



# Heavy Vehicle Specialist Certificate

Heavy Vehicle Specialist Inspector and Inspecting Organisation

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

Ronald Stuart PRAIT

ID

TRSP

Vehicle Registration\*

VIN / Chassis Number

7A9D20013B0023927

Component being certified:

Chassis Modification

Load Anchorage

Log Bolsters

Towing Connection

Brakes

SRT

Certification Category

HVEK

Description of Work

Certify to Brake Rule 32015/2

Code/Standard Certified to

WEHUB Rule Schedule 5

Component Load Rating(s)

General Drawing Number(s)

NA

Supporting Documents

Brake Cert No RP110109

PREV VALUE CERT No HUB10/387

\*Special Conditions

EBS Control - warning lamp must illuminate when ignition switched on and extinguish immediately OR when vehicle reaches 70kph.

Certification Expiry Date (if applicable)

NA

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

R. Stuart Prait

\*Delegate's Name (PRINT IN CAPS)

Date

21/01/2011

Number

364475

COF Vehicle Inspector ID:

COF Vehicle Inspector Signature:

Date

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



**HEAVY VEHICLE BRAKE RULE  
WORKSHEET**  
(PROCEDURE DOCUMENTATION SHEET - PDS)  
&  
**CONFIRMATION OF COMPLIANCE**

CERTIFICATE No. **RP110109**

CUSTOMER NAME	DOMETT TRAILERS		
CUSTOMER ORDER No.	3499	DATE RECEIVED	01/12/2010
VEHICLE TYPE	4Axle Full Trailer Curtainsider		
REG No.		CHASSIS No.	7A9D20013B0023927

**BRIEF SPECIFICATION AS CERTIFIED TO SCHEDULE 5**

**BRAKE VALVES:**

Primary Relay  
Make: WABCO Type: 480-102-064-0

Secondary Relay  
Make: WABCO Type: 480/207/001/0

Spring Brake Relay  
Make: PREV WABCO Type: 971-002-103-4

Park Brake Release Valve  
Make: Prev WABCO Type: 971-002-103-4

Locked Ratio  
Make: \_\_\_\_\_ Type: \_\_\_\_\_ Setting: \_\_\_\_\_

Load Sense Valve  
Front: Make: EBS Control Type: \_\_\_\_\_

Settings: Laden: \_\_\_\_\_ Unladen: \_\_\_\_\_

Load Sense Valve  
Rear: Make: EBS Control Type: \_\_\_\_\_

Setting: Laden: \_\_\_\_\_ Unladen: \_\_\_\_\_

**Other Valves**

Make: WABCO Type: line filters Setting: X 2

Make: \_\_\_\_\_ Type: \_\_\_\_\_ Setting:- \_\_\_\_\_

Make: \_\_\_\_\_ Type: \_\_\_\_\_ Setting: \_\_\_\_\_

Make: \_\_\_\_\_ Type: \_\_\_\_\_ Setting:- \_\_\_\_\_

Comments: \_\_\_\_\_ Prev Valve EXEMPTION NO  
HBV10/387 \_\_\_\_\_

**BRAKE CHAMBERS:**

Front: Make TSE Type: 14 STROKE: 64 mm  
Rear: Make TSE Type: 14/16 STROKE: 64 mm

**SLACK ADJUSTER:**

Front Length (mm) Disc \_\_\_\_\_ Rear Length (mm) Disc \_\_\_\_\_

**BRAKE CALIPERS:** Type WABCO PAN19+

**OTHER:**

TYRES 265/70R 19.5

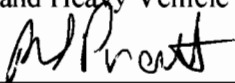
**NOTES:**

PACKING SLIP NO.

PROCESS TIME:

**Confirmation of compliance**

I confirm that the vehicle identified on page 1 and 2 of this Confirmation of Compliance complies with all relevant requirements of the current New Zealand Heavy Vehicle Brake Rule 32015, Schedule 5.

