NZ TRANSPORT AGENCY WAKA KOTAHI

Heavy Vehicle Specialist Certificate

Must be presented to a CoF (Heavy) Inspecting Organisation
Heavy Vehicle Specialist Inspector and Inspecting Organisation

Heavy Vehicle Specialist Inspector's or Manufacturing Inspecting Organisation's Name *(PRINT IN CAPS)*	ID
Chris Clarke	**CJC**

Vehicle Registration*

VIN/Chassis Number
7 A 9 E 2 0 0 1 1 F 1 0 2 3 3 8 1

Component being certified:

☐ Chassis	☐ Load Anchorage	☐ Log Bolsters
☐ Towing Connection	☒ Brakes	☐ SRT
☐ PSV Stability	☐ PSV Rollover	☐ Swept Path
☐ PBS		

Certification Category
HVEK

Description of Work

CERTIFY TO SCHEDULE 5

ROLL STABILTY FUNCTION ACTIVATED

Code/Standard/Rule Certified to	Component Load Rating(s)
HVBR 32015/3 Schedule 5	32000KG

General Drawing Number(s)
N/A

Supporting Documents
BRAKE RULE CERTIFICATE - CJC153206

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

Designer's ID *(if different from inspector below)*

Inspector's Signature

Inspector's Name *(PRINT IN CAPS)*
CHRIS CLARKE

ID Number
C JC

Date
18-May-15

Number
512206
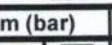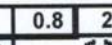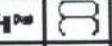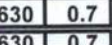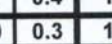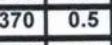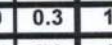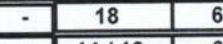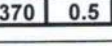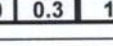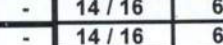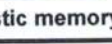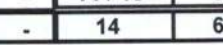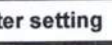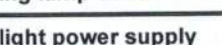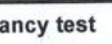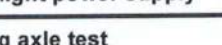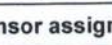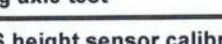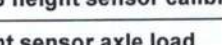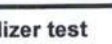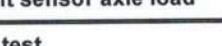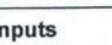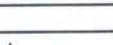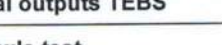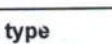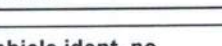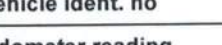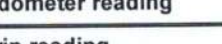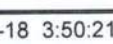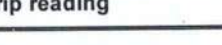
CoF Vehicle Inspector ID	CoF Vehicle Inspector Signature	Date

*All fields excluding those marked with * must be completed before this certificate can be accepted.*
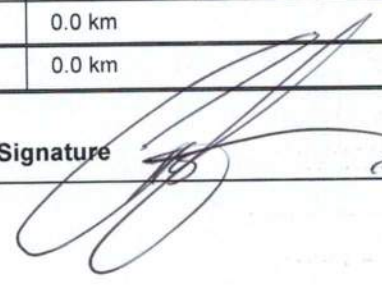
WABCO START-UP PROTOCOL

System	Trailer EBS-E	WABCO part number	480 102 080 0
Production date	2015-01-17	Serial number	437001025700B
Serial number (modulator)	000000035954		
Fingerprint Customer EOL / Customer Development / Flash Program	W503643 / 2015-05-18 ; 00000000 / 0000-00-00 ; 00000000 / 0000-00-00		

WABCO TRAILER EBS-E   GGVS/ADR TUEH TB 2007 - 019.00

HERSTELLER MANUFACTURER CONSTRUCTEUR	DOMETT TRAILERS	GIO	Pin1	Pin3	Pin4
TYP TYPE TYPE	5AFT	1	24V-O1	---	---
FAHRZEUG IDENTNR. CHASSIS NUMBER NUMERO DE CHASSIS	7A9E20011F1023381	2	---	---	---
		3	ALS2	ALS2	---
BREMSBERECHNUNGS-NR. BRAKE CALCULATION NO. CALCUL DE FREINAGE NO.	GenNZ50060A	4	---	---	---
		5	DIAG	DIAG	DIAG
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		6	---	---	---
		7	---	---	---

