

Heavy Vehicle Specialist Certificate

Must be presented to a Transport Service Delivery Agent
Heavy Vehicle Specialist Inspector and Inspecting Organisation

Heavy Vehicle Specialist Inspector's or Manufacturing Inspecting Organisation's Name (PRINT IN CAPS) ID

CHRIS CLARKE **CJC**

Vehicle Registration* VIN/Chassis Number

7A9E38114E1023~~8~~7

Component being certified:

<input type="checkbox"/> Chassis Modification	<input type="checkbox"/> Load Anchorage	<input type="checkbox"/> Log Bolsters
<input type="checkbox"/> Towing Connection	<input checked="" type="checkbox"/> Brakes	<input type="checkbox"/> SRT
<input type="checkbox"/> PSV Stability	<input type="checkbox"/> PSV Rollover	<input type="checkbox"/> Swept Path
<input type="checkbox"/> PBS		

Certification Category: **HUEK**

Description of Work

CARRY OUT COMPLIANCE TO THE NZ HEAVY VEHICLE BRAKE RULE

REAR STABILITY FUNCTION ACTIVATED

Code/Standard/Rule Certified to Component Load Rating(s)

HUBNZ 32015/3 SCHED 5. **35000 KG.**

General Drawing Number(s)

N/A.

Supporting Documents

BRAKE DESIGN CERTIFICATE - JH140728.

Special Conditions*

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

Certification Expiry Date (if applicable) or Hubodometer Reading (whichever comes first)

N/A.

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) ID Number

26.07.2014. **478427**

CoF Vehicle Inspector ID CoF Vehicle Inspector Signature Date

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

WABCO START-UP PROTOCOL

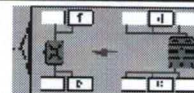
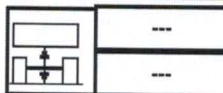
System	Trailer EBS-E	WABCO part number	480 102 080 0
Production date	2013-10-11	Serial number	897001604300C
Serial number (modulator)	000000023931		
Fingerprint Customer EOL / Customer Development / Flash Program	W503643 / 2014-07-28 ; 00000000 / 0000-00-00 ; 00000000 / 0000-00-00		

WABCO TRAILER EBS-E

GGVS/ADR TUEH TB 2007 - 019.00
361-0071-04

HERSTELLER MANUFACTURER CONSTRUCTEUR	DOMETT T&T		
TYP TYPE TYPE	5AFT BULK		
FAHRZEUG IDENTNR. CHASSIS NUMBER NUMERO DE CHASSIS	7A9E38114E1023187		
BREMSBERECHNUNGS-NR. BRAKE CALCULATION NO. CALCUL DE FREINAGE NO.	TP50843A		
POLRADZÄHNEZAHL c-d e-f POLE WHEEL TEETH c-d e-f DENTS ROUE DENTÉE c-d e-f	100	90	ABS-System ABS system Système ABS 4S/3M
RSS RSS RSS	Einfachbereifung Single Tire Monte simple	X	Lenkachse Steering axle Essieu directeur
	Zwillingsbereifung Twin Tire Monte jumelée		Kippkräftiges Fahrzeug Critical Trailer Véhicule critique
Subsystems	---	I/O	24N

GIO	Pin1	Pin3	Pin4
1	---	---	---
2	---	---	---
3	ALS2	ALS2	---
4	---	---	---
5	DIAG	DIAG	DIAG
6	---	---	---
7	---	---	---



ACHSE AXLE ESSIEU	6.5		0.7		2.0		6.5		TYP TYPE	(mm)	(mm)	(bar)			
	pm	6.5	pm	0.7	2.0	6.5	1.0	Pz							
1	1800	0.7	2.4	7600	5.0	0.4	1.6	---	6.5	-	16 / 24	64	74	444	4067
2	1800	0.7	2.4	7600	5.0	0.4	1.6	---	6.5	-	16 / 24	64	74	444	4067
3	1100	0.3	1.6	6600	5.0	0.4	1.7	---	5.2	-	16 / 24	64	74	412	3006
4	1100	0.3	1.6	6600	5.0	0.4	1.7	---	5.2	-	16	64	74	412	3006
5	1100	0.3	1.6	6600	5.0	0.4	1.7	---	5.2	-	16	64	74	412	3006

