# *ID-TORR* Vacuum Fittings

Dixon Sanitary manufactures high-quality vacuum components for the semiconductor industry.

## The D-TORR product range includes:

- · KF and ISO fittings and flanges
- Flexible bellows
- Clamps
- · Weld elbows, reducers, and tees
- · KF ball valves
- Accessories
- · Special fabrications

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#### Application:

 Vacuum sealing for ½" - 2" OD tubing in the semiconductor industry

#### Sizes:

• KF10 - KF50

#### Features:

- Each assembly contains two identical flanges and a centering ring assembly and is clamped together with a thumbscrew clamp
- Coupling features prevent O-ring collapse and keep the assembly aligned
- KF flanges are compatible with other ISO-KF-QF vacuum flange manufacturers' components
- All fittings are IPA cleaned and bagged in a controlled environment
- MTR's available, see page 14

#### Materials:

• Fittings: 304 or 316L stainless steel

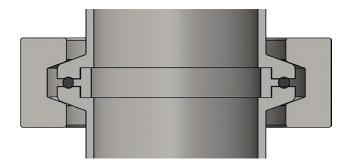
· Clamps: aluminum

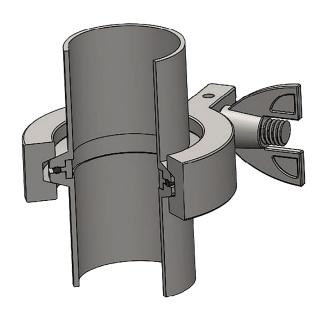
· O-ring: FKM

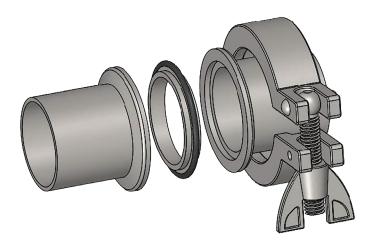
#### Specifications:

Maximum temperature: 302°F (150°C)
Helium leakage testing to 1x10-8 Torr

· Standards followed: ISO2681





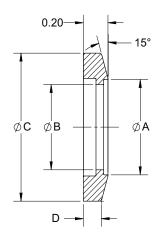


# Part Number Breakdown Example: <u>DVF</u> - <u>A 10 G A</u>

(KF10, 304 stainless steel bored flange)

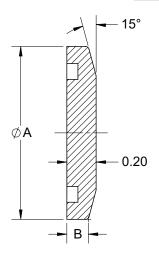
Product Line	-	Series	Size	Material	Туре
DVF		A - KF B - ISO C - Fitting	10 - KF10 16 - KF16 25 - KF25 40 - KF40 50 - KF50	G - 304 stainless steel R - 316L stainless steel <sup>1</sup> L - Aluminum (clamp only)	A - KF bored flange B - KF blank flange C - KF short weld flange D - KF long weld flange E - KF centering ring assembly F - KF overpressure ring G - KF flex bellow H - KF clamp

<sup>&</sup>lt;sup>1</sup> Minimum quantity requirements apply.



## **KF Bored Flange**

Flange Size	А	В	С	D	304 Stainless Steel Part #
KF10	0.51"	0.45"	1.18"	0.12"	DVF-A10GA
KF16	0.76"	0.68"	1.18"	0.11"	DVF-A16GA
KF25	1.01"	0.94"	1.58"	0.13"	DVF-A25GA
KF40	1.51"	1.43"	2.17"	0.12"	DVF-A40GA
KF50	2.01"	1.94"	2.95"	0.12"	DVF-A50GA

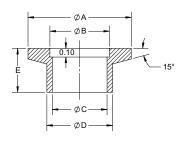


## **KF Blank Flange**

Flange Size	А	В	304 Stainless Steel Part #
KF10	1.18"	0.12"	DVF-A10GB
KF16	1.18"	0.11"	DVF-A16GB
KF25	1.58"	0.13"	DVF-A25GB
KF40	2.17"	0.12"	DVF-A40GB
KF50	2.95"	0.12"	DVF-A50GB

