



DYNAMIC SEALING TECHNOLOGIES, INC



General Purpose Rotary Unions

GP Series

FLOW PASSAGE OPTIONS



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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.

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.

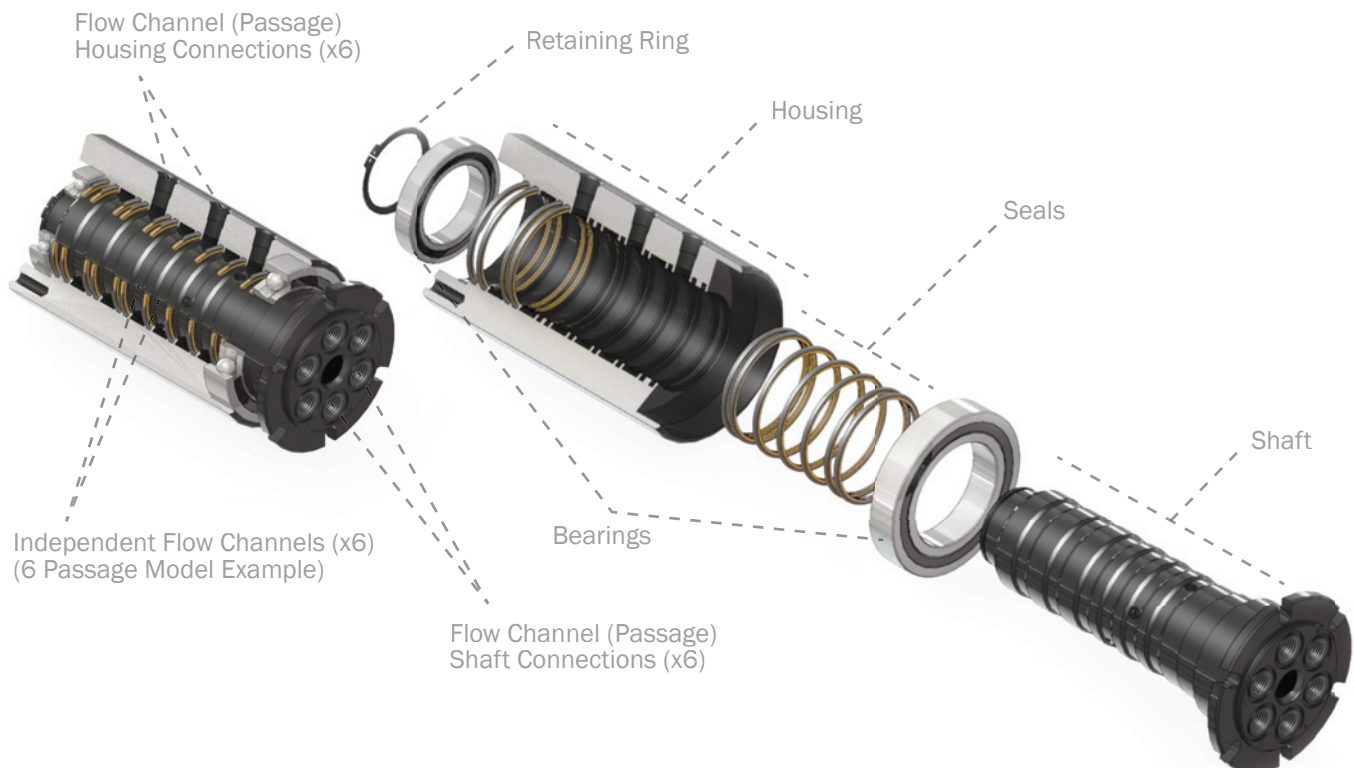
See examples at www.dsti.com/industries

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

- + General Purpose Design
- + NPT / BSPP / O-Ring Connection Options
- + Exclusive DynaSeal™ Seals
- + Electrical Slip Ring Integration
- + Reliable Usage With Dissimilar Medias
- + Custom Modifications Available
- + Available in Stainless Steel (GPS Series)

The GP Series rotary unions are available in 2, 3, 4, 6, 8, 10 and 12 passage models. These general-purpose, multiple-passage rotary unions feature specialized sealing technology suitable for vacuum and bidirectional pressures and independent flow passages capable of transferring different media types simultaneously.

The carbon steel (black oxide) construction is suitable for air/gas, coolant, and hydraulic service. Stainless steel models are available to prevent corrosion for use with applications requiring water or corrosive media transfer (see GPS Series).



GP models with 2, 3, 4, 6 or 8 flow passages come standard with NPT thread shaft connections and O-ring face seal glands for flush mounting the union to an interface. GPM (metric) models with BSPP connections are not available with O-ring face seal glands.

GP models with 10 and 12 flow passages come standard with NPT or BSPP thread connections on the sides of the shaft and housing. Optional O-ring face seal gland connections are available for both NPT and BSPP thread connections on the 10 and 12 flow passage models (must be specified when ordering by adding "OF" (see page 6).

How to Order: Create your Part Number



0	No Thru-bore ¹
1	With Thru-bore ¹

OPTIONS See Next Page

2	2 Flow Passages
3	3 Flow Passages
4	4 Flow Passages
6	6 Flow Passages
8	8 Flow Passages
01-10	10 Flow Passages
01-12	12 Flow Passages

NOTE
Thru-bore standard on all 10 and 12 flow passage models

PART NUMBER EXAMPLES

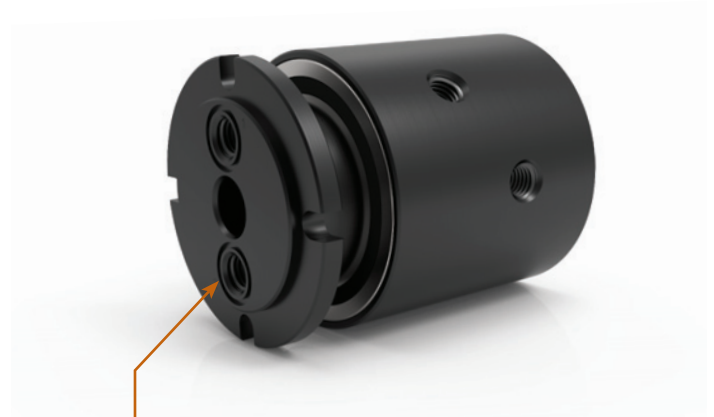
GP-240
■ GP 4-Passage, 1/4" NPT Connections

GPM-301-10
■ GP 10-Passage with thru-bore, 3/8" BSPP Connections

1	1/8" (3.175 mm) Passage Size
2	1/4" (6.350 mm) Passage Size
3	3/8" (9.525 mm) Passage Size
4	1/2" (12.70 mm) Passage Size
5	3/4" (19.05 mm) Passage Size
6	1" (25.40 mm) Passage Size

GP	GP Series (NPT ² Connection)
GPM	GPM (Metric) Series (BSPP ³ Connection)

¹ This digit not used in naming convention of 10 or 12 flow passage models
² NPT with O-ring face seal gland connections
³ O-ring face seal gland connections not available for metric (BSPP) unions with 2 - 8 flow passage models



O-RING FACE SEAL GLAND CONNECTIONS

Standard on all GP 2 - 8 (NPT) models. Not available on GPM 2 - 8 (BSPP) models. If ordering a GP or GPM 10 / 12 passage model and you require an O-ring face seal gland connection, please specify "OF" when naming the part number (see pg 6).

How to Order: Choose your Options



OF Add "OF" for Shaft O-ring Face Seal Option¹

C1 Cover For ES and ESM Series Slip Rings

OPTIONAL ELECTRICAL SLIP RINGS²

ES6A	6 Circuit, 120 Volts
ES12A	12 Circuit, 120 Volts
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 600 Volts Ethernet

NOTE
Only available for GP- and GPM-1x1 models with a thru-bore.

NOTE
Not available for GP- and GPM-1x1 models

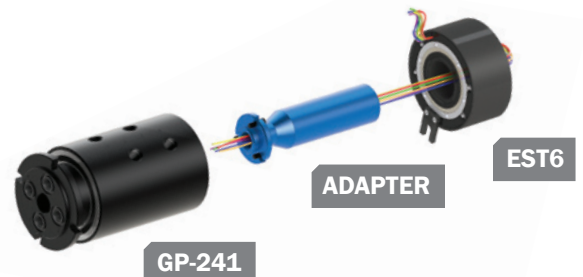
¹ Omit "OF" for all GP models with NPT connections except for GP 10 & 12 passage. Not available on GPM 2 - 8 [BSPP] connection models.

² See Electrical Slip Ring Options on page 23 for full specs

PART NUMBER EXAMPLE

GP-241-EST6

- GP 4-Passage model with thru-bore, 1/4" NPT connections and an EST6 electrical slip ring with required adapter.



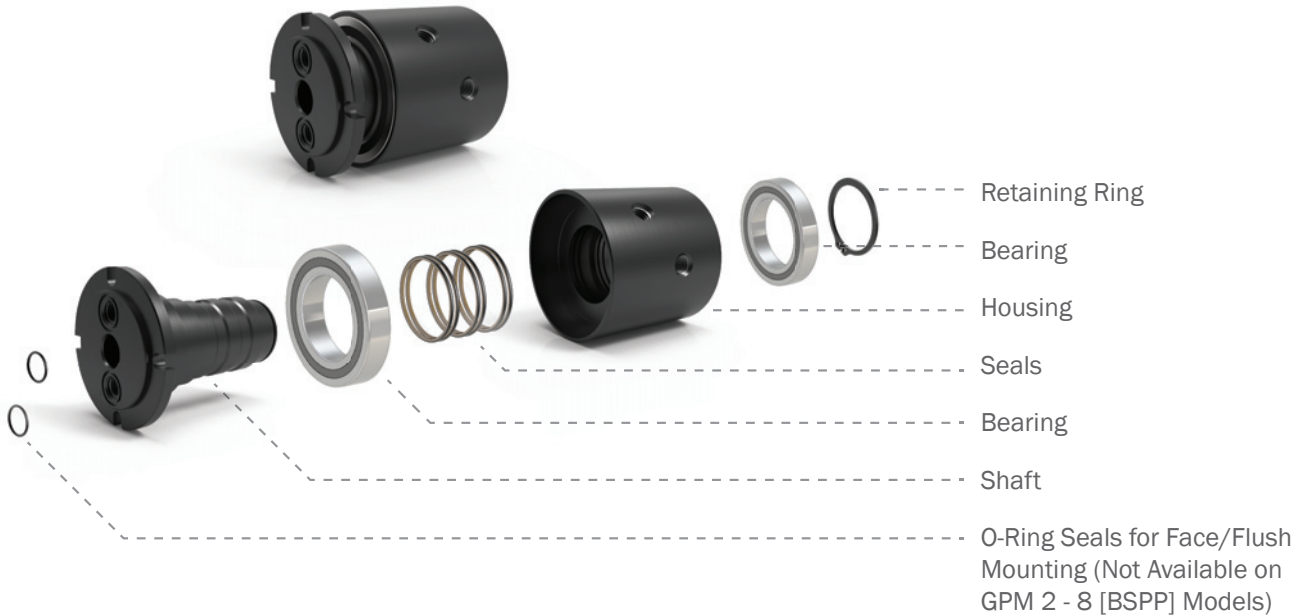
PART NUMBER EXAMPLE

GPM-201-10-OF-ESM36-C1

- GPM 10-Passage with thru-bore, 1/4" BSPP connections with a shaft O-Ring face seal connection and an ES6 electrical slip ring with optional protective cover.



Specifications & Operating Information



Flow Passage Options	2	3	4	6	8	10	12
Media Types	Air/Gas, Coolant ¹ , Oil/Hydraulic ¹ , Water/Glycol ¹						
Passage Sizes	1/8", 1/4", 3/8", 1/2", 3/4", 1" (3.18 mm, 6.35 mm, 9.53 mm, 12.7 mm, 19.1 mm, 25.4 mm)						
Connection Type	NPT, BSPP, O-Ring Face Seals (Not Available on GPM 2 - 8 [BSPP] Models)						
Max. Operating Pressure	7500 PSI (515 BAR) ²						
Max. Vacuum	30 HG ²						
Max. Rotational Speed	500 RPM ³						
Operating Temperature	0° F to 220° F (-18° C to 105° C) ⁴						
Body Material Type	Carbon Steel						
Platings and Coatings	Black Oxide						
Slip Ring Options	See page 23						
Mounting Options	Tapped holes on housing end / Slotted flange or tapped holes at shaft end						

¹ Suitable Water/Glycol or Coolant media must have rust inhibitors present. Oil/Hydraulic media must be petroleum-based. Please consult with DSTI for approval.

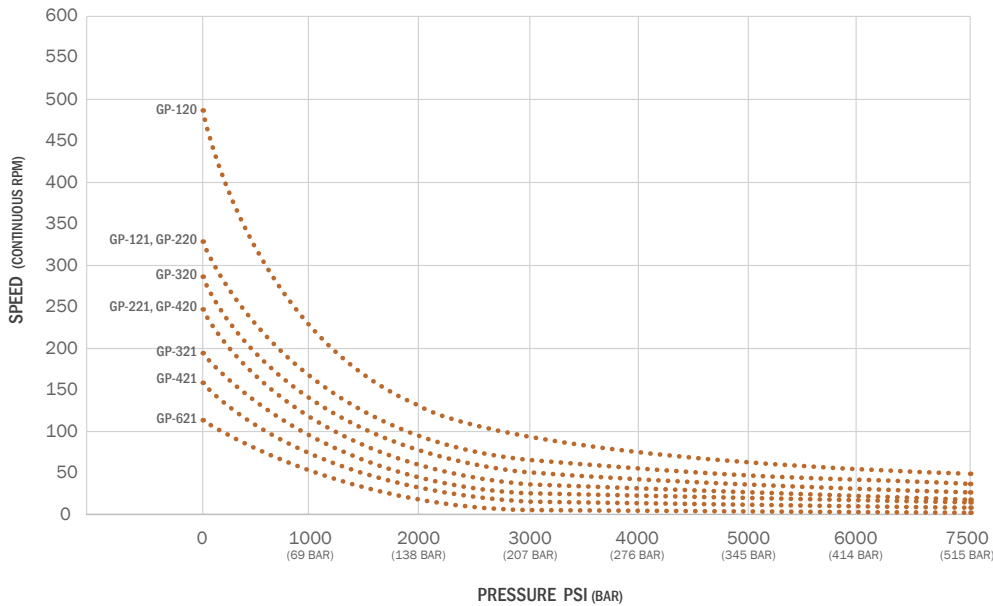
² Values are dependent on a combination of all application parameters. Please consult with DSTI.

