

LF INTRODUCTION

Scope of ISO-LF Components

The ease of assembly and disassembly of ISO components, together with the vast array of configurations available with this system result in a multitude of applications. ISO components may be used in rough vacuums, but are also totally reliable in vacuum systems with pressures to about 10⁻⁶ without baking and 10⁻⁸ with viton “O” rings baked to about 150° C.

ISA CORPORATION'S ISO-LF components have been used with total success in both rough and high vacuum applications. Cryogenics, vacuum drying, leak detectors, vacuum coating, tube evacuation and etchers are just a few of the applications where components have been utilized.

Standard flange dimensions shown below for this type flange and other pertinent dimensions are shown in the tables for each component.

ISO Multi-Fastener Flange (LF type SF shown)

ISO Bolted Flange (LFB type SF shown)

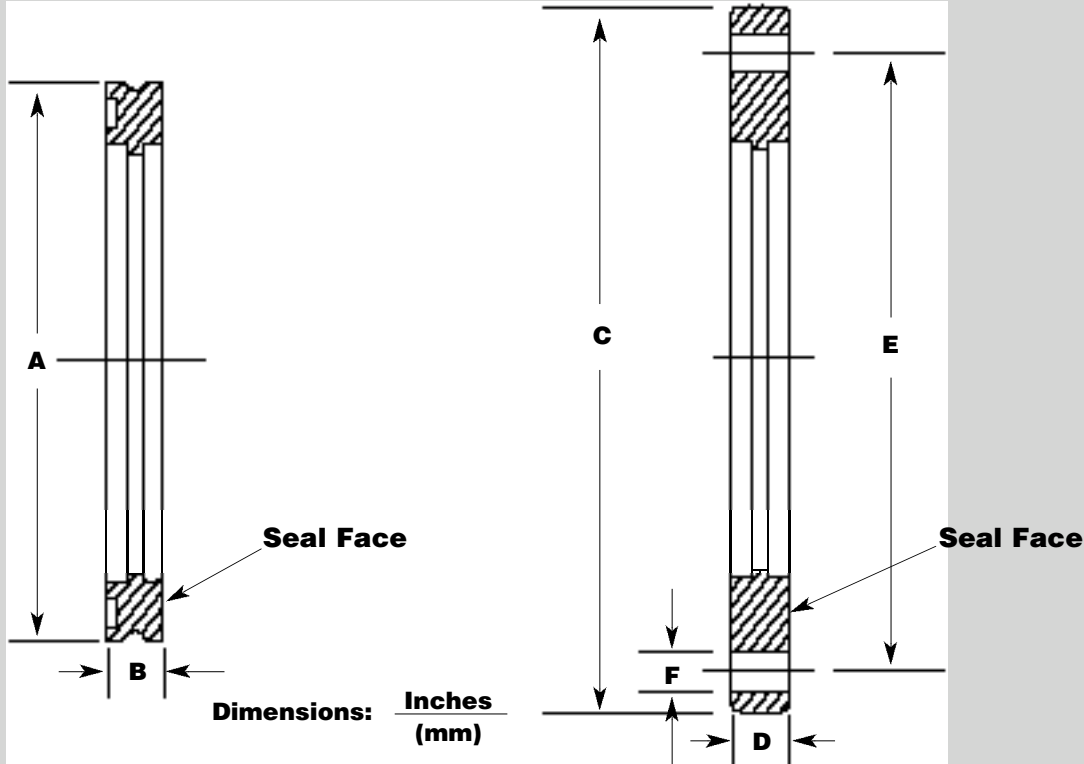
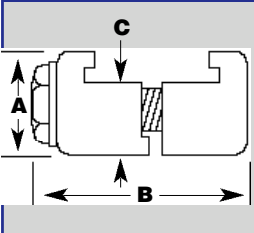
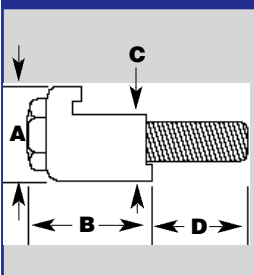
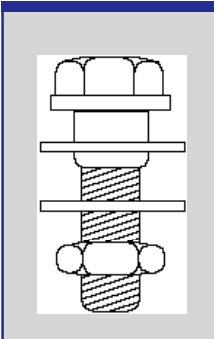
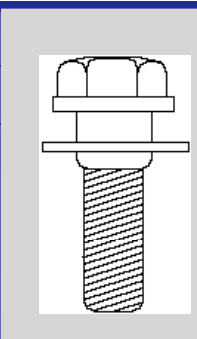


