3 YEAR GUARANTEE
SPARTAN PERIPHERAL DEVICES

VE411 & 431 SERIES CONTROL VALVES

Universal two way, or three way mixing globe valves

VALVE ASSEMBLIES - These assemblies are complete with actuators, linkage assembly and valve body. They are suitable for use in 2-way applications, angle or straight to factory order, or 3 way applications.

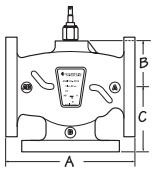
VALVE BODIES - Utilising anti-dezincification bronze components and a heavy duty valve body, they are coupled with a unique variable ratio, all-metal cast linkage system which runs slower at the ends for improved modulation and better close-off force, speeding up in the centre range. Built to BSPT thread and DIN flange European standard as well as NPT thread and ANSI 125 flange American standard.

OTHER FEATURES INCLUDE:

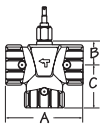
- 11/2 million cycle U-cup packing cartridge
- Stem scrubber rings top and bottom
- Guided stem both top and bottom
- Parabolic and fluted plugs
- Turndown ratio: Consult actuator resolution and valve body rangeability
- Maintenance free • High and low Cv/Kvs each size
- Trouble shooting 'A port' pointer
- Tapped ports for optional P plugs

VALVE BODY DIMENSIONS

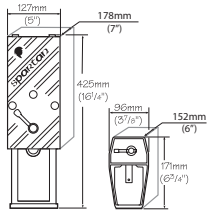
Size *	A	B	C	Weight
25mm (1")	125mm (5")	30mm (1.2")	69mm (2.7")	2lbs/0.9kgs
40mm (11/2")	140mm (5.5")	38mm (1.5")	77mm (3")	4lbs/1.8kgs
50mm (2")	152mm (6")	39mm (1.5")	84mm (3.3")	6lbs/2.7kgs
DIN 80mm	250mm	91mm	124mm	21.6kgs
ANSI 3"	9.80" (250mm)	3.60" (91mm)	4.87" (124mm)	48lbs
DIN 100mm	333mm	114mm	165mm	46.0kgs
ANSI 4"	13.0" (333mm)	4.50" (114mm)	6.5" (165mm)	102lbs



80mm & 100mm (3" & 4")



25 - 50mm (1"-2")



AV1500 (for 16-41Nm Actuators) Wgt: 10lbs/4.5kgs

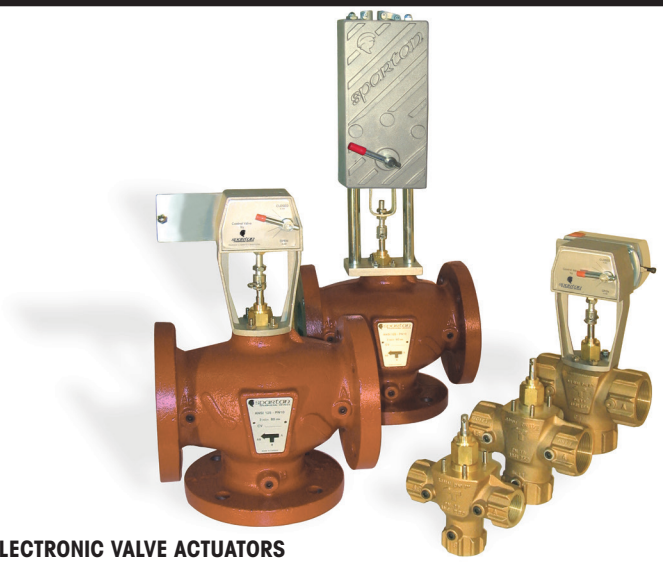
AV-2400 (max. 16Nm Actuators) Wgt: 1lbs/0.45kgs

APPLICATION - Primarily designed for use on closed systems, these valves can nonetheless be used in many other applications. Dezincification resistant, they can be used in most HVAC control systems as well as industrial applications.

This univeral valve bodies are suitable for use as 2-way straight or 2 way angle valves with optional plug-in kit to the bottom port B, or a side port A. Also suitable for use as a 3 way valve in hot or cold water systems, and with static pressure rating suitable to 400 psi., (ANSI 250) for 1", 1 1/2" & 2", and 170psi (ANSI 125) for 3" and 4" sizes. They adapt to low or high rise installations.

These valves are designed as mixing valves in their 3-way format. The water must always mix within the body with the common port as an outlet, even though it can divert through or around the load.

(Refer to the installation instruction sheets.)



