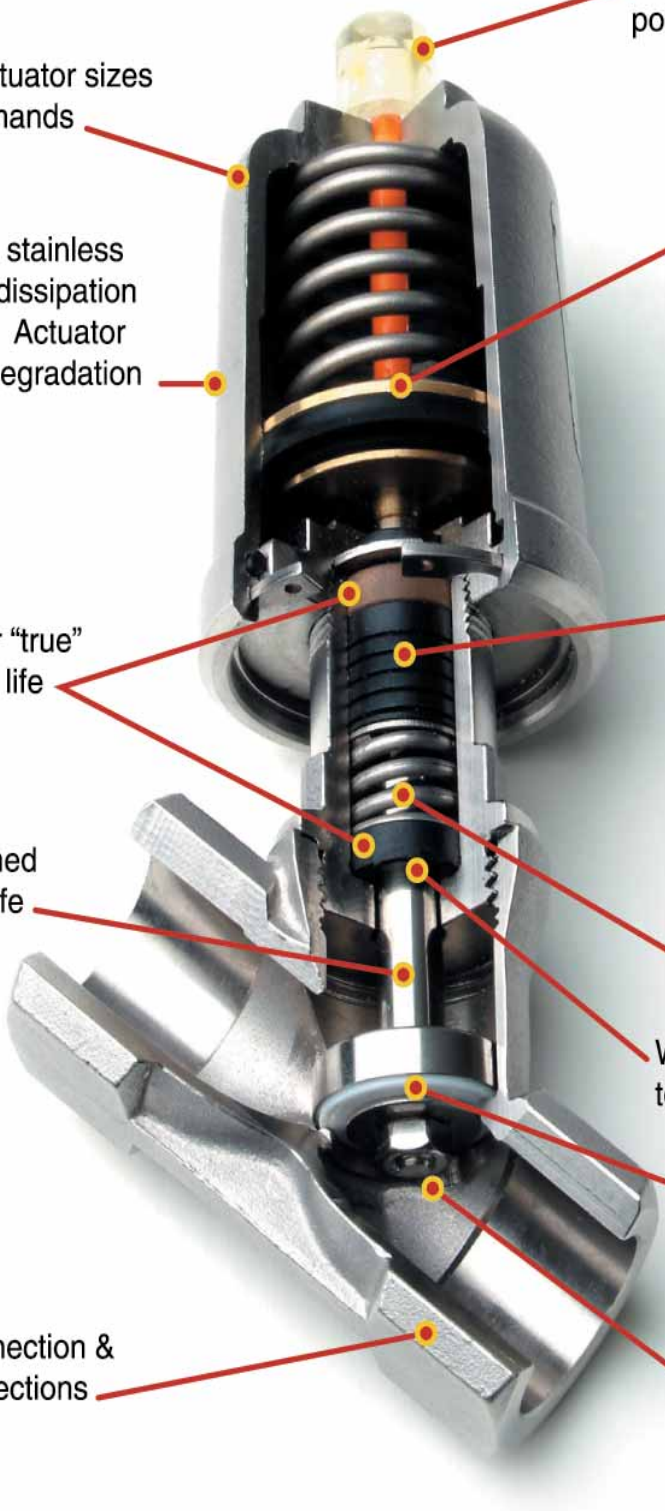
Angle Body On/Off Control and Proportional Control Valves

Angle Body Valve Key Features



Standard enclosed optical position indicator

Versatile rotatable actuator sizes for all application demands

Chrome plated brass & stainless housings for high heat dissipation & corrosion resistance. Actuator not susceptible to UV degradation

Fully repairable for optimum serviceability without removal from system

Dual stem bearings for "true" guidance and superior life

5-PTFE Chevron Packing Rings for Standard 392˚F High Temperature Rating - Longer stem for 430˚F

Precision roller-burnished 316 SS stem for long life

Spring loading on packing rings for tight sealing

Wiping ring prior to packing gland to protect against contamination

PTFE seal provides resistance to aggressive fluids, high temperatures & tight sealing

NPT standard connection & optional end connections

Water-hammer free flow under seat

Angle Body On Off Control & Proportional Control Valves

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Introduction

The portfolio is endowed with numerous benefits including:

- A full-line of normally closed and normally open valves ranging in size from 1/4 inch to 3 inches.
- State of the art performance for long life, ease of service and tighter system integrity.
- Operating pressures up to 580 psi.
- Suitable for temperatures ranging from –40°F to 430°F.
- Handles millions of cycles for high temperature and aggressive media.
- Proportional control capability with pneumatic (p/p), electro-pneumatic (e/p) and digital i/p integral positioners.
- Pilot valves for both AC & DC requirements.
- Complete line of high temperature watertight coil designs suitable for all pilot control valves.
- Fully repairable with discrete repair kits and supporting tools available.

Angle body valves are suitable for many process & industrial application requirements. Relevant on-off and proportional control valve applications include but are not limited to the following areas:

- Food and Beverage Processing:
  - Brewery
  - water, steam, pasteurization, glycol solutions for cooling, de-aeration processes, blending, carbonation, thermal processes
  - Bottling & bottle washing equipment
  - “Clean-in-Place” systems
  - Dairy product processing
- Water Technology & Treatment:
  - Filtration technology
  - Pollution control equipment
- Textile Industry:
  - Bleaching, dyeing & drying equipment
  - Steam, water & additives requirements
- Cooling systems on injection molding machines
- Pharmaceutical & cosmetic industry
- Chemical Process technology
- Refrigeration & Cooling heat exchangers
- Sterilizers – steam supply up to 430°F
- Water applications: Mining, Cement / Concrete Systems, Pulp & Paper
- General industrial applications of aggressive fluids with stainless materials
- Industrial Laundry Equipment
- Industrial Air Dryers

Series 810: 2 Way Angle Body Valves: 1/4" to 3" NPT

FEATURES

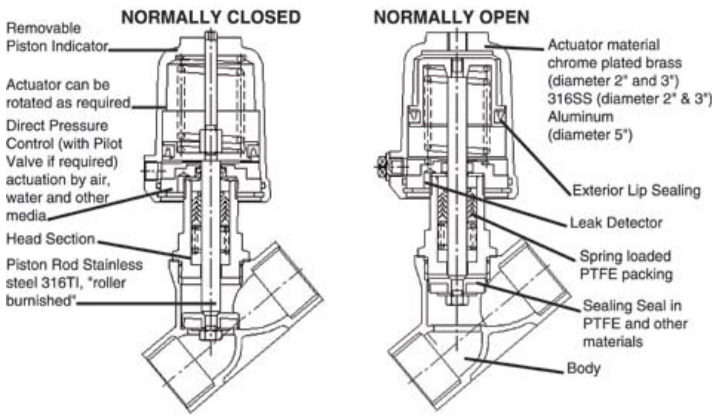
- Compact design, high flow rates
- Visual position indicator standard
- For temperatures from – 22°F to +430°F / -30°C to 221°C
- Working pressures up to 580 psi
- Damped closing anti-water hammer design (fluid under seat)
- Metal actuator housing for exceptional durability in steam & mildly aggressive applications
- Valves satisfy the Pressure Equipment Directive 97/23/EC
- Mountable in any position
- Tight shut-off and Long Service Life
- Actuator and valve components fully repairable

Technical Specifications

Body Material	Bronze Rg5	AISI 316L	Brass
Function	2/2 NC, NO	2/2 NC, NO	2/2 NC, NO
Nominal sizes	1/2" - 2"	1/4" - 2 1/2"	2 1/2" and 3"
Connections: NPT thread **standard** BSP thread (ISO228/1) Tri Clamp Tube Ends Flanges ANSI 150	1/2" - 2"	1/4" - 2 1/2"	2 1/2" - 3"
Nominal Pressure	235 psi (16 bar)	580 psi (40 bar)	235 psi (16 bar)
Differential Pressure	See Specifications tables		
Pilot Pressure	up to 145 psi (10bar) reference graphs		
Actuator: ^Optional	2" & 3" brass plated	2" & 3" brass plated ^ Stainless Actuator	5" aluminum anodized
Max. Fluid Temperature #Optional *Optional	-22°F (-30°C) up to 392°F (200°C) # to -40°F (-40°C)	-22°F (-30°C) up to 392°F (200°C) # to -40°F (-40°C) * Up to +430°F (221°C)	-22°F (-30°C) up to 392°F (200°C) # to -40°F (-40°C)
Ambient Temperature	-22°F (-30°C) up to +140°F (60°C)		
Seal Material	PTFE		
Packing Gland	PTFE / Graphite		
Viscosity of the Fluid	maximum 600 mm²/s (600cSt, 80°E, 2700 SSU)		
Vacuum	maximum 0.0295 mercury (Hg)		
Working pressure for inverted packing for vacuum service	maximum 175 psi		
Leakage	ANSI Class VI shutoff		
Installation	Any position		
Optical Position Indicator	Standard all sizes		
Pilot Control Media	Air, neutral gas, water		
Fluids	Inert gases, hot water, oils, steam	Aggressive & corrosive fluids	Inert gases, hot water, oils, steam

Options

- Electrical position indicators
  - Inductive proximity switches
  - Mechanical limit switches
- Manual override
- Oil and Grease free version
- Ultra High Temp. (PEEK)
- Stroke limiter



Series 810: 2 Way Angle Body Valves: 1/4" to 3" NPT

Series 810 Operating Data: Normally Closed, Flow Direction Under Seat

Recommended for liquids and anti water-hammer application needs

BRONZE / BRASS * BODY VALVES

Port Size	Orifice Size		Flow Coeff		Operating Pressure							Pilot Pressure		Actuator		Valve Number Bronze (1) (2)	Wt. lbs
		DN	Cv	Kv	Min	psi	bar	psi	bar	psi	bar	psi	bar	mm	port		
	inch	(mm)		(m^3/h)		air, gases		water, liquids		steam				dia	bsp		
1/2	0.59	15	4.1	3.6	0	232	16.0	232	16.0	-	-	51-145	3.5-10	50	1/8	810VBN08T320BH000	2.4
3/4	0.78	20	9.2	8.0	0	190	13.0	190	13.0	-	-	65-145	4.5-10	50	1/8	810VBN12T320BH000	2.6
3/4	0.78	20	9.2	8.0	0	232	16.0	232	16.0	-	-	85-145	5.7-10	50	1/8	810VBN12T323BH000	2.8
1	1.00	25	17.4	15.0	0	85	5.8	85	5.8	-	-	65-145	4.5-10	50	1/8	810VBN16T320BH000	3.1
1	1.00	25	17.4	15.0	0	130	9.0	130	9.0	-	-	85-145	5.7-10	50	1/8	810VBN16T323BH000	3.3
1	1.00	25	18.6	16.0	0	232	16.0	232	16.0	-	-	51-145	3.5-10	80	1/4	810VBN16T330BH000	6.6
1-1/4	1.25	32	24.3	21.0	0	75	5.2	75	5.2	-	-	85-145	5.7-10	50	1/8	810VBN20T320BH000	4.0
1-1/4	1.25	32	27.8	24.0	0	175	12.1	175	12.1	-	-	51-145	3.5-10	80	1/4	810VBN20T330BH000	7.3
1-1/4	1.25	32	27.8	24.0	0	232	16.0	232	16.0	-	-	65-145	4.5-10	80	1/4	810VBN20T332BH000	7.5
1-1/2	1.56	40	40.6	35.0	0	100	7.0	100	7.0	-	-	51-145	3.5-10	80	1/4	810VBN24T330BH000	8.0
1-1/2	1.56	40	40.6	35.0	0	145	10.0	145	10.0	-	-	65-145	4.5-10	80	1/4	810VBN24T332BH000	8.2
1-1/2	1.56	40	40.6	35.0	0	190	13.0	190	13.0	-	-	80-145	5.5-10	80	1/4	810VBN24T333BH000	8.5
1-1/2	1.56	40	40.6	35.0	0	220	15.2	220	15.2	-	-	30-145	2.1-10	125	1/4	810VBN24T350BH000	12.8
2	2.00	50	63.8	55.1	0	60	4.0	60	4.0	-	-	51-145	3.5-10	80	1/4	810VBN32T330BH000	9.2
2	2.00	50	63.8	55.1	0	110	7.6	110	7.6	-	-	80-145	5.5-10	80	1/4	810VBN32T333BH000	9.6
2	2.00	50	63.8	55.1	0	125	8.6	125	8.6	-	-	30-145	2.1-10	125	1/4	810VBN32T350BH000	14.1
2	2.00	50	63.8	55.1	0	190	13.0	190	13.0	-	-	45-145	3.1-10	125	1/4	810VBN32T353BH000	14.4
2-1/2	2.56	65	107.9	93.3	0	75	5.0	75	5.0	-	-	45-145	3.1-10	125	1/4	810VBN40T350BH000 *	18.5
3	3.15	80	133.4	115.0	0	50	3.5	50	3.5	-	-	45-145	3.1-10	125	1/4	810VBN48T350BH000 *	23.1

316L STAINLESS STEEL VALVES

Port Size	Orifice Size		Flow Coeff		Operating Pressure							Pilot Pressure		Actuator		Valve Number Stainless (1) (2) (3) (4)	Wt. lbs
		DN	Cv	Kv	Min	psi	bar	psi	bar	psi	bar	psi	bar	mm	port		
	inch	(mm)		(m^3/h)		air, gases		water, liquids		steam				dia	bsp		
1/4	0.31	8	1.1	0.9	0	580	40.0	580	40.0	-	-	51-145	3.5-10	50	1/8	810VSN04T320BH000	2.2
3/8	0.39	10	1.9	1.6	0	580	40.0	580	40.0	-	-	51-145	3.5-10	50	1/8	810VSN06T320BH000	2.3
1/2	0.59	15	4.1	3.6	0	320	22.0	320	22.0	-	-	51-145	3.5-10	50	1/8	810VSN08T320BH000	2.4
3/4	0.78	20	9.2	8.0	0	190	13.0	190	13.0	-	-	65-145	4.5-10	50	1/8	810VSN12T320BH000	2.6
3/4	0.78	20	9.2	8.0	0	275	19.0	275	19.0	-	-	85-145	5.7-10	50	1/8	810VSN12T323BH000	2.8
1	1.00	25	17.4	15.0	0	85	5.8	85	5.8	-	-	65-145	4.5-10	50	1/8	810VSN16T320BH000	3.1
1	1.00	25	17.4	15.0	0	130	9.0	130	9.0	-	-	85-145	5.7-10	50	1/8	810VSN16T323BH000	3.3
1	1.00	25	18.6	16.0	0	320	22.0	320	22.0	-	-	51-145	3.5-10	80	1/4	810VSN16T330BH000	6.6
1-1/4	1.25	32	24.3	21.0	0	75	5.2	75	5.2	-	-	85-145	5.7-10	50	1/8	810VSN20T320BH000	4.0
1-1/4	1.25	32	27.8	24.0	0	175	12.1	175	12.1	-	-	51-145	3.5-10	80	1/4	810VSN20T330BH000	7.3
1-1/4	1.25	32	27.8	24.0	0	245	16.9	245	16.9	-	-	65-145	4.5-10	80	1/4	810VSN20T332BH000	7.5
1-1/4	1.25	32	27.8	24.0	0	320	22.0	320	22.0	-	-	85-145	5.7-10	80	1/4	810VSN20T333BH000	7.7
1-1/2	1.56	40	40.6	35.0	0	100	7.0	100	7.0	-	-	51-145	3.5-10	80	1/4	810VSN24T330BH000	7.9
1-1/2	1.56	40	40.6	35.0	0	145	10.0	145	10.0	-	-	65-145	4.5-10	80	1/4	810VSN24T332BH000	8.1
1-1/2	1.56	40	40.6	35.0	0	190	13.0	190	13.0	-	-	80-145	5.5-10	80	1/4	810VSN24T333BH000	8.3
1-1/2	1.56	40	40.6	35.0	0	220	15.2	220	15.2	-	-	30-145	2.1-10	125	1/4	810VSN24T350BH000	12.8
2	2.00	50	63.8	55.1	0	60	4.0	60	4.0	-	-	51-145	3.5-10	80	1/4	810VSN32T330BH000	9.2
2	2.00	50	63.8	55.1	0	110	7.6	110	7.6	-	-	80-145	5.5-10	80	1/4	810VSN32T333BH000	9.6
2	2.00	50	63.8	55.1	0	125	8.6	125	8.6	-	-	30-145	2.1-10	125	1/4	810VSN32T350BH000	14.1
2	2.00	50	63.8	55.1	0	190	13.0	190	13.0	-	-	45-145	3.1-10	125	1/4	810VSN32T353BH000	14.4
2-1/2	2.56	65	107.9	93.3	0	100	7.0	100	7.0	-	-	45-145	3.1-10	125	1/4	810VSN40T350BH000	18.5

Pressure ratings reflect standard product offering. Higher pressure ratings are available. Consult Parker.

(1) Chrome Plated Brass Actuator Standard, Anodized Aluminum for 125mm housing
(2) For BSP porting, change "N" to "G" in the 6th position
(3) Optional Stainless Actuator, change "B" to "S" in the 13th position

Series 810: 2 Way Angle Body Valves: 1/4" to 3" NPT

Series 810 Operating Data: Normally Closed, Flow Direction Over Seat

Recommended for steam and most gases

BRONZE / BRASS * BODY VALVES

Port Size	Orifice Size inch	Orifice Size DN (mm)	Flow Coeff Cv	Flow Coeff Kv (m^3/h)	Operating Pressure Min	psi air, gases	bar air, gases	psi water, liquids	bar water, liquids	psi steam	bar steam	Pilot Pressure psi	Pilot Pressure bar	Actuator mm dia	Actuator port bsp	Valve Number Bronze (1) (2)	Wt. lbs
1/2	0.59	15	4.1	3.6	0	232	16.0	-	-	210	14.5	40-145	2.8-10	50	1/8	810VBN08T120BH000	2.4
3/4	0.78	20	9.2	8.0	0	232	16.0	-	-	210	14.5	40-145	2.8-10	50	1/8	810VBN12T120BH000	2.6
1	1.00	25	17.4	15.0	0	232	16.0	-	-	210	14.5	40-145	2.8-10	50	1/8	810VBN16T120BH000	3.1
1-1/4	1.25	32	24.3	21.0	0	75	5.2	-	-	75	5.2	40-145	2.8-10	50	1/8	810VBN20T120BH000	4.0
1-1/4	1.25	32	27.8	24.0	0	232	16.0	-	-	210	14.5	16-145	1.1-10	80	1/4	810VBN20T130BH000	7.3
1-1/2	1.56	40	40.6	35.0	0	232	16.0	-	-	210	14.5	16-145	1.1-10	80	1/4	810VBN24T130BH000	7.9
2	2.00	50	63.8	55.1	0	203	14.0	-	-	203	14.0	16-145	1.1-10	80	1/4	810VBN32T130BH000	9.2
2-1/2	2.56	65	107.9	93.3	0	175	12.1	-	-	175	12.1	8-145	0.6-10	125	1/4	810VBN40T150BH000	18.5
3	3.15	80	133.4	115.0	0	131	9.0	-	-	131	9.0	8-145	0.6-10	125	1/4	810VBN48T150BH000	23.1

316L STAINLESS STEEL VALVES

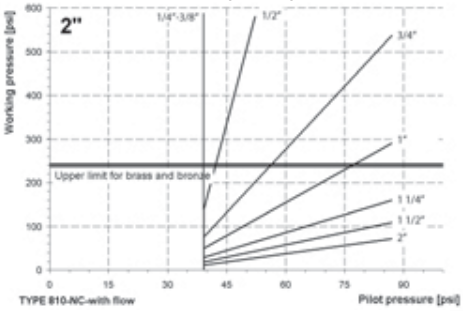
Port Size	Orifice Size inch	Orifice Size DN (mm)	Flow Coeff Cv	Flow Coeff Kv (m^3/h)	Operating Pressure Min	psi air, gases	bar air, gases	psi water, liquids	bar water, liquids	psi steam	bar steam	Pilot Pressure psi	Pilot Pressure bar	Actuator mm dia	Actuator port bsp	Valve Number Stainless (1) (2) (3) (4)	Wt. lbs
1/4	0.31	8	1.1	0.9	0	580	40.0	-	-	210	14.5	40-145	2.8-10	50	1/8	810VSN04T120BH000	2.2
3/8	0.39	10	1.9	1.6	0	580	40.0	-	-	210	14.5	40-145	2.8-10	50	1/8	810VSN06T120BH000	2.3
1/2	0.59	15	4.1	3.6	0	580	40.0	-	-	210	14.5	40-145	2.8-10	50	1/8	810VSN08T120BH000	2.4
3/4	0.78	20	9.2	8.0	0	535	36.8	-	-	210	14.5	40-145	2.8-10	50	1/8	810VSN12T120BH000	2.6
1	1.00	25	17.4	15.0	0	290	20.0	-	-	210	14.5	40-145	2.8-10	50	1/8	810VSN16T120BH000	3.1
1	1.00	25	18.6	16.0	0	480	33.1	-	-	210	14.5	16-145	1.1-10	80	1/4	810VSN16T130BH000	6.6
1-1/4	1.25	32	24.3	21.0	0	160	11.0	-	-	160	11.0	40-145	2.8-10	50	1/8	810VSN20T120BH000	4.0
1-1/4	1.25	32	27.8	24.0	0	510	35.1	-	-	210	14.5	16-145	1.1-10	80	1/4	810VSN20T130BH000	7.3
1-1/2	1.56	40	40.6	35.0	0	335	23.1	-	-	210	14.5	16-145	1.1-10	80	1/4	810VSN24T130BH000	7.9
2	2.00	50	63.8	55.1	0	203	14.0	-	-	203	14.0	16-145	1.1-10	80	1/4	810VSN32T130BH000	9.2
2-1/2	2.56	65	107.9	93.3	0	175	12.1	-	-	175	12.1	8-145	0.6-10	125	1/4	810VSN40T150BH000	18.5

Pressure ratings reflect standard product offering. Higher pressure ratings are available. Consult Parker.

