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: 7A9E10018F1023378

Component being certified:

- [ ] Chassis
- [ ] 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): 30000KG

General Drawing Number(s): N/A

Supporting Documents:

BRAKE RULE CERTIFICATE - LC150708

OPTI-TURN EXEMPTION REF: HMRE15/047

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: CJK

Date: 13-Aug-15

Number: 522422

CoF Vehicle Inspector ID:

CoF Vehicle Inspector Signature:

Date:

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

NZ TRANSPORT AGENCY
WAKA KOTAHI

NATIONAL OFFICE
50 Victoria Street
Private Bag 6995
Wellington 6141
New Zealand
T 64 4 394 5400
F 64 4 894 6100
www.nzta.govt.nz

Exemption: HMRE15/047

EXEMPTION FROM SPECIFIED REQUIREMENTS OF LAND TRANSPORT RULE: Heavy Vehicles 2004 and Vehicle Dimensions and Mass 2002

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 Vehicles 2004 and Vehicle Dimensions and Mass 2002 listed in Schedule 2, subject to the conditions specified in Schedule 3.

SCHEDULE 1:

Make/Model: **Domett Truck & Trailer, 5 Axle Tanker**
VIN/CHASSIS: **7A9E10018F1023378**

SCHEDULE 2: - Exempted Requirement

Heavy Vehicles 2004
- Clause 3.5(2)

Vehicle Dimensions and Mass 2002
- Clause 4.2(7)

SCHEDULE 3: - Conditions of this exemption:

1) The Wabco OptiTurn function of the TEBS-E system is to be activated.
2) The vehicle must not be modified in any way while operating under this exemption.
3) This original exemption must be kept by Gough Transpecs.
4) A copy of this exemption including the OptiTurn function (printed on a silver WABCO Sticker) must be affixed to the exempted vehicle.
5) The sticker in 4) must be legible and include all printed areas of this original exemption letter.
6) This exemption can be revoked at any time in writing by the NZ Transport Agency.

Signed at Wellington this 5th day of March 2015.

Jackie Hartley
Administrator (Assessments)

WABCO START-UP PROTOCOL

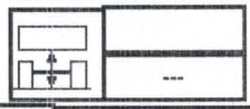
System	Trailer EBS-E	**WABCO part number**	480 102 064 0
Production date	2015-04-10	**Serial number**	436009910200H
Serial number (modulator)	000000103034		
Fingerprint Customer EOL / Customer Development / Flash Program	W503643 / 2015-08-13 ; 00000000 / 0000-00-00 ; 00000000 / 0000-00-00		

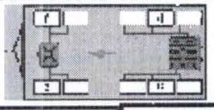
WABCO TRAILER EBS-E

GGVS/ADR TUEH TB 2007 - 019.00
TDB0749

HERSTELLER MANUFACTURER CONSTRUCTEUR	DOMETT T&T				
TYP TYPE TYPE	5AFT TANKER				
FAHRZEUG IDENTNR. CHASSIS NUMBER NUMERO DE CHASSIS	7A9E10018F1023378				
BREMSBERECHNUNGS-NR. BRAKE CALCULATION NO. CALCUL DE FREINAGE NO.	TP2015A				
POLRADZÄHNEZAHL c-d | e-f POLE WHEEL TEETH c-d | e-f DENTS ROUE DENTÉE c-d | e-f	90	90	ABS-System ABS system Système ABS	4S/3M	
RSS RSS RSS Einfachbereifung Single Tire Monte simple		Lenkachse Steering axle Essieu vireur			
RSS RSS RSS Zwillingsbereifung Twin Tire Monte jumelée	X	Kippkritisches Fahrzeug Critical Trailer Véhicule critique			
Subsystems	---		I/O	24N	

