



Heavy Vehicle Specialist Certificate

Heavy Vehicle Specialist Inspector and Inspecting Organisation

Heavy Vehicle Specialist Inspector's Name *(PRINT IN CAPS)*

ID

CHRIS CLARKE

GTC

Vehicle Registration*

VIN / Chassis Number

7A9D25013C1023029

Component being certified:

Chassis Modification

Load Anchorage

Log Bolsters

Certification Category

Towing Connection

✓ Brakes

SRT

HUEK

Description of Work

CARRY OUT COMPLIANCE OF TRAILER TO THE NZ HEAVY VEHICLE BRAKE RULE

Code/Standard Certified to

HUBNZ 32015/2 SCHED 5.

Component Load Rating(s)

N/A.

General Drawing Number(s)

N/A

Supporting Documents

BRAKE DESIGN CERTIFICATE - JH11120K.

PREV EXEMPTION REFERENCE - HUB12/006.

*Special Conditions

WARNING LAMP MUST ILLUMINATE WHEN IGNITION IS SWITCHED ON - THEN EXTINGUISH IMMEDIATELY OR WHEN VEHICLE EXCEEDS 7 KPH.

Certification Expiry Date *(if applicable)*

N/A

or

Hubodometer Reading (whichever comes first)

Declaration

I the undersigned, declare that I am the Heavy Vehicle Specialist Inspector identified above 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 Deed of Appointment. To the best of my knowledge the information contained in this Certificate is true and correct.

Designer's ID *(if certified by a manufacturer)*

Inspector's / Delegate's Signature

*Delegate's Name *(PRINT IN CAPS)*

Date

Number

29.02.2012

398408

COF Vehicle Inspector ID:

COF Vehicle Inspector Signature:

Date

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



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WAKA KOTAHI

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20 Ballance Street
PO Box 5084
Lambton Quay
Wellington 6145
New Zealand
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F 64 4 894 3305
www.nzta.govt.nz

Document: A1260302
Exemption: HVBI2/006

**EXEMPTION FROM SPECIFIED REQUIREMENTS OF LAND TRANSPORT RULE:
Heavy-vehicle Brakes 2006, Rule 32015**

Pursuant to Section 166(1) of the Land Transport Act 1998, and pursuant to the powers delegated to me, I Jackie Hartley, Administrator (Assessments) hereby exempt the motor vehicle specified in Schedule 1 hereto from the section of Land Transport Rule: Heavy-vehicle Brakes 2006 (the Rule) listed in Schedule 2, subject to the conditions specified in Schedule 3.

SCHEDULE 1:

Make/Model: **Domett Truck & Trailer Ltd, 4 axle full-trailer**
VIN/CHASSIS: **7A9D25013C1023029**

SCHEDULE 2: - Exempted Requirement

Section 2.3(9); The parking brake of a vehicle, whether or not it is being operated as a combination vehicle, must be able to be applied by the driver from the normal driving position using one control only.

SCHEDULE 3: - Conditions of this exemption:

- 1) The vehicle must be fitted with a Wabco park-release emergency valve (PREV), Part Number: 971 002 900 0.
- 2) The vehicle must be fitted with the Wabco PREV name plate, Part Number 971 002 103 4, adjacent to the PREV.
- 3) The vehicle must still be fitted with a parking brake that complies with all parking brake requirements in the Rule other than the requirement in Clause 2.3(9) of the Rule.
- 4) The installation of the PREV must be approved in writing by Transport Specialties Limited (Transpecs) or an NZ Transport Agency appointed HVEK certifier acting on behalf of, and under instruction from, Transpecs; Transpecs must keep a written record of all approvals.
- 5) An HVEK certifier in 4) must be fully trained in end of line procedures for Wabco electronically controlled braking systems
- 6) Transpecs must provide full operator training in the use of the PREV and furnish the operator with full written operating instructions for the PREV.
- 7) The vehicle must not be modified in any way while operating under this exemption.
- 8) This original exemption must be kept by Transport Specialties Ltd.
- 9) A copy of this exemption (printed on a silver WABCO Sticker) must be affixed to the exempted vehicle as close to the WABCO PREV as possible.
- 10) The sticker in 8) must be legible and include all printed areas of this original exemption letter.
- 11) This exemption can be revoked at any time in writing by the NZ Transport Agency.
- 12)

Signed at Wellington this 4th day of January 2012.

