NOTICE TO VEHICLE OPERATOR

THIS VEHICLE HAS A BRAKE SYSTEM WHICH HAS BEEN DESIGNED AND FITTED IN ACCORDANCE WITH THE NEW ZEALAND HEAVY VEHICLE BRAKE RULE 32015: SCHEDULE 5.
IF THIS VEHICLE IS OPERATED IN CONJUNCTION WITH NON-CODED VEHICLES, THERE MAY BE OPERATIONAL FACTORS WHICH NEED TO BE TAKEN INTO CONSIDERATION.

PLEASE REFER TO THE CERTIFIER FOR FURTHER INFORMATION.

EXCERPT FROM NZ HEAVY VEHICLE BRAKE RULE 32015

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 the rule : and
(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 a person or organisation appointed to carry out specialist inspection and certification of heavy vehicle brakes.

10.5 **Responsibilities of manufactures and retailers**
A person may manufacture, stock, or offer for sale a brake or its components. Intended for fitting to a vehicle to be used on New Zealand roads, only if that brake or component:

(a) complies with this Rule: and
(b) does not prevent a repair to a vehicle, its structure, systems, components and equipment from complying with this Rule.

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 Land Transport Safety Authority if dissatisfied with a Compliance issue. (refer LTNZ Deed Of Appointment Para 47.4) **Land Transport NZ Helpdesk 0800 699 000**

.....

R S PRATT
(TRSP HVEK)

NOTICE TO VEHICLE OPERATOR

This trailer is equipped with an **E**lectronic **B**rake **S**ystem.

To comply with the New Zealand Heavy Vehicle Brake RULE, it must be used only in conjunction with a truck/tractor equipped with a 5 or 7 pin ABS/EBS power supply socket.
Failure to connect to such supply invalidates Brake Rule compliance.

The trailer ABS/EBS warning light on the towing vehicle dashboard must illuminate when the ignition is switched on and extinguish when the vehicle is in motion.
If the light does not illuminate when ignition is switched on, the system must be checked. If the light remains illuminated when the vehicle is in motion, Brake Rule compliance is compromised. Repairs must be made as soon as possible.

NB;

If this vehicle is fitted with mechanical (spring) suspension, the load sense valving has been adjusted to suit exactly the performance of the original springs. In event of replacement being required, original equipment springs **must** be fitted to ensure correct ongoing operation. Fitment of non genuine springs can affect operation and therefore, compliance.

If you are unsure of your responsibilities and/or obligations. please contact either the vehicle manufacturer or myself.

R S Pratt
(TRSP HVEK 09 980 7300)

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)*: RONALD STUART PRATT

ID: TRSP

Vehicle Registration*:

VIN / Chassis Number: 7A9D15028A0023848

Component being certified:

- [ ] Chassis Modification
- [ ] Load Anchorage
- [ ] Log Bolsters
- [ ] Towing Connection
- [x] Brakes
- [ ] SRT

Certification Category: HVEK

Description of Work: Certify to Brake Rule 32015

Code/Standard Certified to: NZH U Brake Rule Schedule 5

Component Load Rating(s):

General Drawing Number(s):

Supporting Documents: Brake Cert No RP100108

*Special Conditions: EBS Control - Warning light must illuminate when ignition switched on and extinguish immediately or when vehicle reaches 7KPH

Certification Expiry Date *(if applicable)*: NIL

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: R Pratt

*Delegate's Name *(PRINT IN CAPS)*:

Date: 28/01/2010

Number: 333636

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	**WABCO part number**	480 102 020 0
Production date	2008-W25	**Serial number**	2680006060
Fingerprint EOL areas 1;2;3	342681, 195; 342681, 195; 342681, 195		

HERSTELLER MANUFACTURER CONSTRUCTEUR	Domett;			ELEKTR. SCHALTER 1 ELECTR. SWITCH 1 COMMUTATEUR ELECTR.1	---
TYP TYPE TYPE	QUAD Semi;			ISS GESCHW. ISS SPEED COMMUTATEUR VITESSE	0
FAHRZEUG IDENTNR. CHASSIS NUMBER NUMERO DE CHASSIS	7A9D15028A0023848			ISS:PIN INVERTIERT ISS_PIN INVERT COMMUTATEUR INVERSE	---
BREMSBERECHNUNGS-NR. BRAKE CALCULATION NO. CALCUL DE FREINAGE NO.	TP72;			10 s PULS 10 s PULSE IMPULSION 10s	---
ABS-System ABS-System ABS-System	2S/2M			ELEKTR. SCHALTER 2 ELECTR. SWITCH 2 COMMUTATEUR ELECTR.2	---
POLRADZÄHNEZAHL c,d POLE WHEEL TEETH c,d DENTS ROUE DENTÉE c,d	100	POS. LIFTACHSEN POS. LIFTAXLE PRÉP. ESS. RELEV.		WARNLAMPE WARNING LAMP VOYANT DE SÉCURITÉ	2s
POLRADZÄHNEZAHL e,f POLE WHEEL TEETH e,f DENTS ROUE DENTÉE e,f	100	I/O 1 I/O 1 I/O 1	---	LIFTACHSE HEBEN V LIFTING AXLE SPEED V VITESSE ESS. RELEVABLE	0
EXT. BREMSDRUCKSENS. EXT. BRAKE PRESS. SENS. EXT. CAPT. PRES. DE FREIN.	---	RSS RSS RSS	RSS-D	LIFTACHSE SENKEN % LOWER LIFTING AXLE % BAISSER ESSIEU RELEV. %	0

