



Heavy Vehicle Specialist Certificate

Heavy Vehicle Specialist Inspector and Inspecting Organisation

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

Ronald Stuart PAATT

ID

TRSP

Vehicle Registration*

VIN / Chassis Number

7A85N0J0298052684

Component being certified:

Chassis Modification

Load Anchorage

Log Bolsters

Towing Connection

Brakes

SRT

Certification Category

HVEK

Description of Work

certify to Brake Rule 32015

Code/Standard Certified to

NZ HV Brake Rule Schedule 5

Component Load Rating(s)

General Drawing Number(s)

NA

Supporting Documents

Brake Cert No RP100714

PREV Exemption HVB10/257

*Special Conditions

EBS 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)

Grid for hubodometer reading

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)

Blank field for Designer's ID

Inspector's / Delegate's Signature

Signature of R. Stuart

*Delegate's Name (PRINT IN CAPS)

Blank field for Delegate's Name

Date

29/07/2010

Number

351716

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)

WABCO**TRAILER EBS-E**

GGVS/ADR TUEH TB 2007 - 019.00

HERSTELLER MANUFACTURER CONSTRUCTEUR		Domett Evans Rebuild				GIO		Pin1		Pin3		Pin4	
TYP TYPE TYPE		4A Full Tanker				1		---		---		---	
FAHRZEUG IDENTNR. CHASSIS NUMBER NUMERO DE CHASSIS		7A85N0J0298052684				2		---		---		---	
BREMSENRECHNUNGS NR. BRAKE CALCULATION NO. CALCUL DE FREINAGE NO.		00102RP				3		ALS2		ALS2		---	
POLRADZÄHLEZAHL c-d e-f POLE WHEEL TENTI c-d e-f DENTS ROUE DENTÉE c-d e-f		90		90		ABS-System ABS-System Système ABS		4S/3M		4		---	
RSS RSS RSS		Einfachbereifung Single Tire Monte simple		Lenkachse Steering axle Essieu directeur		5		DIAG		DIAG		DIAG	
Zwillingbereifung Twin Tire Monte jumelle		X		Kipplattchen Fahrzeug Critical Trailer Vehicule critique		6		---		---		---	
Subsystems		---		I/O		7		---		---		---	

pm (bar)		6.5		pm (bar)		0.7		2.0		---		6.5	
ACHSE AXLE ESSEU												pz	
1		1450 0.5		6.5 6500 3.9		0.5 1.8		---		6.5		-	
2		1450 0.5		6.5 6500 3.9		0.5 1.8		---		6.5		-	
3		1250 0.4		6.5 6500 3.9		0.5 1.8		---		6.5		-	
4		1250 0.4		6.5 6500 3.9		0.5 1.8		---		6.5		-	
5		0		---		---		---		---		-	

pm (bar)		6.5		pm (bar)		0.7		2.0		---		6.5	
ACHSE AXLE ESSEU												pz	
1		1450 0.5		6.5 6500 3.9		0.5 1.8		---		6.5		-	
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5		0		---		---		---		---		-	

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5		0		---		---		---		---		-	

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4		1250 0.4		6.5 6500 3.9		0.5 1.8		---		6.5		-	
5		0		---		---		---		---		-	

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5		0		---		---		---		---		-	

pm (bar)		6.5		pm (bar)		0.7		2.0		---		6.5	
ACHSE AXLE ESSEU													



P.O.Box 98-971

South Auckland Mail Centre

Ronald Stuart Pratt (TRSP)

