

Must be presented to a CoF (Heavy) Inspecting Organisation  
 Heavy Vehicle Specialist Inspector and Inspecting Organisation

Heavy Vehicle Specialist Inspector's or Manufacturing Inspecting Organisation's Name (PRINT IN CAPS)  
**RONALD STUART PRATT**

ID  
**TRSP**

Vehicle Registration\*

VIN/Chassis Number  
**7A9D20019B0023933**

- Component being certified:
- |   |  |                                       |
|---|--|---------------------------------------|
| <input type="checkbox"/> Chassis Modification | <input type="checkbox"/> Load Anchorage    | <input type="checkbox"/> Log Bolsters |
| <input type="checkbox"/> Towing Connection    | <input checked="" type="checkbox"/> Brakes | <input type="checkbox"/> SRT          |
| <input type="checkbox"/> PSV Stability        | <input type="checkbox"/> PSV Rollover      | <input type="checkbox"/> Swept Path   |
| <input type="checkbox"/> PBS                  |  |                                       |

Certification Category  
**HVEK**

Description of Work  
**INSPECTION AND CERTIFICATION TO BRAKE RULE 32015/3**

Code/Standard/Rule Certified to  
**NZHVB RULE Schedule 5**

Component Load Rating(s)  
**GVM: 33,000 Kg**

General Drawing Number(s)  
**DOMETT 023933**

Supporting Documents  
**Brake Cert No JH141203**

Special Conditions\*  
**EBS Control - Warning Lamp must illuminate when ignition switched on, and extinguish immediately, or when vehicle reaches 7 kph**

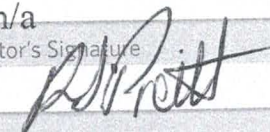
Certification Expiry Date (if applicable)  
**n/a**

or Hubodometer Reading (whichever comes first)  
**n/a**

**Declaration**

I the undersigned, declare that I am the Heavy Vehicle Specialist Inspector identified and I hold a current valid appointment. I certify that the above mentioned vehicle component's design, manufacture and installation, and this certification complies in all respects with the Land Transport Rule: Vehicle Standards Compliance 2002 and my Appointment. To the best of my knowledge the information contained in the Certificate is true and correct.

Designer's ID (if different from inspector below)  
**n/a**

Inspector's Signature  


Inspector's Name (PRINT IN CAPS) ID Number  
**RONALD STUART PRATT** **TRSP**

Date  
**3/12/2014**

Number  
**493931**

CoF Vehicle Inspector ID

CoF Vehicle Inspector Signature

Date

All fields excluding those marked with \* must be completed before this certificate can be accepted.



**Statement of Design Compliance****S.O.D.C. number: JH141203**For Heavy vehicle brake specification  
(Schedule 5) of HV Brake Rule 32015/3**Vehicle details:**

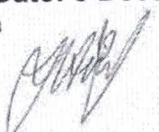
<b>Make:</b>	DOMETT TRAILERS
<b>Model:</b>	E2001
<b>VIN#:</b>	7A9D20019B0023933
<b>Chassis#:</b>	933
<b>GCM (kgs):</b>	N/A
<b>GVM (kgs):</b>	33,000
<b>Wheelbase (mm):</b>	8150
<b>Axle test report #:</b>	TDB 0749 (SAF 300 mm Air bag)
<b>Type:</b>	5AFT DISC BRAKE

**Component Details:**

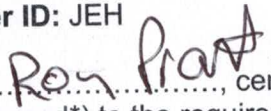
	<b>Front</b>	<b>Rear</b>
<b>Lever length (mm):</b>	69	69
<b>Brake chamber size:</b>	TSE: 14HSCLD64	TSE:1416HTLD64
<b>Tyre size:</b>	265 70 R 19.5	265 70 R 19.5
<b>Drawing number:</b> (for component reference)	N/A	
<b>Brake calculation#:</b>	TP 50837	
<b>OPTI exemption#:</b>	N/A	

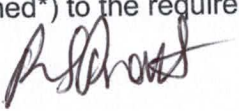
I declare that I am a Heavy Vehicle Specialist Certifier – Engineer and I hold a current valid appointment. I certify that this vehicle component design and this certification comply in all respects with the Land Transport Rule: **Vehicle Standards Compliance 2002**; my Deed of Appointment and applicable requirements. To the best of my knowledge the information contained in this certificate is true and correct.

