



### About Us

Dixon<sup>®</sup> entered the industrial swivel market in 1985 with the purchase of the Le-Hi Andrews Division of Parker Hannifin. Over the years, working with our foundry and machine shop, Dixon<sup>®</sup> has refined our swivel product line. Our unique set of manufacturing abilities enables us to continue to service our customers with high quality products while remaining true to our value proposition.

### **Dixon's Value Proposition**

Dixon is committed to delighting our customers by being the easiest company they do business with every day.

#### Service

Customer service that supports our customers before, during, and after the sale.

#### **Quality Manufacturing**

Innovative manufacturing that continues to build the Dixon brand recognized by our customers as "The Quality Line".

#### **Product Mix**

Broad product offering that provides our customers with market based solutions supported by extensive customer training.

# Safety

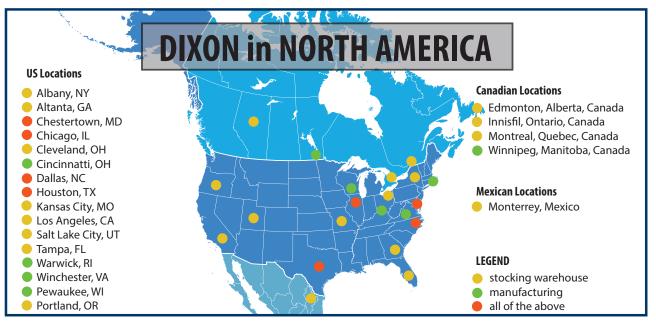
Dixon's couplings and retention devices are designed to work safely for their intended use. The selection of the proper hose, coupling and retention device, and the proper application of the coupling to the hose are of utmost importance.

Users must consider the size, temperature, application, media, pressure and hose and coupling manufacturer's recommendations when selecting the proper hose assembly components. Dixon recommends that all hose assemblies be tested in accordance with the Association for Rubber Products Manufacturer's (ARPM) recommendations and be inspected regularly (before each use) to ensure that they are not damaged or have become loose. Visit ARPMINC.com for more information.

Where safety devices are integral to the coupling, they must be working and utilized. The use of supplementary safety devices such as safety clips or safety cables are recommended.

If any problem is detected, couplings must be removed from service immediately.

Dixon is available to consult, train and recommend the proper selection and application of all fittings we sell. We strongly recommend that distributors and end users make use of Dixon's Testing and Recommendation Services. Call 877.963.4966 or visit dixonvalve.com to learn more.



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#### **Swivel Joints**



#### **Applications:**

- Used wherever a leak-proof swivel connection is needed in pipelines or in combination with hoses to eliminate hose twisting
- Industries range from petroleum, petrochemical, refining, mining, distilling, paint, farm irrigation and fertilizing, wastewater treatment plants and food and beverage process equipment. Dixon<sup>®</sup> swivel joints are found in blending plants, drum filling applications, fluid and dry bulk transfer, vacuum trucks, oil and gas trucks and water trucks. Larger swivels can be found in the steel industry, marine bulk transfer and many more.

#### Features:

- Full 360° rotational movement
- · Wide spacing between dual ball bearing raceways ensures greater load bearing capacity
- Precision-machined design ensures alignment and trouble-free service
- · O-ring dust seal protects the ball races and seals chamber from outside elements
- Radius elbow design ensures a smooth flow pattern
- · Hydrostatic testing is performed on all swivels before shipment

#### **Options Available:**

- End configurations: female NPT,150# flanges, TTMA flange, grooved, weld end and many other variations
- Seal options: Buna, FKM, PTFE, EPDM, FDA Buna, FFKM
- Ball bearing materials: carbon steel, 440 stainless steel, and 316 stainless steel
- Grease materials: Lithium, FDA approved/food grade and silicone
- Swivels that include oxygen, steam or submerged service can be specifically designed for unique applications (special order)
- 100% full penetration weld
- Re-build kits
- Custom swivel options available, contact Dixon® at 877.963.4966

Check out our swivel configurator on dixonvalve.com

#### **Operation / Service**

Dixon<sup>®</sup> swivels are recommended for use at the following maximum Non-Shock Cold Working Pressures (NSCWP) provided in PSI at ambient temperature **70°F (21°C)** for 1" – 12" sizes:

- Aluminum: 150 PSI
- Brass: 300 PSI
- Malleable iron: 600 PSI
- Carbon steel: 1000 PSI
- Stainless steel: 1000 PSI
- When using flanged ends, the pressure rating will be reduced to coincide with that of the flange being used. Carbon steel and stainless steel 150# flanges are recommended for use at 275 PSI maximum and 300# flanges at 740 PSI at ambient temperature 70°F (21°C).
- · Lubrication should be performed periodically, depending on service and operation conditions. Biannually is normally sufficient.
- All dimensions are approximate. Where critical, consult Dixon®.

### **Use with Hose**

The use of swivel joints to compensate for twist in hose (i.e. Style 20 or Style 60) should be carefully reviewed, since the hose must be sufficiently stiff to generate the torque needed to actuate the swivel before it kinks.

In many installations, the twist is caused by lateral movement that can be eliminated by the use of a swivel joint (i.e. Style 40 or Style 30).

Where this is not possible, the use of hose swivels may be a solution. Hose swivels are generally non-ball bearing designs that require less torque to initiate rotation; hose swivels are not designed for load bearing service.

Some hoses are unable to generate even the low torque required for a hose swivel, many metal hoses fall into this group. Other hoses are stiff enough to turn almost any swivel, many armored hoses fall into this group.

#### Pricing

All pricing available upon request. Please contact Dixon<sup>®</sup> for pricing and proper equipment selection for the correct application.

Every swivel joint is built to order, due to this, they are not generally returnable. Return requests will be reviewed on a case by case basis. Restocking charges will be applicable on the accepted returns. Restocking charges include 15%, plus any additional costs incurred.

# **Swivel Styles**

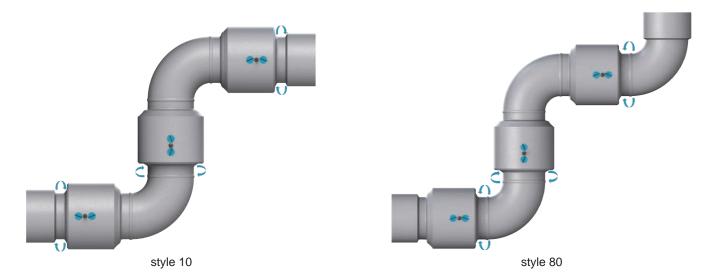
### Single Plane



**Double Plane** 



**Triple Plane** 



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## **O-ring and V-ring Swivel Joint Numbering System**

2	20	F	x	F	CS	0	0	1	0	0
Sizes Inches	Style	End Connection	x	End Connection	Material	Pressure Seal	Dust Seal	Retainers	Ball Bearings	Grease
<b>1</b> = 1"	20	F (FNPT)	x	F (FNPT)	OC = O-ring carbon steel	0 = Buna	<b>0</b> = Buna	0 = No retainer	0 = CS carbon steel	0 = lithium
<b>125</b> = 1.25"	30	W (weld)	х	W (weld)	<b>OS</b> = O-ring 316 stainless steel	<b>1</b> = FKM	1 = FKM	1 = Aluminum standard in CS	1 = 440 stainless steel	1 = food grade
<b>150</b> = 1.5"	40	FG (150#)	х	FG (150#)	CS = V-ring carbon steel	2 = PTFE	<b>2</b> = PTFE	2 = PTFE standard in SS	2 = 316 stainless steel	2 = silicone
<b>2</b> = 2"	50	PF (300#)	х	PF (300#)	SS = V-ring 316L stainless steel	3 = EPDM	3 = EPDM			3 = Tribolube
<b>3</b> = 3"	60	TF (TTMA)	х	TF (TTMA)	AL = Aluminum	4 = FDA Buna	4 = FDA Buna			4 = low temperature
<b>4</b> = 4"	70	BP (BSPP)	х	BP (BSPP)	MI = Malleable iron	5 = No seal	5 = No seal			5 = no grease
<b>6</b> = 6"	80	BT (BSPT)	х	<b>BT</b> (BSPT)	BR = Brass			•		
8 = 8"	10					-				

**10** = 10" **12** = 12"

Other ends or seals are available upon request.

• O-ring: 1" - 4"

• V-ring: 2" - 12"

- Brass and malleable iron only O-ring:  $1^{1}\!\!\!/_2"$  - 3"

• Standard issue grease zirk without check ball. Ask for check ball if required.

### Split Flange Swivel Joint Numbering System

SF	2	20	F	х	F	CS	1	1
Split Flange	Sizes Inches	Style	End Connection	x	End Connection	Nose Piece	Seal Material	Welding
	<b>2</b> = 2"	20	F (FNPT)	х	F (FNPT)	CS = V-ring carbon steel	0 = Baylast	0 = standard
	<b>3</b> = 3"	30	W (weld)	х	W (weld)	SS = V-ring 316L stainless steel	1 = FKM	1 = full penetration
	<b>4</b> = 4"	40	FG (150#)	х	FG (150#)		<b>2</b> = PTFE	
		50	PF (300#)	х	PF (300#)		3 = EPDM	
		60	TF (TTMA)	х	TF (TTMA)		4 = FDA Buna	
		70	BP (BSPP)	х	BP (BSPP)			I
		80	BT (BSPT)	х	BT (BSPT)		-	
		10		1	I	1		

Other ends or seals are available upon request.

### **Split Flange Swivels**



#### **Applications:**

• For use in industries from petroleum, blending plants, petrochemical, refining, mining, distilling, paint plants, farm irrigation and fertilizing, wastewater treatment, food and beverage process equipment, marine and many more

#### Features:

- Bearing pack design allows easy seal change without removing the ball bearings.
- Simple maintenance: remove one nose piece, replace seal pack, and reinstall with little downtime.
- In stream seal separates the wetted area from the ball bearings allowing for longer bearing pack life over conventional swivels.
- Pressure rating: up to 600 PSI
- Temperature: -40°F to 450°F (-40°C to 232°C) depending on seal material, with standard seals: 350°F (177°C)
- Wide set bearing race for higher moment loads
- Compact design for low profile applications

#### Materials:

- · Bearing pack: through hardened forged high carbon alloy
- · Material contact surfaces: stainless steel or carbon steel nose pieces

#### Sizes:

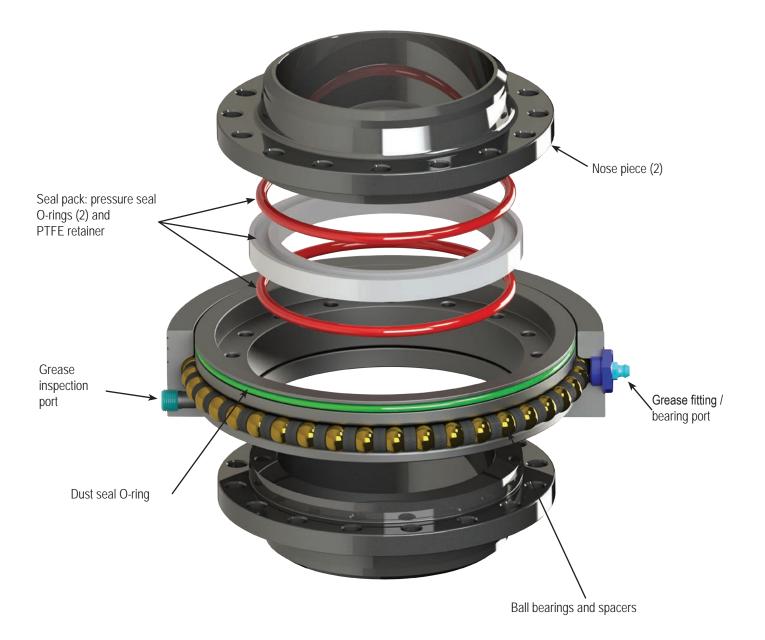
• 2", 3" and 4"

#### Available options:

- All styles
- Stock end configurations: 150 lb. and 300 lb. flanges, FNPT, butt weld, others per request
- Stock seals: Baylast™, FKM, PTFE, others per request
- · Full penetration weld



Weld end swivel joints should be completely disassembled prior to welding, so as not to damage the seals. Care should be taken to avoid distortion of seal and ball race diameters.