³ Operational life is dependent upon both rotational speed and duty cycle. Contact DSTI if your application requires operating close to the maximum rotational speed with a continuous duty cycle.

⁴ High temperature applications may require alternative seal materials. Please consult with DSTI.

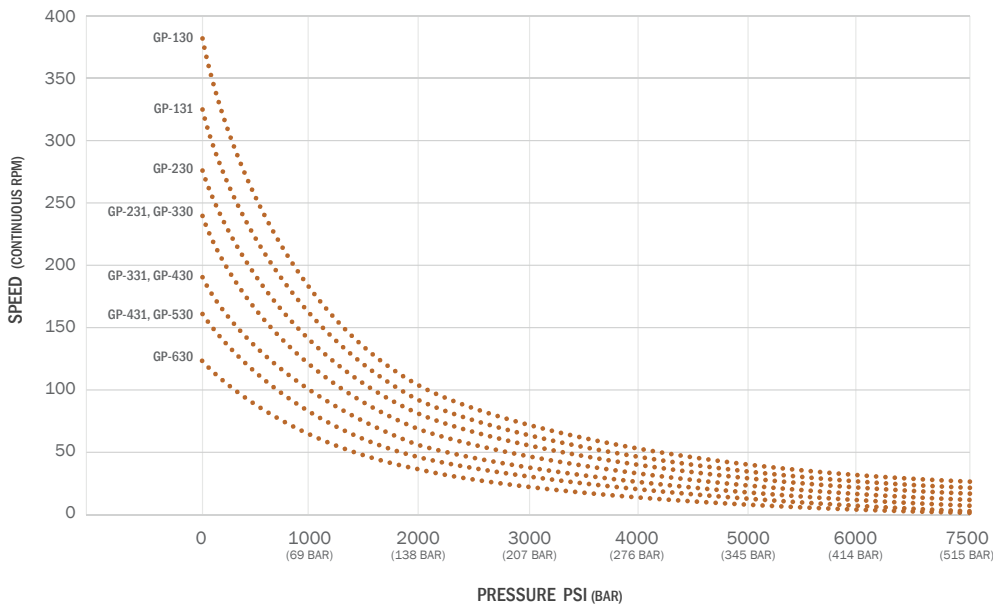
Performance Data: Pressure vs. Speed (Continuous)

2 PASSAGES



* This data is to be used as a general guideline. Data based on using hydraulic fluid with the product rotating continuously. Please consult DSTI about your specific application.

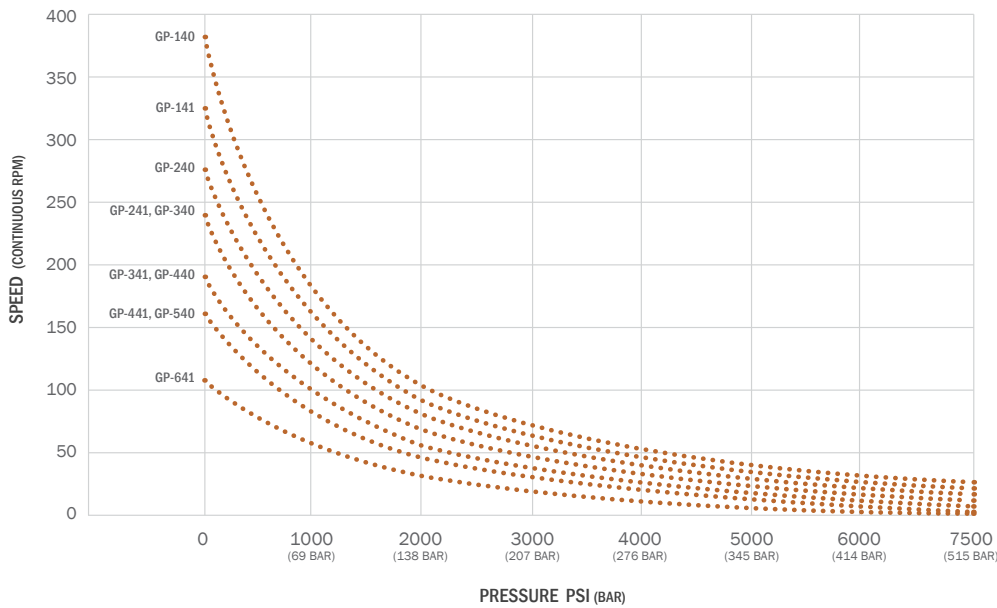
3 PASSAGES



* This data is to be used as a general guideline. Data based on using hydraulic fluid with the product rotating continuously. Please consult DSTI about your specific application.

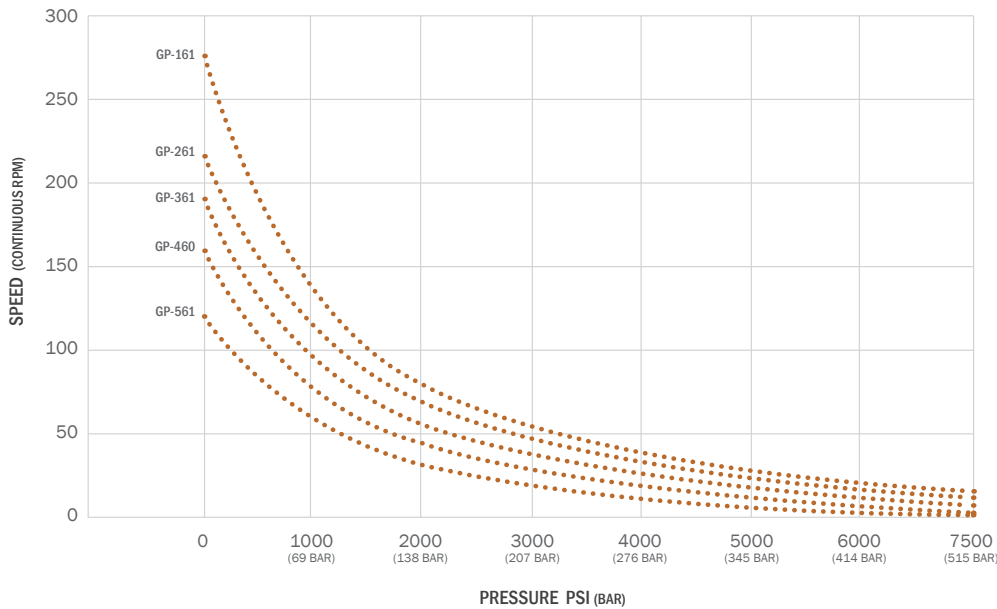
Performance Data: Pressure vs. Speed (Continuous)

4 PASSAGES



* This data is to be used as a general guideline. Data based on using hydraulic fluid with the product rotating continuously. Please consult DSTI about your specific application.

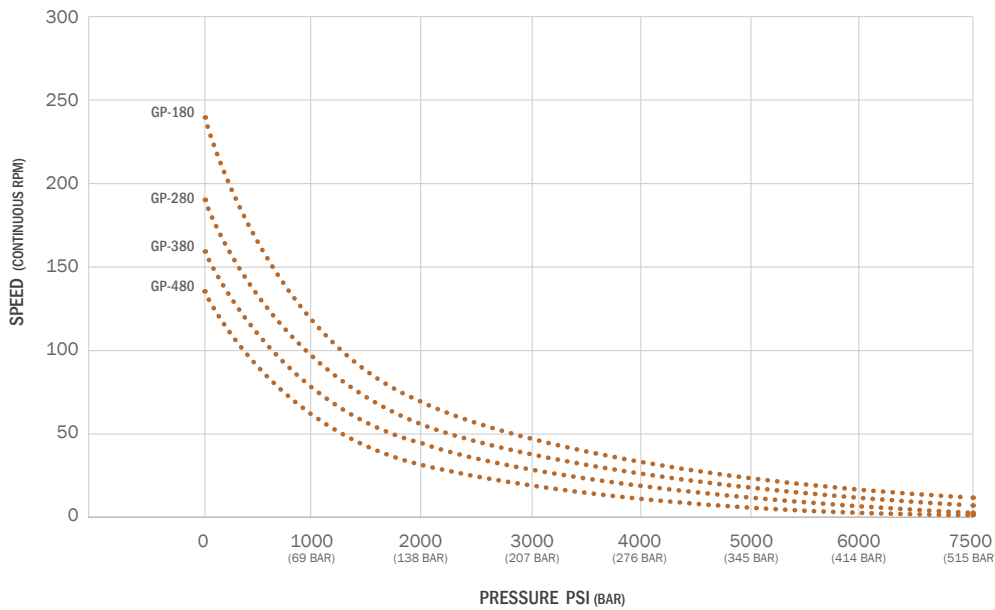
6 PASSAGES



* This data is to be used as a general guideline. Data based on using hydraulic fluid with the product rotating continuously. Please consult DSTI about your specific application.

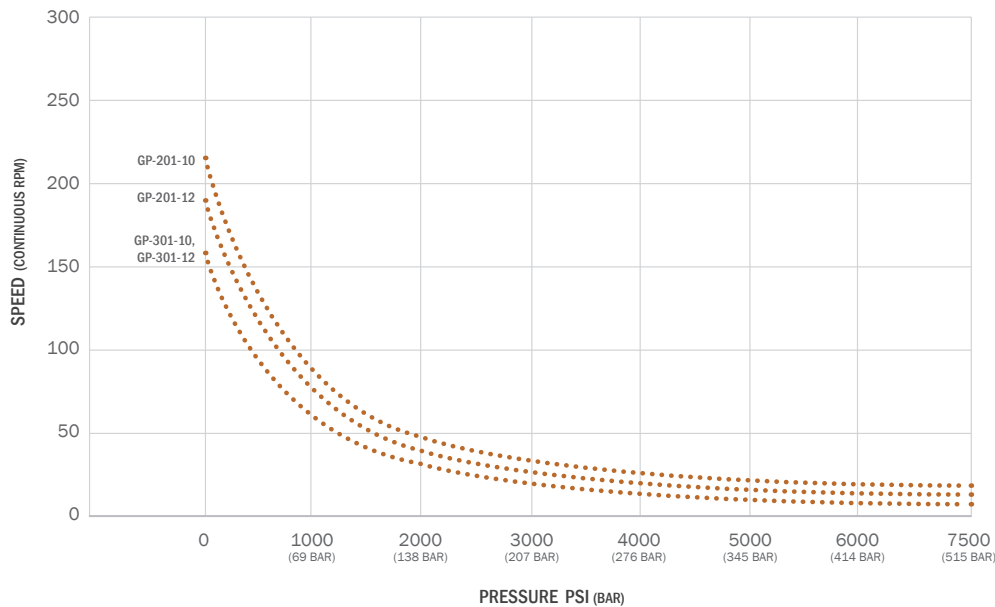
Performance Data: Pressure vs. Speed (Continuous)

8 PASSAGES



* This data is to be used as a general guideline. Data based on using hydraulic fluid with the product rotating continuously. Please consult DSTI about your specific application.

10 & 12 PASSAGES



* This data is to be used as a general guideline. Data based on using hydraulic fluid with the product rotating continuously. Please consult DSTI about your specific application.

Performance Data: Pressure vs. Torque

PRESSURE PSI (BAR)

MODEL	0	1000 (69 BAR)	2000 (138 BAR)	3000 (207 BAR)	4000 (276 BAR)	5000 (345 BAR)	6000 (414 BAR)	7500 (515 BAR)
GP-120	0.5 [0.7]	1.3 [1.8]	2.1 [2.8]	2.8 [3.8]	3.6 [4.9]	4.3 [5.8]	5.1 [6.9]	6.3 [8.5]
GP-121	1.9 [2.6]	3.7 [5.0]	5.4 [7.3]	7.1 [9.6]	8.8 [11.9]	10.5 [14.2]	12.3 [16.7]	14.9 [20.2]
GP-220	3.9 [5.3]	7.3 [9.9]	10.7 [14.5]	14.2 [19.3]	17.6 [23.9]	21.1 [28.6]	24.5 [33.2]	29.7 [40.3]
GP-221	5.7 [7.7]	11.8 [16.0]	17.9 [24.3]	24.1 [32.7]	30.2 [40.9]	36.3 [49.2]	42.5 [57.6]	51.6 [70.0]
GP-320	4.0 [5.4]	8.7 [11.8]	13.4 [18.2]	18.0 [24.4]	22.7 [30.8]	27.4 [37.1]	32.1 [43.5]	39.2 [53.1]
GP-321	7.1 [9.6]	21.6 [29.3]	36.1 [48.9]	50.6 [68.6]	65.1 [88.3]	79.5 [107.8]	94.1 [127.6]	115.7 [156.9]
GP-420	5.7 [7.7]	11.8 [16.0]	17.9 [24.3]	24.1 [32.7]	30.2 [40.9]	36.3 [49.2]	42.5 [57.6]	51.6 [70.0]
GP-421	12.2 [16.5]	33.0 [44.7]	53.9 [73.1]	74.7 [101.3]	95.6 [129.6]	116.4 [157.8]	137.3 [186.2]	168.6 [228.6]
GP-621	24.4 [33.1]	71.3 [96.7]	118.2 [160.3]	165.2 [223.0]	212.1 [287.6]	259.0 [351.2]	305.9 [414.7]	376.3 [510.2]
GP-130	1.5 [2.0]	3.1 [4.2]	4.7 [6.4]	6.3 [8.5]	7.9 [10.7]	9.5 [12.9]	11.1 [15.0]	13.5 [18.3]
GP-131	2.6 [3.5]	4.9 [6.6]	7.2 [9.8]	9.5 [12.9]	11.8 [16.0]	14.1 [19.1]	16.4 [22.2]	19.8 [26.8]
GP-230	5.3 [7.2]	11.6 [15.7]	17.8 [24.1]	24.1 [32.7]	30.3 [41.1]	36.6 [49.6]	42.8 [58.0]	52.2 [70.8]
GP-231	7.6 [10.3]	15.8 [21.4]	23.9 [32.4]	32.1 [43.5]	40.3 [54.6]	48.4 [65.6]	56.6 [76.7]	68.9 [93.4]
GP-330	7.6 [10.3]	15.8 [21.4]	23.9 [32.4]	32.1 [43.5]	40.3 [54.6]	48.4 [65.6]	56.6 [76.7]	68.9 [93.4]
GP-331	9.5 [12.9]	28.8 [39.0]	48.1 [65.4]	67.4 [91.4]	86.7 [117.4]	106.0 [143.7]	125.4 [170.0]	154.3 [209.2]
GP-430	9.5 [12.9]	28.8 [39.0]	48.1 [65.4]	67.4 [91.4]	86.7 [117.4]	106.0 [143.7]	125.4 [170.0]	154.3 [209.2]
GP-431	16.2 [21.3]	44.0 [59.7]	71.8 [97.3]	99.6 [135.0]	127.4 [172.7]	155.2 [210.4]	183.1 [248.3]	224.8 [304.8]
GP-530	16.2 [21.3]	44.0 [59.7]	71.8 [97.3]	99.6 [135.0]	127.4 [172.7]	155.2 [210.4]	183.1 [248.3]	224.8 [304.8]
GP-630	24.7 [33.5]	74.2 [100.6]	123.6 [167.6]	173.0 [234.6]	222.5 [301.7]	271.9 [368.6]	321.3 [435.6]	395.5 [536.2]
GP-140	1.9 [2.6]	3.9 [5.3]	5.9 [8.0]	7.9 [10.7]	9.9 [13.4]	11.9 [16.1]	13.9 [18.8]	16.9 [22.9]
GP-141	3.2 [4.3]	6.1 [8.27]	9.0 [12.2]	11.8 [16.0]	14.7 [19.9]	17.6 [23.9]	20.4 [27.7]	24.8 [33.6]
GP-240	6.6 [8.9]	14.4 [19.5]	22.3 [30.2]	30.1 [40.8]	37.9 [51.4]	45.7 [62.0]	53.5 [72.5]	65.3 [88.5]
GP-241	9.5 [12.9]	19.7 [26.7]	29.9 [40.5]	40.1 [54.4]	50.3 [68.2]	60.5 [82.0]	70.8 [96.0]	86.1 [116.7]
GP-340	9.5 [12.9]	19.7 [26.7]	29.9 [40.5]	40.1 [54.4]	50.3 [68.2]	60.5 [82.0]	70.8 [96.0]	86.1 [116.7]
GP-341	11.9 [16.1]	36.0 [48.8]	60.2 [81.6]	84.3 [114.3]	108.4 [147.0]	132.6 [179.8]	156.7 [212.5]	192.9 [261.5]
GP-440	11.9 [16.1]	36.0 [48.8]	60.2 [81.6]	84.3 [114.3]	108.4 [147.0]	132.6 [179.8]	156.7 [212.5]	192.9 [261.5]
GP-441	20.3 [27.5]	55.0 [74.6]	89.8 [121.8]	124.6 [168.9]	159.3 [216.0]	194.1 [263.2]	228.8 [310.2]	280.9 [380.8]
GP-540	20.3 [27.5]	55.0 [74.6]	89.8 [121.8]	124.6 [168.9]	159.3 [216.0]	194.1 [263.2]	228.8 [310.2]	280.9 [380.8]
GP-641	40.7 [55.2]	118.9 [161.2]	197.1 [267.2]	275.3 [373.3]	353.5 [479.3]	431.7 [585.3]	509.9 [691.3]	627.1 [850.2]

