

WARRANTY POLICY

SAF AXLES AND SUSPENSIONS



Edition 09/2008



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Labour time allowance chart for warranty repair work

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Labour time allowance for axles with INTEGRAL disc brakes - standard repair packages

Axle types: SK RB 9019 / 9022 INTEGRAL, BI9-19K, BI9-19K, BIL9-19K, SI9-19K, ZI9-19K, ZI11-19K, BI9-19W, BI9-19W, BIL9-19W, SI9-19W, ZI9-19W, BI9-22K01, BA9-22K01, BIL9-22K01, SI9-22K01, SI11-22K01, ZI9-22K01, ZI11-22K01, BI9-22W, BIL9-22W, SI9-22W, SI11-22W, ZI9-22W, ZI11-22W	9
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Labour time allowance for axles with INTEGRAL disc brakes - standard single repairs

Axle types: SK RB 9019 / 9022 INTEGRAL, BI9-19K, BI9-19K, BIL9-19K, SI9-19K, ZI9-19K, ZI11-19K, BI9-19W, BI9-19W, BIL9-19W, SI9-19W, ZI9-19W, BI9-22K01, BA9-22K01, BIL9-22K01, SI9-22K01, SI11-22K01, ZI9-22K01, ZI11-22K01, BI9-22W, BIL9-22W, SI9-22W, SI11-22W, ZI9-22W, ZI11-22W	10
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Labour time allowance for axles with disc brakes - standard repair packages

Axle types: SK RB 9019 / 9022, SK RS 9019 / 9022, SK RZ 9019 / 9022, B9-19K, BL9-19K, B9-19W, BL9-19W, B9-22K01, BL9-22K01, B9-22W, BL9-22W	11
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Labour time allowance for axles with disc brakes - standard single repairs

Axle types: SK RB 9019 / 9022, SK RS 9019 / 9022, SK RZ 9019 / 9022, B9-19K, BL9-19K, B9-19W, BL9-19W, B9-22K01, BL9-22K01, B9-22W, BL9-22W	12
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Labour time allowance for axles with drum brakes - standard repair packages

Axle types: SK RS 9030 / 9037 / 9042, SK RZ 9030 / 9037 / 9042, Z9-3020, ZL9-3020, Z11-3020, ZL11-3020, S9-3718, SL9-3718, Z9-3720, ZL9-3720, Z11-3720, ZL11-3720, S9-4218, SL9-4218, S11-4220, SL11-4220, SZL11-4220, Z9-4218, ZL9-4218, Z11-4220, ZL11-4220	13
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Labour time allowance for axles with drum brakes - standard single repairs

Axle types: SK RS 9030 / 9037 / 9042, SK RZ 9030 / 9037 / 9042, Z9-3020, ZL9-3020, Z11-3020, ZL11-3020, S9-3718, SL9-3718, Z9-3720, ZL9-3720, Z11-3720, ZL11-3720, S9-4218, SL9-4218, S11-4220, SL11-4220, SZL11-4220, Z9-4218, ZL9-4218, Z11-4220, ZL11-4220	14
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To facilitate processing of all warranty claims the following procedure is mandatory and effective 1 September 2008 for all SAF-HOLLAND (Aust) Pty Ltd Service Agents.

NO WARRANTY WORK IS TO BE STARTED BEFORE THE FOLLOWING INFORMATION IS RECEIVED.

In all instances, every claim / potential claim must be reported to the SAF-HOLLAND (Aust) Service Department and photos of the claimed failed components are to be emailed to service@safholland.com.au BEFORE any claim acceptance is made. These photos are to include a photo of the opposite end of the axle(s) as well.

Upon examination of the photos and initial acceptance a claim number will be provided by the Service Department to the customer / Service Agent and the respective SAF-HOLLAND staff member initially contacted will be advised accordingly.

Labour will only be paid in accordance with SAF-HOLLAND published "Labour time allowance chart for warranty repair work", Edition 10/2007.

- Any repair costs outside the allowance chart times are to be fully detailed on the Service Agents invoice to justify the additional costs. These repairs are to be approved by the SAF-HOLLAND Service Department prior to commencement.
- For work associated with repairs under SAF-HOLLAND warranty, only spare parts costs for original SAF-HOLLAND spare parts will be acknowledged and refunded.
- All parts used for the repair are to be listed by the Service Agent with a breakdown of parts supplied at no charge by SAF-HOLLAND and those from the Service Agents own stock.

The following minimum details for any claim are required at the time the claim is registered :-

- Original Equipment Manufacturer
- Customer / vehicle owner name
- Service Agents name
- Initial reason for the claim,
- Quantity of units claimed,
- Item description

The Service Agent is to record the claim number on the Service Report form, the Service Agents invoice, and all parts removed for warranty replacement, and any other documentation associated with the claim.

The Service Agent is required to fully complete the Service Report form in its entirety. This includes all contact and full address details as to the vehicle owner and Service Agent, and relevant original equipment manufacturer data.

Mandatory is the recording of

- the axle serial no's and ident no's, axle type details (refer to axle type plate for SKRZ, SKRB type code).
- the kilometres in service,
- VIN / chassis number,
- full date of first registration / date first in service in dd/mm/yyyy format (refer to registration label for data).

Required is as fully detailed as possible information as to what the actual complaint is. We need to know the specifics of what the problem is, not just “replaced under warranty as instructed”. Also required is the information on the position on vehicle, vehicle type, body type, etc, etc.

In ALL instances photos (clear and in focus) are to be taken of the “failed” part(s), axle serial number ID plate / serial number tag (if not available a photo of the right hand axle spindle end with serial number visible, and in the case of hub / bearing failures photos of the hub, rotor, calliper and brake pads (with manufacturers mark clearly shown).