No image available for that sensor arra

BREMSENPRÜFNUMMER BRAKE TEST NUMBER NUMÉRO D'ESSAI DE FREIN	
GGVS/ADR	**TPN 1203/04**
ANFAHRHILFE GESCHW. TRACTION HELP V VITESSE AIDE DEMARRAGE	0
ANFAHRHILFE DRUCK TRACTION HELP PRESS. PRES. AIDE DEMARRAGE	0.0

	STEUERDRUCK PM (BAR) CONTROL PRESSURE (BAR) PRESSION DE SERVICE PM (BAR)		6.5	STEUERDRUCK PM (BAR) CONTROL PRESSURE (BAR) PRESSION DE SERVICE PM (BAR)		0.8	2.0	6.5
ACHSE AXLE ESSIEU	ACHSLAST LEER AXLE LOAD UNLADEN CHARGE ESSIEU A VIDE (KG)	BALGDRUCK LEER SUSP. PRESS. UNLADEN PRESS. SUSP. A VIDE (BAR)	BREMSDRUCK LEER BRAKE PRESS. UNLADEN PRESS. DE FREIN. A VIDE (BAR)	ACHSLAST BELADEN AXLE LOAD LADEN CHARGE ESSIEU EN CHARGE (KG)	BALGDRUCK BELADEN SUSP. PRESS. LADEN PRESS. SUSP. EN CHARGE (BAR)	BREMSDRUCK BELADEN BRAKE PRESS. LADEN PRESS. DE FREIN. A CHARGE (BAR)		
1	1200	0.4	2.1	7000	4.3	0.5	1.6	6.1
2	1200	0.4	2.1	7000	4.3	0.5	1.6	6.1
3	1200	0.4	2.1	7000	4.3	0.5	1.6	6.1
4	1200	0.4	2.1	7000	4.3	0.5	1.6	6.1
5	---	---	---	---	---	---	---	---

		Test report number				
		Axle	**1**	**2**	**3**	**4**	**5**
Actuator type	**Service brake**					
	Spring brake					
Max. actuator stroke (mm)						
Lever length (mm)						

Diagnostic memory	OK	**Warning lamp control**	OK
Parameter setting	carried out	**Stop light power supply**	Not tested
EBS pressure test	OK	**Lifting axle test**	Not tested
Redundancy test	OK		
ABS sensor assignment	OK		

Manufacturer	Domett;	**Vehicle ident. no**	7A9D15028A0023848
Vehicle type	QUAD Semi;	**Odometer reading**	0.0 km
next Service	30000 km	**Trip reading**	0 km
Tested by	Ron Pratt		
Date	2010-01-28 11:25:59 AM		**Signature**

WABCO

TRAILER EBS

No image available for that sensor arrange

HERSTELLER MANUFACTURER CONSTRUCTEUR	Domett;			ELEKTR. SCHALTER 1 ELECTR. SWITCH 1 COMMUTATEUR ELECTR.1	---
TYP TYPE TYPE	QUAD Semi;			ISS GESCHW. ISS SPEED COMMUTATEUR VITESSE	0
FAHRZEUG IDENTNR. CHASSIS NUMBER NUMERO DE CHASSIS	7A9D15028A0023848			ISS-PIN INVERTIERT ISS_PIN INVERT COMMUTATEUR INVERSÉ	---
BREMSBERECHNUNGS-NR. BRAKE CALCULATION NO. CALCUL DE FREINAGE NO.	TP72;			10 s PULS 10 s PULSE IMPULSION 10s	---
ABS-System ABS-System ABS-System	2S/2M			ELEKTR. SCHALTER 2 ELECTR. SWITCH 2 COMMUTATEUR ELECTR.2	---
POLRADZÄHNEZAHL c,d POLE WHEEL TEETH c,d DENTS ROUE DENTÉE c,d	100	POS. LIFTACHSEN POS. LIFTAXLE PREP. ESS. RELEV.		WARNLAMPE WARNING LAMP VOYANT DE SÉCURITÉ	2s
POLRADZÄHNEZAHL e,f POLE WHEEL TEETH e,f DENTS ROUE DENTÉE e,f	100	I/O 1 I/O 1 I/O 1	---	LIFTACHSE HEBEN V LIFTING AXLE SPEED V VITESSE ESS. RELEVABLE	0
EXT. BREMSDRUCKSENS. EXT. BRAKE PRESS. SENS. EXT. CAPT. PRES. DE FREIN.	---	RSS RSS RSS	RSS-D	LIFTACHSE SENKEN % LOWER LIFTING AXLE % BAISSER ESSIEU RELEV. %	0