**Date:** 3 December 2014

  
**Name:** John Hirst (HVEK)  
**Certifier ID:** JEH

LT 400 No = 493931

I,  **Roy Pratt**, certify that the braking system has been assembled and programmed\*) to the requirements of this Design Certificate.

**Signed:** **Dated:** 4-12-2014

\*) Programmed according to WABCO's End of Line protocol requirements where applicable and that the air suspension parameter pressures suit the suspension design & air bellow size.



# Statement of Compliance with the New Zealand Heavy Brake Rule

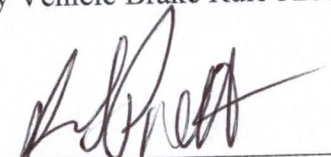
Documentation required supporting Statements of Compliance with the New Zealand Heavy Brake Rule, to be made available to the Statutory Authority on request, must include all calculations and test reports.

## Confirmation of compliance

I confirm that the vehicle identified on page 1 of this Statement of Compliance complies with all relevant requirements of the current New Zealand Heavy Vehicle Brake Rule 32015/3, Schedule 5.

Date: 3<sup>rd</sup> Dec 2014

Signed (pp.):

  
4/12/2014

## Certifier's identification

Name: J E Hirst

Phone (bus): (09) 980 7300

Fax (bus): (09) 980 7306

Postal address: Transport Specialties, Cnr Kerrs & Ash Roads

Wiri, Auckland, PO Box 98 971 Manukau City 2241

Position: JEH

## Confirmation of continued compliance of modification

I confirm the brake system of the vehicle identified on page 1 of this Statement of Compliance as modified by myself, continues to comply with all the relevant requirements of the current New Zealand Heavy Vehicle Brake Rule 32015/3, Schedule 5.

Date: \_\_\_\_\_

Signed: \_\_\_\_\_

Certifier's identification: JEH

Name:

Phone (bus): (09) 980 7300

Fax (bus): (09) 980 7306

Postal address: Transport Specialties Ltd

Cnr Kerrs & Ash Roads, Wiri, Auckland

PO Box 98 971, Manukau City 2241





P.O.Box 98-971 South Auckland Mail Centre

J.HIRST (JEH)

