NZ TRANSPORT AGENCY
WAKA KOTAHI

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): CHRIS CLARKE

ID: CJC

Vehicle Registration*:

VIN/Chassis Number: 7A9D5C028E1C23257

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

CARRY OUT COMPLIANCE TO THE NZ HEAVY VEHICLE BRAKE RULE

ROLL STABILITY FUNCTION ACTIVATED.

Code/Standard/Rule Certified to: HVBNZ 2015/3 SCHED 5

Component Load Rating(s): 44000KG.

General Drawing Number(s): N/A.

Supporting Documents: BRAKE DESIGN CERTIFICATE - JFH140546

Special Conditions*: WARNING LAMP MUST ILLUMINATE WHEN IGNITION IS SWITCHED ON + THEN EXTINGUISH IMMEDIATELY OR WHEN VEHICLE EXCEEDS 7KPH.

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)*:

ID Number:

Date: 25.05.2014

Number: 471818

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

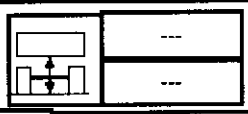
System	Trailer EBS-E	**WABCO part number**	480 102 080 0
Production date	2013-11-16	**Serial number**	897001648700B
Serial number (modulator)	000000024517		
Fingerprint Customer EOL / Customer Development / Flash Program	W503643 / 2014-05-28 ; 00000000 / 0000-00-00 ; 00000000 / 0000-00-00		

WABCO TRAILER EBS-E

GGVS/ADR TUEH TB 2007 - 019.00
TDB0678

HERSTELLER MANUFACTURER CONSTRUCTEUR	DOMETT			
TYP TYPE TYPE	4AS (SKELL)			
FAHRZEUG IDENTNR. CHASSIS NUMBER NUMERO DE CHASSIS	7A9D50028E1023257			
BREMSBERECHNUNGS-NR. BRAKE CALCULATION NO. CALCUL DE FREINAGE NO.	TP51045S			
POLRADZAHNEZAHL 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 Einfachbereifung Single Tire Monte simple	X	Lenkachse Steering axle Essieu vireur		
RSS Zwillingsbereifung Twin Tire Monte jumelée		Kippkritisches Fahrzeug Critical Trailer Vehicule critique		
Subsystems	SB	I/O	24N	

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



	pm (bar)			pm (bar)							TYP TYPE	(mm)	(mm)	(bar) 1.0	(bar) Pz
AXLE ESSIEU									pz					TR (daN)	
1	1100	0.5	1.7	6000	3.9	0.3	1.3	---	5.2	-	14 / 16	64	69	411	2648
2	1100	0.5	1.7	6000	3.9	0.3	1.3	---	5.2	-	14 / 16	64	69	411	2648
3	1100	0.5	1.7	6000	3.9	0.3	1.3	---	5.2	-	14	64	69	411	2648
4	1100	0.5	1.7	6000	3.9	0.3	1.3	---	5.2	-	14	64	69	411	2648
5	0	---	---	0	---	---	---	---	---	-	---	---	---	---	---

Diagnostic memory	OK	**Warning lamp control**	OK
Parameter setting	carried out	**Stop light power supply**	Not tested
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	**Vehicle ident. no**	7A9D50028E1023257
Vehicle type	4AS (SKELL)	**Odometer reading**	0.0 km
next Service	0 km	**Trip reading**	0.0 km
Tester	Chris Clarke		
Date	2014-05-28 3:13:32 p.m.	**Signature**	

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

distribution: DOMETT
7A9D50028E1023257
SODC: JH140544

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 (V6.13.11.12)
-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 V6.13.11.12 db 20.02.2014

vehicle manufacturer: DOMETT
trailer model : 4AS (SKELL)
trailer type : 4-axle-semi-trailer
remarks : air / hydraulic / VA suspension
WABCO TRAILER - EBS
TRISTOP 1+2: T.14/16
355/50 R 22,5

axle 1 + 2 + 3 + 4 : SAF, SBW 1937, TDB 0678 ECE,

		unladen		laden
total mass	P in kg	5000 - 6000	42000 -	44000
king-pin	PS kg	600 - 1600	18000 -	20000
axle 1	P1 in kg	1100		6000
axle 2	P2 in kg	1100		6000
axle 3	P3 in kg	1100		6000
axle 4	P4 in kg	1100		6000
total axle mass	PR in kg	4400		24000
wheel base	E in mm	9200 - 9200		
centre of gravity height	h in mm	1350		2534
K-factor		Kv min 1.8099	Kc min	0.9950
K-factor		Kv max 1.8155	Kc max	1.0064

