



High Volume, Corrosion Resistant Rotary Unions

HVH Series

FLOW PASSAGE OPTIONS

4

6

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About DSTI

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

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



DID YOU KNOW?

DSTI Exports Products to Over 60 Countries.

What is a Rotary Union?

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

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

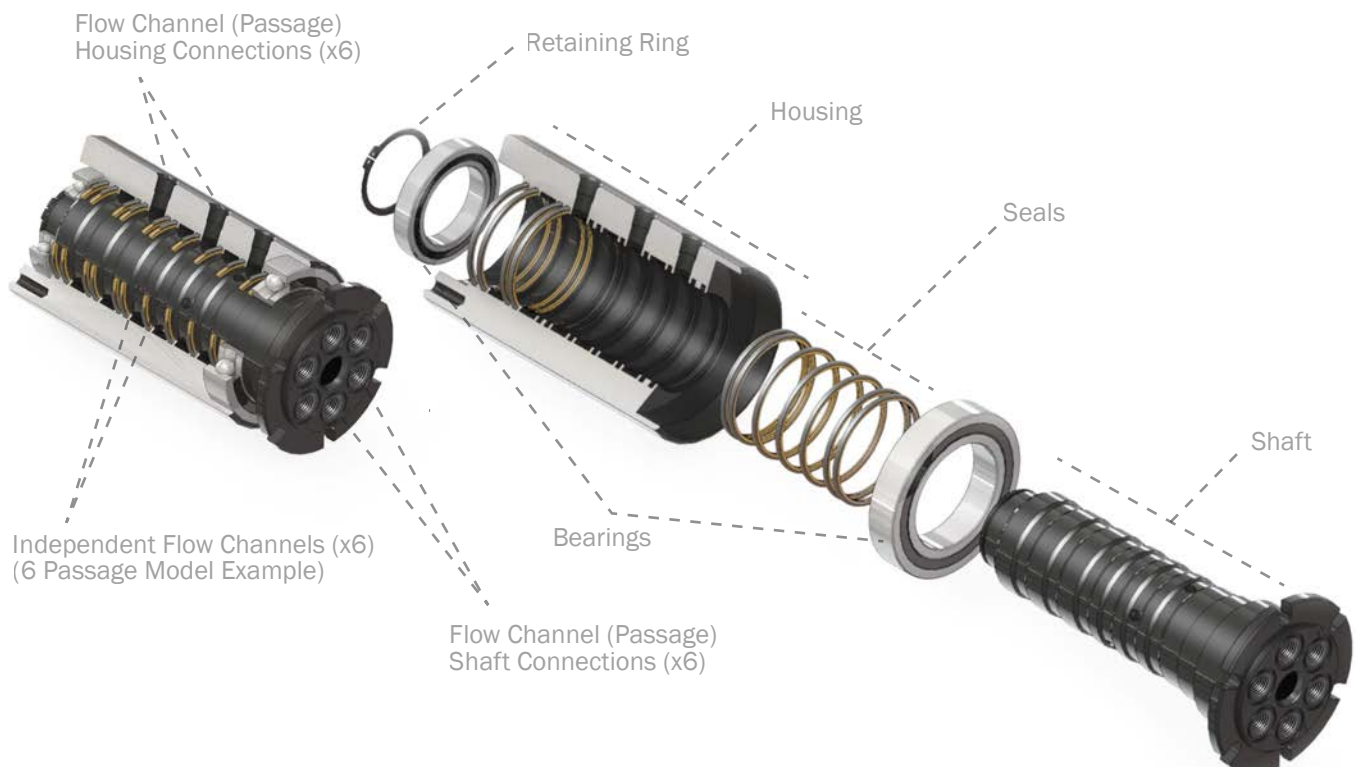
See examples at www.dsti.com/industries

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

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

- 1) Type of media(s) / fluid(s) to be transferred
- 2) Number of independent flow channels (passages)
- 3) Operating pressure
- 4) Operating temperature
- 5) Operating speed
- 6) Shaft & housing connection type
- 7) Flow channel (passage) size
- 8) Torque & load requirements
- 9) Duty cycle*

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



Overview

- + Suitable For Vacuum & Bidirectional Pressures Up To 5,000 PSI
- + Large Flow Passages & Increased Flow Volume
- + Heavy-Duty Alloy Steel/Ductile Iron Construction
- + Corrosion Resistant Black Oxide Surface Treatment
- + Electrical Slip Ring Options Available
- + Aluminum Slip Ring Cover Option To Protect Capsule Slip Ring In Harsh Environments
- + Nylon Cord Grip Standard When Using Slip Rings

