

SERIES 830T THREE WAY VALVE

The series 830T three-way valve is designed for diverting service or mixing service applications. A diverting service valve takes common stream and splits it into two outlet ports. A mixing service valve combines two fluid streams and discharges the mixed fluid to a common outlet port.

The 830T three-way valve actually performs the function of two opposite-acting standard two-way valves. So the use of one valve instead of two is very economical.

Our various trim types and end connections of the 830T valves give you design flexibility that can surely satisfy your system requirements. The 830T valve is available in size 3/4" - 10" and ANSI 150 and 300 classes.

Features

High Capacity: Broad and streamlined fluid passage can pass larger amount of fluid than other three-way valves of the same size.

Stable Operation: Port and top guiding or cage guiding makes the operation of the plug stable regardless of plug travel.

Durability: Rugged structure and smooth operation guarantee a long maintenance-free service life.

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

Specifications

Valve Size:	3/4" to 10"
Ratings:	ANSI Class 150 and 300
End Connections:	Flanged End, Welding End
Materials:	See Table 1 on page 3
Port Sizes:	Full or reduced
Flow Characteristic:	Linear or Equal Percentage
Seat Leakage:	ANSI Class IV
Flow Coefficient:	See Table 4 on page 5
Dimensions:	See Tables 5, 6 on pages 6, 7

Quality Assurance/Quality Control

All Series 830T valves meet the ANSI B16.34 standard for "Valves - Flanged, Threaded, and Butt-welding End." This encompasses the dimensions, construction, testing and rating of all valves supplied. We also perform ANSI standard seat leakage and hydrostatic tests on every valve we build, and operability tests are run on each valve and actuator leaving our factory. Special tests are readily available to meet your specific project needs, including non-destructive testing of valve components and performance testing of actuator controls.

Cover Photo: 2 inch (50 mm) valve of 'M-type' configuration.

Table 1 Combination of 830T (M-Type) Body Assembly Materials

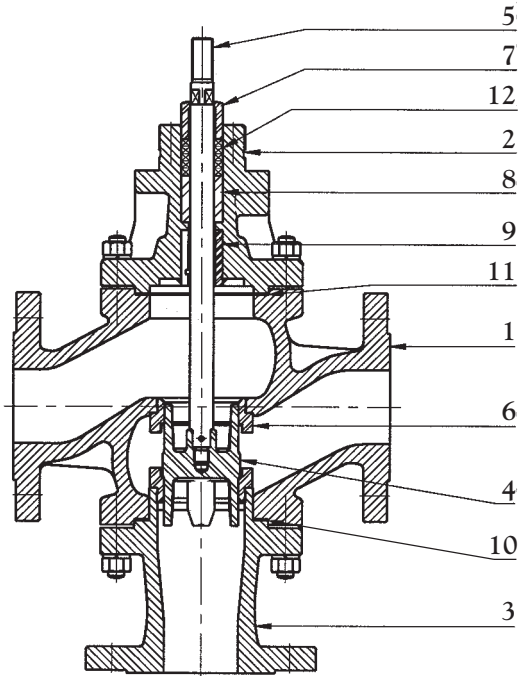


Figure 1

Mixing : 3/4" - 6"
 Diverting : 3/4" - 4 "

This configuration features an unbalanced plug for simple maintenance and economical installation. The larger size valves are often used with motor operators. Designed with two side and one bottom pipeline connections.

NO.	PART NAME	MATERIAL
1	Body	A 216 WCB, WCC A 217 WC6, WC9 A 351 CF8, CF8M A 351 CF3, CF3M A 351 CN7M
2	Bonnet	A 351 CF3, CF3M A 351 CN7M
3	3-Way Flange	A 352 LCC HASTELLOY-C
4	Plug	316 SS
5	Stem	316 SS
6	Seat	316 SS 316 SS Stellite
7	Packing Gland	316 SS
8	Packing Spacer	316 SS
9	Stopper Ring	316 SS
10	Body Gasket	TFE (Filler) & SS or Graphite (Filler) SS
11	Bonnet Gasket	
12	Packing Set	Teflon (V-Packing) Glass-Filled TFE Graphite

