



Heavy Vehicle Specialist Certificate

Heavy Vehicle Specialist Inspector and Inspecting Organisation

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

LANCE CAWTE

ID

LPC

Vehicle Registration*

3580S

VIN / Chassis Number

7A9D1001XY0023189

Component being certified:

Chassis Modification

Load Anchorage

Log Bolsters

Certification Category

HVEK

Towing Connection

X

Brakes

SRT

Description of Work

CERTIFY TO HEAVY VEHICLE BRAKE RULE 32015.

Code/Standard Certified to

SCHEDULE 5

Component Load Rating(s)

N/A

General Drawing Number(s)

N/A

Supporting Documents

BRAKE CODE CERTIFICATE LC100705

PREV EXEMPTION REF HVB10/XXXXXX

*Special Conditions

WARNING LAMP MUST ILLUMINATE WHEN IGNITION IS SWITCHED ON & THEN EXTINGUISH IMMEDIATELY OR WHEN VEHICLE SPEED 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

22-Jul-10

Number

349060

COF Vehicle Inspector ID:

COF Vehicle Inspector Signature:

Date

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

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
 CHASSIS 189
 LC100705
 LT400, 349060

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 (V6.09.06.08)
 -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 V6.09.06.08 db 08.06.2009

vehicle manufacturer: DOMETT
 trailer model : D101 TANKER
 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	5200	28000
axle 1	P1 in kg	1400	7000
axle 2	P2 in kg	1400	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	1170	1755

	axle 1	axle 2	axle 3	axle 4
no. of combined axles	1	1	1	1
no. of brake chambers per axle line K DZ	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.14/24	T.14/24
lever length	1Bh 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	2.4	2.4	2.1	2.1
chamber pressure(rdyn max)pH at z=22,5%bar	2.4	2.4	2.1	2.1
chamber press.(servo)pcha at pm6,5bar bar	5.8	5.8	4.6	4.6
piston force ThA at pm6,5bar N	5588	5588	4385	4355
brake force(rdyn min)T lad. at pm6,5bar N	42260	42260	33173	33173
brake force(rdyn max)T lad. at pm6,5bar N	42260	42260	33173	33173
brake force within 1 % rolling friction proportion	%	25.0	25.0	25.0

braking rate z laden 0.549 for rdyn min
 z = sum (TR)/PRmax 0.549 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

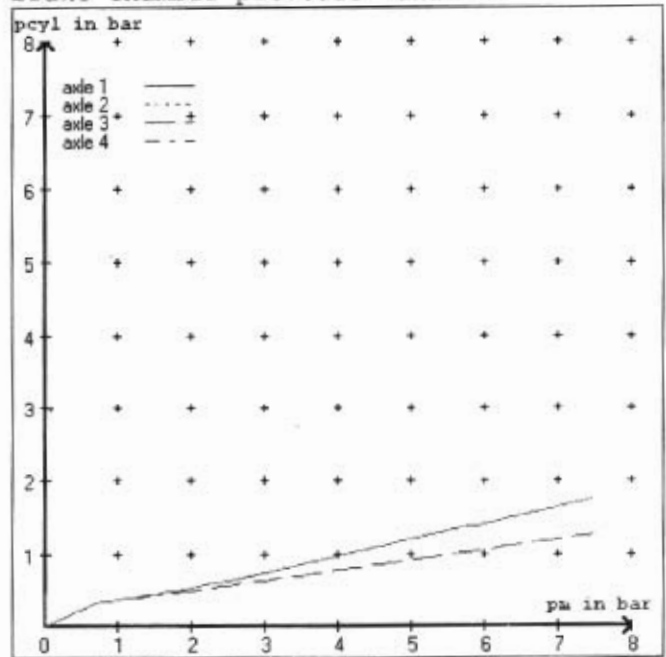
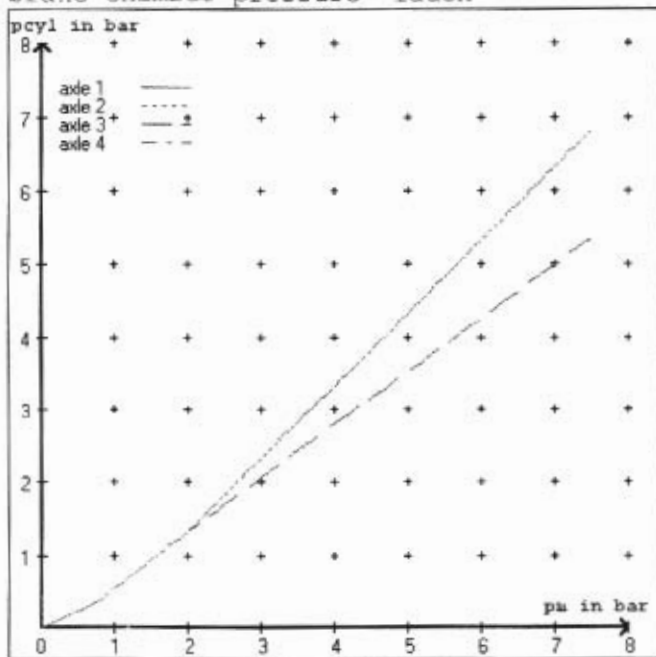
valve 2: 480 207 0.. 0 WABCO
EBS relay valve

