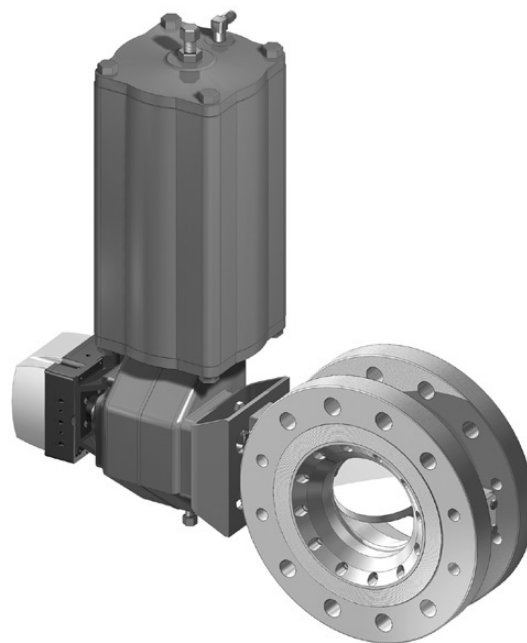


NELES® HIGH CAPACITY TRIPLE ECCENTRIC DISC VALVE, METAL SEATED NELDISC® SERIES L6

Metso's Neles series L6 is a double flanged metal seated Neldisc® triple eccentric disc valve with one piece body design, for both control and tight shut-off applications. It is particularly well suited for the refining, power, petrochemical and chemical industries.

The L6 incorporates the Neldisc® triple offset metal seated design, which provides extended operational life in control, tight shut-off, high cycle, high temperature and abrasive applications. S-disc flow construction expands application possibilities beyond those of typical butterfly valves. Full rating from ASME 150 to 600 makes the L6 a sound control or shut-off valve and an ideal replacement for gate valves.



Excellent on-off capabilities

- Uniquely functioning full metal seat design assures tightness over long time periods.
- Contact between disc and seat is mechanically induced and does not rely on assistance from differential pressure.
- Bi-directional long term tightness is maintained even in high cycle rate services. Unidirectional in ASME Class 600. Tightness is not compromised by large thermal cycling either.
- Low friction and excellent wear resistance.
- Lowered operational torque reduces actuator size
- Heavy-duty stem and bearings arrangement extends service life and is insensitive to thermal cycles and impurities.

Excellent flow control capabilities

- Good controllability via smoothly rising installed characteristic curve at both very small openings and nearly full Cv positions. L6 provides very wide rangeability in fairly low pressure drop services.
- Good dynamic stability in both flow directions.
- S-disc design provides dynamic torque balancing and noise abatement, allowing L6 valve use in applications where high performance butterflies could not typically be considered. This offers very cost effective control solutions.
- Available with a variety of actuators, positioners and accessories for single source responsibility.

Abrasion resistant

- Solid, sturdy all metal seat design is based on metal-to-metal contact. No resilient parts are needed for seating. Furthermore, there are no resilient parts exposed to the medium.

Wide pressure and temperature range

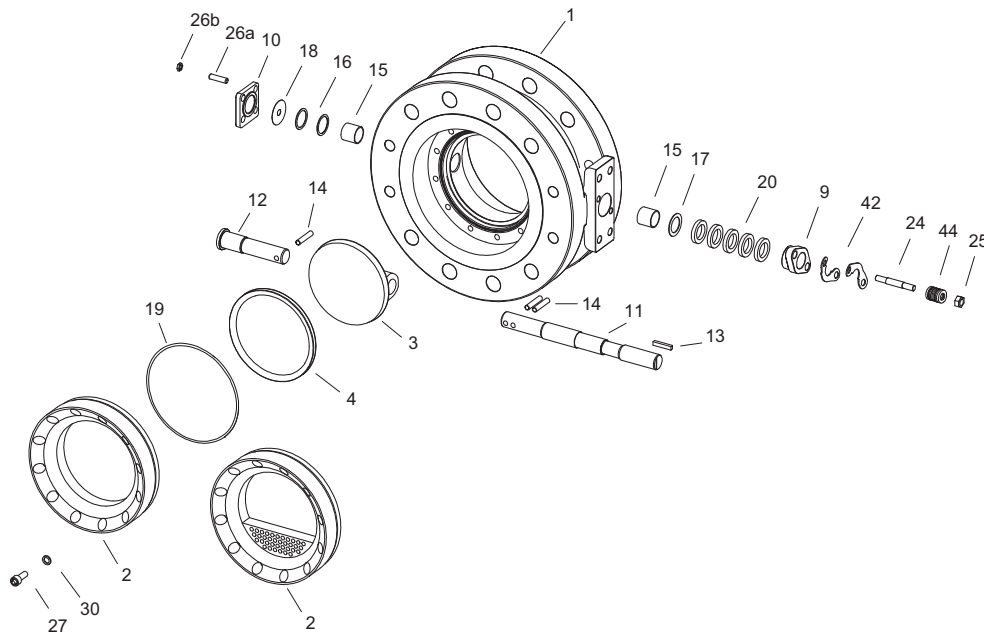
- Differential pressure/temperature ratings in accordance with ASME B16.34.
- Standard construction performs equally well from -200 ...+600 °C / -328 ...+1110 °F.

Low cost of ownership

- Extremely high cycle life minimizes the need for maintenance, and increases Mean Time Between Failure (MTBF).
- Interchangeable seat can be replaced without disassembling the disc and shaft. Seat replacement does not require any adjustment or special tools. Seat design is exactly the same in ASME class 150 and 300 regardless of pressure rating.