## **V-ring Seals**

V-ring, also known as chevron packing, is a multiple lip seal known for its reliability and long life. V-ring packings are designed to seal even under misalignment caused by race wear from years of service. Longer time in-between service periods, increasing up time efficiencies and lowering maintenance costs are a result of the three lip seals and the ability to seal even if the unit is in misalignment.

#### Features:

- Spring loaded triple V-ring sealing system ensures a leak-proof seal at high or low pressure and extends seal life
- Swivels are shipped standard with the following:
  - Buna-N pressure seals and dust seals
  - Carbon steel ball bearings
  - Aluminum retainers in carbon steel swivels
  - PTFE retainers in stainless steel swivels
- Available working pressure ratings up to 1000 PSI

#### Materials:

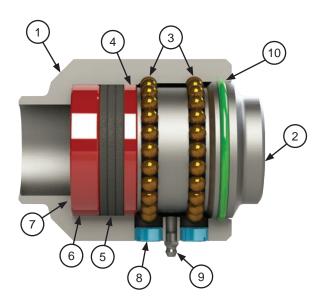
Available in carbon steel, 316L stainless steel and aluminum

#### Sizes:

• 2"-12"

- 1. body
- 2. sleeve
- 3. ball bearings
- 4. seal retainer
- 5. V-ring (pressure) seal
- 6. spring retainer
- 7. spring
- 8. ball retainer screw
- 9. grease fitting
- 10. O-ring (dust seal)



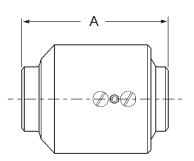




Weld end swivel joints should be completely disassembled prior to welding, so as not to damage the seals. Care should be taken to avoid distortion of seal and ball race diameters.

# Single Plane V-ring Style 20 - Weld End x Weld End

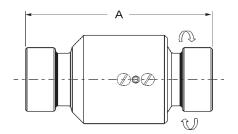




Size	Part #	Material	Weight (lbs)	Dimension (inches) A	
2"	220WXW	CS - carbon steel	9.2	5-5/16"	
Z	22000200	SS - stainless steel	9.2	5-5/16	
3"	320WXW	CS - carbon steel	12.9	5-3/4"	
3	52000200	SS - stainless steel	13.1	5-3/4	
4"	420WXW	CS - carbon steel	24.4		
4	42000200	SS - stainless steel	25.1	/	
		CS - carbon steel	CS - carbon steel 54.5		
6"	620WXW	SS - stainless steel	56.5	8-3/8"	
		AL - aluminum	21.6		
		CS - carbon steel	78.3		
8"	820WXW	SS - stainless steel	92.3	8-5/8"	
		AL - aluminum	35.3		
10"	1020WXW	CS - carbon steel	190.4	11-5/8"	
10	102000200	SS - stainless steel	192.8	0/6-11	
10"	1220WXW	CS - carbon steel	208.2	11 11/20"	
12"	122000200	SS - stainless steel	210.9	11-11/32"	

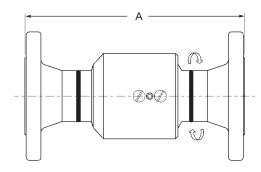
# Single Plane V-ring Style 20 - Female NPT x Female NPT





Size	Part #	Material	Weight (lbs)	Dimension (inches) A	
2"	220FXF	CS - carbon steel	12.7	8-11/16"	
2	220FAF	SS - stainless steel	12.2	0-11/10	
3"	320FXF	CS - carbon steel	17.0	- 10"	
3	320FAF	SS - stainless steel	18.4	10	
4"	420FXF	CS - carbon steel 36.7		11-3/4"	
	420FAF	SS - stainless steel	37.7	11-3/4	
		CS - carbon steel	67.5	12-1/8"	
6"	620FXF	SS - stainless steel	69.5		
		AL - aluminum	25.8		

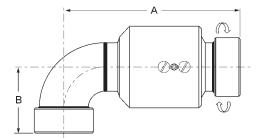
## Single Plane V-ring Style 20 - 150# ASA Flange x 150# ASA Flange





Size	Part #	Material	Weight (lbs)	Dimension (inches) A
2"	220FGXFG	CS - carbon steel	21.7	10-5/16"
Z	220FGAFG	SS - stainless steel	21.1	10-5/18
3"	320FGXFG	CS - carbon steel	36.0	11-1/4"
3	320FGAFG	SS - stainless steel	35.3	11-1/4
4"	420FGXFG	CS - carbon steel	57.4	13"
4	420FGAFG	SS - stainless steel	58.1	13
		CS - carbon steel	CS - carbon steel 104.2	
6"	620FGXFG	SS - stainless steel	106.2	15-3/8"
		AL - aluminum	39.0	
		CS - carbon steel	162.3	
8"	820FGXFG	SS - stainless steel 170.3		16-5/8"
		AL - aluminum	61.0	
10"	1020FGFG	CS - carbon steel	295.7	19-5/8"
10	1020FGFG	SS - stainless steel	299.5	19-5/6
10"	1220FGFG	CS - carbon steel	369.0	20-11/32"
12"	1220FGFG	SS - stainless steel	373.7	20-11/32

# Single Plane V-ring Style 20 - Female NPT x Female NPT

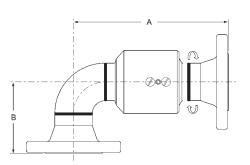




Size	Part #	Material	Weight (lbs)	Dimensions (inches)		
5126	Fait#	Material		A	В	
2"	230FXF	CS - carbon steel	12.1	- 9"	3-11/16"	
Z	230FAF	SS - stainless steel	12.1	9		
3"	330FXF	CS - carbon steel	20.6	10-7/8"	5-1/8"	
	330FAF	SS - stainless steel	21.3	10-778		
	430FXF	CS - carbon steel	42.4	13-3/8"	6-3/8"	
4	430FXF	SS - stainless steel	44.4	13-3/6	0-3/8	
		CS - carbon steel	84.3		7-7/8"	
6"	630FXF	SS - stainless steel	84.2	16-1/4"		
		AL - aluminum	31.5	]		

# Single Plane V-ring Style 30 - 10# ASA Flange x 150# ASA Flange

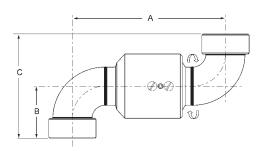




Size	Part #	Material	Weight (lbs)	Dimensions (inches)		
Size	1 art #	Material		A	В	
2"	230FGXFG	CS - carbon steel	22.7	9-13/16"	4-1/2"	
Z	230FGAFG	SS - stainless steel	22.1	9-13/10	4-1/2	
3"	330FGXFG	CS - carbon steel	39.4	11-1/2"	5-3/4"	
5	330FGAFG	SS - stainless steel	38.2	11-1/2	5-5/4	
4"	430FGXFG	CS - carbon steel	63.6		7"	
4	430FGXFG	SS - stainless steel	64.8	14		
	630FGXFG	CS - carbon steel	121.0		9-1/2"	
6"		SS - stainless steel	120.9	17-7/8"		
		AL - aluminum	44.7			
		CS - carbon steel	196.3			
8"	830FGXFG	SS - stainless steel	207.9	20-5/8"	12"	
		AL - aluminum	76.6			
10"	10205050	CS - carbon steel	342.6	25 27/22"	14"	
10"	1030FGFG	SS - stainless steel	347.0	25-27/32"	14	
10"	12205050	CS - carbon steel	451.0	27 27/22"	40.4/0	
12"	1230FGFG	SS - stainless steel	456.7	27-27/32"	16-1/2"	

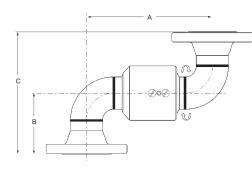
# Single Plane V-ring Style 40 - Female NPT x Female NPT





Size	Part #	Material	Woight (lba)	Dimensions (inches)		
5120	Pall#	Material	Weight (lbs)	A	В	С
2"	240FXF	CS - carbon steel	13.1	0.5/16"	' 3-11/16"	7-3/8"
Z	240FXF	SS - stainless steel	13.1	9-5/10		
3"	340FXF	CS - carbon steel	24.0	11-3/4"	5-1/8"	10-1/4"
3		SS - stainless steel	24.2	11-3/4		
4"	440FXF	CS - carbon steel	48.6	15"	6-3/8"	12-3/4"
4		SS - stainless steel	51.1	15	0-3/0	
		CS - carbon steel	101.1			
6"	640FXF	SS - stainless steel	98.9	20-3/8"	7-7/8"	15-3/4"
		AL - aluminum	39.0			

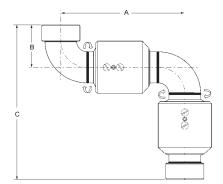
# Single Plane V-ring Style 40 - 150# ASA Flange x 150# ASA Flange





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Size	Part #	Material	Weight (lbs)	A	В	С
2"	240FGXFG	CS - carbon steel	23.7	9-5/16"	4-1/2"	9"
2	240FGAFG	SS - stainless steel	23.1	9-5/10		
3"	340FGXFG	CS - carbon steel	42.8	11-3/4"	5-3/4"	11-1/2"
3	340FGAFG	SS - stainless steel	41.1	11-3/4	0-3/4	11-1/2
4"	440FGXFG	CS - carbon steel	69.8	15"	7"	14"
4	440FGXFG	SS - stainless steel	71.5	15		
	640FGXFG	CS - carbon steel	137.8		9-1/2"	19"
6"		SS - stainless steel	135.6	20-3/8"		
		AL - aluminum	52.2			
		CS - carbon steel	230.3		1	24"
8"	840FGXFG	SS - stainless steel	245.5	24-5/8"	12"	
		AL - aluminum	92.2			
10"	10105050	CS - carbon steel	394.6	04.4/4.0	4.4"	0.0"
10"	1040FGFG	SS - stainless steel	400.0	31-1/16"	14"	28"
4.0"	1240FGFG	CS - carbon steel	533.0	25 44/20"	16-1/2"	33"
12"		SS - stainless steel	540.0			

# Double Plane V-ring Style 50 - Female NPT x Female NPT

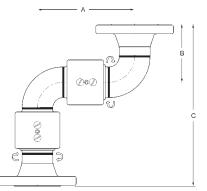




Size	Part #	Material	Maight (lba)	Dimensions (inches)		
5120	Pall#	Material	Weight (lbs)	А	В	С
2"	250FXF	CS - carbon steel	22.8	0.5/16"	3-11/16"	12-11/16"
Ζ	250FXF	SS - stainless steel	23.3	9-5/10		
	350FXF	CS - carbon steel	36.9	11-3/4"	5-1/8"	16"
3		SS - stainless steel	37.3	11-3/4		
	450FXF	CS - carbon steel	73.0	15"	6-3/8"	19-3/4"
4		SS - stainless steel	76.2	15	0-3/0	19-3/4
		CS - carbon steel	155.6			
6"	650FXF	SS - stainless steel	155.4	20-3/8"	7-7/8"	24-1/8"
		AL - aluminum	60.6			

