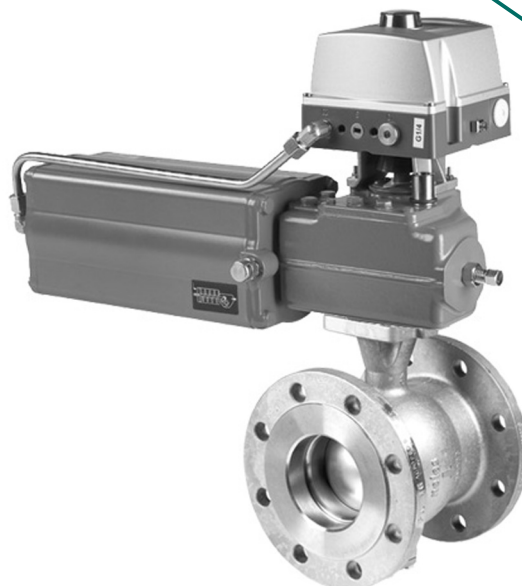


NELES® RE2-SERIES V-PORT SEGMENT VALVE

Metso's Neles RE2-Series control 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 RE2-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 segmented ball, 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 RE2-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.

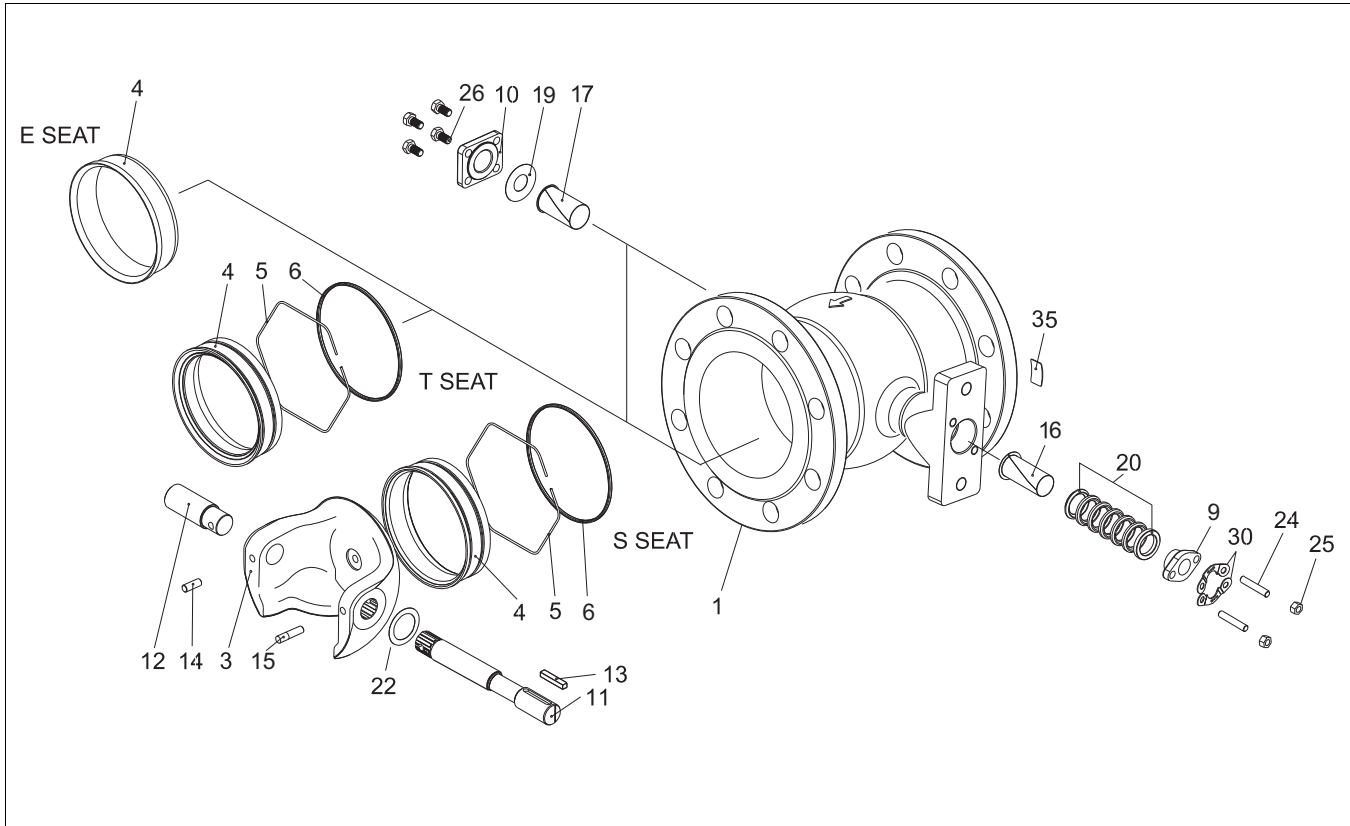
Economical

- 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 flow impingement. Together with the 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 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

