RWTÜV Fahrzeug GmbH

Ein Unternehmen der CUBIS-Gruppe

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Test Report

No. TDB 0624 dated 26.11.98

for application of Annex VII Directive 71/320/EEC

1 IDENTIFICATION

1.1 Axle

Manufacturer:	BPW Bergische Achsen Kommanditgesellschaft D-51674 Wiehl
Make:	BPW
Type:	GS 100
Model:	-
Technically permissible axle load P_e [1]:	11000 daN

1.2 Brake

Manufacturer:		See 1.1
Make:		BPW
Type:		FL 4118
Model:		-
Technically permissible camshaft input torque $C_{max,e}$:		3700 Nm (for calculation: 2800 Nm at 6,5 bar)
Brake drum	- Internal diameter:	410 mm
	- Mass:	47,5 kg
	- Material:	Cast iron (grey cast iron)
Brake lining	- Manufacturer:	BBA Friction GmbH D-51375 Leverkusen
	- Make:	Textar
	- Type:	T 090
	- Identification:	Type indication at front
	- Width:	180 mm
	- Thickness:	8,5...12 mm (sickle-shaped)
	- Surface area:	1331 cm²
	- Method of attachment:	Rivited
Brake geometry:		See appendix 1 dated 30.10.98 See appendix 2 dated 24.07.98

1.3 Wheel (Single)

Rim diameter D_e:	See appendix 1 dated 30.10.98
Dimensions:	See appendix 1 dated 30.10.98

[1] See sheet 3/3

RWTÜV

Manufacturer : BPW
Type of axle : GS 100

1.4 Tyres

Dynamic rolling radius R_e
at reference load P_e: 420...530 mm

1.5 Actuation

Brake actuator -Manufacturer: GRAU
- Type: Diaphragm brake actuator
- Model: 30 (120 361 101)

Lever length l_e: 180 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	5,5	-	5,5
Braking time	min	-	2,55	-
Brake force developed T_e	daN	8061	784	6722
Brake efficiency T_e/P_e	-	0,73	0,07	0,61
Actuator stroke s_e	mm	45	-	53
Camshaft input torque C_e	Nm	1870	-	1870
$C_{o,e}$	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	5,5	-	5,5
Number of brake applications	-	-	20	-
Duration of braking cycle	s	-	60	-
Brake force developed T_e	daN	7766	3368	5444
Brake efficiency T_e/P_e	-	0,71	0,31	0,49
Actuator stroke s_e	mm	47	-	53
Camshaft input torque C_e	Nm	1870	-	1870
$C_{o,e}$	Nm	30	-	30

2) See sheet 3/3

Manufacturer : BPW
Type of axle : GS 100

3 NAME OF TECHNICAL SERVICE CONDUCTING THE TEST

RWTÜV Fahrzeug GmbH
Technischer Dienst für Bremsanlagen
D-45307 Essen

4 DATE OF TEST: 22.07.98

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, 26.11.98

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, 27. JAN. 1999

i. A.

7 TEST DOCUMENTS

/ Appendix 1: Dimensions brake drum/wheel/tyre (5 sheet)
/ Appendix 2: Brake geometry

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1) Calculation with g = 10 m/s²
2) Inertia dynamometer test; R_e = 519 mm

