

Suction Diffusers



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INTRODUCTION

The Lubi LSD Suction Diffuser is a device which directly mounts to the suction side of horizontal or vertical centrifugal pumps.

It is designed to reduce space and installation cost by replacing a conventional 90° elbow, 'Y' strainer and flow stabilizing piping on the suction side of the pump. It may also be used as a reducing elbow, should the suction piping be larger than the pump inlet.

The suction diffuser consists of a start-up strainer (removable fine mesh filter), permanent strainer, guide vane, body cover and body cover 'O' ring.

The suction strainer helps to remove foreign materials that may be hazardous to the pump or other system components, while providing the proper flow conditions to the pump.

The water flow is passed through an in-built strainer to remove suspended solids and then guided to the pump suction through flow stabilizing guide vane. Guide vanes reduces turbulence and resulting stress and vibration. Fine mesh filter is provided to prevent seal failure and instrumentation damage during commissioning.

FEATURES AND BENEFITS

It's multi functional design saves space and installation costs by incorporating all conventional devices into a single device solution.

90° ELBOW

Direct mounting to the suction flange of any pump which turn the piping 90°, this feature replacing a conventional elbow. In addition, suction diffuser can be mount on a pump suction flange either horizontal or vertical position.

IN-LINE STRAINER

The in-line strainer is divided into a outer cylindrical start-up strainer and a star-shaped permanent strainer.

The start-up strainer is a fine mesh strainer which helps in removing unwanted metal and other foreign particles or objects when the pump is first started. This strainer is made out of Galvanized steel and it is preferable to remove it after the first 15 days of service.

The permanent strainer is made out of 3 mm perforated stainless steel AISI 304 sheet metal. It will protect the pump against metallic or other foreign particles and objects during the entire service life of the pump. The design of this strainer provide a large free flow area to reduce pressure drop. This feature replaces a conventional 'Y' strainer.

GUIDE VANES

Flow stabilizing vanes on the outlet of suction diffuser allow the suction diffuser to bolt directly to the pump. This feature saves space and also reduces cost of a conventional long straight pipe. Integrally straightening guide vanes also reduces flow turbulence, thereby creating optimum flow conditions and minimize stress on pump components.