EXPLODED VIEW

L6C & L6D

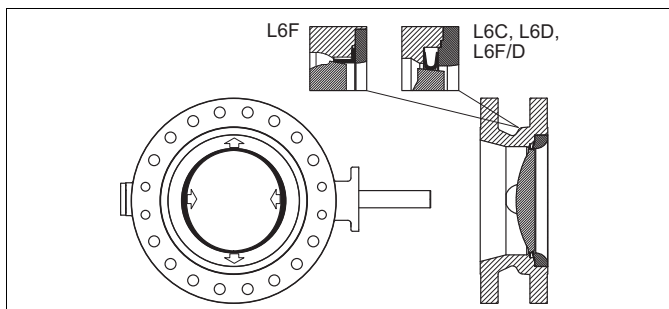


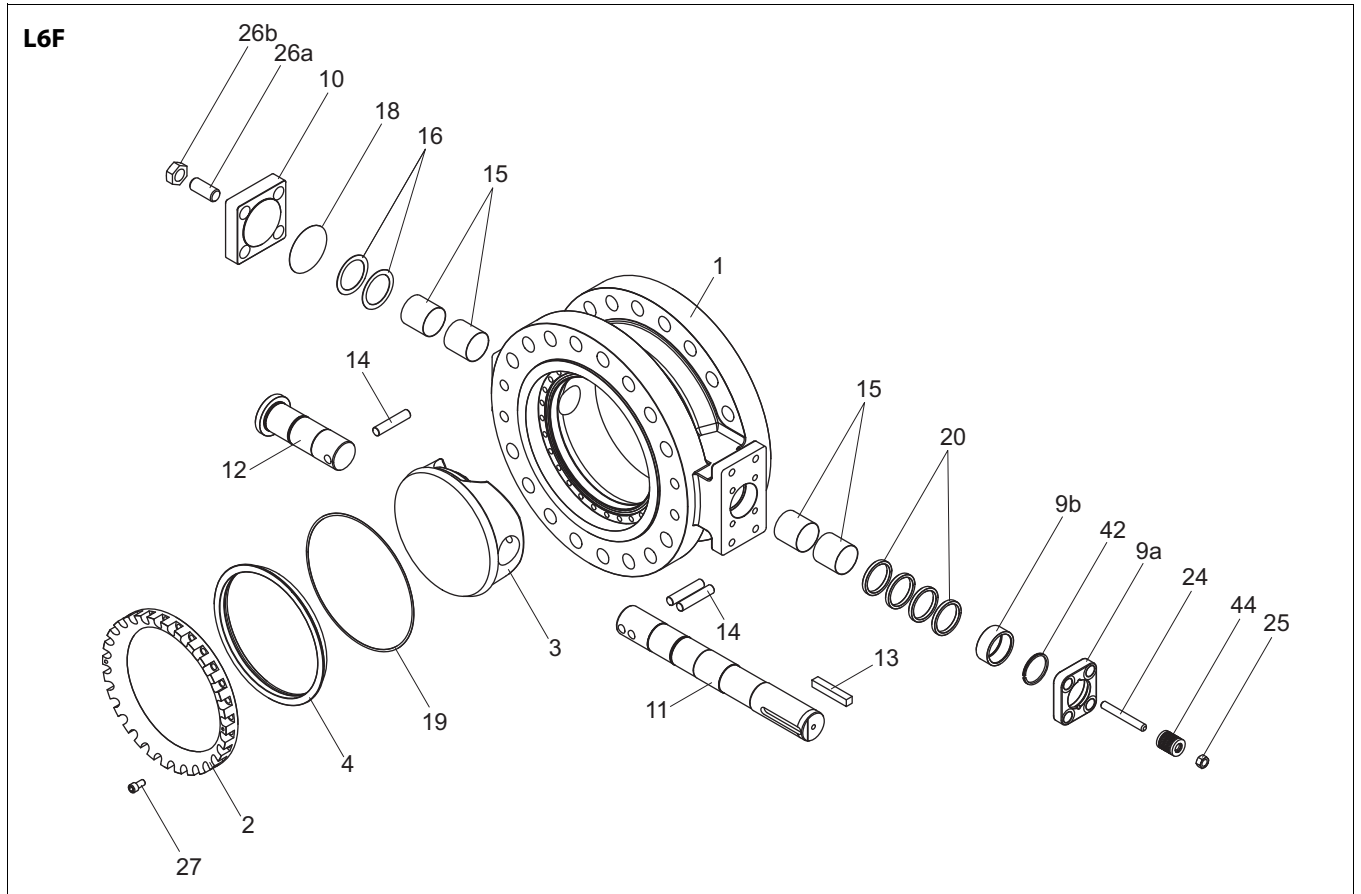
PARTS LIST

Part No.	Part Name	Material
1	Body	Carbon Steel ASTM A216 Type WCB / 316 Stainless Steel ASTM A351 Type CF8M
2	Clamp ring	316 Stainless Steel ASTM A182 type F316 / 316 Stainless Steel ASTM A351 Type CF8M
3	Disc	316 stainless steel ASTM A351 type CF8M
4	Seat ring	Incoloy® 825 hard chrome plated DN 100-750 / 4"-30" W:no 1.4418 (Avesta® 248 SV) hard chrome plated DN 800-1500 / 32"-64"
9	Gland	316 stainless steel ASTM A351 type CF8M
10	Blind flange	316 stainless steel ASTM A351 type CF8M
11	Drive shaft	17-4PH stainless steel hard chrome plated
12	Shaft	17-4PH stainless steel hard chrome plated
13	Key	329 stainless steel
14	Cylindrical pin	17-4PH stainless steel
15	Bearing (upper & lower)	Cobalt based alloy / Nitronic® 60
16	Thrust bearing	Cobalt based alloy
17	Anti extrusion ring	Stainless steel
18	Gasket	Graphite
19	Body seal	Graphite
20	Gland packing	PTFE / Graphite.
24	Stud	Stainless steel
25	Nut	Stainless steel
26a	Stud	Stainless steel
26b	Nut	Stainless steel
27	Socket screw	Stainless steel
30	Spring washer	Stainless steel
42	Retaining plate	Stainless steel
44	Spring stack	SIS 2324 & CrMo steel + ENP

NELDISC TRIPLE ECCENTRIC SEATING PRINCIPLE

The disc of the valve is machined to close tolerances, to create an elliptical shape, similar to an oblique slice taken from a solid metal cone. When the valve is closed, the elliptical disc at the major axis displaces the seat ring outward, causing the seat ring to contact the disc at the minor axis. The seat ring is able to move freely (except ASME Class 600) in a plane in its recess, to accommodate the disc in an optimal manner. When the valve is opened, the contact is released, and the seat ring returns to its original circular shape.





PARTS LIST

Item	Part Name	Material
1	Body	Carbon Steel ASTM A216 Type WCB / 316 Stainless Steel ASTM A351 Type CF8M
2	Clamp ring	316 Stainless Steel ASTM A182 type F316 / 316 Stainless Steel ASTM A351 Type CF8M
3	Disc	316 stainless steel ASTM A351 type CF8M
4	Seat ring	W:no 1.4418 (Avesta® 248 SV) hard chrome plated DN 200-900 / 08"-36"
9a	Casting gland	316 stainless steel ASTM A351 type CF8M
9b	Compression ring	316 stainless steel ASTM A351 type CF8M
10	Blind flange	316 stainless steel ASTM A351 type CF8M
11	Drive shaft	17-4PH stainless steel hard chrome plated
12	Shaft	17-4PH stainless steel hard chrome plated
13	Key	329 stainless steel
14	Pin	17-4PH stainless steel
15	Bearing	Cobalt based alloy
16	Bearing	Cobalt based alloy
18	Gasket	Graphite
19	Body seal	Graphite
20	Gland packing	Graphite
24	Stud	PTFE / Graphite.
25	Nut	Stainless steel
26a	Stud	Stainless steel
26b	Nut	Stainless steel
27	Hexagon socket screw	Stainless steel
42	Retainer ring	Stainless steel
44	Disc spring set	SIS 2324 & CrMo steel + ENP

TECHNICAL SPECIFICATIONS

Valve ratings

Classes 150, 300 and 600 in accordance with ASME B16.34 and BS 5351.

Sizes and end connection types

ASME cl. 150 valves are available in sizes 4"-80" (DN 100-2000).
 ASME cl. 300 valves are available in sizes 4"-56" (DN 100-1400).
 ASME cl. 600 valves are available in sizes 6"-40" (DN 150-1000).

Flanges are designed as per:

- ASME B16.5 for 4"-24" (DN 100-600) valves
- ASME B16.47 series A for 28" (DN 700) and bigger sizes.
- ASME B16.47 series B flanges are available upon request.

ASME cl. 150 & 300 face-to-face dimensions are acc. to ISO 5752 series 13.
 ASME cl. 600 face-to-face dimensions are acc. to ISO 5752 series 14.