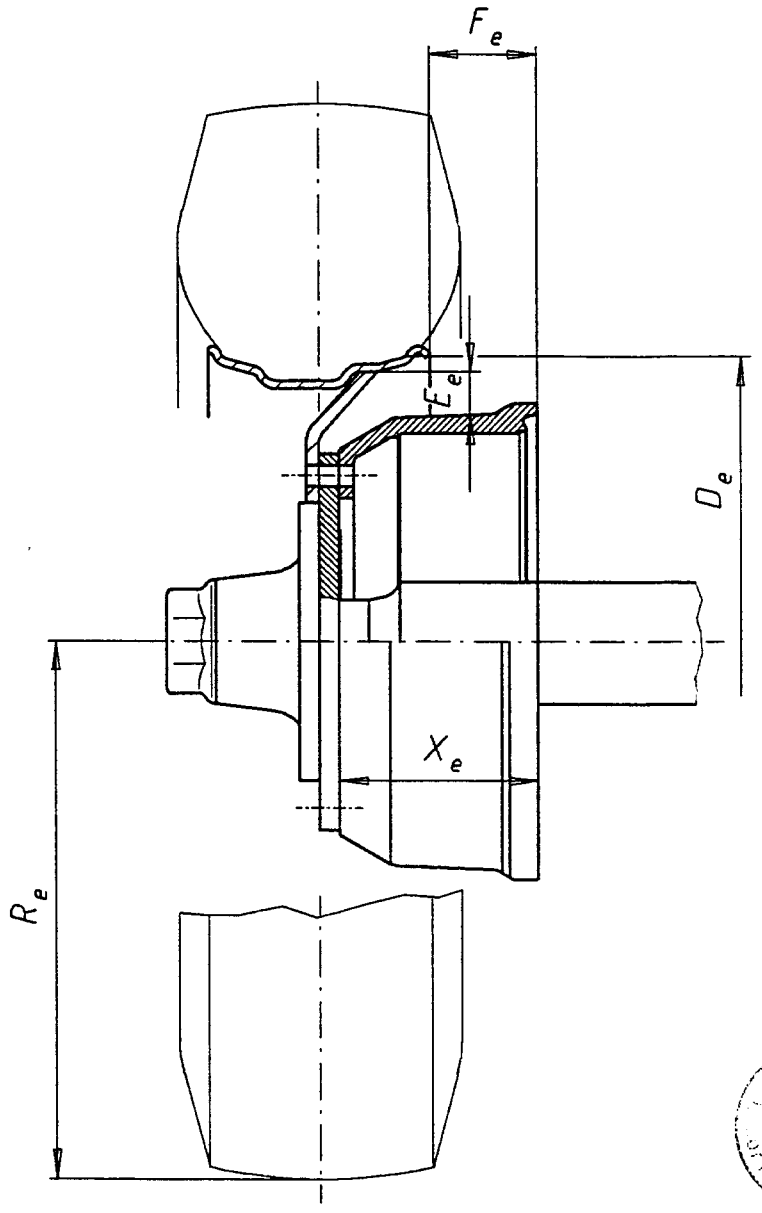
BPW-Brake FL 4118 appendix 1 to TEST REPORT NO. TDB 0624

TE-2266.0 E

5 Blatt | Bl.-Nr. 1

Abt. EZ
Tag 30.10.98
Bearb. Schöler

BPW BERGISCHE ACHSEN Kommanditgesellschaft D-51674 Wiehl



Drum-width X_e (mm)	Drum-mass (kg)	Axle load P_e (da N)	Tyre	Rim	R_e (mm)	D_e (mm)	E_e (mm)	F_e (mm)
≥ 226	47,5	11000	400/55-22,5	22,5×11,75	467	572	26	+68
≥ 226	47,5	11000	500/45-22,5	22,5×16.00	477	572	26	+14
≥ 226	47,5	11000	550/45-22,5	22,5×16.00	497	572	26	+14
≥ 226	47,5	11000	15 R 22,5	22,5×11,75	509	572	26	+68
≥ 226	47,5	11000	385/65 R 22,5	22,5×11,75	519	572	26	+68