PRESSURIZED TORQUE (POUND FOOT [NEWTON METER])

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

Performance Data: Pressure vs. Torque

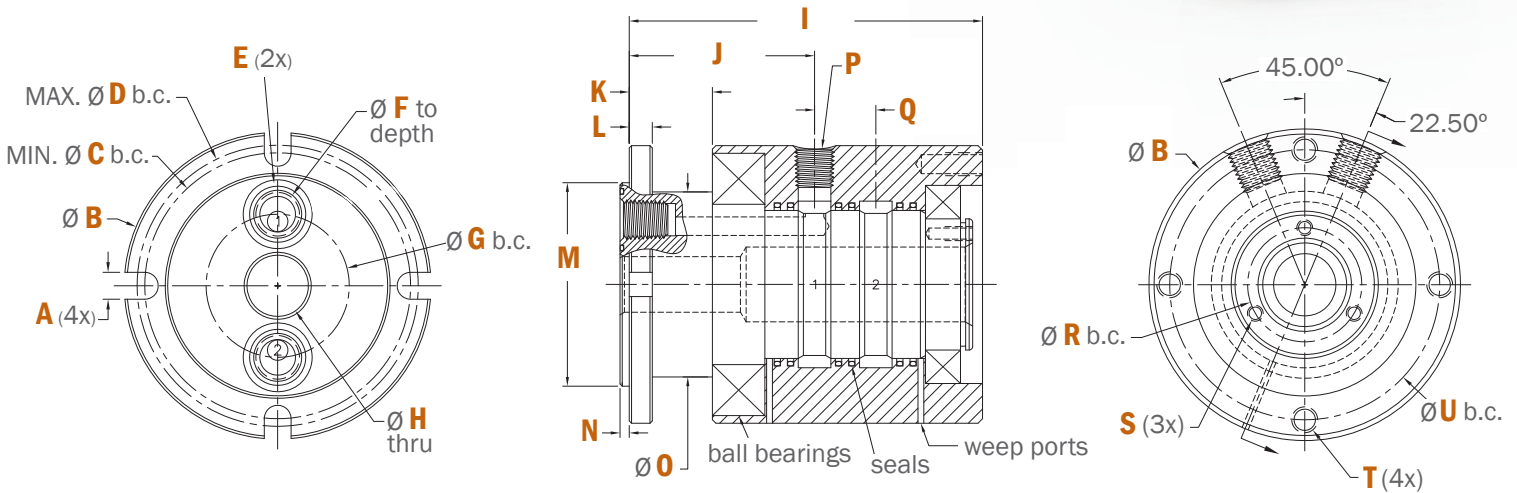
PRESSURE PSI (BAR)

MODEL	0	1000 (69 BAR)	2000 (138 BAR)	3000 (207 BAR)	4000 (276 BAR)	5000 (345 BAR)	6000 (414 BAR)	7500 (515 BAR)
GP-161	6.0 [8.13]	13.0 [17.6]	20.0 [27.1]	27.1 [36.7]	34.1 [46.2]	41.1 [55.7]	48.2 [65.4]	58.7 [79.6]
GP-261	9.8 [13.3]	31.3 [42.4]	52.8 [71.6]	74.3 [100.7]	95.8 [129.9]	117.3 [159.0]	138.8 [188.2]	171.0 [231.8]
GP-361	13.1 [17.8]	39.6 [53.7]	66.2 [89.8]	92.7 [125.7]	119.3 [161.7]	145.8 [197.7]	172.4 [233.7]	212.2 [287.7]
GP-460	22.3 [30.2]	60.5 [82.0]	98.8 [134.0]	137.0 [185.7]	175.2 [237.5]	213.5 [289.5]	251.7 [341.3]	309.0 [418.9]
GP-561	43.3 [58.7]	129.8 [176.0]	216.3 [293.3]	302.8 [410.5]	389.3 [527.8]	475.8 [645.1]	562.3 [762.4]	692.0 [938.2]
GP-180	10.4 [14.1]	21.7 [29.4]	32.9 [44.6]	44.1 [59.8]	55.4 [75.1]	66.6 [90.3]	77.8 [105.5]	94.7 [128.4]
GP-280	15.4 [20.9]	46.8 [63.5]	78.2 [106.0]	109.6 [148.6]	140.9 [191.0]	172.3 [233.6]	203.7 [276.2]	250.8 [340.0]
GP-380	26.4 [35.8]	71.6 [97.1]	116.7 [158.2]	161.9 [219.5]	207.1 [280.8]	252.3 [342.1]	297.5 [403.4]	365.2 [495.1]
GP-480	32.5 [44.1]	94.0 [127.4]	155.5 [210.8]	217.0 [294.2]	278.5 [377.6]	340.0 [461.0]	401.5 [544.4]	493.7 [669.4]
GP-201-10	14.7 [19.9]	38.5 [52.2]	62.3 [84.5]	86.1 [116.7]	109.9 [149.0]	133.7 [181.3]	157.5 [213.5]	193.2 [262.0]
GP-301-10	23.3 [31.6]	66.8 [90.6]	110.2 [149.4]	153.7 [208.4]	197.1 [267.2]	240.5 [326.1]	284.0 [385.1]	327.4 [443.9]
GP-201-12	19.2 [26.3]	50.1 [67.9]	81.1 [110.0]	112.0 [151.9]	142.9 [193.7]	173.8 [235.6]	204.7 [277.5]	251.1 [340.4]
GP-301-12	26.2 [35.5]	75.1 [101.8]	124.0 [168.1]	172.9 [234.4]	221.7 [300.6]	270.6 [366.9]	319.5 [433.2]	392.8 [532.6]

**PRESSURIZED TORQUE
(POUND FOOT [NEWTON METER])**

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

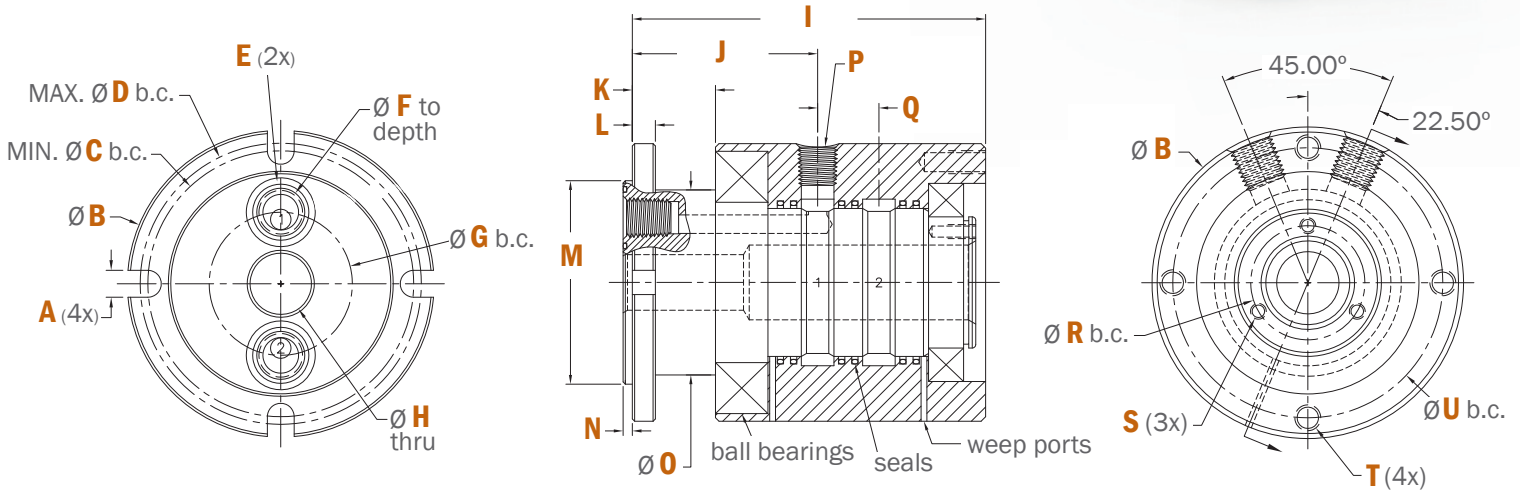
2 Flow Passage: Dimensions



	GP-120 [GPM-120]	GP-121 [GPM-121]	GP-220 [GPM-220]	GP-221 [GPM-221]	GP-320 [GPM-320]
A	0.203" [5.5mm]	0.281" [6.60mm]	0.281" [6.60mm]	0.344" [9.00mm]	0.281" [6.60mm]
B	2.437" [61.90mm]	2.937" [74.60mm]	2.937" [74.60mm]	3.750" [95.25mm]	3.187" [80.95mm]
C	2.000" [50.80mm]	2.500" [63.50mm]	2.500" [63.50mm]	3.250" [82.55mm]	2.750" [69.85mm]
D	2.250" [57.15mm]	2.750" [69.85mm]	2.687" [68.25mm]	3.437" [87.30mm]	2.937" [74.60mm]
E	2-014 O-Ring [N/A ¹]	2-015 O-Ring [N/A ¹]	2-017 O-Ring [N/A ¹]	2-017 O-Ring [N/A ¹]	2-019 O-Ring [N/A ¹]
F	0.16" [4.0mm]	0.16" [4.0mm]	0.25" [6.4mm]	0.25" [6.4mm]	0.38" [9.5mm]
G	.812" [20.62mm]	1.312" [33.32mm]	1.000" [25.40mm]	1.750" [44.45mm]	1.187" [30.15mm]
H	N/A	0.50" [12.7mm]	N/A	0.75" [19.1mm]	N/A
I	3.35" [85.0mm]	3.64" [92.4mm]	4.37" [111.1mm]	4.77" [121.2mm]	4.71" [119.5mm]
J	1.83" [46.5mm]	2.03" [51.6mm]	2.26" [57.5mm]	2.50" [63.6mm]	2.36" [60.0mm]
K	0.88" [22.2mm]	1.00" [25.4mm]	1.00" [25.4mm]	1.12" [28.5mm]	1.00" [25.4mm]
L	0.250" [6.35mm]	0.250" [6.35mm]	0.250" [6.35mm]	0.312" [7.92mm]	0.250" [6.35mm]
M	1.625" [41.28mm]	2.187" [55.55mm]	2.000" [50.80mm]	2.750" [69.85mm]	2.375" [60.33mm]
N	0.125" [3.18mm]	0.125" [3.18mm]	0.125" [3.18mm]	0.125" [3.18mm]	0.125" [3.18mm]
O	1.54" [39.0mm]	1.81" [45.97mm]	1.94" [49.27mm]	2.50" [63.50mm]	2.25" [57.2mm]
P	1/8"-27 NPT [G1/8"-28 BSPP]	1/8"-27 NPT [G1/8"-28 BSPP]	1/4"-18 NPT [G1/4"-19 BSPP]	1/4"-18 NPT [G1/4"-19 BSPP]	3/8"-18 NPT [G3/8"-19 BSPP]
Q	0.549" [13.94mm]	0.549" [13.94mm]	0.828" [21.03mm]	0.828" [21.03mm]	0.950" [24.13mm]
R	N/A	0.730" [18.54mm]	N/A	1.374" [34.90mm]	N/A
S	N/A	#4-40 [M3x0.5]	N/A	#10-24 [M5x0.8]	N/A
T	#10-24 UNC [M5x0.8]	1/4"-20 [M6x1.0]	1/4"-20 [M6x1.0]	5/16"-18 [M8x1.25]	1/4"-20 [M6x1.0]
U	1.875" [47.63mm]	2.375" [60.33mm]	2.500" [63.50mm]	3.250" [82.55mm]	2.750" [69.85mm]