For hub units / bearing failures photos are also required of the rotor and calliper for the “failed” end and the opposite end., and for “noisy” hub units an SAF-HOLLAND Data Input Sheet Hub Unit is also required to be completed and returned with the Service Report.

Photos are to be emailed to service@safholland.com.au appropriately referenced to the claim number.

It is not necessary for parts to be returned to branch warehouses (when photos have been supplied) but the components shall be retained by the Service Agent for a period of 60 days after replacement in case there is a need for SAF-HOLLAND to obtain for further examination. At all times ALL items are to be clearly marked / tagged with the relevant warranty claim number. The SAF-HOLLAND branch warehouse will process as required.

If any components are disposed of and not available when requested the claim will be rejected.

The completed Service Report and other support documentation, including any repair costs, are to be forwarded by the Service Agent within 48 hours of the repair being completed to:-

Service Department
SAF-HOLLAND (Aust) Pty Ltd
PO Box 63
Melton
VIC 3337

Invoices are not to be sent to SAF-HOLLAND branches and will not be paid by individual branches. All invoices are to be sent to the SAF-HOLLAND Service Department as detailed above.

In the situation where there are goods to be returned from the Service Agent an SAF-HOLLAND Return Authorisation form will be supplied. This form is to accompany the goods and the goods are to be returned on our nominated carrier, to our account.

Claims for any costs not submitted within 14 days from the date of repair as detailed on the Service Report will not be accepted.

Incomplete or missing Service Report forms, photos, or other required / requested documentation will delay processing of claims.

WARRANTY

SAF MODUL SUSPENSION AND J-SERIES AXLE WARRANTY

SAF-HOLLAND (AUST.) PTY. LTD. warrants all SAF MODUL suspensions and J-Series axles manufactured by it, when properly installed, to be free from defects in material and workmanship under normal use and service.

- SAF MODUL suspensions and J-Series axles are covered for a period of one (1) year from the date of installation.
 - The axle beam has five (5) years warranty for structural and manufacturing defects only.
- The warranty is void with respect to any product which has been altered in any way from its manufactured condition, such as intentional modification, accident, corrosion, misuse failure to provide necessary and reasonable maintenance and is exclusive of normal wear.

The sole responsibility of SAF-HOLLAND under this warranty is limited to repairing or replacing at the factory any part or parts which are returned, with transportation charges prepaid, and are found to be defective to the satisfaction of SAF-HOLLAND.

Written authorization from SAF-HOLLAND must be obtained prior to returning any part or parts.

No charges for transportation or for labour performed on SAF-HOLLAND products by unauthorized persons will be allowed under this warranty.

SAF-HOLLAND shall not be liable, in any event, for proximate, incidental, consequential or other damages, including but not limited to damages for loss of production or injury to persons or property arising out of any breach of this warranty.

Hubodometer must be fitted to each trailer to ensure warranty is valid. If not fitted the warranty is null and void.

Records will be compared to inspection and preventative maintenance manual to ensure accuracy.

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE WARRANTY OF MERCHANTABILITY OR A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE EXTENDING BEYOND THAT SET FORTH ABOVE.

SAF-HOLLAND reserves the right, without prior notice, to change specifications and dimensions as designs are altered and/or improved.

Options and features other than those shown may be provided.



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WARRANTY

SAF INTRADRUM WARRANTY

SAF-HOLLAND (AUST.) PTY. LTD. warrants all SAF Intradrum axle suspension assemblies manufactured by it.

- Lifetime warranty is offered on Axle Connection for normal on-road operation.
 - Shock Absorber, Hub Unit and Pivot Bush, when properly installed, to be free from defects in material and workmanship under normal use and service, are covered for a period of up to 1,000,000 km or six (6) years on sealed road application only and 500,000 km or three (3) years for off-road application.
 - Automatic Slack Adjusters have 300,000 km warranty or two (2) years.
 - Other Parts are covered for one (1) year against manufacturing fault only.
- Excluded from the warranty are normal wear and tear parts, damaged due to extreme force, incorrect operation and subsequent damage.

Brake balance between Truck and Trailer must be checked regularly and damage of wheel bearings and brake components will not be warrantable if balance is out side recommendation. Regular inspection and preventative maintenance procedures must be carried out in accordance to SAF maintenance manual. The warranty is void with respect to any product which has been altered in any way from its manufactured condition, such as intentional modification, accident, corrosion, misuse failure to provide necessary and reasonable maintenance and is exclusive of normal wear. The sole responsibility of SAF-HOLLAND under this warranty is limited to repairing or replacing at the factory any part or parts which are returned, with transportation charges prepaid, and are found to be defective to the satisfaction of SAF-HOLLAND. Written authorization from SAF-HOLLAND must be obtained prior to returning any part or parts.

No charges for transportation or for labour performed on SAF-HOLLAND products by unauthorized persons will be allowed under this warranty.

SAF-HOLLAND shall not be liable, in any event, for proximate, incidental, consequential or other damages, including but not limited to damages for loss of production or injury to persons or property arising out of any breach of this warranty.

Hubodometer must be fitted to each trailer to ensure warranty is valid. If not fitted the warranty is null and void. Records will be compared to inspection and preventative maintenance manual to ensure accuracy.

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE WARRANTY OF MERCHANTABILITY OR A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE EXTENDING BEYOND THAT SET FORTH ABOVE.

SAF-HOLLAND reserves the right, without prior notice, to change specifications and dimensions as designs are altered and/or improved. Options and features other than those shown may be provided.



SAF INTRADISC WARRANTY

SAF-HOLLAND (AUST.) PTY. LTD. warrants all SAF Intradisc axle suspension assemblies manufactured by it.

- Lifetime warranty is offered on Axle Connection for normal on-road operation.
- Shock Absorber, Wheel Bearings and Pivot Bush, when properly installed, to be free from defects in material and workmanship under normal use and service, is covered for a period of up to 1,000,000 km or six (6) years on sealed road application only and 500,000 km or three (3) years for off-road application.
- Brake Caliper has a two (2) year warranty against manufacturing fault.
- The Disc Rotor has two (2) year's unlimited mileage against manufacturing failure.
- Other Parts are covered for one (1) year against manufacturing fault only.

Excluded from the warranty are normal wear and tear parts, damaged due to extreme force, incorrect operation and subsequent damage. Brake balance between Truck and Trailer must be checked regularly and damage of wheel bearings and brake components will not be warrantable if balance is out side recommendation. Damage to brake components including premature Pad wear, Caliper or Rotor damage through brake code specification being used which differ from our specified data will not be covered under the terms of the warranty. Regular inspection and preventative maintenance procedures must be carried out in accordance to SAF maintenance manual. The warranty is void with respect to any product which has been altered in any way from its manufactured condition, such as intentional modification, accident, corrosion, misuse failure to provide necessary and reasonable maintenance and is exclusive of normal wear.

The sole responsibility of SAF-HOLLAND under this warranty is limited to repairing or replacing at the factory any part or parts which are returned, with transportation charges prepaid, and are found to be defective to the satisfaction of SAF-HOLLAND. Written authorization from SAF-HOLLAND must be obtained prior to returning any part or parts. No charges for transportation or for labour performed on SAF-HOLLAND products by unauthorized persons will be allowed under this warranty.

SAF-HOLLAND shall not be liable, in any event, for proximate, incidental, consequential or other damages, including but not limited to damages for loss of production or injury to persons or property arising out of any breach of this warranty. Hubodometer must be fitted to each trailer to ensure warranty is valid. If not fitted the warranty is null and void. Records will be compared to inspection and preventative maintenance manual to ensure accuracy.

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE WARRANTY OF MERCHANTABILITY OR A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE EXTENDING BEYOND THAT SET FORTH ABOVE.

SAF-HOLLAND reserves the right, without prior notice, to change specifications and dimensions as designs are altered and/or improved.

Options and features other than those shown may be provided.



SAF MODUL SUSPENSION WITH 146MM AXLE DIAMETER WARRANTY

SAF-HOLLAND (AUST.) PTY. LTD. warrants all SAF MODUL air suspensions, axles (both drum and disc) manufactured by it, when properly installed, to be free from defects in material and workmanship under normal use and service.

- The axle beam has five (5) years for structural and manufacturing defects only.
- The axle hub and bearings are covered for 1,000,000 km or six (6) years, on sealed road application only and 500,000 km or three (3) years for off-road application, whichever comes first.
- Brake caliper and disc rotor both have two (2) years warranty for structural and manufacturing defects.
- All other parts are warranted for one (1) year.

Excluded from the warranty shall be all damage caused intentionally or by gross negligence or by improper or inappropriate handling or the failure to observe the operating, service and installation instructions. Normal wear and tear shall also be excluded from said warranty such as brake linings, drums, brake rollers and springs, disc pads and rotors. Our warranty obligations shall be voided if the goods supplied by us are repaired or modified, parts are used that are not original SAF parts or if SAF identification plates are removed.

Brake balance between truck and trailer must be checked regularly and damage of wheel bearings and brake components will not be warrantable if balance is outside recommendation. The warranty is void with respect to any product which has been altered in any way from its manufactured condition, such as intentional modification, accident, corrosion, misuse failure to provide necessary and reasonable maintenance and is exclusive of normal wear. The sole responsibility of SAF-HOLLAND under this warranty is limited to repairing or replacing at the factory any part or parts which are returned, with transportation charges prepaid, and are found to be defective to the satisfaction of SAF-HOLLAND. Written authorization from SAF-HOLLAND must be obtained prior to returning any part or parts. No charges for transportation or for labour performed on SAF-HOLLAND products by unauthorized persons will be allowed under this warranty.

SAF-HOLLAND shall not be liable, in any event, for proximate, incidental, consequential or other damages, including but not limited to damages for loss of production or injury to persons or property arising out of any breach of this warranty.

Hubodometer must be fitted to each trailer to ensure warranty is valid. If not fitted the warranty is null and void. Records will be compared to inspection and preventative maintenance manual to ensure accuracy.

THERE ARE NO WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING THE WARRANTY OF MERCHANTABILITY OR A WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE EXTENDING BEYOND THAT SET FORTH ABOVE.

SAF-HOLLAND reserves the right, without prior notice, to change specifications and dimensions as designs are altered and/or improved. Options and features other than those shown may be provided.