RSS RSS RSS	Einfachbereifung Single Tire Monte simple		Lenkachse Steering axle Essieu vireur	
	Zwillingsbereifung Twin Tire Monte jumelée	X	Kippkritisches Fahrzeug Critical Trailer Véhicule critique	

Subsystems	---		I/O	24N

															(bar)	
	pm (bar)	6.5		pm (bar)	0.8	2.0	---	6.5							1.0	Pz
ACHSE AXLE ESSIEU								pz	TYP TYPE		(mm)	(mm)			TR (daN)	
1	1630	0.7	1.8	8000	5.1	0.4	1.5	---	6.7	-	18	64	69		496	4528
2	1630	0.7	1.8	8000	5.1	0.4	1.5	---	6.7	-	18	64	69		496	4528
3	1370	0.5	1.4	6400	4.0	0.3	1.4	---	4.8	-	14 / 16	64	69		486	2880
4	1370	0.5	1.4	6400	4.0	0.3	1.4	---	4.8	-	14 / 16	64	69		486	2880
5	1370	0.5	1.4	6400	4.0	0.3	1.4	---	4.8	-	14	64	69		486	2880

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 height sensor calibration	Not tested
ABS sensor assignment	OK	Height sensor axle load	Not tested
RTR check	Not tested	Leak test	Not tested
Immobilizer test	Not tested	Signal outputs TEBS	Not tested
Signal inputs	Not tested	Tag axle test	Not tested

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

Manufacturer	DOMETT TRAILERS	Vehicle ident. no	7A9E20011F1023381
Vehicle type	5AFT	Odometer reading	0.0 km
next Service	0 km	Trip reading	0.0 km
Tester	Chris Clarke	Signature	
Date	2015-05-18 3:50:21 p.m.		

trailer (full, semi-, centre-axle) with air brake system acc. to UN/ECE-R.13.11

distribution: DOMETT TRAILERS
               7A9E20011F1023381
               CJC153206
               LT400 512206

vehicle manufacturer: DOMETT TRAILERS

trailer model   :   5AFT

trailer type   :   5-axle-full-trailer

remarks   :   air / hydraulic / VA suspension
                          WABCO TRAILER - EBS E
                          TRISTOP 3+4: T.14/24
                          265/70 R 19,5

axle 1 + 2 + 3 + 4 + 5 : SAF, SBW 1937, TDB 0749 ECE,

			unladen	laden
total mass	P in kg		7370	35200
axle 1	P1 in kg		1630	8000
axle 2	P2 in kg		1630	8000
axle 3	P3 in kg		1370	6400
axle 4	P4 in kg		1370	6400
axle 5	P5 in kg		1370	6400
wheel base	E in mm	7320 -	7320	
centre of gravity height	h in mm		1090	2062

		axle 1	axle 2	axle 3	axle 4	axle 5
no. of combined axles		1	1	1	1	1
no. of brake chambers per axle line	KDZ	2	2	2	2	2
The power output corresponds to		BZ 122.1	BZ 122.1	BZ 119.6	BZ 119.6	BZ 122.1
brake chamber manufacturer		Meritor	Meritor	Meritor	Meritor	Meritor
chamber size		18.	14.	T.14/24	T.14/24	14.
lever length	lBh in mm	69	69	69	69	69
brake factor	[-]	23.03	23.03	23.03	23.03	23.03
dyn. rolling radius	rdyn min in mm	421	421	421	421	421
dyn. rolling radius	rdyn max in mm	421	421	421	421	421
threshold torque	Co Nm	6.0	6.0	6.0	6.0	6.0

calculation:

		axle 1	axle 2	axle 3	axle 4	axle 5
chamber pressure(rdyn min)pH at z=22,5%bar		2.5	2.5	2.1	2.1	2.1
chamber pressure(rdyn max)pH at z=22,5%bar		2.5	2.5	2.1	2.1	2.1
chamber press.(servo)pcha at pm6,5bar bar		6.7	6.7	4.8	4.8	4.8
piston force ThA at pm6,5bar N		7185	6489	4586	4586	4586
brake force(rdyn min)T lad. at pm6,5bar N		54427	49174	34628	34628	34628
brake force(rdyn max)T lad. at pm6,5bar N		54427	49174	34628	34628	34628
brake force within 1 % rolling friction						
proportion	%	21.7	19.6	19.6	19.6	19.6

braking rate   z laden   0.601   for rdyn min
z = sum (TR)/PRmax   0.601   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   or 480 207 2.. 0
              EBS relay valve

   brake cylinder: Meritor   18HSCLD64

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

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

   brake cylinder: Meritor   14HSCLD64

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

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

   brake cylinder: Meritor   1424HTLD64

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

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

   brake cylinder: Meritor   1424HTLD64

axle 5:
   valve 1: 971 002 ... 0   WABCO
            EBS emergency valve

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

   brake cylinder: Meritor   14HSCLD64

test type III   (zIII = 0.30)   for rdyn min : axle1 axle2 axle3 axle4 axle5
at pm 3.6 bar =>   pcha in bar :   3.3   3.3   2.6   2.6   2.6
test type III   (zIII = 0.06)   for rdyn min : axle1 axle2 axle3 axle4 axle5
at pm 1.3 bar =>   pcha in bar :   0.8   0.8   0.7   0.7   0.7

brake chamber pressure   laden

brake chamber pressure   unladen
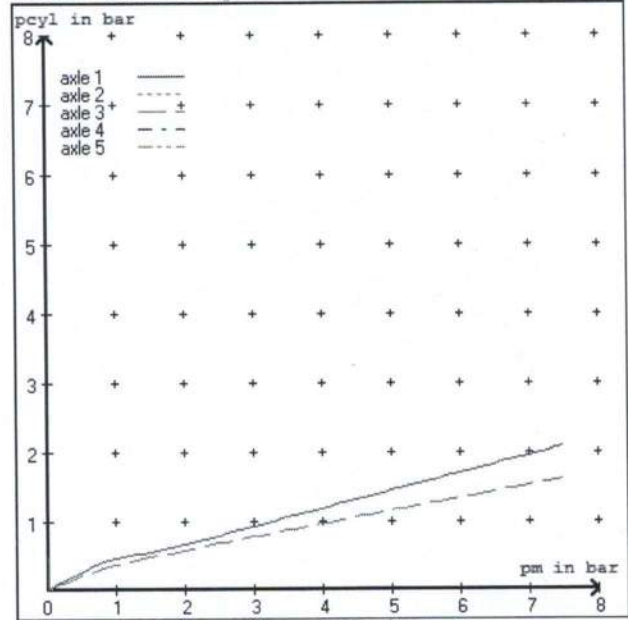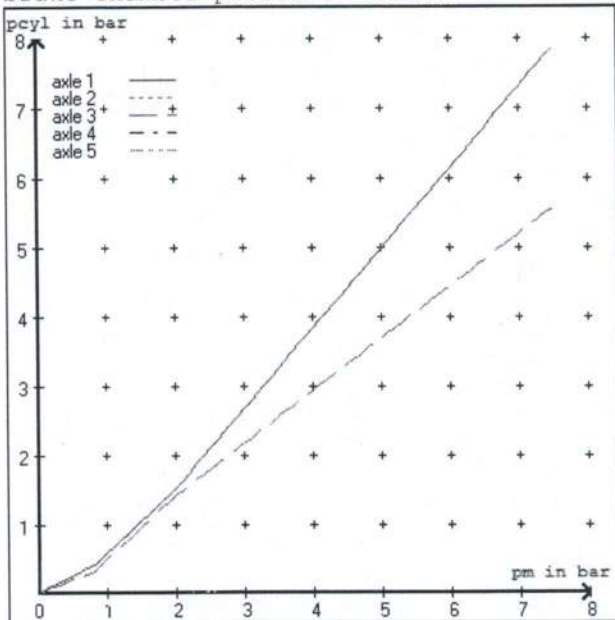
compatibility band   laden