Double Plane V-ring Style 50 - 150# ASA Flange x 150# ASA Flange

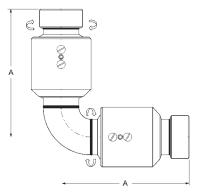




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Size	Part #	Material	Weight (lbs)	A	В	С	
2"	250FGXFG	CS - carbon steel	32.8	0 5/16"	4 1/2"	14-5/16"	
Z	250FGXFG	SS - stainless steel	32.2	9-5/16"	4-1/2"	14-5/10	
3"	350FGXFG	CS - carbon steel	55.7	11-3/4"	5-3/4"	17-1/4"	
3	350FGAFG	SS - stainless steel	54.3	11-3/4		17-1/4	
4"	450FGXFG	CS - carbon steel	94.2	15"	7"	21"	
4		SS - stainless steel	96.6	15		21	
	650FGXFG	CS - carbon steel	192.3		9-1/2"	27-3/8"	
6"		SS - stainless steel	192.1	20-3/8"			
		AL - aluminum	73.8				
		CS - carbon steel	308.6			32-5/8"	
8"	850FGXFG	SS - stainless steel	337.8	24-5/8"	12"		
		AL - aluminum	127.5				
10"	1050FGFG	CS - carbon steel	585.0	31-27/32	14"	39-5/8"	
10	TUSUFGFG	SS - stainless steel	592.4	31-27/32	14	39-5/6	
12"	1250FGFG	CS - carbon steel	741.2	25 11/20	16-1/2	44-11/32"	
12	1250FGFG	SS - stainless steel	750.6	35-11/32			

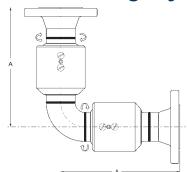
# Double Plane V-ring Style 60 - Female NPT x Female NPT





Size	Part #	Part # Material		Dimension (inches) A	
2"	260FXF	CS - carbon steel	21.40	- 9"	
Ζ	200FAF	SS - stainless steel	21.50	9	
3"	360FXF	CS - carbon steel	34.30	10-7/8"	
	300FAF	SS - stainless steel	34.30	10-778	
	460FXF	CS - carbon steel	72.00	13-3/8"	
4	400FAF	SS - stainless steel	72.00	13-3/6	
		CS - carbon steel	118.00		
6"	660FXF	SS - stainless steel	140.40	16-1/4"	
		AL - aluminum	55.54		

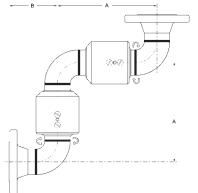
Double Plane V-ring Style 60 - 150# ASA Flange x 150# ASA Flange





Size	Part #	Material	Weight (lbs)	Dimension (inches) A
2"	260FGXFG	CS - carbon steel	42.00	9-13/16"
2	ZOUFGAFG	SS - stainless steel	42.00	9-13/10
3"	360FGXFG	CS - carbon steel	83.00	11-1/2"
3	SOUFGAFG	SS - stainless steel	83.00	11-1/2
4"	460FGXFG	CS - carbon steel	106.00	14"
4	400FGXFG	SS - stainless steel	106.00	
		CS - carbon steel	172.00	
6"	660FGXFG	SS - stainless steel	172.00	17-7/8"
		AL - aluminum	68.74	]
		CS - carbon steel	312.00	
8"	860FGXFG	SS - stainless steel	312.00	20-5/8"
		AL - aluminum	117.34	
10"	1060FGFG	CS - carbon steel	534.90	25-27/32"
10	TUOUFGFG	SS - stainless steel	541.70	23-27/32
10"	12605050	CS - carbon steel	659.20	27.27/22"
12"	1260FGFG	SS - stainless steel	667.58	27-27/32"

# Double Plane V-ring Style 70 - 150# ASA Flange x 150# ASA Flange



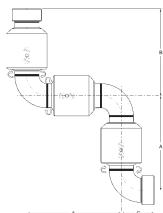


Dort #	Matarial	Weight (lbs)	Dimensions (inches	
Fait#	Ivialeriai		A 9-5/16" 11-3/4" 15" 20-3/8" 24-5/8" 31-27/32"	В
27050,750	CS - carbon steel	33.8	0.5/16"	4-1/2"
270FGXFG	SS - stainless steel	33.2	9-5/10	4-1/2
370ECXEC	CS - carbon steel	59.1	11 2/4"	5-3/4"
370FGAFG	SS - stainless steel	57.2	11-3/4	5-5/4
17050750	CS - carbon steel	100.4	4.5.1	7"
470FGXFG	SS - stainless steel	103.3	15	/
	CS - carbon steel	209.1		
670FGXFG	SS - stainless steel	206.8	20-3/8"	9-1/2"
	AL - aluminum	81.5		
	CS - carbon steel	342.6		
870FGXFG	SS - stainless steel	375.4	24-5/8"	12"
	AL - aluminum	143.0		
10705050	CS - carbon steel	637.0	24 27/22"	14"
1070FGFG	SS - stainless steel	645.1	31-2//32	14
12705050	CS - carbon steel	823.2	25 11/20"	16 1/2"
1270FGFG	SS - stainless steel	833.7	30-11/32	16-1/2"
		270FGXFG       CS - carbon steel         370FGXFG       SS - stainless steel         370FGXFG       CS - carbon steel         370FGXFG       SS - stainless steel         470FGXFG       CS - carbon steel         5S - stainless steel       CS - carbon steel         670FGXFG       SS - stainless steel         670FGXFG       SS - stainless steel         670FGXFG       SS - stainless steel         AL - aluminum       CS - carbon steel         870FGXFG       SS - stainless steel         AL - aluminum       CS - carbon steel         1070FGFG       SS - stainless steel         11270FGFG       CS - carbon steel	270FGXFG         CS - carbon steel         33.8           370FGXFG         SS - stainless steel         33.2           370FGXFG         CS - carbon steel         59.1           370FGXFG         SS - stainless steel         57.2           470FGXFG         CS - carbon steel         100.4           SS - stainless steel         103.3         CS - carbon steel         209.1           670FGXFG         SS - stainless steel         206.8         AL - aluminum         81.5           CS - carbon steel         342.6         355 - stainless steel         375.4           AL - aluminum         143.0         1070FGFG         CS - carbon steel         637.0           SS - stainless steel         637.0         SS - stainless steel         637.0           1270FGFG         CS - carbon steel         637.0         823.2	Part #         Material         Weight (lbs)         A           270FGXFG         CS - carbon steel         33.8         9-5/16"           370FGXFG         CS - carbon steel         33.2         9-5/16"           370FGXFG         CS - carbon steel         59.1         11-3/4"           470FGXFG         CS - carbon steel         57.2         11-3/4"           470FGXFG         CS - carbon steel         100.4         15"           670FGXFG         SS - stainless steel         103.3         15"           670FGXFG         SS - stainless steel         209.1         20-3/8"           670FGXFG         SS - stainless steel         206.8         20-3/8"           870FGXFG         SS - stainless steel         342.6         24-5/8"           870FGXFG         SS - stainless steel         375.4         24-5/8"           1070FGFG         CS - carbon steel         637.0         31-27/32"           1270FGFG         CS - carbon steel         645.1         31-27/32"

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Triple Plane V-ring Style 80 - Female NPT x Female NPT

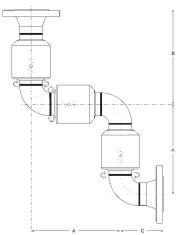




Size	Part #	Material	Maight (lba)	Dimensions (inches)		
5120	Fall#	Ivialenai	Weight (lbs)	A	В	C
2"	280FXF	CS - carbon steel	33.0	9-5/16"	0.0/16"	3-11/16"
Ζ	200FAF	SS - stainless steel	33.5	19-5/10	9-9/10	5-11/10
3"	380FXF	CS - carbon steel	53.2	11-3/4"	10-7/8"	5-1/8"
3		SS - stainless steel	53.3			0-1/0
4"	480FXF	CS - carbon steel	103.6	15" 13-3/	12 2/0"	6-3/8"
4	400FAF	SS - stainless steel	108.0		13-3/0	0-3/0
		CS - carbon steel	226.9	20-3/8"		
6"	680FXF	SS - stainless steel	226.6		16-1/4"	7-7/8"
		AL - aluminum	89.4			

# Triple Plane V-ring Style 80 - 150# ASA Flange x 150# ASA Flange

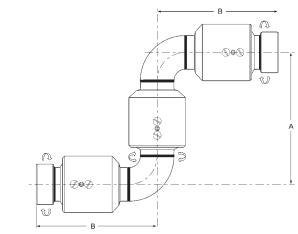




Size	Part #	Material	Maight (lba)	Dimensions (inches)			
Size		Ivialeriai	Weight (lbs)	A	В	С	
2"	280FGXFG	CS - carbon steel	43.1	9-5/16"	9-13/16"	4-1/2"	
2	280FGAFG	SS - stainless steel	42.4	9-5/10	9-13/10	4-1/2	
3"	380FGXFG	CS - carbon steel	72.0	11-3/4"	11-1/2"	5-3/4"	
	SOUFGAFG	SS - stainless steel	70.3	11-3/4	11-1/2	5-5/4	
4"	480FGXFG	CS - carbon steel	124.8	15"	14"	7"	
4	480FGAFG	SS - stainless steel	128.4	15	14		
	680FGXFG	CS - carbon steel	263.6	20-3/8"	17-7/8"		
6"		SS - stainless steel	263.3			9-1/2"	
		AL - aluminum	102.2				
		CS - carbon steel	420.9	Τ	1		
8"	880FGXFG	SS - stainless steel	467.6	24-5/8"	20-5/8"	12"	
		AL - aluminum	178.0				
10"	1080FGFG	CS - carbon steel	827.4	21 10/22"	25-19/32"	14"	
10	1080FGFG	SS - stainless steel	837.9	31-19/32	20-19/32	14	
12"	1280FGFG	CS - carbon steel	1031.8	25 44/201		16 1/0"	
IΖ		SS - stainless steel	1044.9	35-11/32	27-27/32"	10-1/2	

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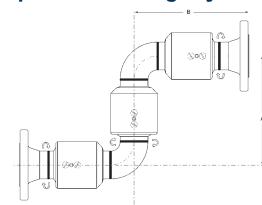
# Triple Plane V-ring Style 10 - Female NPT x Female NPT





Size	Dort #	Motorial	$M_{a}$ ; sht (lb a)	Dimensions (inches)	
5120	Part #	Material	Weight (lbs)	A	В
2"	210FXF	CS - carbon steel	32.0	9-5/16"	9"
2	210FXF	SS - stainless steel	32.5	9-5/10	9
3"	310FXF	CS - carbon steel	49.8	11-3/4"	10-7/8"
3	310FXF	SS - stainless steel	50.4		
4"	410FXF	CS - carbon steel	97.4	- 15"	13-3/8"
4	410FXF	SS - stainless steel	101.3		13-3/0
		CS - carbon steel	210.2	20-3/8"	
6"	610FXF	SS - stainless steel	200.0		16-1/4"
		AL - aluminum	68.6		

# Triple Plane V-ring Style 10 - 150# ASA Flange x 150# ASA Flange





Size	Part #	Material	Maight (lba)	Dimensions (inches)	
5120	Part#	Material	Weight (lbs)	Dimensio A 9-5/16" 11-3/4" 15" 20-3/8" 24-5/8" 31-1/16"	В
2"	210FGXFG	CS - carbon steel	42.1	0.5/16"	9-13/16"
Z	210FGXFG	SS - stainless steel	41.4	9-5/16	9-13/10
3"	310FGXFG	CS - carbon steel	68.6	11 2/4"	11-1/2"
	STOFGAFG	SS - stainless steel	67.4	11-3/4	- /2
4"	410FGXFG	CS - carbon steel	118.6	15"	14"
4	410FGAFG	SS - stainless steel	121.7		14
	610FGXFG	CS - carbon steel	222.1	20-3/8"	17-7/8"
6"		SS - stainless steel	233.9		
		AL - aluminum	97.2		]
		CS - carbon steel	386.9	24-5/8"	
8"	810FGXFG	SS - stainless steel	430.1		20-5/8"
		AL - aluminum	162.8		
10"	1010FGFG	CS - carbon steel	775.4	31 1/16"	25-27/32"
10	TOTOFGFG	SS - stainless steel	785.3	<sup>או ו ו ג</sup> ך	25-27/52
12"	12105050	CS - carbon steel	949.4	35-11/32"	27-27/32"
12	1210FGFG	SS - stainless steel	961.5		21-21/32

### **O-ring Swivel Joints**

#### **Applications:**

Commonly used seal in aluminum loading / unloading arm applications

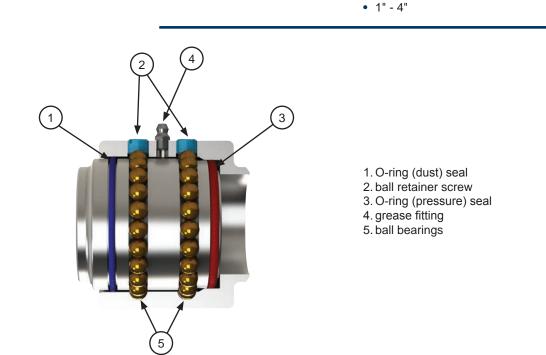
#### Features:

- O-ring pressure seal ensures a leak-proof seal and smooth rotation with lower torque.
- · Smooth moving seal for high volume drum and tote loading
- Available working pressure ratings up to **1000 PSI**
- Available end configurations: tank car thread with gasket, TTMA tank truck flange

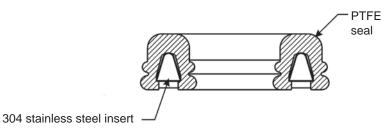
#### Materials:

 Available in carbon steel, 316L stainless steel, aluminum, brass and malleable iron

Sizes:



### **Optional Spring-Loaded PTFE Pressure Seal for O-ring Swivels**



cross sectional view of seal (for use in sizes 1" - 3")



Weld end swivel joints should be completely disassembled prior to welding, so as not to damage the seals. Care should be taken to avoid distortion of seal and ball race diameters.



