RWTÜV

Ein Unternehmen der
TÜV Mitte Gruppe

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Test Report

No. TDB 0622 dated 21.11.2000

for application of Annex VII Directive 71/320/EEC

1 IDENTIFICATION

1.1 Axle

Manufacturer:		OTTO SAUER Achsenfabrik Keilberg D-63854 Bessenbach
Make:		SAF
Type:		SNK 3015-9S
Model:		-
Technically permissible axle load P_e [1]:		9000 daN

1.2 Brake

Manufacturer:		See 1.1
Make:		SAF
Type:		SNK 300x150
Model:		-
Technically permissible camshaft input torque $C_{max,e}$:		2800 Nm (for calculation: 2250 Nm at 6,5 bar)
Brake drum	- Internal diameter:	300 mm
	- Mass:	36,5 kg
	- Material:	Cast iron (grey cast iron)
Brake lining	- Manufacturer:	BREMSKERL-Reibbelagwerke Emmerling GmbH & Co. KG D-31629 Estorf
	- Type:	BREMSKERL 6386
	- Identification:	Type indication at front
	- Width:	150 mm
	- Thickness:	8,5...16 mm (sickle-shaped)
	- Surface area:	760 cm²
	- Method of attachment:	Rivited
Brake geometry:		See appendix 1 dated 07.06.2000 See appendix 2 dated 07.06.2000

1.3 Wheel (Single)

Rim diameter D_e:	381 mm (15")
Dimensions:	See appendix 1 dated 07.06.2000

[1] See sheet 3/3

1.4 Tyres

Dynamic rolling radius R_e
at reference load P_e: 434 mm

1.5 Actuation

Brake actuator	-Manufacturer:	GRAU
	- Type:	Diaphragm brake actuator
	- Model:	30 (120 361 101)
Lever length l_e:		152 mm

2 RECORD OF TEST RESULTS [2)]

(corrected to take account of rolling resistance $\hat{=}$ 0,01P_e)

2.1 In the case of vehicles of categories O_2 and O_3

Test type:			**0**	**I**	
Annex VII, Appendix 1, point:			3.5.1.2	3.5.2.2/3	3.5.2.4
Test speed		km/h	40	40	40
Brake actuator pressure p_e		bar	4,5	-	4,5
Braking time		min	-	2,55	-
Brake force developed T_e		daN	5448	630	5957
Brake efficiency T_e/P_e		-	0,61	0,07	0,66
Actuator stroke s_e		mm	33	-	42
Camshaft input torque	C_e	Nm	1281	-	1281
	$C_{o,e}$	Nm	30	-	30

2.2 In the case of vehicles of category O_4

Test type:			**0**	**III**	
Annex VII, Appendix 1, point:			3.5.1.2	3.5.3.1.2	3.5.3.2
Test speed					
initial		km/h	60	60	60
final		km/h	0	30	0
Brake actuator pressure p_e		bar	4,5	-	4,5
Number of brake applications		-	-	20	-
Duration of braking cycle		s	-	60	-
Brake force developed T_e		daN	5647	2700	4844
Brake efficiency T_e/P_e		-	0,63	0,30	0,54
Actuator stroke s_e		mm	39	-	49
Camshaft input torque	C_e	Nm	1281	-	1281
	$C_{o,e}$	Nm	30	-	30

[2)] See sheet 3/3

RWTÜV

Manufacturer : SAF
Type of axle : SNK 3015-9S

3 NAME OF TECHNICAL SERVICE CONDUCTING THE TEST

RWTÜV Fahrzeug GmbH
Technischer Dienst für Bremsanlagen
D-45307 Essen

4 DATE OF TEST: 25.05.1998

5 This test has been carried out and the result reported in accordance with Directive 71/320/EEC as last amended by Directive 98/12/EC and Annex VII, Appendix 1.

Essen, 21.11.2000

LABORATORY FOR VEHICLE TECHNOLOGY
Testing Laboratory for Braking Systems
according to Directive 71/320/EEC in the
version of Directive 98/12/EC

Dipl.-Ing. Kaesler

6 APPROVAL AUTHORITY, if different from the technical service

Flensburg, 28. NOV. 2000

i. A.

