



senior[®]
Flexonics

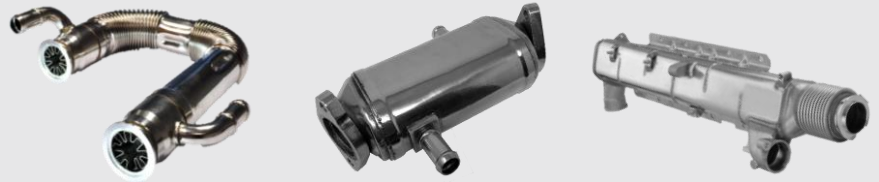
Products – Heat Exchangers

We have a wealth of experience in designing and manufacturing liquid cooled heat exchangers for the land vehicle market.

EGR Coolers

Senior provide a wide range of bespoke EGR Heat Exchangers, including Shell & Tube, Plate & Fin and our patented Co-axial Cooler. Our heat exchangers have up to 95% efficiency, are highly resistant to fouling and are scalable to match performance requirements.

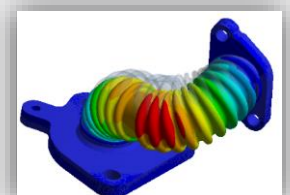
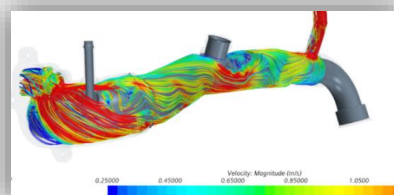
Product Range



- **Co-axial Coolers:** Lightweight stainless steel tube-in-tube design. Compact & routable, with up to 5 bends. High degree of mechanical flexibility and ideal for high temperature applications. Unique patented design.
- **Shell & Tube Coolers:** Effectiveness up to 95%. Low thermal stresses. Withstands high cyclic pressures. Scalable to match performance requirements.
- **Plate & Fin Coolers:** Our most power-dense cooler. Highly resistant to fouling. Effectiveness up to 95%.

Product Validation Capabilities

- CFD for performance and boiling
- FEA for low & high cycle fatigue analysis
- Rig performance measurement
- Gas side and coolant side pressure pulsation
- Thermal Shock & Shaker Vibration testing
- Acceleration data acquisition on customer vehicle



**SENIOR FLEXONICS
DESIGN, DEVELOP
AND MANUFACTURE
THERMAL
MANAGEMENT
COMPONENTS AND
SYSTEMS FOR THE
LAND VEHICLE,
POWER AND ENERGY
MARKET**

Senior Flexonics Crumlin offers unparalleled product design, development, testing and manufacturing capabilities and is the Primary European Design and Development centre for thermal management, fluid conveyance and flexible connectors.

Housed in a dedicated sales, research, development and prototyping site Senior Flexonics' program of continuous improvement and innovation has enabled the delivery of cost effective, high performance products for the rapidly developing marketplace