

NELES® RE-SERIES V-PORT SEGMENT VALVE

Metso's Neles RE series V-port segment valves are economical high performance valves in a quarter-turn design. They are offered with a variety of trim options from standard and low Cv trims for general applications, to noise/cavitation Q-Trim® for reducing aerodynamic noise and preventing cavitation. Standard units are equipped with either diaphragm or cylinder actuators and ND9000® intelligent valve controllers for precise control, reliability and performance monitoring on-line.

FEATURES

Integral body construction

- Integrally flanged R-Series valves feature one piece body construction with no flange rings, inserts or end caps to create potential leak paths, even if the valve is subjected to pipe bending forces. Seating capabilities are totally unaffected by pipeline forces, which assures reliable valve operation.

Accurate control

- Carefully designed V-ported segment, low torque requirements and clearance-free movement result in good control performance. The design provides steady and gentle contact between the seat and segment at all times to minimize friction while providing tightness. Bearings are located inside the valve body providing larger bearing areas, lower bearing loads and longer bearing life.

Safety and environment

- Rotary operation reduces fugitive emissions dramatically compared to a sliding stem design.

Durable metal seat

- The seat of the R-series V-port segment valve is firm and uniquely durable. The seat is designed in such a way that its sealing surface is not located directly in the flow stream. This gives the seat an extended service life. The working principle is a pressure-aided seat which enables good sealing properties at a low pressure difference. The seat is located inside the valve, which prevents forces from the pipe system influencing the sealing effect. Two-way tight seat is available as an option.



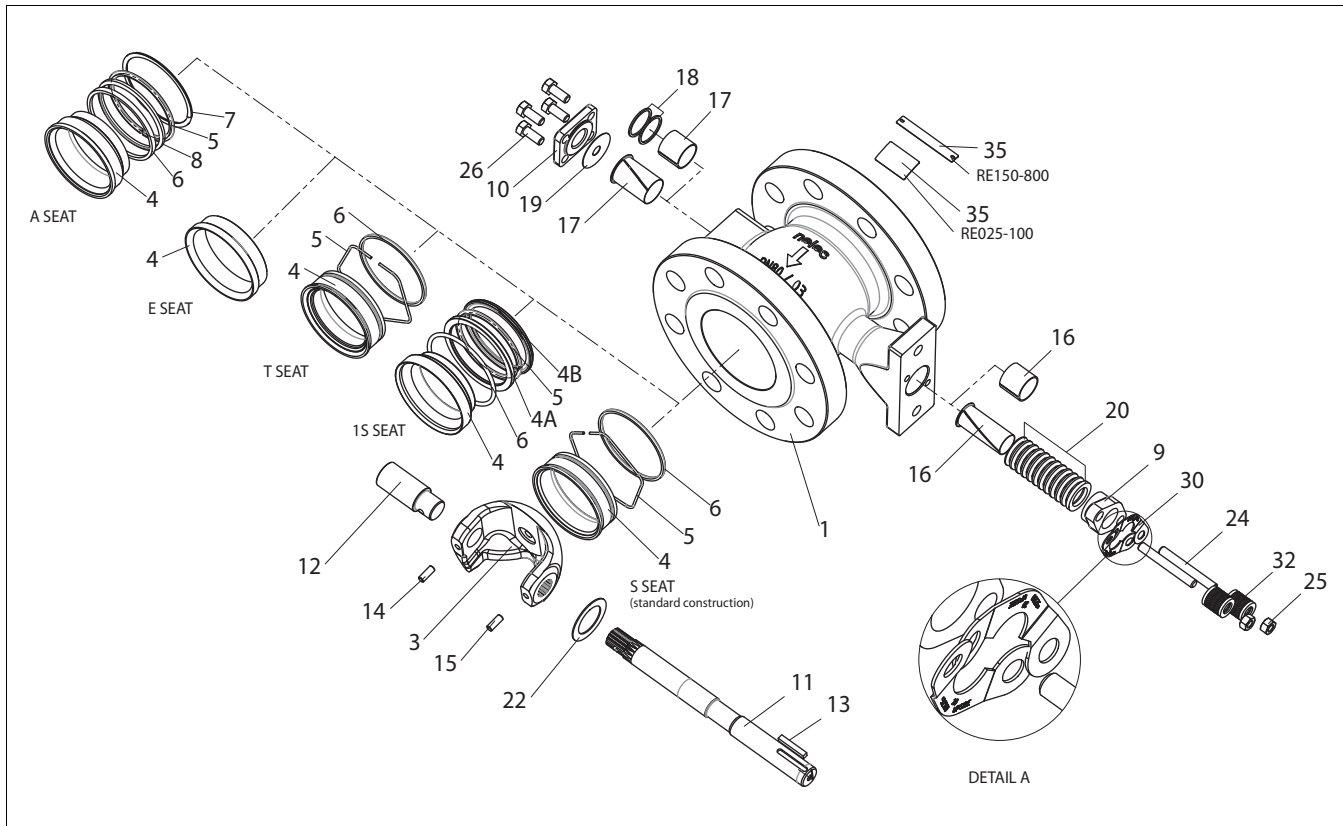
Economical

- Low torque requirements reduce wear, resulting in better reliability. In addition, standard designs carry hard chromium facing on the segment and cobalt based alloy seat, which has been designed to avoid the flow impingement. Together with low load bearing design and live-loaded packing, operational life is improved and maintenance needs are minimized. Low torque combined with the well integrated actuator design provides a lower cost valve unit.

Small flow and low noise/cavitation Q-Trim® options

- DN25/1" valves feature five different segments. They extend the valves' application range to very low-flow high accuracy services, such as additive and coloring lines, pilot plants etc. Cavitation and aerodynamic noise are reduced with the patented Q-Trim® option. This self-cleaning design handles contaminated flows (impure steam, river water, etc.) without plugging.

EXPLODED VIEW



PARTS LIST (standard construction)*

Part	Name	BODY MATERIAL	
		Stainless steel	Carbon steel
1	Body	ASTM A351 gr. CF8M	ASTM A216 gr. WCB
3	V-port segment	AISI 329 + chromium / CG8M + chromium ¹⁾	AISI 329 + chromium / CG8M + chromium ¹⁾
4	Seat	AISI 316 + Cobalt based alloy / PTFE ¹⁾	AISI 316 + Cobalt based alloy / PTFE ¹⁾
4A	Back ring	AISI 316	AISI 316
4B	Support ring	AISI 316	AISI 316
5	Lock spring	INCONEL 625	INCONEL 625
6	Back seal	Stainless steel + PTFE / Viton GF / Graphite	Stainless steel + PTFE / Viton GF / Graphite
7	Retaining ring	EN 10028-1.4571	EN 10028-1.4571
8	Support ring	AISI 316	AISI 316
9	Gland follower	ASTM A351 gr. CF8M	ASTM A351 gr. CF8M
10	Blind flange	ASTM A351 gr. CF8M	ASTM A351 gr. CF8M
11	Drive shaft	AISI 329 / 17-4PH ¹⁾	AISI 329 / 17-4PH ¹⁾
12	Shaft	AISI 329 / 17-4PH ¹⁾	AISI 329 / 17-4PH ¹⁾
13	Key	AISI 329	AISI 329
14	Cylindrical pin	AISI 329 / 17-4PH ¹⁾	AISI 329 / 17-4PH ¹⁾
15	Cylindrical pin	AISI 329 / 17-4PH ¹⁾	AISI 329 / 17-4PH ¹⁾
16	Bearing	PTFE + SS net / cobalt based alloy ¹⁾	PTFE + SS net / cobalt based alloy ¹⁾
17	Bearing	PTFE + SS net / cobalt based alloy ¹⁾	PTFE + SS net / cobalt based alloy ¹⁾
18	Thrust bearing	Cobalt based alloy ¹⁾	Cobalt based alloy ¹⁾
19	Sealing plate	Graphite / PTFE	Graphite / PTFE
20	Packing	Graphite / PTFE	Graphite / PTFE
22	Filling ring (only low Cv 1"/DN 25)	Stainless Steel AISI 316	Stainless Steel AISI 316
24	Stud	ISO 3506 A4-80/B8M	ISO 3506 A4-80/B8M
25	Hexagon nut	ISO 3506 A4-80/B8M	ISO 3506 A4-80/B8M
26	Hexagon bolt	ISO 3506 A4-80/B8M	ISO 3506 A4-80/B8M
30	Retainer plate	AISI 316	AISI 316
32	Spring stack	SIS 2324 & CrMo Steel + ENP	SIS 2324 & CrMo Steel + ENP
35	Identification plate	AISI 316	AISI 316