Kraftfahrt-Bundesamt 44

7 TEST DOCUMENTS

/ Appendix 1: Dimensions brake drum/wheel/tyre
/ Appendix 2: Brake geometry

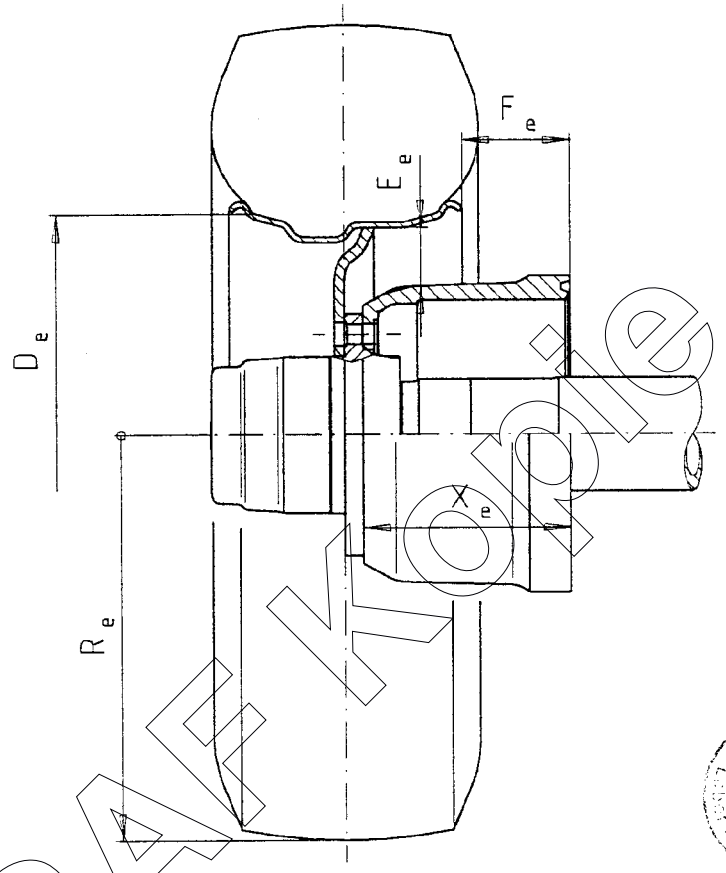
[1] Calculation with g = 10 m/s²
[2] Inertia dynamometer test

Anlage 1 zum Prüfprotokoll Nr.: TDB 0622

Annex 1 to brake test record:
Annexe 1 au procès verbal:
Allegaro 1 al verbale di Omologazione Nr.:

SAF OTTO SAUER ACHSENFABRIK KEILBERG D - 63854 BESSENBACH GERMANY

Bremse: brake: frein: Freno:	SNK 300 × 150	Grundtyp: basis type: modèle de base: Modello di base:	SNK 3015-9 S	Zeichn. Nr.: 6 077 9156 00	Blatt: 1
				Datum: 07.06.2000	Name: Roth



Bremse Brake Tambour Freno: Breite width largeur Largh. X_e (mm)	Bremse: Masse weight masse Peso kg	Achslast Axle capacity Charge de l'essieu Portata assale P_e (daN)	Reifen Tyre Pneu Pneumatico	Felge Rim Jante Cerchio	B_e (mm)	R_e (mm)	D_e (mm)	E_e (mm)	F_e (mm)
230	36,5	9 000	285/70 R 19,5	19,5 × 8,25	-	434	495	66	+120