Part	Name	Body material
1	Body	ASTM A351 gr. CF8
3	Segment	SIS 2324 + chromium / SIS 2324 / AISI 329
4	Seat	Cobalt based alloy / PTFE 1)
5	Lock spring	INCONEL 625
6	Back seal	SS Eligiloy spring + PTFE
9	Gland follower	ASTM A351 gr. CF8M
10	Blind flange	ASTM A351 gr. CF8M
11	Drive shaft	SIS 2324/AISI 329 duplex SS
12	Shaft	SIS 2324/AISI 329 duplex SS
13	Key	SIS 2324/AISI 329 duplex SS
14	Cylindrical pin	SIS 2324/AISI 329 duplex SS
15	Cylindrical pin	SIS 2324/AISI 329 duplex SS
16	Bearing	PTFE + SS net
17	Bearing	PTFE + SS net
19	Sealing plate	Graphite
20	Packing	PTFE/Graphite 1)
22	Filling ring (only low Cv 1"/DN 25)	Stainless Steel AISI 316
24	Stud	ISO 3506 A4-80/B8M
25	Hexagon nut	ISO 3506 A4-80/B8M
26	Hexagon bolt	ISO 3506 A4-80/B8M
30	Retainer plate	AISI 316
35	Identification plate	AISI 304

1) Alternative materials

TECHNICAL SPECIFICATIONS

Type

Integrally flanged V-ported ball, quarter-turn valve
Pressure ratings JIS 10K, see table below.

Sizes

DN 25, 40, 50, 80, 100

End-connections

Flanged

Face-to-face dimensions

JIS B 2002 Attached table 2-4 series 6

Temperature range

-40 °C ... +260 °C / -40...+500 °F.

Inherent flow characteristic

Equal percentage.

Fire safety

Fire safe design to meet API 607, 3rd edition.

Shut-off classification

IEC 60534-4/ANSI/FCI 70.2 Class IV.

10 x ISO 5208 Rate D, soft seat Rate D

See also table on this page.

Flow capacity

See table on this page.

Valve trim rotation

Clockwise to close.

OPTIONS

Q-Trim:

DN 50, 80, 100

Reduced Cv trim:

For DN 25 valve only.

Valve body and seat test

All valves manufactured by Metso undergo pressure testing. The test pressure of RE2-series valve body is 1.5 x the pressure rating and the standard test pressure of seat is 1.1 x the maximum permissible shut-off pressure or lower depending on size and material. The test medium is water containing a corrosion inhibitor. Seat design options shown on the next page.

Maximum allowable leakage		
Size DN	Metal seat	Soft seat
25	1.50 ml/min	0.15 ml/min
40	2.40 ml/min	0.24 ml/min
50	3.00 ml/min	0.30 ml/min
80	4.80 ml/min	0.48 ml/min
100	6.00 ml/min	0.60 ml/min