Diagnostic memory	OK	Warning lamp control	OK
Parameter setting	carried out	Stop light power supply	Not OK
EBS pressure test	Not tested	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	7A9E38114E1023187
Vehicle type	5AFT BULK	Odometer reading	0.0 km
next Service	0 km	Trip reading	0.0 km
Tester	Chris Clarke	Signature	
Date	2014-07-28 9:57:59 a.m.		

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

distribution: DOMETT T&T
7A9E38114E1023187
SODC: JH140728

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 (V6.13.06.12).
-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 T&T
trailer model : SAFT BULK
trailer type : 5-axle-full-trailer
remarks : air / hydraulic / VA suspension
WABCO TRAILER - EBS
TRISTOP 1+2+3: T.16/24
265/70 R 19,5
355/50 R 22,5

axle 1 + 2 + 3 + 4 + 5 : Assali Stefen, ELSA 195 LE, 361-0071-04 ext05 ECE,

		unladen	laden
total mass	P in kg	6900	35000
axle 1	P1 in kg	1800	7600
axle 2	P2 in kg	1800	7600
axle 3	P3 in kg	1100	6600
axle 4	P4 in kg	1100	6600
axle 5	P5 in kg	1100	6600
wheel base	E in mm	6950 - 6950	
centre of gravity height	h in mm	1040	2307

	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 119.6	BZ 119.6	BZ 119.6	BZ 122.1	BZ 122.1
brake chamber manufacturer	Meritor	Meritor	Meritor	Meritor	Meritor
chamber size	T.16/24	T.16/24	T.16/24	16.	16.
lever length lBh in mm	74	74	74	74	74
brake factor [-]	20.26	20.26	20.26	20.26	20.26
dyn. rolling radius rdyn min in mm	421	421	449	449	449
dyn. rolling radius rdyn max in mm	421	421	449	449	449
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	2.5	2.5	2.4	2.4	2.4
chamber pressure (rdyn max)pH at z=22,5%bar	2.5	2.5	2.4	2.4	2.4
chamber press. (servo)pcha at pm6,5bar bar	6.5	6.5	5.2	5.2	5.2
piston force ThA at pm6,5bar N	6590	6590	5197	5197	5197
brake force (rdyn min)T lad. at pm6,5bar N	47100	47100	34814	34814	34814
brake force (rdyn max)T lad. at pm6,5bar N	47100	47100	34814	34814	34814
brake force within 1 % rolling friction proportion %	20.8	20.8	19.5	19.5	19.5

braking rate z laden 0.579 for rdyn min
z = sum (TR)/PRmax 0.579 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 1624HTLD64

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 1624HTLD64

axle 3:

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

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

brake cylinder: Meritor 1624HTLD64

axle 4:

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

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

brake cylinder: Meritor 16HSCLD64

axle 5:

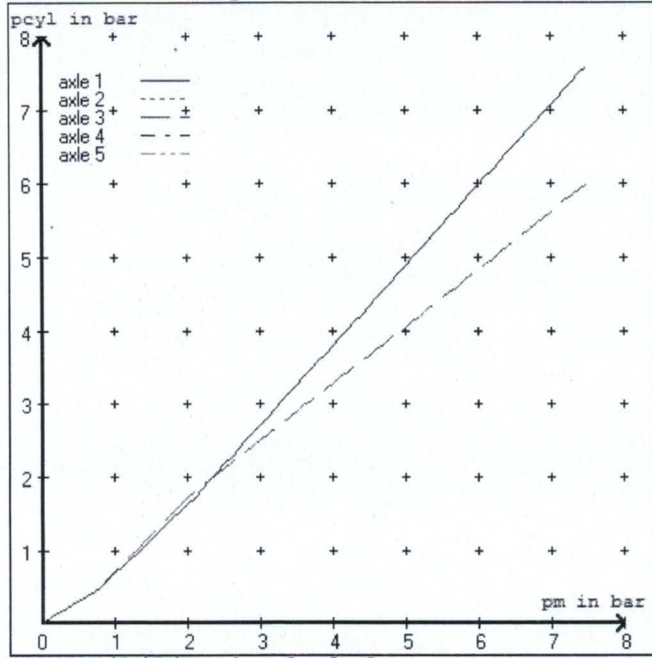
valve 1: 971 002 ... 0 WABCO
 EBS emergency valve

