



Heavy Vehicle Specialist Certificate

Heavy Vehicle Specialist Inspector and Inspecting Organisation

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

ID

CHRIS CLARKE

CC

Vehicle Registration*

VIN / Chassis Number

7A9C20020B1023009

Component being certified:

Chassis Modification

Load Anchorage

Log Bolsters

Certification Category

Towing Connection

Brakes

SRT

HUEK

Description of Work

CARRY OUT COMPLIANCE TO SCHEDULE 5.

Code/Standard Certified to

Component Load Rating(s)

HUBNZ32015/2 SCHED 5

General Drawing Number(s)

N/A

N/A

Supporting Documents

BRAKE DESIGN CERTIFICATE - JH11008.

PREV EXEMPTION REFERENCE HUB1/239

*Special Conditions

WARNING LAMP MUST ILLUMINATE WHEN IGNITION SWITCHED ON + THE EXTINGUISH IMMEDIATELY OR WHEN VEHICLE 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

Number

09.11.2011

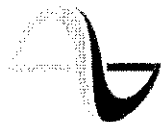
388733

COF Vehicle Inspector ID:

COF Vehicle Inspector Signature:

Date

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



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Document: A1223148
Exemption: HVB11/239

**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 Jackie Hartley, Administrator (Assessments) 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, 3 Axle Semi-Trailer (B-Rear)**
VIN/CHASSIS: **7A9C20020B1023009**

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 16th day of September 2011.

Jackie Hartley
Administrator (Assessments)

WABCO START-UP PROTOCOL

System	Trailer EBS-E	WABCO part number	480 102 080 0
Production date	2011-04-08	Serial number	897000051900J
Fingerprint Customer EOL / Customer Development / Flash Program	W 039897 / 2011-11-09 ; 00000000 / 0000-00-00 ; 00000000 / 0000-00-00		

WABCO TRAILER EBS-E

GGVS/ADR TUeH TB 2007 - 019.00
361-041-08 ECE

HERSTELLER MANUFACTURER CONSTRUCTEUR	DOMETT			GIO	Pin1	Pin3	Pin4
TYP TYPE TYPE	3A B REAR			1	---	---	---
FAHRZEUG IDENTNR. CHASSIS NUMBER NUMERO DE CHASSIS	7A9C20020B1023009			2	---	---	---
BREMSSBERECHNUNGS-NR. BRAKE CALCULATION NO. CALCUL DE FREINAGE NO.	TP50548			3	---	---	---
POLRADZAHNEZAHN c-d e- POLE WHEEL TEETH c-d e- DENTS ROUE DENTEE c-d e-	80	80	ABS-System ABS-System Système ABS	4	---	---	---
RSS RSS RSS	Einlachsberufung Simple Tire Monte simple		Lankachse Steering axle Essieu avant	5	DIAG	DIAG	DIAG
	X		Kippstichtisches Fahrzeug Critical Trailer Vehicule critique	6	---	---	---
Subsystems	---	I/O		7	---	---	---

ACHSE AXLE ESSIEU	6.5			0.6			2.0			pZ	TYP TYPE	(mm)	(mm)	(bar)	
	pm (bar)	0.4	2.3	pm (bar)	0.6	2.0	---	6.5	1.0					Pz	
1	1400	0.4	2.3	7000	4.1	0.5	1.8	---	6.1	-	14 / 24	57	80	321	3088
2	1400	0.4	2.3	7000	4.1	0.5	1.8	---	6.1	-	14 / 24	57	80	321	3088
3	1400	0.4	2.3	7000	4.1	0.5	1.8	---	6.1	-	14	60	80	321	3088
4	0	---	---	0	---	---	---	---	---	-	---	---	---	---	---
5	0	---	---	0	---	---	---	---	---	-	---	---	---	---	---

Diagnostic memory	OK	Warning lamp control	OK
Parameter setting	carried out	Stop light power supply	Not tested
EBS pressure test	Not tested	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	Vehicle ident. no	7A9C20020B1023009
Vehicle type	3A B REAR	Odometer reading	0.0 km
next Service	0 km	Trip reading	0.0 km
Tested by	Chris Clarke	Signature	
Date	2011-11-09 8:28:29 a.m.		

