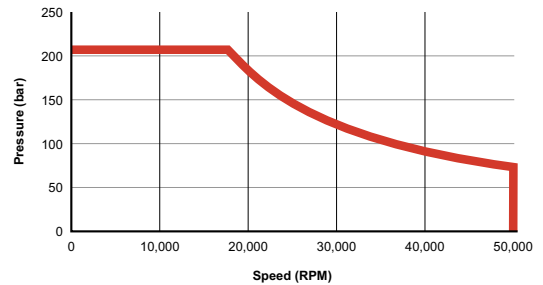
1159 Series Bearingless AutoSense™ "Long Stroke" Rotating Unions for Coolant and Air Service with CoolControl™ Technology



- Single passage for all media
- Patented AutoSense technology automatically changes between closed seals and controlled leakage operation in response to type of media
- Non-rotating element has "stroke" (axial movement) of up to 13.5 mm, to track drawbar movement even when the union is mounted on the clamping device
- CoolControl technology utilizes an air pilot to hold seals closed during axial drawbar movements, thus minimizing coolant leakage during tool change cycles
- Full flow design has no obstructions to trap chips or debris
- Balanced mechanical seals made from silicon carbide for long life even under difficult operating conditions

Operating Data

| | | |
|---------------------|--|------------|
| Media | Water-based Coolant MQL Air up to 10 bar (145 psi) | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | |
| Maximum Speed | 50,000 min ⁻¹ | 50,000 rpm |
| Maximum Pressure | 210 bar | 3,045 psi |
| Maximum Flow | 33 l/min (6 mm bore) | |
| Maximum Temperature | 71°C | 160°F |



| Ordering Number | B Supply Connection | C Overall Diameter | D Overall Length | L Mounting Distance | A Rotor Connection | E Rotor Length | G Bore Diameter | H Across Flats | I Pilot Diameter | M Pilot Length | Max Speed (rpm) |
|-----------------|---------------------|--------------------|------------------|---------------------|--------------------|----------------|-----------------|----------------|------------------|----------------|-----------------|
| 1159-024-105 | 16.4 mm Counterbore | 31 | 52.9 | 28.5 / 24.0 | M8 x 1 LH | 22 | 4 | 17 | 8.995 / 8.991 | 3.5 | 50,000 |
| 1159-020-101 | 16.4 mm Counterbore | 31 | 79.3 | 45.7 / 34.0 | M12 x 1 RH | 24.2 | 6 | 17 | 12.994 / 12.989 | 6 | 50,000 |
| 1159-135-103 | 16.4 mm Counterbore | 31 | 86.1 | 52.5 / 39.0 | M12 x 1.25 LH | 24.2 | 6 | 17 | 12.994 / 12.989 | 6 | 50,000 |
| 1159-003-137 | 20.0 mm Counterbore | 38.5 | 79 | 30.0 / 23.0 | M12 x 1.25 LH | 26.9 | 5 | 15 | 12.994 / 12.990 | 6 | 50,000 |

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com

DEUBLIN

High Flow Rotating Unions for specific applications including Aerospace & machining of special materials

1129-470-511



Features

- Pop-Off Seals for unlimited unpressurized dry run
- Single passage for coolant or MQL
- M30 x 1.5 LH Rotor
- Housing 34.0 mm counterbore mounting



NO AIR PRESSURE WITH ROTATION

Operating Data

| | |
|---------------------|---|
| Media | Water-based Coolant |
| | MQL |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron |
| Maximum Speed | 10,000 min ⁻¹ 10,000 rpm |
| Maximum Pressure | 140 bar 2,030 psi |
| Maximum Flow | 276 l/min (16mm bore) |
| Maximum Temperature | 71°C 160°F |

1110-800-802 and 1110-800-805



Features

- Pop-Off Seals for unlimited unpressurized dry run
- Single passage for coolant or MQL
- 48 g6 Housing Bore Mounted
- Hexagon 13 D10 Rotor Connection
- G 1/2" radial supply port
- Axial drawbar stroke:
1110-800-802: 8 mm
1110-800-805: 18 mm



NO AIR PRESSURE WITH ROTATION

Operating Data

| | |
|---------------------|---|
| Media | Water-based Coolant |
| | MQL |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron |
| Maximum Speed | 17,000 min ⁻¹ 17,000 rpm |
| Maximum Pressure | 140 bar 2,030 psi |
| Maximum Flow | 200 l/min (12mm bore) |
| Maximum Temperature | 71°C 160°F |

1110-960-965



Features

- Pop-Off Seals for unlimited unpressurized dry run
- Single passage for coolant or MQL
- 65 g6 Housing Bore Mounted
- Hexagon 16 D10 Rotor Connection
- 1" NPT RH radial supply port
- Allows drawbar stroke up to 17 mm



NO AIR PRESSURE WITH ROTATION

Operating Data

| | |
|---------------------|---|
| Media | Water-based coolant |
| | MQL |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron |
| Maximum Speed | 5,000 min ⁻¹ 5,000 rpm |
| Maximum Pressure | 27 bar 390 psi |
| Maximum Flow | 200 l/min (14.3mm bore) |
| Maximum Temperature | 71°C 160°F |

1110-020-124



Features

- Pop-Off Seals
- Single passage for coolant or MQL
- M22 x 1.5 RH Rotor Thread Mounted
- 29.993 / 29.980 Rotor Pilot
- G 1/2" radial supply port



NO AIR PRESSURE WITH ROTATION

Operating Data

| | |
|---------------------|---|
| Media | Water-based coolant |
| | MQL |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron |
| Maximum Speed | 8,000 min ⁻¹ 8,000 rpm |
| Maximum Pressure | 27 bar 390 psi |
| Maximum Flow | 163 l/min (12.7mm bore) |
| Maximum Temperature | 71°C 160°F |

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com

DEUBLIN

Special 2-Passage Rotating Unions for MQL Mixed in the Spindle

1112-100-101, 1112-000-165 and 1112-000-343



Features

- Two concentric passages for mixing oil and air in the spindle
- Rotating inner passage for oil lance
- Threaded rotor for easy installation. M16x1.5LH, 5/8"-18 UNFLH, M12x1.25 LH rotors available
- Full-flow design has no obstructions to trap chips or debris
- Patented AutoSense technology for unlimited dry running without media pressure

Operating Data

| | | |
|---------------------|---|------------|
| Media | Oil or Water (inner passage) Air (outer passage) | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | |
| Maximum Speed | 20,000 min ⁻¹ | 20,000 rpm |
| Maximum Pressure | | |
| Oil / Water | 62 bar | 900 psi |
| Air | 10 bar | 145 psi |
| Maximum Flow | 2.3 l/min | 0.6 gpm |
| Maximum Temperature | 71°C | 160°F |

