



CHRIS CLARKE

CJC

7A9E38118D1023161



HUEK

CARRY OUT COMPLIANCE TO THE NZ HEAVY VEHICLE BRAKE RULE.

ROLL STABILITY FUNCTION ACTIVATED.

Vehicle Type: HUBVE 320S/2 SCHED 5.

Design Gross Weight:

35000KG.

Vehicle ID: N/A.

Compliance: BRAKE DESIGN CERTIFICATE - JH131211

Special Conditions: WARNING LAMP MUST ILLUMINATE WHEN IGNITION SWITCHED ON + THEN EXTINGUISH IMMEDIATELY OR WHEN VEHICLE EXCEEDS 7KPH.

Compliance Method: N/A or Highway Meter Reading (where applicable)

Declaration

I hereby declare that the information provided in this certificate is true and correct to the best of my knowledge and belief.

26.01.2014

458163

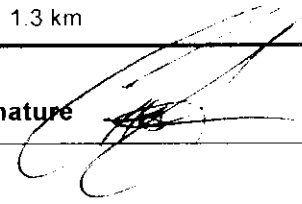
WABCO START-UP PROTOCOL

System	Trailer EBS-E	WABCO part number	480 102 080 0
Production date	2013-08-07	Serial number	897001484200C
Serial number (modulator)	000000022828		
Fingerprint Customer EOL / Customer Development / Flash Program	W503643 / 2014-01-24 ; 00000000 / 0000-00-00 ; 00000000 / 0000-00-00		

WABCO		TRAILER EBS-E		GGVS/ADR TUEH TB 2007 - 019.00 361-0071-04			
HERSTELLER MANUFACTURER CONS/RUCTEUR	DOMETT T&T			GIO	Pin1	Pin3	Pin4
TYP TYPE	5AFT BULK			1	---	---	---
FAHRZEUG IDENTNR. CHASSIS NUMBER NUMERO DE CHASSIS	7A9E38118D1023161			2	---	---	---
BREMSEBERECHNUNGS-NR. BRAKE CALCULATION NO CALCUL DE FREINAGE NO	TP50843A			3	ALS2	ALS2	---
POLRADZAHNZAHL c.d. e-f POLE WHEEL TEETH c.d. e-f DENIS ROUE DENTIF c.d. e-f	100	90	ABS-System ABS-System Systeme ABS	4	---	---	---
RSS RSS RSS	X	Lenkachse Steering axle Essieu vireur	4S/3M	5	DIAG	DIAG	DIAG
Subsystems	---	I/O	24N	6	---	---	---
				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
Signal inputs	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	7A9E38118D1023161
Vehicle type	5AFT BULK	Odometer reading	1.3 km
next Service	0 km	Trip reading	1.3 km
Tested by	Chris Clarke	Signature 	
Date	2014-01-24 10:37:07 a.m.		

trailer (full, semi-, centre-axle) with air brake system acc. to UN/ECE-R.13.11

distribution: DOMETT T&T
 7A9E38118D1023161
 SODC: JH131211
 PREV: HVB13/427

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 (V6.13.06.12);
 -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 calculator.
 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 V6.13.06.12 db 12.06.2013

vehicle manufacturer: DOMETT T&T
 trailer model : 5AFT BULK
 trailer type : 5-axle-full-trailer
 remarks : air / hydraulic / VA suspension
 WABCO TRAILER - EBS
 TRISTOP 1+2+3: T.16/24
 265/70 R 19,5
 355/50 R 22,5

axle 1 + 2 + 3 + 4 + 5 : Assali Stefen, ELSA 195 LE, 361-0071-04 ext05 ECE,

		unladen	laden
total mass	P in kg	6900	35000
axle 1	P1 in kg	1800	7600
axle 2	P2 in kg	1800	7600
axle 3	P3 in kg	1100	6600
axle 4	P4 in kg	1100	6600
axle 5	P5 in kg	1100	6600
wheel base	E in mm	6950 - 6950	
centre of gravity height	h in mm	1040	2307