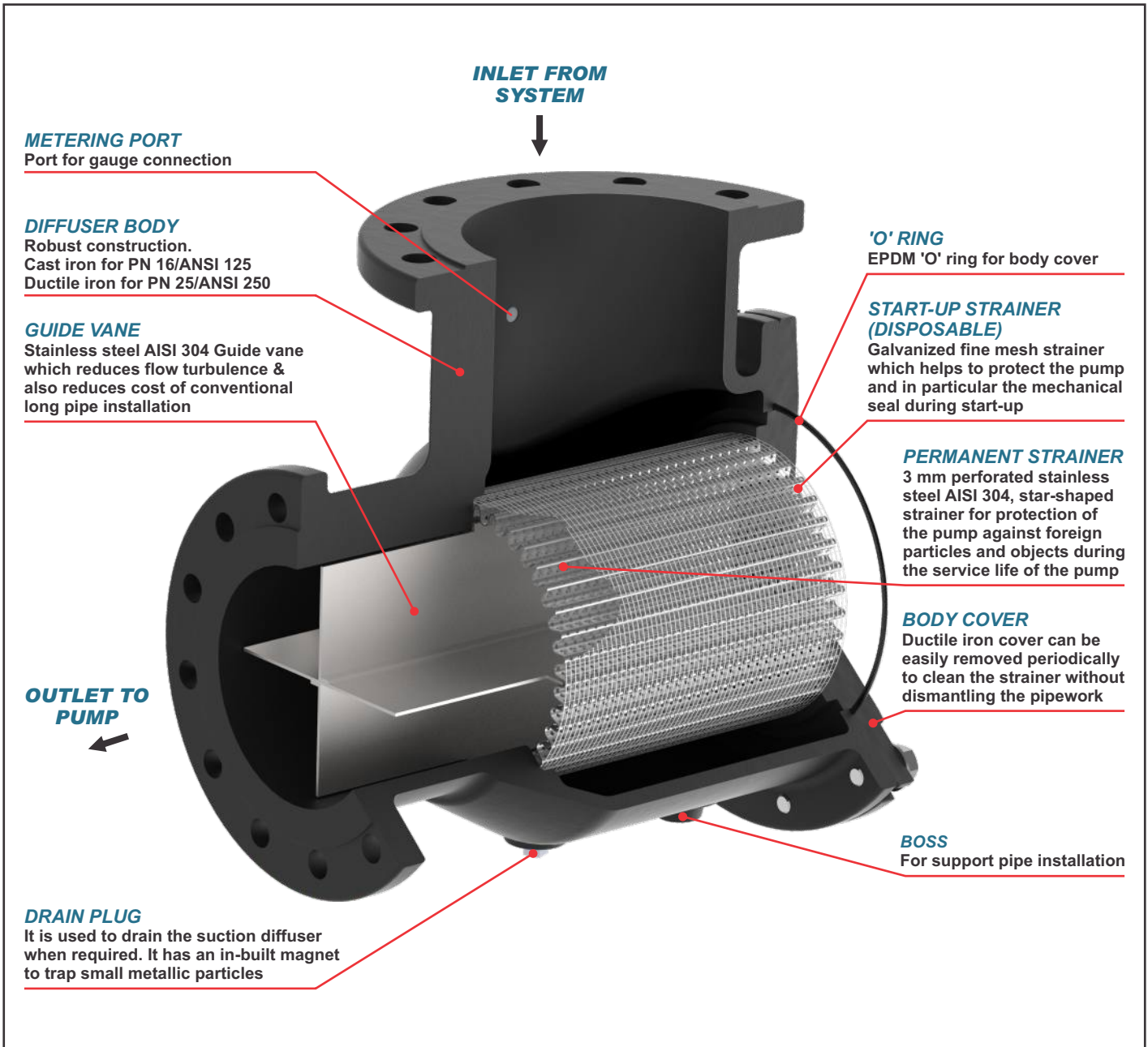
REDUCING ELBOW

The suction diffuser connects same size piping to the pump suction, but can also connect to inlet piping one size larger than the pump suction, eliminating a reducing elbow.

STANDARD FEATURES INCLUDE

- Available in PN 16 & PN 25 as per DIN standard EN 1092-2, with flanged connections. Flanges with ANSI 125 & ANSI 250 are available as per ASME B16.1. Grooved end flanged connections are available on request.
- Available with equal or reduced outlet flanges.
- Cast on supporting pads for convenient mounting of standard I.D support foot.
- Drain/purge plugs is used to drain the suction diffuser when required. It has an in-built magnet to trap small metallic particles.
- Available suction gauge port.
- 'O' ring seals body cover.
- Quick opening bolted body cover minimize down time while cleaning the strainer.