1112-240-001 and 1112-243-001



Features

- Two concentric passages for mixing oil and air in the spindle
- Rotating inner passage for oil lance
- Bore mounted design for easy installation
- Patented Pop-Off™ and AutoSense™ technologies allow unlimited dry running without media pressure

Operating Data

| | | |
|---------------------|---|------------|
| Media | Oil or Coolant (Inner Passage) Air (outer passage) | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | |
| Maximum Speed | 30,000 min ⁻¹ | 30,000 rpm |
| Maximum Pressure | | |
| Oil / Coolant | 140 | 2030 psi |
| Air | 8 bar | 116 psi |
| Max. Flow | 6 l/min | 1.6 gpm |
| Maximum Temperature | 71°C | 160°F |

1122-923-852



Features

- Two concentric passages for mixing oil and air in the spindle
- Non-rotating inner passage for oil lance
- Bearingless design

Operating Data

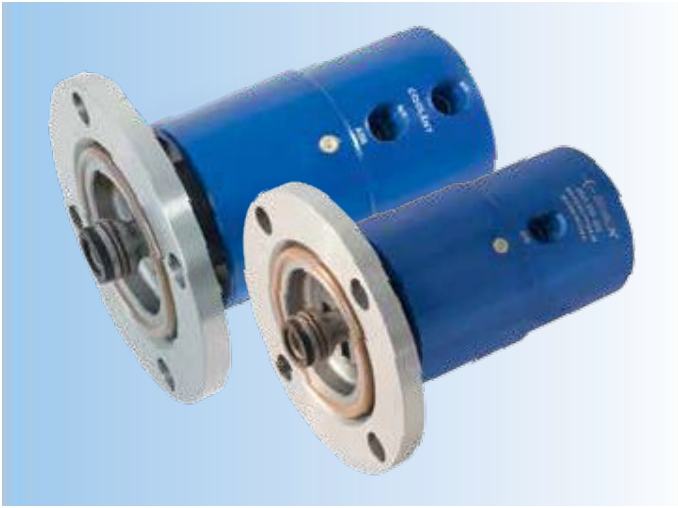
| | | |
|---------------------|--|------------|
| Media | Oil (inner passage) Air (outer passage) | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | |
| Maximum Speed | 20,000 min ⁻¹ | 20,000 rpm |
| Maximum Pressure | | |
| Oil / Water | 12 bar | 174 psi |
| Air | 8 bar | 116 psi |
| Maximum Flow | 2.3 l/min | 0.6 gpm |
| Maximum Temperature | 71°C | 160°F |

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com

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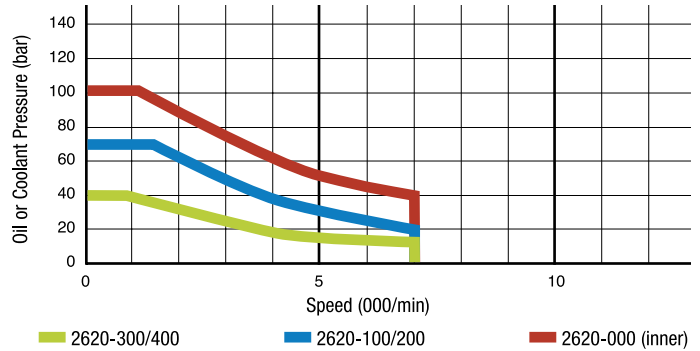
2620 Series 2-Passage Rotating Unions for Various Media

- Two independent passages for applications such as clamping and unclamping
- Balanced mechanical seals for each passage provide long life and reduced torque even at maximum pressure
- Closed seals provide continuous containment of media
- Dual precision ball bearings for smooth operation
- Labyrinth protection for ball bearings
- Mountings options are compatible with DEUBLIN 2520 or 1579 series unions



Operating Data

| | | |
|---------------------|---|------------------------|
| Media | See table | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | |
| Maximum Speed | 7,000 min ⁻¹ 7,000 rpm | |
| Maximum Pressure | See table | |
| Maximum Flow | 69 l/min | 18.2 gpm (per passage) |
| Maximum Temperature | 71°C | 160°F |



| 2620-XXX-252 | | 2620-XXX-940 | | 2620-XXX-157 | | Inner Passage | | Outer Passage | | Notes | |
|-----------------------------|----------------------------|-----------------|--------------------|-----------------|--------------------|-------------------------|---------------------|---------------------|---------------------|---------------------|--|
| | | | | | | Media | Max. Pressure [bar] | Media | Max. Pressure [bar] | | |
| With Ø 108 mm flanged rotor | With Ø 88 mm flanged rotor | Ordering Number | Supply Connections | Ordering Number | Supply Connections | Ordering Number | Supply Connections | Ordering Number | Supply Connections | | |
| Ordering Number | Supply Connections | Ordering Number | Inner Passage | Outer Passage | Ordering Number | Inner and outer Passage | Media | Max. Pressure [bar] | Media | Max. Pressure [bar] | |
| 2620-000-252 | 1/4 NPT | 2620-002-940 | G 1/4" | G 1/4" | 2620-000-157 | 1/4 NPT | Hydraulic Oil | 100 | Hydraulic Oil | 30 | |
| 2620-100-252 | 1/4 NPT | 2620-102-940 | G 3/8" | G 1/8" | 2620-100-157 | 1/4 NPT | Hydraulic Oil | 70 | Compressed Air | 6 | Compressed air seals may be lubricated through oil cup or by using oiled compressed air. |
| 2620-120-252 | 1/4 NPT | 2620-122-940 | G 3/8" | G 1/8" | 2620-120-157 | 1/4 NPT | Hydraulic Oil | 70 | Compressed Air | 10 | |
| 2620-200-252 | 1/4 NPT | 2620-202-940 | G 3/8" | G 1/8" | 2620-200-157 | 1/4 NPT | Coolant | 70 | Compressed Air | 6 | |
| 2620-220-252 | 1/4 NPT | 2620-222-940 | G 3/8" | G 1/8" | 2620-220-157 | 1/4 NPT | Coolant | 70 | Compressed Air | 10 | |
| 2620-300-252 | 1/4 NPT | 2620-302-940 | G 1/4" | G 1/4" | 2620-300-157 | 1/4 NPT | Compressed Air | 6 | Hydraulic Oil | 40 | Compressed air seals require no external lubrication. |
| 2620-320-252 | 1/4 NPT | 2620-322-940 | G 1/4" | G 1/4" | 2620-320-157 | 1/4 NPT | Compressed Air | 10 | Hydraulic Oil | 40 | |
| 2620-400-252 | 1/4 NPT | 2620-402-940 | G 1/4" | G 1/4" | 2620-400-157 | 1/4 NPT | Compressed Air | 6 | Coolant | 40 | |
| 2620-420-252 | 1/4 NPT | 2620-422-940 | G 1/4" | G 1/4" | 2620-420-157 | 1/4 NPT | Compressed Air | 10 | Coolant | 40 | |
| 2620-500-252* | 1/4 NPT | 2620-502-940* | G 3/8" | G 1/8" | 2620-500-157 | 1/4 NPT | Compressed Air | 6 | Compressed Air | 6 | Consult DEUBLIN regarding maximum speed. |
| 2620-520-252 | 1/4 NPT | 2620-522-940 | G 3/8" | G 1/8" | 2620-520-157 | 1/4 NPT | Compressed Air | 10 | Compressed Air | 10 | |

* Inner passage allowed for operation with hydraulic 70 bar and coolant 70 bar.

