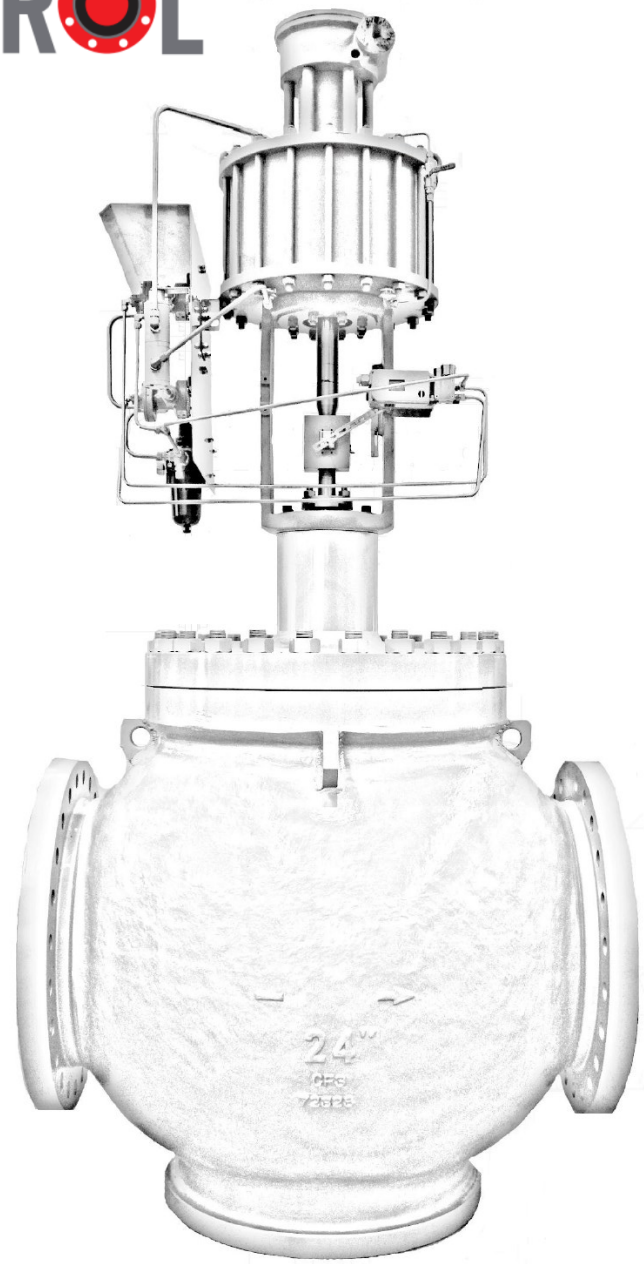
WZI FLOW CONTROL

3 YEAR WARRANTY

1M+ VALVES INSTALLED

ASSEMBLED IN USA



SERIES ABM

PRESSURE BALANCED
CAGE CONTROL VALVE

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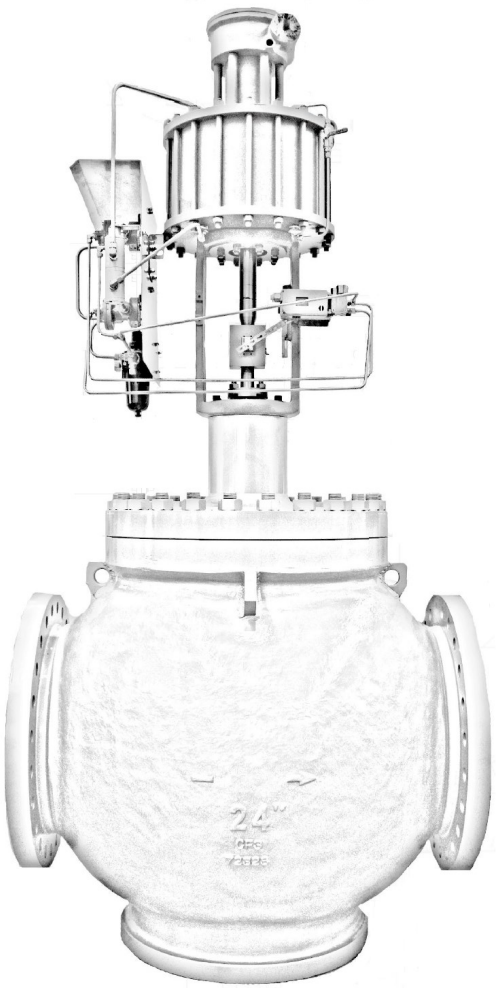


