

Heavy Vehicle Specialist Certificate

12/1/2013 10:00 AM
Page 1 of 1

CHRIS CLARKE

CJK

7A9D35047D1023209



HUEK

CARRY OUT COMPLIANCE TO SCHEDULE 5.

ROLL STABILITY FUNCTION ACTIVATED.

HUBBZ 3205/2 SCHED 5

30000 KG.

N/A

BRAKE DESIGN CERTIFICATE - CJK 2176 - JH131108.

PREVENTION - HUB13/447

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

or

N/A

Declaration

19.11.2013

454276



Exemption: HVB13/447

**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, 4 Axle Full Trailer**
VIN/Chassis: **7A9D35017D1023209**


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 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
 7A9D35017D1023209
 SODC: JH131108
 PREV: HVB13/447

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 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 : 4AFT TIPPER
 trailer type : 4-axle-full-trailer
 remarks : air / hydraulic / VA suspension
 WABCO TRAILER - EBS E
 TRISTOP 3+4: 24/30
 265/70 R 19,5

axle 1 + 2 + 3 + 4 : Hendrickson, HXS 15 x 8.625, 04F108,

		unladen	laden
total mass	P in kg	5500	30000
axle 1	P1 in kg	1500	7500
axle 2	P2 in kg	1500	7500
axle 3	P3 in kg	1250	7500
axle 4	P4 in kg	1250	7500
wheel base	E in mm	4600 - 4600	
centre of gravity height	h in mm	1250	2070

	axle 1	axle 2	axle 3	axle 4
no. of combined axles	1	1	1	1
no. of brake chambers per axle line	2	2	2	2
The power output corresponds to	BC 0029.0BC	BC 0029.0BC	BC 0051.0BC	BC 0051.0
brake chamber manufacturer	WABCO	WABCO	WABCO	WABCO
chamber size	24	24	24/30	24/30
lever length	1Bh in mm	165	165	140
brake factor	[-]	8.70	8.70	8.70
dyn. rolling radius	rdyn min in mm	421	421	421
dyn. rolling radius	rdyn max in mm	421	421	421
threshold torque	Co Nm	20.0	20.0	20.0

calculation:	axle 1	axle 2	axle 3	axle 4
chamber pressure(rdyn min)pH at z=22,5%bar	2.1	2.1	1.9	1.9
chamber pressure(rdyn max)pH at z=22,5%bar	2.1	2.1	1.9	1.9
chamber press.(servo)pcha at pm6,5bar bar	6.0	6.0	4.0	4.0
piston force ThA at pm6,5bar N	8408	8408	5621	5621
brake force(rdyn min)T lad. at pm6,5bar N	57247	57247	32434	32434
brake force(rdyn max)T lad. at pm6,5bar N	57247	57247	32434	32434
brake force within 1 % rolling friction proportion %	26.9	26.9	23.1	23.1

braking rate z laden 0.609 for rdyn min
 z = sum (TR)/PRmax 0.609 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

brake cylinder: WABCO 423 106 90. 0 / 423 106 96x 0

axle 2:

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

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

brake cylinder: WABCO 423 106 90. 0 / 423 106 96x 0

axle 3:

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: WABCO 925 376 005 0 / 925 376 2.. 0

axle 4:

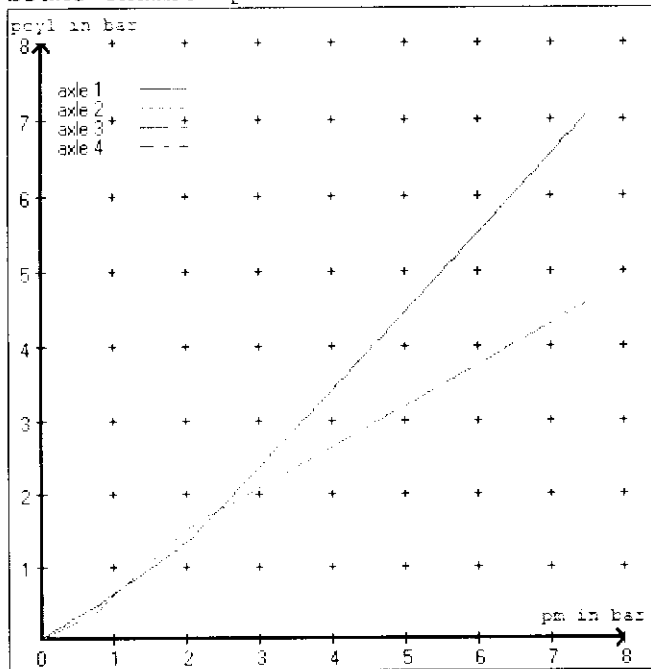
valve 1: 971 002 ... 0 WABCO
EBS emergency valve

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

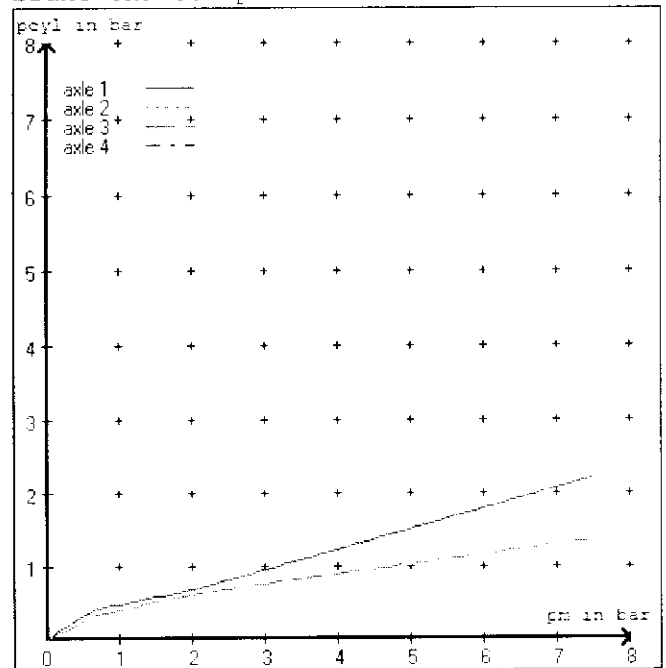
brake cylinder: WABCO 925 376 005 0 / 925 376 2... 0

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	
at pm 3.5 bar =>	pcha in bar :	2.9	2.9	2.3	2.3	
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	

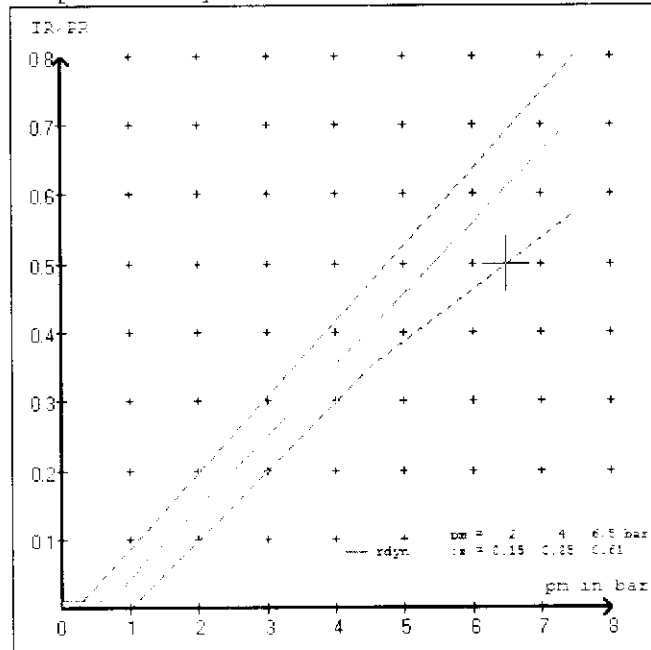
brake chamber pressure laden



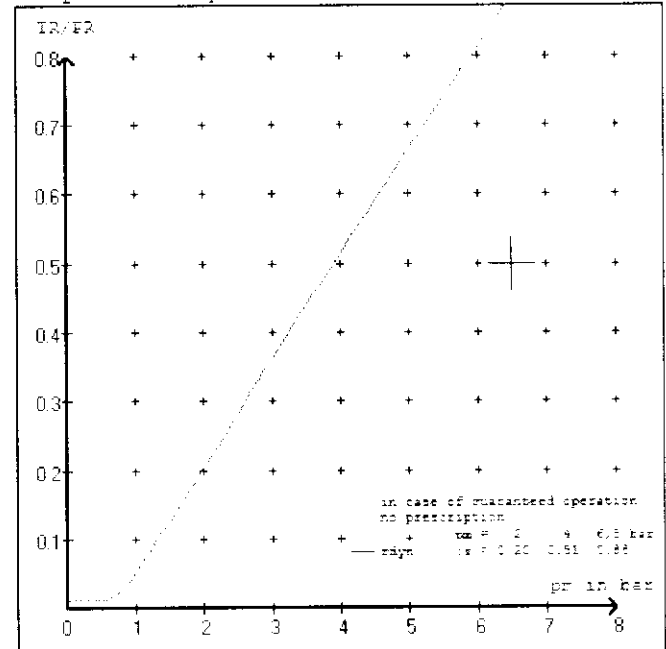
brake chamber pressure unladen



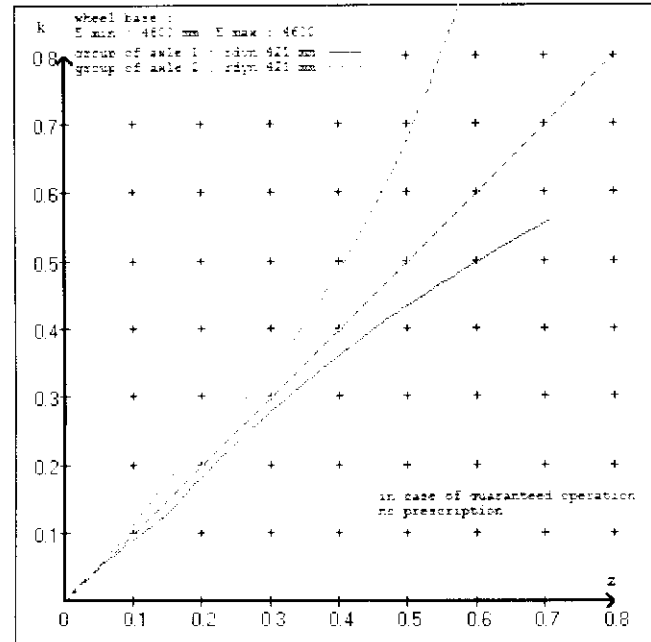
compatibility band laden



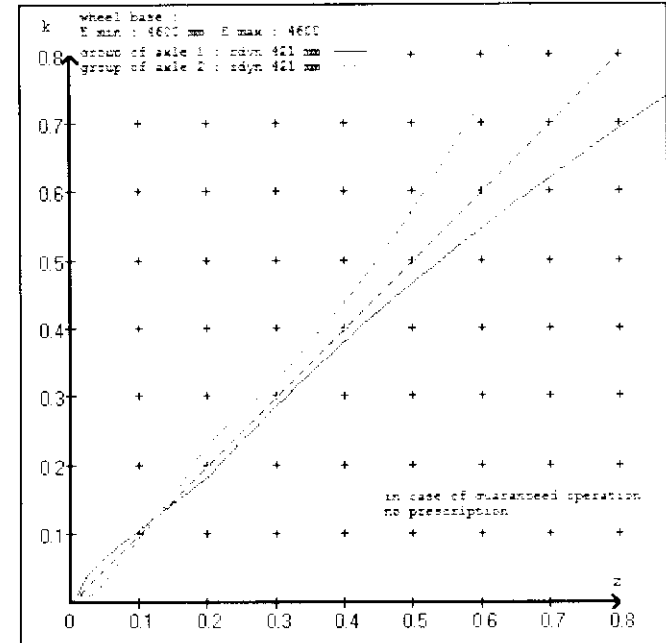
compatibility band unladen



curves of friction laden



curves of friction unladen



vehicle manufacturer: DOMETT
 trailer model : 4AFT TIPPER
 trailer type : 4-axle-full-trailer

brake chamber and lever length :

axle 1 : 2 x type/diameter 24 (WABCO) lever length 165 mm
 axle 2 : 2 x type/diameter 24 (WABCO) lever length 165 mm
 axle 3 : 2 x type/diameter 24/30 (WABCO) lever length 140 mm
 axle 4 : 2 x type/diameter 24/30 (WABCO) lever length 140 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 or 480 207 2.. 0

EBS input data

=====
 vehicle manufacturer: DOMETT
 trailer model : 4AFT TIPPER
 trailer type : 4-axle-full-trailer
 brake calculation no. : TP 50942A

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 = 0.140
 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	1500	to be	1.9	7500	to be	0.4	1.3	6.0	
2	1500	entered by	1.9	7500	entered by	0.4	1.3	6.0	
3	1250	the vehicle	1.2	7500	the vehicle	0.3	1.5	4.0	
4	1250	manufact.	1.2	7500	manufact.	0.3	1.5	4.0	
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
1500 1.9	1500 1.9	1250 1.2	1250 1.2
2000 2.2	2000 2.2	1750 1.4	1750 1.4
2500 2.6	2500 2.6	2250 1.6	2250 1.6
3000 2.9	3000 2.9	2750 1.9	2750 1.9
3500 3.3	3500 3.3	3250 2.1	3250 2.1
4000 3.6	4000 3.6	3750 2.3	3750 2.3
4500 3.9	4500 3.9	4250 2.5	4250 2.5
5000 4.3	5000 4.3	4750 2.8	4750 2.8
7500 6.0	7500 6.0	7500 4.0	7500 4.0

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

axle 1	: reference axle: HendricksonINTRAAX	brake lining: Abex 3030-197
	test report : 04F108	date : 08/25/04
axle 2	: reference axle: HendricksonINTRAAX	brake lining: Abex 3030-197
	test report : 04F108	date : 08/25/04
axle 3	: reference axle: HendricksonINTRAAX	brake lining: Abex 3030-197
	test report : 04F108	date : 08/25/04
axle 4	: reference axle: HendricksonINTRAAX	brake lining: Abex 3030-197
	test report : 04F108	date : 08/25/04

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

axle 1	(rdyn 421 mm)	T = 25.2 % Fe
axle 2	(rdyn 421 mm)	T = 25.2 % Fe
axle 3	(rdyn 421 mm)	T = 17.7 % Fe
axle 4	(rdyn 421 mm)	T = 17.7 % Fe

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

axle 1	(sp = 71 mm)	s = 50 mm
axle 2	(sp = 71 mm)	s = 50 mm
axle 3	(sp = 63 mm)	s = 42 mm
axle 4	(sp = 63 mm)	s = 42 mm

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

axle1	ThA = 8408 N
axle2	ThA = 8408 N
axle3	ThA = 5621 N
axle4	ThA = 5621 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 = 59917 N
axle 2	(rdyn 421 mm)	T = 59917 N
axle 3	(rdyn 421 mm)	T = 34137 N
axle 4	(rdyn 421 mm)	T = 34137 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)	0.61	0.64

required braking rate	>= 0,4 and
(items 1.5.3 and 1.7.2 to annex 11)	>= 0,6*E (0.37)

axle 1	(rdyn 421 mm)	T = 59917 N
axle 2	(rdyn 421 mm)	T = 59917 N
axle 3	(rdyn 421 mm)	T = 34137 N
axle 4	(rdyn 421 mm)	T = 34137 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)	0.61	0.64

required braking rate	>= 0,4 and
(items 1.5.3 and 1.7.2 to annex 11)	>= 0,6*E (0.37)

spring parking brake

		<u>axle 3</u>	<u>axle 4</u>
no of TRISTOP-actuators per axle line KDZ		2	2
TRISTOP-actuator type		24/30	24/30
lever length	lBh in mm	140	140
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	6360	6360
sp.brake chamber no 925		376 005 0376 005 0	
sp.brake chamber no 925		376 2.. 0376 2.. 0	
release pressure	pLs in bar	4.9	4.9

calculation:

ratio until road		3.0374	3.0374
$iFb = lBh * \eta * C * rBt / (2 * rBn * rstat)$			
	for rstat in mm	401	401
brake force of spring br. Tf in N		37768	37768
$Tf = (TFZ * KDZ - 2 * Co / lBh) * iFb$			
braking rate	zf laden	0.267	
$zf = \text{sum}(Tf) / P + 0,01$			

Test of the frictional connection required by the parking brake

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

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

$$\min Ef = 3449 \text{ mm} \quad \text{for } E = 4600 \text{ mm}$$

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$$\min Ef = 3449 \text{ mm} \quad \text{for } E = 4600 \text{ mm}$$

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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 =	2070 mm	height of center of gravity - laden
PR =	15000 kg	maximum bogie mass - laden
P =	30000 kg	maximum total mass - laden
nf =	2	no. of axle(s) with TRISTOP spring brake actuators
ng =	2	no. of bogie axle(s)

axle manufacturer	axle 1 + 2 + 3 + 4	
type of brake	Hendrickson	
type of axle	HXS 15 x 8.625	
test report no.	INTRAAX	
test report of characteristic value	04F108	
adm. stat. axle load	Pstat in kg	10500
tested axle load	Pe in kg	10500
max. adm. tyre radius	Rezul in mm	999
adm. cam. torque (6,5 bar)	Czul in Nm	2020
lining area per brake	AB in cm ²	1351
no. of brake cylinder	-	2
brakefactor Bf	-	8.70
threshold torque (Co,dec)	in Nm	20
date	08/25/04	
brake lining	Abex 3030-197	
cam torque	Ce in Nm	1480
brake force	TeIII in daN	5220
stroke	seIII in mm	46
tested tyre radius	Re in mm	516
tested lever length	le in mm	152
threshold torque (Co,e)	in Nm	9