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com

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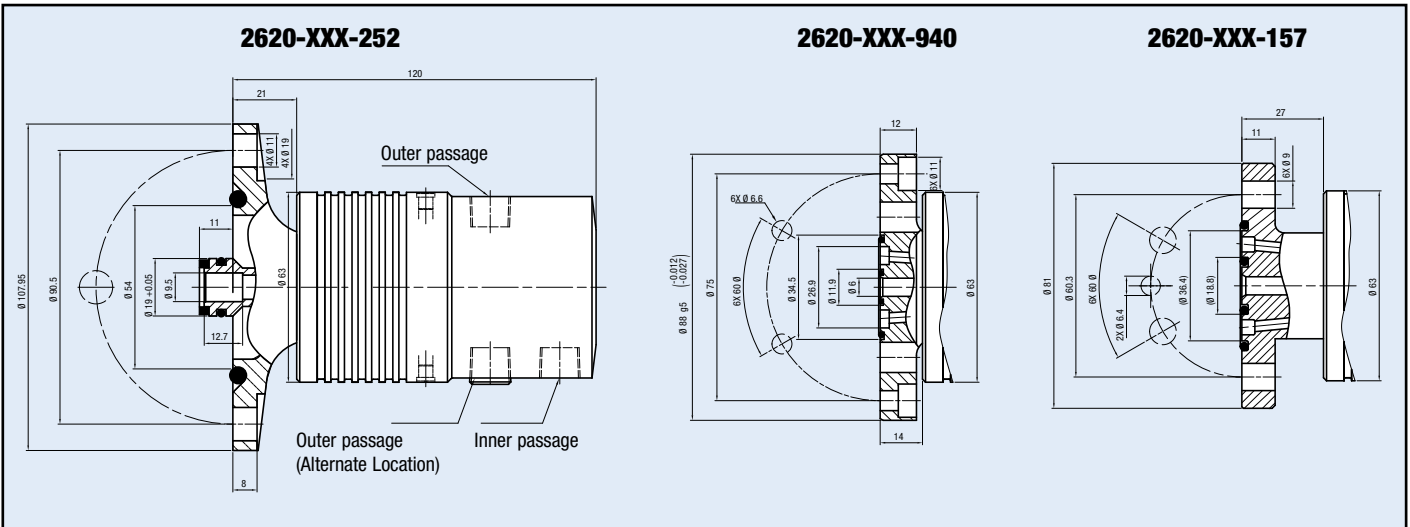
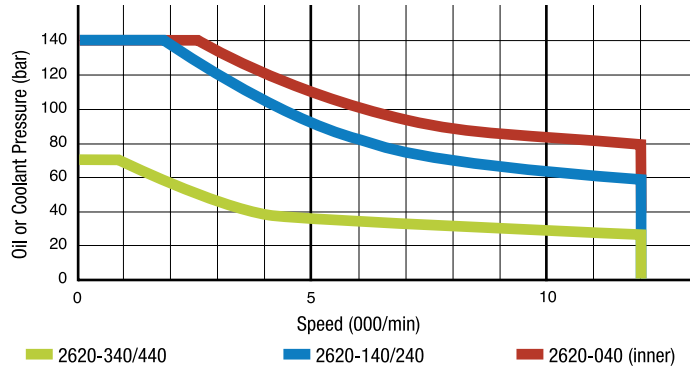
2620 Series 2-Passage Rotating Unions for Various Media



- Two independent passages for applications such as clamping and unclamping, work piece sensing, and cooling
- Balanced mechanical seals for each passage provide long life and reduced torque even at maximum pressure
- Closed seals provide continuous containment of media
- Dual precision ball bearings for smooth operation
- Labyrinth protection for ball bearings
- Mountings options are compatible with DEUBLIN 2520 or 1579 series unions

Operating Data

| | | |
|---------------------|---|------------------------|
| Media | See table | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | |
| Maximum Speed | 12,000 min ⁻¹ 12,000 rpm | |
| Maximum Pressure | See table | |
| Maximum Flow | 69 l/min | 18.2 gpm (per passage) |
| Maximum Temperature | 71°C | 160°F |



| With Ø 108 mm flanged rotor | | With Ø 88 mm flanged rotor | | With Ø 81 mm flanged rotor | | Inner Passage | | Outer Passage | | Notes |
|-----------------------------|-------------------------|----------------------------|--------------------|----------------------------|--------------------|----------------|---------------------|----------------|---------------------|--|
| Ordering Number | Supply Connections | Ordering Number | Supply Connections | Ordering Number | Supply Connections | Media | Max. Pressure [bar] | Media | Max. Pressure [bar] | |
| | Inner and outer Passage | | Inner Passage | | Outer Passage | | | | | Inner and outer Passage |
| 2620-040-252 | 1/4 NPT | 2620-042-940 | G 1/4" G 1/4" | 2620-040-157 | 1/4 NPT | Hydraulic Oil | 140 | Hydraulic Oil | 70 | |
| 2620-140-252 | 1/4 NPT | 2620-142-940 | G 3/8" G 1/8" | 2620-140-157 | 1/4 NPT | Hydraulic Oil | 140 | Compressed Air | 6 | Compressed air seals may be lubricated through oil cup or by using oiled compressed air. |
| 2620-160-252 | 1/4 NPT | 2620-162-940 | G 3/8" G 1/8" | 2620-160-157 | 1/4 NPT | Hydraulic Oil | 140 | Compressed Air | 10 | |
| 2620-240-252 | 1/4 NPT | 2620-242-940 | G 3/8" G 1/8" | 2620-240-157 | 1/4 NPT | Coolant | 140 | Compressed Air | 6 | |
| 2620-260-252 | 1/4 NPT | 2620-262-940 | G 3/8" G 1/8" | 2620-260-157 | 1/4 NPT | Coolant | 140 | Compressed Air | 10 | |
| 2620-340-252 | 1/4 NPT | 2620-342-940 | G 1/4" G 1/4" | 2620-340-157 | 1/4 NPT | Compressed Air | 6 | Hydraulic Oil | 70 | Compressed air seals require no external lubrication. |
| 2620-360-252 | 1/4 NPT | 2620-362-940 | G 1/4" G 1/4" | 2620-360-157 | 1/4 NPT | Compressed Air | 10 | Hydraulic Oil | 70 | |
| 2620-440-252 | 1/4 NPT | 2620-442-940 | G 1/4" G 1/4" | 2620-440-157 | 1/4 NPT | Compressed Air | 6 | Coolant | 70 | |
| 2620-460-252 | 1/4 NPT | 2620-462-940 | G 1/4" G 1/4" | 2620-460-157 | 1/4 NPT | Compressed Air | 10 | Coolant | 70 | |

