

TECHNICAL BULLETIN

CAM TUBE SYSTEM

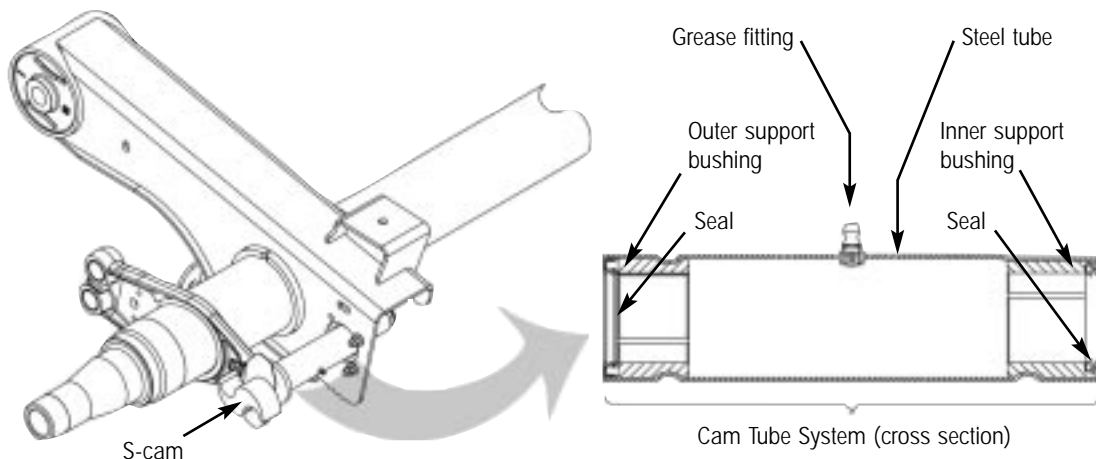
SUBJECT: New Brake S-cam Support Design

LIT NO: 49441-236

DATE: Spring 2001

In keeping with our philosophy of continuous improvement, Hendrickson Asia Pacific is pleased to introduce the cam tube system – a no-cost design improvement to the existing cam support structure on all INTRAAX® suspensions.

Designed to fit both standard and HXS® extended service brake assemblies, the cam tube system is a one-piece, grease-filled steel tube that encloses the S-cam shaft on each wheel-end assembly. Encased at each end of this tube, are the camshaft support bushings and seals. Hendrickson developed this integrated, modular system to keep potential contaminants away from the camshaft, which will extend the life of the camshaft bushings and journals, reduce maintenance and maximise your investment.



Hendrickson will begin phasing in the cam tube system as standard equipment on new INTRAAX® suspension systems. The gradual phase-in is expected to be complete and on all new models by early 2002. The cam tube system cannot be retrofitted on existing suspensions.

The cam tube system offers these value added features and benefits at no additional cost:

- **50 percent fewer places for contaminants to enter** – Existing trailer brake designs have separate seals that individually surround each journal and bushing. The sealed cam tube system eliminates the need for the inner pair of seals, thereby cutting in half the opportunity for contaminant entry.
- **Double-lip seals and long-life bushings** – The seals used in the cam tube system have a double-lip design and are extremely durable in grease-seal applications. The snug double barrier greatly limits the potential for contaminant entry. The rubber seal material contains an ozone inhibitor to reduce degradation over time. The bushings are made of a glass-reinforced nylon for long service life, reduced friction and improved performance.

