



SERIES 3500

3-WAY TYPE GLOBE CONTROL VALVE

COMPREHENSIVE RANGE
OF VALVES FOR THE
ENERGY & PROCESS
INDUSTRIES

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MAIN PRODUCT FEATURE

- **High Capacity**

Broad and streamlined fluid passages allow for larger amounts of fluid versus other 3-Way valves of the same size.

- **Stable Operation**

Port and cage guiding make the operation of the plug stable regardless of plug travel.

- **Durability**

Rugged design and smooth operation guarantee a long maintenance - free service life.

3500 SERIES

- The 3500 Series valve is a 3-way design for use on blending two separate flows, by having two inlets and a common outlet port or dividing a flow into two proportional parts by having one common inlet and two outlet ports.
- The 3500 Series valve uses pneumatic or electric actuator with many extension possibilities and a wide range of applications. The basic equipment is fitted with a mixing or diverting plug and strong high capacity stem guiding and serves at the same time as basis for multiple types of applications.
- Seats are not welded and can be unscrewed and serviced even after years of operation. Exchanging of seat and plug can be completed within few minutes.
- This range of valves has been designed in two forms designated 3500 and 3501. The 3500 series conventional type is to provide an economic solution for all mixing and selected diverting services. The 3501 balanced trim is specially designed for high duty diverting service applications

FLEXIBILITY

Various body and trim types provide design versatility for your needs.

- 3500

This configuration features an unbalanced plug for simple maintenance and economical installation.

Designed with two side and one bottom pipeline connections.

- 3501

This configuration uses a balanced plug design to minimize the actuator forces and provide stable control in large valve sizes with pneumatic actuators.

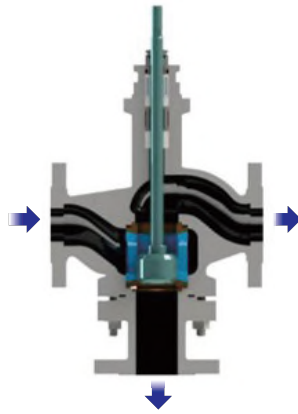
The quick change trim with the plug accessible from the bonnet allows for easy maintenance.

Designed with two side and one bottom pipeline connections.

BODY STYLES



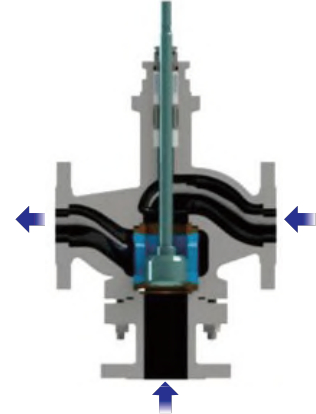
CONVENTIONAL STYLE



DIVERTING

3501 SERIES

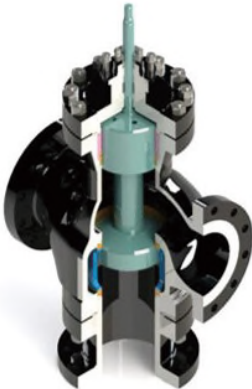
1" - 4"



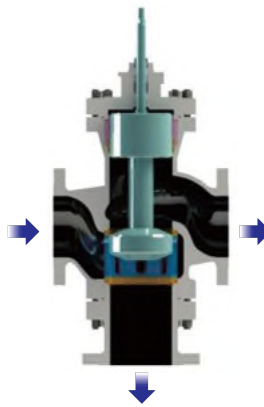
MIXING

3500 SERIES

1" - 12"



HIGH CAPACITY STYLE



DIVERTING

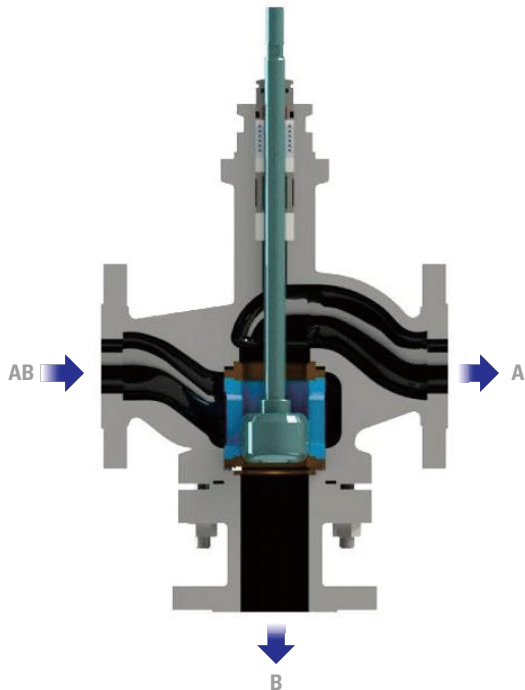
3501 SERIES

3" - 12"

