

# NELES® HIGH PERFORMANCE TRIPLE ECCENTRIC DISC VALVE, METAL SEATED NELDISC®, SERIES LW & LG

Metso's Neles Neldisc is a metal seated high performance triple eccentric disc valve. It provides a long lasting tight shut-off with excellent flow characteristics and high capacity. The LW and LG series fulfill the requirements of ASME, EN and API 609(cat. B) standards. Following standards types are available:

Wafer -body design, PN25, Class 150	
LW6L	f-to-f EN 558 series 20, API609 cat B, Class 150
LW7L	LW7L f-to-f EN 558 series 25
Wafer -body design, PN40, Class 300	
LW8M	EN 558 part 1, table 5, basic series 16
LW5M	API609 cat B, Class 300
Lug -body design, PN25, Class 150	
LG6L	f-to-f EN 558 series 20, API609 cat B, Class 150
LG7L	f-to-f EN 558 series 25
Lug -body design, PN40, Class 300	
LG8M	EN 558 part 1, table 5, basic series 16
LG5M	API609 cat B, Class 300

The LW and LG series are widely used in pulp and paper, chemical, petrochemical and refining industries. With nearly equal percentage characteristics and superior tightness, Neldisc triple eccentric disc valves operate both in control and shut-off applications. As a result of the unique triple offset



geometry of Neldisc®, the contact between disc and seat is mechanically induced and does not rely on assistance from differential pressure. With optional seal, the valve tightness can be improved even more. Due to a number of special constructions, developed from the versatile Neldisc design, these valves offer a powerful tool for standardization and are truly high performance valves. The size range is from 3" to 24" (DN80 - 600). Bigger sizes are presented in the L1 and L2 series, for further information please see bulletin 2L121.

## RELIABILITY

### Approvals

- TA-Luft, chapter 3.1.8.4, Shell SPE 77/312, ISO 15848
- Firesafe tested to BS6755 and API607, 6th edition.

### Increased safety and minimized emissions

- As standard, live loaded gland packing to meet TA-Luft and Clean Air Act requirements.
- PTFE V-ring or graphite packing for a wide range of applications.
- Double packing with or without connection for leakage detection if required.
- Anti-blow out shaft construction is standard in all valves, see page 2 exploded view.
- ATEX

## PERFORMANCE

### Excellent for on-off and control applications

- Bi-directional tight seat DIN 3230 rate 2 / BO, ISO 5208 rate B (air), FCI 70.2 Class VI, API 598
- Unique all-metal seat design assures superior tightness in difficult applications over long time periods.
- Contact between disc and seat is mechanically induced and does not rely on assistance from differential pressure.
- Low cost control valve for low differential pressures.
- S-disc option for optimised control performance, even to 80 degree opening without dynamic torque and to difficult high noise and cavitation applications.

### Abrasion resistant

- Solid metal seat design offered in a variety of materials to suit your application.
- Fully metal seated construction. No resilient parts exposed to the medium.

### Materials suitable for a broad range of applications

- Standard body materials:
- Carbon steel (1.0619 / WCB)
- Stainless steel (1.4408 / CF8M)
- Other materials are available on application.

### Wide range of face to face dimensions

- EN 558 part 1, table 5, basic series 20 (DIN 3202 - K1)
- EN 558 part 1, table 5, basic series 25 (DIN 3202 - K2)
- EN 558 part 1, table 5, basic series 16 (DIN 3202 - K3)
- API 609 cat. B, Class 150
- API 609 cat. B, Class 300

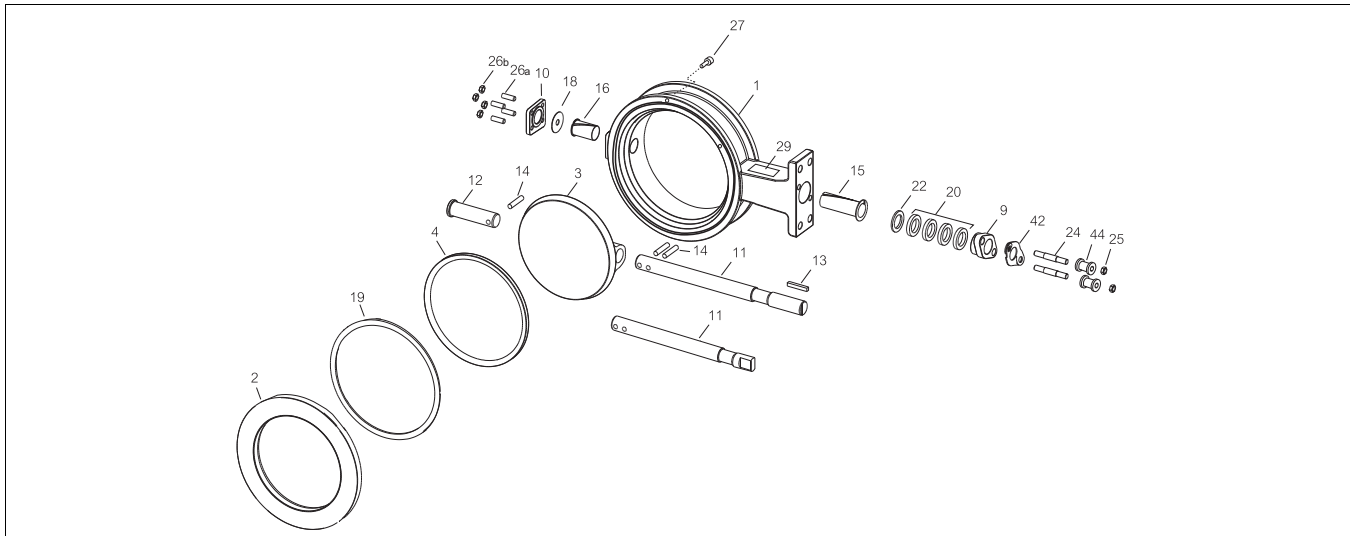
### Features

- Metal seated design.
- Bidirectional long term tightness.
- Low friction.
- Excellent wear resistance.
- Extended life cycle.
- Lower operational torque.

### Wide pressure and temperature range

- Differential pressure/temperature ratings in accordance with ASME B16.34 and with EN.
- Appropriate constructions perform equally well from -200 °C to +600 °C.

### EXPLODED VIEW

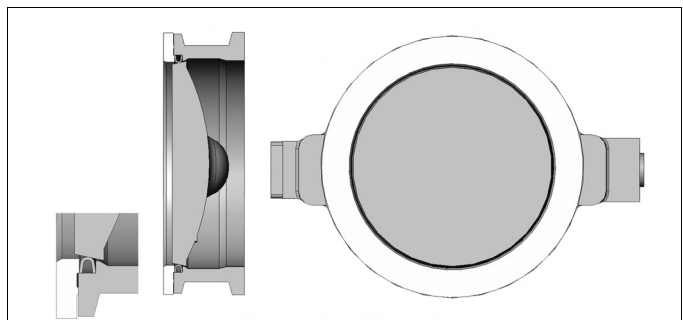


### PARTS LIST

ITEM	PART DESCRIPTION	STANDARD MATERIALS	
1	BODY	EN 10213-1.0619 / ASTM A 216 gr. WCB	EN 10213-1.4408 / ASTM A 351 gr. CF8M
2	CLAMP RING	EN 10213-1.4408 / ASTM A 351 gr. CF8M	
3	DISC	ASTM A 182 gr. F316, (EN 10213-1.4408 or EN 10088-1.4401)	
4	SEAT RING (code A) SEAT RING (code C)	Hard chrome coated Incoloy 825 Polymer hard chrome impregnated Incoloy 825	
9	GLAND	EN 10213-1.4408 / ASTM A 351 gr. CF8M	
10	BLIND FLANGE	EN 10213-1.4408 / ASTM A 351 gr. CF8M	
11	DRIVE SHAFT	AISI 329	
12	SHAFT	AISI 329	
13	KEY	Stainless Steel	
14	PIN	AISI 329	
15	BEARING	AISI 316 + PTFE	
16	BEARING	AISI 316 + PTFE	
18	GASKET	Graphite	
19	BODY SEAL	Graphite	
20	SET GLAND PACKING	PTFE V-ring	
22	ANTI-EXTRUSION RING	Graphite + AISI 316	
24	STUD	Stainless steel	
25	HEXAGON NUT	Stainless steel	
26a	STUD	Stainless steel	
26 b	HEXAGON NUT	Stainless steel	
27	HEX SOC. HEAD CAP SCREW	Stainless steel	
29	IDENTIFICATION PLATE	AISI 304	
42	RETAINING PLATE	EN 10088-1.4435 CF8M	
44	TA-Luft kit		

### 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. When the valve is opened, the contact is released and the seat ring returns to its original circular shape.



