#3412.

NZ TRANSPORT AGENCY
WAKA KOTAHI

Heavy Vehicle Specialist Certificate

Heavy Vehicle Specialist Inspector and Inspecting Organisation

Heavy Vehicle Specialist Inspector's Name *(PRINT IN CAPS)*: JOHN HIRST

ID: JEH

Vehicle Registration*:

VIN / Chassis Number: 7A9D10010A0023904

Component being certified:

- [ ] Chassis Modification
- [ ] Load Anchorage
- [ ] Log Bolsters
- [ ] Towing Connection
- [X] Brakes
- [ ] SRT

Certification Category: HVEK

Description of Work: CERTIFY TO SCHEDULE 5

Code/Standard Certified to: HVBR 32015/2

Component Load Rating(s): N/A

General Drawing Number(s): N/A

Supporting Documents:
BRAKE CODE CERTIFICATE - JH100902
PREV EXEMPTION REFERENCE - HVB10/316

*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 above 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 Deed of Appointment. To the best of my knowledge the information contained in this Certificate is true and correct.

Designer's ID *(if certified by a manufacturer)*:

Inspector's / Delegate's Signature:

*Delegate's Name *(PRINT IN CAPS)*:

Date: 7-Sep-10

Number: 347694

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

Level 9, PSIS House
20 Ballance Street
PO Box 5084
Lambton Quay
Wellington 6145
New Zealand
T 64 4 894 5200
F 64 4 894 3305
www.nzta.govt.nz

Document: B1083626
Exemption: HVB10/316

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 Eugene Girardin, Vehicles Unit Engineer, 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:

Make/Model: **Domett Truck & Trailer Ltd, 4 Axle Full Trailer**
VIN/CHASSIS: **7A9D10010A0023904**

SCHEDULE 2: - Exempted Requirement

Section 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 Transport Specialties Limited (Transpecs) or an NZ Transport Agency appointed HVEK certifier acting on behalf of, and under instruction from, Transpecs; Transpecs must keep a written record of all approvals.

5) An HVEK certifier in 4) must be fully trained in end of line procedures for Wabco electronically controlled braking systems

6) 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 Transport Specialties LTD.

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 8) must be legible and include all printed area's 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 30th day of July 2010

Eugene Girardin
Engineer
Vehicles Unit

Transpecs

QUALITY ON THE MOVE

NOTICE TO VEHICLE OPERATOR

THIS VEHICLE HAS A BRAKE SYSTEM WHICH HAS BEEN DESIGNED AND FITTED IN ACCORDANCE WITH THE LAND TRANSPORT HEAVY VEHICLE BRAKE RULE 32015/2.

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

PLEASE REFER TO THE CERTIFIER FOR FURTHER INFORMATION.

EXCERPT FROM LAND TRANSPORT RULE; HEAVY-VEHICLE BRAKES RULE 32015/2. SECTION 10,

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 this rule;

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 person or organisation appointed to carry out specialist inspection and certification of heavy vehicle brakes.

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 New Zealand Transport Authority if dissatisfied with a Compliance issue. (Refer NZTA Deed Of Appointment Para 47.4) **NZTA Helpdesk 0800 699 000**

.....

(J.Hirst (JEH) HVEK)

Transpecs
QUALITY ON THE MOVE

NOTICE TO VEHICLE OPERATOR

This trailer is equipped with an **E**lectronic **B**rake **S**ystem.

To comply with the New Zealand Heavy Vehicle Brake Rule 32015/2, 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.

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

J E Hirst
(JEH HVEK)
(09 980 7300)

Transpecs
QUALITY ON THE MOVE

NOTICE TO VEHICLE OPERATOR

WABCO Park Release Emergency Valve (PREV)

This trailer is equipped with a WABCO PREV
Part # 971 002 900 0

Application of the park brake via the cab control valve will actuate and apply all service brakes on the trailer. In the event of a leak in the service brake system the Spring Brakes will automatically override and hold the vehicle in compliance to Land Transport Rule: Heavy-vehicle Brakes Rule 32015/2.

