



Heavy Vehicle Specialist Certificate

Heavy Vehicle Specialist Inspector and Inspecting Organisation

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

RONALD STUART PRATT

ID

TRSP

Vehicle Registration*

VIN / Chassis Number

7A9D20017B0023932

Component being certified:

Chassis Modification

Load Anchorage

Log Bolsters

Towing Connection

Brakes

SRT

Certification Category

HUEK

Description of Work

Certify to Brake Rule 32015/2

Code/Standard Certified to

NZ HV B Rule Schedule 5

Component Load Rating(s)

30,000kg = Man Gum

General Drawing Number(s)

NA

Supporting Documents

Brake cert No RP110501

Prev Exemption No HV B10/392

*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

RS Pratt

*Delegate's Name (PRINT IN CAPS)

Blank field for Delegate's Name

Date

04/05/2011

Number

371526

COF Vehicle Inspector ID:

Blank field for COF Vehicle Inspector ID

COF Vehicle Inspector Signature:

Blank field for COF Vehicle Inspector Signature

Date

Blank field for 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*

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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)



Document: B1107081
Exemption: HVB10/392

**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: **Domett Truck & Trailer Ltd, 4 Axle Full Trailer**
VIN/CHASSIS: **7A9D20017B0023932**

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 15th day of October 2010

Eugene Girardin
Engineer
Vehicles Unit



P.O.Box 98-971

South Auckland Mail Centre

Ronald Stuart Pratt (TRSP)

DATE	4-May-11	TYPE APPROVED	SAF4AEBS-E
CERTIFICATE No	RP110501	PREV EXEMPTION NO	HVB10/392
VIN No	7A9D20017B0023932		
BRAKE CHAMBERS FRONT	14TSE64mm	MAN GVM	3000KG
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 WITH N.Z		LINING MATERIALFRONT	
HVBR 32015/2 SCHEDULE 5		LINING MATERIAL REAR	

WABCO**TRAILER EBS-E**GGVS/ADR TUEH TB 2007 - 019.00
TDB 0749

HERSTELLER MANUFACTURER CONSTRUCTEUR		DOMETT		GIO		Pin1	Pin3	Pin4
TYP TYPE TYPE		4 AX F/T C/SIDE		1	---	---	---	---
FAHRZEUG IDENTNR. CHASSIS NUMBER NUMERO DE CHASSIS		7A9D20017B0023932		2	---	---	---	---
BREMSBERECHNUNGS-NR. BRAKE CALCULATION NO. CALCUL DE FREINAGE NO.		TP50454		3	ALS2	ALS2	---	---
POLRADZÄHNEZAHL c-d e-f POLE WHEEL TEETH c-d e-f DENTS ROUE DENTÉE c-d e-f		90	90	4	---	---	---	---
ABS-System ABS-System Système ABS		4S/3M		5	DIAG	DIAG	DIAG	---
RSS RSS RSS	Einfachbereifung Single Tire Monte simple	Lankachse Steering axle Essieu vireur		6	---	---	---	---
Zwillingsbereifung Twin Tire Monte jumelée		X	Kippkritisches 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						
TR (daN)															
1	1500	0.7	2.1	8000	5.3	0.3	1.6	---	6.4	-	14	64	69	---	---
2	1500	0.7	2.1	8000	5.3	0.3	1.6	---	6.4	-	14	64	69	---	---
3	1700	0.9	2.3	8000	5.3	0.3	1.6	---	6.2	-	14 / 16	64	69	---	---
4	1700	0.9	2.3	8000	5.3	0.3	1.6	---	6.2	-	14 / 16	64	69	---	---
5	0	---	---	0	---	---	---	---	---	-	---	---	---	---	---

WABCO

START-UP PROTOCOL

System	Trailer EBS-E	WABCO part number	480 102 064 0
Production date	2011-01-04	Serial number	896000180300E
Fingerprint Customer EOL / Customer Development / Flash Program	W 041609 / 2011-05-04 ; 00000000 / 0000-00-00 ; 00000000 / 0000-00-00		


