

IFDR Precision Filtration Overview

IFDR's are used on machine tools for Grinding and Mill / Turn operations and are a step change in technical capability and process performance for the inline processing and decontamination of the whole metalworking fluid volume prior to delivery back, under variable flow and pressure, to the cutting zone.

The primary separation process, to remove particles, is a merger of hydro-cyclonic and centrifuge technologies delivering the benefits of both without any of the drawbacks. With no moving or wear parts this primary process utilises fluid flow to remove particles to below 10 μ with 98% single pass efficiency without the need for consumable media, spare parts kits or traditional maintenance interventions thereby reducing a manufacturers Fluid Footprint and contributing to zero factory waste.

An inline secondary process automatically separates 'tramp oil' away from the metalworking fluid prior to the fluid being returned direct to the cutting zone to mitigate the traditional impacts of contaminated fluid impinging on machinability.

As no filtration system operates with 100% efficiency the important question to ask is "what contamination remains in the fluid stream post filtration".

Independent analysis from the University of Sheffield's Mercury Centre verified IFDR performance on a metalworking fluid sample from an aerospace grinding application in the Rolls Royce Factory of the Future at the Advanced Manufacturing Research Centre with Boeing. The results revealed residual particle sizes/vol% as 0.41 μ @10%, 0.75 μ @50%, 1.95 μ @90% with no particles above 6 μ

Reducing The Impact of Lubricants In The Manufacturing Process

