

Internal Cartridge Types - Field replaceable & interchangeable

Used for all V200 and V300 Spartan valve bodies, these replaceable and interchangeable cartridges are service and maintenance free.

They are used for specific applications with variations of parabolic or linear characterized globe plungers. CV (KV) values can be changed without having to remove the valve from the line simply by changing

the cartridge.

The internals are equipped with 1½ million cycles (3 million repositions), packings with burnished mirror finish stainless steel stems and micro machined accurate parabolic characterized plugs.



EP TYPE CARTRIDGE (for 2 way valve body)



Used for hot and chilled water and 50% glycol.
Select from available CV's 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5,
Can be installed in all 2 way ½" valve bodies
Select from available CV's 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.5
Can be installed in all 2 way ¾" valve bodies



EB TYPE CARTRIDGE (for 2 way valve body)



Balanced cartridge used for high close-off pressure applications for hot and chilled water, and 50% glycol. The close-off pressure capability will rise with the actual differential pressure increase across the valve. The higher the ΔP the higher the close-off pressure and theoretically it can rise to the limit of the valve body rating.

Select from available CV's 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, Can be installed in all 2 way ½" valve bodies
Select from available CV's 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.5 Can be installed in all 2 way ¾" valve bodies
Select from available CV's 6.0, 6.4, 8.0, 9.0
Can be installed in 2 way 1" valve bodies

◆ **The EB cartridge is recommended when used in conjunction with PowerCube, ThermoElectric or Thermostatic actuators.**



EV TYPE CARTRIDGE (for 2 way valve body)



Used for low pressure up to 15PSI steam applications recognizable by nickel plated cap.

Select from available CV's 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, Can be installed in all 2 way ½" valve bodies
Select from available CV's 1.0, 1.5, 2.0, 2.5, 3.0, 3.5, 4.5 Can be installed in all 2 way ¾" valve bodies
Select from available CV's 6.0, 6.4, 8.0, 9.0
Can be installed in 2 way 1" valve bodies



BC TYPE CARTRIDGE (for 2 way valve body)



Cage type cartridge used for low CV values.

Select from available CV's 0.15, 0.25, 0.50
Can be installed in all 2 way ½" valve bodies



ED TYPE CARTRIDGE (for 3 way valve body)



Used for 3 way diverting valve bodies for hot and chilled water and 50% glycol.

Select from available CV's 1.0, 2.0, 3.0, 3.5
Can be installed in 3 way ½" and ¾" valve bodies

Internal Cartridge Specifications - each CV/KV is stamped on the face of the cartridge

| Replaceable Cartridge Type | EP Type | EV Type | BC Type | EB Type | ED Type |
|----------------------------|------------------------------|------------------------------|----------------------|--|--------------------|
| Valve seat | Integral bronze | Integral bronze | Bronze - replaceable | Integral bronze | Integral bronze |
| Valve disc/plunger | EPDM / brass | Hi-temperature EPDM | Brass cage | EPDM / brass | EPDM / brass |
| Valve spring | Stainless Steel | Stainless Steel | Stainless Steel | Stainless Steel | Stainless Steel |
| Packing | Double EPDM | Hi-temperature Double EPDM | Double EPDM | Double EPDM | Double EPDM |
| Stroke | 4mm | 4mm | 4mm | 4mm | 2.8mm & 4mm |
| Tight close off | 100 % | 100 % | 0.1% of Cv | 100% | 100% |
| Steam rated | N / A | 15 psi. (250°F / 120°C) | N / A | N / A | N / A |
| Water rated | (250°F / 120°C) | N / A | (250°F / 120°C) | (250°F / 120°C) | (250°F / 120°C) |
| Glycol rated | To 50% | N / A | To 50% | To 50% | To 50% |
| Cv Equal % - 4mm lift | 0.5, 1.0, 1.5, 2.0, 2.5, 3.0 | 0.5, 1.0, 1.5, 2.0, 2.5, 3.0 | 0.15, 0.25, 0.50 | 0.5, 1.0, 1.5, 2.0, 2.5, 3.0, 6.0, 8.0 | N/A |
| Rangeability | 100:1 | 100:1 | 100:1 | 100:1 | - |
| Cv Linear - 2.8mm lift | N/A | N/A | N/A | N/A | 1.0, 2.0, 3.0 |
| - 4mm lift | 2.2, 3.5, 4.5 | 2.2, 3.5, 4.5, 6.4, 9.0 | N/A | 2.2, 3.5, 4.5, 6.4, 9.0 | 3.5 |
| | | | | | Bottom port CV 2.0 |