WABCO	TRAILER EBS-E	GGVS/ADR TUEH TB 2007 - 019.00 TDB 0749
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HERSTELLER MANUFACTURER CONSTRUCTEUR	DOMETT			GIO	Pin1	Pin3	Pin4
TYP TYPE TYPE	4 AX F/T C/SIDE			1	---	---	---
FAHRZEUG IDENTNR. CHASSIS NUMBER NUMERO DE CHASSIS	7A9D20017B0023932			2	---	---	---
BREMSBERECHNUNGS-NR. BRAKE CALCULATION NO. CALCUL DE FREINAGE NO.	TP50454			3	ALS2	ALS2	---
POLRADZAHNEZAHL c-d e-f POLE WHEEL TEETH c-d e-f DENTS ROUE DENTÉE c-d e-f	90	90	ABS-System ABS-System Système ABS	4	---	---	---
			4S/3M	5	DIAG	DIAG	DIAG
RSS RSS RSS	Einfachbereifung Single Tire Monte simple		Lenkachse Steering axle Essieu vireur	6	---	---	---
	Zwillingsbereifung Twin Tire Monte jumelée	X	Kippkritisches Fahrzeug Critical Trailer Vehicule critique	7	---	---	---
Subsystems	---		I/O				

ACHSE AXLE ESSEU	pm (bar)		6.5	pm (bar)		0.7	2.0	---	6.5	TYP TYPE	(mm)	(mm)	(bar)		
	(kg)			(kg)					1.0				Pz		
1	1500	0.7	2.1	8000	5.3	0.3	1.6	---	6.4	-	14	64	69	---	---
2	1500	0.7	2.1	8000	5.3	0.3	1.6	---	6.4	-	14	64	69	---	---
3	1700	0.9	2.3	8000	5.3	0.3	1.6	---	6.2	-	14 / 16	64	69	---	---
4	1700	0.9	2.3	8000	5.3	0.3	1.6	---	6.2	-	14 / 16	64	69	---	---
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	Signal outputs TEBS	Not tested

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

Manufacturer	DOMETT	Vehicle ident. no	7A9D20017B0023932
Vehicle type	4 AX F/T C/SIDE	Odometer reading	0.0 km
next Service	0 km	Trip reading	0.0 km
Tested by	Ron Pratt	 Signature	
Date	2011-05-04 8:00:42 AM		

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
7A9D20017B0023932

please note!

This brake calculation is made under consideration of
 -the legal prescriptions mentioned above in the version valid all 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
 trailer model : 4AX F/T C/SIDE
 trailer type : 4-axle-full-trailer
 remarks : air / hydraulic / VA suspension
 WABCO TRAILER - EBS
 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	6400	32000
axle 1	P1 in kg	1500	8000
axle 2	P2 in kg	1500	8000
axle 3	P3 in kg	1700	8000
axle 4	P4 in kg	1700	8000
wheel base	E in mm	7500 - 7500	
centre of gravity height	h in mm	1090	2000

	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	2.5	2.5
chamber pressure(rdyn max)pH at z=22,5%bar	2.6	2.6	2.5	2.5
chamber press.(servo)pcha at pm6,5bar bar	6.4	6.4	6.2	6.2
piston force ThA at pm6,5bar N	6189	6189	5988	5988
brake force(rdyn min)T lad. at pm6,5bar N	46902	46902	45387	45387
brake force(rdyn max)T lad. at pm6,5bar N	46902	46902	45387	45387
brake force within 1 % rolling friction proportion %	25.0	25.0	25.0	25.0

braking rate z laden 0.588 for rdyn min
 z = sum (TR)/PRmax 0.588 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:

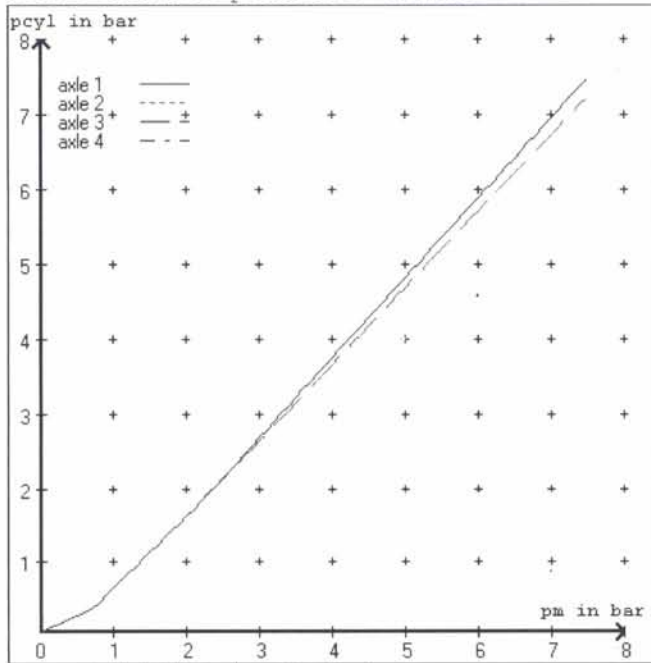
valve 1: 971 002 ... 0 WABCO
 EBS emergency valve

