



Heavy Vehicle Specialist Inspector and Inspecting Organisation

Heavy Vehicle Specialist Inspector's Name (PRINT IN CAPS)

Ron Pratt

ID

TRSP

Vehicle Registration*

VIN / Chassis Number

7A9D31015B0023947

Component being certified:

Chassis Modification

Load Anchorage

Log Bolsters

Certification Category

HUEK

Towing Connection

Brakes

SRT

Description of Work

Certify to Brake Rule 32015/2

Code/Standard Certified to

NZ#VB Rule Schedule 5

Component Load Rating(s)

MAN GVM = 28000kg

General Drawing Number(s)

NA

Supporting Documents

Brake Cert No RP110709

Prev Value exempt No HVB11/069

*Special Conditions

EBS Control - Warning lamp must illuminate when ignition switched on and extinguish immediately OR when vehicle reaches 7Kph.

Certification Expiry Date (if applicable)

NA

or

Hubodometer Reading (whichever comes first)

Grid for hubodometer reading

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

R. Pratt

*Delegate's Name (PRINT IN CAPS)

Date

08/07/2011

Number

377286

COF Vehicle Inspector ID:

COF Vehicle Inspector Signature:

Date

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

NOTICE TO VEHICLE OPERATOR

This trailer is equipped with an Electronic Brake System,

To comply with the New Zealand Heavy Vehicle Brake RULE, 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.

NB:

If this vehicle is fitted with mechanical (spring) suspension, the load sense valving has been adjusted to suit exactly the performance of the original springs. In event of replacement being required, original equipment springs **must** be fitted to ensure correct ongoing operation. Fitment of non genuine springs can affect operation and therefore, compliance.

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



R S Pratt
(TRSP HVEK 09 980 7300)

NOTICE TO VEHICLE OPERATOR

THIS VEHICLE HAS A BRAKE SYSTEM WHICH HAS BEEN DESIGNED AND FITTED IN ACCORDANCE WITH THE NEW ZEALAND HEAVY VEHICLE BRAKE RULE-32015: SCHEDULE 5.

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

PLEASE REFER TO THE CERTIFIER FOR FURTHER INFORMATION.

EXCERPT FROM NZ HEAVY VEHICLE BRAKE RULE 32015

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 the rule; and*
- (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 a person or organisation appointed to carry out specialist inspection and certification of heavy vehicle brakes.*


10.5 Responsibilities of manufactures and retailers

A person may manufacture, stock, or offer for sale a brake or its components. Intended for fitting to a vehicle to be used on New Zealand roads, only if that brake or component:

- (a) complies with this Rule; and*
- (b) does not prevent a repair to a vehicle, its structure, systems, components and equipment from complying with this Rule.*

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 Land Transport Safety Authority if dissatisfied with a Compliance issue. (refer LTNZ Deed Of Appointment Para 47.4) Land Transport NZ Helpdesk 0800 699 000*


.....
R S PRATT
(TRSP HVEK)

WABCO

TRAILER EBS-E

GGVS/ADR TUEH TB 2007 - 019.00

HERSTELLER MANUFACTURER CONSTRUCTEUR	Domett Trailers		
TYP TYPE TYPE	4A Full Tip		
FAHRZEUG-KENNTNR. CHASSIS NUMBER NUMERO DE CHASSIS	7A9D31015B0023947		
BREMSENRECHENUNGS-NR. BRAKE CALCULATION NO. CALCUL DE FREINAGE N°	00191RP		
POLENDZAHLEN s+d e+f POLE AXLES TESTS s+d e+f DENTS ROUES DENTÉS s+d e+f	90	90	ABS System ABS System Systeme ABS 4S/3M
REZ REZ REZ	Einachsachse Single Tye Axe simple		Lernachse Steering axle Essieu avant
	Zuladungsbefreiung Tare Tye Axe penalisée	X	Risiko/hoches Fahrtenng Critical Trailer Vehicule critique
Subsystems	SB		I/O

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



ACHSE AXLE ESSIEU	pm (bar)		6.5		pm (bar)		0.7		2.0		---		6.5		TR (daN)
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	
1	1550	0.6	2.5	7000	4.3	0.4	1.5	---	6.4	-	---	---	---	---	---
2	1550	0.6	2.5	7000	4.3	0.4	1.5	---	6.4	-	---	---	---	---	---
3	1400	0.5	1.8	7000	4.3	0.4	1.5	---	4.9	-	---	---	---	---	---
4	1400	0.5	1.8	7000	4.3	0.4	1.5	---	4.9	-	---	---	---	---	---
5	0	---	---	0	---	---	---	---	---	-	---	---	---	---	---



NZ TRANSPORT AGENCY
WAKA KOTAHI

Domett

Document: B1146227
Exemption: HVB11/069

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

**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: **7A9D3101580023947**

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 areas 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 29th day of April 2011.