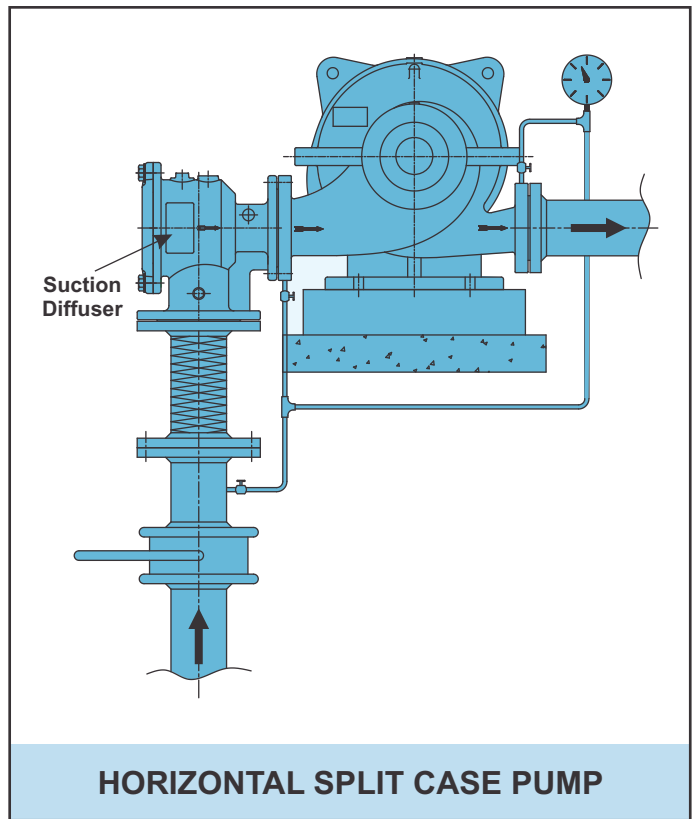
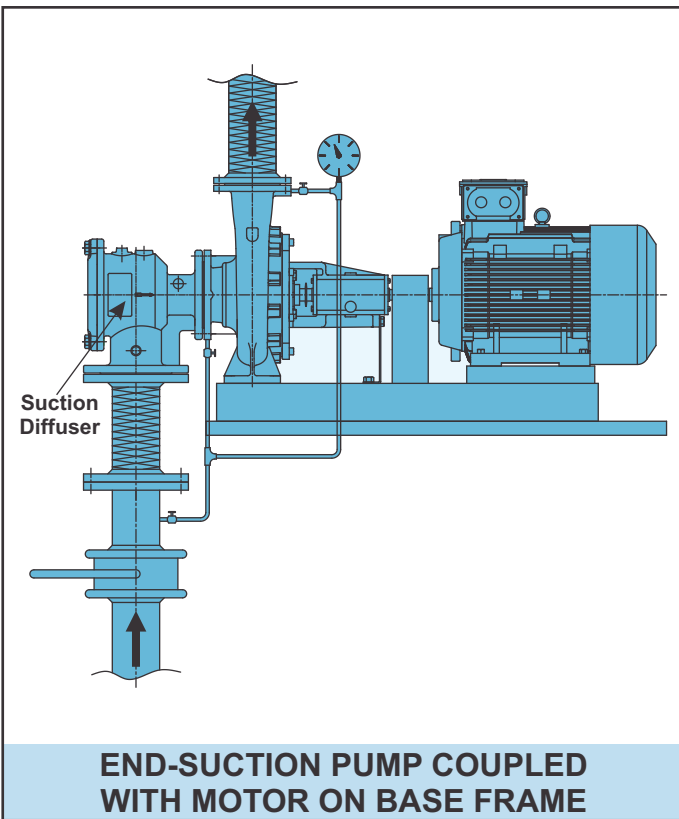
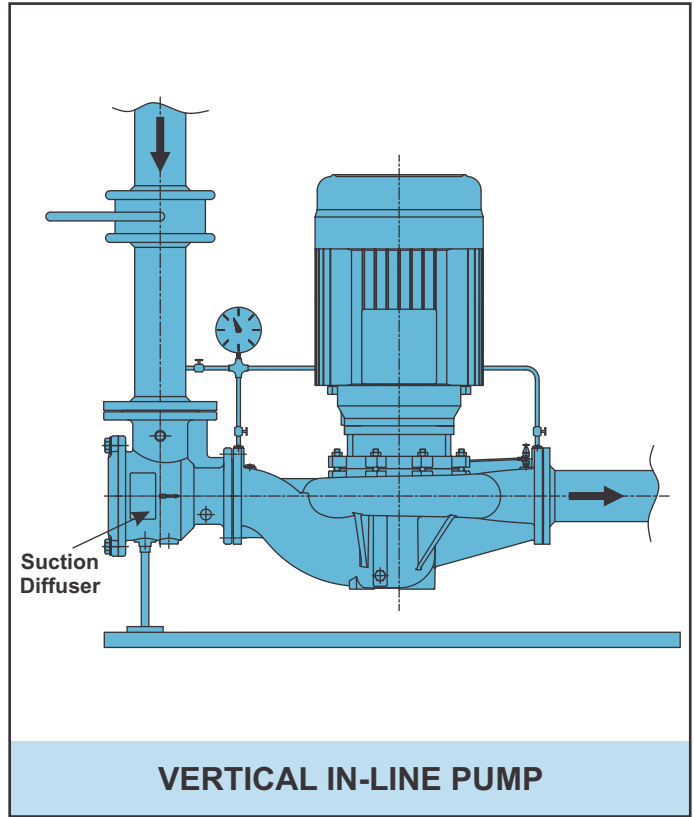
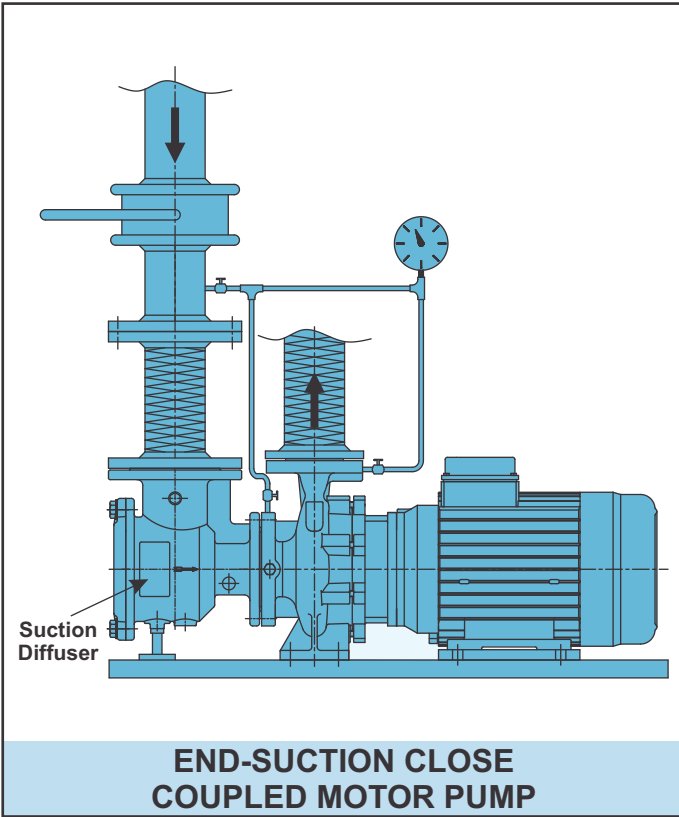
DESIGN FEATURES



