Heavy Vehicle Specialist Certificate

CHRIS CLARKE CJC

7A9C200390102320 6

✓

HUEK.

CARRY OUT COMPLIANCE TO THE NZ HEAVY VEHICLE BRAKE RULE.

ROLL STABILITY FUNCTION ACTIVATED.

HOBJ2 3205/2 SCHED 5

26000 KG.

N/A.

BRAKE DESIGN CERTIFICATE CJC2185.
TREV EXEMPTION

WARNING LAMP MUST ILLUMINATE WHEN IGNITION SWITCHED ON & THEN EXTINGUISH IMMEDIATELY OR WHEN VEHICLE EXCEEDS 7KPH.

or

N/A

[redacted]

25.11.2013

454285

WABCO START-UP PROTOCOL

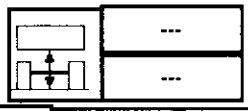
System	Trailer EBS-E	**WABCO part number**	480 102 080 0
Production date	2013-07-19	**Serial number**	897001476700M
Serial number (modulator)	000000022687		
Fingerprint Customer EOL / Customer Development / Flash Program	W503643 / 2013-11-25 ; 00000000 / 0000-00-00 ; 00000000 / 0000-00-00		

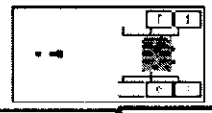
WABCO TRAILER EBS-E

GGVS/ADR TUEH TB 2007 - 019.00

HERSTELLER MANUFACTURER CONSTRUCTEUR	DOMETT			
TYP TYPE TYPE	3AS B REAR			
FAHRZEUG IDENTNR. CHASSIS NUMBER NUMERO DE CHASSIS	7A9C20039D1023206			
BREMSBERECHNUNGS-NR. BRAKE CALCULATION NO CALCUL DE FREINAGE NO	GenNZ39			
POLRADZAHNEZAHL c-d / e-f POLE WHEEL TEETH c-d / e-f DENTS ROUE DENTEE c-d e-f	90	90	ABS-System ABS System Systeme ABS	4S/2M
RSS Einfachbereifung Single Tyre Monte simple			Lenkachse Steering axle Essieu vireur	
RSS RSS Zwillingsbereifung Twin Tyre Monte jumelee	X		Kippkritisches Fahrzeug Critical Trailer Vehicule critique	
Subsystems	SB		I/O	24N

GIO	Pin1	Pin3	Pin4
1	---	---	---
2	---	---	---
3	---	---	---
4	---	---	---
5	DIAG	DIAG	DIAG
6	---	---	---
7	---	---	---





	pm (bar)		6.5	pm (bar)		0.6	2.0	---	6.5		TYP TYPE	(mm)	(mm)	(bar) 1.0	(bar) Pz
ACHSE AXLE ESSIEU									pz					TR (daN)	
1	1300	0.4	2.2	6000	4.8	0.5	1.7	---	5.4	-	14 / 24	61	80	300	2647
2	1300	0.4	2.2	6000	4.8	0.5	1.7	---	5.4	-	14 / 24	61	80	300	2647
3	1300	0.4	2.2	6000	4.8	0.5	1.7	---	5.4	-	14	62	80	300	2647
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
Signal inputs	Not tested		

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

Manufacturer	DOMETT	**Vehicle ident. no**	7A9C20039D1023206
Vehicle type	3AS B REAR	**Odometer reading**	0.0 km
next Service	0 km	**Trip reading**	0.0 km
Tested by	Chris Clarke	**Signature**	
Date	2013-11-25 8:43:14 a.m.		

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

distribution: DOMETT
/A9C20039D1023206
CJC2185

please note! This brake calculation is made under consideration of the legal precriptions mentioned above in the version valid at the time of making the program (V6.12.08.27).
-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 c).
In any case we commend to do a braking harmonisation
WABCOBrake V6.12.08.27 db 02.10.2012

vehicle manufacturer: DOMETT
trailer model : 3AS 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,

			unladen		laden
total mass	P in kg	5000 -	6000	26000 -	30000
king-pin	PS kg	1100 -	2100	9000	12000
axle 1	P1 in kg		1300		6000
axle 2	P2 in kg		1300		6000
axle 3	P3 in kg		1300		6000
total axle mass	PR in kg		3900		18000
wheel base	E in mm	6675 -	6675		
centre of gravity height	h in mm		1150		2121
K-factor		Kv min	1.8348	Kc min	0.9856
K-factor		Kv max	1.8377	Kc max	1.0149

