



# Heavy Vehicle Specialist Certificate

Heavy Vehicle Specialist Inspector and Inspecting Organisation

Inspector's Name (www.ics.govt.nz)

ID

CHRIS CLARKE

CJC

Inspector's Organisation

VIN / Chassis Number

7A9E25010D1023138

Component(s) Certified:

Chassis Modification

Load Anchorage

Log Bolsters

Component(s) Exceeds:

Towing Connection

✓ Brakes

SRT

HUEK.

Description of Work

CARRY OUT SET UP OF TRAILER EBS SYSTEM.

Roll Stability Function (RSF) ACTIVATED + TESTED AS PER START UP PROTOCOL.

Ordering Organisation (Certified)

Component Load Rating(s)

HUBINZ 32015/2 SCHED 5.

34800 KG.

General Towing Number(s)

N/A.

Supporting document

Brake Design Certificate - JH130308  
Pre-Exemption - HUB13/035.

Special Condition

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

Current Mileage (km) (Date of inspection)

OR

Hubodometer Reading (whichever is available)

N/A

### Declaration

I hereby solemnly declare that I am the Heavy Vehicle Specialist Inspector named above and I hold a current valid appointment to certify that the above mentioned vehicle complies (or does not comply) with the requirements of the Land Transport Rule Vehicle Standards Compliance 2002 and my Deed of Appointment. To the best of my knowledge the information contained in this certificate is true and correct.

Designer's ID (as stated by a manufacturer)

Inspector's / Delegate's Signature

Delegate's Name (www.ics.govt.nz)

Date

Number

22.03.2013

429826

Inspector's Organisation

COI Vehicle Inspector Signature:

Date

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



Exemption: HVB13/035

**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 Truck & Trailer Ltd, 5 axle full-trailer**  
VIN/Chassis: **7A9E25010D1023138**

**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 18th day of February 2013

Jackie Hartley  
Administrator (Assessments)

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

distribution: DOMETT  
 7A9E25010D1023138  
 SODC: JH130308  
 PREV: HVB13/035

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 (V6.12.08.27).  
 -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 V6.12.08.27 db 30.08.2012

vehicle manufacturer: DOMETT  
 trailer model : 5AFT STOCK  
 trailer type : 5-axle-full-trailer  
 remarks : air / hydraulic / VA suspension  
 WABCO TRAILER - EBS  
 TRISTOP 3+4+5: 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	5600	34800
axle 1	P1 in kg	1300	7500
axle 2	P2 in kg	1300	7500
axle 3	P3 in kg	1000	6600
axle 4	P4 in kg	1000	6600
axle 5	P5 in kg	1000	6600
wheel base	E in mm	6000 - 6100	
centre of gravity height	h in mm	1070	2395

	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 119.6
brake chamber manufacturer	Meritor	Meritor	Meritor	Meritor	Meritor
chamber size	18.	18.	T.14/16	T.14/16	T.14/16
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	2.1	2.1	2.1
chamber pressure(rdyn max)pH at z=22,5%bar	2.3	2.3	2.1	2.1	2.1
chamber press.(servo)pcha at pm6,5bar bar	6.3	6.3	4.8	4.8	4.8
piston force ThA at pm6,5bar N	6735	6735	4586	4586	4586
brake force(rdyn min)T lad. at pm6,5bar N	50977	50977	34648	34648	34648
brake force(rdyn max)T lad. at pm6,5bar N	50977	50977	34648	34648	34648
brake force within 1 % rolling friction proportion %	21.2	21.2	19.2	19.2	19.2

braking rate z laden 0.603 for rdyn min  
 z = sum (TR)/PRmax 0.603 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:

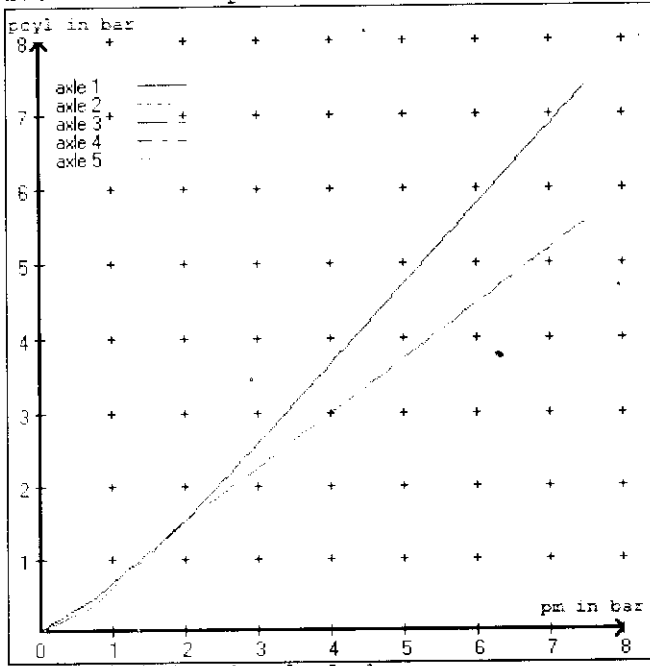
valve 1: 971 002 ... 0 WABCO  
EBS emergency valve