¹⁾ Alternative materials

* The parts are not in number order since certain part has dedicated part number.

TECHNICAL SPECIFICATIONS

Type

Integrally flanged V-port segment, quarter-turn valve
Pressure ratings are as follows:
Body: ASME 150-300, PN 10-40, see page 5
Trim: See tables on page 5.

Sizes

Inch 1", 1 1/2", 2", 2 1/2", 3", 4", 6", 8", 10", 12", 14", 16", 20", 24", 28", 32"
DN 25, 40, 50, 65, 80, 100, 150, 200, 250, 300, 350, 400, 500, 600, 700, 800

End-connections

Flanged

Face-to-face dimensions

ASME/ISA 75.08.02, IEC 60534-3-2.

Temperature range

-52...+260 °C / -60...+500 °F with soft bearings
-52...+315 °C / -60...+599 °F with metal bearings
-52...+425 °C / -60...+797 °F with metal bearing and high temperature seats.

Inherent flow characteristic

Equal percentage.

Fire safety

Fire safe design to meet ISO 10497:2010 - API 607, Seventh Edition.

Oxygen construction

Only for gaseous oxygen service.

Shut-off classification

IEC 60534-4/ANSI/FCI 70.2 Class IV, optionally Class V with high Δp testing pressure.
10 x ISO 5208 Rate D.
See also table on this page.

Flow capacity

See table on this page.

Valve trim rotation

Clockwise to close.

OPTIONS

Q-trim:

Inch 2", 2 1/2", 3", 4", 6", 8", 10", 12", 14", 16", 20", 24", 28", 32"
DN 50, 65, 80, 100, 150, 200, 250, 300, 350, 400, 500, 600, 700, 800

Reduced Cv trim: For DN 25 / 1" valve only.

Valve body and seat test

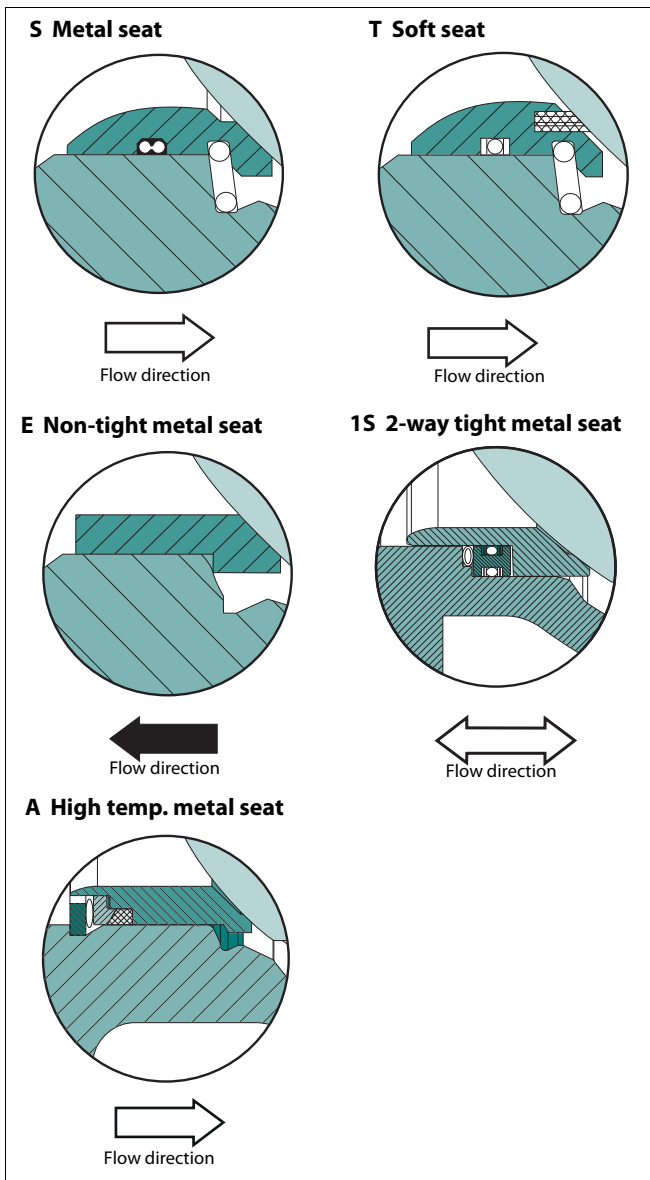
All valves manufactured by Metso undergo pressure testing. The test pressure of R-series valve body is 1.5 x the pressure rating and the standard test pressure of seat is 3,5 barG according to IEC 60534 / ANSI/FCI 702 Class IV. The test medium is water containing a corrosion inhibitor.
Seat design options shown on the next page.

Maximum C_v -coefficients for RE-series valves

Size		Metal seat, S	Q-trim, S-seat	Metal seat, 1S	Q-trim, 1S-seat	Soft seat, T	Q-trim, T-seat	Metal seat, A	Q-trim, A-seat
DN	INCH	C_v 100 % ¹⁾	C_v 100 % ²⁾	C_v 100 %	C_v 100 %	C_v 100 %	C_v 100 %	C_v 100 %	C_v 100 %
25	1	45	-	24	-	21	-	-	-
40	1.5	110	-	58	-	61	-	-	-
50	2	180	47	115	30	110	29	130	39
65	2.5	280	96	210	72	215	74	-	-
80	3	420	160	342	130	340	130	350	150
100	4	620	250	510	210	520	210	540	220
150	6	1260	540	1160	500	1070	459	1100	500
200	8	2030	880	1910	830	1760	763	1800	835
250	10	3210	1510	3050	1440	2830	1331	3000	1420
300	12	4490	2140	4340	2070	4080	1945	-	-
350	14	6440	3160	6220	3050	5750	2821	-	-
400	16	8510	4180	8330	4090	7630	3748	-	-
500	20	13020	6600	12560	6370	11670	5916	-	-
600	24	-	-	19700	9230	-	-	-	-
700	28	-	-	25300	13700	-	-	-	-
800	32	-	-	32000	16181	-	-	-	-

1) 100 % corresponds to 95° turning angle

2) For Q-R-valves, 100 % corresponds to 90° turning angle



SEAT DESIGNS

S Metal seat

Seat:	316 SS + Cobalt based hard facing, sizes 1" - 20" / DN 32 - 800
Spring:	Inconel 625
Seat seal:	Filled PTFE lipseal / SS Elgiloy spring
Temp. range:	-52...+315 °C / -60 ...+599 °F
Service:	General

T Soft seat

Seat:	316 SS with PTFE + X-treme®, sizes 1" - 6" 316 SS with PTFE + C25 % insert, sizes 8" - 32"
Spring:	Inconel 625
Seat seal:	Filled PTFE lipseal
Back seal:	PTFE
Temp. range:	-52...+260 °C / -60 ...+500 °F
Service:	General service with tight shut-off.