DATE

29/07/2010

TYPE APPROVED

NO

CERTIFICATE No

RP100714

4AFTSAFEBB-Edisc

VIN No

7A85N0J0298052684

BRAKE CHAMBERS FRONT

14TSE 64mm

BRAKE CHAMBERS REAR

14/16TSE 64mm LOAD SENSED

Yes EBS Control

SLACK LENGTH FRONT

Disc

TYRE SIZE FRONT

265/70R19.5

SLACK LENGTH REAR

Disc

TYRE SIZE REAR

265/70R19.5

THIS VEHICLE COMPLIES W

N.Z.H.V.B.R

LINING MATERIAL FRONT

Jurid 539 AF

32015 SCHEDULE 5

LINING MATERIAL REAR

Jurid 539 AF



Donnett

Document: B1081590
Exemption: HVB10/257

**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 Eugene Girardin, Vehicles Unit Engineer, 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: **Evans Eng Ltd, 4 Axle Full Trailer**
VIN/CHASSIS: **7A85N0J0298052684**

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 area's of this original exemption letter.
- 11) This exemption can be revoked at any time in writing by the NZ Transport Agency.

Signed at Wellington this 27th day of July 2010

Eugene Girardin
Engineer
Vehicles Unit

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

distribution: Domett (EVANS REBUILD)
7A85N0J0298052684
00102 RP Dom Evans rebuild

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 (V6.09.08.08).
-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 V6.09.08.08 db 08.06.2009

vehicle manufacturer: Domett (EVANS REBUILD)
trailer model : 4A Full Tanker
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, KB 1018.0

		<u>unladen</u>	<u>laden</u>
total mass	P in kg	5400	26000
axle 1	P1 in kg	1450	6500
axle 2	P2 in kg	1450	6500
axle 3	P3 in kg	1250	6500
axle 4	P4 in kg	1250	6500
wheel base	E in mm	4800 - 4800	
centre of gravity height	h in mm	900	1900

	<u>axle 1</u>	<u>axle 2</u>	<u>axle 3</u>	<u>axle 4</u>
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
brake factor	[-]	23.03	23.03	23.03
dyn. rolling radius	rdyn min in mm	421	421	421
dyn. rolling radius	rdyn max in mm	421	421	421
threshold torque	Co Nm	6.0	6.0	6.0

calculation:

chamber pressure (rdyn min) pH at z=22,5%bar	2.3	2.3	2.0	2.0
chamber pressure (rdyn max) pH at z=22,5%bar	2.3	2.3	2.0	2.0
chamber press. (servo) pcha at pm6,5bar bar	6.2	6.2	4.4	4.4
piston force ThA at pm6,5bar N	5988	5988	4185	4185
brake force (rdyn min) T lad. at pm6,5bar N	45240	45240	31609	31609
brake force (rdyn max) T lad. at pm6,5bar N	45240	45240	31609	31609
brake force within 1 % rolling friction proportion %	25.0	25.0	25.0	25.0

braking rate z laden 0.603 for rdyn min
z = sum (TR)/PRmax 0.603 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: 480 207 0.. 0 WABCO
 EBS relay valve

axle 2:

valve 1: 480 207 0.. 0 WABCO
 EBS relay valve

axle 3:

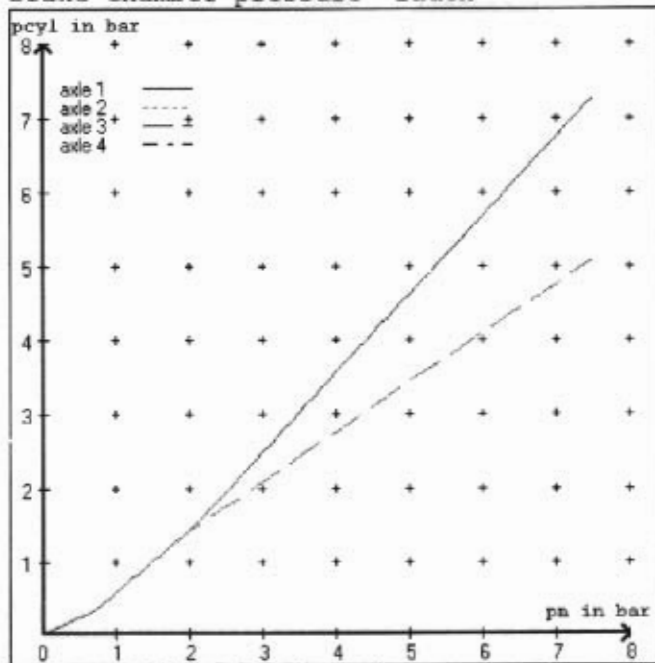
valve 1: 480 102 0.. 0 WABCO
 EBS trailer modulator

axle 4:

