



## Surveyor™ High Speed Rail Tribometer

The Portec Lube Crew<sup>SM</sup> is the leading industry supplier of lubrication innovation. From the industry's most advanced hi-rail, on-board and wayside lubricator system designs (multi-system **H.O.W.**<sup>TM</sup> approach) to bulk lubricant transfer systems and the widest offering of lubrication consulting & contract services...no company offers more.

Since the 1940s Portec has developed unmatched understanding regarding lubrication of the wheel/rail interface. This experience combined with the precise rail friction measurement capabilities of the Surveyor™ High Speed Rail Tribometer enable Portec to provide rail freight and transit operators with even better analysis and solutions for improving fuel economy, reducing wheel/rail wear, enhancing safety and minimizing noise.



## More than a system or service...SOLUTIONS!

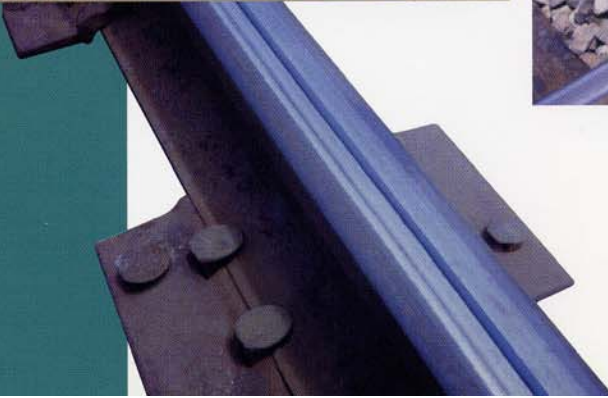
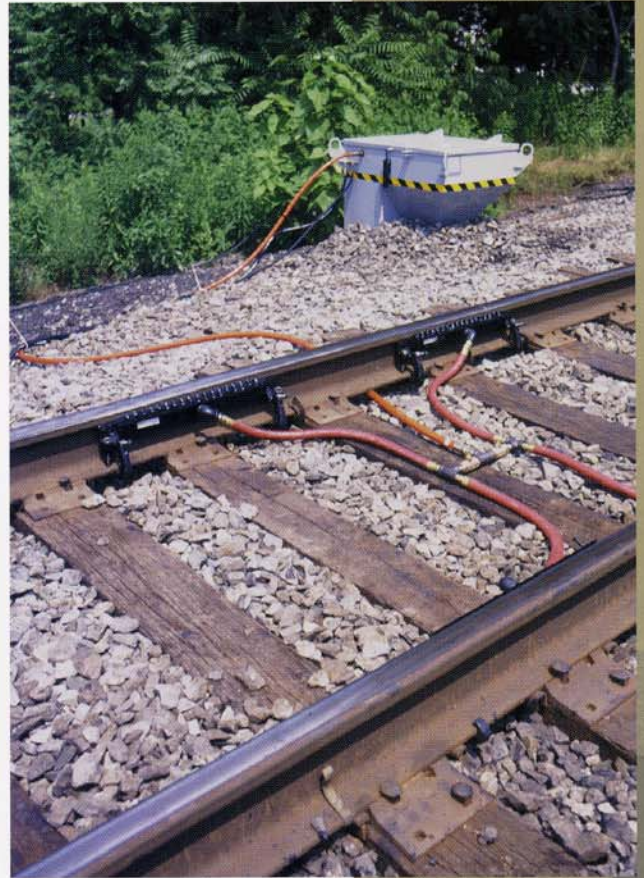
The **Surveyor™ High Speed Rail Tribometer** consistently and accurately measures the coefficient of friction of the tread and gauge for both rails. That's all you really need to know about the machine...it's the contract service team that really "tells" the whole story.

### 5 important parts to more effective lubrication management:

- Accurate rail friction measurement and data compilation
- Skillful analysis of data
- Identification of problems and the optimum solution
- Implementation of the solution
- Periodic rail friction measurement for solution assessment



Whether evaluating current wayside lubricator effectiveness, testing new lubricants, developing a hi-rail lubrication program, adding top-of-rail friction modification or exploring a new lubrication approach, the **Surveyor™** will provide highly reliable friction measurement data. For data analysis and solution recommendations, look to the Lube Crew™ for all the know **H.O.W.™** to improve fuel economy, enhance safety, reduce wear and minimize noise.



# Surveyor™ ... H.O.W.™ it works

*Coefficient of friction – A number expressing the ratio between the force required to move one surface along another and the force, normal to the surfaces pressing them together.*

Everyone in the rail industry knows there are really no situations that are truly "normal." Problems, however, there are plenty of those – poor braking and traction or excessive noise and wheel/rail wear to mention a few. But are they problems or symptoms? In most cases these are symptoms of poor friction conditions in the wheel/rail interface. The only way to know is to measure.

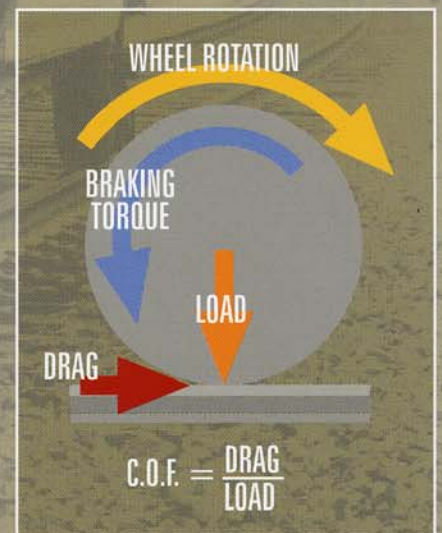
The **Surveyor™ High Speed Rail Tribometer** measures the coefficient of friction by providing a system with sufficient mass to apply download forces to the contact points of the tread and gauge similar to the way a passing train imposes those forces in the real world. The **Surveyor™** measures the coefficient of friction of the rail, not the ineffective lubricants loitering outside the contact path. The **Surveyor™** measures what is really happening... where the wheel meets the rail.

**Surveyor™** is a rugged, durable and stable M.O.W. machine designed to withstand the tough railroad environment.

- Accurate coefficient of friction measurements for tread and gauge of both rails
- Coefficient of friction measurements linked to your mile post system
- Capable of measuring over 200 miles of track per day
- Complete and continuous track profiles for building "snapshot" database
- Computer monitors all system functions
- Visual observation inputted directly to data collection in real-time
- Self diagnostics assure all systems working properly



**Surveyor™ High Speed Rail Tribometer** is typically provided on a contract service basis where the Portec Lube Crew™ performs the friction measurements, data analysis and solution recommendations. However, **Surveyor™** is available for purchase or lease where Portec will provide operator training and lubrication consulting services on a contract basis. Contact the Lube Crew™ at 1-800-722-9960 for details.



We've always known **H.O.W.**<sup>TM</sup>  
Now we know **H.O.W.**<sup>TM</sup> much lubrication is enough lubrication



Surveyor<sup>TM</sup> is part of the Portec Lube Crew<sup>SM</sup> family of **H.O.W.**<sup>TM</sup> lubrication products and contract services.



Developed and patented by DMF (Diversified Metal Fabricators) and available worldwide exclusively by Portec Rail Products Inc.



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Specifications subject to change