* Special materials are available - consult factory

Table 2 Combination of 830T (B-Type) Body Assembly Materials

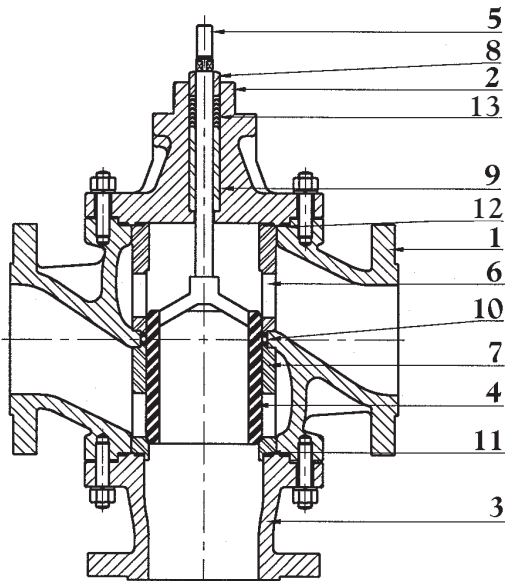


Figure 2

Mixing : 4" - 10"

Diverting : 4" - 10 "

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.

NO.	PART NAME	MATERIAL
1	Body	A 216 WCB, WCC A 217 WC6, WC9 A 351 CF8, CF8M
2	Bonnet	A 351 CF3, CF3M
3	3-Way Flange	A 351 CN7M A 352 LCC HASTELLOY-C
4	Plug	316 SS
5	Stem	316 SS
6	Upper Cage Seat	316 SS, 420 SS
7	Lower Cage Seat	316 SS, 420 SS
8	Packing Gland	316 SS
9	Packing Spacer	316 SS
10	Balance Seal	EPDM Viton Graphite
11	Body Gasket	TFE (Filler) & SS or Graphite (Filler) & SS
12	Bonnet Gasket	
13	Packing Set	TFE (V-Packing) Glass-Filled TFE Graphite

* Special materials are available - consult factory

Table 3 Combination of 830T (U-Type: mixing only) Body Assembly Materials

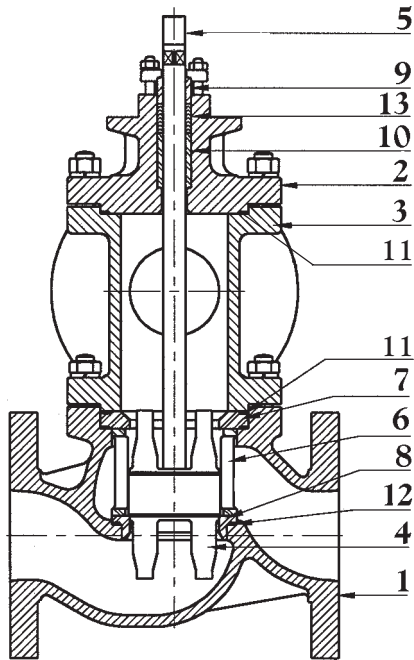


Figure 3

Mixing : 1" - 4"
 Diverting : 1" - 4"

This design combines an unbalanced plug with a Top-Entry Quick Change Trim. Designed with three side pipeline connections the design simplifies piping installation.