GIO	Pin1	Pin3	Pin4
1	ILS1	---	ILS1
2	eTASC	---	eTASC
3	ALS2	ALS2	---
4	---	MH	LS1
5	DIAG	DIAG	DIAG
6	---	---	---
7	---	---	---





	pm (bar)		6.5	pm (bar)		0.8	2.0	---	6.5		TYP TYPE	(mm)	(mm)	(bar) 1.0	Pz
ACHSE AXLE ESSIEU									pz					TR (daN)	
1	1500	0.6	1.7	7250	4.5	0.4	1.3	---	5.8	-	18	65	69	506	3799
2	1500	0.6	1.7	7250	4.5	0.4	1.3	---	5.8	-	18	65	69	506	3799
3	1100	0.3	1.2	6000	3.7	0.3	1.4	---	4.5	-	14 / 16	64	69	500	2781
4	1100	0.3	1.2	6000	3.7	0.3	1.4	---	4.5	-	14 / 16	64	69	500	2781
5	1100	0.3	1.2	6000	3.7	0.3	1.4	---	4.5	1	14	64	69	500	2781

Diagnostic memory	OK	**Warning lamp control**	OK
Parameter setting	carried out	**Stop light power supply**	OK
EBS pressure test	OK	**Lifting axle test**	Not tested
Redundancy test	OK	**ECAS height sensor calibration**	Not tested
ABS sensor assignment	OK	**Height sensor axle load**	Not tested
RTR check	Not tested	**Leak test**	Not tested
Immobilizer test	Not tested	**Signal outputs TEBS**	Not tested
Signal inputs	Not tested	**Tag axle test**	Not tested

Diagnostic memory ELEX	Not tested	**Signal outputs ELEX**	Not tested
TailGUARDlight	Not tested	**TailGUARD**	Not tested

Manufacturer	DOMETT T&T	**Vehicle ident. no**	7A9E10018F1023378
Vehicle type	5AFT TANKER	**Odometer reading**	581958.4 km
next Service	0 km	**Trip reading**	581958.4 km
Tester	Chris Clarke	**Signature**	
Date	2015-08-13 9:42:39 p.m.		

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

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

distribution: DOMETTS
2015, 5A, SAF,TANKER
7A9E10018F1023378
LC150708
CJC LT400 522422

vehicle manufacturer: DOMETTS

trailer model : 2015 5A TANKER, E1001

trailer type : 5-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 + 5 : SAF, SBW 1937, TDB 0749 ECE,

		unladen	laden
total mass	P in kg	6300	32500
axle 1	P1 in kg	1500	7250
axle 2	P2 in kg	1500	7250
axle 3	P3 in kg	1100	6000
axle 4	P4 in kg	1100	6000
axle 5	P5 in kg	1100	6000
wheel base	E in mm	5695 - 5695	
centre of gravity height	h in mm	1000	1582

		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.14/24	T.14/24	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	2.2	2.2	2.0	2.0	2.0
chamber pressure(rdyn max)pH at z=22,5%	bar	2.2	2.2	2.0	2.0	2.0
chamber press.(servo)pcha at pm6,5bar	bar	5.8	5.8	4.5	4.5	4.5
piston force ThA at pm6,5bar	N	6172	6172	4285	4285	4285
brake force(rdyn min)T lad. at pm6,5bar	N	46701	46701	32317	32317	32317
brake force(rdyn max)T lad. at pm6,5bar	N	46701	46701	32317	32317	32317
brake force within 1 % rolling friction proportion	%	21.2	21.2	19.2	19.2	19.2

braking rate z laden 0.597 for rdyn min
z = sum (TR)/PRmax 0.597 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: 480 207 0.. 0 WABCO or 480 207 2.. 0
EBS relay valve