		axle 1	axle 2	axle 3
no. of combined axles		1	1	1
no. of brake chambers per axle line	KDZ	2	2	2
The power output corresponds to		BC 0056.2	BC 0056.2	BC 0055.2
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		2.4	2.4	2.4
chamber pressure(rdyn max)pH at z=22,5%bar		2.4	2.4	2.4
chamber press.(servo)pcha at pm6,5bar	bar	5.4	5.4	5.4
piston force ThA at pm6,5bar	N	4333	4333	4333
brake force(rdyn min)T lad. at pm6,5bar	N	33180	33180	33180
brake force(rdyn max)T lad. at pm6,5bar	N	33180	33180	33180
brake force within 1 % rolling friction proportion	%	33.3	33.3	33.3

braking rate z laden	0.564	for rdyn min
z = sum (TR)/PRmax	0.564	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: 480 107 ... 0 WABCO
EBS trailer modulator

brake cylinder: BPW 05.444.38...

axle 2:
valve 1: 480 102 ... 0 WABCO
EBS trailer modulator

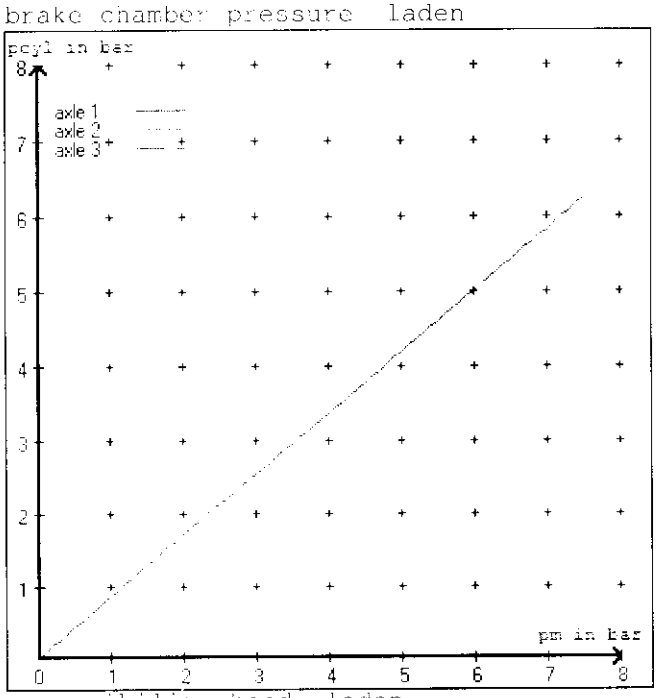
brake cylinder: BPW 05.444.38...

axle 3:
valve 1: 480 107 ... 0 () WABCO or 480 207 0.. 0 / 2.. 0
EBS trailer modulator

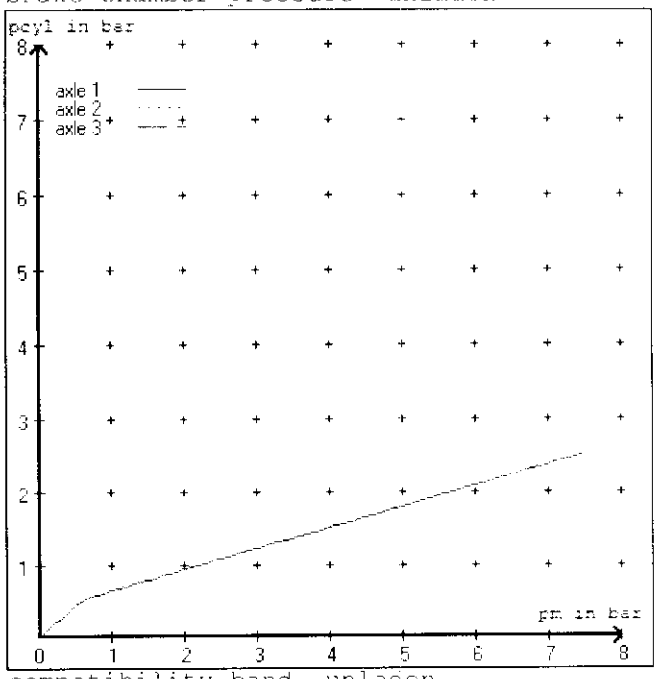
brake cylinder: BPW 05.444.30...

