

## 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  $\Delta P$  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