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com



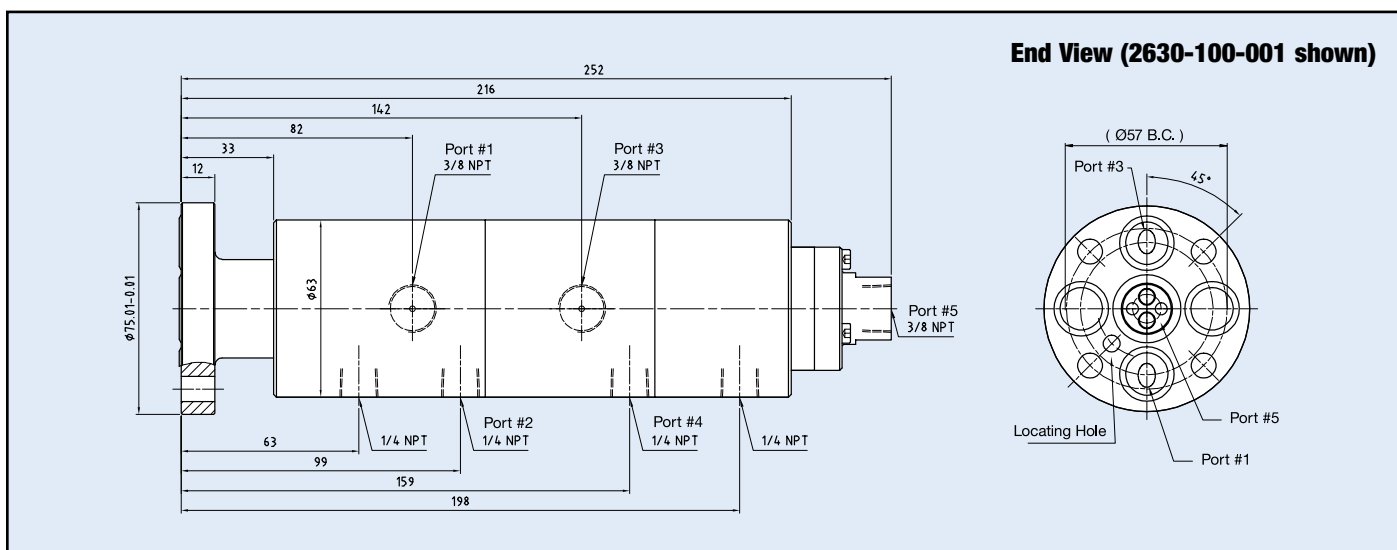
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2630/2640/2650 Series 3 to 5-Passage Rotating Unions for Various Media

- Three to five independent passages for applications such as clamping and unclamping, work piece or tool sensing, and spindle cooling
- Balanced mechanical seals in all passages for low torque and long life even with high speeds and pressures
- Closed seals provide continuous containment of media
- No external lubrication of air seals is required
- Dual precision ball bearings for smooth operation
- Labyrinth protection for ball bearings

Operating Data

| | | |
|--------------------------|---|------------|
| Media | See table | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | |
| Maximum Speed | 10,000 min ⁻¹ | 10,000 rpm |
| Maximum Pressure | | |
| Coolant or oil | 140 bar | 2,030 psi |
| Air | 10 bar | 145 psi |
| Maximum Flow Per Passage | | |
| 2630 Series | 39 l/min | 10.2 gpm |
| 2640 Series | 17 l/min | 4.5 gpm |
| 2650 Series | 17 l/min | 4.5gpm |
| Maximum Temperature | 71°C | 160°F |



End View (2630-100-001 shown)

| Number of Passages | Ordering Number | Port #1 | Port #2 | Port #3 | Port #4 | Port #5 |
|--------------------|-----------------|--------------------------|---------|--------------------------|---------|--------------------------|
| 3 | 2630-000-001 | Hydraulic or Cooling Oil | Drain | Water | Drain | Coolant / MQL / Dry Air* |
| | 2630-100-001 | Hydraulic or Cooling Oil | Drain | Hydraulic or Cooling Oil | Drain | Coolant / MQL / Dry Air* |
| | 2630-200-001 | Hydraulic or Cooling Oil | Air** | Coolant | Drain | NA |
| | 2630-300-001 | NA | Air** | Coolant | Air** | NA |
| | 2630-400-001 | NA | Air** | Coolant | Drain | Coolant / MQL / Dry Air* |
| 4 | 2630-500-001 | Hydraulic or Cooling Oil | Drain | Hydraulic or Cooling Oil | Drain | Hydraulic or Cooling Oil |
| | 2640-000-001 | Hydraulic or Cooling Oil | Air** | Coolant | Drain | Coolant / MQL / Dry Air* |
| | 2640-100-001 | Hydraulic or Cooling Oil | Air** | Hydraulic or Cooling Oil | Drain | Coolant / MQL / Dry Air* |
| | 2640-200-001 | Hydraulic or Cooling Oil | Air** | Hydraulic or Cooling Oil | Drain | Hydraulic or Cooling Oil |
| | 2640-400-001 | Hydraulic or Cooling Oil | Air** | Hydraulic or Cooling Oil | Air** | NA |
| 5 | 2640-600-001 | Air** | Air** | Air** | Drain | Coolant / MQL / Dry Air* |
| | 2650-000-001 | Hydraulic or Cooling Oil | Air** | Coolant | Air** | Hydraulic or Cooling Oil |
| | 2650-100-001 | Hydraulic or Cooling Oil | Air** | Hydraulic or Cooling Oil | Air** | Air** |

* This passage features AutoSense™ technology. With dry air, it operates with controlled leakage with MQL and coolant, it operates with closed seals.

