



Heavy Vehicle Specialist Certificate

Heavy Vehicle Specialist Inspector and Inspecting Organisation

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

ID

RONALD STUART Pratt

TRSP

Vehicle Registration*

VIN / Chassis Number

7A9D35013A0023919

Component being certified:

Chassis Modification

Load Anchorage

Log Bolsters

Towing Connection

Brakes

SRT

Certification Category

HUEK

Description of Work

Certify to Brake Rule 32015

Code/Standard Certified to

NZHUB Rule Schedule 5

Component Load Rating(s)

General Drawing Number(s)

NA

Supporting Documents

Brake cert No RP100808

*Special Conditions

ABS Control - Warning lamp must illuminate when ignition switched on and extinguish immediately or when vehicle reaches 7KPH

Certification Expiry Date (if applicable)

NA

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

RS Pratt

*Delegate's Name (PRINT IN CAPS)

Date

23/08/2010

Number

351734

COF Vehicle Inspector ID:

COF Vehicle Inspector Signature:

Date

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

NOTICE TO VEHICLE OPERATOR

THIS VEHICLE HAS A BRAKE SYSTEM WHICH HAS BEEN DESIGNED AND FITTED IN ACCORDANCE WITH THE NEW ZEALAND HEAVY VEHICLE BRAKE RULE 32015: SCHEDULE 5.

IF THIS VEHICLE IS OPERATED IN CONJUNCTION WITH NON-CODED VEHICLES, THERE MAY BE OPERATIONAL FACTORS WHICH NEED TO BE TAKEN INTO CONSIDERATION.

PLEASE REFER TO THE CERTIFIER FOR FURTHER INFORMATION.

EXCERPT FROM NZ HEAVY VEHICLE BRAKE RULE 32015

10.1 Responsibilities of operators

A person who operates a vehicle must ensure that the vehicle complies with this Rule

10.2 Responsibilities of repairers

A person who repairs or adjusts a brake must ensure that the repair or adjustment:

- (a) does not prevent the vehicle from complying with the rule : and*
- (b) complies with Land Transport Rule: Vehicle Repair 1998.*

10.3 Responsibilities of modifiers

A person who modifies a vehicle so as to affect the braking performance of the vehicle must:

- (a) ensure that the modification does not prevent the vehicle from complying with this rule: and*
- (b) notify the operator that the vehicle must be inspected and. If necessary. Certified by a person or organisation appointed to carry out specialist inspection and certification of heavy vehicle brakes.*

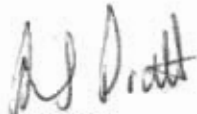
10.5 Responsibilities of manufactures and retailers

A person may manufacture, stock, or offer for sale a brake or its components. Intended for fitting to a vehicle to be used on New Zealand roads, only if that brake or component:

- (a) complies with this Rule: and*
- (b) does not prevent a repair to a vehicle, its structure, systems, components and equipment from complying with this Rule.*

IF YOU ARE UNSURE ABOUT YOUR RESPONSIBILITIES, PLEASE CONTACT THE VEHICLE MANUFACTURER, OR MYSELF.

COMPLAINTS. *Complaints and Warranty issues which relate to Brake Certification will be acknowledged within 7 working days and a resolution proposed within 25 working days. Resolution of complaints and Warranty issues is subject to Transpecs Warranty policy. Customers have the right to appeal to the Land Transport Safety Authority if dissatisfied with a Compliance issue. (refer LTNZ Deed Of Appointment Para 47.4) Land Transport NZ Helpdesk 0800 699 000*


.....
R S PRATT
(TRSP HVEK)

NOTICE TO VEHICLE OPERATOR

This trailer is equipped with an Electronic Brake System.

To comply with the New Zealand Heavy Vehicle Brake RULE, it must be used only in conjunction with a truck/tractor equipped with a 5 or 7 pin ABS/EBS power supply socket.

Failure to connect to such supply invalidates Brake Rule compliance.

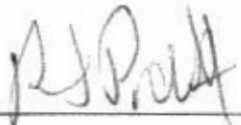
The trailer ABS/EBS warning light on the towing vehicle dashboard must illuminate when the ignition is switched on and extinguish when the vehicle is in motion.

If the light does not illuminate when ignition is switched on, the system must be checked. If the light remains illuminated when the vehicle is in motion, Brake Rule compliance is compromised. Repairs must be made as soon as possible.