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

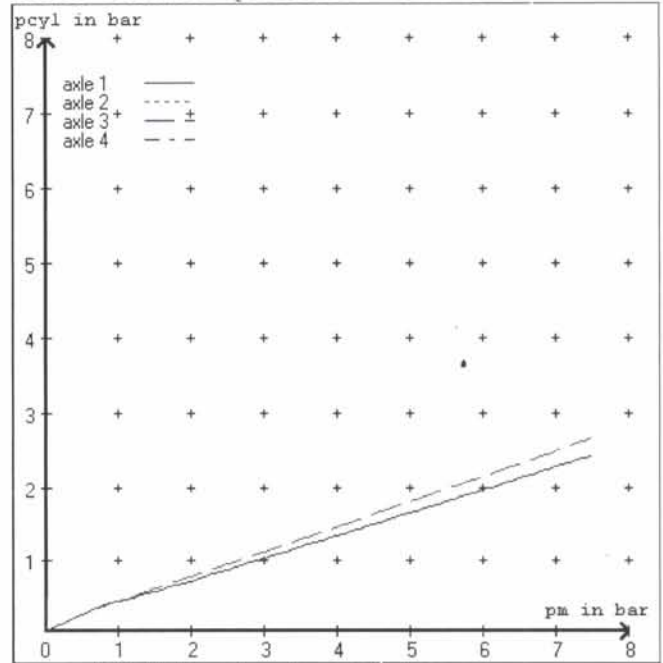
brake cylinder: Meritor 1416HTLD64

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	
at pm 3.6 bar =>	pcha in bar :	3.4	3.4	3.3	3.3	
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	