When the vehicle is presented for COF the trailer park brake system is tested by pulling the red actuation knob on the PREV, situated mid way down the chassis rail. The cab control in the prime mover does not have to be applied for this test procedure.

If you are unsure of any aspect relating to this instruction please contact either the vehicle manufacturer or myself.

J E Hirst
(JEH HVEK)
(09 980 7300)

trailer (full, semi-, centre-axle) with air brake system acc. to
71/320/EEC, last amended by 98/12/EC and 2006/96/EC or UN/ECE-R.13.10

distribution: DOMETT FONTERRA 2010
7A9D10010A0023904

please note!

This brake calculation is made under consideration of
-the legal precriptions mentioned above in the version valid
alt the time of making the program (V6.09.06.08).
--the functional characteristics of our products,
but not of those of other 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).
WABCOBrake V6.09.06.08 db 08.06.2009

vehicle manufacturer: DOMETT
trailer model : 4AX TANKER
trailer type : 4-axle-full-trailer
remarks : air / hydraulic / VA suspension
WABCO TRAILER - EBS
TRISTOP 3+4: T.14/24
265/70 R 19,5

axle 1 + 2 + 3 + 4 : SAF, PAN 19-1, TDB 0749 ECE,

		unladen	laden
total mass	P in kg	5040	28000
axle 1	P1 in kg	1360	7000
axle 2	P2 in kg	1360	7000
axle 3	P3 in kg	1160	7000
axle 4	P4 in kg	1160	7000
wheel base	E in mm	4800 - 4800	
centre of gravity height	h in mm	1170	1755

		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 122.1	BZ 122.1	BZ 119.6	BZ 119.6
brake chamber manufacturer		Meritor	Meritor	Meritor	Meritor
chamber size		14.	14.	T.14/16	T.14/16
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	421	421	421	421
dyn. rolling radius	rdyn max in mm	421	421	421	421
threshold torque	Co Nm	6.0	6.0	6.0	6.0

calculation:

chamber pressure(rdyn min)	pH at z=22,5% bar	2.4	2.4	2.1	2.1
chamber pressure(rdyn max)	pH at z=22,5% bar	2.4	2.4	2.1	2.1
chamber press.(servo)	pcha at pm6,5bar bar	5.8	5.8	4.6	4.6
piston force	ThA at pm6,5bar N	5588	5588	4385	4385
brake force(rdyn min)	T lad. at pm6,5bar N	42260	42260	33173	33173
brake force(rdyn max)	T lad. at pm6,5bar N	42260	42260	33173	33173
brake force within 1 % rolling friction proportion	%	25.0	25.0	25.0	25.0

braking rate z laden 0.549 for rdyn min
z = sum (TR)/PRmax 0.549 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
EBS relay valve

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

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

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

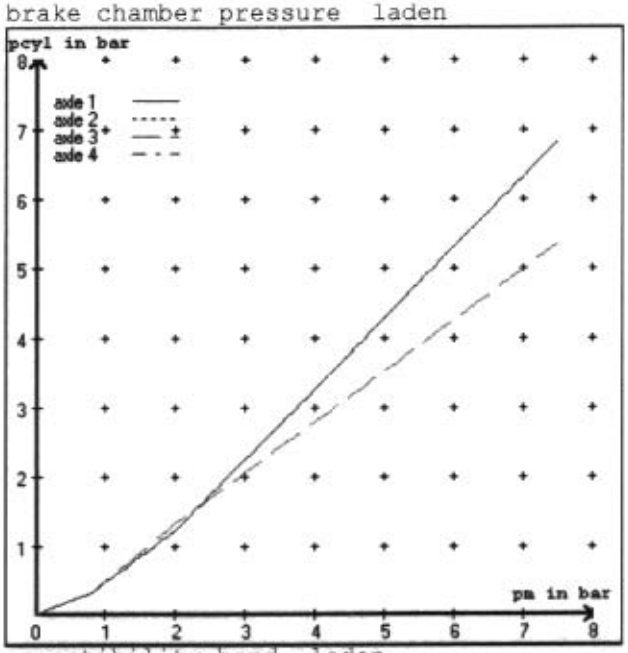
valve 2: 480 102 0.. 0 WABCO
EBS trailer modulator