	axle 1	axle 2	axle 3	axle 4	axle 5
no. of combined axles	1	1	1	1	1
no. of brake chambers per axle line KDZ	2	2	2	2	2
The power output corresponds to	BZ 119.6	BZ 119.6	BZ 119.6	BZ 122.1	BZ 122.1
brake chamber manufacturer	Meritor	Meritor	Meritor	Meritor	Meritor
chamber size	T.16/24	T.16/24	T.16/24	16.	16.
lever length lBh in mm	74	74	74	74	74
brake factor [-]	20.26	20.26	20.26	20.26	20.26
dyn. rolling radius rdyn min in mm	421	421	449	449	449
dyn. rolling radius rdyn max in mm	421	421	449	449	449
threshold torque Co Nm	6.0	6.0	6.0	6.0	6.0

calculation:

chamber pressure (rdyn min) p _H at z=22,5%bar	2.5	2.5	2.4	2.4	2.4
chamber pressure (rdyn max) p _H at z=22,5%bar	2.5	2.5	2.4	2.4	2.4
chamber press. (servo) p _{cha} at p _m 6,5bar bar	6.5	6.5	5.2	5.2	5.2
piston force ThA at p _m 6,5bar N	6590	6590	5197	5197	5197
brake force (rdyn min) T lad. at p _m 6,5bar N	47100	47100	34814	34814	34814
brake force (rdyn max) T lad. at p _m 6,5bar N	47100	47100	34814	34814	34814
brake force within 1 % rolling friction proportion %	20.8	20.8	19.5	19.5	19.5

braking rate z laden 0.579 for r_{dyn} min
 z = sum (TR)/PRmax 0.579 for r_{dyn} 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 or 480 207 2... 0
EBS relay valve

brake cylinder: Meritor 1624HTLD64

axle 2:

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

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

brake cylinder: Meritor 1624HTLD64

axle 3:

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

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

brake cylinder: Meritor 1624HTLD64

axle 4:

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

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

brake cylinder: Meritor 16HSCLD64

axle 5:

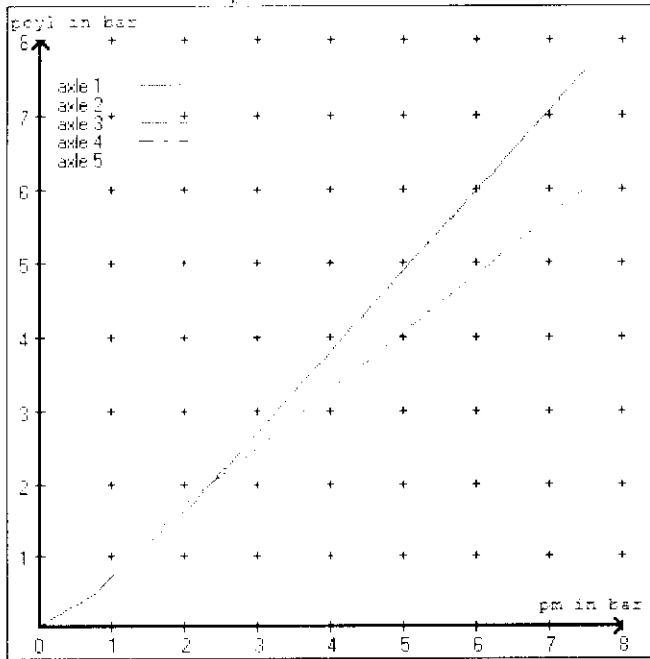
valve 1: 971 002 ... 0 WABCO
EBS emergency valve

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

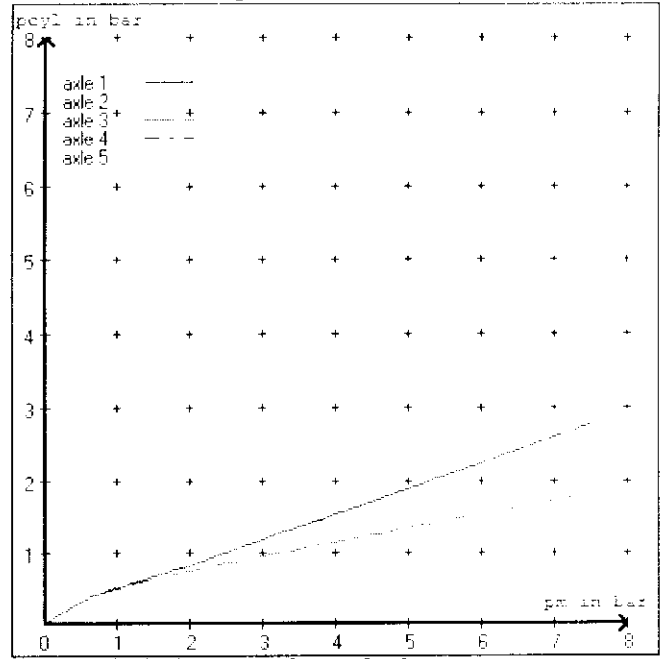
brake cylinder: Meritor 16HSCLD64

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	axle5	
at pm 3.6 bar =>	pcha in bar :	3.4	3.4	3.0	3.0	3.0	
test type III (zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	axle4	axle5	
at pm 1.2 bar =>	pcha in bar :	0.9	0.9	0.9	0.9	0.9	