### Loading Arm Swivels





style 30, short radius

style 30, long radius





style 50

#### **Replacement Parts**

Description	Part #
4" schedule 80 aluminum nipple	ATN100X7
D style heavy duty shovel handle	100DHAN-AL
buna seal kit	4RKOBU
FKM seal kit	4RKOVIVI

• TTMA loading arm swivel with heavy duty D style shovel handle

• Shovel handle is used to guide the API load coupler onto the

• Long radius elbow improves the flow into the API load coupler and provides spacing between the load arm and the tank truck

Features:

• TTMA flanges on both ends

adapter on the tank truck

· Can be used with flange extensions



4RKOBU



100DHAN-AL



4RKOVIVI

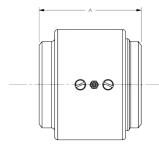
# **Typical Application for Top Loading Arm**



# **Typical Application for Bottom Loading Arm**



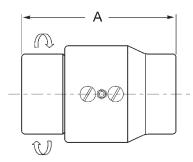
# Single Plane O-ring Style 20 - Weld x Weld





Size	Part #	Material	Weight (lbs)	Dimension (inches) A
1"	120WXW	OC - carbon steel	2.56	2-14/16"
1	12000200	OS - stainless steel	2.57	2-14/10
		OC - carbon steel	3.19	3-3/16"
11/2"	15020WXW	OS - stainless steel	3.19	3-3/10
		AL - aluminum	1.43	3-13/16"
	220WXW	OC - carbon steel	4.60	3-9/16"
2"		OS - stainless steel	4.60	3-9/16
		AL - aluminum	2.67	5-6/16"
		OC - carbon steel	7.07	4-2/16"
3"	320WXW	OS - stainless steel	7.08	4-2/10
		AL - aluminum	3.93	5-11/16"
		OC - carbon steel	20.30	- 6"
4"	420WXW	OS - stainless steel	21.20	
		AL - aluminum	7.10	7-5/16"

# Single Plane O-ring Style 20 - Female NPT x Female NPT

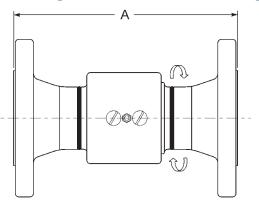




Size	Part #	Material	Weight (lbs)	Dimension (inches) A
		OC - carbon steel	2.80	
1"	120FXF	OS - stainless steel	2.50	3-15/16"
		AL - aluminum	1.10	
1¼"	12520FXF	AL - aluminum	1.40	3-31/32"
		OC - carbon steel	3.55	
		OS - stainless steel	3.55	
11⁄2"	15020FXF	AL - aluminum	1.40	4"
		BR - brass	4.30	
		MI - malleable iron	3.80	
		OC - carbon steel	6.30	
		OS - stainless steel	6.80	
2"	220FXF	AL - aluminum	3.50	5-9/16"
		BR - brass	8.50	
		MI - malleable iron	7.50	
		OC - carbon steel	8.60	5-7/8"
		OS - stainless steel	9.00	5-7/8
3"	320FXF	AL - aluminum	4.00	
		BR - brass	11.10	5-29/32"
		MI - malleable iron	9.70	
4"	420FXF	AL - aluminum	7.30	7-5/8"
	-	dixonvalve.com • 877.963.4966	8	-

# Single Plane O-ring Style 20 - 150# ASA Flange x 150# ASA Flange

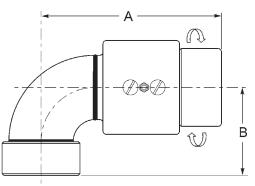




Size	Part #	Material	Weight (lbs)	Dimension (inches) A
1"	120FGXFG	OC - carbon steel	7.80	7-9/32"
		OC - carbon steel	11.60	8-1/16"
11/2"	15020FGXFG	OS - stainless steel	11.60	0-1/10
		AL - aluminum	4.04	8-11/16"
		OC - carbon steel	16.60	8-17/32"
2"	220FGXFG	OS - stainless steel	16.60	8-17/32
		AL - aluminum	7.50	10-3/8"
		OC - carbon steel	30.60	9-5/8"
3"	320FGXFG	OS - stainless steel	30.60	9-5/6
		AL - aluminum	10.00	11-5/32"
4"	420FGXFG	AL - aluminum	13.00	13-5/16"

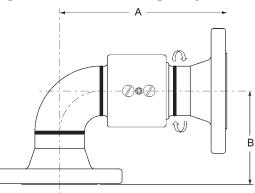
# Single Plane O-ring Style 30 - Female NPT x Female NPT





Size	Dort #	Motorial	Maight (lba)	Dimensio	ns (inches)
0120	Pall#	Material	Weight (lbs)	А	В
1"	120EXE	OC - carbon steel	3.6	4-13/32"	2-3/16"
I	130FXF	OS - stainless steel	3.0	А	2-11/16"
		OC - carbon steel	5.0	E 7/16"	2 15/20
		OS - stainless steel	5.6	5-7/10	3-15/32
11⁄2"	OS - stainless steel         OC - carbon steel         OS - stainless steel         AL - aluminum         BR - brass         MI - malleable iron         OC - carbon steel         OS - stainless steel         AL - aluminum         BR - brass         MI - malleable iron         OS - stainless steel         OS - stainless steel </td <td>1.7</td> <td></td> <td></td>	1.7			
		BR - brass	5.2	4-11/16"	3"
		MI - malleable iron	4.6	4-13/32" 5-29/32" 5-7/16" 4-11/16" 6-21/32" 6-3/16" 8-9/64"	
		OC - carbon steel	7.6	6-21/32"	3-1/4"
		OS - stainless steel	6.3		
2"	230FXF	AL - aluminum	4.1	5-7/16" 4-11/16" 6-21/32" 6-3/16" 8-9/64"	
		BR - brass	9.9		2-7/8"
		MI - malleable iron	8.8		
		OC - carbon steel	13.4	0.0/04	4 4 9 / 4 9
		OS - stainless steel	13.2	8-9/64	4-13/16
3"	330FXF	AL - aluminum	5.2	Ì	1
		BR - brass	15.4	7-1/16"	3-7/8"
		MI - malleable iron	13.0	7	
4"	430FXF	AL - aluminum	9.2	9-1/8"	4-3/4"

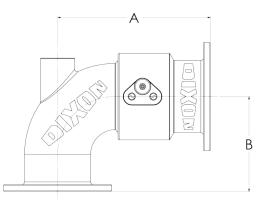
# Single Plane O-ring Style 30 - 150# ASA Flange x 150# ASA Flange





Size	Part #	Material	Maight (lba)	Dimensior	ns (inches)
Size	Part#	Material	Weight (Ibs)	A	В
1"	130FGXFG	OC - carbon steel	8.00	6-3/32"	3-3/16"
I	ISUFGAFG	OS - stainless steel	8.00	A 6-3/32" 6-19/32" 7-7/8" 7-1/32" 8-1/32" 8-5/8" 9-7/8"	3-11/16"
		OC - carbon steel	12.13	7 7/0"	4-11/16"
11⁄2"	15030FGXFG	OS - stainless steel	12.13	1-110	4-11/10
		AL - aluminum	4.22	7-7/8" 7-1/32" 8-1/32"	5-11/32"
		OC - carbon steel	20.20	0 1/22"	4-1/2"
2"	230FGXFG	OS - stainless steel	20.20	0-1/32	4-1/2
		AL - aluminum	7.83	8-5/8"	5-9/32"
		OC - carbon steel	32.90	0.7/0"	5-3/4"
3"	330FGXFG	OS - stainless steel	32.90	9-770	5-5/4
		AL - aluminum	12.80	9-11/16"	6-15/32"
4"	430FGXFG	AL - aluminum	14.00	11-31/32"	7-19/32"

# Tank Truck Flange x Tank Truck Flange

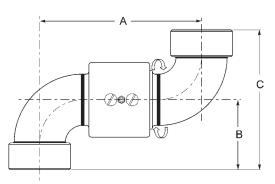




Size	Dort #	Part # Material	Waight (lba)	Dimensions (inches)	
Size	Pall#	Material	Weight (lbs)	A	В
		OC - carbon steel	8.10	5-5/8"	5-1/8"
2"	230TFXTF	OS - stainless steel	6.80	5-5/6	5-1/0
		AL - aluminum	4.60	5-5/8"	5-1/8"
		OC - carbon steel	14.40	8-1/2"	4-3/8"
3"	330TFXTF	OS - stainless steel	14.75	0-1/2	4-3/0
		AL - aluminum	6.21	7-3/4"	4-15/16"
4"	430TFXTF	AL - aluminum	12.00	8-7/8"	5-17/32"

# Single Plane O-ring Style 40 - Female NPT x Female NPT

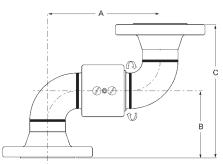




Sizo	Size Part # Materia		Weight (lbs)		Dimensions (inches)		
Size	Pall #	Material	vveight (ibs)	A	В	С	
1"	140575	OC - carbon steel	3.73	4-59/64"	2-3/16"	4-3/8"	
	1 140FXF	140FXF OS - stainless steel		3.82	5-59/64"	2-11/16"	5-3/8"
		OC - carbon steel	6.83	7-11/16"	3-15/32"	6-15/16"	
	1½" <b>15040FXF</b>	OS - stainless steel	7.0	/-11/10	3-15/32	0-15/10	
11⁄2"		AL - aluminum	2.3		3"		
		BR - brass	6.8	6-1/8"		6"	
	MI - malleable iron		6.2				
		OC - carbon steel	8.5	7-17/32"	2 1/4"	6-1/2"	
				OS - stainless steel	8.71	1-1//32	3-1/4"
2"	240FXF	AL - aluminum	4.5		2-7/8"		
		BR - brass	11.2	6-11/16"		5-3/4"	
		MI - malleable iron	9.1				
		OC - carbon steel	17.7	10 1/0"	4 12/16"	0 5/0"	
		OS - stainless steel	18.14	10-1/8"	4-13/16"	9-5/8"	
3"	340FXF	AL - aluminum	5.9				
		BR - brass	18.0	8-1/4"	3-7/8"	7-3/4"	
		MI - malleable iron	15.0				
4"	440FXF	AL - aluminum	10.2	10-5/8"	4-3/4"	9-1/2"	

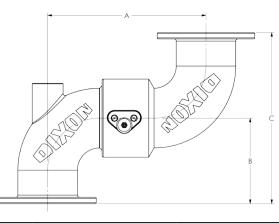
# Single Plane O-ring Style 40 - 150# ASA Flange x 150# ASA Flange