axle 4:

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

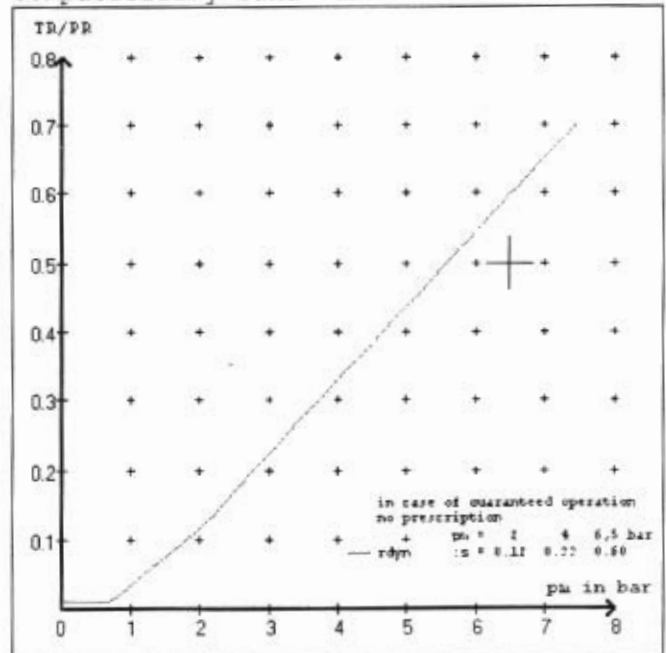
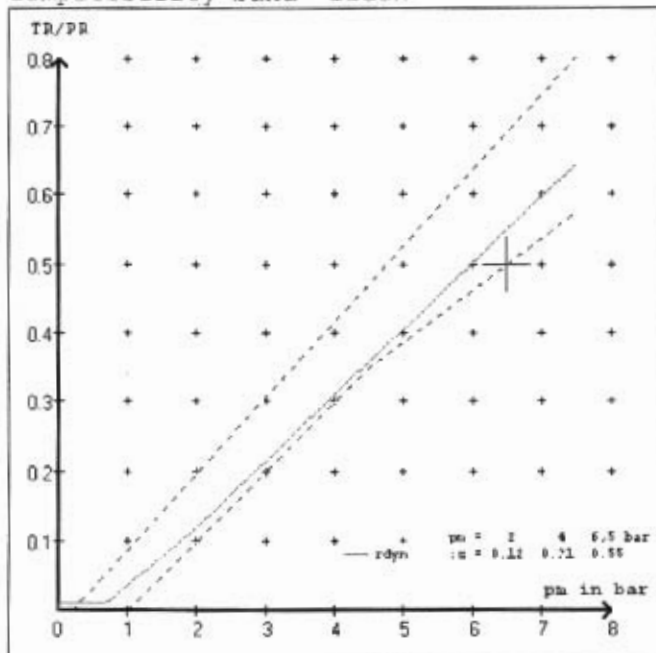
valve 2: 480 207 0.. 0 WABCO
EBS relay valve