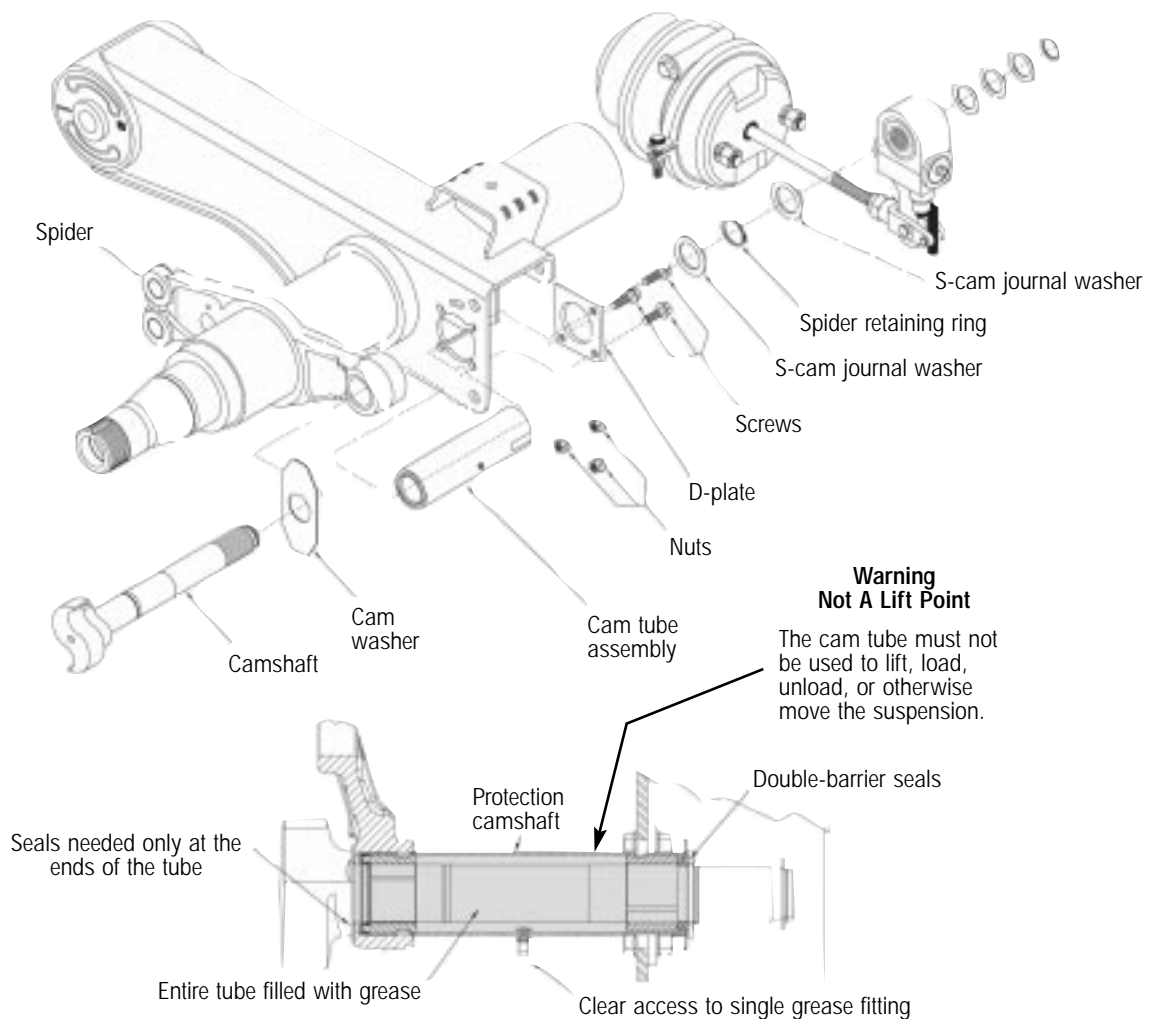
For The Road Ahead

 **HENDRICKSON**

NEW BRAKE S-CAM SUPPORT DESIGN



- **Seven-fold increase in grease volume** – Existing trailer brake designs have grease chambers only in the bushing/journal areas. This grease capacity offers little protection if debris passes beyond the seals. Since the entire tube in the cam tube system is filled with grease (approximately seven times more than existing designs), the parts per million count of any particles that may get into the bushing area is greatly reduced.
- **Improved access to lube fitting** – The grease fittings on the existing design have been replaced by a single, centrally located fitting for easy access. This grease fitting is compatible with most automatic lubricating systems. Simply unscrew the grease fitting and attach the auto-lube adaptor.
- **Modular cartridge design for ease of assembly** – Since all of the seals and bushings are inside the steel tube, replacement (if needed) is simple compared to current conventional designs. Located at the end of the tube that passes through the suspension beam is a patent pending “joint flat”. This “flat” interlocks with the simple D-shaped retaining plate, properly orienting the grease fitting and preventing the tube from rotating. The D-shaped retaining plate is held to the suspension beam with only three fasteners. The fourth, more difficult to reach fastener found on most conventional designs has been omitted. The other end of the tube is captured by the redesigned spider.
- **Reduced weight spider** – Our new lightweight, forged-steel spider has been redesigned to accept the cam tube. This new spider is at least 2.7kg lighter than the stamped designs of the competition, providing “best in class” performance.