Jackie Hartley
Administrator (Assessments)

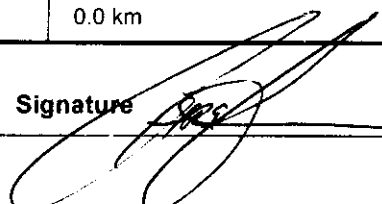
WABCO START-UP PROTOCOL

System	Trailer EBS-E	WABCO part number	480 102 064 0
Production date	2011-07-21	Serial number	896003018000E
Fingerprint Customer EOL / Customer Development / Flash Program	W 041610 / 2012-02-29 ; 00000000 / 0000-00-00 ; 00000000 / 0000-00-00		

WABCO		TRAILER EBS-E		GGVS/ADR TUEH TB 2007 - 019.00 TDB 0749 ECE			
HERSTELLER MANUFACTURER CONSTRUCTEUR	DOMETT T&T			GI0	Pin1	Pin3	Pin4
TYP TYPE TYPE	4AX STOCK			1	---	---	---
FAHRZEUG IDENT.NR. CHASSIS NUMBER NUMERO DE CHASSIS	7A9D25013C1023029			2	---	---	---
BREMSBERECHNUNGS-NR. BRAKE CALCULATION NO. CALCUL DE FREINADE NO.	TP50581			3	ALS2	ALS2	---
POLRADZAHNZAHL c-d e-f POLE WHEEL TEETH c-d e-f DENTS ROUE DENTEE c-d e-f	90	90	ABS-System ABS-System Système ABS	4	---	---	---
RSS Einfachbereifung Single Tire Monte simple			Lenkachse Steering axle Essieu vitour	5	DIAG	DIAG	DIAG
RSS Zwillingsbereifung Twin Tire Monte jumelle	X		Kippländiges Fahrzeug Critical Trailer Vehicule critique	6	---	---	---
Subsystems	---	I/O		7	---	---	---

Diagnostic memory	OK	Warning lamp control	OK
Parameter setting	carried out	Stop light power supply	Not tested
EBS pressure test	Not tested	Lifting axle test	Not tested
Redundancy test	OK	ECAS distance sensor calibration	Not tested
ABS sensor assignment	OK	Distance sensor Axle load calibr.	Not tested
RTR check	Not tested	Leak test	Not tested
Immobilizer test	Not tested	Signal outputs TEBS	Not tested

Diagnostic memory ELEX	Not tested	Signal outputs ELEX	Not tested
TailGUARDlight	Not tested	TailGUARD	Not tested

Manufacturer	DOMETT T&T	Vehicle ident. no	7A9D25013C1023029
Vehicle type	4AX STOCK	Odometer reading	0.0 km
next Service	0 km	Trip reading	0.0 km
Tested by	Chris Clarke	Signature 	
Date	2012-02-29 8:17:18 a.m.		

Statement of Design Compliance

S.O.D.C. number: JH111208

**For Heavy vehicle brake specification
(schedule 5) of HV Brake Rule 32015/2**

Vehicle details:

Make: Domett Trailers
Model: D2501
VIN#: 7A9D25013C1023029
Chassis#: 1029
GCM (kgs): N/A
GVM (kgs): 30000
Wheelbase (mm): 6580
Axle test report #: SAF INTRADISC TDB 0749
Type: 4 Axle Stock

Component Details:

	<u>Front</u>	<u>Rear</u>
Slack adjuster length:	DISC	DISC
Brake chamber size:	14(14HSCLD64-1604)	14/16(1416HTLD64-1606)
Tyre size:	265 70 R 19.5	265 70 R 19.5
Drawing number:	D2501	
(for component reference)		
Brake calculation#:	TP50581	

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: 28 Dec 2011



Name: John Hirst (HVEK)
Certifier ID: JEH

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

Signed: 

Dated: 29-02-2012

*) Programmed according to Wabco's End of Line protocol requirements where applicable.