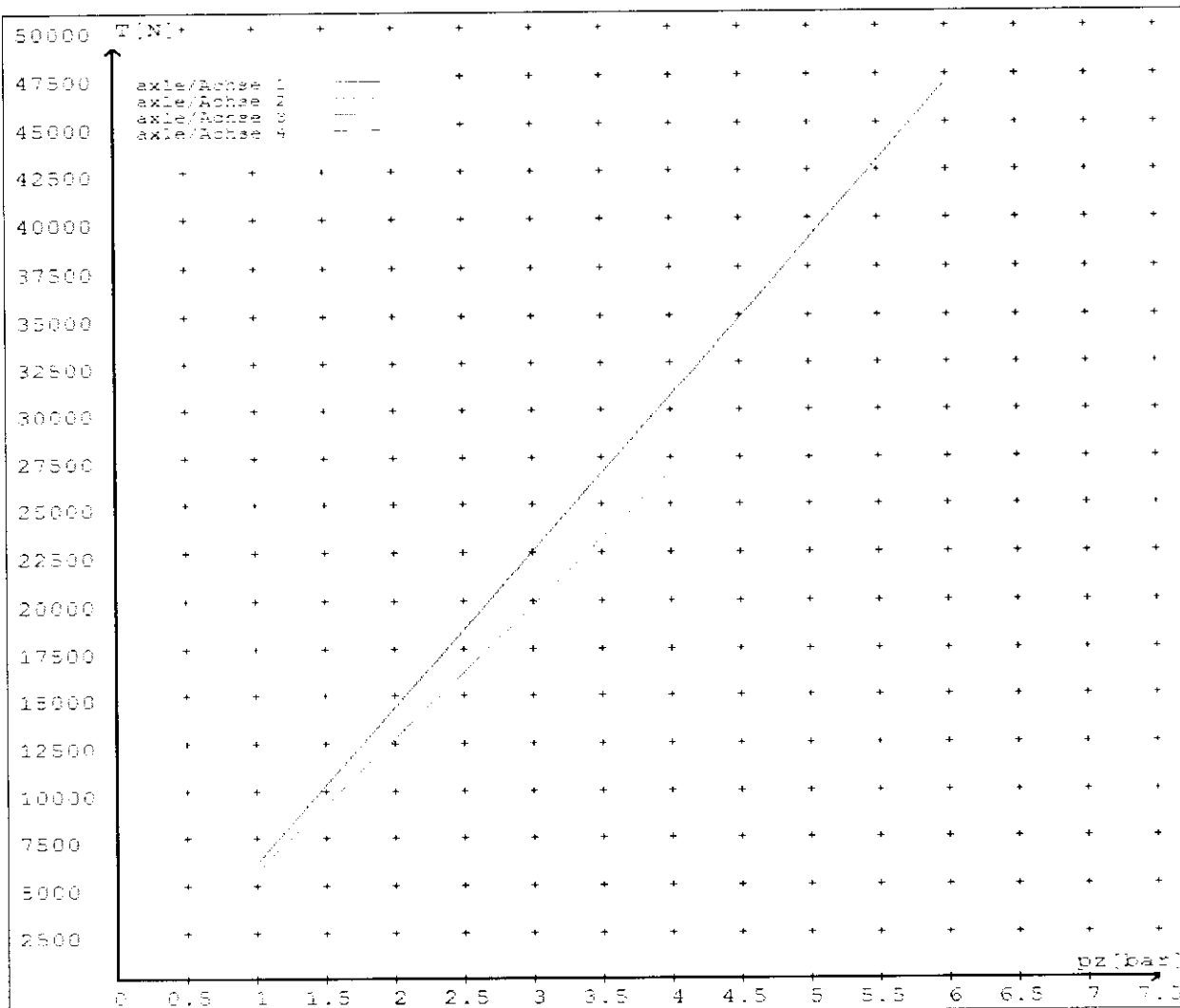
reference values

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

	pz [bar]	T [N]	T [N]
axle 1	1.0	6101	
	6.0	47001	
axle 2	1.0	6101	
	6.0	47001	
axle 3	1.0		5707
	4.0		26628
axle 4	1.0		5707
	4.0		26628

VIN - no.:

	Axle(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betriebe / Fest)	24/	24/	24/30	24/30	/
Maximum stroke smax = ...mm maximaler Hub smax = ...mm	82	82	64	64	
Lever length = ...mm Hebellänge = ...mm	165	165	140	140	