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

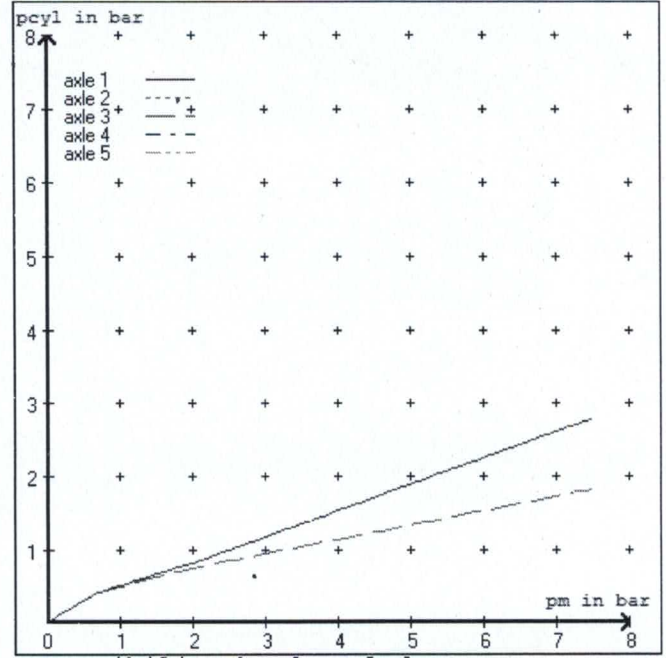
brake cylinder: Meritor 16HSCLD64

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	axle5	
at pm 3.6 bar =>	pcha in bar :	3.4	3.4	3.0	3.0	3.0	
test type III (zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	axle4	axle5	
at pm 1.2 bar =>	pcha in bar :	0.9	0.9	0.9	0.9	0.9	

