

## NELES® HIGH PERFORMANCE TRIPLE ECCENTRIC DISC VALVE, METAL SEATED NELDISC®, SERIES L9B/L90B

Metso's Neles L9B/L90B-series valve is a high performance triple eccentric disc valve. The body is fabricated of boiler vessel quality carbon steel, and can easily be welded into the piping without preheating.

As a result of the unique geometry, contact between the disc and seat is mechanically induced, and does not rely on assistance from differential pressure.

The valve shut-off performance is therefore maintained at all pressures and is bidirectional. Floating seat ring action maintains shut-off performance under temperature cycling conditions. Body contraction is not transmitted to the seat and cannot jam the valve. The L9B/L90B-series seating principle is based on the same ingenious design applied in hundreds of thousands other Neldisc valves already delivered. This design is both proven in service and as witnessed by several authorities.

### APPLICATIONS

- District heating.
- Trunk lines.
- Steamline isolation and throttling.

### DESIGN FEATURES

#### Sizes

- DN 200 ... 1400 / 8" ... 56".

#### Pressure classes

- ASME #150 / DIN PN 25.

#### Metal seated

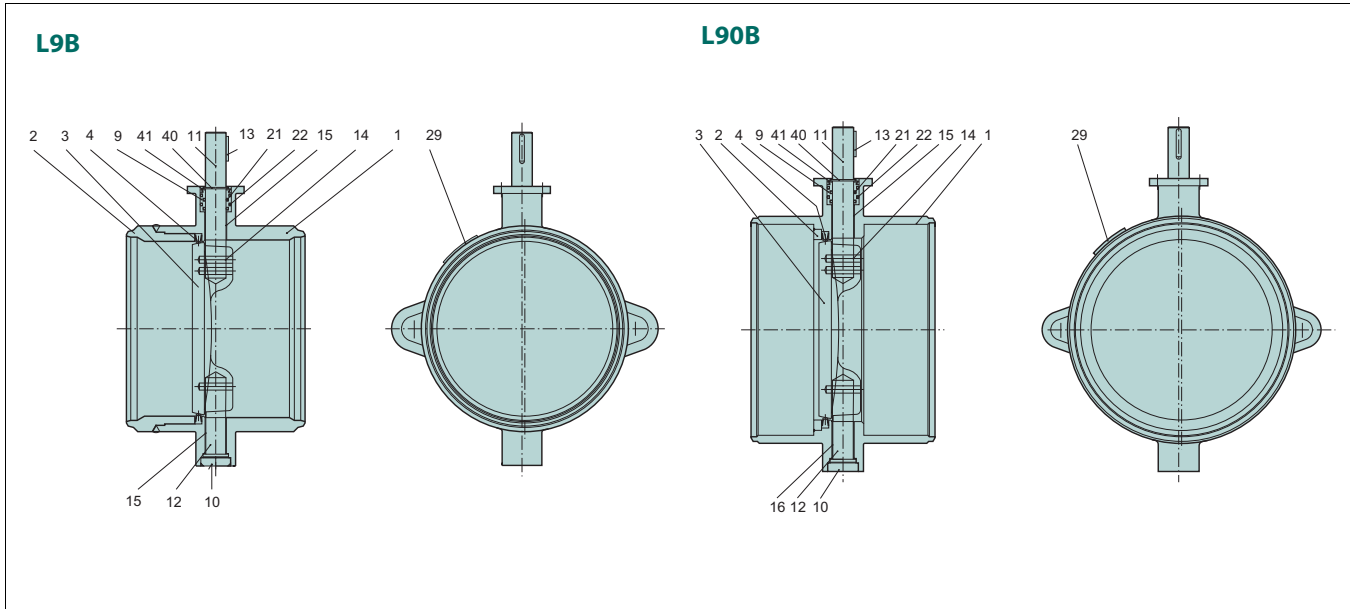
- Superior tightness in both flow directions.

#### Disc

- Triple eccentric disc design.