reference values for z = 0.5

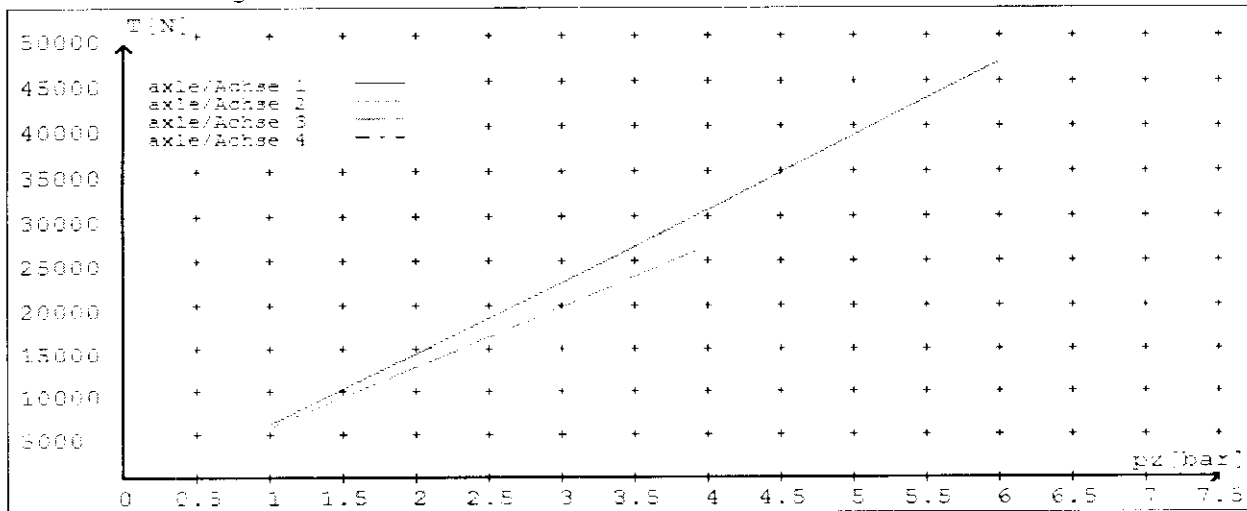
for max rdyn: 421 mm

Angabe der Referenzwerte für z = 0.5

für max rdyn: 421 mm

brake calculation no: TP 50942A date 07.11.2013

Bremsberechnung Nr: TP 50942A vom 07.11.2013



	Axle(s) / Achse(n)				
Brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	24/	24/	24/30	24/30	/
Maximum stroke s _{max} [mm] maximaler Hub s _{max} [mm]	82	82	64	64	
Lever length l [mm] Hebel Länge [mm]	165	165	140	140	

HVBR WORKSHEET
(PROCEDURE & COMPLIANCE DOCUMENTATION SHEET)

CERTIFICATE No. JH131108

CUSTOMER NAME

DOMETT TRUCK & TRAILER LTD

CUSTOMER ORDER No.

4103

DATE RECEIVED

Oct 2013

VEHICLE TYPE

4 AXLE FULL TRAILER

REG No.

CHASSIS No.

7A9D35017D1023209

BRIEF SPECIFICATION AS CERTIFIED TO HVBR

BRAKE CHAMBERS:

Type: 24S (TSE): Max stroke = 67 mm Lever length = 165 mm

Type: 2430GC (TSE): Max stroke = 64 mm Lever length = 140 mm

Ratio Valve Setting: EBS CONTROL WITH RSS ACTIVATED

Test Points: 3 4 5 7

FRICITION LINING:

OEM

Aftermarket

(All) Lining Brand

ABEX 3030-197

EBS CONTROL: SPECIAL CONDITIONS APPLY - SEE INSTRUCTION ON L1400

VALVES: AS PER DATA SHEET ATTACHED & SO1541799

TYRE SIZE: 265 70 R 19.5

NOTES

PACKING SLIP NO.

SO1541799

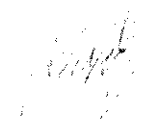
PROCESS TIME:

1

WABCO Brake calculation TP50942: WABCO CHAMBERS ARE TSE

COMPLETION DATE : 10th Nov 2013

SIGNATURE



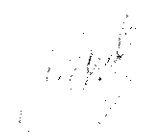
Statement of Compliance with the New Zealand Heavy Brake Rule

Documentation required to support 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: 10th Nov 2013

Signed: 

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