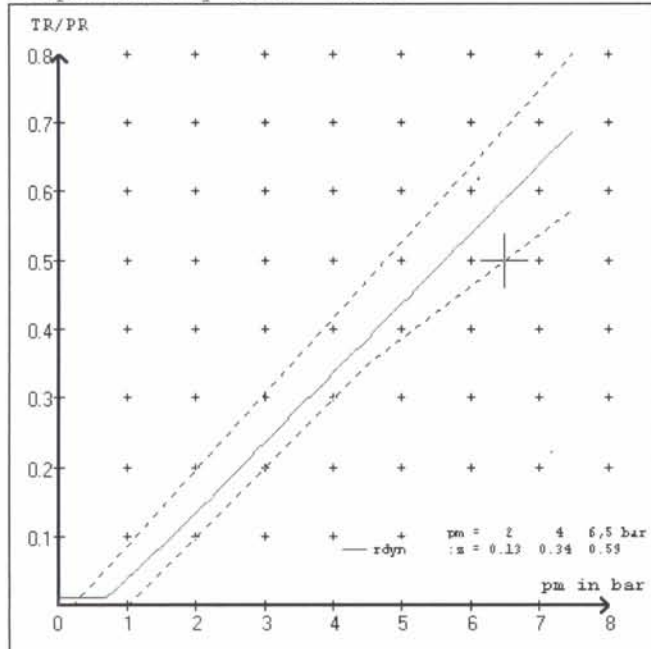
brake chamber pressure laden



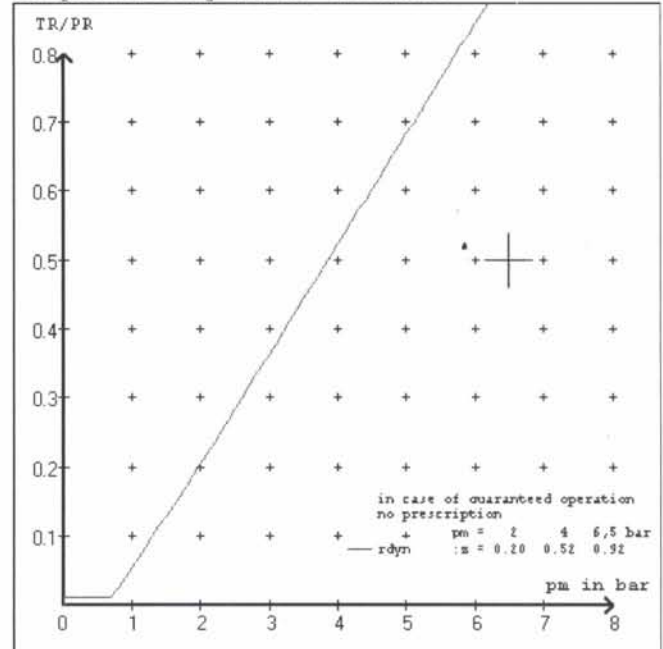
brake chamber pressure unladen



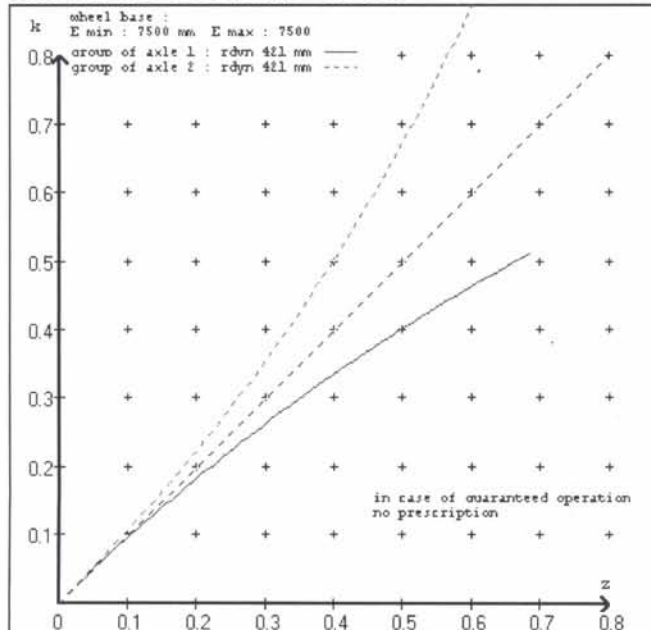
compatibility band laden



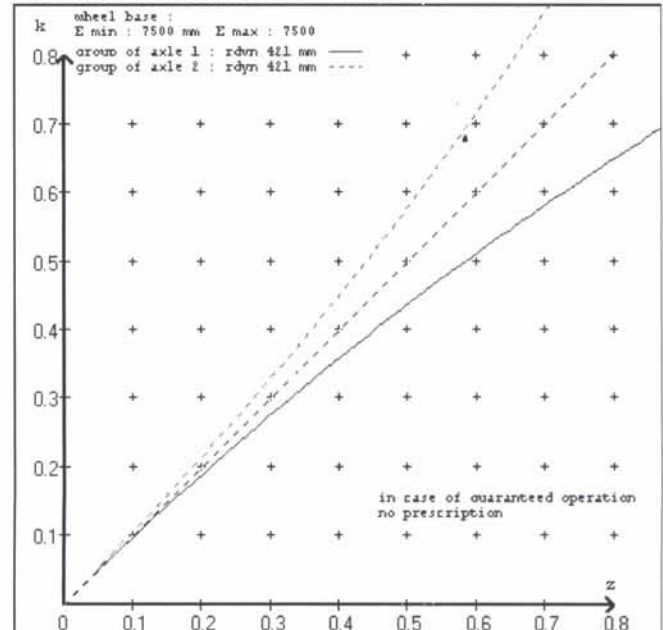
compatibility band unladen



curves of friction laden



curves of friction unladen



vehicle manufacturer: DOMETT
 trailer model : 4AX F/T C/SIDE
 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
 trailer model : 4AX F/T C/SIDE
 trailer type : 4-axle-full-trailer
 brake calculation no. : TP 50454A

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 = 0.132
 6.5 bar z = 0.590

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	2.1	8000	to be	0.3	1.6	6.4	
2	1500	entered by the vehicle manufact.	2.1	8000	entered by the vehicle manufact.	0.3	1.6	6.4	
3	1700		2.3	8000		0.3	1.6	6.2	
4	1700		2.3	8000		0.3	1.6	6.2	
5	0		0,0	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
1500	2.1	1500	2.1	1700	2.3	1700	2.3
2000	2.4	2000	2.4	2200	2.6	2200	2.6
2500	2.8	2500	2.8	2700	2.9	2700	2.9
3000	3.1	3000	3.1	3200	3.2	3200	3.2
3500	3.4	3500	3.4	3700	3.5	3700	3.5
4000	3.8	4000	3.8	4200	3.8	4200	3.8
4500	4.1	4500	4.1	4700	4.2	4700	4.2
5000	4.4	5000	4.4	5200	4.5	5200	4.5
8000	6.4	8000	6.4	8000	6.2	8000	6.2