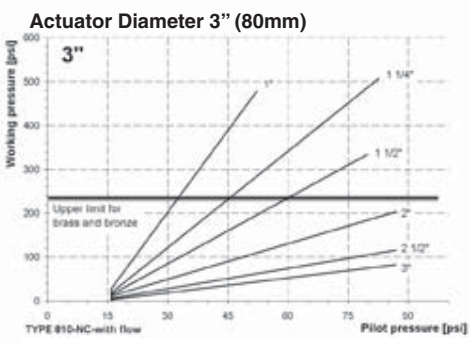
(1) Chrome Plated Brass Actuator Standard, Anodized Aluminum for 125mm housing
(2) For BSP porting, change "N" to "G" in the 6th position
(3) Optional Stainless Actuator, change "B" to "S" in the 13th position
(4) For ultra-high temperature 430°F, 1/2" to 1-1/4" sizes only, see Ultra High Temperature tables

Control Pressure & Operating Pressure Charts

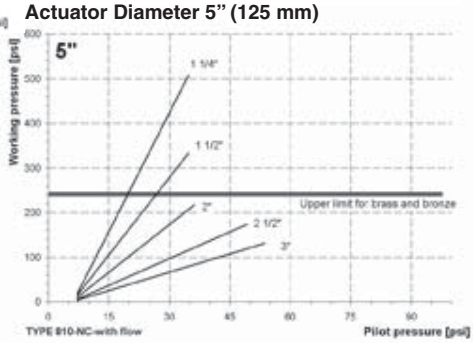
Actuator Diameter 2" (50mm)



Actuator Diameter 3" (80mm)



Actuator Diameter 5" (125 mm)



Series 810: 2 Way Angle Body Valves: 1/4" to 3" NPT

Series 810 Operating Data: Normally Open, Flow Direction Under Seat

BRONZE / BRASS * BODY VALVES

Port Size	Orifice Size inch	Orifice Size DN (mm)	Flow Coeff Cv	Flow Coeff Kv (m^3/h)	Operating Pressure Min	psi air, gases	bar air, gases	psi water, liquids	bar water, liquids	psi steam	bar steam	Pilot Pressure psi	Pilot Pressure bar	Actuator mm dia	Actuator port bsp	Valve Number Bronze (1) (2)	Wt. lbs
1/2	0.59	15	4.1	3.6	0	232	16.0	232	16.0	210	14.5	35-145	2.4-10	50	1/8	S10VBN08T220BH000	2.4
3/4	0.78	20	9.2	8.0	0	232	16.0	232	16.0	210	14.5	45-145	3.1-10	50	1/8	S10VBN12T220BH000	2.6
1	1.00	25	17.4	15.0	0	160	11.0	160	11.0	160	11.0	50-145	3.5-10	50	1/8	S10VBN16T220BH000	3.1
1	1.00	25	18.6	16.0	0	232	16.0	232	16.0	210	14.5	20-145	1.4-10	80	1/4	S10VBN16T230BH000	6.6
1-1/4	1.25	32	24.3	21.0	0	100	7.0	100	7.0	100	7.0	50-145	3.5-10	50	1/8	S10VBN20T220BH000	4.0
1-1/4	1.25	32	27.8	24.0	0	232	16.0	232	16.0	210	14.5	20-145	1.4-10	80	1/4	S10VBN20T230BH000	7.3
1-1/2	1.56	40	40.6	35.0	0	232	16.0	232	16.0	210	14.5	20-145	1.4-10	80	1/4	S10VBN24T230BH000	7.9
2	2.00	50	63.8	55.1	0	190	13.0	190	13.0	190	13.0	20-145	1.4-10	80	1/4	S10VBN32T230BH000	9.2
2-1/2	2.56	65	107.9	93.3	0	175	12.1	175	12.1	175	12.1	10-145	0.7-10	125	1/4	S10VBN40T250BH000 *	18.5
3	3.15	80	133.4	115.0	0	131	9.0	131	9.0	131	9.0	10-145	0.7-10	125	1/4	S10VBN48T250BH000 *	23.1

316L STAINLESS STEEL VALVES

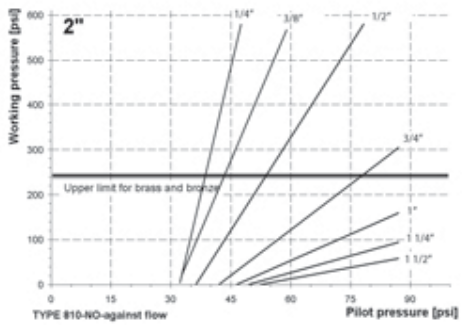
Port Size	Orifice Size inch	Orifice Size DN (mm)	Flow Coeff Cv	Flow Coeff Kv (m^3/h)	Operating Pressure Min	psi air, gases	bar air, gases	psi water, liquids	bar water, liquids	psi steam	bar steam	Pilot Pressure psi	Pilot Pressure bar	Actuator mm dia	Actuator port bsp	Valve Number Stainless (1) (2) (3) (4)	Wt. lbs
1/4	0.31	8	1.1	0.9	0	580	40.0	580	40.0	210	14.5	35-145	2.4-10	50	1/8	S10VSN04T220BH000	2.2
3/8	0.39	10	1.9	1.6	0	580	40.0	580	40.0	210	14.5	35-145	2.4-10	50	1/8	S10VSN06T220BH000	2.3
1/2	0.59	15	4.1	3.6	0	580	40.0	580	40.0	210	14.5	35-145	2.4-10	50	1/8	S10VSN08T220BH000	2.4
3/4	0.78	20	9.2	8.0	0	305	21.0	305	21.0	210	14.5	45-145	3.1-10	50	1/8	S10VSN12T220BH000	2.6
1	1.00	25	17.4	15.0	0	160	11.0	160	11.0	160	11.0	50-145	3.5-10	50	1/8	S10VSN16T220BH000	3.1
1	1.00	25	18.6	16.0	0	480	33.1	480	33.1	210	14.5	20-145	1.4-10	80	1/4	S10VSN16T230BH000	6.6
1-1/4	1.25	32	24.3	21.0	0	100	7.0	100	7.0	100	7.0	50-145	3.5-10	50	1/8	S10VSN20T220BH000	4.0
1-1/4	1.25	32	27.8	24.0	0	460	31.7	460	31.7	210	14.5	20-145	1.4-10	80	1/4	S10VSN20T230BH000	7.3
1-1/2	1.56	40	40.6	35.0	0	305	21.0	305	21.0	210	14.5	20-145	1.4-10	80	1/4	S10VSN24T230BH000	7.9
2	2.00	50	63.8	55.1	0	190	13.0	190	13.0	190	13.0	20-145	1.4-10	80	1/4	S10VSN32T230BH000	9.2
2-1/2	2.56	65	107.9	93.3	0	175	12.1	175	12.1	175	12.1	10-145	0.7-10	125	1/4	S10VSN40T250BH000	18.5

Pressure ratings reflect standard product offering. Higher pressure ratings are available. Consult Parker.

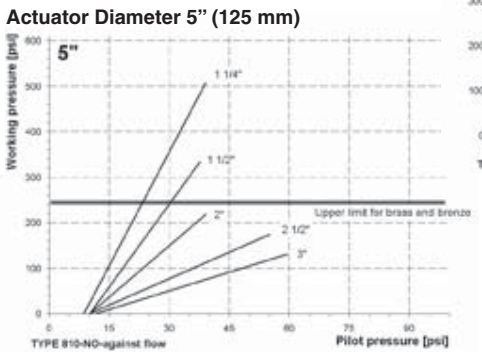
(1) Chrome Plated Brass Actuator Standard, Anodized Aluminum for 125mm housing
(2) For BSP porting, change "N" to "G" in the 6th position
(3) Optional Stainless Actuator, change "B" to "S" in the 13th position
(4) For ultra-high temperature 430°F, 1/2" to 1-1/4" sizes only, see Ultra High Temperature tables

Control Pressure & Operating Pressure Charts

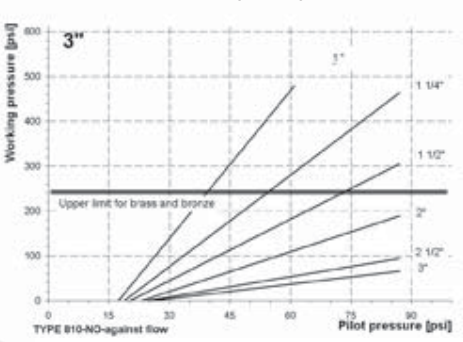
Actuator Diameter 2" (50mm)



Actuator Diameter 5" (125 mm)



Actuator Diameter 3" (80mm)



Series 810: 2 Way Angle Body Valves: 1/4" to 3" NPT

Series 810 Operating Data: Ultra High Temp., Normally Closed, Flow Direction Under Seat- For control of fluids up to 430° F / 221° C

316L STAINLESS STEEL VALVES

Port Size	Orifice Size inch	Orifice Size DN (mm)	Flow Coeff Cv	Flow Coeff Kv (m^3/h)	Operating Pressure Min	psi air, gases	bar air, gases	psi water, liquids	bar water, liquids	psi steam	bar steam	Pilot Pressure psi	Pilot Pressure bar	Actuator mm dia	Actuator port bsp	Valve Number Stainless (1) (2) (3) (4)	Wt. lbs
1/4	0.31	08	1.1	0.9	0	380	26.1	380	26.1	-	-	85-145	5.8-10	50	1/8	**810VSN04P320BU000**	2.6
1/2	0.59	15	4.1	3.6	0	380	26.1	380	26.1	-	-	85-145	5.8-10	50	1/8	**810VSN08P320BU000**	2.6
3/4	0.78	20	10.4	9.0	0	360	24.8	360	24.8	-	-	51-145	3.5-10	80	1/8	**810VSN12P330BU000**	4.2
1	1.00	25	19.7	17.1	0	250	17.2	250	17.2	-	-	51-145	3.5-10	80	1/4	**810VSN16P330BU000**	6.8
1-1/4	1.25	32	32.5	28.1	0	175	12.0	175	12.0	-	-	80-145	5.5-10	80	1/4	**810VSN20P330BU000**	7.5

Series 810 Operating Data: Ultra High Temp., Normally Closed, Flow Direction Over Seat- For control of fluids up to 430° F / 221° C

316L STAINLESS STEEL VALVES

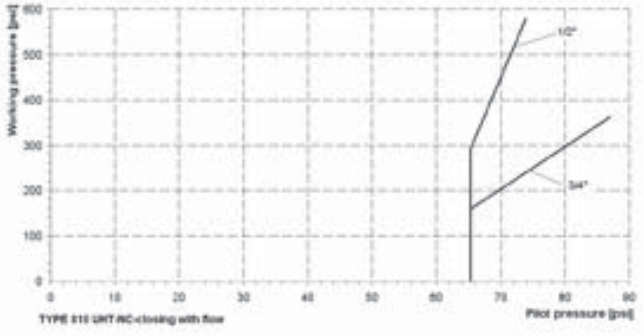
Port Size	Orifice Size inch	Orifice Size DN (mm)	Flow Coeff Cv	Flow Coeff Kv (m^3/h)	Operating Pressure Min	psi air, gases	bar air, gases	psi water, liquids	bar water, liquids	psi steam	bar steam	Pilot Pressure psi	Pilot Pressure bar	Actuator mm dia	Actuator port bsp	Valve Number Stainless (1) (2) (3) (4)	Wt. lbs
1/4	0.31	08	1.1	0.9	0	580	40.0	-	-	330	22.7	65-145	4.5-10	50	1/8	**810VSN04P120BU000**	2.6
1/2	0.59	15	4.1	3.6	0	580	40.0	-	-	330	22.7	65-145	4.5-10	50	1/8	**810VSN08P120BU000**	2.6
3/4	0.78	20	10.4	9.0	0	360	24.8	-	-	330	22.7	65-145	4.5-10	50	1/8	**810VSN12P120BU000**	2.9
1	1.00	25	19.7	17.1	0	475	32.7	-	-	330	22.7	51-145	3.5-10	80	1/4	**810VSN16P130BU000**	6.8
1-1/4	1.25	32	32.5	28.1	0	360	24.8	-	-	330	22.7	51-145	3.5-10	80	1/4	**810VSN20P130BU000**	7.5

Pressure ratings reflect standard product offering. Higher pressure ratings are available. Consult Parker.

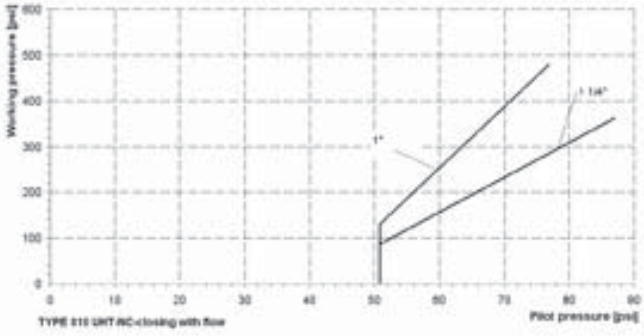
(1) Chrome Plated Brass Actuator Standard, Anodized Aluminum for 125mm housing
(2) For BSP porting, change "N" to "G" in the 6th position
(3) Optional Stainless Actuator, change "B" to "S" in the 13th position
(4) For ultra high temperature stainless valves, seal material changes from PTFE to PEEK.

Control Pressure & Operating Pressure Charts

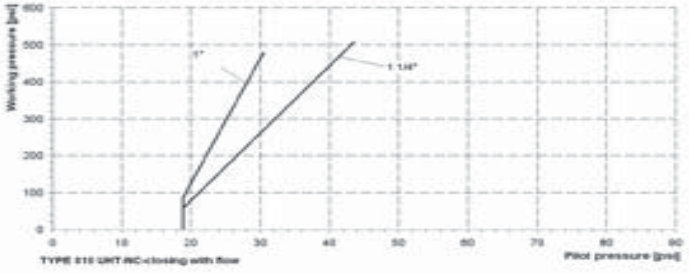
Actuator Diameter 2" (50mm)



Actuator Diameter 3" (80mm)

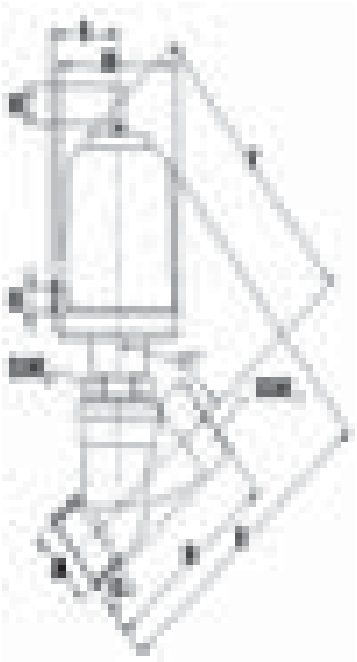


Actuator Diameter 5" (125 mm)

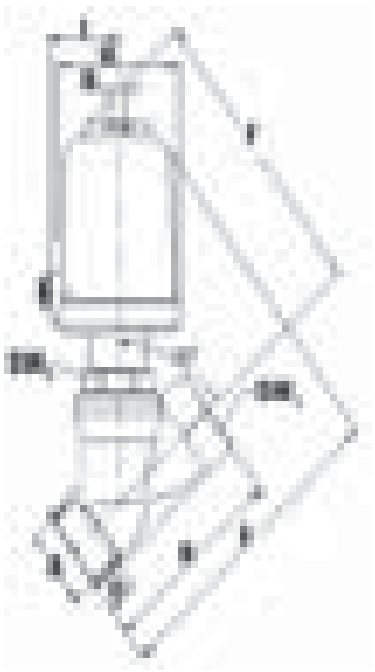


Series 810: 2 Way Angle Body Valves: 1/4" to 3" NPT

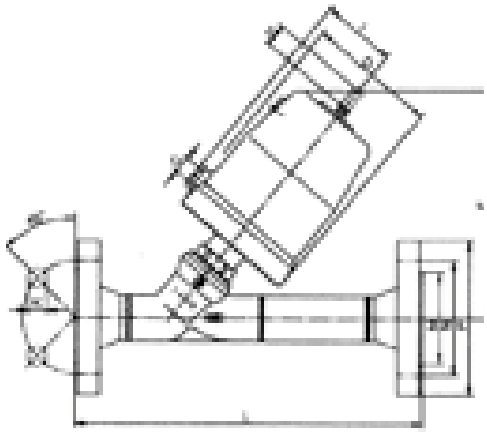
Series 810 Operating Data: Dimensions and Weights



Normally Closed



Normally Open



Flanged Version

A Pipe Size NPT	Actuator Diameter mm	DN	B		C	D	E		F	G	H	I	SW1		SW2	Cv-values		Weight	
			Bronze SST	Brass			Bronze SST	Brass			stroke		Bronze SST	Brass		Bronze SST	Brass	lbs.	Kg.
1/4"	50	08	2.35	-	0.45	2.45	5.10	-	4.85	G1/8	0.33	1.35	0.80	-	1.20	1.1	-	2.2	1.0
3/8"	50	10	2.35	-	0.45	2.45	5.10	-	4.85	G1/8	0.35	1.35	0.90	-	1.20	1.9	-	2.3	1.0
1/2"	50	15	2.55	-	0.60	2.45	5.30	-	4.70	G1/8	0.28	1.35	1.00	-	1.20	4.1	-	2.4	1.1
3/4"	50	20	2.95	-	0.65	2.45	5.30	-	4.90	G1/8	0.47	1.35	1.20	-	1.20	9.2	-	2.6	1.2
1"	50	25	3.55	-	0.75	2.45	5.70	-	5.10	G1/8	0.63	1.35	1.55	-	1.20	17.3	-	3.1	1.4
1"	80	25	3.55	-	0.75	3.80	7.30	-	6.70	G1/4	0.63	2.15	1.55	-	1.20	18.5	-	6.6	3.0
1-1/4"	50	32	4.35	-	0.85	2.45	6.30	-	5.70	G1/8	0.63	1.35	1.90	-	1.20	24.3	-	4.0	1.8
1-1/4"	80	32	4.35	-	0.85	3.80	7.85	-	7.50	G1/4	0.79	2.15	1.90	-	1.20	27.7	-	7.3	3.3
1-1/4"	125	32	4.35	-	0.85	5.75	9.05	-	8.45	G1/4	0.79	3.15	1.90	-	1.20	28.0	-	12.1	5.5
1-1/2"	50	40	4.70	-	0.85	2.45	6.50	-	5.90	G1/8	0.63	1.35	2.15	-	1.20	35.0	-	4.6	2.1
1-1/2"	80	40	4.70	-	0.85	3.80	8.05	-	7.70	G1/4	0.91	2.15	2.15	-	1.20	40.4	-	7.9	3.6
1-1/2"	125	40	4.70	-	0.85	5.75	9.25	-	8.65	G1/4	0.91	3.15	2.15	-	1.20	40.4	-	12.8	5.8
2"	50	50	5.90	-	1.00	2.45	7.30	-	6.30	G1/8	0.63	1.35	2.70	-	1.25	46.0	-	5.9	2.7
2"	80	50	5.90	-	1.00	3.80	8.85	-	7.85	G1/4	1.14	2.15	2.70	-	1.25	63.5	-	9.2	4.2
2"	125	50	5.90	-	1.00	5.75	9.85	-	8.85	G1/4	1.14	3.15	2.70	-	1.25	63.5	-	14.1	6.4
2-1/2"	80	65	-	7.10	1.20	3.80	-	10.25	8.25	G1/4	1.14	2.15	-	3.35	1.60	-	107	13.6	6.2
2-1/2"	125	65	-	7.10	1.20	5.75	-	11.20	9.45	G1/4	1.14	3.15	-	3.35	1.60	-	107	18.5	8.4
3"	80	80	-	8.25	1.30	3.80	-	11.00	8.85	G1/4	1.14	2.15	-	3.95	1.60	-	133	18.3	8.3
3"	125	80	-	8.25	1.30	5.75	-	12.00	9.85	G1/4	1.14	3.15	-	3.95	1.60	-	133	23.1	10.5

Dimension in inches except as noted

Dimension and Weights for High Temperature

A Pipe Size NPT	Actuator Diameter mm	DN	B	C	D	E	F	G	H	I	SW1	SW2	Cv-values	Weight	
			SST			SST			stroke		SST		SST	lbs.	Kg.
1/4"	50	08	2.35	0.45	2.45	5.10	5.60	G1/8	0.33	1.35	0.80	1.20	1.1	2.2	1.0
1/2"	50	15	2.55	0.60	2.45	5.30	5.47	G1/8	0.28	1.35	1.00	1.20	4.1	2.6	1.2
3/4"	50	20	2.95	0.65	2.45	5.30	5.67	G1/8	0.47	1.35	1.20	1.20	9.3	2.9	1.3
3/4"	80	20	2.95	0.65	3.80	7.30	7.13	G1/4	0.47	1.35	1.20	1.20	9.3	4.2	1.9
1"	50	25	3.55	0.75	2.45	5.70	7.28	G1/8	0.63	1.35	1.55	1.20	17.4	6.8	3.1
1"	80	25	3.55	0.75	3.80	7.30	8.47	G1/4	0.63	2.15	1.55	1.20	18.6	11.7	5.3
1-1/4"	80	32	4.35	0.85	3.80	7.85	7.92	G1/4	0.79	2.15	1.90	1.20	24.4	7.5	5.4
1-1/4"	125	32	4.35	0.85	5.75	9.05	9.10	G1/4	0.79	3.15	1.90	1.20	27.8	12.3	5.6

Dimension in inches except as noted

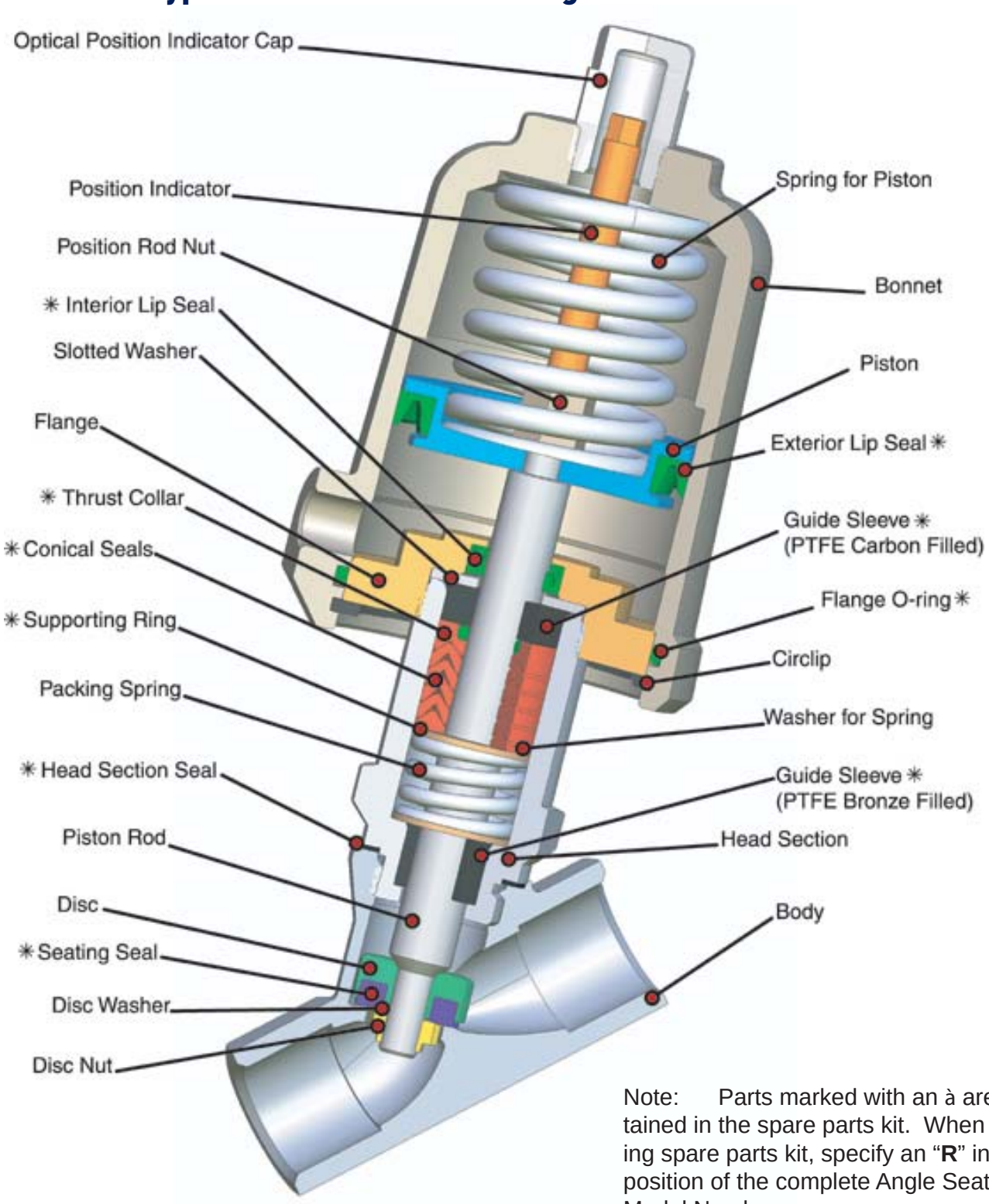
Dimension and Weights for Flanged

A Pipe Size NPT	Actuator Diameter mm	DN	M	N	P	F	K	L	D No. of drillings	Weight	
										lbs.	Kg.
1/2"	50	15	2.38	3.50	2.45	4.90	0.55	9.05	4	6.0	2.7
3/4"	50	20	2.75	3.88	2.45	4.90	0.55	10.25	4	7.5	3.4
1"	50	25	3.12	4.25	2.45	5.10	0.55	10.25	4	9.0	4.1
1"	80	25	3.12	4.25	3.80	6.70	0.55	10.25	4	12.6	5.7
1-1/4"	50	32	3.50	4.62	2.45	5.70	0.70	11.80	4	12.6	5.7
1-1/4"	80	32	3.50	4.62	3.80	7.30	0.70	11.80	4	15.9	7.2
1-1/4"	125	32	3.50	4.62	5.75	8.45	0.70	11.80	4	20.7	9.4
1-1/2"	50	40	3.88	5.00	2.45	5.90	0.70	11.80	4	14.1	6.4
1-1/2"	80	40	3.88	5.00	3.80	7.50	0.70	11.80	4	17.4	7.9
1-1/2"	125	40	3.88	5.00	5.75	8.65	0.70	11.80	4	22.1	10.0
2"	50	50	4.75	6.00	2.45	6.30	0.70	13.80	4	19.0	8.6
2"	80	50	4.75	6.00	3.80	7.70	0.70	13.80	4	22.3	10.1
2"	125	50	4.75	6.00	5.75	8.85	0.70	13.80	4	27.6	12.5

Dimension in inches except as noted

Series 810: 2 Way Angle Body Valves: 1/4" to 3" NPT

Series 810 Typical Cross Section Drawing



Note: Parts marked with an à are contained in the spare parts kit. When ordering spare parts kit, specify an "**R**" in the 4th position of the complete Angle Seat Valve Model Number.