ELECTRONIC VALVE ACTUATORS

Actuators are available for 2-position, floating (tri-state) and 0-10 VDC modulating control. Ambient temperature is from -32°C (-25°F) to 55°C (130°F). Ambient humidity 95%RH non-condensing. Gear lubrication silicone-free. Power supply voltage is 24 VAC 50/60Hz on all models.

Modulating actuators are supplied with a 0 - 10 VDC feedback to transmit the position of the actuator for use in external control loops or position indication. Optional auxillary switches also available for all models. One year warranty on actuators.

All incorporate override lever/position indicators. The heavy duty steel "Geneva" linkage movement provides a robust, variable ratio motion which provides more force at the ends of travel for seating the valve extra tightly. The same variable ratio assists in the valve characteristics to improve modulating control.

OTHER FEATURES INCLUDE:

- Lower, more compact package
- Both mounting nuts and studs are stainless steel to ensure ease of removal, even after decades of corrosive service
- All metal. No plastic. Hardened steel movement
- Override lever/pointer on all units
- Factory installed and pre-adjusted to its valve body
- Maintenance-free, long life expectancy and housed in an attractive, corrosion resistant, sturdy metal yoke

VALVE ACTUATORS

PART NO.	SIGNAL INPUT	TORQUE	RESOLUTION	LINKAGE	TYPE	STEM FORCE
NON-SPRING RETURN (FAIL LAST POSITION)						
ME-5120	Tri-state	5Nm / 44in/lb	N/A	AV-2414	I	60kg / 132lb
ME-5320	0-10VDC	5Nm / 44in/lb	100:1	AV-2414	I	60kg / 132lb
ME-5130	Tri-state	10Nm / 88in/lb	N/A	AV-2414	I	120kg / 264lb
ME-5330	0-10 VDC	10Nm / 88in/lb	100:1	AV-2414	I	120kg / 264lb
ME-5140	Tri-state	16Nm / 132in/lb	N/A	AV-2417	H	127kg / 280lb
ME-5340	0-10 VDC	16Nm / 132in/lb	100:1	AV-2417	H	127kg / 280lb
ME-5140L	Tri-state	25Nm / 221in/lb	N/A	AV-1524	K	150kg / 331lb
ME-5340L	0-10 VDC	25Nm / 221in/lb	100:1	AV-1524	K	150kg / 331lb
ME-5150	Tri-state	35Nm / 310in/lb	N/A	AV-1524	K	211kg / 465lb
ME-5350	0-10 VDC	35Nm / 310in/lb	100:1	AV-1524	K	211kg / 465lb
ME-5350-ON	0-10 VDC	40Nm / 360in/lb	100:1	AV-1524	K	246kg / 542lb
SPRING RETURN						
ME-5430	2-position	7Nm / 62in/lb	N/A	AV-2414	I	85kg / 186lb
ME-5630	Tri-state	7Nm / 62in/lb	N/A	AV-2414	I	85kg / 186lb
ME-5830	0-10 VDC	7Nm / 62in/lb	100:1	AV-2414	I	85kg / 186lb
ME-5440	2-position	16Nm / 142in/lb	N/A	AV-2417	H	127kg / 280lb
ME-5640	Tri-State	16Nm / 142in/lb	N/A	AV-2417	H	127kg / 280lb
ME-5840	0-10 VDC	16Nm / 142in/lb	100:1	AV-2417	H	127kg / 280lb
ME-5640	Tri-State	16Nm / 142in/lb	N/A	AV-1524	K	95kg / 210lb
ME-5840	0-10 VDC	16Nm / 142in/lb	100:1	AV-1524	K	95kg / 210lb
ME-5840	0-10 VDC	16Nm / 142in/lb	100:1	AV-1524	K	95kg / 210lb
ME-5850-ON	0-10 VDC	40Nm / 360in/lb	100:1	AV-1524	K	246kg / 542lb

