

# THRUST WASHERS



**With a focus on LESS (Low Emission Sealing Solutions),** Lead Center Fluid Power Automotive has developed a new line of thrust washers.

**A thrust washer is designed to create** a surface on which a bearing can roll, or a load can be applied. Traditionally, thrust washers were made from metals. Freudenberg Sealing Technologies has used its materials and design knowledge to develop proprietary software and testing capabilities, allowing engineers to replace heavy, torque-robbing, metal thrust washers with thermoplastic or thermoset alternatives. These innovative products help reduce weight, improve friction and thickness/flatness, and often provide a cost benefit to the customer.

**The Society of Plastic Engineers** recognized Freudenberg Sealing Technologies work in this field at the 44th annual Automotive Innovation Awards. Our high-load, high-shear, geared axial polymer thrust washer was a finalist in the powertrain category and enabled the successful launch of the General Motors 8L90 automatic transmission.



## VALUES TO THE CUSTOMER

- We have a full line of off-the-shelf and custom-formulated thermoplastics and thermosets enabling us to optimize the cost/function of the part for your specific needs.
- Our scientists have modified existing test methods and test sample specimens to improve the quality of the comparison data we generate on our bench wear test machines, eliminating some potential false failure modes (e.g., not controlling heat buildup during the test that may lead to an artificially induced melting condition).
- Our proprietary DTRA (Design Tool for Rotary Application) software can simulate how our thrust washer designs will behave in the application, thus decreasing our overall development time and cost.
- Freudenberg Sealing Technologies has developed thrust washer validation test rigs that are capable of applying up to 22,240 Newtons of force at 10,000 rpm on a sample as large as 127mm in diameter. Our test rigs can be outfitted for dry and lubricated testing.
- We offer global design, development, and production support for your customers.