NZ TRANSPORT AGENCY
WAKA KOTAHI

Heavy Vehicle Specialist Certificate

Must be presented to a CoF (Heavy) Inspecting Organisation
Heavy Vehicle Specialist Inspector and Inspecting Organisation

Heavy Vehicle Specialist Inspector's or Manufacturing Inspecting Organisation's Name *(PRINT IN CAPS)*: Chris Clarke

ID: CJC

Vehicle Registration*:

VIN/Chassis Number: 7A9D31018F1023327

Component being certified:

- [ ] Chassis Modification
- [ ] Load Anchorage
- [ ] Log Bolsters
- [ ] Towing Connection
- [X] Brakes
- [ ] SRT
- [ ] PSV Stability
- [ ] PSV Rollover
- [ ] Swept Path
- [ ] PBS

Certification Category: HVEK

Description of Work:

CERTIFY TO SCHEDULE 5

ROLL STABILTY FUNCTION ACTIVATED

Code/Standard/Rule Certified to: HVBR 32015/3 Schedule 5

Component Load Rating(s): 29000KG

General Drawing Number(s): N/A

Supporting Documents: BRAKE RULE CERTIFICATE - JH150105

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 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 Appointment. To the best of my knowledge the information contained in the Certificate is true and correct.

Designer's ID *(if different from inspector below)*:

Inspector's Signature:

Inspector's Name *(PRINT IN CAPS)*: CHRIS CLARKE

ID Number: CJC

Date: 5-Mar-15

Number: 504513

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 UN/ECE-R.13.11

distribution: DOMETT
7A9D31016F1023326: SODC - JH150104
7A9D31018F1023327: SODC - JH150105

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 (V6.14.04.20).
-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 V6.14.04.20 db 08.07.2014

vehicle manufacturer: DOMETT
trailer model : 4AFT SPLIT TIPPER
trailer type : 4-axle-full-trailer
remarks : air / hydraulic / VA suspension
WABCO TRAILER - EBS E
TRISTOP 3+4: T.14/24
265/70 R 19,5

axle 1 + 2 + 3 + 4 : SAF, SBW 1937, TDB 0749 ECE,

		unladen	laden
total mass	P in kg	6120	29000
axle 1	P1 in kg	1650	7250
axle 2	P2 in kg	1650	7250
axle 3	P3 in kg	1410	7250
axle 4	P4 in kg	1410	7250
wheel base	E in mm	5900 - 5900	
centre of gravity height	h in mm	1180	2381

		axle 1	axle 2	axle 3	axle 4
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 brake chamber manufacturer		BZ 122.1 Meritor	BZ 122.1 Meritor	BZ 119.6 Meritor	BZ 119.6 Meritor
chamber size		18.	18.	T.14/24	T.14/24
lever length	lBh in mm	69	69	69	69
brake factor	[-]	23.03	23.03	23.03	23.03
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	6.0	6.0	6.0	6.0

calculation:					
chamber pressure(rdyn min)pH at z=22,5%bar		2.5	2.5	2.0	2.0
chamber pressure(rdyn max)pH at z=22,5%bar		2.5	2.5	2.0	2.0
chamber press.(servo)pcha at pm6,5bar	bar	6.6	6.6	4.0	4.0
piston force ThA at pm6,5bar	N	7072	7072	3784	3784
brake force(rdyn min)T lad. at pm6,5bar	N	53503	53503	28653	28653
brake force(rdyn max)T lad. at pm6,5bar	N	53503	53503	28653	28653
brake force within 1 % rolling friction proportion	%	26.3	26.3	23.7	23.7

braking rate z laden
z = sum (TR)/PRmax

0.578 for rdyn min
0.578 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 1424HTLD64