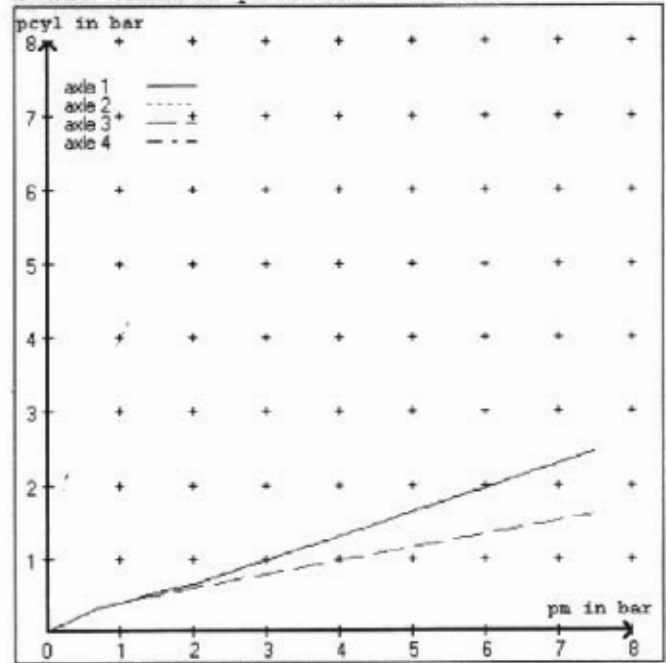
valve 1: 480 102 0.. 0 WABCO
 EBS trailer modulator

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	
at pm 3.6 bar =>	pcha in bar :	3.1	3.1	2.4	2.4	
test type III (zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	axle4	
at pm 1.2 bar =>	pcha in bar :	0.7	0.7	0.7	0.7	

