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)

Chris Clarke

ID

CJC

Vehicle Registration*

VIN/Chassis Number

7 A 9 E 2 5 0 1 4 E 1 0 2 3 3 2 3

Component being certified:

☐ Chassis Modification	☐ 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

HVBR 32015/3 Schedule 5

Component Load Rating(s)

32000KG

General Drawing Number(s)

N/A

Supporting Documents

BRAKE RULE CERTIFICATE - CJC152884

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

CJK

Date

21-Jan-15

Number

499984

CoF Vehicle Inspector ID

CoF Vehicle Inspector Signature

Date

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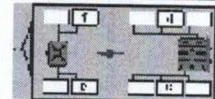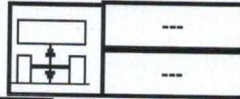
WABCO — START-UP PROTOCOL

System	Trailer EBS-E	WABCO part number	480 102 080 0
Production date	2014-07-30	Serial number	437000724500J
Serial number (modulator)	000000032868		
Fingerprint Customer EOL / Customer Development / Flash Program	W503643 / 2015-01-21 ; 00000000 / 0000-00-00 ; 00000000 / 0000-00-00		

WABCO TRAILER EBS-E

GGVS/ADR TUEH TB 2007 - 019.00
TDB0749

HERSTELLER MANUFACTURER CONSTRUCTEUR	DOMETT
TYP TYPE TYPE	5AFT STOCK
FAHRZEUG IDENTNR. CHASSIS NUMBER NUMERO DE CHASSIS	7A9E25014E1023323
BREMSBERECHNUNGS-NR. BRAKE CALCULATION NO. CALCUL DE FREINAGE NO.	TP51190A

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

RSS / Einfachbereifung Single Tire Monte simple — Lenkachse Steering axle Essieu vireur

RSS / Zwillingsbereifung Twin Tire Monte jumelée: X — Kippkritisches Fahrzeug Critical Trailer Véhicule critique

Subsystems: --- | I/O | 24N

GIO	Pin1	Pin3	Pin4
1	24V-O1	---	---
2	---	---	---
3	ALS2	ALS2	---
4	---	---	---
5	DIAG	DIAG	DIAG
6	---	---	---
7	---	---	---

ACHSE AXLE ESSIEU	pm (bar) 6.5			pm (bar) 0.8 2.0 --- 6.5					pz	TYP TYPE	(mm)	(mm)	1.0 Pz TR (daN)	
1	2000	1.0	2.2	7250	4.6	0.4	1.3	---	6.2	-	18	64	69	493	4196
2	2000	1.0	2.2	7250	4.6	0.4	1.3	---	6.2	-	18	64	69	493	4196
3	1800	0.8	1.6	6000	3.7	0.3	1.4	---	4.2	-	14 / 16	64	69	486	2516
4	1800	0.8	1.6	6000	3.7	0.3	1.4	---	4.2	-	14 / 16	64	69	486	2516
5	1800	0.8	1.6	6000	3.7	0.3	1.4	---	4.2	-	14	64	69	486	2516

Diagnostic memory	OK	Warning lamp control	OK
Parameter setting	carried out	Stop light power supply	Not OK
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	Vehicle ident. no	7A9E25014E1023323
Vehicle type	5AFT STOCK	Odometer reading	0.0 km
next Service	0 km	Trip reading	0.0 km
Tester	Chris Clarke		
Date	2015-01-21 8:28:23 p.m.	Signature	

distribution: DOMETT
                7A9E25017E1023316
                CJC152884

vehicle manufacturer: DOMETT

trailer model   :   5 AXLE STOCK

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,   PAN 19-1,   TDB 0749 ECE,

			unladen	laden
total mass	P in kg		9400	32500
axle 1	P1 in kg		2000	7250
axle 2	P2 in kg		2000	7250
axle 3	P3 in kg		1800	6000
axle 4	P4 in kg		1800	6000
axle 5	P5 in kg		1800	6000
wheel base	E in mm	6795 - 6795		
centre of gravity height	h in mm		1093	2318