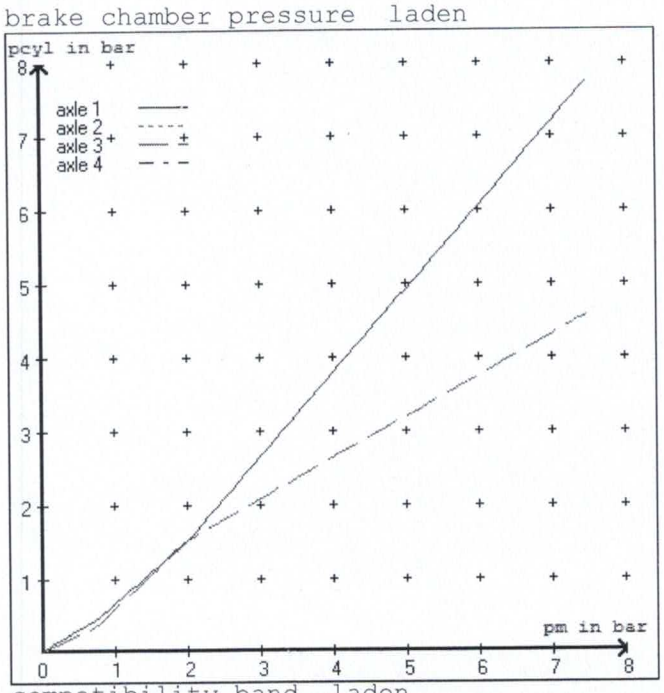
axle 4:
valve 1: 971 002 ... 0 WABCO
EBS emergency valve

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

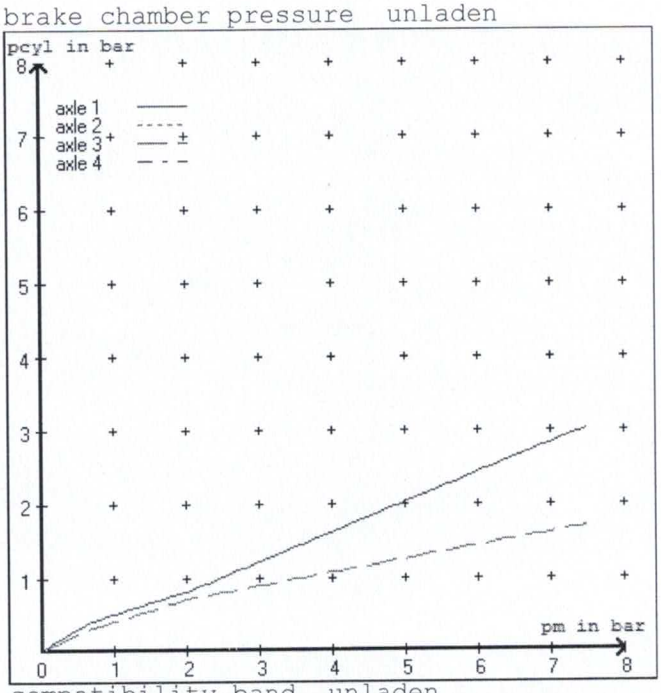
brake cylinder: Meritor 1424HTLD64

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	
at pm 3.6 bar =>	pcha in bar :	3.4	3.4	2.4	2.4	
test type III (zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	axle4	
at pm 1.2 bar =>	pcha in bar :	0.8	0.8	0.8	0.8	