**ASSEMBLY DRAWING**

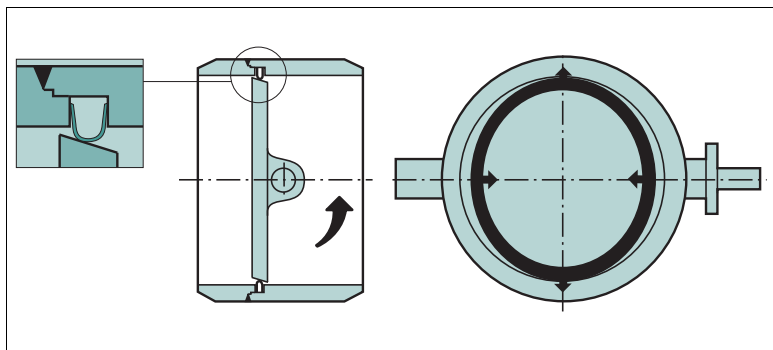


**PARTS LIST**

ITEM	QTY	PART DESCRIPTION	MATERIAL
1	1	Body	Steel
2	1	Body ring	Steel
3	1	Disc	Stainless steel
4	1	Seat ring	DN 200-600 Ni-Fe-base superalloy + Hard chrome DN 700-1400 Stainless steel + Hard chrome
9	1	Bushing	Stainless steel
10	1	Blind flange	Steel
11	1	Drive shaft	Stainless steel
12	1	Shaft	Stainless steel
13	1	Key	Stainless steel
14	3	Pin	Stainless steel
15	2	Bearing	PTFE on stainless steel net
21	2	O-ring	Ethylene propylene rubber (EPDM)
22	2	O-ring	Ethylene propylene rubber (EPDM)
29	1	Identification plate	Stainless steel
40	1	Lock ring	Steel
41	1	Support ring	Steel

**NELDISC TRIPLE ECCENTRIC SEATING PRINCIPLE**

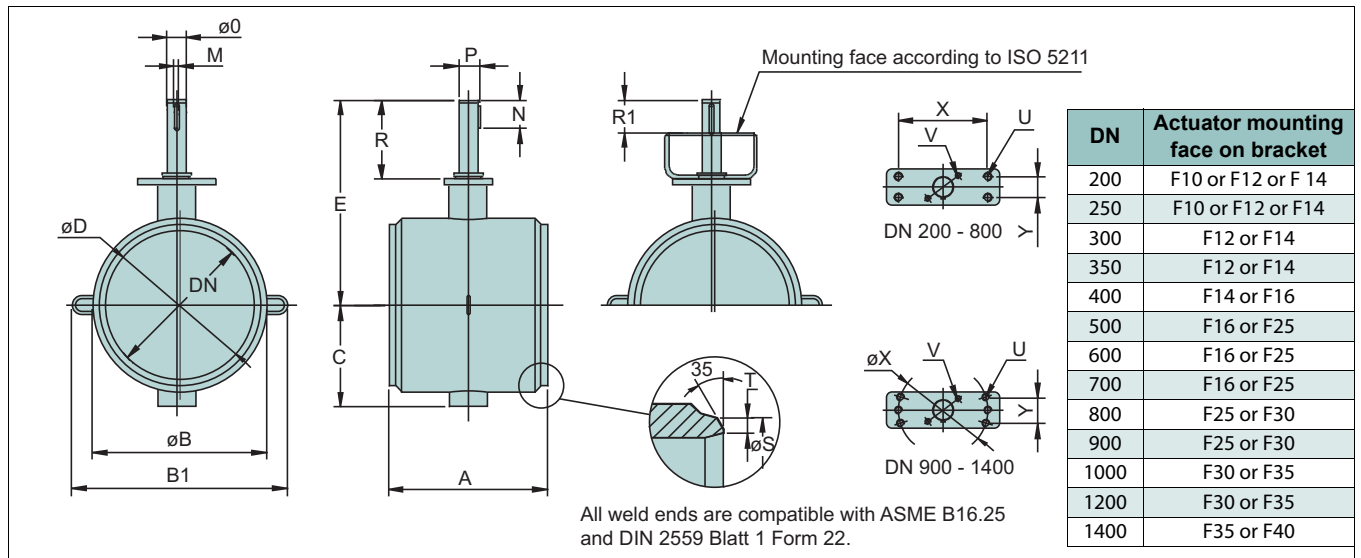
The disc of the valve is machined to close tolerances to create an elliptical shape similar to an oblique slice taken from a solid metal cone. When the valve is closed, the elliptical disc at the major axis displaces the seat ring outward, causing the seat ring to contact the disc at the minor axis. When the valve is opened, the contact is released and the seat ring returns to its original circular shape.