Date: 21/01/2011 Signed: 

**Certifier's identification**

Name & ID: RON PRATT (TRSP)

Phone (bus): 09 9807300 Fax (bus): 09 9807306

Postal address: TRANSPORT SPECIALTIES LTD  
PO BOX 98-971,  
MANUKAU CITY,  
MANUKAU 2241

Position: TRSP (HVEK)

**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, Schedule 5.

Date: \_\_\_\_\_ Signed: \_\_\_\_\_

Certifier's identification: \_\_\_\_\_

Name: \_\_\_\_\_

Phone (bus): \_\_\_\_\_ Fax (bus): \_\_\_\_\_

Postal address: \_\_\_\_\_

Position: \_\_\_\_\_

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



NZ TRANSPORT AGENCY  
WAKA KOTAHI

Testing Station

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](http://www.nzta.govt.nz)

Document: B1107074  
Exemption: HVB10/387

**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: **7A9D20013B0023927**

**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.

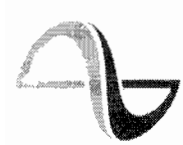
**SCHEDULE 3: - Conditions of this exemption:**

- 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 15<sup>th</sup> day of October 2010

Eugene Girardin  
Engineer  
Vehicles Unit





Document: B1107074  
Exemption: HVB10/387

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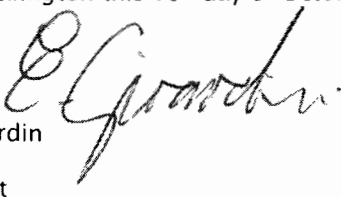
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Eugene Girardin  
Engineer  
Vehicles Unit

# WABCO


## START-UP PROTOCOL

System	Trailer EBS-E	WABCO part number	480 102 064 0
Production date	2010-08-02	Serial number	284009600500
Fingerprint Customer EOL / Customer Development / Flash Program	W 029383 / 2011-01-21 ; 00000000 / 0000-00-00 ; 00000000 / 0000-00-00		

<b>WABCO</b>		<b>TRAILER EBS-E</b>		GGVS/ADR TUEH TB 2007 - 019.00 TDB 0749			
HERSTELLER MANUFACTURER CONSTRUCTEUR	DOMETT			GIO	Pin1	Pin3	Pin4
TYP TYPE	4 AX F/T C/SIDE			1	---	---	---
FAHRZEUG IDENTIF. CHASSIS NUMBER NUMERO DE CHASSIS	7A9D20013B0023927			2	---	---	---
BREMSENRECHNUNG NR. BRAKE CALCULATION NO. CALCUL DE FREINAGE NO.	TP50454			3	ALS2	ALS2	---
PCLEADZÄHLEZAHLE c-d) e-f PCLE WHEEL TRIP c-d) e-f CENTS NOUS DÉTÈE c-d) e-f	90	90	ABS-System ABS-System Systeme ABS	4	---	---	---
RSS RSS RSS	Einfachlenkung Single Trac Monte simple		Lenkachs Steering axle Essieu avant	5	DIAG	DIAG	DIAG
	Zwillingslenkung Twin Trac Monte jumele		Kipprichtliches Fahrzeug Critical Tractor Vehicule critique	6	---	---	---
Subsystems	I/O			7	---	---	---

ACHSE AXLE ESSIEU	pm (bar)		6.5	pm (bar)		0.7	2.0	---	6.5	TYP TYPE	(mm)	(mm)	(bar)		
	H (kg)	⊗	⊗	H (kg)	⊗	⊗	pz	1.0	Pz						
1	1500	0.7	2.1	8000	5.3	0.3	1.6	---	6.4	-	14	64	69	---	---
2	1500	0.7	2.1	8000	5.3	0.3	1.6	---	6.4	-	14	64	69	---	---
3	1700	0.9	2.3	8000	5.3	0.3	1.6	---	6.2	-	14 / 16	64	69	---	---
4	1700	0.9	2.3	8000	5.3	0.3	1.6	---	6.2	-	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	7A9D20013B0023927
Vehicle type	4 AX F/T C/SIDE	Odometer reading	0.0 km
next Service	0 km	Trip reading	0.0 km
Tested by	Ron Pratt	Signature 	
Date	2011-01-21 10:28:26 AM		