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

axle 1	(rdyn 421 mm)	T = 23.8 % Fe
axle 2	(rdyn 421 mm)	T = 23.8 % Fe
axle 3	(rdyn 421 mm)	T = 23.3 % Fe
axle 4	(rdyn 421 mm)	T = 23.3 % 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 = 57 mm)	s = 39 mm
axle 4	(sp = 57 mm)	s = 39 mm

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

axle1	ThA = 6189 N
axle2	ThA = 6189 N
axle3	ThA = 5988 N
axle4	ThA = 5988 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 = 36945 N
axle 2	(rdyn 421 mm)	T = 36945 N
axle 3	(rdyn 421 mm)	T = 35758 N
axle 4	(rdyn 421 mm)	T = 35758 N

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

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

0.59	(hot)braking
	0.46

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

	>= 0,4 and
	>= 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 = 36945 N
axle 2	(rdyn 421 mm)	T = 36945 N
axle 3	(rdyn 421 mm)	T = 35758 N
axle 4	(rdyn 421 mm)	T = 35758 N

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

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

0.59	(hot)braking
	0.46

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

	>= 0,4 and
	>= 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	0.317	
$zf = \text{sum}(Tf) / P + 0,01$			

Test of the frictional connection required by the parking brake

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

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

$$\text{min Ef} = 5303 \text{ mm for } E = 7500 \text{ mm}$$

$$\text{min Ef} = 5303 \text{ mm for } E = 7500 \text{ mm}$$

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 = 2000 mm height of center of gravity - laden

PR = 16000 kg maximum bogie mass - laden

P = 32000 kg maximum total mass - laden

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

ng = 2 no. of bogie axle(s)