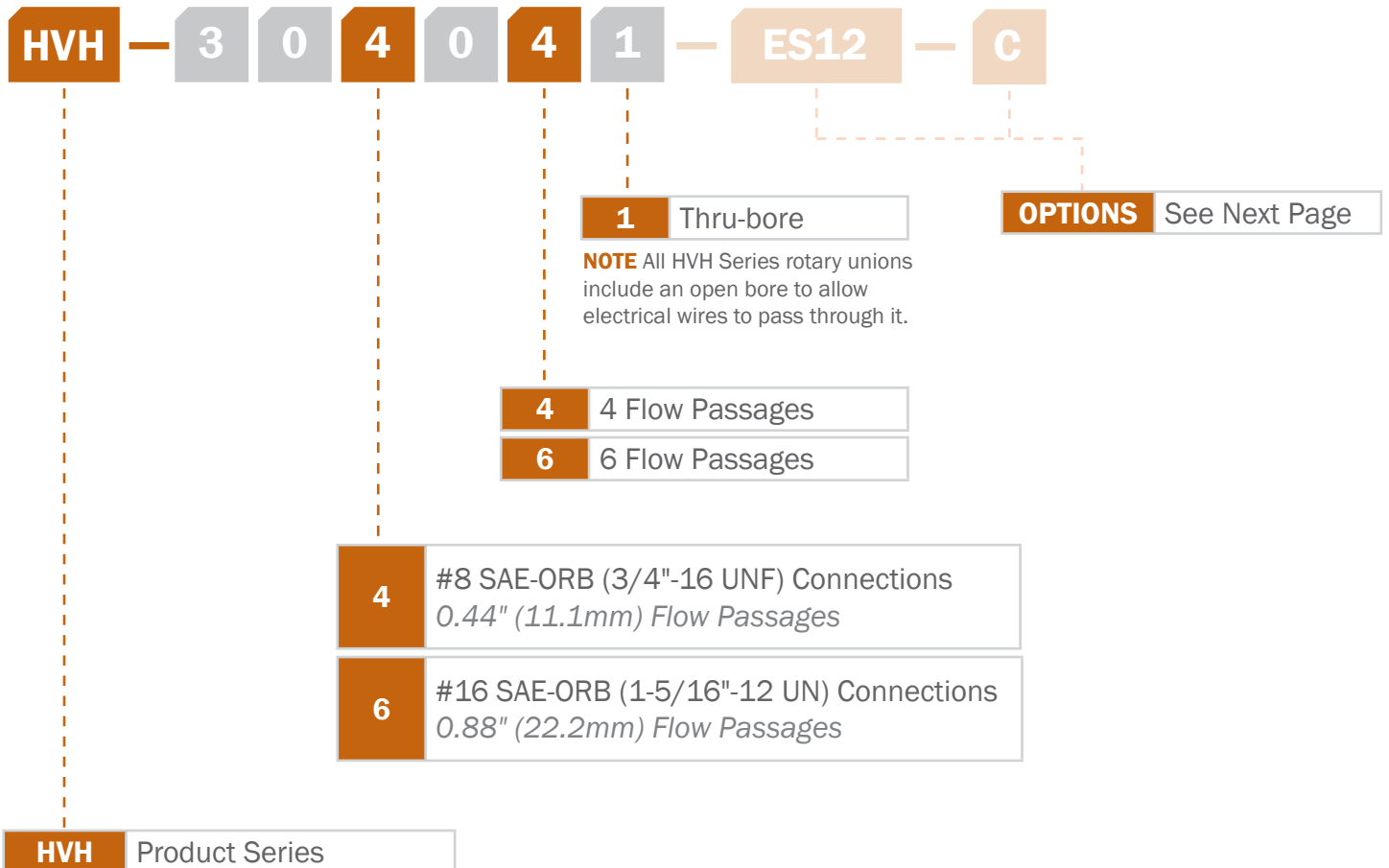


The HVH Series multiple-passage rotary unions are available in 4 and 6 flow passages. Designed for applications requiring high flow volume at low rotational speeds, the HVH Series has large diameter flow passages suitable for vacuum & bidirectional pressures up to 5,000 PSI [345 BAR].

Its heavy-duty construction features an alloy steel shaft and ductile iron housing with a black oxide coating for mild corrosion resistance, making the HVH Series an ideal solution for tough, outdoor environments.

All models come standard with female tapped SAE-ORB connections on the face of the shaft and the side of the housing. To mount the HVH Series we have included tapped holes on the ends of the shaft and housing.

How to Order: Create your Part Number



PART NUMBER CONFIGURATIONS

HVH-304041

- 4-Passage with #8 SAE-ORB (3/4"-16 UNF) Connections

HVH-306041

- 4-Passage with #16 SAE-ORB (1-5/16"-12 UN) Connections

HVH-304061

- 6-Passage with #8 SAE-ORB (3/4"-16 UNF) Connections

HVH-306061

- 6-Passage with #16 SAE-ORB (1-5/16"-12 UN) Connections



How to Order: Choose your Options

HVH — **3** **0** **4** **0** **4** **1** — **ES12** — **C**

OPTIONAL ELECTRICAL SLIP RINGS¹

ESx	6 - 56 Circuits 240 Volts
ESEx	8 - 51 Circuits 240 Volts Ethernet
ESMx	9 - 52 Circuits 240 Volts
ESTx	6 - 24 Circuits 600 Volts
ESETx	4 - 22 Circuits 240, 600 Volts ² Ethernet