## TECHNICAL SPECIFICATION

<b>Product type:</b> High performance triple eccentric disc valve. Metal seated. Welding ends.	<b>Seat:</b> DN 200 ... 600 ASTM B 424 (Incoloy 825). DN 700 ... 1400 AVESTA 248 SV (W. no 1.4418).
<b>Pressure ratings</b> <b>Body:</b> PN 25. <b>Trim:</b> ASME Class 150/PN 20.	<b>Shafts:</b> AISI 329 (SS 14 2324).
<b>Size range:</b> DN 200 ... 1400/8" ... 56".	<b>Bearings:</b> PTFE + AISI 316 net.
<b>Temperature range:</b> Standard +150 °C. High temperature +250 °C.	<b>Options:</b> Adjustable graphite gland packing. Adjustable teflon gland packing.
<b>Design standards</b> <b>Valve:</b> ASME B16.34 -1988. <b>Welding ends:</b> Compatible with ASME B16.25 and DIN 2559 Blatt 1 Form 22.	<b>Certification:</b> EN 10204-2.2 material certificates for body. Tightness test certificate.
<b>Standard materials</b> <b>Body:</b> L9B - DIN 1629 - 1.0421 (St 52.0). L90B - DIN 17155 - 1.0425 (H11).	<b>Valve testing:</b> Each valve undergoes a shell test and a seat test. The shell test pressure is 1.5xPN. The seat test pressure is 1.1xPN. The test medium is inhibited water.
<b>Disc:</b> ASTM A351 gr. CF8M DN 700 ... 1400 ASTM A 216 gr. WCB optional	<b>Valve tightness:</b> Bidirectionally ISO 5208 Rate D or ANSI Class V.

## DIMENSIONS



TYPE	Dimensions, mm															STANDARD WELD ENDS		C <sub>v</sub>	kg
	DN/øD	A	øB	B1	C	E	øM	N	øO	P	R	R1	U	X	Y	øS=Pipe outside diameter	T=Suitable for pipe wall thickness		
L9B200	200	200	241	311	161	326	6.35	46	25	27.8	136	46	M12	110	32	219	4.8 - 6.4	3050	30
L9B250	250	210	298.5	378.5	190	372	6.35	51	30	32.9	161	51	M12	130	32	273	4.8-6.4	4870	40
L9B300	300	210	343	423	223	412	9.52	58	35	39.1	168	58	M12	130	32	324	5.2-7.1	7300	55
L9B350	350	240	394	478	252	468	9.52	68	40	44.2	188	68	M16	160	40	356	5.2-7.1	10500	80
L9B400	400	270	445	529	284	510	12.70	80	45	50.4	200	80	M16	160	40	406	5.2-7.1	13700	130
L9B500	500	290	546	646	350	606	12.70	90	55	60.6	230	90	M20	160	55	508	6.3-8.0	21900	190
L9B600	600	330	660	760	430	745	19.05	119	70	78.2	292	112	M27	230	90	610	6.3-8.0	31000	260
L90B700/600	700/600	350	720	836	430	792	19.05	119	70	78.2	292	112	M27	230	90	711	7.9-9.5	27800	360
L90B800/700	800/700	380	821	941	550	892	22.23	146	85	96.4	326	146	M27	230	90	813	7.9-9.5	35300	530
L90B900/800	900/800	410	922	1042	600	1007	22.23	156	95	104.8	371	151	M33	330	120	914	8.8-10.3	48000	710
L90B1000/900	1000/900	440	1027	1172	645	1060	25.40	180	105	116.1	377	157	M33	330	120	1016	9.5-11.1	59500	900
L90B1200/1000	1200/1000	500	1230	1375	735	1150	31.75	205	120	133.8	377	157	M33	330	120	1219	11.9-13	74300	1250
L90B1400/1200	1400/1200	560	1440	1640	895	1370	38.1	250	150	166.6	430	180	M36	400	160	1422	12.0-14.0	104000	2150

## HOW TO ORDER

1.	2.	3.	4.	5.	6.	7.
L9	B	400	E	A	F	

1. sign	PRODUCT SERIES
L9	Weld ends / full bore / DN 200 - 600.
L90	Weld ends / reduced bore / DN 700 - 1400.