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

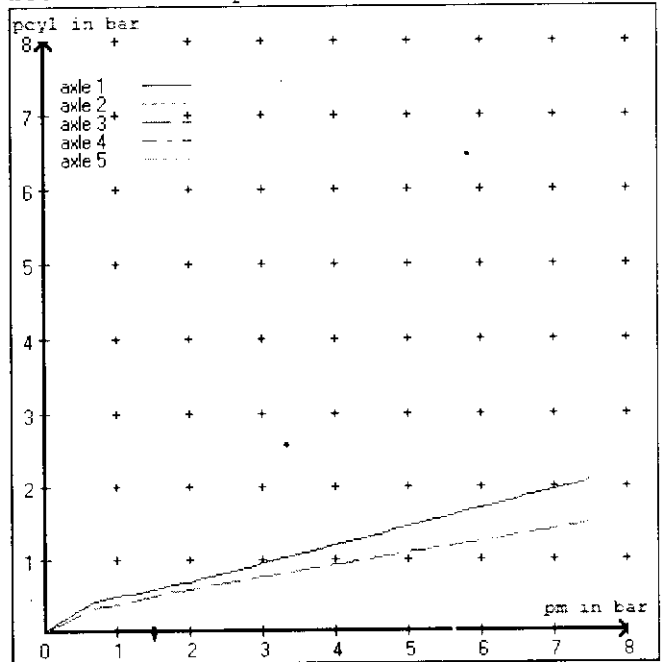
brake cylinder: Meritor 1416HTLD64

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	axle5	
at pm 3.5 bar =>	pcha in bar :	3.1	3.1	2.6	2.6	2.6	2.6
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	0.7