FIGURE 2

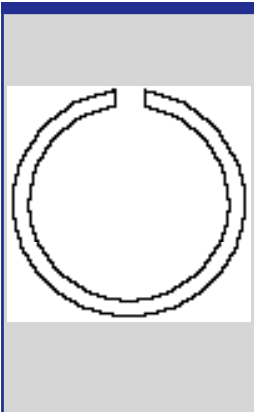
Nominal Flange Size Designation (mm)	Suggested Tube/Pipe Dims: O.D. x Wall (inches)	ISO MULTI-FASTENER FLANGE (ISO-LF)			ISO BOLTED FLANGE (ISO-LFB)				N (No. Holes)	Wrench (mm)
		A (O.D.)	B (Thickness)	No. Clamps Required	C (O.D.)	D (Thickness)	E (Bolt Circle)	F (Bolt Holes)		
NW 63	2.5 x .065	3.74 (95)	.47 (12)	3-4	5.12 (130)	.47 (12)	4.33 (110)	.35 (9)	4	13
NW 80	3.0 x .065	4.33 (110)	.47 (12)	4-8	5.71 (145)	.47 (12)	4.92 (125)	.35 (9)	8	13
NW100	4.0 x .065	5.12 (130)	.47 (12)	4-8	6.50 (165)	.47 (12)	5.71 (145)	.35 (9)	8	13
NW160	6.0 x .083	7.09 (180)	.47 (12)	4-8	8.86 (225)	.63 (16)	7.87 (200)	.43 (11)	8	17
NW200	8.0 x .120	9.45 (240)	.47 (12)	6-12	11.22 (285)	.63 (16)	10.24 (260)	.43 (11)	12	17
NW250	10.0 x .125	11.42 (290)	.47 (12)	6-12	13.19 (335)	.63 (16)	12.20 (310)	.43 (11)	12	17
NW320	12.75 x .165	14.57 (370)	.67 (17)	8-12	16.73 (425)	.79 (20)	15.55 (395)	.55 (14)	12	19
NW400	16.0 x .188	17.72 (450)	.67 (17)	8-16	20.08 (425)	.79 (20)	18.90 (480)	.55 (14)	16	19
NW500	20.0 x .188	21.65 (550)	.67 (17)	12-16	24.02 (610)	.79 (20)	22.83 (580)	.55 (14)	16	19

	<ul style="list-style-type: none"> • Double claw aluminum clamp • Stainless bolt and washer • Joins LF (MF) flanges 	LARGE FLANGE DOUBLE CLAW CLAMP					
		PART NUMBER	FLANGE SIZE	A	B	C	UNIT PRICE
		LF 63/100-DC	63, 80, 100	.95	1.98	.63	Call
		LF160/250-DC	160, 200, 250	1.10	2.05	.80	Call
	LF320/500-DC	320, 400, 500	1.34	2.56	1.04	Call	

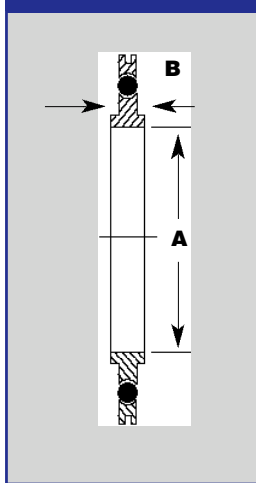
	<ul style="list-style-type: none"> • Single claw aluminum clamp • Stainless bolt and washer • Joins LF (MF) flange to tapped bolted flange 	LARGE FLANGE SINGLE CLAW CLAMP						
		PART NUMBER	FLANGE SIZE	A	B	C	D	UNIT PRICE
		LF 63/100-C	63, 80, 100	.95	1.20	.63	.39	Call
		LF160/250-C	160, 200, 250	1.10	1.25	.80	.39	Call
	LF320/500-C	320, 400, 500	1.34	1.57	1.04	.72	Call	