Eugene Girardin
Engineer
Vehicles Unit

WABCO START-UP PROTOCOL

System	Trailer EBS-E	WABCO part number	480 102 064 0
Production date	2011-01-04	Serial number	896000181100D
Fingerprint Customer EOL / Customer Development / Flash Program	W 041609 / 2011-07-08 ; 00000000 / 0000-00-00 ; 00000000 / 0000-00-00		


WABCO	TRAILER EBS-E	GGVSIADR TUEH TB 2007 - 019.00
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HERFELLER MANUFACTURER CONSTRUCTEUR	Domett Trailers			GIO	Pin1	Pin3	Pin4
TYP TYPE	4A Full Tip			1	---	---	---
FAHRZEUG IDENTIF. CHASSIS NUMBER NUMERO DE CHASSIS	7A9D31015B0023947			2	---	---	---
WENNBEZEICHNUNG-NR. WENNBEZELICHTUNG-NR. CÉLULA DE PRENSAGE NO.	00191RP			3	ALS2	ALS2	---
POLYACCOBRIEZAMEL 1-11-1-1 HOLE WHEEL TEETH 1-11-1-1 DENTS ROUE DENTEE 1-11-1-1	90	90	ABS-System ABS-System Systeme ABS	4	---	---	---
ABS	Einachslenkung Single Tip Mono étrépe		Leitachse Steering axle Essieu direct	5	DIAG	DIAG	DIAG
ABS	Zweiachslenkung Twin Tip Mono jante	X	Kapitelachsen-Fahrerzug Circuit Trailer Vehicule-attelage	6	---	---	---
Subsystems	SB		I/O	7	---	---	---

ACHSE AIXE ESSEU	pm (bar)		6.5		pm (bar)		0.7		2.0		---		6.5		TYP TYPE	(mm)	(mm)	(bar)	
	1	2	3	4	5	6	7	8	9	10	11	12	1.0	Pz					
1	1550	0.6	2.5	7000	4.3	0.4	1.5	---	6.4	-	---	---	---	---	---	---	---	---	---
2	1550	0.6	2.5	7000	4.3	0.4	1.5	---	6.4	-	---	---	---	---	---	---	---	---	---
3	1400	0.5	1.8	7000	4.3	0.4	1.5	---	4.9	-	---	---	---	---	---	---	---	---	---
4	1400	0.5	1.8	7000	4.3	0.4	1.5	---	4.9	-	---	---	---	---	---	---	---	---	---
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	Signal outputs TEBS	Not tested

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

Manufacturer	Domett Trailers	Vehicle ident. no	7A9D31015B0023947
Vehicle type	4A Full Tip	Odometer reading	0.0 km
next Service	0 km	Trip reading	0.0 km
Tested by	Ron Pratt	Signature 	
Date	2011-07-08 11:46:33 AM		



P.O.Box 98-971

South Auckland Mail Centre

Ronald Stuart Pratt (TRSP)

DATE 08/07/2011 TYPE APPROVED 4AFTRORDSEBSe

CERTIFICATE No RP110709 PREV EXEMPTION NO HUB11/069

VIN No 7A(D)31015B0023947

BRAKE CHAMBERS FRONT 16 Mas 65mm MAN GVM 28000Kg

BRAKE CHAMBERS REAR 16/24Mas 65mm LOAD SENSED YES EBS CONTROL

SLACK LENGTH FRONT Disc TYRE SIZE FRONT 265/70R19.5

SLACK LENGTH REAR Disc TYRE SIZE REAR 265/70R19.5

THIS VEHICLE COMPLIES WITH N.Z. LINING MATERIAL FRONT ROR8616

HVBR 32016/2 SCHEDULE 5 LINING MATERIAL REAR ROR8616

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.13.11

distribution: Domett Trailers
4A Full Tip ROR Disc EBS e
7A9D31015B0023947 RP110709
00191RP

please read!