HVBR WORKSHEET
(PROCEDURE & COMPLIANCE DOCUMENTATION SHEET)

CERTIFICATE No.

CUSTOMER NAME

CUSTOMER ORDER No.

DATE RECEIVED

VEHICLE TYPE

REG No.

CHASSIS No.

BRIEF SPECIFICATION AS CERTIFIED TO HVBR

BRAKE CHAMBERS:

Type: 14 (TSE): Max stroke = 64 mm Lever length = 69 mm

Type: 1416 (TSE) : Max stroke = 64 mm Lever length = 69 mm

BRAKE VALVES:

Ratio Valve Setting: EBS CONTROL

Test Points: 3 4 5 7

FRICION LINING:

(All) Lining Brand

OEM

Aftermarket

JURID 539

EBS CONTROL: IF SPECIAL CONDITIONS APPLY – SEE INSTRUCTION ON LT400

VALVES: AS PER BRAKE CALCULATION# TP50581

TYRE SIZE: 265 70 R 19.5

NOTES

PACKING SLIP NO.

PROCESS TIME:

MERITOR CHAMBERS IN TP50581 ARE TSE

COMPLETION DATE : 28th December 2011

SIGNATURE (pp.): 

Statement of Compliance with the New Zealand Heavy Brake Rule

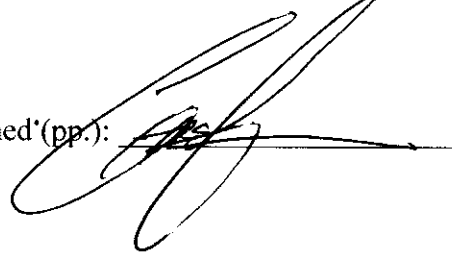
Documentation required supporting Statements of Compliance with the New Zealand Heavy Brake Rule, to be made available to the Statutory Authority on request, must include all calculations and test reports.

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 32015/2, Schedule 5.

Date: 28th Dec 2011

Signed*(pp.):



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 32015/2, 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

trailer (full, semi-, centre-axle) with air brake system acc. to 71/320/EEC, last amended by 98/12/EC and 2006/96/EC or UN/ECE-R.13.11

distribution: DOMETT T&T
7A9D25013C1023029

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 (V6.10.05.21).
-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!
WABCOBrake V6.10.05.21 db 26.05.2010

vehicle manufacturer: DOMETT T&T
trailer model : 4AX STOCK
trailer type : 4-axle-full-trailer
remarks : air / hydraulic / VA suspension
WABCO TRAILER - EBS E
TRISTOP 3+4: T.14/24
265/70 R 19,5

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

		unladen	laden
total mass	P in kg	4940	30000
axle 1	P1 in kg	1320	7500
axle 2	P2 in kg	1320	7500
axle 3	P3 in kg	1150	7500
axle 4	P4 in kg	1150	7500
wheel base	E in mm	6580 - 6580	
centre of gravity height	h in mm	1070	2530

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

calculation:

chamber pressure(rdyn min)pH at z=22,5%bar	2.6	2.6	2.2	2.2
chamber pressure(rdyn max)pH at z=22,5%bar	2.6	2.6	2.2	2.2
chamber press.(servo)pcha at pm6,5bar bar	6.7	6.7	5.0	5.0
piston force Tha at pm6,5bar N	6489	6489	4786	4786
brake force(rdyn min)T lad. at pm6,5bar N	49125	49125	36251	36251
brake force(rdyn max)T lad. at pm6,5bar N	49125	49125	36251	36251
brake force within 1 % rolling friction proportion %	25.0	25.0	25.0	25.0

braking rate z laden 0.580 for rdyn min
z = sum (TR)/PRmax 0.580 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
 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
 EBS relay valve

brake cylinder: Meritor 14HSCLD64

axle 3:

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

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

brake cylinder: Meritor 1416HTLD64

axle 4:

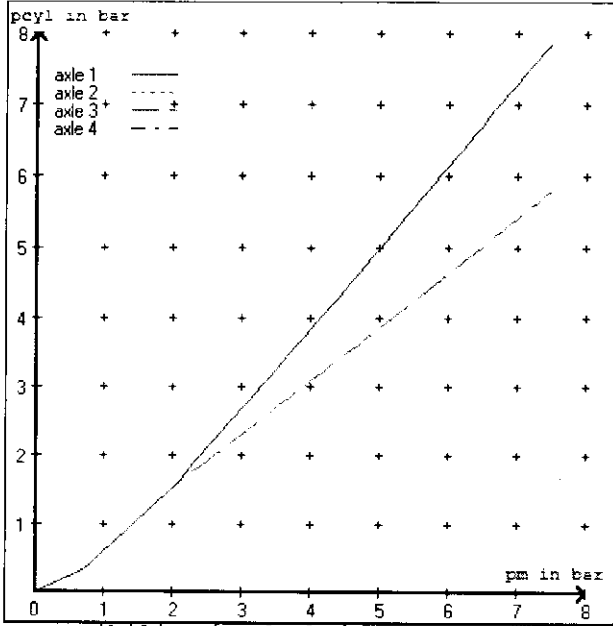
valve 1: 971 002 ... 0 WABCO
 EBS emergency valve

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

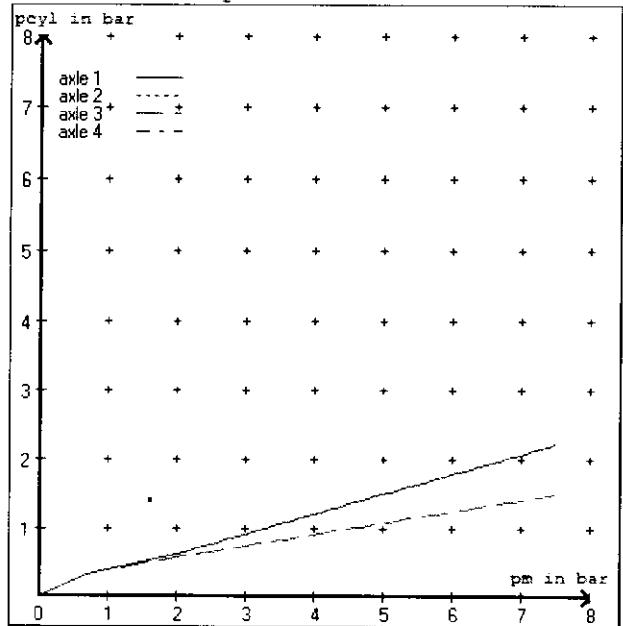
brake cylinder: Meritor 1416HTLD64

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4
at pm 3.7 bar =>	pcha in bar :	3.4	3.4	2.8	2.8
test type III (zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	axle4
at pm 1.2 bar =>	pcha in bar :	0.8	0.8	0.8	0.8