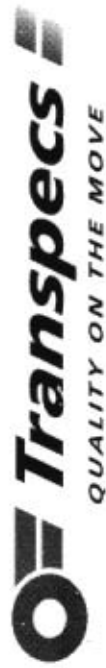
NB:

If this vehicle is fitted with mechanical (spring) suspension, the load sense valving has been adjusted to suit exactly the performance of the original springs. In event of replacement being required, original equipment springs **must** be fitted to ensure correct ongoing operation. Fitment of non genuine springs can affect operation and therefore, compliance.

If you are unsure of your responsibilities and/or obligations, please contact either the vehicle manufacturer or myself.



R S Pratt
(TRSP HVEK 09 980 7300)



P.O.Box 98-971

South Auckland Mail Centre

Ronald Stuart Pratt (TRSP)

DATE 20/08/2010 TYPE APPROVED NO

CERTIFICATE No RP100808 4AFT HEND EBS E

7A9D35013A0023919

BRAKE CHAMBERS FRONT 24TSE64mm

BRAKE CHAMBERS REAR 24/30TSE64mm LOAD SENSED Yes EBS Control

SLACK LENGTH FRONT 140mm TYRE SIZE FRONT 265/70R19.5

SLACK LENGTH REAR 140mm TYRE SIZE REAR 265/70R19.5

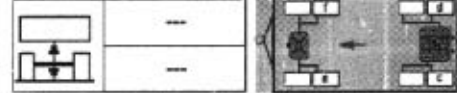
THIS VEHICLE COMPLIES WITH N.Z.H.V.B.R. LINING MATERIAL FRONT ABEX 3030-197

32015 SCHEDULE 5 LINING MATERIAL REAR ABEX 3030-197

WABCO**TRAILER EBS-E**

GGVSIADR TUEH TB 2007 - 019.00

HERSTELLER MANUFACTURER CONSTRUCTEUR		Domett Trailers		GIO	Pin1	Pin3	Pin4
TYP TYPE		4A Full Trailer Tipp		1	---	---	---
FAHRZEUG IDENTIFIK. CHASSIS NUMBER NUMERO DE C-CHASSIS		7A9D35013A0023919		2	---	---	---
BREMSBERECHNUNGS-NR. BRAKE CALCULATION NO. CALCUL DE FREMAGE NO.				3	ALS2	ALS2	---
POLRADZÄHLEZAHL c-d e-f POLE WHEEL TEETH c-d e-f DENTS ROUE DENTEE c-d e-f		100	100	4	---	---	---
ABS-System ABS-System Systeme ABS		4S/3M		5	DIAG	DIAG	DIAG
RSS RSS RSS	Einfachbereifung Single Tire Mote simple	Lernachse Steering axle Essieu direct		6	---	---	---
	Zwillingbereifung Twin Tire Mote jumelle	X	Hippokritisches Fahrzeug Critical Trailer Vehicule critique	7	---	---	---
Subsystems		--		I/O			



ACHSE AXLE ESSIEU	pm (bar)		6.5	pm (bar)		0.7	2.0	---	6.5	TYP TYPE	(mm)	(mm)	⊙ (bar)	
	H (kg)	⊙	⊙	H (kg)	⊙	⊙	pz	1.0	Pz					
1	1500	0.5	1.9	7000	3.9	0.4	1.3	---	6.0	-	---	---	---	---
2	1500	0.5	1.9	7000	3.9	0.4	1.3	---	6.0	-	---	---	---	---
3	1200	0.3	1.2	7000	3.9	0.4	1.3	---	4.2	-	---	---	---	---
4	1200	0.3	1.2	7000	3.9	0.4	1.3	---	4.2	-	---	---	---	---
5	0	---	---	0	---	---	---	---	---	-	---	---	---	---

System	Trailer EBS-E	WABCO part number	480 102 064 0
Production date	2010-03-29	Serial number	284008245700
Fingerprint Customer EOL / Customer Development / Flash Program	W 029383 / 2010-08-12 ; 00000000 / 0000-00-00 ; 00000000 / 0000-00-00		

