TRANSPORT AGENCY

Heavy Vehicle Specialist Certificate

CHRIS CLARKE CJC

7A9E2001 8D1023214

✓

HUEK.

CARRY OUT COMPLIANCE TO THE NZ HEAVY VEHICLE BRAKE RULE.

ROLL STABILITY FUNCTION ACTIVATED.

Chassis Stability Control Requirements:
HUBNZ 3205/2 SCHED 5.

Component Load Rating(s):
33000 KG.

General Description:
N/A.

Supporting Documents:
BRAKE DESIGN CERTIFICATE - JH13201
PREV EXEMPTION REF - HUB13/444.

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

Certification Expiry Date: N/A

or Hubodometer Reading (where expiry not):

Declaration

I, Heavy Vehicle Specialist [illegible] hold valid appointment [illegible] to components [illegible] certification [illegible] Heavy Vehicle Regulations [illegible]. To the best [illegible] the Certification [illegible]

Designation (ID):

Issue [illegible]

Date: 06·12·2013

Number: 457706

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

WABCO START-UP PROTOCOL

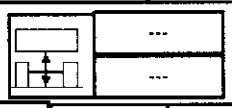
System	Trailer EBS-E	**WABCO part number**	480 102 080 0
Production date	2013-05-11	**Serial number**	897001377500A
Serial number (modulator)	000000021826		
Fingerprint Customer EOL / Customer Development / Flash Program	W503643 / 2013-12-06 ; 00000000 / 0000-00-00 ; 00000000 / 0000-00-00		

WABCO TRAILER EBS-E

GGVS/ADR TUEH TB 2007 - 019.00
TDB0749

HERSTELLER MANUFACTURER CONSTRUCTEUR	DOMETT			
TYP TYPE TYPE	5AFT C/SIDE			
FAHRZEUG IDENTNR CHASSIS NUMBER NUMERO DE CHASSIS	7A9E20018D1023214			
BREMSBERECHNUNGS-NR BRAKE CALCULATION NO CALCUL DE FREINAGE NO	TP50951A			
POLRADZAHNEZAHL c-d, e-f POLE WHEEL TEETH c-d, e-f DENTS ROUE DENTEE c-d, e-f	90	90	ABS-System ABS-System Systeme ABS	4S/3M
RSS RSS RSS Einfachbereifung Single Type Monte simple		Lenkachse Steering axle Essieu direct		
Zwillingsbereifung Twin Type Monte jumelee	X	Kippkritisches Fahrzeug Critical Trailer Vehicule critique		
Subsystems	---	I/O	24N	

GIO	Pin1	Pin3	Pin4
1	---	---	---
2	---	---	---
3	ALS2	ALS2	---
4	---	---	---
5	DIAG	DIAG	DIAG
6	---	---	---
7	---	---	---



	pm (bar)		6.5	pm (bar)		0.7	2.0	---	6.5		TYP TYPE	(mm)	(mm)	(bar) 10 TR (daN)	Pz
ACHSE AXLE ESSIEU									pz						
1	1650	0.9	2.1	7500	4.9	0.4	1.4	---	5.9	-	18	64	69	510	4108
2	1650	0.9	2.1	7500	4.9	0.4	1.4	---	5.9	-	18	64	69	510	4108
3	1400	0.7	1.6	6000	3.9	0.3	1.4	---	4.3	-	14 / 16	64	69	501	2659
4	1400	0.7	1.6	6000	3.9	0.3	1.4	---	4.3	-	14 / 16	64	69	501	2659
5	1400	0.7	1.6	6000	3.9	0.3	1.4	---	4.3	-	14	64	69	501	2659

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	**Vehicle ident. no**	7A9E20018D1023214
Vehicle type	5AFT C/SIDE	**Odometer reading**	0.0 km
next Service	0 km	**Trip reading**	0.0 km
Tested by	Chris Clarke	**Signature**	
Date	2013-12-06 7:58:15 a.m.		