Service Report			Datum Date	00/00/00	Meldungsnr. Report No.	SH0123	Kundennummer Customer No.	14202398			
<p>Bitte beachten Sie: Service Report vollständig ausfüllen und unmittelbar nach Schadenseintritt an SAF-HOLLAND senden. Nach Eingang erhalten Sie von SAF-HOLLAND eine Meldungsnummer zu dieser Reklamation. Diese Meldungsnummer gilt für die gesamte Bearbeitung wie z.B. Anfragen, Schriftverkehr, Anforderung von Schachteilen, Dokumente usw. Die Kostengrenze für die erforderliche Durchführungsfreigabe beträgt 500,-EUR (max. 3 Std. Arbeitszeit zzgl. Material und Administration).</p> <p>Please note: Complete the Service Report and send it to SAF-HOLLAND immediately after the occurrence of the damage. On receipt of the report, SAF-HOLLAND will send you a claim number for this report. This claim number applies to the whole handling of the work, such as e.g. enquiries, correspondence, requests for the damaged parts, documents, etc. The cost limit for the necessary repair approval is EUR 500.00 (max. 3 hours labour plus material and administration).</p>											
Auftraggeber mit Ansprechpartner Address and Contact Person			Fahrzeughalter (Name, Straße, PLZ, Ort, Land) Vehicle owner (Name, Address, Postcode, Country)			Fahrzeughersteller Vehicle manufacturer					
Fred Jones Freds Repair Shop Long way road Far away			Joe Bloggs Transport 100 Somewhere st Somewhere Australia 1234			Trailer Builders Pty Ltd 365 Trailer rd Near Here Australia 1234					
Amtl. Kennzeichen Registration No.	0000abc		Ident. Nr. + Serial Nr. 1. Achse Ident. No. and Serial No. 1st axle		12345678						
Fahrgestell Nr. Chassis No.	0aaaaaaa0aaa00000		Ident. Nr. + Serial Nr. 2. Achse Ident. No. and Serial No. 2nd axle								
Datum der Erstzulassung bzw. Einbaudatum Ersatzteil Date of registration or installation date of spare parts	00/00/00		Ident. Nr. + Serial Nr. 3. Achse Ident. No. and Serial No. 3rd axle								
Laufleistung in km (aus EBS/ABS auslesen) Km in service (read out from EBS/ABS)	000000		Ident. Nr. + Serial Nr. 4. Achse Ident. No. and Serial No. 4th axle								
Achsstyp, siehe Typschild Achse Axle type, see axle type plate	SKRZ9019W		Ident. Nr. + Serial Nr. 5. Achse Ident. No. and Serial No. 5th axle								
INTEGRAL Brems Scheibennummer(n) INTEGRAL brake disc number(s)			Reparatur-Datum Date of repair		00/00/00						
Reparatur- Werkstatt Garage	Freds Repair Shop										
Zugwagen / Zugmaschine Tractor	Hersteller Manufacturer		Typ Type		Erstzulassung Registration date		EBS Ja / Yes <input type="checkbox"/> Nein / No <input type="checkbox"/>				
Lastzugbremsabstimmung beladen bzw. Anpassungsuntersuchung (EBS) durchgeführt Loaded truck and trailer compatibility or harmonisation test (EBS) completed		Ja / Yes <input type="checkbox"/> Nein / No <input type="checkbox"/>		Durchführende Werkstatt Carried out by garage		Gem. Protokoll vom According to report dated					
Einbaulage / Position on vehicle			Fahrzeugart / Vehicle type				Aufbauart / Body type				
	Links Left	Rechts Right	Achslift Axle lift		<input type="checkbox"/>		<input type="checkbox"/>	Kipper Tipper	<input type="checkbox"/>	Spezialfahrzeug Special	<input type="checkbox"/>
1. Achse 1st axle	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	Koffer Box	<input checked="" type="checkbox"/>	Pritsche/Plattform Platform	<input type="checkbox"/>
2. Achse 2nd axle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input checked="" type="checkbox"/>		<input type="checkbox"/>	Tank Tank	<input type="checkbox"/>	Betonmischer Concrete mixer	<input type="checkbox"/>
3. Achse 3rd axle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>		<input type="checkbox"/>	Silo Silo	<input type="checkbox"/>	Wechselpritsche Demountable	<input type="checkbox"/>
4. Achse 4th axle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sonstige Other	<input type="checkbox"/>		<input type="checkbox"/>	Tieflader Low loader	<input type="checkbox"/>	Sonstige Other	<input type="checkbox"/>
5. Achse 5th axle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Zul. Achslasten Permitted axle loads			Reifengröße Tyre size				
Fahrzeug-Stillstand Trailer standstill	Ja / Yes <input type="checkbox"/>	Nein / No <input type="checkbox"/>	EBS: Ja / Yes <input checked="" type="checkbox"/> Nein / No <input type="checkbox"/>		E / S <input checked="" type="checkbox"/>		ZW / DU <input checked="" type="checkbox"/>				
Beanstandung Complaint	Stempel/Unterschrift Antragsteller Stamp / signature of application			Reparatur freigegeben Repair approved		Ja / Yes <input type="checkbox"/>	Nein / No <input type="checkbox"/>				
Wheel bearing failure right hand first axle.											

Introduction

Vehicle preparation time, once-only 20 minutes per vehicle including

- Vehicle brought into work place
- Vehicle secured in accordance with standard safety working practices
- Axle jacked up
- Inspection of the components for re-use, clean or replace as necessary
- Tighten bolts and nuts in accordance with the SAF recommended torque setting
- Prepare any defective parts available for inspection by SAF

Procedures, which are not included in this labour time allowance catalogue, must be justified and prior authorisation given by SAF Service department before any repair work is carried out.

Service Report

In the event of damage, always first complete the SAF Service Report: available over the Internet: www.safholland.com → After Sales → Service → Service Forms → Service Report

SAF Service Report must be completed fully and accurately (in particular the figures from the axle type plate, i.e. the serial number is absolutely necessary):

Type Plate up to mid-2004

SAF OTTO SAUER ACHSENFABRIK KEILBERG D-63854 BESSENBACH / G E R M A N Y	
TYP	SKRB 9019 WI
Ident.-No. / Prod.-No.	147 83 35 7 49 000 00 0 000
zul. Last kg perm. disp. charge adm.	STAT. 9000 TECH. 11000 v max. km/h max. speed vitesse maxi.
TDB-No.	0678 Grundtyp SBW 1937-11S

Type plate from mid-2004

OTTO SAUER ACHSENFABRIK GMBH D-63856 BESSENBACH · GERMANY SAF			
Type	SKRB9022WI	Serial No.	229 04 3 229
Basis Type	SBW2243-11S	Ident No.	247 96 38 7 48 1
Test Report	36110702	Perm. axle cap. stat.	9000 kg
		U max.	105 km/h
AN 1280397		SN 229043229	

Identification in case of type plate absence: serial no. on right of axle spindle end in the driving direction



All labour time allowances are continuously updated according to technical demands.

The updates are available under:

www.safholland.com → After Sales → Service → Service Literature → Labour time allowance chart

We recommend SAF Original spare parts for all repairs.

Warranty Claim Administration time (handling costs)

No.		Minutes
S10001	Administration time allowance for handling the warranty claim, processing and the claim acceptance for SAF Service-Partner / Competence Partner and Service 24	45
S10002	Administration time allowance for handling the warranty claim, processing and the claim acceptance without inspection of claimed warranty parts for SAF Subsidiary / National agent	15
S10003	Administration time allowance for handling the warranty claim, processing and the claim acceptance with inspection of, and responsibility for, claimed warranty parts for SAF Subsidiary / National agent	30
S10010	Additional (must be separately quoted in the invoice)	
S10011	Labour time for road side assistance	According expenses
S10012	Travelling kilometres for road side assistance	According expenses

Labour time allowance for axles with *INTEGRAL* disc brakes

Standard repair packages

Axle types: SK RB 9019 / 9022 *INTEGRAL*, BI9-19K, BI9-19W, BIL9-19K, SI9-19K, ZI9-19K, ZI11-19K, BI9-19W, BI9-19W, BIL9-19W, SI9-19W, ZI9-19W, BI9-22K01, BA9-22K01, BIL9-22K01, SI9-22K01, SI11-22K01, ZI9-22K01, ZI11-22K01, BI9-22W, BIL9-22W, SI9-22W, SI11-22W, ZI9-22W, ZI11-22W

No.		Minutes
S11101	Vehicle preparation time, once-only per vehicle including <ul style="list-style-type: none"> ▪ Vehicle brought into work place ▪ Vehicle secured in accordance with standard safety working practices ▪ Axle jacked up 	20
S20201	1 side Pads - remove, replace and refit <ul style="list-style-type: none"> ▪ Release parking brake ▪ Remove and refit wheel ▪ Release brake calliper on adjuster screw ▪ Remove pads ▪ Check brake calliper for free sliding movement ▪ Check rubber boots ▪ Refit new pads ▪ Adjust running clearance of pads 	20
S20202	1 Brake calliper – remove, replace and refit <ul style="list-style-type: none"> ▪ Release parking brake ▪ Remove and refit wheel ▪ Release brake calliper on adjuster screw ▪ Remove and refit pads ▪ Remove and refit brake chamber ▪ Remove and refit new brake calliper ▪ Adjust running clearance of pads 	45
S20203	1 <i>INTEGRAL</i> Hub Unit or 1 brake disc and 1 brake calliper – remove, replace and refit <ul style="list-style-type: none"> ▪ Release parking brake ▪ Remove and refit wheel ▪ Release brake calliper on adjuster screw ▪ Remove and refit pads ▪ Remove and refit brake chamber ▪ Remove and refit brake calliper ▪ Remove and refit hub cap ▪ Remove and refit axle nut ▪ Remove and refit <i>INTEGRAL</i> hub unit including brake disc ▪ Disassemble and assemble <i>INTEGRAL</i> hub unit and brake disc ▪ Clean axle stub and apply fresh fitting paste ▪ Adjust running clearance of pads ▪ Adjust ABS-Sensor 	70
S11102	Test the braking performance on the rolling-road test stand	15

Labour time allowance for axles with *INTEGRAL* disc brakes

Standard single repairs

Axle types: SK RB 9019 / 9022 *INTEGRAL*, BI9-19K, BI9-19K, BIL9-19K, SI9-19K, ZI9-19K, ZI11-19K, BI9-19W, BI9-19W, BIL9-19W, SI9-19W, ZI9-19W, BI9-22K01, BA9-22K01, BIL9-22K01, SI9-22K01, SI11-22K01, ZI9-22K01, ZI11-22K01, BI9-22W, BIL9-22W, SI9-22W, SI11-22W, ZI9-22W, ZI11-22W

No.		Minutes
S11101	Vehicle preparation time, once-only per vehicle including <ul style="list-style-type: none"> ▪ Vehicle brought into work place ▪ Vehicle secured in accordance with standard safety working practices ▪ Axle jacked up 	20
S20301	1 Wheel remove and refit	10
S20303	1 Parking brake or standard brake chamber remove, replace and refit	10
S20304	10 Wheel bolts remove, replace and refit.	20
S20305	1 ABS Sensor remove, replace, refit and adjust	15
S20306	1 Brake calliper overhaul. Brake calliper is removed from axle. <ul style="list-style-type: none"> ▪ Remove, replace and refit thrust pieces, guide pins, bushes, seals and rubber boots 	80
S20307	1 Complete axle remove and refit <ul style="list-style-type: none"> ▪ Fit brake chambers, shock absorbers, air bags and wheels ▪ Adjust axle alignment ▪ Adjust running clearance of pads ▪ Fit and adjust ABS-Sensor 	210
S20308	1 Axle beam remove and refit <ul style="list-style-type: none"> ▪ Fit <i>INTEGRAL</i> hub unit with brake disc ▪ Fit brake callipers, brake chambers, shock absorbers, air bags and wheels ▪ Set axle alignment ▪ Adjust running clearance of pads ▪ Fit and adjust ABS-Sensor 	280
S20309	1 Air bag remove, replace and refit	40
S20310	1 Shock absorber remove, replace and refit	15
S20311	1 Lift air bag remove, replace and refit	20
S20312	1 Lift arm assembly including lift air bag remove, replace and refit	60
S20313	1 HD-Bush or 3-D-bearing bush remove, replace and refit	60
S20314	1 Trailing arm (MODUL suspension) remove, replace and refit	80
S20315	1 Axle alignment check	60
S20316	Each further axle alignment check	30
S20317	1 Self-steering knuckle remove, replace and refit. The axle and brake are dismantled.	120
S20318	1 Stabilising damper for self-steering axle remove and refit	10
S20319	1 Locking cylinder for self-steering axle remove and refit	10
S20320	1 EBS / ABS memory print out diagnostics report	10
S20321	1 Brake performance test report for the laden truck/trailer brake compatibility	30
S11102	Test the braking performance on the rolling-road test stand	15