Inherent flow characteristic

Standard: Equal percentage
 S-disc: Modified equal percentage

Valve tightness (bi-directionally)

- Standard seat, code A:
 - ANSI Class V
 - ISO 5208, rate D, air
 - DIN 3230 rate 3
 - 10 x ISO 5208 rate D with RH hand lever

- Optional tightness:
 - API 598 (metal seated),
 - ANSI Class VI
 - ISO 5208 rate A, air (4"-24")

Safety features

- Fire-tested per API 607, 6th edition and BS 6755 part 2.
- Fugitive emission control with live loaded stem sealing as standard, ISO 15848, TA-Luft/VDI 2440 and Shell 77/312
- Rugged single piece double flanged body eliminates potential leak paths associated with jointed bodies.
- Positive shaft blow-out prevention.

Options

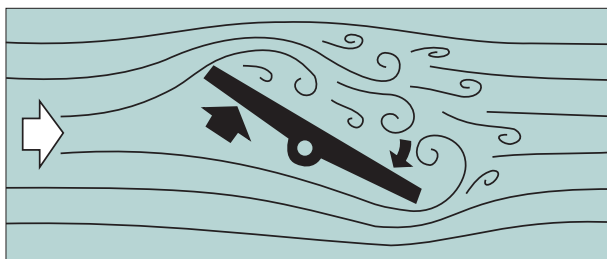
- S-Disc, flow balancing trim, see bulletin 2 S-L1 20
- Oxygen construction for gaseous oxygen service
- High temperature design
- High cycle/cycling design
- Erosion resistant design
- Cryogenic
- Steam jacket, heat tracing
- NACE MR0103/MR0175

Flow data

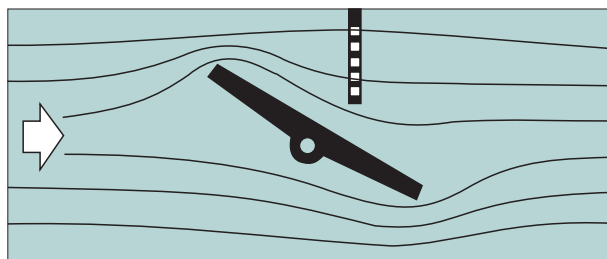
Table 1: Flow coefficients of L6 Neldisc triple eccentric disc valves.

Size	Cv-values						
	Standard				S-Disc		
	#150	#300	#600/300	#600	#150	#300	#600
4	189	189	180	-	160	160	-
6	546	546	510	510	410	410	322
8	1080	978	978	750	730	670	488
10	2150	1830	1830	1500	1401	1200	978
12	3650	2790	2790	2750	2300	1817	1650
14	5250	4220	2790	3962	3314	2726	2205
16	7250	5540	4220	4220	4183	3500	3130
18	10000	6810	5540	5540	5338	4170	3940
20	14300	9110	6810	8900	7300	5732	5340
24	15900	10400	10400	10100	8400	6720	6470
28	25100	16300	16300	16100	12614	10488	9470
30	24100	15900	16300	15900	12344	10339	9370
32	39500	23700	23700	23700	17277	14761	13200
36	53000	24300	24000	24000	23085	14993	13180
40	69600	36700	-	33000	30039	22266	20180
42	66300	35700	-	-	29395	22013	-
48	80700	34000	-	-	36106	21550	-
52	127000	73600	-	-	52395	46954	-
56	117000	69800	-	-	50693	45777	-
60	112000	67400	-	-	49563	-	-
64	149000	-	-	-	66646	-	-
72	221000	-	-	-	110782	-	-
80	203000	-	-	-	105086	-	-

Conventional butterfly valve flow



S-DISC flow



S-DISC design offers stable flow control, reduced dynamic torque, noise level and vibration. For more information see technical bulletin 2SL120.

Not recommended mounting position coding for valve-actuator unit if using S-disc: A-HL, B-HL, C-HL and D-HL.

CONSTRUCTIONS

Standard

Fire-tested construction in accordance with API 607, 4th edition and BS 6755 part 2, is standard. Standard design also carries a live loaded stem packing.

Cryogenic

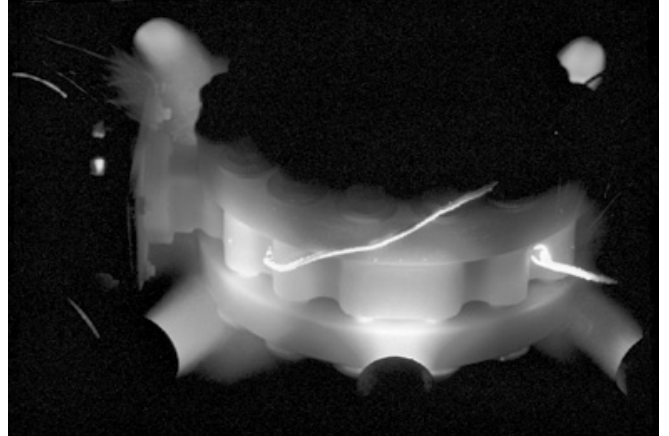


L6 is an excellent valve for cryogenic applications, temperatures -200 ... -46 °C / -320 ... -50 °F. Tight sealing over a wide range of cryogenic temperatures is accomplished with a high nickel alloy seat which maintains its mechanical properties even at cryogenic temperatures. The testing of the cryogenic valves is done in the Metso cryogenic laboratory in Finland. The testing procedure is agreed together with customer to fulfill the available standards and requirements.

Abrasive

The disc can be protected against erosion by HCr plating or cobalt based alloy. The shaft is protected by special bearing bushings and can be flushed with a purge.

High temperature

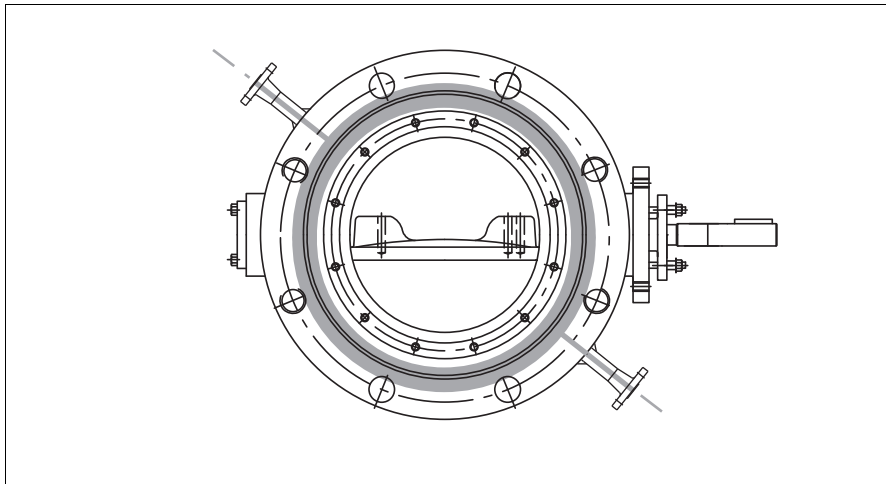


Service temperatures above +425 °C / +800 °F require high temperature construction with cobalt based alloy bearings and high temperature alloy shafts and seat. +600 °C / +1110 °F, consult the factory for proper material selection and higher temperatures.