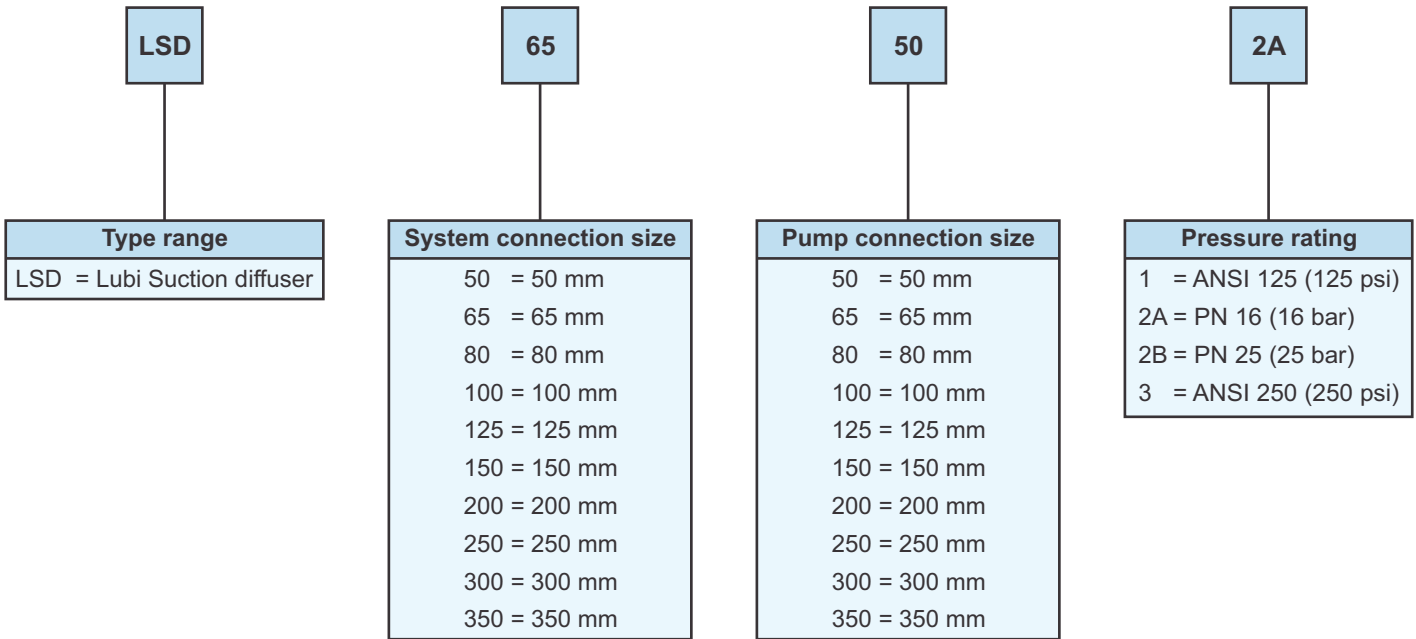
MATERIAL OF CONSTRUCTION

Component	Material	
	PN 16/ANSI 125	PN 25/ANSI 250
Diffuser body	Cast iron	Ductile iron
Body cover	Ductile iron	Ductile iron
Permanent strainer (3 mm perforations)	Stainless steel AISI 304	Stainless steel AISI 304
Start-up strainer (fine mesh)	Galvanized steel	Galvanized steel
Guide vane (flow straightening vane)	Stainless steel AISI 304	Stainless steel AISI 304
Body cover 'O' ring	EPDM	EPDM

