

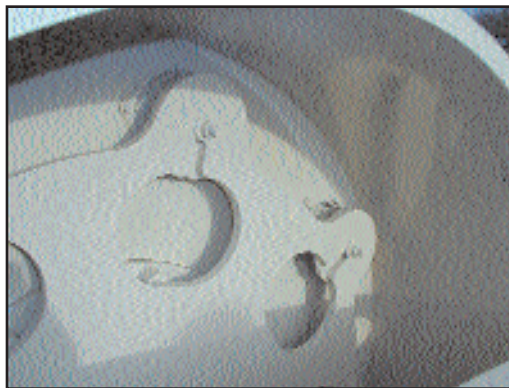
## LORD Helps Ingersoll-Rand Launch TF Series on Solid Ground

Ingersoll-Rand's new line of vibratory rollers, the TF series, was designed with operator comfort in mind. Using an integrated systems approach, Lord Corp., providers of vibration, noise and motion control solutions, helped provide the smooth ride Ingersoll-Rand sought for their new vibratory soil compactor.

The TF series debuted at the CONEXPO-CON/AGG Show in Las Vegas, Nev. and was billed as a replacement for Ingersoll-Rand's Pro-Pac machines. Key features include drum performance, full-time traction system, new serviceability features, reduced maintenance time, as well as new ergonomic features that provide a more comfortable and productive work environment for the operator.

Lord Corp., a long-time partner of Ingersoll-Rand, was a vital element of the design team since operator comfort and reduced maintenance were the key goals for the product family.

"We have worked with Ingersoll-Rand for more than 30 years," said Lord Account Manager, Andy Swoyer. "But the



**LORD's drum isolator, shown installed on the drive plate of the new vibratory roller, improves isolation and durability.**

TF series project is the first to truly encompass a complete systems approach to design. We worked with Ingersoll-Rand from the onset of project design to meet their aggressive requirements for reduced noise and vibration."

According to Swoyer, Ingersoll-Rand approached Lord in 2000 to assist them in meeting their strict performance requirements for the drum, platform, engine and steering valve isolation systems.

"Nobody knew what form the solutions would come in," said Swoyer, "but superior noise and vibration isolation for the operator were key."

Lord's integrated systems approach began with benchmarking, full systems analysis, and analytical modeling. For six months, Ingersoll-Rand's Pro-Pac model roller could be found in Lord's Erie, Pa. test lab as design engineers conducted extensive computer modeling and proof testing of proposed design solutions and configurations. The result was a tested line of mounts and isolators, installed in more than 15 locations on the TF series, as well as validation that performance goals had been met.

Swoyer said that harsh ride was a major complaint on earlier models, particularly in "roading" operating conditions. The products designed for the TF series, according to Swoyer, have already been proven to provide operators with a smoother ride and to minimize maintenance.

Ingersoll-Rand sought a system design that would meet their life and isolation requirements, as well as easy installation for the drum isolation system. Lord followed with a new drum isolator design, incorporating some of the time-tested design features of its predecessors including excellent isolation and durability, while accommodating easier installation for this most demanding application. This will translate into easier replacement for maintenance personnel and increased machine availability.

Improved ride characteristics for all modes of operation are a must for the platform isolation system. Extensive design changes were incorporated into the TF series operator's platform. Lord's isolation solution came in the form of conical



**Ingersoll-Rand's new TF series SD122DX Vibratory Compactor with open ROPS replaces the Pro-Pac models. Features include drum performance, full-time traction system and improved serviceability.**

and Surface Effect mounts, both providing improved ride quality and better noise and vibration isolation, as well as accommodation of Roll-Over-Protective-Structure (ROPS) loads.

Surface Effect platform mounts embody advanced elastomers and lubricants in a unique configuration to generate deflection-dependent damping forces. A relatively soft mounting element carries static loads and provides improved noise and vibration isolation, while a unique sliding damper engages to produce damping forces to control platform motion during harsh operating conditions. Thus, the best characteristics of noise and vibration isolation are combined with platform motion control to produce a unique and significantly improved ride feel. Unlike conventional hydraulic dampers, Lord Surface Effect dampers contain no fluids and therefore cannot leak.

The key requirements for the engine isolation system were excellent vibration isolation throughout the engine's operating range, and gross motion control. Lord's proven Center-Bonded Isolator design was called upon once again to fill a demanding task. A one-piece, center-bonded isolator was



***The inclusion of LORD's Conical Platform Isolators improve ride characteristics during all modes of operation.***



***Surface Effect Platform Isolators use advanced elastomers and lubricants in a unique configuration to generate deflection-dependent damping forces.***

selected to support the engine at the fly-wheel housing on each side, while a trunnion arrangement was designed for the fan end, giving a superior three-point isolation system. This configuration has proven its durability and vibration isolation capabilities.

Finally, for the steering valve isolation system, the important requirement was reduction of structure-borne noise. An easy-to-install mount was selected for application to four points on the steering motor housing. Once again, a reliable and field-proven Center-Bonded Isolator design was relied upon to provide interruption to a structure-borne noise path, resulting in greatly reduced noise transmission to the operator's platform and cabin.

All of the aforementioned isolation solutions were part of a comprehensive, total system approach to improving operator comfort and productivity on the new TF series product family. This approach yielded a "whole is greater than sum of the parts" result in the new soil compactor products that will define a significant differentiating characteristic among competitive soil compaction offerings. Operators of the new equipment are sure to be very pleased.

# LORD

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