SERIES ABM FEATURES

- **Quick Change, Pressure Balanced** Cage Control Valve
- **Low Noise**, Drilled Hole Plug
- For Use in **Noisy Gas** and **Cavitating Applications**
- **Equal Percentage** or **Linear** Control Characteristics
- Shutoff to **ANSI/FCI70-2 Class IV, V**
- **Class 150 — Class 300**
- **Valve Sizes 3” (DN80) ~ 24” (DN600)**

CAGE QUICK CHANGE TRIM GLOBE VALVES

KEY COMPONENTS

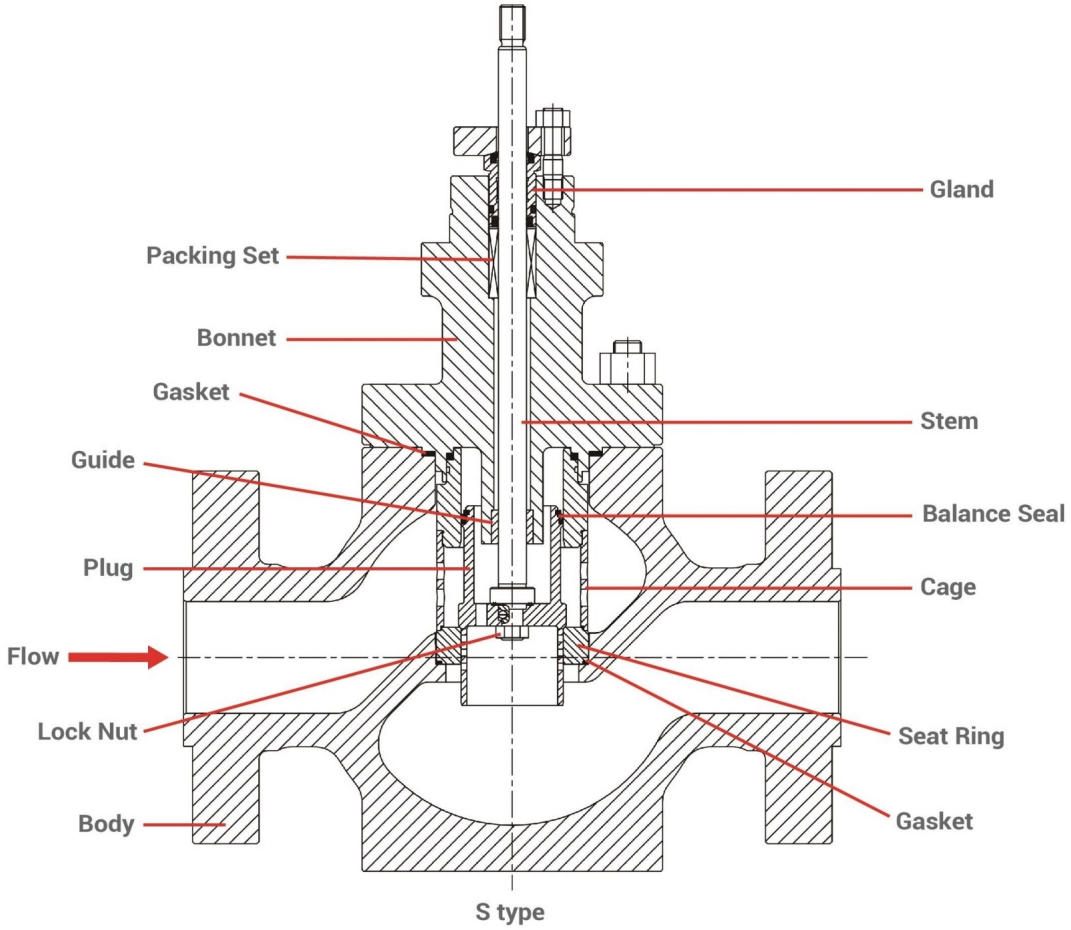
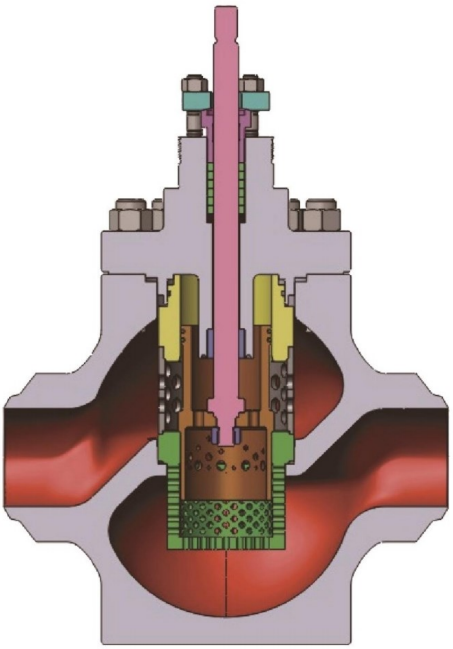