This brake calculation is made under consideration of
-the legal prescriptions mentioned above in the version valid
at the time of making the program (V6.10.05.21),
-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 V6.10.05.21 db 26.05.2010

vehicle manufacturer: Domett Trailers
trailer model : 4A Full Tipping
trailer type : 4-axle-full-trailer
remarks : air / hydraulic / VA suspension
WABCO TRAILER - EBS E
TRISTOP 3+4: T.16/24
265/70 R 19,5

axle 1 + 2 + 3 + 4 : ROR, Eisa 195 LE, 36107104 ECE,

		unladen	laden
total mass	P in kg	5900	28000
axle 1	P1 in kg	1550	7000
axle 2	P2 in kg	1550	7000
axle 3	P3 in kg	1400	7000
axle 4	P4 in kg	1400	7000
wheel base	E in mm	5900 - 5900	
centre of gravity height	h in mm	1170	2200

	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	16.	16.	T.16/24	T.16/24
lever length 1Bh in mm	74	74	74	74
brake factor [-]	20.26	20.26	20.26	20.26
dyn. rolling radius r _{dyn min} in mm	421	421	421	421
dyn. rolling radius r _{dyn max} in mm	421	421	421	421
threshold torque Co Nm	6.0	6.0	6.0	6.0

calculation:				
chamber pressure(r _{dyn min})pH at z=22,5bar	2.5	2.5	2.2	2.2
chamber pressure(r _{dyn max})pH at z=22,5bar	2.5	2.5	2.2	2.2
chamber press.(servo)pcha at pm6,5bar bar	6.4	6.4	4.9	4.9
piston force ThA at pm6,5bar N	6482	6482	4876	4876
brake force(r _{dyn min})T lad. at pm6,5bar N	46279	46279	34837	34837
brake force(r _{dyn max})T lad. at pm6,5bar N	46279	46279	34837	34837
brake force within 1 % rolling friction proportion	25.0	25.0	25.0	25.0

braking rate z laden 0.591 for r_{dyn min}
z = sum (TR)/FRmax 0.591 for r_{dyn max}

Trailer may only be operated in combination with trucks/tractors with
ISQ 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

brake cylinder: Meritor 16HSCLD64

axle 2:

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

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

brake cylinder: Meritor 16HECLD64

axle 3:

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

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

brake cylinder: Meritor 1624HTLD64

axle 4:

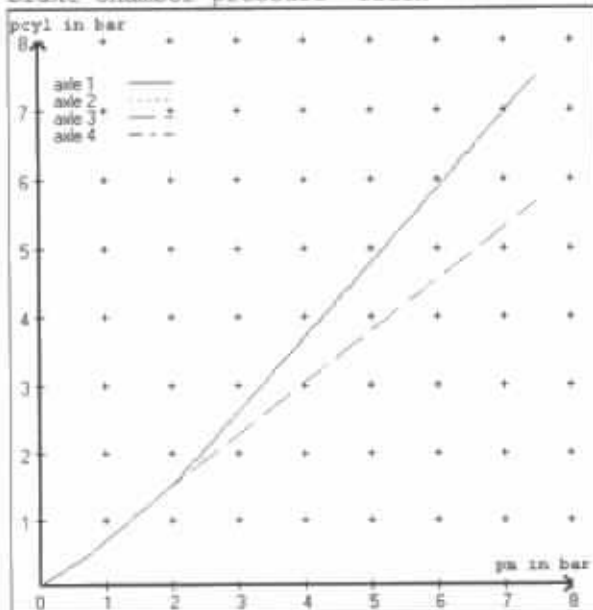
valve 1: 971 002 ... 0 WABCO
 EBS emergency valve