1028-1-1-01

SPECIFICATION		NON-SPRING RETURN CONTROL VALVES ASSEMBLIES - PART NUMBERS							
Valve Body Part No:	Valve Size	CV	Valve Body Type	Valve Connection	Valve Linkage	Actuator Floating	Actuator 0-10Vdc Modulating	Close-off presure	
						ME5120 44 in/lb	**ME5320 44 in/lb**	PSI	BAR
V411	1"	6	2/3 Way	NPT Thread	AV24I	VE411-6-I-5120	VE411-6-I-5320	100	6.80
V411	1"	11	2/3 Way	NPT Thread	AV24I	VE411-11-I-5120	VE411-11-I-5320	100	6.80
V411	1 1/2"	16	2/3 Way	NPT Thread	AV24I	VE411-16-I-5120	VE411-16-I-5320	66	4.60
V411	1 1/2"	24	2/3 Way	NPT Thread	AV24I	VE411-24-I-5120	VE411-24-I-5320	66	4.60
V411	2"	35	2/3 Way	NPT Thread	AV24I	VE411-35-I-5120	VE411-35-I-5320	37	2.60
V411	2"	45	2/3 Way	NPT Thread	AV24H	VE411-45-H-5120	VE411-45-H-5320	25	1.70
						ME5130 88 in/lb	**ME5330 88 in/lb**		
V411	1 1/2"	16	2/3 Way	NPT Thread	AV24I	VE411-16-I-5130	VE411-16-I-5330	100	6.80
V411	1 1/2"	24	2/3 Way	NPT Thread	AV24I	VE411-24-I-5130	VE411-24-I-5330	100	6.80
V411	2"	35	2/3 Way	NPT Thread	AV24I	VE411-35-I-5130	VE411-35-I-5330	70	4.70
V411	2"	45	2/3 Way	NPT Thread	AV24H	VE411-45-H-5130	VE411-45-H-5330	45	3.00
V431	3"	65	2/3 Way	ANSI Flange	AV24I	VE431-65-I-5130	VE431-65-I-5330	30	2.04
V431	3"	75	2/3 Way	ANSI Flange	AV24H	VE431-75-H-5130	VE431-75-H-5330	15	1.02
						ME5140 132 in/lb	**ME5340 132 in/lb**		
V411	2"	35	2/3 Way	NPT Thread	AV24I	VE411-35-I-5140	VE411-35-I-5340	100	6.80
V411	2"	45	2/3 Way	NPT Thread	AV24H	VE411-45-H-5140	VE411-45-H-5340	70	4.76
V431	3"	65	2/3 Way	ANSI Flange	AV24I	VE431-65-I-5140	VE431-65-I-5340	55	3.74
V431	3"	75	2/3 Way	ANSI Flange	AV24H	VE431-75-H-5140	VE431-75-H-5340	30	2.04
V431	3"	110	2/3 Way	ANSI Flange	AV15K	VE431-110-K-5140	VE431-110-K-5340	25	1.70
						ME5140L 221 in/lb	**ME5340L 221 in/lb**		
V431	3"	65	2/3 Way	ANSI Flange	AV24I	VE431-65-I-5140L	VE431-65-I-5340L	90	6.12
V431	3"	75	2/3 Way	ANSI Flange	AV24H	VE431-75-H-5140L	VE431-75-H-5340L	55	3.74
V431	3"	110	2/3 Way	ANSI Flange	AV15K	VE431-110-K-5140L	VE431-110-K-5340L	40	2.72
						ME5150 310 in/lb	**ME5350 310 in/lb**		
V431	3"	75	2/3 Way	ANSI Flange	AV15Q	VE431-75-Q-5150	VE431-75-Q-5350	85	5.78
V431	3"	110	2/3 Way	ANSI Flange	AV15K	VE431-110-K-5150	VE431-110-K-5350	65	4.42
V431	4"	190	2/3 Way	ANSI Flange	AV15Y	VE431-190-Y-5150	VE431-190-Y-5350	30	2.04
						ME5150-ON 360 in/lb	**ME5350-ON 360 in/lb**		
V431	4"	190	2/3 Way	ANSI Flange	AV15Y	VE431-190-Y-5150-ON	VE431-190-Y-5350-ON	40	2.72
SPECIFICATION		**SPRING RETURN CONTROL VALVES ASSEMBLIES - PART NUMBERS**							
Valve Body Part No:	Valve Size	CV	Valve Body Type	Valve Connection	Valve Linkage	Actuator Two Position On/Off	Actuator 0-10Vdc Modulating	Close-off presure	
						ME5430 62 in/lb	**ME5830 62 in/lb**	PSI	BAR
V411	1"	6	2/3 Way	NPT Thread	AV24I	VE411-6-I-5420	VE411-6-I-5820	35	2.40
V411	1"	11	2/3 Way	NPT Thread	AV24I	VE411-11-I-5420	VE411-11-I-5820	35	2.40
V411	1"	6	2/3 Way	NPT Thread	AV24I	VE411-6-I-5430	VE411-6-I-5830	100	6.80
V411	1"	11	2/3 Way	NPT Thread	AV24I	VE411-11-I-5430	VE411-11-I-5830	100	6.80
V411	1 1/2"	16	2/3 Way	NPT Thread	AV24I	VE411-16-I-5430	VE411-16-I-5830	70	4.76
V411	1 1/2"	24	2/3 Way	NPT Thread	AV24I	VE411-24-I-5430	VE411-24-I-5830	70	4.76
V411	2"	35	2/3 Way	NPT Thread	AV24I	VE411-35-I-5430	VE411-35-I-5830	52	3.50
V411	2"	45	2/3 Way	NPT Thread	AV24H	VE411-45-H-5430	VE411-45-H-5830	35	2.38
V431	3"	65	2/3 Way	ANSI Flange	AV24I	VE431-65-I-5430	VE431-65-I-5830	30	2.04
						ME5440 142 in/lb	**ME5840 142 in/lb**		
V411	1 1/2"	16	2/3 Way	NPT Thread	AV24I	VE411-16-I-5440	VE411-16-I-5840	125	8.50
V411	1 1/2"	24	2/3 Way	NPT Thread	AV24I	VE411-24-I-5440	VE411-24-I-5840	125	8.50
V411	2"	35	2/3 Way	NPT Thread	AV24I	VE411-35-I-5440	VE411-35-I-5840	100	6.80
V411	2"	45	2/3 Way	NPT Thread	AV24H	VE411-45-H-5440	VE411-45-H-5840	80	5.44
V431	3"	65	2/3 Way	ANSI Flange	AV24I	VE431-65-I-5440	VE431-65-I-5840	55	3.74
V431	3"	75	2/3 Way	ANSI Flange	AV24H	VE431-75-H-5440	VE431-75-H-5840	40	2.72
V431	3"	110	2/3 Way	ANSI Flange	AV15K	VE431-110-K-5440	VE431-110-K-5840	25	1.70
						ME5850-ON 360 in/lb	**ME5850-ON 360 in/lb**		
V431	3"	65	2/3 Way	ANSI Flange	AV15Q	VE431-65-Q-5850-ON	VE431-65-Q-5850-ON	100	6.80
V431	3"	75	2/3 Way	ANSI Flange	AV15Q	VE431-75-Q-5850-ON	VE431-75-Q-5850-ON	100	6.80
V431	3"	110	2/3 Way	ANSI Flange	AV15K	VE431-110-K-5850-ON	VE431-110-K-5850-ON	75	5.10
V431	4"	190	2/3 Way	ANSI Flange	AV15Y	VE431-190-Y-5850-ON	VE431-190-Y-5850-ON	40	2.72