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	
at pm 8.7 bar ->	pcha in bar :	3.1	3.1	3.1	
test type III (zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	
at pm 1.1 bar ->	pcha in bar :	1.0	1.0	1.0	

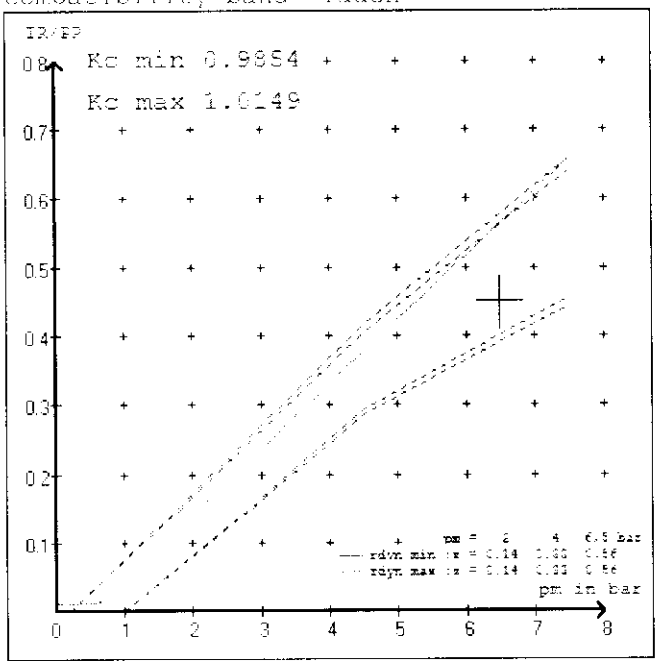
brake chamber pressure laden



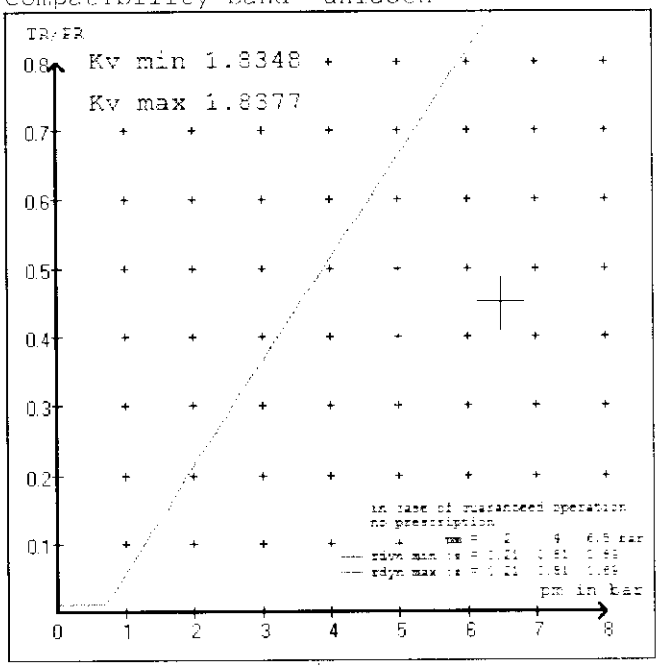
brake chamber pressure unladen



compatibility band laden



compatibility band unladen



vehicle manufacturer: DOMETT
trailer model : 3AS 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 :

valve :
480 102 ... 0 WABCO EBS trailer modulator
480 102 ... 0 WABCO EBS trailer modulator or 480 20/ 0.. 0 / 2.. 0

EBS input data
==============
vehicle manufacturer: DOMETT
trailer model : 3AS B REAR
trailer type : 3-axle-semi-trailer
brake calculation no. : GenNZ 39S

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 = 0.010
(laden condition) 2.0 bar z = 0.142
6.5 bar z = 0.565