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
7A9C20020B1023009
JH111008

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 : 3A B REAR
trailer type : 3-axle-semi-trailer
remarks : air / hydraulic / VA suspension
WABCO TRAILER - EBS
TRISTOP 1+2: 14/24
265/70 R 19,5

axle 1 + 2 + 3 : BPW, TSB 3709, 361-041-08 ECE,

		<u>unladen</u>		<u>laden</u>	
total mass	P in kg	6000	-	6500	26000 - 26000
king-pin	PS kg	1800	-	2300	5000 - 5000
axle 1	P1 in kg			1400	7000
axle 2	P2 in kg			1400	7000
axle 3	P3 in kg			1400	7000
total axle mass	PR in kg			4200	21000
wheel base	E in mm	5680	-	5690	
centre of gravity height	h in mm			1160	2100
K-factor		Kv min	1.8062		Kc min 0.9927
K-factor		Kv max	1.8079		Kc max 0.9933

		<u>axle 1</u>	<u>axle 2</u>	<u>axle 3</u>
no. of combined axles		1	1	1
no. of brake chambers per axle line	KDZ	2	2	2
The power output corresponds to		BZ 107.0	BZ 107.0	BZ 106.0
brake chamber manufacturer		BPW	BPW	BPW
chamber size		14/24	14/24	14
lever length	lBh in mm	80	80	80
brake factor	[-]	20.50	20.50	20.50
dyn. rolling radius	rdyn min in mm	421	421	421
dyn. rolling radius	rdyn max in mm	421	421	421
threshold torque	Co Nm	12.0	12.0	12.0

calculation:

chamber pressure(rdyn min)pH at z=22,5%bar		2.7	2.7	2.7
chamber pressure(rdyn max)pH at z=22,5%bar		2.7	2.7	2.7
chamber press.(servo)pcha at pm6,5bar bar		6.1	6.1	6.1
piston force ThA at pm6,5bar N		4987	4987	4987
brake force(rdyn min)T lad. at pm6,5bar N		38368	38368	38368
brake force(rdyn max)T lad. at pm6,5bar N		38368	38368	38368
brake force within 1 % rolling friction proportion	%	33.3	33.3	33.3

braking rate z laden 0.559 for rdyn min
z = sum (TR)/PRmax 0.559 for rdyn max

Trailer may only be operated in combination with trucks/tractors with ISO 7638 supply (5 or 7 polar).

brake diagram : 841 701 101 0

maximum pressure: 8.5 bar

axle 1:

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

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

brake cylinder: BPW 05.444.38.....

axle 2:

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

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

brake cylinder: BPW 05.444.38.....

axle 3:

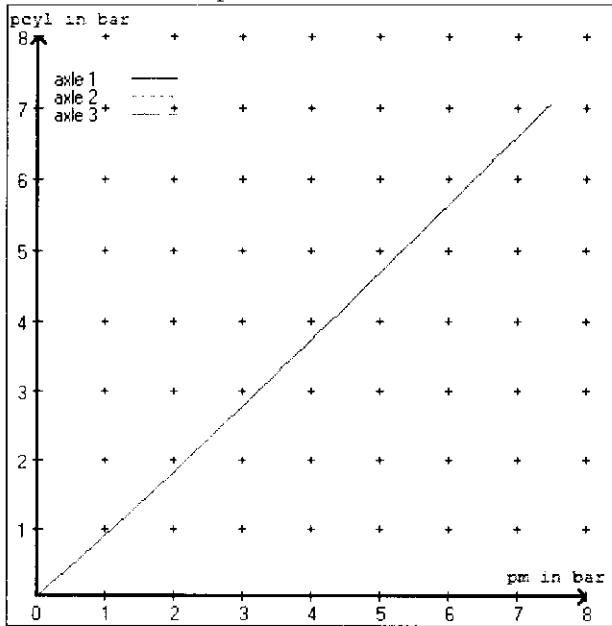
valve 1: 971 002 ... 0 WABCO
EBS emergency valve

valve 2: 480 102 ... 0 () WABCO or 480 207 0.. 0
EBS trailer modulator

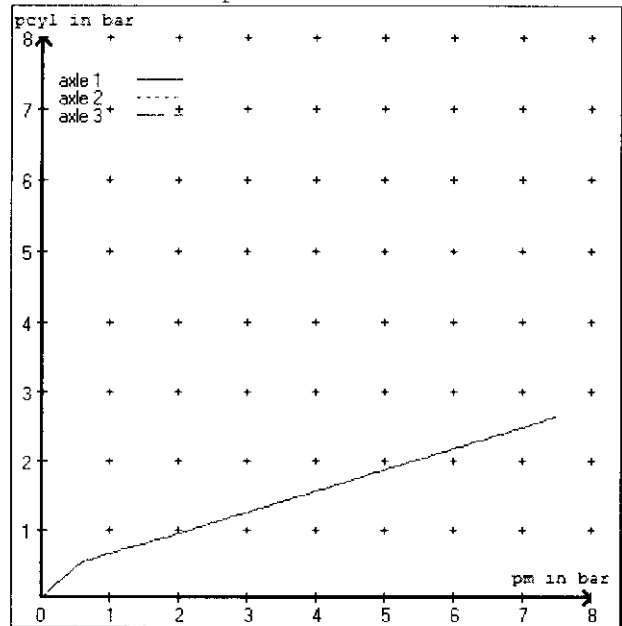
brake cylinder: BPW 05.444.30.....