Maximum C_v and resistance coefficients for RE2-series valves

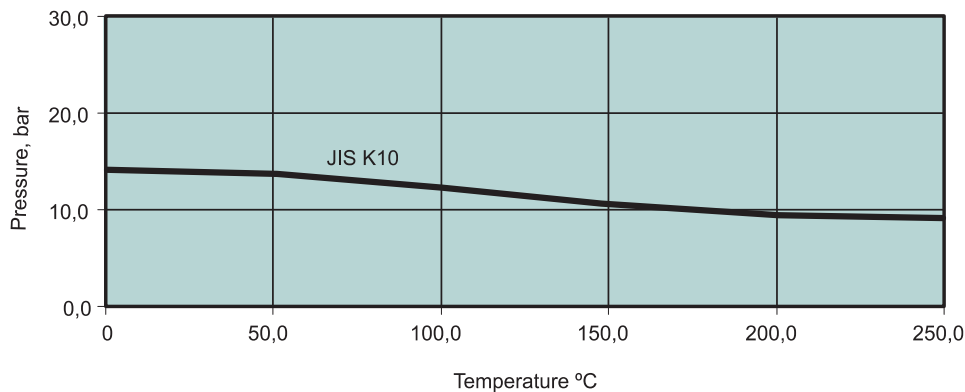
Valve size DN	Metal-seated valve			Soft-seated valve	
	Standard valve		Q-RE2-valve	Standard valve	
	C_v 100 % ¹⁾	ξ 100 % ¹⁾	C_v 100 % ²⁾	C_v 100 % ¹⁾	ξ 100 % ¹⁾
25	45	0.41	–	21	1.83
40	110	0.45	–	61	1.47
50	180	0.41	47	110	1.10
80	420	0.50	160	340	0.76
100	620	0.56	250	520	0.79

1) 100 % corresponds to 95° turning angle

2) For Q-RE2-valves, 100 % corresponds to 90° turning angle

BODY PRESSURE RATINGS

A 351 gr. CF8



Note:

- 1) RE2-valves are not recommended for applications with high on-off cycling rate. X- or L-series valves should be used in these cases.
- 2) Nelprof analysis determines actual throttling Δp capability, taking into account trim velocity, exit velocity, noise and cavitation.

SEAT DESIGNS

S Metal seat

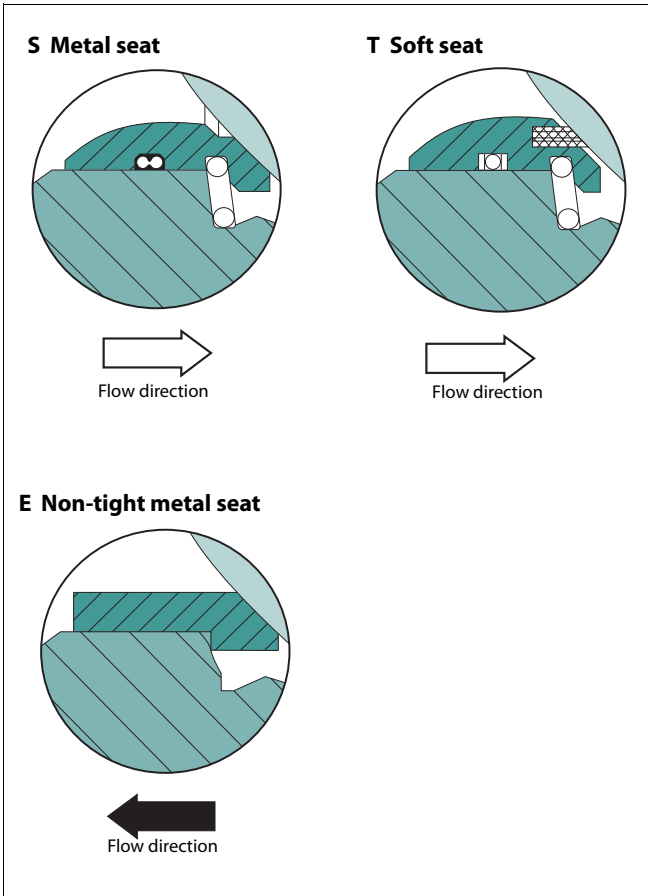
Seat:	316 SS + Cobalt based hard facing
Spring:	Inconel 625
Seat seal:	Filled PTFE lip seal / SS Elgiloy spring
Temp. Range:	-40 °C... +260 °C / - 40 °F ...+500 °F
Service:	General

T Soft seat

Seat:	316 SS with PTFE + X-treme®
Spring:	Inconel 625
Seat seal:	Filled PTFE lip seal
Back seal:	PTFE
Temp. Range:	-40 °C... +260 °C / - 40 °F ...+500 °F
Service:	General service with tight shut-off.

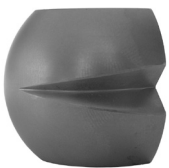
E Non-tight metal seat

Seat:	Cobalt based alloy
Temp. Range:	-40 °C... +260 °C / - 40 °F ...+500 °F
Service:	Extremely erosive applications, non-tight.
NOTE !	Flow direction is reversed.