NACE

L6 Neldisc valves are available to comply with NACE MR 0103 or NACE MR 0175.

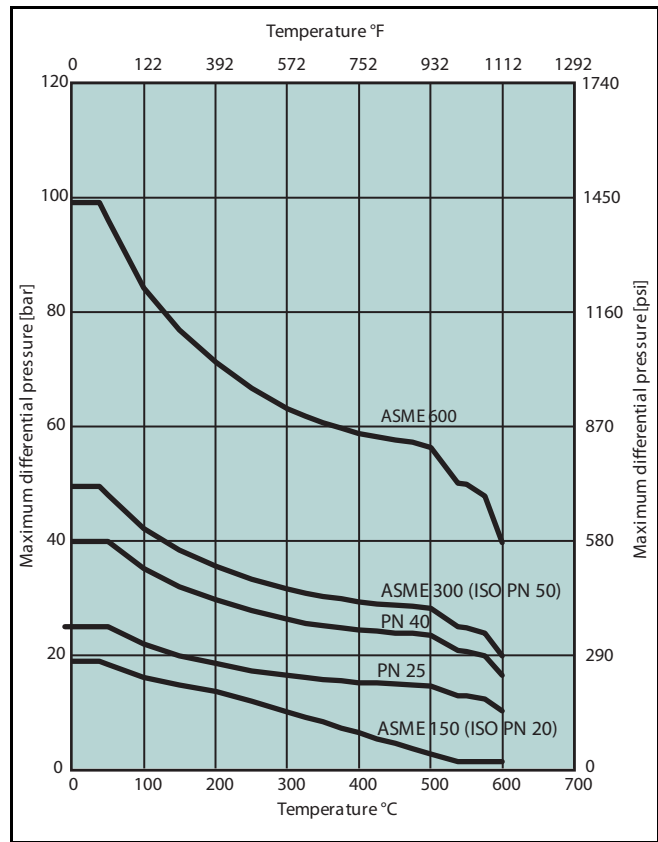
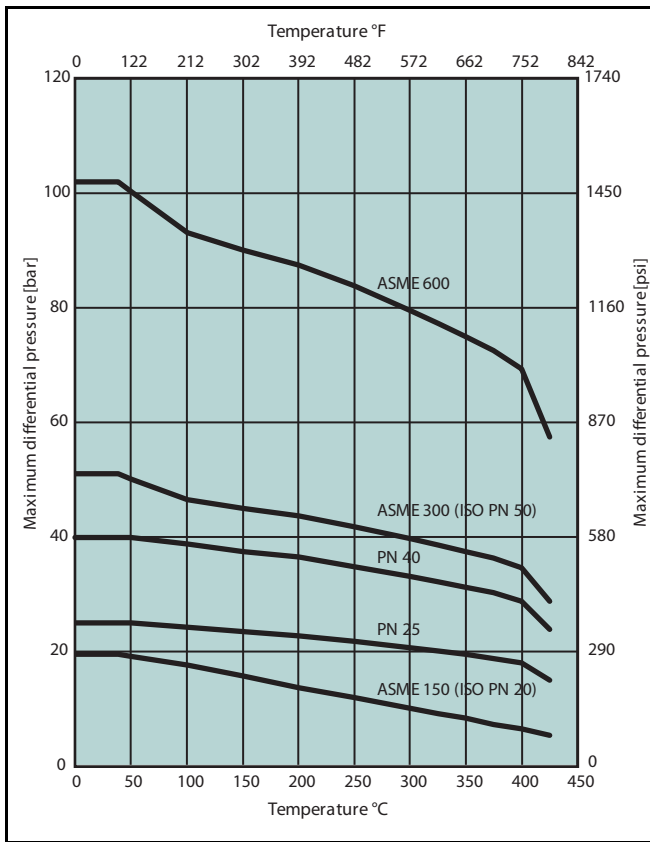
Steam jacket



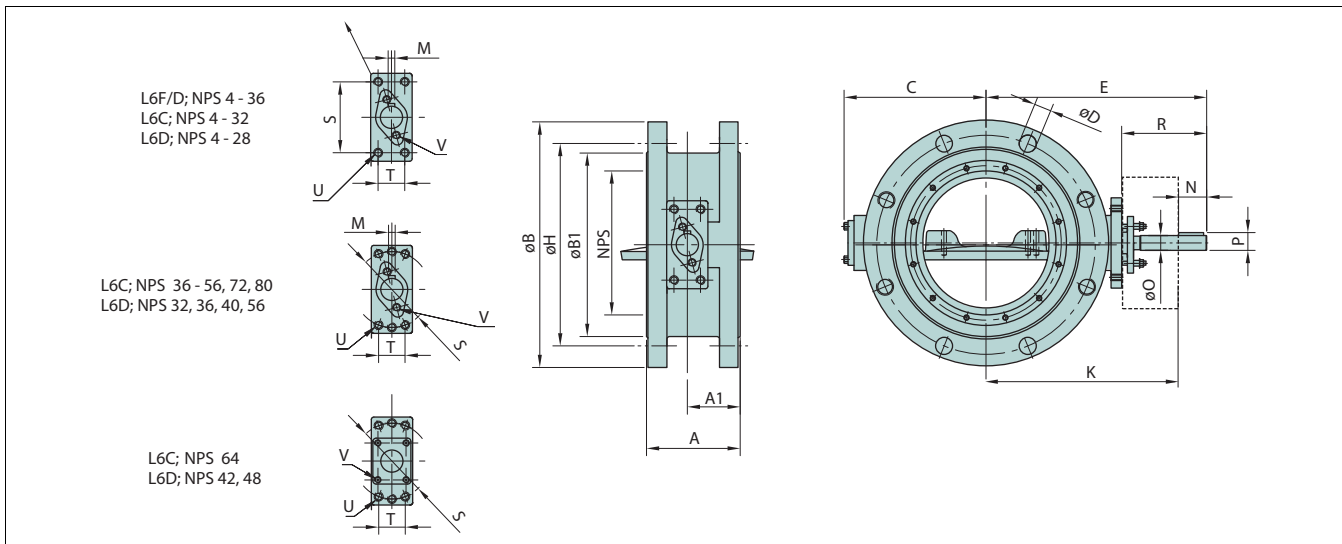
For applications requiring constant higher temperature levels, the L6 valve can be equipped with steam jacket to prevent e.g. liquid sulphur to crystallize. The bearing area is protected by an O-ring to prevent contaminant particles from entering the bearing and packing area.