axle 4:
valve 1: 971 002 ... 0 WABCO
EBS emergency valve

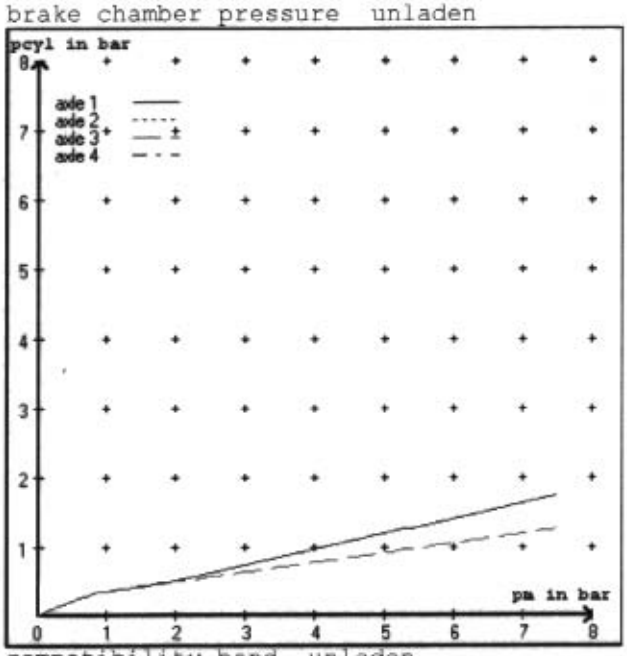
valve 2: 480 102 0.. 0 WABCO
EBS trailer modulator

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	
at pm 3.9 bar =>	pcha in bar :	3.2	3.2	2.7	2.7	
test type III (zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	axle4	
at pm 1.4 bar =>	pcha in bar :	0.7	0.7	0.8	0.8	

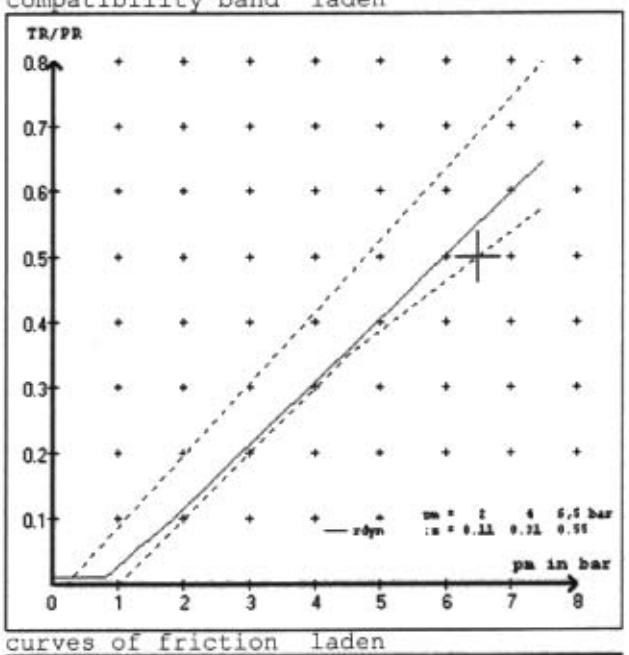
brake chamber pressure laden



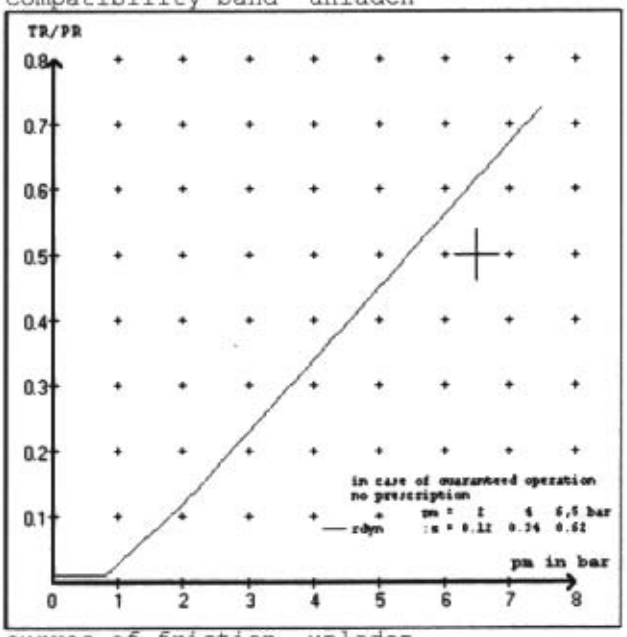
brake chamber pressure unladen



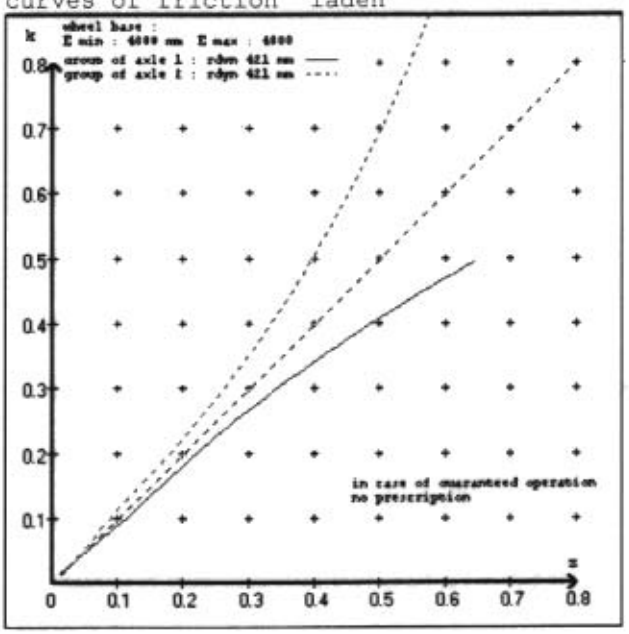
compatibility band laden



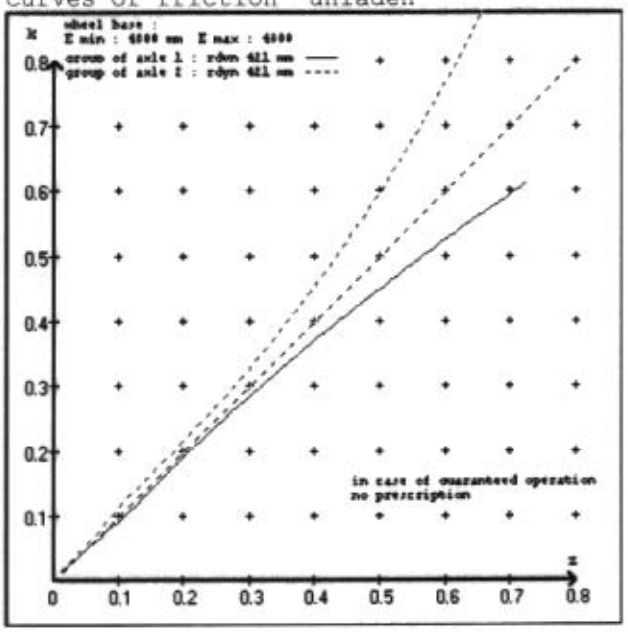
compatibility band unladen



curves of friction laden



curves of friction unladen



vehicle manufacturer: DOMETT
trailer model : 4AX TANKER
trailer type : 4-axle-full-trailer

brake chamber and lever length :
axle 1 : 2 x type/diameter 14. (Meritor) lever length 69 mm
axle 2 : 2 x type/diameter 14. (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

brake diagram :

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

EBS input data
==========
vehicle manufacturer: DOMETT
trailer model : 4AX TANKER
trailer type : 4-axle-full-trailer
brake calculation no. : TP 50420A

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 = 0.000
(laden condition) 2.0 bar z = 0.116
6.5 bar z = 0.550

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	1360	to be entered by the vehicle manufact.	1.5	7000	to be entered by the vehicle manufact.	0.4	1.2	5.8
2	1360		1.5	7000		0.4	1.2	5.8
3	1160		1.2	7000		0.4	1.3	4.6
4	1160		1.2	7000		0.4	1.3	4.6
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
1360	1.5	1360	1.5	1160	1.1	1160	1.1
1860	1.9	1860	1.9	1660	1.4	1660	1.4
2360	2.3	2360	2.3	2160	1.7	2160	1.7
2860	2.6	2860	2.6	2660	2.0	2660	2.0
3360	3.0	3360	3.0	3160	2.3	3160	2.3
3860	3.4	3860	3.4	3660	2.6	3660	2.6
4360	3.8	4360	3.8	4160	2.9	4160	2.9
4860	4.2	4860	4.2	4660	3.2	4660	3.2
7000	5.8	7000	5.8	7000	4.6	7000	4.6

data sheet to EC/ECE vehicle type-approval certificate concerning braking equipment: according to 98/12/EC annex IX 2.7.4 / 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

calc. verif. of residual (hot) braking force type III
(item 4.2 of appendix I to annex VII)

axle 1	(rdyn 421 mm)	T = 22.3 % Pe
axle 2	(rdyn 421 mm)	T = 22.3 % Pe
axle 3	(rdyn 421 mm)	T = 18.9 % Pe
axle 4	(rdyn 421 mm)	T = 18.9 % Pe

calculated actuator stroke in mm
(item 4.3.1.1 of appendix I to annex VII)

axle 1	(sp = 57 mm)	s = 39 mm
axle 2	(sp = 57 mm)	s = 39 mm
axle 3	(sp = 56 mm)	s = 39 mm
axle 4	(sp = 56 mm)	s = 39 mm

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

axle1	ThA = 5588 N
axle2	ThA = 5588 N
axle3	ThA = 4385 N
axle4	ThA = 4385 N

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

axle 1	(rdyn 421 mm)	T = 33284 N
axle 2	(rdyn 421 mm)	T = 33284 N
axle 3	(rdyn 421 mm)	T = 26161 N
axle 4	(rdyn 421 mm)	T = 26161 N

	basic test of subject trailer (z)	type III (calculated) residual (hot)braking
braking rate of the vehicle (item 4.3.2 to appendix I to annex VII)	0.55	0.43
required braking rate (items 1.3.3 and 1.6.2 to annex II)		>= 0,4 and >= 0,6*z (0.33)

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

axle 1	(rdyn 421 mm)	T = 33284 N
axle 2	(rdyn 421 mm)	T = 33284 N
axle 3	(rdyn 421 mm)	T = 26161 N
axle 4	(rdyn 421 mm)	T = 26161 N

	basic test of subject trailer (z)	type III (calculated) residual (hot)braking
braking rate of the vehicle (item 4.3.2 to appendix I to annex VII)	0.55	0.43
required braking rate (items 1.3.3 and 1.6.2 to annex II)		>= 0,4 and >= 0,6*z (0.33)

spring parking brake

		axle 3	axle 4
no of TRISTOP-actuators per axle line	KDZ	2	2
TRISTOP-actuator type		T.14/16	T.14/16
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	6160	6160
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	48188	48188
Tf = (TFZ*KDZ-2*Co/lBh)*iFb			

braking rate	zf laden	0.361
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 = 3504 mm for E = 4800 mm
==========
min Ef = 3504 mm for E = 4800 mm
==========