DATE	3-Dec-14	BRAKE SYSTEM	24V EBS
CERT. NO.	JH141203	OptiTurn EXEMPTION	N/A
VIN / CHASSIS	7A9D20019B0023933		

BRAKE CHAMBERS FRONT TSE 14HSCLD65

BRAKE CHAMBERS REAR TSE 1416HTLD64 & 14HSCLD64

SLACK LENGTH FRONT	69 mm	TYRE SIZE FRONT	265 70 R 19.5
SLACK LENGTH REAR	69 mm	TYRE SIZE REAR	265 70 R 19.5

THIS VEHICLE COMPLIES WITH THE NZ

HVBR 32015/3 - SCHEDULE 5	LINING MATERIAL FRONT	JURID 539
	LINING MATERIAL REAR	JURID 539

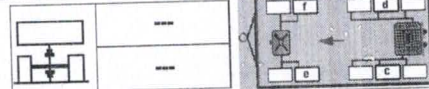
# WABCO

## TRAILER EBS-E

GGVS/ADR TUEH TB 2007 - 019.0X  
TDB0749

HERSTELLER MANUFACTURER CONSTRUCTEUR	FRUEHAUF NZ LTD		
TYP TYPE TYPE	5AFT C/SIDE		
FAHRZEUG IDENTIF. CHASSIS NUMBER NUMERO DE CHASSIS	7A9D20019B0023933		
BREMSBERECHNUNGS-NR. BRAKE CALCULATION NO. CALCUL. DE FREINAGE NO.	TP50837		
POLRADZÄHNEZAHL c-d   e-f POLE WHEEL TEETH c-d   e-f DENTS ROUE DENTÉE c-d   e-f	90	90	ABS-System ABS system Systeme ABS
RSS RSS RSS	Einfachbereifung Single Tire Monte simple	Lenkachse Steering axle Essieu virEUR	4S/3M
	Zwillingsbereifung Twin Tire Monte jumelée	Kippkritisches Fahrzeug Critical Trailer Vehicule critique	
Subsystems	---		I/O

GIO	Pin1	Pin3	Pin4
1	24V-O1	---	---
2	---	---	---
3	ALS2	ALS2	---
4	---	---	---
5	DIAG	DIAG	DIAG
6	---	---	---
7	---	---	---



ACHSE AXLE ESSIEU	pm (bar)		6.5	pm (bar)		0.7	2.0	---	6.5	TYP TYPE	(mm)	(mm)	(bar)		
	↓ (kg)	⊗	⊗	↓ (kg)	⊗	⊗	pz	1.0	Pz						
1	1600	0.7	2.0	7500	4.8	0.3	1.5	---	6.0	-	14	64	69	512	3771
2	1600	0.7	2.0	7500	4.8	0.3	1.5	---	6.0	-	14	64	69	512	3771
3	1300	0.5	1.7	6600	4.1	0.3	1.5	---	5.1	-	14 / 16	64	69	505	3177
4	1300	0.5	1.7	6600	4.1	0.3	1.5	---	5.1	-	14 / 16	64	69	505	3177
5	1300	0.5	1.7	6600	4.1	0.3	1.5	---	5.1	-	14	64	69	505	3177

trailer (full, semi-, centre-axle) with air brake system acc. to UN/ECE-R.13.11

distribution: DOMETT TRAILERS  
7A9D20019B0023933

SODC: JH141203 - LT400: RP

vehicle manufacturer: DOMETT TRAILERS  
trailer model : SAFT C/SIDE  
trailer type : 5-axle-full-trailer  
remarks : air / hydraulic / VA suspension  
WABCO TRAILER - EBS  
TRISTOP 3+4: T.14/16  
265/70 R 19,5

please note!

This brake calculation is made under consideration of  
-the legal prescriptions mentioned above in the version valid  
at the time of making the program (V6.12.08.27).  
-the functional characteristics of our products  
as well as the data of the brake out of the test  
approvals of the axle manufacturers, and  
-the other vehicle data included in the brake calculation.  
Please check whether these data correspond to the actual vehicle data.  
Our conditions of delivery apply (particularly section 9.0).  
In any case we commend to do a braking harmonisation!  
WABCO Brake V6.12.08.27 db 30.08.2012

axle 1 + 2 + 3 + 4 + 5 : SAF, PAN 19-1, TDB 0749 ECE,

		<u>unladen</u>	<u>laden</u>
total mass	P in kg	7100	34800
axle 1	P1 in kg	1600	7500
axle 2	P2 in kg	1600	7500
axle 3	P3 in kg	1300	6600
axle 4	P4 in kg	1300	6600
axle 5	P5 in kg	1300	6600
wheel base	E in mm	8150 - 8150	
centre of gravity height	h in mm	1060	2054