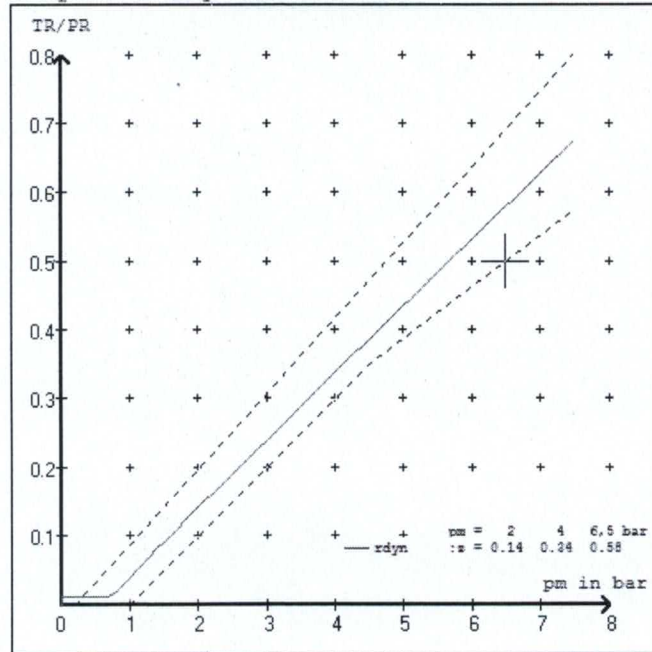
brake chamber pressure laden



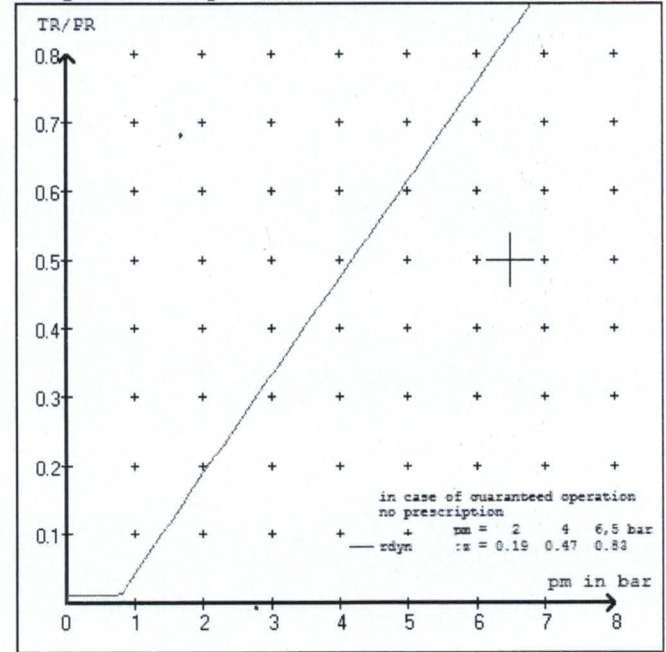
brake chamber pressure unladen



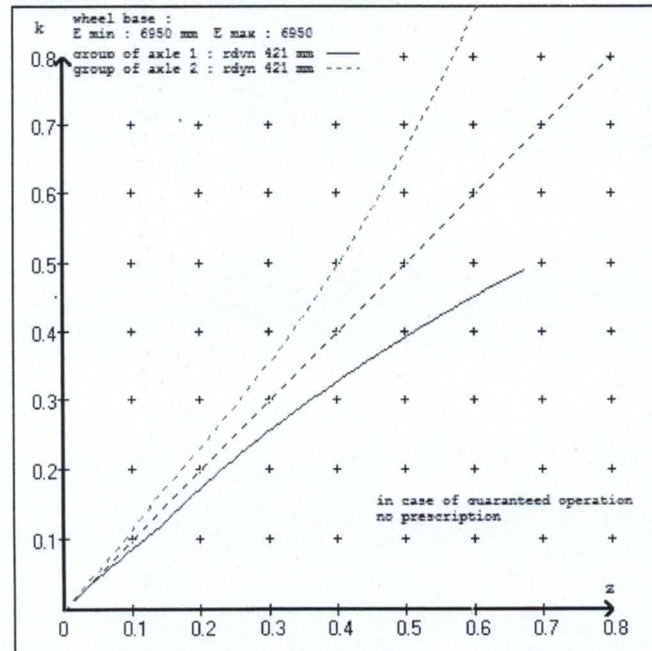
compatibility band laden



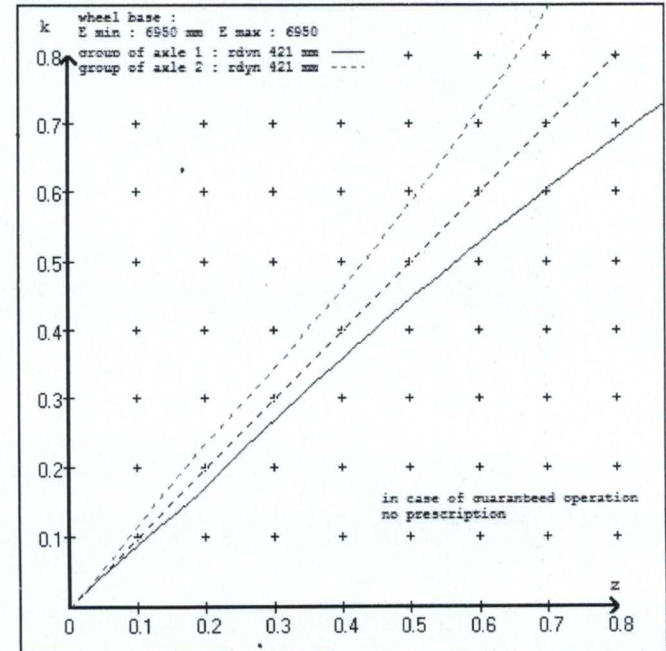
compatibility band unladen



curves of friction laden



curves of friction unladen



vehicle manufacturer: DOMETT T&T
 trailer model : 5AFT BULK
 trailer type : 5-axle-full-trailer