Cino	Part #	Material	Moight (lbs)	Din	Dimensions (inches)		
Size	Part#	Material	Weight (lbs)	A	В	С	
1"	140FGXFG	OC - carbon steel	8.90	4-59/64"	3-3/16"	6-3/8"	
I	140FGXFG	OS - stainless steel	8.90	5-59/64"	3-11/16"	7-3/8"	
		OC - carbon steel	12.66	7-11/16"	4-11/16"	9-3/8"	
11⁄2"	15040FGXFG OS - stainless steel		12.66	/-11/10	4-11/10	9-3/0	
		AL - aluminum	4.40	6-1/8"	5-11/32"	5-11/16"	
			OC - carbon steel	21.10	7-17/32"	4-1/2"	9"
2"	240FGXFG	OS - stainless steel	21.10	7-1//32	4-1/2	9	
		AL - aluminum	8.16	6-11/16"	5-9/32"	10-9/16"	
		OC - carbon steel	39.70	10-1/8"	5-3/4"	11-1/2"	
3"	340FGXFG	OS - stainless steel	39.70	10-1/6	5-3/4	- /2	
		AL - aluminum	11.00	8-1/4"	6-5/8"	13-1/4"	
4"	440FGXFG	AL - aluminum	15.91	10-5/8"	7-9/16"	15-1/8"	

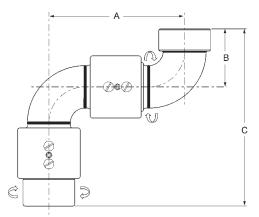
# Tank Truck Flange x Tank Truck Flange





Size	Part # Material		Maight (lba)	Dimensions (inches)			
Size	Pall#	Material	Weight (lbs)	A	В	С	
		OC - carbon steel	8.35	7-17/32"	5-1/8"	10-1/4"	
2"	240TFXTF	OS - stainless steel	8.36	1-1//52	5-1/6	10-1/4	
		AL - aluminum		6-11/16"	5-1/8"	10-1/4"	
		OC - carbon steel	17.31	10-1/8"	4-3/8"	8-3/4"	
3"	340TFXTF	OS - stainless steel	17.73	10-1/0	4-3/0	0-3/4	
		AL - aluminum	7.30	9-9/64"	4-15/16"	9-7/8"	
4"	440TFXTF	AL - aluminum	17.00	10-5/8"	6-9/16"	13-1/8"	

### Female NPT x Female NPT

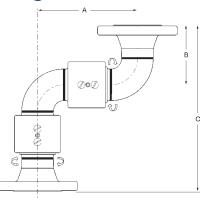




Size	Part #	Material	Woight (lbs)	Dir	Dimensions (inches)		
SIZE	Fait#	Wateria	Weight (lbs)	A	В	С	
1"	450575	OC - carbon steel	7.30	4-59/64"	2-3/16"	6-3/32"	
I	1" <b>150FXF</b>	OS - stainless steel	7.30	5-59/64"	2-11/16"	7-19/32"	
		OC - carbon steel	9.00	7-11/16"	3-15/32"	8-29/32"	
11⁄2"	15050FXF	OS - stainless steel	9.00	7-11/10	3-15/32	0-29/32	
		AL - aluminum	3.18	6-1/8"	3"	7-11/16"	
		OC - carbon steel	14.04	7-17/32"	3-1/4"	9-29/32"	
		OS - stainless steel	14.04	1-1//32	J-1/4	3-23/32	
2"	250FXF	AL - aluminum	7.80		2-7/8"		
		BR - brass	14.90	6-11/16"		9-1/16"	
		MI - malleable iron	13.20				
		OC - carbon steel	21.80	10-1/8"	4-13/16"	12-61/64"	
3"	350FXF	OS - stainless steel	21.80	10-1/6	4-13/10	12-01/04	
3	3 <b>330FAF</b>	AL - aluminum		9.40	8-1/4"	3-7/8"	10-29/32"
		MI - malleable iron	21.50	0-1/4	3-770	10-29/32	
4"	450FXF	AL - aluminum	15.00	10-5/8"	4-3/4"	13-7/8"	

# Double Plane O-ring Style 50 - 150# ASA Flange x 150# ASA Flange

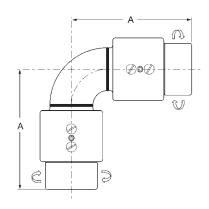




	Part # Material	Matarial	Weight (lbs)	Din	Dimensions (inches)			
Size	Part #	waterial	Weight (lbs)	A	В	С		
1"	150FGXFG	OC - carbon steel	10.79	4-59/64"	3-3/16"	9-19/64"		
'	ISUFGXFG	OS - stainless steel	10.79	5-59/64"	3-11/16"	10-19/64"		
	1½" 15050FGXFG OS -	OC - carbon steel	13.92	7 44/46"	4.44/4.0"	10.0/10"		
11⁄2"		OS - stainless steel	13.92	7-11/16"	4-11/16"	12-9/16"		
		AL - aluminum		5.72	6-1/8"	5-11/32"	12-3/8"	
				OC - carbon steel	22.36	7 17/20"	4-1/2"	12-17/32"
2"	250FGXFG	OS - stainless steel	22.36	7-17/32"	4-1/2	12-17/32		
		AL - aluminum	11.62	6-11/16"	5-9/32"	13-29/32"		
		OC - carbon steel	37.58	10.1/0"	E 0/4"	45 5/0"		
3"	350FGXFG	OS - stainless steel	37.58	- 10-1/8"	5-3/4"	15-5/8"		
		AL - aluminum	16.72	8-1/4"	6-15/32"	16-3/32"		
4"	450FGXFG	AL - aluminum	2.52	10-5/8"	7-19/32"	19-9/16"		

## Double Plane O-ring Style 60 - Female NPT x Female NPT

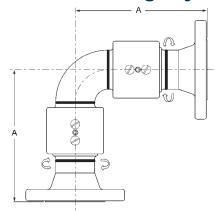




Size	Part #	Material Weight (lbs)		Dimension (inches) A
1"	160FXF	OC - carbon steel	6.30	4-13/32"
1	TOUFAF	OS - stainless steel	6.30	4-29/32"
		OC - carbon steel	9.36	5-7/16"
11⁄2"	15060FXF	OS - stainless steel	9.36	5-7716
		AL - aluminum	2.90	4-11/16"
	260FXF	OC - carbon steel	12.95	6-21/32"
		OS - stainless steel	12.96	0-21/32
2"		AL - aluminum	6.90	
		BR - brass	14.30	6-7/32"
		MI - malleable iron	12.60	
		OC - carbon steel	22.60	8-9/64"
3"	200575	OS - stainless steel	22.65	8-9/64
3	360FXF	AL - aluminum	8.60	7 1/22"
		MI - malleable iron	18.60	7-1/32"
4"	460FXF	AL - aluminum	13.40	9-1/8"
				-

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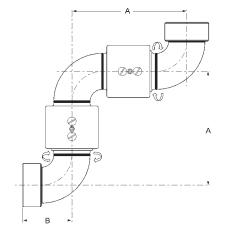
# Double Plane O-ring Style 60 - 150# ASA Flange x 150# ASA Flange





Size	Size Part #		Weight (lbs)	Dimension (inches) A
1"	160FGXFG	OC - carbon steel	10.57	6-7/64"
1	TOUFGXFG	OS - stainless steel	10.57	6-39/64"
		OC - carbon steel	13.40	7-7/8"
11⁄2"	15060FGXFG	FG OS - stainless steel 13.40		7-778
		AL - aluminum	5.54	7-1/32"
		OC - carbon steel	24.90	0.1/20"
2"	260FGXFG	OS - stainless steel	24.90	8-1/32"
		AL - aluminum	11.30	8-5/8"
		OC - carbon steel	34.65	9-7/8"
3"	360FGXFG	OS - stainless steel	34.65	9-778
		AL - aluminum	1572.0	9-5/8"
4"	460FGXFG	AL - aluminum	23.29	11-31/32"

# Double Plane O-ring Style 70 - Female NPT x Female NPT



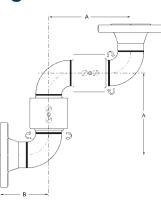


Cine	Dert #	# Material	$M_{a}$	Dimensior	ns (inches)
Size	Part #	IVIAterial	Weight (lbs)	А	В
1"	130575	OC - carbon steel	7.52	4-59/64"	2-3/16"
I	170FXF	OS - stainless steel	7.52	5-59/64"	2-11/16"
		OC - carbon steel	9.53	7 44/40"	2 45/201
11/2"	15070FXF	OS - stainless steel	9.53	7-11/16"	3-15/32"
		AL - aluminum	3.36	6-1/8"	3"
	270FXF	OC - carbon steel	14.99		3-1/4" 2-7/8"
		OS - stainless steel	14.99		
2"		AL - aluminum	8.13		
		BR - brass	15.92		
		MI - malleable iron	14.08		
		OC - carbon steel	24.73	10.1/0"	4 40/40"
3"	370FXF	OS - stainless steel	24.73	10-1/8"	4-13/16"
		AL - aluminum	10.10	8-1/4"	3-7/8"
4"	470FXF	AL - aluminum	16.70	10-5/8"	4-3/4"
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## Double Plane O-ring Style 70 - 150# ASA Flange x 150# ASA Flange

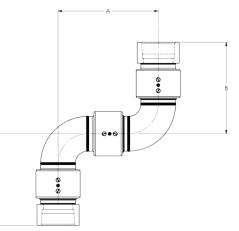




Part # Material	Maight (lba)	Dimensions (inches)		
Pall#	Material	weight (ibs)	A	В
17050250	OC - carbon steel	11.01	4-59/64"	3-3/16"
TTOFGXFG	OS - stainless steel	11.01	5-59/64"	3-3/10
	OC - carbon steel	14.45	7 11/16"	4-11/16"
15070FGXFG	OS - stainless steel	14.45	7-11/10	4-11/10
	AL - aluminum	5.90	6-1/8"	5-11/32"
270FGXFG	OC - carbon steel	23.31	7 17/20"	4-1/2"
	OS - stainless steel	23.31	7-17/32	
	AL - aluminum	11.95	6-11/16"	5-9/32"
	OC - carbon steel	40.51	10 1/0"	5-3/4"
370FGXFG	OS - stainless steel	40.51	10-1/0	5-3/4
	AL - aluminum	17.73	8-1/4"	6-15/32"
470FGXFG	AL - aluminum	27.11	10-5/8"	7-19/32"
	170FGXFG 15070FGXFG 270FGXFG 370FGXFG	170FGXFG       OC - carbon steel         0S - stainless steel       OC - carbon steel         15070FGXFG       OS - stainless steel         AL - aluminum       OC - carbon steel         270FGXFG       OS - stainless steel         AL - aluminum       OC - carbon steel         270FGXFG       OS - stainless steel         AL - aluminum       OC - carbon steel         0S - stainless steel       AL - aluminum         0C - carbon steel       OS - stainless steel         AL - aluminum       OC - carbon steel         0S - stainless steel       AL - aluminum	170FGXFG         OC - carbon steel         11.01           0S - stainless steel         11.01           0C - carbon steel         14.45           15070FGXFG         OC - carbon steel         14.45           0S - stainless steel         14.45           0C - carbon steel         23.31           0S - stainless steel         23.31           0S - stainless steel         23.31           0C - carbon steel         23.31           0S - stainless steel         23.31           0C - carbon steel         23.31           0S - stainless steel         40.51           0S - stainless steel         40.51	Part #         Material         Weight (lbs)         A           170FGXFG         OC - carbon steel         11.01         4-59/64"           0S - stainless steel         11.01         5-59/64"           15070FGXFG         OC - carbon steel         14.45           15070FGXFG         OC - carbon steel         14.45           270FGXFG         OC - carbon steel         14.45           AL - aluminum         5.90         6-1/8"           OC - carbon steel         23.31         7-17/32"           OS - stainless steel         23.31         7-17/32"           AL - aluminum         11.95         6-11/16"           OC - carbon steel         40.51         10-1/8"           370FGXFG         OS - stainless steel         40.51         10-1/8"