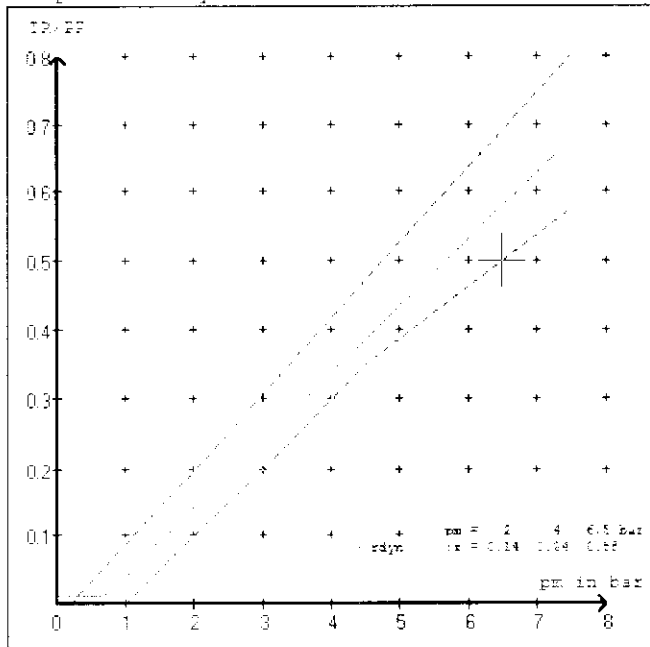
brake chamber pressure laden



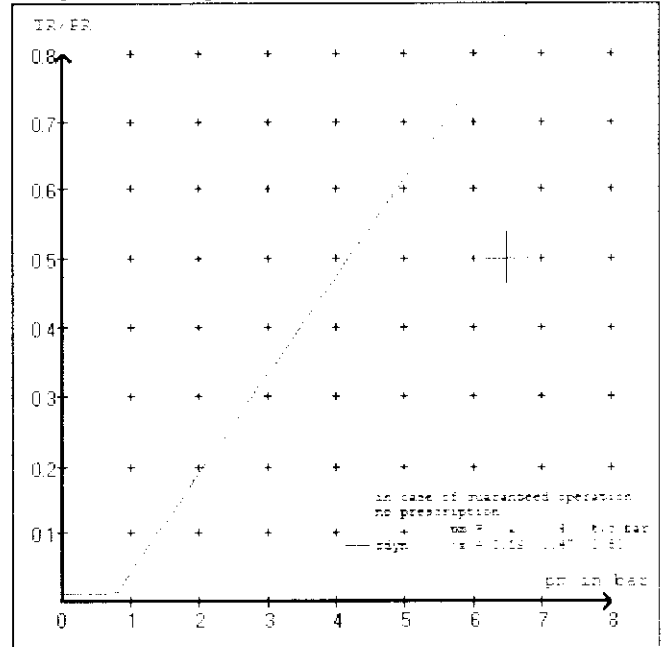
brake chamber pressure unladen



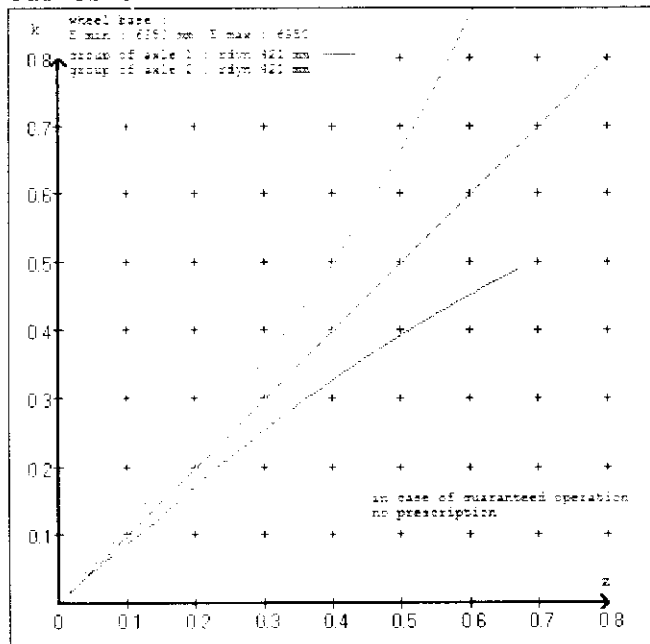
compatibility band laden



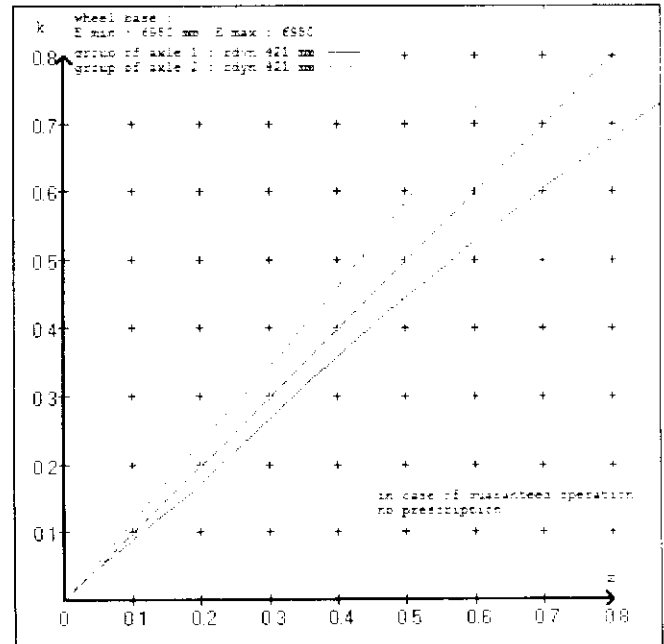
compatibility band unladen



curves of friction laden



curves of friction unladen



vehicle manufacturer: DOMETT T&T
 trailer model : 5AFT BULK
 trailer type : 5-axle-full-trailer

brake chamber and lever length :

axle 1 : 2 x type/diameter T.16/24 (Meritor) lever length 74 mm
 axle 2 : 2 x type/diameter T.16/24 (Meritor) lever length 74 mm
 axle 3 : 2 x type/diameter T.16/24 (Meritor) lever length 74 mm
 axle 4 : 2 x type/diameter 16. (Meritor) lever length 74 mm
 axle 5 : 2 x type/diameter 16. (Meritor) lever length 74 mm

brake diagram :

valve :

971 002 ... 0 WABCO EBS emergency valve
 480 207 0... 0 WABCO EBS relay valve or 480 207 2... 0
 480 102 ... 0 WABCO EBS trailer modulator

EBS input data

=====
 vehicle manufacturer: DOMETT T&T
 trailer model : 5AFT BULK
 trailer type : 5-axle-full-trailer
 brake calculation no. : TP 50843A

tire circumference main axle : 2825 for rdyn max
 tire circumference auxiliary axle : 2650 for rdyn max

assignment pm / deceleration z: pm 0.7 bar z = 0.010
 (laden condition) 2.0 bar z = 0.138
 6.5 bar z = 0.580

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	1800	to be	2.4	7600	to be	0.4	1.6	6.5	
2	1800	entered by the vehicle manufact.	2.4	7600	entered by the vehicle manufact.	0.4	1.6	6.5	
3	1100		1.6	6600		0.4	1.7	5.2	
4	1100		1.6	6600		0.4	1.7	5.2	
5	1100		1.6	6600		0.4	1.7	5.2	