** This passage operates with closed seals, appropriate for tool or work piece sensing applications.

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com



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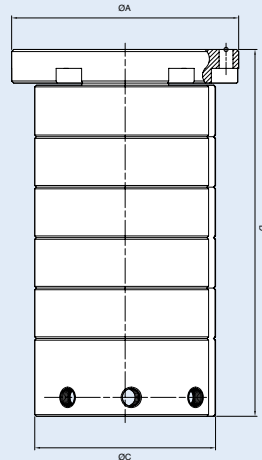
Multi-Channel High Speed Unions (1000+ RPM) for DDRT Applications Requiring Various Media

- 3-8 Passages for Various Media
- Applications include clamping and unclamping, work piece or tool sensing, air cleaning, and spindle cooling
- Minimized axial length
- No external lubrication required for air seals
- Balanced mechanical seals in all passages for low torque and long life even with high speeds and pressures
- Closed seals provide continuous containment of media with no by-pass leakage
- Dual precision ball bearings for smooth operation

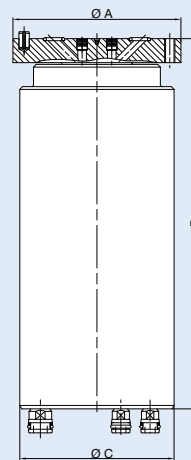
Operating Data

| | | |
|---------------------|---|-----------|
| Media | Hydraulic Oil | |
| | Cooling Oil | |
| | Air up to 10 bar (145 psi) | |
| | Coolant | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | |
| Maximum Speed | See Chart | See Chart |
| Maximum Pressure | | |
| Coolant or oil | Up to 140 bar | 2,030 psi |
| Air | Up to 10 bar | 150 psi |
| Maximum Temperature | 71°C | 160°F |

**Rotor-mounted Radial Connection
Connection 1**



**Rotor-mounted Axial Connection
Connection 2**



| Number of Passages | Connection | Ordering Number | Max Speed | Media Channels | D Overall Length | C Housing Diameter | A Flange Diameter |
|--------------------|------------|-----------------|-----------|--|------------------|--------------------|-------------------|
| 3 | 1 | 2603-140-108 | 7000 | 2x Oil, 1x Air | 140 | 68 | 108 |
| 3 | 1 | 2603-145-108 | 7000 | 2x Oil, 1x Air | 140 | 68 | 108 |
| 3 | 1 | 2603-141-108 | 3000 | 3x Air | 140 | 68 | 108 |
| 4 | 1 | 2604-001-108 | 3000 | 2x Oil, 2x Air | 164 | 86 | 108 |
| 4 | 1 | 2604-101-108 | 3000 | 3x Hydraulic, 1x Air | 164 | 86 | 108 |
| 6 | 1 | 2606-100-101 | 3000 | 2x Cooling Oil, 2x Hydraulic Oil, 2x Air | 205 | 86 | 100 |
| 6 | 2 | 2606-200-101 | 3000 | 2x Cooling Oil, 2x Hydraulic Oil, 2x Air | 215 | 86 | 100 |
| 6 | 1 | 2606-075-102 | 3000 | 2x Cooling Oil, 2x Hydraulic Oil, 2x Air | 163 | 75 | 75 |
| 8 | 1 | 2608-158-103 | 2000 | 2x Cooling Oil, 3x Hydraulic Oil, 3x Air | 252 | 115 | 168 |
| 8 | 1 | 2608-159-103 | 2000 | 2x Cooling Oil, 4x Hydraulic Oil, 2x Air | 252 | 115 | 168 |

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com

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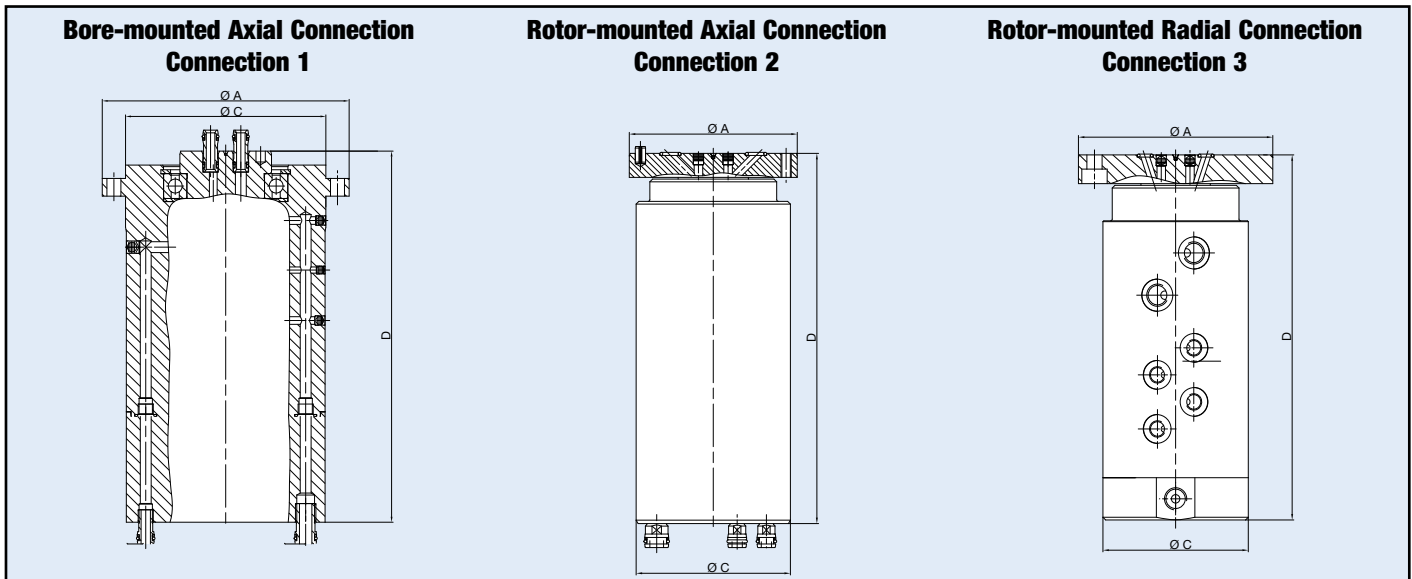
Hybrid-Multi-Passage Series up to 10-Passages for various Media

- Independent channels for various applications, e.g. clamping/ unclamping, tool clamping, cooling and work piece sensing
- Combination of various sealing technologies for compact design, high pressures for hydraulic and coolant applications and high flow
- Special balanced sealing technologies for low temperatures and long life
- Various installation options for easy and fast installation through media plug-and-socket connection (*DEUBLIN* tubes)