Table 1: Key Components

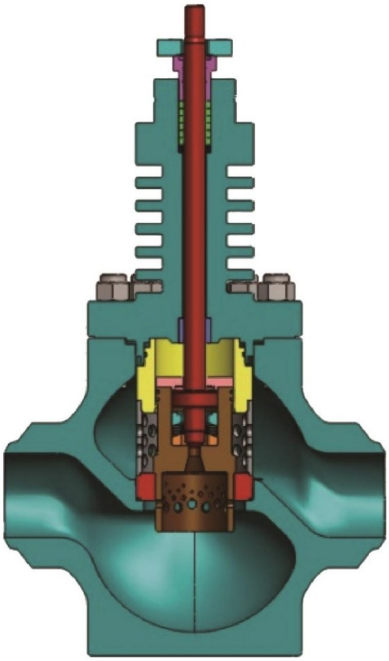
TYPE	Pressure Balanced Cage Control Valve
BODY SIZE	3” (DN(80) ~ 24” (DN600)
PLUG CHARACTERISTIC	Drilled Hole Plug, Equal Percentage, Linear
PRESSURE CLASSES	Class 150 ~ Class 300
BODY CONNECTIONS	RF, RTJ, BW
FACE TO FACE DIMENSIONS	IEC 60534-3, B16.10, S75.03, See Tables 5.1, 5.2, and 5.3
STEM PACKING	PTFE V-Ring, PTFE V-Ring Double, PTFE Filled, Grafoil®/Graphite
GASKET	316ss with Grafoil®
BALANCE SEAL	S type PTFE U-cup <518°F (270°C) Class IV/V P type metal piston ring Class IV/V

VALVE TRIM DESIGN OPTIONS

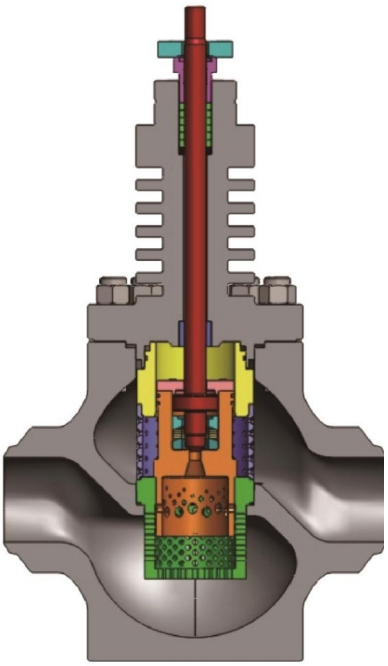
- Variety of Standard and Customizable Configurations
- Diverse Critical Applications, Low/Medium Pressure, High Temperature Designs
- Precision Control with Smooth Opening/Closing Design
- High Cv with Stable and Repeatable Flow Parameters