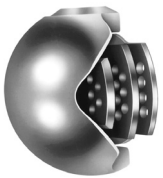
CONSTRUCTION OPTIONS

Low C_v trims



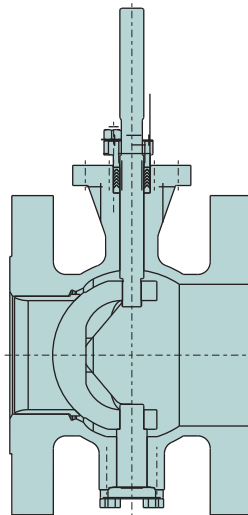
Reduced C_v trims are available on the DN25 valve to control very low flows with high accuracy. The narrow orifice is a selfflushing design because the trim orifice is continually increasing.

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.

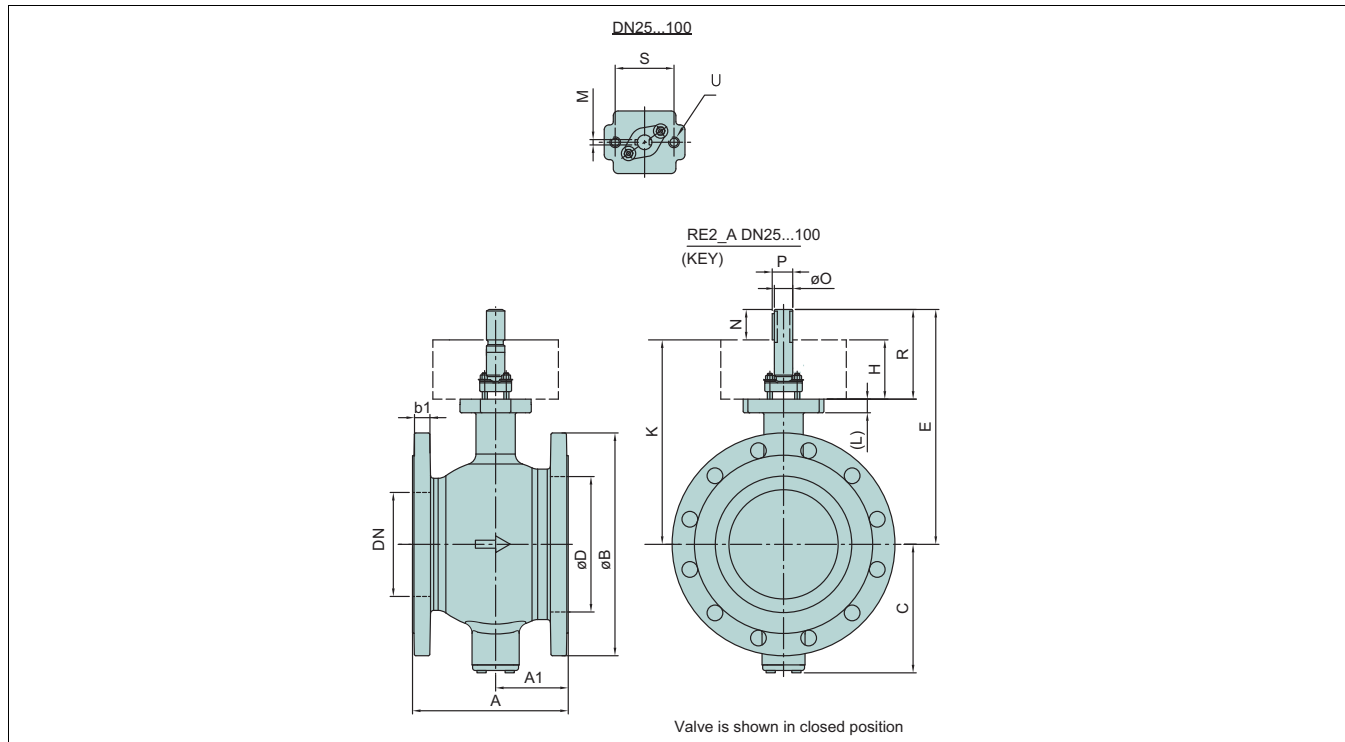
Erosion resistant version



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.