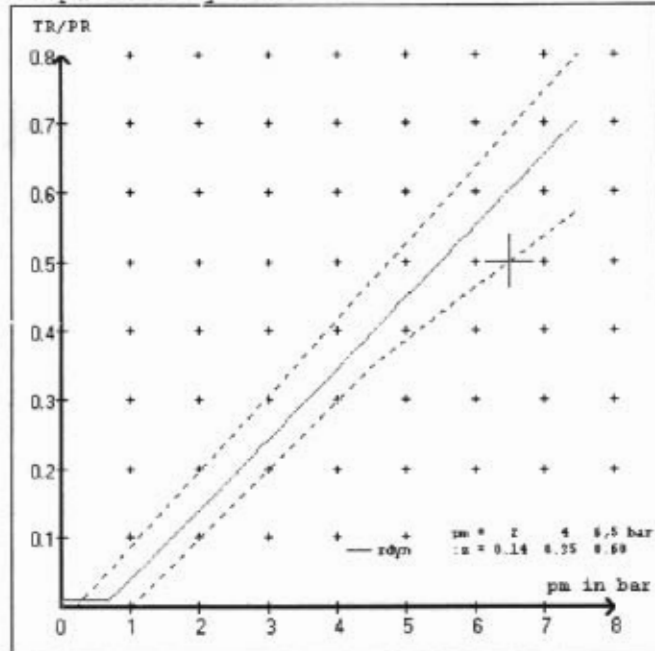
brake chamber pressure laden



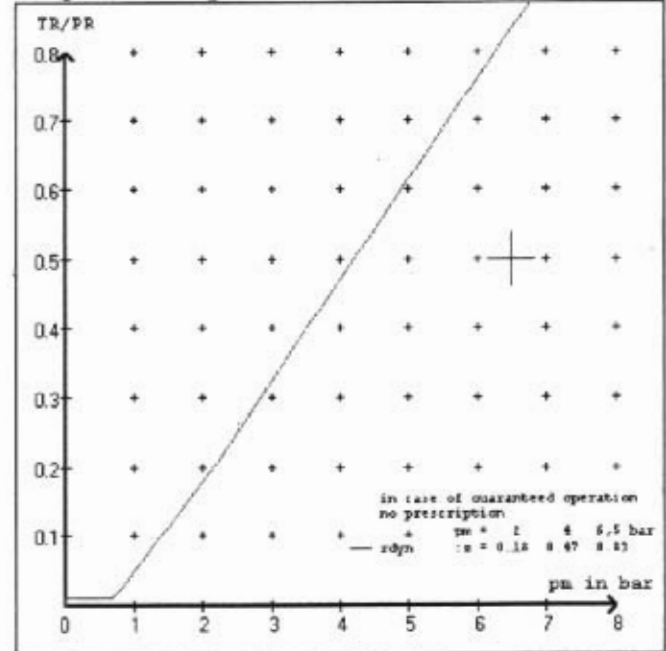
brake chamber pressure unladen



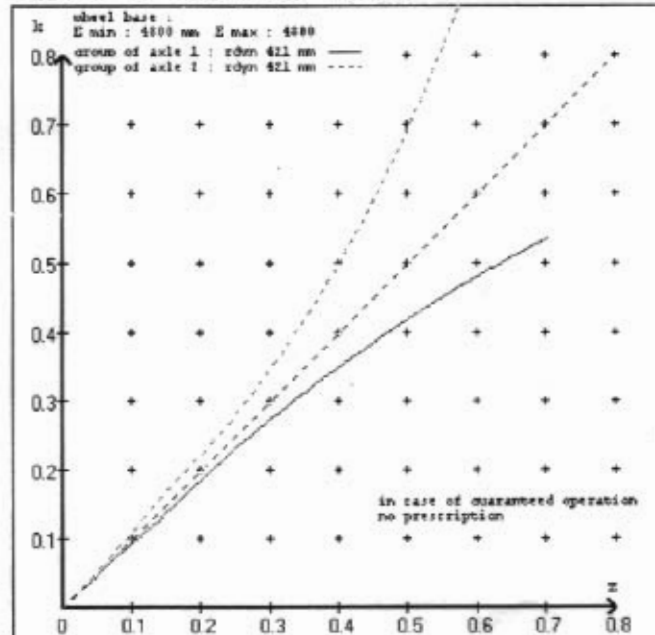
compatibility band laden



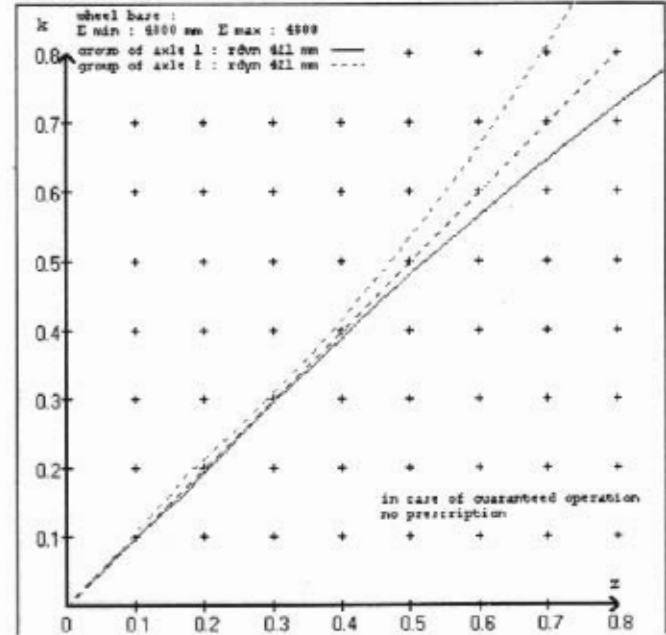
compatibility band unladen



curves of friction laden



curves of friction unladen



vehicle manufacturer: Domett (EVANS REBUILD)
 trailer model : 4A Full Tanker
 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 :

