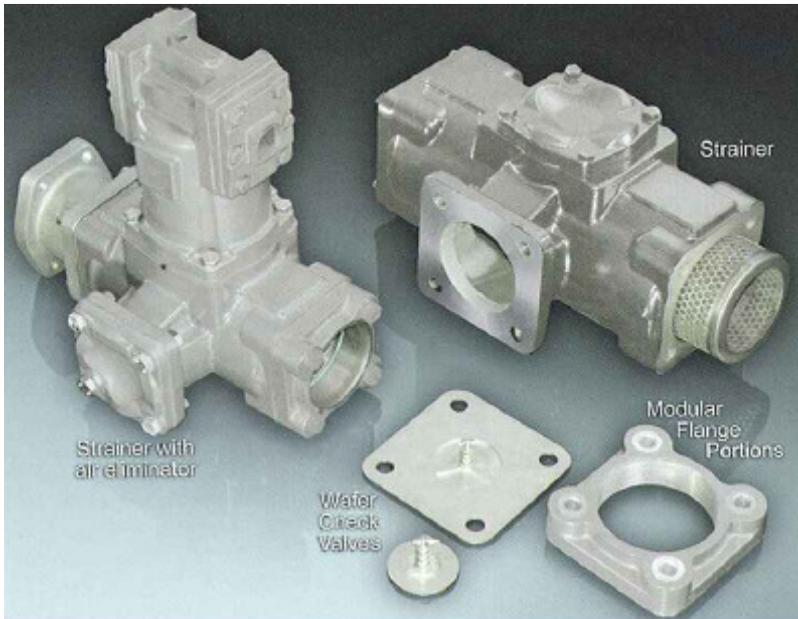




INSTRUCTION MANUAL SUPPLEMENT

**Air Eliminator/Strainer
& Check Valve**

Models:
1"(025),
1 1/2"(040),
2"(050)
3"(080),
4"(100)



NSW
TEL: (02) 9939 0711
FAX: (02) 9939 0411

QLD/PNG
TEL: (07) 3204 9166
FAX: (07) 3204 1224

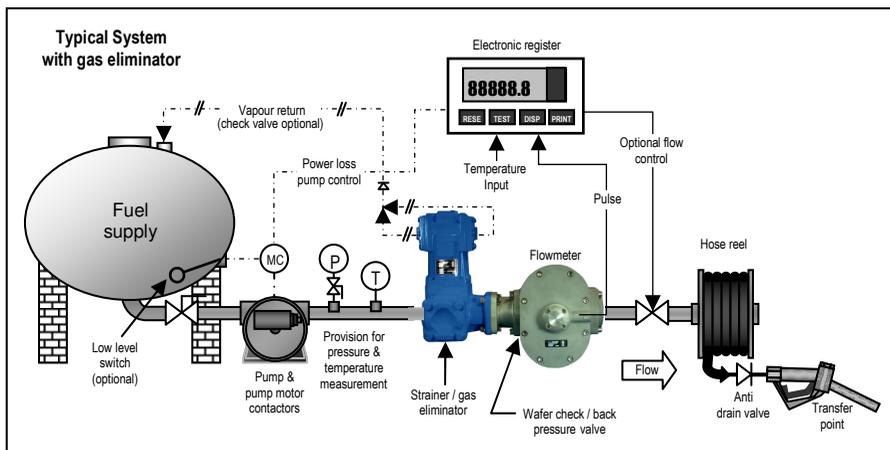
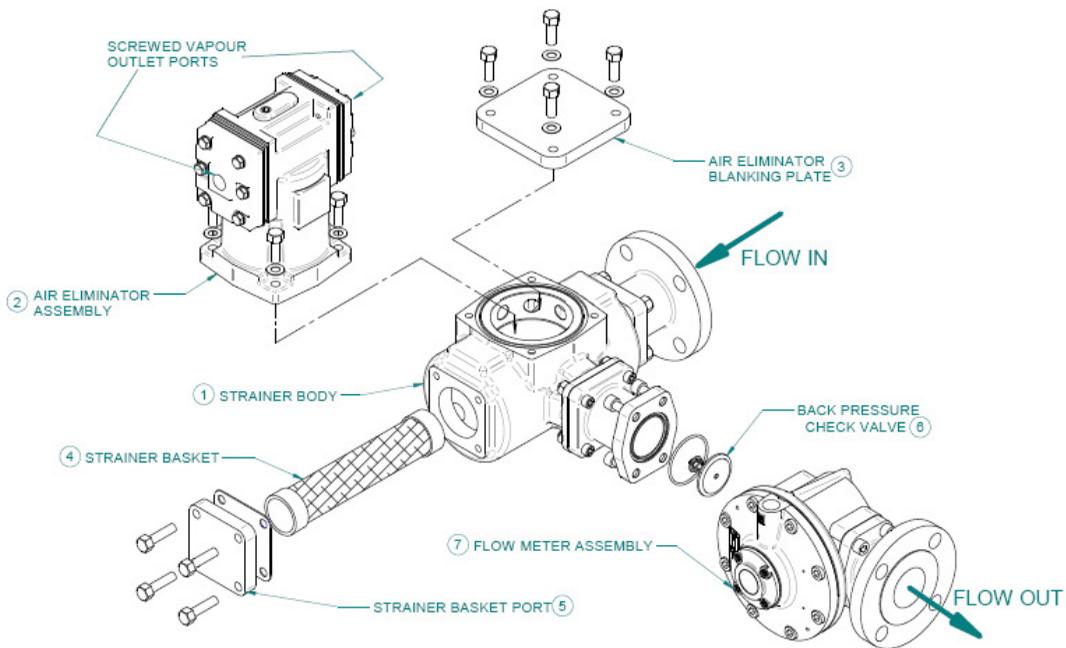
VIC/TAS
TEL: (03) 8787 8288
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WA
TEL: (08) 9209 30665
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SA/NT
TEL: (08) 8241 7111
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Air or Gas Elimination Overview