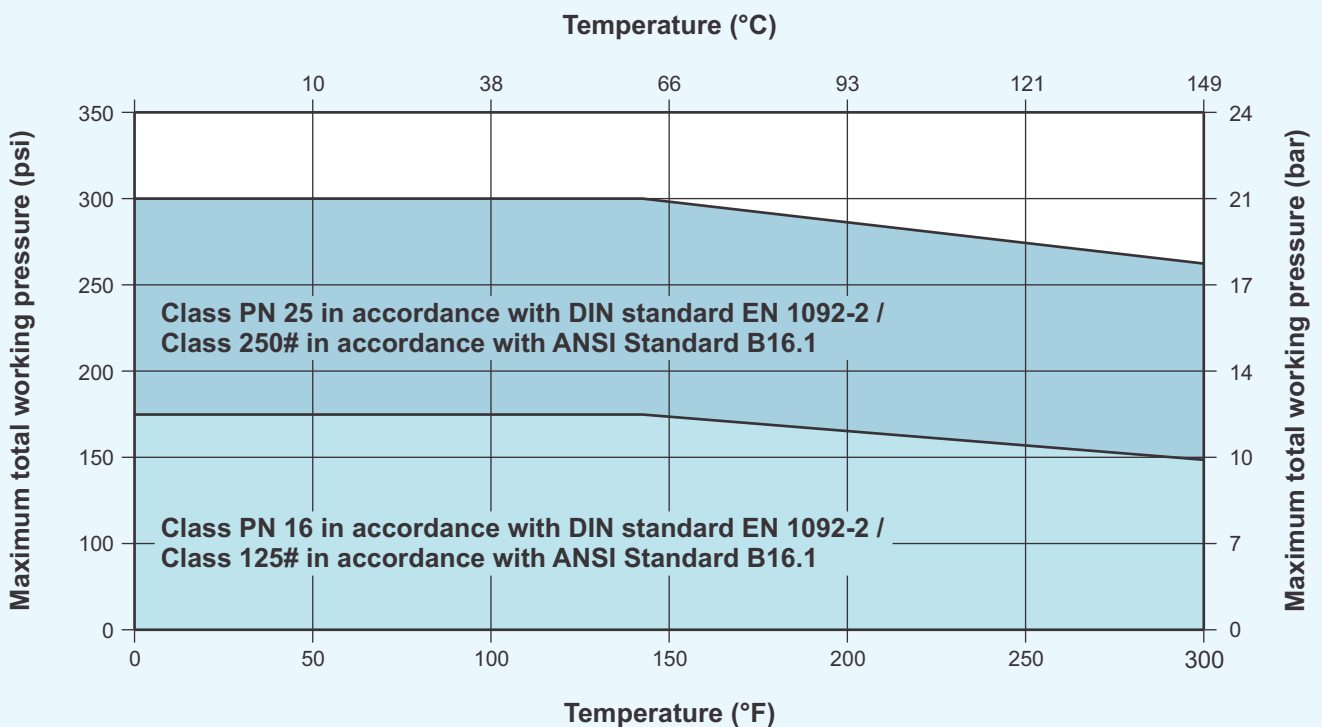
TYPICAL INSTALLATION



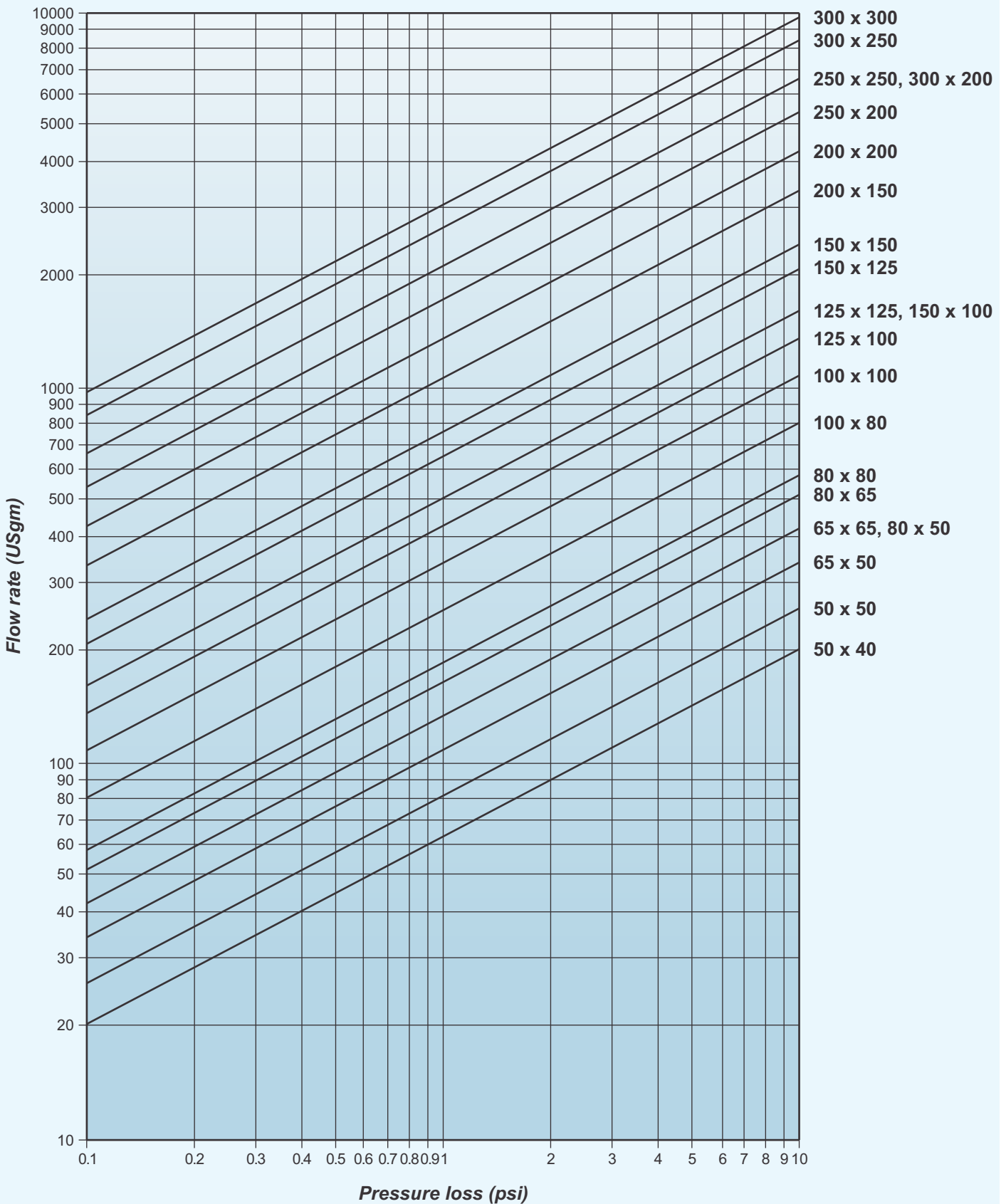