P Type Normal Temperature with Additional Seat Basket

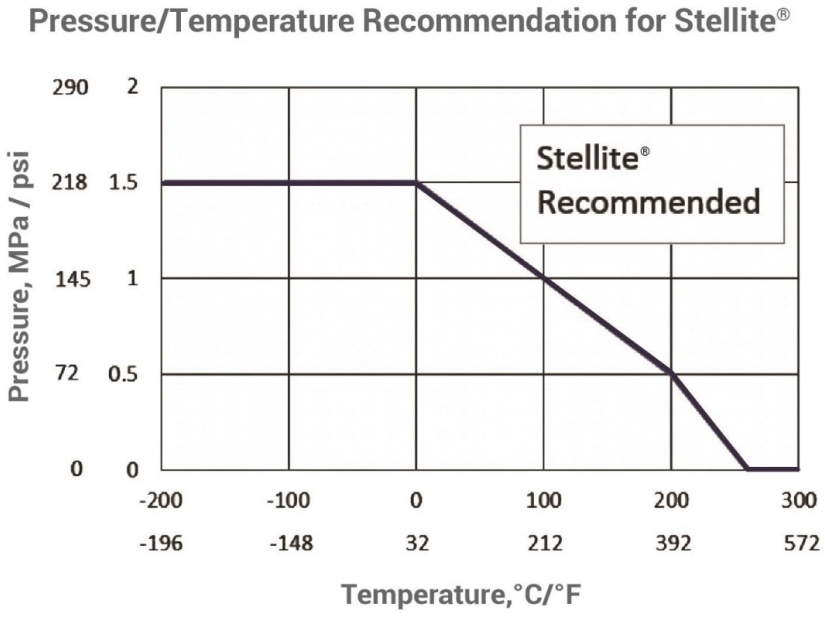


P Type High Temperature Pressurized Seat Design



P Type High Temperature with Pressurized Seat and Additional Seat Basket

TRIM HARDFACING VERSUS OPERATING PRESSURE-TEMPERATURE RATINGS



MATERIALS OF CONSTRUCTION

BODY/TRIM STANDARD MATERIAL COMBINATIONS OPERATING TEMPERATURE AND SEAT LEAKAGE

Table 2-1: Body Material, Carbon Steel and Chrome Moly

Body Material		A216 - WCB, A217 - WC6, A217 - C5, A217 - WC9, A352 - LCB				
Plug	Material	420ss	3Cr17NiMo	440B	316ss	
	Treatment	HT	NT	HT	NT	
Seat	Material	420ss	3Cr17NiMo	440B	316ss	
	Treatment	HT	HT	HT	HF	
Guide	Material	440B	3Cr17NiMo	440B	316ss	
	Treatment	HT	HT	HT	NT	
Gasket		316ss+Grafoil®				
Seat Leakage	ANSI/FCI 70-2	Class IV or V	Class IV or V	Class IV or V	Class IV or V	Class IV or V
Body Operating Temperature °F/°C	A216-WCB	23°F-800°F (-5°C-425°C)	23°F-800°F (-5°C-425°C)	23°F-800°F (-5°C-425°C)	23°F-800°F (-5°C-425°C)	
	A217-WC6	23°F-1000°F (-5°C-538°C)	23°F-1000°F (-5°C-538°C)	23°F-1000°F (-5°C-538°C)	23°F-1000°F (-5°C-538°C)	
	A217-C5					
	A217-WC9					
	A352-LCB	-49°F-445°F (-45°C-230°C	-49°F-445°F (-45°C-230°C	-49°F-445°F (-45°C-230°C	-49°F-445°F (-45°C-230°C	

NOTES:
1) Stellite® plug is not recommended to use
2) HT=Hardening Treatment, NT=Nitriding Treatment HF=Stellite®
3) 316ss trim limited to 600F (315°C) in a carbon steel body or chrome-moly
4) Pressure boundary components are supplied to ASTM certification
5) Trim components are supplied to ASTM/JIS/DIN/GB equivalent

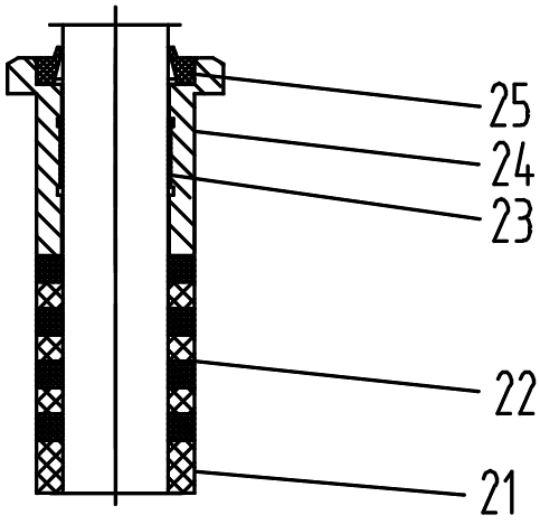
Table 2-2: Body Material, Stainless Steel

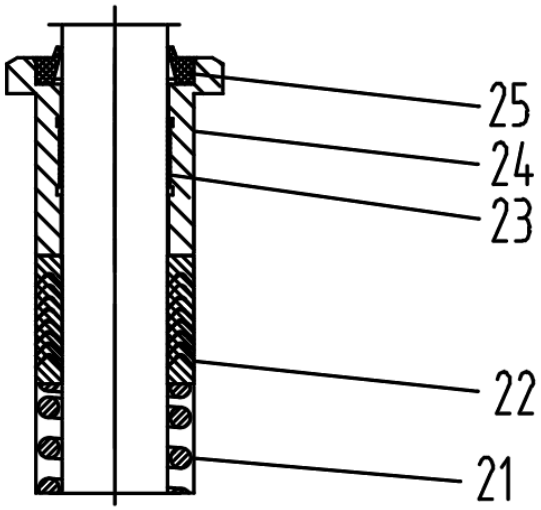
Body Material		A351-CF8M		A351-CF8M
Plug	Material	316ss	304ss	316ss
	Treatment	NT	NT	NT
Seat	Material	316ss	304ss	316ss
	Treatment	HF	HF	HF
Guide	Material	304ss	304ss	316ss
	Treatment	NT	NT	NT
Gasket		316ss+Grafoil®		
Seat Leakage	ANSI/FCI 70-2	Class IV or V		Class IV or V
Body Operating Temperature °F/°C	A351-CF8M	50°F-1000°F (-45°C-538°C)		50°F-1000°F (-45°C-538°C)
	A351-CF8M	-50°F-1000°F (-45°C-538°C)		50°F-1000°F (-45°C-538°C)