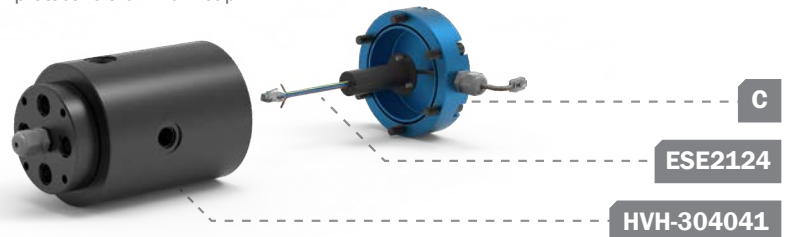
C

Optional Cap For Capsule Slip Rings (ES, ESE and ESM)

HVH + CAPSULE SLIP RING EXAMPLE

HVH-304041-ESE2124-C

- HVH 4-Passage model with thru-bore, #8 SAE-ORB connections and an ESE2124 ethernet slip ring plus optional protective aluminum cap



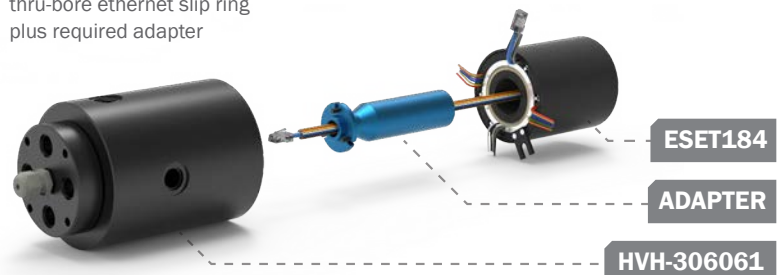
¹ See Electrical Slip Ring Options on page 10 for full specs

² 600V max on 16 AWG power circuits, 240v maximum on Ethernet cable.

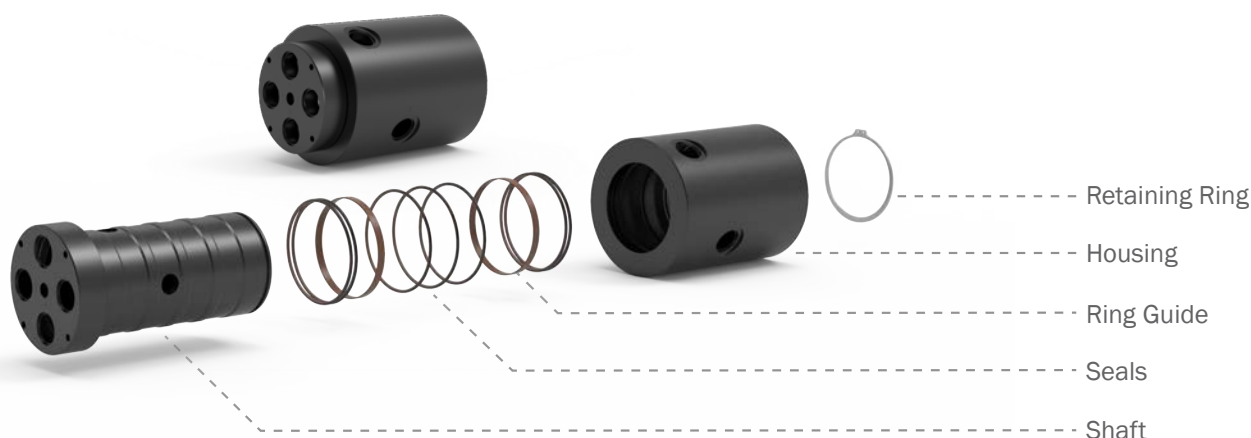
HVH + THRU-BORE SLIP RING EXAMPLE

HVH-306061-ESET184

- HVH 6-Passage with thru-bore, #16 SAE-ORB connections and an ESET184 thru-bore ethernet slip ring plus required adapter



Specifications & Operating Information



Flow Passage Options	4	6
Media Types	Air/Gas, Oil/Hydraulic ³	
Connection Size	#8 SAE-ORB (3/4"-16 UNF), #16 SAE-ORB (1-5/16"-12 UN)	
Passage Size	0.44" (11.1mm), 0.88" (22.2mm)	
Max. Operating Pressure	5,000 PSI (345 BAR) ¹	
Max. Vacuum	30 HG	
Max. Rotational Speed	20 RPM ¹	
Operating Temperature	0° F to 220° F (-18° C to 105° C) ²	
Body Material Type	Alloy Steel, Ductile Iron	
Platings and Coatings	Black Oxide	
Slip Ring Options	Full line of standard electrical slip rings and custom options available. See page 10	
Mounting Options	Tapped holes on the ends of the shaft and housing ⁴	

¹ Values are dependent on a combination of all application parameters. Please consult with DSTI.