	<u>axle 1</u>	<u>axle 2</u>	<u>axle 3</u>	<u>axle 4</u>	<u>axle 5</u>
no. of combined axles	1	1	1	1	1
no. of brake chambers per axle line KDZ	2	2	2	2	2
The power output corresponds to	BZ 122.1	BZ 122.1	BZ 119.6	BZ 119.6	BZ 122.1
brake chamber manufacturer	Meritor	Meritor	Meritor	Meritor	Meritor
chamber size	14.	14.	T.14/16	T.14/16	14.
lever length	69	69	69	69	69
brake factor	23.03	23.03	23.03	23.03	23.03
dyn. rolling radius rdyn min in mm	421	421	421	421	421
dyn. rolling radius rdyn max in mm	421	421	421	421	421
threshold torque Co Nm	6.0	6.0	6.0	6.0	6.0

calculation:					
chamber pressure (rdyn min) pH at z=22,5%bar	2.4	2.4	2.2	2.2	2.2
chamber pressure (rdyn max) pH at z=22,5%bar	2.4	2.4	2.2	2.2	2.2
chamber press. (servo) pcha at pm6,5bar bar	6.0	6.0	5.1	5.1	5.1
piston force ThA at pm6,5bar N	5788	5788	4886	4886	4886
brake force (rdyn min) T lad. at pm6,5bar N	43824	43824	36920	36920	36920
brake force (rdyn max) T lad. at pm6,5bar N	43824	43824	36920	36920	36920
brake force within 1 % rolling friction proportion %	20.0	20.0	20.0	20.0	20.0

braking rate z laden 0.581 for rdyn min  
z = sum (TR)/PRmax 0.581 for rdyn max

Trailer may only be operated in combination with trucks/tractors with ISO 7638 supply (5 or 7 polar).

brake diagram :

maximum pressure: 8.5 bar

axle 1:

valve 1: 971 002 ... 0 WABCO  
EBS emergency valve

valve 2: 480 207 0... 0 WABCO or 480 207 2... 0  
EBS relay valve

brake cylinder: Meritor 14HSCLD64

axle 2:

valve 1: 971 002 ... 0 WABCO  
EBS emergency valve

valve 2: 480 207 0... 0 WABCO or 480 207 2... 0  
EBS relay valve

brake cylinder: Meritor 14HSCLD64

axle 3:

valve 1: 971 002 ... 0 WABCO  
EBS emergency valve

valve 2: 480 102 ... 0 WABCO  
EBS trailer modulator

brake cylinder: Meritor 1416HTLD64 .

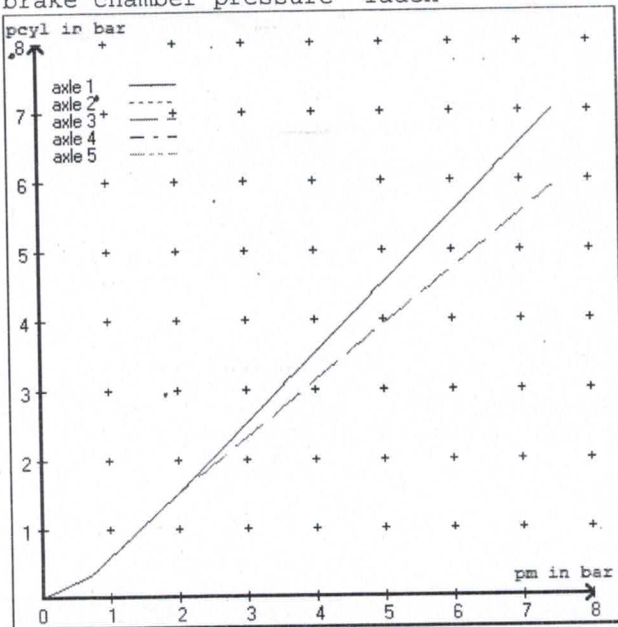


axle 4:  
valve 1: 971 002 ... 0                   WABCO  
          EBS emergency valve  
  
