

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)* ID

Chris Clarke **CJC**

Vehicle Registration* VIN/Chassis Number

7A9E30019F1023383

Component being certified:

<input type="checkbox"/> Chassis	<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

HVEK

Description of Work

CERTIFY TO SCHEDULE 5

ROLL STABILTY FUNCTION ACTIVATED

Code/Standard/Rule Certified to	Component Load Rating(s)
HVBR 32015/3 Schedule 5	32000KG
General Drawing Number(s)	
N/A	

Supporting Documents

BRAKE RULE CERTIFICATE - CJC153211

Special Conditions*

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

Certification Expiry Date <i>(if applicable)</i>	or	Hubodometer Reading <i>(whichever comes first)</i>
N/A		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

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

CHRIS CLARKE **CJC**

Date	Number
20-Jul-15	518661

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

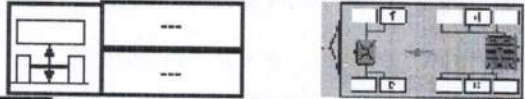
START-UP PROTOCOL

System	Trailer EBS-E	WABCO part number	480 102 080 0
Production date	2015-02-06	Serial number	437001125400A
Serial number (modulator)	000000037331		
Fingerprint Customer EOL / Customer Development / Flash Program	W503643 / 2015-07-20 ; 00000000 / 0000-00-00 ; 00000000 / 0000-00-00		

WABCO	TRAILER EBS-E	GGVS/ADR TUEH TB 2007 - 019.00 TDB0749
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HERSTELLER MANUFACTURER CONSTRUCTEUR	DOMETT		
TYP TYPE	5AFT DROP SIDE TIPPE		
FAHRZEUG IDENTNR. CHASSIS NUMBER NUMERO DE CHASSIS	7A9E30019F1023383		
BREMSBERECHNUNGS-NR. BRAKE CALCULATION NO. CALCUL DE FREINAGE NO.	TP51294A		
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 RSS	Einfachbereifung Single Tire Monte simple	Lenkachse Steering axle Essieu vireur	
RSS RSS	Zwillingsbereifung Twin Tire Monte jumelée	X	Kippkritisches Fahrzeug Critical Trailer Véhicule critique
Subsystems	SB	I/O	24N


GIO	Pin1	Pin3	Pin4
1	24V-O1	---	---
2	---	---	---
3	ALS2	ALS2	---
4	---	---	---
5	DIAG	DIAG	DIAG
6	---	---	---
7	---	---	---



ACHSE AXLE ESSIEU	6.5			0.6			2.0			6.5			TYP TYPE	(mm)	(mm)	(bar)	
	pm	6.5	pm	0.6	2.0	---	6.5	pm	0.6	2.0	---	6.5				1.0	Pz
1	1800	0.6	2.7	8000	3.9	0.4	1.5	---	6.8	-	18	65	69	512	4748		
2	1800	0.6	2.7	8000	3.9	0.4	1.5	---	6.8	-	18	65	69	512	4748		
3	1200	0.3	1.5	6400	3.1	0.3	1.5	---	4.2	-	14 / 16	64	69	502	2584		
4	1200	0.3	1.5	6400	3.1	0.3	1.5	---	4.2	-	14 / 16	64	69	502	2584		
5	1200	0.3	1.5	6400	3.1	0.3	1.5	---	4.2	-	14	64	69	502	2584		

Diagnostic memory	OK	Warning lamp control	OK
Parameter setting	carried out	Stop light power supply	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	Vehicle ident. no	7A9E30019F1023383
Vehicle type	5AFT DROP SIDE TIPPE	Odometer reading	0.0 km
next Service	0 km	Trip reading	0.0 km
Tester	Chris Clarke	Signature 	
Date	2015-07-20 2:17:00 p.m.		