brake chamber and lever length :

axle 1 : 2 x type/diameter T.16/24 (Meritor) lever length 74 mm
 axle 2 : 2 x type/diameter T.16/24 (Meritor) lever length 74 mm
 axle 3 : 2 x type/diameter T.16/24 (Meritor) lever length 74 mm
 axle 4 : 2 x type/diameter 16. (Meritor) lever length 74 mm
 axle 5 : 2 x type/diameter 16. (Meritor) lever length 74 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 T&T
 trailer model : 5AFT BULK
 trailer type : 5-axle-full-trailer
 brake calculation no. : TP 50843A

tire circumference main axle : 2825 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 = 0.138
 6.5 bar z = 0.580

control pressure pm			6,5	contrbl 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	1800	to be	2.4	7600	to be	0.4	1.6	6.5	
2	1800	entered by the vehicle manufact.	2.4	7600	entered by the vehicle manufact.	0.4	1.6	6.5	
3	1100		1.6	6600		0.4	1.7	5.2	
4	1100		1.6	6600		0.4	1.7	5.2	
5	1100		1.6	6600		0.4	1.7	5.2	

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 pcy1	axle load pcy1	axle load pcy1	axle load pcy1	axle load pcy1	
1800	2.4	1800	2.4	1100	1.6
2300	2.8	2300	2.8	1600	1.9
2800	3.1	2800	3.1	2100	2.3
3300	3.5	3300	3.5	2600	2.6
3800	3.8	3800	3.8	3100	2.9
4300	4.2	4300	4.2	3600	3.2
4800	4.5	4800	4.5	4100	3.6
5300	4.9	5300	4.9	4600	3.9
7600	6.5	7600	6.5	6600	5.2

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

axle 1 : reference axle: Assali Stef---/--- ---/K brake lining: ROR8616AF(M13)
 test report : 361-0071-04 e date : 17.06.2011
 axle 2 : reference axle: Assali Stef---/--- ---/K brake lining: ROR8616AF(M13)
 test report : 361-0071-04 e date : 17.06.2011
 axle 3 : reference axle: Assali Stef---/--- ---/K brake lining: ROR8616AF(M13)
 test report : 361-0071-04 e date : 17.06.2011
 axle 4 : reference axle: Assali Stef---/--- ---/K brake lining: ROR8616AF(M13)
 test report : 361-0071-04 e date : 17.06.2011
 axle 5 : reference axle: Assali Stef---/--- ---/K brake lining: ROR8616AF(M13)
 test report : 361-0071-04 e date : 17.06.2011

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 = 21.5 % Fe
axle 2	(rdyn 421 mm)	T = 21.5 % Fe
axle 3	(rdyn 449 mm)	T = 17.5 % Fe
axle 4	(rdyn 449 mm)	T = 17.5 % Fe
axle 5	(rdyn 449 mm)	T = 17.5 % Fe

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

axle 1	(sp = 58 mm)	s = 37 mm
axle 2	(sp = 58 mm)	s = 37 mm
axle 3	(sp = 57 mm)	s = 37 mm
axle 4	(sp = 57 mm)	s = 37 mm
axle 5	(sp = 57 mm)	s = 37 mm

