

**E C4E Valve** **5CB**

3 600 psig / Max Cv 205 / Max Bean Size 216

**VALVE SPECIFICATIONS**

This control valve uses a bolted bonnet to retain the flow trim in the valve body. The flow trim is pressure balanced to minimize the stem loads and provide low operating torques. Standard end connections range in size from 4" to 6".

Valve Model	C4E
Body Type	Inline
Body Rating	3 600 PSIG (Maximum C.W.P.)
Inlet Connection	see 'Standard End Connections'
Outlet Connection	see 'Standard End Connections'
Bonnet Type	Bolted
Body / Bonnet Material	see 'Material Options'
Stem Material	see 'Material Options'
Seal Material	see 'Material Options'
Trim Style	Ported Cage with External Sleeve
Balanced / Unbalanced	Balanced
Flow Characteristic	Equal Percentage
Trim Material	see 'Trim Options'
Design Cv	see 'Trim Options'
Leakage Class	Class V (Standard)

**TRIM OPTIONS**

	Standard Trim Cage & External Sleeve 2 Row / 4 Hole	Multistage Trim	High-Pressure Multi-stage Trim
Material	UNS S17400, Stellite, Tungsten Carbide	Stellite, Tungsten Carbide	Stellite, Tungsten Carbide
Application	Liquid, Gas, Multiphase; Abrasive	Liquid, Gas, Multiphase	Liquid, Gas, Multiphase
Cv	205	54	35
Turns	20	15	15
Travel	3.35"	2.55"	2.55"

**STANDARD  
END CONNECTIONS**

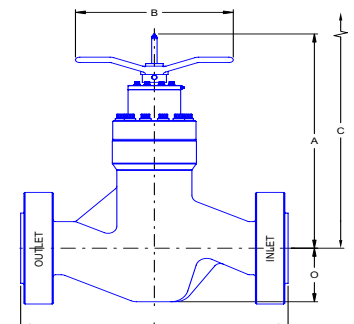
Connection Size ▶	Standard Dimensions & Estimated Weights							
	4" Nominal				6" Nominal			
	'F'		Weight		'F'		Weight	
Connection Type ▼	inch	mm	lbs.	kg	inch	mm	lbs.	kg
ASME 150 RF	*20.12	*511	388	176	*18.62	*473	458	208
ASME 300 RF	*20.12	*511	408	185	18.62	473	458	208
ASME 600 RF	*20.12	*511	432	196	20.00	508	525	238
ASME 600 RTJ	*20.12	*511	452	196	20.12	511	525	238
ASME 900 RF	20.12	511	452	205	28.12	714	683	310
ASME 900 RTJ	20.25	514	452	205	28.25	718	683	310
ASME 1500 RT	20.88	530	489	222	30.25	768	791	359
ASME 1500 RTJ	21.00	533	489	222	30.50	775	791	359

\* Not a standard ISA face-to-face dimension.

**ENVELOPE DIMENSIONS**

Dimensions 'A', 'B', and 'C' apply to manually operated valves and are tabulated below. 'F' (face-to-face) and dimension depends on the end connection and is tabulated above. Special dimensions and other end connections are available upon request.

Dimensions		
	inch	mm
A	29.75	756
B	18.00	457
C	41.38	1051
D	7.81	198



Note: "C" is the disassembly clearance.

**MATERIAL OPTIONS**

Temperature Class	Certification Level	API - 6A Material Class Designations						
		AA	BB	CC	DD	EE	FF	HH
PU -20F to 250F PX -20F to 350F	STD / PSL-1	BB	BB	FF	EE	EE	FF	n/a
	PSL-2	EE	EE	FF	EE	EE	FF	n/a
	PSL-3	EE	EE	FF	EE	EE	FF	n/a
LU -50F to 250F	STD / PSL-1	EE	EE	FF	EE	EE	FF	n/a
	PSL-2	EE	EE	FF	EE	EE	FF	n/a
	PSL-3	EE	EE	FF	EE	EE	FF	n/a

	BB-General Service	EE-Sour Service	FF-Sour Service
<b>Body</b>	ASTM A352 LCC / ASTM A216 WCB	ASTM A352 LCC / ASTM A216 WCB	ASTM A351 CF8M
<b>Bonnet</b>	AISI 4130	AISI 4130	AISI 4130 / UNS S31803
<b>Stem</b>	UNS S17400	UNS S17400	UNS S17400
<b>Bolting</b>	ASTM A320 L7M	ASTM A320 L7M	ASTM A320 L7M
<b>Retaining Sleeve</b>	ASTM A743 CF8M	ASTM A743 CF8M	ASTM A743 CF8M
<b>Balance Sleeve</b>	UNS S42400	UNS S42400	UNS S42400
<b>Seals</b>	Buna - N	Viton	Viton

Other materials available upon request.