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	
at pm 3.9 bar =>	pcha in bar :	3.2	3.2	2.7	2.7	
test type III (zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	axle4	
at pm 1.3 bar =>	pcha in bar :	0.8	0.8	0.8	0.8	



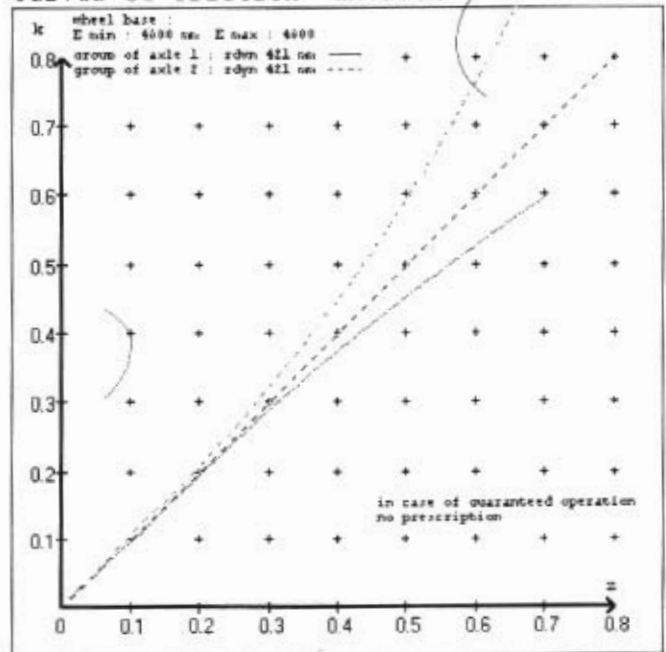
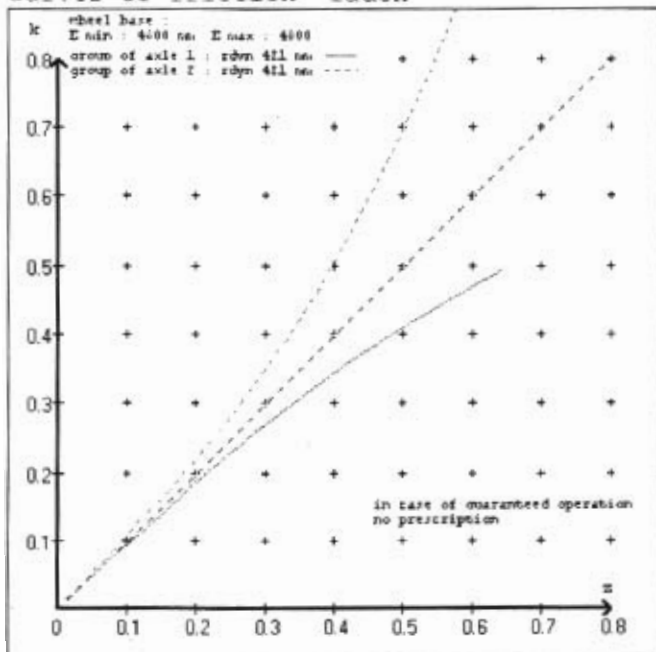
compatibility band laden

compatibility band unladen



curves of friction laden

curves of friction unladen



vehicle manufacturer: DOMETT
 trailer model : D101 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.14/24 (Meritor) lever length 69 mm
 axle 4 : 2 x type/diameter T.14/24 (Meritor) lever length 69 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

EBS input data

=====

vehicle manufacturer: DOMETT
 trailer model : D101 TANKER
 trailer type : 4-axle-full-trailer
 brake calculation no. : TP 57A