ADDITIONAL NOTES:
6) Several stainless steels such as ASTM A-890-99 Grade 3A (1.4468) duplex stainless steel and Hastelloy® can be supplied according to clients' requirements

MATERIALS OF CONSTRUCTION

VALVE PACKING BOX OPTIONS





PACKING BOX BILL OF MATERIAL AND TEMP. SELECTION

Table 3: Packing Box Materials

Item	Name	Temperature, °C / °F							
		-196	-46	-29	200	260	345	425	566
		-320	-50	-20	392	500	650	800	1050
21	Spacer, Graphite Packing	Carbon							
	Spring, V-Ring Packing		300SS						
	Spacer, NACE Service		Carbon						
22	Packing, Standard Bonnet		PTFE						
			Filled PTFE						
			Grafoil®/Graphite						
	Packing Extended / Finned Bonnet	PTFE							
		Filled PTFE							
		Grafoil/Graphite							
23	Guide Standard Bonnet		Metaloplast™						
	Guide Extended Bonnet	Metaloplast™							
24	Packing Follower	316ss							
25	Wiper Ring, Standard Bonnet		Buna-N						
	Wiper Ring, Extended Bonnet	Buna-N							

Notes:
Standard packing boxes are shown. Fugitive emission qualified and live loading options are available

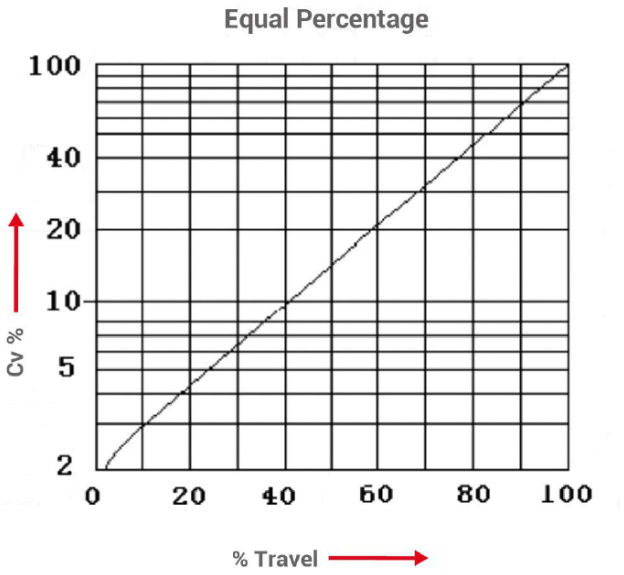
FLOW CHARACTERISTICS

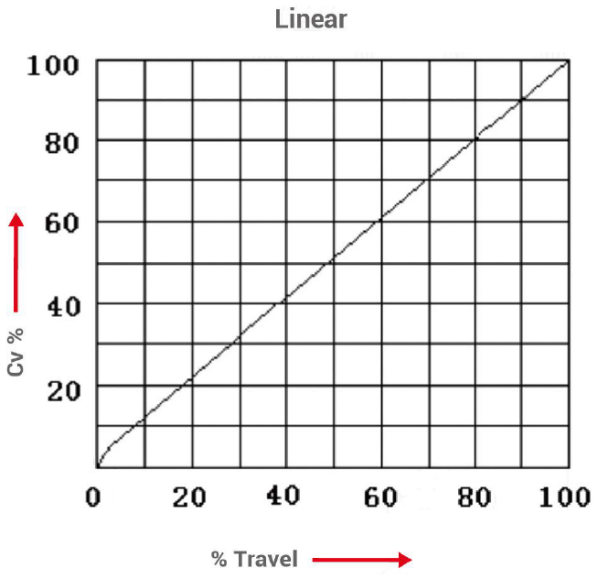
Cv AND STROKE

Table 4: Valve Size, Cv, and Stroke

Plug type		Drilled Hole Plug					
Flow characteristics		Linear			Equal percentage		
Rated Size inch (mm)	Stroke inch (mm)	Cv1	Cv2	Cv3	Cv1	Cv2	Cv3
3” (80)	1.2” (30)	116	73	46	64	46	29
4” (100)		139	116	73	73	64	46
6” (150)	**2.4” (**60)	445	304	198	246	176	146
8” (200)		527	445	304	304	246	176
10” (250)	3.9” (100)	1053	761	445	608	445	375
12” (300)		1521	1053	761	842	608	445
14’ (350)		2106	1521	1053	995	842	608
16” (400)	4.7” (120)	2925	2106	1638	1463	1053	878
18” (450)	6.9” (175)	3900	3100	2106	2106	1638	1053
20” (500)	7.9” (200)	4650	3900	3100	2480	2106	1638
24” (600)	11.8” (300)	6700	5808	4650	3250	2925	2480