Labour time allowance for axles with disc brakes

Standard repair packages

Axle types: SK RB 9019 / 9022, SK RS 9019 / 9022, SK RZ 9019 / 9022, B9-19K, BL9-19K, B9-19W, BL9-19W, B9-22K01, BL9-22K01, B9-22W, BL9-22W

No.		Minutes
S11101	Vehicle preparation time, once-only per vehicle including <ul style="list-style-type: none"> ▪ Vehicle brought into work place ▪ Vehicle secured in accordance with standard safety working practices ▪ Axle jacked up 	20
S30201	1 side Pads - remove, replace and refit <ul style="list-style-type: none"> ▪ Release parking brake ▪ Remove and refit wheel ▪ Release brake calliper on adjuster screw ▪ Remove pads ▪ Check brake calliper for free sliding movement ▪ Check rubber boots ▪ Refit new pads ▪ Adjust running clearance of pads 	20
S30202	1 Brake calliper – remove, replace and refit <ul style="list-style-type: none"> ▪ Release parking brake ▪ Remove and refit wheel ▪ Release brake calliper on adjuster screw ▪ Remove and refit pads ▪ Remove and refit brake chamber ▪ Remove and refit new brake calliper ▪ Adjust running clearance of pads 	45
S30204	1 Brake calliper and 1 brake disc – remove, replace and refit <ul style="list-style-type: none"> ▪ Release parking brake ▪ Remove and refit wheel ▪ Release brake calliper on adjuster screw ▪ Remove and refit pads ▪ Remove and refit brake chamber ▪ Remove and refit brake calliper ▪ Remove, replace and refit wheel flange and brake disc ▪ Clean axle stub and apply fresh fitting paste ▪ Adjust running clearance of pads 	60
S30205	1 Hub unit, 1 brake calliper and 1 brake disc - remove, replace and refit <ul style="list-style-type: none"> ▪ Release parking brake ▪ Remove and refit wheel ▪ Release brake calliper on adjuster screw ▪ Remove and refit pads ▪ Remove and refit brake chamber ▪ Remove, replace and refit brake calliper ▪ Remove and refit wheel flange and brake disc ▪ Remove and refit axle nut ▪ Remove, replace and refit hub unit ▪ Clean axle stub and apply fresh fitting paste ▪ Adjust running clearance of pads ▪ Adjust ABS-Sensor 	75
S11102	Test the braking performance on the rolling-road test stand	15

Labour time allowance for axles with disc brakes

Standard single repairs

Axle types: SK RB 9019 / 9022, SK RS 9019 / 9022, SK RZ 9019 / 9022, B9-19K, BL9-19K, B9-19W, BL9-19W, B9-22K01, BL9-22K01, B9-22W, BL9-22W

No.		Minutes
S11101	Vehicle preparation time, once-only per vehicle including <ul style="list-style-type: none"> ▪ Vehicle brought into work place ▪ Vehicle secured in accordance with standard safety working practices ▪ Axle jacked up 	20
S30301	1 Wheel remove and refit	10
S30302	1 Twin wheels remove and refit	15
S30303	1 Parking brake or standard brake chamber remove, replace and refit	10
S30304	10 Wheel bolts remove, replace and refit. The hub unit is dismantled.	20
S30305	1 ABS Sensor remove, replace, refit and adjust	15
S30306	1 Brake calliper overhaul. Brake calliper is removed from axle. <ul style="list-style-type: none"> ▪ Remove, replace and refit thrust pieces, guide pins, bushes, seals and rubber boots 	80
S30307	1 Complete axle remove and refit <ul style="list-style-type: none"> ▪ Fit brake chambers, shock absorbers, air bags and wheels ▪ Adjust axle alignment ▪ Adjust running clearance of pads ▪ Fit and adjust ABS-Sensor 	210
S30308	1 Axle beam remove and refit <ul style="list-style-type: none"> ▪ Fit hub unit, brake discs, brake callipers, brake chambers, shock absorbers, air bags and wheels ▪ Set axle alignment ▪ Adjust running clearance of pads ▪ Fit and adjust ABS-Sensor 	280
S30309	1 Air bag remove, replace and refit	40
S30310	1 Shock absorber remove, replace and refit	15
S30311	1 Lift air bag remove, replace and refit	20
S30312	1 Lift arm assembly including lift air bag remove, replace and refit	60
S30313	1 HD-Bush or 3-D-bearing bush remove, replace and refit	60
S30314	1 Trailing arm (MODUL suspension) remove, replace and refit	80
S30315	1 Axle alignment check	60
S30316	Each further axle alignment check	30
S30317	1 Self-steering knuckle remove, replace and refit. The axle and brake are dismantled.	120
S30318	1 Stabilising damper for self-steering axle remove and refit	10
S30319	1 Locking cylinder for self-steering axle remove and refit	10
S30320	1 EBS / ABS memory print out diagnostics report	10
S30321	1 Brake performance test report for the laden truck/trailer brake compatibility	30
S11102	Test the braking performance on the rolling-road test stand	15

Labour time allowance for axles with drum brakes

Standard repair packages

Axle types: SK RS 9030 / 9037 / 9042, SK RZ 9030 / 9037 / 9042, Z9-3020, ZL9-3020, Z11-3020, ZL11-3020, S9-3718, SL9-3718, Z9-3720, ZL9-3720, Z11-3720, ZL11-3720, S9-4218, SL9-4218, S11-4220, SL11-4220, SZL11-4220, Z9-4218, ZL9-4218, Z11-4220, ZL11-4220