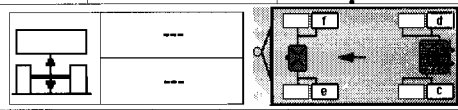
# WABCO

## TRAILER EBS-E

GGVS/ADR TUEH TB 2007 - 019.00  
TDB 0749

HERSTELLER MANUFACTURER CONSTRUCTEUR		<b>DOMETT</b>	
TYP TYPE TYPE		<b>4 AX F/T C/SIDE</b>	
FAHRZEUG IDENT.NR. CHASSIS NUMBER NUMERO DE CHASSIS		<b>7A9D20013B0023927</b>	
BREMSBERECHNUNGS-NR. BRAKE CALCULATION NO. CALCUL DE FREINAGE NO.		<b>TP50454</b>	
POLRADZÄHNEZAHL c-d   e-f POLE WHEEL TEETH c-d   e-f DENTS ROUE DENTÉE c-d   e-f	<b>90</b>	<b>90</b>	ABS-System ABS-System Système ABS
RSS RSS RSS	Einfachbereifung Single Tire Monte simple		Leniachse Steering axle Essieu Vireur
	<b>X</b>	Zwillingsbereifung Twin Tire Monte jumelée	
Subsystems		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	TYP TYPE	(mm)	(mm)	(bar)		
	H (kg)	(kg)	(kg)	(kg)	(kg)	(kg)	(kg)	1.0	Pz						
1	1500	0.7	2.1	8000	5.3	0.3	1.6	---	6.4	-	14	64	69	---	---
2	1500	0.7	2.1	8000	5.3	0.3	1.6	---	6.4	-	14	64	69	---	---
3	1700	0.9	2.3	8000	5.3	0.3	1.6	---	6.2	-	14 / 16	64	69	---	---
4	1700	0.9	2.3	8000	5.3	0.3	1.6	---	6.2	-	14 / 16	64	69	---	---
5	0	---	---	0	---	---	---	---	---	-	---	---	---	---	---



## **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.*

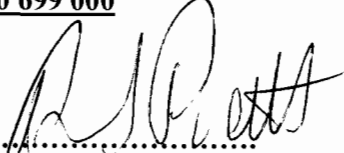
#### **10.5 Responsibilities of manufactures and retailers**

*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)**



P.O.Box 98-971

South Auckland Mail Centre

Ronald Stuart Pratt (TRSP)

DATE 21-Jan-11 TYPE APPROVED SAF4AEB5-E

CERTIFICATE No RP110109 PREV EXEMPTION NO HVB10/387

VIN No 7A9D20013B0023927

BRAKE CHAMBERS FRONT 14TSE64mm

BRAKE CHAMBERS REAR 14/16TSE 64mm 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 NZ LINING MATERIAL FRONT Jurid 539

HVBR 32015/2 SCHEDULE 5 LINING MATERIAL REAR Jurid 539

distribution: DOMETT  
 7A9D2001XA0023927

please note!