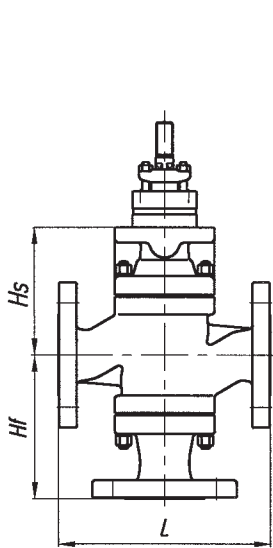
NO.	PART NAME	MATERIAL
1	Body	A 216 WCB, WCC
2	Bonnet	A 217 WC6, WC9
3	3-Way Flange	A 351 CF8, CF8M
		A 351 CF3, CF3M
		A 351 CN7M
		A 352 LCC
		HASTELLOY-C
4	Plug	316 SS
5	Stem	316 SS
6	Seat Retainer	316 SS
7	Upper Seat	316 SS
		316 SS Stellite
8	Lower Seat	316 SS
		316 SS Stellite
9	Packing Gland	316 SS
10	Packing Spacer	316 SS
9	Balance Seal	EPDM
		Viton
		Graphite
10	Body Gasket	TFE (Filler) & SS
11	Bonnet Gasket	OR
		Graphite (Filler) SS
12	Seat Gasket	TFE (Filler) & SS
		OR
		Graphite (Filler) SS
13	Packing Set	TFE (V-Packing)
		Glass-Filled TFE
		Graphite

* Special materials are available - consult factory

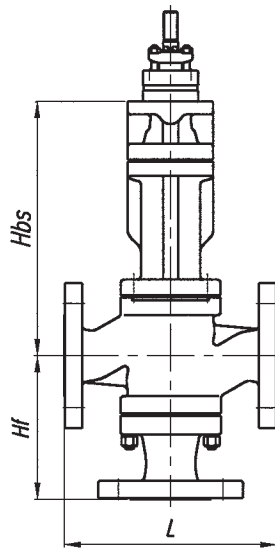
Table 4 Flow Coefficient, Cv for M-Type, B-Type and U-Type

Port Size	3/4"	1"	1 1/2"	2"	2 1/2"	3"	4"	5"	6"	8"	10"
C _v	9	16	33	50	75	105	190	280	390	500	750
Stroke	(inch)	0.8	0.8	0.8	0.8	1.6	1.6	2.0	2.0	2.0	2.8
	(mm)	20	20	20	20	40	40	50	50	50	70

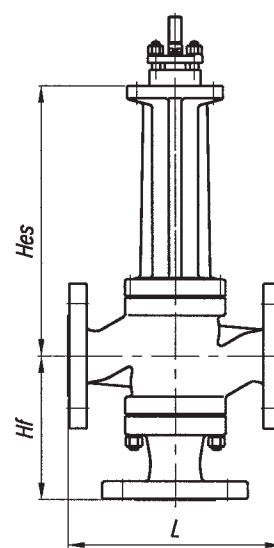
Table 5 830T (M-Type, B-Type) Body Dimensions



Standard Bonnet
Figure 4



Bellows Bonnet
Figure 5



Extension Bonnet
Figure 6

VALVE SIZE		L		MIXING TYPE				DIVERTING TYPE			
(inch)	(mm)	ANSI Class 150	ANSI Class 300	Hf	Hs	Hbs	Hes	Hf	Hs	Hbs	Hes
3/4"	20	7.25/184	7.62/194	4.9/124	4.3/110	11.0/280	9.8/110	4.9/124	4.3/110	11.0/280	9.8/110
1"	25	7.25/184	7.62/194	4.9/124	4.3/110	11.0/280	9.8/110	4.9/124	4.3/110	11.0/280	9.8/110
1 1/2"	40	8.75/222	9.25/235	6.1/155	5.5/140	11.8/300	11.4/290	6.1/155	5.5/140	11.8/300	11.4/290
2"	50	10.00/254	10.00/254	7.1/180	6.3/160	15.0/380	13.4/340	7.1/180	6.3/160	15.0/380	13.4/340
2 1/2"	65	10.88/276	11.50/292	7.9/200	6.9/174	15.1/383	16.1/410	7.9/200	6.9/174	15.1/383	16.1/410
3"	80	11.75/298	12.50/318	8.7/220	7.4/187	18.5/470	17.1/433	8.7/220	7.4/187	18.5/470	17.1/433
4"	100	13.88/352	14.50/368	9.7/245	9.3/236	21.3/540	18.7/475	9.7/245	9.3/236	21.3/540	18.7/475
5"	125	15.87/403	16.75/425	12.6/320	12.6/305	23.2/590	22.8/580	12.6/320	12.6/305	23.2/590	22.8/580
6"	150	17.75/451	18.62/473	14.5/369	14.2/360	25.2/640	24.4/620	14.5/369	14.0/355	25.6/650	24.8/630
8"	200	24.21/615	24.21/615	19.8/504	15.5/394	26.2/665	25/635	19.8/504	19.8/503	26.2/665	25/635
10"	250	27.88/708	27.88/708	20.1/510	20.1/510	26.8/680	25.7/653	20.1/510	20.1/510	26.8/680	25.7/653