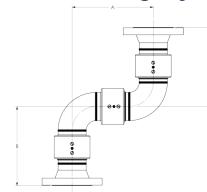
# Triple Plane O-ring Style 10 - Female NPT x Female NPT





Cine	Dort #	Meterial	$M_{a}$ ; whet (lb a)	Dimensior	ns (inches)
Size	Part #	Material	Weight (lbs)	A	В
1"	110FXF	OC - carbon steel	9.08	5"	5"
I	TIOFXF	OS - stainless steel	9.09	3	5
		OC - carbon steel	13.08	6-1/5"	6-1/4"
11⁄2"	15010FXF	OS - stainless steel	13.09	0-1/5	0-1/4
		AL - aluminum	5.35	6-4/5"	6-7/8"
	210FXF	OC - carbon steel	18.49	7-1/2"	7-2/9"
2"		OS - stainless steel	18.51	1-1/2	
		AL - aluminum	9.89	9-3/8"	9"
		OC - carbon steel	32.64	10-1/8"	9-1/4"
3"	310FXF	OS - stainless steel	32.67	10-1/8	9-1/4
		AL - aluminum	17.66	11-2/3"	10-7/9"
		OC - carbon steel	82.31	4.4"	10 2/0"
4"	410FXF	OS - stainless steel	82.40	- 14"	12-3/8"
		AL - aluminum	32.47	15-1/3"	13-2/3"

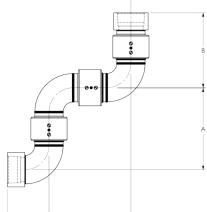
# Triple Plane O-ring Style 10 - 150# ASA Flange x 150# ASA Flange





Size	Dort #	Motorial	Maight (lba)	Dimensio	ns (inches)
Size	Part #	Material	Weight (Ibs)	A	В
1"	110FGXFG	OC - carbon steel	12.56	5"	6"
I	TIOFGXFG	OS - stainless steel	12.58	<sup>&gt;</sup>	0
		OC - carbon steel	18.00	6 1/5"	7 1/0"
11⁄2"	15010FGXFG	OS - stainless steel	18.02	6-1/5"	7-1/8"
		AL - aluminum	6.76	6-4/5"	7-3/4"
	210FGXFG	OC - carbon steel	26.81	7-1/2"	8"
2"		OS - stainless steel	26.84	7 /-1/2	
		AL - aluminum	10.82	9-3/8"	9-7/8"
		OC - carbon steel	48.41	10.1/0"	0.7/0"
3"	310FGXFG	OS - stainless steel	48.46	10-1/8"	9-7/8"
		AL - aluminum	17.36	11-2/3"	11-2/5"
		OC - carbon steel	104.02	4.4"	13"
4"	410FGXFG	OS - stainless steel	104.13	14"	13
		AL - aluminum	29.33	15-1/3"	14-1/3"

# Triple Plane O-ring Style 80 - Female NPT x Female NPT

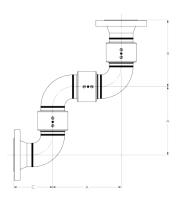




Size	Part #	Material	Moight (lbg)	Dimensions (inches)		
Size	Part#	Material	Weight (lbs)	A	В	С
1"	180FXF	OC - carbon steel	9.29	4-73/81"	5-4/45	2-3/16
Ι	180FXF	OS - stainless steel	9.30	4-73/01	5-4/45	2-3/10
		OC - carbon steel	13.60	6 2/11"	6-12/49"	2 1/16"
11⁄2"	15080FXF	OS - stainless steel	13.62	7 0-2/11		3-1/10
		AL - aluminum	5.69	6-21/26"	6-67/77"	3-1/16"
	280FXF	OC - carbon steel	19.43	7/17/20"	7-7/32"	2 11/16
2"		OS - stainless steel	19.45	7/////32	1-1/32	5-11/10
		AL - aluminum	9.94	9-3/8"	9-1/16"	3-11/16"
		OC - carbon steel	35.56	10-1/8"	9-1/4"	E 1/0"
3"	380FXF	OS - stainless steel	35.60	<sup>10-1/0</sup>	9-1/4	5-1/8"
		AL - aluminum	16.72	11-21/32"	10-25/32"	5-1/8"
		OC - carbon steel	87.89		12-23/63"	0.0/0"
4"	480FXF	OS - stainless steel	87.98	14"	12-23/03	6-3/8"
		AL - aluminum	29.80	15-5/16"	13-11/16"	6-3/8"
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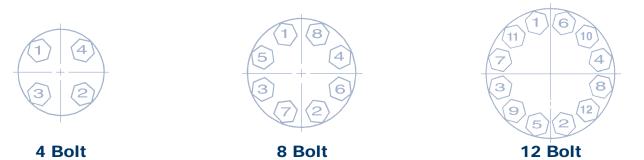
# Triple Plane O-ring Style 80 - 150# ASA Flange x 150# ASA Flange





Size	Dort #	Part # Material		Dimensions (inches)		
Size	Fait#	Ivialeria	Weight (lbs)	A	В	С
1"	180FGXFG	OC - carbon steel	12.78	5"	6"	3-1/5"
1	180FGXFG	OS - stainless steel	12.79	<sup>&gt;</sup>	ю	3-1/5
		OC - carbon steel	18.52	6-1/5"	7-1/8"	4"
11⁄2"	15080FGXFG	OS - stainless steel	18.54	0-1/5	/-1/0	4
		AL - aluminum	7.37	6-4/5"	7-3/4"	4"
	280FGXFG	OC - carbon steel	27.76	7-1/2"	8"	4-1/2"
2"		OS - stainless steel	27.79	/-1/2		4-1/2
		AL - aluminum	12.80	9-3/8"	9-7/8"	4-1/2"
		OC - carbon steel	51.34	10-1/8"	9-7/8"	E 2/4"
3"	380FGXFG	OS - stainless steel	51.39	10-1/8		5-3/4"
		AL - aluminum	22.14	11-2/3"	11-2/5"	5-3/4"
		OC - carbon steel	109.60	14"	13"	7"
4"	480FGXFG	OS - stainless steel	109.71	14	13	· /
		AL - aluminum	37.25	15-1/3"	14-1/3"	7"

### Flange Bolt Tightening Sequence (use appropriate gaskets and bolts)



	D	imension	IS 01 150#	ASA SIE	er Flange	25	
Nominal Pipe Size	Flange OD	Thickness <sup>1</sup>	OD of Raised Face	Diameter of Bolt Circle	Number of Bolts	Diameter of Bolt Holes	Diameter of Bolts
1"	41⁄2"	9/16"	2"	31⁄8"	4	5⁄8"	1/2"
11⁄2"	5"	11/16"	2-7/8"	31⁄8"	4	5⁄8"	1⁄2"
2"	6"	3/4"	3-5/8"	4¾"	4	3⁄4"	5/8"
21⁄2"	7"	7/8"	4-1/8"	51⁄2"	4	3⁄4"	5⁄8"
3"	71⁄2"	15/16"	5"	6"	4	3⁄4"	5/8"
4"	9"	15/16"	6-3/16"	71⁄2"	8	3⁄4"	5⁄8"
5"	10"	15/16"	7-5/16"	81⁄2"	8	7⁄8"	3⁄4"
6"	11"	1"	8-1/2"	91⁄2"	8	7⁄8"	3⁄4"
8"	13½"	1-1/8"	10-5/8"	11¾"	8	7⁄8"	3⁄4"
10"	16"	1-3/16"	12-3/4"	14¾"	12	1"	7⁄8"
12"	19"	1-1/4"	15"	17"	12	1"	7⁄8"

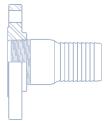
### **Dimensions of 150# ASA Steel Flanges**

<sup>1</sup> 1/16" raised face is included in the thickness

### **Flange Diagrams**

Floating Applications (flange free to swivel)

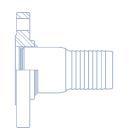
#### **Threaded Applications**



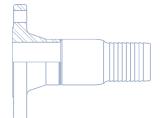


threaded flange with raised face

#### Welded Applications



slip-on flange with raised face



weld neck flange with raised face



slip-on flange with raised face



## V-ring Swivel Seal Replacement Procedure

Remove the ball retainer screws. Add a sufficient amount of solvent into each raceway to flush out the lubricant. Rotate the sleeve, catching the balls as they fall out. When all the balls have been removed, the body and sleeve can be separated. Discard old seals. Thoroughly clean the body, sleeve retainer, spring retainer and springs. \*



5 Insert sleeve into body, compressing swivel joint together until ball races of body and sleeve are in alignment (do not rotate either unit while compressing). Care should be taken to avoid pinching or scoring of V rings. Drop balls into raceway holes, rotating the sleeve slowly as you load. To make space for all the balls, insert a screw driver into the raceway while continuing to rotate the sleeve in one direction (be careful not to damage the threads). This will cause the balls to jam up, making room for the remaining balls. Now reverse the rotation of the sleeve and insert the remaining balls.





Lubricate the body unit with a moly lubricant or equivalent.



Blace the assembled spring retainer unit (spring end first) into the body. Place the set of V rings onto the spring retainer. Be sure V rings are installed with the sealing lips facing toward the retainer. Lubricate the body and seals with a Moly lubricant or equivalent.



Set the dust seal into O ring groove on the sleeve. Place the seal retainer on the sleeve with the grooved end facing the V rings. Lubricate the sleeve with grease.



Reinstall ball retainer screws until tight. If this interferes with the smooth rotation of the ball bearings, then back off 1/8 - 1/4 turn. A thread locking sealant is recommended to prevent screws from backing off. After pressure testing, the unit is ready for installation.



\* The last coil of the springs has been upset (OD slightly larger). When upset end is inserted into the holes provided in the spring retainer, the springs remain secure.



Body and sleeve are matched during manufacturing. Do not mix components with other units.

### **Optional Seals for V-ring Swivels**

#### V-ring - Pressure Seals

- V-ring pressure seal material: FKM, PTFE (SS), PTFE (CS and AL) which includes changing to PTFE retainers, EPR and Buna-N, Buna-N is standard.
- V-ring pressure seals available in 2", 3", 4", 6" and 8"

#### **O-ring - Dust Seals**

- Dust seal material: FKM, EPR and Buna-N, Buna-N is standard.
- O-ring dust seals are available in 2", 3", 4", 6" and 8"
- Carbon steel V-ring swivels come standard with aluminum retainers. These must be compatible with the material flowing through the swivel. PTFE retainers are available.

## **Rebuild Kits for V-ring Swivels**

V-ring swivel rebuild kit - each kit contains 3 V-rings in the material indicated, 1 Buna-N dust seal, 2 ball retainer screws, 1 grease plug and 10 ball bearings. The spring retainer and seal retainer *are not included* in the V-ring swivel rebuild kits.

Size	Buna	FKM	PTFE	EPR
2"	2RKVBU	2RKVVI	2RKVTF	2RKVEP
3"	3RKVBU	3RKVVI	3RKVTF	3RKVEP
4"	4RKVBU	4RKVVI	4RKVTF	4RKVEP
6"	6RKVBU	6RKVVI	6RKVTF	6RKVEP
8"	8RKVBU	8RKVVI	8RKVTF	
10"	10RKVBU	10RKVVI	10RKVTF	
12"	12RKVBU	12RKVVI	12RKVTF	

Note: All rebuild kits are per plane of rotation

## **Optional Ball Bearings for V-ring Swivels**

- Materials: 440 stainless steel or 316 stainless steel
- Ball bearings available in 2", 3", 4", 6" and 8"

### **Replacement Ball Bearings for V-ring Swivels**

Size	Quantity Per Plane of Rotation	Carbon Steel (standard) Part #	440 Stainless Steel Part #	316 Stainless Steel Part #
2"	50	38CSBA	38SSBA	38SSBA-316
3"	62	38CSBA	38SSBA	38SSBA-316
4"	84	38CSBA	38SSBA	38SSBA-316
6"	96	12CSBA	12SSBA	12SSBA-316
8"	84	34CSBA	34SSBA	34SSBA-316
10"	74	1CSBA	1SSBA	1SSBA-316
12"	85	1CSBA	1SSBA	1SSBA-316

### **O-ring Swivel Seal Replacement Procedure**

Note: Instructions are not for assembly with spring-loaded PTFE pressure seal, consult Dixon®.