E Non-tight metal seat

Seat:	Cobalt based alloy
Temp. range:	-80...+425 °C / -112 ...+797 °F
Service:	Extremely erosive applications, non-tight.
NOTE !	Flow direction is reversed.

1S 2-way tight metal seat

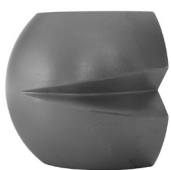
Seat:	316 SS + Cobalt based hard facing, sizes 1" - 32" / DN 25 - 800
Spring:	Inconel 625
Seat seal:	Viton GF
Temp. range:	-30...+200 °C / -22 ...+392 °F
Service:	General

A High temp. metal seat

Seat:	A: SS 316 + Cobalt based hard facing A1: SS 316 + CrC facing (with K segment)
Spring:	Inconel 625
Seat seal:	Graphite
Temp. range:	-52...+425 °C, -60...+797 °F
Service:	General service
Note:	Available with model code A only (11. sign)

CONSTRUCTION OPTIONS

Low C_v trims



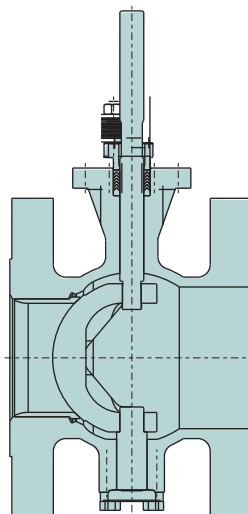
Reduced C_v trims are available on the DN25/ 1" valve to control very low flows with high accuracy. The narrow orifice is a selfflushing design because the trim orifice is continually increasing.

Q-trim™ valve trim for cavitation/noise abatement



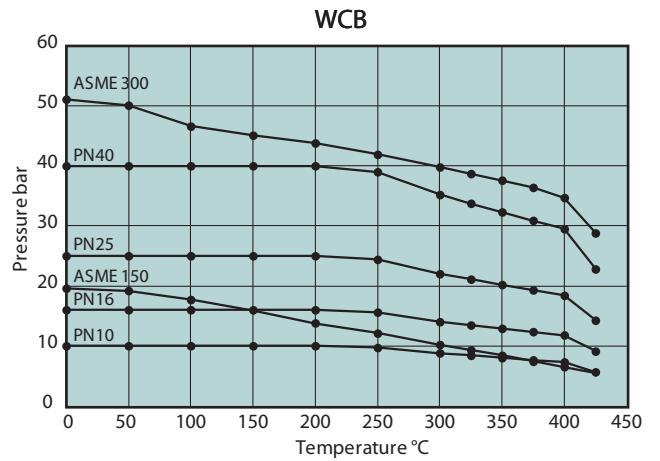
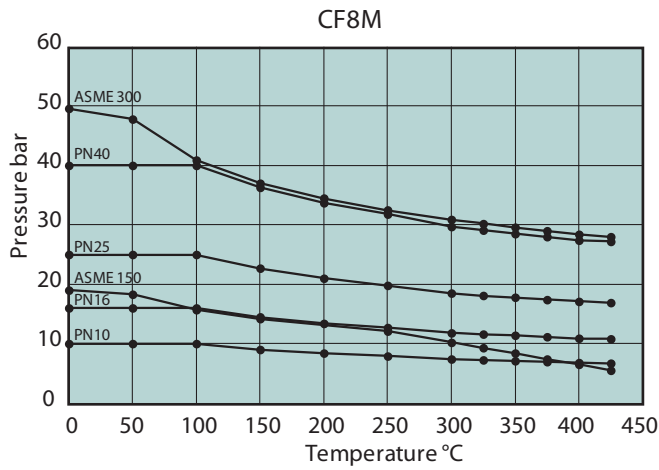
Liquid cavitation and aerodynamic noise problems can be solved with the patented Q-Trim™ valve trim. This design employs the two well-known principles of dividing the pressure drop into a series of small pressure drops and of separating the flow stream into many small jet streams. The use of these two principles combined with the rotation of the attenuator elements provides a combination of cavitation/noise abatement with high rangeability, high capacity and capability to handle impure fluids.

Erosion resistant version



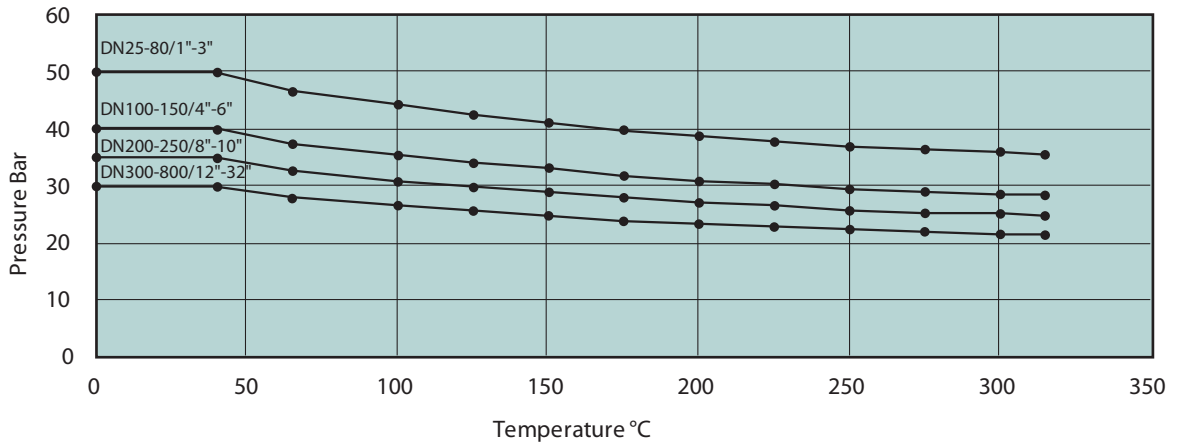
This heavy duty erosion resistant design handles contaminated flows and abrasive media at a favorable cost/useable life ratio. The seat is machined from cobalt chromium alloy and the seat design is changed from normal to reverse flow for maximum abrasion resistance. This version should not be used for isolation service since the seat is not in contact with the segment.