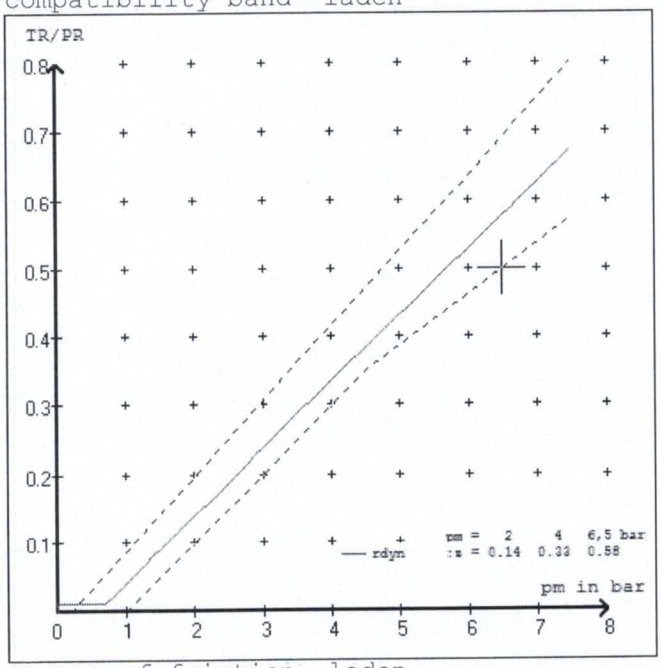
brake chamber pressure laden



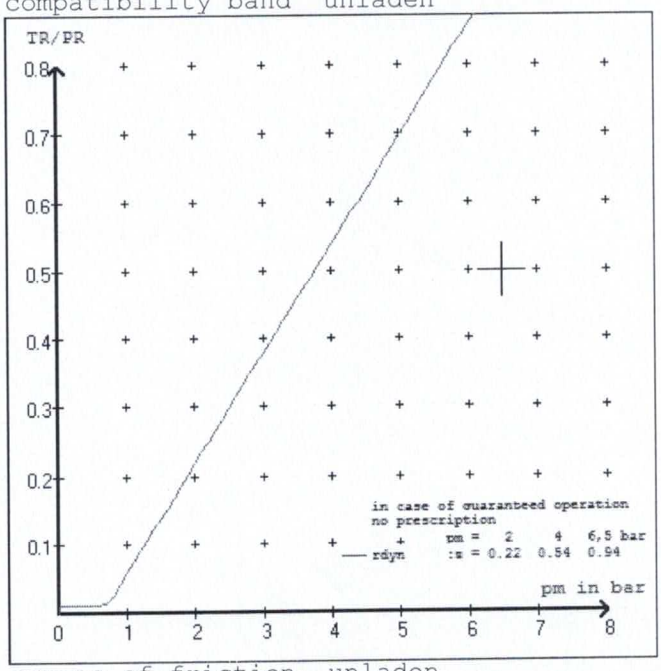
brake chamber pressure unladen



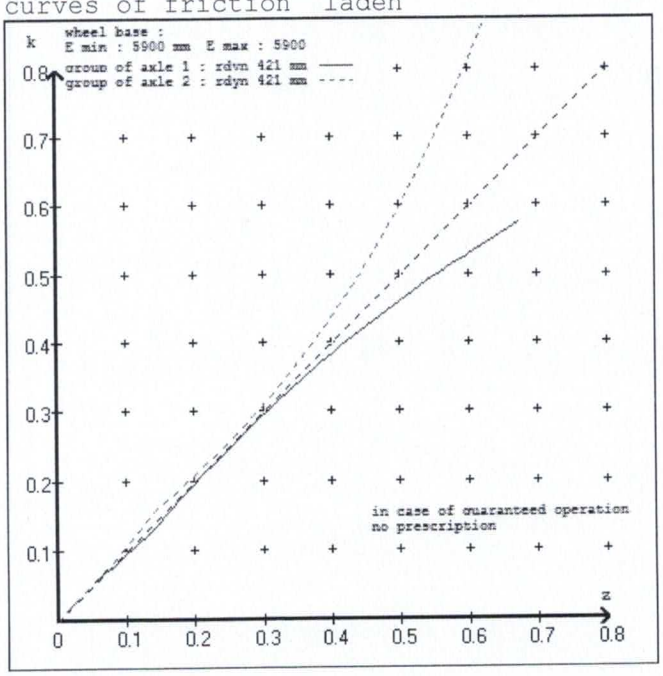
compatibility band laden



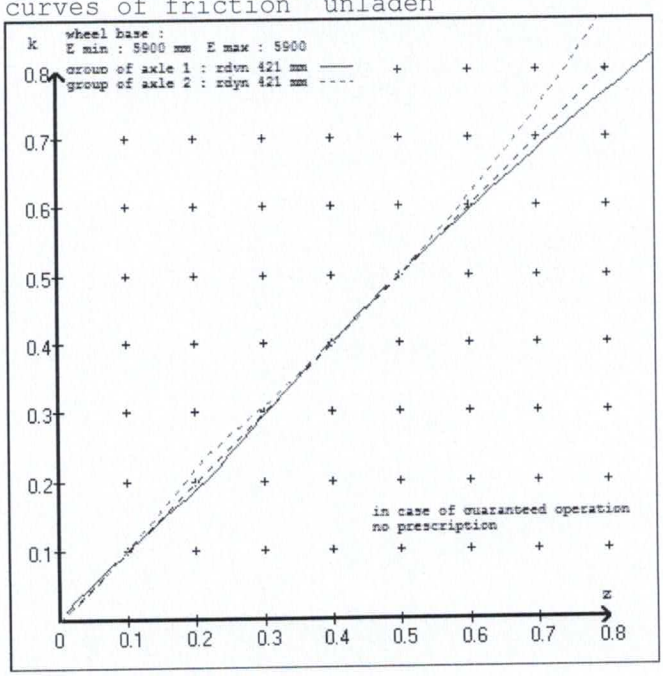
compatibility band unladen



curves of friction laden



curves of friction unladen



vehicle manufacturer: DOMETT
trailer model : 4AFT SPLIT TIPPER
trailer type : 4-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.14/24	(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	
480 207 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 : 4AFT SPLIT TIPPER
trailer type : 4-axle-full-trailer
brake calculation no. : TP 51207A

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 = 0.580

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.	2.6	7250	to be entered by the vehicle manufact.	0.4	1.5	6.6
2	1650		2.6	7250		0.4	1.5	6.6
3	1410		1.5	7250		0.3	1.5	4.0
4	1410		1.5	7250		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.
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axle 1		axle 2		axle 3		axle 4	
axle load	pcyl	axle load	pcyl	axle load	pcyl	axle load	pcyl
1650	2.6	1650	2.6	1410	1.5	1410	1.5
2150	3.0	2150	3.0	1910	1.7	1910	1.7
2650	3.3	2650	3.3	2410	1.9	2410	1.9
3150	3.7	3150	3.7	2910	2.1	2910	2.1
3650	4.0	3650	4.0	3410	2.4	3410	2.4
4150	4.4	4150	4.4	3910	2.6	3910	2.6
4650	4.7	4650	4.7	4410	2.8	4410	2.8
5150	5.1	5150	5.1	4910	3.0	4910	3.0
7250	6.6	7250	6.6	7250	4.0	7250	4.0

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 :	20130930 30.09.2013
axle 2 :	reference axle: SAF	SBW 1937	brake lining:	Jurid 539
	test report :	TDB 0749 ECE	date :	20130930 30.09.2013
axle 3 :	reference axle: SAF	SBW 1937	brake lining:	Jurid 539
	test report :	TDB 0749 ECE	date :	20130930 30.09.2013
axle 4 :	reference axle: SAF	SBW 1937	brake lining:	Jurid 539
	test report :	TDB 0749 ECE	date :	20130930 30.09.2013

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 = 26.0 % Fe
axle 2	(rdyn 421 mm)	T = 26.0 % Fe
axle 3	(rdyn 421 mm)	T = 16.6 % Fe
axle 4	(rdyn 421 mm)	T = 16.6 % 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 = 55 mm)	s = 39 mm
axle 4	(sp = 55 mm)	s = 39 mm

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

axle1	ThA = 7072 N
axle2	ThA = 7072 N
axle3	ThA = 3784 N
axle4	ThA = 3784 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 = 41767 N
axle 2	(rdyn 421 mm)	T = 41767 N
axle 3	(rdyn 421 mm)	T = 22488 N
axle 4	(rdyn 421 mm)	T = 22488 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	0.45
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 = 41767 N
axle 2	(rdyn 421 mm)	T = 41767 N
axle 3	(rdyn 421 mm)	T = 22488 N
axle 4	(rdyn 421 mm)	T = 22488 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	0.45
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		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	48188	48188
Tf = (TFZ*KDZ-2*Co/lBh)*iFb			
braking rate	zf laden	0.349	
zf = 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 = 4359 mm for E = 5900 mm

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min Ef = 4359 mm for E = 5900 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	=	2381 mm	height of center of gravity - laden
PR	=	14500 kg	maximum bogie mass - laden
P	=	29000 kg	maximum total mass - laden
nf	=	2	no. of axle(s) with TRISTOP spring brake actuators
ng	=	2	no. of bogie axle(s)

