

B2...VB Series, 2-Way, VBall Control Valve

Carbon Steel Body, Hardened Chrome Plated, Stainless Steel Ball and Stem



- Fast quarter turn open or closed operation
- Stainless steel ball and stem
- Positive shut-off
- Two-piece body construction

Application

- Water-side control of air handling apparatus in ventilation and air-conditioning system
- Water/Steam control in heating systems
- 300:1 rangeability

The dimensions and drilling of end flanges conform to the American cast iron flange standard, Class 150 (ANSI B16.1).

Technical Data

Media	chilled or hot water, glycol, 250# steam
Flow characteristic	equal percentage
Action	90% rotation valve open CW, valve closed CCW
Sizes	1", 1½", 2"
Type of end fittings	NPT

Materials:

Body	Carbon Steel
Ball	Stainless Steel with Hardened Chrome Plating
Seats	Teflon
Stem	Stainless Steel
Packing	Spring-loaded Teflon

Pressure rating	ANSI 300
Media temp. range	-22°F to 400°F (-30°C to 204°C)
Close-off pressure	150 psig @ 400°F
Maximum differential pressure (ΔP)	steam: 100psi water: 150psi

Cv	Valve Nominal Size		Type	Suitable Actuators		
	Inches	DN [mm]	2-way NPT	Spring	Non-Spring	
24	1"	25	B2100VB-024	NF Series	AM Series	SY Series
55	1½"	40	B2150VB-055			
77	2"	50	B2200VB-077	AF Series		



Models

NFB24-X1
 NFBUP(-S)-X1 w/built-in Aux. Switch
 NFBUP-X1

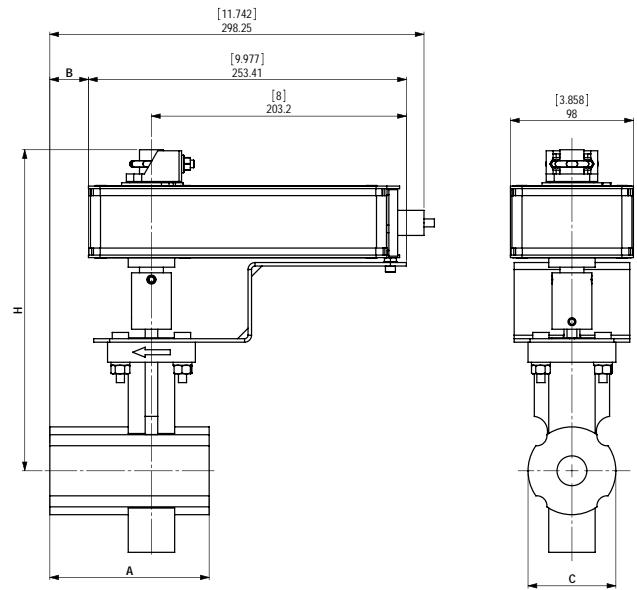
Technical Data

Control	on/off	
Power consumption		
NFB24-X1	running	6 W
	holding	2.5 W
NFBUP(-S)-X1	running	6 W
	holding	2.5 W
Transformer sizing		
NFB24-X1		8.5 VA
NFBUP(-S)-X1		9.5 VA
Electrical connection	½" conduit connector	
(-S model has 2 cables)	3 ft [1m], 18 GA appliance cables	
Electrical protection	120 V actuators double insulated	
Overload protection	electronic throughout 0° to 95° rotation	
Angle of rotation	95°	
Position indication	visual indicator	
Running time	control	<75 seconds
	spring	<20 seconds
Ambient temperature	-22° F to 122° F [-30° C to 50° C]	
Housing	NEMA 2 / IP54	
Agency listings	UL 873, CSA C22.2 No. 24 certified, CE	
Noise level	max. 45 dB(A)	

NFBUP-S-X1

Auxiliary switch 2 x SPDT, 3A (0.5A inductive) @ 250V

Dimensions with 2-Way Valve



Valve Nominal Size

Dimensions (Inches)

Valve Body	COP	Inches	DN [mm]	A	B	C	H
B2100VB-024	150	1"	25	5.00	1.21	2.75	10.07
B2150VB-055	150	1½"	40	7.00	2.35	3.42	10.47