	DOUBLE FLANGE BOLTS					BOLTED to TAPPED FLANGE BOLTS			
	PART NUMBER	BOLT SIZE	# PER SET	PER SET PRICE		PART NUMBER	BOLT SIZE	# PER SET	PER SET PRICE
	LFB63-BD	M8x40	4	Call		LFB63-BS	M8x30	4	Call
	LFB80/100-BD	M8x40	8	Call		LFB80/100-BS	M8x30	8	Call
	LFB160-BD	M10x50	8	Call		LFB160-BS	M10x35	8	Call
	LFB200/250-BD	M10x50	12	Call		LFB200/250-BS	M10x35	12	Call
	LFB320-BD	M12x60	12	Call		LFB320-BS	M12x45	12	Call
LFB400/500-BD	M12x60	16	Call	LFB400/500-BS	M12x45	16	Call		
LFB630-BD	M12x65	20	Call	LFB630-BS	M12x50	20	Call		

• All stainless components • Price is for set as shown

	<ul style="list-style-type: none"> • Retains bolt ring • Nickel-plated stainless steel • Viton: 200° C max. • Buna N: 100° C max. • BSilicone: 100° C max. 	RETAINING RING & REPLACEMENT O'RINGS				
		Part Number	Retaining Ring	Buna N	Viton	Silicone
		LF63-250-	RR Call	OB Call	OV Call	OS Call
		LF80-300-	RR Call	OB Call	OV Call	OS Call
		LF100-400-	RR Call	OB Call	OV Call	OS Call
		LF160-600-	RR Call	OB Call	OV Call	OS Call
		LF200-800-	RR Call	OB Call	OV Call	OS Call
		LF250-1000-	RR Call	OB Call	OV Call	OS Call
		LF320-1200-	RR Call	OB Call	OV Call	OS Call
		LF400-1600-	RR Call	OB Call	OV Call	OS Call
LF500-2000-	RR Call	OB Call	OV Call	OS Call		

Add RR to end of part number for Retaining Ring or OB, OV, or OS for O'Rings.

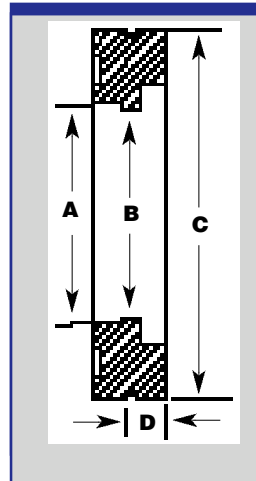


- Replaceable O-ring
- Aluminum spacer ring
- Buna N - 100°C max.
- Viton - 200°C max.
- Silicone -200°C max. chemically resistant
- Screen mesh available

CENTERING RING ASSEMBLY 304 STAINLESS STEEL AND ALUMINUM

Part number	A	B	Stainless Steel			Aluminum		
			Buna N	Silicone	Viton	Buna N	Silicone	Viton
LF63-250-	2.65	.154	Call	Call	Call	Call	Call	Call
LF80-300-	3.16	.154	Call	Call	Call	Call	Call	Call
LF100-400-	3.90	.154	Call	Call	Call	Call	Call	Call
LF160-600-	5.80	.154	Call	Call	Call	Call	Call	Call
LF200-800-	8.15	.154	Call	Call	Call	Call	Call	Call
LF250-1000-	10.05	.154	Call	Call	Call	Call	Call	Call
LF320-1200-	12.30	.220	Call	Call	Call	Call	Call	Call
LF400-1600-	15.53	.220	Call	Call	Call	Call	Call	Call
LF500-2000-	19.51	.220	Call	Call	Call	Call	Call	Call

Be sure to indicate SR for (stainless steel), or AR for (aluminum) along with OB, OV, or OS to indicate O'Ring at end of part number. (Example: LF63-250-SR-OV)