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

axle1	ThA = 6590 N
axle2	ThA = 6590 N
axle3	ThA = 5197 N
axle4	ThA = 5197 N
axle5	ThA = 5197 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 = 41860 N
axle 2	(rdyn 421 mm)	T = 41860 N
axle 3	(rdyn 449 mm)	T = 30953 N
axle 4	(rdyn 449 mm)	T = 30953 N
axle 5	(rdyn 449 mm)	T = 30953 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)	0.58	(hot)braking
		0.51

required braking rate	>= 0,4 and
(items 1.5.3 and 1.7.2 to annex 11)	>= 0,6*E (0.35)

axle 1	(rdyn 421 mm)	T = 41860 N
axle 2	(rdyn 421 mm)	T = 41860 N
axle 3	(rdyn 449 mm)	T = 30953 N
axle 4	(rdyn 449 mm)	T = 30953 N
axle 5	(rdyn 449 mm)	T = 30953 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)	0.58	(hot)braking
		0.51

required braking rate	>= 0,4 and
(items 1.5.3 and 1.7.2 to annex 11)	>= 0,6*E (0.35)

spring parking brake

	<u>axle 1</u>	<u>axle 2</u>	<u>axle 3</u>
no of TRISTOP-actuators per axle line KDZ	2	2	2
TRISTOP-actuator type	T.16/24	T.16/24	T.16/24
lever length lBh in mm	74	74	74
stat. tyre radius rstat max in mm	401	401	432
at a stroke of s in mm	30	30	30
min. force of spring brake TFZ in N	7605	7605	7605
sp.brake chamber no Meritor.....	4	4	4
release pressure pLs in bar	4.8	4.8	4.8

calculation:

ratio until road	3.7388	3.7388	3.4705
$iFb = lBh \cdot \eta \cdot C \cdot rBt / (rBn \cdot rstat)$ for rstat in mm	401	401	432
brake force of spring br. Tf in N	56260	56260	52223
$Tf = (TFZ \cdot KDZ - 2 \cdot Co / lBh) \cdot iFb$			
braking rate zf laden	0.490		
$zf = \text{sum}(Tf) / P + 0,01$			

Test of the frictional connection required by the parking brake

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

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

min Ef = 4430 mm for E = 6950 mm
 =====
 min Ef = 4430 mm for E = 6950 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 = 2307 mm height of center of gravity - laden
 PR = 19800 kg maximum bogie mass - laden
 P = 35000 kg maximum total mass - laden
 nf = 3 no. of axle(s) with TRISTOP spring brake actuators
 ng = 3 no. of bogie axle(s)