pm =   2   4   6,5 bar
:z = 0.14 0.34 0.60

compatibility band   unladen

in case of guaranteed operation
no prescription
pm =   2   4   6,5 bar
:z = 0.16 0.39 0.67

curves of friction   laden

wheel base :
E min : 7320 mm E max : 7320
group of axle 1 : rdyn 421 mm
group of axle 2 : rdyn 421 mm
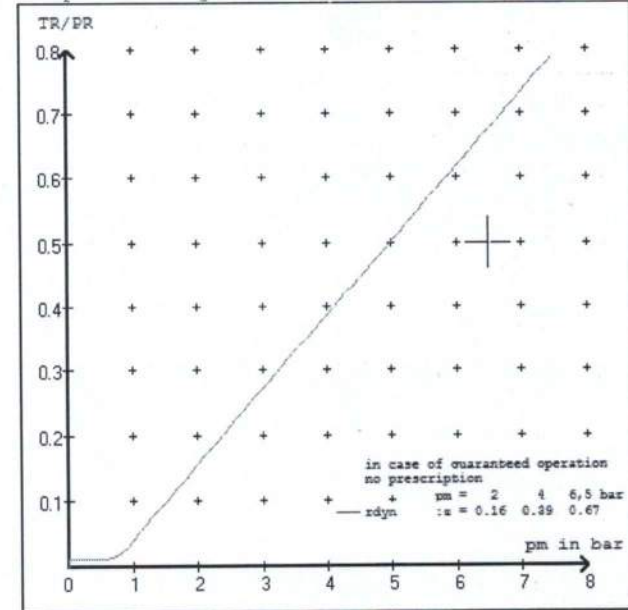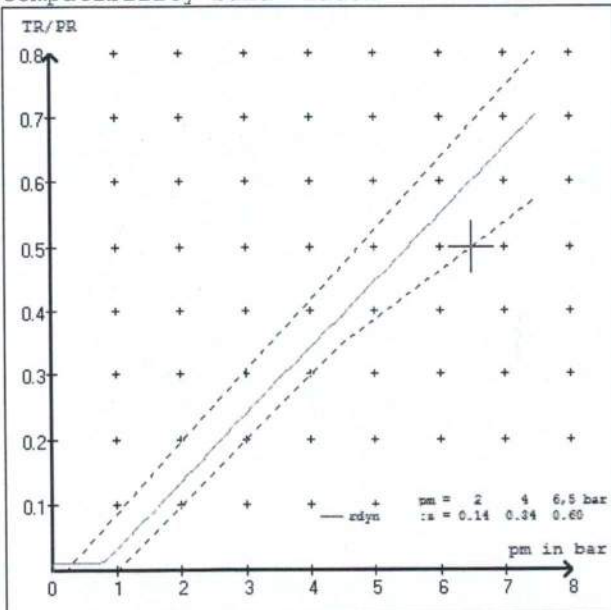
in case of guaranteed operation
no prescription

curves of friction   unladen
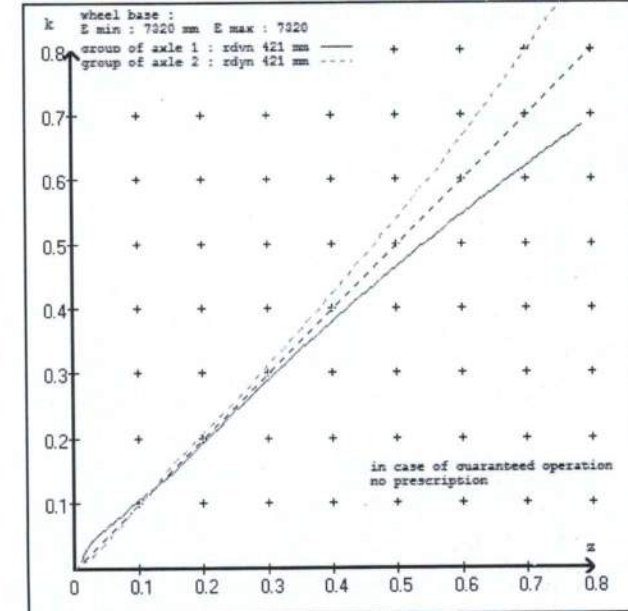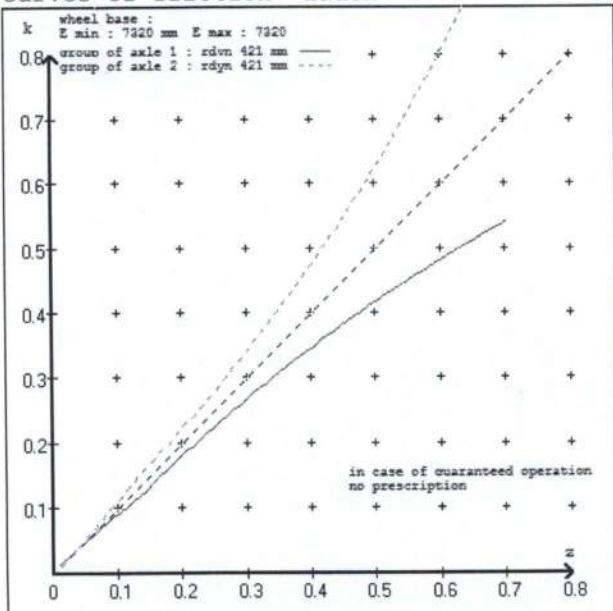
wheel base :
E min : 7320 mm E max : 7320
group of axle 1 : rdyn 421 mm
group of axle 2 : rdyn 421 mm

in case of guaranteed operation
no prescription

vehicle manufacturer: DOMETT TRAILERS
trailer model   :   5AFT
trailer type   :   5-axle-full-trailer

brake chamber and lever length :
axle 1 :   2 x type/diameter   18.   (Meritor)   lever length 69 mm
axle 2 :   2 x type/diameter   14.   (Meritor)   lever length 69 mm
axle 3 :   2 x type/diameter   T.14/24 (Meritor)   lever length 69 mm
axle 4 :   2 x type/diameter   T.14/24 (Meritor)   lever length 69 mm
axle 5 :   2 x type/diameter   14.   (Meritor)   lever length 69 mm

brake diagram :

valve :
971 002 ... 0   WABCO EBS emergency valve
480 207 0.. 0   WABCO EBS relay valve   or 480 207 2.. 0
480 102 ... 0   WABCO EBS trailer modulator

EBS input data
==============
vehicle manufacturer: DOMETT TRAILERS
trailer model   : 5AFT
trailer type   : 5-axle-full-trailer
brake calculation no.   : GenNZ 50060A

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 = 0.010
(laden condition)   2.0 bar z = 0.134
                                   6.5 bar z = 0.600

axle	axle load unladen	bellow pr. unladen	control pressure pm 6,5 brake pr. unladen	axle load laden	bellow pr. laden	control pressure pm 0.8 brake pr. laden	2.0	6.5
1	1630	to be	1.8	8000	to be	0.4	1.5	6.7
2	1630	entered by	1.8	8000	entered by	0.4	1.5	6.7
3	1370	the vehicle	1.4	6400	the vehicle	0.3	1.4	4.8
4	1370	manufact.	1.4	6400	manufact.	0.3	1.4	4.8
5	1370		1.4	6400		0.3	1.4	4.8

