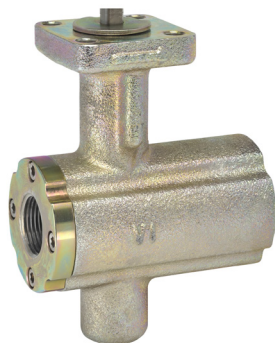


# B2100VB-024, 1", V Ball Control Valve

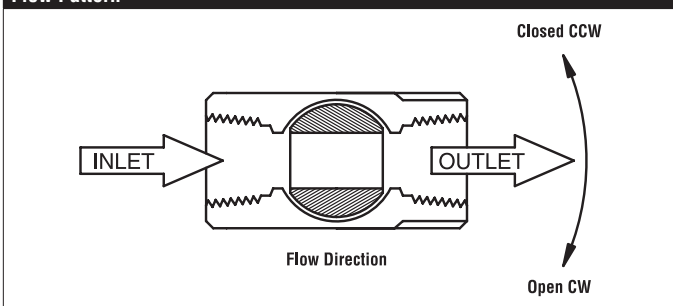
## Hardened Chrome Plated Carbon Steel Body, Stainless Steel Ball and Stem



### Technical Data

Service	chilled or hot water, up to 60% glycol, steam
Flow Characteristic	equal percentage
Controllable Flow Range	75°
Size [mm]	1" [25]
End Fitting	NPT female ends (1" to 2"); ISO flange (3" to 6")
Body	WCC Grade Carbon steel
Ball	stainless steel
Stem	stainless steel
Stem Packing	spring loaded Teflon® V-ring
Ball Seat	Teflon®
Packing	spring loaded Teflon® V-ring
Body Pressure Rating [psi]	ASME/ANSI Class 300
Max Inlet Pressure (Steam)	200 psi
Media Temperature Range (Water)	-22°F to 380°F [-30°C to 193°C]
Media Temperature Range (Steam)	-22°F to 380°F [-30°C to 193°C]
Maximum Differential Pressure (Steam)	100 psi
Max Differential Pressure (Water)	150 psi
Maximum Differential Pressure Steam (Rotary Actuator)	100 psi
Close-Off Pressure	150 psi
Close-Off Pressure (Steam)	200 psi
Rangeability	300:1
Cv	24
Weight	9 lb [4.1 kg]
Leakage	ANSI Class IV

### Flow Pattern



### Product Features

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 system.

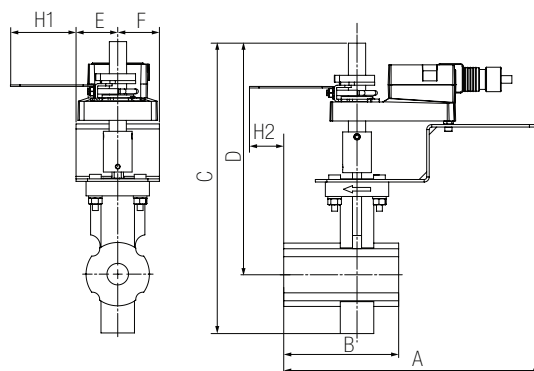
300:1 rangeability.

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

### Suitable Actuators

	Non-Spring	Spring
B2100VB-024	SY1, SY2, AMB(X)	NFB(X)

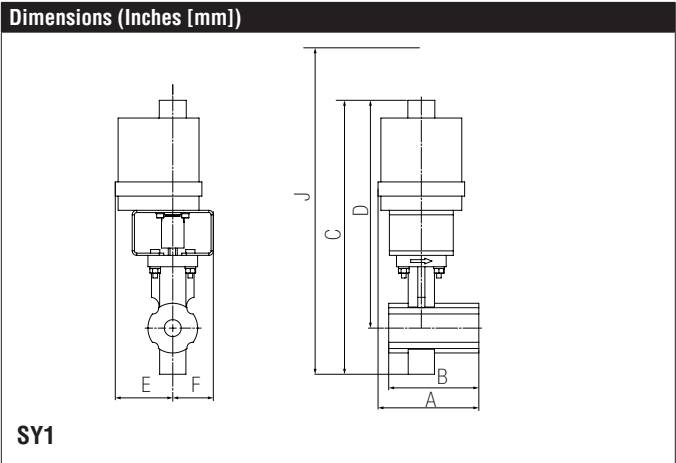
### Dimensions (Inches [mm])



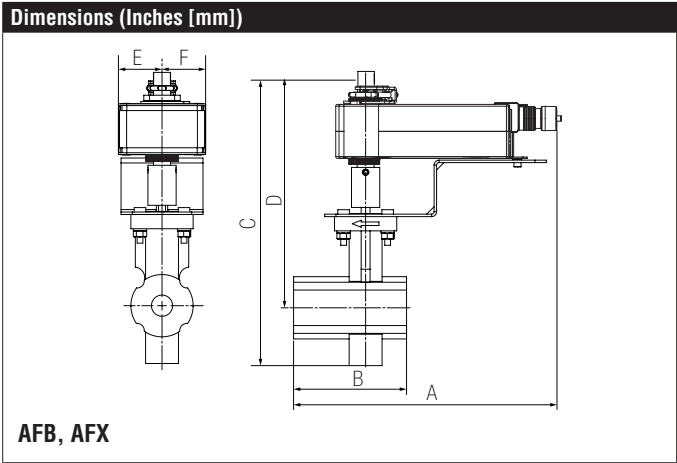
AMB, AMX

A	B	C	D	E	F	H1	H2
11.8" [300]	5" [127]	12.6" [320]	10.07" [256]	1.81" [46]		1.18" [30]	0.5" [15]