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

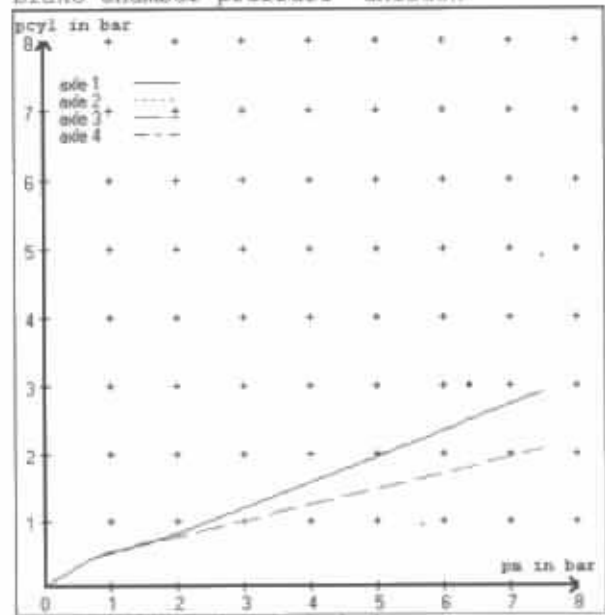
brake cylinder: Meritor 1624HTLD64

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	
at pm 3.7 bar =>	pcha in bar :	3.3	3.3	2.8	2.8	
test type III (zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	axle4	
at pm 1.2 bar =>	pcha in bar :	0.9	0.9	0.9	0.9	