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3
at pm 3.7 bar =>	pcha in bar :	3.5	3.5	3.5
test type III (zIII = 0.06)	for rdyn min :	axle1	axle2	axle3
at pm 1.2 bar =>	pcha in bar :	1.0	1.0	1.0

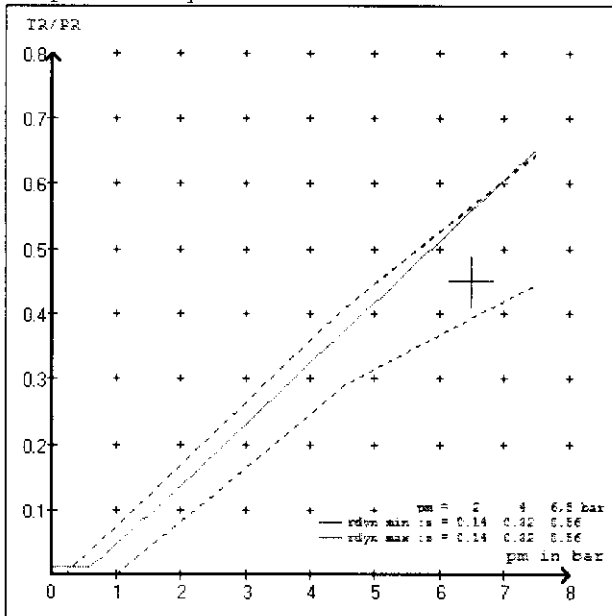
brake chamber pressure laden



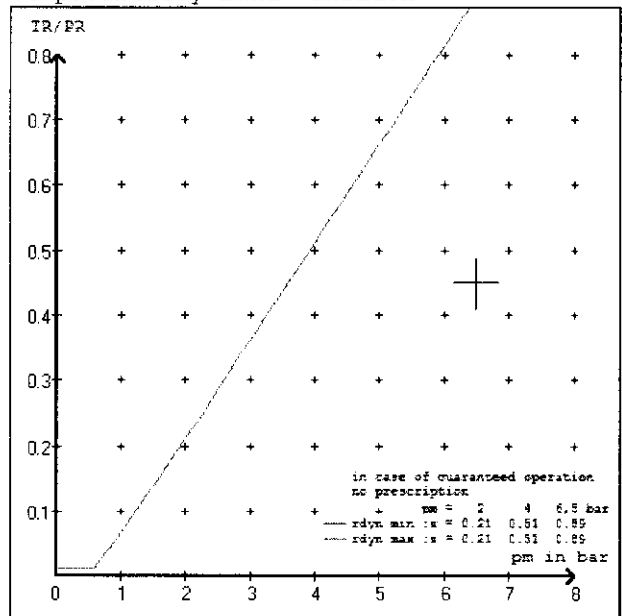
brake chamber pressure unladen



compatibility band laden



compatibility band unladen



vehicle manufacturer: DOMETT
 trailer model : 3A B REAR
 trailer type : 3-axle-semi-trailer

brake chamber and lever length :

axle 1 : 2 x type/diameter 14/24 (BPW) lever length 80 mm
 axle 2 : 2 x type/diameter 14/24 (BPW) lever length 80 mm
 axle 3 : 2 x type/diameter 14 (BPW) lever length 80 mm

brake diagram : 841 701 101 0

valve :

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

EBS input data

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vehicle manufacturer: DOMETT
 trailer model : 3A B REAR
 trailer type : 3-axle-semi-trailer
 brake calculation no. : TP 50548S

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 = 0.000
 (laden condition) 2.0 bar z = 0.134
 6.5 bar z = 0.560

control pressure pm		6,5	control pressure pm		0.6	2.0	6.5		
axle	axle load unladen	bellow pr. unladen	brake pr. unladen	axle load laden	bellow pr. laden	brake pr. laden			
1	1400	to be	2.3	7000	to be	0.5	1.8	6.1	
2	1400	entered by the vehicle manufact.	2.3	7000	entered by the vehicle manufact.	0.5	1.8	6.1	
3	1400		2.3	7000		0.5	1.8	6.1	
4	0		0,0	0		0,0	0,0	0,0	0,0
5	0		0,0	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.

