3420.

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

7 A 9D 1 0 0 1 X A 0 0 2 3 9 1 2

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 - JH100911

PREV EXEMPTION REFERENCE - HVB10/306

*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

17-Sep-10

Number

357703

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

Document: B1083609
Exemption: HVB10/306

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: **7A9D1001XA0023912**

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) <u>NZTA Helpdesk 0800 699 000</u>

....
(J.Hirst (JEH) HVEK)

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
                7A9D1001XA0023912

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:

		axle 1	axle 2	axle 3	axle 4
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
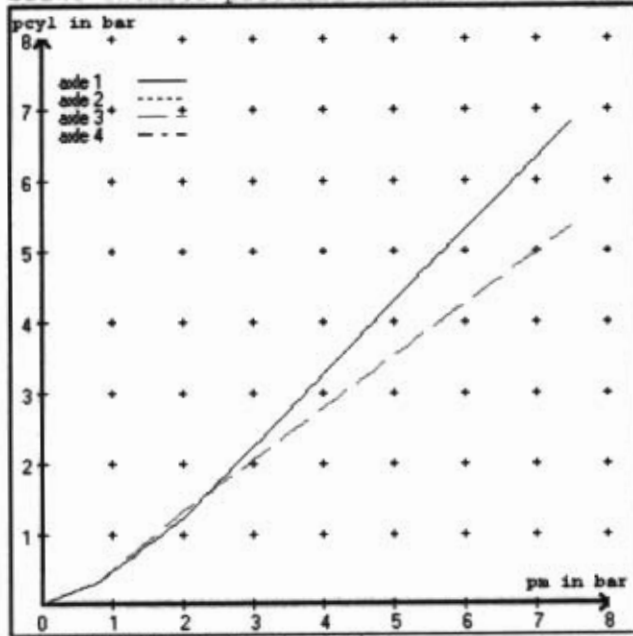
brake chamber pressure   unladen
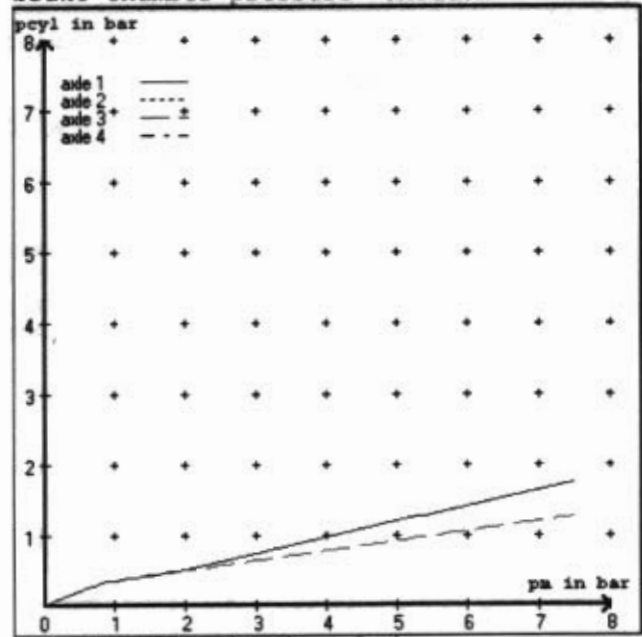
compatibility band   laden