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 5
axle load pcy1	axle load pcy1	axle load pcy1	axle load pcy1	axle load pcy1
1800 2.4	1800 2.4	1100 1.6	1100 1.6	1100 1.6
2300 2.8	2300 2.8	1600 1.9	1600 1.9	1600 1.9
2800 3.1	2800 3.1	2100 2.3	2100 2.3	2100 2.3
3300 3.5	3300 3.5	2600 2.6	2600 2.6	2600 2.6
3800 3.8	3800 3.8	3100 2.9	3100 2.9	3100 2.9
4300 4.2	4300 4.2	3600 3.2	3600 3.2	3600 3.2
4800 4.5	4800 4.5	4100 3.6	4100 3.6	4100 3.6
5300 4.9	5300 4.9	4600 3.9	4600 3.9	4600 3.9
7600 6.5	7600 6.5	6600 5.2	6600 5.2	6600 5.2

data sheet to ECE vehicle type-approval certificate concerning braking equipment: according to ECE R13 annex 11

axle 1 : reference axle: Assali Stef---/--- ---/K brake lining: ROR8616AF(M13)
 test report : 361-0071-04 e date : 17.06.2011
 axle 2 : reference axle: Assali Stef---/--- ---/K brake lining: ROR8616AF(M13)
 test report : 361-0071-04 e date : 17.06.2011
 axle 3 : reference axle: Assali Stef---/--- ---/K brake lining: ROR8616AF(M13)
 test report : 361-0071-04 e date : 17.06.2011
 axle 4 : reference axle: Assali Stef---/--- ---/K brake lining: ROR8616AF(M13)
 test report : 361-0071-04 e date : 17.06.2011
 axle 5 : reference axle: Assali Stef---/--- ---/K brake lining: ROR8616AF(M13)
 test report : 361-0071-04 e date : 17.06.2011

calc. verif. of residual (hot) braking force type III
 (item 4.2.1 of appendix 2 to annex 11)

axle 1	(rdyn 421 mm)	T = 21.5 % Fe
axle 2	(rdyn 421 mm)	T = 21.5 % Fe
axle 3	(rdyn 449 mm)	T = 17.5 % Fe
axle 4	(rdyn 449 mm)	T = 17.5 % Fe
axle 5	(rdyn 449 mm)	T = 17.5 % Fe

calculated actuator stroke in mm
 (item 4.3.1.1 of appendix 2 to annex 11)

axle 1	(sp = 58 mm)	s = 37 mm
axle 2	(sp = 58 mm)	s = 37 mm
axle 3	(sp = 57 mm)	s = 37 mm
axle 4	(sp = 57 mm)	s = 37 mm
axle 5	(sp = 57 mm)	s = 37 mm

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

axle1	ThA = 6590 N
axle2	ThA = 6590 N
axle3	ThA = 5197 N
axle4	ThA = 5197 N
axle5	ThA = 5197 N

calc. residual (hot) braking force in N
 (item 4.3.1.4 of appendix 2 to annex 11)

axle 1	(rdyn 421 mm)	T = 41860 N
axle 2	(rdyn 421 mm)	T = 41860 N
axle 3	(rdyn 449 mm)	T = 30953 N
axle 4	(rdyn 449 mm)	T = 30953 N
axle 5	(rdyn 449 mm)	T = 30953 N

	basic test	type III
	of subject	(calculated)
	trailer (E)	residual
braking rate of the vehicle		(hot)braking
(item 4.3.2 to appendix 2 to annex 11)	0.58	0.51
required braking rate		>= 0,4 and
(items 1.5.3 and 1.7.2 to annex 11)		>= 0,6*E (0.35)

axle 1	(rdyn 421 mm)	T = 41860 N
axle 2	(rdyn 421 mm)	T = 41860 N
axle 3	(rdyn 449 mm)	T = 30953 N
axle 4	(rdyn 449 mm)	T = 30953 N
axle 5	(rdyn 449 mm)	T = 30953 N

	basic test	type III
	of subject	(calculated)
	trailer (E)	residual
braking rate of the vehicle		(hot)braking
(item 4.3.2 to appendix 2 to annex 11)	0.58	0.51
required braking rate		>= 0,4 and
(items 1.5.3 and 1.7.2 to annex 11)		>= 0,6*E (0.35)

spring parking brake

	<u>axle 1</u>	<u>axle 2</u>	<u>axle 3</u>
no of TRISTOP-actuators per axle line KDZ	2	2	2
TRISTOP-actuator type	T.16/24	T.16/24	T.16/24
lever length	74	74	74
stat. tyre radius	401	401	432
at a stroke of	30	30	30
min. force of spring brake	7605	7605	7605
sp.brake chamber no Meritor.....	4	4	4
release pressure	4.8	4.8	4.8

calculation:

ratio until road	3.7388	3.7388	3.4705
$iF_b = lBh \cdot \eta \cdot C \cdot rB_c / (rB_n \cdot rstat)$			
for rstat in mm	401	401	432
brake force of spring br. T_f in N	56260	56260	52223
$T_f = (TFZ \cdot KDZ - 2 \cdot Co / lBh) \cdot iF_b$			
braking rate	0.490		
$z_f = \text{sum}(T_f) / P + 0,01$			

