



The technical specifications might not be congruent.

- NVCB 7000 series
- NENUTEC ball valves with characterised discs are especially designed and produced for applications in the HVAC systems.
- Our wide range of NENUTEC ball valves with characterised discs have been developed to regulate the flow of water and steam demanded by a controller.

### Product Features

#### Ball valve:

- Ball valve size DN 15(1/2") to DN 50(2")
- 2-way and 3-way (mixing/diverting)
- The demand of high-rise buildings with high-pressure pumping systems is assured.

#### Actuator:

- Torque 2 Nm / 5 Nm / 8 Nm / 10 Nm
- Power Supply AC/DC 24 V and AC 230 V
- Control 2 Point, 2 / 3 Point or Modulating DC 0...10V
- 1 adjustable auxiliary switch (SPDT)
- Customer version on request

*Nenutec actuators can be factory or field installed*

- > Refer to NABA.../NABM... data sheet
- > Refer to NAFA.../NAFM... data sheet
- > Refer to NAF data sheet

### Technical Specifications

Valve Body Pressure Rating	580 psi (PN40 or 4'000 kPa) Meets Requirements of ANSI B16.15, Class 250		
Fluid Temperature	-5°C to 120°C		
Operating Temperature	-20°C...+50°C		
Non-Operating Temperature	-30°C...+60°C		
Body Sizes	DN 15(1/2") to DN 50(2")		
Service	Chilled, hot water, up to 50% Glycol Solutions and 15% (103 kPa) Saturated steam		
Seat Leakage	0.01% of KVs		
Pipe Connection	BSP (European Standard) or NPT		
Thread Connection	Female Thread		
Flow Characteristic	Equal Percentage (Linear on bypass port of 3-way valve)		
Seat Leakage	0.01% of Cv (EN 60534-4: Class IV)		
Stroke	90°		
Body Materials	Brass Trim	Body Stem Seat Seal	Forged Brass Brass PFTE EPDM Double O-Ring

#### Model Selection Table 2-way Ball Valves

DN (mm)	DN (Inch)	Model **	Kvs	Actuator type ***	
15	1/2"	NVCB 72015-BA	2.5	NABM 1.2-02	NAFM 1.2-05
15	1/2"	NVCB 72015-BE	4.0	NABM 1.2-02	NAFM 1.2-05
15	1/2"	NVCB 72015-BB	6.3	NABM 1.2-02	NAFM 1.2-05
15	1/2"	NVCB 72015-BF *	10.0	NABA...02	NAFA...05
20	3/4"	NVCB 72020-BD	4.0	NABM 1.2-05	NAFM 1.2-05
20	3/4"	NVCB 72020-BE	6.3	NABM 1.2-05	NAFM 1.2-05
20	3/4"	NVCB 72020-BF *	10.0	NABA...05	NAFA...05
25	1"	NVCB 72025-BE	10.0	NABM 1.2-05	NAFM 1.2-05
25	1"	NVCB 72025-BF *	16.0	NABA...05	NAFA...05
32	1 1/4"	NVCB 72032-BE	16.0	NABM 1.2-05	NAFM 1.2-05
32	1 1/4"	NVCB 72032-BF *	25.0	NABA...05	NAFA...05
40	1 1/2"	NVCB 72040-BE	25.0	NABM 1.1-10	NAFM 1.2-08
40	1 1/2"	NVCB 72040-BF *	40.0	NABA...10	NAFA...08
50	2"	NVCB 72050-BE	40.0	NABM 1.1-10	NAFM 1.2-08
50	2"	NVCB 72050-BF	63.0	NABM 1.1-10	NAFM 1.2-08
50	2"	NVCB 72050-BD *	100.0	NABA...10	NAFA...08

Remarks:

- \* Full Port without characterised insert
- \*\* BSP Thread Standard (NPT on request)

Actuator type:

- \*\*\* NAB...02/05 LN LN = Low Neck Bracket for NVCB 7200 / 7300 series
- NAB...02/08 HN HN = High Neck Bracket for NVCB 7200 / 7300 series
- NAB...10 HN

#### Model Selection Table 3-way Ball Valves

DN (mm)	DN (Inch)	Model **	Kvs	Actuator type ***	
15	1/2"	NVCB 73015-BA	2.5	NABM 1.2-02	NAFM 1.2-05
15	1/2"	NVCB 73015-BE	4.0	NABM 1.2-02	NAFM 1.2-05
15	1/2"	NVCB 73015-BB	6.3	NABM 1.2-02	NAFM 1.2-05
15	1/2"	NVCB 73015-BF *	10.0	NABA...02	NAFA...05
20	3/4"	NVCB 73020-BD	4.0	NABM 1.2-05	NAFM 1.2-05
20	3/4"	NVCB 73020-BE	6.3	NABM 1.2-05	NAFM 1.2-05
20	3/4"	NVCB 73020-BF *	10.0	NABA...05	NAFA...05
25	1"	NVCB 73025-BE	10.0	NABM 1.2-05	NAFM 1.2-05
25	1"	NVCB 73025-BF *	16.0	NABA...05	NAFA...05
32	1 1/4"	NVCB 73032-BE	16.0	NABM 1.2-05	NAFM 1.2-05
32	1 1/4"	NVCB 73032-BF *	25.0	NABA...05	NAFA...05
40	1 1/2"	NVCB 73040-BE	25.0	NABM 1.1-10	NAFM 1.2-08
40	1 1/2"	NVCB 73040-BF *	40.0	NABA...10	NAFA...08
50	2"	NVCB 73050-BE	40.0	NABM 1.1-10	NAFM 1.2-08
50	2"	NVCB 73050-BF	63.0	NABM 1.1-10	NAFM 1.2-08
50	2"	NVCB 73050-BD *	100.0	NABA...10	NAFA...08

Remarks:

- \* Full Port without characterised insert
- \*\* BSP Thread Standard (NPT on request)
- \*\* Mixing and Diverting Application in one Valve

Actuator type:

- \*\*\* NAB...02/05 LN LN = Low Neck Bracket for NVCB 7200 / 7300 series
- NAB...02/08 HN HN = High Neck Bracket for NVCB 7200 / 7300 series
- NAB...10 HN

### Selection Formula

#### Legend

—  $\Delta p_{max}$  = Maximum permitted pressure difference for a long-life cycle referred to the full cycle of opening.

- · - · -  $\Delta p_{max}$  = For low-noise operation.

$\Delta p_{v100}$  = Pressure difference of ball valve when fully open

$V_{100}$  = Nominal flow rate with  $\Delta p_{v100}$

#### Formula $k_{vs}$ for water

$$k_{vs} = \frac{V_{100}}{\sqrt{\frac{\Delta p_{v100}}{100}}}$$

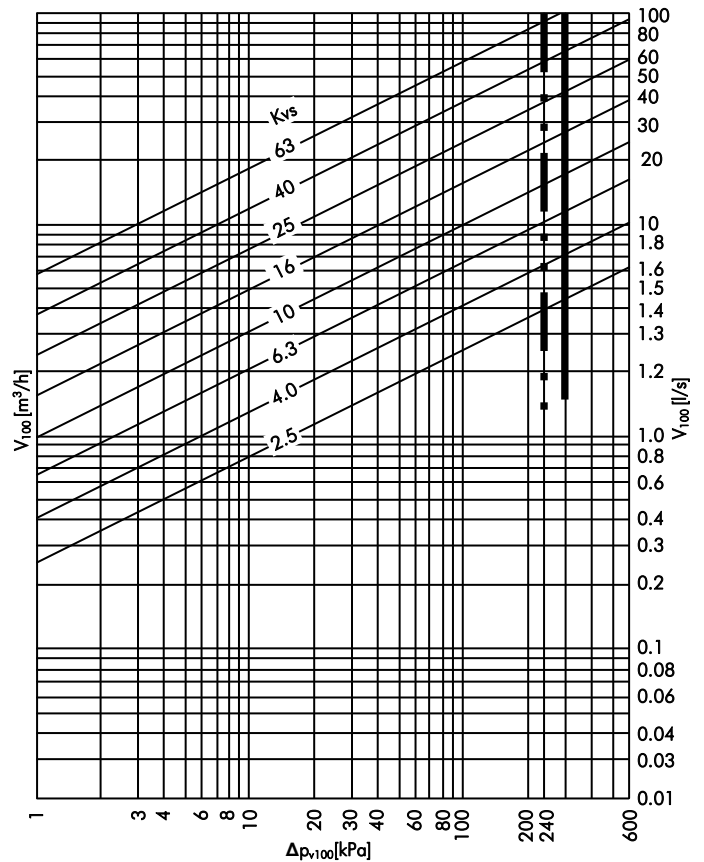
$k_{vs}$  [m<sup>3</sup>/h]