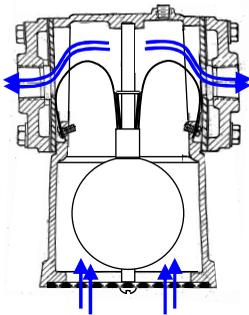
In considering the proper air eliminator for a given metering system requires the understanding of many factors for a given set of circumstances. In some applications there are just too many variables involved so it is not uncommon to consider the most efficient air elimination method on the presumption that it will handle any possible condition which might arise. This penalizes the purchaser where a less efficient air eliminator would suffice and in some cases the air eliminator might be omitted altogether if certain conditions can be prevented from occurring.

It is far better to avoid pumping any air or vapor than to attempt to separate and remove it after it has been mixed with the liquid. Air entrainment can be avoided by proper design when the installation is being planned. An example might be avoiding the need to receive liquid through the same lines that are used for delivery to the meter. Another example might be where it is necessary to purge the line to the meter when the installation is idle. It should be made possible to refill the purged lines without forcing the air or vapor through the meter.

Where air and liquid are thoroughly mixed, the time required for the air bubbles to separate from the liquid will depend upon the viscosity of the liquid, the higher the viscosity the longer the time needed for the air bubbles to gravitate towards the upper chamber of the air eliminator where it can be exhausted. If the flow rate & viscosity are high then perhaps a larger air eliminator vessel with dual eliminator heads would be more suitable, these need to be engineered on the basis of each installations flow conditions.

Pumps : The choice of pump to be used can effect the amount of air or vapor that may be encountered, for example, a centrifugal pump with a flooded suction will not pump any large volume of free air, here an air eliminator with check valve would be suitable.

Air ventilation piping : The air eliminator head should always be vented through a venting pipe or tube to a receptacle of some kind or back to the supply tank. There will always be a small amount of mist or foam experienced when the air is released, this can be a very volatile mixture and should be confined for safety reasons. If the receptacle is a closed drum or similar, it should be fitted with a screened vent large enough to avoid creating back pressure on the air eliminator vent line.

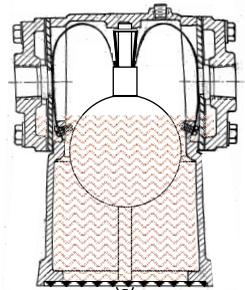


When open, air (or gas) passes up through the baffle plate & is vented off through the two threaded vent ports.



Air eliminator **MUST BE** mounted in vertical position as shown.

DO NOT plug off the two outlet vents as this could cause damage to the internals.



Back pressure check valve : These are incorporated as an integral part of the air elimination process, they create a back pressure (generally 1 bar) downstream of the air eliminator in order to force any entrained air towards the upper air eliminator chamber, they also prevent reverse flow. Wafer check valves are slim-line check valves that may be sandwiched between purpose designed flanges on the inlet of the flowmeter.

System interlocks : The adage "prevention is better than cure" is practiced when linking the metering system with an interlock of sorts, these can include air detectors, supply vessel level alarming & wet chamber sensing, these devices sense the presence of air and initiate a preventative action such as termination of the transfer process or throttling of the flow to allow the entrained air to be removed.

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