BREMSENPRÜFNUMMER BRAKE TEST NUMBER NUMÉRO D'ESSAI DE FREIN	
GGVS/ADR	TPN 1203/04
ANFAHRHILFE GESCHW. TRACTION HELP V VITESSE AIDE DEMARRAGE	0
ANFAHRHILFE DRUCK TRACTION HELP PRESS. PRES. AIDE DEMARRAGE	0.0

	STEUERDRUCK PM (BAR) CONTROL PRESSURE (BAR) PRESSION DE SERVICE PM (BAR)		6.5	STEUERDRUCK PM (BAR) CONTROL PRESSURE (BAR) PRESSION DE SERVICE PM (BAR)		0.8	2.0	6.5
ACHSE AXLE ESSIEU	ACHSLAST LEER AXLE LOAD UNLADEN CHARGE ESSIEU A VIDE (KG)	BALGDRUCK LEER SUSP. PRESS. UNLADEN PRESS. SUSP. A VIDE (BAR)	BREMSDRUCK LEER BRAKE PRESS. UNLADEN PRESS. DE FREIN. A VIDE (BAR)	ACHSLAST BELADEN AXLE LOAD LADEN CHARGE ESSIEU EN CHARGE (KG)	BALGDRUCK BELADEN SUSP. PRESS. LADEN PRESS. SUSP. EN CHARGE (BAR)	BREMSDRUCK BELADEN BRAKE PRESS. LADEN PRESS. DE FREIN. A CHARGE (BAR)		
1	1200	0.4	2.1	7000	4.3	0.5	1.6	6.1
2	1200	0.4	2.1	7000	4.3	0.5	1.6	6.1
3	1200	0.4	2.1	7000	4.3	0.5	1.6	6.1
4	1200	0.4	2.1	7000	4.3	0.5	1.6	6.1
5	---	---	---	---	---	---	---	---

Transpecs
QUALITY ON THE MOVE

P.O.Box 98-971 South Auckland Mail Centre

Ronald Stuart Pratt (TRSP)

DATE	13-Jan-09	TYPE APPROVED	NO
CERTIFICATE No	RP090101		RORQEBS
VIN No	7A9D1502280023824		
BRAKE CHAMBERS FRONT	16/24 Meritor 64		
BRAKE CHAMBERS REAR	16Meritor 64	LOAD SENSED	Yes EBS Control
SLACK LENGTH FRONT	Disc	TYRE SIZE FRONT	355/50R22.5
SLACK LENGTH REAR	Disc	TYRE SIZE REAR	355/50R22.5
THIS VEHICLE COMPLIES W	.N.Z.H.V.B.R	LINING MATERIALFRONT	ROR 8616 AF
32015 SCHEDULE 5		LINING MATERIAL REAR	ROR 8616 AF

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
3140 848
00072RP

please note!

This brake calculation is made under consideration of
-the legal precriptions mentioned above in the version valid
alt the time of making the program (V8.09.06.08).
-the functional characteristics of our products,
but not of those of other 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).
WABCOBrake V8.09.06.08 db 08.06.2009

vehicle manufacturer:		Domett
trailer model	:	QUAD Semi
trailer type	:	4-axle-semi-trailer
remarks	:	air / hydraulic / VA suspension WABCO T-EBS: D or D PLUS (PREV) TRISTOP 1+2: T.14/24 355/50 R 22,5

axle 1 + 2 + 3 + 4 : ROR, Elsa 195 LE, 36102202, Re 518

		unladen	laden
total mass	P in kg	6900 - 6900	42000 - 42000
king-pin	PS kg	2100 - 2100	14000 - 14000
axle 1	P1 in kg	1200	7000
axle 2	P2 in kg	1200	7000
axle 3	P3 in kg	1200	7000
axle 4	P4 in kg	1200	7000
total axle mass	PR in kg	4800	28000
wheel base	E in mm	8500 - 8500	
centre of gravity height	h in mm	1320	2200
K-factor		Kv min 1.8177	Kc min 1.0676
K-factor		Kv max 1.8177	Kc max 1.0676