brake cylinder: Meritor 18HSCLD64

axle 2:
valve 1: 480 207 0.. 0 WABCO or 480 207 2.. 0
EBS relay valve

brake cylinder: Meritor 18HSCLD64

axle 3:
valve 1: 480 102 0.. 0 WABCO
EBS trailer modulator

brake cylinder: Meritor 1424HTLD64

axle 4:
valve 1: 480 102 0.. 0 WABCO
EBS trailer modulator

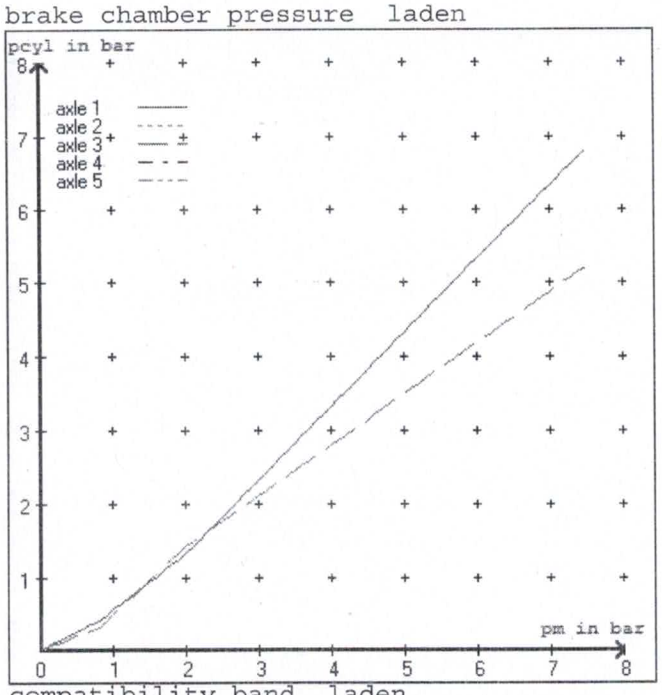
brake cylinder: Meritor 1424HTLD64

axle 5:
valve 1: 480 102 0.. 0 WABCO
EBS trailer modulator

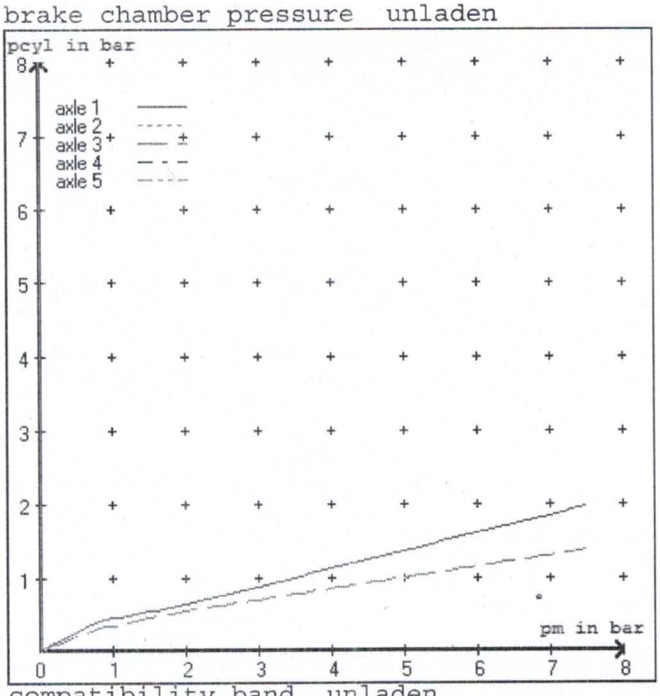
brake cylinder: Meritor 14HSCLD64

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	axle5
at pm 3.6 bar =>	pcha in bar :	2.9	2.9	2.5	2.5	2.5
test type III (zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	axle4	axle5
at pm 1.3 bar =>	pcha in bar :	0.8	0.8	0.7	0.7	0.7

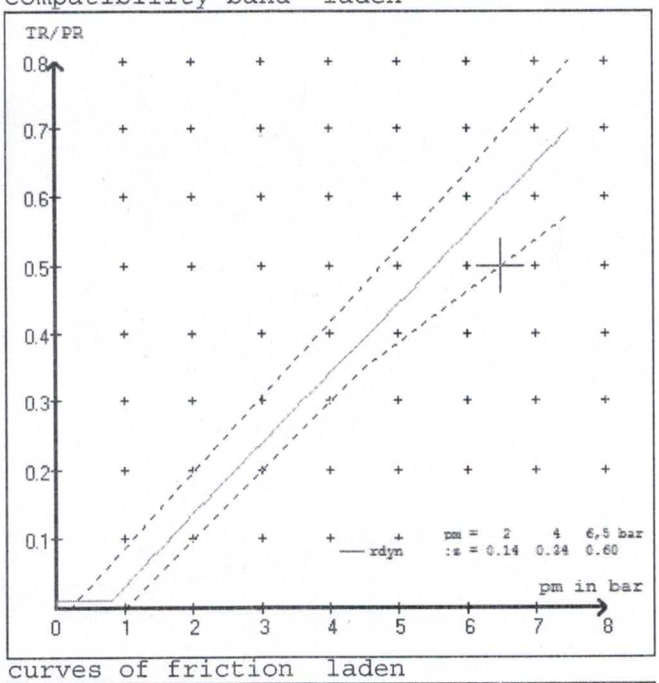
brake chamber pressure laden



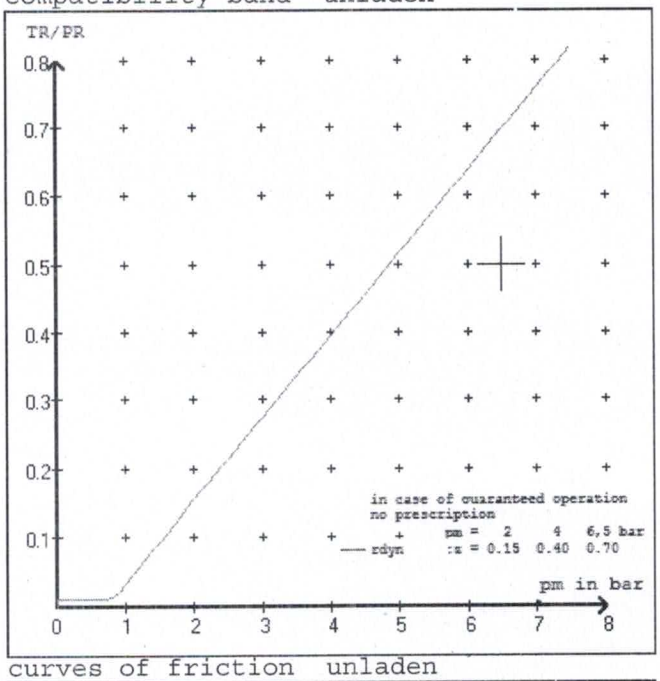
brake chamber pressure unladen



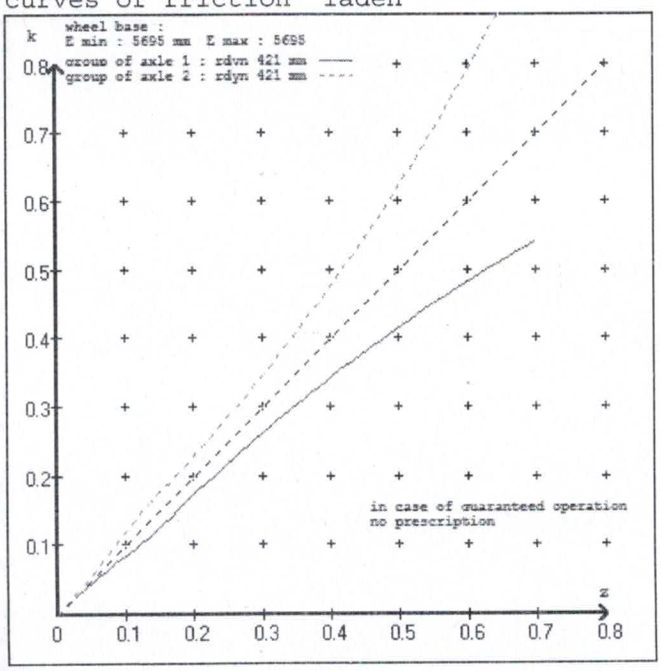
compatibility band laden



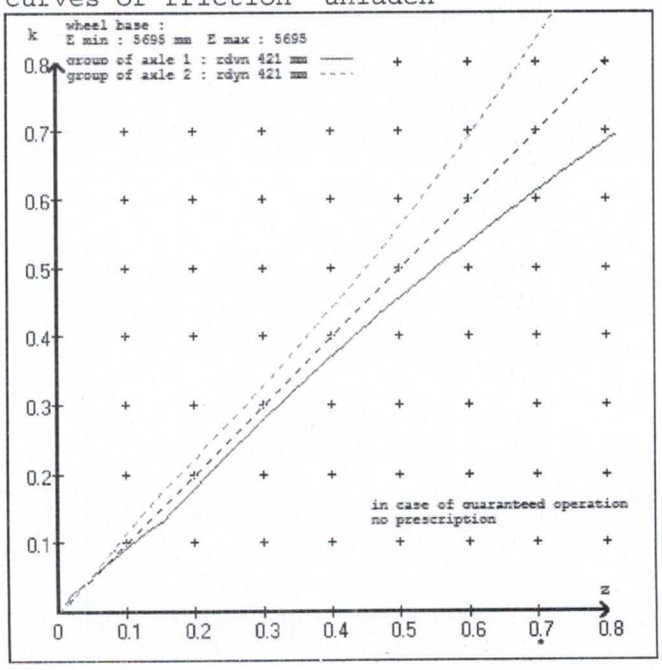
compatibility band unladen



curves of friction laden



curves of friction unladen



vehicle manufacturer: DOMETTS
trailer model : 2015 5A TANKER, E1001
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.14/24	(Meritor)	lever length 69 mm
axle 4 :	2 x type/diameter	T.14/24	(Meritor)	lever length 69 mm
axle 5 :	2 x type/diameter	14.	(Meritor)	lever length 69 mm

brake diagram :

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: DOMETTS
trailer model : 2015 5A TANKER, E1001
trailer type : 5-axle-full-trailer
brake calculation no. : TP 2015A

tire circumference main axle : 2650 for rdyn max
tire circumference auxiliary axle : 2650 for rdyn max

assignment pm / deceleration z: pm 0.8 bar z = 0.010
(laden condition) 2.0 bar z = 0.134
6.5 bar z = 0.600

control pressure pm			6,5	control pressure pm		0.8	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 entered by the vehicle manufact.	1.7	7250	to be entered by the vehicle manufact.	0.4	1.3	5.8
2	1500		1.7	7250		0.4	1.3	5.8
3	1100		1.2	6000		0.3	1.4	4.5
4	1100		1.2	6000		0.3	1.4	4.5
5	1100		1.2	6000		0.3	1.4	4.5

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
1500	1.7	1500	1.7	1100	1.2	1100	1.2	1100	1.2
2000	2.1	2000	2.1	1600	1.5	1600	1.5	1600	1.5
2500	2.4	2500	2.4	2100	1.9	2100	1.9	2100	1.9
3000	2.8	3000	2.8	2600	2.2	2600	2.2	2600	2.2