			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 163.1
brake chamber manufacturer			Meritor	Meritor	Meritor	Meritor	Meritor
chamber size			18.	18.	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		2.1	2.1	2.1	2.1	2.1
chamber pressure(rdyn max)pH at z=22,5%bar		2.1	2.1	2.1	2.1	2.1
chamber press.(servo)pcha at pm6,5bar bar		6.3	6.3	4.5	4.5	4.5
piston force ThA at pm6,5bar N		6735	6735	4285	4285	3790
brake force(rdyn min)T lad. at pm6,5bar N		50953	50953	32317	32317	28572
brake force(rdyn max)T lad. at pm6,5bar N		50953	50953	32317	32317	28572
brake force within 1 % rolling friction						
proportion %		21.7	21.7	19.6	19.6	17.5

braking rate   z laden
z = sum (TR)/PRmax

                                   0.612   for rdyn min
                                   0.612   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: 480 207 0.. 0   WABCO   or 480 207 2.. 0
       EBS relay valve

  brake cylinder: Meritor   18HSCLD64

axle 2:
   valve 1: 480 207 0.. 0   WABCO   or 480 207 2.. 0
       EBS relay valve

  brake cylinder: Meritor   18HSCLD64

axle 3:
   valve 1: 480 102 ... 0   WABCO
       EBS trailer modulator

  brake cylinder: Meritor   1424HTLD64

axle 4:
  valve 1: 480 102 ... 0   WABCO
          EBS trailer modulator

  brake cylinder: Meritor   1424HTLD64

axle 5:
  valve 1: 480 102 ... 0   WABCO
          EBS trailer modulator

  brake cylinder: Meritor   FM0298S14E

test type III   (zIII = 0.30) for rdyn min : axle1 axle2 axle3 axle4 axle5
at pm 3.4 bar =>   pcha in bar :   2.9   2.9   2.6   2.6   2.6
test type III   (zIII = 0.06) for rdyn min : axle1 axle2 axle3 axle4 axle5
at pm 1.1 bar =>   pcha in bar :   0.7   0.7   0.9   0.9   0.9

brake chamber pressure   laden

brake chamber pressure   unladen
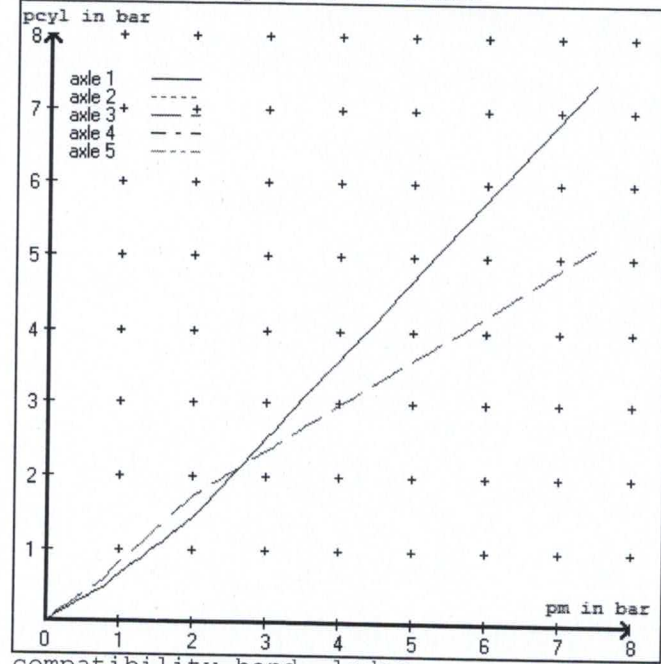
compatibility band   laden
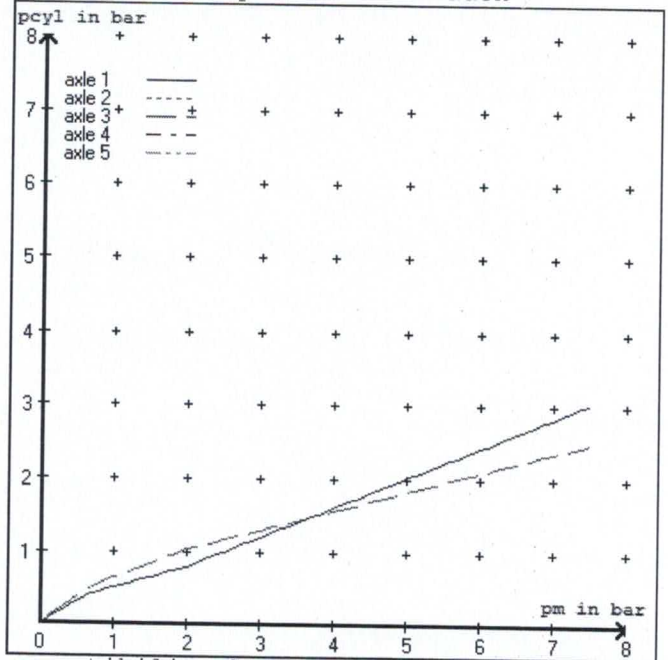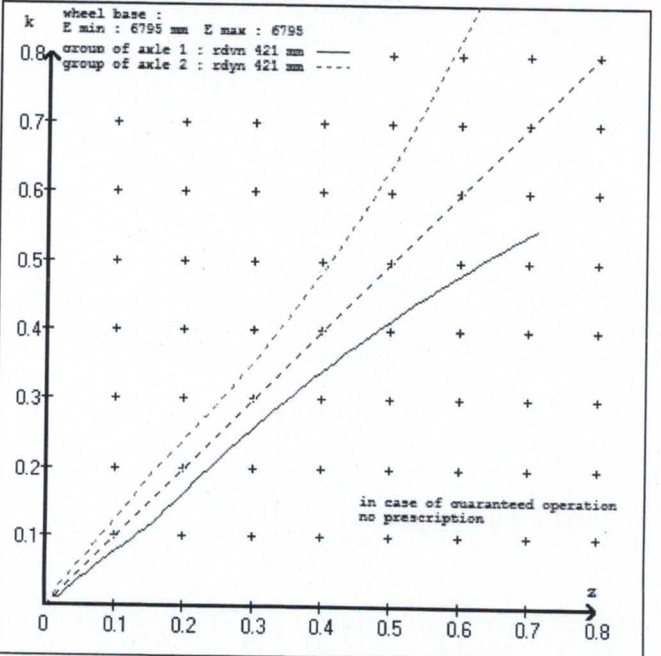
compatibility band   unladen

curves of friction   laden

curves of friction   unladen

vehicle manufacturer: DOMETT
trailer model   :   5 AXLE STOCK
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   18. (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 :
480 207 0.. 0   WABCO EBS relay valve   or 480 207 2.. 0
480 102 ... 0   WABCO EBS trailer modulator

EBS input data
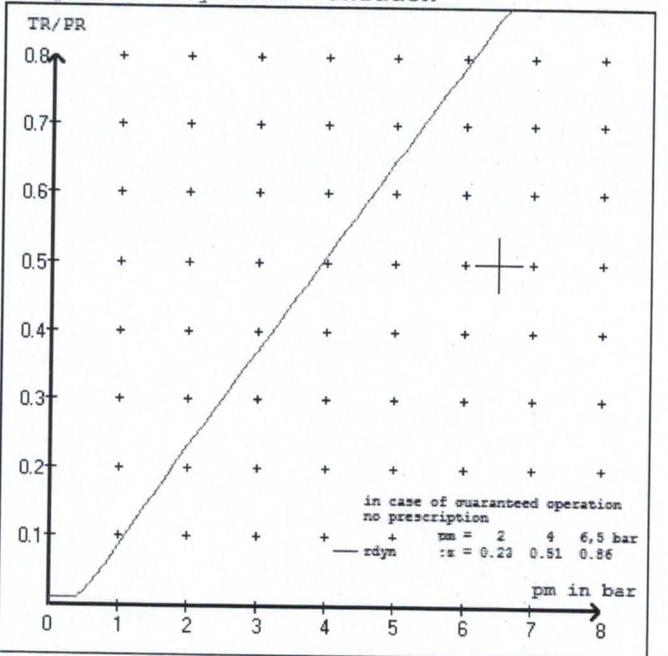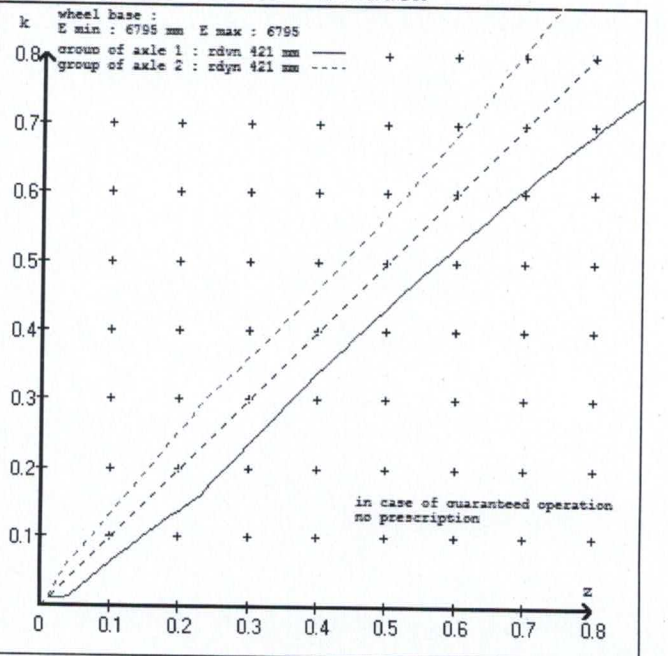==============
vehicle manufacturer: DOMETT
trailer model   : 5 AXLE STOCK
trailer type   : 5-axle-full-trailer
brake calculation no.   : GenNZ 82A

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 = 0.010
(laden condition)   2.0 bar z = 0.142
                                   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 0.7	2.0	6.5
						brake pr. laden		
1	2000	to be	2.6	7250	to be	0.4	1.4	6.3
2	2000	entered by	2.6	7250	entered by	0.4	1.4	6.3
3	1800	the vehicle	2.2	6000	the vehicle	0.5	1.7	4.5
4	1800	manufact.	2.2	6000	manufact.	0.5	1.7	4.5
5	1800		2.2	6000		0.5	1.7	4.5

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
2000	2.6	2000	2.6	1800	2.2	1800	2.2	1800	2.2
2500	3.0	2500	3.0	2300	2.5	2300	2.5	2300	2.5
3000	3.3	3000	3.3	2800	2.7	2800	2.7	2800	2.7
3500	3.7	3500	3.7	3300	3.0	3300	3.0	3300	3.0
4000	4.0	4000	4.0	3800	3.3	3800	3.3	3800	3.3
4500	4.4	4500	4.4	4300	3.6	4300	3.6	4300	3.6
5000	4.7	5000	4.7	4800	3.8	4800	3.8	4800	3.8
5500	5.1	5500	5.1	5300	4.1	5300	4.1	5300	4.1
7250	6.3	7250	6.3	6000	4.5	6000	4.5	6000	4.5

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 : 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	
axle 5 : 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 4.2.1 of appendix 2 to annex 11)

axle 1	(rdyn 421 mm)	$T = 22.4$ % Fe
axle 2	(rdyn 421 mm)	$T = 22.4$ % Fe
axle 3	(rdyn 421 mm)	$T = 17.8$ % Fe
axle 4	(rdyn 421 mm)	$T = 17.8$ % Fe
axle 5	(rdyn 421 mm)	$T = 15.1$ % 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 = 58 mm)	$s = 39$ mm
axle 3	(sp = 56 mm)	$s = 39$ mm
axle 4	(sp = 56 mm)	$s = 39$ mm
axle 5	(sp = 50 mm)	$s = 39$ mm

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

axle1	ThA = 6735 N
axle2	ThA = 6735 N
axle3	ThA = 4285 N
axle4	ThA = 4285 N
axle5	ThA = 3790 N