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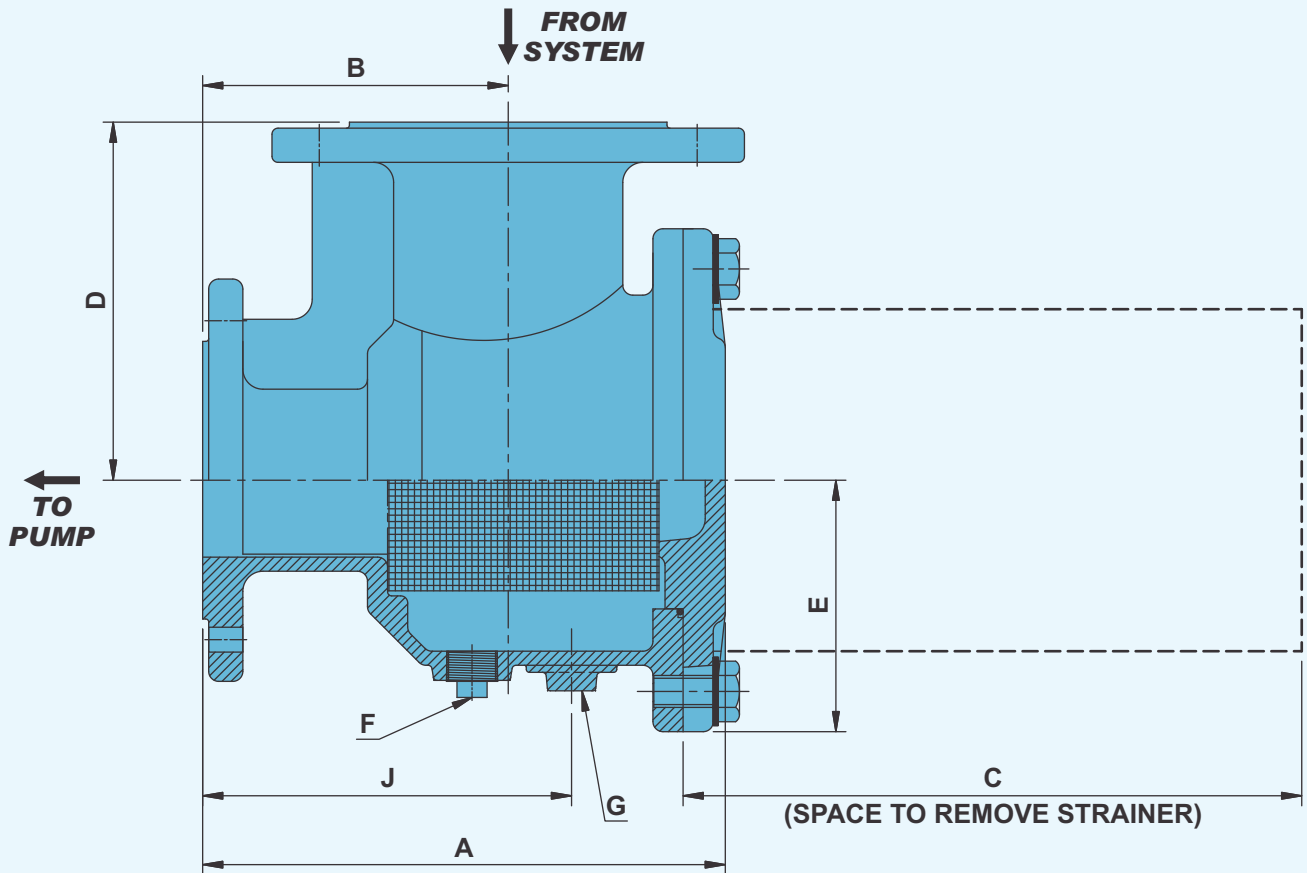
PRESSURE vs TEMPERATURE RATINGS