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	1300	to be entered by the vehicle manufact.	2.2	6000	to be entered by the vehicle manufact.	0.5	1.7	5.4
2	1300		2.2	6000		0.5	1.7	5.4
3	1300		2.2	6000		0.5	1.7	5.4
4	0		0,0	0		0,0	0,0	0,0
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 load	pcyl	axle load	pcyl	axle load	pcyl
1300	2.2	1300	2.2	1300	2.2
1800	2.5	1800	2.5	1800	2.5
2300	2.9	2300	2.9	2300	2.9
2800	3.2	2800	3.2	2800	3.2
3300	3.6	3300	3.6	3300	3.6
3800	3.9	3800	3.9	3800	3.9
4300	4.2	4300	4.2	4300	4.2
4800	4.6	4800	4.6	4800	4.6
6000	5.1	6000	5.4	6000	5.4

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

axle 1 : reference axle: BPW D 115-2 brake lining: BPW 8101
test report : 361-041-08 EC date : 01.04.2011
axle 2 : reference axle: BPW D 115-2 brake lining: BPW 8101
test report : 361-041-08 EC date : 01.04.2011
axle 3 : reference axle: BPW D 115-2 brake lining: BPW 8101
test report : 361-041-08 EC date : 01.04.2011

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 = 15.7 % Fe
axle 2	(rdyn 421 mm)	T = 15.7 % Fe
axle 3	(rdyn 421 mm)	T = 15.7 % Fe

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

axle 1	(sp = 50 mm)	s = 48 mm
axle 2	(sp = 50 mm)	s = 48 mm
axle 3	(sp = 51 mm)	s = 48 mm

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

axle1	ThA = 4333 N
axle2	ThA = 4333 N
axle3	ThA = 4333 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 = 30077 N
axle 2	(rdyn 421 mm)	T = 30077 N
axle 3	(rdyn 421 mm)	T = 30077 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)	0.56	0.51
required braking rate (items 1.5.3 and 1.7.2 to annex 11)		>= 0,4 and >= 0,6*E (0.34)

axle 1	(rdyn 421 mm)	T = 30077 N
axle 2	(rdyn 421 mm)	T = 30077 N
axle 3	(rdyn 421 mm)	T = 30077 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)	0.56	0.51
required braking rate (items 1.5.3 and 1.7.2 to annex 11)		>= 0,4 and >= 0,6*E (0.34)

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

axle 1 : reference axle: BPW D 115-2 brake lining: BPW 8200
test report : 361-041-08 EC date : 02.04.2011
axle 2 : reference axle: BPW D 115-2 brake lining: BPW 8200
test report : 361-041-08 EC date : 02.04.2011
axle 3 : reference axle: BPW D 115-2 brake lining: BPW 8200
test report : 361-041-08 EC date : 02.04.2011

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 = 15.7 % Fe
axle 2	(rdyn 421 mm)	T = 15.7 % Fe
axle 3	(rdyn 421 mm)	T = 15.7 % Fe

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

axle 1	(sp = 50 mm)	s = 47 mm
axle 2	(sp = 50 mm)	s = 47 mm
axle 3	(sp = 51 mm)	s = 47 mm

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

axle1	ThA = 4333 N
axle2	ThA = 4333 N
axle3	ThA = 4333 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 = 31240 N
axle 2	(rdyn 421 mm)	T = 31240 N
axle 3	(rdyn 421 mm)	T = 31240 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)	0.56	0.53
required braking rate (items 1.5.3 and 1.7.2 to annex 11)		>= 0,4 and >= 0,6*E (0.34)

axle 1	(rdyn 421 mm)	T = 31240 N
axle 2	(rdyn 421 mm)	T = 31240 N
axle 3	(rdyn 421 mm)	T = 31240 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)	0.56	0.53
required braking rate (items 1.5.3 and 1.7.2 to annex 11)		>= 0,4 and >= 0,6*E (0.34)

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

axle 1 : reference axle: BPW D 115-2 brake lining: BPW 8302
test report : 361-041-08 EC date : 03.04.2011
axle 2 : reference axle: BPW D 115-2 brake lining: BPW 8302
test report : 361-041-08 EC date : 03.04.2011
axle 3 : reference axle: BPW D 115-2 brake lining: BPW 8302
test report : 361-041-08 EC date : 03.04.2011

calc. verif. of residual (hot) braking force type III
(item 4.3.1 of appendix 2 to annex 11)

axle 1	(rdyn 421 mm)	T = 15.7 % Fe
axle 2	(rdyn 421 mm)	T = 15.7 % Fe
axle 3	(rdyn 421 mm)	T = 15.7 % Fe