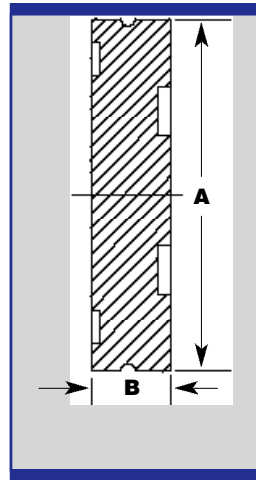


- 304 stainless steel
- 6061-T6 aluminum
- Internal weld
- Self aligning
- Accepts standard inch tubing
- Infinitely rotatable
- Use clamps or rotatable bolt ring

SHORT WELD FLANGE STAINLESS STEEL, OR ALUMINUM

PART NUMBER	Stainless or Aluminum	TUBE OD	THRU HOLE		SETBACK		UNIT PRICE	
			A	B	C	D	Stainless Steel	Aluminum
LF63-250	SF, ASF	2.50"	2.51	2.37	3.74	.25	Call	Call
LF80-300	SF, ASF	3.00"	3.01	2.87	4.33	.25	Call	Call
LF100-400	SF, ASF	4.00"	4.01	3.87	5.12	.25	Call	Call
LF160-600	SF, ASF	6.00"	6.02	5.83	7.09	.25	Call	Call
LF200-800	SF, ASF	8.00"	8.02	7.76	9.45	.25	Call	Call
LF250-1000	SF, ASF	10.00"	10.02	9.75	11.42	.25	Call	Call
LF320-1200	SF, ASF	12.75"	12.77	12.42	14.57	.38	Call	Call
LF400-1600	SF, ASF	16.00"	16.02	15.50	17.72	.38	Call	Call
LF500-2000	SF, ASF	20.00"	20.02	19.50	21.65	.38	Call	Call

BE SURE TO ADD "O" RING SUFFIX B, S, OR V

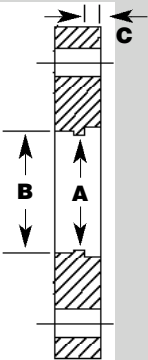


- 304 Stainless steel
- 6061 T-6 aluminum
- Infinitely rotatable
- To close off unused ports or machine bore or tap to application
- Use clamps or rotatable bolt ring

BLANK FLANGE 304 STAINLESS STEEL, OR ALUMINUM

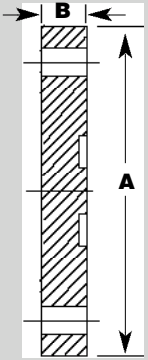
PART NUMBER	Stainless Steel, or Aluminum	A	B	UNIT PRICE	
				Stainless Steel	Aluminum
LF 63- 250	SV, AB	3.74	.47	Call	Call
LF 80- 300	SV, AB	4.33	.47	Call	Call
LF100- 400	SV, AB	5.12	.47	Call	Call
LF160- 600	SV, AB	7.09	.47	Call	Call
LF200- 800	SV, AB	9.45	.47	Call	Call
LF250-1000	SV, AB	11.42	.47	Call	Call
LF320-1200	SV, AB	14.57	.67	Call	Call
LF400-1600	SV, AB	17.72	.67	Call	Call
LF-500-2000	AB	21.65	.67	Call	Call

BE SURE TO ADD "O" RING SUFFIX B, S, OR V



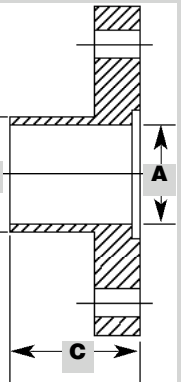
- 304 stainless steel
- Internal weld
- Self aligning
- Accepts standard inch tubing
- Use bolts to tighten
- Tapped bolt holes available

WELD FLANGE - BOLTED						
PART NUMBER	TUBE OD	SET BACK			UNIT PRICE	
		A	B	C		
LFB63- 250-SF	2.50"	2.37	2.51	.25	Call	
LFB80- 300-SF	3.00"	2.87	3.01	.25	Call	
LFB100- 400-SF	4.00"	3.87	4.01	.25	Call	
LFB160- 600-SF	6.00"	5.83	6.02	.25	Call	
LFB200- 800-SF	8.00"	7.76	8.02	.25	Call	
LFB250-1000-SF	10.00"	9.75	10.02	.25	Call	
LFB320-1200-SF	12.75"	12.42	12.77	.38	Call	
LFB400-1600-SF	16.00"	15.62	16.02	.38	Call	
LFB500-2000-SF	20.00"	19.62	20.02	.38	Call	