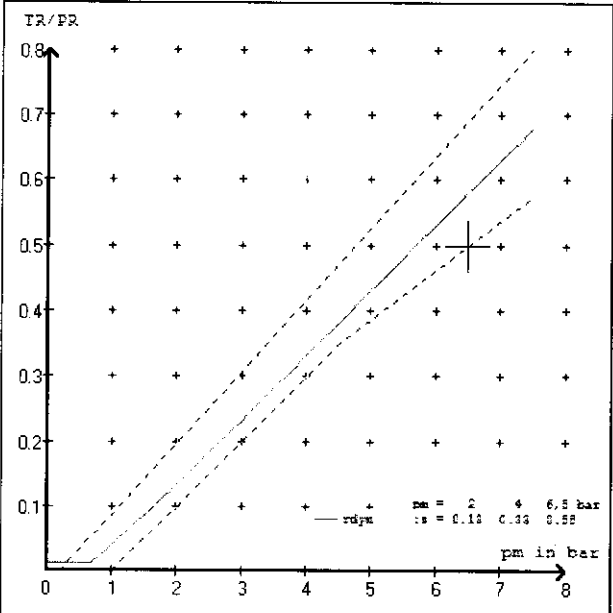
brake chamber pressure laden



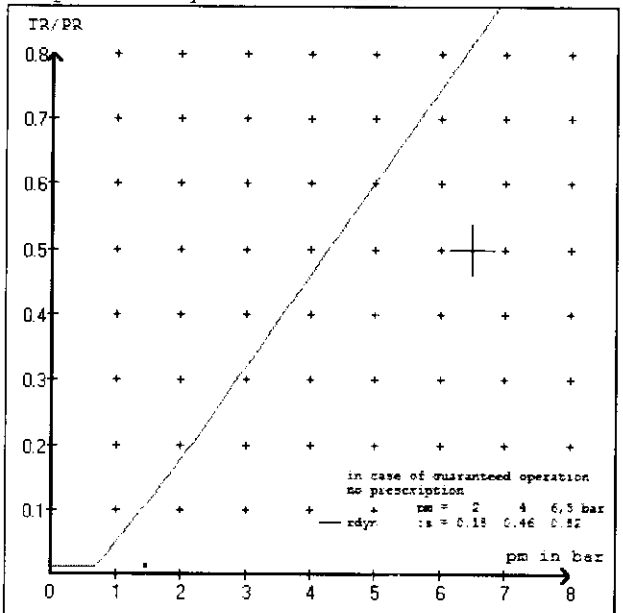
brake chamber pressure unladen



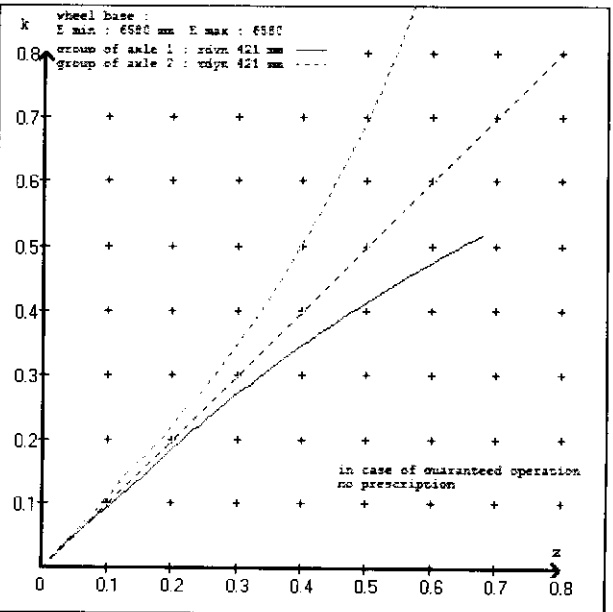
compatibility band laden



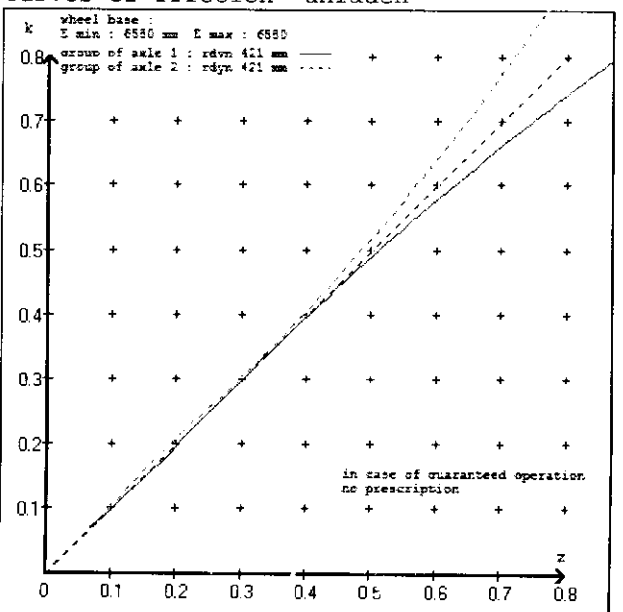
compatibility band unladen



curves of friction laden



curves of friction unladen



vehicle manufacturer: DOMETT T&T
 trailer model : 4AX STOCK
 trailer type : 4-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

brake diagram :

valve :

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

EBS input data

=====

vehicle manufacturer: DOMETT T&T
 trailer model : 4AX STOCK
 trailer type : 4-axle-full-trailer
 brake calculation no. : TP 50581A

