



# **ELECTRIFICATION ADVANCED SOLUTIONS**

**BATTERY SYSTEMS, E-POWERTRAIN  
& THERMAL MANAGEMENT  
FOR ELECTRIC & HYBRID VEHICLES**



# HUTCHINSON, YOUR TRUSTED PARTNER FOR THE CRITICAL FUNCTIONS OF ELECTRIFICATION

As electrification reshapes mobility, vehicle architectures are evolving toward higher integration and greater technical complexity. High voltage, thermal constraints, and stringent safety requirements now place critical functions at the very heart of vehicle performance.

Hutchinson supports OEMs and Tier 1 suppliers in securing these critical functions across electric and hybrid vehicles. From battery systems to e-powertrain and thermal management, we deliver engineered, multi-material solutions that reinforce safety and reliability across electrified architectures.

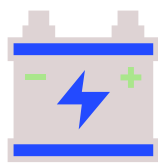
## ENABLING A SAFER AND MORE SUSTAINABLE TRANSITION

Leveraging over 170 years of materials engineering experience, Hutchinson has built strong expertise in sealing, thermal management, vibration control, fluid systems and fire resistance, all essential to the performance and longevity of electrified vehicles.

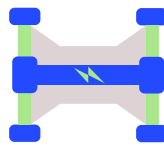
Grounded in a thorough understanding of customer architectures and operating constraints, our teams design and manufacture application-specific solutions that meet the highest standards demanded by electric mobility. Our global industrial footprint allows us to support customers worldwide, from early development phases to largescale serial production.

## A COMPREHENSIVE APPROACH TO ELECTRIFICATION CHALLENGES

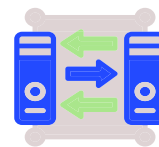
### Battery Systems · E-Powertrain · Thermal Management



Battery Systems



E-Powertrain



Thermal Management

Electrification introduces new technical challenges that require highly integrated, cross-functional solutions. Hutchinson addresses all critical functions across electrified powertrains through four key domains:

- **Sealing and thermal runaway protection**, ensuring battery pack integrity, waterproofing and resistance to thermal events
- **Thermal and fluid management**, controlling temperature, improving efficiency and extending component lifetime
- **Vibration and acoustic control**, protecting sensitive electric components, supporting the longevity of electric drivetrains and enhancing driving comfort
- **Lightweight protection and structural solutions** that enhance comfort, designed for high-voltage environments and compact architectures

Hutchinson's solutions are fully compatible with BEV, HEV and PHEV architectures, integrating seamlessly into battery packs, cooling circuits, electric motors and power electronics.

### Customer-driven design, from material science to system integration

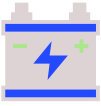
What sets Hutchinson apart is our ability to design application-specific solutions that combine materials science, functional expertise and system knowledge to match each customer's precise requirements.

At the core of this approach lies **materials innovation**. From formulation to transformation, Hutchinson's in-house capabilities enable the development of materials specifically engineered for electric vehicle constraints. Fire-resistant, halogen-free EPDM compounds, advanced elastomers, foams and composite solutions contribute directly to battery safety, system reliability, and vehicle longevity.

Hutchinson's materials are designed to deliver:

- High resistance to heat, fire, and aging
- Compatibility with coolants and electrical environments
- Lightweight performance to support energy efficiency
- Long-term durability under demanding operating conditions

By combining material science, system expertise and a customer-driven mindset, Hutchinson positions itself as the trusted partner for the critical functions of electrification, helping customers design safer, more reliable and more sustainable electric mobility.



# Battery Systems

Advanced thermal management, sealing and protection solutions for electric batteries, ensuring safety, performance and durability.



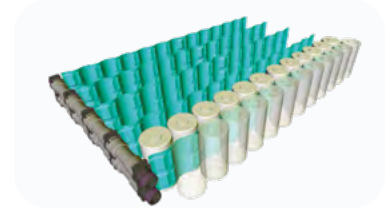
## BATTERY COOLING LINES

- Low pressure loss
- Even flow distribution
- Light and flexible solution



## BATTERY PACK SEALS

- Dust & Fluid Protection
- Serviceability
- Fire-Resistant



## CELL2COOL

- Cooling efficiency
- Thermal interface material (TIM) removal
- Weight saving
- Reduced pressure losses
- Compatible with all cell geometries



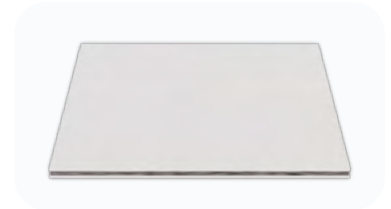
## INTERCELL PADS

- Very low thermal conductivity at high temperature
- Wide range of compressibility
- Electrical insulation
- Non-flammable and high-temperature resistant



## BLASTSHIELDS

- High temperature resistance
- Non-flammable
- Particle ejecta resistant (UL2596 test)
- Low density



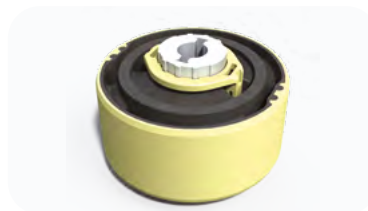
## COMPOSITE PROTECTIVE PLATE

- Weight saving
- Fire Protection
- Shock absorption
- EMI shielding
- Complex geometries