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
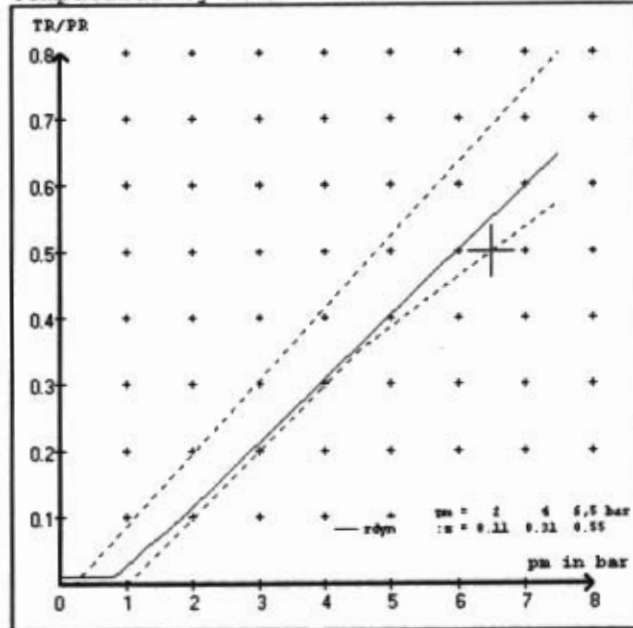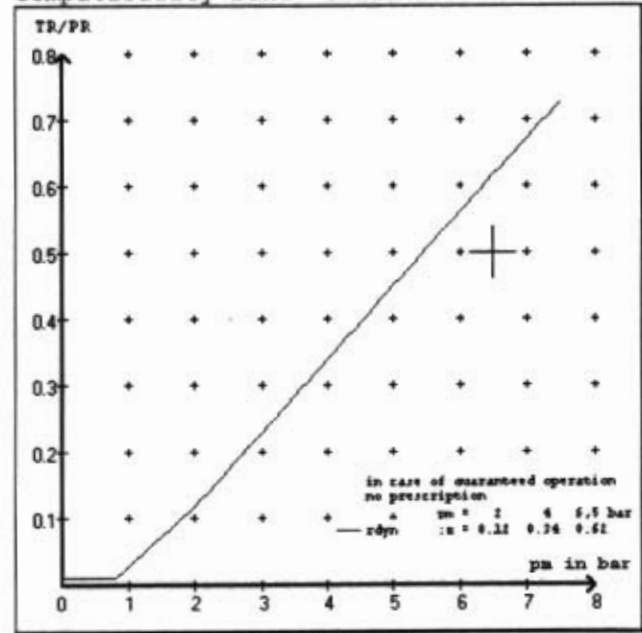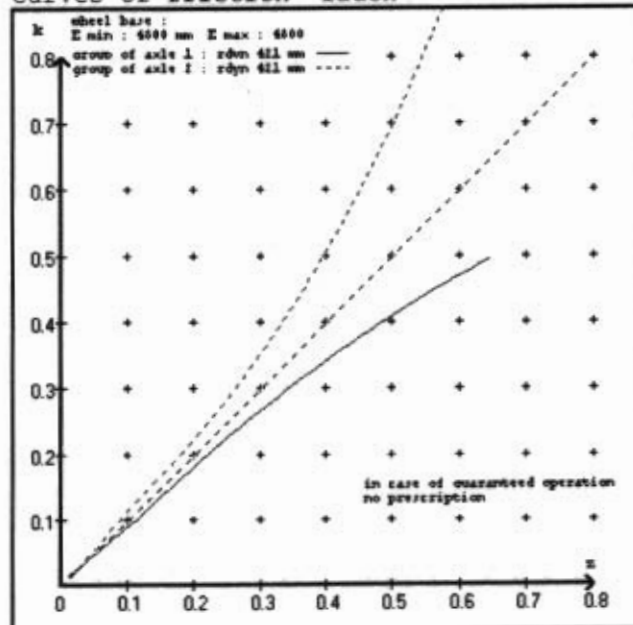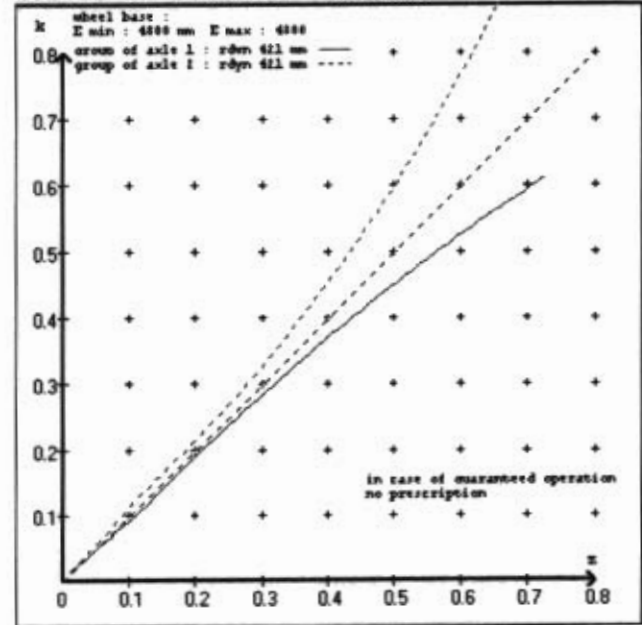480 102 0.. 0   WABCO EBS trailer modulator

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

axle	axle load unladen	bellow pr. unladen	brake pr. unladen	axle load laden	bellow pr. laden	brake pr. laden 0.8	2.0	6.5
		control pressure pm 6,5			control pressure pm	0.8	2.0	6.5
1	1360	to be	1.5	7000	to be	0.4	1.2	5.8
2	1360	entered by	1.5	7000	entered by	0.4	1.2	5.8
3	1160	the vehicle	1.2	7000	the vehicle	0.4	1.3	4.6
4	1160	manufact.	1.2	7000	manufact.	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 fállen 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:

		axle 3	axle 4
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.: