Advanced Braking Pty Ltd

Technical Bulletin – TBN-027

Product: LCV1 - SIBS on Toyota Landcruiser

Subject: Replacement of failed Scotseals (ABT P/N 15-1470)

Change Revision

Issue Revision	Issue Date	Comments
00	12-JUL-07	INITIAL RELEASE
01	24-JAN-08	REPLACEMENT EXTENDED TO FEB 8TH 2008. NEW FORMAT.

SYSTEM CERTIFICATION ISO 9001:2000 SGS

Technical Bulletin – TBN-027

Product: **LCV1 (SIBS on Toyota Landcruisers – all models)**
SAF P/N: 15-1470 SCOTSEAL

Subject: **Replacement of failed SCOTSEALS (15-1470) from SIBS on Toyota Landcruisers**

Summary:
SKF – manufacturers of the SCOTSEAL used as the housing seal on SIBS on Toyota Landcrusiers; – have agreed to produce a product that is manufactured from materials resistant to SIBS fluid.

The new product directly replaces the old part and maintains the same ABT P/N: 15-1470.
SKF P/N's:

- Old part: 48002 (manufactured from incompatible materials)
- New part: 48001 (manufactured from compatible materials)

The new product is manufactured solely for Advanced Braking (formerly Safe Effect) and is only available through Advanced Braking.

Replacement:

- Both failed & unused SCOTSEALS (SAF P/N: 15-1470; SKF P/N: 48002) can be returned to Advanced Braking (ABT) for a full credit.
- Unused SCOTSEALS should be returned in their original packaging.
- Replacement is only available for failed SCOTSEALS not alternative seals supplied by Advanced Braking as an interim measure.
- The above offer has been extended to **08-FEBRUARY-2008** (was until 30-Nov-07).

Detail:
Sometime during 2005 SKF, the manufacturers of the SCOTSEAL product used as the main housing seal in the SIBS for Toyota Landcruiser (LCV1); changed the rubber materials used in their product. The old material was all NITRILE, whilst the new product had the lip material manufactured from HNBR and the rubber on the sleeve from EPDM. This change was made without informing Advanced Braking.

Beginning in late 2006, reports of failed SCOTSEALS on SIBS brakes were received by Advanced Braking. Following failure analysis and testing conducted by both SKF and Advanced Braking, the cause of the failed seals was isolated to the EPDM material of the rubber sleeve. Both NITRILE and HNBR (HYDROGENATED NITRILE) are resistant to both SIBS fluid and grease. EPDM will swell in the presence of both SIBS fluid and grease. See image overleaf.

SKF agreed to re-commence manufacture of the SCOTSEAL manufactured from all NITRILE. This part is manufactured specifically for Advanced Braking and only available through Advanced Braking. The inferior seal has been purged from Advanced Braking's stock and all future new kits and spare parts orders will be of the superior all NITRILE seal.

The initial material change to EPDM was made by SKF to encourage swelling of the rubber coated to the inner sleeve. This works effectively on hubs and worn stub shafts on trucks, where these seals are predominantly used. SIBS fluid is slightly more aggressive than truck differential oil and causes the EPDM material to swell and peel away, leading to failure of the seal.

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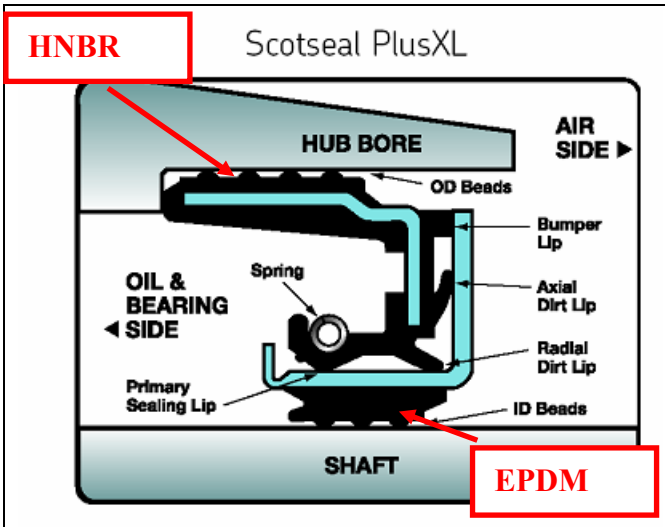
<td> 
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<td>Schematic of SCOTSEAL.
EPDM rubber on the sleeve (ID). HNBR rubber of the lip and OD of the seal.</td>
<td>Example of failed SCOTSEAL. Note the swelling of the rubber on the inner sleeve.</td>
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Issue Date: **24-Jan-2008**
Issue Revision: **1**