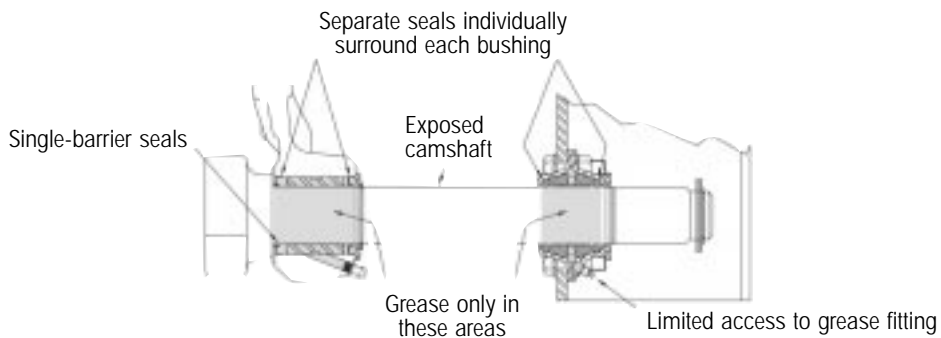
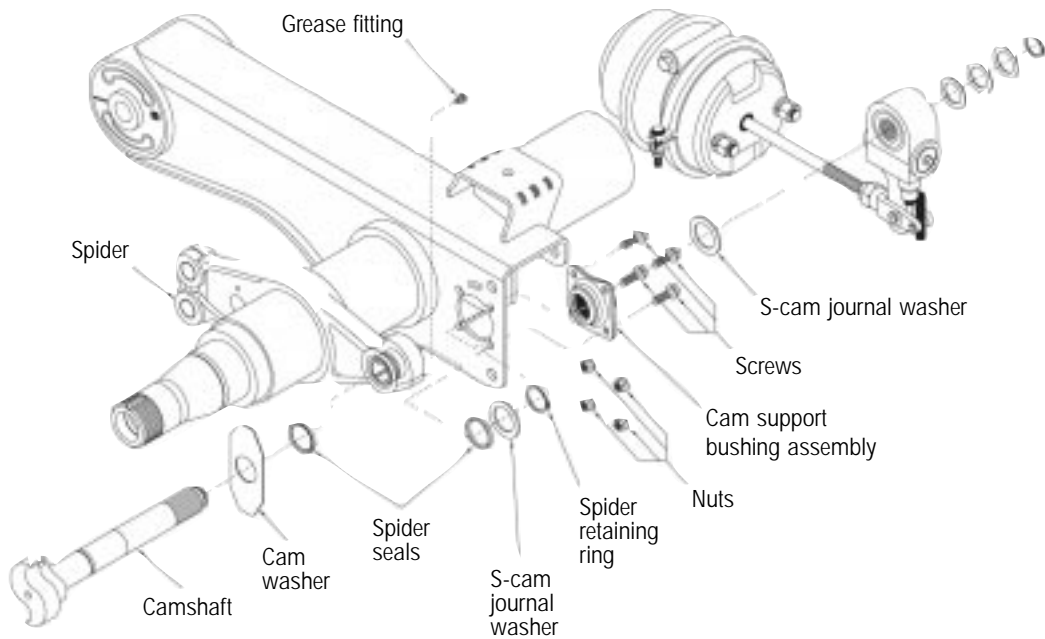
The new INTRAAX® cam tube system, standard equipment beginning in the spring



CAM TUBE SYSTEM WARRANTY COVERAGE

The warranty coverage periods for the cam tube system are described in the following table. Note that these warranty terms exclude camshaft head and spine wear. Note also that the warranty periods in this table apply only when the suspension is used in the recommended application (pursuant to the Hendrickson application guide, publication L707), within the rated capacities, and used as intended.

APPLICATION	SUSPENSION TYPE	PARTS	LABOR
Off-Highway	INTRAAX®	300,000km or 3 years	100,000km or 1 year
Highway	INTRAAX®	300,000km or 3 years	100,000km or 3 years



Previous INTRAAX® S-cam support system



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