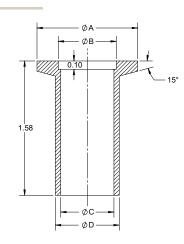
## **KF Short Weld Flange**

Flange Size	А	В	С	D	Е	304 Stainless Steel Part #
KF10	1.18"	0.48"	0.37"	0.50"	0.50"	DVF-A10GC
KF16	1.18"	0.67"	0.62"	0.75"	0.50"	DVF-A16GC
KF25	1.58"	1.03"	0.87"	1.00"	0.50"	DVF-A25GC
KF40	2.17"	1.62"	1.37"	1.50"	0.75"	DVF-A40GC
KF50	2.95"	2.05"	1.87"	2.00"	0.75"	DVF-A50GC



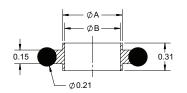
## **KF Long Weld Flange**

Flange Size	А	В	С	D	304 Stainless Steel Part #
KF10	1.18"	0.48"	0.37"	0.50"	DVF-A10GD
KF16	1.18"	0.67"	0.62"	0.75"	DVF-A16GD
KF25	1.58"	1.03"	0.87"	1.00"	DVF-A25GD
KF40	2.17"	1.62"	1.37"	1.50"	DVF-A40GD
KF50	2.95"	2.05"	1.87"	2.00"	DVF-A50GD



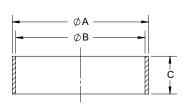
## **KF Centering Ring Assembly**

304 Stainless Steel with FKM O-ring Part #	В	А	Flange Size
DVF-A10GE	0.44"	0.48"	KF10
DVF-A16GE	0.63"	0.67"	KF16
DVF-A25GE	0.98"	1.02"	KF25
DVF-A40GE	1.57"	1.61"	KF40
DVF-A50GE	1.97"	2.05"	KF50

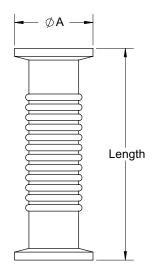


## **KF Overpressure Ring**

Flange Size	Α	В	С	Max PSIG	304 Stainless Steel Part #
KF10	1.25"	1.19"	0.35"	100	DVF-A1016GF
KF16	1.25"	1.19"	0.35"	100	DVF-A1016GF
KF25	1.66"	1.58"	0.35"	100	DVF-A25GF
KF40	2.26"	2.18"	0.35"	75	DVF-A40GF
KF50	2 77"	2 64"	0.15"	50	DVF-A50GF

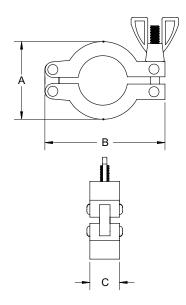


All dimensions are in inches unless indicated otherwise.



## **KF Flex Bellow (Formed)**

Flange Size	А	Length	304 Stainless Steel Part #
KF10	1.18"	3.20"	DVF-A10GG
KF16	1.18"	3.20"	DVF-A16GG
KF25	1.58"	4.20"	DVF-A25GG
KF40	2.17"	4.20"	DVF-A40GG
KF50	2.95"	4.20"	DVF-A50GG
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# **KF Clamp**

Flange Size	А	В	С	Aluminum Part #
KF10	1.69"	2.39"	0.63"	DVF-A1016LH
KF16	1.69"	2.39"	0.63"	DVF-A1016LH
KF25	2.14"	2.80"	0.63"	DVF-A25LH
KF40	2.75"	3.44"	0.63"	DVF-A40LH
KF50	3.50"	4.25"	0.71"	DVF-A50LH

## KF Two-Way Encapsulated Ball Valve

#### Sizes:

• ½" - 2"

#### Features:

- · Live-loaded stem packing
- · Blowout-proof stem
- · Full port design
- ISO5211 high mounting pad
- · Encapsulated seals
- · Lockable handle
- Can be actuated
- · 100% tested before shipping