¹O-ring face seal gland connection not available on GPM (metric) models

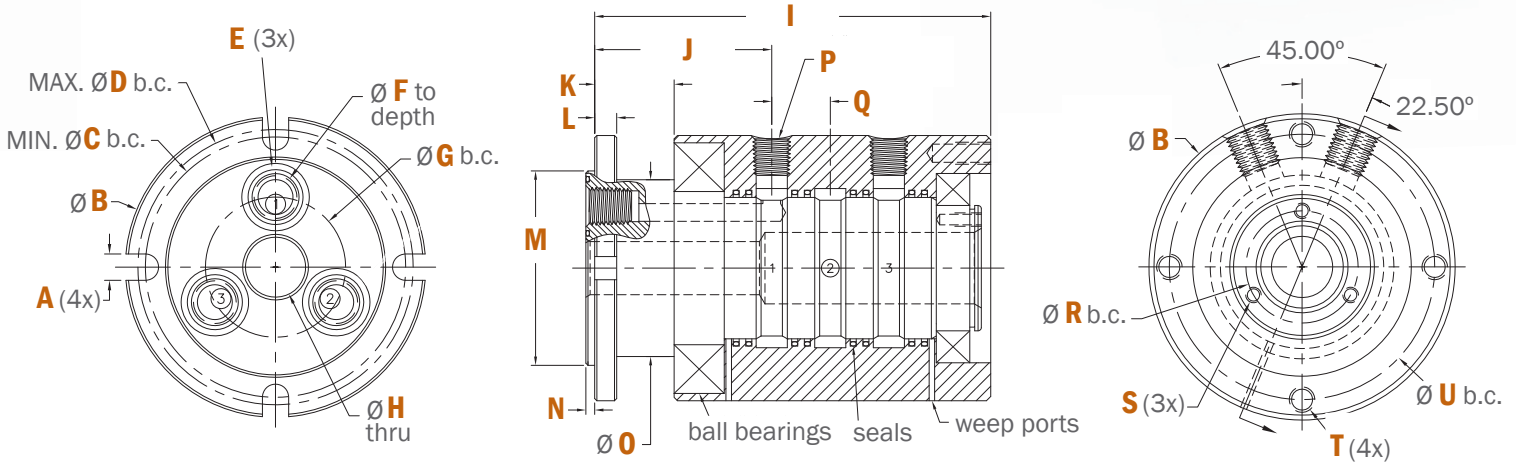
2 Flow Passage: Dimensions



	GP-321 [GPM-321]	GP-420 [GPM-420]	GP-421 [GPM-421]	GP-621 [GPM-621]
A	0.344" [9.00mm]	0.344" [9.00mm]	0.344" [9.00mm]	0.531" [13.49mm]
B	4.187" [106.35mm]	3.875" [98.43mm]	4.937" [125.40mm]	7.187" [182.55mm]
C	3.500" [88.90mm]	3.188" [80.98mm]	4.125" [104.78mm]	6.250" [158.75mm]
D	3.875" [98.43mm]	3.500" [88.90mm]	4.625" [117.48mm]	6.750" [171.45mm]
E	2-019 O-Ring [N/A ¹]	2-023 O-Ring [N/A ¹]	2-023 O-Ring [N/A ¹]	2-128 O-Ring [N/A ¹]
F	0.380" [9.5mm]	0.500" [12.70mm]	0.500" [12.70mm]	1.000" [25.40mm]
G	1.875" [47.63mm]	1.437" [36.50mm]	2.250" [57.15mm]	3.000" [76.20mm]
H	0.750" [19.05mm]	N/A	0.750" [19.05mm]	1.000" [25.40mm]
I	5.31" [134.9mm]	5.39" [137.0mm]	6.16" [156.4mm]	8.60" [218.4mm]
J	2.65" [67.2mm]	2.71" [68.7mm]	3.15" [79.9mm]	4.37" [111.1mm]
K	1.12" [28.5mm]	1.19" [30.1mm]	1.63" [41.3mm]	1.63" [41.3mm]
L	0.312" [7.92mm]	0.312" [7.92mm]	0.375" [9.53mm]	0.625" [15.88mm]
M	3.000" [76.20mm]	2.750" [69.85mm]	3.625" [92.08mm]	5.000" [127.00mm]
N	0.125" [3.18mm]	0.125" [3.18mm]	0.187" [4.75mm]	0.187" [4.75mm]
O	2.84" [3.18mm]	2.58" [65.53mm]	3.50" [88.90mm]	5.25" [133.35mm]
P	3/8"-18 NPT [G3/8"-19 BSPP]	1/2"-14 NPT [G1/2"-14 BSPP]	1/2"-14 NPT [G1/2"-14 BSPP]	1"-11.5 NPT [G1"-11 BSPP]
Q	1.030" [26.16mm]	1.106" [28.09mm]	1.186" [30.12mm]	1.794" [45.57mm]
R	1.374" [34.90mm]	N/A	1.374" [34.90mm]	1.374" [34.90mm]
S	#10-24 [M5x0.8]	N/A	#10-24 [M5x0.8]	#10-24 [M5x0.8]
T	5/16"-18 [M8x1.25]	5/16"-18 [M8x1.25]	5/16"-18 [M8x1.25]	1/2"-13 [M12x1.75]
U	3.625" [92.08mm]	3.250" [82.55mm]	4.125" [104.78mm]	6.000" [152.40mm]

¹ O-ring face seal gland connection not available on GPM (metric) models

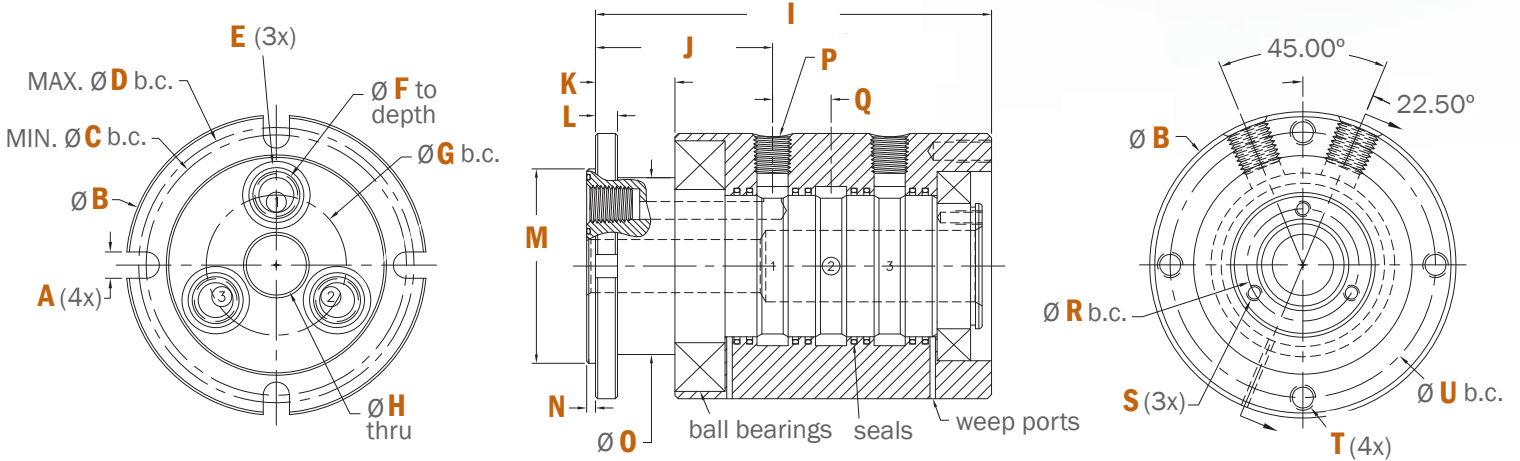
3 Flow Passage: Dimensions



	GP-130 [GPM-130]	GP-131 [GPM-131]	GP-230 [GPM-230]	GP-231 [GPM-231]	GP-330 [GPM-330]
A	0.281" [6.60mm]	0.281" [6.60mm]	0.281" [6.60mm]	0.344" [9.00mm]	0.344" [9.00mm]
B	2.687" [68.25mm]	2.937" [74.60mm]	3.187" [80.95mm]	3.750" [95.25mm]	3.875" [98.43mm]
C	2.250" [57.15mm]	2.500" [63.50mm]	2.750" [69.85mm]	3.250" [82.55mm]	3.178" [80.95mm]
D	2.500" [63.50mm]	2.750" [69.85mm]	2.937" [74.60mm]	3.437" [87.30mm]	3.562" [90.47mm]
E	2-015 O-Ring [N/A ¹]	2-015 O-Ring [N/A ¹]	2-017 O-Ring [N/A ¹]	2-017 O-Ring [N/A ¹]	2-019 O-Ring [N/A ¹]
F	.160" [4.00mm]	.160" [4.00mm]	.250" [6.40mm]	.250" [6.40mm]	.38" [9.5mm]
G	1.000" [25.40mm]	1.312" [33.32mm]	1.250" [31.75mm]	1.750" [44.45mm]	1.375" [34.93mm]
H	N/A	0.500" [12.70mm]	N/A	0.750" [19.1mm]	N/A
I	4.15" [105.3mm]	4.19" [106.3mm]	5.29" [134.4mm]	5.60" [142.3mm]	6.03" [153.2mm]
J	1.99" [50.6mm]	2.03" [51.6mm]	2.30" [58.4mm]	2.50" [63.6mm]	2.63" [66.8mm]
K	1.00" [25.4mm]	1.00" [25.4mm]	1.00" [25.4mm]	1.12" [28.5mm]	1.19" [30.1mm]
L	0.250" [6.35mm]	0.250" [6.35mm]	0.250" [6.35mm]	0.312" [7.92mm]	0.312" [7.92mm]
M	1.875" [47.63mm]	2.187" [55.55mm]	2.375" [60.33mm]	2.750" [69.85mm]	2.625" [66.68mm]
N	0.125" [3.18mm]	0.125" [3.18mm]	0.125" [3.18mm]	0.125" [3.18mm]	0.125" [3.18mm]
O	1.75" [44.5mm]	1.81" [46.0mm]	2.25" [57.2mm]	2.50" [63.5mm]	2.576" [65.4mm]
P	1/8"-27 NPT [G1/8"-28 BSPP]	1/8"-27 NPT [G1/8"-28 BSPP]	1/4"-18 NPT [G1/4"-19 BSPP]	1/4"-18 NPT [G1/4"-19 BSPP]	3/8"-18 NPT [G3/8"-19 BSPP]
Q	0.549" [13.94mm]	0.549" [13.94mm]	0.828" [21.03mm]	0.828" [21.03mm]	0.950" [24.13mm]
R	N/A	0.730" [18.54mm]	N/A	1.374" [34.90mm]	N/A
S	N/A	#4-40 [M3x0.5]	N/A	#10-24 [M5x0.8]	N/A
T	1/4"-20 [M6x1.0]	1/4"-20 [M6x1.0]	1/4"-20 [M6x1.0]	5/16"-18 [M8x1.25]	5/16"-18 [M8x1.25]
U	2.125" [53.98mm]	2.375" [60.33mm]	2.750" [69.85mm]	3.250" [82.55mm]	3.250" [82.55mm]

¹O-ring face seal gland connection not available on GPM (metric) models

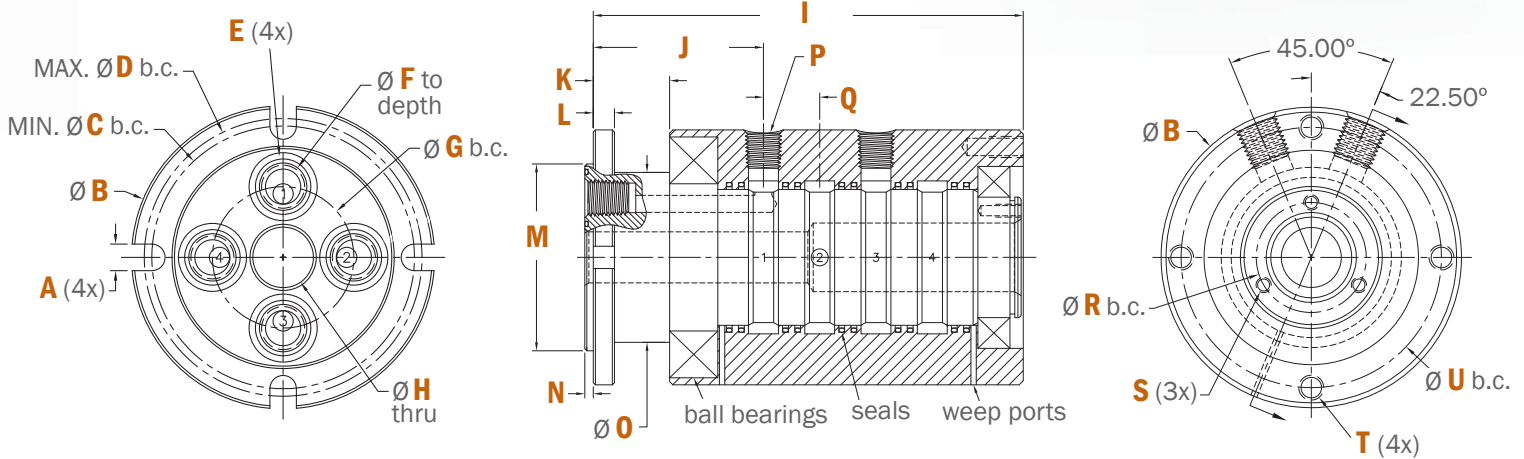
3 Flow Passage: Dimensions



	GP-331 [GPM-331]	GP-430 [GPM-430]	GP-431 [GPM-431]	GP-530 [GPM-530]	GP-630 [GPM-630]
A	0.344" [9.00mm]	0.344" [9.00mm]	0.344" [9.00mm]	0.406" [11.00mm]	0.531" [13.49mm]
B	4.187" [106.35mm]	4.250" [107.95mm]	4.937" [125.40mm]	5.187" [131.75mm]	6.937" [176.20mm]
C	3.500" [88.90mm]	3.625" [92.08mm]	4.125" [104.78mm]	4.375" [111.13mm]	6.000" [152.40mm]
D	3.875" [98.43mm]	3.937" [100.00mm]	4.625" [117.48mm]	4.812" [122.22mm]	6.500" [165.10mm]
E	2-019 O-Ring [N/A ¹]	2-023 O-Ring [N/A ¹]	2-023 O-Ring [N/A ¹]	2-026 O-Ring [N/A ¹]	2-128 O-Ring [N/A ¹]
F	0.38" [9.5mm]	0.50" [12.7mm]	0.500" [12.70mm]	0.75" [19.1mm]	1.000" [25.40mm]
G	1.875" [47.63mm]	1.750" [44.45mm]	2.250" [57.15mm]	2.125" [53.98mm]	2.625" [66.68mm]
H	0.75" [19.1mm]	N/A	0.75" [19.1mm]	N/A	N/A
I	6.34" [161.1mm]	7.06" [179.3mm]	7.41" [188.1mm]	8.28" [210.2mm]	10.57" [268.4mm]
J	2.65" [67.2mm]	2.97" [75.5mm]	3.21" [81.5mm]	3.39" [86.1mm]	4.53" [115.1mm]
K	1.12" [28.5mm]	1.38" [34.9mm]	1.69" [42.8mm]	1.50" [38.1mm]	2.25" [57.2mm]
L	0.312" [7.92mm]	0.375" [9.53mm]	0.437" [11.10mm]	0.500" [11.10mm]	0.625" [15.88mm]
M	3.000" [76.20mm]	3.125" [79.38mm]	3.625" [92.08mm]	3.750" [95.25mm]	4.625" [117.48mm]
N	0.125" [3.18mm]	0.187" [4.75mm]	0.187" [4.75mm]	0.187" [4.75mm]	0.187" [4.75mm]
O	2.84" [72.1mm]	2.92" [74.2mm]	3.50" [89.0mm]	3.45" [87.6mm]	5.00" [127.0mm]
P	3/8"-18 NPT [G3/8"-19 BSPP]	1/2"-14 NPT [G1/2"-14 BSPP]	1/2"-14 NPT [G1/2"-14 BSPP]	3/4"-14 NPT [G3/4"-14 BSPP]	1"-11.5 NPT [G1"-11 BSPP]
Q	1.030" [26.16mm]	1.186" [30.12mm]	1.186" [30.12mm]	1.454" [36.93mm]	1.79" [45.6mm]
R	1.374" [34.90mm]	N/A	1.374" [34.9mm]	N/A	N/A
S	#10-24 [M5x0.8]	N/A	#10-24 [M5x0.8]	N/A	N/A
T	5/16"-18 [M8x1.25]	5/16"-18 [M8x1.25]	5/16"-18 [M8x1.25]	5/16"-18 [M8x1.25]	1/2"-13 [M12x1.75]
U	3.625" [92.08mm]	3.625" [92.08mm]	4.125" [104.78mm]	4.500" [114.30mm]	5.750" [146.05mm]