The close off pressures are rated as per ANSI/FCI 70-2 1976, Class III 0.1% seat leakage.

Maximum differential pressure across the valve body should not exceed 60 PSI (4.08 bar) to prevent water noise and cavitation.

1028-1-1-01

SPECIFICATION		NON-SPRING RETURN CONTROL VALVES ASSEMBLIES - PART NUMBERS							
Valve Body Part No:	Valve Size	KV	Valve Body Type	Valve Connection	Valve Linkage	Actuator Floating	Actuator 0-10Vdc Modulating	Close-off presure	
						ME5120 5 Nm	**ME5320 5 Nm**	PSI	BAR
V411	25	5.00	2/3 Way	BSP Thread	AV24I	VE411-5.0-I-5120	VE411-5.0-I-5320	100	6.80
V411	25	9.20	2/3 Way	BSP Thread	AV24I	VE411-9.2-I-5120	VE411-9.2-I-5320	100	6.80
V411	40	13.30	2/3 Way	BSP Thread	AV24I	VE411-13.3-I-5120	VE411-13.3-I-5320	66	4.60
V411	40	20.00	2/3 Way	BSP Thread	AV24I	VE411-20.0-I-5120	VE411-20.0-I-5320	66	4.60
V411	50	29.20	2/3 Way	BSP Thread	AV24I	VE411-29.2-I-5120	VE411-29.2-I-5320	37	2.60
V411	50	37.50	2/3 Way	BSP Thread	AV24H	VE411-37.5-H-5120	VE411-37.5-H-5320	25	1.70
						ME5130 10 Nm	**ME5330 10 Nm**		
V411	40	13.30	2/3 Way	BSP Thread	AV24I	VE411-13.3-I-5130	VE411-13.3-I-5330	100	6.80
V411	40	20.00	2/3 Way	BSP Thread	AV24I	VE411-20.0-I-5130	VE411-20.0-I-5330	100	6.80
V411	50	29.20	2/3 Way	BSP Thread	AV24I	VE411-29.2-I-5130	VE411-29.2-I-5330	70	4.70
V411	50	37.50	2/3 Way	BSP Thread	AV24H	VE411-37.5-H-5130	VE411-37.5-H-5330	45	3.00
V431	80	54.20	2/3 Way	DIN Flange	AV24I	VE431-54.2-I-5130	VE431-54.2-I-5330	30	2.04
V431	80	62.40	2/3 Way	DIN Flange	AV24H	VE431-62.4-H-5130	VE431-62.4-H-5330	15	1.02
						ME5140 15 Nm	**ME5340 15 Nm**		
V411	50	29.20	2/3 Way	BSP Thread	AV24I	VE411-29.2-I-5140	VE411-29.2-I-5340	100	6.80
V411	50	37.50	2/3 Way	BSP Thread	AV24H	VE411-37.5-H-5140	VE411-37.5-H-5340	70	4.76
V431	80	54.20	2/3 Way	DIN Flange	AV24I	VE431-54.2-I-5140	VE431-54.2-I-5340	55	3.74
V431	80	62.40	2/3 Way	DIN Flange	AV24H	VE431-62.4-H-5140	VE431-62.4-H-5340	30	2.04
V431	80	95.00	2/3 Way	DIN Flange	AV15K	VE431-95-K-5140	VE431-95-K-5340	25	1.70
						ME5140L 25 Nm	**ME5340L 25 Nm**		
V431	80	54.20	2/3 Way	DIN Flange	AV24I	VE431-54.2-I-5140L	VE431-54.2-I-5340L	90	6.12
V431	80	62.40	2/3 Way	DIN Flange	AV24H	VE431-62.4-H-5140L	VE431-62.4-H-5340L	55	3.74
V431	80	95.00	2/3 Way	DIN Flange	AV15K	VE431-95-K-5140L	VE431-95-K-5340L	40	2.72
						ME5150 35 Nm	**ME5350 35 Nm**		
V431	80	62.40	2/3 Way	DIN Flange	AV15Q	VE431-62.4-Q-5150	VE431-62.4-Q-5350	85	5.78