Operating Data

| | | |
|------------------|-------------------------|-----------|
| Max. Speed | see table | |
| Max. Pressure | | |
| Hydraulic | up to 200 bar | 2,900 psi |
| Cooling Water | up to 6 bar | 87 psi |
| Coolant | up to 140 bar | 2,030 psi |
| Air, MQL | up to 10 bar | 145 psi |
| Vacuum | up to 0,07 bar absolute | 1.015 psi |
| Max. Temperature | 71 °C | 160 °F |



| Passages | Connection | Ordering Number | Max. Speed [rpm] | Media | D Overall Length | C Overall Diameter | A Ø Flange |
|----------|------------|-----------------|------------------|--|------------------|--------------------|------------|
| 3 | 3 | SP0301 | 500 | 3x Compressed Air | 128 | 86 | 64 f7 |
| 3 | 1 | SP0562 | 500 | 2x Hydraulic, 1x Compressed Air | 147 | 129 | 159 |
| 4 | 2 | SP0673 | 1,000 | 2x Hydraulic, 2x Cooling Water | 260 | 88 | 85 g6 |
| 4 | 2 | SP0575 | 400 | 2x Hydraulic, 2x Compressed Air | 157 | 90 | 98 g7 |
| 4 | 2 | SP0570 | 1,000 | 4x Hydraulic | 157 | 90 | 98 g7 |
| 4 | 2 | SP0653 | 1,200 | 4x Compressed Air when stationary | 157 | 90 | 98 g7 |
| 4 | 1 | SP0599 | 500 | 2x Hydraulic, 2x Compressed Air | 171 | 129 | 159 |
| 5 | 2 | SP0664 | 2,500 | 3x Hydraulic, 2x Compressed Air | 245 | 110 | 132 g7 |
| 5 | 2 | SP0592 | 250 | 4x Hydraulic, 1x Compressed Air | 190 | 90 | 98 g7 |
| 6 | 3 | SP0591 | 600 | 2x Hydraulic, 4x Compressed Air | 216 | 86 | 115 g6 |
| 7 | 1 | SP0399 | 500 | 5x Hydraulic, 2x Compressed Air | 240 | 129 | 159 |
| 8 | 2 | SP0667 | 800 | 5x Hydraulic, 2x Compressed Air, 1x Vacuum | 280 | 115 | 134 g6 |
| 9 | 2 | SP0669 | 1,000 | 8x Hydraulic, 1x Compressed Air | 332 | 134 | 134 g6 |
| 10 | 2 | MPSS-000037 | 35 | 8x Hydraulic, 2x Compressed Air | 342 | 164 | 94 f8 |

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com

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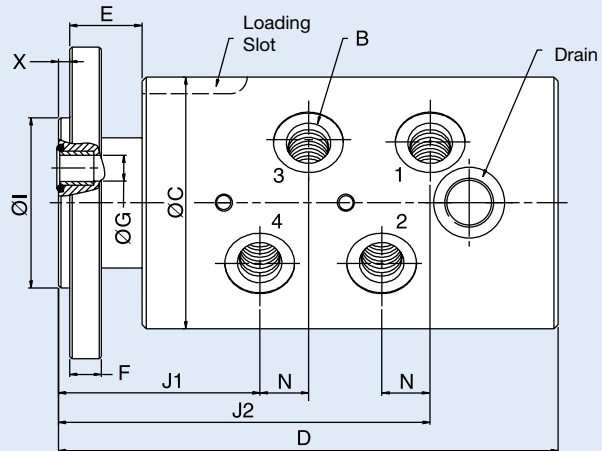
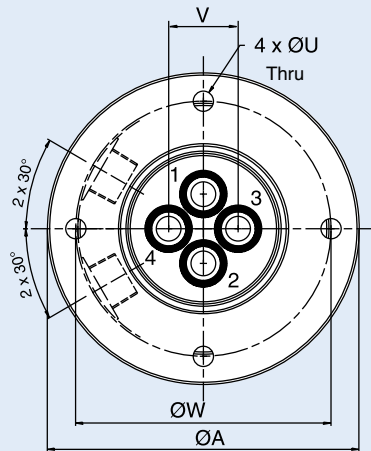
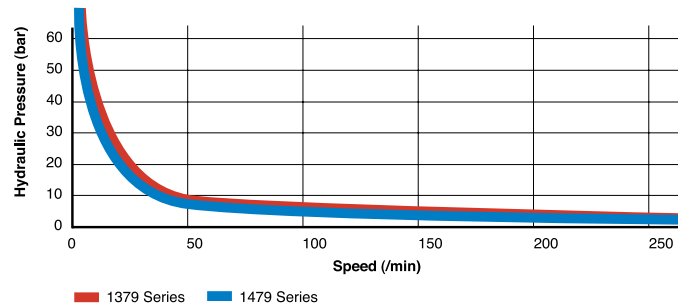
1379 and 1479 Series 4-Passage Rotating Unions for Various Media



- Four independent passages for applications such as clamping and unclamping, work piece or tool sensing, and spindle cooling
- Vent between passages 2 and 3 allows use of two different media without cross contamination. For example, water in passages 1 and 2 and hydraulic oil in passages 3 and 4
- Stainless steel and brass components resist corrosion
- Hardened chrome sealing surface and elastomer-energized seals
- Dual, widely spaced ball bearings absorb large side loads

Operating Data

| | | |
|--------------------------|--|--|
| Media | Hydraulic oil Air (dry or lubricated) | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | |
| Maximum Speed | 250 min ⁻¹ 250 rpm | |
| Maximum Pressure | Hydraulic oil | 60 bar 870 psi (rotating) |
| | | 250 bar 3,625 psi (very slow rotation) |
| | Air | 10 bar 145 psi |
| Maximum Flow Per Passage | 1379 Series | 53 l/min 14 gpm |
| | 1479 Series | 108 l/min 28.5 gpm |
| | Maximum Temperature | 80°C 175°F |



| | Ordering Number | B Supply Connection | A Flange Dia. | C Housing Dia. | D Overall Length | E Rotor Length | F Flange Thickness | G Bore Dia. | I Pilot Dia. | J1 | J2 | N | U | V | W B.C. Ø | X Pilot Length |
|--|-----------------|---------------------|---------------|----------------|------------------|----------------|--------------------|-------------|------------------|----|-----|----|-----|------|----------|----------------|
| | 1379-460 | 3/8" NPT | 110 | 89 | 176 | 25 | 10.5 | 9 | 60.000 59.981 | 72 | 142 | 17 | 7.2 | 24.5 | 90 | 4 |
| | 1379-160 | G 3/8" | 110 | 89 | 176 | 25 | 10.5 | 9 | 60.000 59.981 | 72 | 142 | 17 | 7.2 | 24.5 | 90 | 4 |
| | 1479-400 | 1/2" NPT | 130 | 108 | 202 | 25 | 13.5 | 13 | 75.000 74.981 | 81 | 169 | 23 | 9 | 29 | 110 | 4 |
| | 1479-100 | G 1/2" | 130 | 108 | 202 | 25 | 13.5 | 13 | 75.000 74.981 | 81 | 169 | 23 | 9 | 29 | 110 | 4 |