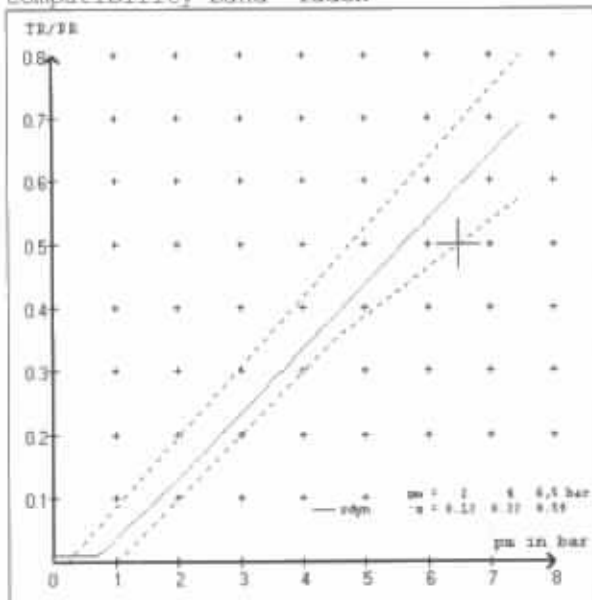
brake chamber pressure laden



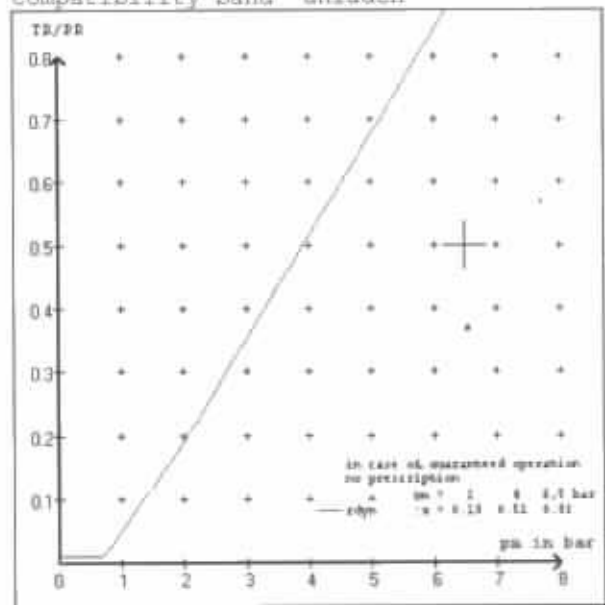
brake chamber pressure unladen



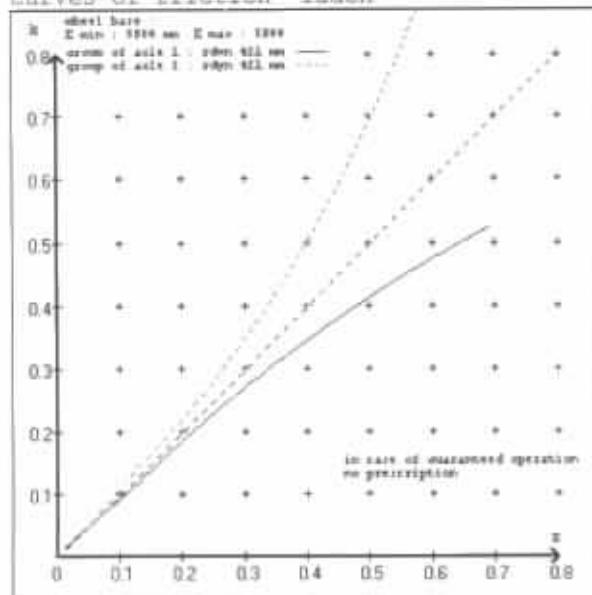
compatibility band laden



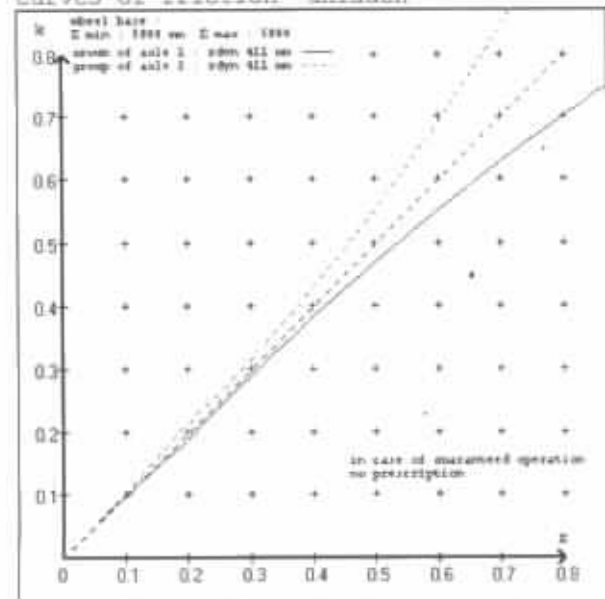
compatibility band unladen



curves of friction laden



curves of friction unladen



vehicle manufacturer: Domett Trailers
 trailer model : 4A Full Tipping
 trailer type : 4-axle-full-trailer

brake chamber and lever length :

axle 1 : 2 x type/diameter 16. (Meritor) lever length 74 mm
 axle 2 : 2 x type/diameter 16. (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 T.16/24 (Meritor) lever length 74 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 Trailers
 trailer model : 4A Full Tipping
 trailer type : 4-axle-full-trailer
 brake calculation no. : TP 191A

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

assignment pm / deceleration z: pm 0.7 bar z = 0.000
 (laden condition) 2.0 bar z = 0.132
 6.5 bar z = 0.590

control pressure pm		6,5	control 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	1550	06 entered by the vehicle 05 manufact.	2.5	7000	43 entered by the vehicle 43 manufact.	0.4	1.5	6.4
2	1550		2.5	7000		0.4	1.5	6.4
3	1400		1.8	7000		0.4	1.5	4.9
4	1400		1.8	7000		0.4	1.5	4.9
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	axle load	axle load	axle load
pcyl	pcyl	pcyl	pcyl
1550 2.5	1550 2.5	1400 1.8	1400 1.8
2050 2.9	2050 2.9	1900 2.1	1900 2.1
2550 3.2	2550 3.2	2400 2.4	2400 2.4
3050 3.6	3050 3.6	2900 2.6	2900 2.6
3550 3.9	3550 3.9	3400 2.9	3400 2.9
4050 4.3	4050 4.3	3900 3.2	3900 3.2
4550 4.6	4550 4.6	4400 3.5	4400 3.5
5050 5.0	5050 5.0	4900 3.7	4900 3.7
7000 6.4	7000 6.4	7000 4.9	7000 4.9

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: ROR	.../... .../K brake lining: ROR 8616 AF
	test report :	36107104 ECE date : 30.10.2006
axle 2	: reference axle: ROR	.../... .../K brake lining: ROR 8616 AF
	test report :	36107104 ECE date : 30.10.2006
axle 3	: reference axle: ROR	.../... .../K brake lining: ROR 8616 AF
	test report :	36107104 ECE date : 30.10.2006
axle 4	: reference axle: ROR	.../... .../K brake lining: ROR 8616 AF
	test report :	36107104 ECE date : 30.10.2006

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

axle 1	(rdyn 421 mm)	T = 21.1 % Fe
axle 2	(rdyn 421 mm)	T = 21.1 % Fe
axle 3	(rdyn 421 mm)	T = 17.1 % Fe
axle 4	(rdyn 421 mm)	T = 17.1 % Fe

