

E C3E Valve 5CB

3 600 psig / Max Cv 83 / Max Bean Size 137

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 3" to 4".

| | |
|------------------------|----------------------------------|
| Valve Model | C3E |
| Body Type | Inline |
| Body Size | 3 inch (Nominal) |
| 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 | 83.5 | 25 | 17 |
| Turns | 17 | 12 | 12 |
| Travel | 2.12" | 1.45" | 1.45" |

STANDARD END CONNECTIONS

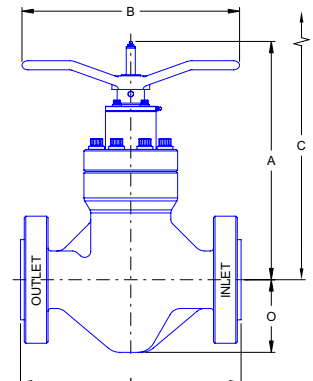
| Connection Size ▶ | Standard Dimensions & Estimated Weights | | | | | | | |
|-------------------|---|------|--------|-----|------------|-----|--------|-----|
| | 3" Nominal | | | | 4" Nominal | | | |
| | 'F' | | Weight | | 'F' | | Weight | |
| Connection Type ▼ | inch | mm | lbs. | kg | inch | mm | lbs. | kg |
| ASME 150 RF | *12.50 | *318 | 170 | 77 | 13.88 | 353 | 211 | 96 |
| ASME 300 RF | 12.50 | 318 | 170 | 77 | 14.50 | 368 | 231 | 105 |
| ASME 600 RF | 13.25 | 337 | 173 | 79 | 15.50 | 394 | 256 | 116 |
| ASME 600 RTJ | 13.38 | 340 | 173 | 79 | 15.62 | 397 | 256 | 116 |
| ASME 900 RF | 17.38 | 441 | 245 | 111 | 20.12 | 511 | 325 | 147 |
| ASME 900 RTJ | 17.50 | 445 | 245 | 111 | 20.25 | 514 | 325 | 147 |
| ASME 1500 RT | 18.12 | 460 | 252 | 114 | 20.88 | 530 | 350 | 159 |
| ASME 1500 RTJ | 18.25 | 464 | 252 | 114 | 21.00 | 533 | 350 | 159 |

* 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) dimension depends on the end connection and is tabulated above. Special dimensions and other end connections are available upon request.

| Dimensions | | |
|------------|-------|-----|
| | inch | mm |
| A | 19.69 | 500 |
| B | 18.00 | 457 |
| C | 27.31 | 694 |
| D | 6.00 | 152 |



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 | STD / PSL-1 | BB | BB | FF | EE | EE | FF | n/a |
| PX -20F to 350F | 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 |
|------------------|----------------------------------|----------------------------------|--------------------------|
| Body | ASTM A352 LCC / ASTM A216 WCB | ASTM A352 LCC / ASTM A216 WCB | ASTM A351 CF8M |
| Bonnet | ASTM A350 LF2 or AISI 4130 | ASTM A350 LF2 or AISI 4130 | ASTM A350 LF2 / AISI 316 |
| Stem | UNS S17400 | UNS S17400 | UNS S17400 |
| Bolting | ASTM A320 L7M | ASTM A320 L7M | ASTM A320 L7M |
| Retaining Sleeve | ASTM A743 CF8M | ASTM A743 CF8M | ASTM A743 CF8M |
| Balance Sleeve | UNS S42400 | UNS S42400 | UNS S42400 |
| Seals | Buna - N | Viton | Viton |

Other materials available upon request.

OTHER VALVE OPTIONS

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

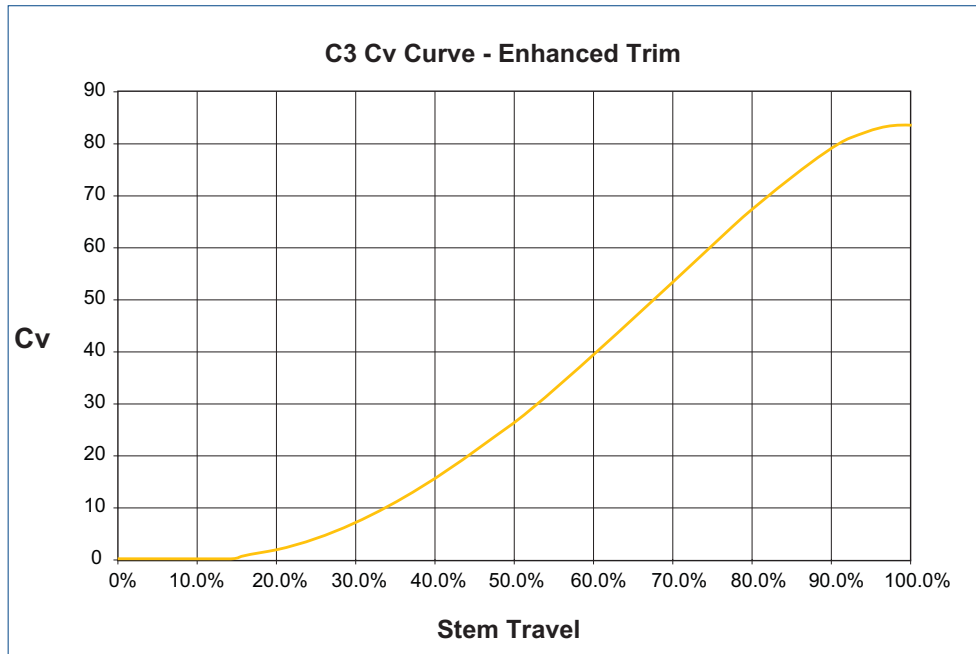
Some limitations may apply.