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com



DEUBLIN

SpindleShield™ Series Unions with Integrated Alert System for Spindle Protection

- Patented SpindleShield system reliably prevents expensive spindle failures by warning machine of leakage due to excessive seal wear
- Rotor mounted, bore mounted, and bearing-less options
- Closed Seal, Pop-Off, and AutoSense sealing options
- Signal can be sent to unused relay on existing I/O board, and unassigned M-code can check status of that relay
- Includes test circuit that can be checked manually or programmed for machine to check automatically

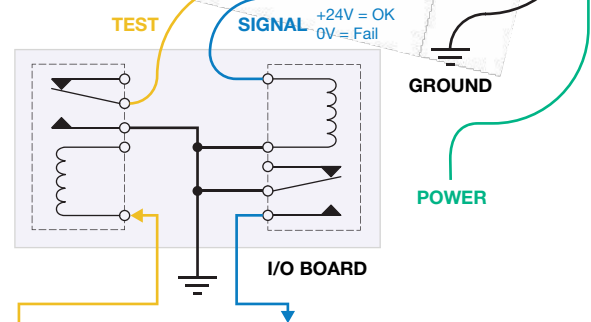
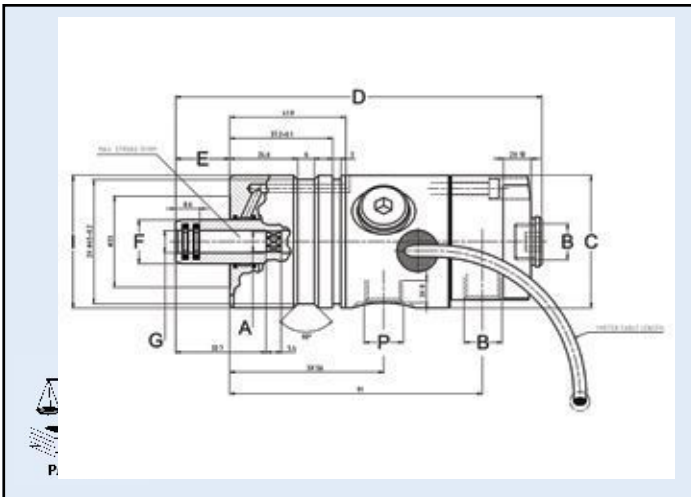
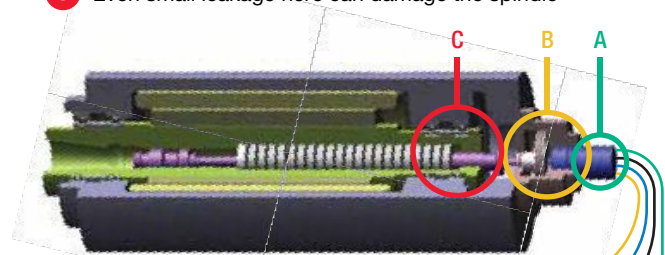
Operating Data

| | | |
|---------------------|---|-----------|
| Media | Water-based Coolant MQL | |
| Filtration | ISO 4406 Class 17/15/12, max. 60 micron | |
| Maximum Speed | See Chart | See Chart |
| Maximum Pressure | 140 bar | 2,030 psi |
| Maximum Flow | 24.3 l/min | |
| Maximum Temperature | 71°C | 160°F |



How it Works

- A** Large or small leakage here is okay, especially with Pop-Off™ or AutoSense™ seals
- B** Small leakage here one time may be okay. Large or repeating leakage will damage the union's bearings
- C** Even small leakage here can damage the spindle



- Self-Test can happen:**
- At machine start-up
 - Monthly
 - Daily
- Program or Macro can:**
- Turn off coolant
 - Stop spindle rotation
 - Call maintenance

| Ordering Number | B Supply Connection | C Overall Diameter | D Housing Length | P Vent Size (3 X 120°) | A Rotor Connection | G Bore Diameter | I Pilot Diameter | Max Speed (rpm) | Seal Technology |
|-----------------|---------------------|--------------------|------------------|------------------------|--------------------|-----------------|------------------|-----------------|-----------------|
| 1103-840-835 | G 1/4" Radial/Axial | 48 | 108 | G 1/4" | Octagon 7.4 D10 | 8.1F9 | 48g6 (housing) | 24,000 | Pop-Off |
| 1113-840-835 | G 1/4" Radial/Axial | 48 | 108 | G 1/4" | Octagon 7.4 D10 | 8.1F9 | 48 g6 (housing) | 24,000 | Closed |
| 1103-820-825 | G 1/4" Radial/Axial | 48 | 108 | G 1/4" | Hexagon 16 D10 | 11H7 | 48 g6 (housing) | 24,000 | Pop-Off |
| 1103-097-212* | G 1/4" Radial | 53 | 142 | G 1/4" | M16 x 1.5 LH | 9 | 17.993 / 19.988 | 20,000 | Pop-Off |
| 1153-003-120* | PT 1/4" Radial | 54 | 78 | Rc 1/8" | M12 x 1.25 LH | 5 | 12.994 / 12.989 | 40,000 | AutoSense |

*Note: Contact Deublin for IC drawing

This series includes additional models. For more information, contact DEUBLIN at +1-847-689-8600 or www.deublin.com

WARRANTY AND OTHER IMPORTANT INFORMATION

Service and Support

Rotating unions are critical to the performance of your machining centers, so *DEUBLIN* products are designed for maximum reliability. *DEUBLIN* service is just as reliable. To provide you with local and emergency service, *DEUBLIN* has a worldwide service network of wholly-owned subsidiaries

and authorized distributors. Whether you need a spare part, new product, technical advice, or help with a design project, *DEUBLIN*'s experienced customer service representatives and application engineers are available to provide immediate assistance.

Warranty

For a period of one year from the date of shipment, *DEUBLIN* warrants that the products sold by it are free from defects in materials and workmanship. The liability of *DEUBLIN* is limited expressly to the replacement or rebuilding of any article, or part thereof, proven defective, when returned to the *DEUBLIN* Company, transportation prepaid, within a reasonable time after termination of the 365-day warranty period.