valve 2: 480 102 ... 0                   WABCO  
          EBS trailer modulator  
  
brake cylinder: Meritor   1416HTLD64

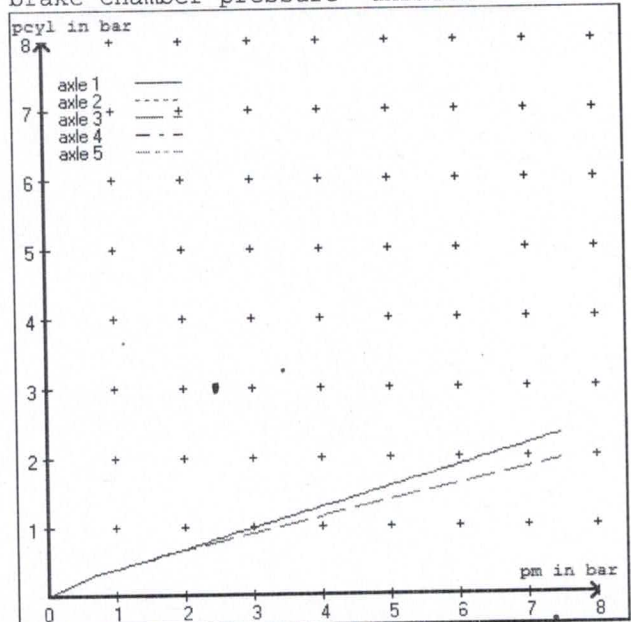
axle 5:  
valve 1: 971 002 ... 0                   WABCO  
          EBS emergency valve  
  
valve 2: 480 102 ... 0                   WABCO  
          EBS trailer modulator  
  
brake cylinder: Meritor   14HSCLD64

test type III	(zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	axle5	
at pm	3.6 bar =>	pcha in bar :	3.1	3.1	2.8	2.8	2.8	2.8
test type III	(zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	axle4	axle5	
at pm	1.2 bar =>	pcha in bar :	0.8	0.8	0.8	0.8	0.8	0.8