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

axle 1	(sp = 58 mm)	s = 40 mm
axle 2	(sp = 58 mm)	s = 40 mm
axle 3	(sp = 57 mm)	s = 40 mm
axle 4	(sp = 57 mm)	s = 40 mm

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

axle1	ThA = 6482 N
axle2	ThA = 6482 N
axle3	ThA = 4876 N
axle4	ThA = 4876 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 = 49523 N
axle 2	(rdyn 421 mm)	T = 49523 N
axle 3	(rdyn 421 mm)	T = 37270 N
axle 4	(rdyn 421 mm)	T = 37270 N

	basic test	type III
	of subject	(calculated)
	trailer (z)	residual
braking rate of the vehicle		(hot)braking
(item 4.3.2 to appendix I to annex VII)	0.59	0.63
required braking rate		>= 0,4 and
(items 1.3.3 and 1.6.2 to annex II)		>= 0,6*2 (0.35)

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

axle 1	(rdyn 421 mm)	T = 49523 N
axle 2	(rdyn 421 mm)	T = 49523 N
axle 3	(rdyn 421 mm)	T = 37270 N
axle 4	(rdyn 421 mm)	T = 37270 N

	basic test	type III
	of subject	(calculated)
	trailer (z)	residual
braking rate of the vehicle		(hot)braking
(item 4.3.2 to appendix I to annex VII)	0.59	0.63
required braking rate		>= 0,4 and
(items 1.3.3 and 1.6.2 to annex II)		>= 0,6*2 (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.16/24	T.16/24
lever length	74	74
stat. tyre radius	401	401
at a stroke of	30	30
min. force of spring brake	7605	7605
sp.brake chamber no Meritor.....	4	4
release pressure	4.8	4.8

calculation:

ratio until road	3.7388	3.7388
$iFb = lBh \cdot \eta \cdot C \cdot rBt / (rBn \cdot rstat)$		
for rstat in mm	401	401
brake force of spring br. Tf in N	56260	56260
$Tf = (TFZ \cdot KDZ - 2 \cdot Co / lBh) \cdot iFb$		
braking rate	0.420	
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

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

$$\min Ef = 4317 \text{ mm} \quad \text{for } E = 5900 \text{ mm}$$

$$\min Ef = 4317 \text{ mm} \quad \text{for } E = 5900 \text{ mm}$$

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 = 2200 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)