BODY PRESSURE RATINGS

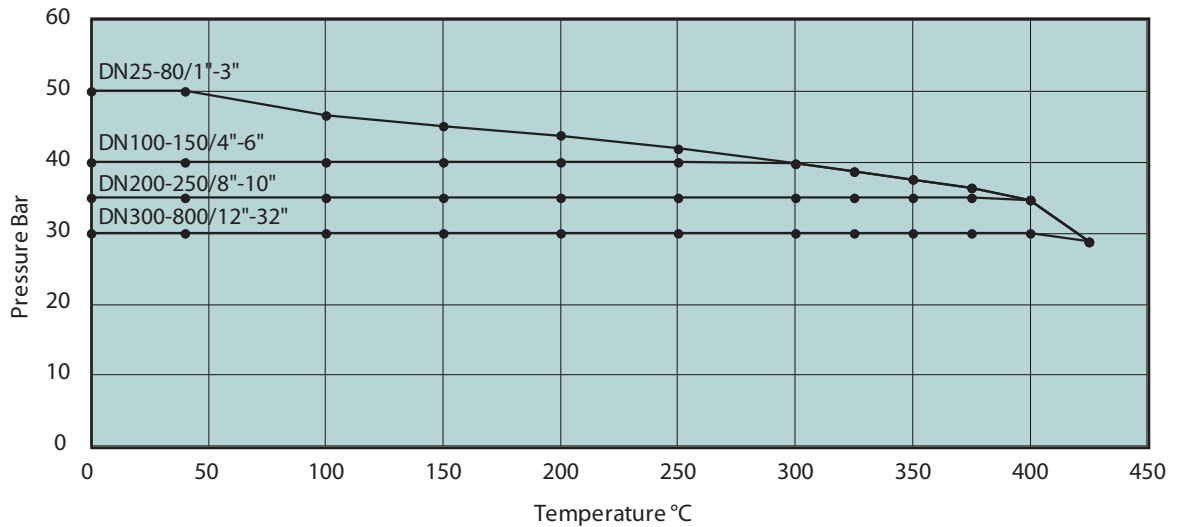


Maximum operating pressure differential in shut-off service

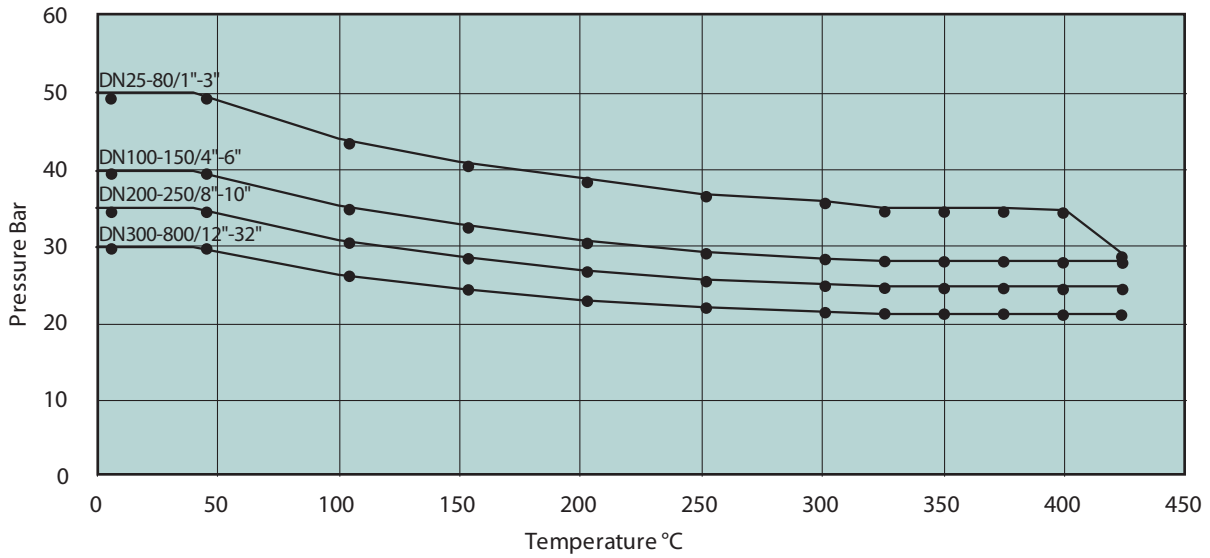
AISI 329 Shaft



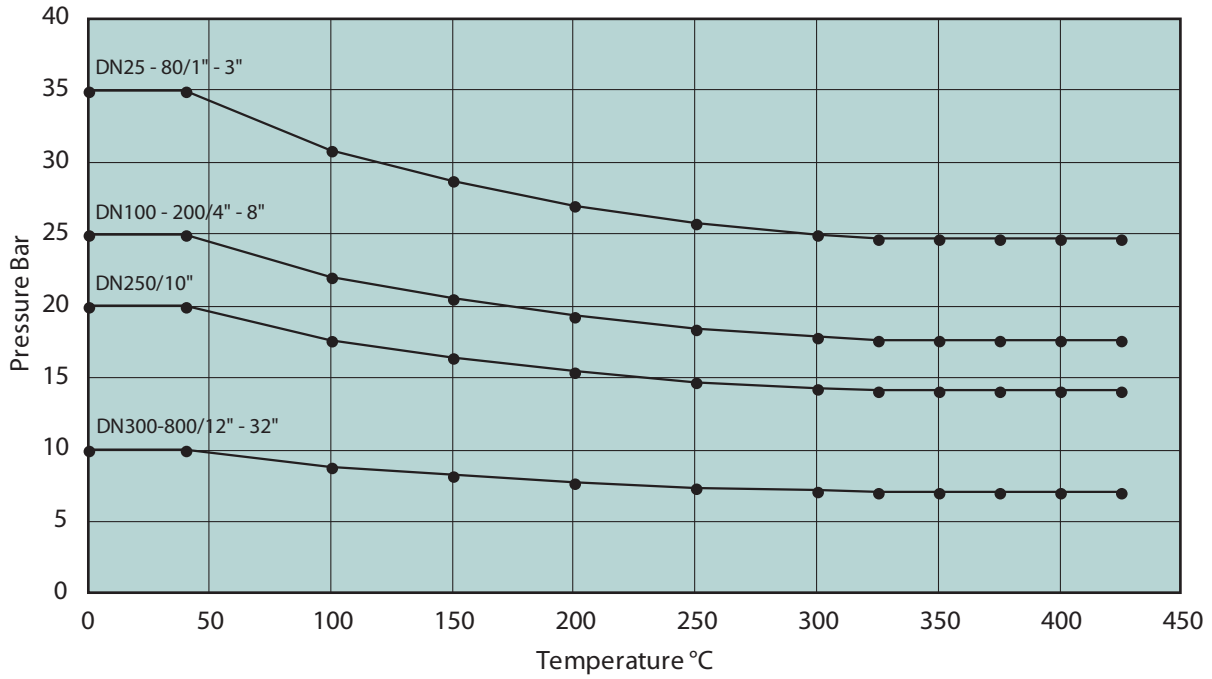
17-4PH Shaft



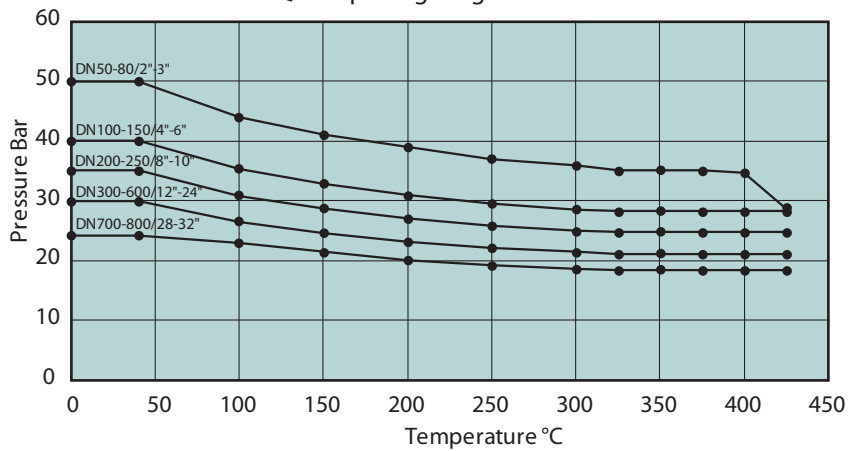
Max operating pressure differential in control service, RE
opening range 0 %-70 %