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

distribution: DOMETT
 7A9E30019F1023383
 SODC: JH150720
 LT400: CJC 518661

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!
 WABCO Brake V6.14.04.20 db 08.07.2014

vehicle manufacturer: DOMETT
 trailer model : 5AFT DROP SIDE TIPPER
 trailer type : 5-axle-full-trailer
 remarks : air / hydraulic / VA suspension
 WABCO TRAILER - EBS
 TRISTOP 3+4: T.14/24 (TSE 1416HTLD ACTUALLY FITTED)
 265/70 R 19,5

axle 1 + 2 + 3 + 4 + 5 : SAF, SBW 1937, TDB 0749 ECE,

		unladen	laden
total mass	P in kg	7200	35200
axle 1	P1 in kg	1800	8000
axle 2	P2 in kg	1800	8000
axle 3	P3 in kg	1200	6400
axle 4	P4 in kg	1200	6400
axle 5	P5 in kg	1200	6400
wheel base	E in mm	5975 - 5975	
centre of gravity height	h in mm	1210	2145

	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 brake chamber manufacturer	BZ 122.1 Meritor	BZ 122.1 Meritor	BZ 119.6 Meritor	BZ 119.6 Meritor	BZ 122.1 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	2.5	2.5	2.0	2.0	2.0
chamber pressure(rdyn max)pH at z=22,5%bar	2.5	2.5	2.0	2.0	2.0
chamber press.(servo)pcha at pm6,5bar bar	6.8	6.8	4.2	4.2	4.2
piston force ThA at pm6,5bar N	7297	7297	3984	3984	3984
brake force(rdyn min)T lad. at pm6,5bar N	55277	55277	30085	30085	30085
brake force(rdyn max)T lad. at pm6,5bar N	55277	55277	30085	30085	30085
brake force within 1 % rolling friction proportion %	21.2	21.2	19.2	19.2	19.2

braking rate z laden 0.582 for rdyn min
 z = sum (TR)/PRmax 0.582 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

axle 5:

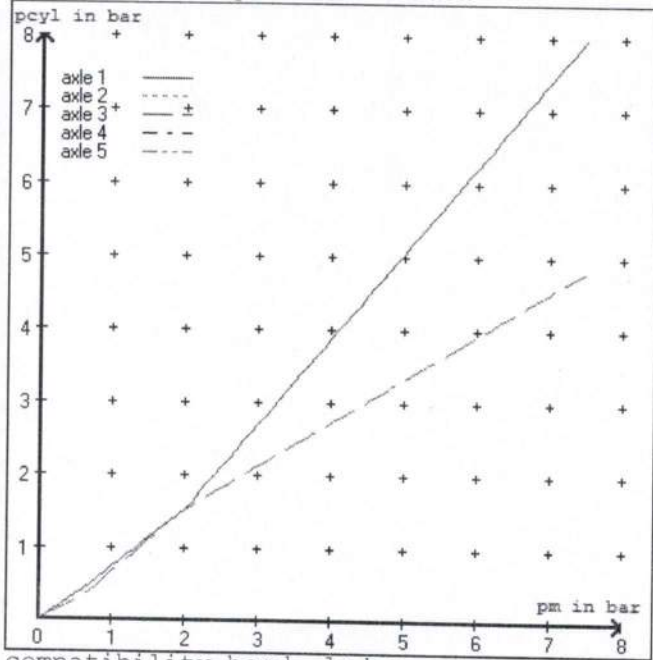
valve 1: 971 002 ... 0 WABCO
EBS emergency valve