Test of the frictional connection required by the parking brake

minimum wheelbase/minimum supporting width min E_f 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 $E_f = 4430$ mm for $E = 6950$ mm
 =====
 min $E_f = 4430$ mm for $E = 6950$ mm
 =====

min $E_f =$ minimum distance between front axle(s) (trailer) or support (semitraile) and the rear axle(s) (resultant of the bogie)
 $E =$ wheel base
 $f_{zul} = 0.80$ maximum permissible frictional connection required
 $z_{ferf} = 0.18$ maximum required braking ratio of the parking brake
 $h = 2307$ mm height of center of gravity - laden
 $PR = 19800$ kg maximum bogie mass - laden
 $P = 35000$ kg maximum total mass - laden
 $n_f = 3$ no. of axle(s) with TRISTOP spring brake actuators
 $n_g = 3$ no. of bogie axle(s)

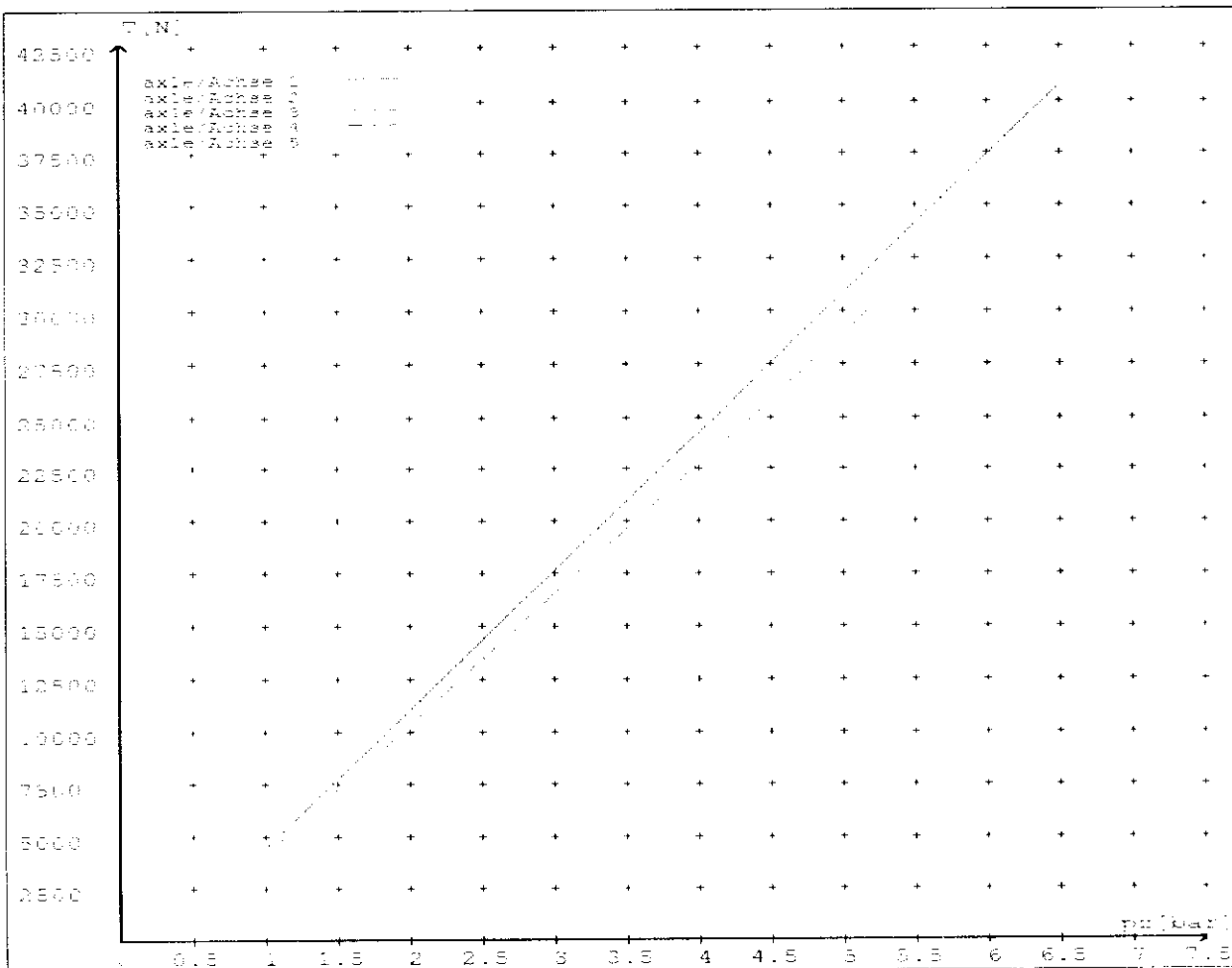
reference values

reference values for z = 50% for max rdyn: 449 mm

	pz [bar]	T [N]	T [N]
axle 1	1.0	4444	
	6.5	40674	
axle 2	1.0	4444	
	6.5	40674	
axle 3	1.0		4123
	5.2		30064
axle 4	1.0		4123
	5.2		30064
axle 5	1.0		4123
	5.2		30064

VIN - no.:

	Axle(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	T.16/24	T.16/24	T.16/24	16./	16./
Maximum stroke smax = ...mm maximaler Hub smax = ...mm	64	64	64	64	64
Lever length = ...mm Hobellänge = ...mm	74	74	74	74	74



HVBR WORKSHEET
(PROCEDURE & COMPLIANCE DOCUMENTATION SHEET)

CERTIFICATE No. JH131211

CUSTOMER NAME

DOMETT

CUSTOMER ORDER No.

4106

DATE RECEIVED

09.09.13

VEHICLE TYPE

5 AXLE FULL TRAILER

REG No.

CHASSIS No.

7A9E38118D1023161

BRIEF SPECIFICATION AS CERTIFIED TO HVBR

BRAKE CHAMBERS:

Type: 1624HTLD64 (TSE) 1,2+3: Max stroke = 64 mm Lever length = 74 mm

Type: 16HSCLD64 (TSE) 4+5 : Max stroke = 64 mm Lever length = 74 mm