		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		BZ 119.6	BZ 119.6	BZ 122.1	BZ 122.1
brake chamber manufacturer		Meritor	Meritor	Meritor	Meritor
chamber size		T.14/16	T.14/16	14.	14.
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	449	449	449	449
dyn. rolling radius	rdyn max in mm	449	449	449	449
threshold torque	Co Nm	6.0	6.0	6.0	6.0

calculation:

chamber pressure(rdyn min)	pH at z=22,5%	bar	2.1	2.1	2.1	2.1
chamber pressure(rdyn max)	pH at z=22,5%	bar	2.1	2.1	2.1	2.1
chamber press.(servo)	pcha at pm6,5bar	bar	5.2	5.2	5.2	5.2
piston force	ThA at pm6,5bar	N	4986	4986	4986	4986
brake force(rdyn min)	T lad. at pm6,5bar	N	35309	35309	35309	35309
brake force(rdyn max)	T lad. at pm6,5bar	N	35309	35309	35309	35309
brake force within 1 % rolling friction proportion		%	25.0	25.0	25.0	25.0

braking rate z laden 0.600 for rdyn min
z = sum (TR)/PRmax 0.600 for rdyn max

Trailer may only be operated in combination with trucks/tractors with ISO 7638 supply (5 or 7 polar).

brake diagram : 841 701 050 0

maximum pressure: 8.5 bar

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

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

brake cylinder: Meritor 1416HTLD64

axle 2:
valve 1: 971 002 ... 0 WABCO
EBS emergency valve

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

brake cylinder: Meritor 1416HTLD64

axle 3:
valve 1: 971 002 ... 0 WABCO
EBS emergency valve

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

brake cylinder: Meritor 14HSCLD64

axle 4:

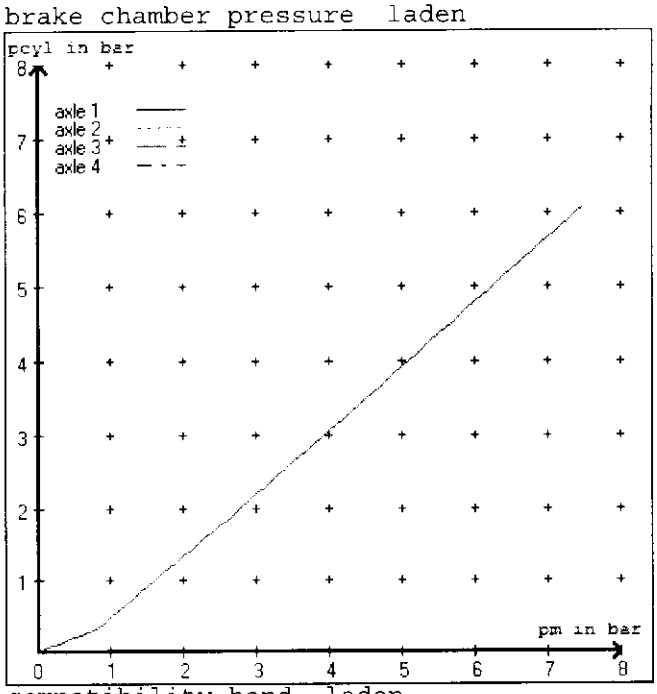
valve 1: 971 002 ... 0 WABCO
EBS emergency valve

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

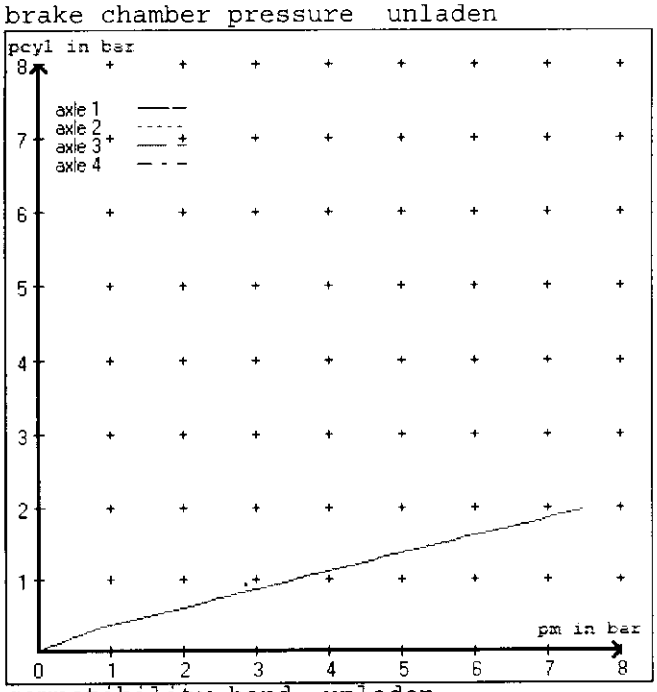
brake cylinder: Meritor 14HSCLD64

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	
at pm 3.6 bar =>	pcha in bar :	2.7	2.7	2.7	2.7	
test type III (zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	axle4	
at pm 1.3 bar =>	pcha in bar :	0.7	0.7	0.7	0.7	