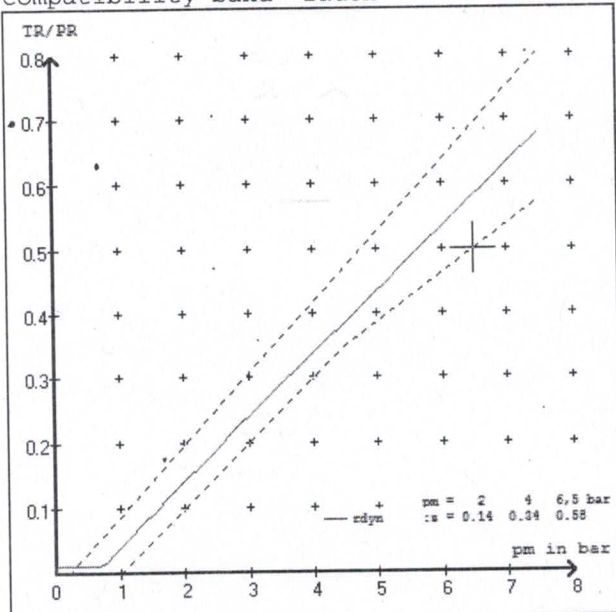
brake chamber pressure laden



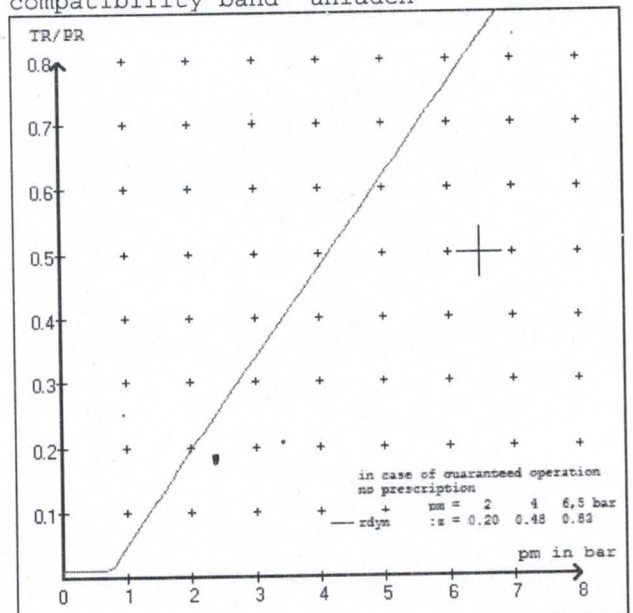
brake chamber pressure unladen



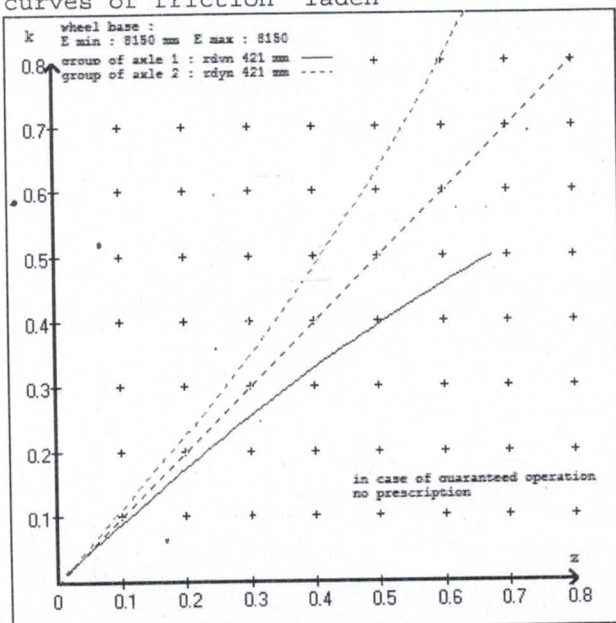
compatibility band laden



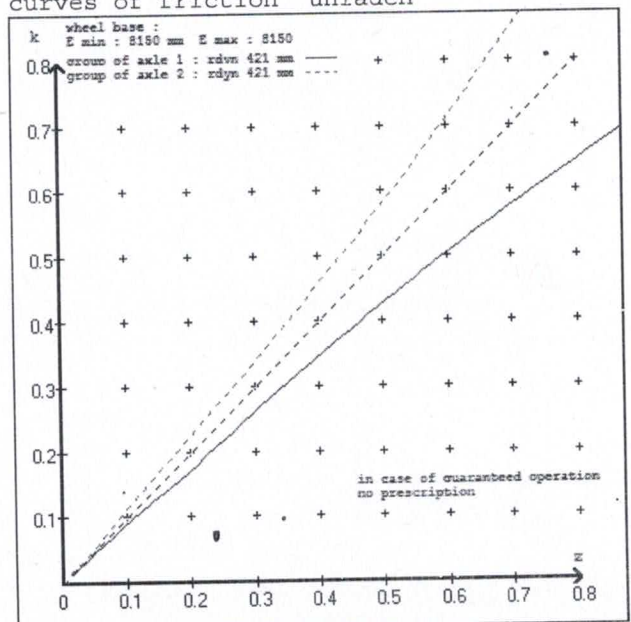
compatibility band unladen



curves of friction laden



curves of friction unladen





vehicle manufacturer: FRUEHAUF NZ LTD  
 trailer model : 5AFT C/SIDE  
 trailer type : 5-axle-full-trailer

brake chamber and lever length :

axle 1 : 2 x type/diameter 14. (Meritor) lever length 69 mm  
 axle 2 : 2 x type/diameter 14. (Meritor) lever length 69 mm  
 axle 3 : 2 x type/diameter T.14/16 (Meritor) lever length 69 mm  
 axle 4 : 2 x type/diameter T.14/16 (Meritor) lever length 69 mm  
 axle 5 : 2 x type/diameter 14. (Meritor) lever length 69 mm

brake diagram :

valve :  
 971 002 ... 0 WABCO EBS emergency valve  
 480 207 0.. 0 WABCO EBS relay valve or 480 207 2.. 0  
 480 102 ... 0 WABCO EBS trailer modulator