Pressure/temperature ratings for valve body, WCB

Pressure/temperature ratings for valve body, CF8M



DIMENSIONS



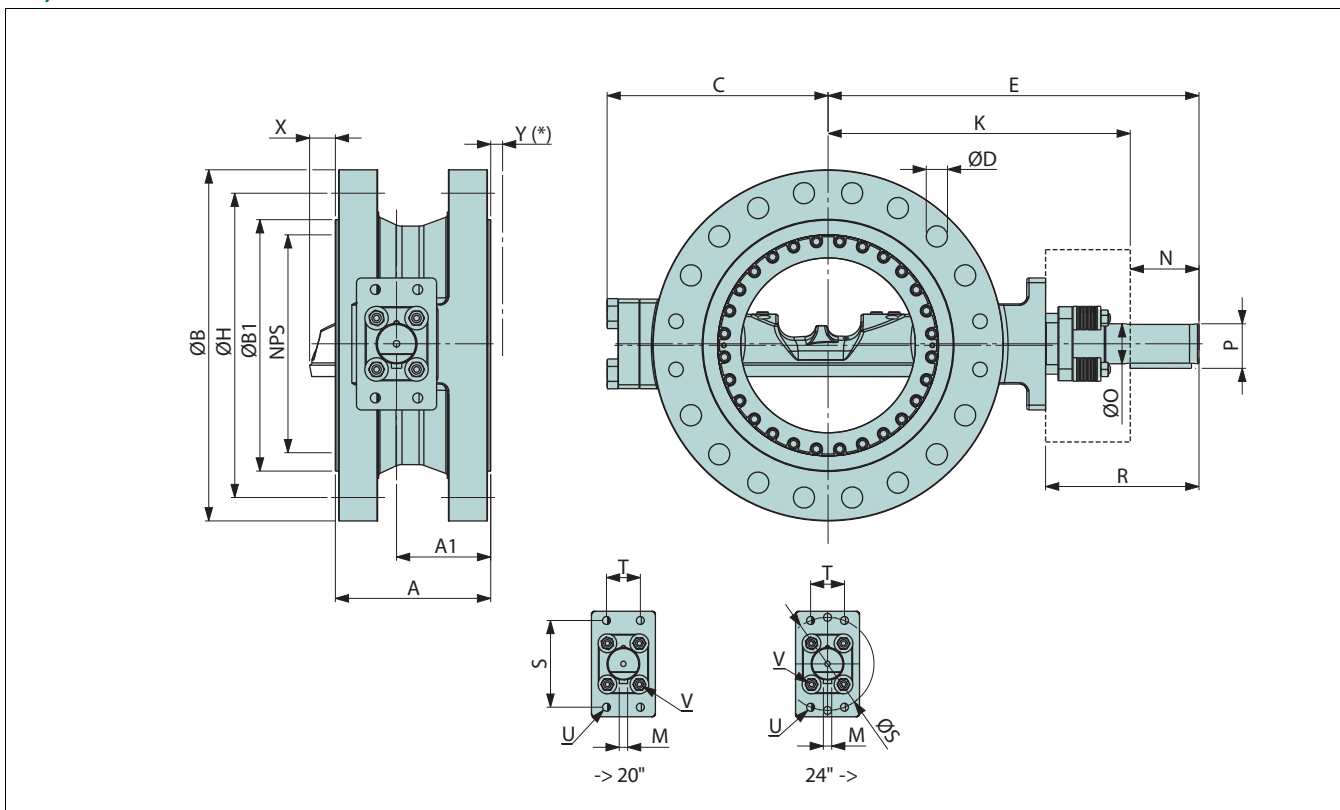
L6C, ASME CLASS 150

NPS	Dimensions, mm																kg	U	V
	A	A1	øB	øB1	øH	øD	C	E	øO	R	P	M	N	K	S	T			
4	127	74	230	157.2	190.5	19	90	273	15	105	17	4.76	25	248	70	-	25	M10	M8
5	140	80	255	185.7	215.9	23	135	307	20	125	22.2	4.76	35	272	90	-	34	M12	M8
6	140	79	280	215.9	241.3	23	135	330	20	125	22.2	4.76	35	295	90	-	40	M12	M8
8	152	82.5	345	269.9	298.5	23	160	352	20	125	22.2	4.76	35	317	110	32	60	M12	M8
10	165	88	405	323.8	362	26	185	393	25	136	27.8	6.35	46	347	110	32	85	M12	M10
12	178	104	485	381	431.8	26	225	451	30	161	32.9	6.35	51	400	130	32	120	M12	M10
14	190	118	535	412.8	476.3	29	280	490	35	170	39.1	9.52	58	430	130	32	150	M12	M10
16	216	134	595	469.9	539.8	29	315	545	40	190	44.2	9.52	68	475	160	40	220	M16	M10
18	222	131	635	533.4	577.9	32	340	568	45	200	50.4	12.7	80	488	160	40	250	5/8	1/2
20	229	129	700	584.2	635	32	370	608	50	230	55.5	12.7	90	518	160	55	320	3/4	1/2
24	267	158	815	692.2	749.3	35	435	669	55	230	60.6	12.7	90	579	160	55	490	3/4	1/2
28*	292	144	925	800	863.6	35	464	820	70	300	78.2	19.05	119	701	230	90	700	1	5/8
30*	318	170	985	857	914.4	35	492	785	70	300	78.2	19.05	119	666	230	90	850	1	5/8
32*	318	159	1060	914	977.9	42	530	875	85	325	94.7	22.23	146	730	230	90	1050	1	5/8
36*	330	150	1170	1022	1085.8	42	630	995	95	375	104.8	22.23	156	839	330	120	1350	1 1/4	3/4
38*	330	150	1240	1073	1149.3	42	695	1085	95	375	104.8	22.23	156	929	330	120	1400	1 1/4	3/4
40*	410	222	1290	1124	1200.2	42	645	1090	105	395	116	25.4	180	913	330	120	1600	1 1/4	3/4
48*	470	256	1510	1359	1422.4	42	756	1235	120	425	133.8	31.75	205	1030	330	120	2300	1 1/4	3/4
56*	530	288	1745	1575	1651	48	1001	1470	150	530	181	38.1	280	1190	400	160	4600	1 1/2	1 1/4
64*	600	370	1870	1714	1790	38	1097	1540	165	530	181	38.1	280	1260	400	160	5200	1 1/2	1 1/4
72*	356	160.5	2020	1917	1957	29	1130	1512	135	475	148.9	31.75	225	1287	360	135	4800	1 1/4	7/8
80*	540	274.5	2345	2213	2257	45	1173	1700	135	475	148.9	31.75	225	1475	360	135	6900	1 1/4	7/8