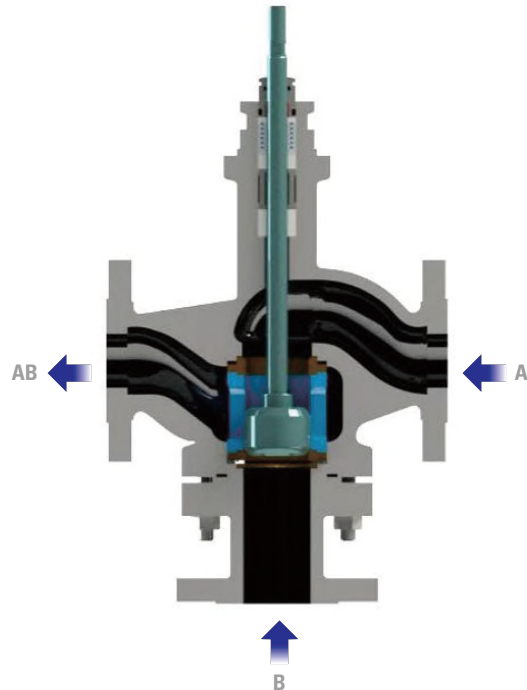
Applications:

Reject Valves, Heat Transfer, By-pass, Chiller, HVAC, Heat Transfer, Blending, Controlling Temperature and Flow.

FLOW DIVERTING



FLOW MIXING



The flow AB is divided into two exit flow A and B. In both series the direction of the flow is always against the plug. Standard diaphragm actuators can be used without special devices as for instance hydraulic brakes. The plugs are guided directly in the upper and seat, in the best way.

The entrance flows A and B are mixed to single exit flow AB. Typical application : temperature control.

Both types, mixing and diverting, are built from the same parts of the modular part system. The bodies are chosen from the standard straight-through valve bodies, which provides a quick delivery. The plugs for mixing and diverting are identical.



Three Way Valve
with Diaphragm Actuator



Three Way Valve
with Electric Actuator

STANDARD SPECIFICATION

3500 / 3501 Mixing & Diverting 3 Way Valve

3501 Balanced Plug Type Diverting 3 Way Valve

	3500 SERIES	3501 SERIES
BODY TYPE	Bottom Flanged 3Way	Bottom Flanged 3Way
BONNET	Plain (Built in)	Plain (Standard), Fin & Extension, Bellows Seal
SIZE RANGE	Mixing : 1" to 12" (DN25 to DN300) Diverting : 1" to 4" (DN25 to DN100)	3" to 12" (DN80 to DN300)
PRESSURE RATING	ANSI 150LBS to 300LBS (JIS 10K to 20K)	ANSI 150LBS to 600LBS (JIS 10K to 40K)
OPERATING PRESSURE RANGE	Up to 300psi (g) {Up to 20Kg/cm ² (g)}	Up to 900psi (g) {Up to 63Kg/cm ² (g)}
OPERATING TEMPERATURE RANGE	-58°F to +1,050°F (-50°C to +565°C)	
END CONNECTION	Socket Weld – ANSI B16.11, Butt Weld – ANSI B 16.25 FF/RF/RTJ Flange – ANSI B 16.5 (Option : JIS Flange, DIN Flange, NPT/PT Screw)	
BODY MATERIALS	Carbon Steel(WCB, WCC, A105) Chrome-moly Steel(WC6, WC9, C12A, F11, F22, F91) Stainless Steel(CF8, CF8M, CF3, CF3M, F304, F304L, F310, F316L) Duplex Stainless Steel, Monel, AL Bronze, Inconel 625 Hastelloy B/C, Other Alloy	
TRIM MATERIALS	316 SS, 316 SS + Stellite #6, Hardened 410 SS / 440C SS 17-4PH, F22(Nitride treatment), F51	
ACTUATOR	Pneumatic Diaphragm, Pneumatic Cylinder Electric Motorized, Electric Hydraulic	
TRIM STYLE	V-Port, Window Cage, Drilled Hole Cage	
PLUG GUIDE METHOD	Cage Guide	
Cv RANGE	Up to 1800	
FLOW CHARACTERISTIC	Linear, Equal %, Modified Equal %, Quick Open	
SEAT LEAKAGE	FCI-70.2, Standard : ANSI Class IV Option : ANSI Class V , ANSI Class VI (Soft Seat), MSS-SP61	