## TECHNICAL SPECIFICATION

### Product type

Metal seated, high performance triple eccentric disc valve  
LW : Wafer type  
LG : Lug type

### Pressure ratings:

Body: Type: LW6L, LW7L, LG6L, LG7L  
PN 25, ISO PN 20, ASME150

Type: LW8M, LG8M, LW5M, LG5M  
PN 40, ISO PN 50, ASME300

Type: LW8C, LG8C  
Sizes DN 700 - DN 1000: ASME 150

Trim: Type: LW6L, LW7L, LG6L, LG7L  
Sizes DN 80 - DN 150 : PN 25  
Sizes DN200 - DN 600: ISO PN 20

Type: LW8M, LG8M, LW5M, LG5M  
Sizes DN 80 - DN 600: PN 40, ISO PN 50

Type: LW8C, LG8C  
Sizes DN 700 - DN 1000: ASME 150

### Size range

DN 80 - DN 1000 (DN 125 LW only)

### Temperature range

-200 °C...+ 600 °C  
(over + 600 °C please consult with factory)

### Design standards

In accordance with ASME B16.34, API 609 cat B and DIN 3840

### Standard materials

Body: EN 10213-1.0619 / ASTM A 216 gr. WCB  
EN 10213-1.4408 / ASTM A 351 gr. CF8M

Disc: EN 10088-1.4401 / ASTM A 182 gr. F316  
EN 10213-1.4408 / ASTM A 351 gr. CF8M  
Clamp ring: EN 10213-1.4408 / ASTM A 351 gr. CF8M  
Shafts and pins: AISI 329 - 1.4418 / ASTM A 546 gr. 630 (17-4PH)  
Seat ring, code A: Hard chrome plated Incoloy 825  
Bearings: AISI 316 + PTFE or cobalt based alloy

### Material and test certification

EN 10204-3.1B material certificates for body, clamp ring, gland and blind flange. Disc and shaft certification on request. Tightness test certificate.

### Approvals

Emission: TA-Luft, chapter 3.1.8.4, Shell SPE 77/312, ISO 15848  
Fire test: BS6755 and API607, 6th edition.

### Valve tightness (bi-directionally)

Standard seat, code A:  
ANSI Class V  
ISO 5208, rate D, water  
DIN 3230 rate 3  
Optional tightness:  
API 598 (metal seated), water  
ISO 5208 rate B, water  
ANSI Class VI

Other tightness on request

### 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

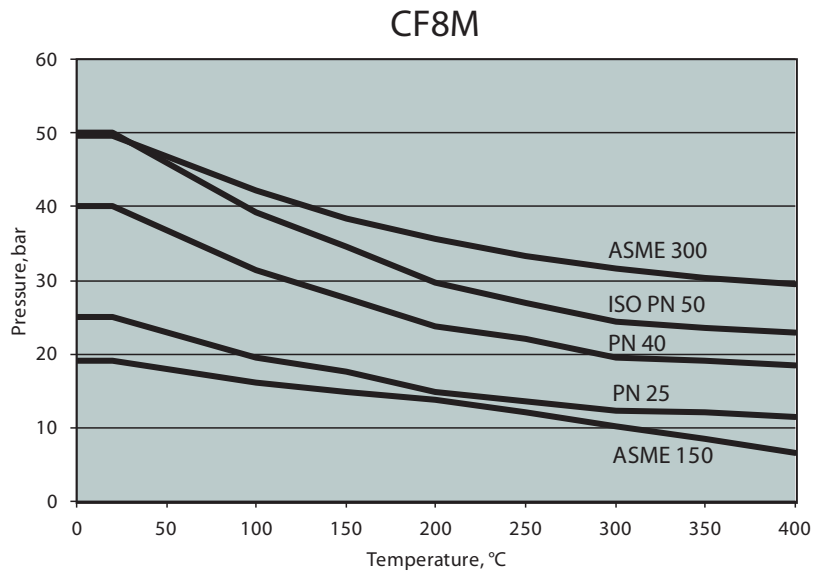
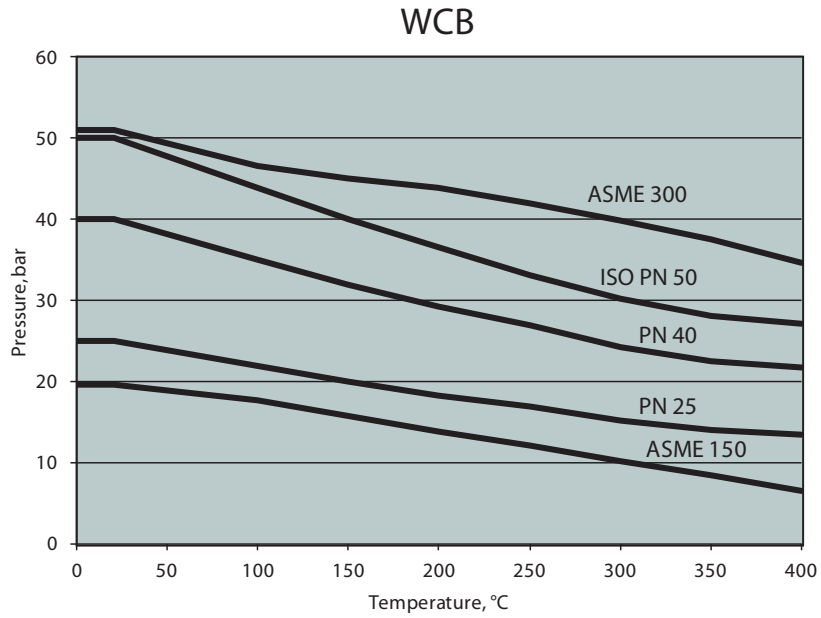
### Flow data

Cv and Kv tables of LW6, LW7, LW8 and LG6, LG7 and LG8 valves in pressure classes PN 25 and PN 40 / ISO PN 50.