NZ TRANSPORT AGENCY
WAKA KOTAHI

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New Zealand
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Exemption: HVB13/444

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 Ltd, 5 Axle Full Trailer**
VIN/Chassis: **7A9E20018D1023214**

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 postion 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 1st day of November 2013

Jackie Hartley
Administrator (Assessments)

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

distribution: DOMETT
7A9E20018D1023214
SODC: JH131201
PREV: HVB13/444

please note!

This brake calculation is made under consideration of
-the legal precriptions 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 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 V6.13.06.12 db 12.06.2013

vehicle manufacturer: DOMETT
trailer model : 5AFT C/SIDE
trailer type : 5-axle-full-trailer
remarks : air / hydraulic / VA suspension
WABCO TRAILER - EBS E
TRISTOP 3+4: T.14/16
265/70 R 19,5

axle 1 + 2 + 3 + 4 + 5 : SAF, PAN 19-1, TDB 0749 ECE,

		unladen	laden
total mass	P in kg	7500	33000
axle 1	P1 in kg	1650	7500
axle 2	P2 in kg	1650	7500
axle 3	P3 in kg	1400	6000
axle 4	P4 in kg	1400	6000
axle 5	P5 in kg	1400	6000
wheel base	E in mm	6945 - 6945	
centre of gravity height	h in mm	1110	2068

		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 122.1	BZ 122.1	BZ 119.6	BZ 119.6	BZ 122.1
brake chamber manufacturer		Meritor	Meritor	Meritor	Meritor	Meritor
chamber size		18.	18.	T.14/16	T.14/16	14.
lever length	lBh in mm	69	69	69	69	69
brake factor	[-]	23.03	23.03	23.03	23.03	23.03
dyn. rolling radius	rdyn min in mm	421	421	421	421	421
dyn. rolling radius	rdyn max in mm	421	421	421	421	421
threshold torque	Co Nm	6.0	6.0	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	2.0
chamber pressure(rdyn max)	pH at z=22,5%bar	2.3	2.3	2.0	2.0	2.0
chamber press.(servo)	pcha at pm6,5bar bar	5.9	5.9	4.3	4.3	4.3
piston force	ThA at pm6,5bar N	6285	6285	4085	4085	4085
brake force(rdyn min)	T lad. at pm6,5bar N	47576	47576	30803	30803	30803
brake force(rdyn max)	T lad. at pm6,5bar N	47576	47576	30803	30803	30803
brake force within 1 % rolling friction proportion	%	21.2	21.2	19.2	19.2	19.2

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

brake cylinder: Meritor 18HSCLD64

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 18HSCLD64

axle 3:
valve 1: 971 002 ... 0 WABCO
EBS emergency valve

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

brake cylinder: Meritor 1416HTLD64

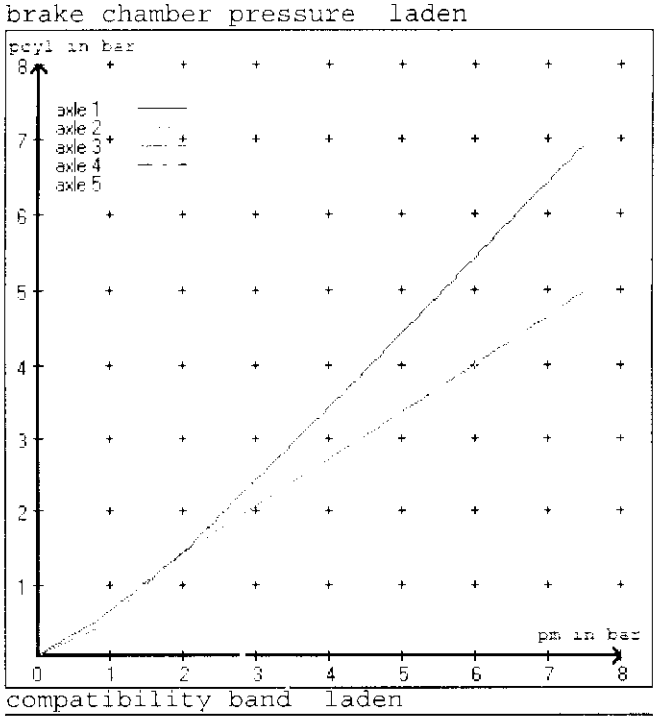
axle 5:
valve 1: 971 002 ... 0 WABCO
EBS emergency valve