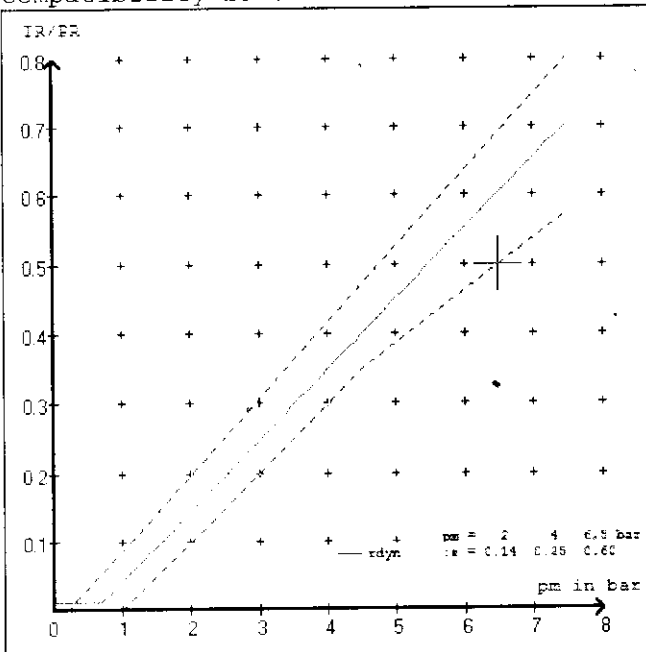
brake chamber pressure laden



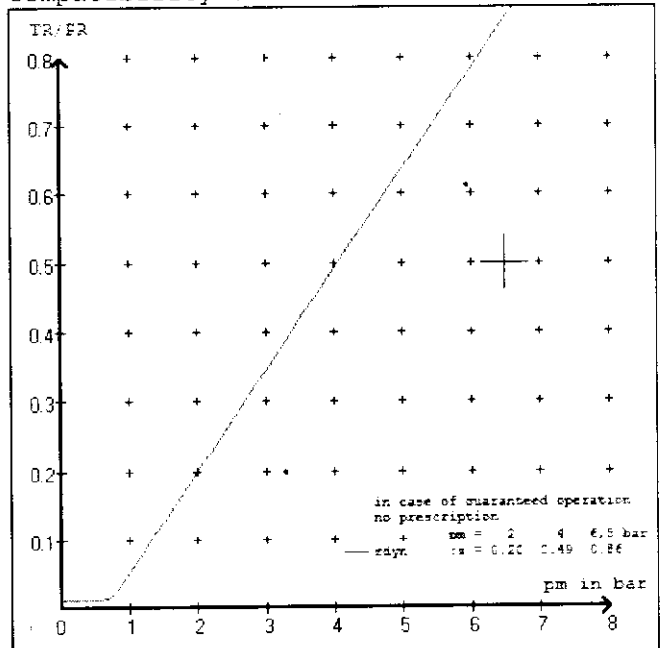
brake chamber pressure unladen



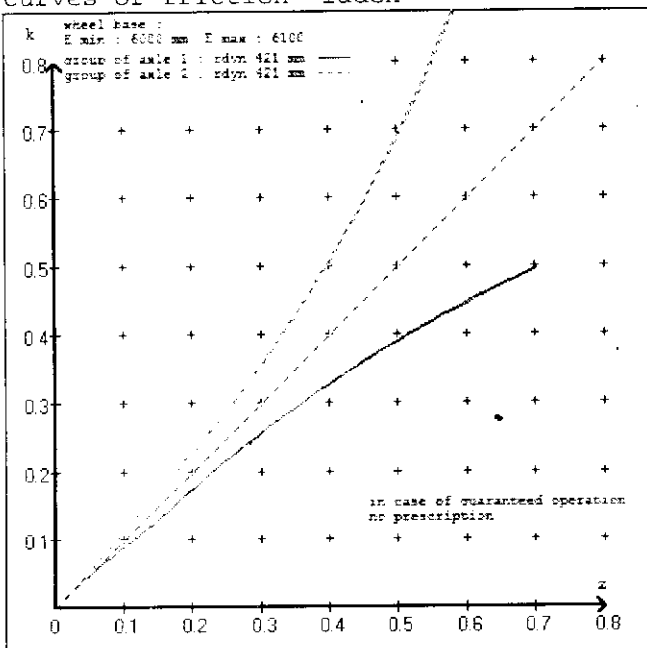
compatibility band laden



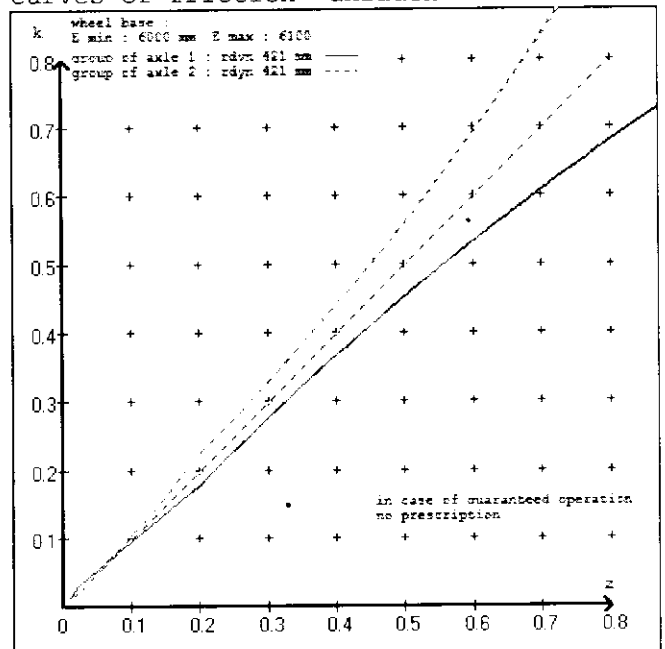
compatibility band unladen



curves of friction laden



curves of friction unladen



vehicle manufacturer: DOMETT  
 trailer model : 5AFT STOCK  
 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 T.14/16 (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

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vehicle manufacturer: DOMETT  
 trailer model : 5AFT STOCK  
 trailer type : 5-axle-full-trailer  
 brake calculation no. : TP 50786A

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	1300	to be	1.8	7500	to be	0.4	1.5	6.3
2	1300	entered by the vehicle manufact.	1.8	7500	entered by the vehicle manufact.	0.4	1.5	6.3
3	1000		1.3	6600		0.3	1.5	4.8
4	1000		1.3	6600		0.3	1.5	4.8
5	1000		1.3	6600		0.3	1.5	4.8