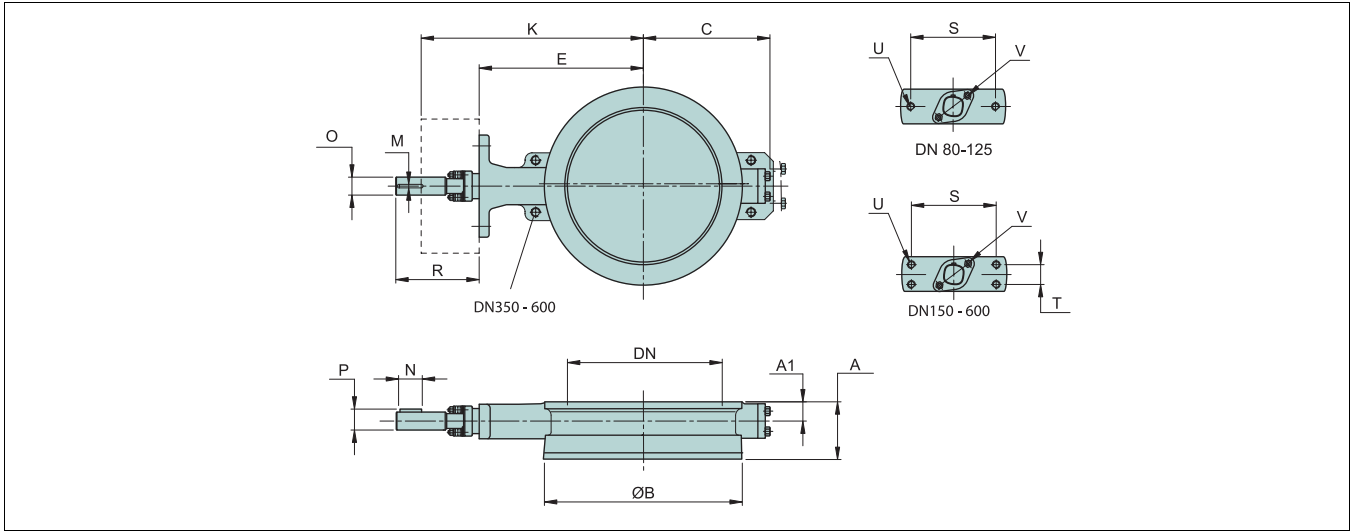
LW6, LW7, LG6, LG7, LW8C, LG8C / PN 25, ASME150, ISOPN20					LW8, LW5 LG8, LG5 / PN 40, ASME300, ISO PN 50			
DN	Cv 80°	Cv 90°	Kv 80°	Kv 90°	Cv 80°	Cv 90°	Kv 80°	Kv 90°
80	235	245	203	212	235	245	203	212
100	400	450	346	389	400	450	346	389
125	750	840	649	727	750	840	649	727
150	1100	1500	952	1298	970	1240	839	1073
200	2200	3050	1903	2638	1700	2130	1471	1842
250	3500	4870	3028	4213	2500	3180	2163	2751
300	5200	7300	4498	6315	4000	5090	3460	4403
350	7500	10500	6488	9083	5900	7470	5104	6462
400	9800	13700	8470	11840	5900*	7470*	5104*	6462*
450	12525	17600	10834	15224	6611*	7620*	5719*	6591*
500	15637	21900	13526	18944	8763*	10100*	7580*	8737*
600	22141	31000	19152	26815	10498*	12100*	9081*	10467*
700	22850	27800	19766	24048				
750	29300	35300	25346	30536				
800	34700	42126	30017	36440				
900	40000	48000	34600	41522				
1000	49000	59500	42387	51470				

### Valve body ratings

Maximum working pressure ratings of the valve body in accordance with different standards.

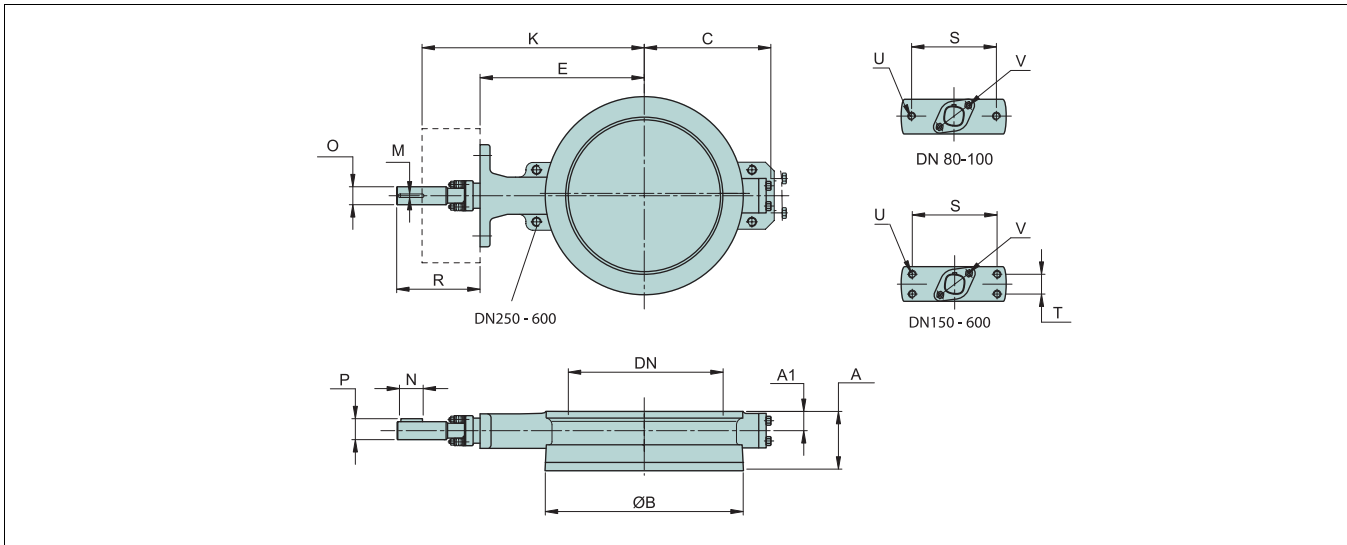


## DIMENSIONS AND WEIGHTS



## LW6LB &amp; LW7LB, DN 80 – 600, DIMENSIONS

DN	Dimensions, mm									U Thread	V Thread	Dimensions, mm					Weight kg
	A1	LW6LB A (K1/API)	LW7LB A (K2)	ØB	C	E	K	S	T			O	R	M	N	P	
80	18	46/48	49	128	80	168	248	70	-	M10	M8	15	105	4.76	25	17.0	4
100	20	52/54	56	158	100	182	272	90	-	M12	M8	20	125	4.76	35	22.2	6
125	22	56/-	64	190	135	205	295	90	-	M12	M8	20	125	4.76	35	22.2	9
150	23	56/57	70	212	150	227	317	110	32	M12	M8	20	125	4.76	35	22.2	15
200	24	60/64	71	268	160	257	347	110	32	M12	M10	25	135	6.35	46	27.8	20
250	29	68/71	76	320	210	290	400	130	32	M12	M10	30	160	6.35	51	32.9	30
300	32	78/81	83	378	275	320	430	130	32	M12	M10	35	160	9.52	58	39.1	45
350	36	92/92	92	438	290	355	475	160	40	M16	M10	40	188	9.52	68	44.2	70
400	44	102/102	102	485	320	405	525	160	40	M16	M14	45	200	12.7	80	50.4	95
450	47	114/114	114	532	370.3	380	520	160	55	M20	M14	50	230	12.7	90	55.5	130
500	56	127/127	127	585	412.3	440	580	160	55	M20	M14	55	230	12.7	90	60.6	175
600	72	154/154	154	685	646.4	505	685	230	90	M20	M14	70	300	19.05	119	78.15	305

