



## AF50 Filter – Replacement Cartridge Product Information

Product Code:	AF50
Height:	100mm
Diameter:	145mm
Single item weight:	450g
Construction:	Long fibre cellulose body with nylon cover and brass fastening
Applications:	Engine oil, hydraulic oil and diesel fuel
Filtration Level:	Particulate contamination in accordance with BS 5540 part 4: 1981 and ISO/DIS 4406. ISO equivalent to NAS 1638 Class 6 (Hydraulic oil specification)
Operating Temps:	Within normal operating temperatures of engine, gear and hydraulic oils



### Cartridge Design:

The Astrea Bypass Filter Cartridge is made of densely wound pure coniferous long fibre wood pulp paper, held together in a material casing offered in specified sizes for use in the appropriate filtration units.

### Action of the cartridge:

The filtration cartridge acts both by absorption and by adsorption in a continuous recycling process. Long fibres of the paper attract the water formed either through the combustion process or by condensation and absorb it like a sponge, at the same time rejecting the large oil molecules which are forced to pass between the tight windings of the cartridge. As the oil passes through the cartridge, minute carbon, wear metals, and silicon particles are extracted from the oil by adhering to the many surfaces of the filter - a process known as adsorption. Thus the cartridge, by removing water inhibits the production of acids which both degrade the oil and cause excessive wear

### How finest filtration is achieved.....

The Astrea Bypass Filter Cartridge will remove particles down to 3 micron (relative) and totally remove water. The principle for filtering particulate matter is 'liquid chromatography' which is in effect allowing a fluid to drain down a surface which will progressively arrest particles. This is achieved by having the tissue rolled on a core. Oil is passed up the core, collecting in a cavity to be forced back down between countless layers where particles are adsorbed within the matrix created by millions of cellulose fibres. The principle for filtering water is capillary absorption into the hollow vegetable fibre of the cellulose tissue. The molecular structure of the oil is too large to be absorbed this way.

While the Astrea Bypass Filter System is extracting the water and the contaminant, it is continuously safeguarding the desirable elements compounded within the actual oil in use. These typically include, dependent upon use, dispersants, detergents, oxidation and rust inhibitors, metal de-activators, pour-point depressants, viscosity improvers, lubricity agents, fungicidal, anti-foaming and gelling additives. These additives are held in suspension and their levels can be critical if the oil is to maintain its beneficial qualities. Oil Flow Rate: Output levels are dependent on viscosity, temperature, degree of contamination, and oil pressure. Guide – For SAE 15w/40 oil @ 70 c/ 60 psi/ 4.2Kcm-0.44gcm/ 2.01mp to 0.65gpm/ 3.01mp  
Operating Temperatures: Within operating specifications of engine, gear and hydraulic oils.  
Filtration Level: Particulate contamination in accordance with BS 5540 part 4: 1981 and ISO/DIS 4406. ISO equivalent to NAS 1638 class 6. (Hydraulic oil specification)

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