PEP™ Filters

ICS2

InterSeptor™ Centrifugal Separation Systems

Applications:

- Nozzle protection
- Mechanical seal protection
- Protection of heat exchanger surfaces to increase efficiency
- Removal of sand and grit prior to cooling tower basins and to prevent the fouling of heat exchanger tubes
- Pre-filtration for bag, cartridge, screen, disc, sand media filters, and centrifuges
- Intake water liquid particle separation (river water, lakes, wells)
- Sludge removal from industrial wastewater
- Recycling of solvents used in painting, machining, and other industrial processes
- Machine tool coolant filtration to extend coolant and tool life
- Steel mills - cleaning, quench, and wash water
- Particle removal in oil and gas extraction and production
- Filtration of hot oil in food processing plants to protect heat exchangers
- Market segments - industrial, commercial/HVAC, municipal, irrigation, food, oil and gas

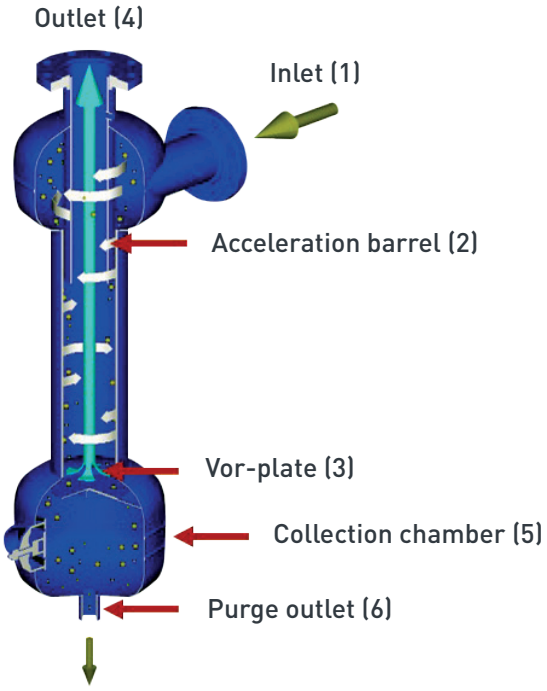
INTERSEPTOR™ CENTRIFUGAL

The ICS2s provide design innovation and performance that is in keeping with the company's long tradition of excellence. They utilize centrifugal action to remove particles from liquids.

These separators are available as stand alone units or as complete package systems.

How it works

1. Particles enter the unit via the tangential inlet (1), driving circular flow within the separator.
2. Liquid velocity is increased by the internal acceleration barrel (2).
3. Particles are separated from the liquid by the centrifugal action caused by the circular flow in the unit.
4. Fluid from which the separable solids have been removed is drawn to the center of the vortex.
   The Vor-plate (3) enhances particle separation efficiency and controls liquid turbulence. Liquid from which the separable particles have been removed is drawn to the center of the circling liquid (vortex) and driven up an internal pipe feeding to the outlet.
5. The clean liquid exits the unit at the top via the outlet (4).
6. The separated particles are concentrated in the collection chamber (5) and removed through the purge outlet (6).



SEPARATION SYSTEMS (ICS2)

ICS2 model selection

Factors to consider when choosing a separator

1. Specific gravity of particle
2. Viscosity
3. Particle size
4. System flow*
5. System pressure
6. Purge cycle type

* The efficiency of all centrifugal separators is dependent upon maintaining a consistent liquid velocity through the unit. The company has conducted extensive testing to ensure optimum efficiency when operating within the flow range ratings of the units.

Separator	Flow Range (GPM)	Inlet/ Outlet*	Purge Outlet (NPT)
F-ICS2-0050	4-12	½"	1"
F-ICS2-0075	9-20	¾"	1"
F-ICS2-0100	15-35	1"	1"
F-ICS2-0125	20-50	1-¼"	1"
F-ICS2-0150	35-78	1-½"	1"
F-ICS2-0200	70-160	2"	1"
F-ICS2-0300	180-330	3"	1"
F-ICS2-0400	290-530	4"	1"
F-ICS2-0500	500-970	6"	1"
F-ICS2-0600	800-1530	6"	1"
F-ICS2-0800	1475-2730	8"	2"
F-ICS2-1000	2425-3920	10"	2"
F-ICS2-1200	3475-5450	12"	2"

*Connection Types: 1/2", 3/4": NPT; 1"-12": ASA

What particles will the ICS2 remove?