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

axle 1	(sp = 50 mm)	s = 39 mm
axle 2	(sp = 50 mm)	s = 39 mm
axle 3	(sp = 51 mm)	s = 39 mm

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

axle1	ThA = 4333 N
axle2	ThA = 4333 N
axle3	ThA = 4333 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 = 31895 N
axle 2	(rdyn 421 mm)	T = 31895 N
axle 3	(rdyn 421 mm)	T = 31895 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)	0.56	0.54
required braking rate (items 1.5.3 and 1.7.2 to annex 11)		>= 0,4 and >= 0,6*E (0.34)

axle 1	(rdyn 421 mm)	T = 31895 N
axle 2	(rdyn 421 mm)	T = 31895 N
axle 3	(rdyn 421 mm)	T = 31895 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)	0.56	0.54
required braking rate (items 1.5.3 and 1.7.2 to annex 11)		>= 0,4 and >= 0,6*E (0.34)

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		05.444.3805.444.38	
release pressure	pLs in bar	5.2	5.2

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	0.325	
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 = 1606 mm for E = 6675 mm

min Ef = 1606 mm for E = 6675 mm

min Ef	-		minimum distance between front axle(s) (trailer) or support (semitrails 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	=	2121 mm	height of center of gravity - laden
PR	=	18000 kg	maximum bogie mass - laden
P	=	30000 kg	maximum total mass - laden
nf	=	2	no. of axle(s) with TRISTOP spring brake actuators
ng		3	no. of bogie axle(s)