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 = 0.123
 6.5 bar z = 0.550

axle	control pressure pm 6,5			control pressure pm 0.7 2.0 6.5		
	axle load unladen	bellow pr. unladen	brake pr. unladen	axle load laden	bellow pr. laden	brake pr. laden
1	1400	to be	1.5	7000	to be	0.3 1.3 5.8
2	1400	entered by	1.5	7000	entered by	0.3 1.3 5.8
3	1200	the vehicle	1.1	7000	the vehicle	0.3 1.3 4.6
4	1200	manufact.	1.1	7000	manufact.	0.3 1.3 4.6
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
1400	1.5	1400	1.5
1900	1.9	1900	1.9
2400	2.3	2400	2.3
2900	2.7	2900	2.7
3400	3.0	3400	3.0
3900	3.4	3900	3.4
4400	3.8	4400	3.8
4900	4.2	4900	4.2
7000	5.8	7000	5.8
1200	1.1	1200	1.1
1700	1.4	1700	1.4
2200	1.7	2200	1.7
2700	2.0	2700	2.0
3200	2.3	3200	2.3
3700	2.6	3700	2.6
4200	2.9	4200	2.9
4700	3.2	4700	3.2
7000	4.6	7000	4.6

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 = 22.5 % Pe
axle 2	(rdyn 421 mm)	T = 22.5 % Pe
axle 3	(rdyn 421 mm)	T = 18.7 % Pe
axle 4	(rdyn 421 mm)	T = 18.7 % Pe

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 = 5588 N
axle2	ThA = 5588 N
axle3	ThA = 4385 N
axle4	ThA = 4385 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 = 33284 N
axle 2	(rdyn 421 mm)	T = 33284 N
axle 3	(rdyn 421 mm)	T = 26161 N
axle 4	(rdyn 421 mm)	T = 26161 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)	0.55	(hot)braking
		0.43

required braking rate $\geq 0,4$ and $\geq 0,6 \cdot z$ (0.33)
(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 = 33284 N
axle 2	(rdyn 421 mm)	T = 33284 N
axle 3	(rdyn 421 mm)	T = 26161 N
axle 4	(rdyn 421 mm)	T = 26161 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)	0.55	(hot)braking
		0.43

required braking rate $\geq 0,4$ and $\geq 0,6 \cdot z$ (0.33)
(items 1.3.3 and 1.6.2 to annex II)

	<u>axle 3</u>	<u>axle 4</u>
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	59654	59654
$Tf = (TFZ * KDZ - 2 * Co / lBh) * iFb$		
braking rate zf laden	0.444	
$zf = \text{sum}(Tf) / P + 0,01$		