No.		Minutes
S11101	Vehicle preparation time, once-only per vehicle including <ul style="list-style-type: none"> ▪ Vehicle brought into work place ▪ Vehicle secured in accordance with standard safety working practices ▪ Axle jacked up 	20
S40206	1 Hub and 1 brake drum remove and refit, with mounted wheel, inspect the brake on one side of the wheel <ul style="list-style-type: none"> ▪ Release parking brake ▪ Release brake shoes by resetting the slack adjuster ▪ Remove and refit hub cap ▪ Remove and refit axle nut ▪ Remove and refit hub with brake drum and wheel ▪ Clean axle stub and apply fresh fitting paste ▪ Adjust the hub bearing running clearance as necessary ▪ Adjust running clearance of brake linings 	10
S40207	1 Hub, 1 brake drum, brake shoes and brake linings - remove, replace and refit <ul style="list-style-type: none"> ▪ Wheel / twin wheels remove and refit ▪ Release parking brake ▪ Release brake shoes by resetting the slack adjuster ▪ Remove and refit hub cap ▪ Remove and refit axle nut ▪ Remove and refit hub and brake drum ▪ Remove and refit brake shoes ▪ Remove, replace and refit brake linings ▪ Clean brake shoes / lining mating surfaces and cover with corrosion inhibitor ▪ Check and replace camshaft bearings as necessary (for additional labour time allowance see below) ▪ Apply copper paste to the brake shoe anchors and cam roller journals ▪ Remove, replace and refit brake drum from hub or machine the brake drum radius (for additional labour time allowance see below) ▪ Replace shoe return spring and shoe retaining clamp ▪ Machine new brake lining surface to brake drum diameter ▪ Check, re-grease and replace hub bearing as necessary (for additional labour time allowance see below) ▪ Clean and apply fitting paste to axle stub ▪ Adjust the hub bearing clearance as necessary ▪ Adjust running clearance of brake linings ▪ Adjust ABS-Sensor 	85
S11102	Test the braking performance on the rolling-road test stand	15

Labour time allowance for axles with drum brakes

Standard single repairs

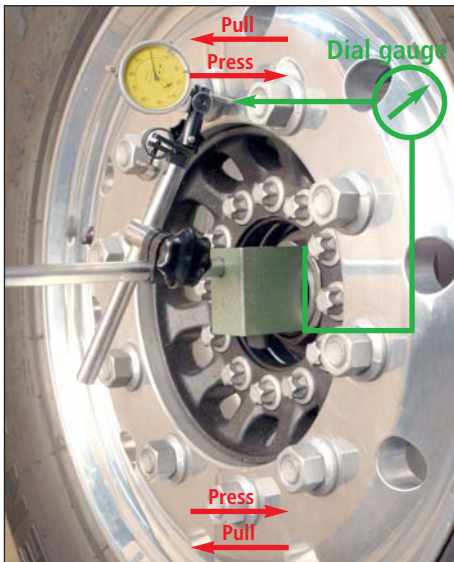
Axle types: SK RS 9030 / 9037 / 9042, SK RZ 9030 / 9037 / 9042, Z9-3020, ZL9-3020, Z11-3020, ZL11-3020, S9-3718, SL9-3718, Z9-3720, ZL9-3720, Z11-3720, ZL11-3720, S9-4218, SL9-4218, S11-4220, SL11-4220, SZL11-4220, Z9-4218, ZL9-4218, Z11-4220, ZL11-4220

No.		Minutes
S11101	Vehicle preparation time, once-only per vehicle including <ul style="list-style-type: none"> ▪ Vehicle brought into work place ▪ Vehicle secured in accordance with standard safety working practices ▪ Axle jacked up 	20
S40301	1 Wheel remove and refit	10
S40302	1 Twin wheels remove and refit	15
S40322	1 Camshaft inclusive bushing remove, replace and refit <ul style="list-style-type: none"> ▪ The brake drums and shoes are dismantled ▪ Remove and refit slack adjuster 	15
S40323	1 Hub or 1 set hub bearings remove, replace and refit. The hub is dismantled.	20
S40324	1 Brake drum radius machined	10
S40325	1 Parking brake / standard brake chamber remove, replace and refit	15
S40326	1 Slack adjuster remove, replace and refit	15
S40304	10 Wheel bolts remove, replace and refit. The hub is dismantled.	20
S40305	1 ABS Sensor remove, replace, refit and adjust	15
S40307	1 Complete axle remove and refit <ul style="list-style-type: none"> ▪ Fit brake chambers, shock absorbers, air bags and wheels ▪ Adjust axle alignment ▪ Adjust running clearance of pads ▪ Fit and adjust ABS-Sensor 	210
S40309	1 Air bag remove, replace and refit	40
S40310	1 Shock absorber remove, replace and refit	15
S40311	1 Lift air bag remove, replace and refit	20
S40312	1 Lift arm assembly inclusive lift air bag remove, replace and refit	60
S40313	1 HD-Bush or 3-D-bearing bush remove, replace and refit	60
S40314	1 Trailing arm (MODUL suspension) remove, replace and refit	80
S40315	1 Axle alignment check	60
S40316	Each further axle alignment check	30
S40317	1 Self-steering knuckle remove, replace and refit. The axle and brake are dismantled.	120
S40318	1 Stabilising damper for self-steering axle remove and refit	10
S40319	1 Locking cylinder for self-steering axle remove and refit	10
S40320	1 EBS / ABS memory print out diagnostics report	10
S40321	1 Brake performance test report for the laden truck/trailer brake compatibility	30
S11102	Test the braking performance on the rolling-road test stand	15

We recommend that you carry out the wheel rock test and wheel bearing noise test and check the function of the seal system (grease leakage) in the event of signs of a malfunction.