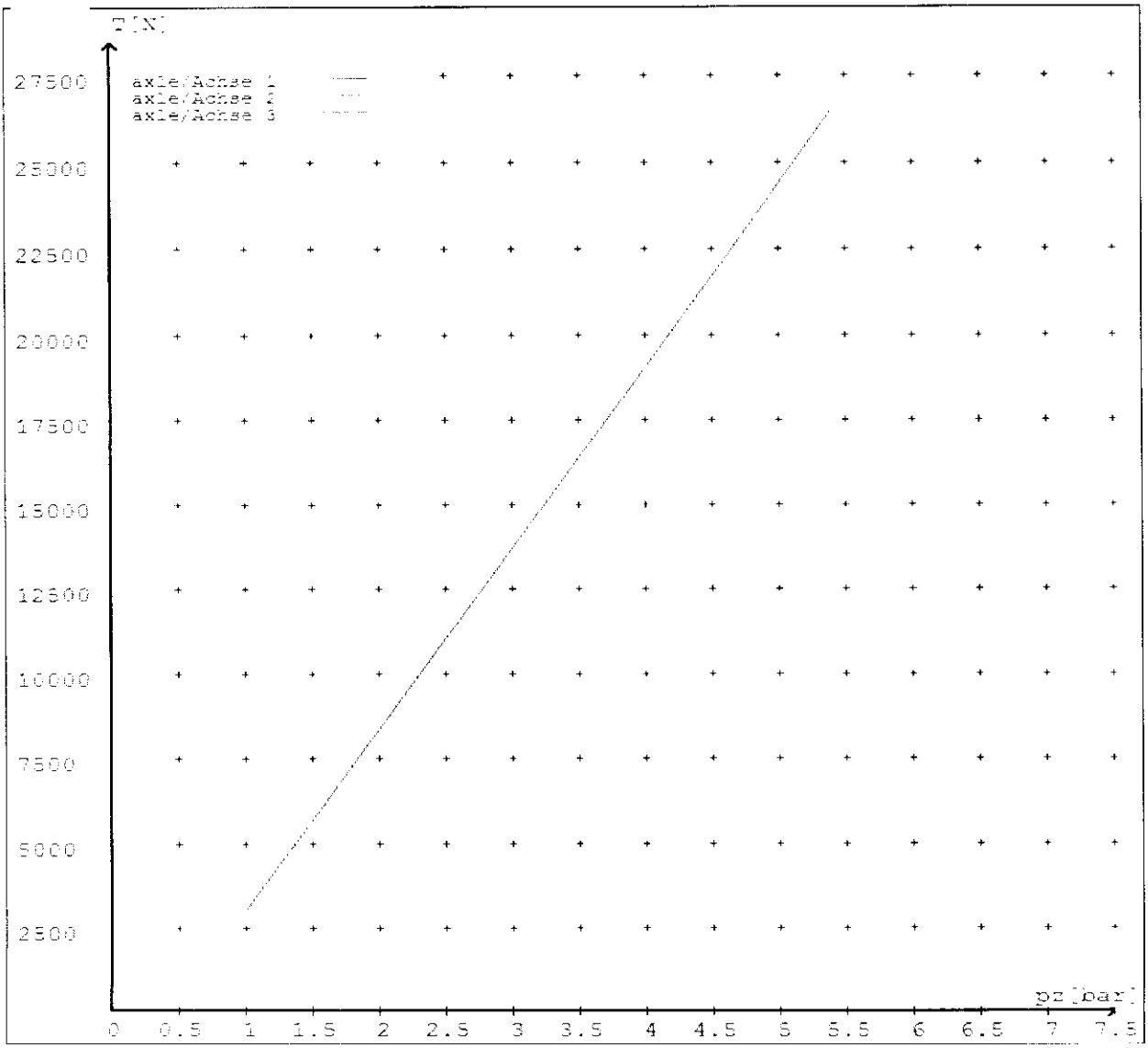
reference values

reference values for z = 45% for max rdyn: 421 mm

	pz [bar]	T [N]	T [N]
axle 1	1.0 5.4		3006 26473
axle 2	1.0 5.4		3006 26473
axle 3	1.0 5.4		3006 26473

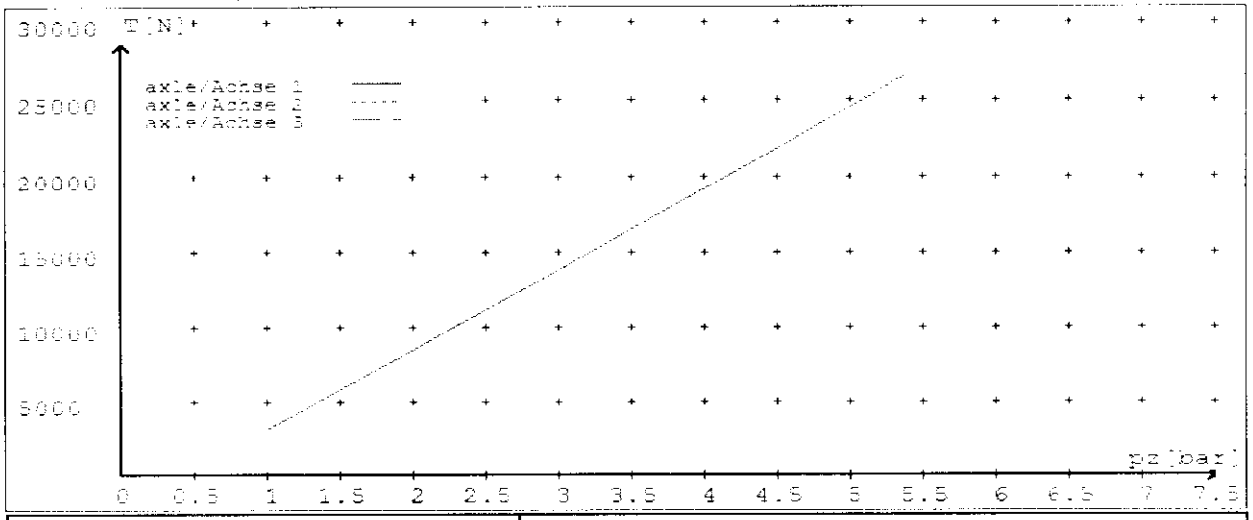
VIN - no.:

	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	61	61	62		
Lever length ....mm Hebel-Länge = ...mm	80	80	80		



Print on WABCO no. 899 200 922 4 (only possible with laser printers!)

reference values for z = 0.45 **for max rdyn: 421 mm**
Angabe der Referenzwerte für z = 0.45 für max rdyn: 421 mm
brake calculation no: GenNZ 39S date 25.11.2013
Bremsberechnung Nr: GenNZ 39S vom 25.11.2013



	Axle(s) / Achse(n)				
[illegible]	14/24	14/24	14./	/	/
[illegible]	62	61	62		
[illegible]	80	80	80		