WABCO		TRAILER EBS-E		GGVS/ADR TUEH TB 2007 - 019.00			
HERSTELLER MANUFACTURER CONSTRUCTEUR	Domett Trailers			GIO	Pin1	Pin3	Pin4
TYP TYPE	4A Full Trailer Tipp			1	---	---	---
FAHRZEUG IDENTIFIK. CHASSIS NUMBER NUMERO DE CHASSIS	7A9D35013A0023919			2	---	---	---
BREMSSBERECHNUNG BRAKE CALCULATION NO. CALCUL DE FREINAGE NO.				3	ALS2	ALS2	---
POLRADZÄHNEZAHL c-d e-f POLE WHEEL TEETH c-d e-f DENTS ROUE DENTÉE c-d e-f	100	100	ABS-System ABS-System Systeme ABS	4	---	---	---
RSS RSS RSS	Einachslenkung Single Tire Monte simple		Lenkachse Steering axle Essieu avant	5	DIAG	DIAG	DIAG
Zwillingablenkung Twin Tire Monte jumelle	X		Rippkranisches Fahrzeug Critical Trailer Vehicule critique	6	---	---	---
Subsystems	---		I/O	7	---	---	---

ACHSE AXLE ESSIEU	pm (bar)	6.5	pm (bar)	0.7	2.0	---	6.5	TR (daN)
1	1500	0.5	1.9	7000	3.9	0.4	1.3	---
2	1500	0.5	1.9	7000	3.9	0.4	1.3	---
3	1200	0.3	1.2	7000	3.9	0.4	1.3	---
4	1200	0.3	1.2	7000	3.9	0.4	1.3	---
5	0	---	---	0	---	---	---	---

Diagnostic memory	OK	Warning lamp control	OK
Parameter setting	carried out	Stop light power supply	Not tested
EBS pressure test	OK	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		

Manufacturer	Domett Trailers	Vehicle ident. no	7A9D35013A0023919
Vehicle type	4A Full Trailer Tipp	Odometer reading	0.0 km
next Service	0 km	Trip reading	0.0 km
Tested by	Ron Pratt	Signature <i>R. Pratt</i>	
Date	2010-08-12 9:15:37 PM		

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.13.10

Dom
3334

distribution: Domett
3334 919
4A Hend EBS
00107RP

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 (V6.08.06.08).
-the functional characteristics of our products, but not of those of other 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).
WABCOBrake V6.08.06.08 db 08.06.2009

vehicle manufacturer: Domett
trailer model : 4A Full Trailer Tipper
trailer type : 4-axle-full-trailer
remarks : air / hydraulic / VA suspension
WABCO TRAILER - EBS
TRISTOP 3+4: 24/30
265/70 R 19,5

axle 1 + 2 + 3 + 4 : Hendrickson, PW 335x210, RDW 1914 0699, RDW 1901 1249

		unladen	laden
total mass	P in kg	5400	28000
axle 1	P1 in kg	1500	7000
axle 2	P2 in kg	1500	7000
axle 3	P3 in kg	1200	7000
axle 4	P4 in kg	1200	7000
wheel base	E in mm	4800 - 4800	
centre of gravity height	h in mm	980	1900

		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		FE 747	FE 747BC	0051.0BC	0051.0
brake chamber manufacturer		WABCO	WABCO	WABCO	WABCO
chamber size		24	24	24/30	24/30
lever length	lBh in mm	140	140	140	140
brake factor	[-]	8.70	8.70	8.70	8.70
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	10.0	10.0	10.0	10.0

calculation:

chamber pressure(rdyn min)pH at z=22,5%bar	2.2	2.2	1.8	1.8	
chamber pressure(rdyn max)pH at z=22,5%bar	2.2	2.2	1.8	1.8	
chamber press.(servo)pcha at pm6,5bar bar	6.0	6.0	4.2	4.2	
piston force ThA at pm6,5bar N	8271	8271	5915	5915	
brake force(rdyn min)T lad. at pm6,5bar N	48131	48131	34497	34497	
brake force(rdyn max)T lad. at pm6,5bar N	48131	48131	34497	34497	
brake force within 1 % rolling friction proportion	%	24.6	24.6	25.4	25.4

braking rate z laden 0.602 for rdyn min
z = sum (TR)/PRmax 0.602 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: 480 102 ... 0 WABCO
 EBS trailer modulator

axle 2:

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

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

axle 3:

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

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

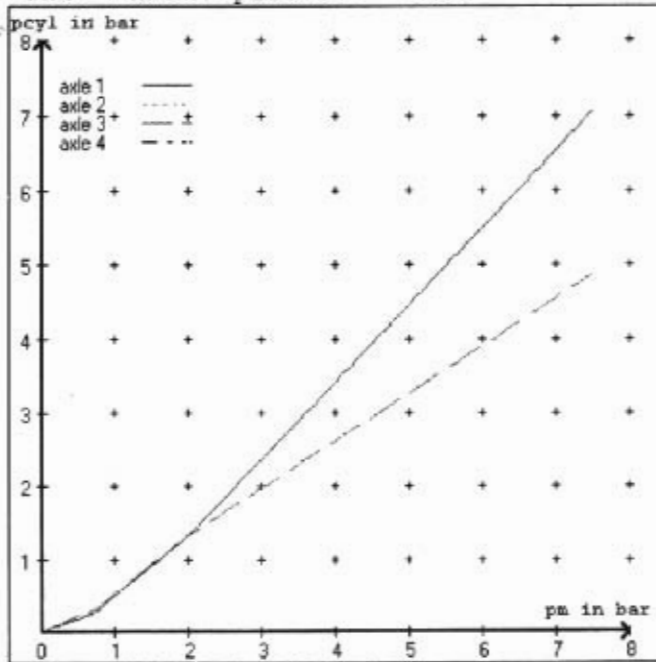
axle 4:

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

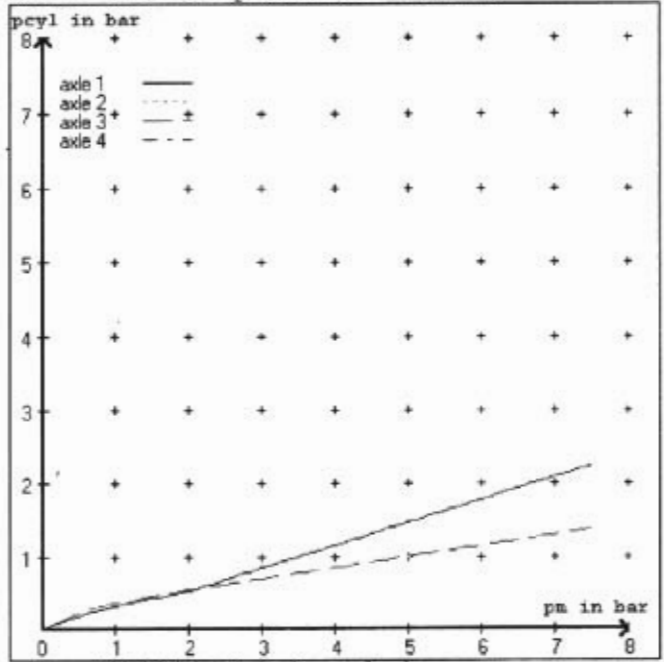
valve 2: 480 207 0.. 0 WABCO
 EBS relay valve

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	
at pm 3.6 bar =>	pcha in bar :	2.9	2.9	2.3	2.3	
test type III (zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	axle4	
at pm 1.2 bar =>	pcha in bar :	0.6	0.6	0.7	0.7	