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

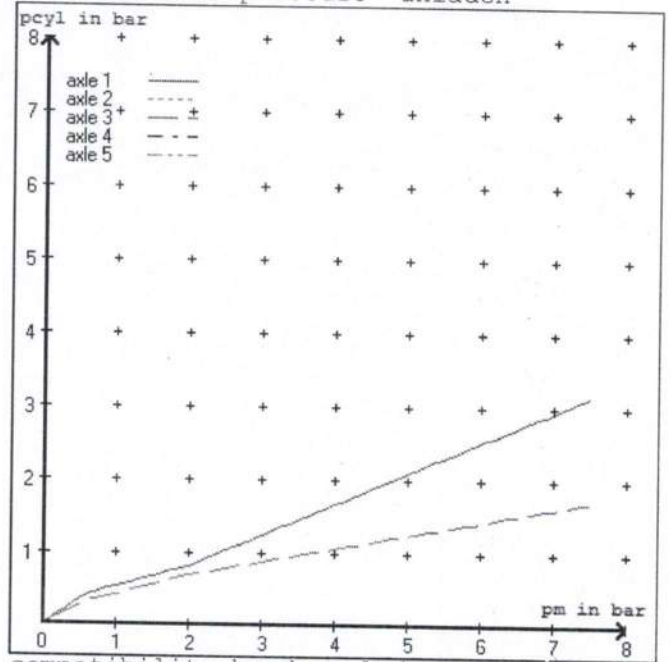
brake cylinder: Meritor 14HSCLD64

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	axle5	
at pm 3.6 bar =>	pcha in bar :	3.4	3.4	2.5	2.5	2.5	
test type III (zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	axle4	axle5	
at pm 1.1 bar =>	pcha in bar :	0.8	0.8	0.8	0.8	0.8	

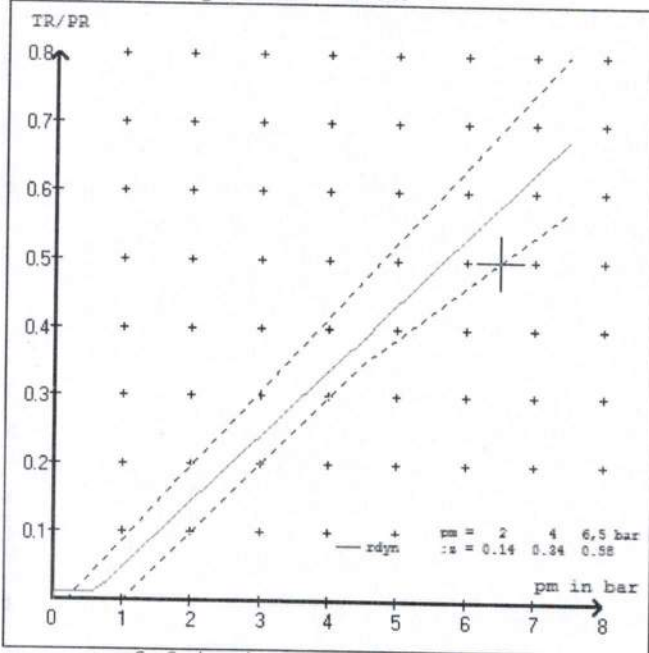
brake chamber pressure laden



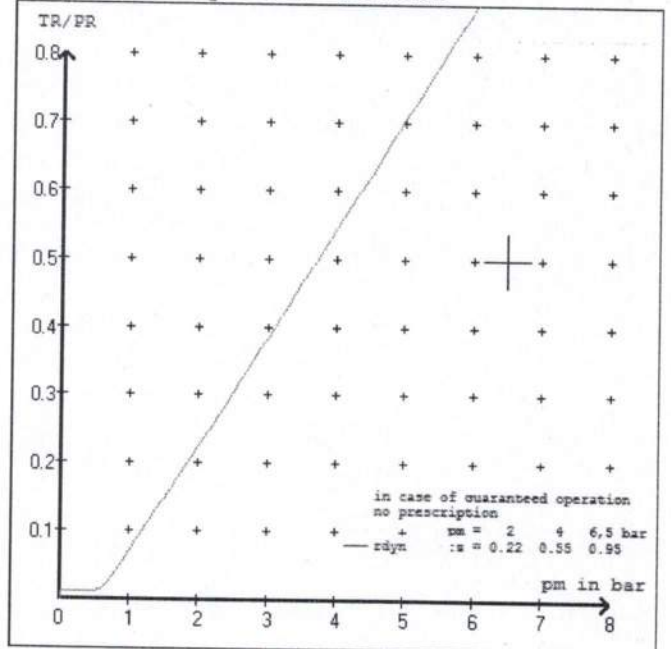
brake chamber pressure unladen



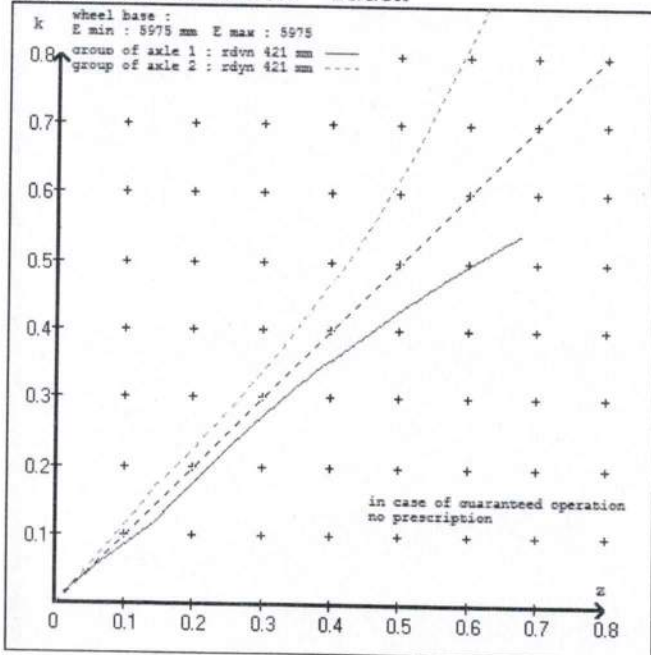
compatibility band laden



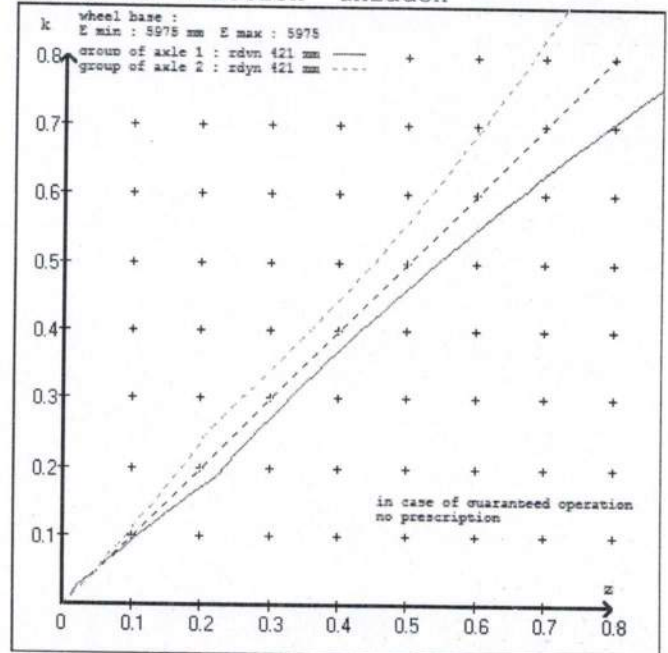
compatibility band unladen



curves of friction laden



curves of friction unladen



vehicle manufacturer: DOMETT
 trailer model : 5AFT DROP SIDE TIPPER
 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 :

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 : 5AFT DROP SIDE TIPPER
 trailer type : 5-axle-full-trailer
 brake calculation no. : TP 51294A

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

assignment pm / deceleration z: pm 0.6 bar z = 0.010
 (laden condition) 2.0 bar z = 0.145
 6.5 bar z = 0.580

control pressure pm		6,5	control pressure pm					
axle	axle load unladen	bellow pr. unladen	brake pr. unladen	axle load laden	bellow pr. laden	brake pr. laden		
1	1800	to be	2.7	8000	to be	0.4	1.5	6.8
2	1800	entered by the vehicle manufact.	2.7	8000	entered by the vehicle manufact.	0.4	1.5	6.8
3	1200		1.5	6400		0.3	1.5	4.2
4	1200		1.5	6400		0.3	1.5	4.2
5	1200		1.5	6400		0.3	1.5	4.2

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 pcyl	axle load pcyl	axle load pcyl	axle load pcyl	axle load pcyl
1800 2.7	1800 2.7	1200 1.5	1200 1.5	1200 1.5
2300 3.0	2300 3.0	1700 1.8	1700 1.8	1700 1.8
2800 3.4	2800 3.4	2200 2.0	2200 2.0	2200 2.0
3300 3.7	3300 3.7	2700 2.3	2700 2.3	2700 2.3
3800 4.0	3800 4.0	3200 2.5	3200 2.5	3200 2.5
4300 4.4	4300 4.4	3700 2.8	3700 2.8	3700 2.8
4800 4.7	4800 4.7	4200 3.1	4200 3.1	4200 3.1
5300 5.0	5300 5.0	4700 3.3	4700 3.3	4700 3.3
8000 6.8	8000 6.8	6400 4.2	6400 4.2	6400 4.2