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!  
 WABCOBrake V6.10.05.21 db 26.05.2010

vehicle manufacturer: DOMETT  
 trailer model : 4AX F/T C/SIDE  
 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,

		<u>unladen</u>	<u>laden</u>
total mass	P in kg	6400	32000
axle 1	P1 in kg	1500	8000
axle 2	P2 in kg	1500	8000
axle 3	P3 in kg	1700	8000
axle 4	P4 in kg	1700	8000
wheel base	E in mm	7500 - 7500	
centre of gravity height	h in mm	1090	2000

	<u>axle 1</u>	<u>axle 2</u>	<u>axle 3</u>	<u>axle 4</u>
no. of combined axles	1	1	1	1
no. of brake chambers per axle line K D Z	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	1Bh in mm	69	69	69
brake factor	[-]	23.03	23.03	23.03
dyn. rolling radius	rdyn min in mm	421	421	421
dyn. rolling radius	rdyn max in mm	421	421	421
threshold torque	Co Nm	6.0	6.0	6.0

calculation:

chamber pressure(rdyn min)pH at z=22,5%bar	2.6	2.6	2.5	2.5
chamber pressure(rdyn max)pH at z=22,5%bar	2.6	2.6	2.5	2.5
chamber press.(servo)pcha at pm6,5bar bar	6.4	6.4	6.2	6.2
piston force ThA at pm6,5bar N	6189	6189	5988	5988
brake force(rdyn min)T lad. at pm6,5bar N	46902	46902	45387	45387
brake force(rdyn max)T lad. at pm6,5bar N	46902	46902	45387	45387
brake force within 1 % rolling friction proportion %	25.0	25.0	25.0	25.0

braking rate z laden 0.588 for rdyn min  
 z = sum (TR)/PRmax 0.588 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

brake cylinder: Meritor    14HSCLD64

axle 2:

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

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

brake cylinder: Meritor    14HSCLD64

axle 3:

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

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

brake cylinder: Meritor    1416HTLD64



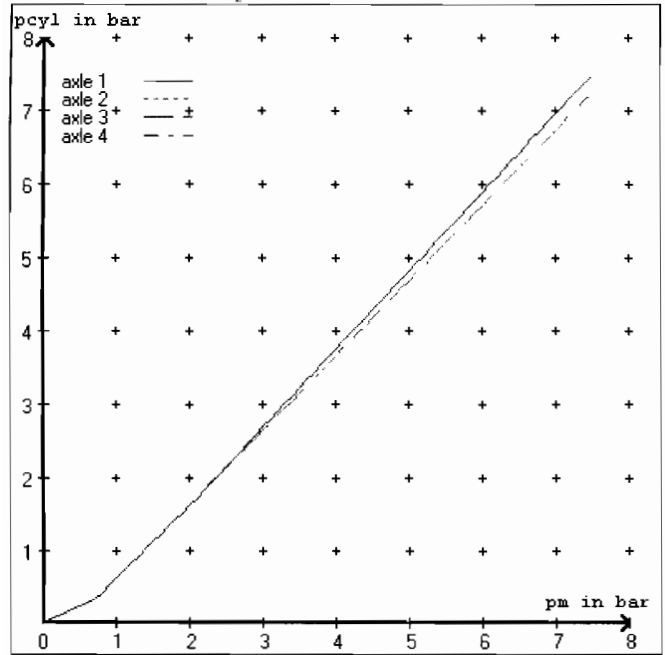
: 971 002 ... 0                   WABCO  
 EBS emergency valve

