Fuel-Cell Components
Metallic bipolar plates

Improve performance and reliability, extend product life, and reduce system cost. Dana is adapting proven technologies to deliver next-generation metallic bipolar plate solutions. Our unique manufacturing approach offers a cost-effective method to serve the stringent power density, reliability, and cost requirements of fuel-cell stack original equipment manufacturers (OEMs).
High-volume manufacturing expertise backed with global support.

Applications for Dana’s technologies include bipolar plates for polymer electrolyte fuel cells. Markets for our state-of-the-art components and processes extend to stationary power, industrial mobility, and transportation.

Dana delivers:
- In-house expertise and quality control
- Testing base material for:
  - Formability
  - Material composition
  - Electrochemical stability
- Product analysis
  - High-precision dimensional measurements
  - Functional analysis (pressure film and force deflection curves)
  - In-situ stack tests
- Analysis of cell components
  - Post-mortem analysis of bipolar plates, membrane electrode assembly (MEA), and gaskets

Computer-aided design (CAD)
- Integrated product design to meet customer needs
- Transfer of customer specifications into metal bipolar plate technology

Computational fluid dynamics
- Design optimization of fluid flow on header region, on plate level, and full size stack
- Optimal distribution and balancing of hydrogen, air, and coolant

Finite element analysis (FEA)
- In-depth analysis to fulfill customer needs on sealing performance
- Simulation of full plate forming process
- Force distribution and balance between plate, MEA, and stack endplates

Process, design, and materials
- High-precision, high-speed stamping – full dimensional accuracy to CAD
- Sophisticated laser welding – ready for mass manufacturing
- Durable, high-performance active area coating at a cost that is commercially viable
- Unique, customizable elastic bead seal technology offers ultra-low permeation, increases power density, and reduces cost

Dana’s completely integrated solutions.
By offering a cost-effective bipolar plate technology that meets all customer requirements, Dana is helping to develop the growing, global fuel-cell industry.

Learn more today by visiting dana.com/light-vehicle.