This warranty is void if the product is dismantled, modified, altered, or damaged from improper maintenance, side loading,

excessive temperature, abrasive or chemical action, or other abuse. No representative, agent, or employee of *DEUBLIN* has any authority to modify the terms of this warranty. *DEUBLIN* will not be responsible for any consequential or resulting damage which may be claimed to have occurred through the sale or use of such products or parts, thereof, which might be defective.

There are no warranties which extend beyond the description contained under this heading, express or implied, including warranties of fitness for a particular purpose.

Important Notice

The *DEUBLIN* Rotating Union is a precision-made piece of equipment and should be handled accordingly. It is a rotating sealing device – not just a plumbing union. Improper use or installation can result in premature leakage or failure. While *DEUBLIN* unions are of the highest quality and precision, they are “wear and tear” items. It is important that they are periodically inspected and, as the seals wear out, replaced or repaired to avoid the consequences of leakage.

DEUBLIN unions never should be used for applications other than as specified in the catalog. *DEUBLIN* unions should not be used to convey flammable media (flash point \leq 140°F or 60°C) as leakage may result in explosions or fires. *Deublin* unions should be used in accordance with standard safety guidelines for the media, and in a well-ventilated area. The use of our product on hazardous or corrosive media is strictly forbidden.

For applications other than as stated in the catalog, contact *DEUBLIN*'s Engineering Department for recommendations.

These instructions are provided as general guidelines. They do not contain exhaustive information about the installation, use or maintenance of unions. Purchasers and users of *DEUBLIN* unions should be certain that they have reviewed *DEUBLIN*'s catalog and have sufficient experience and training in the use of unions before attempting installation or use of *DEUBLIN* products. The principal responsibility for the safe and effective use of *DEUBLIN* unions rests with the user and its employees. *DEUBLIN* will provide, upon request, whatever assistance it can to advise users about the use of its products and about any difficulties or problems which are brought to its attention.

Factory Testing

All *DEUBLIN* Rotating Unions are factory-tested under pressure prior to shipment. This thorough check ensures that each *DEUBLIN* union performs as intended. *DEUBLIN* Rotating Unions can be installed with the confidence that they will operate to your complete satisfaction.

GETTING TECHNICAL OR DESIGN ASSISTANCE FROM DEUBLIN

Since 1945, *DEUBLIN* has grown from a small garage shop to the world's largest manufacturer of rotating unions. Today, *DEUBLIN*'s international headquarters is located in Waukegan, Illinois, with manufacturing facilities and sales offices located in 17 countries on four continents. *DEUBLIN*'s state-of-the-art manufacturing facilities feature the latest technologies, including multi-axis CNC, robotics, single point threading, and cylindrical grinding.

Advanced machining techniques and proprietary processes allow *DEUBLIN* to achieve the most precise tolerances in the industry and to ensure superior performance and union life. Our worldwide distribution network allows machine operators all over the world to specify *DEUBLIN* unions when purchasing equipment made in another country. We are manufacturers ourselves, so we understand the importance of fast response time to keep your manufacturing process rolling. Wherever you are located, *DEUBLIN* has a stocking distributor nearby to meet your requirements – quickly.



DEUBLIN Unions making *DEUBLIN* Unions

This series includes additional models. For more information, contact *DEUBLIN* at +1-847-689-8600 or www.deublin.com

ORDERING CHECK LIST

Because rotating unions must accommodate a broad range of speeds, pressures, and media, the *DEUBLIN* product line includes thousands of standard models. But sometimes even this extensive selection may not meet your specialized needs. That's why we manufacture an ever-growing line of custom unions to meet the particular requirements of world-leading manufacturers. In many situations, we can adapt an existing union design in order to offer a cost-effective solution that meets your exact specifications.



DEUBLIN 2-passage Unions on CNC Turning Center

When you contact us, we will ask a number of questions to make sure that we completely understand your application. These questions may include:

| | |
|-----------------------------|---|
| Machine Type | <input type="checkbox"/> CNC Machining Center <input type="checkbox"/> Gun Drilling <input type="checkbox"/> Transfer Line or Flex Line <input type="checkbox"/> Turning Machine <input type="checkbox"/> Grinding <input type="checkbox"/> Multiple Spindle Head <input type="checkbox"/> Other _____ |
| Orientation | <input type="checkbox"/> Horizontal <input type="checkbox"/> Vertical <input type="checkbox"/> Multi-axis: Vertical + _____ ° and – _____ ° |
| Union Location | <input type="checkbox"/> Spindle <input type="checkbox"/> Motor Spindle <input type="checkbox"/> Indexing Table or Pallet <input type="checkbox"/> Other: _____ |
| Available Space | Maximum overall length = _____ mm Maximum diameter = _____ mm (Please attach drawings or photographs of the area where the union will be installed.) |
| Mounting | Bearing-supported: <input type="checkbox"/> Rotor-mounted <input type="checkbox"/> Bore-mounted Bearingless: <input type="checkbox"/> Outboard mounting <input type="checkbox"/> Inboard mounting <input type="checkbox"/> Around the shaft (shaft diameter = _____ mm) <input type="checkbox"/> Other: _____ |
| Rotor Style | <input type="checkbox"/> Threaded (pitch and diameter = _____) <input type="checkbox"/> Flanged (diameter = _____) <input type="checkbox"/> Other: _____ |
| Media | <input type="checkbox"/> Water-based coolant <input type="checkbox"/> Cutting oil <input type="checkbox"/> Hydraulic oil <input type="checkbox"/> Air-oil mist <input type="checkbox"/> Lubricated air <input type="checkbox"/> Dry air <input type="checkbox"/> Other: _____ |
| Operating Conditions | <input type="checkbox"/> Maximum pressure _____ bar (when rotating) _____ bar (when stopped) <input type="checkbox"/> Maximum speed _____ rpm <input type="checkbox"/> Maximum flow _____ liters per minute <input type="checkbox"/> Maximum temperature _____ °C |

**The better we understand your requirements,
the faster and more accurately we can respond.**

WARNING DEUBLIN unions should not be used to convey flammable media (flash point \leq 140°F or 60°C) as leakage may result in explosions or fires. DEUBLIN unions should be used in accordance with standard safety guidelines for the media, and in a well-ventilated area. The use of our product on hazardous or corrosive media is strictly forbidden.



Since its establishment in 1945, Deublin has consistently adhered to a policy of producing the best product of its kind in the market. The result of this policy has been constant growth through the years. For this progress we are grateful to our many loyal customers. We cordially invite you to visit our modern manufacturing facilities in Waukegan, Illinois; Mainz, Germany; Monteveglio, Italy; and Dalian, China.

Sincerely,

Donald L. Deubler
Chairman of the Board



Global Headquarters in Waukegan, Illinois, U.S.A.



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Monteveglio, Italy



Dalian, China



Deublin products & services are available throughout the world.

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