

# E P4E 10k Choke 5CB

10000 psig / Max Cv 205 / Max Bean Size 216



## VALVE SPECIFICATIONS ▶

|                        |                                  |
|------------------------|----------------------------------|
| Valve Model            | P4E 10k                          |
| Body Type              | Right Angle                      |
| Body Rating            | 10 000 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<br>Cage & External Sleeve<br>2 Row / 4 Hole | Multistage Trim               | High-Pressure<br>Multi-stage Trim |
|-------------|---|-------------------------------|-----------------------------------|
| Material    | UNS S17400, Stellite,<br>Tungsten Carbide                 | Stellite,<br>Tungsten Carbide | Stellite,<br>Tungsten Carbide     |
| Application | Liquid, Gas, Multiphase;<br>Clean or Abrasive *           | Liquid, Gas, Multiphase       | Liquid, Gas, Multiphase           |
| Cv          | 205   | 54                            | 35                                |
| Turns       | 20  | 15                            | 15                                |
| Travel      | 3.35"   | 2.55"                         | 2.55"                             |

\* For abrasive service, tungsten carbide is recommended.

## STANDARD END CONNECTIONS ▶

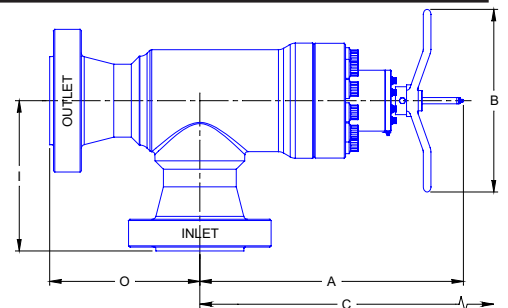
| Connection Size ▶ | Standard Dimensions & Estimated Weights |     |        |     |            |     |        |     |            |     |        |     |
|-------------------|---|-----|--------|-----|------------|-----|--------|-----|------------|-----|--------|-----|
|                   | 4" Nominal                              |     |        |     | 5" Nominal |     |        |     | 6" Nominal |     |        |     |
|                   | 'I' or 'O'                              |     | Weight |     | 'I' or 'O' |     | Weight |     | 'I' or 'O' |     | Weight |     |
| Connection Type ▼ | inch                                    | mm  | lbs.   | kg  | inch       | mm  | lbs.   | kg  | inch       | mm  | lbs.   | kg  |
| ASME 150 RF       | 10.50                                   | 267 | 495    | 225 | 11.00      | 279 | 505    | 230 | 11.00      | 279 | 515    | 235 |
| ASME 300 RF       | 10.88                                   | 276 | 515    | 235 | 11.38      | 289 | 535    | 245 | 11.38      | 289 | 555    | 250 |
| ASME 600 RF       | 11.75                                   | 298 | 545    | 245 | 12.25      | 311 | 495    | 270 | 12.38      | 314 | 620    | 280 |
| ASME 600 RTJ      | 11.81                                   | 300 | 545    | 245 | 12.31      | 313 | 495    | 270 | 12.44      | 316 | 620    | 280 |
| ASME 900 RF       | 12.25                                   | 311 | 565    | 255 | 12.75      | 324 | 630    | 285 | 13.25      | 337 | 680    | 310 |
| ASME 900 RTJ      | 12.31                                   | 313 | 565    | 255 | 12.81      | 325 | 630    | 285 | 13.31      | 338 | 680    | 310 |
| ASME 1500 RF      | 12.62                                   | 321 | 605    | 275 | 13.88      | 352 | 730    | 330 | 14.50      | 368 | 790    | 360 |
| ASME 1500 RTJ     | 12.69                                   | 322 | 605    | 275 | 13.94      | 354 | 730    | 330 | 14.62      | 371 | 790    | 360 |
| ASME 2500 RTJ     | 15.44                                   | 392 | 730    | 330 | 17.00      | 432 | 910    | 415 | 18.75      | 476 | 1155   | 525 |
| 2 000 API 6B      | 11.81                                   | 300 | 545    | 245 | 12.31      | 313 | 595    | 270 | 12.44      | 316 | 620    | 280 |
| 3 000 API 6B      | 12.31                                   | 313 | 570    | 260 | 12.81      | 325 | 635    | 290 | 13.31      | 338 | 690    | 315 |
| 5 000 API 6B      | 12.69                                   | 322 | 605    | 275 | 13.94      | 354 | 730    | 330 | 14.62      | 371 | 790    | 360 |
| 10 000 API 6BX    | 14.00                                   | 356 | 640    | 290 | 14.81      | 376 | 720    | 325 | n/a        | n/a | n/a    | n/a |

## ENVELOPE DIMENSIONS ▶

Dimensions 'A', 'B', and 'C' apply to manually operated chokes and are tabulated below. 'I' (inlet) and 'O' (outlet) dimensions depend on the end connections and are tabulated above. Special dimensions and other end connections are available upon request.

| Dimensions |       |     |
|------------|-------|-----|
|            | inch  | mm  |
| A          | 26.00 | 660 |
| B          | 18.00 | 457 |
| C          | 37.62 | 956 |

Note: "C" is the disassembly clearance.