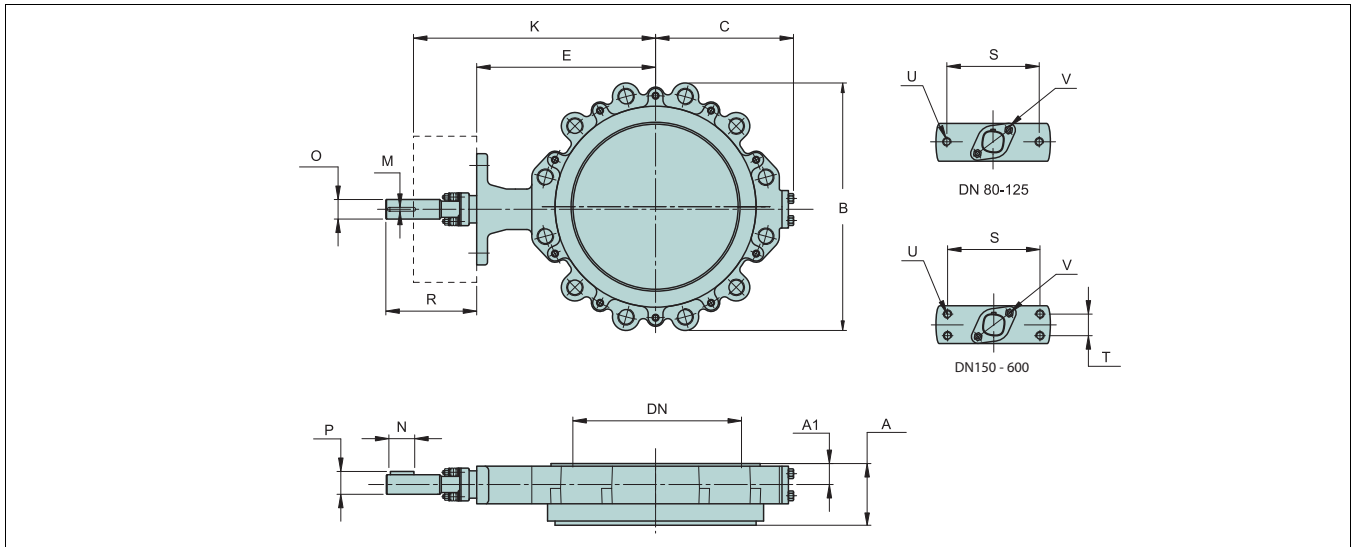


**LW8MB, LW5MB, DN 80 – 600, DIMENSIONS**

DN	Dimensions, mm										U Thread	V Thread	Dimensions, mm					Weight kg
	A1	LW8M A (K3)	LW5M A (API)	ØB	C	E	K	S	T	O			R	M	N	P		
80	18	64	48	128	80	168	248	70	-	M10	M8	15	105	4.76	25	17.0	4	
100	20	64	54	158	100	182	272	90	-	M12	M8	20	125	4.76	35	22.2	6	
125	20	70	56	158	100	182	272	90	-	M12	M8	20	125	4.76	35	22.2	6	
150	27	76	59	218	145	232	322	110	32	M12	M10	25	135	6.35	46	27.8	20	
200	34	89	73	276	205	274	384	130	32	M12	M10	35	165	9.52	58	39.1	38	
250	41	114	83	335	260	320	440	160	40	M16	M14	45	200	12.7	80	50.4	60	
300	46	114	92	395	300	360	500	160	55	M20	M14	50	230	12.7	90	55.5	85	
350	57	127	117	450	330	400	540	160	55	M20	M14	55	230	12.7	90	60.6	105	
400	66	140	133	505	370	440	580	160	55	M20	M14	55	230	12.7	90	60.6	125	
450	72	152	149	554	409.4	415	595	230	90	M24	M16	70	299	19.05	119	78.25	225	
500	73	152	159	610	441.4	440	620	230	90	M24	M16	70	298	19.05	119	78.25	255	
600	83	178	181	700	516.4	500	680	230	90	M24	M16	85	326	22.225	146	94.625	405	

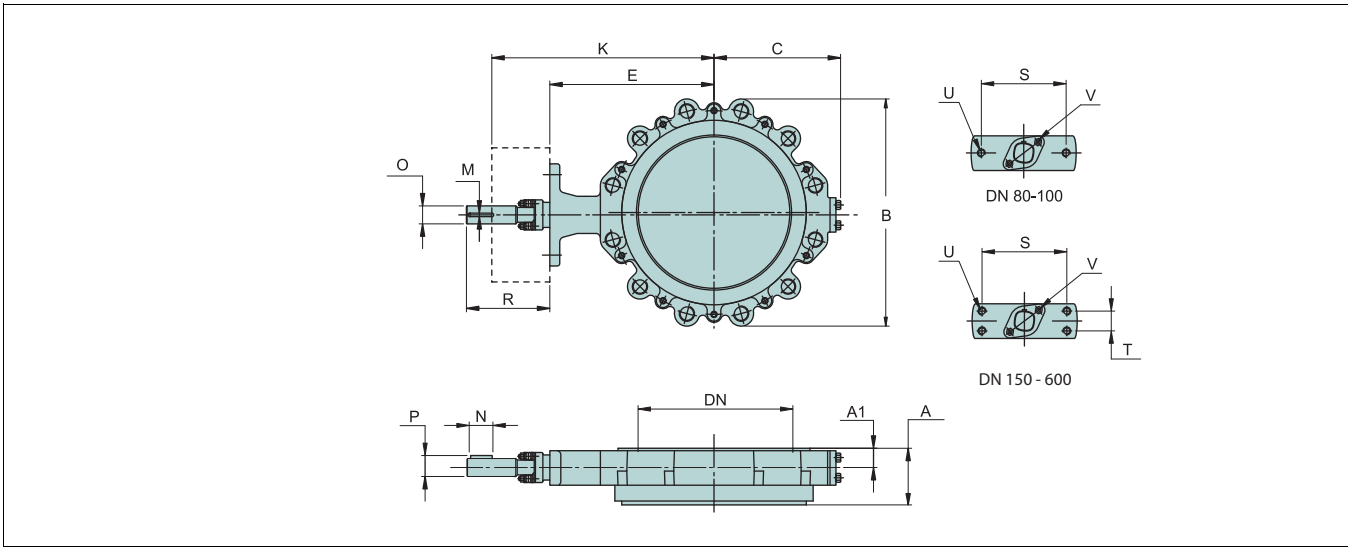
**LW8C**

LW8CB NPS/DN	A1	LW8CB A (K3)		ØB	C	E	K	S	T	U	V	O	R	M	N	P	Weight kg
28/700	115	229	-	762	510	505	685	230	90	M24	M16	70	399	19.05	119	78.2	360
30/750	102	229	-	813	530	575	755	230	90	M24	M16	85	326	22.23	146	94.6	470
32/800	102	241	-	864	615	600	780	230	90	M24	M16	85	326	22.23	146	94.6	540
36/900	107	241	-	972	655	630	850	330	120	M30	M24	95	376	22.23	156	104.8	730
40/1000	135	300	-	1080	745	724	944	330	120	M30	M24	105	400	25.4	180	116.1	1030



**LG6LB & LG7LB, DN 80 - 600**

DN	Dimensions, mm										U Threa d	V Threa d	Flange drillings								Dimensions, mm					Weigh t kg
	A 1	LG6LB A (K1/ API)	LG7L B A (K2)	B	C	E	K	S	T	PN10			PN16		PN25		ISO PN20		O	R	M	N	P			
										Threa d			Qty	Threa d	Qty	Threa d	Qty	Threa d						Qty		
80	17	46/48	49	205	120	168	248	70	-	M10	M8	M16	8	M16	8	M16	8	M16	4	15	105	4.76	25	17.0	9	
100	21	52/54	56	235	135	182	272	90	-	M12	M8	M16	8	M16	8	M20	8	M16	8	20	125	4.76	35	22.2	14	
150	22	56/57	70	300	160	227	317	110	32	M12	M8	M20	8	M20	8	M24	8	M20	8	20	125	4.76	35	22.2	24	
200	25	60/64	71	360	185	257	347	110	32	M12	M10	M20	8	M20	12	M24	12	M20	8	25	135	6.35	46	27.8	34	
250	28	68/71	76	425	220	290	400	130	32	M12	M10	M20	12	M24	12	M27	12	M24	12	30	160	6.35	51	32.9	43	
300	32	78/81	83	485	275	320	430	130	32	M12	M10	M20	12	M24	12	M27	16	M24	12	35	160	9.52	58	39.1	75	
350	36	92/92	92	555	310	355	475	160	40	M16	M10	M20	16	M24	16	M30	16	M27	16	40	188	9.52	68	44.2	95	
400	41	102/102	102	610	340	405	525	160	40	M16	M14	M24	16	M27	16	M33	16	M27	16	45	200	12.7	80	50.4	150	
450	49	114/114	114	640	370.3	380	520	160	55	M20	M14	M24	20	M27	20	-	-	M30	16	50	230	12.7	90	55.5	205	
500	56	127/127	127	730	412.3	440	580	160	55	M20	M14	M24	20	M30	20	M33	20	M30	20	55	230	12.7	90	60.6	297	
600	65	154/154	154	835	464.4	505	685	230	90	M20	M14	M27	20	M33	20	M36	20	M33	20	70	300	19.05	119	78.15	446	