$V_{100}$  [m<sup>3</sup>/h]

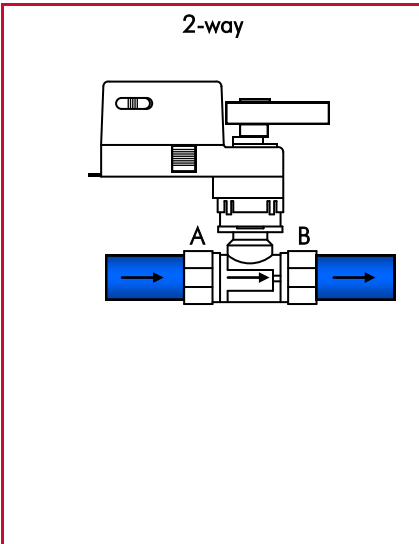
$\Delta V_{100}$  [kPa]

#### Definition of $\Delta p_s$

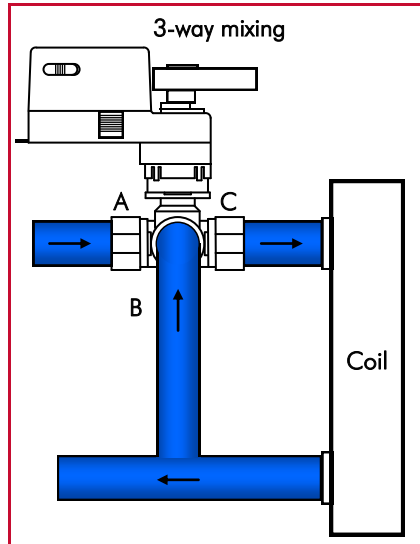
Closing pressure at which the actuator can still seal the valve tightly allowing for the appropriate leakage rate.



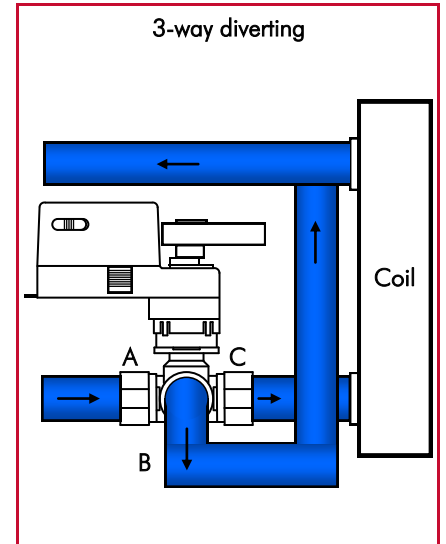
### Piping Diagrams



Remark:  
3-way Valve Assemblies are shipped as standard with ball ports labeled as A, B, C accordingly. All 3-way Ball Valves are shipped 0° counterclockwise. For applications requiring a different flow pattern, please consult your NENUTEC representative.



Mixing Applications:  
Fluid enters through two inlets (A and B) and exits through one outlet (C).