V431	80	95.00	2/3 Way	DIN Flange	AV15K	VE431-95-K-5150	VE431-95-K-5350	65	4.42
V431	100	163.00	2/3 Way	DIN Flange	AV15Y	VE431-163-Y-5150	VE431-163-Y-5350	30	2.04
						ME5150-ON 360 in/lb	**ME5350-ON 360 in/lb**		
V431	100	163.00	2/3 Way	DIN Flange	AV15Y	VE431-163-Y-5150-ON	VE431-163-Y-5350-ON	40	2.72
SPECIFICATION		**SPRING RETURN CONTROL VALVES ASSEMBLIES - PART NUMBERS**							
Valve Body Part No:	Valve Size	KV	Valve Body Type	Valve Connection	Valve Linkage	Actuator Two Position On/Off	Actuator 0-10Vdc Modulating	Close-off presure	
						ME5430 7 Nm	**ME5830 7 Nm**	PSI	BAR
V411	25	5.00	2/3 Way	BSP Thread	AV24I	VE411-5.0-I-5420	VE411-5.0-I-5820	35	2.40
V411	25	9.20	2/3 Way	BSP Thread	AV24I	VE411-9.2-I-5420	VE411-9.2-I-5820	135	2.40
V411	25	5.00	2/3 Way	BSP Thread	AV24I	VE411-5.0-I-5430	VE411-5.0-I-5830	100	6.80
V411	25	9.20	2/3 Way	BSP Thread	AV24I	VE411-9.2-I-5430	VE411-9.2-I-5830	100	6.80
V411	40	13.30	2/3 Way	BSP Thread	AV24I	VE411-13.3-I-5430	VE411-13.3-I-5830	70	4.76
V411	40	20.00	2/3 Way	BSP Thread	AV24I	VE411-20.0-I-5430	VE411-20.0-I-5830	70	4.76
V411	50	29.20	2/3 Way	BSP Thread	AV24I	VE411-29.2-I-5430	VE411-29.2-I-5830	52	3.50
V411	50	37.50	2/3 Way	BSP Thread	AV24H	VE411-37.5-H-5430	VE411-37.5-H-5830	35	2.38
V431	80	54.20	2/3 Way	DIN Flange	AV24I	VE431-54.2-I-5430	VE431-54.2-I-5830	30	2.04
						ME5440 16 Nm	**ME5840 16 Nm**		
V411	40	13.30	2/3 Way	BSP Thread	AV24I	VE411-13.3-I-5440	VE411-13.3-I-5840	125	8.50
V411	40	20.00	2/3 Way	BSP Thread	AV24I	VE411-20.0-I-5440	VE411-20.0-I-5840	125	8.50
V411	50	29.20	2/3 Way	BSP Thread	AV24I	VE411-29.2-I-5440	VE411-29.2-I-5840	100	6.80
V411	50	37.50	2/3 Way	BSP Thread	AV24H	VE411-37.5-H-5440	VE411-37.5-H-5840	80	5.44
V431	80	54.20	2/3 Way	DIN Flange	AV24I	VE431-54.2-I-5440	VE431-54.2-I-5840	55	3.74
V431	80	62.40	2/3 Way	DIN Flange	AV24H	VE431-62.4-H-5440	VE431-62.4-H-5840	40	2.72
V431	80	95.00	2/3 Way	DIN Flange	AV15K	VE431-95-K-5440	VE431-95-K-5840	25	1.70
						ME5850-ON 40 Nm	**ME5850-ON 40 Nm**		
V431	80	54.20	2/3 Way	DIN Flange	AV15Q	VE431-54.2-Q-5850	VE431-54.2-Q-5850	100	6.80
V431	80	62.40	2/3 Way	DIN Flange	AV15Q	VE431-62.4-Q-5850	VE431-62.4-Q-5850	100	6.80
V431	80	95.00	2/3 Way	DIN Flange	AV15K	VE431-95-K-5850	VE431-95-K-5850	75	5.10
V431	100	163.00	2/3 Way	DIN Flange	AV15Y	VE431-163-Y-5850-ON	VE431-163-Y-5850-ON	40	2.72