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 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 = 26.3 % Fe
axle 2	(rdyn 421 mm)	T = 26.3 % Fe
axle 3	(rdyn 421 mm)	T = 17.0 % Fe
axle 4	(rdyn 421 mm)	T = 17.0 % Fe
axle 5	(rdyn 421 mm)	T = 17.0 % 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 = 7297 N
axle2	ThA = 7297 N
axle3	ThA = 3984 N
axle4	ThA = 3984 N
axle5	ThA = 3984 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 = 43161 N
axle 2	(rdyn 421 mm)	T = 43161 N
axle 3	(rdyn 421 mm)	T = 23578 N
axle 4	(rdyn 421 mm)	T = 23578 N
axle 5	(rdyn 421 mm)	T = 23578 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
		0.45
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 = 43161 N
axle 2	(rdyn 421 mm)	T = 43161 N
axle 3	(rdyn 421 mm)	T = 23578 N
axle 4	(rdyn 421 mm)	T = 23578 N
axle 5	(rdyn 421 mm)	T = 23578 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
		0.45
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 3</u>	<u>axle 4</u>
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	0.356	
$zf = \sum (Tf) / P + 0,01$		

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 = 4682 mm for E = 5975 mm

min Ef = 4682 mm for E = 5975 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 = 2145 mm height of center of gravity - laden
- PR = 19200 kg maximum bogie mass - laden
- P = 35200 kg maximum total mass - laden
- nf = 2 no. of axle(s) with TRISTOP spring brake actuators
- ng = 3 no. of bogie axle(s)