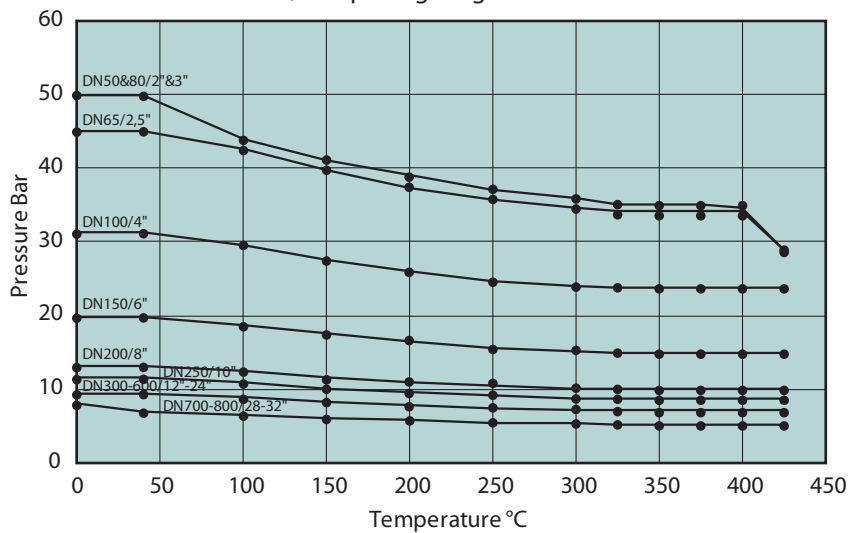
Max operating pressure differential in control service,
RE opening range 70 %-100 %



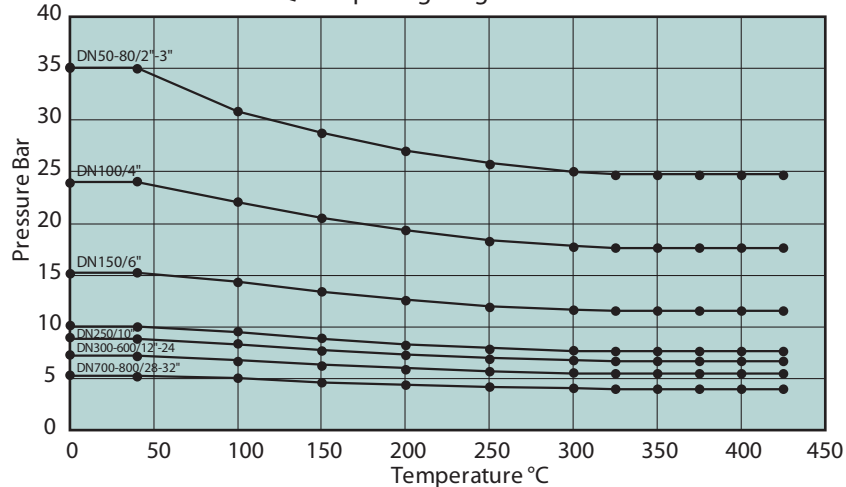
Max operating pressure differential in control service,
Q-RE opening range 0 %- 30 %



Max operating pressure differential in control service,
Q-RE opening range 30 %- 60 %



Max operating pressure differential in control service,
Q-RE opening range 60 %-100 %



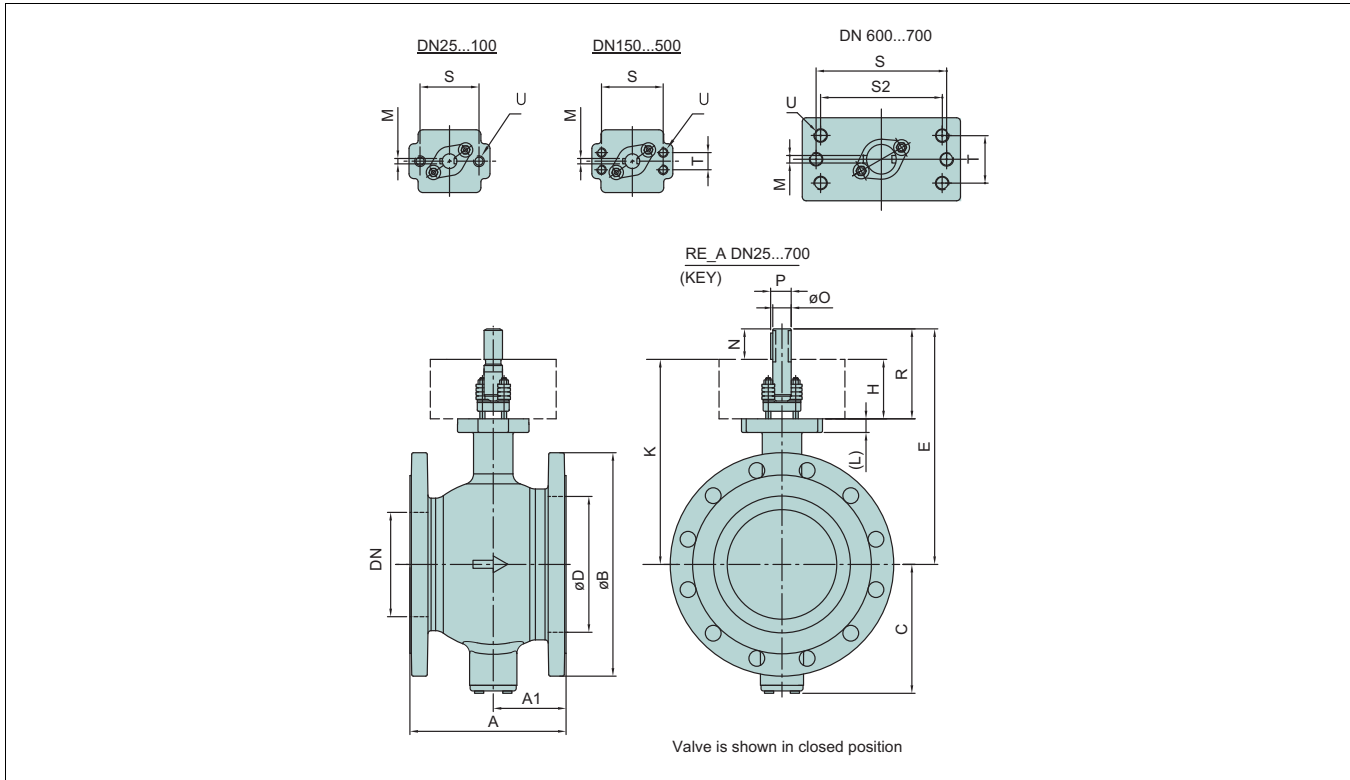
Note:

- 1) RE-valves are not recommended for applications with high on-off cycling rate. X- or L-series valves should be used in these cases.
- 2) Please observe body rating for material in question when determining maximum allowable shut-off pressure differential.