Cv VS STROKE CURVES





DIMENSIONS AND WEIGHTS

WITH PNEUMATIC ACTUATOR

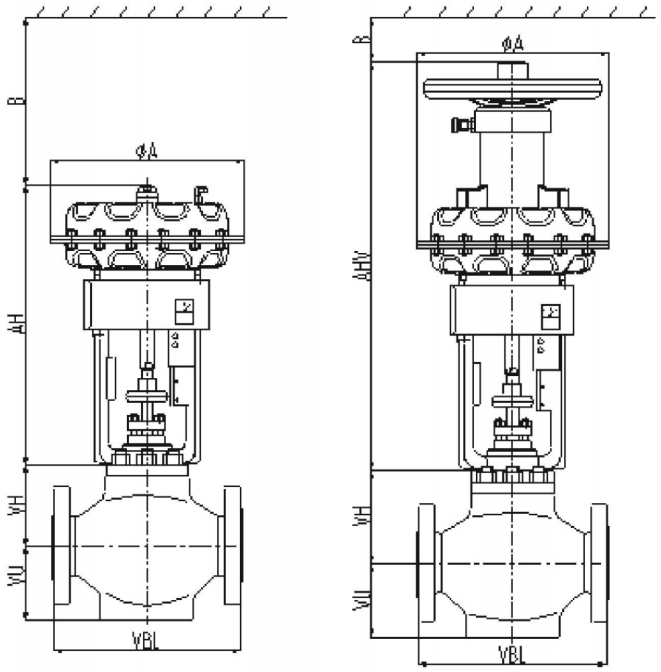


Figure 5-1: Overall drawing with top mounted handwheel
For DN80—DN400 (3”-16”)

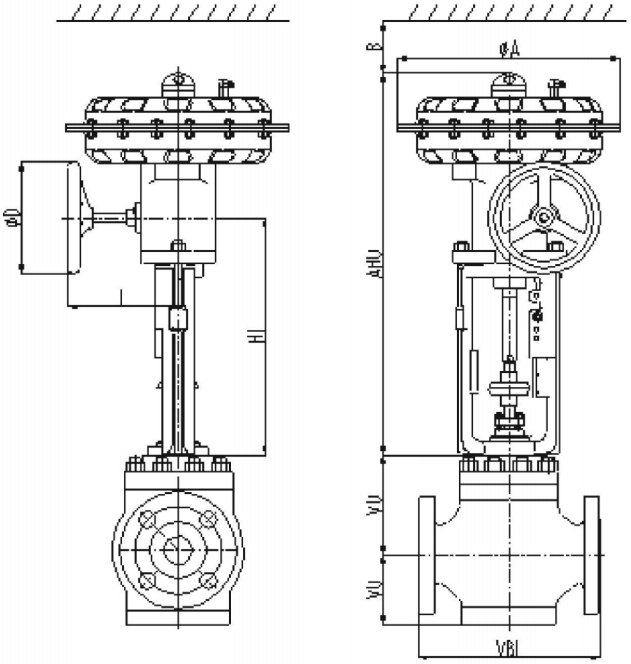


Figure 5.2: Overall drawing with side mounted handwheel
for DN80—DN400 (3”-16”)

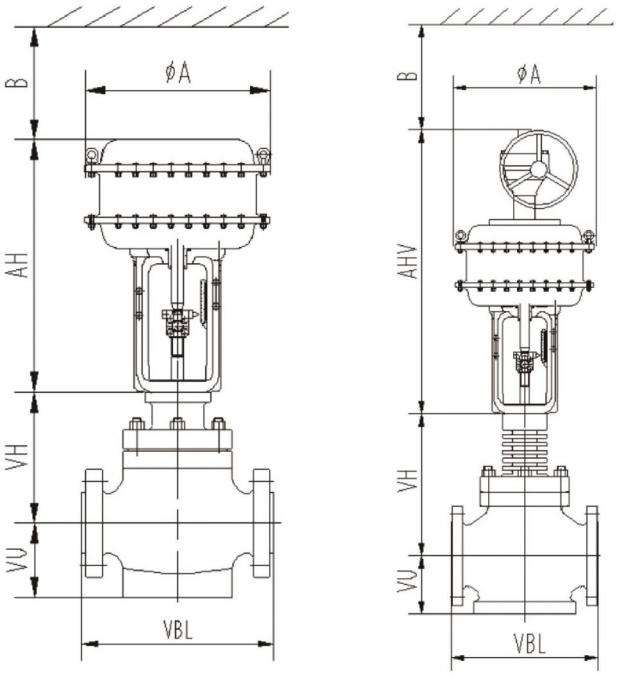


Figure 5.3: Overall drawing with MF5 Actuator
for DN80—DN400 (3”-16”)