: 480 102 0.. 0                   WABCO  
 EBS trailer modulator

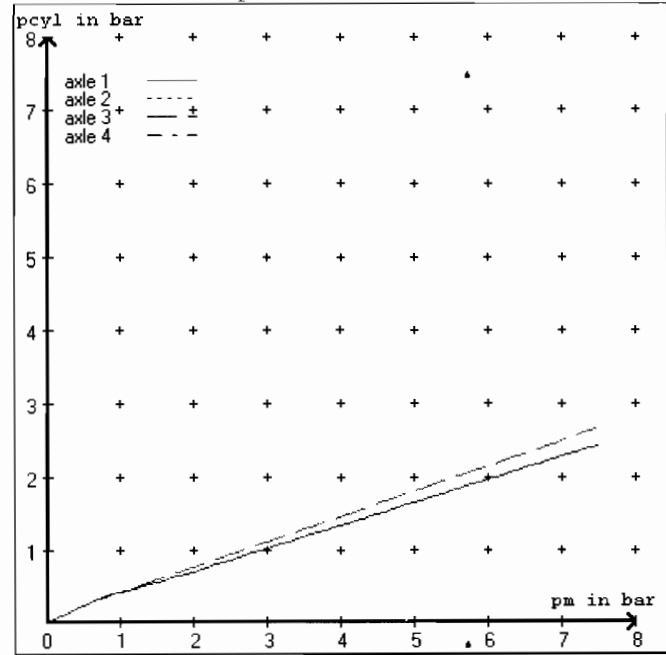
Cylinder: Meritor   1416HTLD64

e III	(zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	
6 bar	=>	pcha in bar :	3.4	3.4	3.3	3.3	
e III	(zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	axle4	
2 bar	=>	pcha in bar :	0.8	0.8	0.8	0.8	.