Test of the frictional connection required by the parking brake

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

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

$$\text{min Ef} = 3504 \text{ mm} \quad \text{for } E = 4800 \text{ mm}$$

$$\text{min Ef} = 3504 \text{ mm} \quad \text{for } E = 4800 \text{ mm}$$

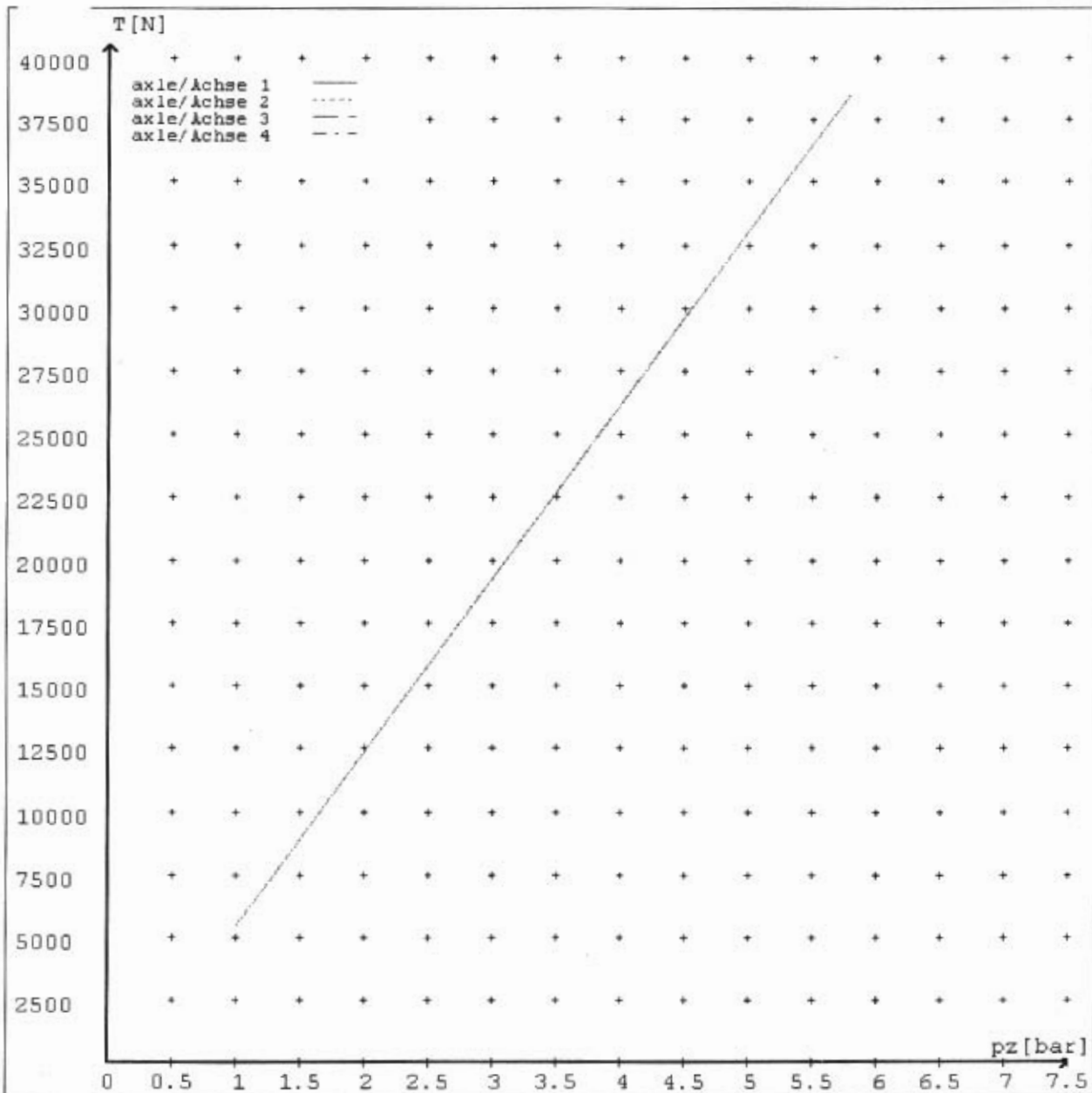
min Ef =		minimum distance between front axle(s) (trailer) or support (semitraile)
		and the rear axle(s) (resultant of the bogie)
E =		wheel base
fzul =	0.80	maximum permissible frictional connection required
zferf =	0.18	maximum required braking ratio of the parking brake
h =	1755 mm	height of center 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)

reference values

reference values for z = 50%

	pz [bar]	T [N]	T [N]
axle 1	1.0	5383	
	5.8	38488	
axle 2	1.0	5383	
	5.8	38488	
axle 3	1.0		5383
	4.6		30212
axle 4	1.0		5383
	4.6		30212

VIN - no.:

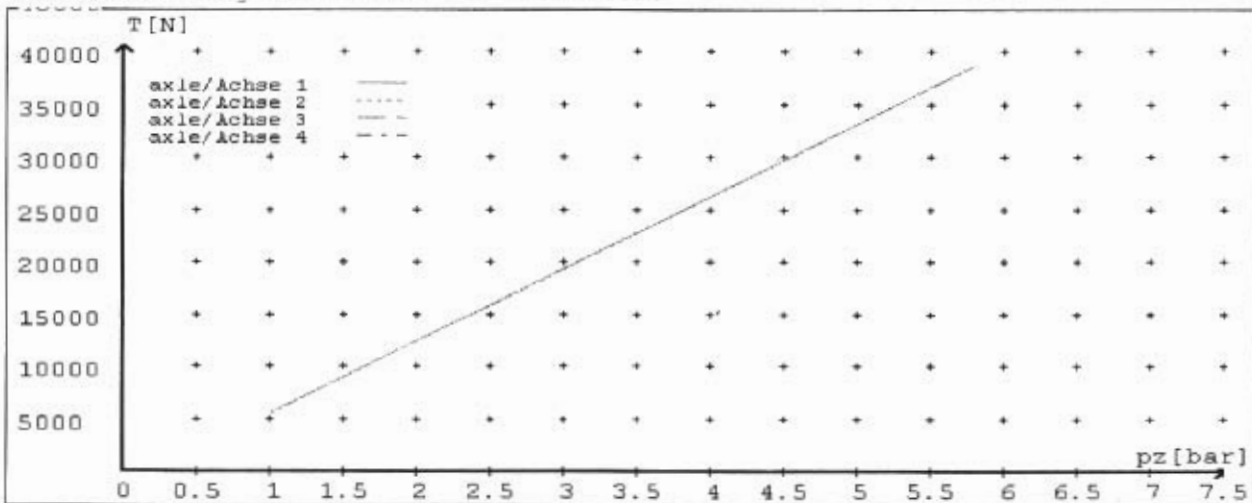


reference values for $z = 0.5$

Angabe der Referenzwerte für $z = 0.5$

brake calculation no: TP 57A date 24.07.2010

Bremsberechnung Nr: TP 57A vom 24.07.2010



	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	



NZ TRANSPORT AGENCY
WAKA KOTAHI

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Document: B1083677
Exemption: HVB10/336

**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: **7A9D1001XY0023189**


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 30th day of July 2010


Eugene Girardin
Engineer

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.



L P CAWTE
(LPC HVEK)
(09 980 7300)

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

10.4 Responsibilities of repairers

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

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

10.5 Responsibilities of modifiers

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

- (c) ensure that the modification does not prevent the vehicle from complying with this rule: and*
- (d) 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.*

10.6 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:

- (c) complies with this Rule: and*
- (d) 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 NZ Transport Agency if dissatisfied with a Compliance issue. (refer NZTA Deed Of Appointment Para 47.4)*

NZ Transport Agency Helpdesk 0800 699 000



.....
L.P.CAWTE
(LPC HVEK)

WABCO


START-UP PROTOCOL

System	Trailer EBS-E	WABCO part number	480 102 064 0
Production date	2010-04-23	Serial number	284008467400
Fingerprint Customer EOL / Customer Development / Flash Program	W 033868 / 2010-07-22 ; 00000000 / 0000-00-00 ; 00000000 / 0000-00-00		

WABCO		TRAILER EBS-E				GGVS/ADR TUEH TB 2007 - 019.00 TDB0749			
HERSTELLER MANUFACTURER CONSTRUCTEUR	DOMETT					GIO	Pin1	Pin3	Pin4
TYPE	LC100705					1	---	---	---
FAHRZEUG IDENTIF. CHASSIS NUMBER NUMERO DE CHASSIS	7A9D1001XY0023189					2	---	---	---
BREMSENRECHNUNGS-NR. BRAKE CALCULATION NO. CALCUL DE FREINAGE NO.	TP057LPC					3	ALS2	ALS2	---
POLRADZAHLEZAHL 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	4S/3M		4	---	---	---
RSS Single Tire Monte simple			Lenkachse Steering axle Essieu directeur			5	DIAG	DIAG	DIAG
Zwillingsbereifung Twin Tire Monte jumelle	X		Kippschwerachse Critical Trailer Vehicule critique			6	---	---	---
Subsystems	---		I/O			7	---	---	---

ACHSE AXLE ESSEU	pm (bar)		6.5		pm (bar)		0.7		2.0		---		6.5		Pz	
	h (kg)	⊗	⊗	⊗	h (kg)	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	⊗	1.0	TR (daN)
1	1400	0.6	1.5	7000	4.6	0.4	1.3	---	5.8	-	14	64	69	---	---	---
2	1400	0.6	1.5	7000	4.6	0.4	1.3	---	5.8	-	14	64	69	---	---	---
3	1200	0.5	1.1	7000	4.6	0.4	1.3	---	4.6	-	14 / 16	64	69	---	---	---
4	1200	0.5	1.1	7000	4.6	0.4	1.3	---	4.6	-	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 OK
Immobilizer test	Not tested		

Manufacturer	DOMETT	Vehicle ident. no	7A9D1001XY0023189
Vehicle type	LC100705	Odometer reading	0.0 km
next Service	0 km	Trip reading	0.0 km
Tested by	LPC	Signature 	
Date	2010-07-22 3:43:30 p.m.		