¹O-ring face seal gland connection not available on GPM (metric) models

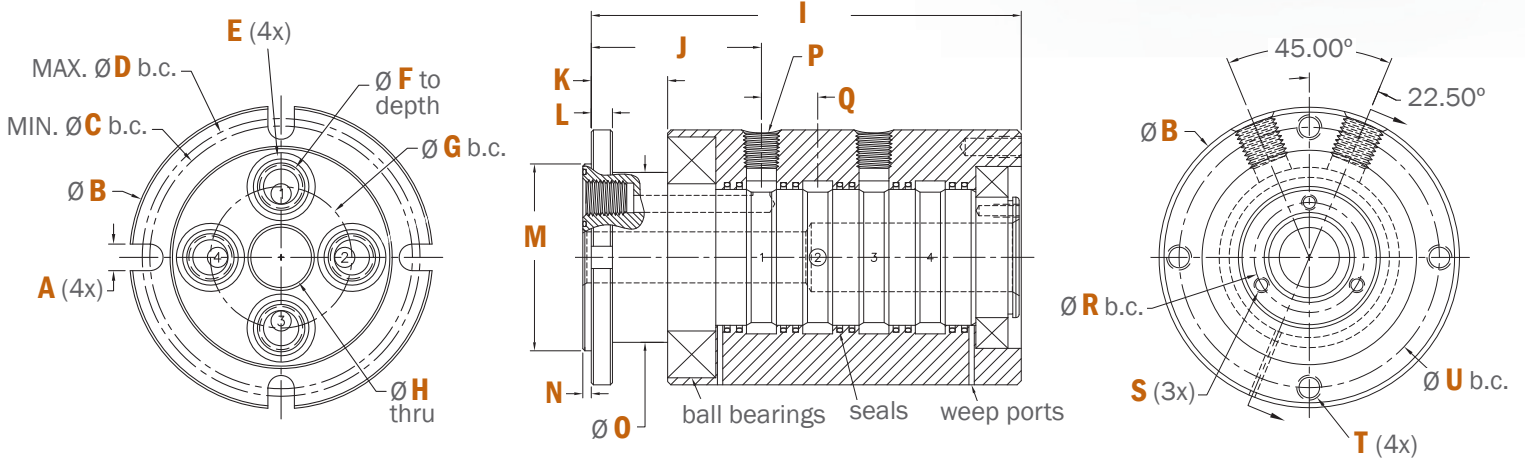
4 Flow Passage: Dimensions



	GP-140 [GPM-140]	GP-141 [GPM-141]	GP-240 [GPM-240]	GP-241 [GPM-241]	GP-340 [GPM-340]
A	0.281" [6.60mm]	0.281" [6.60mm]	0.281" [6.60mm]	0.344" [9.00mm]	0.344" [9.00mm]
B	2.687" [68.24mm]	2.937" [74.60mm]	3.187" [80.95mm]	3.750" [95.25mm]	3.875" [98.43mm]
C	2.250" [57.15mm]	2.500" [63.50mm]	2.750" [69.85mm]	3.250" [82.55mm]	3.187" [80.95mm]
D	2.500" [63.50mm]	2.750" [69.85mm]	2.937" [74.60mm]	3.437" [87.30mm]	3.562" [90.47mm]
E	2-015 O-Ring [N/A ¹]	2-015 O-Ring [N/A ¹]	2-017 O-Ring [N/A ¹]	2-017 O-Ring [N/A ¹]	2-019 O-Ring [N/A ¹]
F	0.16" [4.00mm]	0.16" [4.0mm]	0.25" [6.4mm]	0.25" [6.4mm]	0.38" [9.5mm]
G	1.062" [26.97mm]	1.312" [33.32mm]	1.375" [34.93mm]	1.750" [44.45mm]	1.500" [38.10mm]
H	N/A	0.50" [12.7mm]	N/A	0.75" [19.1mm]	N/A
I	4.70" [119.3mm]	4.74" [120.3mm]	6.12" [155.4mm]	6.33" [160.7mm]	6.98" [177.3mm]
J	1.99" [50.6mm]	2.03" [51.6mm]	2.30" [58.4mm]	2.50" [63.6mm]	2.63" [66.8mm]
K	1.00" [25.4mm]	1.00" [25.4mm]	1.00" [25.4mm]	1.12" [28.5mm]	1.19" [30.1mm]
L	0.250" [6.35mm]	0.250" [6.35mm]	0.250" [6.35mm]	0.312" [7.92mm]	0.312" [7.92mm]
M	1.875" [47.63mm]	2.187" [55.55mm]	2.375" [60.33mm]	2.750" [69.85mm]	2.625" [66.68mm]
N	0.125" [3.18mm]	0.125" [3.18mm]	0.125" [3.18mm]	0.125" [3.18mm]	0.125" [3.18mm]
O	1.750" [44.45mm]	1.81" [46.0mm]	2.20" [55.9mm]	2.50" [63.5mm]	2.58" [65.4mm]
P	1/8"-27 NPT [G1/8"-28 BSPP]	1/8"-27 NPT [G1/8"-28 BSPP]	1/4"-18 NPT [G1/4"-19 BSPP]	1/4"-18 NPT [G1/4"-19 BSPP]	3/8"-18 NPT [G3/8"-19 BSPP]
Q	0.549" [13.94mm]	0.549" [13.94mm]	0.828" [21.03mm]	0.828" [21.03mm]	0.950" [24.13mm]
R	N/A	0.730" [18.54mm]	N/A	1.374" [34.90mm]	N/A
S	N/A	#4-40 [M3x0.5]	N/A	#10-24 [M5x0.8]	N/A
T	1/4"-20 [M6x1.0]	1/4"-20 [M6x1.0]	1/4"-20 [M6x1.0]	5/16"-18 [M8x1.25]	5/16"-18 [M8x1.25]
U	2.125" [53.98mm]	2.375" [60.33mm]	2.750" [69.85mm]	3.250" [82.55mm]	3.250" [82.55mm]

¹O-ring face seal gland connection not available on GPM (metric) models

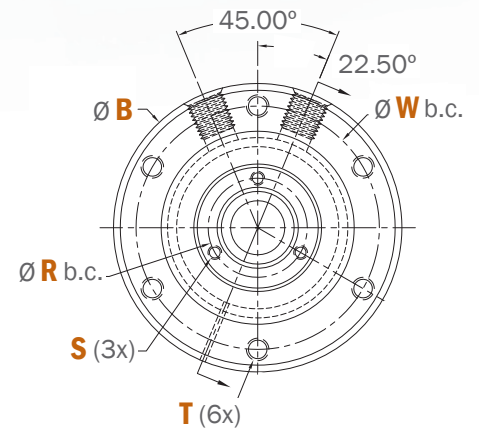
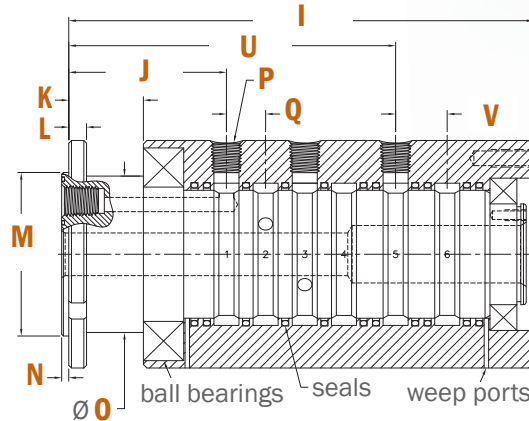
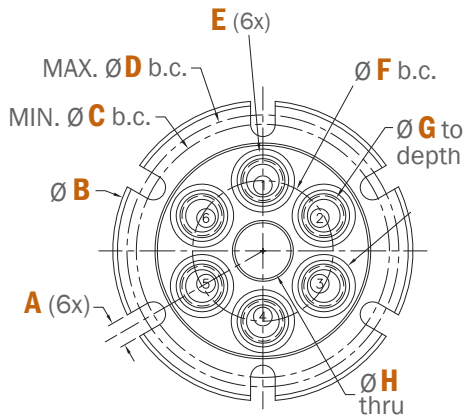
4 Flow Passage: Dimensions



	GP-341 [GPM-341]	GP-440 [GPM-440]	GP-441 [GPM-441]	GP-540 [GPM-540]	GP-641 [GPM-641]
A	0.344" [9.00mm]	0.344" [9.00mm]	0.344" [9.00mm]	0.406" [11.00mm]	0.531" [13.49mm]
B	4.187" [106.35mm]	4.250" [107.95mm]	4.937" [125.40mm]	5.187" [131.75mm]	7.187" [182.55mm]
C	3.500" [88.90mm]	3.625" [92.08mm]	4.125" [104.78mm]	4.375" [111.13mm]	6.250" [158.75mm]
D	3.875" [98.43mm]	3.937" [100.00mm]	4.625" [117.48mm]	4.812" [122.22mm]	6.750" [171.45mm]
E	2-019 O-Ring [N/A ¹]	2-023 O-Ring [N/A ¹]	2-023 O-Ring [N/A ¹]	2-026 O-Ring [N/A ¹]	2-128 O-Ring [N/A ¹]
F	0.38" [9.5mm]	0.50" [12.7mm]	0.50" [12.7mm]	0.75" [19.1mm]	1.00" [25.4mm]
G	1.875" [47.63mm]	1.750" [44.45mm]	2.250" [57.15mm]	2.125" [53.98mm]	3.000" [76.20mm]
H	0.75" [19.1mm]	N/A	0.75" [19.1mm]	N/A	1.00" [25.4mm]
I	7.37" [187.2mm]	8.25" [209.5mm]	8.59" [218.2mm]	9.73" [247.1mm]	12.19" [309.5mm]
J	2.65" [67.2mm]	2.97" [75.5mm]	3.21" [81.5mm]	3.39" [86.1mm]	4.37" [111.1mm]
K	1.12" [28.5mm]	1.38" [34.9mm]	1.69" [42.8mm]	1.50" [38.1mm]	2.25" [57.2mm]
L	0.312" [7.92mm]	0.375" [9.53mm]	0.437" [11.10mm]	0.500" [11.10mm]	0.625" [15.88mm]
M	3.000" [76.20mm]	3.125" [79.38mm]	3.625" [92.08mm]	3.750" [95.25mm]	5.000" [117.48mm]
N	0.125" [3.18mm]	0.187" [4.75mm]	0.187" [4.75mm]	0.187" [4.75mm]	0.187" [4.75mm]
O	2.84" [72.1mm]	2.92" [74.2mm]	3.50" [89.00mm]	3.45" [87.60mm]	5.25" [133.4mm]
P	3/8"-18 NPT [G3/8"-19 BSPP]	1/2"-14 NPT [G1/2"-14 BSPP]	1/2"-14 NPT [G1/2"-14 BSPP]	3/4"-14 NPT [G3/4"-14 BSPP]	1"-11.5 NPT [G1"-11 BSPP]
Q	1.030" [26.16mm]	1.186" [30.12mm]	1.186" [30.12mm]	1.454" [36.93mm]	1.794" [45.57mm]
R	1.374" [34.9mm]	N/A	1.374" [34.90mm]	N/A	1.374" [34.90mm]
S	#10-24 [M5x0.8]	N/A	#10-24 [M5x0.8]	N/A	#10-24 [M5x0.8]
T	5/16"-18 [M8x1.25]	5/16"-18 [M8x1.25]	5/16"-18 [M8x1.25]	5/16"-18 [M8x1.25]	1/2"-13 [M12x1.75]
U	3.625" [92.08mm]	3.625" [92.08mm]	4.125" [104.78mm]	4.500" [114.30mm]	6.000" [152.40mm]

