

FEATURES

- All metal construction. (no elastomeric gaskets)
- Body gaskets are fully captured and protected from the process stream.
- The basic design creates a flow from under the plug and provides inherent plug stability.
- Converging flow design for bleeding or mixing service
- Diverging design for bypass or splitting service.
- Metal seats provide Class IV shut-off standard.
- Optional live-loaded packings are available.

Series V830/V831 3-Way Globe Valve 1 1/2" - 10" (DN 40-250) ANSI Class 150-600

The V830/V831 Series is a 3-way globe with skirt guided V-port trim which has screwed-in seat rings.

This valve comes in two forms, the V830 which is a flow blending (mixing) valve and the V831 which is a flow diverting (splitting) valve.

Applications include throttling control of liquids, gases and steam at moderate temperatures and pressures. These valves are also useful in bypass, branch and cross-connection lines between piping systems.

Specifications

Body Style: 3-way blending or diverting globe.

Body Size: 1-1/2" through 10" (40-250 mm).

Body Rating: ANSI Class 150, 300, 600.

Body Materials: Carbon steel, Stainless steel and Chrome-Moly steel. Other castable alloys are available upon request.

End Connections: NPT threaded or socket weld (1-1/2" through 2"), ANSI flanged (1-1/2" through 10"), ANSI butt weld (3" through 10"), others available upon request.

Bonnets: Plain and extension.

Trim Style: Unbalanced skirt guided. V-port trim (refer to figures 4 & 5).

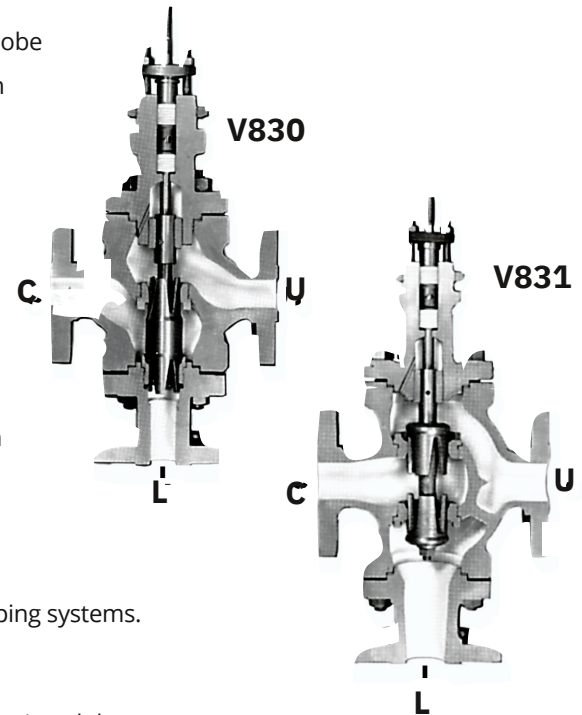
Flow Direction: V830, flow from either inlet port U or L to common outlet port C. V831, flow from common inlet port C to either outlet port U or L.

Trim Characteristic: Linear.

Flow Coefficient: Cv from 8 through 775 (see table 2).

Leakage Class: ANSI Class IV.

Actuators: Standard bonnet mount will accept spring-diaphragm, piston and other actuators. For actuator selection, refer to KOSO Hammel Dahl actuator selection guide.



Material Selection

These charts should be used as a guide to select the pressure class and trim material combination. The curves sloping downward to the right are the pressure rating curves for each ANSI pressure class as listed in ANSI B16.34. In each case, the curve designates the maximum pressure and temperature for the class listed directly below the curve. The bold boundaries mark the recommended pressure and temperature limits for trim material combinations listed in the tables below. All recommendations are generalized and may be subject to adjustment based upon other considerations determined during the valve sizing process.

Figure 1. Trim Chart for Stainless Steel Body
(ASTM A351, CF8M)

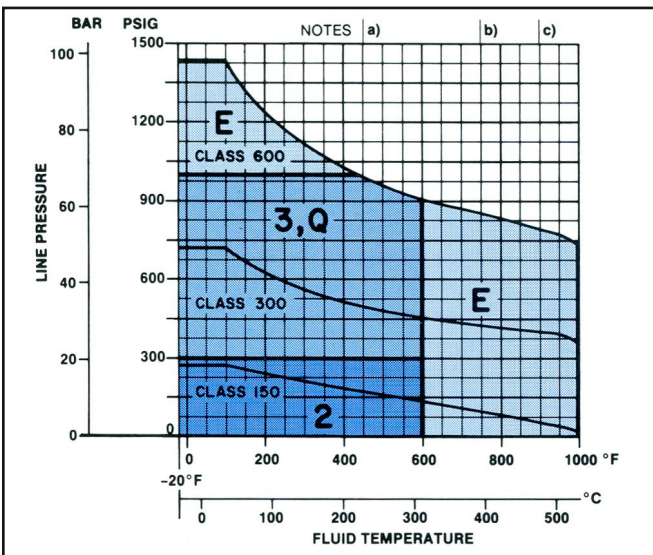


Figure 2. Trim Chart for Carbon Steel Body
(ASTM A216, WCB)