Given maximum allowable throttling differential pressures are based on mechanical strength of the parts only. Nelprof analysis determines actual throttling dp capability, taking into account trim velocity, exit velocity, noise and cavitation.

DIMENSIONS

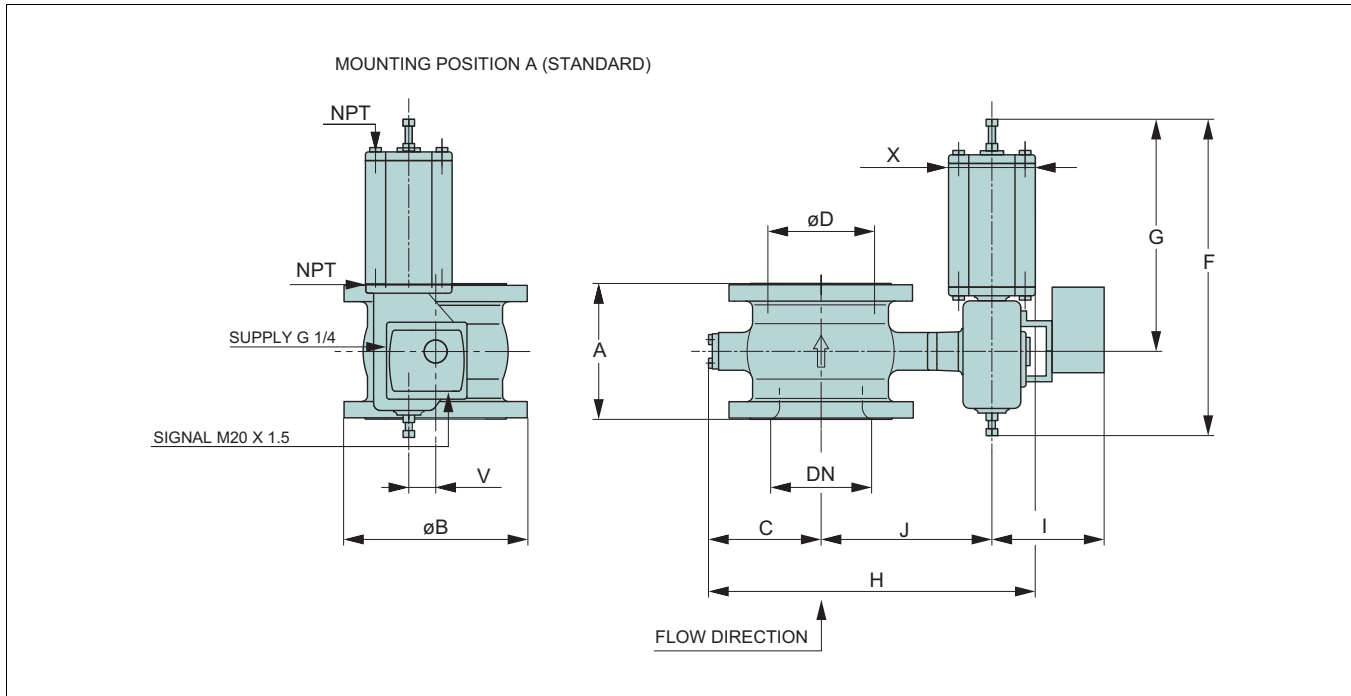
Series RE



DN/inch	Dimensions, mm										Shaft dimensions, mm					
	A1	A	C	øD	K	S/S2	T	U	L	H	RE_A (Key)					
											E	R	øO	M	P	N
25/1"	51	102	56	33	182	70	-	M10	15.5	80	207	105	15	4.76	17	25
40/1 1/2"	57	114	65	49	188.5	70	-	M10	15.5	80	213.5	105	15	4.76	17	25
50/2"	62	124	91	60	199.5	70	-	M10	15.5	80	224.5	105	15	4.76	17	25
65/2 1/2"	72.5	145	97	75	205	70	-	M10	15.5	80	231	105	15	4.76	17	25
80/3"	82.5	165	108	89	232	90	-	M12	16	90	267	125	20	4.76	22.2	35
100/4"	97	194	120	113	241	90	-	M12	16	90	276	125	20	4.76	22.2	35
150/6"	114.5	229	174	164	290	110	32	M12	22	90	335	135	25	6.35	27.8	46
200/8"	111.5	243	201	205	345	130	32	M12	22	110	395	160	30	6.35	32.9	51
250/10"	138.5	297	251	259	387	130	32	M12	26	110	445	168	35	9.53	39.1	58
300/12"	154	338	269	300	445	160	40	M16	26	120	485	188	40	9.53	44.2	68
350/14"	175	400	311	350	486	160	40	M16	29	120	513	200	45	12.70	50.4	80
400/16"	160	400	353	400	553	160	55	M20	29	140	584	230	50	12.70	55.5	90
500/20"	233	508	420	500	618	230	90	M24	40	180	727	292	70	19.05	78.2	119
600/24"	355	610	490	600	704	330/304.7	120	M30	40	220	838	354	75	19.05	81.9	134
700/28"	295	710	539	700	768	330/304.7	120	M30	55	220	914	366	85	22.23	95.3	146
800/32"	380	840	635	800	871.5	330/304.7	120	M30	55	220	1052	402	105	25.4	114.5	180