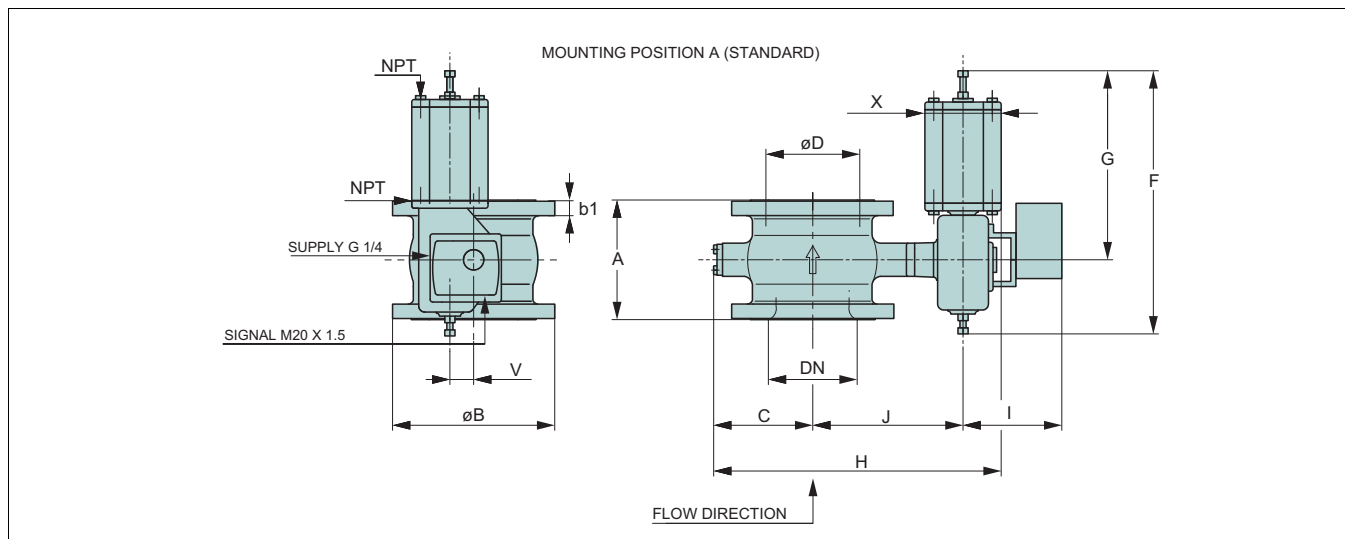
DIMENSIONS

Series RE2



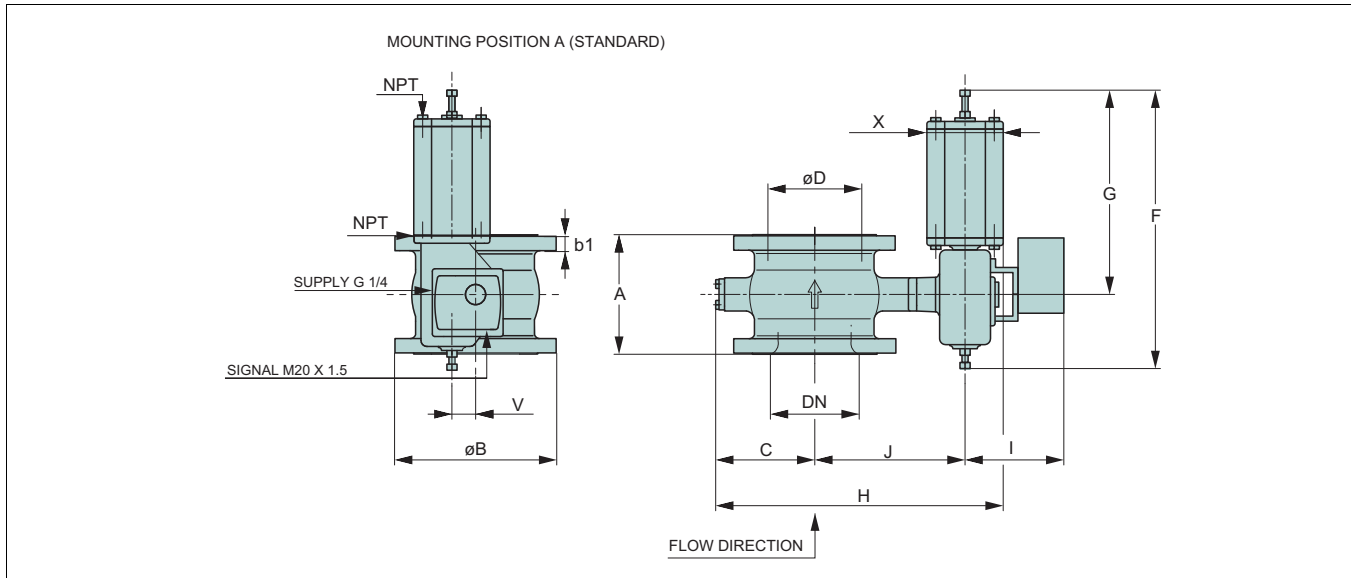
Size DN	Dimensions, mm																	Weight kg
	A	A1	øB	b1	C	øD	K	S/S2	U	L	H	E	R	øO	M	P	N	
25	127	63.5	125	18	56	33	182	70	M10	15.5	80	207	105	15	4.76	17	25	4
40	165	82.5	140	18	65	49	188.5	70	M10	15.5	80	213.5	105	15	4.76	17	25	5.4
50	178	89	155	18	91	60	199.5	70	M10	15.5	80	224.5	105	15	4.76	17	25	7.3
80	203	101.5	185	20	108	89	232	90	M12	16	90	267	125	20	4.76	22.2	35	11.7
100	229	114.5	210	20	120	113	241	90	M12	16	90	276	125	20	4.76	22.2	35	15.2