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Ersetzt durch

BPW-Brake FL 4118 appendix 1 to TEST REPORT NO. TDB 0624

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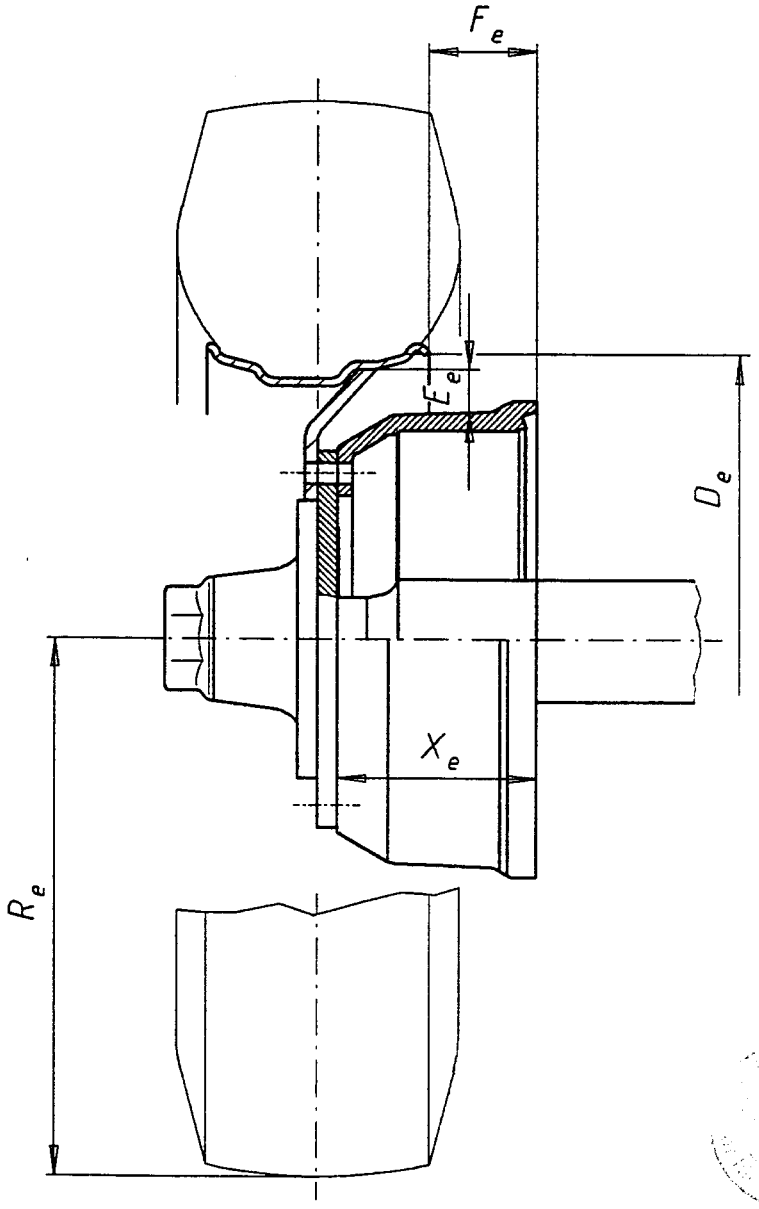
5 Blatt | Bl.-Nr. 2



Drum-width X_e (mm)	Drum-mass (kg)	Axle load P_e (da N)	Tyre	Rim	R_e (mm)	D_e (mm)	E_e (mm)	F_e (mm)
≥ 226	47,5	11000	500/60-22,5	22,5×16.00	547	572	26	+14
≥ 226	47,5	11000	550/60-22,5	22,5×16.00	579	572	26	+14
≥ 226	47,5	11000	600/50-22,5	22,5×20.00	546	572	26	-37
≥ 226	47,5	11000	600/55-22,5	22,5×20.00	592	572	26	-37
≥ 226	47,5	11000	700/40-22,5	22,5×24.00	546	572	26	-88
≥ 226	47,5	11000	700/50-22,5	22,5×24.00	594	572	26	-88
≥ 226	47,5	11000	600/55-26,5	26,5×20.00	631	673	77	-37
≥ 226	47,5	11000	700/50-26,5	26,5×20.00	630	673	77	-37
≥ 226	47,5	11000	800/45-26,5	26,5×28.00	632	673	77	-139
≥ 226	47,5	11000	14.9 R 28	W13×28	645	716	103	+65