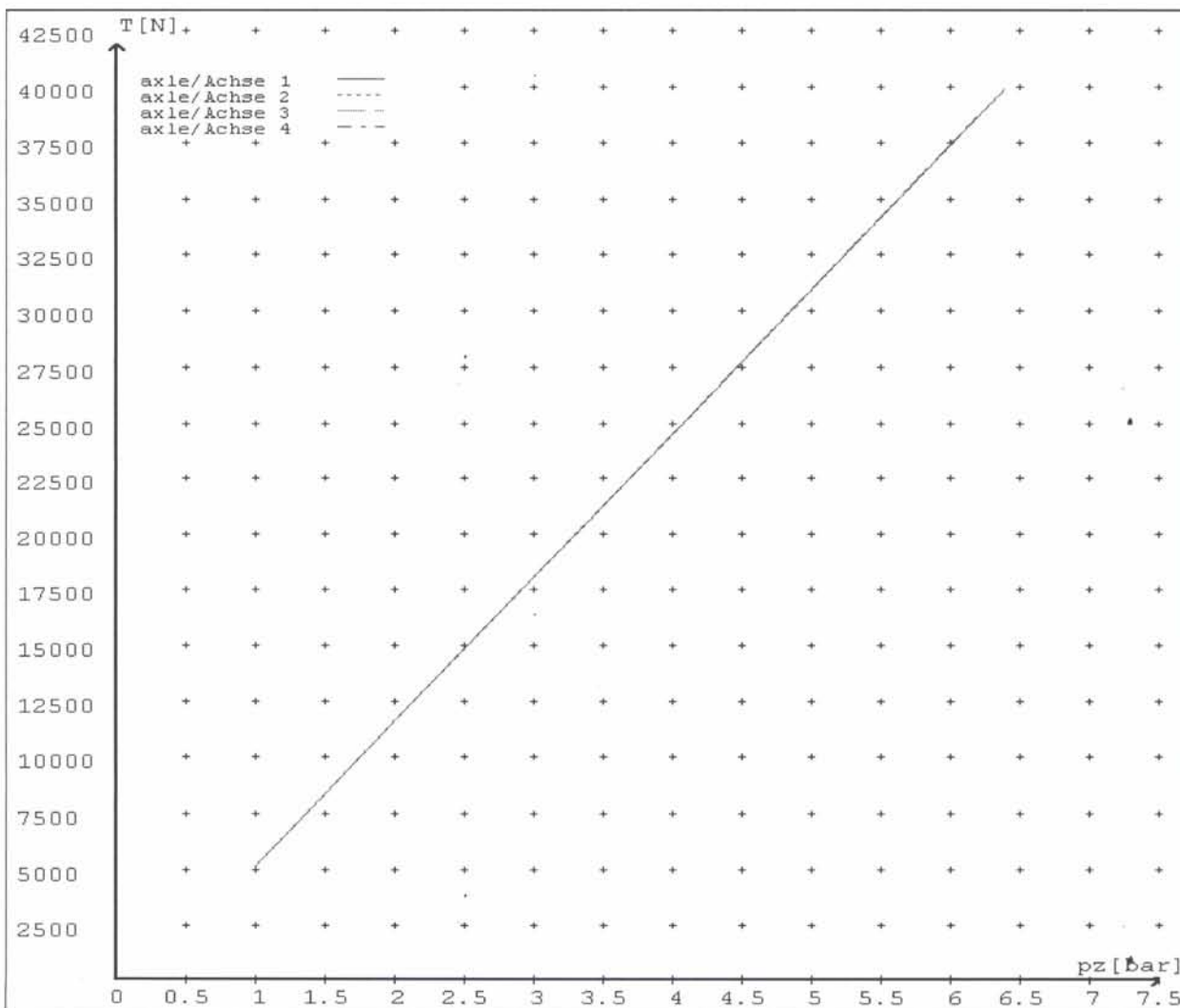
reference values

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

	pz [bar]	T [N]	T [N]
axle 1	1.0	5109	
	6.4	39883	
axle 2	1.0	5109	
	6.4	39883	
axle 3	1.0		5109
	6.2		38595
axle 4	1.0		5109
	6.2		38595

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	



reference values for z = 0.5

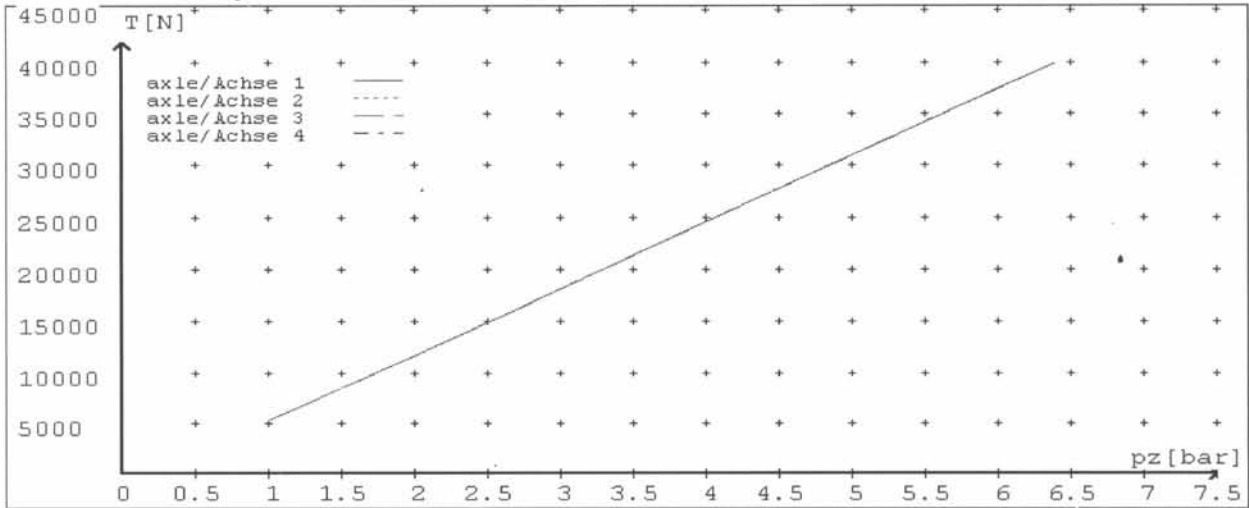
Angabe der Referenzwerte für z = 0.5

for max rdyn: 421 mm

für max rdyn: 421 mm

brake calculation no: TP 50454A date 30.11.2010

Bremsberechnung Nr: TP 50454A vom 30.11.2010



	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	