¹O-ring face seal gland connection not available on GPM (metric) models

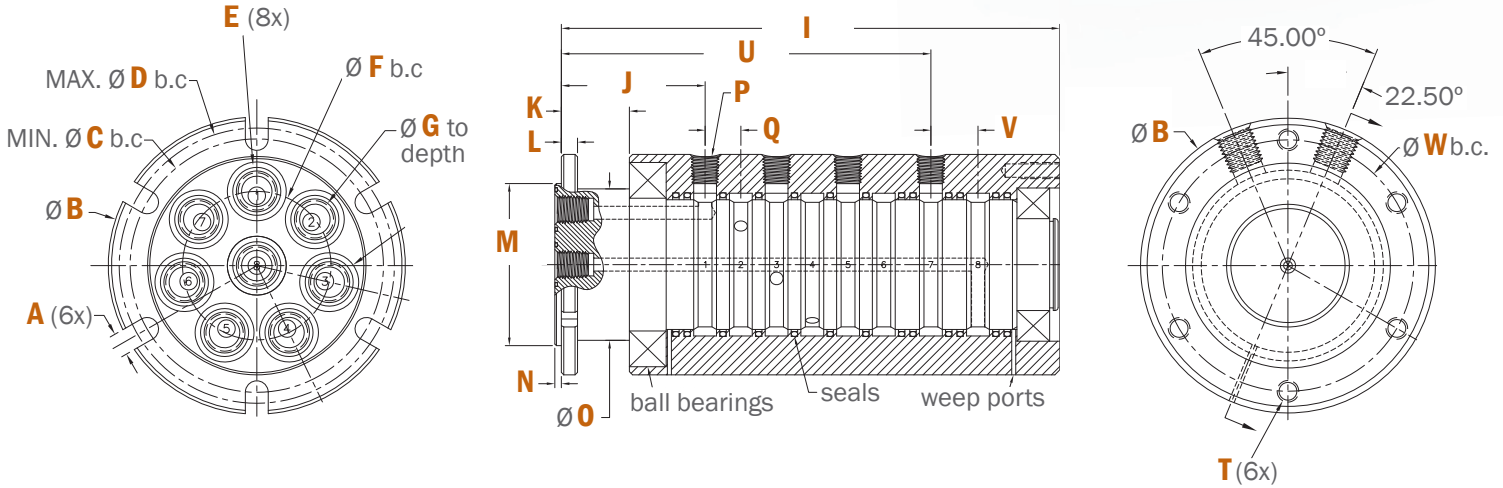
6 Flow Passage: Dimensions



	GP-161 [GPM-161]	GP-261 [GPM-261]	GP-361 [GPM-361]	GP-460 [GPM-460]	GP-561 [GPM-561]
A	0.281" [6.60mm]	0.344" [9.00mm]	0.344" [9.00mm]	0.344" [9.00mm]	0.406" [11.00mm]
B	3.187" [80.95mm]	4.000" [101.6mm]	4.250" [107.95mm]	4.937" [125.40mm]	6.437" [163.50mm]
C	2.750" [69.85mm]	3.375" [85.73mm]	3.687" [93.65mm]	4.375" [111.13mm]	5.500" [139.70mm]
D	3.000" [76.20mm]	3.625" [92.08mm]	3.937" [100.00mm]	4.625" [117.48mm]	6.000" [152.40mm]
E	2-015 O-Ring [N/A ¹]	2-017 O-Ring [N/A ¹]	2-019 O-Ring [N/A ¹]	2-023 O-Ring [N/A ¹]	2-026 O-Ring [N/A ¹]
F	1.562" [39.67mm]	1.875" [47.63mm]	2.125" [53.98mm]	2.437" [61.90mm]	3.125" [79.38mm]
G	0.16" [4.0mm]	0.25" [6.4mm]	0.38" [9.5mm]	0.50" [12.7mm]	0.75" [19.1mm]
H	0.50" [12.7mm]	0.75" [19.1mm]	0.75" [19.1mm]	N/A	1.000" [25.4mm]
I	6.48" [164.7mm]	8.18" [207.6mm]	8.96" [227.7mm]	10.31" [261.8mm]	13.23" [336.1mm]
J	2.44" [61.9mm]	2.77" [70.4mm]	2.83" [72.0mm]	3.21" [81.5mm]	3.56" [90.5mm]
K	1.19" [30.1mm]	1.31" [33.3mm]	1.31" [33.3mm]	1.69" [42.8mm]	1.75" [44.5mm]
L	0.312" [7.92mm]	0.312" [7.92mm]	0.312" [7.92mm]	0.437" [11.10mm]	0.500" [12.70mm]
M	2.375" [60.33mm]	2.875" [73.03mm]	3.250" [82.55mm]	3.812" [96.825mm]	4.750" [120.65mm]
N	0.125" [3.18mm]	0.125" [3.18mm]	0.125" [3.18mm]	0.187" [4.75mm]	0.187" [4.75mm]
O	2.19" [55.6mm]	2.75" [69.9mm]	2.92" [74.2mm]	3.72" [94.5mm]	4.500" [114.30mm]
P	1/8"-27 NPT [G1/8"-28 BSPP]	1/4"-18 NPT [G1/4"-19 BSPP]	3/8"-18 NPT [G3/8"-19 BSPP]	1/2"-14 NPT [G1/2"-14 BSPP]	3/4"-14 NPT [G3/4"-14 BSPP]
Q	0.549" [13.94mm]	0.689" [17.50mm]	0.811" [20.60mm]	0.967" [24.56mm]	1.485" [37.72mm]
R	0.730" [18.54mm]	1.374" [34.90mm]	1.374" [34.90mm]	N/A	1.374" [34.90mm]
S	#4-40 [M3x0.5]	#10-24 [M5x0.8]	#10-24 [M5x0.8]	N/A	#10-24 [M5x0.8]
T	1/4"-20 [M6x1.0]	5/16"-18 [M8x1.25]	5/16"-18 [M8x1.25]	5/16"-18 [M8x1.25]	3/8"-16 [M10x1.5]
U	N/A	5.75" [146.0mm]	6.30" [159.9mm]	7.29" [185.3mm]	N/A
V	N/A	0.908" [23.06mm]	1.030" [26.16mm]	1.186" [30.12mm]	N/A
W	2.625" [66.68mm]	3.375" [85.73mm]	3.625" [92.08mm]	4.125" [104.78mm]	5.625" [142.88mm]

¹O-ring face seal gland connection not available on GPM (metric) models

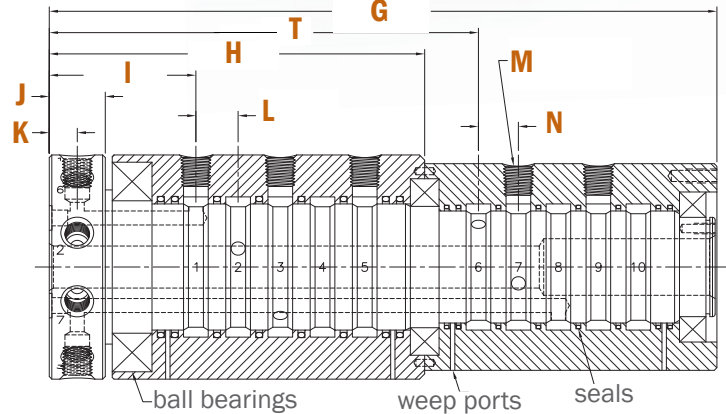
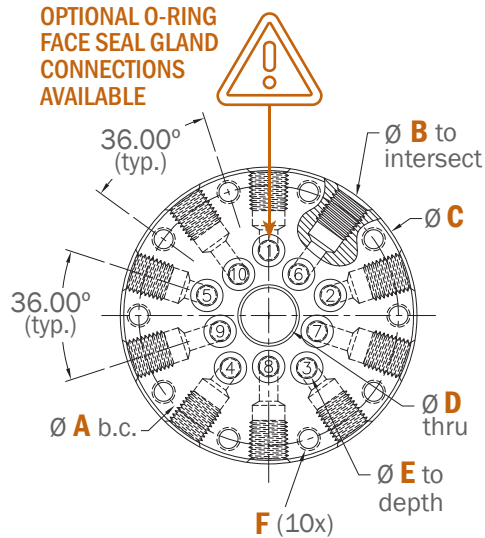
8 Flow Passage: Dimensions



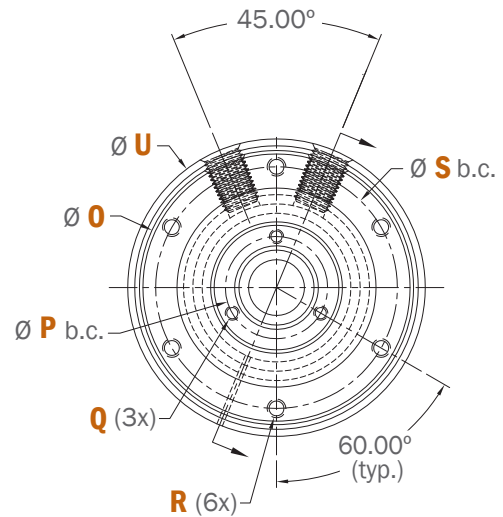
	GP-180 [GPM-180]	GP-280 [GPM-280]	GP-380 [GPM-380]	GP-480 [GPM-480]
A	0.281" [6.60mm]	0.344" [9.00mm]	0.344" [9.00mm]	0.344" [9.00mm]
B	3.437" [87.30mm]	4.250" [107.95mm]	4.937" [125.40mm]	5.625" [142.88mm]
C	3.000" [76.20mm]	3.625" [92.08mm]	4.187" [106.35mm]	4.750" [120.65mm]
D	3.250" [82.55mm]	3.937" [100.00mm]	4.624" [117.45mm]	5.250" [133.35mm]
E	2-015 O-Ring [N/A ¹]	2-017 O-Ring [N/A ¹]	2-019 O-Ring [N/A ¹]	2-022 O-Ring [N/A ¹]
F	1.812" [46.02mm]	2.125" [53.98mm]	2.500" [63.50mm]	2.875" [73.03mm]
G	0.16" [4.0mm]	0.25" [6.4mm]	0.38" [9.5mm]	0.50" [12.7mm]
H	N/A	N/A	N/A	N/A
I	7.49" [190.2mm]	9.61" [244.1mm]	10.93" [277.6mm]	12.45" [316.2mm]
J	2.32" [58.9mm]	2.77" [70.4mm]	3.07" [77.9mm]	3.29" [83.5mm]
K	1.19" [30.1mm]	1.31 [33.3mm]	1.63 [41.3mm]	1.69 [42.8mm]
L	0.312" [7.92mm]	0.312" [7.92mm]	0.375" [9.53mm]	0.437" [11.10mm]
M	2.625" [66.68mm]	3.125" [79.38mm]	3.625" [92.08mm]	4.250" [107.95mm]
N	0.125" [3.18mm]	0.125" [3.18mm]	0.187" [4.75mm]	0.187" [4.75mm]
O	2.55" [64.72mm]	2.92" [74.20mm]	3.60" [91.44mm]	4.00" [101.60mm]
P	1/8"-27 NPT [G1/8"-28 BSPP]	1/4"-18 NPT [G1/4"-19 BSPP]	3/8"-18 NPT [G3/8"-19 BSPP]	1/2"-14 NPT [G1/2"-14 BSPP]
Q	0.549" [13.94mm]	0.689" [17.50mm]	0.81" [20.6]	0.967" [24.56mm]
R	N/A	N/A	N/A	N/A
S	N/A	N/A	N/A	N/A
T	1/4"-20 [M6x1.0]	5/16"-18 [M8x1.25]	5/16"-18 [M8x1.25]	5/16"-18 [M8x1.25]
U	N/A	7.12" [181.0mm]	8.15" [207.1mm]	9.31" [236.4mm]
V	N/A	0.908" [23.06mm]	1.03" [26.2mm]	1.186" [30.12mm]
W	3.000" [76.20mm]	3.625" [92.08mm]	4.312" [109.52mm]	5.000" [127.00mm]

¹O-ring face seal gland connection not available on GPM (metric) models

10 Flow Passage: Dimensions



	GP-201-10 [GPM-201-10]	GP-301-10 [GPM-301-10]
A	3.500" [88.90mm]	4.500" [114.30mm]
B	0.25" [6.4mm]	0.38" [9.5mm]
C	4.000" [101.6mm]	4.937" [125.40mm]
D	0.75" [19.1mm]	0.75" [19.1mm]
E	0.250" [6.40mm]	0.38" [9.5mm]
F	5/16"- 18 [M8x1.25]	5/16"- 18 [M8x1.25]
G	11.91" [302.6mm]	13.62" [346.0mm]
H	6.70" [170.2mm]	7.48" [190.0mm]
I	2.62" [66.5mm]	2.85" [72.4mm]
J	1.00" [25.4mm]	1.250" [31.75mm]
K	0.500" [12.70mm]	0.687" [17.45mm]
L	0.753" [19.13mm]	0.875" [22.23mm]
M	1/4"-18 NPT [G1/4"-19 BSPP]	3/8"-18 NPT [G3/8"-19 BSPP]
N	0.713" [18.11mm]	N/A
O	3.687" [93.65mm]	3.937" [100.00mm]
P	1.374" [34.90mm]	1.374" [34.90mm]
Q	#10-24 [M5x0.8]	#10-24 [M5x0.8]
R	1/4"-20 [M6x1.0]	5/16"-18 [M8x1.25]
S	3.250" [82.55mm]	3.250" [82.55mm]
T	7.66" [194.5mm]	8.58" [217.9mm]
U	4.000" [101.6mm]	4.687" [119.05]



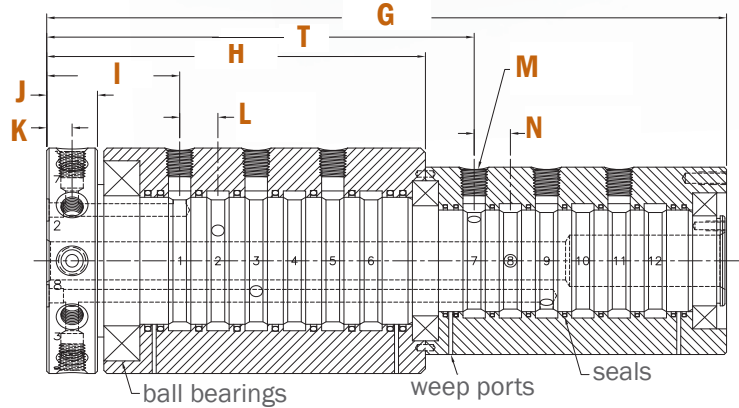
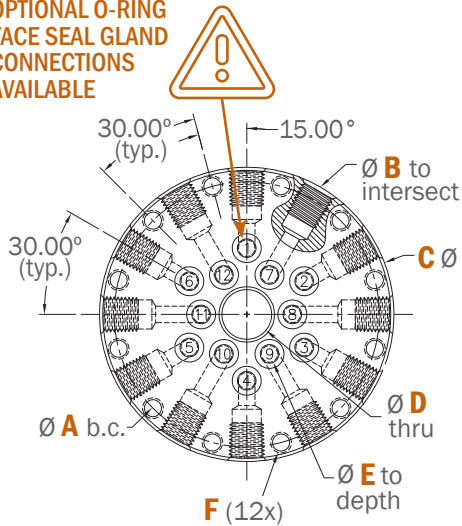
O-RING FACE SEAL GLAND CONNECTIONS

If ordering a GP or GPM 10 passage and you require an O-ring face seal gland connection, please specify "OF" when naming the part number (see pg 6). Download drawing for more information.