**OTHER VALVE OPTIONS**

	Standard	Optional
<b>Calibration Head / Serial Plaque</b>	Aluminum	Stainless Steel
<b>Outlet Sleeve</b>	-	n/a
<b>Body Bleed Port</b>	-	n/a

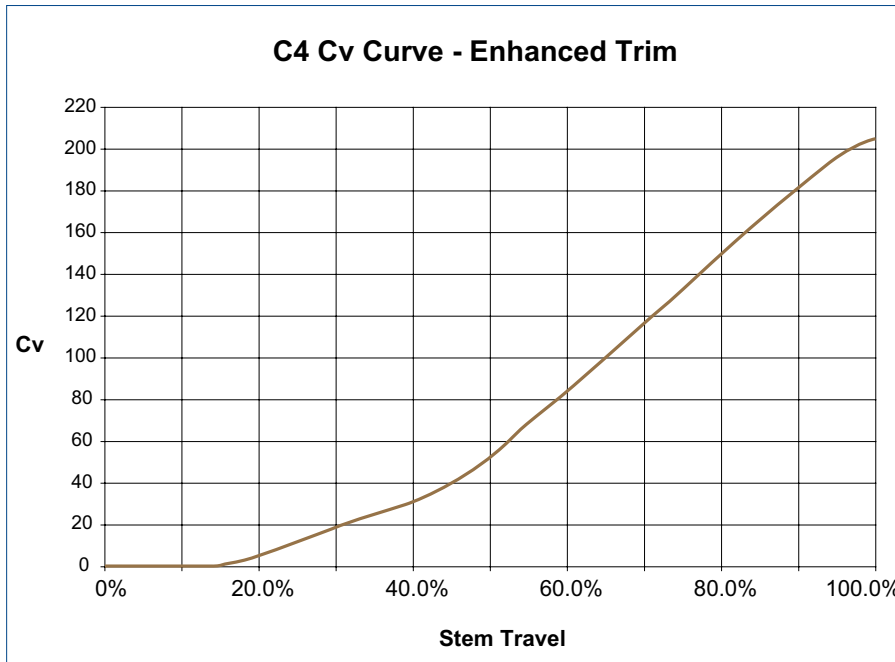
Some limitations may apply.

**ACTUATION OPTIONS**

Master Flo	Other
Manually Operated (Stemlock is optional)	Rotary Electric
Rotary Stepping (Pneumatic)	Rotary Stepping (Pneumatic)
Rotary Stepping (Hydraulic)	Pneumatic Diaphragm
FC Hydraulic Piston	Pneumatic Piston
Pneumatic Piston	Electro-Hydraulic Piston

Other actuators available upon request.