**LG8M, LG5M DN80 - 600**

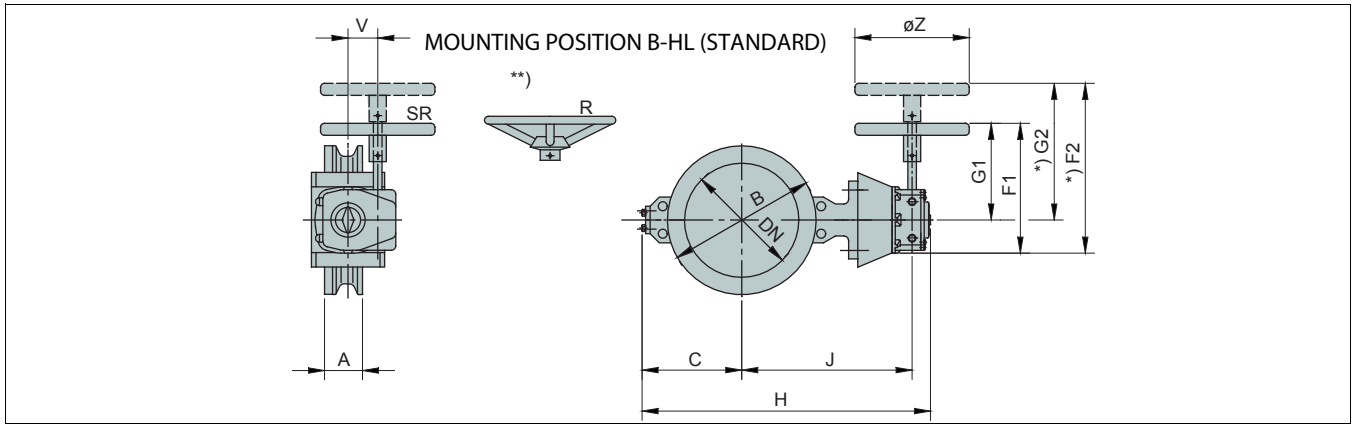
DN	Dimensions, mm										Flange drillings						Dimensions, mm					Weight kg	
	A1	LG8MB A (K3)	LG5M A(API)	B	C	E	K	S	T	U Thread	V Thread	PN25		PN40		ISO PN50		O	R	M	N		P
												Thread	Qty	Thread	Qty	Thread	Qty						
80	17	64	48	205	120	168	248	70	-	M10	M8	M16	8	M16	8	M20	8	15	105	4.76	25	17.0	9
100	21	64	54	235	135	182	272	90	-	M12	M8	M20	8	M20	8	M20	8	20	125	4.76	35	22.2	14
150	24	76	59	290	160	232	322	110	32	M12	M10	M24	8	M24	8	M20	12	25	135	6.35	46	27.8	25
200	34	89	73	365	205	274	384	130	32	M12	M10	M24	12	M27	12	M24	12	35	165	9.52	58	39.1	48
250	41	114	83	435	260	320	440	160	40	M16	M14	M27	12	M30	12	M27	16	45	200	12.7	80	50.4	90
300	46	114	92	500	300	360	500	160	55	M20	M14	M27	16	M30	16	M30	16	50	230	12.7	90	55.5	150
350	57	127	117	565	330	400	540	160	55	M20	M14	M30	16	M33	16	M30	20	55	230	12.7	90	60.6	200
400	62	140	133	649	370	440	580	160	55	M20	M33	M14	16	M36	16	M33	20	55	230	12.7	90	60.6	290
450	72.5	152	149	710	409.4	415	595	230	90	M24	M16	M33	20	M36	20	M33	24	70	299	19.05	119	78.25	382
500	75	152	159	770	441.4	440	620	230	90	M24	M16	M33	20	M39	20	M33	24	70	298	19.05	119	78.25	445
600	80	178	181	915	516.4	500	680	230	90	M24	M16	M36	20	M45x4	20	M39	24	85	326	22.225	146	94.625	725

**LG8C**

NPS/DN	A1	A(K3)	?B	C	E	K	S	T	U	V	O	R	M	N	P	Weight kg	
28/700	115	229	-	835	510	505	685	230	90	M24	M16	70	399	19.05	119	78.2	550
30/750	102	229	-	885	530	575	755	230	90	M24	M16	85	326	22.23	146	94.6	590
32/800	102	241	-	940	615	600	780	230	90	M24	M16	85	326	22.23	146	94.6	600
36/900	107	241	-	1055	655	630	850	330	120	M30	M24	95	376	22.23	156	104.8	790
40/1000	135	300	-	1175	745	724	944	330	120	M30	M24	105	400	25.4	180	116.1	1150



**VALVE + MANUAL GEAR OPERATOR, M**



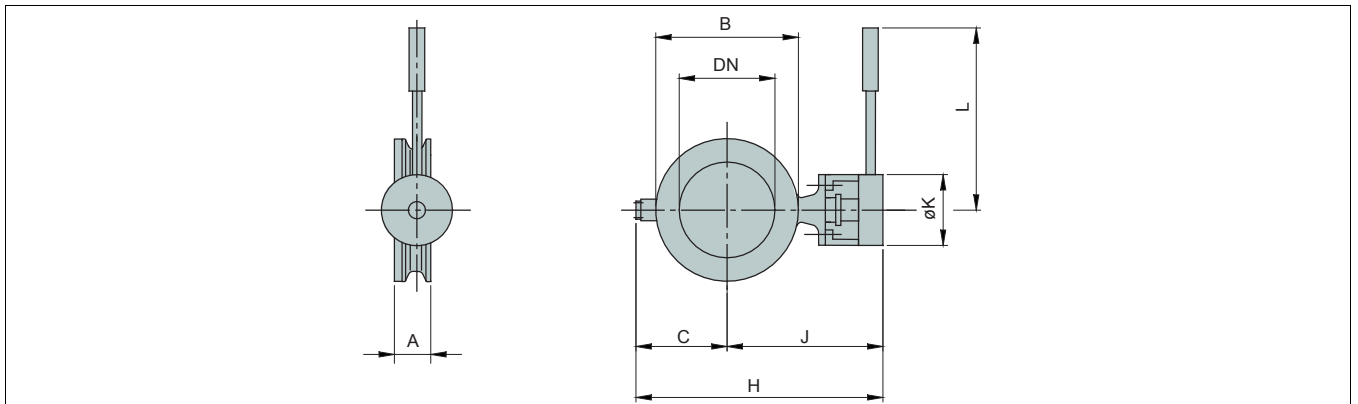
**LW6LB, LW7LB + M series**

VALVE	DN	OPERATOR/ ISO 5211	L 6		L 7			LW			LG			Dimensions, mm						LW L-M kg	LG L-M kg
			A(K1/API)	A (K2)	B	C	H	B	C	H	F1	G1	F2 <sup>*)</sup>	G2 <sup>*)</sup>	J	V	ØZ				
LW6L / LG6L LW7L / LG7L	80	M07/F07	46/48	49	128	80	390	205	120	430	196	152	-	-	275	39	160	8	13		
	100	M07/F07	52/54	56	158	100	435	235	135	470	196	152	-	-	299	39	160	10	18		
	125	M07/F07	56/-	64	190	135	495	270	145	505	196	152	-	-	322	39	160	13	24		
	150	M07/F07	56/57	70	212	150	530	300	160	540	196	152	-	-	344	39	160	19	28		
	200	M10/F10 or M10E/F10	60/64	71	268	160	580	360	185	605	227	169	297	239	387	52	200	26	40		
	250	M12/F12 or M12E/F12	68/71	76	320	210	695	425	220	705	285	210	357	282	440	67	315	42	55		
	300	M12/F12 or M12E/F12	78/81	83	378	275	805	485	275	805	378	279	435	354	480	90	315	65	95		
	350	M14/F16 or M14E/F16	92/92	92	438	290	865	555	310	885	378	279	435	354	525	90	400	95	120		
	400	M16/F16 or M16E/F16	102/102	102	485	320	970	610	340	990	549	391	642	466	575	154	600	140	195		
	450	M15/F16	114/114	114	532	370.3	992	640	370.3	992	456	346	532	406	568	105	500	156.2	231.2		
	500	M15/F16	127/127	127	585	412.3	1094	730	412.3	1094	456	346	532	406	568	105	500	201.2	323.2		
	500	M16/F16	127/127	127	585	412.3	1116	730	412.3	1116	456	346	642	466	635	130	600	211.8	333.8		
600	M25/F16	154/154	154	685	464.4	1309	835	464.4	1309	597	412	-	-	744	182	600	365.8	506.8			