EBS input data

=====

vehicle manufacturer: FRUEHAUF NZ LTD  
 trailer model : 5AFT C/SIDE  
 trailer type : 5-axle-full-trailer  
 brake calculation no. : TP 50837A

tire circumference main axle : 2650 for rdyn max  
 tire circumference auxiliary axle : 2650 for rdyn max

assignment pm / deceleration z: pm 0.7 bar z = 0.010  
 (laden condition) 2.0 bar z = 0.142  
 6.5 bar z = 0.580

control pressure pm			6,5	control pressure pm			0.7	2.0	6.5
axle	axle load unladen	bellow pr. unladen	brake pr. unladen	axle load laden	bellow pr. laden	brake pr. laden			
1	1600	to be	2.0	7500	to be	0.3	1.5	6.0	
2	1600	entered by the vehicle manufact.	2.0	7500	entered by the vehicle manufact.	0.3	1.5	6.0	
3	1300		1.7	6600		0.3	1.5	5.1	
4	1300		1.7	6600		0.3	1.5	5.1	
5	1300		1.7	6600		0.3	1.5	5.1	

The unladen values indicated in the above table are values for the basic parameter set. Higher unladen axle loads and liftaxles are automatically recognized and do not require separate adjustment. The above unladen axle loads must not be fallen below.

=====

axle 1		axle 2		axle 3		axle 4		axle 5	
axle load	pcyl	axle load	pcyl	axle load	pcyl	axle load	pcyl	axle load	pcyl
1600	2.0	1600	2.0	1300	1.7	1300	1.7	1300	1.7
2100	2.3	2100	2.3	1800	2.0	1800	2.0	1800	2.0
2600	2.7	2600	2.7	2300	2.3	2300	2.3	2300	2.3
3100	3.0	3100	3.0	2800	2.7	2800	2.7	2800	2.7
3600	3.4	3600	3.4	3300	3.0	3300	3.0	3300	3.0
4100	3.7	4100	3.7	3800	3.3	3800	3.3	3800	3.3
4600	4.0	4600	4.0	4300	3.6	4300	3.6	4300	3.6
5100	4.4	5100	4.4	4800	3.9	4800	3.9	4800	3.9
7500	6.0	7500	6.0	6600	5.1	6600	5.1	6600	5.1

data sheet to ECE vehicle type-approval certificate concerning braking equipment: according to ECE R13 annex 11

axle 1 : reference axle: SAF	SBW 1937-...	brake lining: Jurid 539
test report :	TDB 0749 ECE	date : 13.10.2008
axle 2 : reference axle: SAF	SBW 1937-...	brake lining: Jurid 539
test report :	TDB 0749 ECE	date : 13.10.2008
axle 3 : reference axle: SAF	SBW 1937-...	brake lining: Jurid 539
test report :	TDB 0749 ECE	date : 13.10.2008
axle 4 : reference axle: SAF	SBW 1937-...	brake lining: Jurid 539
test report :	TDB 0749 ECE	date : 13.10.2008
axle 5 : reference axle: SAF	SBW 1937-...	brake lining: Jurid 539
test report :	TDB 0749 ECE	date : 13.10.2008

calc. verif. of residual (hot) braking force type III  
(item 4.2.1 of appendix 2 to annex 11)

axle 1	(rdyn 421 mm)	T = 22.0 % Fe
axle 2	(rdyn 421 mm)	T = 22.0 % Fe
axle 3	(rdyn 421 mm)	T = 19.5 % Fe
axle 4	(rdyn 421 mm)	T = 19.5 % Fe
axle 5	(rdyn 421 mm)	T = 19.5 % Fe

calculated actuator stroke in mm  
(item 4.3.1.1 of appendix 2 to annex 11)

axle 1	(sp = 57 mm)	s = 39 mm
axle 2	(sp = 57 mm)	s = 39 mm
axle 3	(sp = 56 mm)	s = 39 mm
axle 4	(sp = 56 mm)	s = 39 mm
axle 5	(sp = 56 mm)	s = 39 mm

average thrust output in N at pm = 6,5 bar (however max. pcha = 7,0 bar)