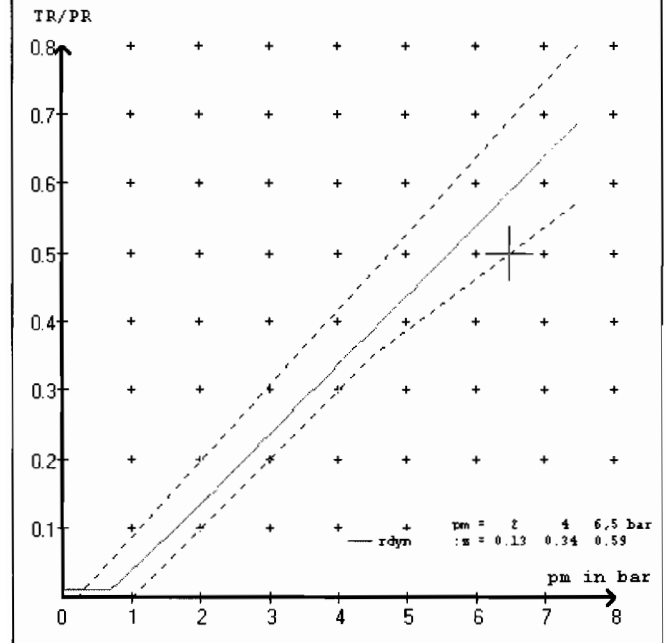
brake chamber pressure laden



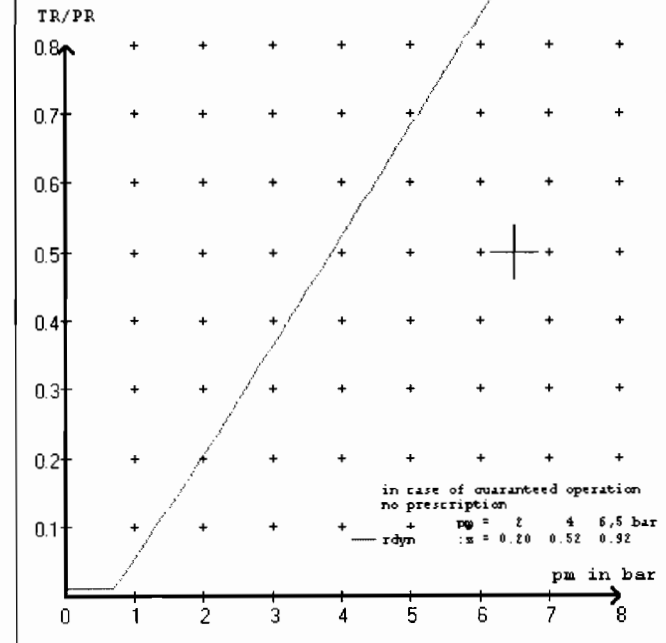
brake chamber pressure unladen



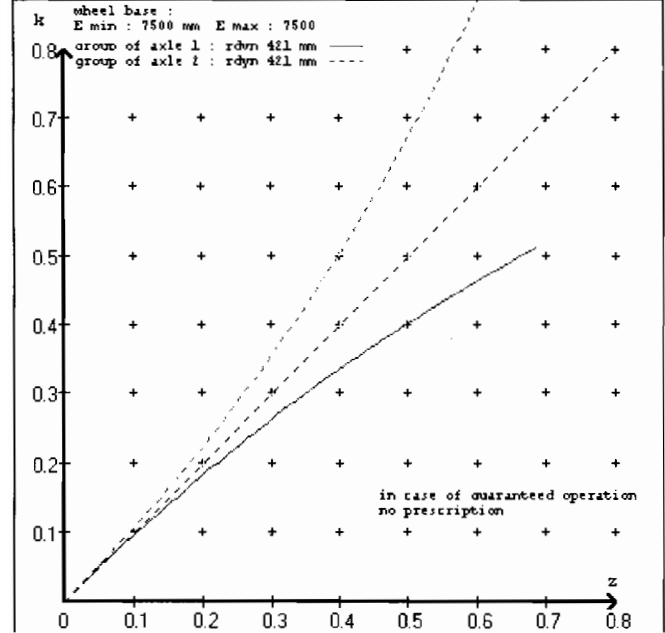
compatibility band laden



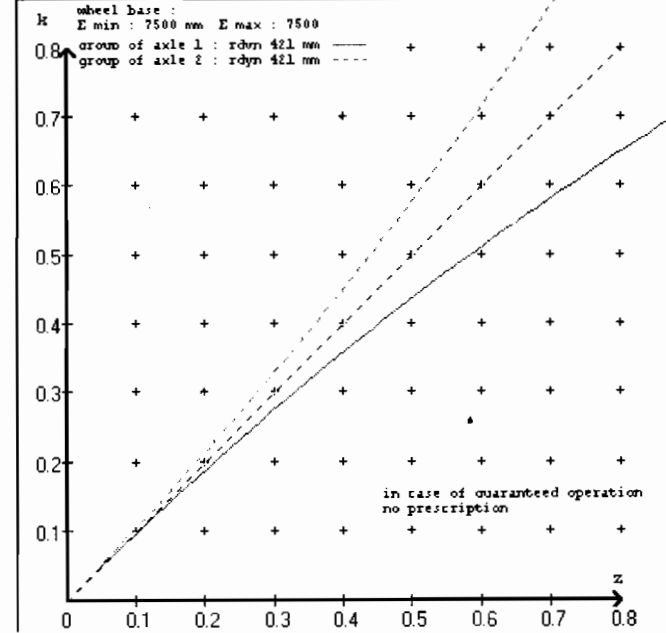
compatibility band unladen



curves of friction laden



curves of friction unladen



vehicle manufacturer: DOMETT  
 trailer model : 4AX F/T C/SIDE  
 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 F/T C/SIDE  
 trailer type : 4-axle-full-trailer  
 brake calculation no. : TP 50454A

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

axle	axle load unladen	control pressure pm 6,5		control pressure pm 0.7 2.0 6.5		
		bellow pr. unladen	brake pr. unladen	axle load laden	bellow pr. laden	brake pr. laden
1	1500	to be	2.1	8000	to be	0.3 1.6 6.4
2	1500	entered by	2.1	8000	entered by	0.3 1.6 6.4
3	1700	the vehicle	2.3	8000	the vehicle	0.3 1.6 6.2
4	1700	manufact.	2.3	8000	manufact.	0.3 1.6 6.2
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
1500	2.1	1500	2.1	1700	2.3	1700	2.3
2000	2.4	2000	2.4	2200	2.6	2200	2.6
2500	2.8	2500	2.8	2700	2.9	2700	2.9
3000	3.1	3000	3.1	3200	3.2	3200	3.2
3500	3.4	3500	3.4	3700	3.5	3700	3.5
4000	3.8	4000	3.8	4200	3.8	4200	3.8
4500	4.1	4500	4.1	4700	4.2	4700	4.2
5000	4.4	5000	4.4	5200	4.5	5200	4.5
8000	6.4	8000	6.4	8000	6.2	8000	6.2