RATED CV VALUE AND STROKE

Trim Size (Inches)	Stroke (mm)	Cage (Window)			1-Stage Drilled Hole		2-Stage Drilled Hole		3-Stage Drilled Hole	
		Quick Opening	Linear	EQ-%	Linear	EQ-%	Linear	EQ-%	Linear	EQ-%
1"	20	16	12		12	12	10	9	9	8
1-1/4"	20	25	20		20	17				
	30						20	17	18	16
1-1/2"	20	33	28		26	22				
	30						25	21	22	20
2"	30	60	50		48	42				
	40						44	38	40	35
2-1/2"	30	80	70		66	58				
	40						75	60	70	55
3"	40	132	110		100	90	90	70	75	60
4"	40	210	180	160	150	130	120	94	110	90
5"	60	320	300	280	270	230	230	180	210	160
6"	60	430	400	360	340	290	280	210	250	190
7"	80	660	580	520	500	430	430	330	400	300
8"	80	860	720	640	600	520				
	90						540	420	500	380
9"	90	1000	900	800	780	600				
	100						690	540	640	490
10"	100	1400	1200	1100	940	800	780	600	720	540
12"	120	1900	1600	1400	1400	1200	1100	850	1000	760

Note!

Trim size is variable per class rating.

DIMENSIONS

3-WAY		Rating	150 LBS						300 LBS						600 LBS							
		Bonnet	Standard		Extension		Bellows		Standard		Extension		Bellows		Standard		Extension		Bellows			
		Yoke	1,2	3	1,2	3	1,2	3	1,2	3	1,2	3	1,2	3	1,2	3	1,2	3	1,2	3		
1"	Unbalance	L	184						197						210							
		H1	145						145													
		H2	107																			
1.5"	Unbalance	L	222						235						251							
		H1	170						170						190							
		H2	124						124						124							
2"	Unbalance	L	254						267						286							
		H1	180						180													
		H2	152																			
2.5"	Unbalance	L	276						292						311							
		H1	260																			
		H2	160																			
	Balance	H1							260													
		H2							255													
3"	Unbalance	L	298						318						337							
		H1	248						248													
		H2	180							190				262								
	Balance	H1													270							
		H2													293							
4"	Unbalance	L	352						368						394							
		H1	330																			
		H2	180	210			300				210											
	Balance	H1							335													
		H2							340													
5"	Balance	L	403						425													
		H1	350						350													
		H2								386			486									
6"	Balance	L	451						473						508							
		H1	369						369													
		H2		398						398												
8"	Balance	L	543						568						610							
		H1	480						480						480							
		H2		510						510					510							
10"	Balance	L	673						708						752							
		H1													550							
		H2														550						
12"	Balance	L	737						775						819							
		H1	550																			
		H2		548																		

3500 Series Globe 3 Way Control Valve

HOW TO ORDER

Actuator	Series	Trim Type	Characteristic	Body Material ¹
Spring Diaphragm	3500 Mixing	1 Metal Seat	1 Linear	2 WCB/A105
870 Air-to-Close	3501 Diverting	2 Soft Seat	2 Equal Percentage	3 316
880 Air-to-Open				A 304
Spring Cylinder				AL 304L
680 Air-to-Open				3L 316L
670 Air-to-Close				8 A350 LF2
660 Double Acting				

Packing	Body Gasket	End Connection	Size
T Teflon	S Standard 400°F	S Socket Weld	1" - 12"
G Graphite	H High Temp 750°F	BW Butt Weld	
LE Low Emission	ST Super Temp 1050°F	F1 150	
		F3 300	
		F6 600	

¹ Please see the J Flow Controls Configurator for a full list of body materials

PARTS AND SERVICE CONTACT J FLOW CONTROLS.
I-O MANUALS ARE AVAILABLE ONLINE.



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