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5 Blatt Bl.-Nr. 3

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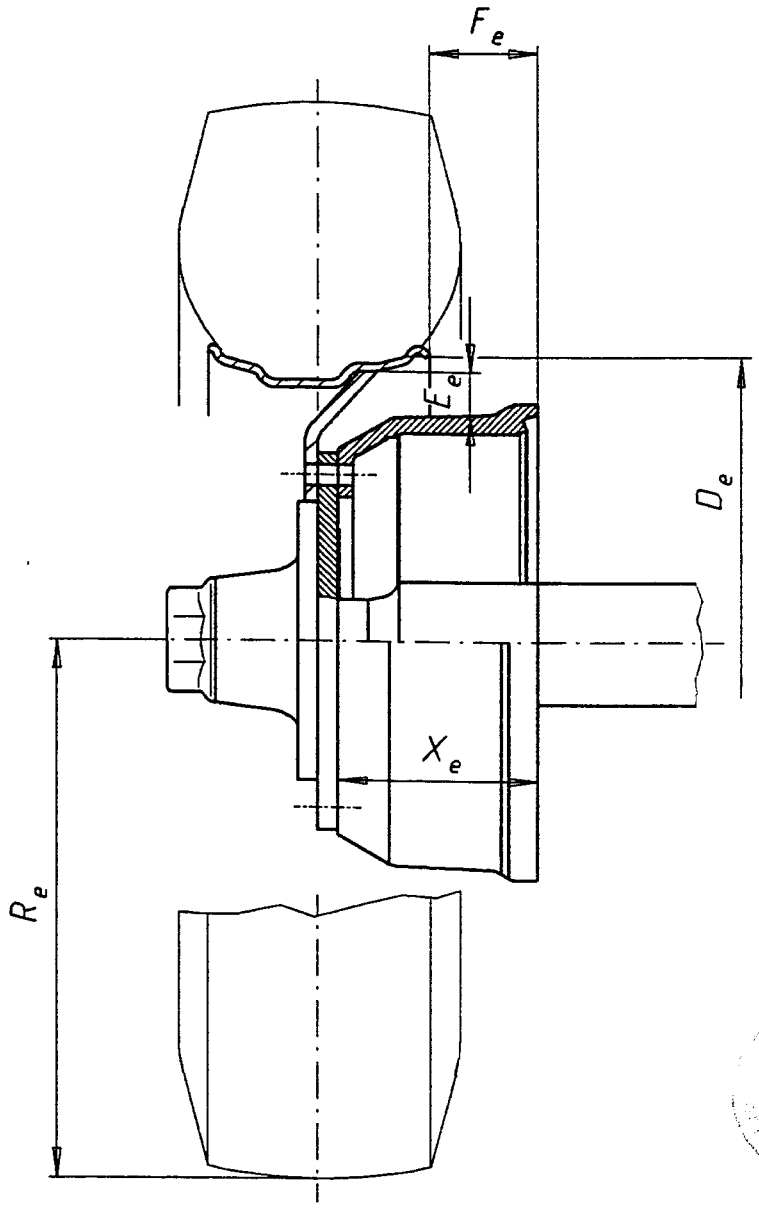

Drum-width X_e (mm)	Drum-mass (kg)	Axle load P_e (da N)	Tyre	Rim	R_e (mm)	D_e (mm)	E_e (mm)	F_e (mm)
≥ 226	47,5	11000	420/75 R 28	DW 13×28	641	716	103	+65
≥ 226	47,5	11000	500/75 R 24	DW 16 L×24	653	614	51,5	+25
≥ 226	47,5	11000	520/75 R 26	DW 16 L×26	692	665	51,5	+25
≥ 226	47,5	11000	600/55 B 30,5	30,5×20.00	685	775	123	-37
≥ 226	47,5	11000	600/55-30,5	30,5×20.00	685	775	123	-37
≥ 226	47,5	11000	600/60-30,5	30,5×20.00	714	775	123	-37
≥ 226	47,5	11000	700/50-30,5	30,5×24.00	702	775	123	-88
≥ 226	47,5	11000	800/45-30,5	30,5×28.00	702	775	123	-139
≥ 226	47,5	11000	700/65-30,5	30,5×24.00	788	775	123	-88
≥ 226	47,5	11000	800/55-30,5	30,5×28.00	788	775	123	-139
≥ 226	47,5	11000	850/50-30,5	30,5×28.00	772	775	123	-139
≥ 226	47,5	11000	750/60-30,5	30,5×24.00	772	775	123	-88