NPS	Dimensions, in																lb	U	V
	A	A1	øB	øB1	øH	øD	C	E	øO	R	P	M	N	K	S	T			
4	5.00	2.91	9.13	6.18	7.50	0.75	3.54	10.75	0.59	4.13	0.67	0.19	0.98	9.76	2.76	-	55	M10	M8
5	5.51	3.15	10.12	7.31	8.50	0.91	5.31	12.09	0.79	4.92	0.87	0.19	1.38	10.71	3.54	-	75	M12	M8
6	5.51	3.11	11.81	8.50	9.50	0.91	5.31	12.99	0.79	4.92	0.87	0.19	1.38	11.61	3.54	-	88	M12	M8
8	5.98	3.25	13.62	10.62	11.75	0.91	6.30	13.86	0.79	4.92	0.87	0.19	1.38	12.48	4.33	1.26	132	M12	M8
10	6.50	3.46	16.18	12.75	14.25	1.02	7.28	15.47	0.98	5.35	1.09	0.25	1.81	13.66	4.33	1.26	187	M12	M10
12	7.01	4.09	19.21	15.00	17.00	1.02	8.86	17.76	1.18	6.34	1.30	0.25	2.01	15.75	5.12	1.26	264	M12	M10
14	7.48	4.65	21.22	16.25	18.75	1.14	11.02	19.29	1.38	6.69	1.54	0.37	2.28	16.93	5.12	1.26	330	M12	M10
16	8.50	5.28	23.70	18.50	21.25	1.14	12.40	21.46	1.57	7.48	1.74	0.37	2.68	18.70	6.30	1.57	484	M16	M10
18	8.74	5.16	25.00	21.00	22.75	1.26	13.39	22.36	1.77	7.87	1.98	0.50	3.15	19.21	6.30	1.57	550	5/8	1/2
20	9.02	5.08	27.52	23.00	25.00	1.26	14.57	23.94	1.97	9.06	2.19	0.50	3.54	20.39	6.30	2.17	704	3/4	1/2
24	10.51	6.22	32.01	24.77	29.50	1.38	17.13	26.34	2.17	9.06	2.39	0.50	3.54	22.80	6.30	2.17	1078	3/4	1/2
28*	11.50	5.67	36.50	31.50	34.00	1.38	18.27	32.28	2.76	11.81	3.08	0.75	4.69	27.60	9.06	3.54	1540	1	5/8
30*	12.52	6.69	38.74	33.75	36.00	1.38	19.37	30.91	2.76	11.81	3.08	0.75	4.69	26.22	9.06	3.54	1870	1	5/8
32*	12.52	6.26	41.73	36.00	38.50	1.65	20.87	34.45	3.35	12.80	3.73	0.88	5.75	28.74	9.06	3.54	2310	1	5/8
36*	12.99	5.91	45.98	40.25	42.75	1.65	24.80	39.17	3.74	14.76	4.13	0.88	6.14	33.03	12.99	4.72	2970	1 1/4	3/4
38*	12.99	5.91	48.74	42.24	45.25	1.65	27.36	42.72	3.74	14.76	4.13	0.88	6.14	36.57	12.99	4.72	3080	1 1/4	3/4
40*	16.14	8.74	50.75	44.25	47.24	1.65	25.39	42.91	4.13	15.55	4.57	1.00	7.08	35.94	12.99	4.72	3520	1 1/4	3/4
48*	18.50	10.08	59.49	53.50	56.00	1.65	29.76	48.62	4.72	16.73	5.27	1.25	8.07	40.55	12.99	4.72	5060	1 1/4	3/4
56*	20.87	11.34	68.90	62.01	65.00	1.89	39.41	57.87	5.91	20.87	7.13	1.50	11.02	46.85	15.75	6.30	10120	1 1/2	1 1/4
64*	23.62	14.57	73.62	67.48	70.47	1.50	43.19	60.63	6.50	20.87	7.13	1.50	11.02	49.61	15.75	6.30	11440	1 1/2	1 1/4
72*	14.02	18.13	83.46	78.39	80.00	1.14	44.49	59.53	5.31	18.70	5.86	1.25	8.86	50.67	14.17	5.31	10560	1 1/4	7/8
80*	21.26	10.81	92.32	87.13	88.86	1.77	46.18	66.93	5.31	18.70	5.86	1.25	8.86	58.07	14.17	5.31	15180	1 1/4	7/8

*) Size 28" and bigger acc. to ASME B16.47 Series A, drilling for sizes 64" and bigger to be agreed with the factory

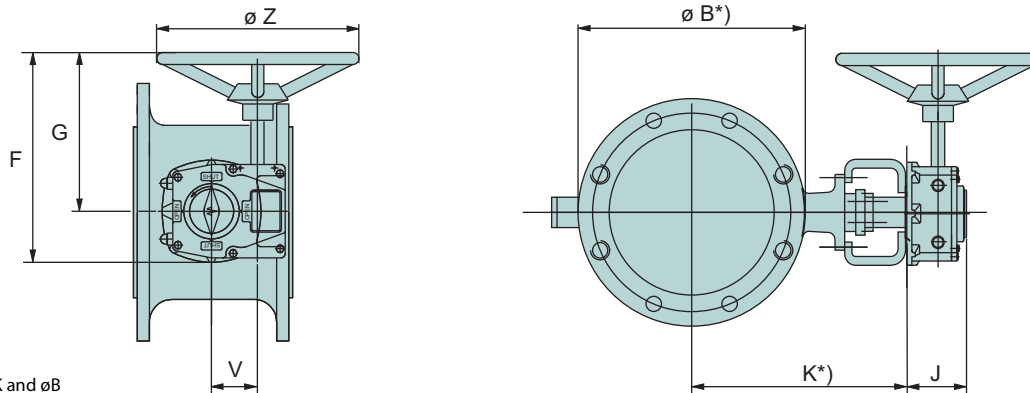
L6F, ASME CLASS 600



NPS	Dimensions, mm																kg	U	V	X	Y
	A	A1	ØB	ØB1	ØH	ØD	C	E	K	ØO	R	P	M	N	S	T					
6	210	119	355	215.9	292.1	28.5	216	413.5	362.5	30	161	33.45	6.35	51	130	35	93	M12	M12	-	-
8	230	157.3	420	269.9	349.2	32	256	458	400	35	178	39.2	9.525	58	160	40	148	M16	M12	-	-
10	250	145	510	323.8	431.8	35	310	530	450	45	200	51	12.7	80	160	40	270	M16	M14	-	-
12	270	174.5	560	381	489	35	345	629	539	50	270	56.1	12.7	90	230	90	330	M24	M20	24.6	-
14	290	168	605	412.8	527.1	38	360	652.5	562.5	55	270	61.2	12.7	90	230	90	384	M24	M18	27.4	-
16	310	193	685	469.9	603.2	41	425	727	603	70	314	78.2	19.05	119	230	90	560	M24	M20	45.7	-
18	330	200	745	533.4	654	45	485	788	642	85	326	94.7	22.225	146	230	90	680	M24	M20	55	-
20	350	213.5	815	584.2	723.9	45	547	885	739	85	366	94.7	22.225	146	330	120	880	M30	M20	72.4	6.5
24	390	256.5	940	692.2	838.2	51	570	962	806	95	376	105.8	22.225	156	330	120	1290	M30	M30	97	-
28	430	200	1075	800	965.2	54	725	1115	935	105	430	116.3	25.4	180	360	135	1400	M30	M30	97.1	51.8
30	430	200	1130	857	1022.4	54	725	1115	935	105	430	116.3	25.4	180	360	135	2100	M30	M30	51.8	97.1
32	470	220	1195	914	1080	60	800	1210	985	135	475	147	31.8	225	400	160	2500	M36	M30	84	131
36	510	320	1315	1022	1193.8	67	845	1292	1042	150	500	169	38.1	250	400	160	3150	M36	M36	190.6	79.5
40	550	304	1320	1111	1212.8	60.3	1002	1530	1250	165	610	181.8	38.1	280	460	180	3655	M36	M36	189	153