480 207 0.. 0 WABCO EBS relay valve
 480 102 0.. 0 WABCO EBS trailer modulator ,

EBS input data

=====

vehicle manufacturer: Domett (EVANS REBUILD)
 trailer model : 4A Full Tanker
 trailer type : 4-axle-full-trailer
 brake calculation no. : TP 102A

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	1450	to be	2.1	6500	to be	0.3	1.4	6.2
2	1450	entered by	2.1	6500	entered by	0.3	1.4	6.2
3	1250	the vehicle	1.4	6500	the vehicle	0.3	1.4	4.4
4	1250	manufact.	1.4	6500	manufact.	0.3	1.4	4.4
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
1450	2.1	1450	2.1	1250	1.4	1250	1.4
1950	2.5	1950	2.5	1750	1.7	1750	1.7
2450	2.9	2450	2.9	2250	2.0	2250	2.0
2950	3.3	2950	3.3	2750	2.3	2750	2.3
3450	3.7	3450	3.7	3250	2.5	3250	2.5
3950	4.1	3950	4.1	3750	2.8	3750	2.8
4450	4.5	4450	4.5	4250	3.1	4250	3.1
4950	4.9	4950	4.9	4750	3.4	4750	3.4
6500	6.2	6500	6.2	6500	4.4	6500	4.4

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 1937-10 Z brake lining: Jurid 539
test report :	TDB 0749 date : 15.05.2002
axle 2 : reference axle: SAF	SBW 1937-10 Z brake lining: Jurid 539
test report :	TDB 0749 date : 15.05.2002
axle 3 : reference axle: SAF	SBW 1937-10 Z brake lining: Jurid 539
test report :	TDB 0749 date : 15.05.2002
axle 4 : reference axle: SAF	SEW 1937-10 Z brake lining: Jurid 539
test report :	TDB 0749 date : 15.05.2002

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

axle 1	(rdyn 421 mm)	T = 18.3 % Pe
axle 2	(rdyn 421 mm)	T = 18.3 % Pe
axle 3	(rdyn 421 mm)	T = 14.2 % Pe
axle 4	(rdyn 421 mm)	T = 14.2 % Pe

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

axle 1	(sp = 57 mm)	s = 42 mm
axle 2	(sp = 57 mm)	s = 42 mm
axle 3	(sp = 56 mm)	s = 42 mm
axle 4	(sp = 56 mm)	s = 42 mm

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

axle1	ThA = 5988 N
axle2	ThA = 5988 N
axle3	ThA = 4185 N
axle4	ThA = 4185 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 = 30293 N
axle 2	(rdyn 421 mm)	T = 30293 N
axle 3	(rdyn 421 mm)	T = 21234 N
axle 4	(rdyn 421 mm)	T = 21234 N

	basic test	type III
	of subject	(calculated)
braking rate of the vehicle	trailer (z)	residual
(item 4.3.2 to appendix I to annex VII)	0.60	(hot)braking
		0.40

required braking rate $\geq 0,4$ and $\geq 0,6 * z$ (0.36)
(items 1.3.3 and 1.6.2 to annex II)