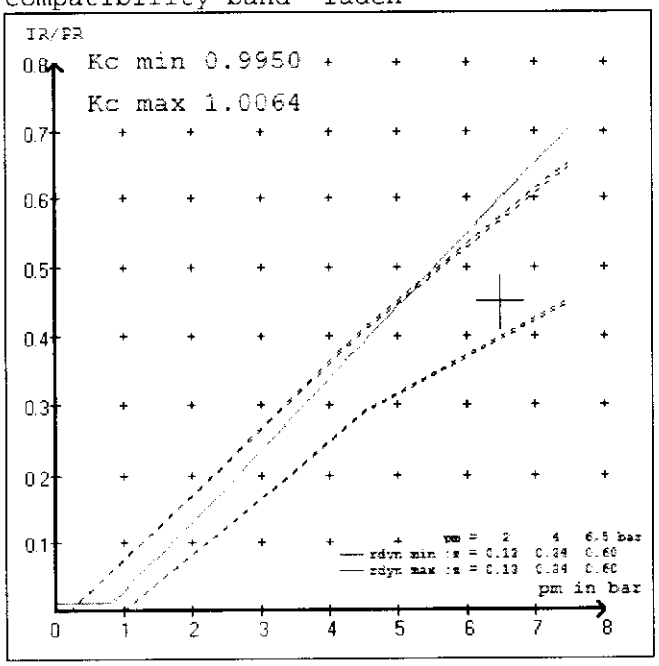
brake chamber pressure laden



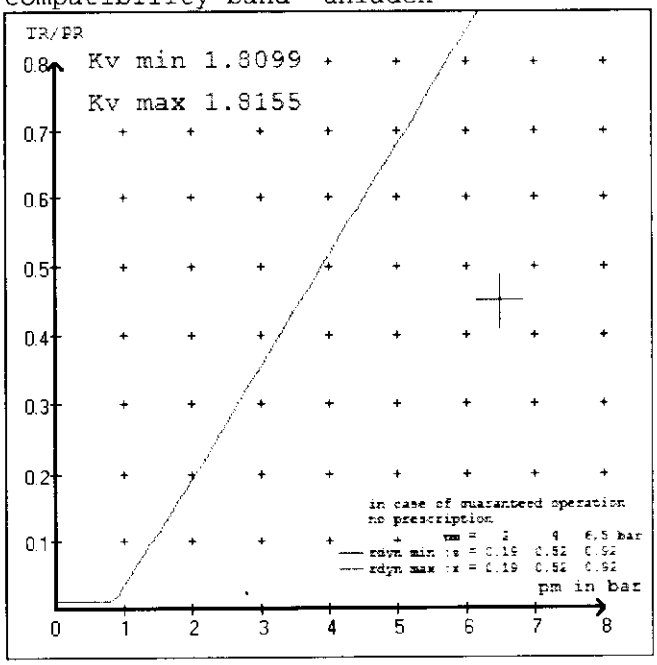
brake chamber pressure unladen



compatibility band laden



compatibility band unladen



vehicle manufacturer: DOMETT
trailer model : 4AS (SKELL)
trailer type : 4-axle-semi-trailer

brake chamber and lever length :

axle 1 : 2 x type/diameter T.14/16 (Meritor) lever length 69 mm
axle 2 : 2 x type/diameter T.14/16 (Meritor) lever length 69 mm
axle 3 : 2 x type/diameter 14. (Meritor) lever length 69 mm
axle 4 : 2 x type/diameter 14. (Meritor) lever length 69 mm

brake diagram : 841 701 050 0

valve :
971 002 ... 0 WABCO EBS emergency valve
480 102 ... 0 WABCO EBS trailer modulator
480 207 0.. 0 WABCO EBS relay valve or 480 207 2.. 0