PRESSURE DROP CHART



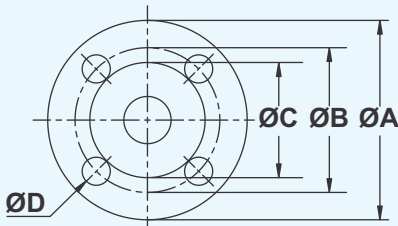
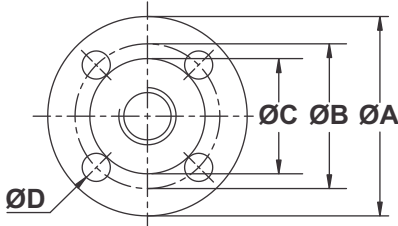
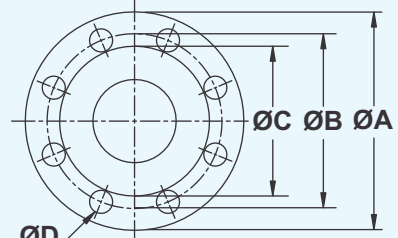
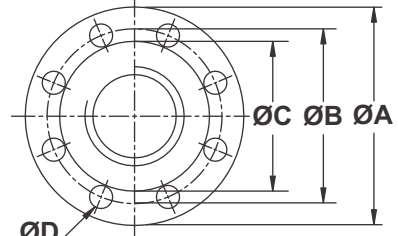
TECHNICAL DATA



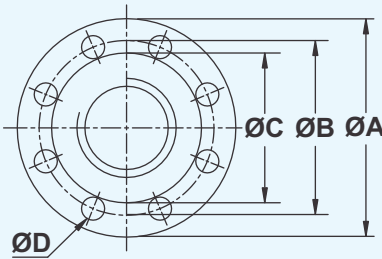
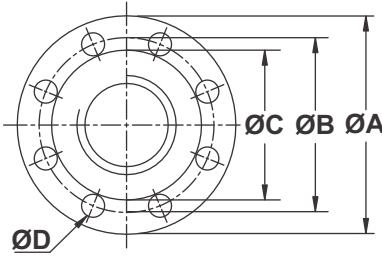
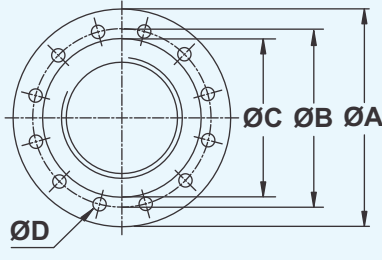
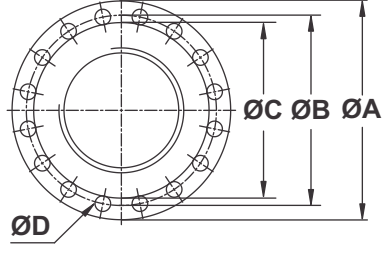
Type	Flange size [mm]		Flange size [inch]		Strainer free area [sq.inch]	Dimensions [mm]								Gross weight [kg]
	Pump side	System side	Pump side	System side		A	B	C	D	E	F	G	J	
LSD 5050	50	50	2	2	35	228	127	250	159	110	1/2" NPT	25	161.5	20
LSD 6550		65		2 1/2	35	228	127	250	159	110	1/2" NPT	25	161.5	21.5
LSD 8050		80		3	35	228	127	250	159	110	1/2" NPT	25	161.5	23.5
LSD 6565	65	65	2 1/2	2 1/2	35	241	140	275	159	110	1/2" NPT	25	174.5	23
LSD 8065		80		3	35	241	140	275	159	110	1/2" NPT	25	174.5	25
LSD 8080	80	80	3	3	50	267	152	300	178	125	3/4" NPT	25	183.5	32
LSD 10080		100		4	50	267	152	300	178	125	3/4" NPT	25	183.5	34
LSD 100100	100	100	4	4	88	315	178	325	203	138	3/4" NPT	32	232	45
LSD 125100		125		5	88	315	178	325	203	138	3/4" NPT	32	232	46
LSD 150100		150		6	88	315	178	325	203	138	3/4" NPT	32	232	48
LSD 125125	125	125	5	5	114	360	204	375	230	166	1" NPT	32	268	61
LSD 150125		150		6	114	360	204	375	230	166	1" NPT	32	268	65
LSD 150150	150	150	6	6	162	448	267	450	279	188	1" NPT	50	345	85
LSD 200150		200		8	162	448	267	450	279	188	1" NPT	50	345	91
LSD 200200	200	200	8	8	270	545	330	525	330	225	1" NPT	50	441	144
LSD 250200		250		10	270	545	330	525	330	225	1" NPT	50	441	150
LSD 250250	250	250	10	10	475	629	368	600	368	257.5	1" NPT	50	472	197
LSD 300250		300		12	475	629	368	600	368	257.5	1" NPT	50	472	205
LSD 300300	300	300	12	12	780	762	457	700	457	334.5	1" NPT	50	584	342
LSD 350300		350		14	780	762	457	700	457	334.5	1" NPT	50	584	355