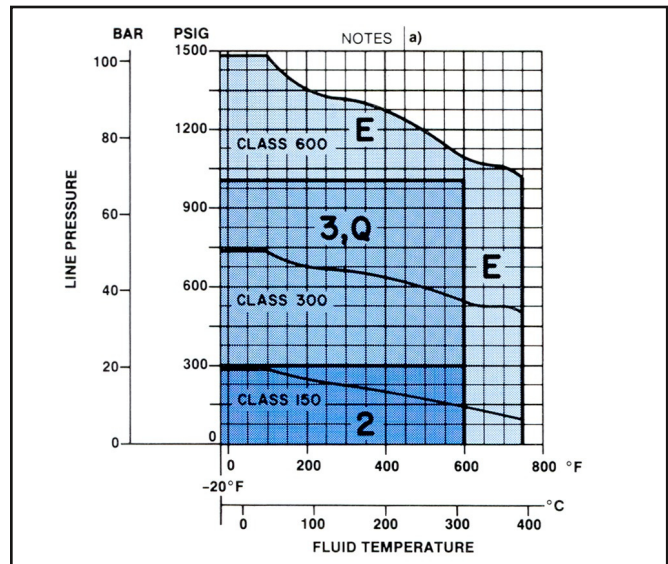


Figure 3. Trim Chart for Chrome-Moly Body
(ASTM A217, C5)

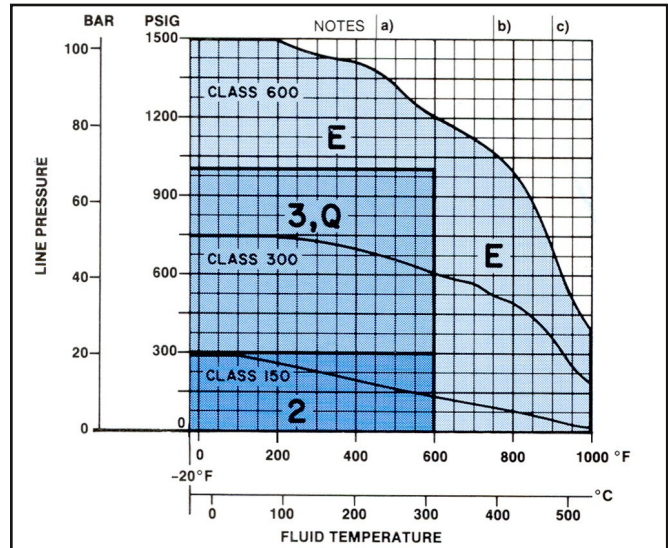


Table 1. Standard Trim Materials

Trim Code	Plug	Seat Ring	Stem	Guide Bushings
2	316 SS	316 SS	316 SS	17-4PH
3	316 SS/HFS	316 SS/HFS	316 SS	17-4PH
E	316 SS/HFS+P	316 SS/HFS	316 SS	Alloy 12
Q	17-4PH	17-4PH	17-4PH	17-4PH

NOTES TO TABLE AND TRIM CHARTS

- a) Above +600°F (316°C) extension bonnet is required.
- b) For service temperature above 1000°F (538°C) contact your local representative.
- c) Unless otherwise specified, the hard-facing is Alloy 6.
- d) Guiding surfaces are treated to prevent galling.
- e) KOSO HAMMEL DAHL reserves the right to substitute materials when appropriate based upon the service or availability.