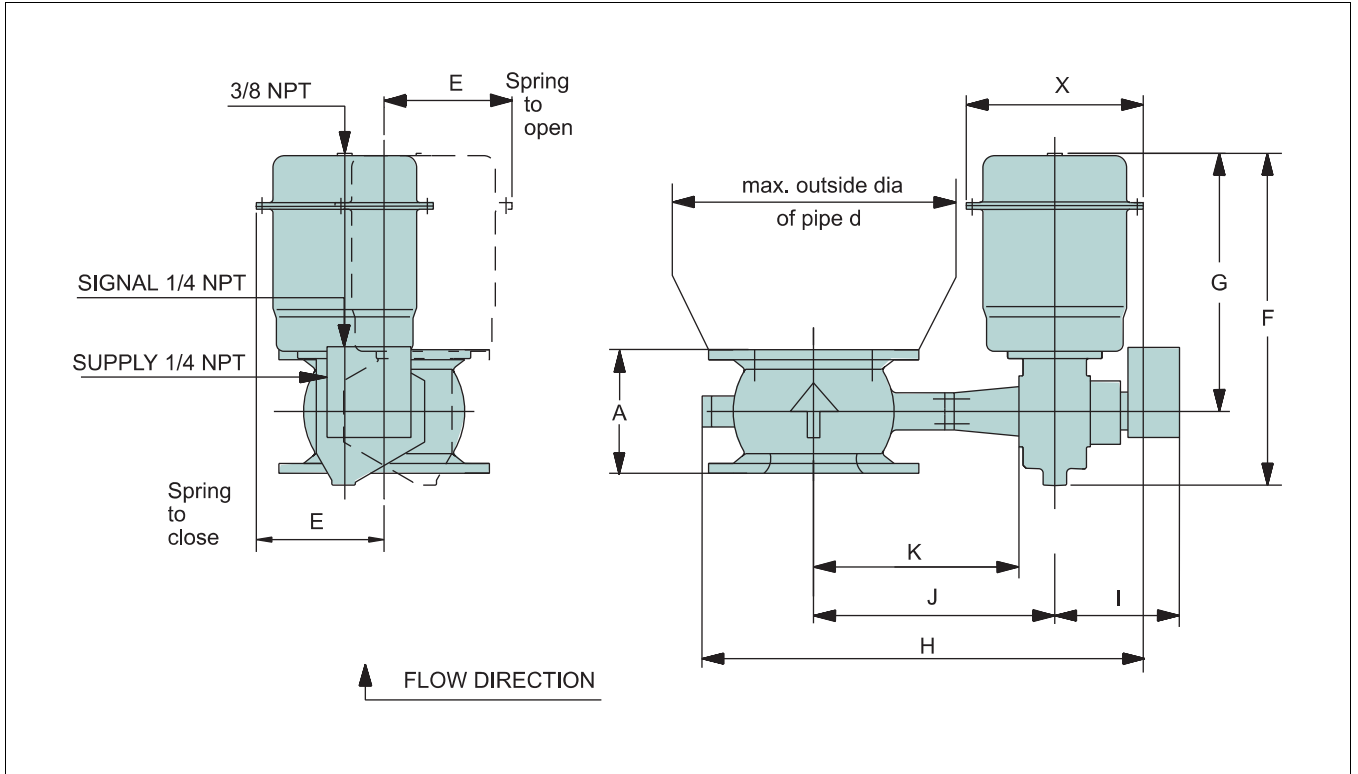
DN/inch	Flange dimensions (B) and weights											
	ASME 150		ASME 300		PN 10		PN 16		PN 25		PN 40	
	øB	Kg	øB	Kg	øB	Kg	øB	Kg	øB	Kg	øB	Kg
25/1"	108	3.6	124	4.9	115	4.6	115	4.6	115	4.6	115	4.6
40/1 1/2"	127	4.6	155	7.5	150	6.2	150	6.2	150	6.2	150	6.2
50/2"	152	7.4	165	9.5	165	8.8	165	8.8	165	8.8	165	8.8
65/2 1/2"	180	13	190	13	185	13	185	13	185	13	185	13
80/3"	191	14	210	19	200	16	200	16	200	16	200	16
100/4"	229	21	254	29	220	18	220	18	235	21	235	21
150/6"	279	39	318	54	285	37	285	37	300	42	300	42
200/8"	343	62	381	83	340	56	340	60	360	64	375	71
250/10"	406	91	450	139	405	85	405	84	425	101	450	125
300/12"	483	142	520	199	460	124	460	123	485	148	520	182
350/14"	534	203	584	284	505	178	520	183	555	223	580	266
400/16"	597	264	648	355	565	234	580	239	620	290	660	346
500/20"	699	550	775	600	670	415	715	435	730	530	755	700
600/24"	815	967	915	1165	780	900	840	973	845	1033	890	1039
700/28"	925	1249	1035	1512	897	1088	910	1129	960	1209	-	-
800/32"	1060	1850	1150	-	1105	1550	1025	1570	1085	1790	-	-

RE - B1J, B1JA



Type	Dimensions, mm												REJ_PN10			REK_PN16			REL_PN25			REM_PN40			REC_ASME 150			RED_ASME 300			
	NPS	DN	A	C	øD	F	G	X	V	J	H	lmax	NPT	øB	b1	kg	øB	b1	kg	øB	b1	kg	øB	b1	kg	øB	b1	kg			
RE_01-B1J6/B1JA6	1	25	102	56	33/38*	485	368	110	36	239	352	305	3/8	115	18	21	115	18	21	115	18	21	115	18	21	108	18	21	124	18	21
RE_1H-B1J6/B1JA6	1.5	40	114	65	49	485	368	110	36	246	368	305	3/8	150	18	23	150	18	23	150	18	23	150	18	23	127	18	23	155	18	24
RE_02-B1J6/B1JA6	2	50	124	91	60	485	368	110	36	257	404	305	3/8	165	20	25	165	20	25	165	20	25	165	20	25	152	20	25	165	20	26
RE_2H-B1J6/B1JA6	2.5	65	145	97	75	485	368	110	36	264	418	305	3/8	185	22	26	185	22	26	185	22	26	185	22	26	180	22	26	190	-	-
RE_03-B1J6/B1JA6	3	80	165	108	89	485	368	110	36	289	454	305	3/8	200	20	32	200	20	32	200	24	32	200	24	32	191	24	30	210	24	35
RE_04-B1J6/B1JA6	4	100	194	120	113	485	368	110	36	298	475	305	3/8	220	20	34	220	20	34	235	24	37	235	24	37	229	24	38	254	24	43
RE_06-B1J6/B1JA6	6	150	229	174	164	485	368	110	36	347	578	305	3/8	285	22	53	285	22	53	300	28	58	300	28	58	279	28	55	318	28	61
RE_01-B1J8/B1JA8	1	25	102	56	33/38*	560	420	135	43	240	364	305	3/8	115	18	25	115	18	25	115	18	25	115	18	25	115	18	25	108	18	25
RE_1H-B1J8/B1JA8	1.5	40	114	65	49	560	420	135	43	247	380	305	3/8	150	18	27	150	18	27	150	18	27	150	18	27	150	18	27	155	18	28
RE_02-B1J8/B1JA8	2	50	124	91	60	560	420	135	43	258	416	305	3/8	165	20	29	165	20	29	165	20	29	165	20	29	152	20	29	165	20	30
RE_2H-B1J8/B1JA8	2.5	65	145	97	75	560	420	135	43	265	430	305	3/8	185	22	30	185	22	30	185	22	30	185	22	30	185	22	30	-	-	-
RE_03-B1J8/B1JA8	3	80	165	108	89	560	420	135	43	290	466	305	3/8	200	20	36	200	20	36	200	24	36	200	24	36	191	24	34	210	24	39
RE_04-B1J8/B1JA8	4	100	194	120	113	560	420	135	43	299	487	305	3/8	220	20	38	220	20	38	235	24	41	235	24	41	229	24	42	254	24	47
RE_06-B1J8/B1JA8	6	150	229	174	164	560	420	135	43	348	590	305	3/8	285	22	57	285	22	57	300	28	62	300	28	62	279	28	59	318	28	65
RE_06-B1J10/B1JA10						650	490	175	51	355	617	225	3/8			70			70			75			75			72		77	
RE_08-B1J6/B1JA6	8	200	243	201	205	485	368	110	36	403	661	305	3/8	340	24	72	340	24	76	360	30	80	375	34	87	343	30	78	381	34	99
RE_08-B1J8/B1JA8	8	200	243	201	205	560	420	135	43	404	673	305	3/8	340	24	76	340	24	80	360	30	84	375	34	91	343	30	82	381	34	103
RE_08-B1J10/B1JA10						650	490	175	51	410	700	310	3/8			90			93			97			104			95		116	
RE_08-B1J12/B1JA12						800	620	215	65	426	736	235	1/2			118			120			124			132			123		144	
RE_10-B1J10/B1JA10	10	250	297	251	259	650	490	175	51	452	790	310	3/8	405	26	119	405	26	119	425	32	135	450	38	159	406	32	124	450	38	172
RE_10-B1J12/B1JA12						800	620	215	65	468	827	325	1/2			147			147			163			187			145		200	
RE_10-B1J16/B1JA16						990	760	265	78	483	867	340	1/2			200			200			216			240			218		253	
RE_12-B1J12/B1JA12	12	300	338	269	300	800	620	215	65	498	875	325	1/2	460	26	185	460	28	185	485	34	209	520	42	243	483	34	203	520	42	260
RE_12-B1J16/B1JA16						990	760	265	78	513	916	340	1/2			228			228			252			217			246		303	
RE_12-B1J20/B1JA20						1200	935	395	97	534	1000	270	3/4			303			303			327			361			321		378	
RE_14-B1J16/B1JA16	14	350	400	311	350	990	760	265	78	529	973	340	1/2	505	26	282	520	30	287	555	38	327	580	46	370	534	38	307	584	46	388
RE_14-B1J20/B1JA20						1200	935	395	97	548	1057	355	3/4			357			362			402			445			382		463	
RE_16-B1J20/B1JA20	16	400	400	353	400	1200	935	395	97	609	1161	355	3/4	565	26	414	580	32	419	620	40	470	660	50	526	597	40	444	648	50	535
RE_16-B1J25/B1JA25						1530	1200	505	121	632	1238	390	3/4			590			595			646			702			620		711	
RE_20-B1J25/B1JA25	20	500	508	430	500	1530	1200	505	121	723	1406	390	1/2	670	47	765	715	47	785	730	47	880	755	57	1050	699	47	900	775	62	950
RE_24-B1J32/B1JA32	24	600	610	497	600	1885	1435	540	153	879	1577	427	1	780	28	1574	840	40	1645	845	46	1705	890	60	1711	815	46.1	1640	915	68.3	1838
RE_28-B1J32/B1JA32	28	700	710	547	700	1885	1435	540	153	943	1691	427	1	895	30	1760	910	42	1801	960	50	1882	-	-	-	925	69.9	1921	1035	88.9	2185