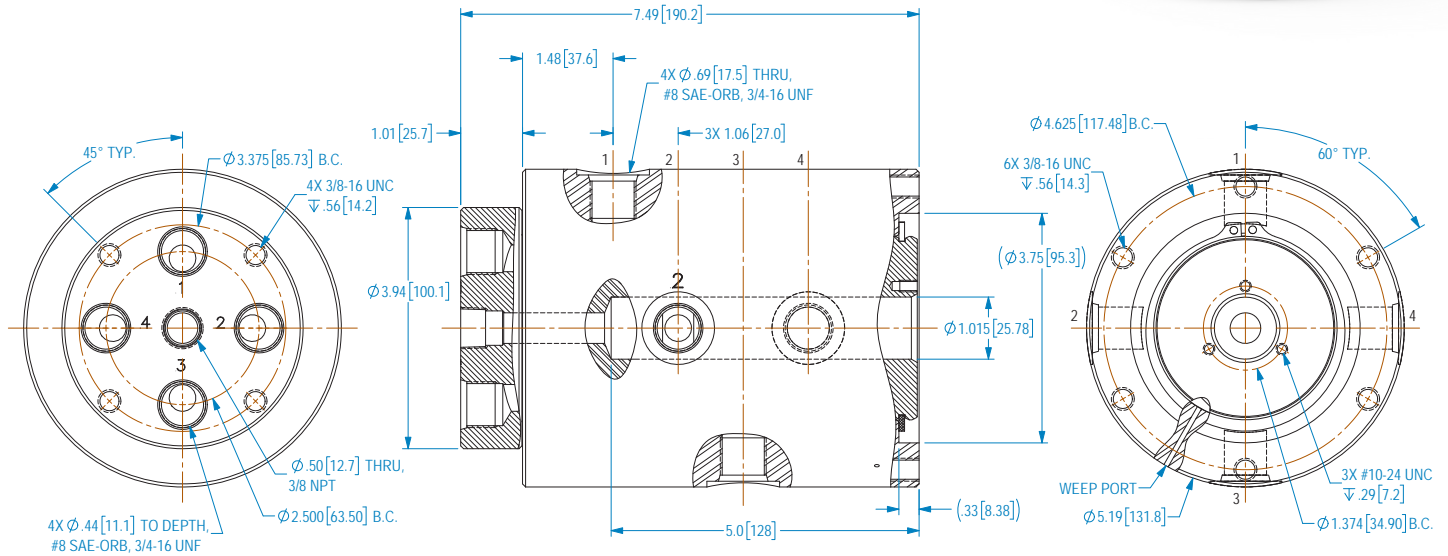
² High temperature applications may require alternative seal materials. Please consult with DSTI.

³ Oil/Hydraulic media must be petroleum-based.

⁴ The rotary union should not be hard mounted on both shaft and housing as misalignment will cause damage.