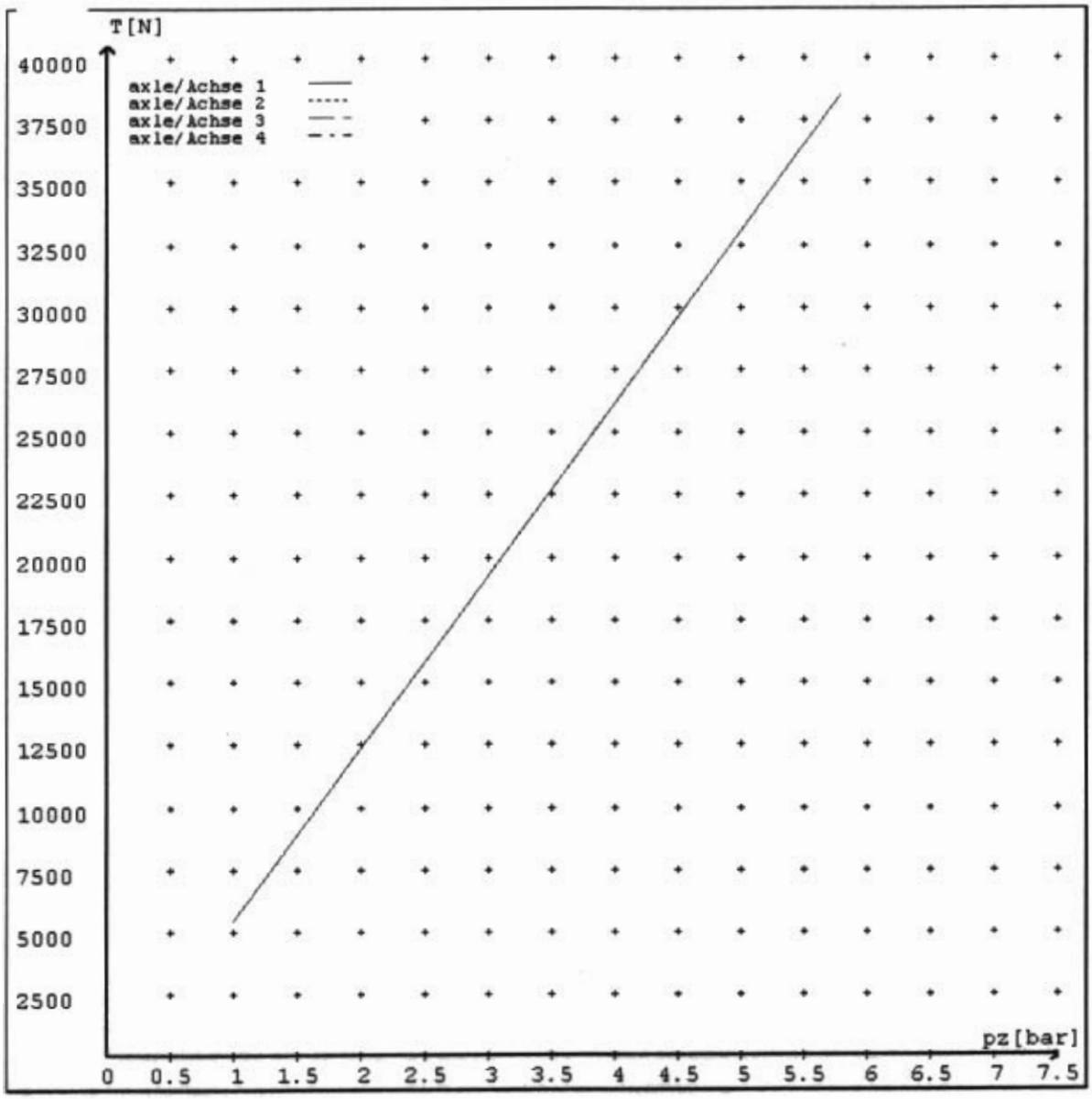
min Ef =			minimum distance between front axle(s) (trailer) or support (semitrailer) and the rear axle(s) (resultant of the bogie)
E	=		wheel base
fzul	=	0.80	maximum permissible frictional connection required
zferf	=	0.18	maximum required braking ratio of the parking brake
h	=	1755 mm	height of center of gravity - laden
PR	=	14000 kg	maximum bogie mass - laden
P	=	28000 kg	maximum total mass - laden
nf	=	2	no. of axle(s) with TRISTOP spring brake actuators
ng	=	2	no. of bogie axle(s)