RE2 - B1C



Type	DN	Dimensions, mm													Weight kg
		A	øB	b1	C	øD	F	G	X	V	J	H	Imax	NPT	
RE2_25-B1C6	25	127	125	18	56	33	400	260	90	36	240	341	310	1/4	12.3
RE2_40-B1C6	40	165	140	18	65	49	400	260	90	36	247	357	310	1/4	14.3
RE2_50-B1C6	50	178	155	18	91	60	400	260	90	36	258	394	310	1/4	16
RE2_80-B1C6	80	203	185	20	108	89	400	260	90	36	290	443	310	1/4	19
RE2_100-B1C6	100	229	210	20	120	113	400	260	90	36	299	464	310	1/4	23.5

RE2 - B1J, B1JA



Type	DN	Dimensions, mm													Weight kg
		A	øB	b1	C	øD	F	G	X	V	J	H	lmax	NPT	
RE2_25-B1J8/B1JA8	25	127	125	18	56	33	560	420	135	43	240	364	305	3/8	26
RE2_40-B1J8/B1JA8	40	165	140	18	65	49	560	420	135	43	247	380	305	3/8	28
RE2_50-B1J8/B1JA8	50	178	155	18	91	60	560	420	135	43	258	416	305	3/8	30
RE2_80-B1J8/B1JA8	80	203	185	20	108	89	560	420	135	43	290	466	305	3/8	32
RE2_100-B1J8/B1JA8	100	229	210	20	120	113	560	420	135	43	299	487	305	3/8	37

HOW TO ORDER

Example: The following example is for an RE2 flanged valve, with an JIS 10K (R), standard construction (A), DN80 size with CF8 stainless steel body (A1) duplex stainless steel segment with HCr chromium coating (J), duplex stainless steel shaft and pins, PTFE bearings on SS316 net (J), metal seats (S), V-ring packing (V) flange facing roughness Ra 3.2 - 6.3, smooth finish (/ -).

1.	2.	3.	4.	5.	6.	7.	8.	9.	10.		11.
-	RE2	R	A	80	A1	J	J	S	V	/	-

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

2. Sign	Product series
RE2	Flanged one piece body, V-port segmented ball, face-to-face acc. to JIS B 2002 Attached table 2-4 series 6.

3. Sign	Pressure rating and flange drilling
R	JIS 10K flanges.

4. Sign	Construction
A	Standard, drive shaft with ANSI keyway to actuator.

5. Sign	Size
	DN 25, 40, 50, 80, 100

6. Sign	Body & screw materials
A1	ASTM A351 gr. CF8 / 1.4408

Note: Bodies have double material marking.

7. Sign	Segment materials
J	Type AISI 329+HCr
S	Type AISI 329

8. Sign	Shaft, pin & bearing materials
J	Type AISI 329 & PTFE on SS316 net

9. Sign	SEAT
S	316 SS + Cobalt based hard facing, back seal PTFE lip seal.
T	316 SS with PTFE + X-treme®, back seal PTFE lip seal
E	Cobalt based alloy, erosion-resistant version non-tight.

10. Sign	Stem packing & blind flange seal
V	PTFE V-rings
F	Graphite rings (fire-safe)

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

Subject to change without prior notice.

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