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

axle 1	(rdyn 421 mm)	$T = 40103$ N
axle 2	(rdyn 421 mm)	$T = 40103$ N
axle 3	(rdyn 421 mm)	$T = 25468$ N
axle 4	(rdyn 421 mm)	$T = 25468$ N
axle 5	(rdyn 421 mm)	$T = 22533$ 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)	0.61	0.48
required braking rate (items 1.5.3 and 1.7.2 to annex 11)		>= 0,4 and >= 0,6*E (0.37)

axle 1	(rdyn 421 mm)	$T = 40103$ N
axle 2	(rdyn 421 mm)	$T = 40103$ N
axle 3	(rdyn 421 mm)	$T = 25468$ N
axle 4	(rdyn 421 mm)	$T = 25468$ N
axle 5	(rdyn 421 mm)	$T = 22533$ 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)	0.61	0.48
required braking rate (items 1.5.3 and 1.7.2 to annex 11)		>= 0,4 and >= 0,6*E (0.37)

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	0.384	
$zf = sum (Tf)/P + 0,01$		

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 =   5206 mm   for E =   6795 mm
===================
min Ef =   5206 mm   for E =   6795 mm
===================

min Ef =   minimum distance between front axle(s) (trailer) or support (semitraile
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   = 2318 mm   height of center of gravity - laden
PR   = 18000 kg   maximum bogie mass - laden
P   = 32500 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	4812	
	6.3	41628	
axle 2	1.0	4812	
	6.3	41628	
axle 3	1.0		4748
	4.5		26403
axle 4	1.0		4748
	4.5		26403
axle 5	1.0		3223
	4.5		23343

VIN - no.:

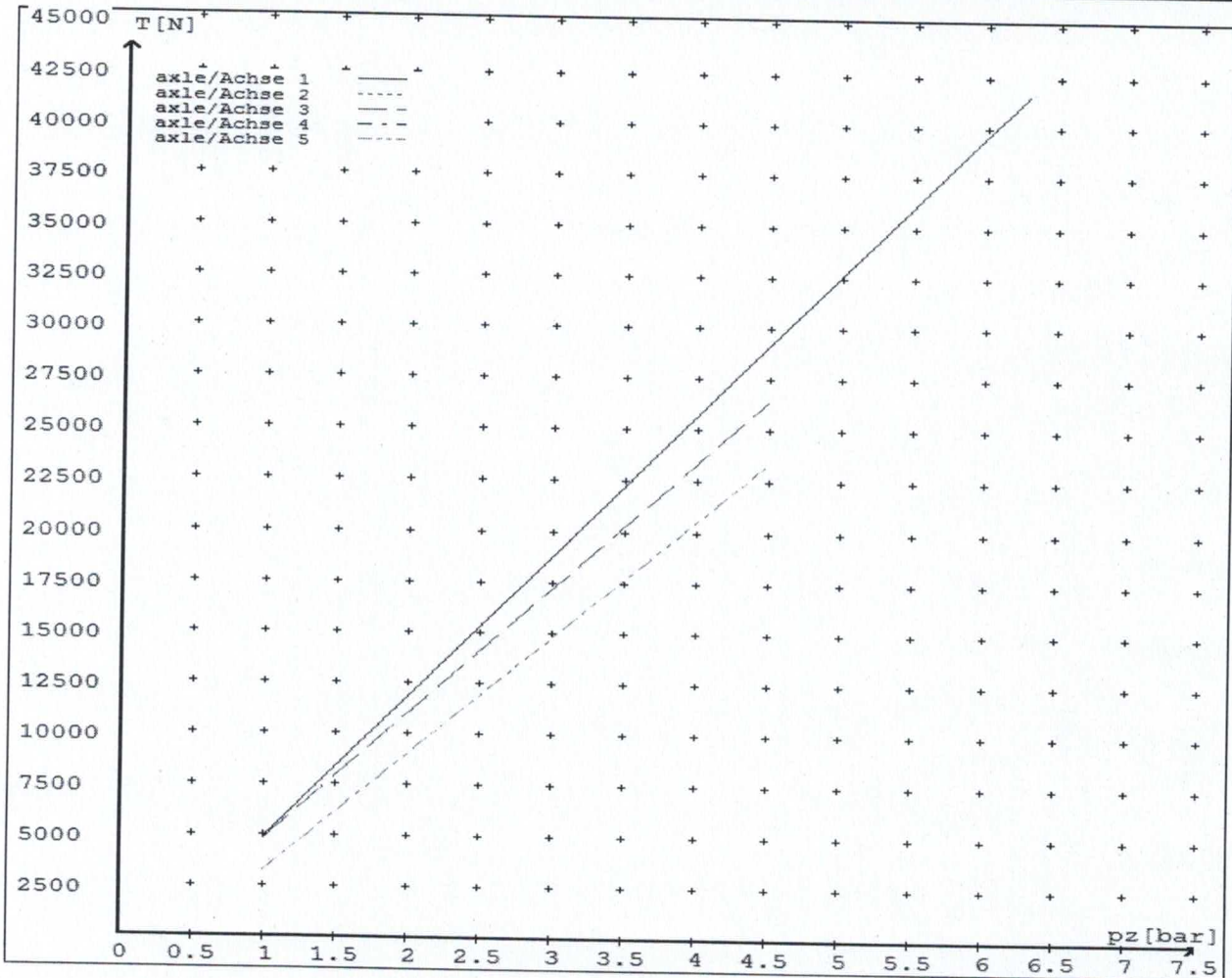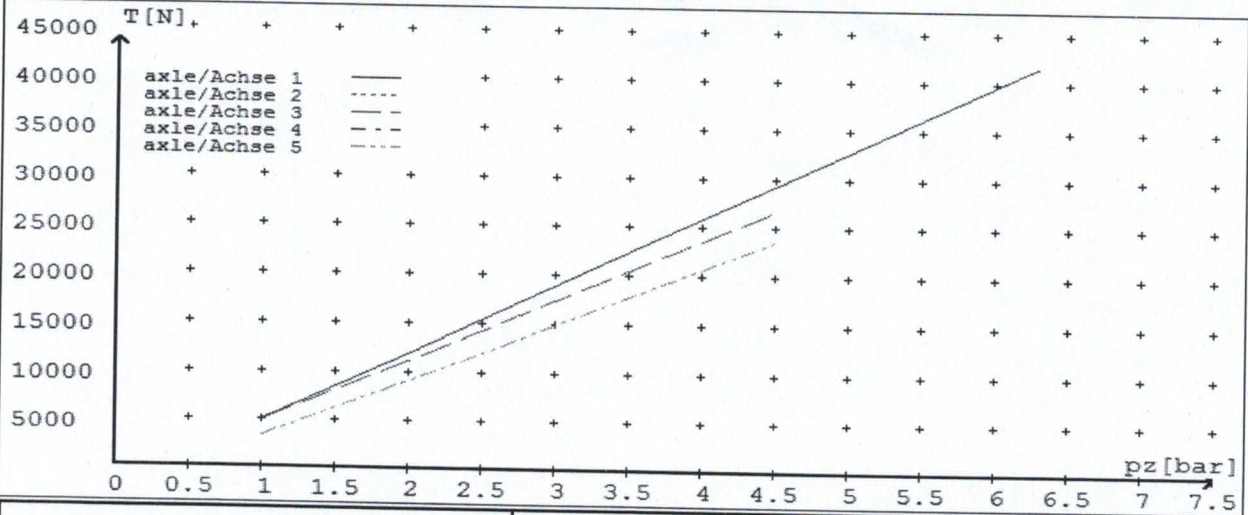|	Axle(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	18./	18./	T.14/24	T.14/24	14/
Maximum stroke smax = ...mm maximaler Hub smax = ...mm	64	64	64	64	67
Lever length = ...mm Hebellänge = ...mm	69.08	69.08	69.08	69.08	69.08

reference values for z = 0.5
Angabe der Referenzwerte für z = 0.5
brake calculation no: GenNZ 82A date 21.01.2015
Bremsberechnung Nr: GenNZ 82A vom 21.01.2015

for max rdyn: 421 mm
für max rdyn: 421 mm

brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	18./	18./	T.14/24	T.14/24	14/
Maximum stroke smax = ...mm maximaler Hub smax = ...mm	64	64	64	64	67
Lever length = ...mm Hebellänge = ...mm	69.08	69.08	69.08	69.08	69.08

Axle(s) / Achse(n)