



Heavy Vehicle Specialist Certificate

Minimum 5 years experience in the role of Heavy Vehicle Specialist

NAME: **CHRIS CLARKE**

CJC

REGISTRATION NUMBER: **7A9D35015D1023211**

ISSUE DATE: **27/01/2013**

EXPIRES: **27/01/2015**

HUEK

CARRY OUT COMPLIANCE OF VEHICLE TO THE NZ HEAVY VEHICLE BRAKE RULE

ROLL STABILITY FUNCTION ACTIVATED

Vehicle Description (if applicable)

(If not, mark 'not applicable')

HUB NZ 32015/2 SCHED 5.

General Driving Purpose(s)

30000 KG.

N/A

Supporting Documents

BRAKE DESIGN CERTIFICATE - JH13K27.

Special Conditions

WARNING LAMP MUST ILLUMINATE WHEN IGNITION SWITCHED ON THEN EXTINGUISH IMMEDIATELY OR WHEN VEHICLE EXCEEDS 70KPH.

Certification Exam Date (if applicable)

or Hubodometer Reading (if applicable)

N/A

Declaration

I, the undersigned, declare that I am the Heavy Vehicle Specialist responsible for the design and construction of the vehicle described above and that I am a duly qualified and licensed component engineer under the Road Transport Act 2001. I declare that the vehicle complies with the applicable Road Transport Rule, Vehicle Standards and any other applicable regulations. To the best of my knowledge and belief, the vehicle complies with the Certificate of Compliance conditions.

Designer's ID Number (if applicable)

In the presence of:

Witness's Name (if applicable)

Date

Number

27-01-2013

458172

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

distribution: DOMETT
 7A9D35015D1023211
 SODC: JH131207
 PREV: HVB13/484

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 9.01).
 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,

		<u>unladen</u>	<u>laden</u>
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

		<u>axle 1</u>	<u>axle 2</u>	<u>axle 3</u>	<u>axle 4</u>
		manually	manually	manually	manually
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		BC 0029.0BC	0029.0BC	0051.0BC	0051.0
brake chamber manufacturer		WABCO	WABCO	WABCO	WABCO
chamber size		24	24	24/30	24/30
lever length	lBh in mm	165	165	140	140
brake factor	[-]	8.70	8.70	8.70	8.70
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	20.0	20.0	20.0	20.0

calculation:

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

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

axle 2:

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

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

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

axle 3:

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

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

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

axle 4:

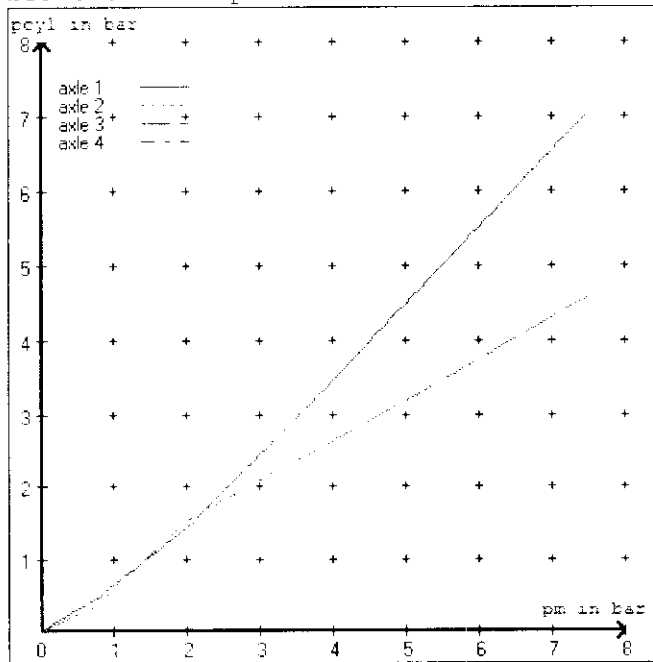
valve 1: 971 002 ... 0 WABCO
 EBS emergency valve