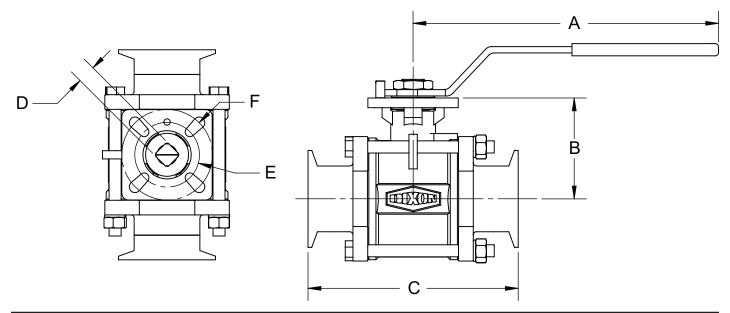
#### Materials:

- · Body, ends, and ball: CF8M stainless steel
- Seats: virgin PTFE, 15% glass reinforced RTFE, 25% carbon reinforced PTFE, 50% stainless steel reinforced PTFE or UHMW

#### Specifications:

- Maximum pressure rating: 1000 PSI WOG
- Helium leakage testing to 1x10<sup>-8</sup> Torr

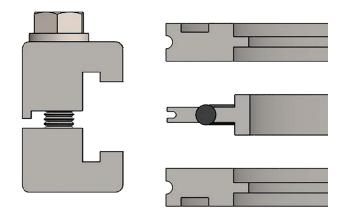




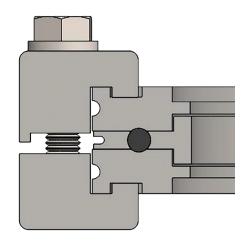
Flange Size	А	В	С	D (mm)	E (mm)	F (mm)	Stainless Steel Part #
KF10	4.9"	1.5"	4.3"	9.00	F03	F04	BV2CV-050VV-A
KF16	4.9"	1.8"	4.7"	9.00	F03	F04	BV2CV-075VV-A
KF25	5.4"	2.1"	4.9"	11.00	F04	F05	BV2CV-100VV-A
KF40	9.3"	2.7"	5.6"	14.00	F05	F07	BV2CV-150VV-A
KF50	9.3"	3.1"	6.4"	14.00	F05	F07	BV2CV-200VV-A

All dimensions are in inches unless indicated otherwise.

## **ISO Flanges and Fittings**







#### Application:

 Vacuum sealing for 2½" - 10" OD tubing in the semiconductor industry

#### Sizes:

ISO63 - ISO250

#### Features:

- Each assembly contains two identical flanges and a centering ring assembly and is joined together by clamps
- Centering ring keeps the flanges in line and prevents the O-ring from being pushed in by atmospheric pressure.
- Multiple clamps must be used to ensure a sturdy connection
- ISO fittings are compatible with other manufacturers' ISO-KF-QF vacuum flanges
- All fittings are IPA cleaned and bagged in a controlled environment
- MTR's available, see page 14

#### Materials:

• Fittings: 304 or 316L stainless steel

· Clamps: aluminum

O-ring: FKM

#### **Specifications:**

• Maximum temperature: 302°F (150°C)

Helium leakage testing to 1x10-8 Torr

· Standards followed: ISO2681

# **ISO Flanges and Fittings**

# Part Number Breakdown Example: <u>DVF</u> - <u>B 63 G A</u>

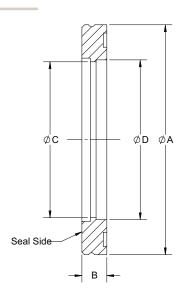
(ISO63, 304 stainless steel bored flange)

Product Line	-	Series	Size	Material	Туре
DVF		A - KF B - ISO C - Fitting	63 - ISO63 80 - ISO80 100 - ISO100 160 - ISO160 200 - ISO200 250 - ISO250	G - 304 stainless steel R - 316L stainless steel <sup>1</sup> L - Aluminum (clamp only)	A - ISO bored flange B - ISO blank flange E - ISO centering ring assembly G - ISO flexible bellow H - ISO double claw clamp

<sup>&</sup>lt;sup>1</sup> Minimum quantity requirements apply.