NPS	Dimensions, inch																lb	U	V	X	Y
	A	A1	ØB	ØB1	ØH	ØD	C	E	K	ØO	R	P	M	N	S	T					
6	8.27	4.68	13.98	8.50	11.50	1.12	8.50	16.28	14.27	1.18	6.33	1.31	0.25	2.01	5.12	1.38	227	M12	M12	-	-
8	9.06	6.19	16.54	10.63	13.75	1.26	10.08	18.03	15.75	1.38	7.01	1.54	0.38	2.28	6.30	1.57	326	M16	M12	-	-
10	9.84	5.71	20.08	12.75	17.00	1.38	12.20	20.87	17.72	1.77	7.87	2.01	0.50	3.15	6.30	1.57	595	M16	M14	-	-
12	10.63	6.87	22.05	15.00	19.25	1.38	13.58	24.76	21.22	1.97	10.63	2.21	0.50	3.54	9.06	3.54	728	M24	M20	0.97	-
14	11.42	6.61	23.82	16.25	20.75	1.50	14.17	25.69	22.15	2.17	10.63	2.41	0.50	3.54	9.06	3.54	847	M24	M18	1.08	-
16	12.20	7.60	26.97	18.50	23.75	1.61	16.73	28.62	23.74	2.76	12.36	3.08	0.75	4.69	9.06	3.54	1235	M24	M20	1.80	-
18	12.99	7.87	29.33	21.00	25.75	1.77	19.09	31.02	25.28	3.35	12.83	3.73	0.88	5.75	9.06	3.54	1499	M24	M20	2.17	-
20	13.78	8.41	32.09	23.00	28.50	1.77	21.54	34.84	29.09	3.35	14.41	3.73	0.88	5.75	12.99	4.72	1940	M30	M20	2.85	0.26
24	15.35	10.10	37.01	27.25	33.00	2.01	22.44	37.87	31.73	3.74	14.80	4.17	0.88	6.14	12.99	4.72	2844	M30	M30	3.82	-
28	16.93	7.87	42.32	31.15	38.00	2.13	28.54	43.90	36.81	4.13	16.93	4.58	1.00	7.09	14.17	5.31	3150	M30	M30	3.82	2.04
30	16.93	7.87	44.49	33.74	40.25	2.13	28.54	43.90	36.81	4.13	16.93	4.58	1.00	7.09	14.17	5.31	4630	M30	M30	2.04	3.82
32	18.50	8.66	47.05	35.98	42.52	2.36	31.50	47.64	38.78	5.31	18.70	5.79	1.25	8.86	15.75	6.30	6102	M36	M30	3.3	5.15
36	20.08	12.60	51.77	40.24	47.00	2.64	33.27	50.87	41.02	5.91	19.69	6.65	1.50	9.84	15.75	6.30	6945	M36	M36	7.50	3.13
40	21.7	12	52	43.7	47.7	2.4	39.4	60.2	49.2	6.5	24	7.2	1.5	11	18.1	7.1	8058	M36	M36	7.4	6

VALVE + MANUAL GEAR OPERATOR

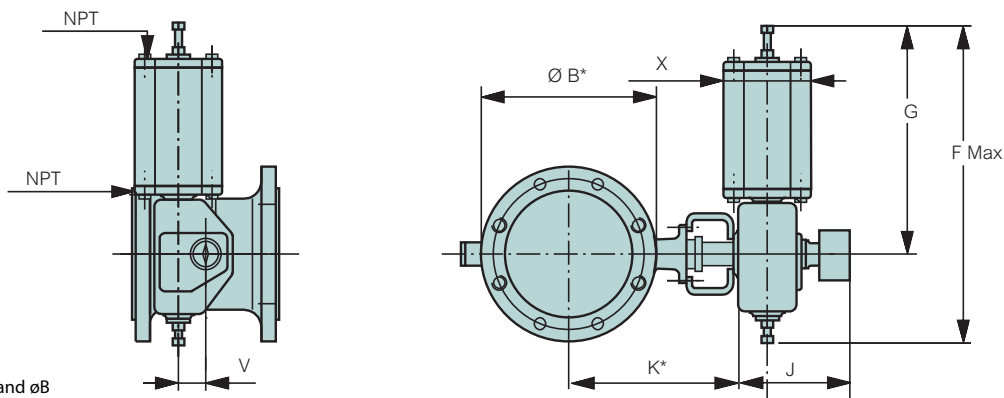


*) See dimensions K and ϕB on pages 7 - 9.

Type	Dimensions in mm					kg
	F	G	J	V	Z	
M07	196	152	58	38	160	3
M10	297	239	67	52	200	5
M12	357	282	81	66	315	10
M14	435	345	93	89	400	18
M15	532	406	105	123	500	31
M16	642	466	126	154	600	45
M25	597	412	160	182	600	61

Type	Dimensions in inch					lbs
	F	G	J	V	Z	
M07	7.72	5.98	2.28	1.52	6.30	6
M10	11.69	9.41	2.64	2.05	7.87	11
M12	14.06	11.10	3.19	2.63	12.40	21
M14	17.13	13.58	3.68	3.52	25.75	40
M15	20.94	15.98	4.15	4.84	19.69	68
M16	25.28	18.35	4.98	6.06	23.62	99
M25	23.28	16.07	6.24	7.10	23.40	134

VALVE + PNEUMATIC ACTUATOR B1C, B1J, B1JA



*) See dimensions K and ϕB on pages 7 - 9.

Type	Dimensions in mm					NPT	kg
	X	G	F	V	J		
B1C6	90	260	400	36	283	1/4	4,2
B1C9	110	315	455	43	279	1/4	9,6
B1C11	135	375	540	51	290	3/8	16
B1C13	175	445	635	65	316	3/8	31
B1C17	215	545	770	78	351	1/2	54
B1C20	215	575	840	97	385	1/2	73
B1C25	265	710	1040	121	448	1/2	131
B1C32	395	910	1330	153	525	3/4	256
B1C40	505	1150	1660	194	595	3/4	446
B1C50	610	1350	1970	242	690	1	830

Type	Dimensions in inch					NPT	lbs
	X	G	F	V	J		
B1C6	3.54	10.24	15.75	1.42	11.14	1/4	9
B1C9	4.33	12.40	17.91	1.69	10.98	1/4	21
B1C11	5.31	14.76	21.26	2.01	11.42	3/8	35
B1C13	6.89	17.52	25.00	2.56	12.44	3/8	68
B1C17	8.46	21.46	30.31	3.07	13.82	1/2	119
B1C20	8.46	22.64	33.07	3.82	15.16	1/2	161
B1C25	10.43	27.95	40.94	4.76	17.64	1/2	289
B1C32	15.55	35.83	52.36	6.02	20.67	3/4	564
B1C40	19.88	45.28	65.35	7.64	23.43	3/4	983
B1C50	24.02	53.15	77.56	9.53	27.17	1	1829

Type	Dimensions in mm					NPT	kg
	X	G	F	V	J		
B1J, B1JA8	135	420	560	43	279	3/8	17
B1J, B1JA10	175	490	650	51	290	3/8	30
B1J, B1JA12	215	620	800	65	316	1/2	57
B1J, B1JA16	265	760	990	78	351	1/2	100
B1J, B1JA20	395	935	1200	97	358	3/4	175
B1J, B1JA25	505	1200	1530	121	448	3/4	350
B1J, B1JA32	540	1410	1830	153	525	1	671
B1J/B1JA40	724	1578	2095	194	580	1	1100

