New Duo Forseal Improves Quality, Reduces Emissions

plungers has been developed by Freudenberg-NOK Sealing Technologies.

Duo forseal is a new design for double-acting polytetrafluoroethylene (PTFE) U-Cups that are used on direct injection automotive systems to seal the pump plunger driven by the camshaft.

The universal properties of PTFE make U-cups highly resistant to all types of motor oils and fuels, but the new duo forseal design offers a significantly improved and better performing injection plunger seal, said Torsten Maschke, president, Automotive Sales and Marketing for Freudenberg-NOK Sealing Technologies.

Engines with gasoline direct injection are very efficient but require higher pressures between advanced injection pumps and their corresponding injection nozzles than traditional air intake systems, Maschke said.

The duo forseal makes an indirect contribution to emissions reduction because it is designed for this high pressure load. Additionally, its patented technology contributes directly to reduced emissions through lower leakage rates compared with traditional designs.

The new seal design provides all the technological characteristics of the current model lines, is cost-efficient and offers universal

A new design for sealing pump resistance to all types of fuels, including E100, and can be used for plunger frequencies to more than 200 Hz, Maschke said.

> The design is also easy to install due to its symmetrical seal configuration and its leakage rate, which has been minimized below the required specifications of the automobile industry. Furthermore, the duo forseal design's stainless steel spring proreliable radial sealing vides forces.

> The new PTFE compound used in the duo forseal shows "an excellent abrasion resistance, especially in contact with plungers coated with diamond-like carbon (DLC). It has proven a long-term stability without affecting the coating," Maschke said.

> "With an operating life of far more than a billion strokes, the duo forseal injection plunger seal from Freudenberg-NOK offers a level of quality significantly above the standard demanded today," Maschke said.

Freudenberg-NOK Sealing Technologies is the Americas joint venture between Freudenberg and Co. in Germany and NOK Corp. in Japan.

Founded in 1989 under the legal name Freudenberg-NOK General Partnership, Freudenberg-NOK is headquartered in Plymouth and operates more than 20 facilities across the Americas.



WSO to Feature Mozart and Ravel

chestra's second concert of the on the flute at 3 p.m. on Saturday, season is set for Sunday, Oct. 13, and showcases works by Maurice Ravel, Wolfgang Mozart and Robert Schumann.

The concert, called "Poignancy and Charm," will feature two well-known Detroit musicians flutist Jeffery Zook and harpist Kerstin Allvin.

"Classical music enthusiasts will recognize them for their work with the Detroit Symphony Orchestra as well as community symphonies in our area," said Lois Jackman, WSO board president.

The WSO has also arranged for

The Warren Symphony Or- Zook to conduct a master class Oct. 12, at the Evola Music Center. 12745 23 Mile Road, in Shelby Township.

The Sunday concert starts at 3 p.m. in the Macomb Center for the Performing Arts, located at 44575 Garfield Road in Clinton Township.

Tickets are \$23 for adults, with discounts for students and senior citizens. Anyone 18 or younger gets in free. To order tickets, contact the Macomb Center for the Performing Arts box office at 586-286-2222, or visit macombcenter.com.