**LG8M, LG5M+ M series**

VALVE	DN	OPERATOR ISO 5211	L 8(K3)		LW			LG			Dimensions, mm						LW M kg	LG M kg	
			A	A (API)	B	C	H	B	C	H	F1	G1	F2 <sup>*)</sup>	G2 <sup>*)</sup>	J	V			ØZ
LW8M / LG8M LW5M / LG5M	80	M07/F07	64	48	128	80	390	205	120	430	196	152	-	-	275	39	160	8	13
	100	M07/F07	64	54	158	100	435	235	135	470	196	152	-	-	299	39	160	10	18
	150	M10/F10 or M10E/F10	76	59	218	145	540	290	160	555	227	169	297	239	327	52	200	26	31
	200	M14/F14 or M14E/F14	87	73	278	205	670	365	205	670	378	279	435	354	414	90	400	58	68
	250	M14/F16 or M14E/F16	114	83	335	260	800	435	260	800	378	279	435	354	490	90	400	80	110
	300	M15/F16 or M15E/F16	114	92	395	300	910	500	300	910	457	331	532	406	550	123	500	120	185
	350	M15/F16 or M15E/F16	127	117	450	330	980	565	330	980	457	331	532	406	590	123	500	140	235
	400	M15/F16 or M15E/F16	140	133	505	370	1060	650	370	1060	457	331	532	406	630	123	500	160	325
	450	M16/F16	152	149	554	409.4	1128.4	710	409.4	1128.4	456	346	642	466	650	130	600	261.8	418.8
	450	M25/F16	152	149	554	409.4	1164.4	710	409.4	1164.4	597	412	-	-	654	182	600	285.8	442.8
	500	M25/F16	152	159	610	441.4	1221.4	770	441.4	1221.4	597	412	-	-	679	182	600	315.8	505.8
	600	M25/F16	178	181	700	516.4	1356.4	915	516.4	1356.4	597	412	-	-	739	182	600	465.8	785.8

**VALVE + HAND LEVER, RH**

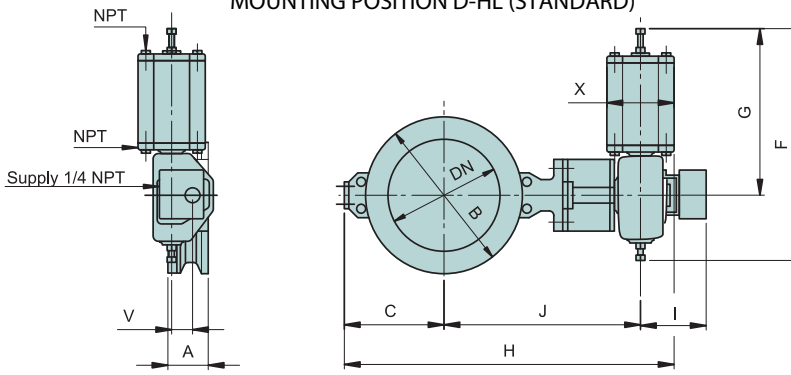


**LW6LB, LW7LB + RH**

Valve	DN	Handlev er	L 6 (K1)		L 7 (K2)			LW			LG			Dimensions, mm				LW L-RH kg	LG L-RH kg
			A	A	B	C	H	B	C	H	J	K	L						
LW6L / LG6L	80	RH415	49	49	128	80	355	205	120	395	275	100	400	5	10				
	100	RH420	52	56	158	100	410	235	135	445	310	100	400	7	15				
LW7L / LG7L	125	RH420	56	64	190	135	495	270	145	505	330	100	400	11	22				
	150	RH520	56	70	212	150	530	300	160	540	370	130	500	17	26				

**VALVE + PNEUMATIC ACTUATOR, B1C**

**MOUNTING POSITION D-HL (STANDARD)**



**LW6LB, LW7LB + B1C**

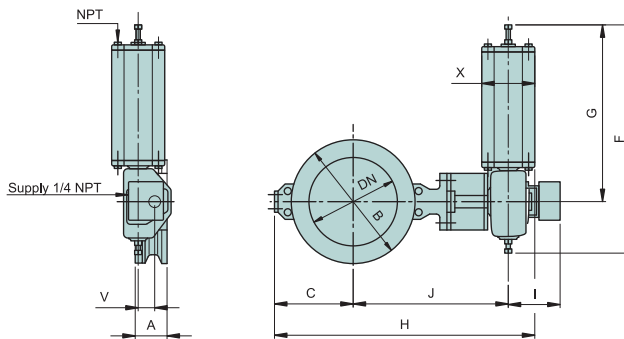
VALVE	DN	ACTUATOR	L		LW			LG			Dimensions, mm							NPT	LW L-B1C kg	LG L-B1C kg
			A (K1 API)	A (K2)	B	C	H	B	C	H	F	G	I	J	V	X				
LW6L / LG6L LW7L / LG7L	80	B1C9	46/48	49	128	80	445	205	120	485	450	315	220	307	43	110	1/4	20	25	
	100	B1C9	52/54	56	158	100	490	235	135	525	450	315	220	331	43	110	1/4	22	30	
	100	B1C11	52/54	56	158	100	510	235	135	545	535	375	225	337	51	135	3/8	28	36	
	125	B1C9	56/-	64	190	135	550	-	-	-	450	315	220	351	43	110	1/4	25	38	
	125	B1C11	56/-	64	190	135	570	-	-	-	535	375	225	360	51	135	3/8	31	44	
	150	B1C9	56/57	70	212	150	585	300	160	595	450	315	220	376	43	110	1/4	34	43	
	150	B1C11	56/57	70	212	150	605	300	160	615	535	375	225	382	51	135	3/8	40	49	
	150	B1C13	56/57	70	212	150	640	300	160	445	650	640	445	240	398	175	3/8	55	64	
	200	B1C11	60/64	71	268	160	645	360	185	670	535	375	225	412	51	135	3/8	45	59	
	200	B1C13	60/64	71	268	160	680	360	185	705	640	445	240	428	65	175	3/8	60	74	
	200	B1C17	60/64	71	268	160	715	360	185	740	785	555	255	443	78	215	1/2	83	97	
	250	B1C13	68/71	76	320	210	785	425	220	795	640	445	240	481	65	175	3/8	71	84	
	250	B1C17	68/71	76	320	210	820	425	220	830	785	555	255	496	78	215	1/2	94	107	
	300	B1C13	78/81	83	378	275	880	485	275	880	640	445	240	511	65	175	3/8	86	116	
	300	B1C17	78/81	83	378	275	915	485	275	915	785	555	255	526	78	215	1/2	110	140	
	300	B1C20	78/81	83	378	275	935	485	275	935	880	590	270	545	97	215	1/2	128	158	
	350	B1C17	92/92	92	438	290	975	555	310	995	785	555	255	571	78	215	1/2	135	160	
	350	B1C20	92/92	92	438	290	995	555	310	1015	880	590	270	590	97	215	1/2	145	180	
	350	B1C25	92/92	92	438	290	1040	555	310	1060	1075	725	310	613	121	265	1/2	215	240	
	400	B1C20	102/102	102	485	320	1075	610	340	1095	880	590	270	640	97	215	1/2	180	235	
	400	B1C25	102/102	102	485	320	1120	610	340	1140	1075	725	310	663	121	265	1/2	240	295	
	450	B1C25	114/114	114	532	370.3	1160.8	640	370.3	1160.8	1075	725	310	658	121	265	1/2	261	336	
	450	B1C32	114/114	114	532	370.3	1262.8	640	370.3	1262.8	1370	920	350	695	153	395	3/4	386	461	
	500	B1C25	127/127	127	585	412.3	1262.8	730	412.3	1262.8	1075	725	310	718	121	265	1/2	306	428	
	500	B1C32	127/127	127	585	412.3	1364.8	730	412.3	1364.8	1370	920	350	755	153	395	3/4	431	553	
	600	B1C32	154/154	154	685	464.4	1521.9	835	464.4	1521.9	1370	920	350	860	153	395	3/4	561	702	
	600	B1C40	154/154	154	685	464.4	1626.9	835	464.4	1626.9	1670	1150	370	910	194	505	3/4	751	892	