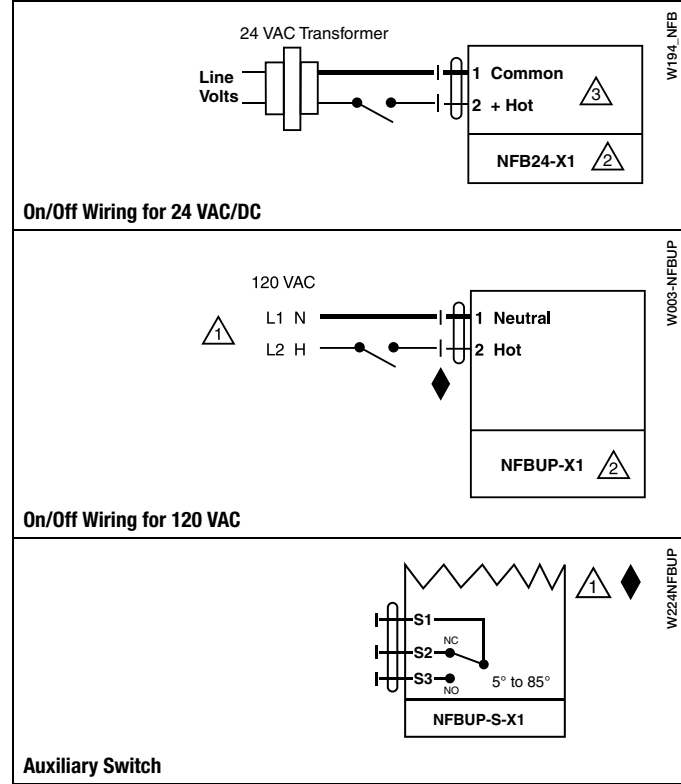
Wiring Diagrams

INSTALLATION NOTES

- 1 Provide overload protection and disconnect as required.
- 2 **CAUTION Equipment damage!**
Actuators may be connected in parallel.
Power consumption must be observed.
- 3 24V actuators can be powered by 24 VAC/DC.
- 4 For end position indication, interlock control, fan startup, etc.,
(-S) Models: 2 SPDT, 3A (0.5 inductive) @250V, one switch fixed at 10°,
one adjustable 10° to 90°.

APPLICATION NOTES

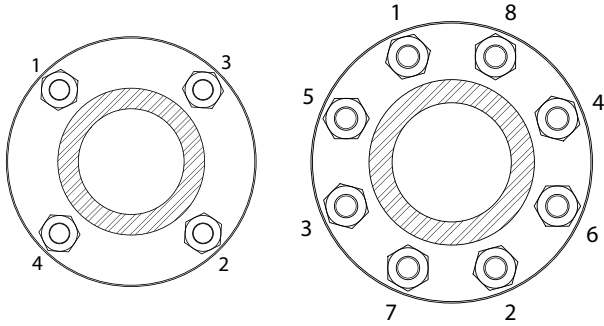
- ◆ Meets cULus or UL and CSA requirements without the need of an electrical ground connection.
- ⚠ **WARNING Live Electrical Components!**
During installation, testing, servicing and troubleshooting of this product, it may be necessary to work with live electrical components. Have a qualified licensed electrician or other individual who has been properly trained in handling live electrical components perform these tasks. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.



Valve Installation Procedure

3", 4" & 6" Valves - Flanged Installation

1. Valve must be in the closed position for installation.
2. **Figure 1 illustrates a flanged valve installation.**
3. Use hex bolts & nuts to secure valve to flange.
4. Ensure proper gaskets are used between the valve flange and pipe flange.
5. Tighten bolts & nuts in alternating opposite sides until completely tightened. Please see torque requirements below. Torque wrench is required.



3" Bolt Tightening Sequence

4" & 6" Bolt Tightening Sequence



WARNING: Exceeding the Maximum Torque Can Damage the Valve and Void the Warranty!