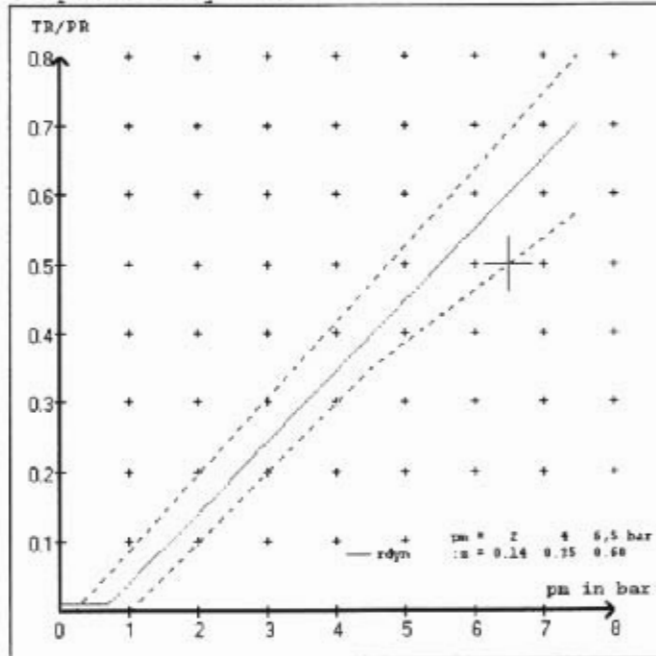
brake chamber pressure laden



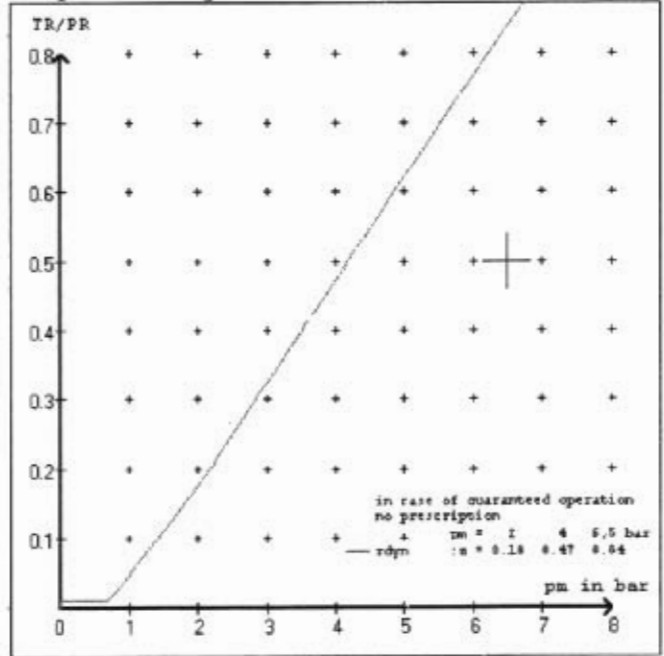
brake chamber pressure unladen



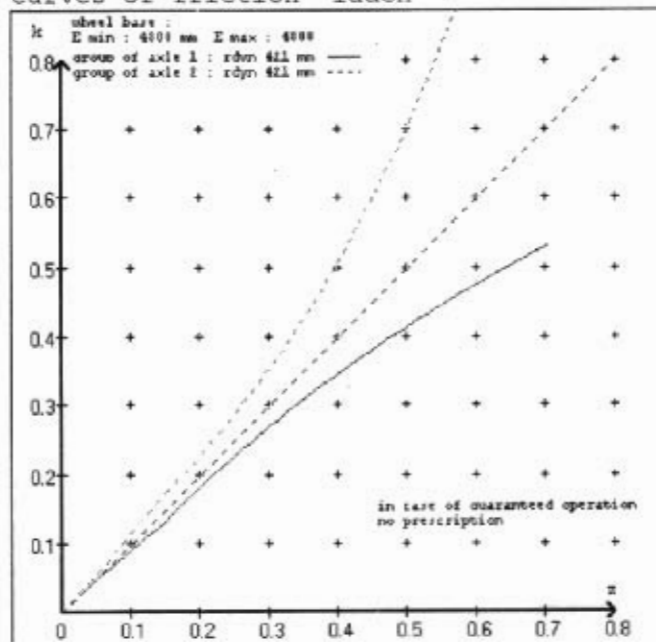
compatibility band laden



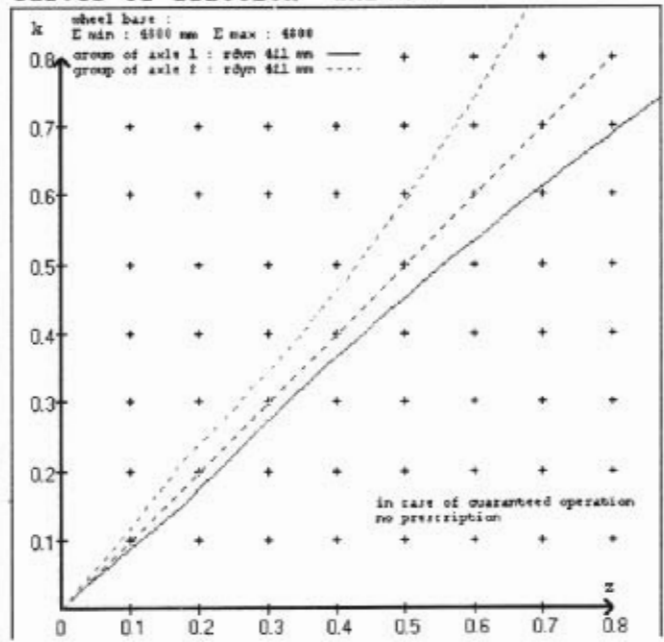
compatibility band unladen



curves of friction laden



curves of friction unladen



vehicle manufacturer: Domett
 trailer model : 4A Full Trailer Tipper
 trailer type : 4-axle-full-trailer

brake chamber and lever length :

axle 1 : 2 x type/diameter 24 (WABCO) lever length 140 mm
 axle 2 : 2 x type/diameter 24 (WABCO) lever length 140 mm
 axle 3 : 2 x type/diameter 24/30 (WABCO) lever length 140 mm
 axle 4 : 2 x type/diameter 24/30 (WABCO) lever length 140 mm

brake diagram :

valve :