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 5
axle load pcyl	axle load pcyl	axle load pcyl	axle load pcyl	axle load pcyl
1300 1.8	1300 1.8	1000 1.3	1000 1.3	1000 1.3
1800 2.2	1800 2.2	1500 1.6	1500 1.6	1500 1.6
2300 2.5	2300 2.5	2000 1.9	2000 1.9	2000 1.9
2800 2.9	2800 2.9	2500 2.2	2500 2.2	2500 2.2
3300 3.3	3300 3.3	3000 2.6	3000 2.6	3000 2.6
3800 3.6	3800 3.6	3500 2.9	3500 2.9	3500 2.9
4300 4.0	4300 4.0	4000 3.2	4000 3.2	4000 3.2
4800 4.3	4800 4.3	4500 3.5	4500 3.5	4500 3.5
7500 6.3	7500 6.3	6600 4.8	6600 4.8	6600 4.8

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

axle 1	(rdyn 421 mm)	T = 24.0 % Fe
axle 2	(rdyn 421 mm)	T = 24.0 % Fe
axle 3	(rdyn 421 mm)	T = 18.1 % Fe
axle 4	(rdyn 421 mm)	T = 18.1 % Fe
axle 5	(rdyn 421 mm)	T = 18.1 % 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 = 6735 N
axle2	ThA = 6735 N
axle3	ThA = 4586 N
axle4	ThA = 4586 N
axle5	ThA = 4586 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 = 40128 N
axle 2	(rdyn 421 mm)	T = 40128 N
axle 3	(rdyn 421 mm)	T = 27308 N
axle 4	(rdyn 421 mm)	T = 27308 N
axle 5	(rdyn 421 mm)	T = 27308 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)	0.60	0.48

required braking rate	>= 0,4 and
(items 1.5.3 and 1.7.2 to annex 11)	>= 0,6*E (0.36)

axle 1	(rdyn 421 mm)	T = 40128 N
axle 2	(rdyn 421 mm)	T = 40128 N
axle 3	(rdyn 421 mm)	T = 27308 N
axle 4	(rdyn 421 mm)	T = 27308 N
axle 5	(rdyn 421 mm)	T = 27308 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)	0.60	0.48

required braking rate	>= 0,4 and
(items 1.5.3 and 1.7.2 to annex 11)	>= 0,6*E (0.36)



spring parking brake

	<u>axle 3</u>	<u>axle 4</u>	<u>axle 5</u>
no of TRISTOP-actuators per axle line KDZ	2	2	2
TRISTOP-actuator type	T.14/16	T.14/16	T.14/16
lever length                      lBh in mm	69	69	69
stat. tyre radius                      rstat max in mm	401	401	401
at a stroke of                      s            in mm	30	30	30
min. force of spring brake            TFZ in N	6160	6160	6160
sp.brake chamber no Meritor.....	4	4	4
release pressure                      pLs in bar	4.8	4.8	4.8

calculation:

ratio until road	3.9674	3.9674	3.9674
$iFb = lBh * \eta * C * rBt / (rBn * rstat)$ for rstat            in mm	401	401	401
brake force of spring br. Tf            in N	48188	48188	48188
$Tf = (TFZ * KDZ - 2 * Co / lBh) * iFb$			
braking rate                      zf laden	0.433		
$zf = \text{sum}(Tf) / P + 0,01$			

Test of the frictional connection required by the parking brake

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

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

min Ef = 3893 mm for E = 6000 mm

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min Ef = 3949 mm for E = 6100 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            =            2395 mm    height of center of gravity - laden
- PR          =            19800 kg    maximum bogie mass - laden
- P            =            34800 kg    maximum total mass - laden
- nf          =            3            no. of axle(s) with TRISTOP spring brake actuators
- ng          =            3            no. of bogie axle(s)