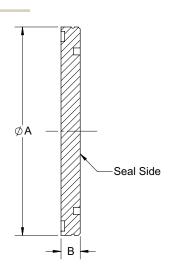
## **ISO Bored Flange**

Flange Size	А	В	С	D	304 Stainless Steel Part #
ISO63	3.74"	0.47"	2.44"	2.51"	DVF-B63GA
ISO80	4.33"	0.47"	2.94"	3.01"	DVF-B80GA
ISO100	5.12"	0.47"	3.91"	4.02"	DVF-B100GA
ISO160	7.09"	0.47"	5.87"	6.03"	DVF-B160GA
ISO200	9.45"	0.47"	7.87"	8.03"	DVF-B200GA
ISO250	11.42"	0.47"	9.88"	10.02"	DVF-B250GA



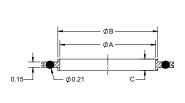
## **ISO Blank Flange**

Flange Size	А	В	304 Stainless Steel Part #
ISO63	3.74"	0.47"	DVF-B63GB
ISO80	4.33"	0.47"	DVF-B80GB
ISO100	5.12"	0.47"	DVF-B100GB
ISO160	7.09"	0.47"	DVF-B160GB
ISO200	9.45"	0.47"	DVF-B200GB
ISO250	11.42"	0.47"	DVF-B250GB



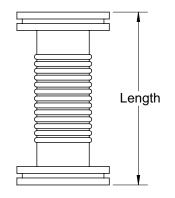
# **ISO Flanges and Fittings**

## **ISO Centering Ring Assembly**



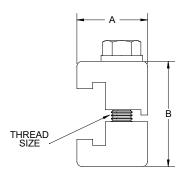
Flange Size	А	В	С	304 Stainless Steel Centering Ring FKM O-ring Aluminum Spacer Ring Part #
ISO63	2.63"	2.74"	0.31"	DVF-B63GE
ISO80	3.14"	3.25"	0.31"	DVF-B80GE
ISO100	3.89"	4.00"	0.31"	DVF-B100GE
ISO160	5.90"	6.01"	0.31"	DVF-B160GE
ISO200	8.26"	8.37"	0.31"	DVF-B200GE

## ISO Flexible Bellow (Formed)



Flange Size	Length	Compressed Length	304 Stainless Steel Part #
ISO63	7.00"	6.00"	DVF-B63GG
ISO80	7.00"	6.00"	DVF-B80GG
ISO100	7.00"	6.00"	DVF-B100GG
ISO160	7.00"	6.00"	DVF-B160GG
ISO200	7.00"	6.00"	DVF-B200GG
ISO250	13.50"	10.50"	DVF-B250GG

## **ISO Double Claw Clamp**



Flange Size	А	В	Thread Size	Qty. of Clamps Required	Aluminum Part #
ISO63	0.94"	1.96"	5/16-18"	3 - 4	DVF-B63100LH
ISO80	0.94"	1.96"	5/16-18"	4 - 8	DVF-B63100LH
ISO100	0.94"	1.96"	5/16-18"	4 - 8	DVF-B63100LH
ISO160	1.10"	1.96"	5/16-18"	4 - 8	DVF-B160250LH
ISO200	1.10"	1.96"	5/16-18"	6 - 12	DVF-B160250LH
ISO250	1.10"	1.96"	5/16-18"	6 - 12	DVF-B160250LH

Note: ISO clamps are sold in multiples of 4.

# **Vacuum Weld Fittings**

Dixon® manufactures high-quality weld fittings for use in high-vacuum and high-temperature applications. Each part is crafted with precision to ensure a leak-free fit. All fittings are IPA cleaned and bagged in a controlled environment.