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

3.9
0.5

EBS input data

vehicle manufacturer: Domett
 trailer model : 4A Full Trailer Tipper
 trailer type : 4-axle-full-trailer
 brake calculation no. : TP 107A

3.9
0.3

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 = 0.134
 6.5 bar z = 0.600

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	1500	to be	1.9	7000	to be	0.2	1.3	6.0
2	1500	entered by the vehicle manufact.	1.9	7000	entered by the vehicle manufact.	0.2	1.3	6.0
3	1200		1.2	7000		0.3	1.3	4.2
4	1200		1.2	7000		0.3	1.3	4.2
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 pcy1	axle load pcy1	axle load pcy1	axle load pcy1
1500 1.9	1500 1.9	1200 1.2	1200 1.2
2000 2.3	2000 2.3	1700 1.5	1700 1.5
2500 2.6	2500 2.6	2200 1.7	2200 1.7
3000 3.0	3000 3.0	2700 2.0	2700 2.0
3500 3.4	3500 3.4	3200 2.2	3200 2.2
4000 3.8	4000 3.8	3700 2.5	3700 2.5
4500 4.1	4500 4.1	4200 2.8	4200 2.8
5000 4.5	5000 4.5	4700 3.0	4700 3.0
7000 6.0	7000 6.0	7000 4.2	7000 4.2

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: Hendrickson2000 Series brake lining: Fer3658F / DurP2008
 test report : RDW 1914 0699 date : 10.02.2000
 axle 2 : reference axle: Hendrickson2000 Series brake lining: Fer3658F / DurP2008
 test report : RDW 1914 0699 date : 10.02.2000
 axle 3 : reference axle: Hendrickson2000 Series brake lining: Fer3658F / DurP2008
 test report : RDW 1914 0699 date : 10.02.2000
 axle 4 : reference axle: Hendrickson2000 Series brake lining: Fer3658F / DurP2008
 test report : RDW 1914 0699 date : 10.02.2000

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

axle 1	(rdyn 421 mm)	T = 21.1 % Pe
axle 2	(rdyn 421 mm)	T = 21.1 % Pe
axle 3	(rdyn 421 mm)	T = 17.1 % Pe
axle 4	(rdyn 421 mm)	T = 17.1 % Pe

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

axle 1	(sp = 73 mm)	s = 53 mm
axle 2	(sp = 73 mm)	s = 53 mm
axle 3	(sp = 63 mm)	s = 53 mm
axle 4	(sp = 63 mm)	s = 53 mm

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

axle1	ThA = 8271 N
axle2	ThA = 8271 N
axle3	ThA = 5915 N
axle4	ThA = 5915 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 = 42078 N
axle 2	(rdyn 421 mm)	T = 42078 N
axle 3	(rdyn 421 mm)	T = 30187 N
axle 4	(rdyn 421 mm)	T = 30187 N

basic test	type III
of subject	(calculated)
trailer (z)	residual
	(hot)braking
	0.53

braking rate of the vehicle
 (item 4.3.2 to appendix I to annex VII)

0.60

required braking rate
 (items 1.3.3 and 1.6.2 to annex II)

>= 0,4 and
 >= 0,6*z (0.36)

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

axle 1	(rdyn 421 mm)	T = 42078 N
axle 2	(rdyn 421 mm)	T = 42078 N
axle 3	(rdyn 421 mm)	T = 30187 N
axle 4	(rdyn 421 mm)	T = 30187 N

basic test	type III
of subject	(calculated)
trailer (z)	residual
	(hot)braking
	0.53

braking rate of the vehicle
 (item 4.3.2 to appendix I to annex VII)

0.60

required braking rate
 (items 1.3.3 and 1.6.2 to annex II)

>= 0,4 and
 >= 0,6*z (0.36)

spring parking brake

	<u>axle 3</u>	<u>axle 4</u>
no of TRISTOP-actuators per axle line KDZ	2	2
TRISTOP-actuator type	24/30	24/30
lever length	140	140
stat. tyre radius	401	401
at a stroke of	30	30
min. force of spring brake	6360	6360
sp.brake chamber no 925	376 005 0376 005 0	
sp.brake chamber no 925	376 2.. 0376 2.. 0	
release pressure	4.9	4.9

calculation:

ratio until road	3.0374	3.0374
$iF_b = lBh \cdot \eta \cdot C \cdot r_{Bt} / (2 \cdot r_{Bn} \cdot r_{stat})$		
for rstat in mm	401	401
brake force of spring br. Tf in N	38202	38202
$T_f = (TFZ \cdot KDZ - 2 \cdot C_o / lBh) \cdot iF_b$		
braking rate	0.288	
zf laden		
$z_f = \sum (T_f) / P + 0,01$		