2. sign	DESIGN
B	Body PN 25 / Trim ASME 150 (PN 20) - Metal seated - O-ring gland packing - Bearings PTFE + AISI 316 net. - Drive shaft with keyway
Y	Special, to be specified.

3. sign	SIZE (mm)
	L9B-SERIES: 200, 250, 300, 350, 400, 500, 600.
	L90B-SERIES: 700/600, 800/700, 900/800, 1000/900, 1200/1000, 1200/1000, 1400/1200.

MATERIALS					
L9B-SERIES (DN 200-600)					
4. sign	BODY	5. sign	DISC	SHAFT & PINS	SEAT
E	ST 52.0 + NICO	A	CF8M / F316	SS 329 (SS 2324)	Incoloy 825, Hard chrome plated
L90B-SERIES (DN 700-1400)					
4. sign	BODY	5. sign	DISC	SHAFT & PINS	SEAT
E	H11 + NICO	A	CF8M / F316	SS 329 (SS 2324)	W. no. 1.4418 (Incoloy 825 in DN 700), Hard chrome plated

\*) Only sizes DN 800 - 1400.

6. sign	PACKING OPTIONS
-	Standard, without sign, O-ring.
F	Adjustable gland packing graphite.
Y	Adjustable gland packing teflon.

7. sign	STANDARD WELD ENDS		
	VALVE TYPE / SIZE	Pipe outside diameter (mm)	Suitable for pipe wall thickness, mm
	L9B 200	219	4.8 - 6.4
	L9B 250	273	4.8 - 6.4
	L9B 300	324	5.2 - 7.1
	L9B 350	356	5.2 - 7.1
	L9B 400	406	5.2 - 7.1
	L9B 500	508	6.3 - 8.0
	L9B 600	610	6.3 - 8.0
	L90B 700/600	711.2	7.9 - 9.5
	L90B 800/700	812.8	7.9 - 9.5
	L90B 900/800	914.4	8.8 - 10.3
	L90B 1000/900	1016	9.5 - 11.1
	L90B 1200/1000	1219	11.9 - 13.0
	L90B 1400/1200	1422	12.0 - 14.0
7. sign	NON-STANDARD WELD ENDS		
	VALVE/SIZE	Pipe outside diameter, mm	Suitable for pipe wall thickness, mm
273X080		273	7.1 - 8.0
267X064	L9B250	267	5.0 - 6.4
324X088		324	7.9 - 8.8
318X064	L9B300	319	5.0 - 6.4
356X088		356	7.9 - 8.8
377X100	L9B350	377	8.5 - 10.0
406X088		406	7.9 - 8.8
426X100	L9B400	426	8.5 - 10.0
508X095		508	8.7 - 9.5
530X075	L9B500	530	6.0 - 7.5
530X095		530	8.0 - 9.5
530X110		530	10.0 - 11.0
610X100	L9B600	610	8.7 - 10.0
630X100		630	8.5 - 10.0
711X111		711.2	10.0 - 11.0
720X100	L90B700/600	720	8.0 - 10.0
720X130		720	11.0 - 13.0
813X119		812.8	10.2 - 11.9
820X110	L90B800/700	820	9.0 - 11.0
820X130		820	12.0 - 13.0
914X127		914.4	11.9 - 12.7
920X120	L90B900/800	920	10.0 - 12.0
920X140		920	12.5 - 14.0
1016X143	L90B1000/900	1016	12.5 - 14.3
1020X100		1020	8.5 - 10.0
1020X130		1020	11.0 - 13.0
1020X160		1020	14.0 - 16.0
1219X130	L90B1200/1000	1219	11.9 - 13.0
1219X160		1219	14.0 - 16.0
1219X190		1219	17.0 - 19.0

Subject to change without prior notice.

### Metso Automation 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, 20 Kallang Avenue, Lobby B, #06-00, PICO Creative Centre, Singapore 339411, Singapore.

Tel. +65 6511 1011. Fax +65 6250 0830

China, 19/F, the Exchange Beijing, No. 118, Jianguo Lu Yi, Chaoyang Dist, 100022 Beijing, China.

Tel. +86-10-6566-6600. Fax +86-10-6566-2575

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)