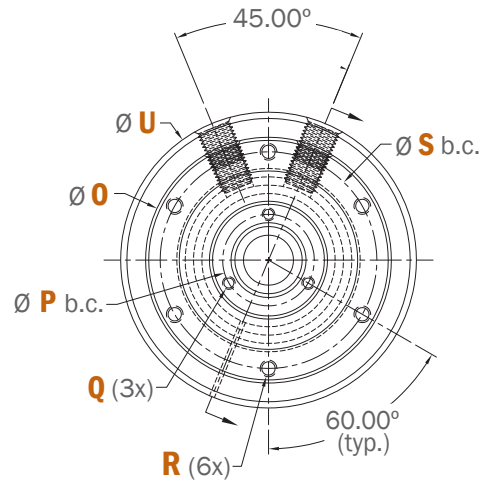
12 Flow Passage: Dimensions



OPTIONAL O-RING FACE SEAL GLAND CONNECTIONS AVAILABLE



	GP-201-12 [GPM-201-12]	GP-301-12 [GPM-301-12]
A	4.000" [101.60mm]	4.500" [114.30mm]
B	0.25" [6.4mm]	0.38" [9.5mm]
C	4.437" [112.70mm]	4.937" [125.40mm]
D	0.75" [19.1mm]	0.75" [19.1mm]
E	0.25" [6.4mm]	0.38" [9.5mm]
F	5/16" - 18 [M8x1.25]	5/16" - 18 [M8x1.25]
G	13.38" [339.8mm]	15.37" [390.5mm]
H	7.45" [170.2mm]	8.36" [212.2mm]
I	2.62" [66.5mm]	2.85" [72.4mm]
J	1.00" [25.40mm]	1.25" [31.75mm]
K	0.500" [12.70mm]	0.687" [17.45mm]
L	0.753" [19.13mm]	0.875" [22.23]
M	1/4"-18 NPT [G1/4"-19 BSPP]	3/8"-18 NPT [G3/8"-19 BSPP]
N	0.713" [18.11mm]	N/A
O	3.687" [93.65mm]	3.937" [100.00mm]
P	1.374" [34.90mm]	1.374" [34.90mm]
Q	#10-24 [M5x0.8]	#10-24 [M5x0.8]
R	1/4"-20 [M6x1.0]	5/16"-18 [M8x1.25]
S	3.250" [82.55mm]	3.250" [82.55mm]
T	8.41" [213.8mm]	9.46" [240.2mm]
U	4.437" [112.70mm]	4.687" [119.05mm]



O-RING FACE SEAL GLAND CONNECTIONS

If ordering a GP or GPM 12 passage and you require an O-ring face seal gland connection, please specify "OF" when naming the part number (see pg 6). Download drawing for more information.

Electrical Slip Ring Integration

- + 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
- + Cord Sets & Pin Connector Options
- + Compatible With a Range of Data Bus Protocols



AVAILABLE SLIP RINGS¹

PART #	# OF CIRCUITS	MAX AMPS/ CIRCUIT	MAX VOLTS	MAX DATA SPEED
ES6A ^{4 5}	6	2	120	Under 50 Mbps
ES6 ⁵	6	2	240	Under 50 Mbps
ES12A ^{4 5}	12	2	120	Under 50 Mbps
ES12 ⁵	12	2	240	Under 50 Mbps
ES18 ⁵	18	2	240	Under 50 Mbps
ES24 ⁵	24	2	240	Under 50 Mbps
ES36 ⁵	36	2	240	Under 50 Mbps
ES56 ⁵	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 ⁵	9	(3x) 10A, (6x) 2A	240	Under 50 Mbps
ESM312 ⁵	15	(3x) 5A, (12x) 2A	240	Under 50 Mbps
ESM420 ⁵	24	(4x) 10A, (20x) 2A	240	Under 50 Mbps
ESM428 ⁵	32	(4x) 5A, (28x) 2A	240	Under 50 Mbps
ESM440 ⁵	44	(4x) 10A, (40x) 2A	240	Under 50 Mbps
ESM448 ⁵	52	(4x) 5A, (48x) 2A	240	Under 50 Mbps
EST6 ⁵	6	10	600	Under 50 Mbps
EST12 ⁵	12	10	600	Under 50 Mbps
EST18 ⁵	18	10	600	Under 50 Mbps
EST24 ⁵	24	10	600	Under 50 Mbps
ESET4 ²	4	Ethernet Only	600	100 Mbps
ESET8 ³	8	Ethernet Only	600	1 Gbps
ESET68 ³	14	(6x) 10A	600	1 Gbps
ESET128 ³	20	(12x) 10A	600	1 Gbps
ESET184 ²	22	(18x) 10A	600	100 Mbps

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

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

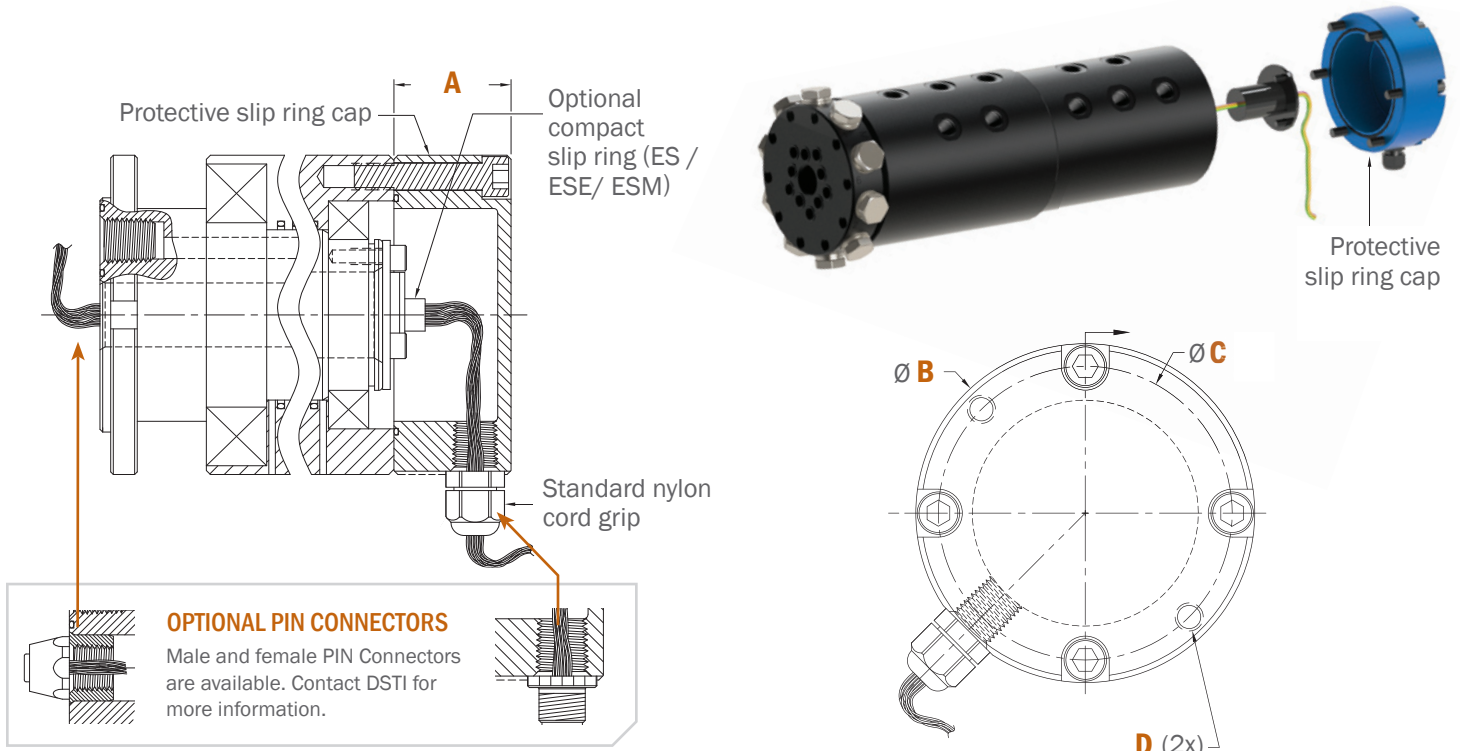
² 100 BaseT Ethernet connections

³ 1000 BaseT Ethernet connections

⁴ Only available for GP-1x1 and GPM-1x1 models with a thru-bore.

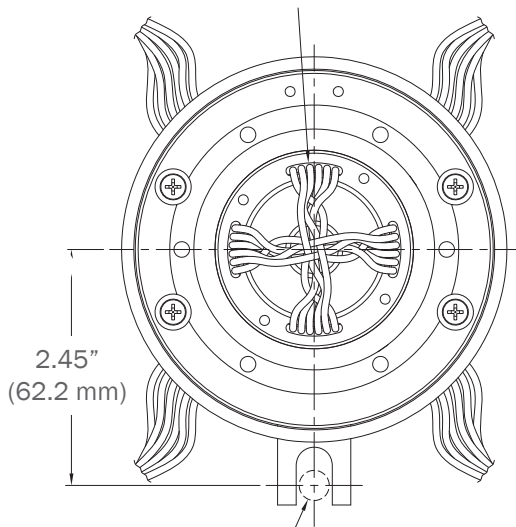
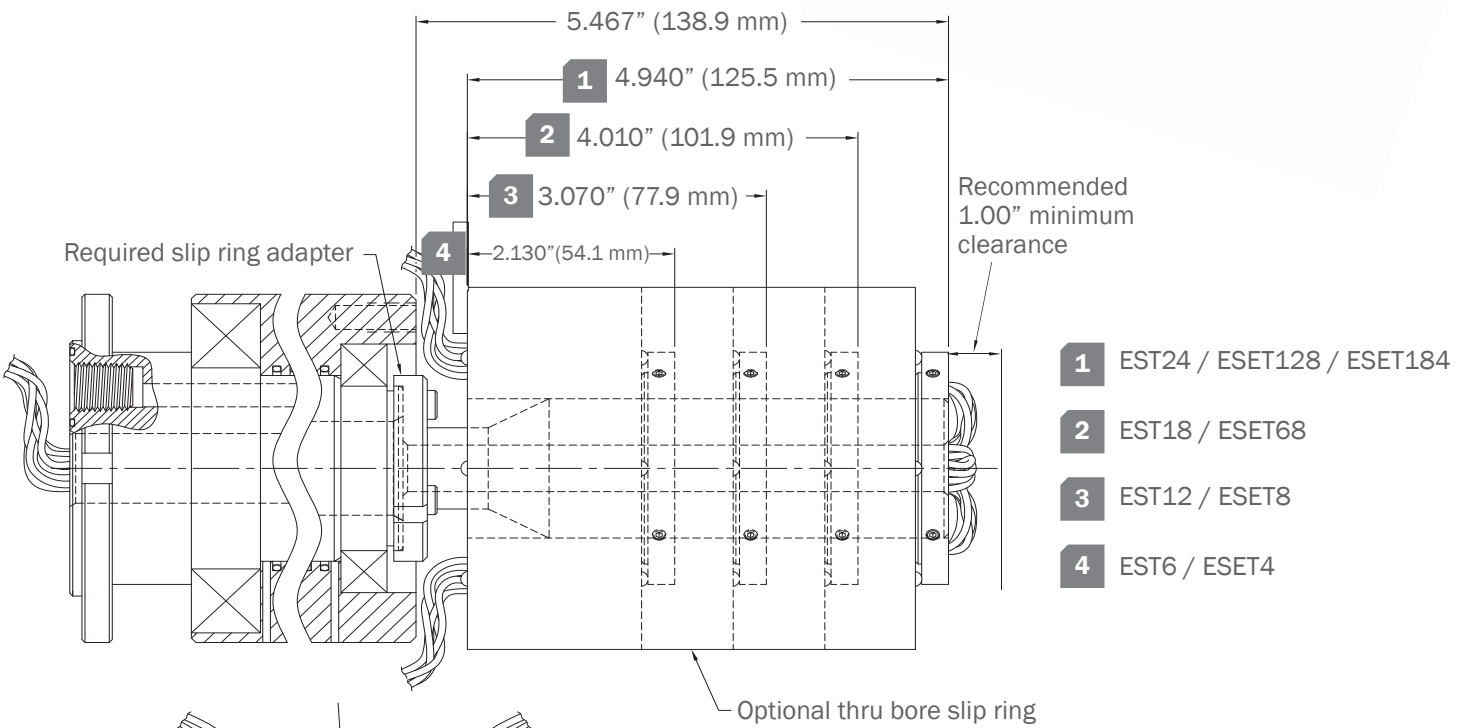
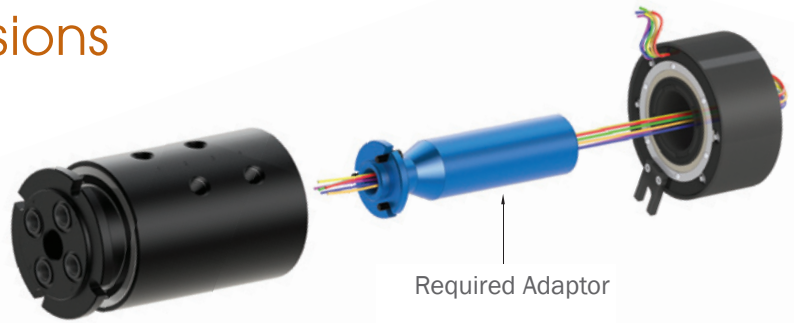
⁵ In order to successfully transfer digital data signals, a variety of conditions must be met. Please consult with DSTI for approval.