The close off pressures are rated as per ANSI/FCI 70-2 1976, Class III 0.1% seat leakage.

Maximum differential pressure across the valve body should not exceed 60 PSI (4.08 bar) to prevent water noise and cavitation.

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Spartan Peripheral Devices

SYSTEM VALVES
PIPING INSTALLATION

V411 & V431

PIPING INSTALLATION INSTRUCTIONS

Mixing valves must always be used with the flow leaving the common AB port. They must always be installed on the return, or leaving, side of the coil. The application is to be diverting the water in the "T" through or around the coil. The water mixes in the valve from the coil or bypass to go back to the system.These valves can be piped in two different configurations, all achieving the same outcome.When the stem of the valve is up, the flow is from Port B to Port AB. When the stem travels down, Port A starts to open and Port B starts to close.

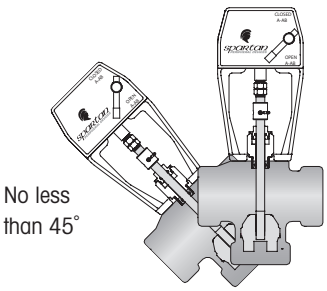
Reversing the Stem Travel

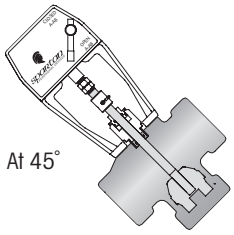
Non-spring return actuators rotation can be reversed by a switch located on the actuator Spring Return Actuators, in most cases, have to be rotated by removing the actuator from the linkage. Once removed, flip the actuator to change the rotation of the spring.

IMPORTANT:

For water applications:
Install in upright position or at a maximum angle of 45˚. DO NOT INSTALL HORIZONTALLY as this may limit the life expectancy of the packing.

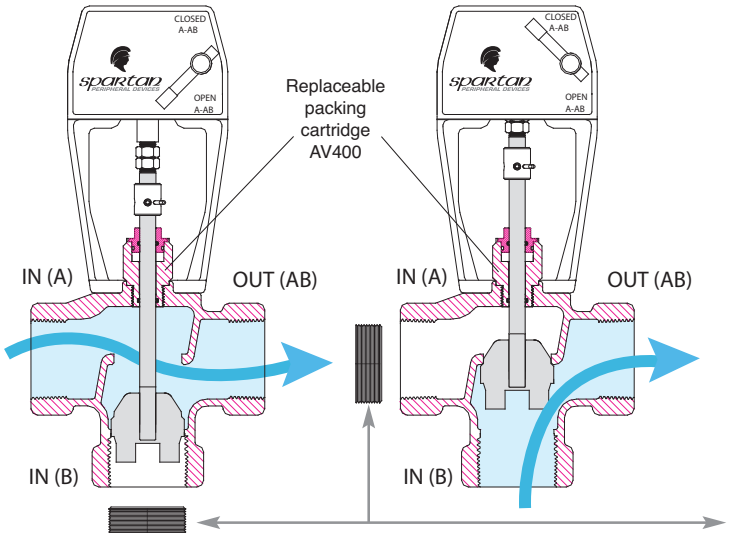
For steam applications:
Install the valve at a 45˚ angle and insulate the valve and piping with insulation to limit the heat rise to the actuator





Flow direction - observe flow direction as indicated on valve body.

Globe valves or lift-and-lay valves are designed for flow in one specific direction only, that is, the liquid forcing the plug off the seat. In the stem down position the flow is from A to AB, in the stem up position the flow is from B to AB. If used with the flow going backwards, the water forces the plug to slam against its seat. Slamming and/or water hammer may then be apparent.