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axle 1	axle 2	axle 3
axle load pcy1	axle load pcy1	axle load pcy1
1400	2.3	1400
1900	2.6	1900
2400	3.0	2400
2900	3.3	2900
3400	3.7	3400
3900	4.0	3900
4400	4.3	4400
4900	4.7	4900
7000	6.1	7000

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: BPW	D 115-2	brake lining: BPW 8200
	test report :	361-041-08	EC date : 28.04.2009
axle 2	: reference axle: BPW	D 115-2	brake lining: BPW 8200
	test report :	361-041-08	EC date : 28.04.2009
axle 3	: reference axle: BPW	D 115-2	brake lining: BPW 8200
	test report :	361-041-08	EC date : 28.04.2009

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

axle 1	(rdyn 421 mm)	T = 18.3 % Fe
axle 2	(rdyn 421 mm)	T = 18.3 % Fe
axle 3	(rdyn 421 mm)	T = 18.3 % Fe

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

axle 1	(sp = 51 mm)	s = 47 mm
axle 2	(sp = 51 mm)	s = 47 mm
axle 3	(sp = 55 mm)	s = 47 mm

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

axle1	ThA = 4987 N
axle2	ThA = 4987 N
axle3	ThA = 4987 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 = 36126 N
axle 2	(rdyn 421 mm)	T = 36126 N
axle 3	(rdyn 421 mm)	T = 36126 N

basic test	type III
of subject	(calculated)
trailer (z)	residual

braking rate of the vehicle (item 4.3.2 to appendix I to annex VII)	0.56	(hot)braking 0.53
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required braking rate (items 1.3.3 and 1.6.2 to annex II)	>= 0,4 and >= 0,6*z (0.34)
--	-------------------------------

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

axle 1	(rdyn 421 mm)	T = 36126 N
axle 2	(rdyn 421 mm)	T = 36126 N
axle 3	(rdyn 421 mm)	T = 36126 N

basic test	type III
of subject	(calculated)
trailer (z)	residual

braking rate of the vehicle (item 4.3.2 to appendix I to annex VII)	0.56	(hot)braking 0.53
--	------	----------------------

required braking rate (items 1.3.3 and 1.6.2 to annex II)	>= 0,4 and >= 0,6*z (0.34)
--	-------------------------------

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: BPW	D 115-2	brake lining: BPW 8101
	test report :	361-041-08	EC date : 16.03.2009
axle 2	: reference axle: BPW	D 115-2	brake lining: BPW 8101
	test report :	361-041-08	EC date : 16.03.2009
axle 3	: reference axle: BPW	D 115-2	brake lining: BPW 8101
	test report :	361-041-08	EC date : 16.03.2009

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

axle 1	(rdyn 421 mm)	T = 18.3 % Fe
axle 2	(rdyn 421 mm)	T = 18.3 % Fe
axle 3	(rdyn 421 mm)	T = 18.3 % Fe

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

axle 1	(sp = 51 mm)	s = 48 mm
axle 2	(sp = 51 mm)	s = 48 mm
axle 3	(sp = 55 mm)	s = 48 mm

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

axle1	ThA = 4987 N
axle2	ThA = 4987 N
axle3	ThA = 4987 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 = 34780 N
axle 2	(rdyn 421 mm)	T = 34780 N
axle 3	(rdyn 421 mm)	T = 34780 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)	0.56	0.51

required braking rate $\geq 0,4$ and $\geq 0,6 \cdot z$ (0.34)
(items 1.3.3 and 1.6.2 to annex II)

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

axle 1	(rdyn 421 mm)	T = 34780 N
axle 2	(rdyn 421 mm)	T = 34780 N
axle 3	(rdyn 421 mm)	T = 34780 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)	0.56	0.51

required braking rate $\geq 0,4$ and $\geq 0,6 \cdot z$ (0.34)
(items 1.3.3 and 1.6.2 to annex II)

spring parking brake

	axle 1	axle 2
no of TRISTOP-actuators per axle line KDZ	2	2
TRISTOP-actuator type	14/24	14/24
lever length lBh in mm	80	80
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	5809	5809
sp.brake chamber no BPW	05.444.3805	05.444.3805
release pressure pLs in bar	4.9	4.9

calculation:

ratio until road	4.0898	4.0898
iFb = lBh*Eta*C*rBt/(rBn*rstat)		
for rstat in mm	401	401
brake force of spring br. Tf in N	46288	46288
Tf = (TFZ*KDZ-2*Co/lBh)*iFb		
braking rate zf laden	0.373	
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 = 2219 mm for E = 5680 mm

=====

min Ef = 2222 mm for E = 5690 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 = 2100 mm height of center of gravity - laden
- PR = 21000 kg maximum bogie mass - laden
- P = 26000 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 = 45% for max rdyn: 421 mm

	pz [bar]	T [N]	T [N]
axle 1	1.0		3218
	6.1		30886
axle 2	1.0		3218
	6.1		30886
axle 3	1.0		3218
	6.1		30886

VIN - no.:

	Axle(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	14/24	14/24	14/	/	/
Maximum stroke smax = ...mm maximaler Hub smax = ...mm	57	57	60		
Lever length =mm Hebellänge =mm	80	80	80		