- 304 stainless steel
- To close off unused ports or machine bore or tap to application
- Use bolts to tighten
- Tapped bolt holes available

BLANK FLANGE - BOLTED 304 STAINLESS STEEL			
PART NUMBER	A	B	UNIT PRICE
LFB63- 250-SB	5.12	.47	Call
LFB80- 300-SB	5.71	.47	Call
LFB100- 400-SB	6.50	.47	Call
LFB160- 600-SB	8.86	.63	Call
LFB200- 800-SB	11.22	.63	Call
LFB250-1000-SB	13.19	.63	Call
LFB320-1200-SB	16.73	.79	Call
LFB400-1600-SB	20.08	.79	Call
LFB500-2000-SB	24.02	.79	Call

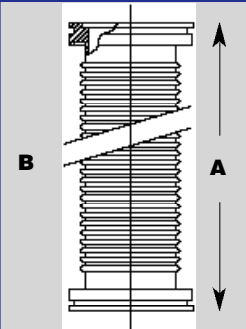


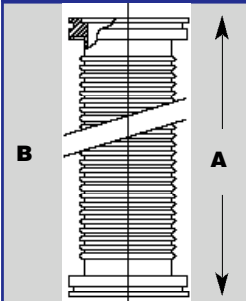
- 304 stainless steel
- Butt weld
- Self aligning
- Accepts standard inch tubing
- Use bolts to tighten
- Tapped bolt holes available
- Special lengths available

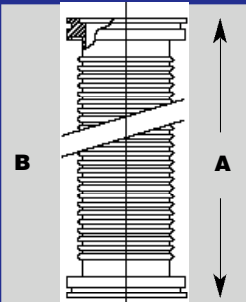
LONG BUTT FLANGE - BOLTED 304 Stainless Steel or 6061 Aluminum					
PART NUMBER	TUBE O.D.				UNIT PRICE
		A	B	C	
LFB63- 250-LF	2.50"	2.37	2.50	3.94	Call
LFB80- 300-LF	3.00"	2.87	3.01	3.94	Call
LFB100- 400-LF	4.00"	3.87	4.00	3.94	Call
LFB160- 600-LF	6.00"	5.83	6.00	3.94	Call
LFB200- 800-LF	8.00"	7.76	8.00	3.94	Call
LFB250-1000-LF	10.00"	9.75	10.00	3.94	Call
LFB320-1200-LF	12.75"	12.42	12.75	3.94	Call
LFB400-1600-LF	16.00"	15.62	16.00	3.94	Call
LFB500-2000-LF	20.00"	19.62	20.00	3.94	Call

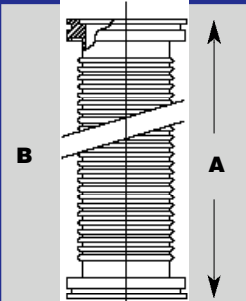
FOR ALUMINUM ADD - A TO PART NUMBER

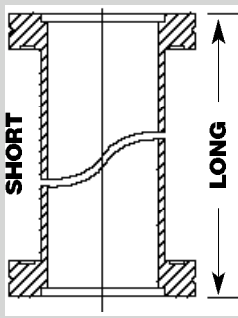
BELLOWS

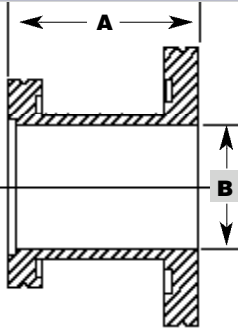
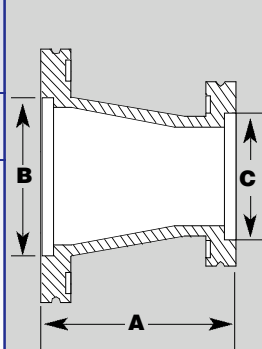
	<ul style="list-style-type: none"> ● Extreme flexibility due to thin wall 	LF to STAINLESS BELLOWS				
		PART NUMBER	HOSE I.D.	(Maximum compressed length)		
		A	B	WALL		