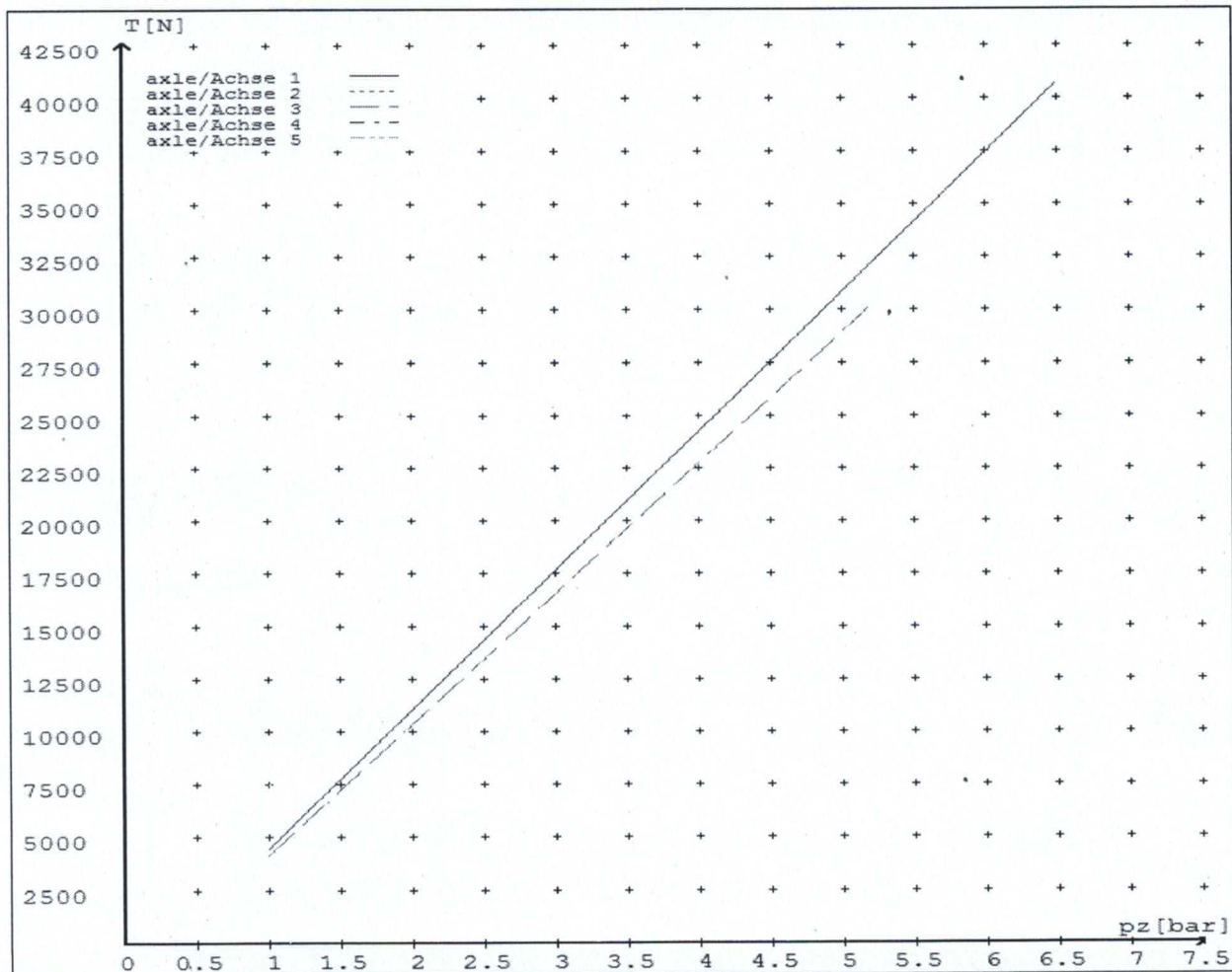
reference values

reference values for z = 50% for max rdyn: 449 mm

	pz [bar]	T [N]	T [N]
axle 1	1.0	4444	
	6.5	40674	
axle 2	1.0	4444	
	6.5	40674	
axle 3	1.0		4123
	5.2		30064
axle 4	1.0		4123
	5.2		30064
axle 5	1.0		4123
	5.2		30064

VIN - no.:

	Axle(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	T.16/24	T.16/24	T.16/24	16./	16./
Maximum stroke s _{max} = ...mm maximaler Hub s _{max} =mm	64	64	64	64	64
Lever length =mm Hebellänge =mm	74	74	74	74	74



HVBR WORKSHEET

(PROCEDURE & COMPLIANCE DOCUMENTATION SHEET)

CERTIFICATE No.

CUSTOMER NAME

CUSTOMER ORDER No.

DATE RECEIVED

VEHICLE TYPE

REG No.

CHASSIS No.

BRIEF SPECIFICATION AS CERTIFIED TO HVBR

BRAKE CHAMBERS:

Type: 1624HTLD64 (TSE) 1,2+3: Max stroke = 64 mm Lever length = 74 mm

Type: 16HSCLD64 (TSE) 4+5 : Max stroke = 64 mm Lever length = 74 mm

BRAKE VALVES:

Ratio Valve Setting: EBS CONTROL

Test Points: 3 4 5 7

FRICITION LINING:

(All) Lining Brand

OEM
ROR 8616 AF

Aftermarket

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

VALVES: AS PER BRAKE CALCULATION# TP50843, SO1554377

TYRE SIZE: 265 70 R 19.5 + 355 50 R 22.5

NOTES

PACKING SLIP NO.

PROCESS TIME:

THE MERITOR CHAMBERS IN BRAKE CALC: TP50843 ARE THE TSE VARIANT. PLEASE REFER TO PART NUMBERS DETAILED ABOVE FOR PERFORMANCE DATA.

COMPLETION DATE : 25th July 2014

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: 25th July 2014

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