Anlage 2 zum Prüfprotokoll Nr. TDB 0622

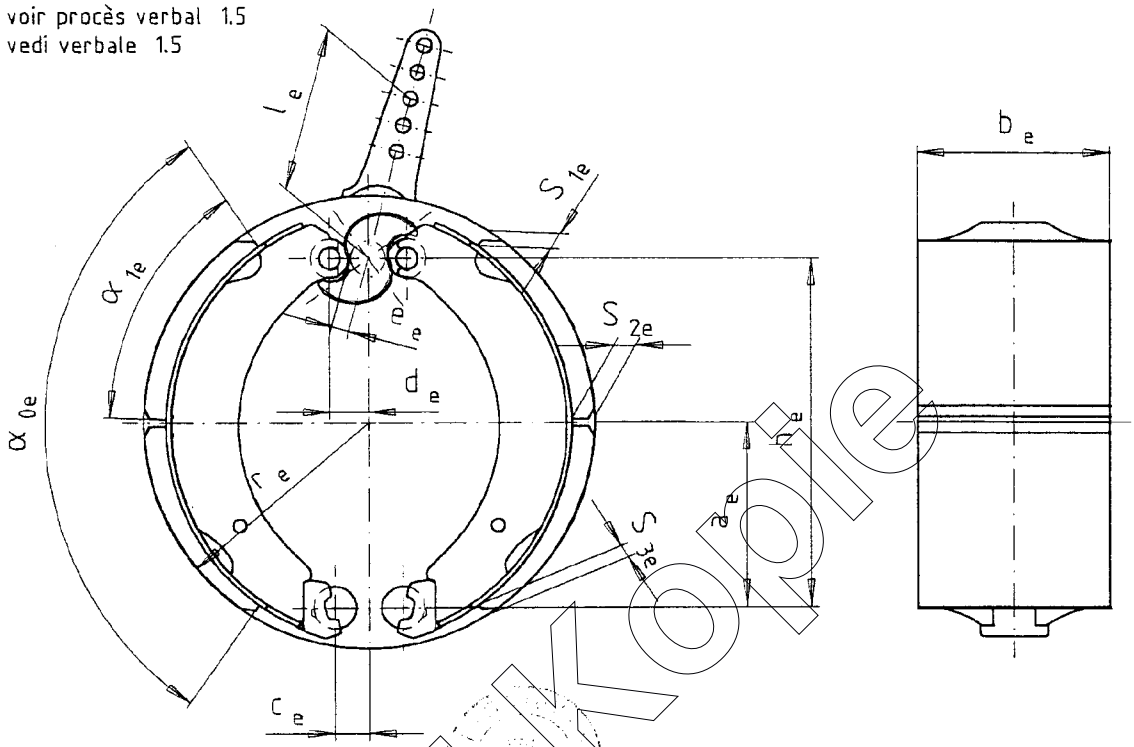
Annex 2 to brake test record
Annexe 2 au procès verbal
Allegato 2 al verbale di Omologazione Nr.

SAF OTTO SAUER ACHSENFABRIK KEILBERG D - 63854 BESSENBACH GERMANY

Zeichn. Nr.: 6 077 9089 01 | Blatt: 1

Datum: 07.06.2000 | Name: Roth

l_e : siehe Prüfprotokoll 1.5
see brake test record 1.5
voir procès verbal 1.5
vedi verbale 1.5



* F_e : wirksame Bremsfläche pro Bremse (cm^2)
Efficient braking area (cm^2)
Zone de freinage active (cm^2)
Zona di frenatura attiva (cm^2)

Bremsen-Typ Brake-type Type de frein Type de freno	a_e	h_e	c_e	d_e	e_e	α_{0e}	α_{1e}	b_e	r_e	* F_e	S_{1e}	S_{2e}	S_{3e}
SNK 420 × 150	171,5	323,9	31,75	36	13,2	110°	53°20'	150	210	1086	17,4	20,2	13
SNK 420 × 180	171,5	323,9	31,75	36	13,2	110°	53°20'	180	210	1322	17,4	20,2	13
SNK 420 × 200	171,5	323,9	31,75	36	13,2	110°	53°20'	200	210	1474	17,4	20,2	13
SNK 367 × 150	145	273	31,75	36	13,2	104°30'	57°	150	183,5	1007	17,2	20,2	12,2
SNK 367 × 180	145	273	31,75	36	13,2	104°30'	57°	180	183,5	1226	17,2	20,2	12,2
SNK 367 × 200	145	273	31,75	36	13,2	104°30'	57°	200	183,5	1370	17,2	20,2	12,2
SNK 300 × 150	113	225	25	29,75	13,2	111°	55°30'	150	150	760	13	16	8,5
SNK 300 × 200	113	225	25	29,75	13,2	111°	55°30'	200	150	1025	13	16	8,5