

# Test Report

No. TDB 0460 dated 27.10.99

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 3720-13Z  
Model: -  
Technically permissible axle load  $P_e$ <sup>1)</sup>: 13000 daN

### 1.2 Brake

Manufacturer: See 1.1  
Make: SAF  
Type: SNK 367x200  
Model: -  
Technically permissible camshaft  
input torque  $C_{max,e}$ : 2800 Nm  
(for calculation: 2250 Nm at 6,5 bar)  
Brake drum - Internal diameter: 367 mm  
- Mass: 47 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: 200 mm  
- Thickness: 12,2...20,2 mm (sickle-shaped)  
- Surface area: 1370 cm<sup>2</sup>  
- Method of attachment: Rivited  
Brake geometry: See appendix 1 dated 11.11.98  
See appendix 2 dated 11.11.98

### 1.3 Wheel (Twin)

Rim diameter  $D_e$ : 495,3 mm (19,5")  
Dimensions: See appendix 1 dated 11.11.98

<sup>1)</sup> See sheet 3/3



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Manufacturer : SAF  
 Type of axle : SNK 3720-13Z

#### 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  $l_e$ : 150 mm <sup>2)</sup> 152 mm <sup>3)</sup>

## 2 RECORD OF TEST RESULTS

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

### 2.1 In the case of vehicles of categories O<sub>2</sub> and O<sub>3</sub> <sup>2)</sup>

| 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  | 6,5     | -         | 6,5     |
| Braking time                  | min  | -       | 2,55      | -       |
| Brake force developed $T_e$   | daN  | 7606    | 944       | 6226    |
| Brake efficiency $T_e/P_e$    | -    | 0,59    | 0,07      | 0,48    |
| Actuator stroke $s_e$         | mm   | 40      | -         | 59      |
| Camshaft input torque $C_e$   | Nm   | 1853    | -         | 1853    |
| $C_{0,e}$                     | Nm   | 30      | -         | 30      |

### 2.2 In the case of vehicles of category O<sub>4</sub> <sup>3)</sup>

| 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  | 6,5     | -         | 6,5     |
| Number of brake applications  | -    | -       | 20        | -       |
| Duration of braking cycle     | s    | -       | 60        | -       |
| Brake force developed $T_e$   | daN  | 7923    | 3921      | 6110    |
| Brake efficiency $T_e/P_e$    | -    | 0,61    | 0,30      | 0,47    |
| Actuator stroke $s_e$         | mm   | 40      | -         | 57      |
| Camshaft input torque $C_e$   | Nm   | 1877    | -         | 1877    |
| $C_{0,e}$                     | Nm   | 30      | -         | 30      |

<sup>2) 3)</sup> See sheet 3/3

RWTÜV Fahrzeug GmbH - Institute for Vehicle Technology, Adlerstr. 7, D - 45307 Essen  
 The Testing Laboratory is accredited by the Accreditation Body of the German Federal Motor Transport Authority (KBA) to conduct inspections according to ECE, EG-TypV (EEC), StVZO and FzTV (KBA-P 00009-95).

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Date : 27.10.99

**RWTÜV**

Manufacturer : SAF  
Type of axle : SNK 3720-13Z

**3 NAME OF TECHNICAL SERVICE CONDUCTING THE TEST**

RWTÜV Fahrzeug GmbH  
Technischer Dienst für Bremsanlagen  
D-45307 Essen

**4 DATE OF TEST: 20.04.93 and 27.05.98**

**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, 27.10.99



Dipl.-Ing. Kaesler

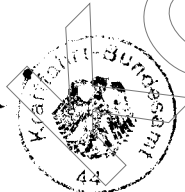


LABORATORY FOR VEHICLE TECHNOLOGY  
Testing Laboratory for Braking Systems  
according to Directive 71/320/EEC in the  
version of Directive 98/12/EC

**6 APPROVAL AUTHORITY, if different from the technical service**

Flensburg, 08. NOV. 1999

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) Rolling road dynamometer test
- 3) Inertia dynamometer test

Allegato 1 al verbale di Omologazione Nr.:

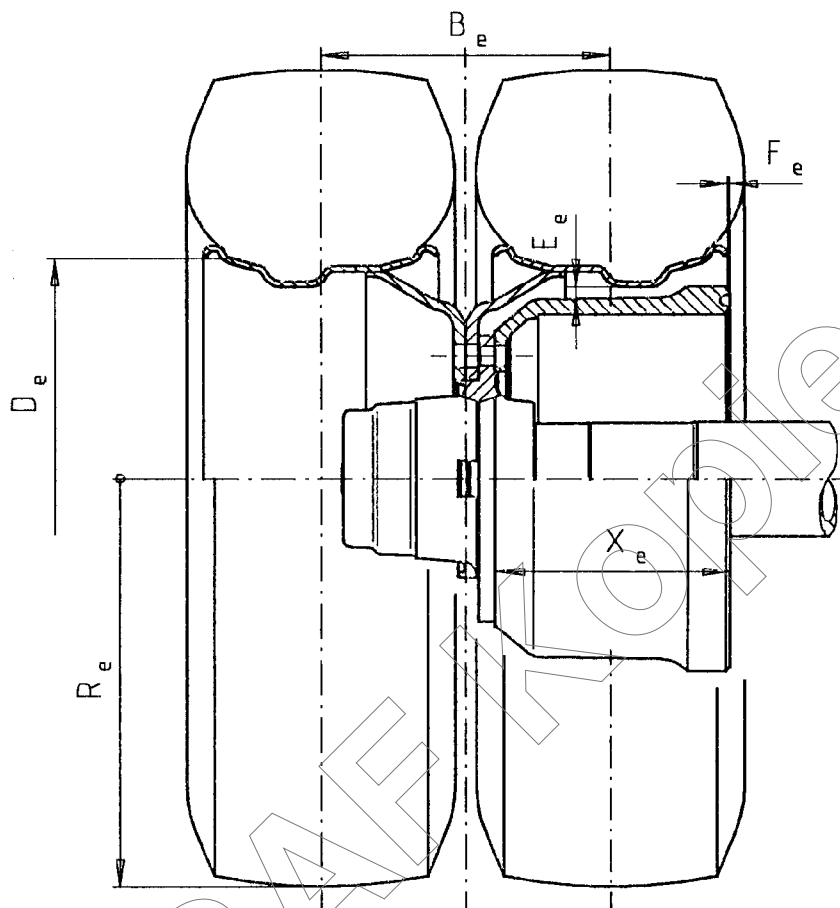
DOTT SAUER  
ACHSENFABRIK KEILBERG  
D - 63854 BESSENBACH  
GERMANY

Freno:

Modello di base:

1

Roth



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 BESENBAACH  
GERMANY

|        |            |       |      |
|--------|------------|-------|------|
| Datum: | 11.11.1998 | Name: | Roth |
|--------|------------|-------|------|

voir procès verbal 1.5  
vedi verbale 1.5

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

[illegible]