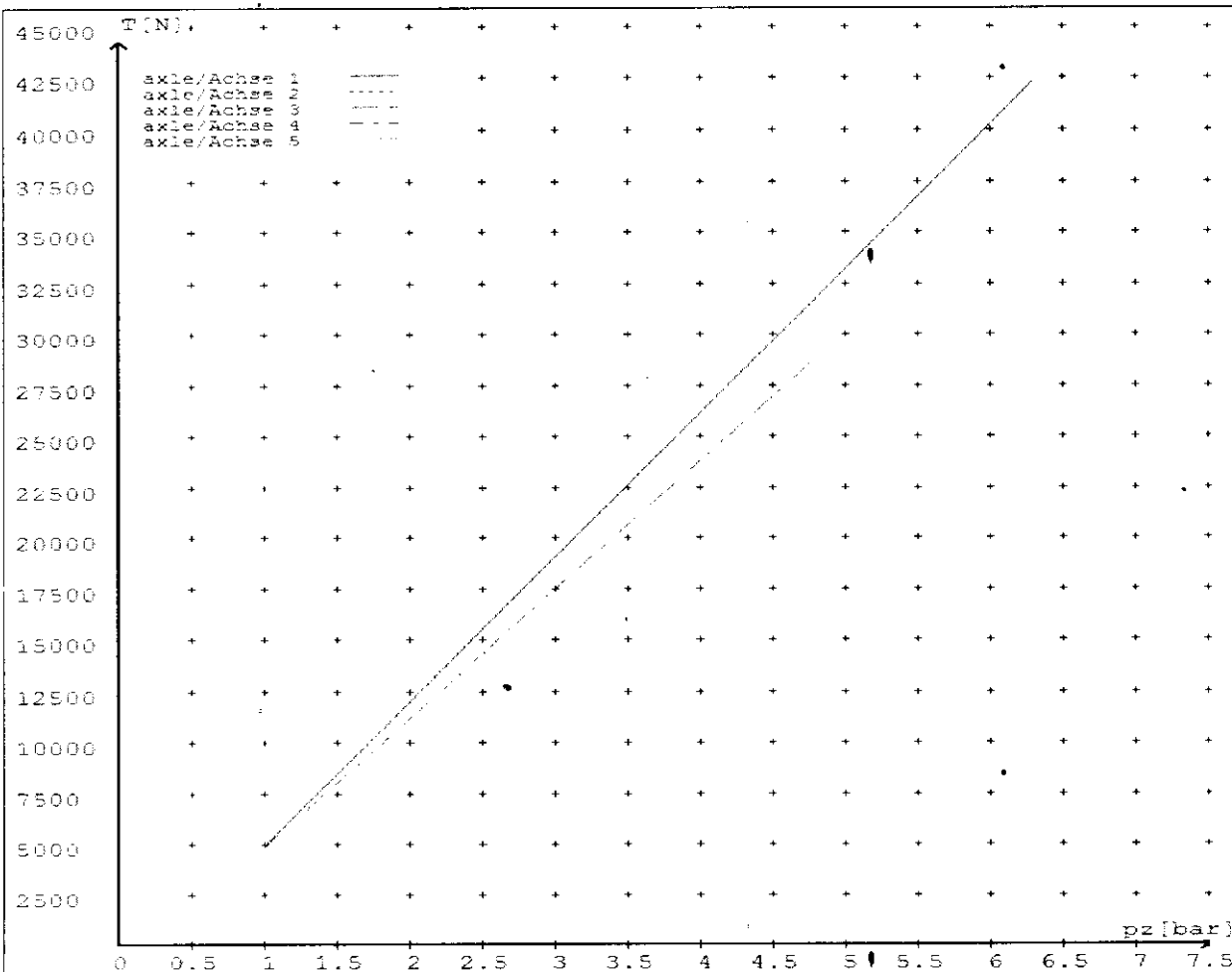
reference values

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

	pz [bar]	T [N]	T [N]
axle 1	1.0	4904	
	6.3	42270	
axle 2	1.0	4904	
	6.3	42270	
axle 3	1.0		4868
	4.8		28730
axle 4	1.0		4868
	4.8		28730
axle 5	1.0		4868
	4.8		28730

VIN - no.:

	Axle(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	18./	18./	T.14/16	T.14/16	T.14/16
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. JH130308

CUSTOMER NAME

DOMETT TRUCK & TRAILER LTD

CUSTOMER ORDER No.

3983

DATE RECEIVED

Mar 2013

VEHICLE TYPE

5 AXLE FULL TRAILER

REG No.

CHASSIS No.

7A9E25010D1023138

**BRIEF SPECIFICATION AS CERTIFIED TO HVBR**

**BRAKE CHAMBERS:**

Type: 18HISCLD65 (TSE): Max stroke = 65 mm    Lever length = 69 mm  
Type: 1416HTLD64 (TSE): Max stroke = 64 mm    Lever length = 69 mm

**BRAKE VALVES:**

Ratio Valve Setting:    **EBS CONTROL**

Test Points:    3 4 5 7

**FRICITION LINING:**

(All) Lining Brand

OEM  
**JURID 539**

Aftermarket

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

**VALVES: AS PER DATA SHEET ATTACHED**

**TYRE SIZE: 265 70 R 19.5**

**NOTES**

PACKING SLIP NO.