Test of the frictional connection required by the parking brake

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

$$\min E_f = E \cdot (1 - PR/P + z_{ferf} \cdot h/E) / (1 - z_{ferf} / (f_{zul} \cdot n_f/n_g))$$

$$\min E_f = 3538 \text{ mm for } E = 4800 \text{ mm}$$

$$\min E_f = 3538 \text{ mm for } E = 4800 \text{ mm}$$

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 = 1900 mm	height of center of gravity - laden
PR = 14000 kg	maximum bogie mass - laden
P = 28000 kg	maximum total mass - laden
nf = 2	no. of axle(s) with TRISTOP spring brake actuators
ng = 2	no. of bogie axle(s)

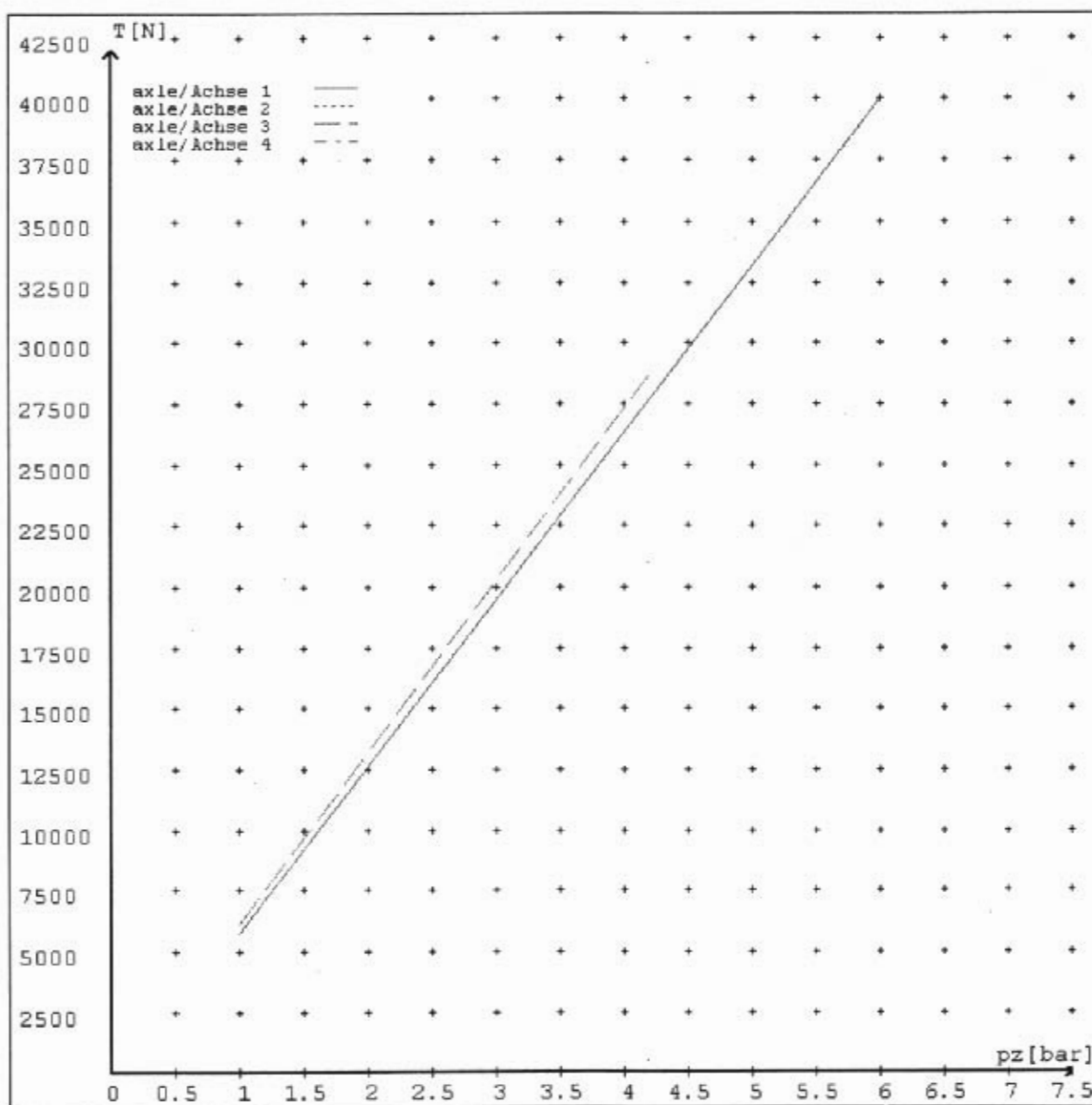
axle manufacturer	axle 1 + 2 + 3 + 4	
type of brake	Hendrickson	
type of axle	PW 335x210	
test report no.	2000 Series	
test report of characteristic value	RDW 1914 0699	
	RDW 1901 1249	
adm. stat. axle load	Pstat in kg	11000
tested axle load	Pe in kg	11000
max. adm. tyre radius	Rezul in mm	999
adm. cam. torque (6,5 bar)	Czul in Nm	1740
lining area per brake	AB in cm ²	1432
no. of brake cylinder	-	2
brakefactor Bf	..	8.70
threshold torque (Co,e)	Co,e in Nm	10
date	10.02.2000	
brake lining	Fer3658F / DurP2008	
cam torque	Ce in Nm	1502
brake force	TeIII in daN	5488
stroke	seIII in mm	57
tested tyre radius	Re in mm	421
tested lever length	le in mm	152