3500	3.1	3500	3.1	3100	2.5	3100	2.5	3100	2.5
4000	3.5	4000	3.5	3600	2.9	3600	2.9	3600	2.9
4500	3.8	4500	3.8	4100	3.2	4100	3.2	4100	3.2
5000	4.2	5000	4.2	4600	3.6	4600	3.6	4600	3.6
7250	5.8	7250	5.8	6000	4.5	6000	4.5	6000	4.5

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
axle 5 :	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 = 22.0 % Fe
axle 2	(rdyn 421 mm)	T = 22.0 % Fe
axle 3	(rdyn 421 mm)	T = 17.2 % Fe
axle 4	(rdyn 421 mm)	T = 17.2 % Fe
axle 5	(rdyn 421 mm)	T = 17.2 % 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 = 6172 N
axle2	ThA = 6172 N
axle3	ThA = 4285 N
axle4	ThA = 4285 N
axle5	ThA = 4285 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 = 36490 N
axle 2	(rdyn 421 mm)	T = 36490 N
axle 3	(rdyn 421 mm)	T = 25301 N
axle 4	(rdyn 421 mm)	T = 25301 N
axle 5	(rdyn 421 mm)	T = 25301 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)	0.60	0.47
required braking rate (items 1.5.3 and 1.7.2 to annex 11)		>= 0,4 and >= 0,6*E (0.36)

axle 1	(rdyn 421 mm)	T = 36490 N
axle 2	(rdyn 421 mm)	T = 36490 N
axle 3	(rdyn 421 mm)	T = 25301 N
axle 4	(rdyn 421 mm)	T = 25301 N
axle 5	(rdyn 421 mm)	T = 25301 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)	0.60	0.47
required braking rate (items 1.5.3 and 1.7.2 to annex 11)		>= 0,4 and >= 0,6*E (0.36)

spring parking brake

	axle 3	axle 4
no of TRISTOP-actuators per axle line KDZ	2	2
TRISTOP-actuator type	T.14/24	T.14/24
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	7605	7605
sp.brake chamber no Meritor.....	4	4
release pressure pLs in bar	4.8	4.8