Remove the ball retainer screws. Add a sufficient amount of solvent into each raceway to flush out the lubricant. Rotate the sleeve, catching the balls as they fall out. When all the balls have been removed, the body and sleeve can be separated. Discard old seals. Thoroughly clean the body and sleeve.





Install the new O rings on the sleeve, dust seal to the rear, product (pressure) seal up front.



sleev

Insert the sleeve into the body, slowly rotate the sleeve while inserting into the body.



5 When the sleeve is fully inserted, feed the ball bearings into the raceways while rotating the sleeve. To make space for all the balls, insert a screw driver into the raceway, while continuing to rotate the sleeve in one direction (be careful not to damage the threads). This will cause the balls to jam up, making room for the remaining balls. Now reverse rotation of sleeve and insert the remaining balls.



**D** Lubricate the body and the sleeve with grease.



**6** Reinstall ball retainer screws until tight. If this interferes with the smooth rotation of the ball bearings, then back off 1/8 - 1/4 turn. A thread locking sealant is recommended to prevent screws from backing off. After pressure testing, the unit is ready for installation.





Body and sleeve are matched during manufacturing. Do not mix components with other units.

#### **Optional Seals for O-ring Swivels**

**O-ring - Pressure Seals** 

- Materials: FKM, spring-loaded PTFE, EPR, food grade Buna and Buna-N, Buna-N is standard
- Available in 1", 1¼", 1½", 2", 3" and 4"

#### **O-ring - Dust Seals**

- Materials: FKM, EPR and Buna-N, Buna-N is standard
- Available in 1",  $1\frac{1}{4}$  ,  $1\frac{1}{2}$ ", 2", 3" and 4"

Note: When a change of seals is ordered, only the pressure seal is changed unless specifically requested by the customer.

### **Rebuild Kits for O-ring Swivels**

Each kit contains:

- 1 O-ring (pressure seal) in the material indicated
- 1 Buna-N dust seal
- · 2 ball retainer screws
- 1 grease plug
- 10 ball bearings

Note: All rebuild kits are per plane of rotation

Size	Buna	FKM	PTFE	EPR
1"	1RKOBU	1RKOVI	1RKOTF	
1¼ and 1½"	150RKOBU	150RKOVI	150RKOTF	150RKOEP
2"	2RKOBU	2RKOVI	2RKOTF	2RKOEP
3"	3RKOBU	3RKOVI	3RKOTF	<b>3RKOEP</b>
4"	4RKOBU	4RKOVI		4RKOEP

#### **Optional Ball Bearings for O-ring Swivels**

Materials: 440 stainless steel or 316 stainless steel

• Availabe in 1", 1¼", 1½", 2", 3" and 4"

### **Replacement Ball Bearings for O-ring Swivels**

Size	Quantity Per Plane of Rotation	<i>Carbon Steel</i> (standard) Part #	440 Stainless Steel Part #	316 Stainless Stee Part #	
2"	40	14CSBA	14SSBA	14SSBA-316	
3"	56	14CSBA	14SSBA	14SSBA-316	
4"	46	38CSBA	38SSBA	38SSBA-316	
6"	60	38CSBA	38SSBA	38SSBA-316	
8"	80	38CSBA	38SSBA	38SSBA-316	

Swivels are shipped standard with the following components:

Buna-N for pressure seals and dust seals

Carbon steel for ball bearings

### **Corrosion Resistance of Coupling Material**



#### WARNING

The following data has been compiled from generally available sources and should not be relied upon without consulting and following the specific recommendations of the manufacturer regarding particular coupling materials.

## Ratings

Metal	Non-Metal	Gasket/Seal Material
1 - excellent	A - acceptable	T - PTFE
2 - good	X - not recommended	V - FKM
3 - fair	<ul> <li>– - contact Dixon<sup>®</sup></li> </ul>	E - EPDM, EPR
X - not recommended		N - Neoprene
<ul> <li>- contact Dixon<sup>®</sup></li> </ul>		B - Buna N

- 1. Ratings given are based at 70°F (21°C). Chemical compatibility varies greatly with temperature. For applications at temperatures other than 70°F (21°C), contact Dixon<sup>®</sup> for recommendations.
- 2. Gasket / seal materials are not necessarily listed in order of preference.
- 3. Chemical resistance of a material does not necessarily indicate the suitability of a fitting in a given application due to variables such as improper clamp and coupling application, special hose construction, gasket material, etc.



Special caution should be taken when handling hazardous materials.

AGENT	Aluminum	Brass	Malleable Iron Carbon Steel	Stainless Steel, 316	Seal Material
Acetate Solvents (Crude)	1	X 1	2 X	1	<u>т</u> Т
Acetate Solvents (Pure) Acetic Acid (80%)	3	X	X	1	TEVNB
Acetic Acid (50%)	2	X	X	1	TEVNB
Acetic Acid (20%)	2	Х	Х	1	TEVNB
Acetic Acid (10%)	2	Х	Х	1	TEVNB
Acetic Anhydride	2	X	2	2	TNB
Acetone	1	2 X	2	1	TE TEVNB
Acetylene Alcohols	1	^	Z		IEVIND
Amyl Alcohol	2	2	2	2	TEVNB
Benzyl Alcohol	2	2	2	1	TVB
Butyl Alcohol	1	2	2	1	TEVN
Diacetone Alcohol	1	1	2	2	TE
Ethyl Alcohol Hexyl Alcohol	-	2	2	2	TEVNB
Isobutyl Alcohol	-		-	-	-
Isopropyl Alcohol	2	2	2	2	TEVNB
Methyl Alcohol (Methanol)	2	2	2	2	TENB
Octyl Alcohol	-	-	-	-	-
Propyl Alcohol	2	2	2	1	TEVNB
Aluminum Aluminum Chloride (Aqu.)	Х	Х	Х	Х	TEVNB
Aluminum Fluoride (Sat.)	2	-	X	2	TEVNB
Aluminum Nitrate (Sat.)	3	Х	X	2	TEVNB
Aluminum Potassium Sulfate (Alum)	2	2	Х	2	TEVNB
Aluminum Sulfate (Sat.)	Х	Х	Х	2	TEVNB
Ammonia	1	V	1	1	TENB
Ammonia Anhydrous Ammonia Gas	1 X	X	1	1	TENB
Ammonia Nitrate	-	-	-	-	-
Ammonium					
Ammonium Biflouride	-	Х	Х	-	TEVB
Ammonium Carbonate (Sat.)	2	Х	2	2	TEVNB
Ammonium Casenate Ammonium Chloride (Sat.)	- X	- X	- X	- X	- TEVNB
Ammonium Hydroxide (Sat.)	2	X	1	2	TEVNB
Ammonium Nitrate	2	X	X	-	TENB
Ammonium Phosphate (10-40%)	Х	Х	Х	2	TEVNB
Ammonium Sulfate (10-40%)	Х	X	X	2	TEVNB
Aniline	- V	X	X	1	
Arsenic Acid Asphalt	X _	X -	X 2	2 2	TEVNB TV
Barium		-	<u> </u>	<u> </u>	I V
Barium Carbonate (Sat.)	Х	2	2	2	TEVNB
Barium Chloride (Sat.)	-	2	-	-	TEVNB
Barium Hydroxide (Sat.)	Х	2	2	2	TEVNB
Barium Sulfate Barium Sulfide	2 X	2 X	X 2	2 2	TEVNB TEVNB
Beer	1	2	2	1	TEVNB
Benzaldehyde	2	2	X	2	TE
Benzene, Benzol	1	2	2	2	TV
Benzine	-	-	-	-	-
Benzoic Acid	2 X	2 X	X -	2	TVN TEVNB
Black Liquor Bleach (12.5% Active Chlorine)	X	-	- X	2 X	TEVN
Borax	X	2	2	1	TEVNB
Boric Acid	1	Х	x	-	TEVNB
Brine Acid	-	2	-	-	TEVNB
Bromic acid	X	Х	-	- -	TEVN
Bromine Liquid Butadiene, Butylene	2	- 2	- 2	X 2	TV TVNB
Butane	2	2	1	2	TV
Butyl Acetate	1	2	2	2	T
Butyric Acid	2	2	X	2	TV

				316	
			u –	Stainless Steel,	a
AGENT	E		Stee	s St	Seal Material
	Aluminum	SS	leab bon	nles	Ň
	Alur	Brass	Malleable Iron Carbon Steel	Stai	Sea
Calcium Calcium Bisulfate	X		Х	2	Т
Calcium Bisulfide	-	-	-	2	TVB
Calcium Bisulfite	Х	Х	Х	2	TVNB
Calcium Bromide	Х	2	X	X	T
Calcium Carbonate Calcium Chloride (Sat.)	X	2	2	2	TEVB TEVNB
Calcium Hydroxide (Sat.)	X	2	2	2	TEVNB
Calcium Hypochlorite (Sat.)	X	x	x	2	TEV
Carbon		×	0	-	<b></b> ) (
Carbon Bisulfide	1	X	2	2	TV TENB
Carbon Dioxide (Dry) Carbon Dioxide (Wet)	1	1 X	3	2	TENB
Carbon Disulfide	1	X	2	2	TV
Carbon Monoxide	1	1	2	1	TEVNB
Carbon Tetrachloride Carbonic Acid	X	-	2	-	TV TEVNB
Carbonic Acid Castor Oil	1 2	2	2	2 2	TEVNB
Caustic Potash	X	-	X	2	TEVNB
Cellosolves	2	2	2	2	TE
Chlorine (Liquid) Chloroform	-	-	2 X	3	TV TV
Chlorosulfonic Acid	-	- X	2	- X	T
Clorox (Bleach, 5.5% CL)	Х	-	X	2	TEVB
Chromic Acid (50%)	2	Х	Х	-	TVNB
Citric Acid	3	X	X	-	TEVNB TEVN
Coke Oven Gas Copper	2	3	2	2	IEVIN
Copper Chloride	Х	Х	Х	Х	TEVNB
Copper Cyanide	Х	X	-	2	TEVNB
Copper Sulfate Crysylic Acid (Conc.)	X	X 2	X 2	2	TEVNB TEV
Cyclohexane	2	2	2	2	TVB
Detergents	2	2	2	2	TEVNB
Dextrose	2	-	-	-	TEVNB
Diesel Fuels Diethylamine	1	-	2 X	1 2	TVB TN
Disodium Phosphate	-	-	1	1	TEV
Ethers	2	2	2	1	TB
Ethyl				-	-
Ethyl Acetate Ethyl Chloride	-	-	2	2	T TEVB
Ethylene			۷	1	
Ethylene Chloride	-	-	2	-	TV
Ethylene Dichloride	-	2	2	2	TV TEVNB
Ethylene Glycol Ethylene Oxide	1	2 X	2	2	T
Fatty Acids	1	3	X	1	TVNB
Ferric					
Ferric Chloride	X	X	Х	X	TEVNB
Ferric Hydroxide Ferric Nitrate (10-50%)	- X	- X	- X	1 2	TEVNB TEVNB
Ferric Sulfate	X	X	X	-	TEVNB
Ferrous					
Ferrous Chloride (Sat.) Ferrous Sulfate	X	X 2	- X	- X	TEVNB TEVNB
Fluboric Acid	2 X	-	<u> </u>	-	TEVNB
Formaldehyde (50%)	-	2	Х	1	TEN
Formic Acid (Anhyd.)	1	Х	X	-	TEVN
Freen	0	0	V	2	TVNB
Freon 11 Freon 12	2	2	X	2	TVNB
Freon 22	2	2	X	2	TN
Fruit Juices	2	2	Х	2	TVNB
Fuel Oil	2	2 iven are based a	2	2	TVNB