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

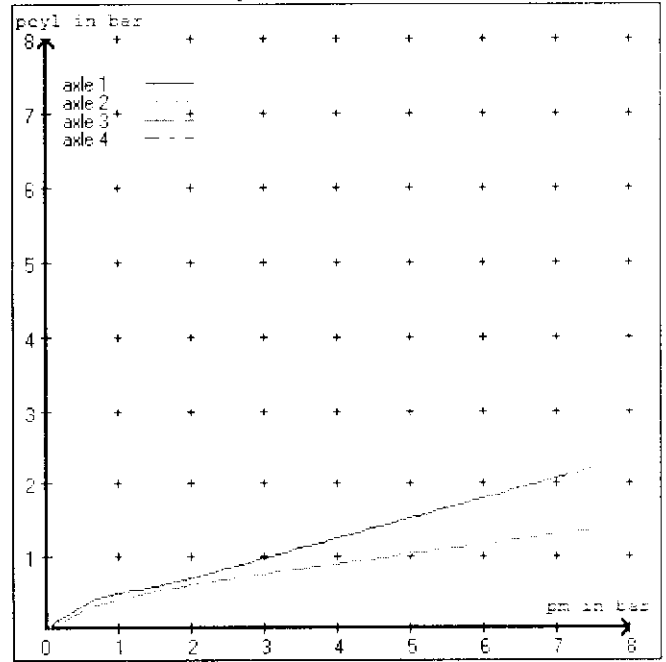
brake cylinder: WABCO 925 376 005 0 / 925 376 2.. 0

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	
at pm 3.4 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 1.1 bar =>	pcha in bar :	0.7	0.7	0.7	0.7	

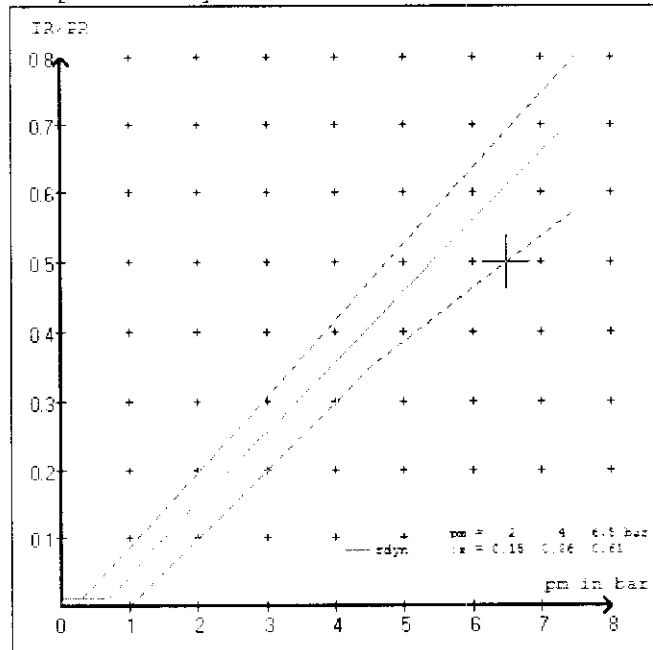
brake chamber pressure laden



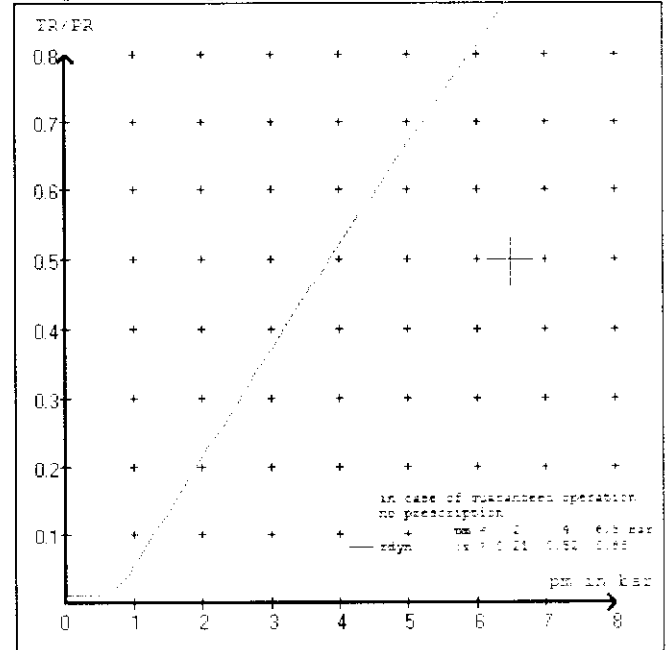
brake chamber pressure unladen



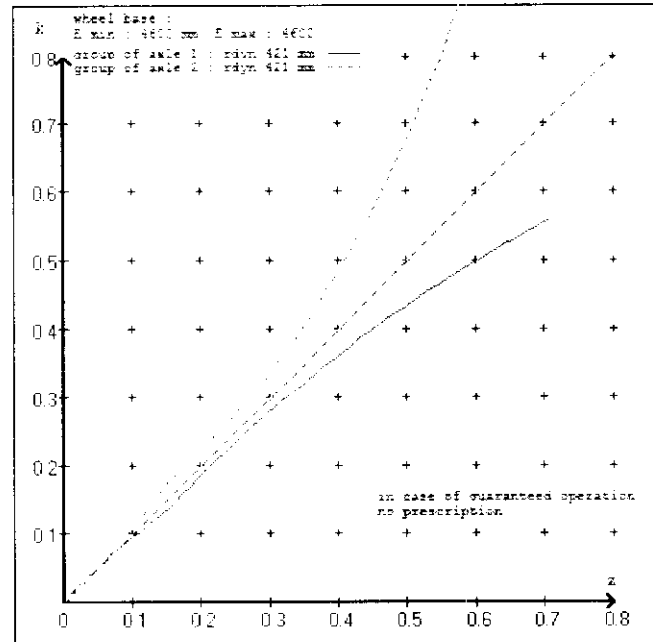
compatibility band laden



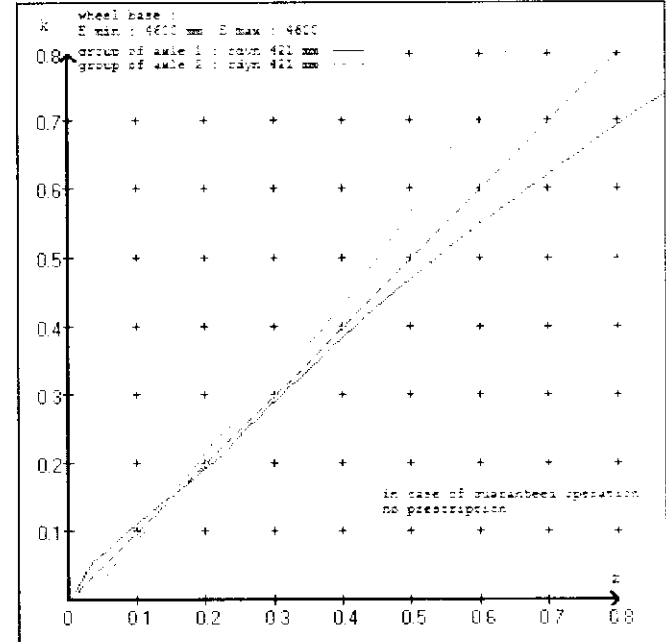
compatibility band unladen



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

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 = 0.142
 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	1.4	6.0
2	1500	entered by	1.9	7500	entered by	0.4	1.4	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 pcy1	axle load pcy1	axle load pcy1	axle load pcy1
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. verif. of residual (hot) braking force type III
(item 4.2.1 of appendix 2 to annex 11)

axle 1	(rdyn 421 mm)	T = 25.4 % Fe
axle 2	(rdyn 421 mm)	T = 25.4 % Fe
axle 3	(rdyn 421 mm)	T = 17.5 % Fe
axle 4	(rdyn 421 mm)	T = 17.5 % 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)
braking rate of the vehicle	trailer (E)	residual
(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)
braking rate of the vehicle	trailer (E)	residual
(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 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

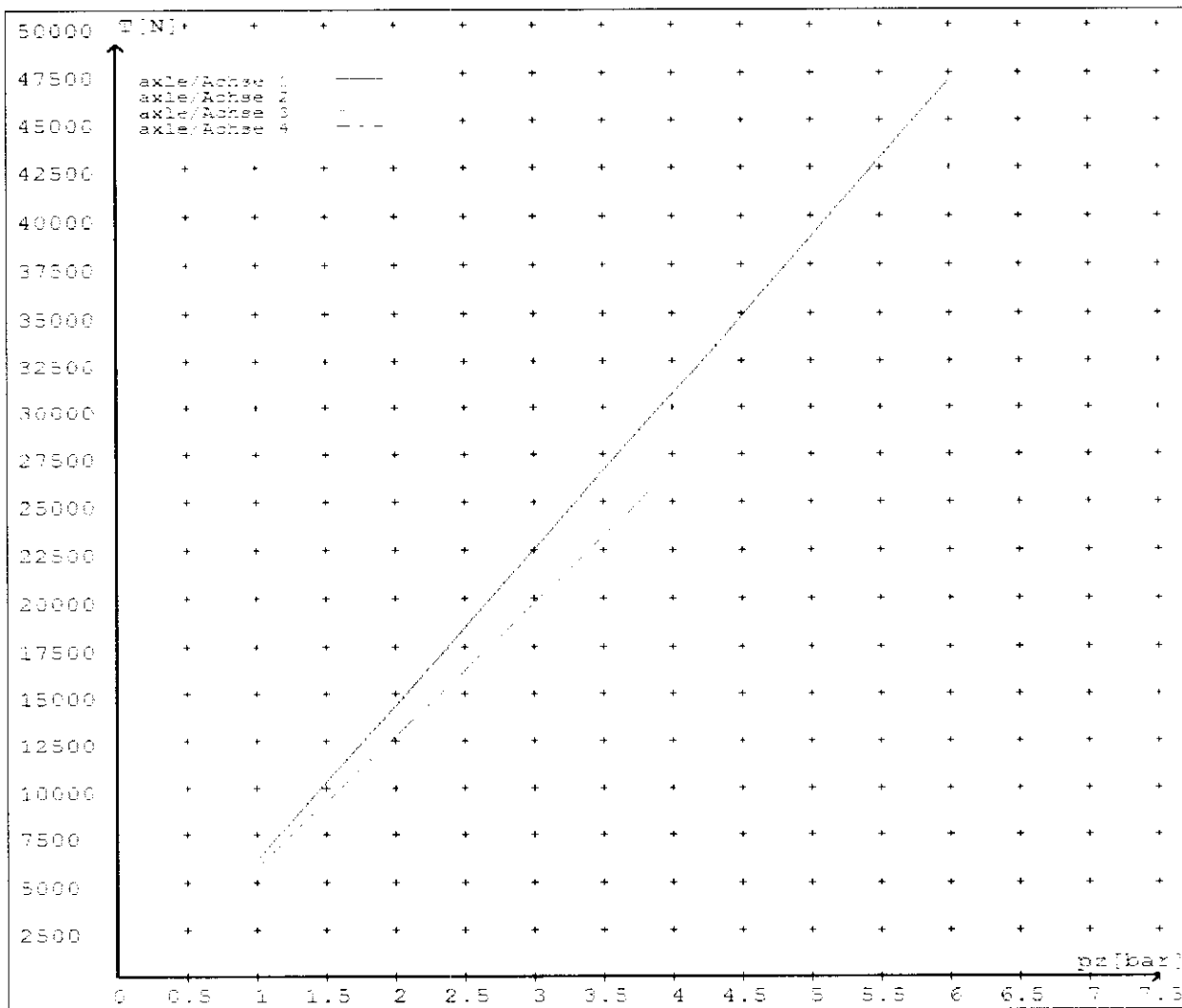
reference values

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 (Betrieb / Fest)	24/	24/	24/30	24/30	/
Maximum stroke smax =mm maximaler Hub smax =mm	67	67	64	64	
Lever lengthmm Hebellänge =mm	165	165	140	140	



reference values for z = 0.5

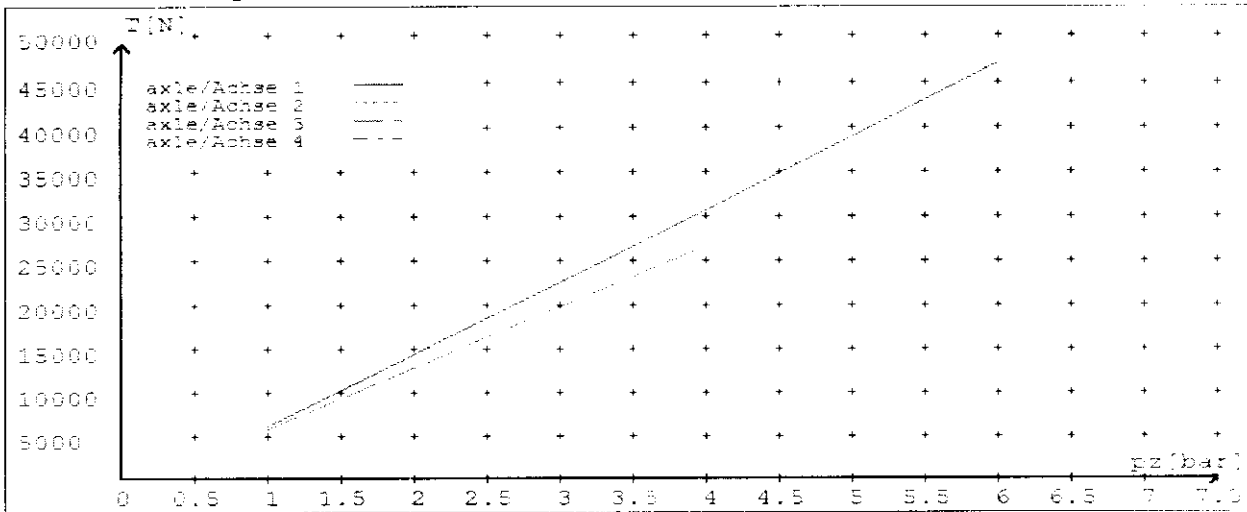
for max rdyn: 421 mm

Angabe der Referenzwerte für z = 0.5

für max rdyn: 421 mm

brake calculation no: TP 50942A date 12.12.2013

Bremsberechnung Nr: TP 50942A vom 12.12.2013



	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	67	67	64	64	
Lever lengthmm Hebelängemm	165	165	140	140	

HVBR WORKSHEET

(PROCEDURE & COMPLIANCE DOCUMENTATION SHEET)

CERTIFICATE No. JH131207

CUSTOMER NAME

DOMETT TRUCK & TRAILER LTD

CUSTOMER ORDER No.

4112

DATE RECEIVED

Oct 2013

VEHICLE TYPE

4 AXLE FULL TRAILER

REG No.

CHASSIS No.

7A9D35015D1023211

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:

(All) Lining Brand

OEM

Aftermarket

ABEX 3030-197

EBS CONTROL: SPECIAL CONDITIONS APPLY - SEE INSTRUCTION ON L1400

VALVES: AS PER DATA SHEET ATTACHED & SO1544042

TYRE SIZE: 265 70 R 19.5

NOTES

PACKING SLIP NO.

SO1544042

PROCESS TIME:

1

WABCO Brake calculation TP50942: WABCO CHAMBERS ARE TSE

COMPLETION DATE : 13th Dec 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: 13th Dec 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

HVBR WORKSHEET
(PROCEDURE & COMPLIANCE DOCUMENTATION SHEET)

CERTIFICATE No. JH131207

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DOMETT TRUCK & TRAILER LTD

CUSTOMER ORDER No.

4112

DATE RECEIVED

Oct 2013

VEHICLE TYPE

4 AXLE FULL TRAILER

REG No.

CHASSIS No.

7A9D35015D1023211

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:

(All) Lining Brand

OEM

Aftermarket

ABEX 3030-197

EBS CONTROL: SPECIAL CONDITIONS APPLY SEE INSTRUCTION ON L1400

VALVES: AS PER DATA SHEET ATTACHED & SO1544042

TYRE SIZE: 265 70 R 19.5

NOTES

PACKING SLIP NO.

SO1544042

PROCESS TIME:

1

WABCO Brake calculation TP50942: WABCO CHAMBERS ARE TSE

COMPLETION DATE : 13th Dec 2013

SIGNATURE




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Postal address: Transport Specialties Ltd

Cnr Kerrs & Ash Roads, Wiri, Auckland
PO Box 98 971, Manukau City 2241