**LW8MB, LW5MB + B1C**

VALVE	DN	ACTUATOR	LW8M A(K3)	LW5M A(API)	LW			LG			Dimensions, mm							NPT	LW -B1C kg	LG -B1C kg
					B	C	H	B	C	H	F	G	I	J	V	X				
LW8M / LG8M LW5M / LG5M	80	B1C9	64	48	128	80	445	205	120	485	450	315	220	307	43	110	1/4	21	26	
	100	B1C9	64	54	158	100	490	235	135	525	450	315	220	331	43	110	1/4	23	31	
	100	B1C11	64	54	158	100	510	235	135	545	535	375	225	337	51	135	3/8	29	37	
	125	B1C9	70	56	190	135	550	-	-	-	450	315	220	354	43	110	1/4	26	-	
	125	B1C11	70	56	190	135	570	-	-	-	535	375	225	360	51	135	3/8	32	-	
	150	B1C9	76	59	218	145	605	290	160	620	450	315	220	387	43	110	1/4	36	41	
	150	B1C11	76	59	218	145	640	290	160	655	535	375	225	403	51	135	3/8	42	47	
	150	B1C13	76	59	218	145	675	290	160	690	640	445	240	418	65	175	3/8	58	63	
	200	B1C11	89	73	278	205	745	365	205	745	535	375	225	445	51	135	3/8	60	70	
	200	B1C13	89	73	278	205	780	365	205	780	640	445	240	460	65	175	3/8	76	86	
	200	B1C17	89	73	278	205	795	365	205	795	785	555	255	479	78	215	1/2	100	110	
	250	B1C17	114	83	335	260	910	435	260	910	785	555	255	536	78	215	1/2	120	150	
	250	B1C20	114	83	335	260	930	435	260	930	880	590	270	555	97	215	1/2	140	170	
	250	B1C25	114	83	335	260	975	435	260	975	1075	725	310	578	121	265	1/2	200	230	
	300	B1C20	114	92	395	300	1030	500	300	1030	880	590	270	615	97	215	1/2	230	165	
	300	B1C25	114	92	395	300	1075	500	300	1075	1075	725	310	638	121	265	1/2	225	290	
	350	B1C20	127	117	450	330	1100	565	330	1100	880	590	270	655	97	215	1/2	185	280	
	350	B1C25	127	117	450	330	1145	565	330	1145	1075	725	310	678	121	265	1/2	245	340	
	400	B1C20	140	133	505	370	1180	649	370	1180	880	590	270	695	97	215	1/2	205	370	
	450	B1C32	152	149	554	409.4	1376.9	710	409.4	1376.9	1370	920	350	770	153	395	3/4	481	638	
	450	B1C40	152	149	554	409.4	1481.9	710	409.4	1481.9	1670	1150	370	820	194	505	3/4	671	828	
	500	B1C32	152	159	610	441.4	1433.9	770	441.4	1433.9	1370	920	350	795	153	395	3/4	511	701	
	500	B1C40	152	159	610	441.4	1538.9	770	441.4	1538.9	1670	1150	370	845	194	505	3/4	701	891	
	600	B1C32	178	181	700	516.4	1568.9	915	516.4	1568.9	1370	920	350	855	153	395	3/4	661	981	
	600	B1C40	178	181	700	516.4	1673.9	915	516.4	1673.9	1670	1150	370	905	194	505	3/4	851	1171	
	600	B1C50	178	181	700	516.4	1776.4	915	516.4	1776.4	2060	1390	415	955	242	610	1	1235	1555	

**VALVE + PNEUMATIC SPRING RETURN ACTUATOR, B1J**

MOUNTING POSITION B (STANDARD)



**LW6LB, LW7LB + B1J**

VALVE	DN	ACTUATOR	L_6		L_7		LW_			LG_			Dimensions, mm						NPT	LW_L-B1J kg	LG_L-B1J kg
			A (K1/API)	A (K2)	B	C	H	B	C	H	F	G	I	J	V	X					
LW6L / LG6L LW7L / LG7L	80	B1J8	46/48	49	128	80	460	205	120	500	555	420	220	307	43	135	3/8	27	32		
	100	B1J8	52/54	56	158	100	505	235	135	540	555	420	220	331	43	135	3/8	29	37		
	100	B1J10	52/54	56	158	100	530	235	135	565	640	480	225	337	51	175	3/8	42	50		
	125	B1J8	56/-	64	190	135	560	-	-	-	555	420	220	351	43	135	3/8	32	45		
	125	B1J10	56/-	64	190	135	585	-	-	-	640	480	225	360	51	175	3/8	45	58		
	150	B1J8	56/57	70	212	150	600	300	160	610	555	420	220	376	43	135	3/8	41	50		
	150	B1J10	56/57	70	212	150	625	300	160	635	640	480	225	382	51	175	3/8	54	63		
	150	B1J12	56/57	70	212	150	660	300	160	670	815	620	240	398	65	215	1/2	81	90		
	200	B1J10	60/64	71	268	160	665	360	185	690	640	480	225	412	51	175	3/8	59	73		
	200	B1J12	60/64	71	268	160	700	360	185	725	815	620	240	428	65	215	1/2	86	100		
	200	B1J16	60/64	71	268	160	740	360	185	765	990	760	255	443	78	265	1/2	143	129		
	250	B1J12	68/71	76	320	210	805	425	220	815	815	620	240	481	65	215	1/2	97	110		
	250	B1J16	68/71	76	320	210	845	425	220	855	990	760	255	496	78	265	1/2	140	153		
	300	B1J12	78/81	83	378	275	900	485	275	900	815	620	240	511	65	215	1/2	112	142		
	300	B1J16	78/81	83	378	275	940	485	275	940	990	760	255	526	78	265	1/2	156	186		
	300	B1J20	78/81	83	378	275	1025	485	275	1025	1230	940	270	545	97	395	3/4	230	260		
	350	B1J16	92/92	92	438	290	1000	555	310	1020	990	760	255	571	78	265	1/2	180	205		
	350	B1J20	92/92	92	438	290	1085	555	310	1105	1230	940	270	590	97	395	3/4	245	280		
	350	B1J25	92/92	92	438	290	1160	555	310	1180	1490	1140	310	613	121	505	3/4	435	460		
	400	B1J20	102/102	102	485	320	1165	610	340	1185	1230	940	270	640	97	395	3/4	280	335		
400	B1J25	102/102	102	485	320	1240	610	340	1260	1490	1140	310	663	121	505	3/4	460	515			
450	B1J25	114/114	114	532	370.3	1280.8	640	370.3	1280.8	1490	1140	310	658	121	505	3/4	480	555			
500	B1J32	127/127	127	585	412.3	1437.3	730	412.3	1437.3	1885	1435	350	755	153	540	1	846	968			
600	B1J32	154/154	154	685	464.4	1324.4	835	464.4	1324.4	1885	1435	350	860	153	540	1	976	1117			

**LW8MB, LW5MB + B1J**

VALVE	DN	ACTUATOR	LW8M A(K3)	LW5M A (API)	LW_			LG_			Dimensions, mm						NPT	LW_-B1J kg	LG_-B1J kg
					B	C	H	B	C	H	F	G	I	J	V	X			
LW8M / LG8M LW5M / LG5M	80	B1J8	64	48	128	80	460	205	120	500	555	420	220	307	43	135	3/8	28	33
	100	B1J8	64	54	158	100	505	235	135	540	555	420	220	331	43	135	3/8	30	38
	100	B1J10	64	54	158	100	530	235	135	565	640	480	225	337	51	175	3/8	43	41
	125	B1J8	70	56	190	135	565	-	-	-	555	420	220	354	43	135	3/8	33	-
	125	B1J10	70	56	190	135	590	-	-	-	640	480	225	360	51	175	3/8	46	-
	125	B1J12	70	56	190	135	620	-	-	-	815	620	240	376	65	215	1/2	73	-
	150	B1J10	76	59	218	145	625	290	160	640	640	480	225	387	51	175	3/8	56	61
	150	B1J12	76	59	218	145	660	290	160	675	815	620	240	403	65	215	1/2	83	88
	150	B1J16	76	59	218	145	700	290	160	715	990	760	255	418	78	265	1/2	128	133
	200	B1J12	89	73	278	205	765	365	205	765	815	620	240	445	65	215	1/2	100	110
	200	B1J16	89	73	278	205	805	365	205	805	990	760	255	460	78	265	1/2	145	155
	200	B1J20	89	73	278	205	890	365	205	890	1230	940	270	479	97	395	3/4	220	230
	250	B1J16	114	83	335	260	935	435	260	935	990	760	255	536	78	265	1/2	165	195
	250	B1J20	114	83	335	260	1020	435	260	1020	1230	940	270	555	97	395	3/4	240	270
	250	B1J25	114	83	335	260	1095	435	260	1095	1490	1140	310	578	121	505	3/4	440	470
	300	B1J20	114	92	395	300	1120	500	300	1120	1230	940	270	615	97	395	3/4	300	330
	300	B1J25	114	92	395	300	1195	500	300	1195	1490	1140	310	638	121	505	3/4	445	510
	350	B1J20	127	117	450	330	1190	565	330	1190	1230	940	270	655	97	395	3/4	285	380
	350	B1J25	127	117	450	330	1265	565	330	1265	1490	1140	310	678	121	505	3/4	465	560
	400	B1J20	140	133	505	370	1265	649	370	1265	1230	940	270	695	97	395	3/4	305	470
400	B1J25	140	133	505	370	1340	649	370	1340	1490	1140	310	718	121	505	3/4	485	650	
450	B1J32	152	149	554	409.4	1449.4	710	409.4	1449.4	1885	1435	350	770	153	540	1	896	1053	
500	B1J32	152	159	610	441.4	1506.4	770	441.4	1506.4	1885	1435	350	795	153	540	1	926	1116	
600	B1J32	178	181	700	516.4	1691.4	915	516.4	1691.4	2870	1435	-	870	153	610	1	2055	2375	