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 = 0.000
 (laden condition) 2.0 bar z = 0.130
 6.5 bar z = 0.580

control pressure pm		6,5	control pressure pm					
axle	axle load unladen	bellow pr. unladen	brake pr. unladen	axle load laden	bellow pr. laden	0.7	2.0	6.5
1	1320	to be	1.9	7500	to be	0.3	1.5	6.7
2	1320	entered by the vehicle manufact.	1.9	7500	entered by the vehicle manufact.	0.3	1.5	6.7
3	1150		1.3	7500		0.3	1.5	5.0
4	1150		1.3	7500		0.3	1.5	5.0
5	0		0,0	0		0,0	0,0	0,0

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 load pcyl	axle load pcyl	axle load pcyl	axle load pcyl
1320	1.9	1320	1.9
1820	2.3	1820	2.3
2320	2.7	2320	2.7
2820	3.1	2820	3.1
3320	3.5	3320	3.5
3820	3.8	3820	3.8
4320	4.2	4320	4.2
4820	4.6	4820	4.6
7500	6.7	7500	6.7

data sheet to EC/ECE vehicle type-approval certificate concerning braking equipment: according to 98/12/EC annex IX 2.7.4 / 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

calc. verific. of residual (hot) braking force type III
(item 4.2 of appendix I to annex VII)

axle 1	(rdyn 421 mm)	T = 24.5 % Fe
axle 2	(rdyn 421 mm)	T = 24.5 % Fe
axle 3	(rdyn 421 mm)	T = 19.7 % Fe
axle 4	(rdyn 421 mm)	T = 19.7 % Fe

calculated actuator stroke in mm
(item 4.3.1.1 of appendix I to annex VII)

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

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

axle1	ThA = 6489 N
axle2	ThA = 6489 N
axle3	ThA = 4786 N
axle4	ThA = 4786 N

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

axle 1	(rdyn 421 mm)	T = 38676 N
axle 2	(rdyn 421 mm)	T = 38676 N
axle 3	(rdyn 421 mm)	T = 28586 N
axle 4	(rdyn 421 mm)	T = 28586 N

	basic test	type III
	of subject	(calculated)
	trailer (z)	residual
braking rate of the vehicle		(hot)braking
(item 4.3.2 to appendix I to annex VII)	0.58	0.46

required braking rate >= 0,4 and
(items 1.3.3 and 1.6.2 to annex II) >= 0,6*z (0.35)

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

axle 1	(rdyn 421 mm)	T = 38676 N
axle 2	(rdyn 421 mm)	T = 38676 N
axle 3	(rdyn 421 mm)	T = 28586 N
axle 4	(rdyn 421 mm)	T = 28586 N

	basic test	type III
	of subject	(calculated)
	trailer (z)	residual
braking rate of the vehicle		(hot)braking
(item 4.3.2 to appendix I to annex VII)	0.58	0.46

required braking rate >= 0,4 and
(items 1.3.3 and 1.6.2 to annex II) >= 0,6*z (0.35)

spring parking brake

		<u>axle 3</u>	<u>axle 4</u>
no of TRISTOP-actuators per axle line KDZ		2	2
TRISTOP-actuator type		T.14/16	T.14/16
lever length	lBh in mm	69	69
stat. tyre radius	rstat max in mm	401	401
at a stroke of	s in mm	30	30
min. force of spring brake	TFZ in N	6160	6160
sp.brake chamber no Meritor.....		4	4
release pressure	pLs in bar	4.8	4.8

calculation:

ratio until road		3.9674	3.9674
$iFb = lBh * \eta * C * rBt / (rBn * rstat)$			
	for rstat in mm	401	401
brake force of spring br. Tf in N		48188	48188
$Tf = (TFZ * KDZ - 2 * Co / lBh) * iFb$			
braking rate	zf laden	0.337	
$zf = \sum (Tf) / P + 0,01$			

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 = 4833 mm for E = 6580 mm

=====

min Ef = 4833 mm for E = 6580 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 = 2530 mm height of center of gravity - laden

PR = 15000 kg maximum bogie mass - laden

P = 30000 kg maximum total mass - laden

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

ng = 2 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	5137	
	6.7	42349	
axle 2	1.0	5137	
	6.7	42349	
axle 3	1.0		5137
	5.0		31251
axle 4	1.0		5137
	5.0		31251

VIN - no.:

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