### Application:

• Use in high-vacuum and high-temperature applications

#### Sizes:

• 1/2" - 6"

#### Feature:

• MTR's available, see page 14

#### Materials:

• Fittings: 304 or 316L stainless steel

#### Specifications:

- Helium leakage testing to 1x10<sup>-8</sup> Torr
- Standards followed: ASTM A270, ASTM A269, and ASME SA270



# Part Number Breakdown Example: <u>DVF</u> - <u>C 050 G 1 Q</u>

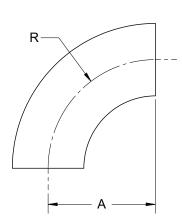
(½" 90° elbow, polished weld fitting, 304 stainless steel)

Product Line	-	Series	Size	Material	Finish	Туре
DVF		A - KF B - ISO C - Fitting	050 - ½" 075 - ¾" 100 - 1" 150 - 1½" 200 - 2" 250 - 2½" 300 - 3" 400 - 4" 600 - 6"	G - 304 stainless steel R - 316L stainless steel <sup>1</sup>	1 - polished 2 - bead blast <sup>1</sup>	Q - 90° elbow R - 90° elbow with tangents S - 45° elbow T - 45° elbow with tangents U - concentric reducer V - tee W - reducing tee

<sup>&</sup>lt;sup>1</sup> Minimum quantity requirements apply.

## Weld 90° Elbow

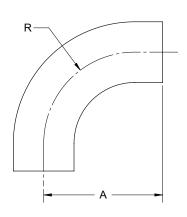
OD	А	R	304 Stainless Steel Part #
1/2"	0.75"	0.75"	DVF-C050G1Q
3/4"	1.00"	1.00"	DVF-C075G1Q
1"	1.50"	1.50"	DVF-C100G1Q
1½"	2.25"	2.25"	DVF-C150G1Q
2"	3.00"	3.00"	DVF-C200G1Q
21/2"	3.75"	3.75"	DVF-C250G1Q
3"	4.50"	4.50"	DVF-C300G1Q
4"	6.00"	6.00"	DVF-C400G1Q
6"	9.00"	9.00"	DVF-C600G1Q



All dimensions are in inches unless indicated otherwise.

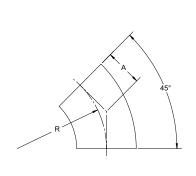
# **Vacuum Weld Fittings**

# Weld 90° Elbow with Tangents



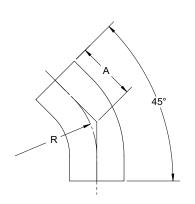
OD	А	R	304 Stainless Steel Part #
3/4"	1.42"	1.00"	DVF-C075G1R
1"	1.82"	1.50"	DVF-C100G1R
1½"	2.94"	2.25"	DVF-C150G1R
2"	4.06"	3.00"	DVF-C200G1R
21/2"	5.19"	3.75"	DVF-C250G1R
3"	6.31"	4.50"	DVF-C300G1R
4"	8.31"	6.00"	DVF-C400G1R
6"	11.50"	9.00"	DVF-C600G1R

## Weld 45° Elbow



OD	А	R	304 Stainless Steel Part #
1/2"	0.31"	0.75"	DVF-C050G1S
3/4"	0.41"	1.00"	DVF-C075G1S
1"	0.62"	1.50"	DVF-C100G1S
11/2"	0.93"	2.25"	DVF-C150G1S
2"	1.25"	3.00"	DVF-C200G1S
21/2"	1.53"	3.75"	DVF-C250G1S
3"	1.84"	4.50"	DVF-C300G1S
4"	2.50"	6.00"	DVF-C400G1S
6"	3.73"	9.00"	DVF-C600G1S