6A-0138

17D-0008

**MATERIAL OPTIONS**

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

|                  | BB-General Service | EE-Sour Service | FF-Sour Service        | HH-Sour Service         |
|------------------|--------------------|-----------------|------------------------|-------------------------|
| Body             | AISI 8620          | AISI 8620       | UNS S31803             | AISI 8620 / Inconel 625 |
| Bonnet           | AISI 4130          | AISI 4130       | AISI 4130 / UNS S31803 | AISI 4130 / Inconel 625 |
| Stem             | UNS S17400         | UNS S17400      | UNS S17400             | Inconel 718             |
| Bolting          | ASTM A320 L7M      | ASTM A320 L7M   | ASTM A320 L7M          | ASTM A320 L7M           |
| Retaining Sleeve | ASTM A743 CF8M     | ASTM A743 CF8M  | ASTM A743 CF8M         | Inconel 625             |
| Balance Sleeve   | UNS S42400         | UNS S31803      | UNS S31803             | Inconel 625             |
| Seals            | Buna - N           | Viton           | Viton                  | Teflon                  |

Other materials available upon request.

**OTHER VALVE OPTIONS**

|                                  | Standard | Optional         |
|----------------------------------|----------|------------------|
| Calibration Head / Serial Plaque | Aluminum | Stainless Steel  |
| Outlet Sleeve                    | -        | Tungsten Carbide |
| Body Bleed Port                  | -        | API Autoclave    |

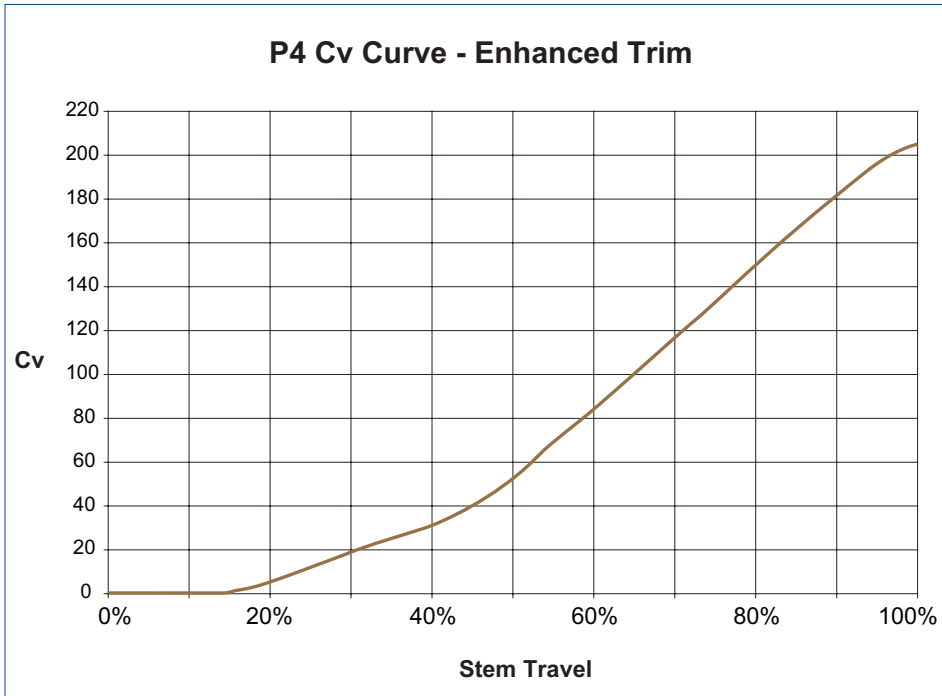
Some limitations may apply.