Series 880: 3 Way Angle Body Valves: 1/2” to 1-1/2” NPT

FEATURES

- Working pressures up to 232 psi
- Visual position indicator
- Compact design
- Temperatures from –22°F to 392°F
- Mountable in any position
- Tight shut-off and long service life
- Versatile actuator options
- Actuator and valve components fully repairable

Technical Specifications

Body Material	Bronze Rg5	AISI 316L
Functions	Distributing, Mixing, Normally Closed, Normally Open	Distributing, Mixing, Normally Open
Nominal sizes	1/2" - 1-1/2 "	1/2" - 1-1/2 "
Connections: NPT thread **standard** BSP thread (ISO228/1)	1/2" - 1-1/2 "	1/2" - 1-1/2 "
Differential Pressure	See Specifications tables	See Specifications tables
Pilot Pressure	up to 145 psi (10bar) reference graphs	up to 145 psi (10bar) reference graphs
Actuator:	2" & 3" brass plated, 5" aluminum anodized	2" & 3" brass plated, 5" aluminum anodized
Max. fluid temperature	-22°F (-30°C) up to 392°F (200°C)	-22°F (-30°C) up to 392°F (200°C)
Max. ambient temperature	-22°F (-30°C) up to 140°F (60°C)	-22°F (-30°C) up to 140°F (60°C)
Seal Material	PTFE	PTFE
Packing Gland	PTFE / Graphite	PTFE / Graphite
Viscosity of the fluid	max.600 mm²/s (600cSt, 80°E, 2700SSU)	max.600 mm²/s (600cSt, 80°E, 2700SSU)
Vacuum	maximum 0.0295 mercury (Hg)	maximum 0.0295 mercury (Hg)
Working pressure for inverted packing for vacuum service	maximum 175 psi	maximum 175 psi
Leakage	ANSI Class VI shutoff	ANSI Class VI shutoff
Installation	Any position	Any position
Pilot Control Media	Air, neutral gas, water	Air, neutral gas, water
Fluids	Inert gases, hot water, oils, & slightly aggressive fluids	Inert gases, hot water, oils, & aggressive fluids
Optical Position Indicator	Standard	Standard

Options

- Electrical position indicators
  - Inductive proximity switches
  - Mechanical limit switches
- Manual override

Series 880: 3 Way Angle Body Valves: 1/2" to 1-1/2" NPT

Bronze Valve Operating Data

BRONZE BODY VALVES — **DISTRIBUTING VALVE DATA (pilot option #3)**

Port Size	Orifice Size inch	Orifice Size DN (mm)	Flow Coeff Cv	Flow Coeff Kv (m^3/h)	Operating Pressure Min	psi air, gases	bar air, gases	psi water, liquids	bar water, liquids	psi steam	bar steam	Pilot Pressure psi	Pilot Pressure bar	Actuator mm dia	Actuator port bsp	Valve Number Bronze (1)	Wt. lbs
1/2	0.59	15	6.1	5.3	0	80	5.5	80	5.5	-	-	45-145	3.1-10	50	1/8	**880VBN08T320BH000**	3.3
1/2	0.59	15	6.1	5.3	0	232	16.0	232	16.0	-	-	35-145	2.4-10	80	1/4	**880VBN08T330BH000**	6.8
3/4	0.78	20	8.5	7.4	0	80	5.5	80	5.5	-	-	45-145	3.1-10	50	1/8	**880VBN12T320BH000**	3.3
3/4	0.78	20	8.5	7.4	0	232	16.0	232	16.0	-	-	35-145	2.4-10	80	1/4	**880VBN12T330BH000**	6.8
1	1.00	25	14.3	12.4	0	48	3.3	48	3.3	-	-	50-145	3.5-10	50	1/8	**880VBN16T320BH000**	4.2
1	1.00	25	14.3	12.4	0	160	11.0	160	11.0	-	-	35-145	2.4-10	80	1/4	**880VBN16T330BH000**	7.7
1	1.00	25	14.3	12.4	0	232	16.0	232	16.0	-	-	25-145	1.7-10	125	1/4	**880VBN16T350BH000**	12.3
1-1/4	1.25	32	23.2	20.2	0	58	4.0	58	4.0	-	-	45-145	3.1-10	80	1/4	**880VBN20T330BH000**	10.6
1-1/4	1.25	32	23.2	20.2	0	160	11.0	160	11.0	-	-	32-145	2.2-10	125	1/4	**880VBN20T350BH000**	14.8
1-1/2	1.56	40	26.7	23.2	0	58	4.0	58	4.0	-	-	45-145	3.1-10	80	1/4	**880VBN24T330BH000**	10.6
1-1/2	1.56	40	26.7	23.2	0	160	11.0	160	11.0	-	-	32-145	2.2-10	125	1/4	**880VBN24T350BH000**	14.8

BRONZE BODY VALVES — **MIXING VALVE DATA (pilot option #4)**

Port Size	Orifice Size inch	Orifice Size DN (mm)	Flow Coeff Cv	Flow Coeff Kv (m^3/h)	Operating Pressure Min	psi air, gases	bar air, gases	psi water, liquids	bar water, liquids	psi steam	bar steam	Pilot Pressure psi	Pilot Pressure bar	Actuator mm dia	Actuator port bsp	Valve Number Bronze (1)	Wt. lbs
1/2	0.59	15	6.1	5.3	0	50	3.4	50	3.4	-	-	65-145	4.5-10	50	1/8	**880VBN08T420BH000**	3.3
1/2	0.59	15	6.1	5.3	0	232	16.0	232	16.0	-	-	60-145	4.2-10	80	1/4	**880VBN08T430BH000**	6.8
3/4	0.78	20	8.5	7.4	0	50	3.4	50	3.4	-	-	65-145	4.5-10	50	1/8	**880VBN12T420BH000**	3.3
3/4	0.78	20	8.5	7.4	0	232	16.0	232	16.0	-	-	60-145	4.2-10	80	1/4	**880VBN12T430BH000**	6.8
1	1.00	25	14.3	12.4	0	20	1.4	20	1.4	-	-	65-145	4.5-10	50	1/8	**880VBN16T420BH000**	4.2
1	1.00	25	14.3	12.4	0	140	9.6	140	9.6	-	-	65-145	4.5-10	80	1/4	**880VBN16T430BH000**	7.7
1	1.00	25	14.3	12.4	0	232	16.0	232	16.0	-	-	45-145	3.1-10	125	1/4	**880VBN16T450BH000**	12.3
1-1/4	1.25	32	23.2	20.2	0	60	4.1	60	4.1	-	-	75-145	5.2-10	80	1/4	**880VBN20T430BH000**	10.6
1-1/4	1.25	32	23.2	20.2	0	131	9.0	131	9.0	-	-	50-145	3.5-10	125	1/4	**880VBN20T450BH000**	14.8
1-1/2	1.56	40	26.7	23.2	0	60	4.1	60	4.1	-	-	75-145	5.2-10	80	1/4	**880VBN24T430BH000**	10.6
1-1/2	1.56	40	26.7	23.2	0	131	9.0	131	9.0	-	-	50-145	3.5-10	125	1/4	**880VBN24T450BH000**	14.8

BRONZE BODY VALVES — **NORMALLY CLOSED VALVE DATA (pilot option #5)**

Port Size	Orifice Size inch	Orifice Size DN (mm)	Flow Coeff Cv	Flow Coeff Kv (m^3/h)	Operating Pressure Min	psi air, gases	bar air, gases	psi water, liquids	bar water, liquids	psi steam	bar steam	Pilot Pressure psi	Pilot Pressure bar	Actuator mm dia	Actuator port bsp	Valve Number Bronze (1)	Wt. lbs
1/2	0.59	15	6.1	5.3	0	232	16.0	232	16.0	-	-	42-145	2.9-10	50	1/8	**880VBN08T520BH000**	3.3
3/4	0.78	20	8.5	7.4	0	232	16.0	232	16.0	-	-	42-145	2.9-10	50	1/8	**880VBN12T520BH000**	3.3
1	1.00	25	14.3	12.4	0	175	12.1	175	12.1	-	-	45-145	3.1-10	50	1/8	**880VBN16T520BH000**	4.2
1	1.00	25	14.3	12.4	0	232	16.0	232	16.0	-	-	18-145	1.3-10	80	1/4	**880VBN16T530BH000**	7.7
1-1/4	1.25	32	23.2	20.2	0	220	15.2	220	15.2	-	-	18-145	1.3-10	80	1/4	**880VBN20T530BH000**	10.6
1-1/4	1.25	32	23.2	20.2	0	232	16.0	232	16.0	-	-	6-145	0.4-10	125	1/4	**880VBN20T550BH000**	14.8
1-1/2	1.56	40	26.7	23.2	0	220	15.2	220	15.2	-	-	18-145	1.3-10	80	1/4	**880VBN24T530BH000**	10.6
1-1/2	1.56	40	26.7	23.2	0	232	16.0	232	16.0	-	-	6-145	0.4-10	125	1/4	**880VBN24T550BH000**	14.8

BRONZE BODY VALVES — **NORMALLY OPEN VALVE DATA (pilot option #6)**

Port Size	Orifice Size inch	Orifice Size DN (mm)	Flow Coeff Cv	Flow Coeff Kv (m^3/h)	Operating Pressure Min	psi air, gases	bar air, gases	psi water, liquids	bar water, liquids	psi steam	bar steam	Pilot Pressure psi	Pilot Pressure bar	Actuator mm dia	Actuator port bsp	Valve Number Bronze (1)	Wt. lbs
1/2	0.59	15	6.1	5.3	0	175	12.1	175	12.1	-	-	44-145	3.0-10	50	1/8	**880VBN08T620BH000**	3.3
1/2	0.59	15	6.1	5.3	0	232	16.0	232	16.0	-	-	18-145	1.3-10	80	1/4	**880VBN08T630BH000**	6.8
3/4	0.78	20	8.5	7.4	0	175	12.1	175	12.1	-	-	44-145	3.0-10	50	1/8	**880VBN12T620BH000**	3.3
3/4	0.78	20	8.5	7.4	0	232	16.0	232	16.0	-	-	18-145	1.3-10	80	1/4	**880VBN12T630BH000**	6.8
1	1.00	25	14.3	12.4	0	105	7.2	105	7.2	-	-	45-145	3.1-10	50	1/8	**880VBN16T620BH000**	4.2
1	1.00	25	14.3	12.4	0	232	16.0	232	16.0	-	-	18-145	1.3-10	80	1/4	**880VBN16T630BH000**	7.7
1-1/4	1.25	32	23.2	20.2	0	185	12.7	185	12.7	-	-	22-145	1.5-10	80	1/4	**880VBN20T630BH000**	10.6
1-1/4	1.25	32	23.2	20.2	0	232	16.0	232	16.0	-	-	8-145	0.6-10	125	1/4	**880VBN20T650BH000**	14.8
1-1/2	1.56	40	26.7	23.2	0	185	12.7	185	12.7	-	-	22-145	1.5-10	80	1/4	**880VBN24T630BH000**	10.6
1-1/2	1.56	40	26.7	23.2	0	232	16.0	232	16.0	-	-	8-145	0.6-10	125	1/4	**880VBN24T650BH000**	14.8

(1) Chrome Plated Brass Actuator Standard, Anodized Aluminum for 125mm housing

Series 880: 3 Way Angle Body Valves: 1/2" to 1-1/2" NPT

Stainless Steel Valve Operating Data

316 STAINLESS BODY VALVES — **DISTRIBUTING VALVE DATA (pilot option #3)**

Port Size	Orifice Size inch	Orifice Size DN (mm)	Flow Coeff Cv	Flow Coeff Kv (m^3/h)	Operating Pressure Min	psi air, gases	bar air, gases	psi water, liquids	bar water, liquids	psi steam	bar steam	Pilot Pressure psi	Pilot Pressure bar	Actuator mm dia	Actuator port bsp	Valve Number Stainless (1)	Wt. lbs
1/2	0.59	15	6.1	5.3	0	130	9.0	130	9.0	-	-	55-145	3.8-10	50	1/8	**880VSN08T320BH000**	3.3
1/2	0.59	15	6.1	5.3	0	390	27.0	390	27.0	-	-	45-145	3.1-10	80	1/4	**880VSN08T330BH000**	6.8
3/4	0.78	20	8.5	7.4	0	130	9.0	130	9.0	-	-	55-145	3.8-10	50	1/8	**880VSN12T320BH000**	3.3
3/4	0.78	20	8.5	7.4	0	320	27.0	320	27.0	-	-	45-145	3.1-10	80	1/4	**880VSN12T330BH000**	6.8
1	1.00	25	14.3	12.4	0	60	4.1	60	4.1	-	-	68-145	4.7-10	50	1/8	**880VSN16T320BH000**	4.2
1	1.00	25	14.3	12.4	0	220	15.1	220	15.1	-	-	45-145	3.1-10	80	1/4	**880VSN16T330BH000**	7.7
1	1.00	25	14.3	12.4	0	390	27.0	390	27.0	-	-	29-145	2.0-10	125	1/4	**880VSN16T352BH000**	12.3
1-1/4	1.25	32	23.2	20.2	0	155	10.7	155	10.7	-	-	45-145	3.1-10	80	1/4	**880VSN20T330BH000**	10.6
1-1/4	1.25	32	23.2	20.2	0	260	18.0	260	18.0	-	-	32-145	2.2-10	125	1/4	**880VSN20T352BH000**	14.8
1-1/2	1.56	40	26.7	23.2	0	80	5.5	80	5.5	-	-	52-145	3.6-10	80	1/4	**880VSN24T330BH000**	
1-1/2	1.56	40	26.7	23.2	0	160	11.0	160	11.0	-	-	32-145	2.2-10	125	1/4	**880VSN24T352BH000**	14.8

316 STAINLESS BODY VALVES — **MIXING VALVE DATA (pilot option #4)**

Port Size	Orifice Size inch	Orifice Size DN (mm)	Flow Coeff Cv	Flow Coeff Kv (m^3/h)	Operating Pressure Min	psi air, gases	bar air, gases	psi water, liquids	bar water, liquids	psi steam	bar steam	Pilot Pressure psi	Pilot Pressure bar	Actuator mm dia	Actuator port bsp	Valve Number Stainless (1)	Wt. lbs
1/2	0.59	15	6.1	5.3	0	50	3.4	50	3.4	-	-	57-145	3.9-10	50	1/8	**880VSN08T420BH000**	3.3
1/2	0.59	15	6.1	5.3	0	290	20.0	290	20.0	-	-	45-145	3.1-10	80	1/4	**880VSN08T430BH000**	6.8
3/4	0.78	20	8.5	7.4	0	50	3.4	50	3.4	-	-	57-145	3.9-10	50	1/8	**880VSN12T420BH000**	3.3
3/4	0.78	20	8.5	7.4	0	290	20.0	290	20.0	-	-	45-145	3.1-10	80	1/4	**880VSN12T430BH000**	6.8
1	1.00	25	14.3	12.4	0	20	1.4	20	1.4	-	-	60-145	4.2-10	50	1/8	**880VSN16T420BH000**	4.2
1	1.00	25	14.3	12.4	0	160	11.0	160	11.0	-	-	45-145	3.1-10	80	1/4	**880VSN16T430BH000**	7.7
1	1.00	25	14.3	12.4	0	350	24.0	350	24.0	-	-	29-145	2.0-10	125	1/4	**880VSN16T452BH000**	12.3
1-1/4	1.25	32	23.2	20.2	0	110	7.6	110	7.6	-	-	50-145	3.6-10	80	1/4	**880VSN20T430BH000**	10.6
1-1/4	1.25	32	23.2	20.2	0	232	16.0	232	16.0	-	-	35-145	2.3-10	125	1/4	**880VSN20T452BH000**	14.8
1-1/2	1.56	40	26.7	23.2	0	60	4.1	60	4.1	-	-	50-145	3.6-10	80	1/4	**880VSN24T430BH000**	10.6
1-1/2	1.56	40	26.7	23.2	0	115	8.0	115	8.0	-	-	35-145	2.3-10	125	1/4	**880VSN24T452BH000**	14.8

316 STAINLESS BODY VALVES — **NORMALLY OPEN VALVE DATA (pilot option #6)**

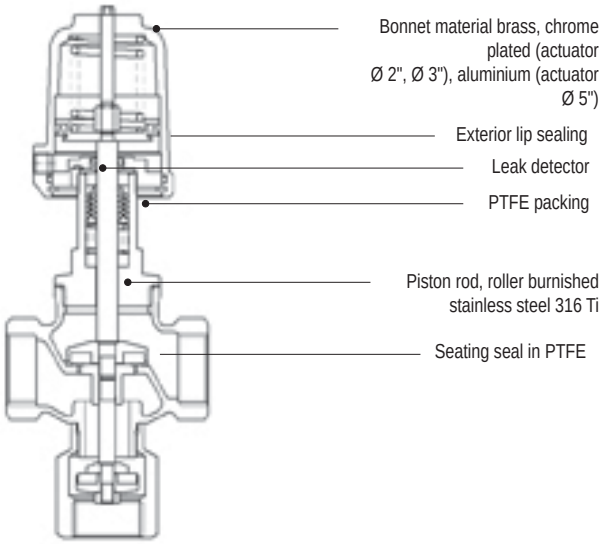
Port Size	Orifice Size inch	Orifice Size DN (mm)	Flow Coeff Cv	Flow Coeff Kv (m^3/h)	Operating Pressure Min	psi air, gases	bar air, gases	psi water, liquids	bar water, liquids	psi steam	bar steam	Pilot Pressure psi	Pilot Pressure bar	Actuator mm dia	Actuator port bsp	Valve Number Stainless (1)	Wt. lbs
1/2	0.59	15	6.1	5.3	0	175	12.0	175	12.0	-	-	45-145	3.3-10	50	1/8	**880VSN08T620BH000**	3.3
1/2	0.59	15	6.1	5.3	0	580	40.0	580	40.0	-	-	18-145	1.3-10	80	1/4	**880VSN08T630BH000**	6.8
3/4	0.78	20	8.5	7.4	0	175	12.0	175	12.0	-	-	45-145	3.3-10	50	1/8	**880VSN12T620BH000**	3.3
3/4	0.78	20	8.5	7.4	0	580	40.0	580	40.0	-	-	18-145	1.3-10	80	1/4	**880VSN12T630BH000**	6.8
1	1.00	25	14.3	12.4	0	100	7.0	100	7.0	-	-	50-145	3.4-10	50	1/8	**880VSN16T620BH000**	4.2
1	1.00	25	14.3	12.4	0	390	27.0	390	27.0	-	-	18-145	1.3-10	80	1/4	**880VSN16T630BH000**	7.7
1-1/4	1.25	32	23.2	20.2	0	232	16.0	232	16.0	-	-	20-145	1.4-10	80	1/4	**880VSN20T630BH000**	10.6
1-1/2	1.56	40	26.7	23.2	0	150	10.3	150	10.3	-	-	20-145	1.4-10	80	1/4	**880VSN24T630BH000**	14.8

(1) Chrome Plated Brass Actuator Standard, Anodized Aluminum for 125mm housing

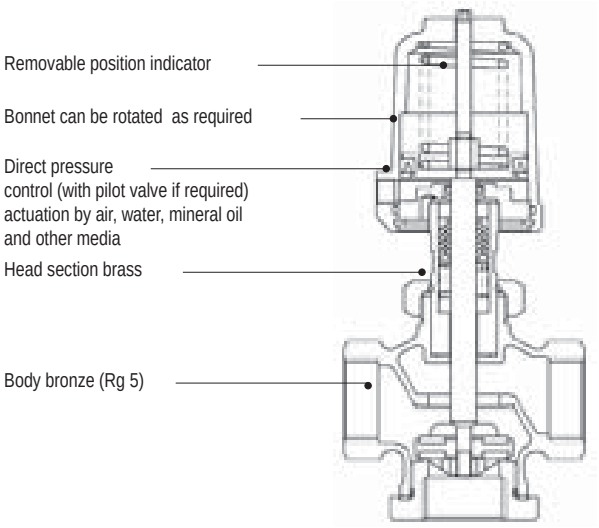
Series 880: 3 Way Angle Body Valves: 1/2” to 1-1/2” NPT