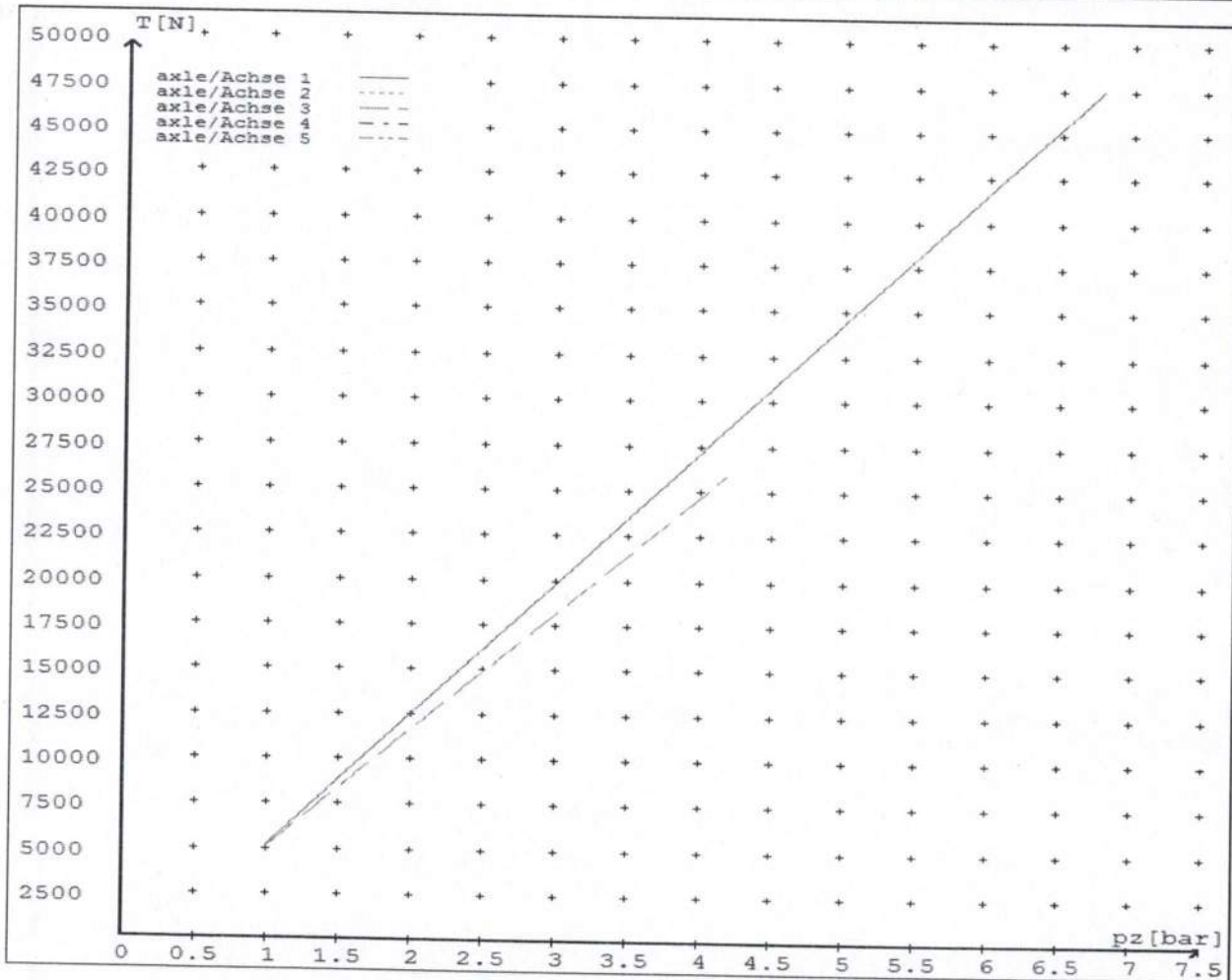
reference values

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

	pz [bar]	T [N]	T [N]
axle 1	1.0	5123	
	6.8	47489	
axle 2	1.0	5123	
	6.8	47489	
axle 3	1.0		5027
	4.2		25846
axle 4	1.0		5027
	4.2		25846
axle 5	1.0		5027
	4.2		25846

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



HVBR WORKSHEET
(PROCEDURE & COMPLIANCE DOCUMENTATION SHEET)

CERTIFICATE No.

JH150720

CUSTOMER NAME

DOMETT TRAILERS LTD

CUSTOMER ORDER No.

4405

DATE RECEIVED

JULY 2015

VEHICLE TYPE

5 AXLE FULL TRAILER

REG No.

CHASSIS No.

7A9E30019F1023383

BRIEF SPECIFICATION AS CERTIFIED TO HVBR

BRAKE CHAMBERS:

<u>Ax #</u>	<u>Make/model</u>	<u>Max stroke</u>	<u>Lever length</u>
1&2	TSE 18HSCLD65	65 mm	69 mm
3&4	TSE 1416HTLD64	64 mm	69 mm
5	TSE 14HSCLD64	64 mm	69 mm

BRAKE SYSTEM:

WABCO EBS : RSS ACTIVATED

TEST POINTS FITTED:

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 BRAKE CALCULATION TP 51294 & SO7388

TYRE SIZE: 265 70 R 19.5

NOTES

PACKING SLIP NO.

SO7388

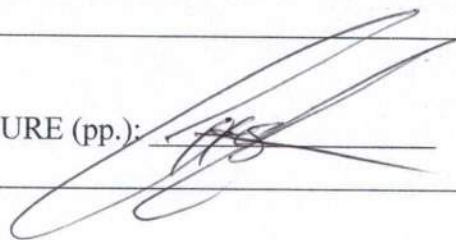
PROCESS TIME:

1

BRAKE CALC #TP51294. 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 : 19th July 2015

SIGNATURE (pp.):



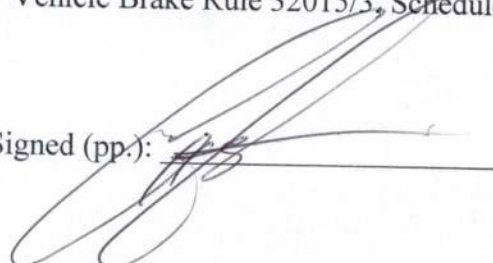
Statement of Compliance with the New Zealand Heavy Brake Rule

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: 19th July 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