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

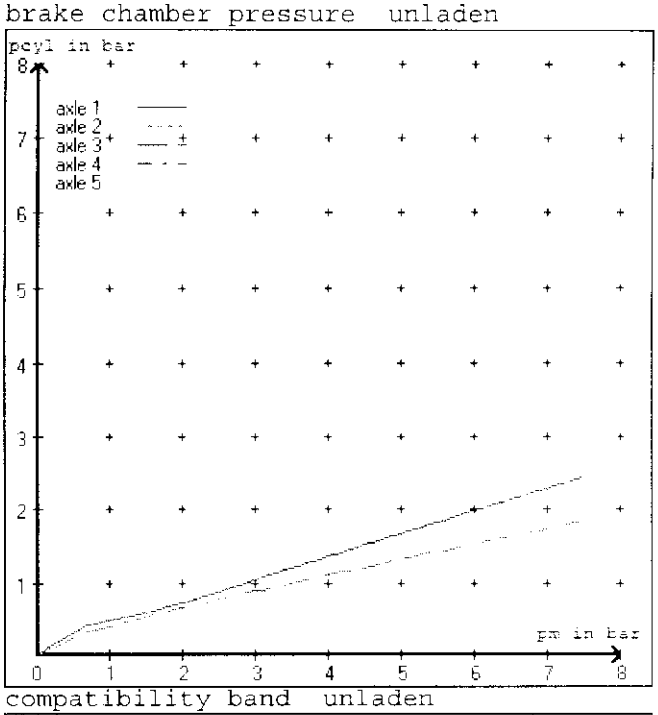
brake cylinder: Meritor 14HSCLD64

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	axle5
at pm 3.6 bar =>	pcha in bar :	3.0	3.0	2.5	2.5	2.5
test type III (zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	axle4	axle5
at pm 1.2 bar =>	pcha in bar :	0.8	0.8	0.7	0.7	0.7

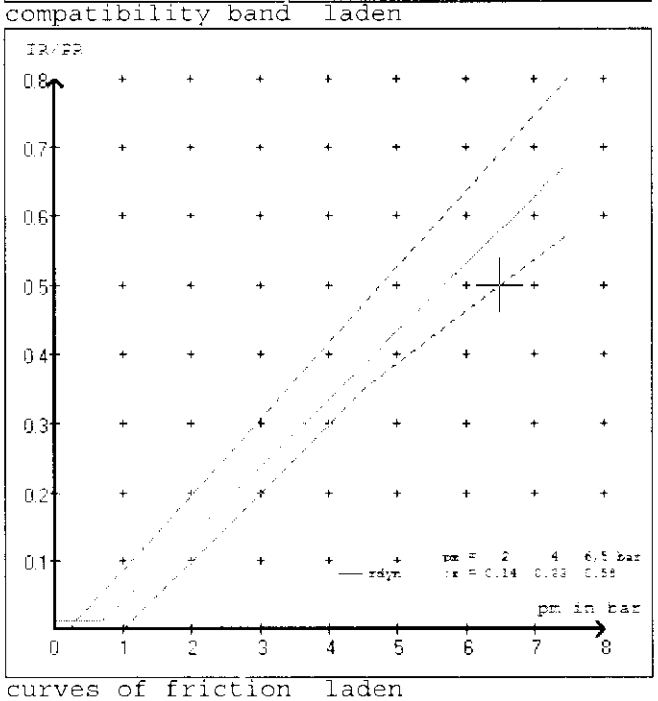
brake chamber pressure laden



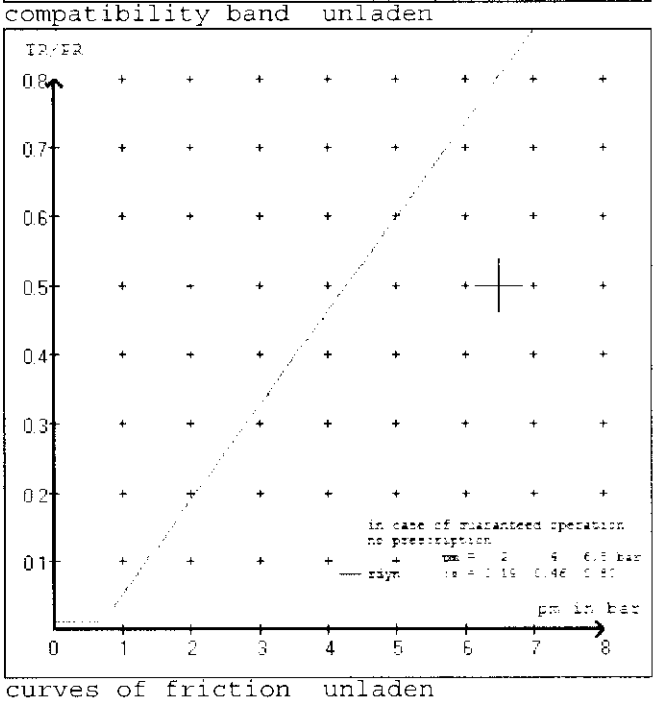
brake chamber pressure unladen



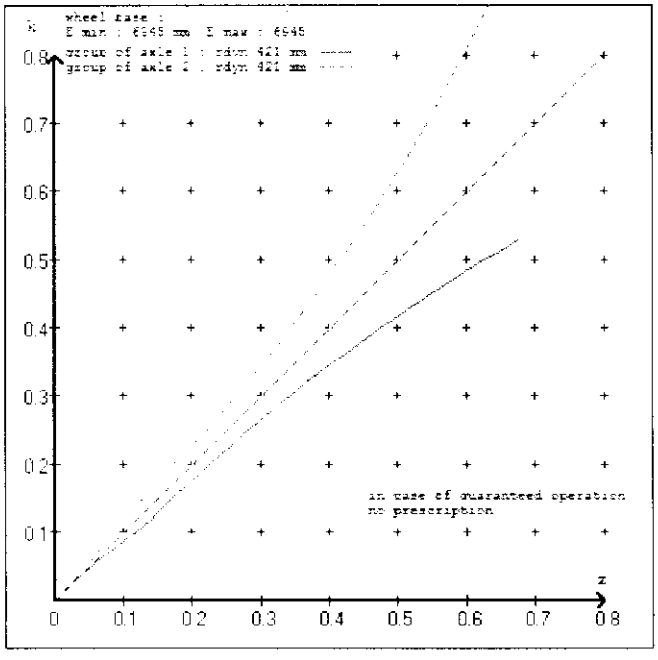
compatibility band laden



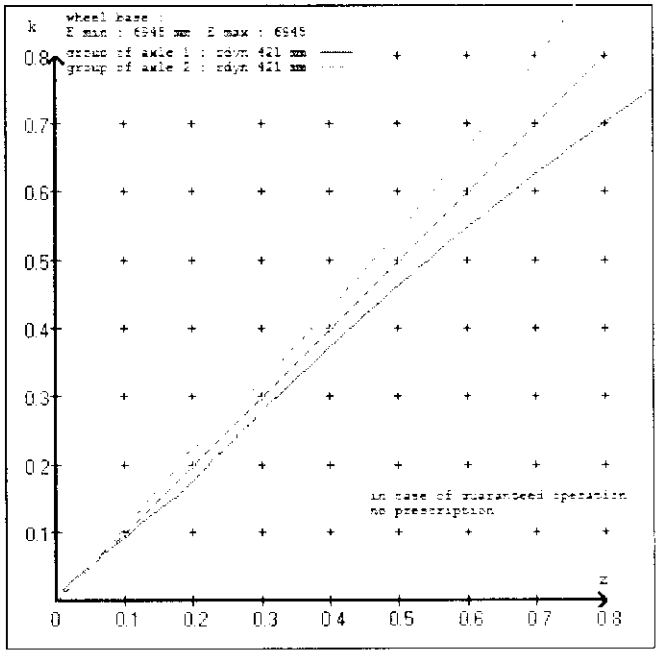
compatibility band unladen



curves of friction laden



curves of friction unladen



vehicle manufacturer: DOMETT
trailer model : 5AFT C/SIDE
trailer type : 5-axle-full-trailer

brake chamber and lever length :

axle 1 :	2 x type/diameter	18.	(Meritor)	lever length 69 mm
axle 2 :	2 x type/diameter	18.	(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
axle 5 :	2 x type/diameter	14.	(Meritor)	lever length 69 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
trailer model : 5AFT C/SIDE
trailer type : 5-axle-full-trailer
brake calculation no. : TP 50951A

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 = 0.010
(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	1650	to be entered by the vehicle manufact.	2.1	7500	to be entered by the vehicle manufact.	0.4	1.4	5.9
2	1650		2.1	7500		0.4	1.4	5.9
3	1400		1.6	6000		0.3	1.4	4.3
4	1400		1.6	6000		0.3	1.4	4.3
5	1400		1.6	6000		0.3	1.4	4.3