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 load	pcyl	axle 2 axle load	pcyl	axle 3 axle load	pcyl	axle 4 axle load	pcyl	axle 5 axle load	pcyl
1630	1.8	1630	1.8	1370	1.4	1370	1.4	1370	1.4
2130	2.2	2130	2.2	1870	1.7	1870	1.7	1870	1.7
2630	2.6	2630	2.6	2370	2.1	2370	2.1	2370	2.1
3130	3.0	3130	3.0	2870	2.4	2870	2.4	2870	2.4
3630	3.3	3630	3.3	3370	2.8	3370	2.8	3370	2.8
4130	3.7	4130	3.7	3870	3.1	3870	3.1	3870	3.1
4630	4.1	4630	4.1	4370	3.4	4370	3.4	4370	3.4
5130	4.5	5130	4.5	4870	3.8	4870	3.8	4870	3.8
8000	6.7	8000	6.7	6400	4.8	6400	4.8	6400	4.8

data sheet to ECE vehicle type-approval certificate concerning braking
equipment: according to ECE R13 annex 11

axle 1 : reference axle: SAF	SBW 1937	brake lining: Jurid 539
test report :	TDB 0749 ECE	date : 20130930 30.09.2013
axle 2 : reference axle: SAF	SBW 1937	brake lining: Jurid 539
test report :	TDB 0749 ECE	date : 20130930 30.09.2013
axle 3 : reference axle: SAF	SBW 1937	brake lining: Jurid 539
test report :	TDB 0749 ECE	date : 20130930 30.09.2013
axle 4 : reference axle: SAF	SBW 1937	brake lining: Jurid 539
test report :	TDB 0749 ECE	date : 20130930 30.09.2013
axle 5 : reference axle: SAF	SBW 1937	brake lining: Jurid 539
test report :	TDB 0749 ECE	date : 20130930 30.09.2013

calc. verif. of residual (hot) braking force type III
(item 4.2.1 of appendix 2 to annex 11)

axle 1	(rdyn 421 mm)	T = 25.9 % Fe
axle 2	(rdyn 421 mm)	T = 23.7 % Fe
axle 3	(rdyn 421 mm)	T = 18.0 % Fe
axle 4	(rdyn 421 mm)	T = 18.0 % Fe
axle 5	(rdyn 421 mm)	T = 18.0 % Fe

calculated actuator stroke in mm
(item 4.3.1.1 of appendix 2 to annex 11)

axle 1	(sp = 58 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
axle 5	(sp = 56 mm)	s = 39 mm

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

axle1	ThA = 7185 N
axle2	ThA = 6489 N
axle3	ThA = 4586 N
axle4	ThA = 4586 N
axle5	ThA = 4586 N

calc. residual (hot) braking force in N
(item 4.3.1.4 of appendix 2 to annex 11)

axle 1	(rdyn 421 mm)	T = 42502 N
axle 2	(rdyn 421 mm)	T = 38426 N
axle 3	(rdyn 421 mm)	T = 27103 N
axle 4	(rdyn 421 mm)	T = 27103 N
axle 5	(rdyn 421 mm)	T = 27103 N

	basic test of subject trailer (E)	type III (calculated) residual (hot)braking
braking rate of the vehicle (item 4.3.2 to appendix 2 to annex 11)	0.60	0.47
required braking rate (items 1.5.3 and 1.7.2 to annex 11)		>= 0,4 and >= 0,6*E (0.36)

axle 1	(rdyn 421 mm)	T = 42502 N
axle 2	(rdyn 421 mm)	T = 38426 N
axle 3	(rdyn 421 mm)	T = 27103 N
axle 4	(rdyn 421 mm)	T = 27103 N
axle 5	(rdyn 421 mm)	T = 27103 N

	basic test of subject trailer (E)	type III (calculated) residual (hot)braking
braking rate of the vehicle (item 4.3.2 to appendix 2 to annex 11)	0.60	0.47
required braking rate (items 1.5.3 and 1.7.2 to annex 11)		>= 0,4 and >= 0,6*E (0.36)

spring parking brake

		axle 3	axle 4
no of TRISTOP-actuators per axle line KDZ		2	2
TRISTOP-actuator type		T.14/24	T.14/24
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	7605	7605
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		59654	59654
$Tf = (TFZ*KDZ-2*Co/lBh)*iFb$			
braking rate	zf laden	0.356	
$zf = sum (Tf)/P + 0,01$			