EBS input data
==========
vehicle manufacturer: DOMETT
trailer model : 4AS (SKELL)
trailer type : 4-axle-semi-trailer
brake calculation no. : TP 51045S

tire circumference main axle : 2825 for rdyn max
tire circumference auxiliary axle : 2825 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	1100	to be entered by the vehicle manufact.	1.7	6000	to be entered by the vehicle manufact.	0.3	1.3	5.2
2	1100		1.7	6000		0.3	1.3	5.2
3	1100		1.7	6000		0.3	1.3	5.2
4	1100		1.7	6000		0.3	1.3	5.2
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	pcyl	axle load	pcyl	axle load	pcyl	axle load	pcyl
1100	1.7	1100	1.7	1100	1.7	1100	1.7
1600	2.1	1600	2.1	1600	2.1	1600	2.1
2100	2.4	2100	2.4	2100	2.4	2100	2.4
2600	2.8	2600	2.8	2600	2.8	2600	2.8
3100	3.1	3100	3.1	3100	3.1	3100	3.1
3600	3.5	3600	3.5	3600	3.5	3600	3.5
4100	3.8	4100	3.8	4100	3.8	4100	3.8
4600	4.2	4600	4.2	4600	4.2	4600	4.2
6000	5.2	6000	5.2	6000	5.2	6000	5.2

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 0678 ECE date : 20130927 27.09.2013
axle 2 : reference axle: SAF SBW 1937 brake lining: Jurid 539
test report : TDB 0678 ECE date : 20130927 27.09.2013
axle 3 : reference axle: SAF SBW 1937 brake lining: Jurid 539
test report : TDB 0678 ECE date : 20130927 27.09.2013
axle 4 : reference axle: SAF SBW 1937 brake lining: Jurid 539
test report : TDB 0678 ECE date : 20130927 27.09.2013

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

axle 1	(rdyn 449 mm)	T = 17.6 % Fe
axle 2	(rdyn 449 mm)	T = 17.6 % Fe
axle 3	(rdyn 449 mm)	T = 17.6 % Fe
axle 4	(rdyn 449 mm)	T = 17.6 % Fe

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

axle 1	(sp = 56 mm)	s = 48 mm
axle 2	(sp = 56 mm)	s = 48 mm
axle 3	(sp = 56 mm)	s = 48 mm
axle 4	(sp = 56 mm)	s = 48 mm

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

axle1	ThA = 4986 N
axle2	ThA = 4986 N
axle3	ThA = 4986 N
axle4	ThA = 4986 N

calc. residual (hot) braking force in N
(item 4.3.1.4 of appendix 2 to annex 11)

axle 1	(rdyn 449 mm)	T = 28885 N
axle 2	(rdyn 449 mm)	T = 28885 N
axle 3	(rdyn 449 mm)	T = 28885 N
axle 4	(rdyn 449 mm)	T = 28885 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	0.49
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 449 mm)	T = 28885 N
axle 2	(rdyn 449 mm)	T = 28885 N
axle 3	(rdyn 449 mm)	T = 28885 N
axle 4	(rdyn 449 mm)	T = 28885 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	0.49
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 1	axle 2
no of TRISTOP-actuators per axle line	KDZ	2	2
TRISTOP-actuator type		T.14/16	T.14/24
lever length	lBh in mm	69	69
stat. tyre radius	rstat max in mm	432	432
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		3.6827	3.6827
iFb = lBh*Eta*C*rBt/(rBn*rstat)			
	for rstat in mm	432	432
brake force of spring br. Tf	in N	44730	44730
Tf = (TFZ*KDZ-2*Co/lBh)*iFb			
braking rate	zf laden	0.390	
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 = 8425 mm for E = 9200 mm
==========
min Ef = 8425 mm for E = 9200 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	=	2510 mm	height of center of gravity - laden
PR	=	24000 kg	maximum bogie mass - laden
P	=	44000 kg	maximum total mass - laden
nf	=	2	no. of axle(s) with TRISTOP spring brake actuators
ng	=	4	no. of bogie axle(s)