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

axle 1	(rdyn 421 mm)	T = 30293 N
axle 2	(rdyn 421 mm)	T = 30293 N
axle 3	(rdyn 421 mm)	T = 21234 N
axle 4	(rdyn 421 mm)	T = 21234 N

	basic test	type III
	of subject	(calculated)
braking rate of the vehicle	trailer (z)	residual
(item 4.3.2 to appendix I to annex VII)	0.60	(hot)braking
		0.40

required braking rate $\geq 0,4$ and $\geq 0,6 * z$ (0.36)
(items 1.3.3 and 1.6.2 to annex II)

spring parking brake

	axle 3	axle 4
no of TRISTOP-actuators per axle line KDZ	2	2
TRISTOP-actuator type	T.14/24	T.14/24
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	7605	7605
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 $Tf = (TFZ * KDZ - 2 * Co / lBh) * iFb$	59654	59654
braking rate zf laden	0.478	
$zf = \sum (Tf) / P + 0,01$		

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 = 3538 mm for E = 4800 mm

min Ef = 3538 mm for E = 4800 mm

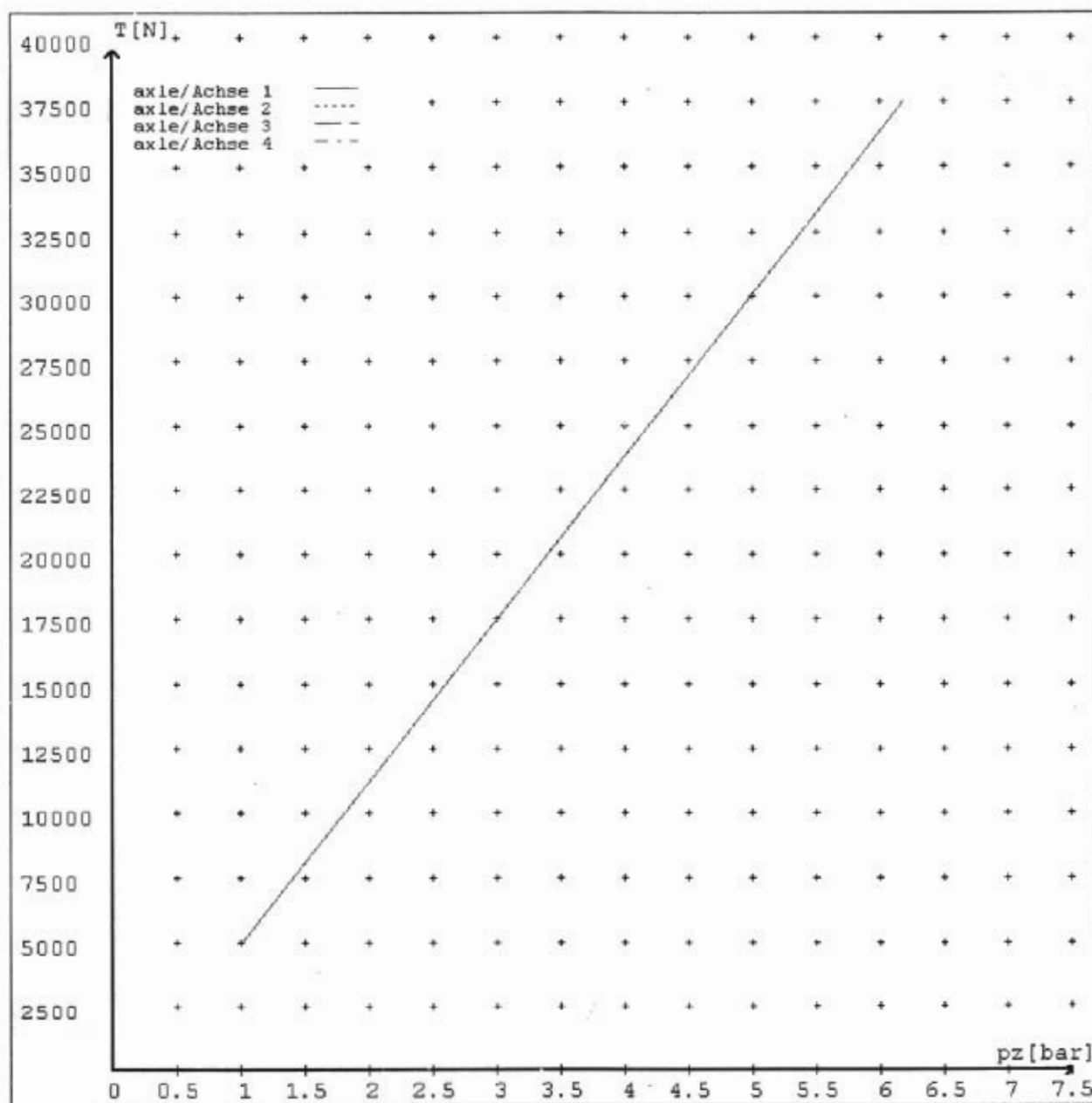
- min Ef = minimum distance between front axle(s) (trailer) or support (semitrailer) and the rear axle(s) (resultant of the bogie)
- E = wheel base
- fzul = 0.80 maximum permissible frictional connection required
- zferf = 0.18 maximum required braking ratio of the parking brake
- h = 1900 mm height of center of gravity - laden
- PR = 13000 kg maximum bogie mass - laden
- P = 26000 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%

