**ZGF Phoenix Filter -**
Eliminates Bag Filters and Lowers Total Operating Costs in Machining Operation

**Customer Challenge:**
Water-based machining coolants are used to lubricate and cool both the cutting tool and component part, as well as continuously flush away the chips/fines during the machining process. This coolant must be filtered.

A large machining operation was changing 50µ bag filters six times per day per machine. The bag filter cost was $36.00 per day or $10,800 per year per machine. This cost did not include purchasing, shipping, inventory, bag changeout labor, lost production time or disposal costs.

Process Overview: The dirty coolant flows from the machine tool to a settling tank equipped with a drag conveyor to remove the larger chips. The coolant then flows over a weir to the dirty tank. The dirty tank coolant is pumped through a 50µ bag filter and into a clean tank for re-use. Each machining center is equipped with a dedicated set of bag filters, one on-line and one on standby, the company was looking for a better option.

**ZGF Solution:**
Install a ZGF Phoenix filter on each machining center. The Phoenix filter is fully automatic and fitted with (6) 50µ Absolute Gap, ZGF Spring Filters. The Phoenix provides uninterrupted flow of clean coolant. The backwash from the Phoenix filter is directed to a 55-gallon drum. The backwash solids settle to the bottom and the recovered coolant overflows back into the dirty tank. The ZGF Spring Filter elements are a non-disposable, stainless-steel coil with a 5-year warranty.

**Results:**
- The Phoenix filter provided payback of approximately 1-year, and the life-cycle savings are tremendous.
- Test results from an independent lab concluded that the 50µ ZGF Spring Filter element provided more consistent and finer filtration than the 50µ bag filter.
- Changing bag filters was a significant burden on maintenance. The Phoenix filter requires virtually no maintenance.
- Bag filters and the associated purchase, shipping, inventory, changeout and disposal costs have been eliminated.

Lower Total Operating Costs, Reduced Labor, and More Consistent and Reliable Filtration