DIMENSIONS AND WEIGHTS

WITH PNEUMATIC ACTUATOR

Table 5.1: Outline Dimensions and Weight DN80-400 (3”-16”), Class 600/900/1500
See Fig. 5.1, 5.2, and 5.3 for Overall Drawing

Main outline sizes (mm), connection sizes of flange comply with ANSI class 150/300 , RF/RTJ/ BW All dimensions are in mm										
Valve	Valve Size, DN		80	100	150	200	250	300	350	400
	VBL Cl. 150	RF	298	352	451	543	730	850	980	1100
		RJ	311	365	464	556	742	862	992	1112
		BW	337	394	473	568	—	—	—	—
	VBL Cl. 300	RF	317	368	473	568	730	850	980	1100
		RJ	333	384	488	585	742	862	992	1112
		BW	337	394	508	610	—	—	—	—
	VH	< 300℃	182	213	261	292	360	397	533	521
		≥ 300℃	301	315	484	517	623	657	725	781
	VU		107	137	189	239	305	335	395	443
Actuator	ØA	MF2	270		-					
		MF3	400				-			
		MF5	-		630					
	AH	MF2	425		-					
		MF3	505		645		-			
		MF5			890		920			
	AHV	MF2	580		-					
		MF3	780		920		-			
		MF5	-		1265 (direction action) 1370 (reverse action)		1295 (direct action) 1395 (reverse action)			
	AHU	MF2	545		-					
		MF3	685		825		-			
	B	MF2	130		200		450			
		MF3	150							
		MF5	-							
	ØD	MF2	200		-					
		MF3	250				-			
		MF5	200							
	L	MF2	159				-			
		MF3	197				-			

Notes:
1) Weights—Valve + actuator without handwheel
2) For alternate sizing and actuators, consult the Factory

DIMENSIONS AND WEIGHTS

WITH PNEUMATIC ACTUATOR

Table 5.2: Outline Dimensions and Weight DN80-400 (3”-16”), Class 600/900/1500
See Fig. 5.1, 5.2, and 5.3 for Overall Drawing

Main outline sizes, connection sizes of flange comply wirh ANSI class 150/300, RF/RTJ/ BW All dimensions are in inches											
Valve	Valve Size, Inch			3″	4″	6″	8″	10″	12″	14″	16″
	VBL Cl. 150	RF		11.75	13.87	17.75	21.37	28.75	33.44	38.56	43.31
		RJ		12.25	15.50	18.25	21.87	29.21	33.94	39.06	43.75
		BW		13.25	15.51	18.62	22.37	—	—	—	—
	VBL Cl. 300	RF		12.50	14.50	18.62	22.37	28.75	33.44	38.56	43.31
		RJ		13.12	15.12	19.21	23.00	29.21	33.94	39.06	43.75
		BW		13.25	15.50	20.00	24.00	—	—	—	—
	VH	< 572°F		7.2	8.4	10.3	11.5	14.2	15.6	21.0	20.5
		≥ 572°F		11.9	12.4	19.1	20.4	24.5	25.9	28.5	30.7
	VU			4.2	5.4	7.4	9.4	12.0	13.2	15.6	17.4
Actuator	ØA		MF2	10.6		-					
			MF3	15.7				-			
			MF5	-		24.8					
	AH		MF2	16.7		-					
			MF3	19.9		25.4		-			
			MF5			35.0		36.2			
	AHV		MF2	22.8		-					
			MF3	30.7		36.2		-			
			MF5	-		49.8 (direct action) 53.7 (reverse action)		51.0 (direct action) 55.1 (reverse action)			
	AHU		MF2	21.5		-					
			MF3	27.0		32.5		-			
	B		MF2	5.1		7.9		17.7			
			MF3	5.9							
			MF5	-							
	ØD		MF2	7.9		-					
			MF3	9.8				-			
			MF5	7.9							
	L		MF2	6.3				-			
			MF3	7.8				-			
	H1		MF2	13.0		-					
			MF3	16.7		19.6		-			
	Weight (lb.)		MF2	167	218	-					
			MF3	224	279	418	557	-			
			MF5	-		733	865	1001	1665	1947	3304