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 =   5583 mm   for E =   7320 mm
====================
min Ef =   5583 mm   for E =   7320 mm
==================

min Ef =   minimum distance between front axle(s) (trailer) or support (semitrailer)
and the rear axle(s) (resultant of the bogie)
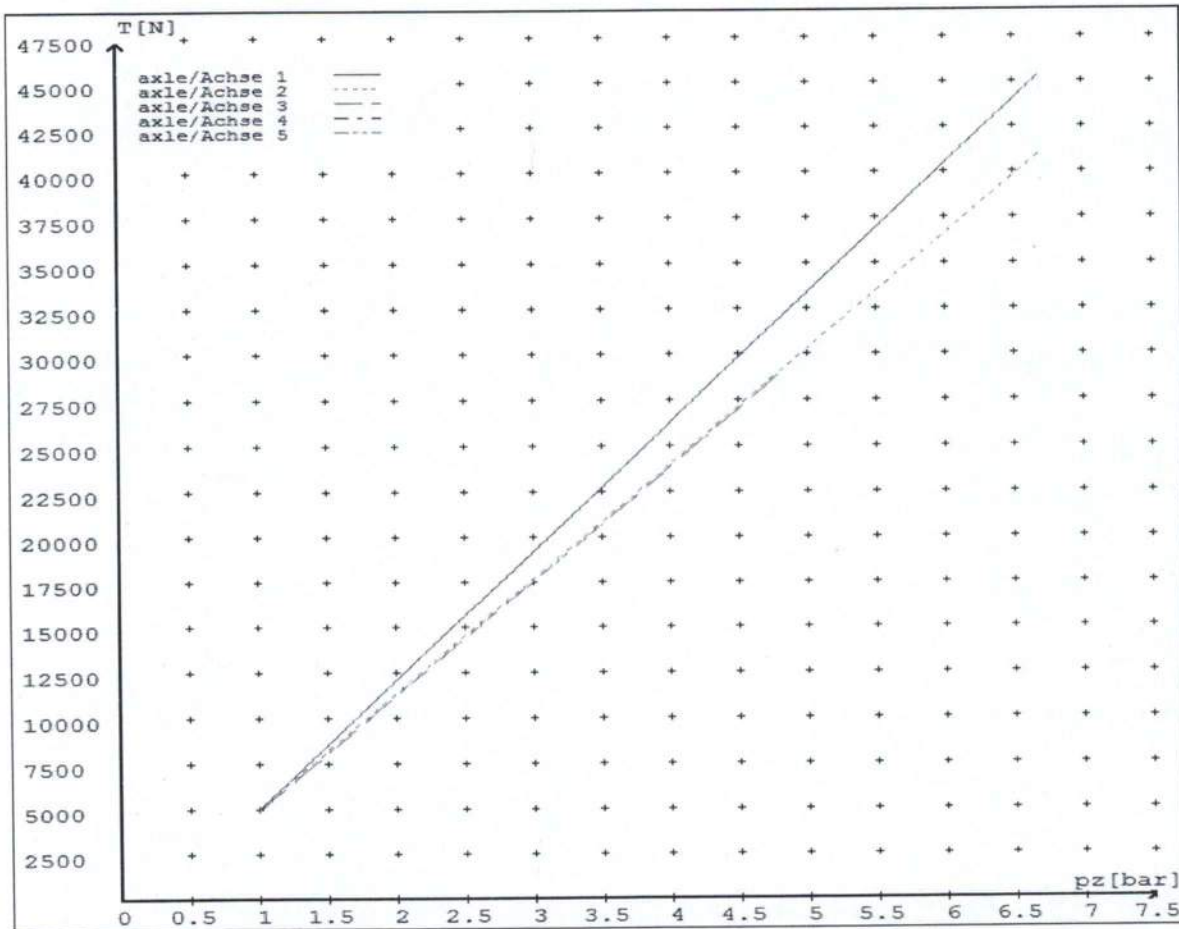| E | = | | wheel base |
fzul	=	0.80	maximum permissible frictional connection required
zferf	=	0.18	maximum required braking ratio of the parking brake
h	=	2062 mm	height of center of gravity - laden
PR	=	19200 kg	maximum bogie mass - laden
P	=	35200 kg	maximum total mass - laden
nf	=	2	no. of axle(s) with TRISTOP spring brake actuators
ng	=	3	no. of bogie axle(s)

