

Test Report

No. TDB 0074 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: SN 3015-8S
Model: -
Technically permissible axle load P_e ¹⁾: 8000 daN

1.2 Brake

Manufacturer: See 1.1
Make: SAF
Type: SN 300x150
Model: -
Technically permissible camshaft
input torque $C_{max,e}$: 2500 Nm
(for calculation: 2000 Nm at 6,5 bar)
Brake drum - Internal diameter: 300 mm
- Mass: 27 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 25.05.2000
See appendix 2 dated 17.06.1993

1.3 Wheel (Single)

Rim diameter D_e : 381 mm (15")
Dimensions: See appendix 1 dated 25.05.2000

¹⁾ See sheet 3/3

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Manufacturer : SAF
 Type of axle : SN 3015-8S

1.4 Tyres

Dynamic rolling radius R_e
 at reference load P_e : 484 mm

1.5 Actuation

Brake actuator - Manufacturer: GRAU
 - Type: Diaphragm brake actuator
 - Model: 20 (120 341 101)
 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 O₂ and O₃

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	6,2	-	6,2
Braking time	min	-	2,55	-
Brake force developed T_e	daN	5079	560	4583
Brake efficiency T_e/P_e	-	0,63	0,07	0,57
Actuator stroke s_e	mm	32	-	45
Camshaft input torque C_e	Nm	1131	-	1131
$C_{0,e}$	Nm	30	-	30

2.2 In the case of vehicles of category O₄

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	6,2	-	6,2
Number of brake applications	-	-	20	-
Duration of braking cycle	s	-	60	-
Brake force developed T_e	daN	5187	2400	3724
Brake efficiency T_e/P_e	-	0,65	0,30	0,47
Actuator stroke s_e	mm	35	-	51
Camshaft input torque C_e	Nm	1131	-	1131
$C_{0,e}$	Nm	30	-	30

²⁾ See sheet 3/3

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RWTÜV

Manufacturer : SAF
Type of axle : SN 3015-8S

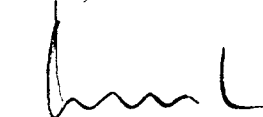
3 NAME OF TECHNICAL SERVICE CONDUCTING THE TEST

RWTÜV Fahrzeug GmbH
Technischer Dienst für Bremsanlagen
D-45307 Essen

4 DATE OF TEST: 25.05.2000

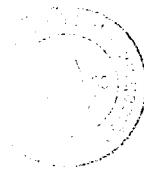
5 This test has been carried out and the result reported in accordance with Directive 71/320/EEC as last amended by Directive 98/12/EC and Annex VII, Appendix 1.

Essen, 21.11.2000



Dipl.-Ing. Kaesler

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



6 APPROVAL AUTHORITY, if different from the technical service

Flensburg, 28. NOV. 2000

i. A.