BRAKE VALVES:

Ratio Valve Setting: **EBS CONTROL**

Test Points: 3 4 5 7

FRICITION LINING:

(All) Lining Brand

OEM

Aftermarket

ROR 8616 AF

EBS CONTROL: IF SPECIAL CONDITIONS APPLY SEE INSTRUCTION ON LU400

VALVES: AS PER BRAKE CALCULATION# TP50843, SO1544044

TYRE SIZE: 265 70 R 19.5 + 355 50 R 22.5

NOTES

PACKING SLIP NO.

SO1544044

PROCESS TIME:

1

THE MERITOR CHAMBERS IN BRAKE CALC: TP50843 ARE THE TSE VARIANT. PLEASE REFER TO PART NUMBERS DETAILED ABOVE FOR PERFORMANCE DATA.

COMPLETION DATE : 18th Dec 2013

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: 18th Dec 2013

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



NEW ZEALAND TRANSPORT AGENCY
REGULATIONS

NATIONAL OFFICE
100 Waterfront Drive
Wellington 6140
New Zealand
Telephone: 04-499 9000
Fax: 04-499 9001
www.nzta.govt.nz

Exemption: HVB13/427

**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: Vehicle Details:

Make/Model: **Domett Trailers, 5 Axle Full Trailer**
VIN/Chassis: **7A9E3811XD1023161**


Schedule 2: Exempted Requirement:

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 Gough Transpecs or an NZ Transport Agency appointed HVEK certifier acting on behalf of, and under instruction from, Gough Transpecs; Gough Transpecs must keep a written record of all approvals.
- 5) The HVEK certifier in 4) must be fully trained in end of line procedures for Wabco electronically controlled braking systems.
- 6) Gough 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 Gough Transpecs.
- 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 9) 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.

Signed at Wellington this 21st day of October 2013


Jackie Hartley
Administrator (Assessments)