

copamateTM
products

***Centrifugal
Solids Separator***



Centrifugal Water Solids Separator

Application Overview

Air in water causes oxidation of piping systems, causing flake corrosion of steel products. The water is contaminated as the flakes break loose. The older the system, the greater the oxidation process and amount of pipe scale. Chemical treatment alone will not remove scale/debris from piping system. The ideal combination is to have a chemical treatment program in conjunction with a separator. The chemicals keep the pipe scale in suspension and the separator will remove the scale.

Common Water Quality Issues

- Commissioning Debris
- Pipeline scale
- Water contamination
- Expensive Maintenance programs

Separator Benefits

- Purge Debris efficiently
- Low pressure drop
- Cost effective
- Low maintenance
- Continuous cleaning
- Ideal for new and existing systems
- Minimizes sludge accumulation
- No moving parts/consumables

The Copamate Separator

Facts

- to remove solids heavier than 1.2 specific gravity and larger than 45 microns (equal to a strainer, 325 meshes).
- Ideally a Separator should be installed as an integral component of a new pipework system, downstream of the pump before the main system equipment.
- The Copamate Separator will remove significant amounts of solids (sand, scale & fines) in a short period of time.
- Working efficiently with a pressure drop of only 3 to 10 psd (21 to 60 kPaD)
- The rate of separation – Tests have demonstrated 170 cm³ of #60 grade sand was removed in 15 minutes from 60 litres of water.

Maintenance

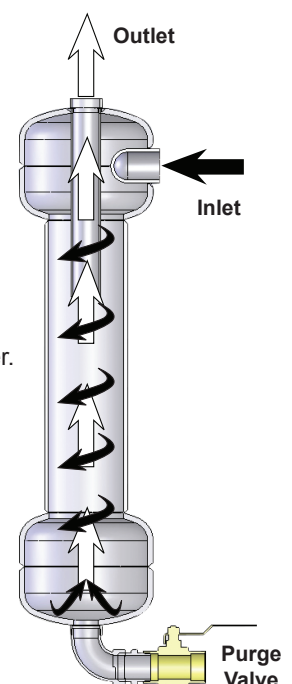
- To clean, simply open the purge valve at the bottom of the unit whilst system is in operation.
- Frequency will depend on the amount of debris in the system, calculation by comparing solids loading per hour with the purge chamber.
- Purging takes seconds, only a small amount of water is consumed in the process.
- The purge valve can be automated. The unit has no moving parts.
- Sludge removal from settling areas in the system is not required – labour saving.

Size Selection

Simply cross reference known flow rate vs pressure drop (21 – 69 kPa) on graphs overleaf. If space is an issue, consider a smaller or inclined separator. I.e: angled at 45 degrees. Economics, a separator sized at 10% of flow will give good results.

Operation

- Inlet water at a preselected velocity is tangentially directed around the internal diameter of the Separator chamber.
- There are no internal barriers to clog or impede flow.
- Pressure drop across the unit can be verified by probing the test points provided.
- Centrifugal force throws solid particles to the internal wall; they slide down into the stilling chamber in the base.
- The cleaned water is discharged from the centre vortex out through the outlet.
- Cleaning is carried out simply by opening the purge valve at the base of the unit.



Specifications

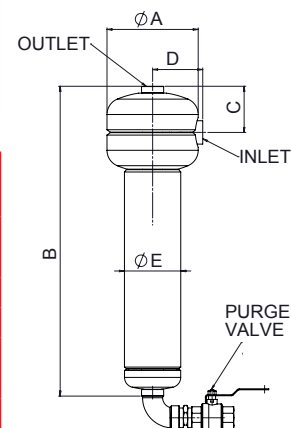
- Material:** Carbon steel housing with alkyd enamel finish. Other materials upon request
- Working Pressure:** 1400kPa
- Flow Range:** 0.4 to 750 :/s (minimum pressure drop 3psid -21kPaD)
- Size Range:** DN15 - 80 (Threaded)
DN50 - 500 (Flanged)
- Connections:** Threaded BSP female or flanges table E (NPS & other flange connections available)
- Includes:** Manual purge valve, Hydrostatic pressure testing, 2 x pressure test points.
- Legs:** DN65 & above (Legs can be fitted to other sizes on request)