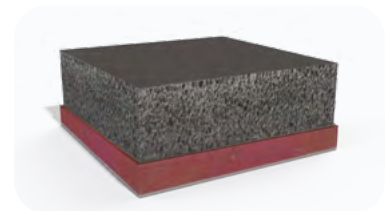
## ENDAQ - MULTI-SENSOR DATA LOGGERS

- 8+ Embedded Sensors
- Easy setup
- Lab quality data
- Wi-fi enabled



## DUAL ISOLATION BUSHINGS

- Improved NVH performance
- Durable
- Tunable

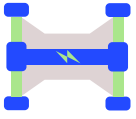


## CELLULAR RUBBER FOAMS

- Multifunctional: sealing – cushioning – thermal or acoustic insulation
- Fire resistance
- Fully customizable



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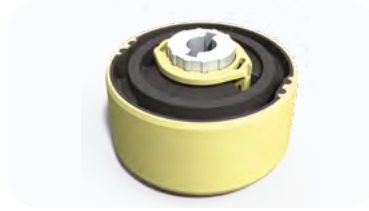
# E-Powertrain

*Cutting-edge sealing, thermal management and vibration control solutions for e-powertrains, ensuring reliability, safety and acoustic comfort.*



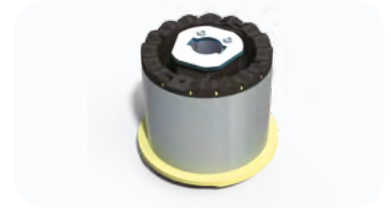
## BRACKETS

- Lightweight optimization
- Design to withstand the loads
- Seamless integration of vehicle systems



## DUAL ISOLATION MOUNTS

- Improved NVH performance
- Durable
- Tunable



## HYDRAULIC MOUNTS

- High damping
- Durable
- Tunable



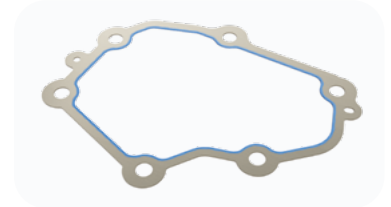
## NVH ENCAPSULATION

- Acoustic and thermal insulation
- Lightweight
- Fully customizable



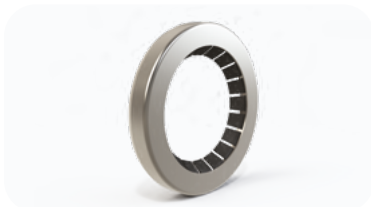
## SHAFT SEALS

- Low friction
- High speed
- Protection against pollution
- Integrated design



## PLATE SEALS

- Reliable performance in extreme conditions
- Adaptability to large tolerances
- Secure positioning during assembly and transport



## GROUNDING RINGS

- Extended lifetime of the E-motor
- Low friction for reduced shaft wear
- High conductivity diverting bearing electric currents



## OIL SPRAY RING

- Higher torque and power density
- Weight reduction
- Extended service life



## SPEED AND POSITION SENSORS

- High accuracy and repeatability
- Single or multi-tracks, regular or irregular poles, Nonius design, axial or radial.
- Compatible with harsh environment



## FERRITE DAMPER

- Improved high-frequency characteristics
- EMC performance > 30MHz



# Thermal Management

High-performance thermal management solutions for electric vehicles, ensuring efficient heat control, safety and durability.



## 2/3-WAY VALVE

- Low pressure loss
- Low internal leakage
- Accurate position regulation



## TUBE SEALS

- Quick and easy assembly
- Low assembly force
- High positioning tolerances



## HYBRID ALL-IN-ONE MODULE

- Smart management of heating and cooling
- Compact and customized design
- Range and charging time savings



## AC MODULE R290

- Cost reduction
- Integrated and compact solution
- Lower refrigerant mass for R290



## HEAT PUMP AC LOOP 1234YF

- In-house rubber hose manufacturing
- Non-brazed interfaces
- Integrated heat exchanger



## MULTI-WAY VALVE

- Low internal leakage
- Pressure loss optimization
- Compact solution



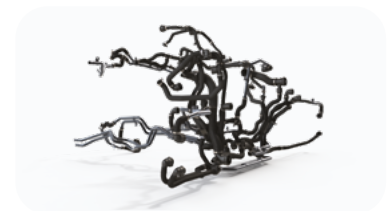
## SENSORS

- High accuracy
- Quick response time
- Resistance to severe environments



## LIGHTWEIGHT AIR DUCT

- Acoustic Attenuation for HVAC (up to 11dB)
- Up to 85% weight reduction
- Flexible duct for easy assembly



## COOLING LINES

- Combines plastic, rubber, and/or metal
- Light and flexible solution
- In-house quick connectors
- Multi-fluid compatibility



## TP AC LINE

- Lightweight and flexible
- Low refrigerant permeability level
- Cost saving and recyclable



## AC MODULE 1234YF

- Compact design
- Efficiency
- Plug-and-Play



## EXV VALVES 1234YF + R290

- Accurate expansion regulation
- Power scalability
- Full flow

Our clients operate in some of the world's most demanding environments, where performance, reliability, and innovation are non-negotiable. Whether in automotive, aerospace & defense, new energies, or other advanced industries, they face complex technical challenges: from managing fluids and thermal, to ensuring acoustic insulation and sealing under extreme conditions.

At Hutchinson, we are a global technology partner, committed to enhancing product performance and extend lifecycle durability. Together, let's contribute to create safer, more comfortable, and more sustainable solutions.



**40,000**  
employees



**26**  
countries



**5%**  
invested each year  
in Research  
& Innovation



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We make it **possible**