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	59654	59654
Tf = (TFZ*KDZ-2*Co/lBh)*iFb		
braking rate zf laden	0.384	
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 = 4265 mm for E = 5695 mm
==========
min Ef = 4265 mm for E = 5695 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	=	1582 mm	height of center of gravity - laden
PR	=	18000 kg	maximum bogie mass - laden
P	=	32500 kg	maximum total mass - laden
nf	=	2	no. of axle(s) with TRISTOP spring brake actuators
ng	=	3	no. of bogie axle(s)

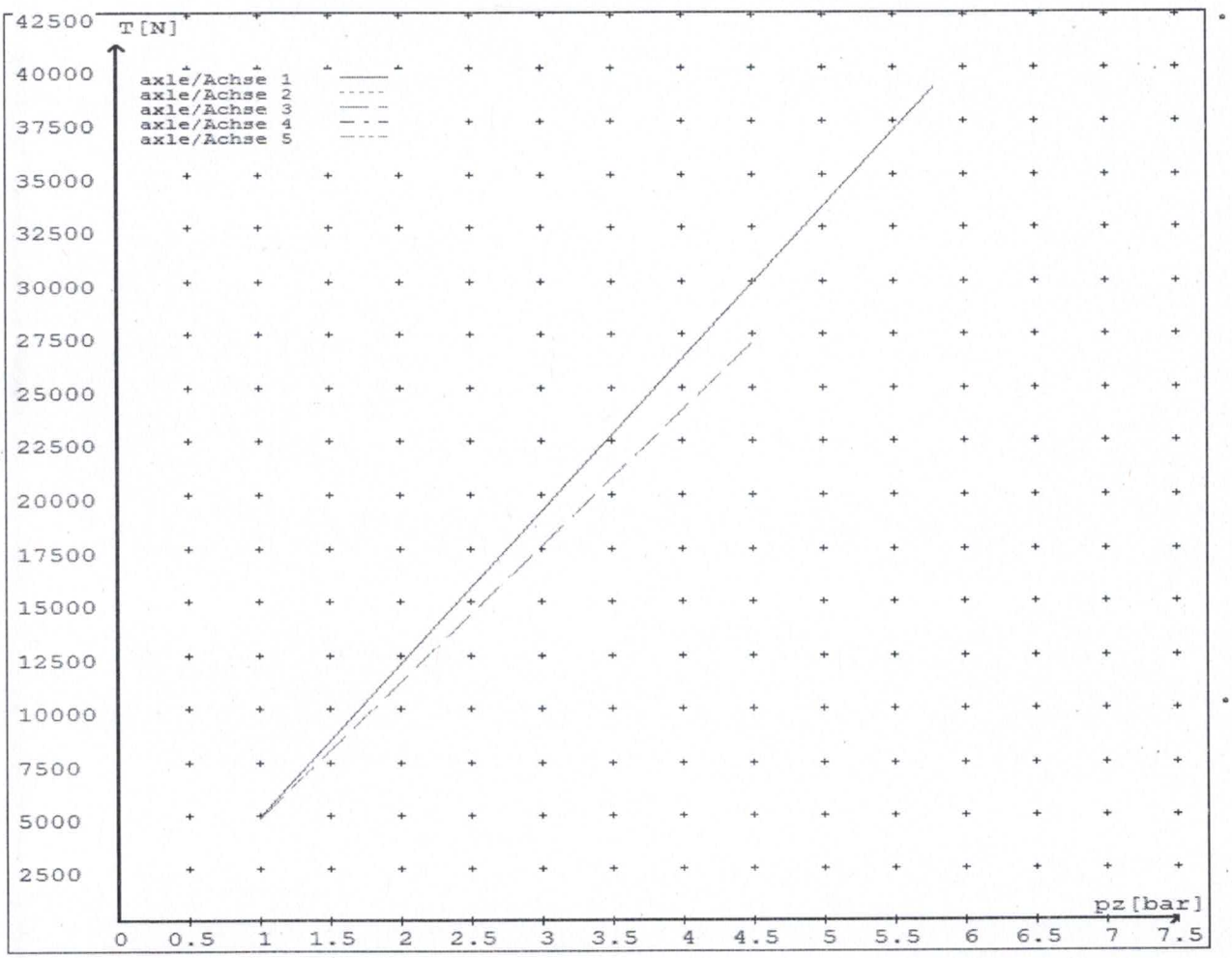
reference values

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

	pz [bar]	T [N]	T [N]
axle 1	1.0 5.8	4932 39113	
axle 2	1.0 5.8	4932 39113	
axle 3	1.0 4.5		4868 27066
axle 4	1.0 4.5		4868 27066
axle 5	1.0 4.5		4868 27066

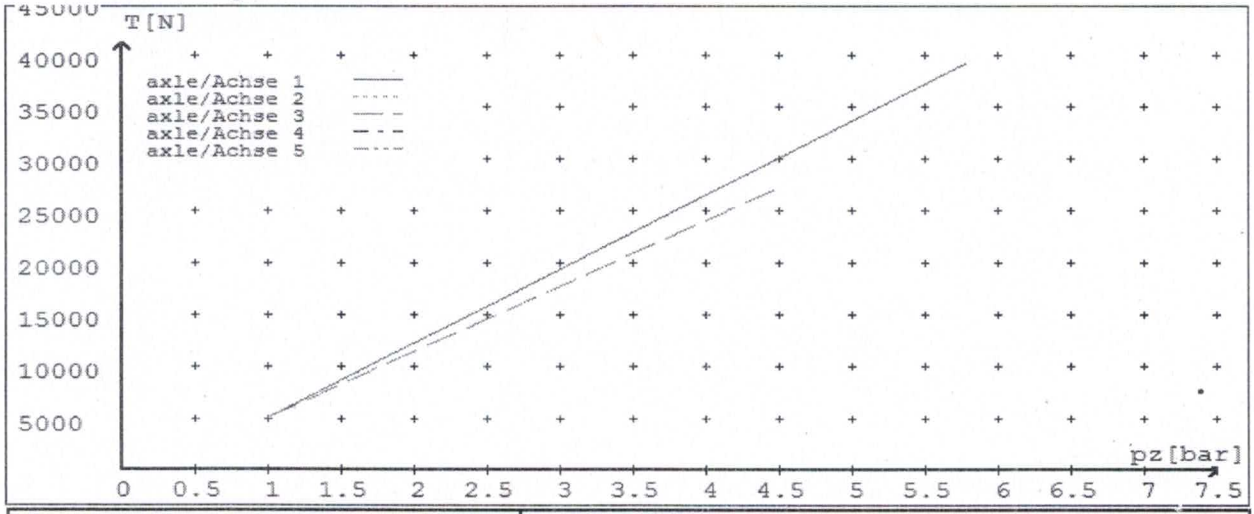
VIN - no.:

	Axle(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	18./	18./	T.14/24	T.14/24	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



Print on WABCO no. 899 200 922 4 (only possible with laser printers!)

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 2015A date 19.04.2015
Bremsberechnung Nr: TP 2015A vom 19.04.2015



	Axle(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	18./	18./	T.14/24	T.14/24	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. LC150708

CUSTOMER NAME DOMETT TRAILERS

CUSTOMER ORDER No. DATE RECEIVED 13.08.15

VEHICLE TYPE 5 AXLE FULL TRAILER

REG No. CHASSIS No. 7A9E10018F1023378

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 VALVES: Ratio Valve Setting: EBS CONTROL

Test Points: 3 4 5 7

FRICTION LINING: OEM Aftermarket

(All) Lining Brand JURID 539

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

VALVES: AS PER BRAKE CALCULATION TP 2015A & SO1550738

TYRE SIZE: 265 70 R 19.5

NOTES

PACKING SLIP NO. PROCESS TIME: 1

BRAKE CALC #TP2015A – THE MERITOR CHAMBERS ARE THE TSE VARIANT.

COMPLETION DATE : 13th August 2015 SIGNATURE:

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: 13th August 2015 Signed: _____

Certifier's identification

Name: C J Clarke

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: CJC

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: CJC

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