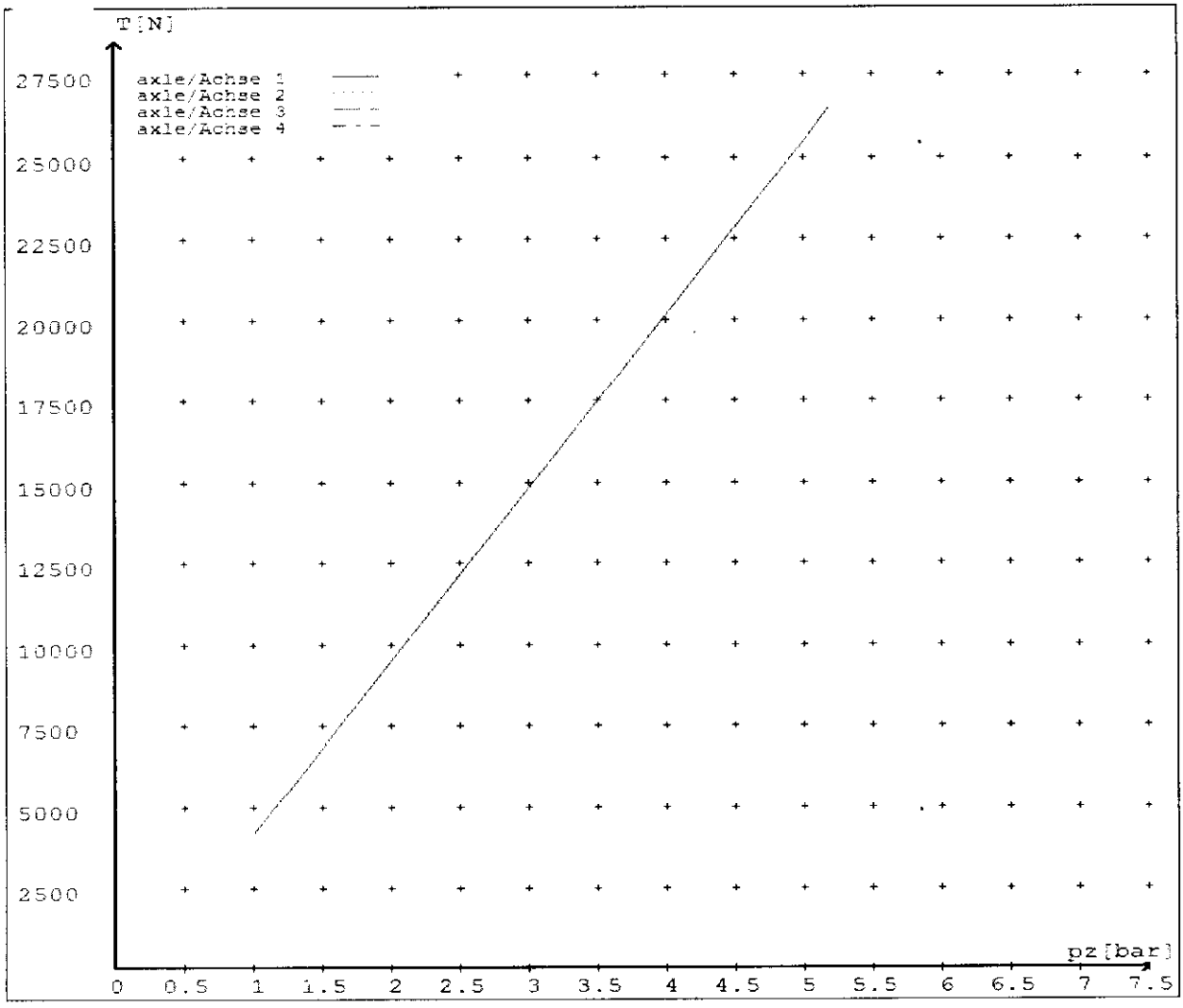
reference values

reference values for z = 45% for max rdyn: 449 mm

	pz [bar]	T [N]	T [N]
axle 1	1.0 5.2	4115 26482	
axle 2	1.0 5.2	4115 26482	
axle 3	1.0 5.2	4115 26482	
axle 4	1.0 5.2		4115 26482

VIN - no.:

	Axle(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	T.14/16	T.14/16	14./	14./	/
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. JH140544

CUSTOMER NAME: DOMETT TRAILERS

CUSTOMER ORDER No.: 4201 DATE RECEIVED: 23.05.14

VEHICLE TYPE: 4 AXLE SEMI TRAILER

REG No.: CHASSIS No.: 7A9D50028E1023257

BRIEF SPECIFICATION AS CERTIFIED TO HVBR

BRAKE CHAMBERS:
Type: 1416HTLD64 (TSE): Max stroke = 64 mm Lever length = 69 mm
Type: 14HSCLD64 (TSE) : Max stroke = 64 mm Lever length = 69 mm

BRAKE SYSTEM: WABCO TEBS-E WITH RSS ACTIVATED
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# TP51045 & Order SO1552451

TYRE SIZE: 355 50 R 22.5

NOTES
PACKING SLIP NO. Order SO1552451 PROCESS TIME: 1

WABCOBrake CALC TP51045: THE MERITOR CHAMBERS ARE THE TSE VARIANT AS DETAILED ABOVE.

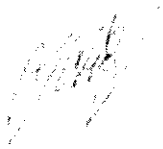
COMPLETION DATE : 25th May 2014 SIGNATURE (pp.):

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 April 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