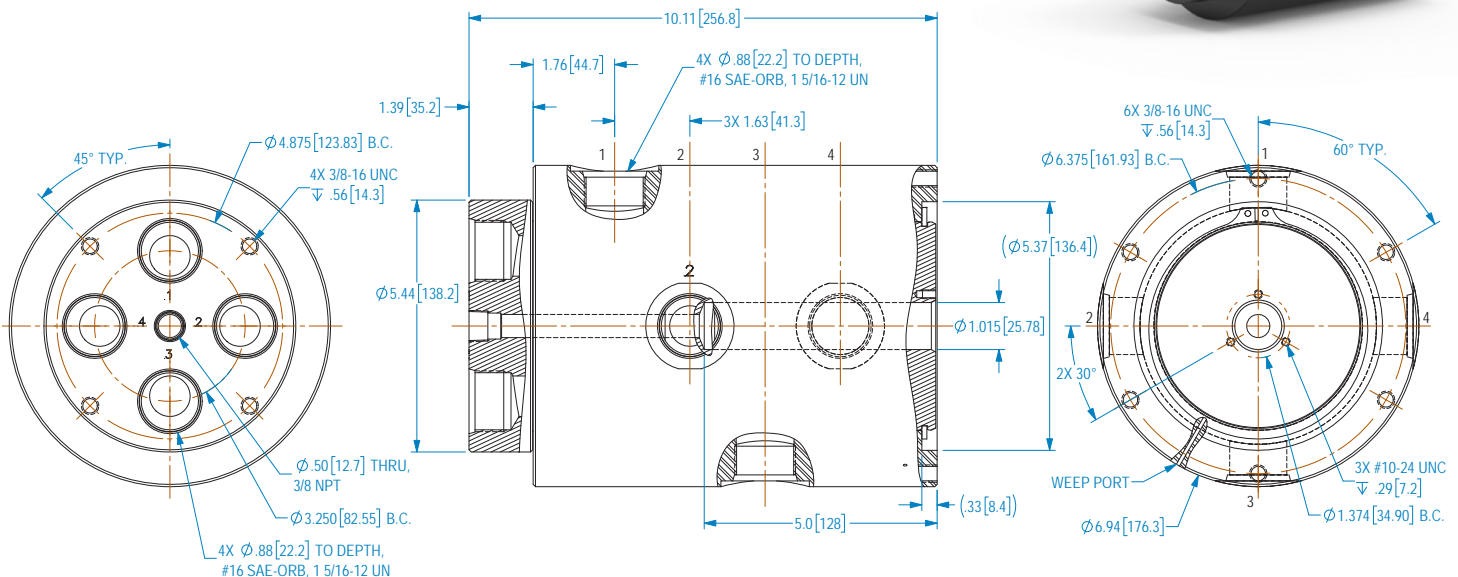
HVH-304041

(4) #8 SAE-ORB (3/4"-16 UNF) Connections



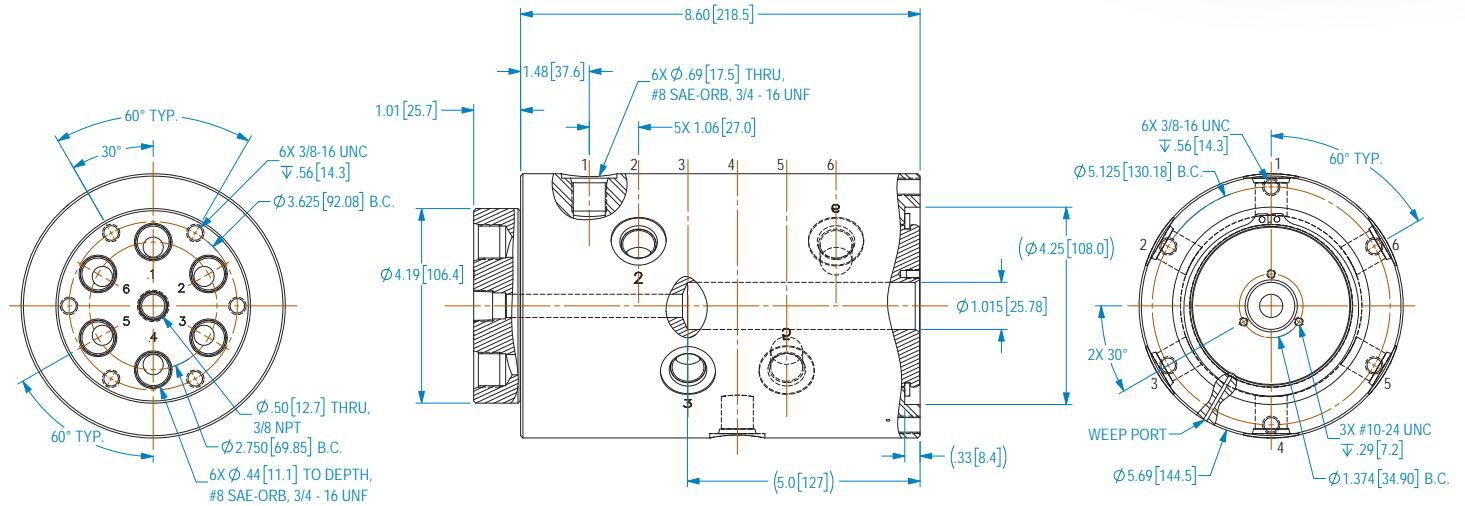
HVH-306041

(4) #16 SAE-ORB (1-5/16"-12 UN) Connections



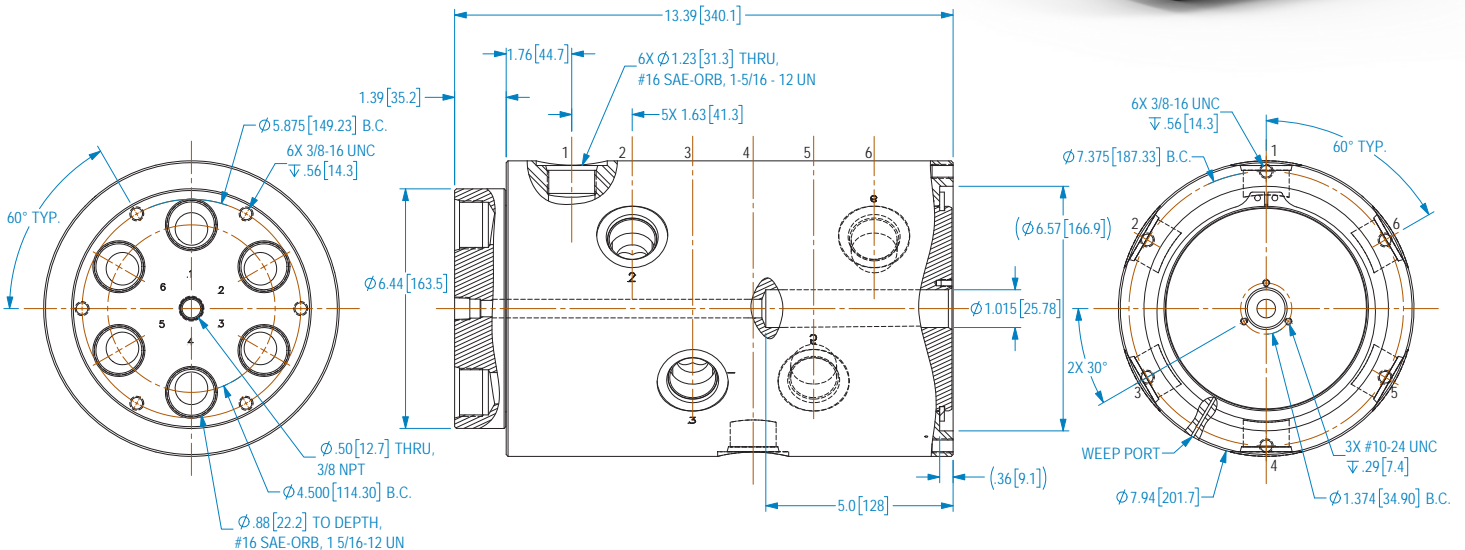
HVH-304061

(6) #8 SAE-ORB (3/4"-16 UNF) Connections



HVH-306061

(6) #16 SAE-ORB (1-5/16"-12 UN) Connections



Electrical Slip Ring Integration Options

- + Ethernet Slip Rings Available
- + 100 BaseT & 1000 BaseT Ethernet Connections
- + High-Quality, Gold-on-Gold Contacts
- + Capsule & Thru-bore Options
- + Low Electrical Noise
- + Analog/Digital Transfer
- + Nylon Cord Grip Comes Standard
- + Compatible With a Range of Data Bus Protocols