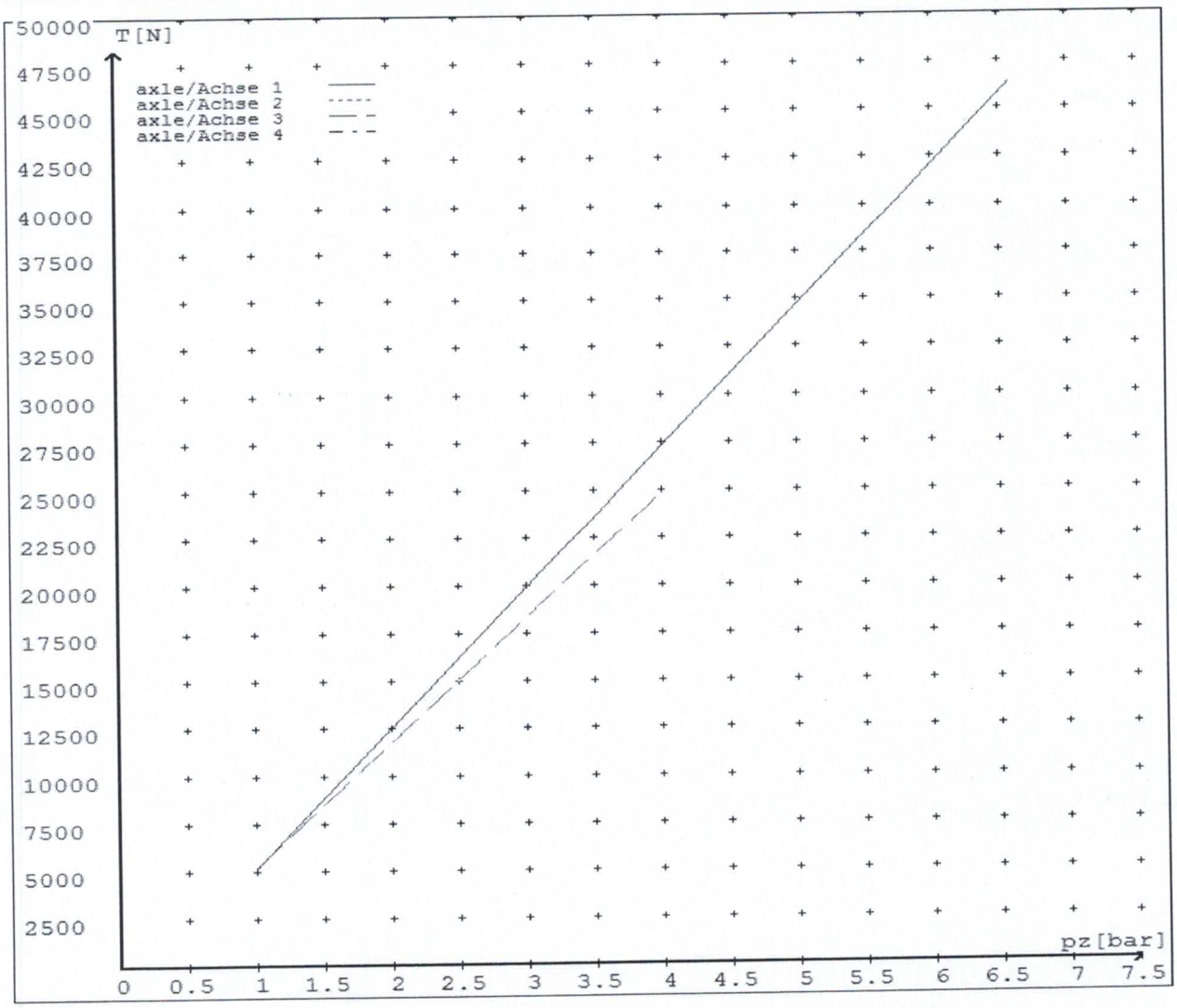
reference values

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

	pz [bar]	T [N]	T [N]
axle 1	1.0 6.6	5095 46283	
axle 2	1.0 6.6	5095 46283	
axle 3	1.0 4.0		5134 24787
axle 4	1.0 4.0		5134 24787

VIN - no.:

	Axle(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	18./	18./	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	



HVBR WORKSHEET

(PROCEDURE & COMPLIANCE DOCUMENTATION SHEET)

CERTIFICATE No. JH150105

CUSTOMER NAME: DOMETT TRAILERS LTD

CUSTOMER ORDER No.: 4334 DATE RECEIVED: January 2015

VEHICLE TYPE: 4 AXLE FULL TRAILER

REG No.: CHASSIS No.: 7A9D31018F1023327

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			

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 TP51207 & SO……..

TYRE SIZE: 265 70 R 19.5

NOTES

PACKING SLIP NO.: T.B.A. PROCESS TIME: 1

BRAKE CALC #TP51207. THE MERITOR CHAMBERS ARE THE TSE VARIANT. THE 1424HTLD64 IN THE CALC ARE USED TO DETERMINE THE SERVICE BRAKE PERFORMANCE. 1616HTLD64 ARE USED TO DETERMINE THE PARK BRAKE PERFORMANCE.

COMPLETION DATE : 8th Jan 2015 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 32015/3, Schedule 5.

Date: 8th Jan 2015 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 32015/3, 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