## **Weld 45° Elbow with Tangents**

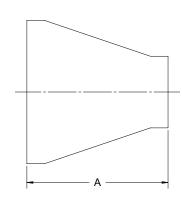


3/4"         0.76"         1.00"         DVF-C075G1T           1"         1.19"         1.50"         DVF-C100G1T           1½"         1.63"         2.25"         DVF-C150G1T           2"         2.31"         3.00"         DVF-C200G1T           2½"         3.00"         3.75"         DVF-C250G1T           3"         3.68"         4.50"         DVF-C300G1T           4"         4.81"         6.00"         DVF-C400G1T           6"         7.33"         9.00"         DVF-C600G1T		OD	А	R	304 Stainless Steel Part #
1½"       1.63"       2.25"       DVF-C150G1T         2"       2.31"       3.00"       DVF-C200G1T         2½"       3.00"       3.75"       DVF-C250G1T         3"       3.68"       4.50"       DVF-C300G1T         4"       4.81"       6.00"       DVF-C400G1T	_	3/4"	0.76"	1.00"	DVF-C075G1T
2"       2.31"       3.00"       DVF-C200G1T         2½"       3.00"       3.75"       DVF-C250G1T         3"       3.68"       4.50"       DVF-C300G1T         4"       4.81"       6.00"       DVF-C400G1T		1"	1.19"	1.50"	DVF-C100G1T
2½"       3.00"       3.75"       DVF-C250G1T         3"       3.68"       4.50"       DVF-C300G1T         4"       4.81"       6.00"       DVF-C400G1T		11/2"	1.63"	2.25"	DVF-C150G1T
3" 3.68" 4.50" <b>DVF-C300G1T</b> 4" 4.81" 6.00" <b>DVF-C400G1T</b>		2"	2.31"	3.00"	DVF-C200G1T
4" 4.81" 6.00" <b>DVF-C400G1T</b>		21/2"	3.00"	3.75"	DVF-C250G1T
		3"	3.68"	4.50"	DVF-C300G1T
6" 7.33" 9.00" <b>DVF-C600G1T</b>		4"	4.81"	6.00"	DVF-C400G1T
		6"	7.33"	9.00"	DVF-C600G1T

# **Vacuum Weld Fittings**

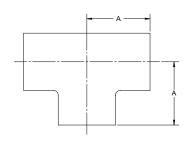
## **Concentric Reducer with Tangents**

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OD	А	304 Stainless Steel Part #
1" x ¾"	1.38"	DVF-C100075G1U
1½" x ¾"	2.38"	DVF-C150075G1U
1½" x 1"	2.38"	DVF-C150100G1U
2" x 1"	2.38"	DVF-C200100G1U
2" x 1½"	2.38"	DVF-C200150G1U
2½" x 1½"	2.38"	DVF-C250150G1U
2½" x 2"	2.38"	DVF-C250200G1U
3" x 1½"	3.63"	DVF-C300150G1U
3" x 2"	3.63"	DVF-C300200G1U
3" x 2½"	3.63"	DVF-C300250G1U
4" x 2"	3.63"	DVF-C400200G1U
4" x 2½"	3.63"	DVF-C400250G1U
4" x 3"	3.63"	DVF-C400300G1U



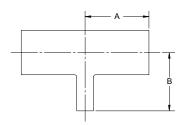
## **Weld Tee**

OD	А	304 Stainless Steel Part #
1/2"	0.75"	DVF-C050G1V
3/4"	1.00"	DVF-C075G1V
1"	1.88"	DVF-C100G1V
11/2"	2.25"	DVF-C150G1V
2"	3.00"	DVF-C200G1V
21/2"	3.00"	DVF-C250G1V
3"	3.25"	DVF-C300G1V
4"	3.88"	DVF-C400G1V
6"	5.00"	DVF-C600G1V