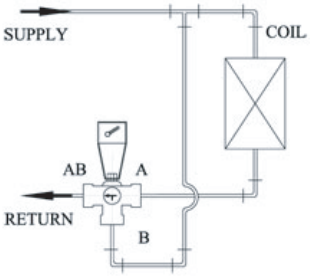


Diagram 1
Spring Stem Up -
Flow is bypassing the coil
* Reverse the actuator rotation to spring stem down to have flow through the coil

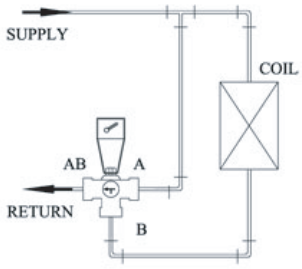
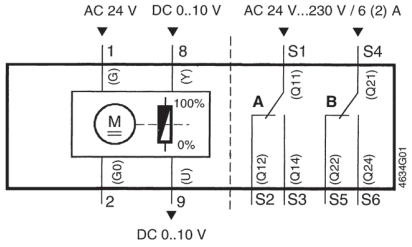


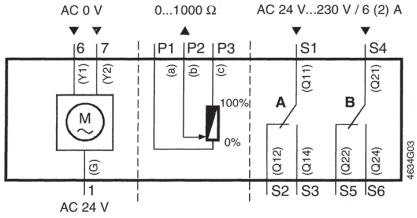
Diagram 2
Spring Stem Up -
Flow is through the coil
* Reverse the actuator rotation to spring stem down to have the flow bypass the coil

ACTUATOR WIRING DIAGRAMS

ME532X
ME533X



ME512X
ME513X



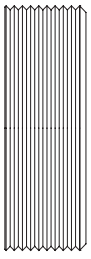
Wiring Colour Coding

1	Supply 24VAC	Red	**8**	0 - 10Vdc input signal	Gray
2	Neutral 24VAC	Black	**9**	0 - 10Vdc output signal	Pink
6	Signal Clockwise	Violet	**3**	Line 120Vac	Black
7	Signal Counterclockwise	Orange	**4**	Neutral 120Vac	White

OPTIONAL PLUG KIT PART NUMBERS
(to convert a 3 way valve body into a 2 way)

American Thread	Metric Thread
AV411N10 - 1.0"	AV411B10 - 25mm
AV411N15 - 1.5"	AV411B15 - 40mm
AV411N20 - 2.0"	AV411B20 - 50mm
ANSI Flange	**DIN Flange**
AV431AK1 - 3.0"	AV431DK1 - 80mm
AV431AK1 - 4.0"	AV431DK1 - 100mm

Disclaimer:
The installation and service should be performed by trained personnel. To avoid electric shock ensure the electrical source is switched off before servicing the device.



To convert 3 way valve body into 2 way (either straight or an angle), plug bottom port B or side port A with a plug kit.

1028-1-1-01

Spartan Peripheral Devices

SYSTEM VALVES
SPECIFICATIONS

V411 & V431

SPECIFICATIONS

SPECIFICATIONS - V-411 ANSI 250 PN25 Bronze valves

Sizes .....25, 40 & 50mm. (1", 11/2" & 2")
Cv's..... 6 & 11; 16 & 24; 35 & 45
Kvs ..... .5 & 9.2; 13.3 & 20, 29.2 & 37.5
Connections ..... .3 female threads NPT or BSPT
Characteristics..... eq% ends - linear center
Turndown ratio ..... See actuator resolution on page 1
Rangeability 100:1
Leakage for water..... ANSI Class III - 0.1% of CV
Maximum differential pressure water ..... 50 psi / 345 Kpa
Body pressure rating ..... ANSI 250
ANSI 250 rating.....32 - 150°F (0 - 66°C) .....400 psig / 27.6 bar
175°F (79°C).....392 psig / 27.0 bar
200°F (93°C).....385 psig / 26.5 bar
250°F (121°C).....250 psig / 17.2 bar
Pressure rating for metric threaded valves PN25
Standard rating to 25 bar or 368psi.
Max fluid temp rating.....135°C (275°F)
Min fluid temp rating .....0°C (32°F)
Max steam inlet pressure ..... 35psi /241Kpa
Maximum differential pressure steam ..... 20psi /138Kpa
Leakage for steam*..... ANSI Class IV - 0.01% of CV
* in assembly with higher torque actuators
Valve Body..... threaded bronze C84400
Packing .....multiple U-cup EPDM
Scrubbing rings ..... top and bottom Viton
Stem.....burnished 'mirror finish' 303 stainless steel PRDT 70
Seat top ..... integral bronze C84400 (uns)
Seat bottom.....removable bronze C84400 (uns)
Disc top & bottom ..... bronze C84400
Stem guides .....packing top & skirt bottom
Lift..... 14mm except Cv's 45 @17mm
Standards ..... IEC 60534-4