SO1525745

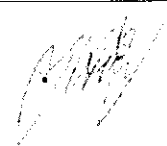
PROCESS TIME:

f

Brake calculation TP50786: MERITOR CHAMBERS ARE TSE

COMPLETION DATE : 13<sup>TH</sup> Mar 2013

SIGNATURE



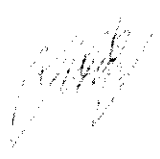
# Statement of Compliance with the New Zealand Heavy Brake Rule

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: 13<sup>th</sup> Mar 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

## **NOTICE TO VEHICLE OPERATOR**

This trailer is equipped with an Electronic Brake System.

To comply with the New Zealand Heavy Vehicle Brake RULE, it must be used only in conjunction with a truck/tractor equipped with a 5 or 7 pin ABS/EBS power supply socket.

Failure to connect to such supply invalidates Brake Rule compliance.

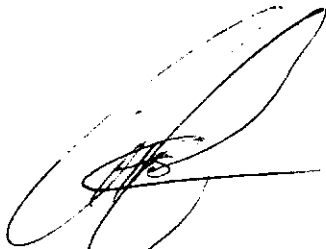
The trailer ABS/EBS warning light on the towing vehicle dashboard must illuminate when the ignition is switched on and extinguish when the vehicle is in motion.

If the light does not illuminate when ignition is switched on, the system must be checked. If the light remains illuminated when the vehicle is in motion, Brake Rule compliance is compromised. Repairs must be made as soon as possible.

### **NB;**

If this vehicle is fitted with mechanical (spring) suspension, the load sense valving has been adjusted to suit exactly the performance of the original springs. In event of replacement being required, original equipment springs **must** be fitted to ensure correct ongoing operation. Fitment of non genuine springs can affect operation and therefore, compliance.

If you are unsure of your responsibilities and/or obligations, please contact either the vehicle manufacturer or myself.



C J Clarke (CJC HVEK)

## **NOTICE TO VEHICLE OPERATOR**

**THIS VEHICLE HAS A BRAKE SYSTEM WHICH HAS BEEN DESIGNED AND FITTED IN ACCORDANCE WITH THE NEW ZEALAND HEAVY VEHICLE BRAKE RULE 32015: SCHEDULE 5.**

**IF THIS VEHICLE IS OPERATED IN CONJUNCTION WITH NON-CODED VEHICLES, THERE MAY BE OPERATIONAL FACTORS WHICH NEED TO BE TAKEN INTO CONSIDERATION.**

**PLEASE REFER TO THE CERTIFIER FOR FURTHER INFORMATION.**

### **EXCERPT FROM NZ HEAVY VEHICLE BRAKE RULE 32015**

#### **10.1 Responsibilities of operators**

*A person who operates a vehicle must ensure that the vehicle complies with this Rule*

#### **10.2 Responsibilities of repairers**

*A person who repairs or adjusts a brake must ensure that the repair or adjustment:*

- (a) does not prevent the vehicle from complying with the rule; and*
- (b) complies with Land Transport Rule: Vehicle Repair 1998.*

#### **10.3 Responsibilities of modifiers**

*A person who modifies a vehicle so as to affect the braking performance of the vehicle must:*

- (a) ensure that the modification does not prevent the vehicle from complying with this rule; and*
- (b) notify the operator that the vehicle must be inspected and, if necessary, certified by a person or organisation appointed to carry out specialist inspection and certification of heavy vehicle brakes.*


#### **10.5 Responsibilities of manufactures and retailers**

*A person may manufacture, stock, or offer for sale a brake or its components. Intended for fitting to a vehicle to be used on New Zealand roads, only if that brake or component:*

- (a) complies with this Rule; and*
- (b) does not prevent a repair to a vehicle, its structure, systems, components and equipment from complying with this Rule.*

**IF YOU ARE UNSURE ABOUT YOUR RESPONSIBILITIES, PLEASE CONTACT THE VEHICLE MANUFACTURER, OR MYSELF.**

**COMPLAINTS.** *Complaints and Warranty issues which relate to Brake Certification will be acknowledged within 7 working days and a resolution proposed within 25 working days. Resolution of complaints and Warranty issues is subject to Transpecs Warranty policy. Customers have the right to appeal to the Land Transport Safety Authority if dissatisfied with a Compliance issue (refer LTNZ Deed Of Appointment Para 47.4) NZTA Helpdesk 0800 699 000*

  
C J Clarke (CJC HVEK)