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	pcyl	axle load	pcyl	axle load	pcyl	axle load	pcyl	axle load	pcyl
1650	2.1	1650	2.1	1400	1.6	1400	1.6	1400	1.6
2150	2.4	2150	2.4	1900	1.9	1900	1.9	1900	1.9
2650	2.7	2650	2.7	2400	2.2	2400	2.2	2400	2.2
3150	3.1	3150	3.1	2900	2.5	2900	2.5	2900	2.5
3650	3.4	3650	3.4	3400	2.8	3400	2.8	3400	2.8
4150	3.7	4150	3.7	3900	3.1	3900	3.1	3900	3.1
4650	4.0	4650	4.0	4400	3.4	4400	3.4	4400	3.4
5150	4.4	5150	4.4	4900	3.7	4900	3.7	4900	3.7
7500	5.9	7500	5.9	6000	4.3	6000	4.3	6000	4.3

data sheet to ECE vehicle type-approval certificate concerning braking equipment: according to 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
axle 5 : 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 4.2.1 of appendix 2 to annex 11)

axle 1	(rdyn 421 mm)	T = 23.3 % Fe
axle 2	(rdyn 421 mm)	T = 23.3 % Fe
axle 3	(rdyn 421 mm)	T = 16.8 % Fe
axle 4	(rdyn 421 mm)	T = 16.8 % Fe
axle 5	(rdyn 421 mm)	T = 16.8 % Fe

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

axle 1	(sp = 58 mm)	s = 39 mm
axle 2	(sp = 58 mm)	s = 39 mm
axle 3	(sp = 56 mm)	s = 39 mm
axle 4	(sp = 56 mm)	s = 39 mm
axle 5	(sp = 56 mm)	s = 39 mm