**ACTUATION OPTIONS**

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

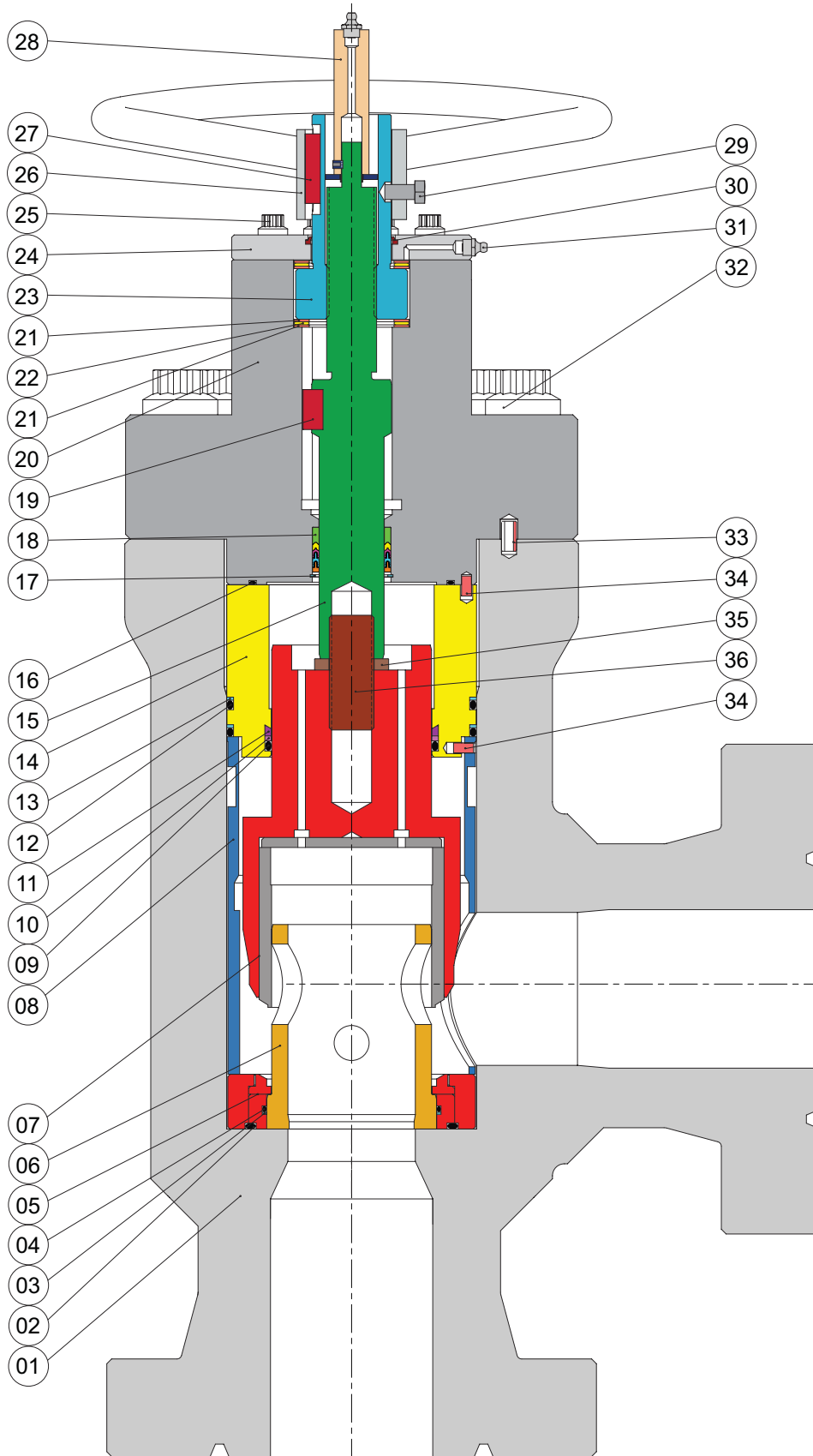
Other actuators available upon request.

**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: Cage - Seat
4. Seal: Cage - Seat
5. Seat
6. Cage
7. External Sleeve
8. Retaining Sleeve
9. Seal: External Sl. - Balance Sl.
10. B/U Ring: External Sl. - Balance Sl.
11. Bushing: External Sl. - Balance Sl.
12. Seal: Balance Sleeve - Body
13. B/U Ring: Balance Sleeve - Body
14. Balance Sleeve
15. Stem
16. Seal: Balance Sleeve - Bonnet
17. Retaining Ring
18. Seal Pack: Stem - Bonnet
19. Key
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; Inline

## chokes for all applications

recycle lines



vent valves



manifold



production



blow down

glycol injection

overboard dumps



subsea



level controllers

water injection



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