7 TEST DOCUMENTS

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

- 1) Calculation with $g = 10 \text{ m/s}^2$
2) Inertia dynamometer test

Anlage 2 zum Prüfprotokoll Nr. TDB 0074

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, BESENBACH
GERMANY

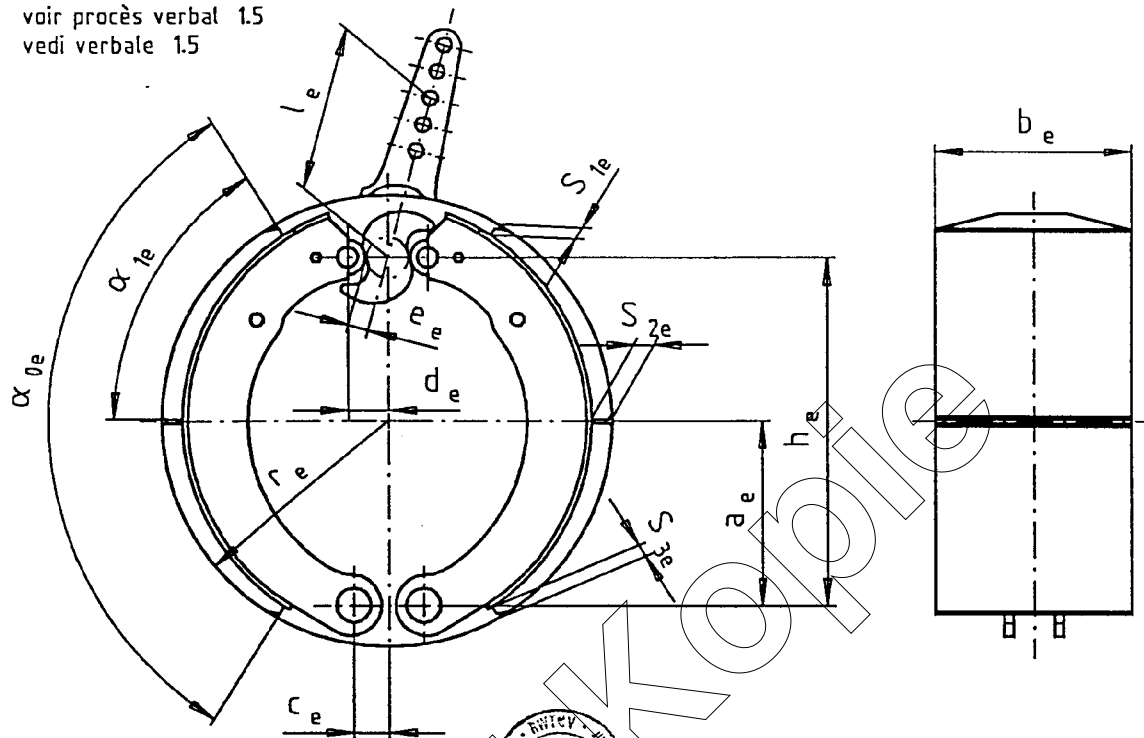
Zeichn. Nr.: 6 077 9001 01

Blatt:

Datum: 17.06.93

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 (mm)	h_e (mm)	c_e (mm)	d_e (mm)	e_e (mm)	α_{0e}	α_{1e}	b_e (mm)	r_e (mm)	* F_e	S_{1e} (mm)	S_{2e} (mm)	S_{3e} (mm)
SN 300 x 150	117	227	25	29,4	12	103°	52°	150	150	760	13	16	8,5
SN 300 x 200	117	227	25	29,4	12	103°	52°	200	150	1025	13	16	8,5
SN 355 x 150	135,6	256,1	40	34,9	13,2	111°	57°	150	177,5	890	15	19	10
SN 355 x 178	135,6	256,1	40	34,9	13,2	111°	57°	178	177,5	1060	15	19	10
SN 355 x 200	135,6	256,1	40	34,9	13,2	111°	57°	200	177,5	1170	15	19	10
SN 419 x 152	171,5	323,9	31,75	34,9	13,2	109°30'	54°	152	209,5	1070	15,7	19	11
SN 419 x 178	171,5	323,9	31,75	34,9	13,2	109°30'	54°	178	209,5	1250	15,7	19	11
SN 419 x 203	171,5	323,9	31,75	34,9	13,2	109°30'	54°	203	209,5	1430	15,7	19	11
SN 400 x 80	155	305	0	33,5	12	117°	61°	80	200	600	10	12,4	10
SN 420 x 120	165	320	32,5	42,3	14,4	115°	70°30'	120	210	914	11,5	18	11,5
SN 420 x 180	165	320	32,5	42,3	14,4	115°	70°30'	180	210	1389	11,5	18	11,5
SN 420 x 200	165	320	32,5	42,3	14,4	115°	70°30'	200	210	1554	11,5	18	11,5
SNF 420 x 120	171,5	323,9	31,75	34,9	13,2	115°	57°30'	120	210	914	11,5	18	11,5
SNF 420 x 180	171,5	323,9	31,75	34,9	13,2	115°	57°30'	180	210	1389	11,5	18	11,5
SNF 420 x 200	171,5	323,9	31,75	34,9	13,2	115°	57°30'	200	210	1554	11,5	18	11,5