- 3" ANSI 150 Flange - 65 ft/lbs
- 4" ANSI 150 Flange - 70 ft/lbs
- 6" ANSI 150 Flange - 100 ft/lbs

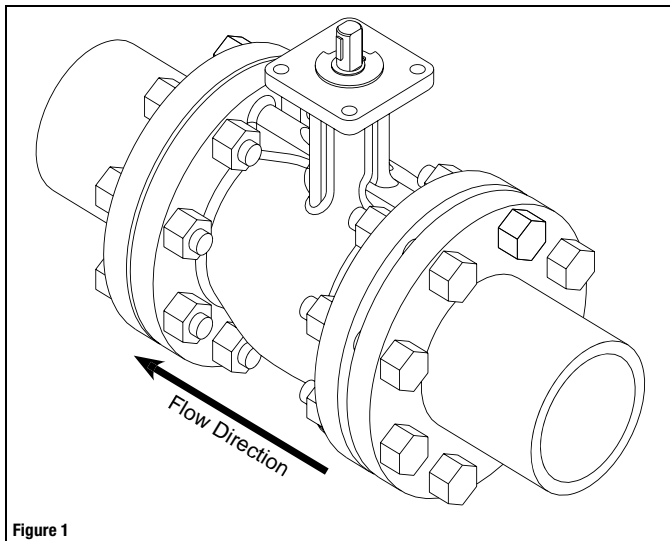


Figure 1

Seat Replacement Procedure

3", 4" & 6" Valves

1. Remove valve from pipe
2. Remove 2 cap retaining washers (1)
3. Using 2 wrenches/flat-head screwdrivers, pry cap assembly (2) out of valve
4. Rotate valve to fully open position
5. Using hands, pull seat (3) out of the valve
6. Replace seat and reverse procedure to reassemble
7. Reinstall valve per installation instructions

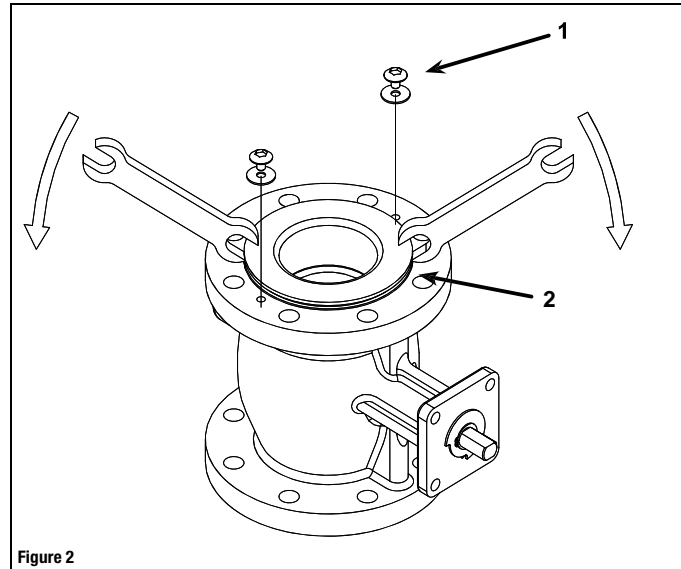


Figure 2

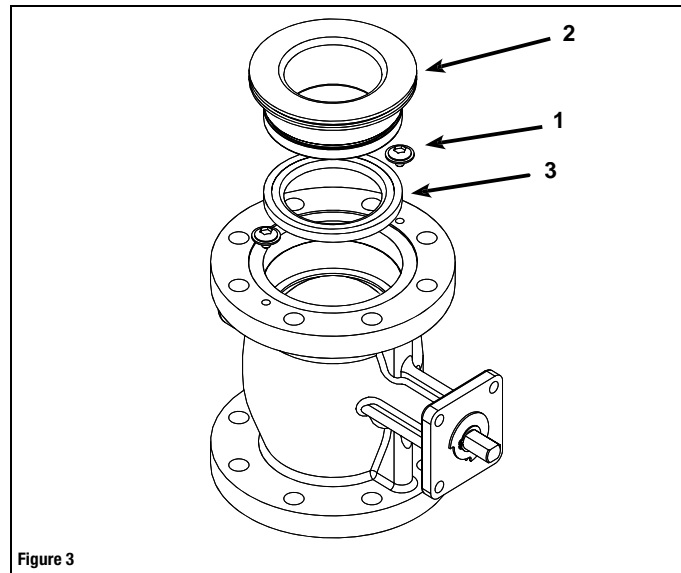


Figure 3