At brake disc changes and in the event of damage, e.g. brake overheating, inspect the bearing for grease leakage.

For further instructions, refer to the error flow charts under www.safholland.com



Beispiel Darstellung

Wheel rock test

1. Raise the wheel. **Do not remove the wheel!**
2. Carefully remove the wheel cap.
3. Check the prescribed tightening torque of the axle nut (900 Nm).
4. Position the magnetic foot of the dial gauge as shown on the left. Surface must be cleaned before.
5. By alternately pulling and pressing (first pull at the top and press at the bottom, then pull at the bottom and press at the top), rock the wheel and read off the travel on the dial gauge.
Rotate the wheel several times before each measurement!

Note!

If a wheel rock of more than 0.25 mm (250 µm) is measured, the hub unit has to be replaced.

„OK“



Example illustration

Grease leak test

Increased grease leakage

1. **Indicator:**
If the wheel flange is covered with grease up to half the height when “dry”.
2. Carefully remove the wheel cap.
3. If the complete inside of the wheel flange, i.e. inside of cover, axle nut, axle tube and seal are covered with grease, an increased grease leakage has occurred.

Note!

There may be a small amount of grease on the lower edge of the seal. This is normal and does not indicate grease leakage.

Seal not completely covered.

Normal operating condition (= after a prolonged period of operation).
Hub unit is OK.

„Not OK“



Example illustration

Seal completely covered all over with tar-like grease.

Recommended measure:
Replace the hub unit



Wheel bearing noise test

1. Raise the wheel. **Do not remove the wheel!**
2. Carefully remove the wheel cap.
3. Check the prescribed tightening torque of the axle nut (900 Nm).
4. Turn the wheel in both directions (fast and slow).
5. If the bearing feels rough **and / or** a "grinding" noise is heard, the hub unit has to be replaced.

Note!

Noises can also be caused by the brakes. Before removing the hub unit, remove the brake pads and repeat the bearing noise test.

Note!

Measure the wheel rock.

Wheel rock up to 0.25 mm is admissible.

Annealing colours on the flange

Annealing colour	Annealing temperature °C
Pale yellow	200
Straw yellow	220
Golden yellow	230
Yellowish brown	240
Terra-cotta	250
Red	260
Purple	270
Violet	280
Dark blue	290
Cornflower blue	300
Pale blue	320
Bluish grey	340
Grey	360

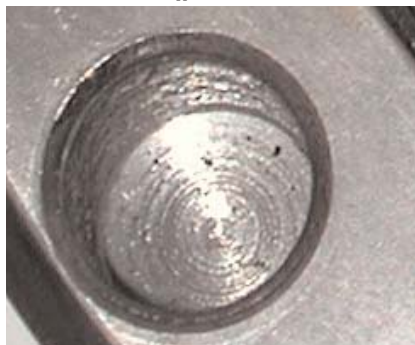
The discolouration is to be seen at the contact points to the brake disc and at the chamfer to the centering diameter or at the bottom of the blind holes (see figures). This discolouration is blue, red or occasionally tending to yellow.

Discolouration in this area can be caused by incorrect function/operation of the brakes. The brake system must therefore be checked for tractor/trailer brake synchronisation and for adaption.

It must be assumed that particularly the grease or the bearing race and the seal have been subjected to thermal damage.

If large amounts of grease escape at the same time from the outer seal (under the cap), the hub unit must be replaced.

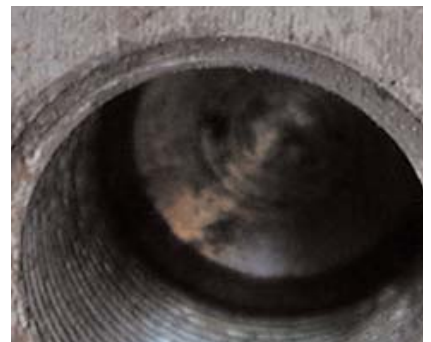
„OK“



„Not OK“



„Not OK“



Recommended measure: Replace the hub unit.

**Datenerfassung „Hub Unit“
Data Input Sheet “Hub Unit”**



SAF Meldungsnr. SAF Report no.	
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Bitte beachten! / Please note!

- Die folgenden Daten sind zur Bearbeitung der Reklamation notwendig.
The following data are required for processing of the complaint.
- SAF benötigt die Messwerte unbedingt vor Beginn der Reparaturarbeiten.
The measured values must be supplied to SAF before the start of the repair.

Fahrzeugeigentümer / Vehicle Owner

Firma Company			
Straße Street			
PLZ / Ort Post code / Town		Land Country	
Nachname Surname		Vorname First name	
Telefon Telephone		Fax Fax	
E-mail E-mail		Internet Internet	

Kippspiel Prüfung / Wheel Rock Test

	Serial-Nummer / Serial number	Links / Left	Rechts / Right
1. Achse 1 st axle		mm	mm
2. Achse 2 nd axle		mm	mm
3. Achse 3 rd axle		mm	mm
4. Achse 4 th axle		mm	mm
5. Achse 5 th axle		mm	mm

**Fettaustritt
(nach SAF Vorgabe)
Grease Escape
(to SAF Specification)**

	links / Left		Rechts / Right	
	Ja / Yes	Nein / No	Ja / Yes	Nein / No
1. Achse 1 st axle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Achse 2 nd axle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Achse 3 rd axle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Achse 4 th axle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Achse 5 th axle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Radlagergeräusch Prüfung
(raues oder mahlendes Geräusch)
Wheel Bearing Noise Test
(rough or grinding noise)**

	Links / Left		Rechts / Right	
	Ja / Yes	Nein / No	Ja / Yes	Nein / No
1. Achse 1 st axle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Achse 2 nd axle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Achse 3 rd axle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Achse 4 th axle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Achse 5 th axle	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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