Table 2. Flow Coefficient (Cv) at Maximum Travel

Flow Characteristic	Trim Size	Code	Valve Size - Inches (mm)						
			1½ (38)	2 (51)	3 (76)	4 (102)	6 (152)	8 (203)	10 (254)
V830 Linear V-port	Full Size	A	29	50	120	170	350	570	775
V831 Linear V-port	Full Size	A	29	45	105	160	350	550	775

Plug Styles

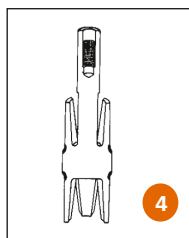


Figure 4. Model V830
V-port Mixing Plug

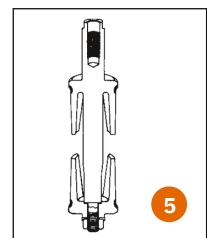


Figure 5. Model V831
V-port Diverting Plug

Hard-Facing Styles

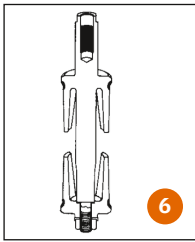
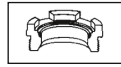


Figure 6. 316 SS/HFS

HFS (Trim Code 3) is 316 stainless steel base material with hard facing on the seating surfaces of the plug and seat ring.



Seat Ring
316
SS/HFS

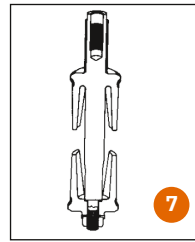
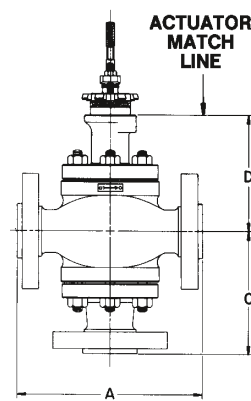


Figure 7. 316 SS/HFS & P

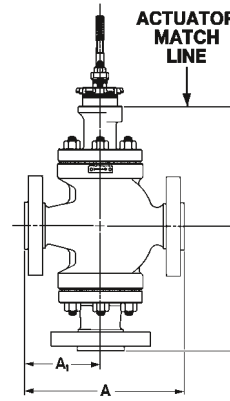
HFS & P (Trim Code E) is 316 stainless steel base material with hard facing on the seating surfaces of the plug and seat ring and the plug guiding surfaces.

Table 3. V830 Valve Body Dimensional Data - in (mm) ANSI Classes 150 - 600

Body Size	Travel	A				C				D			
		Screwed or Socket Weld	Raised Face Flanged			Screwed or Socket Weld	Raised Face Flanged			Plain Bonnet		Extension Bonnet	
			Class 150	Class 300	Class 600		Class 150	Class 300	Class 600	Class 150/300	Class 600	Class 150/300	Class 600
1-1/2 (38)	1.13 (29)	8.00 (203)	8.75 (222)	9.25 (235)	9.88 (251)	5.75 (146)	5.94 (151)	6.19 (157)	6.5 (165)	6.25 (159)	6.25 (159)	11.13 (283)	11.13 (283)
2 (50)	1.13 (29)	9.25 (235)	10.00 (254)	10.50 (267)	11.25 (286)	6.56 (167)	6.38 (162)	6.63 (168)	7 (178)	6.38 (162)	6.38 (162)	11.63 (295)	11.63 (295)
3 (80)	1.5 (38)	—	11.75 (298)	12.50 (318)	13.25 (337)	—	7.5 (191)	7.88 (200)	9 (229)	8 (203)	8 (203)	12.63 (321)	12.63 (321)
4 (100)	1.5 (38)	—	13.88 (353)	14.50 (368)	15.50 (394)	—	8.19 (208)	8.5 (216)	10.5 (267)	7.5 (191)	7.5 (191)	13.5 (343)	13.5 (343)
6 (150)	2.25 (57)	—	17.75 (451)	18.63 (473)	20.00 (508)	—	10.31 (262)	10.75 (273)	12.56 (319)	10.75 (273)	12.06 (306)	15 (381)	16.38 (416)
8 (200)	2.25 (57)	—	21.38 (543)	22.38 (568)	24.00 (610)	—	11.56 (294)	12.06 (306)	14.5 (368)	10.88 (276)	12.38 (314)	16.63 (422)	18.25 (464)
10 (250)	3.5 (89)	—	26.88 (683)	28.25 (718)	30.00 (762)	—	—	15.81 (402)	—	13.63 (346)	13.63 (346)	23.13 (588)	23.13 (588)



