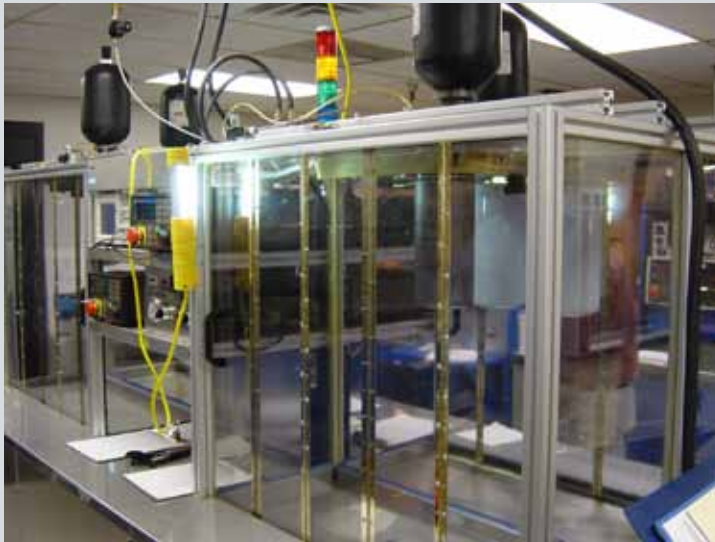
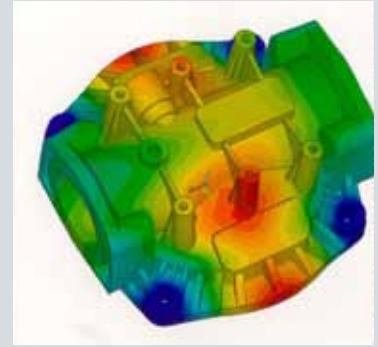
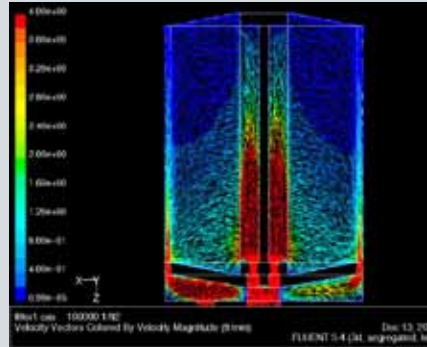
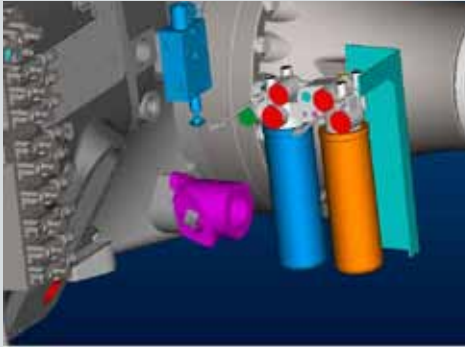




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FILTRATION SOLUTIONS

## LIQUID FILTRATION Development Tools



### Prediction and Simulation

- CAD
- Media modeling
- Fluid mechanics
- Structural analysis
- Thermal analysis

### Development and Validation

#### Filter Durability

- Fabrication integrity
- Environmental conditions
  - Salt spray and cold temperature
- Pressure fatigue
- Flow fatigue
- Hydrostatic burst
- Flow benches
- Filter collapse bench

- Gravimetric analysis
- Filtration performance testing per applicable SAE and ISO standards

#### Rapid Prototyping

- SLA, SLS
- Investment casting
- RTV molding

## Structural Analysis

- Per SAE, ISO, and NFPA standards
- Burst
- Collapse
- Pressure impulse and fatigue

## Tensile Compression

- Used to test material, component and assembly properties

## Environmental Chambers

- Allows testing at hot or cold temperature, with humidity control

## Flow Test Benches

- Allows measurement of static and dynamic flow and restriction for a device
- Allows calculation of device restriction at varying flows and temperatures
- System simulation

## Filtration Performance Testing

- ISO, SAE, NFPA
- Customer standards
- Contaminant (particle or water) removal efficiency
- Contaminant capacity

## Analytical Chemistry Laboratory

- Optical microscopy
- Scanning electron microscopy (SEM)
- Chemical analysis
- Fourier transform infrared (FTIR)
- Gas chromatography (GC/MS)
- Thermal analysis (DSC, TGA)
- Liquid chromatography



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