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5 Blatt Bl.-Nr. 4

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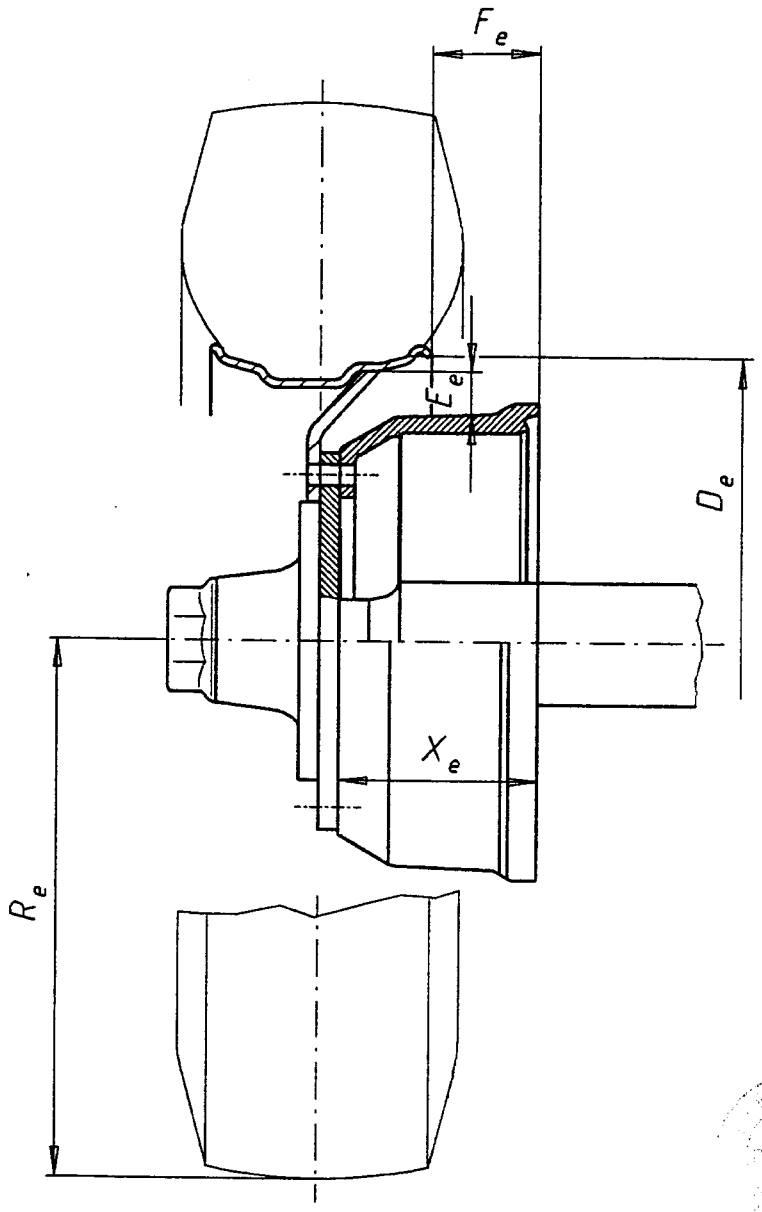

Drum-width X_e (mm)	Drum-mass (kg)	Axle load P_e (da N)	Tyre	Rim	R_e (mm)	D_e (mm)	E_e (mm)	F_e (mm)
≥ 226	47,5	11000	600/65-34	DW 20×34	788	868	177	-30
≥ 226	47,5	11000	850/45-34	DW 28×34	788	868	177	-132
≥ 226	47,5	11000	18.4-26	W 16 L×26	672	665	515	+27
≥ 226	47,5	11000	23.1-26	DW 20 A×26	735	665	77	-30
≥ 226	47,5	11000	28 L-26	DW 25 A×26	749	665	77	-93,5
≥ 226	47,5	11000	600/65 R 28	DW 18 L×28	712	716	103	-1
≥ 226	47,5	11000	28 L R 26	DW 25 A×26	781	665	77	-93,5
≥ 226	47,5	11000	540/65 R 38	DW 16 L×38	800	970	230	+25

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BPW-Brake FL 4118 appendix 1 to TEST REPORT NO. TDB 0624