Note: All dimensions in mm unless otherwise noted.
See page 9 to 11 for Flange dimensions.

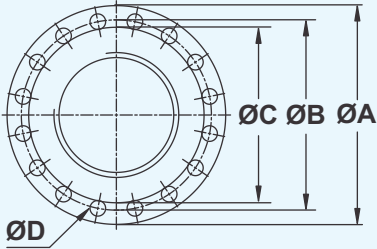
FLANGE DIMENSIONS

Flange size	Figure	Rating	A	B	C	ØD x Nos. of holes
50 mm (2 inch)		PN 16	Ø165	Ø125	Ø102	Ø18 x 4
		PN 25	Ø165	Ø125	Ø102	Ø18 x 4
		ANSI 125	Ø150	Ø121	-	Ø3/4" x 4
		ANSI 250	Ø165	Ø127	Ø106	Ø3/4" x 8
65 mm (2½ inch)		PN 16	Ø185	Ø145	Ø122	Ø18 x 4
		PN 25	Ø185	Ø145	Ø122	Ø18 x 8
		ANSI 125	Ø180	Ø140	-	Ø3/4" x 4
		ANSI 250	Ø190	Ø149	Ø125	Ø7/8" x 8
80 mm (3 inch)		PN 16	Ø200	Ø160	Ø138	Ø18 x 8
		PN 25	Ø200	Ø160	Ø138	Ø18 x 8
		ANSI 125	Ø190	Ø152	-	Ø3/4" x 4
		ANSI 250	Ø210	Ø168	Ø144	Ø7/8" x 8
100 mm (4 inch)		PN 16	Ø235	Ø180	Ø158	Ø18 x 8
		PN 25	Ø235	Ø190	Ø158	Ø22 x 8
		ANSI 125	Ø230	Ø191	-	Ø3/4" x 8
		ANSI 250	Ø255	Ø200	Ø176	Ø7/8" x 8

FLANGE DIMENSIONS

Flange size	Figure	Rating	A	B	C	ØD x Nos. of holes
125 mm (5 inch)		PN 16	Ø270	Ø210	Ø188	Ø18 x 8
		PN 25	Ø270	Ø220	Ø188	Ø25 x 8
		ANSI 125	Ø255	Ø216	-	Ø7/8" x 8
		ANSI 250	Ø280	Ø235	Ø211	Ø7/8" x 8
150 mm (6 inch)		PN 16	Ø300	Ø240	Ø212	Ø22 x 8
		PN 25	Ø300	Ø250	Ø212	Ø25 x 8
		ANSI 125	Ø280	Ø241	-	Ø7/8" x 8
		ANSI 250	Ø320	Ø270	Ø246	Ø7/8" x 12
200 mm (8 inch)		PN 16	Ø360	Ø295	Ø268	Ø22 x 12
		PN 25	Ø360	Ø310	Ø268	Ø25 x 12
		ANSI 125	Ø345	Ø299	-	Ø7/8" x 8
		ANSI 250	Ø380	Ø330	Ø303	Ø1-1/8" x 12
250 mm (10 inch)		PN 16	Ø425	Ø355	Ø320	Ø25X12
		PN 25	Ø425	Ø370	Ø320	Ø29X12
		ANSI 125	Ø405	Ø362	-	Ø1"X12
		ANSI 250	Ø445	Ø387	Ø357	Ø1-1/4"X16

FLANGE DIMENSIONS

Flange size	Figure	Rating	A	B	C	ØD x Nos. of holes
300 mm (12 inch)		PN 16	Ø485	Ø410	Ø378	Ø25X12
		PN 25	Ø485	Ø430	Ø378	Ø29X16
		ANSI 125	Ø485	Ø432	-	Ø1"X12
		ANSI 250	Ø520	Ø451	Ø418	Ø1-1/4"X16

Note: All dimensions in mm unless otherwise noted.

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Product Improvement is a continuous process at 'LUBI'. The data given in this publication is therefore subject to revision.

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