Notes:
1) Weights—Valve + actuator without handwheel
2) For alternate sizing and actuators, consult the Factory

DIMENSIONS AND WEIGHTS

WITH PNEUMATIC ACTUATOR

Table 5.3: Outline Dimensions and Weight DN80-400 (18”-24”), Class 150/300
See Fig. 5.4 for Overall Drawing

Main outline sizes, connection sizes of flange comply with ANSI class 150/300, RF/RTJ/ BW inch (mm)					
Valve	VALVE SIZE		18″(450)	20″(500)	24″(600)
	VBL Cl. 150		46.5" (1181)	49.2" (1250)	57.1" (1450)
	VBL Cl. 300				
	VH	<300°C / 572°F	23.8" (605)	32.1" (815)	35.8" (910)
		≥ 300°C / 572°F	31.7" (805)	40.7" (1035)	47.6" (1210)
	VU		18.1" (460)	21.7" (550)	26.6" (675)
Actuator	ØA	MP500	23.4" (595)		-
		MP500-SR/SD			
		MP650	-		29.3" (745)
		MP650-SR/SD			
	AH	MP500	43.9" (1115)		-
		MP500-SR/SD	76.6" (1945)		-
		MP650	-		41.0" (1041)
		MP650-SR/SD	-		77.2" (1960)
	AHV	MP500	59.6" (1515)		-
		MP650	-		56.7" (1441)
	B		11.8" (300)	11.8" (300)	13.8" (350)
	Approximate Weight, lb. (kg)		6127 (2785)	8532 (3878)	11539 (5245)

Notes:
1) Weights—Valve + actuator without handwheel
2) For alternate sizing and actuators, consult the Factory

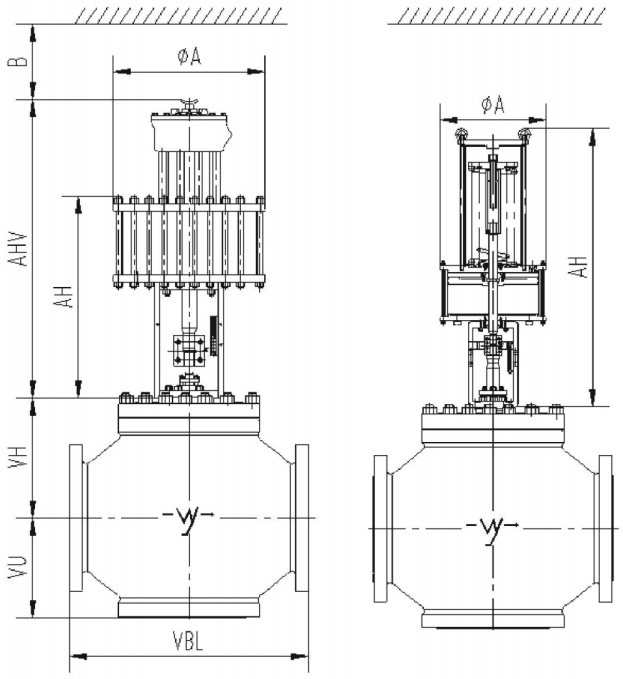


Figure 5.4: Overall drawing with piston actuator
for DN80—DN400 (18”-24”)

WHO WE ARE

WZI Flow Control, Ltd., a subsidiary of WuZhong Instrument Company, Ltd., began business in 1959. As China's largest control valve manufacturer, WZI has a state of the art 2.8M ft2 production, foundry and corporate office campus. With over 1000 employees, WZI is expanding globally with increased manu-facturing, sales and service capabilities to better serve our rapidly growing global customer base.

As a member of the highly acclaimed China Automation Group (www.cag.com.hk), WZI has successfully supplied over 1 million valves for the global market. With our 100% Testing and Serialization Program, WZI prides itself on our high quality, competitively priced products with superior delivery from our new sales and service center located in Houston, Texas. Our Southern California office designs new products and makes continuous improvements to our broad existing product offering.

LET'S WORK TOGETHER

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WE'RE QUALIFIED

As a global manufacturing company, WZI Flow Control verifies that we are operating in full compliance with this partial list of industry standards. Our compliance includes additional standards not shown here. Please contact the factory for additional details.

ISO 9001	**API Spec Q1**	**API 6DSS**	**API 607, 7th Edition**
ISO 14001	**API 6A**	**API 17D**	**API 6FA, 3rd Edition**
OHSAS 18001	**API 6D**	**API 609 Cat B**	**SIL-capable**

QUALITY
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INTEGRITY