reference values

reference values for z = 50%

	pz [bar]	T [N]	T [N]
axle 1	1.0	5711	
	6.0	39976	
axle 2	1.0	5711	
	6.0	39976	
axle 3	1.0		6076
	4.2		28652
axle 4	1.0		6076
	4.2		28652

VIN - no.:

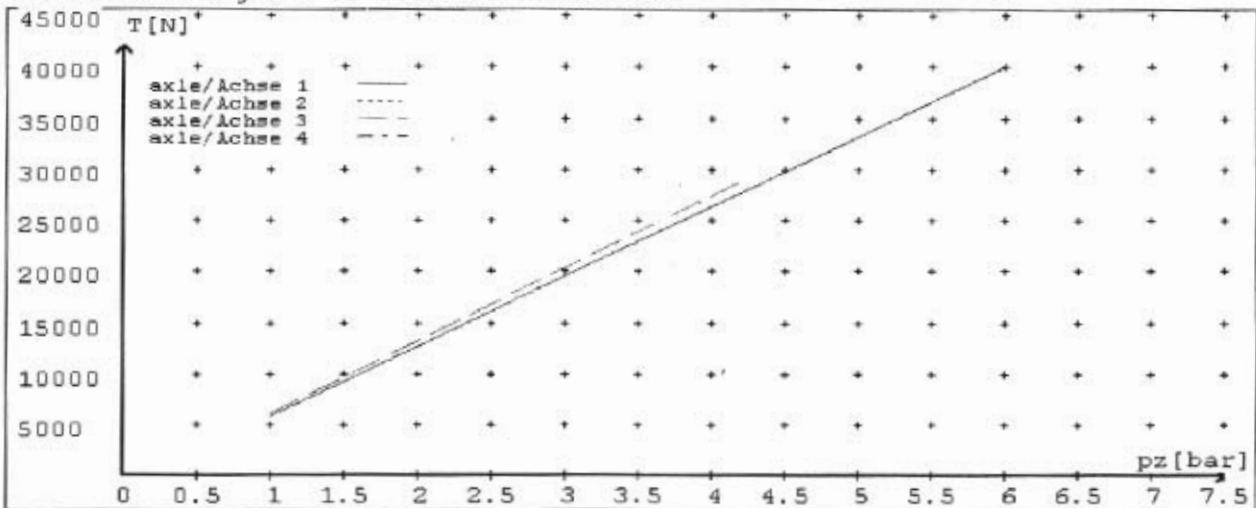


reference values for $z = 0.5$

Angabe der Referenzwerte für $z = 0.5$

brake calculation no: TP 107A date 10.08.2010

Bremsberechnung Nr: TP 107A vom 10.08.2010



	Axle(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	24/	24/	24/30	24/30	/
Maximum stroke smax = ...mm maximaler Hub smax =mm	75	75	64	64	
Lever length = ...mm Hebellänge =mm	140	140	140	140	