AVAILABLE SLIP RINGS¹

PART #	# OF CIRCUITS	MAX AMPS/ CIRCUIT	MAX VOLTS	MAX DATA SPEED
ES6 ⁴	6	2	240	Under 50 Mbps
ES12 ⁴	12	2	240	Under 50 Mbps
ES18 ⁴	18	2	240	Under 50 Mbps
ES24 ⁴	24	2	240	Under 50 Mbps
ES36 ⁴	36	2	240	Under 50 Mbps
ES56 ⁴	56	2	240	Under 50 Mbps
ESE64 ²	10	(6x) 2A	240	100 Mbps
ESE264 ²	12	(2x) 5A, (6x) 2A	240	100 Mbps
ESE224 ²	8	(2x) 10A, (2x) 2A	240	100 Mbps
ESE2124 ²	18	(2x) 5A, (12x) 2A	240	100 Mbps
ESE284 ²	14	(2x) 10A, (8x) 2A	240	100 Mbps
ESE438 ³	51	(43x) 2A	240	1 Gbps
ESE4358 ³	47	(4x) 5A, (35x) 2A	240	1 Gbps
ESE2358 ³	45	(2x) 10A, (35x) 2A	240	1 Gbps
ESE8278 ³	43	(8x) 5A, (27x) 2A	240	1 Gbps
ESE24278 ³	41	(2x) 10A, (4x) 5A, (27x) 2A	240	1 Gbps

PART #	# OF CIRCUITS	MAX AMPS/ CIRCUIT	MAX VOLTS	MAX DATA SPEED
ESM36 ⁴	9	(3x) 10A, (6x) 2A	240	Under 50 Mbps
ESM312 ⁴	15	(3x) 5A, (12x) 2A	240	Under 50 Mbps
ESM420 ⁴	24	(4x) 10A, (20x) 2A	240	Under 50 Mbps
ESM428 ⁴	32	(4x) 5A, (28x) 2A	240	Under 50 Mbps
ESM440 ⁴	44	(4x) 10A, (40x) 2A	240	Under 50 Mbps
ESM448 ⁴	52	(4x) 5A, (48x) 2A	240	Under 50 Mbps
EST6 ⁴	6	10	600	Under 50 Mbps
EST12 ⁴	12	10	600	Under 50 Mbps
EST18 ⁴	18	10	600	Under 50 Mbps
EST24 ⁴	24	10	600	Under 50 Mbps
ESET4 ²	4	Ethernet Only	240	100 Mbps
ESET8 ³	8	Ethernet Only	240	1 Gbps
ESET68 ³	14	(6x) 10A	600 ⁵	1 Gbps
ESET128 ³	20	(12x) 10A	600 ⁵	1 Gbps
ESET184 ²	22	(18x) 10A	600 ⁵	100 Mbps

¹ All slip ring lead wire lengths are 48" (1219mm)

EST / ESET slip rings are 36" (914mm)

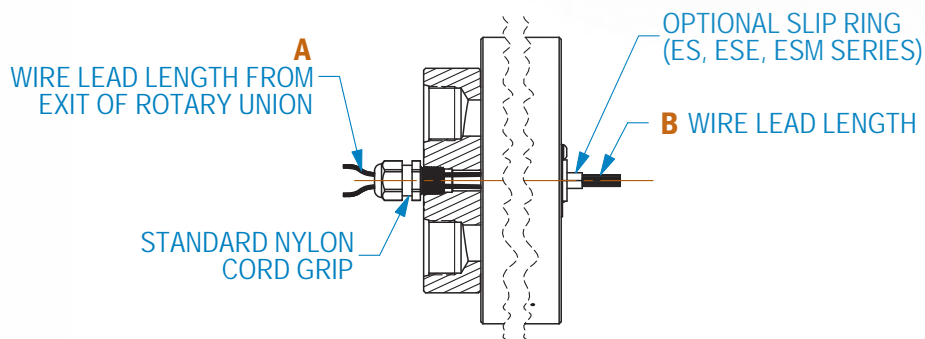
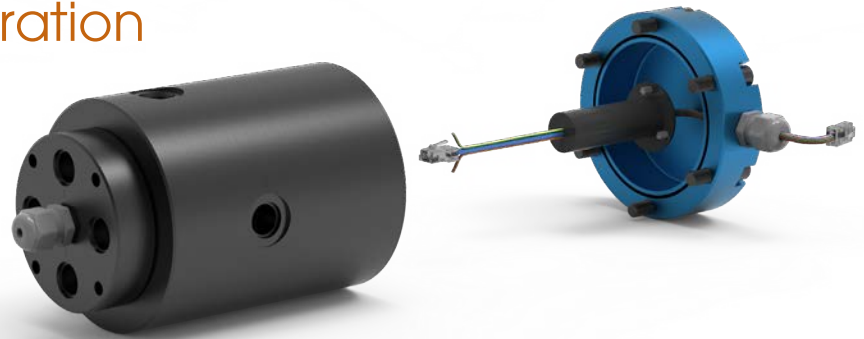
² 100 BaseT Ethernet connections