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5 Blatt | Bl.-Nr. 5

Abt. EZ
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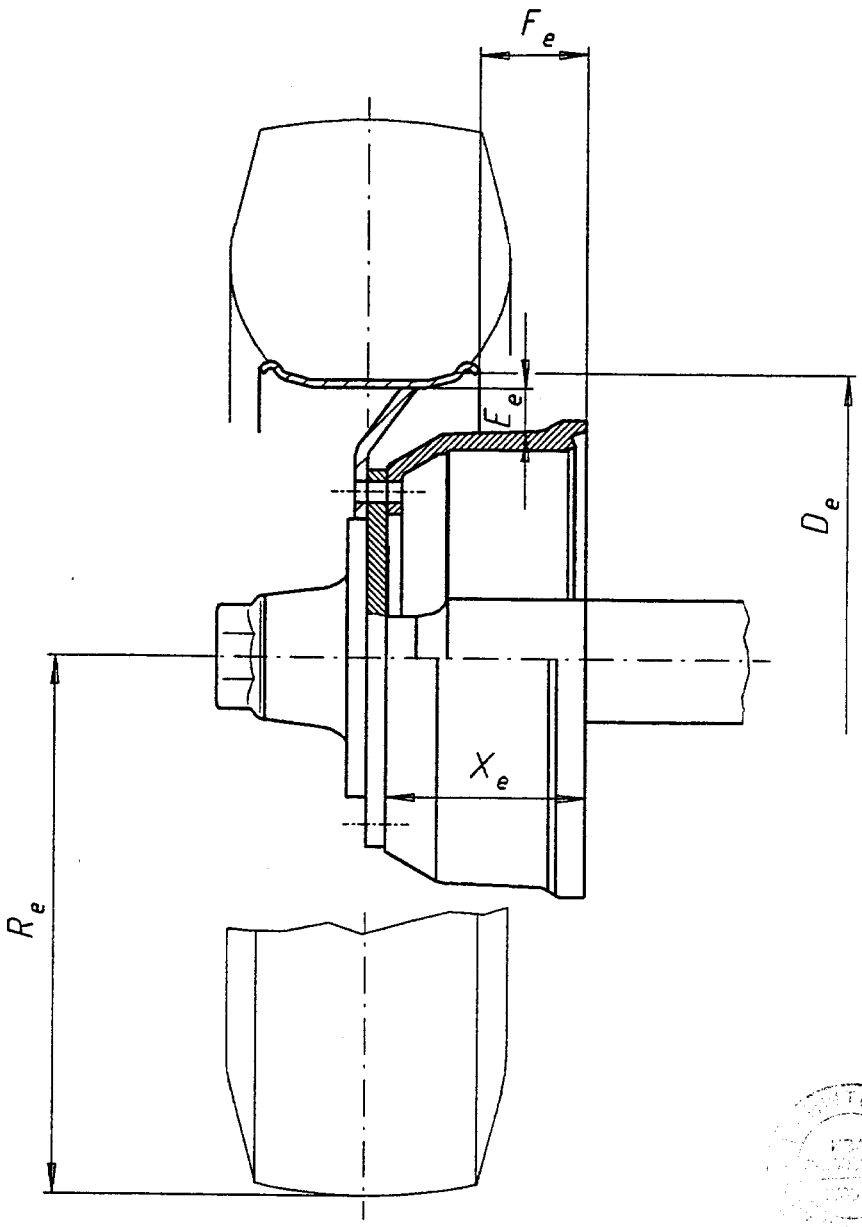

Drum- width X_e (mm)	Drum- mass (kg)	Axle load P_e (da N)	Tyre	Rim	R_e (mm)	D_e (mm)	E_e (mm)	F_e (mm)
≥ 226	47,5	11000	335/80 R 20	11-20 SDC	491	513	17	+93,5
≥ 226	47,5	11000	12,5 R 20	11-20 SDC	497	513	17	+93,5
≥ 226	47,5	11000	14,5 R 20	11-20 SDC	527	513	17	+93,5
≥ 226	47,5	11000	375/75 R 20	11-20 SDC	505	513	17	+93,5