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.14/16	T.14/16
lever length                      lBh in mm	69	69
rstat. 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
$Fb = lBh * \eta * C * rBt / (rBn * rstat)$ for rstat in mm	401	401
brake force of spring br. Tf in N	48188	48188
$Ff = (TFZ * KDZ - 2 * Co / lBh) * iFb$		
braking rate                      zf laden	0.317	
$zf = \sum (Tf) / P + 0,01$		

Test of the frictional connection required by the parking brake

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

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

$\min Ef = 5303 \text{ mm}$	for E = 7500 mm
=====	
$\min Ef = 5303 \text{ mm}$	for E = 7500 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 = 2000 mm height of center of gravity - laden
- PR = 16000 kg maximum bogie mass - laden
- P = 32000 kg maximum total mass - laden
- nf = 2 no. of axle(s) with TRISTOP spring brake actuators
- ng = 2 no. of bogie axle(s)



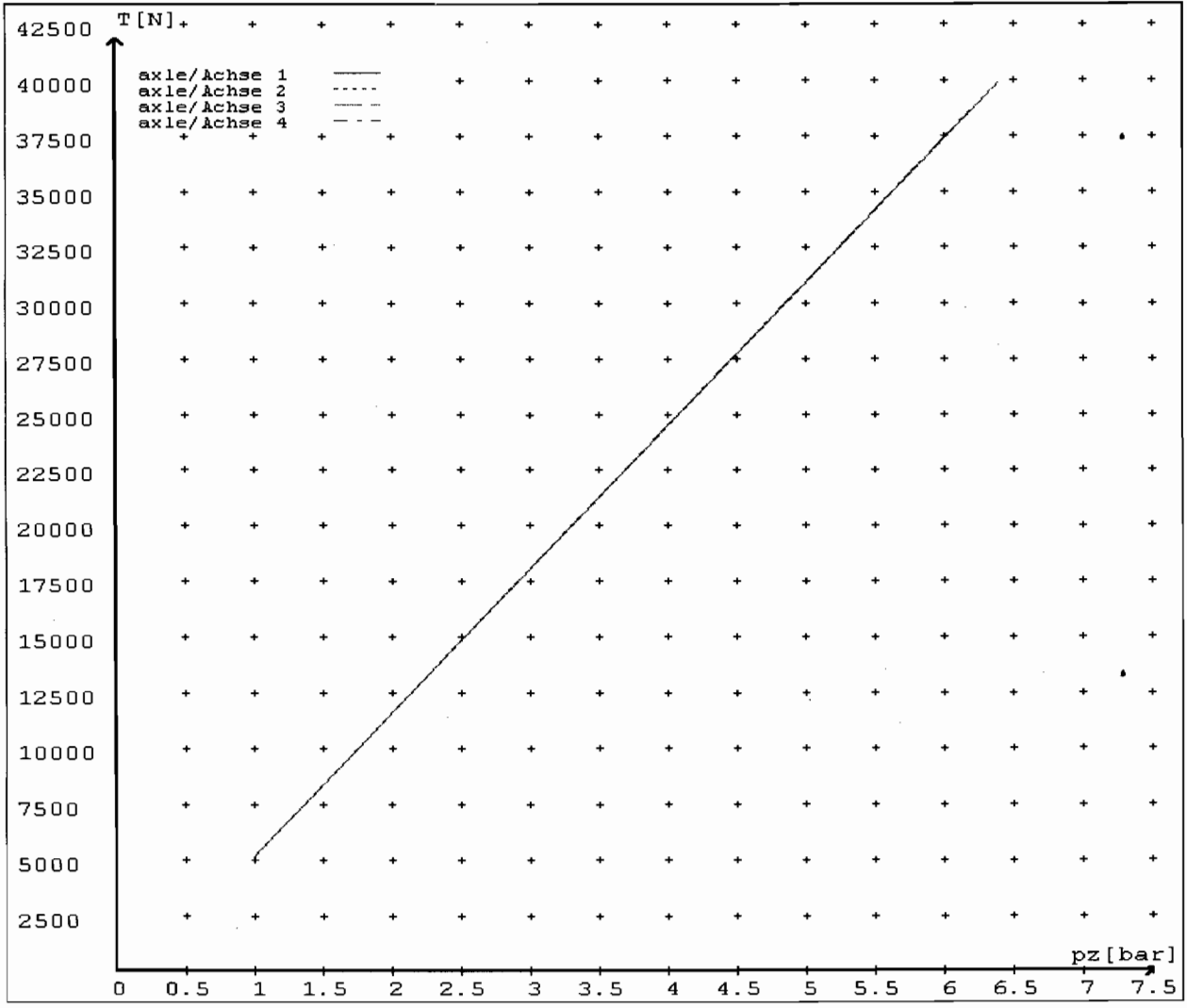
**reference values**

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

	pz [bar]	T [N]	T [N]
axle 1	1.0	5109	
	6.4	39883	
axle 2	1.0	5109	
	6.4	39883	
axle 3	1.0		5109
	6.2		38595
axle 4	1.0		5109
	6.2		38595

VIN - no.:

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



reference values for z = 0.5

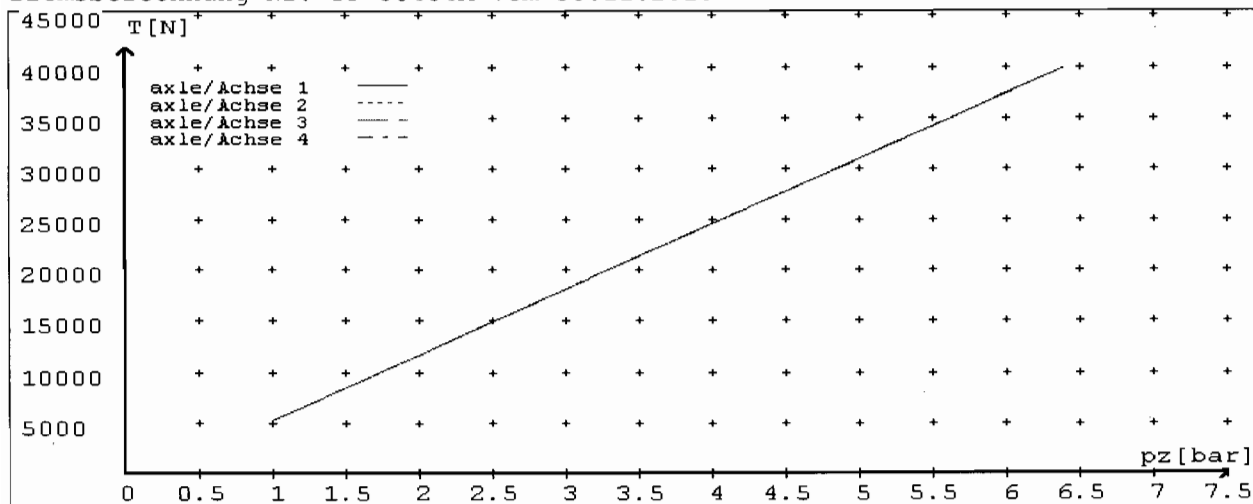
for max rdyn: 421 mm

Angabe der Referenzwerte für z = 0.5

für max rdyn: 421 mm

brake calculation no: TP 50454A date 30.11.2010

Bremsberechnung Nr: TP 50454A vom 30.11.2010



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