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

axle1	ThA = 6285 N
axle2	ThA = 6285 N
axle3	ThA = 4085 N
axle4	ThA = 4085 N
axle5	ThA = 4085 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 = 37462 N
axle 2	(rdyn 421 mm)	T = 37462 N
axle 3	(rdyn 421 mm)	T = 24281 N
axle 4	(rdyn 421 mm)	T = 24281 N
axle 5	(rdyn 421 mm)	T = 24281 N

	basic test of subject trailer (E)	type III (calculated) residual (hot)braking
braking rate of the vehicle (item 4.3.2 to appendix 2 to annex 11)	0.58	0.46
required braking rate (items 1.5.3 and 1.7.2 to annex 11)		>= 0,4 and >= 0,6*E (0.35)

axle 1	(rdyn 421 mm)	T = 37462 N
axle 2	(rdyn 421 mm)	T = 37462 N
axle 3	(rdyn 421 mm)	T = 24281 N
axle 4	(rdyn 421 mm)	T = 24281 N
axle 5	(rdyn 421 mm)	T = 24281 N

	basic test of subject trailer (E)	type III (calculated) residual (hot)braking
braking rate of the vehicle (item 4.3.2 to appendix 2 to annex 11)	0.58	0.46
required braking rate (items 1.5.3 and 1.7.2 to annex 11)		>= 0,4 and >= 0,6*E (0.35)

spring parking brake

		axle 3	axle 4
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	4.5	4.5

calculation:

ratio until road iFb = lBh*Eta*C*rBt/(rBn*rstat)		3.9674	3.9674
	for rstat in mm	401	401
brake force of spring br. Tf Tf = (TFZ*KDZ-2*Co/lBh)*iFb	in N	48188	48188
braking rate zf = sum (Tf)/P + 0,01	zf laden	0.308	

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 = 5327 mm for E = 6945 mm
==========
min Ef = 5327 mm for E = 6945 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	=	2068 mm	height of center of gravity - laden
PR	=	18000 kg	maximum bogie mass - laden
P	=	33000 kg	maximum total mass - laden
nf	=	2	no. of axle(s) with TRISTOP spring brake actuators
ng	=	3	no. of bogie axle(s)