Diverting Applications:  
Fluid enters through one inlet (A) and exits through two outlets (B and C).

#### Application Overview

The NVCB 7000 series feature are available in 2-way and 3-way configurations with threaded BSP or NPT.

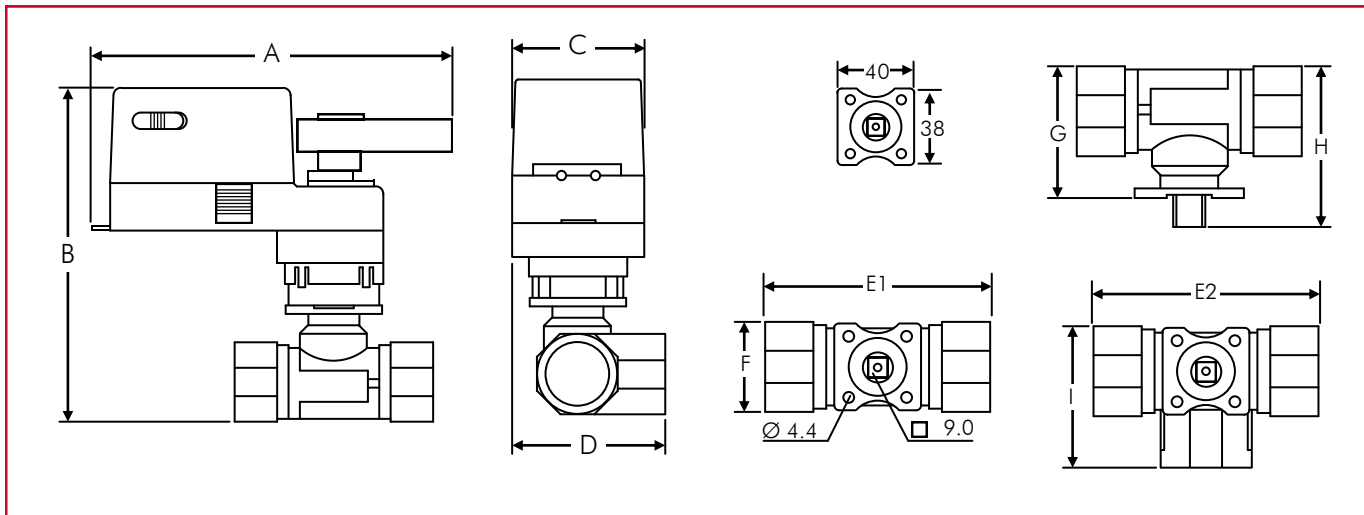
The Valve can be ordered with NENUTEC Ball Valve Actuator NAB... and NTC... / NPC... controller for a complete HVAC solution.

#### Maximum Close-off Pressure KPA (PSI) with Actuator

Model	Torque (Nm)	DN 15	DN 20	DN 25	DN 32	DN 40	DN 50
NAB...-02	2	1'400 (203)	-	-	-	-	-
NAB...-05	5	1'000 (145)	1'000 (145)	1'000 (145)	1'000 (145)	690 (100)	400 (58)
NAB...-10	10	1'400 (203)	1'400 (203)	1'400 (203)	1'400 (203)	1'000 (145)	1'000 (145)

#### Dimensions of Valve Body (mm)

Dimensions (~mm)	DN (mm)	A	B	C	D	E1	E2	F	G	H	I
2- and 3-way	15	144	142	65	68	66	60	22	48	57	46
	20	144	147	65	53	73	67	36	53	62	48
	25	144	153	65	79	95	89	43	59	68	68
	32	144	162	65	83	104	98	51	68	77	75
	40	144	167	65	87	112	106	60	73	82	84
	50	144	183	65	102	128	122	72	89	98	105



Please consider the local valid legislation.



AC / DC 24 V: Connect via safety isolating transformer.

AC 230 V: To isolate from the main power supply, the system must incorporate a device which disconnects the phase conductor (with at least a 3 mm contact gap).



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