## **Weld Reducing Tee**

OD	А	В	304 Stainless Steel Part #
1" x ¾"	1.88"	2.13"	DVF-C100075G1W
1½" x ¾"	2.25"	2.25"	DVF-C150075G1W
1½" x 1"	2.25"	2.38"	DVF-C150100G1W
2" x 1"	3.00"	2.38"	DVF-C200100G1W
2" x 1½"	3.00"	2.38"	DVF-C200150G1W
2½" x 1½"	3.00"	2.50"	DVF-C250150G1W
2½" x 2"	3.00"	2.75"	DVF-C250200G1W
3" x 1½"	3.25"	3.25"	DVF-C300150G1W
3" x 2"	3.25"	3.00"	DVF-C300200G1W
3" x 2½"	3.25"	3.25"	DVF-C300250G1W
4" x 1½"	3.88"	3.50"	DVF-C400150G1W
4" x 2"	3.88"	4.00"	DVF-C400200G1W
4" x 2½"	3.88"	3.75"	DVF-C400250G1W
4" x 3"	3.88"	3.75"	DVF-C400300G1W
6" x 3"	5.00"	4.75"	DVF-C600300G1W
6" x 4"	5.00"	4.88"	DVF-C600400G1W



All dimensions are in inches unless indicated otherwise.

## **MTR - Material Test Reports**

An MTR is a report that contains information about the raw materials, chemical properties, and mechanical properties of a part. Dixon Sanitary provides material test reports for vacuum fittings.

#### Each MTR will contain:

- · Part number and part description
- · Material and material standards
- Heat number
- · Chemical properties
- · Mechanical properties
- Job number

### To retrieve an MTR by QR code:

- 1. Scan the QR code on the product packaging
- 2. Enter the job number
- 3. Review the MTR

#### To retrieve an MTR at dixonvalve.com:

- 1. Go to dixonvalve.com/knowledge-center/interactive-tools/mtr
- 2. Enter the job number
- 3. Review the MTR







## **Limited Warranty**

DIXON VALVE & COUPLING COMPANY, LLC (herein called "Dixon") warrants the products described herein and manufactured by Dixon to be free from defects in material and workmanship for a period of one (1) year from date of shipment by Dixon under normal use and service. Its sole obligation under this warranty being limited to repairing or replacing, as hereinafter provided, at its option any product found to Dixon's satisfaction to be defective upon examination by it, provided that such product shall be returned for inspection to Dixon's factory within three (3) months after discovery of the defect. The repair or replacement of defective products will be made without charge for parts or labor. This warranty shall not apply to: (a) parts or products not manufactured by Dixon, the warranty of such items being limited to the actual warranty extended to Dixon by its supplier; (b) any product that has been subject to abuse, negligence, accident, or misapplication; (c) any product altered or repaired by others than Dixon; and (d) to normal maintenance services and the replacement of service items (such as washers, gaskets, and lubricants) made in connection with such services. To the extent permitted by law, this limited warranty shall extend only to the buyer and any other person reasonably expected to use or consume the goods who is injured in person by any breach of the warranty. No action may be brought against Dixon for an alleged breach of warranty unless such action is instituted within one (1) year from the date the cause of action accrues. This limited warranty shall be construed and enforced to the fullest extent allowable by applicable law.

Other than the obligation of Dixon set forth herein, Dixon disclaims all warranties, express or implied, including but not limited to any implied warranties of merchantability or fitness for a particular purpose, and any other obligation or liability. The foregoing constitutes Dixon's sole obligation with respect to damages, whether direct, incidental or consequential, resulting from the use or performance of the product.

Some products and sizes may be discontinued when stock is depleted, or may require a minimum quantity for ordering.

NOTE: Reasonable care has been taken in preparing this catalog. Dixon Sanitary, a division of Dixon Valve & Coupling Company, LLC reserves the right to make corrections and any dimensional changes.

Dixon®, founded in 1916, is a premier manufacturer and supplier of hose couplings, valves, dry-disconnects, swivels, and other fluid transfer and control products. The company's global reach includes a wide range of products for numerous industries including petroleum exploration, refining, transportation, chemical processing, food & beverage, steel, fire protection, construction, mining, and manufacturing. Dixon®'s strategic objective is to create solutions that make products safer, leakfree, longer lasting, and always available.





The Right Connection®

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