Type	Dimensions in inch					NPT	lbs
	X	G	F	V	J		
B1J, B1JA8	5.31	16.54	22.05	1.69	10.98	3/8	37
B1J, B1JA10	6.89	19.29	25.59	2.01	11.42	3/8	66
B1J, B1JA12	8.46	24.41	31.5	2.56	12.44	1/2	126
B1J, B1JA16	10.43	29.92	38.98	3.07	13.82	1/2	220
B1J, B1JA20	15.55	36.81	47.24	3.82	14.09	3/4	386
B1J, B1JA25	19.88	47.24	60.24	4.76	17.64	3/4	771
B1J, B1JA32	21.26	55.51	72.05	6.02	20.67	1	1479
B1J/B1JA40	28.50	62.13	84.48	7.64	22.83	1	2424

HOW TO ORDER

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
	L6	C	B	N	8	P	A	C	A	G	/	

1. Sign	S-DISC CONSTRUCTION
S-	Flow balancing trim on downstream side of the body flow port

2. Sign	PRODUCT SERIES/DESIGN
L6	L6C and L6D pressure ratings are flanged and face-to-face according to EN 558 part 1, basic serie 13, ISO 5752 series 13, API 609 category B, double flanged, short pattern L6F and L6F/D are flanged and face-to-face according to EN 558 part 1, basic serie 14, ISO 5752 series 14, API 609 category B

3. Sign	PRESSURE RATING
C	Body ASME Class 150
D	Body ASME Class 300
F	Body ASME Class 600
F/D	Body ASME cl.600 / Internals ASME cl.300

4. Sign	SEAT DESIGN
B not L6F/D	Metal seat - actuator mounting neles standard / metric threads with drive shaft with 2 key ways - pipe flange threads according to pipe flange standard applied (sign 13) Used together with sign 5, codes N, C, H, S (also NACE versions)

5. Sign	CONSTRUCTION
N or 1N (NACE)	STANDARD in size range 4"...24"(cl.150, cl.300) STANDARD in size range 6"...40" (cl.600, not L6F/D) - t _{max} = +425 °C / +800 °F - bearings cobalt based alloy, shaft bearing surface nitrated (17-4PH shaft) - body and blind flange gaskets graphite - bare shaft valve ATEX II 2 G c - not used in L6F/D
A	Standard design in size range 04"...24" (cl.150, cl.300) - Bearings PTFE + C25 +AISI 316 or PTFE + C25 + Alloy 625 depending on body material, shaft bearing surface non-nitrated. - t _{max} = +260 °C / +500 °F - Gr. 630 (17-4PH) shaft - body and blind flange gaskets graphite
U or 1U (NACE)	Standard design in size range 28"...80" (cl.150, cl.300) and 4"-36" (L6F/D) - T _{max} + 425 °C/+800 °F - shaft bearings surfaces chrome plated - bearings NITRONIC 60 (not NACE) - bearings cobalt based alloy (NACE) - body and blind flange gaskets graphite - clamp ring screws Gr. 660 (NACE) - bare shaft valve ATEX II 2 G c
H or 1H (NACE)	High temperature, t _{max} = +600 °C / +1112 °F - bearing surfaces of shafts cobalt based alloy - bearings cobalt based alloy - body and blind flange gaskets graphite (ATEX II 2 G c)
C	Cryogenic, t = -200 ...+260 °C, code C t = -50 °C or -100 °C ...+260 °C, code 1C t = -200 ...+260 °C, code 2C - extended bonnet and drive shaft (Cryo extension for T = -200 °C to +260 °C) - bearings PTFE+ C25 + AISI 316 - body and blind flange gaskets graphite - 2 keyways in L6F.
X or 1X (NACE)	LOW EMISSION CONSTRUCTION - Low emissio graphite packing - Low emissio blind flange - Low emissio blind flange bolting gr. 660 - Otherwise as construction "N" or "1N"
S or 1S (NACE)	STEAM JACKET WITH BEARING PROTECTION - steam jacket on valve body and graphite bearing protection, otherwise as construction "BN" or "BU"
Z	OXYGEN CONSTRUCTION - BAM tested non-metallic materials - T = -50 ...+200 °C - Max pressure as per body rating - Bearings cobalt based alloy - Oxygen cleaning acc. to Metso internal procedure T-2115GB - Recommended typecodes L___BZH_AACAG or L___BZH_AMMKG or L___BZH_MMMKG

Note! Only "Z" construction available for oxygen flow media. Not to be used with other flow medias.

6. Sign	SIZE
	L6C: 04, 06, 08, 10, 12, 14, 16, 18, 20, 24, 28, 30, 32, 36, 38, 40, 42, 48, 52, 54, 56, 60, 64, 72, 80
	L6D: 04, 06, 08, 10, 12, 14, 16, 18, 20, 24, 26, 28, 30, 32, 36, 40, 42, 44, 48, 50, 56
	L6F: 06, 08, 10, 12, 14, 16, 18, 20, 24, 28, 30, 32, 36, 40
	L6F/D: 04/03, 06/05, 08/06, 10/08, 12/10, 14/10, 16/12, 18/14, 20/16, 30/24

7. Sign	BODY MATERIALS
A	ASTM A 351 gr. CF8M. Standard.
P	ASTM A 216 gr. WCB.Standard.
F	ASTM A 352 gr. LCC

8. Sign	DISC MATERIAL
A	ASTM A 351 gr. CF8M / F 316. Standard

9. Sign	SHAFT AND PIN MATERIAL
C	Gr. 630 (17-4PH). Standard.
H	Nimonic 80A (high temp. above +425 °C / +800 °F)

10. Sign	SEAT MATERIAL
	Standard
A Not L6F	Incoloy 825, hard chrome plated.
B	W.no. 1.4418, hard chrome plated (AVESTA 248 SV).
D	F6NM, hard chrome plated (Nace) t = -75 °...+425 °C / -100°...+800 °F
H	Nimonic 80A, hard chrome plated, (high temp. above +425 °C / +800 °F).

11. Sign	Packing material option
G	TA-Luft Graphite packing, Fire-safe.
T	TA-Luft PTFE packing, gland packing PTFE, t _{max} = +230 °C / +446 °F.

12. Sign	Flange facing
-	Ra 3.2 - 6.3, standard, without sign cover: EN 1092-1 Type B1 (Ra 3.2 - 12.5) ASME B16.5, Ra 3.2 - 6.3 (125 - 250 µin)

13. Sign	Flange drilling
-	According to ASME B16.5, without sign (4" - 24"). According to ASME B16.47 series A (28" and up).
B	ASME B16.47 Series B Class 150 & Class 300 (size26" and bigger), not L6F.

Examples:

- L6CBN08AACAG = Standard construction with metal bearings, stainless steel body and disc.
Max. temperature +425 °C
- L6CBN08AACAT = Max. temperature +230 °C
- L6CMU28AACAG = Standard construction in bigger sizes, metal bearings, stainless steel body and disc.
Max. temperature +425 °C
- L6CBH10AAHHG = High temperature construction
- L6CBC12AACAG = Cryo construction
- L6FBN08PACBG = Standard construction with metal bearings, carbon steel body and disc.
Class 600, full rated

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