	pz [bar]	T [N]	T [N]
axle 1	1.0	4860	
	6.2	37513	
axle 2	1.0	4860	
	6.2	37513	
axle 3	1.0		4860
	4.4		26210
axle 4	1.0		4860
	4.4		26210

VIN - no.:

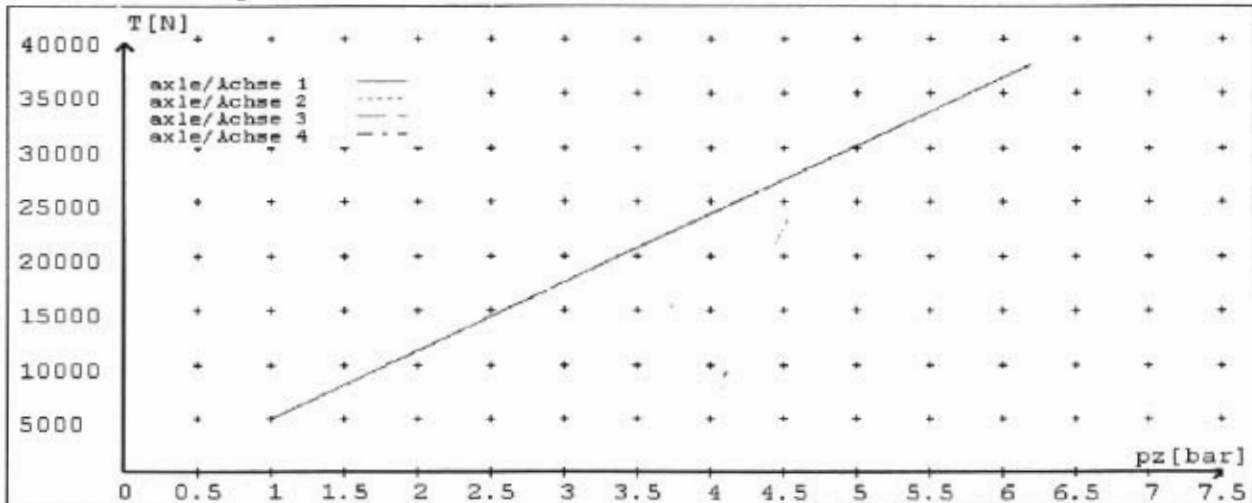


reference values for z = 0.5

Angabe der Referenzwerte für z = 0.5

brake calculation no: TP 102A date 20.07.2010

Bremsberechnung Nr: TP 102A vom 20.07.2010



	Axle(s) / Achse(n)				
Brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	14./	14./	T.14/24	T.14/24	/
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	