How the Valve Functions

Normal function, normally closed

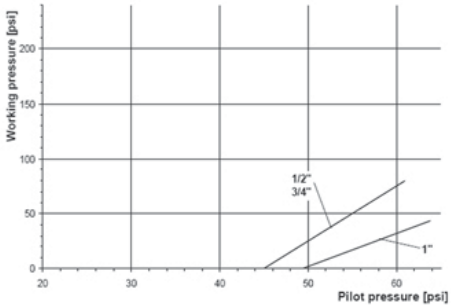


Distributing and mixing function

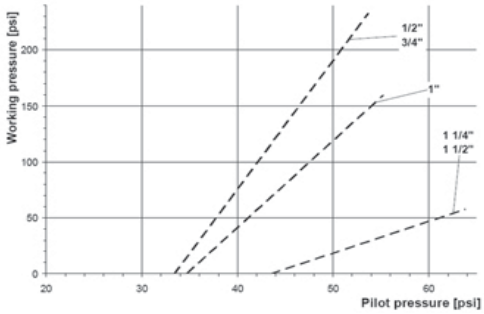


Distributing Function (Pilot Option #3)

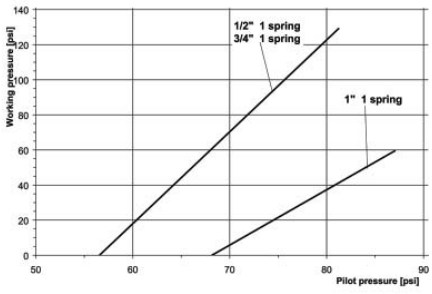
Bronze: Actuator Diameter 2” (50 mm)



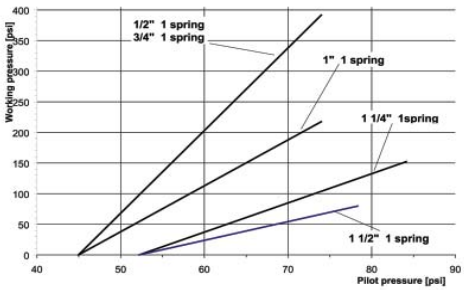
Bronze: Actuator Diameter 3” (80 mm)



Stainless Steel: Actuator Diameter 2” (50 mm)



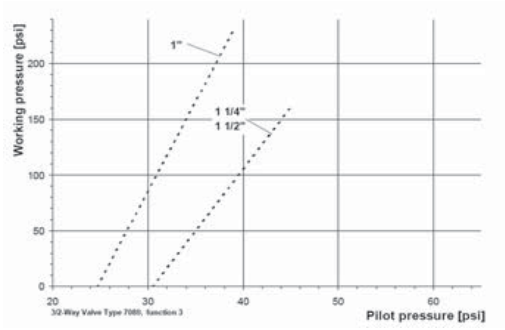
Stainless Steel: Actuator Diameter 3” (80 mm)



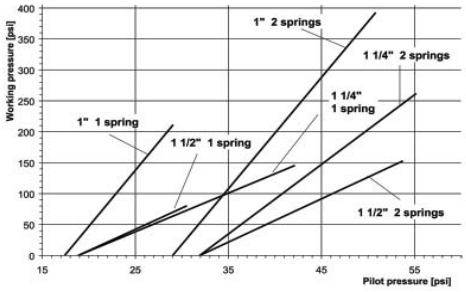
Series 880: 3 Way Angle Body Valves: 1/2" to 1-1/2" NPT

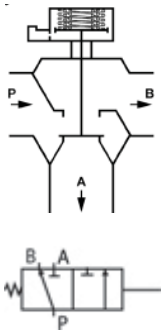
Distributing Function (Pilot Option #3)

Bronze: Actuator Diameter 5" (125 mm)



Stainless Steel: Actuator Diameter 5" (125 mm)

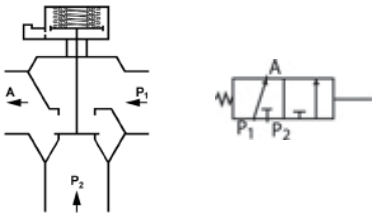




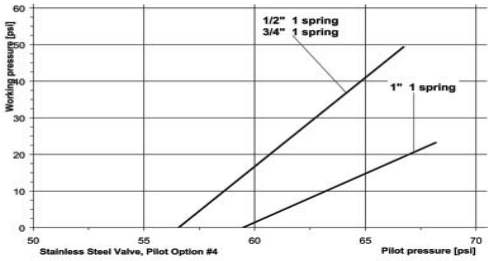
Mixing Function (Pilot Option #4)

Bronze: The valve may be used up to the nominal pressure of 232 psi, if the difference pressure between P1 and P2 does not exceed the admissible maximum value of Δ Pmax.

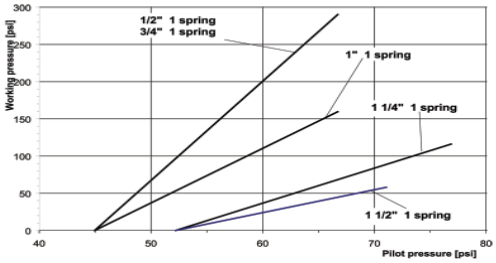
Size	P_{max} psi	Pilot pressure psi	Actuator inch
1/2"	0 - 50	65 - 145	2"
1/2"	0 - 232	60 - 90	3"
3/4"	0 - 50	65 - 145	2"
3/4"	0 - 232	60 - 90	3"
1"	0 - 20	65 - 145	2"
1"	0 - 140	65 - 90	3"
1"	0 - 232	45 - 50	5"
1 1/4"	0 - 60	75 - 130	3"
1 1/4"	0 - 130	50 - 75	5"
1 1/2"	0 - 60	75 - 130	3"
1 1/2"	0 - 130	50 - 75	5"



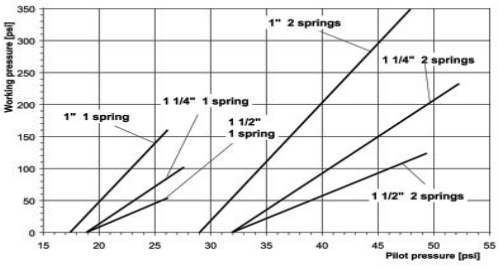
Stainless Steel: Actuator Diameter 2" (50 mm)



Stainless Steel: Actuator Diameter 3" (80 mm)



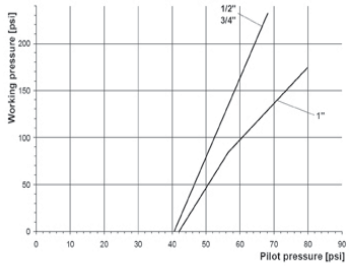
Stainless Steel: Actuator Diameter 5" (125 mm)



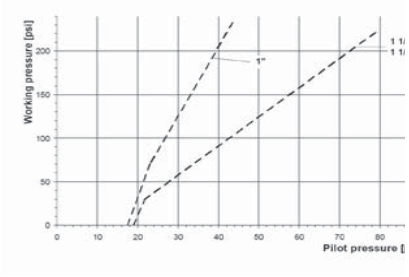
Series 880: 3 Way Angle Body Valves: 1/2” to 1-1/2” NPT

BRONZE: Normally Closed Function (Pilot Option #5)

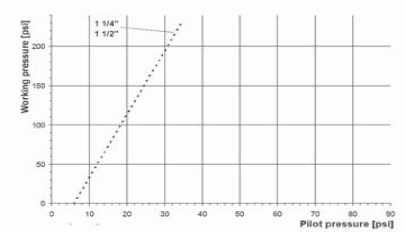
Actuator diameter 2” (50 mm)

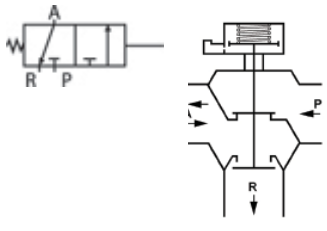


Actuator diameter 3” (80 mm)



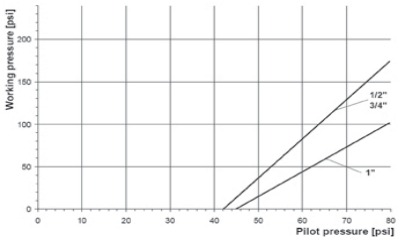
Actuator diameter 5” (125 mm)



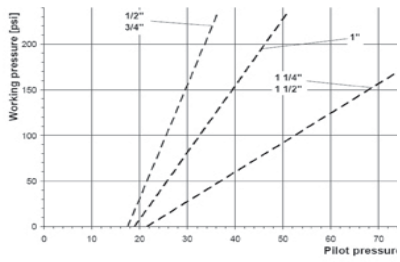


BRONZE: Normally Open Function (Pilot Option #6)

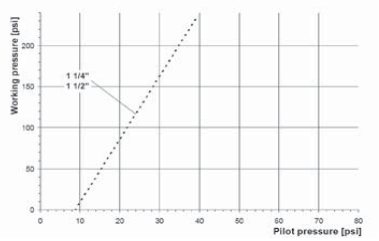
Actuator diameter 2” (50 mm)

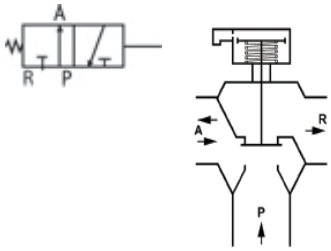


Actuator diameter 3” (80 mm)



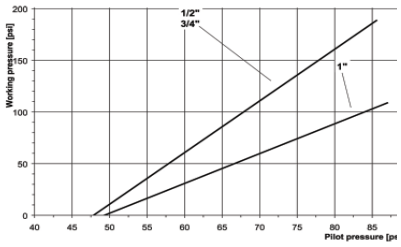
Actuator diameter 5” (125 mm)



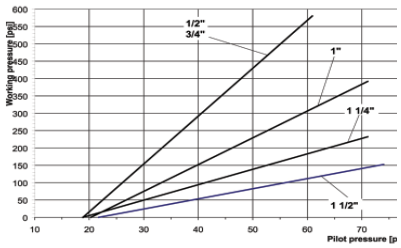


STAINLESS STEEL: Normally Open Function (Pilot Option #6)

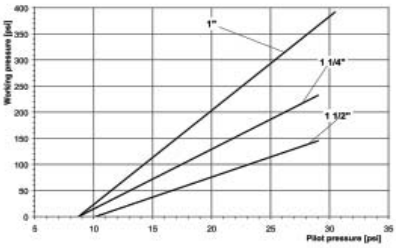
Actuator diameter 2” (50 mm)

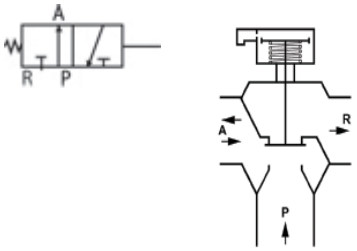


Actuator diameter 3” (80 mm)



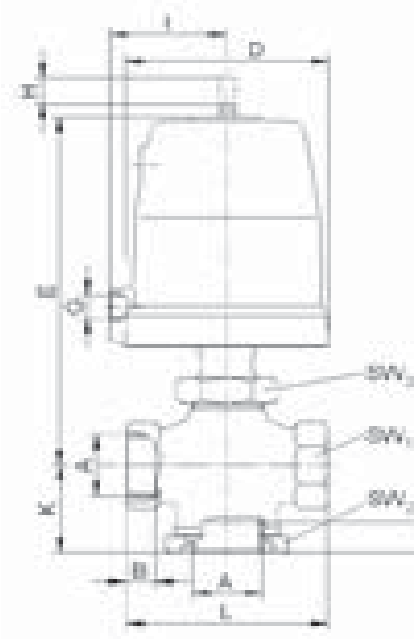
Actuator diameter 5” (125 mm)



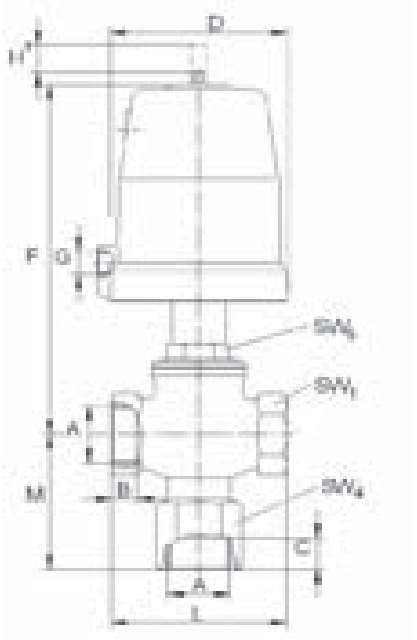


Series 880: 3 Way Angle Body Valves: 1/2" to 1-1/2" NPT

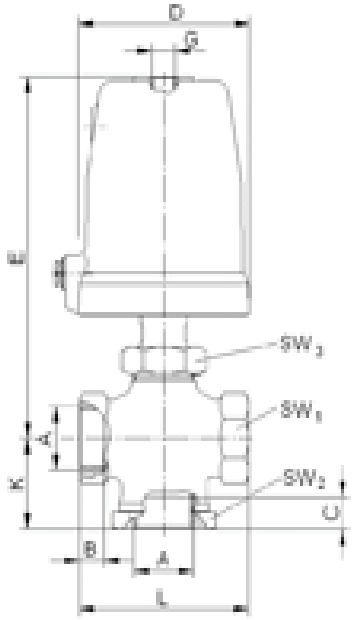
Dimensions and Weights: Body with Threaded Ends



Distributing and mixing function



Normal function, normally closed



Normal function, normally open

A Pipe Size NPT	Actuator Diameter mm	DN	B	C	D	E	F	G	H stroke	I	J stroke	K	L	M	SW1	SW2	SW3	SW4	SW5	Cv	Weight	
																					lbs.	Kg.
1/2"	50	15	0.50	0.60	2.45	6.00	5.80	G 1/8"	0.35	1.35	0.20	1.55	3.15	2.70	1.30	1.60	1.60	1.40	1.20	6.1	3.3	1.5
1/2"	80	15	0.50	0.60	3.85	7.50	7.30	G 1/4"	0.35	2.15	0.20	1.55	3.15	2.70	1.30	1.60	1.60	1.40	1.20	6.1	6.8	3.1
3/4"	50	20	0.50	0.60	2.45	6.00	5.80	G 1/8"	0.35	1.35	0.20	1.65	3.15	2.70	1.30	1.60	1.60	1.40	1.20	8.5	3.3	1.5
3/4"	80	20	0.50	0.60	3.85	7.50	7.30	G 1/4"	0.35	2.15	0.20	1.65	3.15	2.70	1.30	1.60	1.60	1.40	1.20	8.5	6.8	3.1
1"	50	25	0.55	0.70	2.45	6.00	6.50	G 1/8"	0.43	1.35	0.31	1.85	3.75	2.85	1.60	2.15	1.60	1.60	1.20	14.3	4.2	1.9
1"	80	25	0.55	0.70	3.85	7.50	8.05	G 1/4"	0.43	2.15	0.31	1.85	3.75	2.85	1.60	2.15	1.60	1.60	1.20	14.3	7.7	3.5
1"	125	25	0.55	0.70	5.75	8.45	9.00	G 1/4"	0.43	3.15	0.31	1.85	3.75	2.85	1.60	2.15	1.60	1.60	1.20	14.3	12.3	5.6
1-1/4"	80	32	0.70	0.75	3.85	8.20	8.30	G 1/4"	0.73	2.15	0.35	2.40	5.20	3.65	2.30	2.95	1.60	2.15	1.25	23.2	10.6	4.8
1-1/4"	125	32	0.70	0.75	5.75	9.15	9.25	G 1/4"	0.73	3.15	0.35	2.40	5.20	3.65	2.30	2.95	1.60	2.15	1.25	23.2	14.8	6.7
1-1/2"	80	40	0.70	0.75	3.85	8.20	8.30	G 1/4"	0.73	2.15	0.35	2.40	5.20	3.65	2.30	2.95	1.60	2.15	1.25	26.7	10.6	4.8
1-1/2"	125	40	0.70	0.75	5.75	9.15	9.25	G 1/4"	0.73	3.15	0.35	2.40	5.20	3.65	2.30	2.95	1.60	2.15	1.25	26.7	14.8	6.7

Dimension in inches except as noted

810/880 Series Valve Ordering

On Off Control

1. Series		2 Configuration		3. Body Material		4 Connection Type		5. Port / Orifice Inches / DN			6. Seal Material		7 Pilot Function	
	810	V	Valve Assembly	B	Bronze & Brass	N	NPT-thread	04	1/4"	DN08	T	PTFE		For 810 Valve Series
	880	A	Actuator Unit less Body	S	Stainless Steel 316L	G	BSP- ISO	06	3/8"	DN10	P	PEEK	1	NC (closing with flow - over seat)
		R	Repair Kit			A	Weld Ends - ISO	08	1/2"	DN15			2	NO (closing against flow - under seat)
						C	ANSI Flanges 150#	12	3/4"	DN20			3	NC (closing against flow - under seat)
						E	Tube Ends	16	1"	DN25		Consult factory for other seal materials	4	Universal, double acting
						T	Tri Clamp inch (ASME 1998)	20	1-1/4"	DN32				
								24	1-1/2"	DN40				For 880 Valve Series
								32	2'	DN50			3	Distributing Valve
								40	2-1/2"	DN65			4	Mixing Valve
								48	3"	DN80			5	Normally Closed Valve
													6	Normally Open Valve

8 Actuator Diameter		9. Springs		10. Actuator Head Material		11. Temperature Version		12 Packing		13 Accessories		14 Additional	
2	Piston 2" (50mm)	0	Standard	B	Brass Plated, Alum Anodized for 5" size	H	High Temperature standard (392°F / 200°C) (bronze, stainless steel)	0	Standard - PTFE Graphite Filled	0	No accessories	0	No additional accessories
3	Piston 3" (80mm)	2	2 springs	S	Stainless Steel 316 (Option for stainless body valves only)	U	Ultra High Temperature (430°F stainless steel	1	PTFE free	1	Electrical position indicator with single switch	1	Pilot Valve .078 (DN2) 120/60, 110/50 DIN coil
5	Piston 5" (125mm)	3	3 springs			L	Low Temperature (-40°F / -40°C)	2	Inverted packing for Vacuum Service only	2	Electrical position indicator with double switches	2	Pilot Valve .078 (DN2) 240/60, 220/50 DIN coil
										3		3	Pilot Valve .078 (DN2) 24/60 DIN coil
										4	Manual overide (N.C.)	4	Pilot Valve .078 (DN2) 24VDC DIN coil
										5	Stroke limitation(N.C.)	5	Pilot Valve .078 (DN2) 12VDC DIN coil
										6	Electrical position indicator compact	S	Silicone Free
										7	Position indicator with 2 proximity switches	X	Oxygen Service
										8	Position indicator with 1 proximity switch		
										9	Proximity position indicator compact		
										A	ASI BUS (IP65)		

Accessories Selections

Numerous accessory options can be ordered and assembled to on-off pneumatic piston actuator valves. These include:

Position Indicator Switches

Indicator with single electrical switch – **Option Code "1"**
Indicator with double electrical switches – **Option Code "2"**

- Mounts on top of the actuator in place of the standard optical indicator
- Compact NEMA 4 housing

ELECTRICAL SWITCHES		
Breaking Capacity	6 A	5 A
Voltage	250 V AC	4 – 30 V DC
Protection Class	IP 54	
Amb. Temp	-4°F (-20°C) up to 176°F (80°C)	

Manual Override for Normally Closed Valves – Option Code "4"

- Available for normally closed operation when valve is de-pressurized

Stroke Limitation – Option Code "5"

- Adjustable minimum and maximum flow settings from 0% to 100% Cv flow
- Available for normally closed and normally open valves
- Easy adjustment with threaded rod

Compact Electrical Position Indicator – Option Code "6"

- Mounts on top of the actuator in place of the standard optical indicator

MECHANICAL SWITCH	
Breaking Capacity	5 A 230 V AC (resistor)
	5 A 230 V AC (coil)
	0.5 A 230 V AC (filament lamp)
	2 A 15 - 30 V DC
Amb. Temp.	14°F (-10°C) up to 160°F (70°C)
Protection Class	IP 43

Proximity Indicator Switches

Indicator with 2 inductive proximity switches – **Option Code "7"**
Indicator with 1 inductive proximity switch – **Option Code "8"**

- Mounts on top of the actuator in place of the standard optical indicator
- Compact NEMA 4 housing

INDUCTIVE PROXIMITY SWITCHES	
Breaking Capacity	200mA
Voltage	10 – 36 VDC
Amb. Temp	-13°F (-20°C) up to 176°F (80°C)
Protection Class	IP67
Wiring	PNP or NPN
	Optional Explosion Proof and High Voltage Versions

Compact Inductive Proximity Switch – Option Code "9"

- Activates switch when valve is fully open
- Mounts on top of the actuator in place of the standard optical indicator
- Compact NEMA 4 housing

COMPACT INDUCTIVE PROXIMITY SWITCH	
Breaking Capacity	200 mA
Voltage	10 - 30 V DC
Amb. Temp.	-13°F (-20°C) up to 212°F (100°C)
Protection Class	IP 67

3 Way Direct Acting Pilot Control Valves

FEATURES

Pilot Control Valve

- Compact design for industrial applications
- Brass or stainless steel body valves
- NC (normally closed) and NO (normally open) versions
- Rugged coil family for all application demands
- Manual operation optional

Technical Specifications

Function	3/2 Normally Closed, Normally Open and Multi-Purpose
Connections: NPT thread standard	1/8" - 1/4 "
Differential Pressure	See Specifications tables
Pilot Control Media	Air, neutral gas, water
Max. fluid temperature	-20°F (-23°C) up to 185°F (85°C)
Ambient temperature	-20°F (-23°C) up to +140°F (60°C)
Viscosity of the fluid	max.22 mm²/s (22cSt, 3°E, 100SSU)
Installation	Any position
Manual Locking Control	Optional
Materials	Body Brass (stainless optional) Sleeve Stainless Core Stainless Spring Stainless Seals FKM
Coils	DIN coil standard Conduit & Hazardous coils optional

port size	orifice size inch	orifice size mm	Flow Coef Cv	Flow Coef Kv (m^3/h)	air psi	water psi	oil psi	AC VALVE NUMBERS	air psi	water psi	oil psi	DC VALVE NUMBERS
BRASS UNIVERSAL VALVE FOR NORMALLY CLOSED & NORMALLY OPEN REQUIREMENTS												
1/8	1/16	1.5	0.11	0.10	150	150	150	**7133KBN1GVJ1N0D4D1xx**	150	150	150	**7133KBN1GVJ1N0D5D1xx**
1/8	5/64	2.0	0.17	0.15	100	100	100	**7133KBN1JVJ1N0D4D1xx**	100	100	100	**7133KBN1JVJ1N0D5D1xx**
1/4	1/16	1.5	0.11	0.10	150	150	150	**7133KBN2GVJ1N0D4D1xx**	150	150	150	**7133KBN2GVJ1N0D5D1xx**
1/4	5/64	2.0	0.17	0.15	100	100	100	**7133KBN2JVJ1N0D4D1xx**	100	100	100	**7133KBN2JVJ1N0D5D1xx**
STAINLESS NORMALLY CLOSED												
1/8	1/16	1.5	0.10	0.09	200	200	200	**71315SN1GV00N0D4D1xx**	200	200	200	**71315SN1GV00N0D5D1xx**
1/4	3/32	2.4	0.17	0.15	125	125	125	**71315SN2KV00N0D4D1xx**	125	125	125	**71315SN2KV00N0D5D1xx**
STAINLESS NORMALLY OPEN												
1/8	1/16	1.5	0.10	0.09	150	150	150	**71395SN1GVJ1N0D4D1xx**	150	150	150	**71395SN1GVJ1N0D5D1xx**
1/4	3/32	2.4	0.17	0.15	125	125	125	**71395SN2KVJ1N0D4D1xx**	125	125	125	**71395SN2KVJ1N0D5D1xx**

1 bar = 14.5 psi

AC VoltageCodes
P3 = 120/60; 110/50
Q3 = 240/60; 220/50
B2 = 24/60; 24/50

DC VoltageCodes
C1 = 12VDC
C2 = 24VDC

*** xx - Replace with voltage code**

ELECTRICAL SELECTION GUIDE

All Parker solenoid valves for pneumatic actuator control use standard coil designs that are interchangeable. They are available in a wide variety of standard voltages and frequencies. Coils are labeled with electrical data providing easy identification.