SPECIFICATIONS - V-431 ANSI 125 PN16 Cast Iron valveS

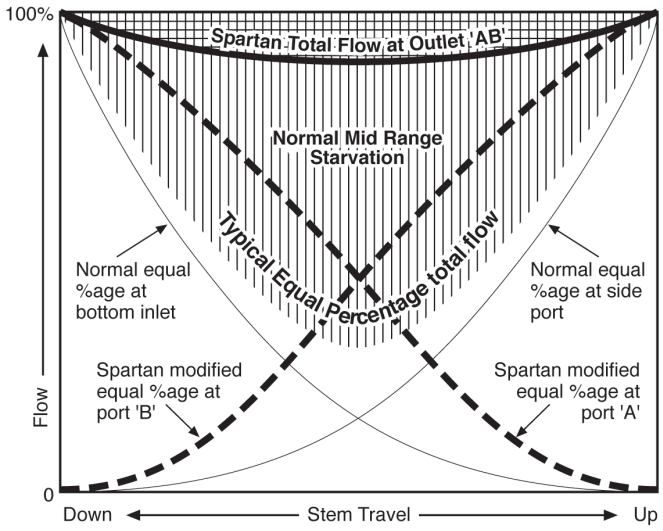
Sizes .....80mm (3"), 100mm (4")
Cv's.....65, 75, 110 & 190
Kvs .....54.2; 62.4, 95 & 163
Connections ..... 3 flanges 125# ANSI or PN16,
Plug characteristics ..... eq% ends - linear center
Turndown ratio ..... See actuator resolution on page 1
Rangeability 100:1
Leakage for water .....ANSI Class III - 0.1% of CV
Maximum differential pressure water ..... 50 psi / 345 Kpa
Body pressre rating.....ANSI 125
ANSI 125 psig static .....32 - 150°F (0 - 66°C) .....175 psig / 12.1 bar
175°F (79°C).....170 psig / 11.7 bar
200°F (93°C).....165 psig / 11.4 bar
250°F (121°C) .....125 psig / 8.6 bar
Pressure rating for V431 DIN Flange valves PN16
Standard rating to 16 bar or 240psi.
Max fluid temp rating .....135°C (275°F)
Min fluid temp rating .....0°C (32°F)
Max steam inlet pressure ..... 30psi /207Kpa
Maximum differential pressure steam ..... 20psi /138Kpa
Leakage for steam..... ANSI Class IV - 0.01% of CV
* in assembly with higher torque actuators
Valve Body..... flanged iron C84400
Packing .....multiple U-cup EPDM
Scrubbing rings ..... top and bottom Viton
Stem.....burnished 'mirror finish' 303 stainless steel PRDT 70
Seat top ..... integral cast iron
Seat bottom..... integral cast iron
Disc top & bottom ..... bronze C84400
Stem guides .....packing top & skirt bottom
Lift..... 65 Cv 14mm; 75 Cv 17mm; 110 Cv 22mm; 190 Cv 25mm
Standards ..... IEC 60534-4

COMMERCIAL CONTROL FEATURES - The unique **universal** design of Spartan PD's valve line is the cost effective "one piece" heavy bronze valve body and its ability to be used as a 2-way or 3-way valve by closing off the unused ports "A" or "B" (Never "AB"). "Suction-cup" effects will not occur and, because of the unique plug characterisation, good control will be had in both 2 and 3-way formats. (modified equal % to linear. See charts). These specially designed plug shapes incorporate the best features of equal percentage and linear characterization to provide a valve excellent for modulating well at low flow, while adapting to provide linear characterization in the later stages of valve opening. This feature, along with the variable ratio linkage kit, provides better mixing yet no mid-range starvation, (common with most 3-way equal percentage valves). This allows for improved throttling action in 2-way duty. A unique trouble-shooting feature, a raised marker at the top of the bonnet, clearly defines port "A" after the insulation (lagging) has been installed.

INDUSTRIAL CONTROL VALVE FEATURES

These valves perform well in industrial applications, incorporating features such as both bottom and top stem guides for quieter, vibration-free performance, stainless steel and low zinc components for years of corrosion free service life, and tapping points at all ports for test gauges, temperature probes, pressure taps, etc. (tapped to 1/8" NPT or BSPT to order). They also adapt to pneumatic operation.

Benefits of Spartan's Universal 2 way & 3 way valve design.



Modified equal % to linear flow characteristics allows for precise control in two way valves and no mid range starvation in three way valves.

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