## HOW TO ORDER

Neldisc triple eccentric disc valve, series LW, LG, DIN and ASME rated  
 LW7LBA\_AAJAT Standard valve ( $T_{max} = +250\text{ }^{\circ}\text{C}$ )  
 LW7LBN\_AACAG Extended service valve ( $T_{max} = 425\text{ }^{\circ}\text{C}$ )  
 LW7LBH\_AANHG High temp. valve ( $T_{max} = 600\text{ }^{\circ}\text{C}$ )  
 LW7LBH\_AAHHG High temp. valve ( $T_{max} = 600\text{ }^{\circ}\text{C}$ )  
 LW7LBC\_AACAG Cryo temp. valve ( $T = -200\text{ }^{\circ}\text{C} - +250\text{ }^{\circ}\text{C}$ )

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.		13.	14.
	LW	6	L	B	A	300	P	A	C	C	T	/	03	K

1. sign	S-DISC CONSTRUCTION
S-	Flow balancing trim on down stream side of body flow port. Not available with LW6 or LG6.

2. sign	PRODUCT SERIES / DESIGN
LW	Wafer type, metal seated triple eccentric disc valve.
LG	Lug type, metal seated triple eccentric disc valve.

3. sign	FACE TO FACE
6	EN 558-Part 1, Table 5 / Basic series 20, (DIN 3202-K1). API 609 category B Class 150
7	EN 558-Part 1, Table 5 / Basic series 25, (DIN 3202-K2).
8	EN 558-Part 1, Table 5 / Basic series 16, (DIN 3202-K3).
5	API 609, category B. Class 300
Y	Special to be specified.

\* LW7L has the same face to face length as the previous L1C valve serie.

4. sign	PRESSURE RATING
L	Sizes DN 80-DN125: 50 bar (ASME300, PN40, ISO PN50, JIS30K) Sizes DN 150-DN 600: 25 bar (PN10-25, ASME150, ISO PN20, JIS10-16K) Max shut off pressure: sizes DN 80 - DN 125 max dp 50 bar sizes DN 150 max dp 25 bar sizes DN 200 - DN 600 max dp 20 bar
C	Body max. pressure ASME 150
M	Body max pressure 50 bar (PN40, ISO PN50, ASME300, JIS 16K, JIS 20K, JIS 30K) sizes DN 80 - DN 600 max dp 50 bar

5. sign	VALVE- ACTUATOR CONNECTION
B	drive shaft with key way / bracket Neles standard.

6. sign	CONSTRUCTION
A	Standard (-50 °C...+260 °C) - bearings aisi 316 + PTFE - body and blind flange gaskets graphite - live loaded TA-luft packing
C	Cryogenic (min. -200 °C) - extended bonnet and drive shaft - otherwise as construction a
N	Extended service (max. +425 °C) - shaft bearings surfaces nitrated - bearings cobalt based alloy - body and blind flange gaskets graphite - live loaded ta-luft packing
H	High temperature - shaft bearings surfaces celsit coated - bearings cobalt based alloy - body and blind flange gaskets graphite - live loaded ta-luft packing
Z	OXYGEN CONSTRUCTION - BAM tested non-metallic materials - $T = -50\text{ }^{\circ}\text{C}...+200\text{ }^{\circ}\text{C}$ - 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.

7. sign	SIZE
	080, 100, 125 (LW only), 150, 200, 250, 300, 350, 400, 450, 500, 600, 700, 750, 800, 900, 1000

MATERIALS					
8. sign	BODY	9. sign	DISC	10. sign	SHAFTS & PINS
A	CF8M / 1.4408	A	CF8M or F316	J	SS 329 (SIS 2324). Only with L_6, L_7
P	WCB / 1.0619			C	Gr. 630 (17-4PH)
B	1.4581	G	1.4581	N	XM-19 (Nitronic 50)
N	WC6	K	1.4408 or 1.4401		
F	LCC	B	CF8M / 1.4408 or F316 / 1.4401+ cobalt based ALLOY	H	Nimonic 80A only sign 6 = "H"
C	CG8M/ AISI 317	C	CG8M/AISI 317		

11. sign	STANDARD SEAT	11. sign	NON-STANDARD SEAT
A	Incoloy 825, hard chrome plated	H	Nimonic 80A, hard chrome plated
		K	2.4681, UNS R31233 (ULTIMET)

12. sign	DESIGN OPTIONS
T	TA-Luft PTFE V-ring packing.
G	TA-Luft graphite packing, Fire safe construction.
Y	Special, TO BE SPECIFIED.

13. sign	Flange facing
-	EN 1092-1 Type B1 (Ra 3.2 - 12.5), standard, without sign cover: ASME B16.5, (Ra 3.2 - 6.3, smooth finish, AARH 125 - 250) DIN 2526 Form E (Ra 4)
07	DIN 2512 FORM N (groove) (Ra 10).
Y	Special, to be specified.

14. sign	FLANGE DRILLING
-	without sign: L_6L, L_7L flange drilling according to PN25 L_5M, L_8M flange drilling according to PN40
C	ASME 150 (available with PN 25 rated valves only).
D	ASME 300 (available with PN 40 rated valves only).
J	PN 10 (available with PN 25 rated valves only).
K	PN 16 (available with PN 25 rated valves only).
L	PN 25
M	PN40 (available with PN 40 rated valves only).
X	ISO PN 20 (available with PN 25 rated valves only).
Z	ISO PN 50 (available with PN 40 rated valves only).
Y	Special, TO BE SPECIFIED.
R	JIS10K (available with PN 25 rated valves only).
S	JIS16K (available with LW valves only).
T	JIS20K (available with PN 40 rated valves only).
U	JIS30K (available with PN 40 rated valves only).

### Metso Flow Control Inc.

**Europe**, Vanha Porvoontie 229, P.O. Box 304, FI-01301 VANTAA, Finland.  
 Tel. +358 20 483 150. Fax +358 20 483 151

**North America**, 44 Bowditch Drive, P.O. Box 8044, Shrewsbury, MA 01545, USA.  
 Tel. +1 508 852 0200. Fax +1 508 852 8172

**South America**, Av. Independência, 2500- Iporanga, 18087-101, Sorocaba-São Paulo, Brazil.  
 Tel. +55 15 2102 9700. Fax +55 15 2102 9748/49

**Asia Pacific**, Haw Par Centre #06-01, 180 Clemenceau Avenue, Singapore 239922.  
 Tel. +65 6511 1011. Fax +65 6250 0830

**China**, 11/F, China Youth Plaza, No.19 North Rd of East 3rd Ring Rd, Chaoyang District, Beijing 100020, China. Tel. +86 10 6566 6600. Fax +86 10 6566 2583.

**Middle East**, Roundabout 8, Unit AB-07, P.O. Box 17175, Jebel Ali Freezone, Dubai, United Arab Emirates. Tel. +971 4 883 6974. Fax +971 4 883 6836

[www.metso.com/valves](http://www.metso.com/valves)

Subject to change without prior notice.