Construction

Encapsulated waterproof coils are standard on all pilot valves. Numerous construction options are available including DIN terminals and conduit hub housing coils. The special compound is absolutely waterproof and impervious to oil, dust and most corrosive fumes and vapors.

All coils are Class "F" rated for high temperature application requirements. Class H coils is optional. The coils are molded in accordance with UL, NEMA, and other accepted standards.

Coil Code*	Class	Wattage	Description	
D4D1xx	F	13	DIN AC Voltages(terminations per DIN 43650 / ISO 4400 requirements)	
D5D1xx	F	16	DIN DC Voltages(terminations per DIN 43650 / ISO 4400 requirements)	
C111xx	F	10	Conduit, NEMA 4X 18" lead length, 2-wires	
H111xx	F	10	Hazardous, NEMA 4X, 7, 9 18" lead length, 2-wires	

* xx- Replace with voltage code

DIN coils are provided standard as noted in order table.
To select the either conduit version coil, simply specify the coil number and voltage in positions 15 through 20 of the valve number.

Example: To order 1/4" NPT brass body NC valve with NEMA 4 conduit coil rated for 120/60 voltage:
7133KBN2JVJ1+N0+C111P3 = 7133KBN2JVJ1N0C111P3
To order the pressure vessel alone, select only the pressure vessel number, the first 12 digits of the part number.
To select coil alone, select the 4-digit coil part and 2-digit voltage code.

Electrical Supply Requirements

The solenoid coil must be connected to electrical lines of correct voltage and frequency as indicated on the coil label. The supply circuits must be properly sized to give adequate voltage at the coil leads even when other electrical equipment is operating. The molded coil is designed to operate with line voltage from 85% to 110% of the coil rated voltage. Operating with a line voltage above or below these limits may result in reduced coil life or coil burn out. Also, operating with line voltage below the limit will result in lowering the maximum operating pressure differential (MOPD).

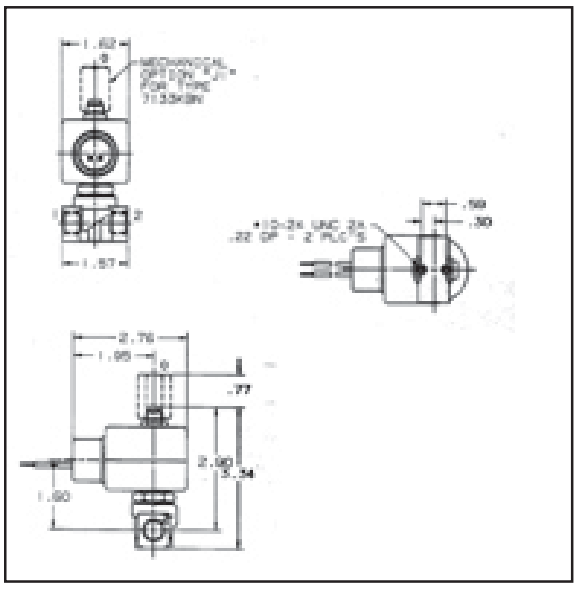
Conversion from AC to DC Coils

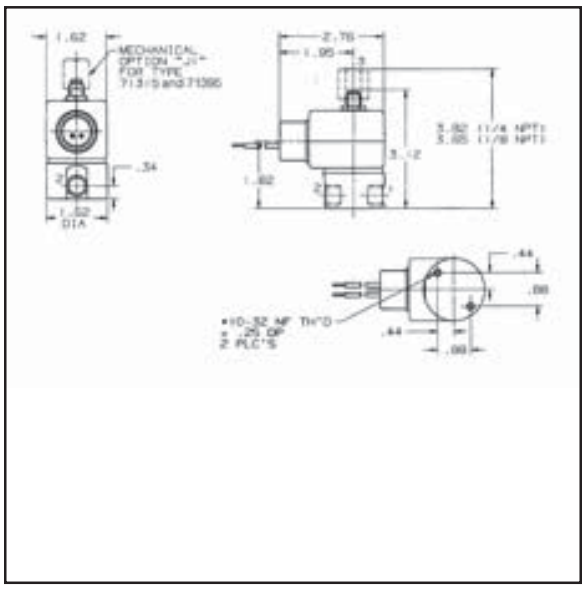
The same valve assembly can be used for both AC and DC service requirements. AC and DC coils are interchangeable. To convert a valve assembly from AC to DC service, select the appropriate DC coil voltage per the valve specification chart based on the system pressure requirements.

ELECTRICAL DATA

To determine the approximate Holding or Inrush Current for AC voltages including 24/60, 120/60, 208/60 and 240/60 in amperes, divide the voltage into the VA rating indicated in the AC Power Consumption tables. DC valves have no inrush current. The current rating in amperes are shown in the DC table. Figures are based on nominal values and will vary slightly depending on operating voltage and coil tolerances.

Valve Series	AC Power Consumption Ratings		DC Current Consumption Ratings (Amperes)	
	10 watt AC coils		10 watt DC coils	
	VA Holding	VA Inrush	12VDC	24VDC
7133K	17	31	0.81	0.41
71315	16	30	0.81	0.41
71395	17	27	0.81	0.41





Proportional Control Angle Body Valves

In this section:

820 Series: 23-28

820 Control Accessories: 29-31

830 & 835 Motor Actuator Features: 32

Series 830: 33-37

Series 835: 38-43

Series 820: 2 Way Angle Body Control Valves: 1/4" to 2"

DIGITAL CONTROL: *Control valve with integrated microprocessor-positioner for neutral through aggressive fluids.*

Features:

- Operates independent of supply pressure variations.
- No steady state air consumption.
- Contactless strike feedback (inductive sensor)
- Not sensitive to vibration
- Instrument grade air not essential
- Individually programmable software configurable flow characteristics
- Protection Class IP 65
- For pneumatic control with linear or rotary actuators

Technical Specifications

Body Material	AISI 316L
Function	2/2 Normally Closed, Closes against the flow
Nominal sizes	1/4" - 2 "
Connections: NPT thread **standard** BSP thread (ISO228/1) Tube Ends Flanges ANSI 150	1/4" - 2 "
Differential Pressure	See Specifications tables
Pilot Pressure	up to 145 psi (10bar) reference graphs
Actuator: ^Optional	2" & 3" brass plated, 5" aluminum ^ 2" & 3" Stainless Actuator
Max. fluid temperature #Optional *Optional	-22°F (-30°C) up to 392°F (200°C) # to -40°F (-40°C) * Up to +430°F (221°C)
Seal Material	PTFE
Packing Gland	PTFE / Graphite
Viscosity of the fluid	max.600 mm²/s (600cSt, 80°E, 2700SSU)
Vacuum	maximum 0.0295 mercury (Hg)
Working pressure for inverted packing for vacuum service	maximum 175 psi
Leakage	ANSI Class VI shutoff
Installation	Any position
Pilot Control Media	Air, neutral gas, water
Fluids	Inert gases, hot water, oils, steam, aggressive & corrosive fluids
Optical Position Indicator	Standard

DIGITAL POSITIONER

Port Size	Orifice Size		Flow Coeff		Operating Pressure							Pilot Pressure		Actuator		Valve Number Stainless (1) (2) (3) Linear Flow (4) (5) (8)	Valve Number Stainless (1) (2) (3) Equal Percentage Flow (6) (7) (8)	Wt lbs
	DN		Cv	Kv	Min	psi	bar	psi	bar	psi	bar	psi	bar	mm	port			
	inch	mm		(m^3/h)		air, gases		water, liquids		steam				dia	bsp			
1/4	0.31	08	0.7	0.6	0	232	16.0	232	16.0	210	14.5	75-90	4-6	50	1/8	820VSN04TD2ABH000	820VSN04TD2EBH000	5.0
1/4	0.31	08	0.7	0.6	0	232	16.0	232	16.0	210	14.5	60-90	4-6	80	1/4	820VSN04TD3ABH000	820VSN04TD3EBH000	9.0
1/2	0.59	15	4.4	3.8	0	232	16.0	232	16.0	210	14.5	60-90	4-6	80	1/4	820VSN08TD3ABH000	820VSN08TD3EBH000	9.0
3/4	0.78	20	10.2	8.9	0	232	16.0	232	16.0	210	14.5	60-90	4-6	80	1/4	820VSN12TD3ABH000	820VSN12TD3EBH000	9.3
1	1.00	25	16.2	14.1	0	232	16.0	232	16.0	210	14.5	60-90	4-6	80	1/4	820VSN16TD3ABH000	820VSN16TD3EBH000	9.7
1-1/4	1.25	32	23.2	20.2	0	145	10.0	145	10.0	145	10.0	45-90	3-6	80	1/4	820VSN20TD3ABH000	820VSN20TD3EBH000	10.5
1-1/4	1.25	32	23.2	20.2	0	232	16.0	232	16.0	210	14.5	60-90	3-6	125	1/4	820VSN20TD5ABH000	820VSN20TD5EBH000	16.1
1-1/2	1.56	40	31.3	27.2	0	87	6.0	87	6.0	87	6.0	60-90	4-6	80	1/4	820VSN24TD3ABH000	820VSN24TD3EBH000	11.0
1-1/2	1.56	40	31.3	27.2	0	232	16.0	232	16.0	210	14.5	60-90	4-6	125	1/4	820VSN24TD5ABH000	820VSN24TD5EBH000	16.8
2	2.00	50	42.9	37.3	0	45	3.0	45	3.0	45	3.0	60-90	4-6	80	1/4	820VSN32TD3ABH000	-	12.4
2	2.00	50	42.9	37.3	0	131	9.0	131	9.0	131	9.0	58-87	4-6	125	1/4	820VSN32TD5ABH000	-	18.1

(1) Chrome Plated Brass Actuator Standard, Anodized Aluminum for 125mm housing.
(2) For BSP porting, change "N" to "G" in the 6th position.
(3) Optional Stainless Actuator, change "B" to "S" in the 13th position.
(4) For 40% linear reduced flow, change 12th position to "B" from A. Reference Cv values chart for availability by port size.
(5) For 25% linear reduced flow, change 12th position to "C" from A. Reference Cv values chart for availability by port size.
(6) For 40% equal percentage reduced flow, change 12th position to "F" from E. Reference Cv values chart for availability by port size.
(7) For 25% equal percentage reduced flow, change 12th position to "G" from E. Reference Cv values chart for availability by port size.
(8) Consult Parker for additional reduced flow availability ooptions.

Series 820: 2 Way Angle Body Control Valves: 1/4" to 2"

ELECTRO-PNEUMATIC CONTROL: *Electro-Pneumatically operated control valve for neutral to aggressive fluids including electro-pneumatic (e/p) positioner.*

Features:

- Integrated Positioner
- All parts contacting fluid made of 316L Stainless Steel
- Temperatures up to 392° F / 200° C
- Compact Design

Technical Specifications

Body Material	AISI 316L
Function	2/2 Normally Closed, Closes against the flow
Nominal sizes	1/4" - 2 "
Connections: NPT thread **standard** BSP thread (ISO228/1) Tube Ends Flanges ANSI 150	1/4" - 2 "
Differential Pressure	See Specifications tables
Pilot Pressure	up to 145 psi (10bar) reference graphs
Actuator: ^Optional	2" & 3" brass plated, 5" aluminum ^ 2" & 3" Stainless Actuator
Max. fluid temperature #Optional *Optional	-22°F (-30°C) up to 392°F (200°C) # to -40°F (-40°C) * Up to +430°F (221°C)
Seal Material	PTFE
Packing Gland	PTFE / Graphite
Viscosity of the fluid	max.600 mm²/s (600cSt, 80°E, 2700SSU)
Vacuum	maximum 0.0295 mercury (Hg)
Working pressure for inverted packing for vacuum service	maximum 175 psi
Leakage	ANSI Class VI shutoff
Installation	Any position
Pilot Control Media	Air, neutral gas, water
Fluids	Inert gases, hot water, oils, steam, aggressive & corrosive fluids
Optical Position Indicator	Standard

ELECTRO-PNEUMATIC POSITIONER (I/P)

Port Size	Orifice Size		Flow Coeff		Operating Pressure							Pilot Pressure		Actuator		Valve Number Stainless (1) (2) (3) **Linear Flow** **(4) (5) (8)**	Valve Number Stainless (1) (2) (3) **Equal Percentage Flow** **(6) (7) (8)**	Wt lbs
	DN		Cv	Kv	Min	psi	bar	psi	bar	psi	bar	psi	bar	mm	port			
	inch	mm		(m^3/h)		air, gases		water, liquids		steam				dia	bsp			
1/4	0.31	08	0.7	0.6	0	232	16.0	232	16.0	210	14.5	60-90	4-6	80	1/4	**820VSN04T83ABH000**	**820VSN04T83EBH000**	9.0
1/2	0.59	15	4.4	3.8	0	232	16.0	232	16.0	210	14.5	60-90	4-6	80	1/4	**820VSN08T83ABH000**	**820VSN08T83EBH000**	9.0
3/4	0.78	20	10.2	8.9	0	232	16.0	232	16.0	210	14.5	60-90	4-6	80	1/4	**820VSN12T83ABH000**	**820VSN12T83EBH000**	9.0
1	1.00	25	16.2	14.1	0	175	12.1	175	12.1	175	12.1	60-90	4-6	80	1/4	**820VSN16T83ABH000**	**820VSN16T83EBH000**	9.5
1-1/4	1.25	32	23.2	20.2	0	102	7.0	102	7.0	102	7.0	60-90	4-6	80	1/4	**820VSN20T83ABH000**	**820VSN20T83EBH000**	10.1
1-1/4	1.25	32	23.2	20.2	0	190	13.1	190	13.1	190	13.1	45-90	3-6	125	1/4	**820VSN20T85ABH000**	**820VSN20T85EBH000**	15.8
1-1/2	1.56	40	31.3	27.2	0	60	4.1	60	4.1	60	4.1	60-90	4-6	80	1/4	**820VSN24T83ABH000**	**820VSN24T83EBH000**	10.8
1-1/2	1.56	40	31.3	27.2	0	160	11.0	160	11.0	160	11.0	60-90	4-6	125	1/4	**820VSN24T85ABH000**	**820VSN24T85EBH000**	16.5
2	2.00	50	42.9	37.3	0	85	5.9	85	5.9	85	5.9	60-90	4-6	125	1/4	**820VSN32T85ABH000**	-	17.8

(1) Chrome Plated Brass Actuator Standard, Anodized Aluminum for 125mm housing.
(2) For BSP porting, change "N" to "G" in the 6th position.
(3) Optional Stainless Actuator, change "B" to "S" in the 13th position.
(4) For 40% linear reduced flow, change 12th position to "B" from A. Reference Cv values chart for availability by port size.
(5) For 25% linear reduced flow, change 12th position to "C" from A. Reference Cv values chart for availability by port size.
(6) For 40% equal percentage reduced flow, change 12th position to "F" from E. Reference Cv values chart for availability by port size.
(7) For 25% equal percentage reduced flow, change 12th position to "G" from E. Reference Cv values chart for availability by port size.
(8) Consult Parker for additional reduced flow availability ooptions.

Series 820: 2 Way Angle Body Control Valves: 1/4" to 2"

PNEUMATIC CONTROL: *Pneumatically operated control valve for neutral to aggressive fluids including pneumatic (p/p) positioner.*

Features

- Integrated Positioner
- All parts contacting fluid made of 316L Stainless Steel
- Temperatures up to 392° F / 200° C
- Compact Design

Technical Specifications

Body Material	AISI 316L
Function	2/2 Normally Closed, Closes against the flow
Nominal sizes	1/4" - 2 "
Connections: NPT thread **standard** BSP thread (ISO228/1) Tube Ends Flanges ANSI 150	1/4" - 2 "
Differential Pressure	See Specifications tables
Pilot Pressure	up to 145 psi (10bar) reference graphs
Actuator: ^Optional	2" & 3" brass plated, 5" aluminum ^ 2" & 3" Stainless Actuator
Max. fluid temperature #Optional *Optional	-22°F (-30°C) up to 392°F (200°C) # to -40°F (-40°C) * Up to +430°F (221°C)
Seal Material	PTFE
Packing Gland	PTFE / Graphite
Viscosity of the fluid	max.600 mm²/s (600cSt, 80°E, 2700SSU)
Vacuum	maximum 0.0295 mercury (Hg)
Working pressure for inverted packing for vacuum service	maximum 175 psi
Leakage	ANSI Class VI shutoff
Installation	Any position
Pilot Control Media	Air, neutral gas, water
Fluids	Inert gases, hot water, oils, steam, aggressive & corrosive fluids
Optical Position Indicator	Standard

PNEUMATIC POSITIONER (P/P)

Port Size	Orifice Size DN inch	DN mm	Flow Coeff Cv	Kv (m^3/h)	Operating Pressure Min	psi air, gases	bar air, gases	psi water, liquids	bar water, liquids	psi steam	bar steam	Pilot Pressure psi	Pilot Pressure bar	Actuator mm dia	Actuator port bsp	Valve Number Stainless (1) (2) (3) **Linear Flow (4) (5) (8)**	Valve Number Stainless (1) (2) (3) **Equal Percentage Flow (6) (7) (8)**	Wt lbs
1/4	0.31	08	0.7	0.6	0	232	16.0	232	16.0	210	14.5	60-90	4-6	80	1/4	**820VSN04T63ABH000**	**820VSN04T63EBH000**	8.0
1/2	0.59	15	4.4	3.8	0	232	16.0	232	16.0	210	14.5	60-90	4-6	80	1/4	**820VSN08T63ABH000**	**820VSN08T63EBH000**	8.1
3/4	0.78	20	10.2	8.9	0	232	16.0	232	16.0	210	14.5	60-90	4-6	80	1/4	**820VSN12T63ABH000**	**820VSN12T63EBH000**	8.4
1	1.00	25	16.2	14.1	0	175	12.1	175	12.1	175	12.1	60-90	4-6	80	1/4	**820VSN16T63ABH000**	**820VSN16T63EBH000**	8.8
1-1/4	1.25	32	23.2	20.2	0	102	7.0	102	7.0	102	7.0	60-90	4-6	80	1/4	**820VSN20T63ABH000**	**820VSN20T63EBH000**	9.5
1-1/4	1.25	32	23.2	20.2	0	190	13.1	190	13.1	190	13.1	45-90	3-6	125	1/4	**820VSN20T65ABH000**	**820VSN20T65EBH000**	15.2
1-1/2	1.56	40	31.3	27.2	0	60	4.1	60	4.1	60	4.1	60-90	4-6	80	1/4	**820VSN24T63ABH000**	**820VSN24T63EBH000**	10.1
1-1/2	1.56	40	31.3	27.2	0	160	11.0	160	11.0	160	11.0	60-90	4-6	125	1/4	**820VSN24T65ABH000**	**820VSN24T65EBH000**	15.8
2	2.00	50	42.9	37.3	0	85	5.9	85	5.9	85	5.9	60-90	4-6	125	1/4	**820VSN32T65ABH000**	-	17.2

(1) Chrome Plated Brass Actuator Standard, Anodized Aluminum for 125mm housing.
(2) For BSP porting, change "N" to "G" in the 6th position.
(3) Optional Stainless Actuator, change "B" to "S" in the 13th position.
(4) For 40% linear reduced flow, change 12th position to "B" from A. Reference Cv values chart for availability by port size.
(5) For 25% linear reduced flow, change 12th position to "C" from A. Reference Cv values chart for availability by port size.
(6) For 40% equal percentage reduced flow, change 12th position to "F" from E. Reference Cv values chart for availability by port size.
(7) For 25% equal percentage reduced flow, change 12th position to "G" from E. Reference Cv values chart for availability by port size.
(8) Consult Parker for additional reduced flow availability ooptions.