reference values

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

	pz [bar]	T [N]	T [N]
axle 1	1.0	4961	
	6.7	45281	
axle 2	1.0	4999	
	6.7	40910	
axle 3	1.0		4868
	4.8		28809
axle 4	1.0		4868
	4.8		28809
axle 5	1.0		4868
	4.8		28809

VIN - no.:

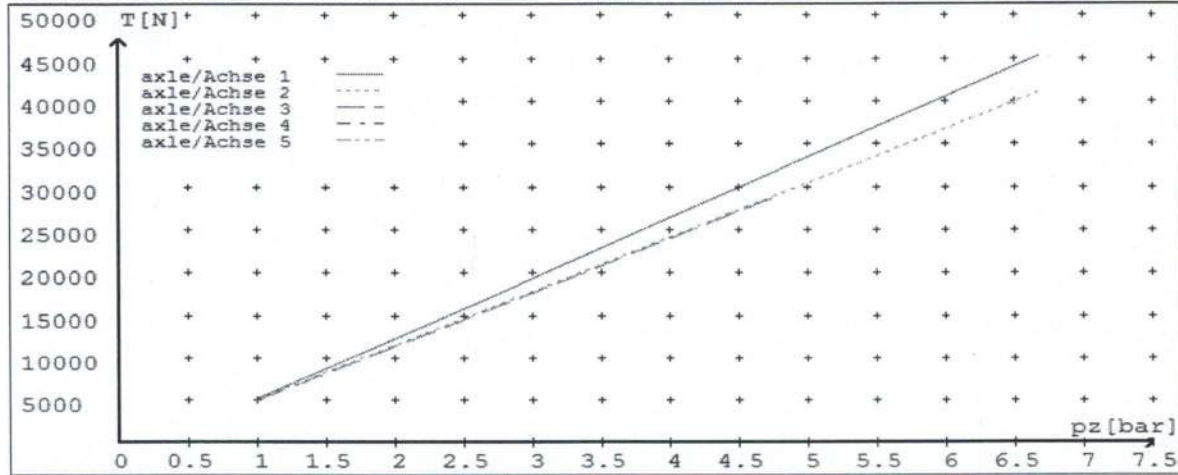|	Axle(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	18./	14./	T.14/24	T.14/24	14./
Maximum stroke smax = ...mm maximaler Hub smax = ...mm	64	64	64	64	64
Lever length = ...mm Hebellänge = ...mm	69.08	69.08	69.08	69.08	69.08

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: GenNZ 50060A date 13.05.2015
Bremsberechnung Nr: GenNZ 50060A vom 13.05.2015

Legend:
- axle/Achse 1
- axle/Achse 2
- axle/Achse 3
- axle/Achse 4
- axle/Achse 5

	Axle(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	18./	14./	T.14/24	T.14/24	14./
Maximum stroke smax = ...mm maximaler Hub smax = ...mm	64	64	64	64	64
Lever length = ...mm Hebellänge = ...mm	69.08	69.08	69.08	69.08	69.08