V830



V831

Table 4. V831 Valve Body Dimensional Data - in (mm) ANSI Classes 150 - 600

Body Size	Travel	A				A ₁				C				D	
		Screwed or Socket Weld	Raised Face Flanged			Screwed or Socket Weld	Raised Face Flanged			Screwed or Socket Weld	Raised Face Flanged			Plain Bonnet	Extension Bonnet
			Class 150	Class 300	Class 600		Class 150	Class 300	Class 600		Class 150	Class 300	Class 600		
1-1/2 (38)	1.13 (29)	8.00 (203)	8.75 (222)	9.25 (235)	9.88 (251)	3.5 (89)	4.13 (105)	4.38 (111)	4.69 (119)	6.94 (176)	7.13 (181)	7.38 (187)	7.69 (195)	7.38 (187)	12.25 (311)
2 (50)	1.13 (29)	9.25 (235)	10.00 (254)	10.50 (267)	11.25 (286)	4.13 (105)	4.63 (118)	4.88 (124)	5.25 (133)	7.81 (198)	7.63 (194)	7.13 (181)	8.25 (210)	7.63 (194)	12.89 (327)
3 (80)	1.5 (38)	—	11.75 (298)	12.50 (318)	13.25 (337)	—	5.25 (133)	5.63 (143)	6 (152)	—	8.75 (222)	9.13 (232)	10.25 (260)	9.25 (235)	13.89 (353)
4 (100)	1.5 (38)	—	13.88 (353)	14.50 (368)	15.50 (394)	—	6.19 (157)	6.5 (165)	7 (178)	—	10.44 (265)	10.75 (273)	12.75 (324)	9.75 (248)	15.75 (400)
6 (150)	2.25 (57)	—	17.75 (451)	18.63 (473)	20.00 (508)	—	7.94 (202)	8.63 (219)	9.06 (230)	—	12.13 (308)	12.56 (319)	14.44 (367)	13.88 (353)	18.25 (464)
8 (200)	2.25 (57)	—	21.38 (543)	22.38 (568)	24.00 (610)	—	9.31 (236)	9.81 (249)	10.63 (270)	—	14.44 (367)	14.94 (379)	17.13 (435)	15 (381)	20.88 (530)
10 (250)	3.5 (89)	—	26.88 (683)	28.25 (718)	30.00 (762)	—	10.69 (272)	11.38 (289)	12.25 (311)	—	19.56 (497)	20.25 (514)	22.5 (572)	18.25 (464)	27.75 (705)

How to Order

To completely specify a control valve, make a selection from each category in the Valve Model Coding System below. The assembled codes create a complete valve model number. The Valve Model Coding System displays the standard product offering for this product line. An extensive number of options and variations exist, which are not listed. For options not shown or to enter an order, contact your local sales representative.

1	Model
V830	3-way Globe Valve - Blending Service
V831	3-way Globe Valve - Diverting Service

7	Trim Characteristics
J	Linear, V-port

2	Body Size
H	1-1/2 (38)
J	2 (51)
L	3 (76)
N	4 (102)
Q	6 (150)
S	8 (200)
T	10 (250)

8	Trim Size
A	Full Size
B	1 Reduction
C	2 Reduction

3	Body Rating
G	ANSI Class 150
H	ANSI Class 300
F	ANSI Class 600

9	Standard Trim Materials			
Trim Code	Plug	Seat Ring	Stem	Guide Bushings
2	316SS	316SS	316SS	17-4PH
3	316SS/HFS	316SS/HFS	316SS	17-4PH
E	316SS/HFS+P	316SS/HFS	316SS	Alloy 12
Q	17-4PH	17-4PH	17-4PH	17-4PH

4	Body Material
C	Carbon Steel (ASTM A216, WCB)
E	Stainless Steel (ASTM A351, CF8M)
K	Chrome-Moly Steel (ASTM A 217, C5)

10	Packing
G	TFE V-ring with Packing Spacer
Y	Double PTFE V-Ring/Spacer
U	PTFE impregnated PTFE Braid
W	Lubricated Aramid Braid
9	Laminated Graphite
B	Live-loaded PTFE V-Ring

NOTE: Graphite packings are generally required in services above 450°F (232°C).

5	End Connections
3	Raised Face Flange
4	NPT Threaded
6	Socket Weld
8	Butt Weld Sch. 40
9	Butt Weld Sch. 80

11	Variations*
-	None
8	Stainless Steel Body Studs and Nuts
9	Stainless Lubricator and Isolating Valve
F	Tack Weld Guide Bushings, recommended above 750°F
G	(399°C) Tack Weld Seat Rings, recommended above 750°F
H	(399°C) Seal Weld Seat Rings, recommended above 750°F
	(399°C)

*For multiple variations, specify all variation codes required.

6	Bonnet Type
2	Plain
3	Extension

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CONTROL VALVES

KOSO HAMMEL DAHL