Series 820: 2 Way Angle Body Control Valves: 1/4" to 2"

Cv - Values

	Linear							Equal Percentage						
DN	1/4"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	1/4"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
100%	0.7	4.4	10.2	16.2	23.2	31.3	42.9	0.7	3.5	7.0	11.6	18.6	29.0	-
40%	0.28	1.7	4.1	6.7	9.3	12.8	-	-	1.4	2.8	4.6	7.0	11.6	-
25%	0.17	1.1	2.6	4.2	-	-	-	-	0.9	1.7	3.0	-	-	-

Kv - Values

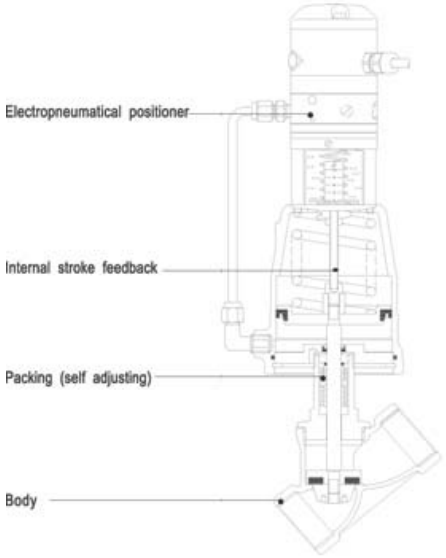
		Linear							Equal Percentage					
DN	08	15	20	25	32	40	50	08	15	20	25	32	40	50
100%	0.61	3.8	8.8	14.0	20.0	27.0	37.0	0.61	3.0	6.0	10.0	16.0	25.0	-
40%	0.24	1.5	3.5	5.8	8.0	11.0	-	-	1.2	2.4	4.0	6.0	10.0	-
25%	0.15	0.9	2.2	3.6	-	-	-	-	0.8	1.5	2.6	-	-	-

Proportional Control

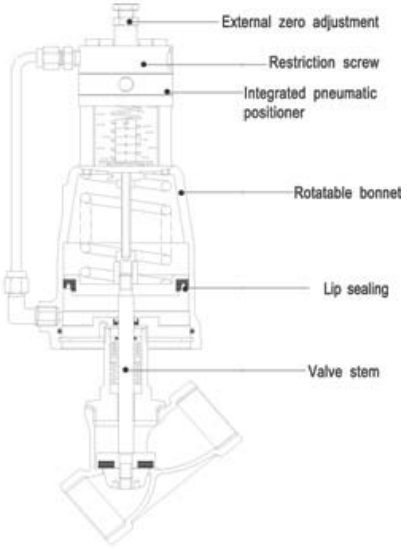
Percentage Flow characteristic with reduced flows based on contour of sealing plug.

Series 820 Technical Data: Positioners

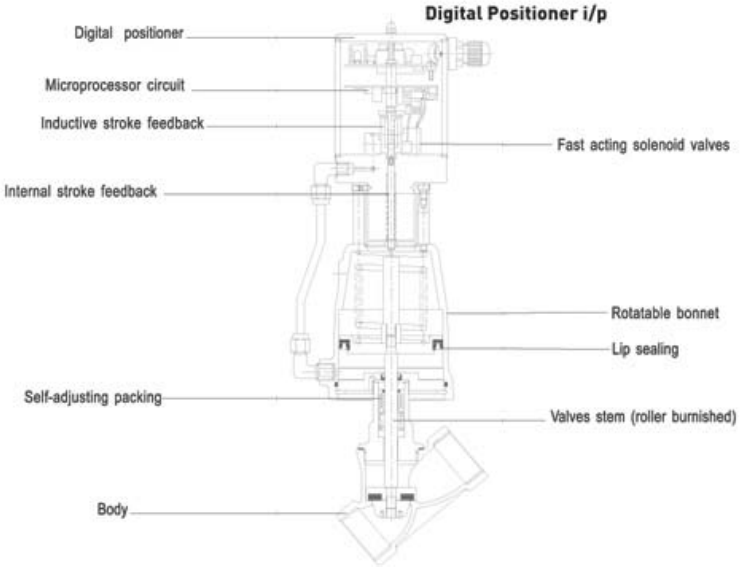
Electro-Pneumatic Positioner e/p



Pneumatic Positioner p/p



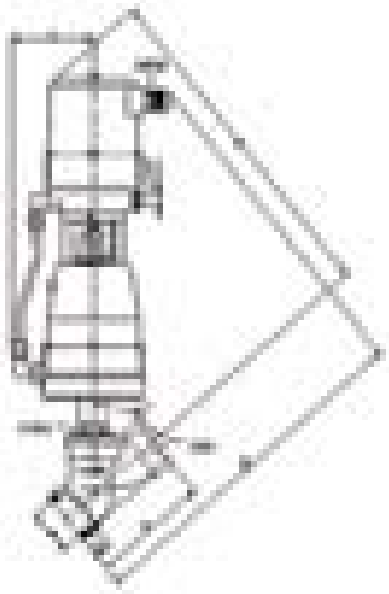
Digital Positioner i/p

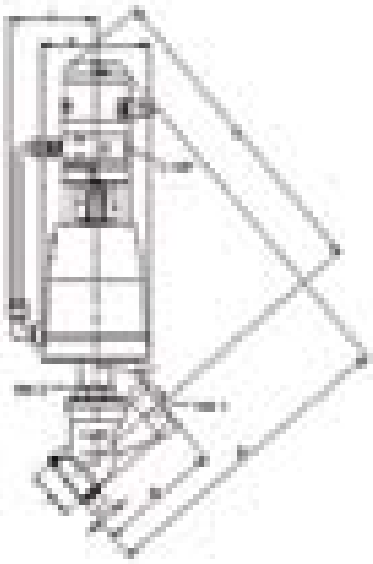


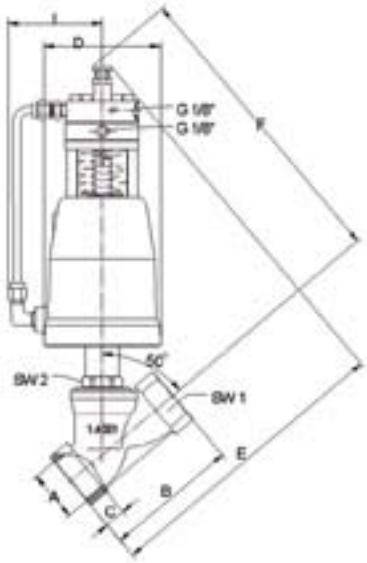
Series 820 Technical Data: Dimensions and Weights

A Pipe Size NPT	Actuator Diameter mm	DN	B	C	D	E Positioner			F Positioner			I	SW1	SW2	Weight (lbs)		
			SST			p/p	I/p	digital	p/p	I/p	digital		SST		p/p	I/p	digital
1/4"	50	08	2.35	0.45	2.45	-	-	11.02	-	-	10.83	2.44	0.79	1.20	-	-	5.0
1/4"	80	08	2.35	0.45	3.80	8.65	9.85	11.80	9.06	10.25	11.61	3.15	0.79	1.20	8.0	8.0	9.0
1/2"	80	15	2.55	0.60	3.80	8.65	9.85	11.80	9.06	10.25	11.61	3.15	1.00	1.20	8.1	8.8	9.0
3/4"	80	20	2.95	0.65	3.80	8.85	10.05	12.00	9.25	10.45	11.61	3.15	1.22	1.20	8.4	9.0	9.2
1"	80	25	3.55	0.75	3.80	9.25	10.45	12.40	9.45	10.65	11.81	3.15	1.55	1.20	8.8	9.5	9.7
1-1/4"	80	32	4.35	0.85	3.80	9.85	11.00	13.00	10.05	11.22	12.40	3.15	1.90	1.20	9.5	10.1	10.5
1-1/4"	125	32	4.35	0.85	5.75	10.45	11.60	14.17	10.85	12.00	13.60	4.15	1.90	1.20	15.2	16.0	16.1
1-1/2"	80	40	4.72	0.85	3.80	10.05	11.20	13.20	10.25	11.42	12.60	3.15	2.17	1.20	10.1	10.8	11.0
1-1/2"	125	40	4.72	0.85	5.75	10.65	11.8.	14.37	11.02	12.20	13.80	4.15	2.17	1.20	15.8	16.5	16.7
2"	80	50	5.90	0.85	3.80	10.85	12.00	13.80	10.65	11.81	13.00	3.15	2.70	1.25	11..7	12.1	12.3
2"	125	50	5.90	1.00	5.75	11.20	12.40	14.95	11.22	12.40	14.17	4.15	2.70	1.25	17.2	17.8	17.8

Dimension in inches except as noted







820 Series Valve Ordering

Proportional Control

1. Series	2. Configuration	3. Body Material	4. Connection Type	5. Port / Orifice Inches / DN	6. Seal Material	7. Pilot Function
820	V Valve Assembly A Actuator Unit less Body R Repair Kit	S Stainless Steel 316L	N NPT-thread G BSP- ISO A Weld Ends - ISO C ANSI Flanges 150# E Tube Ends T Tri Clamp inch (ASME 1998)	04 1/4" DN08 06 3/8" DN10 08 1/2" DN15 12 3/4" DN20 16 1" DN25 20 1-1/4" DN32 24 1-1/2" DN40 32 2' DN50 40 2-1/2" DN65 48 3" DN80	T PTFE Consult factory for other seal materials	6 Pneumatic positioner 8 Electro-pneumatic positioner with clamp adapter 9 Electro-pneumatic positioner ex-proof (II 2 G Eex ib IIC T6) D Integrated digital positioner type

8. Actuator Diameter	9. Characterisitics & Flow Values	10. Actuator Head Material	11. Temperature Version	12. Packing	13. Accessories	14. Additional
2 Piston 2" (50mm) 3 Piston 3" (80mm) 5 Piston 5" (125mm)	(standard spring only) A Linear - Full flow B Linear - reduced 40% flow C Linear - reduced 25% flow D Linear - reduced 7.5% flow E Equal percentage - Full flow F Equal percentage - reduced 40% flow G Equal percentage - reduced 25% flow H Equal percentage - reduced 7.5% flow	B Brass Plated, Alum Anodized for 5" size S Stainless Steel 316 (Optional)	H High temperature standard (392°F / 200°C) (stainless steel) U Ultra High temperature (430°F stainless steel only) L Low Temperature (-40°F / -40°C)	0 Standard - PTFE Graphite Filled 2 Inverted packing for Vacuum Service only	0 No accessories	0 No additional accessories

FEATURES

Digital Control Positioner

- Top Mounted
- Compact construction for linear and rotary actuators
- Control input 0/4-20mA, 0/2-10VDC
- Inductive sensor for non-contact stroke feedback
- 140 movements per inch stroke for precise control, repeatable within <0.5%
- Self calibrating
- Flow characteristics programmable by PC software
- Standard visual position indicator between the positioner and valve actuator
- Alarm output capable
- Available with stainless steel casing
- Simple installation and serviceability

Technical Specifications

Set Point Signal	0/4 - 20 mA, 0/2 - 10 V,
Supply Voltage	24 VDC, maximum 10w
Supply Pressure	44 - 87 psi / 3 - 6 bar
Hysteresis	< 0.5 %
Characteristics	linear, equal percentage, user-defined, process optimized*
Adjustment (stroke, zero point)	Self - Learning
Ambient Temperature	14°F to 170°F / -10°C to + 76°C
Protection class, DIN40050	IP 65
Range of Stroke / Angle	0.12…0.87 inches; 0.35…1.97 inches Rotary actuators up to 180°
Mounting to Control Valve	Standard mounting
Adaption to Range and Zero	Self - Learning
Configuration	Software configurable flow characteristics
Steady State Air Consumption	None

* Process optimized produces a linear flow characteristic for optimal control. After entering a few process points (e.g. upstream and downstream pressures), the optimized flow characteristic is calculated by the digital positioner configuration software and stored in the positioner memory.

FEATURES

Electro-Pneumatic Positioner

- Top Mounted
- Compact construction
- Control input 0/4-20mA
- Standard visual position indicator between the positioner and valve actuator
- Economical
- Wide span range for easy adjustment
- Available in intrinsically safe version
- Simple installation and serviceability

Technical Specifications

Input Signal Range	electro-pneumatic: 0/4 - 20mA
Stroke Range	0.2 - 1 inch depending on return spring
Supply Pressure	44 - 87 psi / 3 - 6 bar
Sensitivity of Response	<0.15 %
Hysteresis	< -1% to + 1%
Characteristics	linear, equal percentage
Adjustment (stroke, zero point)	mechanical
Ambient Temperature	14°F to 140°F / -10°C to + 60°C
Protection class, DIN40050	IP 54
Air Consumption	13.3 to 21.3 scfh (depending on output pressure)
Intrinsically Safe (optional)	Ex II 2 G EEx ib IIC T6 +45°C / +113°F Ex II 2 G EEx ib IIC T5 +60°C / +140°F
Housing	Aluminum, black epoxy coated

FEATURES

Pneumatic Positioner

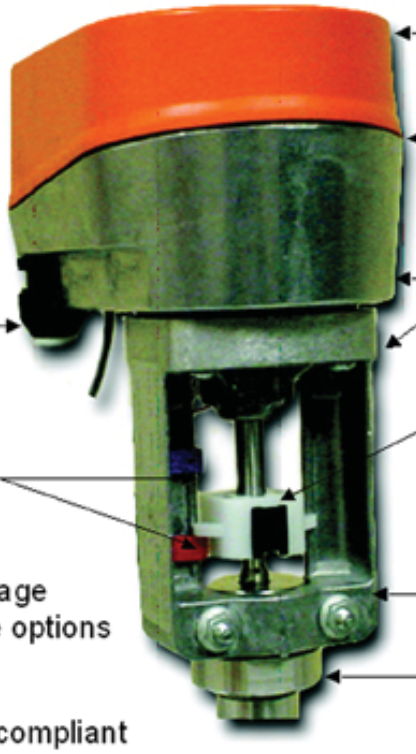
- Top Mounted
- Compact construction
- Standard visual position indicator between the positioner and valve actuator
- Economical
- Easy adjustment
- Simple installation and serviceability

Technical Specifications

Input Signal Range	pneumatic: 3-15 psi / 0.2 - 1 bar
Stroke Range	0.2 - 1 inch depending on return spring
Supply Pressure	44 - 87 psi / 3 - 6 bar
Sensitivity of Response	<0.15 %
Hysteresis	< -1% to + 1%
Characteristics	linear, equal percentage
Adjustment (stroke, zero point)	mechanical
Ambient Temperature	14°F to 140°F / -10°C to + 60°C
Air Consumption	13.3 to 21.3 scfh (depending on output pressure)
Housing	Brass, chrome plated

830 & 835 Series Linear Motor Actuator Features

Key Features
- **Self-calibrating**
- **Spring return fail safe option available**



Cover made of impact resistant plastic

IP 65 rating with rubberized sealing gasket & seals

Aluminum die-cast metallic motor housing & yoke assembly

Multiple wiring knockouts

Automatic coupling of valve stem to motor actuator spindle

Standard Optical Indicator

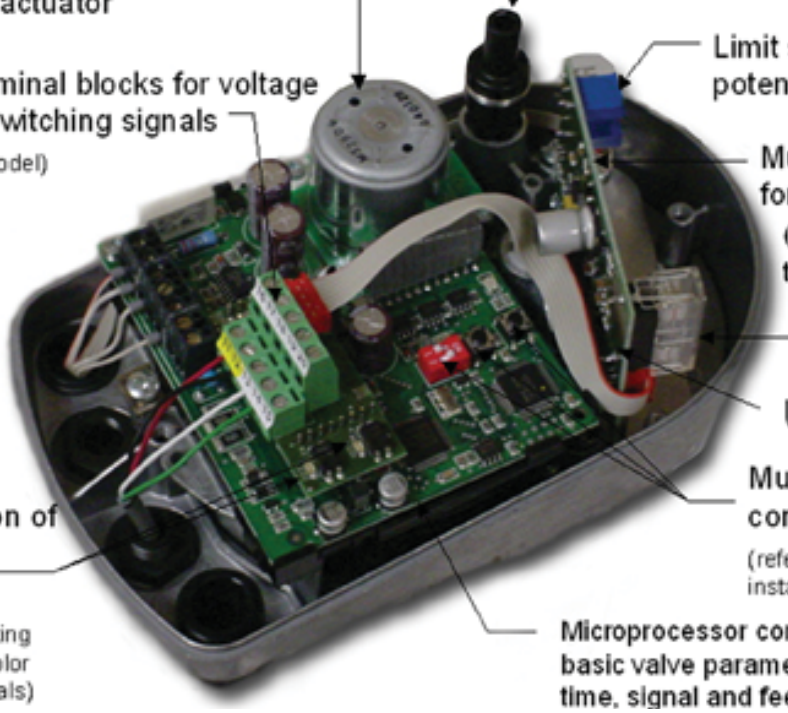
On-off & linear & equal percentage control plug characteristic valve options

Rotatable motor housing

Fully coupled to angle valve body

CE compliant

830 & 835 Series Motor Actuator Electronics



Microprocessor controlled linear actuator

Manual operation for start-up and emergency situations

Limit switch adjustment potentiometers

Electrical terminal blocks for voltage and control switching signals
(depending on model)

Multiple linear control actuators for AC and DC voltages
(On-off valves do not contain this control board)

Safety fuse

Unique IOS Module board

Multi-functional operating control switches
(reference operating and installation instructions)

LED indication of limit switch adjustments
(reference operating instructions for color and flashing signals)

Microprocessor control board controlling basic valve parameters such as running time, signal and feedback status, etc.

Series 830: 2 Way Motorized Valves: 1/2" to 2" NPT

FEATURES

On-Off & Modulating motorized valves for proportional control, with integrated Linear Actuators for neutral through aggressive fluids.

- Operates independent of supply pressure variations
- Compact design
- Self Calibrating
- Not sensitive to vibration
- Temperatures from –22°F to 392°F
- Versatile actuator options
- Available with spring return

Technical Specifications

Body Material	Bronze Rg5 (1)	AISI (2) 316L
Function	2/2 NC, NO	2/2 NC, NO
Nominal sizes	1/2" - 2"	1/2" - 2"
Connections: NPT thread **standard** BSP thread (ISO228/1) Tri clamp (stainless only) Tube ends (stainless only)	1/2" - 2"	1/2" - 2"
Nominal Pressure	232 psi (16 bar)	580 psi (40 bar)
Differential Pressure	See Specifications tables	
Max. fluid temperature #Optional *Optional	-22°F (-30°C) up to 392°F (200°C) # to -40°F (-40°C)	-22°F (-30°C) up to 392°F (200°C) # to -40°F (-40°C) * Up to +430°F (221°C)
Seal Material	PTFE	
Packing Gland	PTFE / Graphite	
Viscosity of the fluid (3)	maximum 600 mm²/s (600cSt, 80°E, 2700 SSU)	
Vacuum	maximum 0.0295 inches mercury (Hg)	
Working pressure for inverted packing for vacuum service	maximum 175 psi	
Leakage	ANSI Class VI shutoff (4)	
Installation	Any orientation	
Ingress	IP 65	
Characterization	Linear & Equal Percentage	
Optical Position Indicator	Standard all sizes	
Fluids	Inert gases, hot water, oils, steam	Aggressive & corrosive fluids

(1) Rg5 – (ASTM B-139) Bronze material commonly used for valve bodies. Exhibits good corrosion resistance, technical characteristics including tensile strength and has a Rockwell hardness of B80.

(2) AISI – American Iron and Steel Institute – North American organization dedicated to the advancement of technological innovation in steel production and its applications.

(3) Viscosity terms including: cSt Centistokes – a measure of Kinematic viscosity at a specific temperature rating, usually 40°C. 1 cSt = 1 mm^2/s
SSU Saybolt Universal Seconds – unit of viscosity measurement used in the United States but not on an international basis. Centistokes unit is the generally accepted international viscosity measurement.

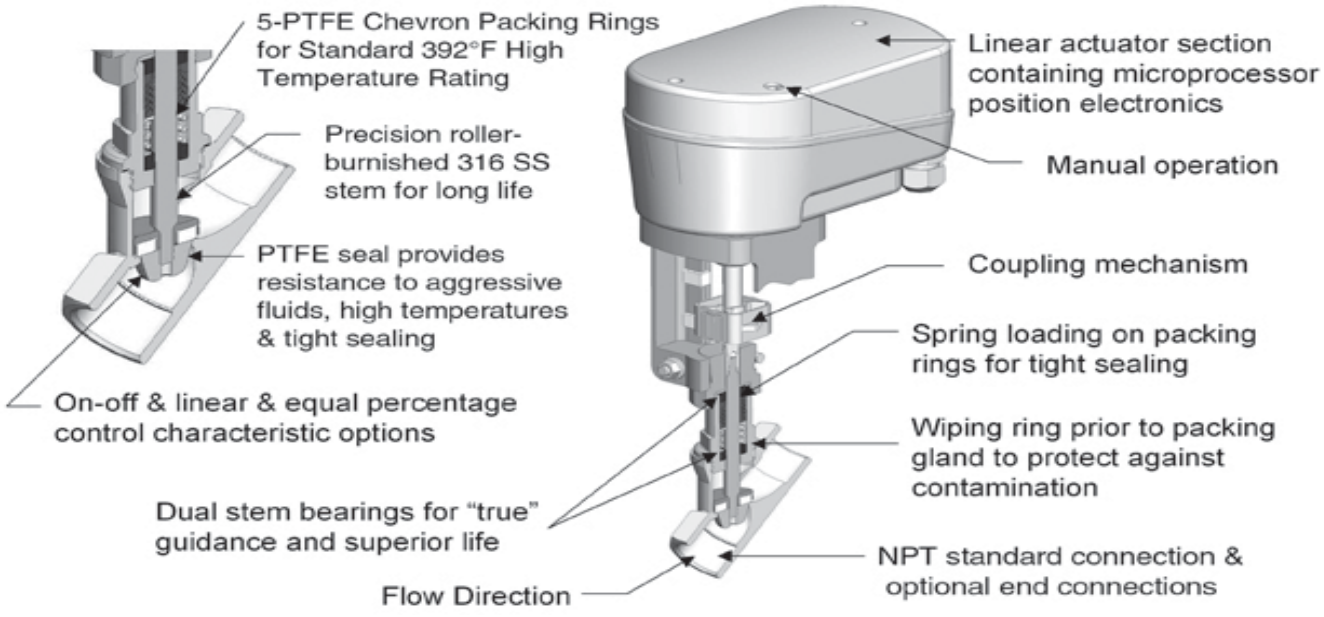
(4) ANSI Class VI shutoff – ISA leakage classification per ISA RP39.6 standard defining maximum allowable leakage. For Teflon™ soft seal, leakage rate is bubbletight.