³ 1000 BaseT Ethernet connections

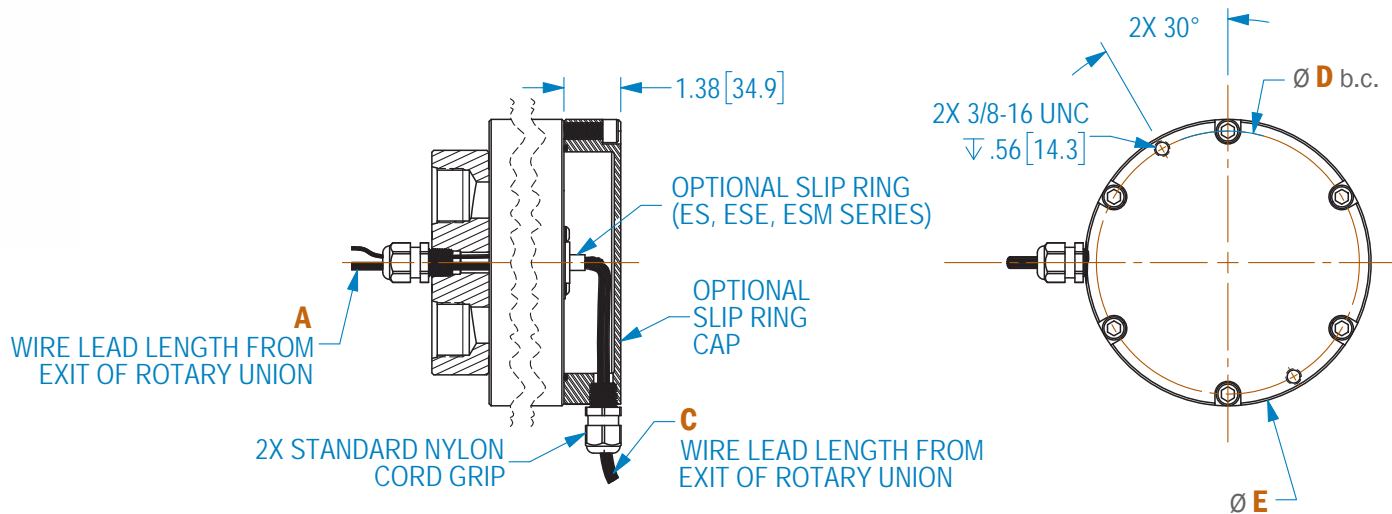
⁴ In order to successfully transfer digital data signals, a variety of conditions must be met. Please consult with DSTI for approval.

⁵ 600V max on 16 AWG power circuits, 240v maximum on Ethernet cable.