Note: All dimensions are for reference only

Table 6 830T (U-Type) Body Dimensions

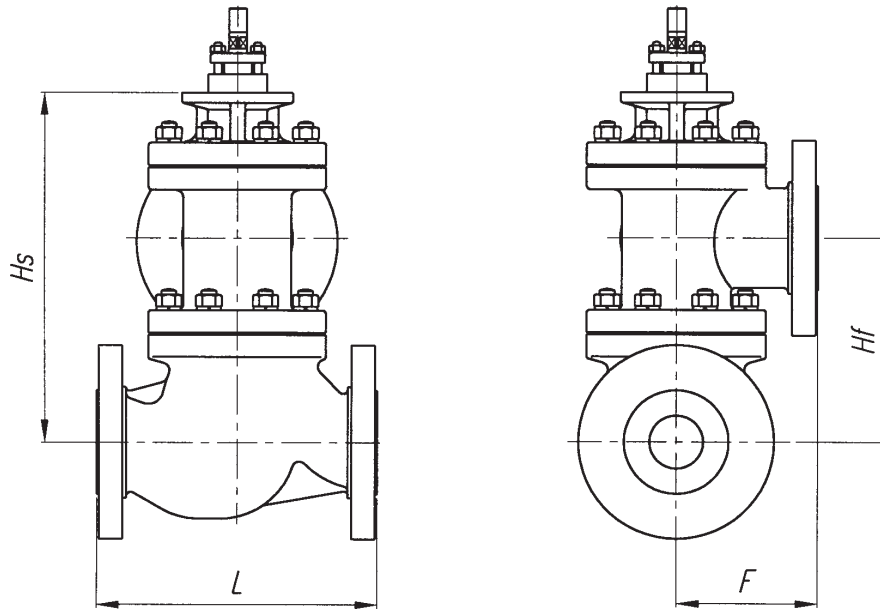


Figure 7

VALVE SIZE		L (Welding End)		F	Hf	Hs
(inch)	(mm)	ANSI Class 150	ANSI Class 300			
1"	25	8.25/210	8.25/210	4.1/105	4.5/115	7.5/190
1 1/2"	40	9.88/251	9.88/251	4.9/125	5.1/130	10.1/256
2"	50	11.25/286	11.25/286	5.6/143	6.9/176	12.1/306
2 1/2"	65	11.50/292	11.50/292	5.7/146	8.3/210	14.4/365
3	80	12.50/318	12.50/318	6.3/159	9.3/235	15.9/405
4	100	14.50/368	14.50/368	7.2/184	10.8/275	18.7/475

VALVE SIZE		L (Welding End)		F	Hf	Hs
(inch)	(mm)	ANSI Class 150	ANSI Class 300			
1"	25	8.25/210	8.25/210	4.1/105	4.5/115	7.5/190
1 1/2"	40	9.88/251	9.88/251	4.9/125	5.1/130	10.1/256
2"	50	11.25/286	11.25/286	5.6/143	6.9/176	12.1/306
2 1/2"	65	11.50/292	11.50/292	5.7/146	8.3/210	14.4/365
3	80	12.50/318	12.50/318	6.3/159	9.3/235	15.9/405
4	100	14.50/368	14.50/368	7.2/184	10.8/275	18.7/475

- Notes: 1. All dimensions are for reference only
 2. Welding End: 1) 1" - 2" = Socket Weld
 2) 2 1/2" - 4" = Butt Weld