QPX-RE



DN	Actuator QPX	Dimensions, mm										Total weight, kg	
		A	E	F	G	H	I	J	K	X	Pipe d	Valve+actuator +positioner	
												ASME 150	ASME 300
25	1	102	142	382	330	388	160	225	182	213	230	19	20,5
40	1	114	142	382	330	404	160	232	189	213	245	20	23
50	1	124	142	382	330	441	160	243	200	213	265	22	25
80	2	165	142	382	330	506	172	284	232	213	330	38	43
100	2	194	156	480	389	527	172	293	241	228	350	45	53
150	2	229	156	480	389	630	191	342	290	228	450	63	78
	3	229	190	565	446	657	214	346	290	274	410	78	93
200	3	243	190	565	446	739	191	401	345	274	520	101	122
	4	243	228	635	495	768	214	407	345	320	485	121	142
250	4	297	228	635	495	860	214	449	387	320	570	150	198
	5	297	276	768	608	906	243	464	387	382	540	205	253
300	5	338	276	768	608	982	214	522	445	382	650	256	313
350	5	400	276	768	608	1065	243	563	486	382	735	317	398
400	5	400	276	768	608	1174	243	630	553	382	870	378	470

HOW TO ORDER

Example: The following example is for an RE flanged valve, with an ASME Class 300 body (D), standard construction (A), 3" size with WCB carbon steel body (D), duplex stainless steel V-port segment with HCr chromium coating (J), duplex stainless steel shaft and pins, PTFE bearings on SS316 net (J), metal seats (S), live loaded PTFE V-ring packing (T), flange facing roughness Ra 3.2 - 6.3, smooth finish (-).

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	
Q-	RE	D	A	03	D	J	J	S	T	/	-

1. Sign	Trim codes
---	standard V-port (no sign)
Q-	Low noise and anti-cavitation trim (for DN 50 / 2" and bigger)
C005-	Maximum Cv = 0.5 (for DN 25 / 1" only)
C015-	Maximum Cv = 1.5 (for DN 25 / 1" only)
C05-	Maximum Cv = 5.0 (for DN 25 / 1" only)
C15-	Maximum Cv = 15.0 (for DN 25 / 1" only)

2. Sign	Product series
RE	Flanged one piece body, V-port segment, face-to-face acc. to ISA 75.08.02 and IEC 60534-3-2.

3. Sign	Pressure rating and flange drilling
C	ASME 150 (1" - 32")
D	ASME 300 (1" - 32")
J	PN 10 (DN 200 - DN 800)
K	PN 16 (DN 100 - DN 800)
L	PN 25 (DN 200 - DN 800)
M	PN 40 (DN 25 - DN 600)
R	JIS 10K flanges, based on body casting of ASME 300 (1" - 28")
S	JIS 16K flanges, based on body casting of ASME 300 (1" - 28")
T	JIS 20K flanges, based on body casting of ASME 300 (1" - 28")
Y	Special, to be specified

4. Sign	Construction
A	Standard, drive shaft with ANSI keyway to actuator.
Z	Oxygen construction - BAM listed non-metallic materials (only for Gaseous Oxygen Service) - Temperature: -50...+200 °C - Max pressure 20 bar or as per body rating, whichever is lower - Applicable body materials (6th sign): A, C - Applicable shaft/bearing (8th sign): J, N, S, C - Applicable seats (9th sign): S, S2 - Applicable packing (10th sign): G - Cleaning acc. to Metso internal procedure Recommended type code: RE_Z_AJJSJG

5. Sign	Size
	Inch 1", 1 1/2", 2", 2 1/2", 3", 4", 6", 8", 10", 12", 14", 16", 20", 24", 28", 32" DN 25, 40, 50, 65, 80, 100, 150, 200, 250, 300, 350, 400, 500, 600, 700, 800

6. Sign	Body & screw materials	
D	ASTM A216 gr. WCB / 1-0619	(blind flange & gland bolting SS A4-80/B8M)
A	ASTM A351 gr. CF8M / 1.4408	(blind flange & gland bolting SS A4-80/B8M)
T	Titanium	(blind flange & gland bolting of Titanium)

Note: Bodies have double material marking.

7. Sign	Segment materials
J	Type AISI 329+HCr
C	CG8M + HCr
S	Type AISI 329
K	CG8M + CrC
T	Titanium + ceramic coating
V	Titanium without coating

8. Sign	Shaft, pin & bearing materials
J	Type AISI 329 & PTFE on SS316 net
S	17-4 PH / Cobalt based alloy (NPS 2" - 10" / DN 50 - 250) (max +425 °C)
T	Titanium / PVDF

9. Sign	SEAT
A	316 SS + cobalt based hard facing High temp. metal seat
S	S 316 SS + Cobalt based hard facing, back seal PTFE lip seal.
S2	SS 316 + CrC hardfacing (with K segment)
T	X-treme, metal body, back seal PTFE lip seal, sizes 1"-6" PTFE+C25 %, metal body, back seal PTFE lip seal, size 8"- 32"
E	Cobalt based alloy, erosion-resistant version non-tight.
1S	1S 316 SS + Cobalt based hard facing, 2-way tight metal seat
A1	SS 316 + CrC hardfacing (with K segment)
U	Titanium metal seat
T5	Titanium soft seat

10. Sign	Stem packing & blind flange seal
T	PTFE V-rings, live loaded
G	Graphite rings, live loaded (fire-safe)

11. Sign	MODEL CODE
-	Version 0
A	Version A is used only with NPS02, NPS03-10 / DN50, DN80-DN250

12. Sign	Flange facing
/-	ASME B16.5 (Ra 3.2 - 6.3 / RMS 125-250) Cover EN1092-1 Type B1

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