reference values

reference values for z = 50%

	pz [bar]	T [N]	T [N]
axle 1	1.0 5.8	5383 38488	
axle 2	1.0 5.8	5383 38488	
axle 3	1.0 4.6		5383 30212
axle 4	1.0 4.6		5383 30212

VIN - no.:



WABCO START-UP PROTOCOL

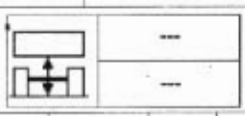
System	Trailer EBS-E	**WABCO part number**	480 102 064 0
Production date	2010-05-12	**Serial number**	284008623800
Fingerprint Customer EOL / Customer Development / Flash Program	W 029383 / 2010-09-09 ; 00000000 / 0000-00-00 ; 00000000 / 0000-00-00		

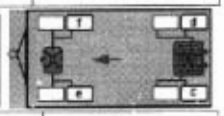
WABCO TRAILER EBS-E

GGVS/ADR TUEH TB 2007 - 019.00
TDB0749

HERSTELLER MANUFACTURER CONSTRUCTEUR	DOMETT
TYP TYPE TYPE	4AX TANKER
FAHRZEUG IDENTNR. CHASSIS NUMBER NUMERO DE CHASSIS	7A9D10010A0023904
BREMSBERECHNUNGS-NR. BRAKE CALCULATION NO. CALCUL DE FREINAGE NO.	TP50420
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 Einfachbereifung Single Tire Monte simple	
Lenkachse Steering axle Essieu vireur	
Zwillingsbereifung Twin Tire Monte jumelee	X
Kippkritisches Fahrzeug Critical Trailer Vehicule critique	
Subsystems	--- / I/O

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





	pm (bar)		6.5	pm (bar)		0.7	2.0	---	6.5					(bar) 1.0	(bar) Pz
ACHSE AXLE ESSIEU	(kg)			(kg)					pz		TYP TYPE	(mm)	(mm)	TR (daN)	
1	1400	0.6	1.5	7000	4.6	0.4	1.2	---	5.8	-	14	64	69	---	---
2	1400	0.6	1.5	7000	4.6	0.4	1.2	---	5.8	-	14	64	69	---	---
3	1200	0.5	1.2	7000	4.6	0.4	1.3	---	4.6	-	14 / 16	64	69	---	---
4	1200	0.5	1.2	7000	4.6	0.4	1.3	---	4.6	-	14 / 16	64	69	---	---
5	0	---	---	0	---	---	---	---	---	-	---	---	---	---	---

Diagnostic memory	OK	**Warning lamp control**	OK
Parameter setting	carried out	**Stop light power supply**	Not tested
EBS pressure test	OK	**Lifting axle test**	Not tested
Redundancy test	OK	**ECAS distance sensor calibration**	Not tested
ABS sensor assignment	OK	**Distance sensor Axle load calibr**	Not tested
RTR check	Not tested	**Leak test**	Not tested
Immobilizer test	Not tested		

Manufacturer	DOMETT	**Vehicle ident. no**	7A9D10010A0023904
Vehicle type	4AX TANKER	**Odometer reading**	0.0 km
next Service	0 km	**Trip reading**	0.0 km
Tested by	Ron Pratt		
Date	2010-09-09 11:50:00 AM		**Signature**