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Tag 24.07.98
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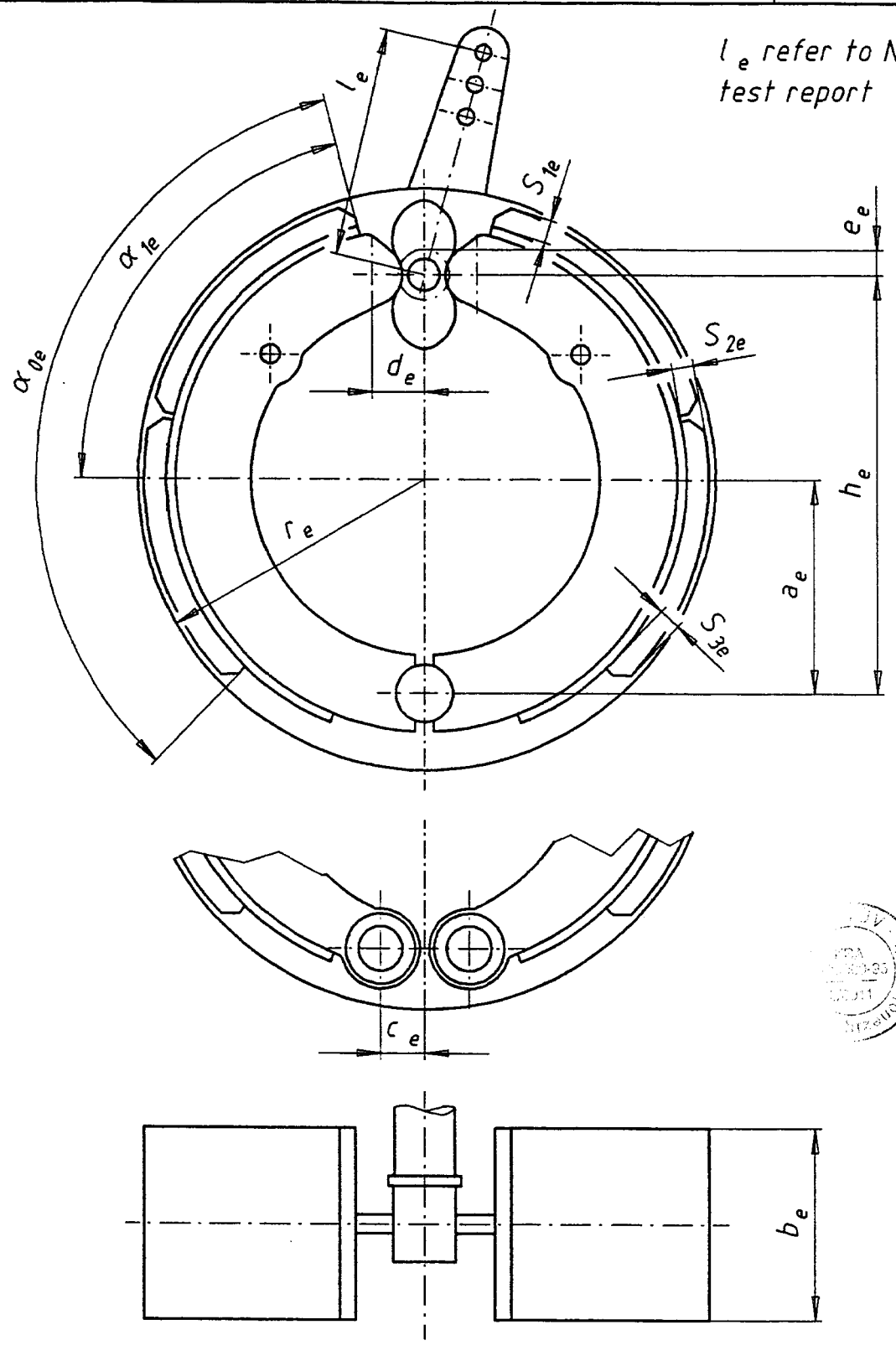
l_e refer to No.1.5. of test report



All dimensions except α_{0e}, α_{1e} and F_e in mm. F_e = braking surface per brake (cm²).

Type of brake	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}
FL 3008	118	226	0	27,5	17	116°	61°	80	150	480	9	13	9
FL 4118	163,7	317,7	33	43,5	14	115°	70,5°	180	205	1331	8,5	12	8,5

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