AGENT	Aluminum	Brass	Malleable Iron Carbon Steel	Stainless Steel, 316	Seal Material
	A	Ъ	ΞÖ	t.	Š
Furfural	2	2	2	2	TEN
Gasoline					
Refined Gasoline	2	2	2	2	TVNB
Sour Gasoline	Х	2	2	2	TVNB
Gelatin	2	2	Х	2	TEVNB
Glucose	2	2	2	2	TEVNB
Glue	2	2	2	2	TEVNB
Glycerine	1	1	2	1	TEVNB
Glycols	2	2	2	2	TEVNB
Green Liquor	-	-	2	-	TEVNB
Heptane	2	2	2	2	TVNB
Hexane	2	2	2	1	TVNB
Hydrobromic Acid (50%)	X	X	X	X	TEV
Hydrobromic Acid (20%)	X	X	X	X	
Hydrochloric Acid (20%)	X	X	X	X	TEVNB
Hydrochloric Acid (38%)	X	X	X	X	TEVN
Hydrocyanic Acid	2	X	2	2	
Hydrofluosilicic Acid (10-50%)	X	2	Х	2	TEVNB
Hydrogen		V	V		
Hydrogen Peroxide (50%)	-	X	X	-	TEV
Hydrogen Sulfide (Aqu.)	- X	- 2	-	2	TE
Hydrogen Chloride (Dry Gas)	1	1	2	- 1	
Hydrogen Gas Hypochlorous Acid	X	X	X	X	TEVNB TEV
Iodine	1	X	X	X	TEV
Isopropyl Ether	-	2		2	T
Jet Fuel (JP4, JP5)	2	1	- 2	2	TV
Kerosene	2	2	2	2	TVNB
Ketones	2	2	2	2	T
Lactic Acid (25%)	3	2	X	-	TEVN
Lactic Acid (80%)	2	2	X	-	TEVN
Lard Oil	2	-	3	2	TVB
Lead	<u> </u>		0	2	IVB
Lead Acetate	Х	Х	Х	2	TENB
Lead Chloride	X	-	-	2	TVNB
Lead Sulfate	X	-	Х	2	TEVNB
Lime Sulphur	X	Х	X	2	TEVN
Linoleic Acid	2	X	X	2	TVB
Linseed Oil	2	2	2	2	TVNB
Lubricants (Oil)	2	1	2	2	TVNB
Magnesium					
Magnesium Carbonate	2	-	-	2	TEVNB
Magnesium Chloride	Х	Х	-	-	TEVNB
Magnesium Hydroxide	2	2	2	1	TEVNB
Magnesium Nitrate	2	2	2	2	TEVNB
Magnesium Oxide	-	-	-	-	-
Magnesium Sulfate	2	-	-	2	TEVNB
Maleic Acid	-	2	Х	2	TEV
Mercuric					
Mercuric Chloride	X	X	X	-	TEVB
Mercuric Cyanide	X	X	X	2	TEVB
Mercury	X	X	2	1	TEVNB
Methane	1	1	2	1	TEVNB
Methanol	2	2	2	2	TENB
Methyl Methyl Bromide	V		0	0	T\/
Methyl Bromide Methyl Ethyl Ketone	X	-	2	2	TV TE
	2	2	2	2	
Methyl Isobutyl Ketone	2	2	2 X	2	T T
Methyl Methacrylate Methylene Chloride	2	- 2		2	T
Milk	- 1	X	2	- 1	TEVNB
Mineral Oil	2	1	2	2	TVNB
Muriatic Acid	X	-	-	X	TV
Napthalene	2	2	2	1	TV
raptilatorio	<u> </u>	<b>_</b>	<u> </u>		
Naptha	2	2	2	2	TVB

AGENT	Aluminum	Brass	Malleable Iron Carbon Steel	Stainless Steel, 316	Seal Material
Nickel					
Nickel Chloride	X	X	Х	-	TEVNB
Nickel Sulfate	Х	Х	-	2	TEVNB
Nitric Nitric Acid (100%)	1	Х	Х	-	TV
Nitric Acid (100%)	X	X	X	-	TV
Nitric Acid (30%)	X	X	X	-	TV
Nitrobenzene	1	2	2	2	Т
Oils	-	-	-	-	
Castor Oil	2	2	2	2	TEVNB
Coconut Oil Corn Oil	2	-	3	2	
Corn Oil Cotton Seed Oil	2	2	2	2 2	TVNB TVNB
Fuel Oil	2	2	2	2	TVNB
Linseed Oil	2	2	2	2	TVNB
Mineral Oil	2	1	2	2	TVNB
Silicon Oil	2	1	2	2	TEVB
Vegetable Oil Oleic Acid	2	2	2	1	TVNB TB
Oleum	2	3 X	2	1 2	TV
Oxalic Acid (Sat.)	2	-	X	X	TEV
Oxygen	2	2	2	2	TEVNB
Palmitic Acid (Sat.)	2	3	3	2	TVB
Paraffin	2	2	2	2	TVNB
Perchloroethylene	2	2	2	-	TV
Petrolatum	2	-	3	2	TVNB TV
Phenol (Carbolic Acid) Phosphoric Acid	1	1	Ζ	1	IV
Phosphoric Acid (25-50%)	Х	Х	Х	-	TEVN
Phosphoric Acid (50-85%)	X	X	Х	-	TEV
Photographic Solutions	-	-	Х	1	TVNB
Phthalic Anhydride	-	2	2	1	TEV
Picric Acid	1	Х	Х	2	TEVNB
Plating Solutions Brass Plating Solution		-	-	2	TEVNB
Cadmium Plating Solution	-	-	-	2	TEVNB
Chrome 40% Plating Solution	Х	2	Х	2	TEVN
Copper (Cyanide) Plating Solution	-	-	-	-	TEVNB
Gold Plating Solution	-	-	-	1	TEVNB
Iron PLating Solution	-	-	-	-	TEVB
Lead Plating Solution Nickel Plating Solution	-	-	-	1	TEVNB TEVNB
Silver Plating Solution	-	-	-	1	TEVNB
Tin Plating Solution	-	-	-	3	TEVNB
Zinc Plating Solution	-	-	-	-	TEVNB
Potassium			-		
Potassium Acetate	X	X	2	-	TEVB
Potassium Bicarbonate (30%)	X	2	2	1	
Potassium Carbonate (50%) Potaasium Chlorate (30%)	X 2	2 X	2	1	TEVNB TEVNB
Potassium Chloride (30%)	X	X	2	-	TEVNB
Potassium Chromate (30%)	2	2	-	2	TEVB
Potassium Cyanide Solution (30%)	Х	Х	2	2	TEVNB
Potassium Dichromate (30%)	1	2	2	1	TEVB
Potassium Hydroxide (90%)	X	X	-	-	TENB
Potassium Nitrate (80%)	1 2	2	2	2	TEVNB TEVN
Potassium Permanganate (20%) Potassium Sulfate (10%)	2	2	2	1	TEVN
Propane	1	1	2	2	TVB
Propylene Gylcol	2	2	2	2	TVNB
Propylene Oxide (90%)	-	-	-	1	TE
Pyridine	2	2	2	2	T
Pyrogallic Acid	2	2	2	2	
Silver Nitrate	X 2	X 2	X 2	1 2	TEVNB TEVNB
Soap Solutions		∠ iven are based a		۷.	

AGENT	Aluminum	Brass	Malleable Iron Carbon Steel	Stainless Steel, 316	Seal Material
Sodium		â	N/	0	TEN
Sodium Acetate	1	2	X	2	TEN
Sodium Bicarbonate (20%)	2	2	3	1	TEVNB
Sodium Bisulfate	X	-	2	-	TEVNB
Sodium Bisulfite	X	2	X	-	TEVNB
Sodium Borate	2	2	3	2	
Sodium Perborate (10%)	2	X	2	2	
Sodium Carbonate	X	2	2 X	2	
Sodium Chlorate (50%) Sodium Cyanide	2 X	2		2	TEVNB TEVNB
Sodium Cyanide Sodium Dichromate		X	2	2	TE
	2	X			
Sodium Hydroxide (70%)	X	X	3	2	TENB
Sodium Hydroxide (50%) Sodium Hydroxide (30%)	X X	X 2	3	- 1	TENB TENB
Sodium Hydroxide (30%) Sodium Chloride (30%)	X X	2	2	-	TEVNB
Sodium Chloride (30%) Sodium Hypochlorite	X X	X	X	-	TEV
Sodium Metaphosphate	X	X	X	2	TEVNB
Sodium Nitrate (40%)	1	2	2	1	TENB
Sodium Perborate (10%)	2	X	2	2	TEVNB
Sodium Peroxide (10%)	2	X	2	2	TEVNB
Sodium Silicate	1	2	2	2	TEVNB
Sodium Sulfate	-	2	2	1	TEVNB
Sodium Sulfide (50%)	Х	X	2	2	TEVNB
Sodium Thiosulphate	2	X	X	2	TEVNB
Stannic Chloride	X	X	X	X	TEVNB
Stannous Chloride	X	X	X	-	TEVNB
Steam	-	-	-	-	-
Stearic Acid	2	3	3	1	TVNB
Stoddard's Solvent	2	2	2	2	TVB
Sugar Liquors (Cane)	1	2	2	2	TEVNB
Sugar Liquors (Beet)	1	2	2	1	TEVNB
Sulfate Liquors	2	Х	3	2	TVNB
Sulfite Liquors	Х	Х	Х	2	TVNB
Sulfur Chloride	Х	-	Х	-	TV
Sulfur Dioxide (Dry)	2	2	1	2	TE
Sulfur Trioxide	2	2	2	2 X	TEV
Sulfuric Acid (TO 10%)	X	2	Х	Х	TEVNB
Sulfuric Acid (100%)	X	Χ	2	-	TV
Sulfurous Acid	2	2	Х	-	TV
Tannic Acid	X	-	Х	2	TEVNB
Tanning Liquors	1	-	-	1	TVNB
Tartaric Acid	-	-	-	1	
Titanium Tetrachloride	X	X	2	2	
Toluene	1	1	1	1	TVB
Tetrahydrofuran	X 2	-	1	2	
Tomato Juice	2	-	3	2	TEVNB TV
Trichloroethylene	2		2	- 2	TEVN
Triethanolamine	-	X	2	2	TVB
Triethylamine Trisodium Phosphate (10%)	X	2	2	<u> </u>	TVB
Turpentine	2	X	2	1	TVB
Urea (50%)	2	-	2	2	TEVNB
Urine	-	-	2	1	TEVNB
Vinegar	2	X	2	2	TEVN
Water Acid (Mine)	X	X	X	-	TEVNB
Water (Distilled)	X	2	X	2	TEVNB
Water (Sea)	2	2	X	2	TEVNB
Whiskey	X	2	2	1	TEVNB
White Liquor (Pulp)	2	-	x	2	TEVNB
Wine	x	2	X	1	TEVNB
Xylene	2	2	2	2	TV
Zinc					
Zinc Chloride	Х	Х	Х	2	TEVNB
Zinc Nitrate	-	-	-	2	TEVNB
Zinc Sulfate (50%)	Х	2	Х	1	TEVNB

Notes

Notes

Dixon<sup>®</sup> is recognized as the premier manufacturer and supplier of hose fittings and accessories spanning a wide range of industrial uses. Dixon<sup>®</sup>'s range includes products for food, dairy processing, beverage and brewery, mobile tankers, mining, construction, chemical processing, petroleum, oilfields, refining and manufacturing.

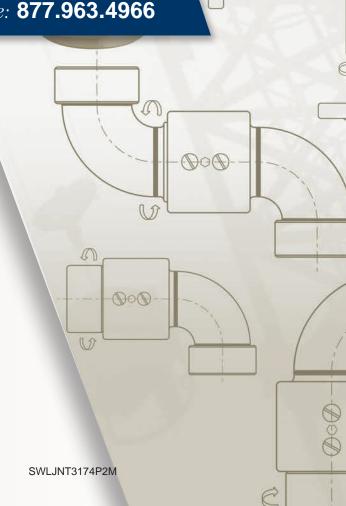
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