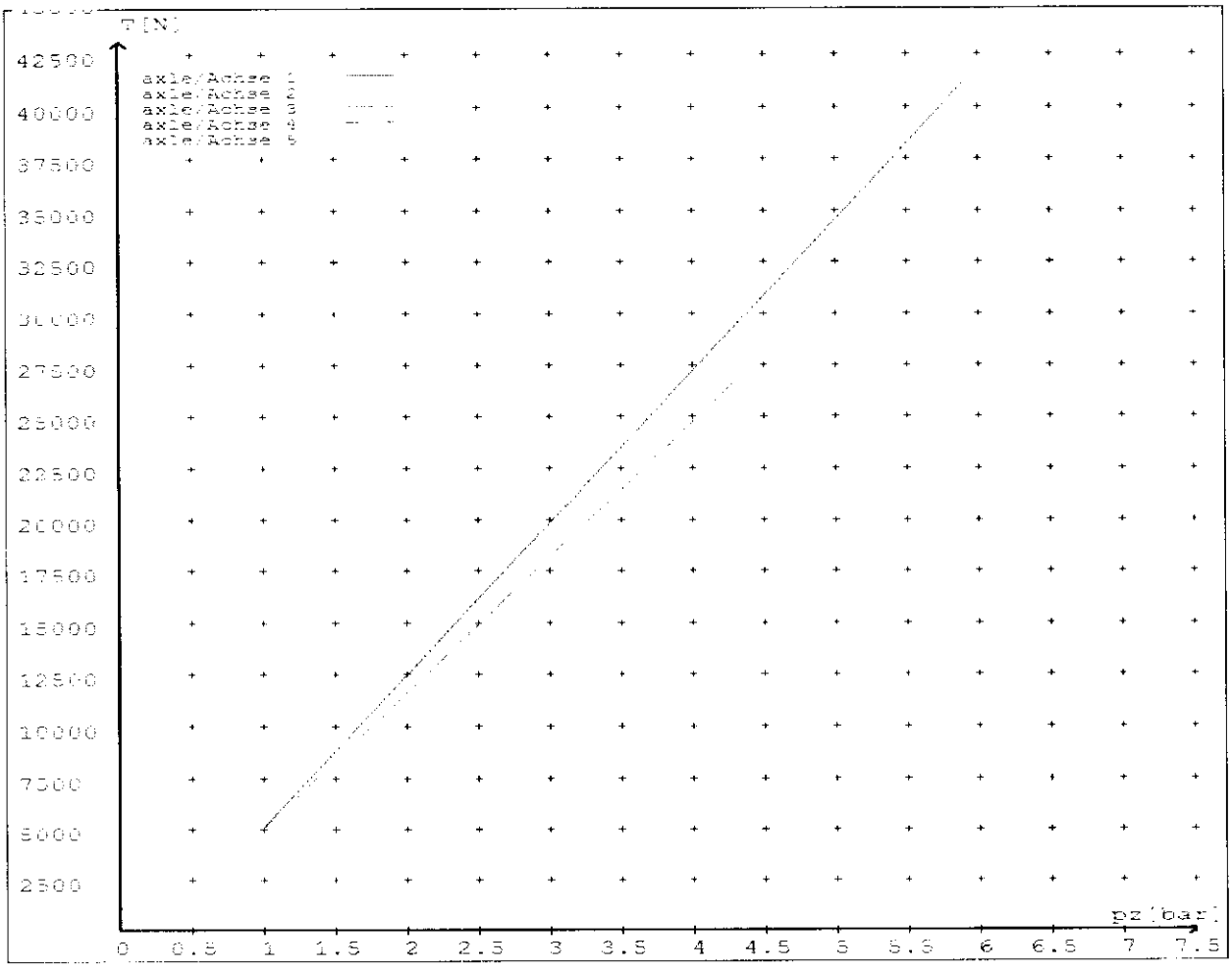
reference values

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

	pz [bar]	T [N]	T [N]
axle 1	1.0 5.9	5107 41085	
axle 2	1.0 5.9	5107 41085	
axle 3	1.0 4.3		5019 26600
axle 4	1.0 4.3		5019 26600
axle 5	1.0 4.3		5019 26600

VIN - no.:

	Axle(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	18./	18./	T.14/16	T.14/16	14./
Maximum stroke smax = ...mm maximaler Hub smax = ...mm	64	64	64	64	64
Lever length = ...mm Hebellänge = ...mm	69.08	69.08	69.08	69.08	69.08



HVBR WORKSHEET

(PROCEDURE & COMPLIANCE DOCUMENTATION SHEET)

CERTIFICATE No. JH131201

CUSTOMER NAME: DOMETT TRAILERS LTD

CUSTOMER ORDER No.: 4107 DATE RECEIVED: Nov 13

VEHICLE TYPE: 5 AXLE FULL TRAILER

REG No.: CHASSIS No.: 7A9E20018D1023214

BRIEF SPECIFICATION AS CERTIFIED TO HVBR

BRAKE CHAMBERS:

Ax #	Make/model	Max stroke	Lever length
1&2	TSE 18HSCLD65	65 mm	69 mm
3&4	TSE 1416HTLD64	64 mm	69 mm
5	TSE 14HSCLD64	64 mm	69 mm

BRAKE SYSTEM: WABCO EBS : RSS ACTIVATED

TEST POINTS FITTED: 3 4 5 7

FRICTION LINING: OEM Aftermarket

(All) Lining Brand JURID 539

EBS CONTROL: SPECIAL CONDITIONS APPLY – SEE INSTRUCTION ON LT400:

VALVES: AS PER BRAKE CALCULATION TP 50951 & SO1541798

TYRE SIZE: 265 70 R 19.5

NOTES

PACKING SLIP NO.: SO1541798 PROCESS TIME: 1

BRAKE CALC #TP50951

COMPLETION DATE : 6th 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: 6th 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

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