ACTUATION OPTIONS

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

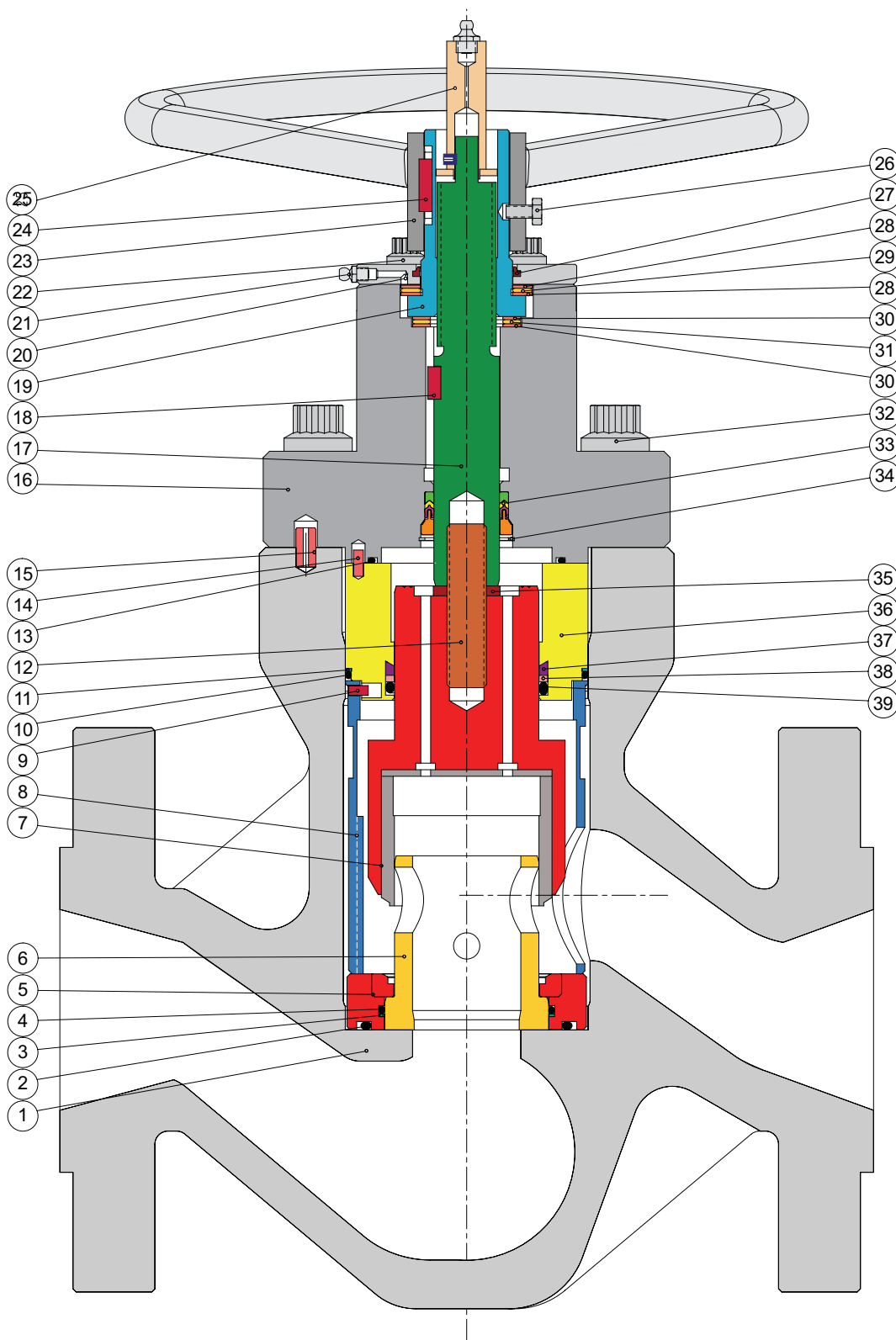
Other actuators available upon request.

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. Pin
- 10. Seal: Balance Sleeve - Body
- 11. B/U Ring: Balance Sleeve - Body
- 12. Stud
- 13. Seal: Balance Sleeve - Bonnet
- 14. Pin
- 15. Spring Pin
- 16. Bonnet
- 17. Stem
- 18. Key
- 19. Stem Nut
- 20. Cover Plate
- 21. Grease Nipple
- 22. Capscrew
- 23. Handwheel
- 24. Key
- 25. Calibration Head
- 26. Capscrew
- 27. Wiper
- 28. Thrust Washer
- 29. Thrust Bearing
- 30. Thrust Washer
- 31. Thrust Washer
- 32. Capscrew
- 33. Seal Pack: Stem - Bonnet
- 34. Retaining Ring
- 35. Lockwasher
- 36. Balance Sleeve
- 37. External-Sleeve Bushing
- 38. B/U Ring: External Sl. - Balance Sl.
- 39. Seal: External Sl. - Balance Sleeve

P3 Product Family

Standard:
 • P3E - Bolted Bonnet; 6 000 PSI

Other Options:

- P3E 10k - Bolted Bonnet; 10 000 PSI
- P3E HT - Bolted Bonnet; 3 600 PSI; High Temperature Service
- C3E - Bolted Bonnet; 3 600 PSI; Inline
- C3E HT - Bolted Bonnet; 3 600 PSI; High-Temperature Service

chokes
for all applications

recycle lines



vent valves



manifold



production



blow down

overboard dumps

glycol injection



subsea



level controllers

water injection