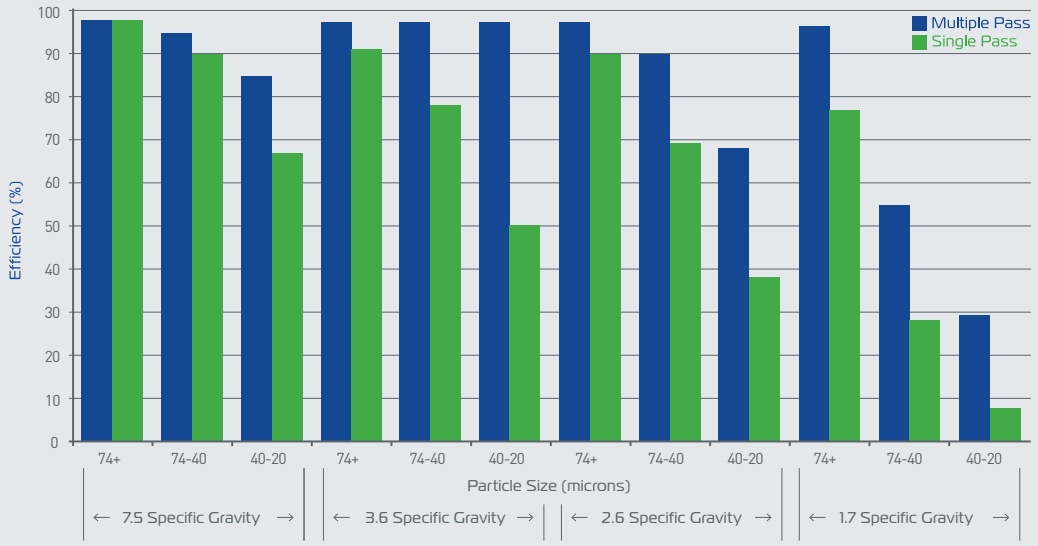
The particle removal sizes in a centrifugal separator is dependent upon the particle specific gravity versus the liquid it is being removed from. For particles to be removed from liquid, they must have a higher specific gravity than the liquid (the most common liquid is water which has a specific gravity of 1). The greater the difference, the higher the removal efficiency.

The ICS2 has been found to be effective in removing particles with high specific gravities to as low as 5 micron.
Please see the next page for more information on typical removal efficiencies.

Typical Particle Materials	Specific Gravity
Aluminum	2.7
Alumina	4
Asbestos	2.1 - 2.8
Bauxite	2.6
Brass	9
Bronze, Copper	8.9
Carborundum	3.2
Coal (Anthracite)	1.3 - 1.9
Coal Ash	2
Dolomite (Limestone, Marble)	2.9
Glass	3
Gravel (Granite)	2.5 - 3.0
Iron (Steel)	7.8
Lead	11.3
Lead Oxide	9.5
Manganese	7.4
Nickel	8.9
Sand	2.6
Silt	1.2
Sulphur	2.1

ICS2 Efficiency

ISC2 efficiencies can be estimated based on the specific gravity of the particles to be removed. Particles with high specific gravities will be removed more effectively down to a lower micron rating. Particle shape, size, weight, cross sectional area, and the specific gravity of the carrying liquid will also influence the efficiency results. Efficiency performance can be increased when the liquid is re-circulated through the unit or passed through multiple units (multiple pass installation).



ICS2 Purge options

Purging of the ICS2 will be required to eliminate the particles removed from the liquid and collected in the bottom of the separator unit. This can be accomplished in several ways:

Manual purge

A valve is opened manually to purge the particles from the unit on an intermittent basis.

Automatic purge

The ICS2 is automated with a control panel that automatically opens and closes an actuated valve to accomplish a purge. The control panel will allow the operator to set the desired interval between purges and the duration of the purge.

Continuous bleed purge

A manual purge valve is left open to allow for continuous purge of the removed particles. The valve will be set so that the bleed is no more than 10% of the inlet flow.

Valve options

- Electrically actuated ball valve
- Failsafe actuated ball valve
- Pinch valve