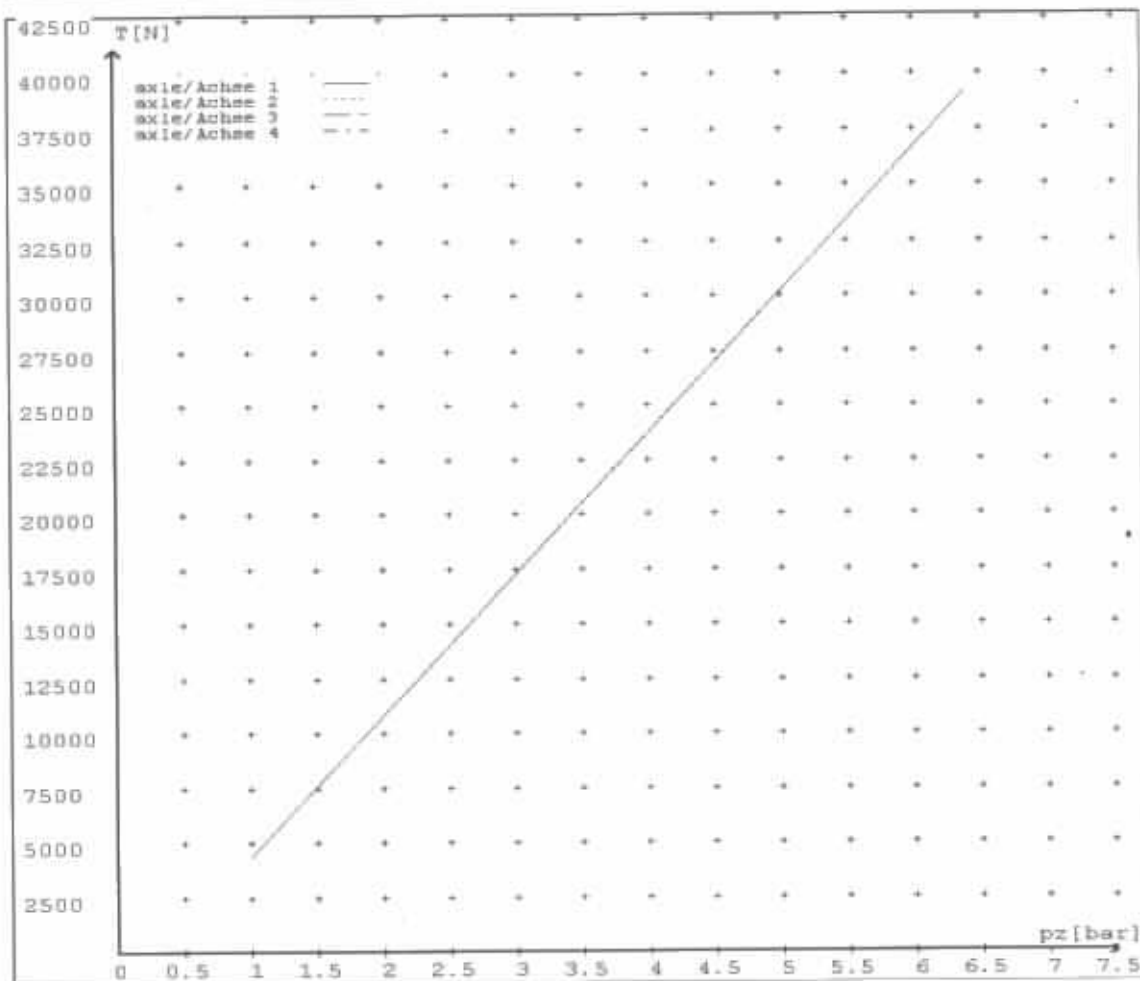
reference values

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

	pz [bar]	T [N]	T [N]
axle 1	1.0	4304	
	6.4	39153	
axle 2	1.0	4304	
	6.4	39153	
axle 3	1.0		4304
	4.9		29473
axle 4	1.0		4304
	4.9		29473

VIN - no.:

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



reference values for $z = 0.5$

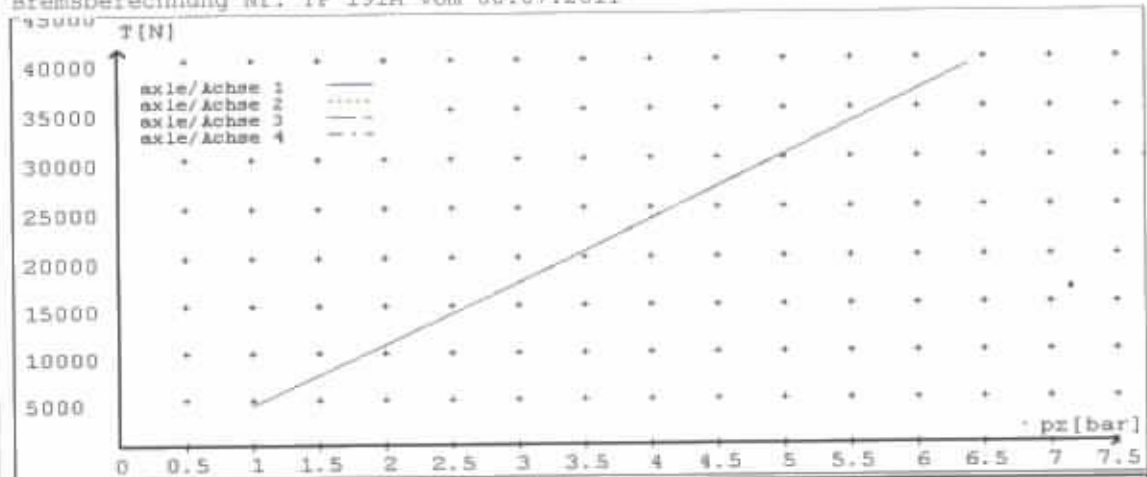
Angabe der Referenzwerte für $z = 0.5$

brake calculation no: TP 191A date 08.07.2011

Bremsberechnung Nr: TP 191A vom 08.07.2011

for max rdyn: 421 mm

für max rdyn: 421 mm



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