Capsule Slip Ring Integration



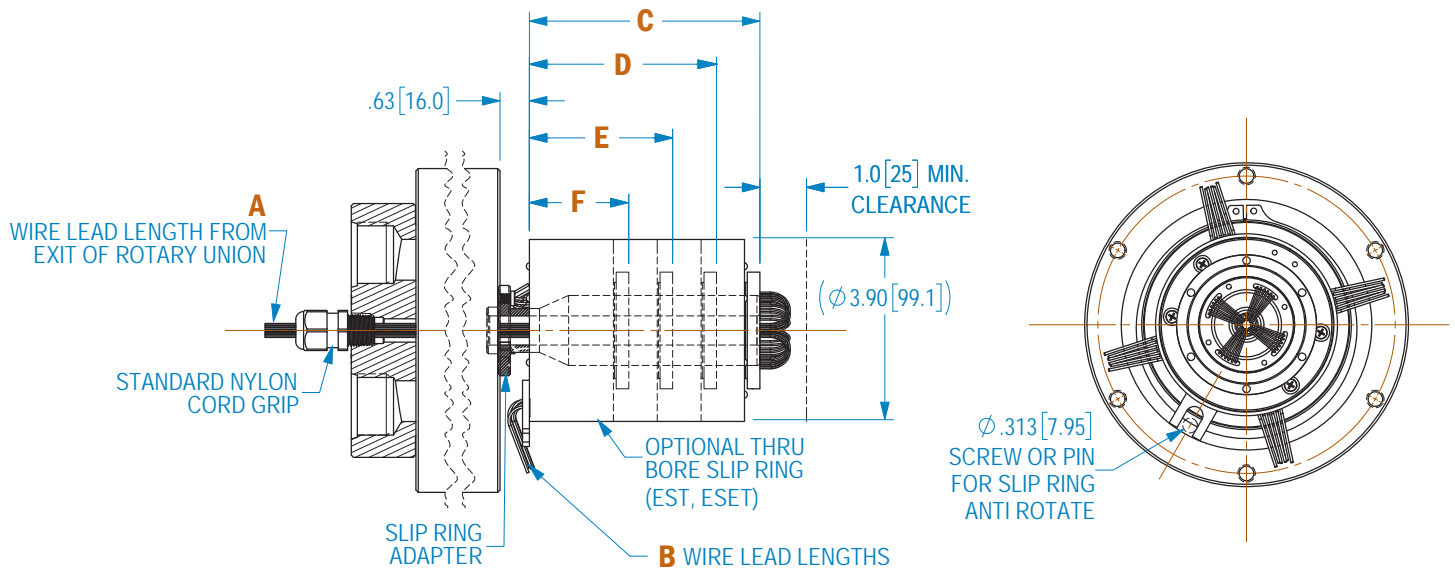
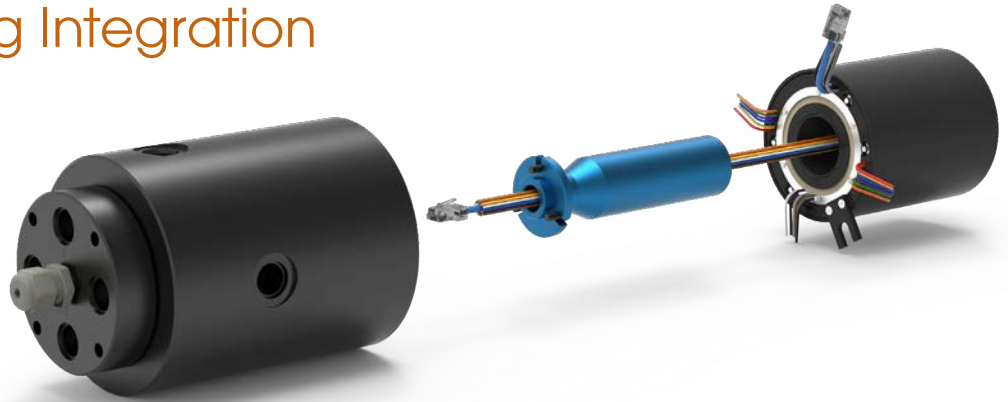
OPTIONAL SLIP RING CAP



Model	A*	B*	C*	D	E
HVH-304041	42" [1067mm]	48" [1219mm]	44" [1118mm]	4.625" [117.48mm]	5.19" [131.8mm]
HVH-306041	39" [991mm]	48" [1219mm]	43" [1092mm]	6.375" [161.93mm]	6.94" [176.3mm]
HVH-304061	40" [1016mm]	48" [1219mm]	44" [1118mm]	5.125" [130.18mm]	5.69" [144.5mm]
HVH-306061	36" [914mm]	48" [1219mm]	42" [1067mm]	7.375" [187.33mm]	7.94" [201.7mm]

* Wire lengths are approximations.

Thru-Bore Slip Ring Integration



Model	A*	B*
HVH-304041	22" [559mm]	36" [914mm]
HVH-306041	17" [432mm]	36" [914mm]
HVH-304061	19" [483mm]	36" [914mm]
HVH-306061	15" [381mm]	36" [914mm]

* Wire lengths are approximations.

C	EST24 / ESET128 / ESET184 4.94" [125.5mm]
D	EST18 / ESET68 4.01" [101.9mm]
E	EST12 / ESET8 3.07" [78.0mm]
F	EST6 / ESET4 2.13" [54.1mm]

Installation & Mounting

PREPARATION:

Remove the rotary union from the shipping container. Inspect the entire assembly, including all passage connections to make sure that they are clean and no visual damage occurred during transport. If the assembly is a rotary union/electrical slip ring, the electrical slip ring may be packaged separately to protect during shipping. If this is the case, mount the electrical slip ring to the rotating union assembly using the supplied hardware.

RECOMMENDED INSTALLATION PRACTICE:

DSTI does not recommend mounting the rotary union with both the shaft & housing components solidly bolted into place. One of the two components should be mounted in a manner that allows for some movement in the event of misalignment or run-out during rotation. Using only the supply lines or hoses to fix the stationary component in place is also not recommended. An anti-rotation arm that attaches to the stationary part of the rotary union assembly and rests against part of the equipment framework is recommended (see figure 1).

MOUNTING A ROTARY UNION W/ AN ELECTRICAL SLIP RING:

Make sure the electrical wiring is fixed in place and protected from contact with other components or equipment. Care should be taken to make sure the slip ring area remains clean and dry during use.

SHAFT MOUNTING, THREADED CONNECTIONS:

Equipment mounting surface needs to be concentric to the center line of the rotary union shaft to assure proper function. Make sure all fittings are properly tightened & pipe thread sealant is used as required.

HOUSING MOUNTING

If using the housing to secure the union into a piece of equipment, bolt the assembly into place using the tapped holes on the back of the housing.

THESE INSTRUCTIONS ARE INTENDED TO BE USED AS A GENERAL GUIDE, PLEASE CONSULT DSTI TO DISCUSS ANY SPECIFIC QUESTIONS RELATED TO YOUR INSTALLATION.

INITIAL START-UP:

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



- ① HVH HOUSING
- ② HVH SHAFT
- ③ ANTI-ROTATE DEVICE EXAMPLE

Warranty

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



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