Flow Co-efficient / Flow at dp - Threaded Model

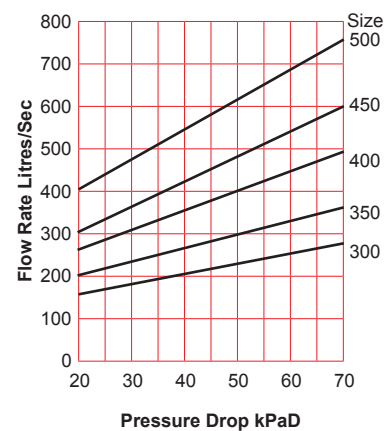
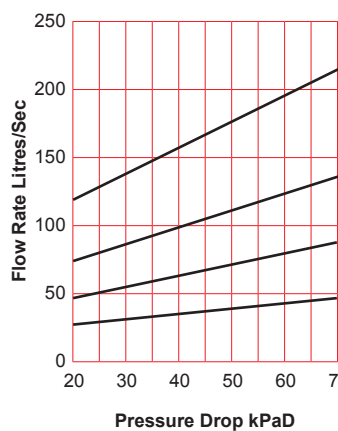
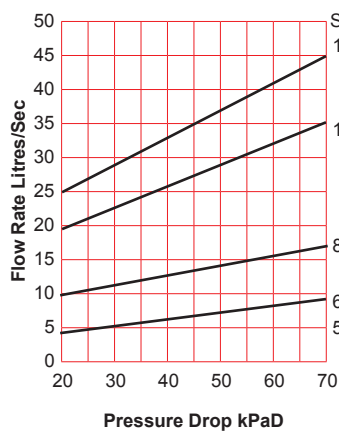
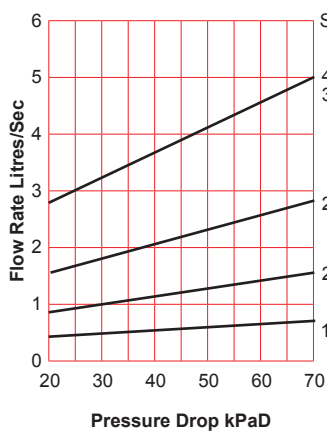
Size (DN)	15	20	25	32	40	50
Kv	2.9	6.5	12.1	21.6	21.6	35.3
L/s @ 21kPaD	0.37	0.82	1.53	2.73	2.73	4.48
L/s @ 41kPaD	0.53	0.16	2.16	3.86	3.86	6.34
L/s @ 69kPaD	0.68	1.50	2.79	4.99	4.99	8.18

Dimensions (mm) - Threaded Model

Size (DN)	15	20	25	32	40	50	65	80
B	585	585	600	775	775	865	865	825
A	152	152	152	152	152	254	254	254
C	83	83	89	127	127	110	110	110
E	51	64	76	152	152	152	152	254
D	96	96	102	100	100	150	150	165
Purge Valve NB	15	20	25	40	40	50	50	50
Purge Vol Litres	1.4	1.4	1.4	1.4	1.4	2.0	2.0	2.0
KG	4.8	6.3	6.6	10	10	13.7	13.7	13.7
Model/Code	PSS015	PSS020	PSS025	PSS032	PSS040	PSS050	PSS065	PSS080

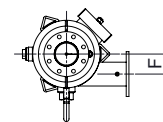


Threaded Model



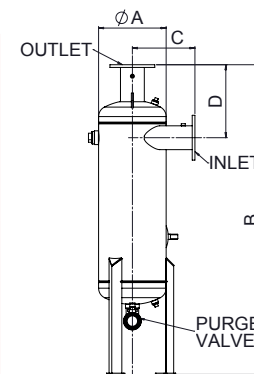
Flow Co-efficient / Flow at dp - Flanged Table E Model

Size (DN)	50	65	80	100	125	150	200	250	300	350	400	450	500
Kv	35.3	35.3	73	151	192	345	603	931	1164	1560	2034	2560	3224
L/s @ 21kPaD	4.48	4.48	9.29	19	24	44	77	118	148	198	258	325	409
L/s @ 41kPaD	6.34	6.34	13	27	35	62	108	167	209	280	365	459	578
L/s @ 69kPaD	8.18	8.18	17	35	45	80	140	215	269	361	471	593	746



Dimensions (mm) - Flanged Table E Model

Size (DN)	50	65	80	100	125	150	200	250	300	350	400	450	500
B	940	940	890	1292	1292	1342	1597	2007	2330	2610	2970	3145	3220
A	254	254	254	324	324	356	457	559	610	762	762	915	1067
D	185	185	245	350	350	3854	440	490	530	585	600	670	735
E	152	152	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
C	200	200	200	300	300	330	375	430	455	530	530	600	685
F	N/A	N/A	N/A	96	96	94	120	142	142	203	178	228	280
Purge Valve NB	50	50	50	50	50	50	50	50	50	50	50	50	50
Purge Vol Litres	2.0	2.0	3.5	8.8	8.8	13	24	36	48	71	71	122	169
KG	19.6	22	32	75	81	105	166	261	388	630	740	975	1183
Model/Code	PSF050E	PSF065E	PSF080E	PSF100E	PSF125E	PSF150E	PSF200E	PSF250E	PSF300E	PSF350E	PSF400E	PSF450E	PSF500E
Inspection Access	N/A	N/A	N/A	165x135	165x135	165x135	165x135	165x135	165x135	165x135	165x135	165x135	165x135



Flanged Model

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