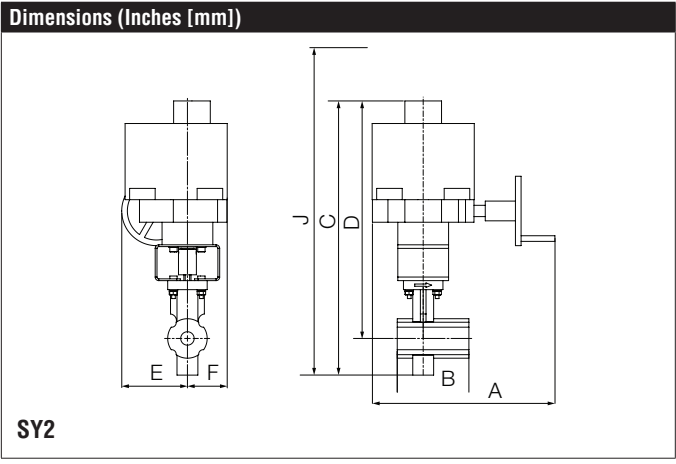
**B2100VB-024, 1", V Ball Control Valve**  
Hardened Chrome Plated Carbon Steel Body, Stainless Steel Ball and Stem



A	B	C	D	E	F	J
5.58" [142]	5" [127]	14.94" [380]	12.64" [321]	2.4" [61]		20.44" [519]



A	B	C	D	E	F
11.74" [298]	5" [127]	12.6" [320]	10.07" [256]	1.95" [49]	



A	B	C	D	E	F	J
12.6" [320]	5" [127]	19.17" [487]	16.57" [421]	4.48" [114]	3.56" [90]	27.67" [703]

# NFBUP-S-X1

On/Off, Spring Return, 24 to 240 VAC



Technical Data	
Power Supply	24...240 VAC -20% / +10%, 50/60 Hz, 24...125 VDC ±10%
Power Consumption Running	6 W
Power Consumption Holding	2.5 W
Transformer Sizing	6 VA @ 24 VAC (class 2 power source), 6.5 VA @ 120 VAC, 9.5 VA @ 240 VAC
Shaft Diameter	1/2" to 1.05" round, centers on 1/2" and 3/4" with insert, 1.05" without insert
Electrical Connection	(2) 3 ft [1 m], 18 GA appliance cables with 1/2" conduit connectors
Overload Protection	electronic throughout 0° to 95° rotation
Angle of Rotation	95° (adjustable with mechanical end stop, 35° to 95°)
Torque	90 in-lbs [10 Nm] minimum
Direction of Rotation (Motor)	reversible with built-in switch
Direction of Rotation (Fail-Safe)	reversible with CW/CCW mounting
Position Indication	visual indicator, 0° to 95° (0° is full spring return position)
Manual Override	5 mm hex crank (3/16" Allen), supplied
Running Time (Motor)	<75 sec
Running Time (Fail-Safe)	20 sec @ -4°F to +122°F [-20°C to +50°C], <60 sec @ -49°F [-45°C]
Humidity	max. 95% RH non-condensing
Ambient Temperature Range	-22°F to 122°F [-30°C to 50°C]
Storage Temperature Range	-40°F to 176°F [-40°C to 80°C]
Housing	NEMA 2, IP54, UL enclosure type 2
Agency Listings†	UL 873 listed, CSA C22.2 No. 24 certified
Noise Level (Motor)	<50 dB (A)
Noise Level (Fail-Safe)	<62 dB (A)
Servicing	maintenance free
Quality Standard	ISO 9001
Weight	4.4 lb [2 kg]
Auxiliary Switch	2 x SPDT 3A resistive (0.5A inductive) @ 120 VAC, one fixed at +10°, one fixed at 80°

†Rated Impulse Voltage 4kV, Type of Action 1.AA.B, Control Pollution Degree 3.

Wiring Diagrams

**INSTALLATION NOTES**

- A** Actuators with appliance cables are numbered.
- UP** Universal Power Supply (UP) models can be supplied with 24 VAC up to 240 VAC, or 24 VDC up to 125 VDC.
- 1** Provide overload protection and disconnect as required.
- 4** Two built-in auxiliary switches (2x SPDT), for end position indication, interlock control, fan startup, etc.
- !** Apply only AC line voltage or only UL-Class 2 voltage to the terminals of auxiliary switches. Mixed or combined operation of line voltage/safety extra low voltage is not allowed.
- ◆** Meets cULus 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.