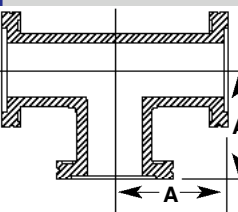
	<ul style="list-style-type: none"> ● Formed metal ● Flange butt-welded to hose ● Special lengths available ● Thick wall available 	LF to FLEXIBLE METAL HOSE 10" THIN WALL				
		PART NUMBER	HOSE I.D.	(Maximum compressed length)		
		A	B	WALL		

	<ul style="list-style-type: none"> ● Formed metal ● Flange butt-welded to hose ● Special lengths available ● Thick wall available 	LF to FLEXIBLE METAL HOSE 20" THIN WALL				
		PART NUMBER	HOSE I.D.	(Maximum compressed length)		
		A	B	WALL		

	<ul style="list-style-type: none"> ● Formed metal ● Flange butt-welded to hose ● Special lengths available ● Thick wall available 	LF to FLEXIBLE METAL HOSE 40" THIN WALL				
		PART NUMBER	HOSE I.D.	(Maximum compressed length)		
		A	B	WALL		

		LF NIPPLES - 304 STAINLESS STEEL OR 6061 ALUMINUM			
		PART NUMBER	SHORT	LONG	UNIT PRICE
 <p>● LF flanges infinitely rotatable</p> <p>● Special lengths available</p>		LF63- 250-NS	4.18	Call	
		LF63- 250-NL		6.92	Call
		LF80- 300-NS	4.18		Call
		LF80- 300-NL		7.72	Call
		LF100- 400-NS	4.18		Call
		LF100- 400-NL		8.50	Call
		LF160- 600-NS	4.18		Call
		LF160- 600-NL		10.86	Call
		LF200- 800-NS	4.18		Call
		LF200- 800-NL		13.22	Call
		LF250-1000-NS	4.18		Call
		LF250-1000-NL		16.38	Call
		LF320-1200-NL		19.76	Call
		LF400-1600-NL		19.76	Call
		LF500-2000-NL		19.76	Call
FOR ALUMINUM ADD - A TO PART NUMBER					

		LF to LF REDUCERS 304 STAINLESS STEEL OR				LF to LF REDUCERS - CONICAL				
		PART NUMBER	A	B	UNIT PRICE	PART NUMBER	A	B	C	UNIT PRICE
		LF63 x LF80	2.95	2.37	Call					
		LF63 x LF100	2.95	2.37	Call					
		LF63 x LF160	2.95	2.37	Call					
		LF80 x LF100	2.95	2.87	Call					
		LF100 x LF160	2.95	3.87	Call					
		LF63 x LF80-CR	4.14	2.87	2.37	Call				
		LF63 x LF100-CR	4.14	3.83	2.37	Call				
		LF63 x LF160-CR	2.95	2.37	2.37	Call				
		LF80 x LF100-CR	4.14	3.83	2.87	Call				
		LF80 x LF160-CR	9.52	5.78	2.87	Call				
		F100x LF160-CR	9.52	5.78	3.83	Call				
FOR ALUMINUM ADD - A TO PART NUMBER										

		TEE - 304 STAINLESS STEEL OR 6061 ALUMINUM		
		PART NUMBER	A	UNIT PRICE
 <p>● Same size LF flange on all ports. Other combinations available</p> <p>● Larger sizes available</p>		LF63-250-T	3.25	Call
		LF80-300-T	3.50	Call
		LF100-400-T	4.13	Call
		LF160-600-T	5.38	Call
		LF200-800-T	7.38	Call
		LF250-1000-T	9.88	Call
		LF320-1200-T	10.87	Call
		LF400-1600-T	13.37	Call
	LF500-2000-T	15.87	Call	
FOR ALUMINUM ADD - A TO PART NUMBER			REDUCING TEES AVAILABLE	