Series 830: 2 Way Motorized Valves: 1/2" to 2" NPT

Linear Actuator Technical Specifications

Type of Motor	BM24C	BM24C/I	BM24C/IOS	BM115C/IOS	BM230C/IOS	BM24	BM230
Function	Control	Control	Control	Control	Control	ON-Off	ON-Off
Nominal Voltage	24 V AC/DC	24 V AC/DC	24 V AC/DC	115 V AC	230 V AC	24 V AC/DC	230 V AC
Set Point Control	2 - 10 V	4 - 20 mA	4 - 20 mA	4 - 20 mA	4 - 20 mA	3 - step	3 - step
Load	100 k Ohm	500 Ohm	500 Ohm	500 Ohm	500 Ohm	-	-
Position Feedback	2 - 10 V	2 - 10 V	4 - 20 mA	4 - 20 mA	4 - 20 mA	-	-
External Load	-	-	< 700 Ohm	< 700 Ohm	< 700 Ohm	-	-
Limit Switches	-	-	2 x	2 x	2 x	-	-
Max. Switching Load	-	-	230V/130mA	230V/130mA	230V/130mA	-	-
Power Consumption	3 W	3 W	3 W	4 W	4 W	3 W	6 W
Stroking Time (standard)	70s / 0.8 inch	70s / 0.8 inch	70s / 0.8 inch	70s / 0.8 inch	70s / 0.8 inch	190s / inch	190s / inch
Thrust (1)	180 lbs (800 N)						
Class of Protection	IP65						
Ambient Temperature	14°F up to 140°F (-10°C up to 60°C)						

(1) Electrical closing force



Stroke Times

Code	Motor Speed	Rate	Actuator Type
0	Standard	70 sec / 0.80 inch	Control
0	Standard	190 sec / 1.00 inch	On-Off
1	2X Standard	35 sec / 0.80 inch	Control
2	0.5X Standard	140 sec / 0.80 inch	Control
3	0.25x Standard	280 sec / 0.80 inch	Control

Series 830: 2 Way Motorized Valves: 1/2" to 2" NPT

Operating Data

ON-OFF CONTROL ACTUATOR — **CONTROL PARAMETERS 24V AC/DC**

BRONZE VALVES

Port Size	Orifice Size		Flow Coeff		Operating Pressure						Valve Number Bronze	Weight	
		DN	Cv	Kv	Min	psi	bar	psi	bar	psi	bar			
	inch	mm		(m^3/h)		air, gases		water, liquids		steam			lbs	Kg
1/2	0.59	15	4.1	3.6	0	232	16.0	232	16.0	210	14.5	830VBN08T360MH000	4.4	2.0
3/4	0.78	20	10.4	9.0	0	232	16.0	232	16.0	210	14.5	830VBN12T360MH000	4.8	2.2
1	1.00	25	19.7	17.1	0	175	12.1	175	12.1	175	12.1	830VBN16T360MH000	5.3	2.4
1-1/4	1.25	32	32.5	28.3	0	100	6.9	100	6.9	100	6.9	830VBN20T360MH000	6.2	2.8
1-1/2	1.56	40	40.6	35.3	0	70	4.8	70	4.8	70	4.8	830VBN24T360MH000	6.8	3.1
2	2.00	50	52.2	45.4	0	40	2.8	40	2.8	40	2.8	830VBN32T360MH000	8.1	3.7

ON-OFF CONTROL ACTUATOR — **CONTROL PARAMETERS 24V AC/DC**

316L STAINLESS STEEL VALVES

Port Size	Orifice Size		Flow Coeff		Operating Pressure						Valve Number Stainless	Weight	
		DN	Cv	Kv	Min	psi	bar	psi	bar	psi	bar			
	inch	mm		(m^3/h)		air, gases		water, liquids		steam			lbs	Kg
1/2	0.59	15	4.1	3.6	0	580	40.0	580	40.0	210	14.5	830VSN08T360MH000	4.4	2.0
3/4	0.78	20	10.4	9.0	0	290	20.0	290	20.0	210	14.5	830VSN12T360MH000	4.8	2.2
1	1.00	25	19.7	17.1	0	175	12.1	175	12.1	175	12.1	830VSN16T360MH000	5.3	2.4
1-1/4	1.25	32	32.5	28.3	0	100	6.9	100	6.9	100	6.9	830VSN20T360MH000	6.2	2.8
1-1/2	1.56	40	40.6	35.3	0	70	4.8	70	4.8	70	4.8	830VSN24T360MH000	6.8	3.1
2	2.00	50	52.2	45.4	0	40	2.8	40	2.8	40	2.8	830VSN32T360MH000	8.1	3.7

ON-OFF CONTROL ACTUATOR — **CONTROL PARAMETERS 230V AC**

BRONZE VALVES

Port Size	Orifice Size		Flow Coeff		Operating Pressure						Valve Number Bronze	Weight	
		DN	Cv	Kv	Min	psi	bar	psi	bar	psi	bar			
	inch	mm		(m^3/h)		air, gases		water, liquids		steam			lbs	Kg
1/2	0.59	15	4.1	3.6	0	232	16.0	232	16.0	210	14.5	830VBN08T370MH000	4.4	2.0
3/4	0.78	20	10.4	9.0	0	232	16.0	232	16.0	210	14.5	830VBN12T370MH000	4.8	2.2
1	1.00	25	19.7	17.1	0	175	12.1	175	12.1	175	12.1	830VBN16T370MH000	5.3	2.4
1-1/4	1.25	32	32.5	28.3	0	100	6.9	100	6.9	100	6.9	830VBN20T370MH000	6.2	2.8
1-1/2	1.56	40	40.6	35.3	0	70	4.8	70	4.8	70	4.8	830VBN24T370MH000	6.8	3.1
2	2.00	50	52.2	45.4	0	40	2.8	40	40.0	40	2.8	830VBN32T370MH000	8.1	3.7

ON-OFF CONTROL ACTUATOR — **CONTROL PARAMETERS 230V AC**

316L STAINLESS STEEL VALVES

Port Size	Orifice Size		Flow Coeff		Operating Pressure						Valve Number Stainless	Weight	
		DN	Cv	Kv	Min	psi	bar	psi	bar	psi	bar			
	inch	mm		(m^3/h)		air, gases		water, liquids		steam			lbs	Kg
1/2	0.59	15	4.1	3.6	0	580	40.0	580	40.0	210	14.5	830VSN08T370MH000	4.4	2.0
3/4	0.78	20	10.4	9.0	0	290	20.0	290	20.0	210	14.5	830VSN12T370MH000	4.8	2.2
1	1.00	25	19.7	17.1	0	175	12.1	175	12.1	175	12.1	830VSN16T370MH000	5.3	2.4
1-1/4	1.25	32	32.5	28.3	0	100	6.9	100	6.9	100	6.9	830VSN20T370MH000	6.2	2.8
1-1/2	1.56	40	40.6	35.3	0	70	4.8	70	4.8	70	4.8	830VSN24T370MH000	6.8	3.1
2	2.00	50	52.2	45.4	0	40	2.8	40	2.8	40	2.8	830VSN32T370MH000	8.1	3.7

Series 830: 2 Way Motorized Valves: 1/2" to 2" NPT

Operating Data

LINEAR CONTROL MOTOR ACTUATOR - BM24C
CONTROL PARAMETERS 24V AC/DC, SET-POINT 2-10V, FEEDBACK 2-10V

Port Size	Orifice Size		Flow Coeff		Operating Pressure							Valve Number Stainless Linear Flow (1)(2)	Valve Number Stainless Equal Percentage Flow (3)(4)	Weight	
	DN		Cv	Kv	Min	psi	bar	psi	bar	psi	bar				
	inch	mm		(m^3/h)		air, gases		water, liquids		steam				lbs	Kg
1/2	0.59	15	4.4	3.8	0	580	40.0	580	40.0	210	14.5	830VSN08T31AMH000	830VSN08T31EMH000	4.4	2.0
3/4	0.78	20	10.2	8.9	0	290	20.0	290	20.0	210	14.5	830VSN12T31AMH000	830VSN12T31EMH000	4.8	2.2
1	1.00	25	16.2	14.1	0	175	12.1	175	12.1	175	12.1	830VSN16T31AMH000	830VSN16T31EMH000	5.3	2.4
1-1/4	1.25	32	23.2	20.2	0	100	6.9	100	6.9	100	6.9	830VSN20T31AMH000	830VSN20T31EMH000	6.2	2.8
1-1/2	1.50	40	31.3	27.2	0	70	4.8	70	4.8	70	4.8	830VSN24T31AMH000	830VSN24T31EMH000	6.8	3.1
2	2.00	50	42.9	37.3	0	40	2.8	40	2.8	40	2.8	830VSN32T31AMH000	830VSN32T31EMH000	8.1	3.7

LINEAR CONTROL MOTOR ACTUATOR - BM24C/I
CONTROL PARAMETERS 24V AC/DC, SET-POINT 4-20mA, FEEDBACK 2-10V

Port Size	Orifice Size		Flow Coeff		Operating Pressure							Valve Number Stainless Linear Flow (1)(2)	Valve Number Stainless Equal Percentage Flow (3)(4)	Weight	
	DN		Cv	Kv	Min	psi	bar	psi	bar	psi	bar				
	inch	mm		(m^3/h)		air, gases		water, liquids		steam				lbs	Kg
1/2	0.59	15	4.4	3.8	0	580	40.0	580	40.0	210	14.5	830VSN08T32AMH000	830VSN08T32EMH000	4.4	2.0
3/4	0.78	20	10.2	8.9	0	290	20.0	290	20.0	210	14.5	830VSN12T32AMH000	830VSN12T32EMH000	4.8	2.2
1	1.00	25	16.2	14.1	0	175	12.1	175	12.1	175	12.1	830VSN16T32AMH000	830VSN16T32EMH000	5.3	2.4
1-1/4	1.25	32	23.2	20.2	0	100	6.9	100	6.9	100	6.9	830VSN20T32AMH000	830VSN20T32EMH000	6.2	2.8
1-1/2	1.50	40	31.3	27.2	0	70	4.8	70	4.8	70	4.8	830VSN24T32AMH000	830VSN24T32EMH000	6.8	3.1
2	2.00	50	42.9	37.3	0	40	2.8	40	2.8	40	2.8	830VSN32T32AMH000	830VSN32T32EMH000	8.1	3.7

LINEAR CONTROL MOTOR ACTUATOR - BM24C/IOS
CONTROL PARAMETERS 24V AC/DC, SET-POINT 4-20mA, FEEDBACK 4-20mA

Port Size	Orifice Size		Flow Coeff		Operating Pressure							Valve Number Stainless Linear Flow (1)(2)	Valve Number Stainless Equal Percentage Flow (3)(4)	Weight	
	DN		Cv	Kv	Min	psi	bar	psi	bar	psi	bar				
	inch	mm		(m^3/h)		air, gases		water, liquids		steam				lbs	Kg
1/2	0.59	15	4.4	3.8	0	580	40.0	580	40.0	210	14.5	830VSN08T33AMH000	830VSN08T33EMH000	4.4	2.0
3/4	0.78	20	10.2	8.9	0	290	20.0	290	20.0	210	14.5	830VSN12T33AMH000	830VSN12T33EMH000	4.8	2.2
1	1.00	25	16.2	14.1	0	175	12.1	175	12.1	175	12.1	830VSN16T33AMH000	830VSN16T33EMH000	5.3	2.4
1-1/4	1.25	32	23.2	20.2	0	100	6.9	100	6.9	100	6.9	830VSN20T33AMH000	830VSN20T33EMH000	6.2	2.8
1-1/2	1.50	40	31.3	27.2	0	70	4.8	70	4.8	70	4.8	830VSN24T33AMH000	830VSN24T33EMH000	6.8	3.1
2	2.00	50	42.9	37.3	0	40	2.8	40	2.8	40	2.8	830VSN32T33AMH000	830VSN32T33EMH000	8.1	3.7

LINEAR CONTROL MOTOR ACTUATOR - BM115C/IOS
CONTROL PARAMETERS 115V AC, SET-POINT 4-20mA, FEEDBACK 4-20mA

Port Size	Orifice Size		Flow Coeff		Operating Pressure							Valve Number Stainless Linear Flow (1)(2)	Valve Number Stainless Equal Percentage Flow (3)(4)	Weight	
	DN		Cv	Kv	Min	psi	bar	psi	bar	psi	bar				
	inch	mm		(m^3/h)		air, gases		water, liquids		steam				lbs	Kg
1/2	0.59	15	4.4	3.8	0	580	40.0	580	40.0	210	14.5	830VSN08T34AMH000	830VSN08T34EMH000	4.4	2.0
3/4	0.78	20	10.2	8.9	0	290	20.0	290	20.0	210	14.5	830VSN12T34AMH000	830VSN12T34EMH000	4.8	2.2
1	1.00	25	16.2	14.1	0	175	12.1	175	12.1	175	12.1	830VSN16T34AMH000	830VSN16T34EMH000	5.3	2.4
1-1/4	1.25	32	23.2	20.2	0	100	6.9	100	6.9	100	6.9	830VSN20T34AMH000	830VSN20T34EMH000	6.2	2.8
1-1/2	1.50	40	31.3	27.2	0	70	4.8	70	4.8	70	4.8	830VSN24T34AMH000	830VSN24T34EMH000	6.8	3.1
2	2.00	50	42.9	37.3	0	40	2.8	40	2.8	40	2.8	830VSN32T34AMH000	830VSN32T34EMH000	8.1	3.7

LINEAR CONTROL MOTOR ACTUATOR - BM230C/IOS
CONTROL PARAMETERS 230V AC, SET-POINT 4-20mA, FEEDBACK 4-20mA

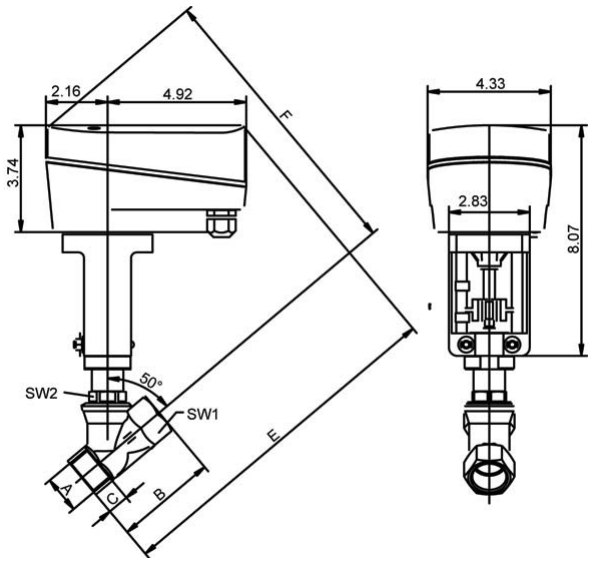
Port Size	Orifice Size		Flow Coeff		Operating Pressure							Valve Number Stainless Linear Flow (1)(2)	Valve Number Stainless Equal Percentage Flow (3)(4)	Weight	
	DN		Cv	Kv	Min	psi	bar	psi	bar	psi	bar				
	inch	mm		(m^3/h)		air, gases		water, liquids		steam				lbs	Kg
1/2	0.59	15	4.4	3.8	0	580	40.0	580	40.0	210	14.5	830VSN08T35AMH000	830VSN08T35EMH000	4.4	2.0
3/4	0.78	20	10.2	8.9	0	290	20.0	290	20.0	210	14.5	830VSN12T35AMH000	830VSN12T35EMH000	4.8	2.2
1	1.00	25	16.2	14.1	0	175	12.1	175	12.1	175	12.1	830VSN16T35AMH000	830VSN16T35EMH000	5.3	2.4
1-1/4	1.25	32	23.2	20.2	0	100	6.9	100	6.9	100	6.9	830VSN20T35AMH000	830VSN20T35EMH000	6.2	2.8
1-1/2	1.50	40	31.3	27.2	0	70	4.8	70	4.8	70	4.8	830VSN24T35AMH000	830VSN24T35EMH000	6.8	3.1
2	2.00	50	42.9	37.3	0	40	2.8	40	2.8	40	2.8	830VSN32T35AMH000	830VSN32T35EMH000	8.1	3.7

(1) For 40% linear reduced flow, change 12th position to "B" from A
(2) For 25% linear reduced flow, change 12th position to "C" from A
(3) For 40% equal percentage reduced flow, change 12th position to "F" from E
(4) For 25% equal percentage reduced flow, change 12th position to "G" from E

Series 830: 2 Way Motorized Valves: 1/2” to 2” NPT

Dimensions and Weights

Body with Threaded Ends



A Pipe Size NPT	DN	B	C	E	F	SW1	SW2	Stroke	Weight	
									lbs	Kg
1/2"	15	2.55	0.55	11.80	10.05	1.00	1.20	0.35	4.4	2.0
3/4"	20	2.95	0.60	12.20	10.05	1.20	1.20	0.55	4.8	2.2
1"	25	3.55	0.70	12.40	10.25	1.55	1.20	0.71	5.3	2.4
1-1/4"	32	4.35	0.75	13.40	10.45	1.90	1.20	0.83	6.2	2.8
1-1/2"	40	4.70	0.75	9.65	10.85	2.15	1.20	0.87	6.8	3.1
2"	50	5.90	0.75	14.15	11.40	2.70	1.25	0.87	8.1	3.7

Dimension in inches except as noted

Cv - Values

	Linear						Equal Percentage					
Size	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"
100%	4.4	10.2	16.2	23.2	31.3	42.9	3.5	7.0	11.6	18.6	29.0	-
40%	1.7	4.1	6.7	9.3	12.8	-	1.4	2.8	4.6	7.0	11.6	-
25%	1.1	2.6	4.2	-	-	-	0.9	1.7	3.0	-	-	-

On-Off	4.1	10.4	19.7	32.5	40.6	52.2

Kv - Values

	Linear						Equal Percentage					
DN	15	20	25	32	40	50	15	20	25	32	40	50
100%	3.8	8.8	14.0	20.0	27.0	37.0	3.0	6.0	10.0	16.0	25.0	-
40%	1.5	3.5	5.8	8.0	11.0	-	1.2	2.4	4.0	6.0	10.0	-
25%	0.9	2.2	3.6	-	-	-	0.8	1.5	2.6	-	-	-

On-Off	3.6	9.0	17.1	28.1	35.2	45.5

Series 835: 3 Way Motorized Valves: 1/2" to 1-1/2" NPT

FEATURES

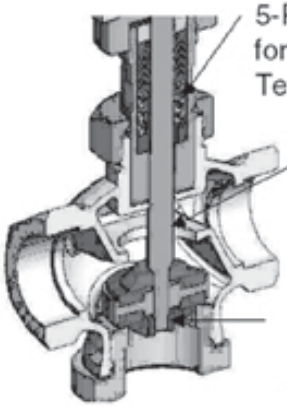
On-Off & Modulating motorized valves with integrated Linear Actuators for neutral through aggressive fluids.

- Operates independent of supply pressure variations
- Compact design
- Self Calibrating
- Not sensitive to vibration
- Temperatures from –22°F to 392°F
- Versatile actuator options
- Available with spring return

Technical Specifications

Body Material	Bronze Rg5
Function	3/2 Distributing Valve, 3/2 Mixing Valve, 3/2 Normally Closed, 3/2 Normally Open
Nominal sizes	1/2" - 1-1/2 "
Connections: NPT thread **standard** BSP thread (ISO228/1)	1/2" - 1-1/2 "
Nominal Pressure	232 psi (16 bar)
Differential Pressure	See Specifications tables
Max. fluid temperature #Optional	-22°F (-30°C) up to 392°F (200°C) # to -40°F (-40°C)
Seal Material	PTFE
Packing Gland	PTFE / Graphite
Viscosity of the fluid	max.600 mm²/s (600cSt, 80°E, 2700SSU)
Vacuum	maximum 0.0295 inches mercury (Hg)
Working pressure for inverted packing for vacuum service	maximum 175 psi
Leakage	ANSI Class VI shutoff
Installation	Any orientation
Ingress	IP65
Optical Position Indicator	Standard all sizes
Fluids	Inert gases, hot water, oils, steam fluids

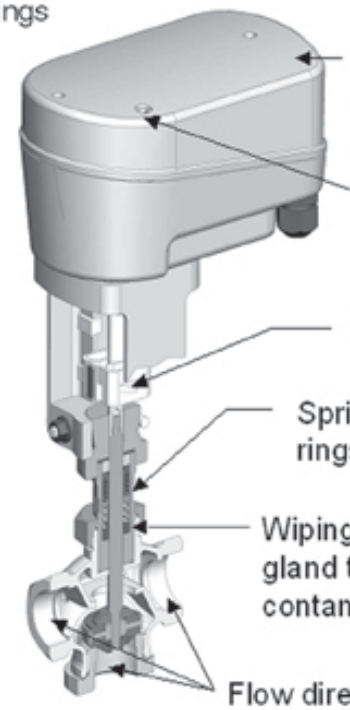
Series 835: 3 Way Motorized Valves: 1/2" to 1-1/2" NPT



5-PTFE Chevron Packing Rings for Standard 392°F High Temperature Rating

Precision roller-burnished 316 SS stem for long life

PTFE seal provides resistance to aggressive fluids, high temperatures & tight sealing



Linear actuator section containing microprocessor position electronics

Manual operation

Coupling mechanism

Spring loading on packing rings for tight sealing

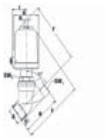
Wiping ring prior to packing gland to protect against contamination

Flow direction porting based on operational functionality

Operational Functions

- Distributing
- Mixing
- Normally Closed
- Normally Open

(reference operating and installation instructions for piping arrangements)



Distributing Function

Cv - Values - Distributing Valve

Size	P-B	P-A
1/2"	6.4	6.1
3/4"	8.6	10.1
1"	14.3	14.5
1-1/4"	28.3	23.2
1-1/2"	30.9	26.7

Kv - Values - Distributing Valve

DN	P-B	P-A
15	5.6	5.3
20	7.5	8.8
25	12.4	12.6
32	24.6	20.2
40	26.9	23.2

Mixing Function

Cv - Values - Mixing Valve

Size	P1-A	P2-A
1/2"	6.6	6.1
3/4"	8.5	11.0
1"	14.6	16.2
1-1/4"	29.6	24.4
1-1/2"	35.1	27.0

Kv - Values - Mixing Valve

DN	P-B	P-A
15	5.7	5.3
20	7.4	9.6
25	12.7	14.1
32	25.8	21.2
40	30.5	23.5

Series 835: 3 Way Motorized Valves: 1/2" to 1-1/2" NPT

Linear Actuator Technical Specifications

Type of Motor	BM24C	BM24C/I	BM24C/IOS	BM115C/IOS	BM230C/IOS	BM24	BM230
Function	Control	Control	Control	Control	Control	ON-Off	ON-Off
Nominal Voltage	24 V AC/DC	24 V AC/DC	24 V AC/DC	115 V AC	230 V AC	24 V AC/DC	230 V AC
Set Point Control	2 - 10 V	4 - 20 mA	4 - 20 mA	4 - 20 mA	4 - 20 mA	3 - step	3 - step
Load	100 k Ohm	500 Ohm	500 Ohm	500 Ohm	500 Ohm	-	-
Position Feedback	2 - 10 V	2 - 10 V	4 - 20 mA	4 - 20 mA	4 - 20 mA	-	-
External Load	-	-	< 700 Ohm	< 700 Ohm	< 700 Ohm	-	-
Limit Switches	-	-	2 x	2 x	2 x	-	-
Max. Switching Load	-	-	230V/130mA	230V/130mA	230V/130mA	-	-
Power Consumption	3 W	3 W	3 W	4 W	4 W	3 W	6 W
Stroking Time (standard)	70s / 0.8 inch	70s / 0.8 inch	70s / 0.8 inch	70s / 0.8 inch	70s / 0.8 inch	190s / inch	190s / inch
Thrust (1)	180 lbs (800 N)						
Class of Protection	IP65						
Ambient Temperature	14°F up to 140°F (-10°C up to 60°C)						