**PERFORMANCE CHARACTERISTICS**



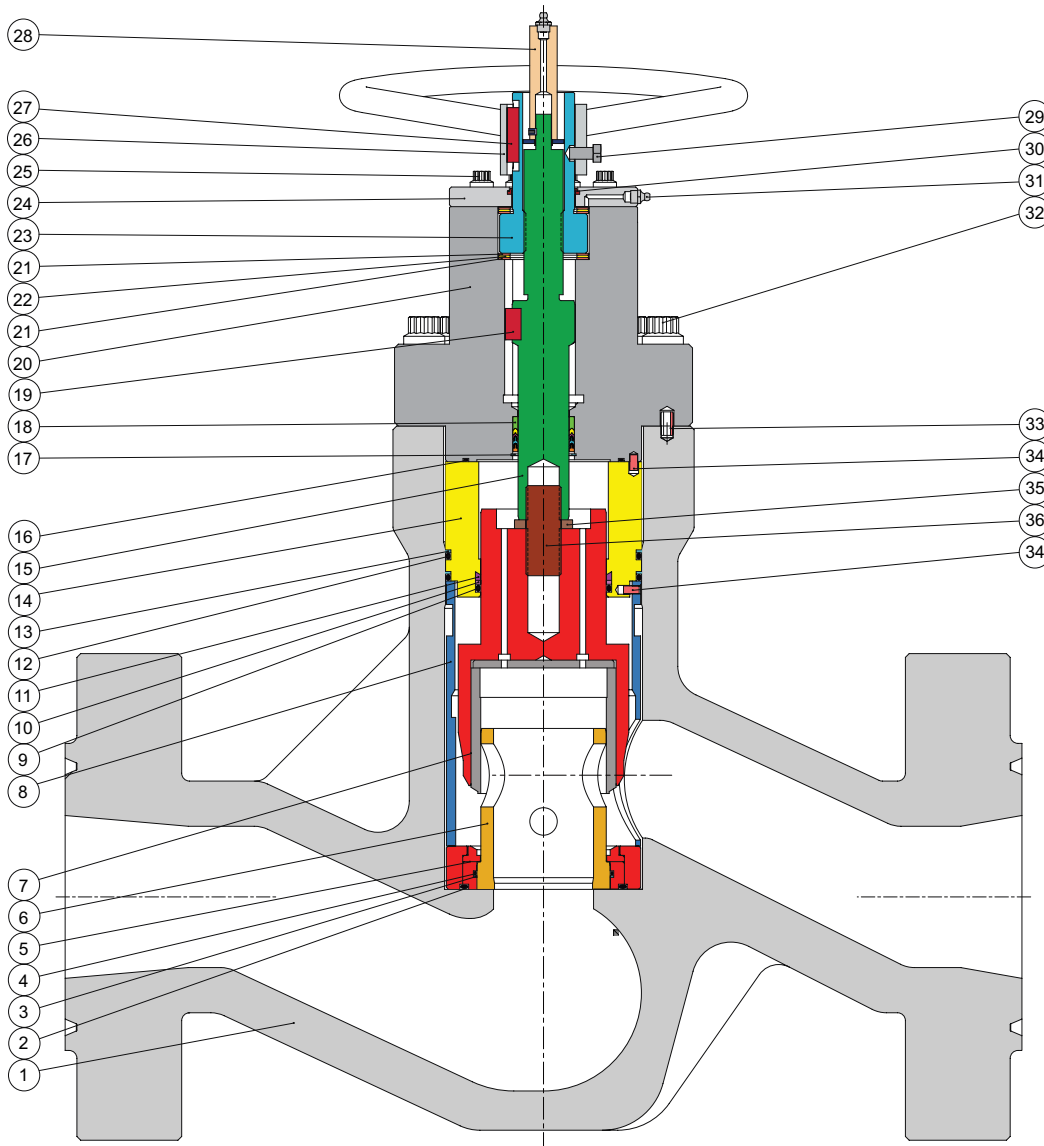
**LIQUID PRESSURE RECOVERY FACTOR (FL)**

Master Flo's trim geometry has been designed to achieve high  $F_L$  numbers. This results in a decreased cavitation potential, lower noise generation, increased flow capacity, and longer trim life. The high  $F_L$  numbers of Master Flo's trims have been verified experimentally as per the test procedures of ISA-S75.02-1996.

## PARTS LIST



1. Body
2. Seal: Seat - Body
3. B/U Ring: Nozzle - Seat
4. Seal: Nozzle - Seat
5. Seat
6. Cage
7. External Sleeve
8. Retaining Sleeve
9. Seal: External Sleeve - Balance Sleeve
10. B/U Ring: External Sleeve - Balance Sleeve
11. Bushing: External Sleeve - Balance Sleeve
12. Seal: Balance Sleeve - Body
13. B/U Ring: Balance Sleeve - Body
14. Balance Sleeve
15. Stem
14. Balance Sleeve
15. Stem
16. Seal: Balance Sleeve - Bonnet
17. Retaining Ring
18. Seal Pack: Stem - Bonnet
19. Key: Stem - Bonnet
20. Bonnet
21. Thrust Washer
22. Thrust Bearing
23. Stem Nut
24. Cover Plate
25. Capscrew
26. Handwheel
27. Key
28. Calibration Head
29. Capscrew
30. Wiper
31. Grease Nipple
32. Capscrew
33. Spring Pin
34. Groove Pin
35. Lockwasher
36. Stud



## P4 Product Family



- Standard:
- P4E - Bolted Bonnet; 6000 PSI

- Other Options:
- P4E 10k - Bolted Bonnet; 10000 PSI
  - C4E - Bolted Bonnet; 3600 PSI

chokes  
for all applications

recycle lines



vent valves



manifold



production



blow down

overboard dumps



level controllers

glycol injection



subsea

water injection



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