Protective Cap for Capsule Slip Rings (Optional)



Compatible Models	A	B	C	D
GP(M)-121	0.875" [22.2mm]	2.937" [74.6mm]	2.375" [60.33mm]	1/4"-20 [M6x1.0]
GP(M)-131	0.875" [22.2mm]	2.937" [74.6mm]	2.375" [60.33mm]	1/4"-20 [M6x1.0]
GP(M)-141	0.875" [22.2mm]	2.937" [74.6mm]	2.375" [60.33mm]	1/4"-20 [M6x1.0]
GP(M)-161	0.875" [22.2mm]	3.187" [80.9mm]	2.625" [66.68mm]	1/4"-20 [M6x1.0]
GP(M)-201-10	1.375" [34.9mm]	3.687" [93.6mm]	3.250" [82.55mm]	1/4"-20 [M6x1.0]
GP(M)-201-12	1.375" [34.9mm]	3.687" [93.6mm]	3.250" [82.55mm]	1/4"-20 [M6x1.0]
GP(M)-221	1.375" [34.93mm]	3.750" [95.25mm]	3.250" [82.55mm]	5/16"-18 [M8x1.25]
GP(M)-231	1.375" [34.93mm]	3.750" [95.25mm]	3.250" [82.55mm]	5/16"-18 [M8x1.25]
GP(M)-241	1.375" [34.93mm]	3.750" [95.25mm]	3.250" [82.55mm]	5/16"-18 [M8x1.25]
GP(M)-261	1.375" [34.93mm]	4.000" [101.6mm]	3.375" [85.73mm]	5/16"-18 [M8x1.25]
GP(M)-301-10	1.375" [34.93mm]	4.937" [125.4mm]	3.250" [82.55mm]	5/16"-18 [M8x1.25]
GP(M)-301-12	1.375" [34.93mm]	3.937" [100.0mm]	3.250" [82.55mm]	5/16"-18 [M8x1.25]
GP(M)-321	1.375" [34.93mm]	4.187" [106.3mm]	3.625" [92.08mm]	5/16"-18 [M8x1.25]
GP(M)-331	1.375" [34.93mm]	4.187" [106.3mm]	3.625" [92.08mm]	5/16"-18 [M8x1.25]
GP(M)-341	1.375" [34.93mm]	4.187" [106.3mm]	3.625" [92.08mm]	5/16"-18 [M8x1.25]
GP(M)-361	1.375" [34.93mm]	4.250" [107.9mm]	3.625" [92.08mm]	5/16"-18 [M8x1.25]
GP(M)-421	1.375" [34.93mm]	4.937" [125.4mm]	4.125" [104.78mm]	5/16"-18 [M8x1.25]
GP(M)-431	1.375" [34.93mm]	4.937" [125.4mm]	4.125" [104.78mm]	5/16"-18 [M8x1.25]
GP(M)-441	1.375" [34.93mm]	4.937" [125.4mm]	4.125" [104.78mm]	5/16"-18 [M8x1.25]
GP(M)-561	1.375" [34.93mm]	6.437" [163.5mm]	5.625" [142.88mm]	3/8"-16 [M10x1.50]
GP(M)-621	1.375" [34.93mm]	7.187" [182.5mm]	6.000" [152.40mm]	1/2"-13 [M12x1.75]
GP(M)-641	1.375" [34.93mm]	7.187" [182.5mm]	6.000" [152.40mm]	1/2"-13 [M12x1.75]

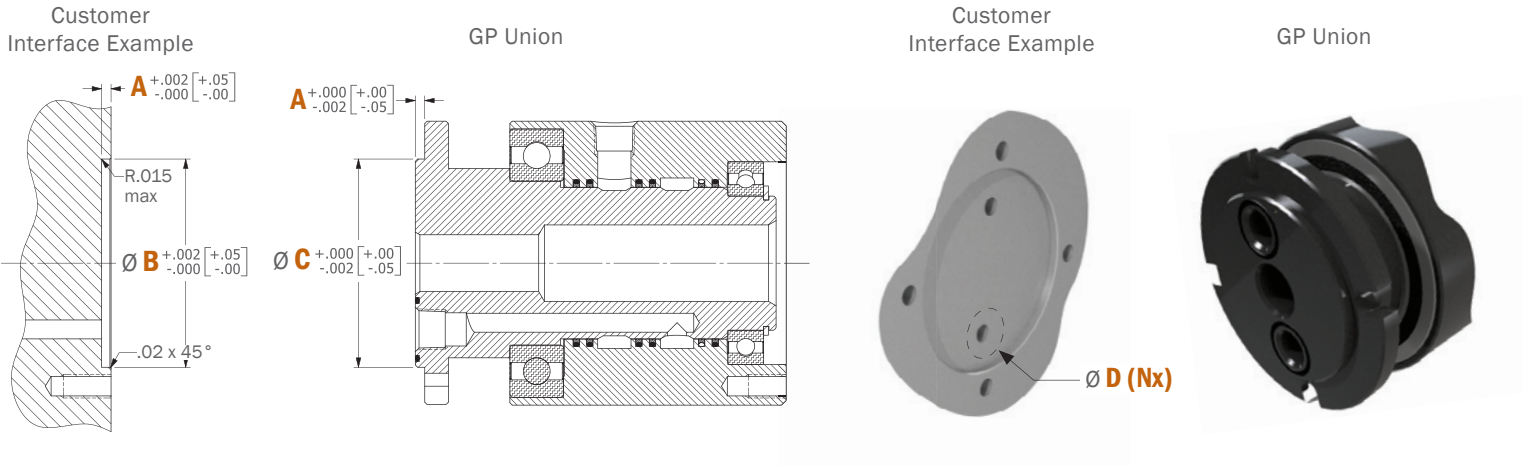
Thru-Bore Slip Ring Dimensions



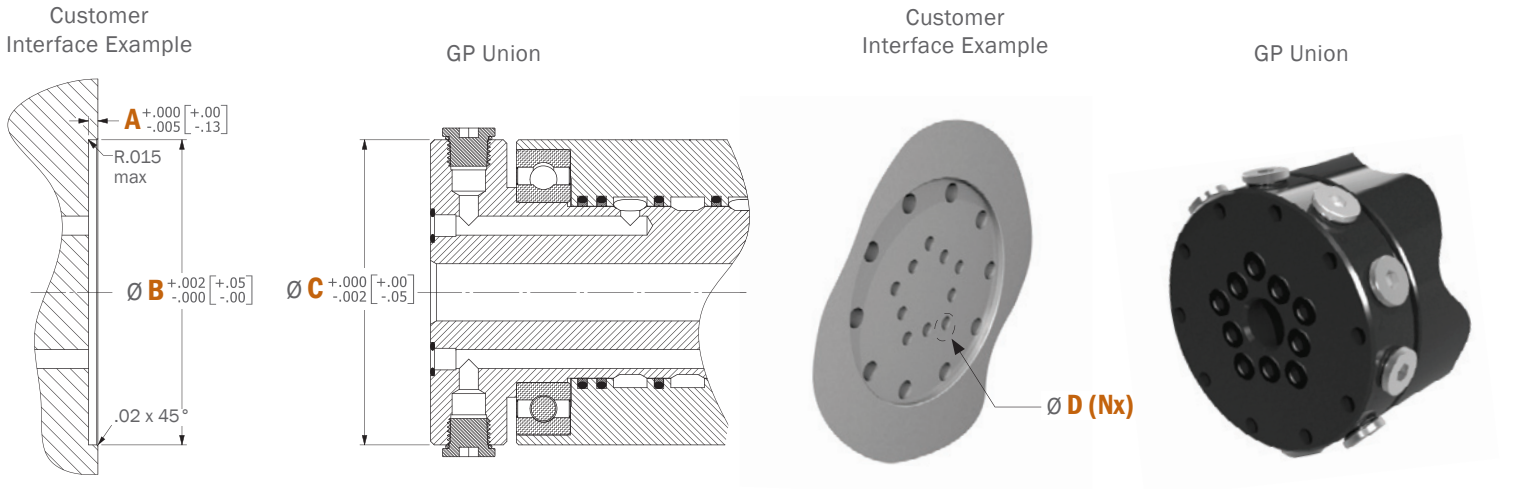
Ø .313" (7.95 mm) screw or pin for slip ring anti-rotate

Customer Interface using O-Ring Seal Connection

GP 2 - 8 PASSAGE MODELS (NOT AVAILABLE ON GPM MODELS)



GP & GPM 10 & 12 PASSAGE MODELS



Customer Interface using O-Ring Seal Connection

(2 - 8 PASSAGE MODELS)

PART #	A	B	C	D (Nx)
GP-120	0.125" [3.18mm]	1.626" [41.30mm]	1.625" [41.28mm]	0.656" [16.66mm] (2x)
GP-121	0.125" [3.18mm]	2.188" [55.58mm]	2.187" [55.55mm]	0.706" [17.93mm] (2x)
GP-220	0.125" [3.18mm]	2.001" [50.83mm]	2.000" [50.80mm]	0.843" [21.24mm] (2x)
GP-221	0.125" [3.18mm]	2.751" [69.88mm]	2.750" [69.85mm]	0.843" [21.24mm] (2x)
GP-320	0.125" [3.18mm]	2.376" [60.35mm]	2.375" [60.33mm]	0.968" [24.59mm] (2x)
GP-321	0.125" [3.18mm]	3.001" [76.23mm]	3.000" [76.20mm]	0.968" [24.59mm] (2x)
GP-420	0.125" [3.18mm]	2.751" [69.88mm]	2.750" [69.85mm]	1.180" [29.97mm] (2x)
GP-421	0.187" [4.75mm]	3.626" [92.10mm]	3.625" [92.08mm]	1.156" [29.36mm] (2x)
GP-621	0.187" [4.75mm]	5.001" [127.03mm]	5.000" [127.00mm]	1.694" [43.03mm] (2x)
GP-130	0.125" [3.18mm]	1.876" [47.65mm]	1.875" [47.63mm]	0.656" [16.66mm] (3x)
GP-131	0.125" [3.18mm]	2.188" [55.58mm]	2.187" [55.55mm]	0.706" [17.93mm] (3x)
GP-230	0.125" [3.18mm]	2.376" [60.35mm]	2.375" [60.33mm]	0.843" [21.24mm] (3x)
GP-231	0.125" [3.18mm]	2.751" [69.88mm]	2.750" [69.85mm]	0.843" [21.24mm] (3x)
GP-330	0.125" [3.18mm]	2.626" [66.70mm]	2.625" [66.68mm]	0.968" [24.59mm] (3x)
GP-331	0.125" [3.18mm]	3.001" [76.23mm]	3.000" [76.20mm]	0.968" [24.59mm] (3x)
GP-430	0.187" [4.75mm]	3.126" [79.40mm]	3.125" [79.38mm]	1.156" [29.36mm] (3x)
GP-431	0.187" [4.75mm]	3.626" [92.10mm]	3.625" [92.08mm]	1.156" [29.36mm] (3x)
GP-530	0.187" [4.75mm]	3.751" [95.28mm]	3.750" [95.25mm]	1.420" [36.07mm] (3x)
GP-630	0.187" [4.75mm]	4.626" [117.50mm]	4.625" [117.48mm]	1.694" [43.03mm] (3x)
GP-140	0.125" [3.18mm]	1.876" [47.65mm]	1.875" [47.63mm]	0.656" [16.66mm] (4x)
GP-141	0.125" [3.18mm]	2.188" [55.58mm]	2.187" [55.55mm]	0.706" [17.93mm] (4x)
GP-240	0.125" [3.18mm]	2.376" [60.35mm]	2.375" [60.33mm]	0.843" [21.24mm] (4x)
GP-241	0.125" [3.18mm]	2.751" [69.88mm]	2.750" [69.85mm]	0.843" [21.24mm] (4x)
GP-340	0.125" [3.18mm]	2.626" [66.70mm]	2.625" [66.68mm]	0.968" [24.59mm] (4x)
GP-341	0.125" [3.18mm]	3.001" [76.23mm]	3.000" [76.20mm]	0.968" [24.59mm] (4x)
GP-440	0.187" [4.75mm]	3.126" [79.40mm]	3.125" [79.38mm]	1.180" [29.97mm] (4x)
GP-441	0.187" [4.75mm]	3.626" [92.10mm]	3.625" [92.08mm]	1.180" [29.97mm] (4x)
GP-540	0.187" [4.75mm]	3.751" [95.28mm]	3.750" [95.25mm]	1.420" [36.07mm] (4x)
GP-641	0.187" [4.75mm]	5.001" [127.03mm]	5.000" [127.00mm]	1.694" [43.03mm] (4x)
GP-161	0.125" [3.18mm]	2.376" [60.35mm]	2.375" [60.33mm]	0.706" [17.93mm] (6x)
GP-261	0.125" [3.18mm]	2.876" [73.05mm]	2.875" [73.03mm]	0.843" [21.24mm] (6x)
GP-361	0.125" [3.18mm]	3.251" [82.58mm]	3.250" [82.55mm]	0.968" [24.59mm] (6x)
GP-460	0.187" [4.75mm]	3.813" [96.85mm]	3.812" [96.83mm]	1.156" [29.36mm] (6x)
GP-561	0.187" [4.75mm]	4.751" [120.68mm]	4.750" [120.65mm]	1.420" [36.07mm] (6x)
GP-180	0.125" [3.18mm]	2.626" [66.70mm]	2.625" [66.68mm]	0.706" [17.93mm] (8x)
GP-280	0.125" [3.18mm]	3.126" [79.40mm]	3.125" [79.38mm]	0.843" [21.24mm] (8x)
GP-380	0.187" [4.75mm]	3.626" [92.10mm]	3.625" [92.08mm]	0.968" [24.59mm] (8x)
GP-480	0.187" [4.75mm]	4.251" [107.98mm]	4.250" [107.95mm]	1.156" [29.36mm] (8x)

(10 & 12 PASSAGE MODELS)

PART #	A	B	C	D (Nx)
GP-201-10	0.094" [2.39mm]	4.001" [101.63mm]	4.000" [101.60mm]	0.437" [11.10mm] (10x)
GP-301-10	0.187" [4.75mm]	4.938" [125.43mm]	4.937" [125.40mm]	0.562" [14.27mm] (10x)
GP-201-12	0.094" [2.39mm]	4.438" [112.73mm]	4.437" [112.70mm]	0.437" [11.10mm] (12x)
GP-301-12	0.187" [4.75mm]	4.938" [125.43mm]	4.937" [125.40mm]	0.562" [14.27mm] (12x)

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 ROTARY UNION 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 1.1).

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: O-RING MANIFOLD TYPE:

Make sure the rotary union shaft face & equipment mounting surface is clean and free from dents or chips to insure proper installation. Equipment pilot bore needs to be concentric to the center line of the rotary union shaft to assure proper function. Install face mount O-rings into groove or counter bore in rotating union shaft face. General assembly grease can be used as needed to hold O-rings into place during assembly. Align rotary union shaft with equipment pilot bore and flow passages, then insert into place. Bolt assembly into place using tapped holes or mounting flange on rotary union face.

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

SHAFT MOUNTING, THREADED CONNECTIONS:

When mounting the shaft using threaded connections, make sure all fittings are properly tightened & pipe thread sealant is used as required. Equipment mounting surface needs to be concentric to the center line of the rotary union shaft to assure proper function. After all fittings are in place, bolt assembly into place using tapped holes or mounting flange on rotating union shaft.

INITIAL START-UP:

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



FIGURE 1.1

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 or consequential damages of any kind in connection with the sale, use or repair of any product purchased from DSTI. Warranty is subject to change.

Engineered Fluid Solutions

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