(1) Electrical closing force

Operating Data

DISTRIBUTING AND MIXING VALVES

ON-OFF CONTROL ACTUATOR
BRONZE VALVES

CONTROL PARAMETERS 24V AC/DC

Port Size	Orifice Size		Flow Coeff		Flow Coeff		Operating Pressure							Valve Number Bronze	Valve Number Bronze	Weight	
		DN	Cv	Kv	Cv	Kv	Min	psi	bar	psi	bar	psi	bar				
	inch	mm	P-A	(m^3/h)	P-B	(m^3/h)		air, gases		water, liquids		steam		Distributing Valve	Mixing Valve	lbs	Kg
1/2	0.59	15	6.1	5.3	6.4	5.6	0	220	15.2	220	15.2	210	14.5	835VBN08T360MH000	835VBN08T460MH000	5.5	2.5
3/4	0.78	20	10.1	8.8	8.6	7.5	0	220	15.2	220	15.2	210	14.5	835VBN12T360MH000	835VBN12T460MH000	5.5	2.5
1	1.00	25	14.5	12.6	14.3	12.4	0	115	7.9	115	7.9	115	7.9	835VBN16T360MH000	835VBN16T460MH000	6.4	2.9
1-1/4	1.25	32	23.2	20.2	28.3	24.6	0	45	3.1	45	3.1	45	3.1	835VBN20T360MH000	835VBN20T460MH000	8.4	3.8
1-1/2	1.56	40	26.7	23.2	30.9	26.9	0	45	3.1	45	3.1	45	3.1	835VBN24T360MH000	835VBN24T460MH000	8.4	3.8

ON-OFF CONTROL ACTUATOR
BRONZE VALVES

CONTROL PARAMETERS 230V AC

Port Size	Orifice Size		Flow Coeff		Flow Coeff		Operating Pressure							Valve Number Bronze	Valve Number Bronze	Weight	
		DN	Cv	Kv	Cv	Kv	Min	psi	bar	psi	bar	psi	bar				
	inch	mm	P-A	(m^3/h)	P-B	(m^3/h)		air, gases		water, liquids		steam		Distributing Valve	Mixing Valve	lbs	Kg
1/2	0.59	15	6.1	5.3	6.4	5.6	0	220	15.2	220	15.2	210	14.5	835VBN08T370MH000	835VBN08T470MH000	5.5	2.5
3/4	0.78	20	10.1	8.8	8.6	7.5	0	220	15.2	220	15.2	210	14.5	835VBN12T370MH000	835VBN12T470MH000	5.5	2.5
1	1.00	25	14.5	12.6	14.3	12.4	0	115	7.9	115	7.9	115	7.9	835VBN16T370MH000	835VBN16T470MH000	6.4	2.9
1-1/4	1.25	32	23.2	20.2	28.3	24.6	0	45	3.1	45	3.1	45	3.1	835VBN20T370MH000	835VBN20T470MH000	8.4	3.8
1-1/2	1.56	40	26.7	23.2	30.9	26.9	0	45	3.1	45	3.1	45	3.1	835VBN24T370MH000	835VBN24T470MH000	8.4	3.8

Series 835: 3 Way Motorized Valves: 1/2" to 1-1/2" NPT

Operating Data

LINEAR CONTROL MOTOR ACTUATOR - BM24C
CONTROL PARAMETERS 24V AC/DC, SET-POINT 2-10V, FEEDBACK 2-10V

Port Size	Orifice Size		Flow Coeff		Flow Coeff		Operating Pressure							Valve Number Bronze Distributing Valve	Valve Number Bronze Mixing Valve	Weight	
		DN	Cv	Kv	Cv	Kv	Min	psi	bar	psi	bar	psi	bar				
	inch	mm	P-A	(m^3/h)	P-B	(m^3/h)		air, gases		water, liquids		steam				lbs	Kg
1/2	0.59	15	6.1	5.3	6.4	5.6	0	220	15.2	220	15.2	210	14.5	835VBN08T310MH000	835VBN08T410MH000	5.5	2.5
3/4	0.78	20	10.1	8.8	8.6	7.5	0	220	15.2	220	15.2	210	14.5	835VBN12T310MH000	835VBN12T410MH000	5.5	2.5
1	1.00	25	14.5	12.6	14.3	12.4	0	115	7.9	115	7.9	115	7.9	835VBN16T310MH000	835VBN16T410MH000	6.4	2.9
1-1/4	1.25	32	23.2	20.2	28.3	24.6	0	45	3.1	45	3.1	45	3.1	835VBN20T310MH000	835VBN20T410MH000	8.4	3.8
1-1/2	1.56	40	26.7	23.2	30.9	26.9	0	45	3.1	45	3.1	45	3.1	835VBN24T310MH000	835VBN24T410MH000	8.4	3.8

LINEAR CONTROL MOTOR ACTUATOR - BM24C/I
CONTROL PARAMETERS 24V AC/DC, SET-POINT 4-20mA, FEEDBACK 2-10V

Port Size	Orifice Size		Flow Coeff		Flow Coeff		Operating Pressure							Valve Number Bronze Distributing Valve	Valve Number Bronze Mixing Valve	Weight	
		DN	Cv	Kv	Cv	Kv	Min	psi	bar	psi	bar	psi	bar				
	inch	mm	P-A	(m^3/h)	P-B	(m^3/h)		air, gases		water, liquids		steam				lbs	Kg
1/2	0.59	15	6.1	5.3	6.4	5.6	0	220	15.2	220	15.2	210	14.5	835VBN08T320MH000	835VBN08T420MH000	5.5	2.5
3/4	0.78	20	10.1	8.8	8.6	7.5	0	220	15.2	220	15.2	210	14.5	835VBN12T320MH000	835VBN12T420MH000	5.5	2.5
1	1.00	25	14.5	12.6	14.3	12.4	0	115	7.9	115	7.9	115	7.9	835VBN16T320MH000	835VBN16T420MH000	6.4	2.9
1-1/4	1.25	32	23.2	20.2	28.3	24.6	0	45	3.1	45	3.1	45	3.1	835VBN20T320MH000	835VBN20T420MH000	8.4	3.8
1-1/2	1.56	40	26.7	23.2	30.9	26.9	0	45	3.1	45	3.1	45	3.1	835VBN24T320MH000	835VBN24T420MH000	8.4	3.8

LINEAR CONTROL MOTOR ACTUATOR - BM24C/IOS
CONTROL PARAMETERS 24V AC/DC, SET-POINT 4-20mA, FEEDBACK 4-20mA

Port Size	Orifice Size		Flow Coeff		Flow Coeff		Operating Pressure							Valve Number Bronze Distributing Valve	Valve Number Bronze Mixing Valve	Weight	
		DN	Cv	Kv	Cv	Kv	Min	psi	bar	psi	bar	psi	bar				
	inch	mm	P-A	(m^3/h)	P-B	(m^3/h)		air, gases		water, liquids		steam				lbs	Kg
1/2	0.59	15	6.1	5.3	6.4	5.6	0	220	15.2	220	15.2	210	14.5	835VBN08T330MH000	835VBN08T430MH000	5.5	2.5
3/4	0.78	20	10.1	8.8	8.6	7.5	0	220	15.2	220	15.2	210	14.5	835VBN12T330MH000	835VBN12T430MH000	5.5	2.5
1	1.00	25	14.5	12.6	14.3	12.4	0	115	7.9	115	7.9	115	7.9	835VBN16T330MH000	835VBN16T430MH000	6.4	2.9
1-1/4	1.25	32	23.2	20.2	28.3	24.6	0	45	3.1	45	3.1	45	3.1	835VBN20T330MH000	835VBN20T430MH000	8.4	3.8
1-1/2	1.56	40	26.7	23.2	30.9	26.9	0	45	3.1	45	3.1	45	3.1	835VBN24T330MH000	835VBN24T430MH000	8.4	3.8

LINEAR CONTROL MOTOR ACTUATOR - BM115C/IOS
CONTROL PARAMETERS 115V AC, SET-POINT 4-20mA, FEEDBACK 4-20mA

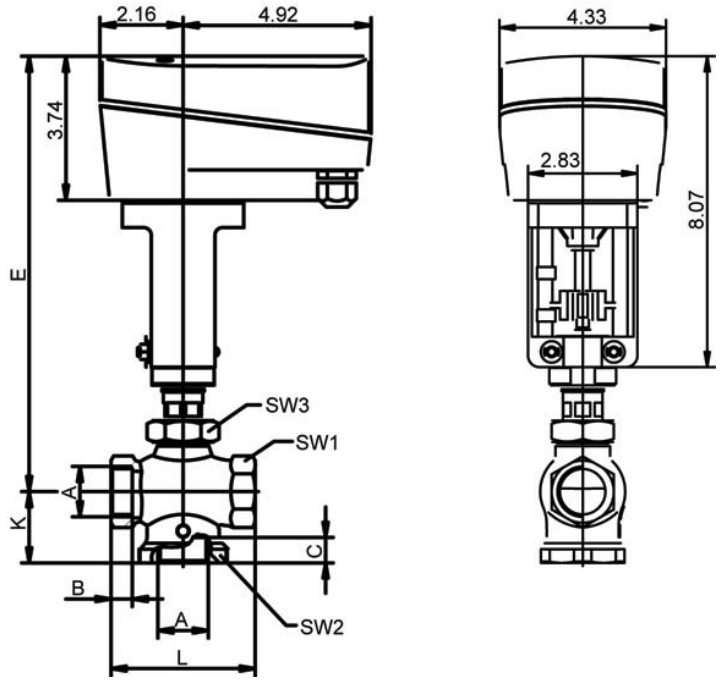
Port Size	Orifice Size		Flow Coeff		Flow Coeff		Operating Pressure							Valve Number Bronze Distributing Valve	Valve Number Bronze Mixing Valve	Weight	
		DN	Cv	Kv	Cv	Kv	Min	psi	bar	psi	bar	psi	bar				
	inch	mm	P-A	(m^3/h)	P-B	(m^3/h)		air, gases		water, liquids		steam				lbs	Kg
1/2	0.59	15	6.1	5.3	6.4	5.6	0	220	15.2	220	15.2	210	14.5	835VBN08T340MH000	835VBN08T440MH000	5.5	2.5
3/4	0.78	20	10.1	8.8	8.6	7.5	0	220	15.2	220	15.2	210	14.5	835VBN12T340MH000	835VBN12T440MH000	5.5	2.5
1	1.00	25	14.5	12.6	14.3	12.4	0	115	7.9	115	7.9	115	7.9	835VBN16T340MH000	835VBN16T440MH000	6.4	2.9
1-1/4	1.25	32	23.2	20.2	28.3	24.6	0	45	3.1	45	3.1	45	3.1	835VBN20T340MH000	835VBN20T440MH000	8.4	3.8
1-1/2	1.56	40	23.2	20.2	30.9	26.9	0	45	3.1	45	3.1	45	3.1	835VBN24T340MH000	835VBN24T440MH000	8.4	3.8

LINEAR CONTROL MOTOR ACTUATOR - BM230C/IOS
CONTROL PARAMETERS 230V AC, SET-POINT 4-20mA, FEEDBACK 4-20mA

Port Size	Orifice Size		Flow Coeff		Flow Coeff		Operating Pressure							Valve Number Bronze Distributing Valve	Valve Number Bronze Mixing Valve	Weight	
		DN	Cv	Kv	Cv	Kv	Min	psi	bar	psi	bar	psi	bar				
	inch	mm	P-A	(m^3/h)	P-B	(m^3/h)		air, gases		water, liquids		steam				lbs	Kg
1/2	0.59	15	6.1	5.3	6.4	5.6	0	220	15.2	220	15.2	210	14.5	835VBN08T350MH000	835VBN08T450MH000	5.5	2.5
3/4	0.78	20	10.1	8.8	8.6	7.5	0	220	15.2	220	15.2	210	14.5	835VBN12T350MH000	835VBN12T450MH000	5.5	2.5
1	1.00	25	14.5	12.6	14.3	12.4	0	115	7.9	115	7.9	115	7.9	835VBN16T350MH000	835VBN16T450MH000	6.4	2.9
1-1/4	1.25	32	23.2	20.2	28.3	24.6	0	45	3.1	45	3.1	45	3.1	835VBN20T350MH000	835VBN20T450MH000	8.4	3.8
1-1/2	1.56	40	26.7	23.2	30.9	26.9	0	45	3.1	45	3.1	45	3.1	835VBN24T350MH000	835VBN24T450MH000	8.4	3.8

Series 835: 3 Way Motorized Valves: 1/2" to 1-1/2" NPT

Dimensions and Weights



A Pipe Size NPT	DN	B	C	E	K	L	SW1	SW2	SW3	Stroke	Weight	
											lbs	Kg
1/2"	15	0.50	0.60	11.30	1.55	3.15	1.30	1.60	1.60	0.35	5.5	2.5
3/4"	20	0.50	0.60	11.30	1.65	3.15	1.30	1.60	1.60	0.35	5.5	2.5
1"	25	0.55	0.70	11.30	1.85	3.75	1.60	2.15	1.60	0.43	6.4	2.9
1-1/4"	32	0.70	0.75	11.95	2.40	5.20	2.30	2.95	1.60	0.73	8.4	3.8
1-1/2"	40	0.70	0.75	11.95	2.40	5.20	2.30	2.95	1.60	0.73	8.4	3.8

Dimension in inches except as noted

830/835 Series Valve Ordering

1. Series	2. Configuration	3. Body Material	4. Connection Type	5. Port / Orifice Inches / DN	6. Seal Material	7. Pilot Function
830 835	V Valve Assembly A Actuator Unit less Body R Repair Kit	B Bronze S Stainless steel 316L	N NPT-thread G BSP- ISO E Tube ends	08 1/2" DN15 12 3/4" DN20 16 1" DN25 20 1-1/4" DN32 24 1-1/2" DN40 32 2' DN50	T PTFE Consult factory for other seal materials	<u>For 830 Valve Series</u> 3 NC (closing against flow - under seat) <u>For 835 Valve Series</u> 3 Distributing Function 4 Mixing Function 5 Normally Closed 6 Normally Open

8. Linear Actuators	9. Characterisitics & Flow Values	10. Linear Actuator Head	11. Temperature Version	12. Packing	13. Safety Position	14. Stroking Times
1 See Table Below	0 On-Off	M Motorized	H High temperature standard (392°F / 200°C) (bronze, stainless steel)	0 Standard - PTFE Graphite Filled	0 Safety Position	0 Standard (70s/0.80 inch for control actuators - 190s/inch for on-off actuators)
2	A Linear - Full flow		U Ultra High temperature (430°F stainless steel only)	2 Inverted packing for Vacuum Service only	1 Spring to close	L 114s/inch (on-off actuators)
3	B Linear - reduced 40% flow		L Low Temperature (-40°F / -40°C)			1 35s/0.80 inch (control actuators only)
4	C Linear - reduced 25% flow					2 140s/0.80 inch (control actuators only)
	D Linear - reduced 7.5% flow					
5	E Equal percentage - Full flow					3 280s/0.80 inch (control actuators only)
6	F Equal percentage - reduced 40% flow					
7	G Equal percentage - reduced 25% flow					
	H Equal percentage - reduced 7.5% flow					

LINEAR ACTUATOR TABLE

	Actuator Type	Linear Actuator	Voltage	Position Control	Feedback Control	Limit Switches
1	Control Actuator	BM24C	24V AC/DC	2 - 10 VDC	2 - 10 VDC	None
2	Control Actuator	BM24C/I	24V AC/DC	4 - 20 mA	2 - 10 VDC	None
3	Control Actuator	BM24C/IOS	24V AC/DC	4 - 20 mA	4 - 20 mA	2 switches
4	Control Actuator	BM115C/IOS	115V AC	4 - 20 mA	4 - 20 mA	2 switches
5	Control Actuator	BM230C/IOS	230V AC	4 - 20 mA	4 - 20 mA	2 switches
6	On-Off Actuator	BM24	24V AC/DC	None	None	None
7	On-Off Actuator	BM230	230V AC	None	None	None
8	On-Off Actuator	BM115	115V AC	None	None	None

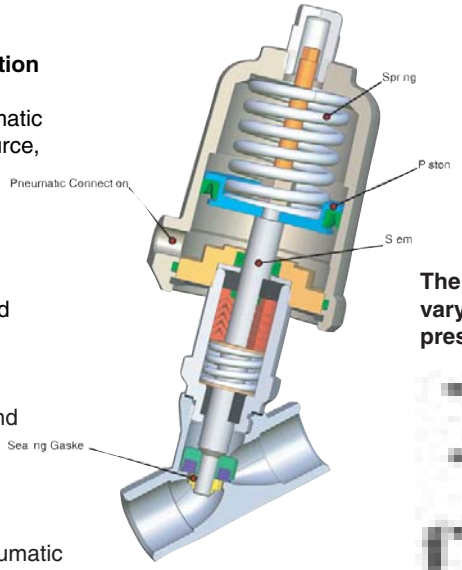
OPERATING PRINCIPLES

Introduction
Angle seat valves are robust, high flow valves suitable for many diverse industrial applications including chemical industry, food processing, steam sterilizers, water technology and OEM industrial applications just to name a few. This section provides a brief overview of the components and functional varieties of angle seat valves.

General Information

On-Off Valve Construction and Basic Operation

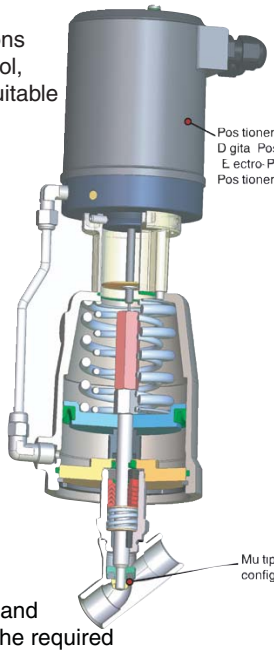
An angle seat valve is a piston operated pneumatic device controlled by an external pneumatic source, either gas or liquid. The angle seat valve is used to control the flow of liquids or gases in a positive, fully-closed or fully-open mode. The valve is commonly used in high flow requirements, high temperature, aggressive applications and handling fluids with suspended particles, which replaced manual valves or electrically / motorized operated valves.



The angle seat valve is operated by opening and closing an orifice in a valve body which permits or prevents flow through the valve. The orifice is opened or closed through the use of a combined stem, spring and piston assembly that is raised or lowered when a pneumatic source is applied to the actuator head. The bottom of the stem contains a compatible sealing material, which closes off the orifice in the body, stopping flow through the valve.

Proportional Control Valve Construction and Basic Operation

Proportional control valves are suitable for applications requiring pressure, temperature, flow and level control, generally recommend for closed loop systems but suitable for open loop systems as well. The control valve is generally the final element in the control circuit. The position of the valve stem is controlled through a control signal and feedback loop to maintain the system parameters. The control signal can be a pneumatic, voltage or current signal. The feedback loop, through sensors, transducers, meters, etc., adjust the control signal to match the required output. Various configurations of the valve disc can better match the process flow rates over the entire flow range for consistent valve gain and stable process performance.

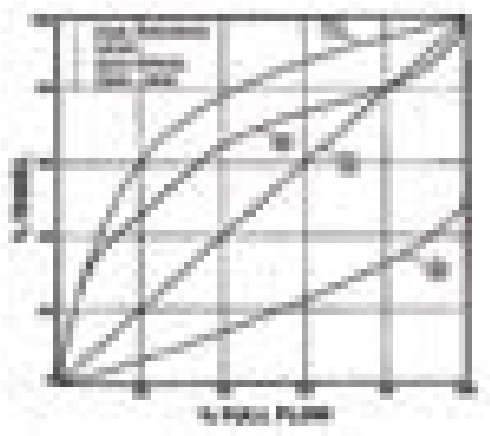


Proportional Control Valve Construction and Basic
The control valve series is available with integrated positioners including digital, electro-pneumatic and pneumatic capabilities. The positioner senses the valve stem position in comparison to an input signal and adjusts the actuation pressure and disc position for the required performance. The positioner is typically used in conjunction with a control valve to provide better control and repeatability as well as to combat hysteresis and other elements such as packing friction.

LINEAR FLOW CHARACTERISTIC:
Equal changes in flow for equal increments of lift, assuming a constant differential pressure across the valve seat.

EQUAL PERCENTAGE FLOW CHARACTERISTIC:
Equal changes in travel will produce equal percentage changes in flow, assuming a constant differential pressure across the valve seat.

The flowing chart depicts typical results with varying flow characteristic curves at constant pressure differentials.



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3. Delivery: Unless otherwise provided on the face hereof, delivery shall be made F.O.B. Seller's plant. Regardless of the method of delivery, however, risk of loss shall pass to Buyer upon Seller's delivery to a carrier. Any delivery dates shown are approximate only and Seller shall have no liability for any delays in delivery. Shipments are made by common carrier. Any premium freight must be requested and paid for by the Buyer.

4. Warranty: Seller warrants that the items sold hereunder shall be free from defects in material or workmanship for a period of 2 years from the date of shipment to Buyer, or 2,000 hours of use, whichever expires first. Exception to this is the Angle Body Valve line has a 1 year warranty. THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO ITEMS PROVIDED HEREUNDER. SELLER MAKES NO OTHER WARRANTY, GUARANTEE, OR REPRESENTA TION OF ANY KIND WHATSOEVER. ALL OTHER WARRANTIES, INCLUDING BUT NOT LIMITED TO, MERCHANTIBILITY AND FITNESS FOR PURPOSE, WHETHER EXPRESS, IMPLIED, OR ARIS. ING BY OPERATION OF LAW, TRADE USAGE, OR COURSE OF DEAL ING ARE HEREBY DISCLAIMED. NOTWITHSTANDING THE FOREGOING, THERE ARE NO WARRANTIES WHATSOEVER ON ITEMS BUILT OR ACQUIRED WHOLLY OR PARTIALLY, TO BUYER'S DESIGNS OR SPECIFICATIONS.

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7. Special Tooling: A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the items sold hereunder, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

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9. Taxes: Unless otherwise indicated on the face hereof, all prices and charges are exclusive of excise, sales, use, property, occupational or like taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of the items sold hereunder. If any such taxes must be paid by Seller or if Seller is liable for the collection of such tax, the amount thereof shall be in addition to the amounts for the items sold. Buyer agrees to pay all such taxes or to reimburse Seller therefore upon receipt of its invoice. If Buyer claims exemption from any sales, use or other tax imposed by any taxing authority, Buyer shall save Seller harmless from and against any such tax, together with any interest or penalties thereon which may be assessed if the items are held to be taxable.

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12. Entire Agreement/Governing Law: The terms and conditions set forth herein, together with any amendments, modifications and any different terms or conditions expressly accepted by Seller in writing, shall constitute the entire Agreement concerning the items sold, and there are no oral or other representations or agreements which pertain thereto. This Agreement shall be governed in all respects by the law of the State of Ohio. No actions arising out of the sale of the items sold hereunder or this Agreement may be brought by either party more than two (2) years after the cause of action accrues.

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