axle1	ThA = 5788 N
axle2	ThA = 5788 N
axle3	ThA = 4886 N
axle4	ThA = 4886 N
axle5	ThA = 4886 N

calc. residual (hot) braking force in N  
(item 4.3.1.4 of appendix 2 to annex 11)

axle 1	(rdyn 421 mm)	T = 34521 N
axle 2	(rdyn 421 mm)	T = 34521 N
axle 3	(rdyn 421 mm)	T = 29089 N
axle 4	(rdyn 421 mm)	T = 29089 N
axle 5	(rdyn 421 mm)	T = 29089 N

braking rate of the vehicle (item 4.3.2 to appendix 2 to annex 11)	basic test	type III
	of subject	(calculated)
0.58	trailer (E)	residual
		(hot)braking
		0.46

required braking rate  
(items 1.5.3 and 1.7.2 to annex 11)

>= 0,4 and  
>= 0,6\*E (0.35)

axle 1	(rdyn 421 mm)	T = 34521 N
axle 2	(rdyn 421 mm)	T = 34521 N
axle 3	(rdyn 421 mm)	T = 29089 N
axle 4	(rdyn 421 mm)	T = 29089 N
axle 5	(rdyn 421 mm)	T = 29089 N

braking rate of the vehicle (item 4.3.2 to appendix 2 to annex 11)	basic test	type III
	of subject	(calculated)
0.58	trailer (E)	residual
		(hot)braking
		0.46

required braking rate  
(items 1.5.3 and 1.7.2 to annex 11)

>= 0,4 and  
>= 0,6\*E (0.35)



spring parking brake

	axle 3	axle 4
no of TRISTOP-actuators per axle line KDZ	2	2
TRISTOP-actuator type	T.14/16	T.14/16
lever length	69	69
stat. tyre radius	401	401
	lBh in mm	rstat max in mm
at a stroke of	s	in mm
min. force of spring brake	TFZ in N	6160
sp.brake chamber no Meritor.....	4	4
release pressure	pLs in bar	4.5
	4.5	4.5

calculation:

ratio until road	3.9674	3.9674
$iFb = lBh * \eta * C * rBt / (rBn * rstat)$		
brake force of spring br. Tf in N	59654	59654
$Tf = (TFZ * KDZ - 2 * Co / lBh) * iFb$		
braking rate	zf laden	0.359
$zf = \sum (Tf) / P + 0,01$		

Test of the frictional connection required by the parking brake

minimum wheelbase/minimum supporting width min Ef necessary  
to fulfil the regulations

$$\min Ef = E * (1 - PR/P + zferf * h/E) / (1 - zferf / (fzul * nf/ng))$$

min Ef = 5861 mm for E = 8150 mm  
 =====  
 min Ef = 5861 mm for E = 8150 mm  
 =====

min Ef = minimum distance between front axle(s) (trailer) or support (semitrailer)  
 and the rear axle(s) (resultant of the bogie)

E = wheel base

fzul = 0.80 maximum permissible frictional connection required

zferf = 0.18 maximum required braking ratio of the parking brake

h = 2054 mm height of center of gravity - laden

PR = 19800 kg maximum bogie mass - laden

P = 34800 kg maximum total mass - laden

nf = 2 no. of axle(s) with TRISTOP spring brake actuators

ng = 3 no. of bogie axle(s)

reference values

reference values for z = 50% for max rdyn: 421 mm

	pz [bar]	T [N]	T [N]
axle 1	1.0	5128	
	6.0	37714	
axle 2	1.0	5128	
	6.0	37714	
axle 3	1.0		5052
	5.1		31773
axle 4	1.0		5052
	5.1		31773
axle 5	1.0		5052
	5.1		31773

VIN - no.:

	Axle(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	14./	14./	T.14/16	T.14/16	14./
Maximum stroke smax = ...mm maximaler Hub smax = ....mm	64	64	64	64	64
Lever length = ....mm Hebellänge = ....mm	69.08	69.08	69.08	69.08	69.08