		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 119.6	BZ 119.6	BZ 122.1	BZ 122.1
brake chamber manufacturer		Meritor	Meritor	Meritor	Meritor
chamber size		T.16/24	T.16/24	16.	16.
lever length	lBh in mm	74	74	74	74
brake factor	[-]	20.30	20.30	20.30	20.30
dyn. rolling radius	rdyn min in mm	449	449	449	449
dyn. rolling radius	rdyn max in mm	449	449	449	449
threshold torque	Co Nm	10.0	10.0	10.0	10.0
calculation:					
chamber pressure(rdyn min)pH at z=22,5%bar		2.5	2.5	2.5	2.5
chamber pressure(rdyn max)pH at z=22,5%bar		2.5	2.5	2.5	2.5
chamber press.(servo)pcha at pm6,5bar	bar	6.1	6.1	6.1	6.1
piston force	ThA at pm6,5bar N	6161	6161	6161	6161
brake force(rdyn min)T lad. at pm6,5bar	N	41008	41008	41008	41008
brake force(rdyn max)T lad. at pm6,5bar	N	41008	41008	41008	41008
brake force within 1 % rolling friction proportion	%	25.0	25.0	25.0	25.0

braking rate z laden	0.597	for rdyn min
z = sum (TR)/PRmax	0.597	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: 480 102 0.. 0 WABCO
EBS trailer modulator

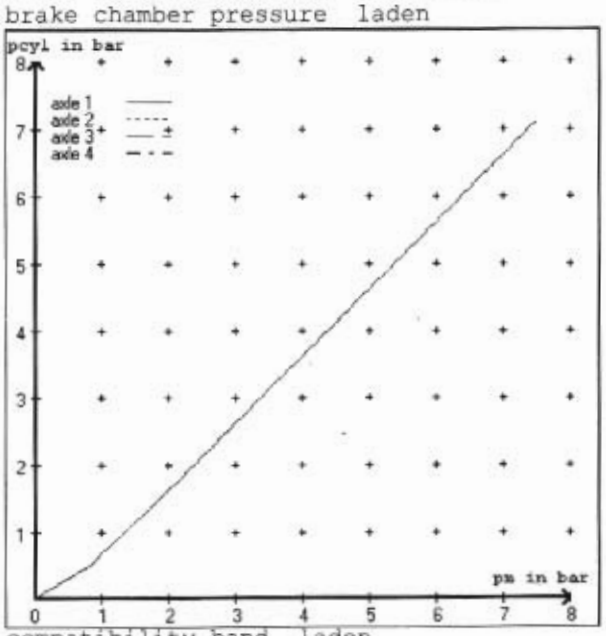
axle 2:
valve 1: 480 102 0.. 0 WABCO
EBS trailer modulator

axle 3:
valve 1: 480 207 0.. 0 WABCO
EBS relay valve

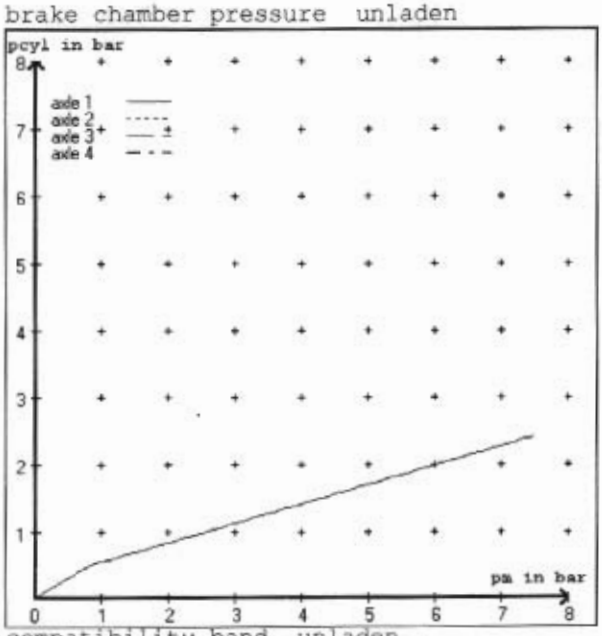
axle 4:
valve 1: 480 207 0.. 0 WABCO
EBS relay valve

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	
at pm 3.7 bar =>	pcha in bar :	3.3	3.3	3.3	3.3	
test type III (zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	axle4	
at pm 1.3 bar =>	pcha in bar :	1.0	1.0	1.0	1.0	

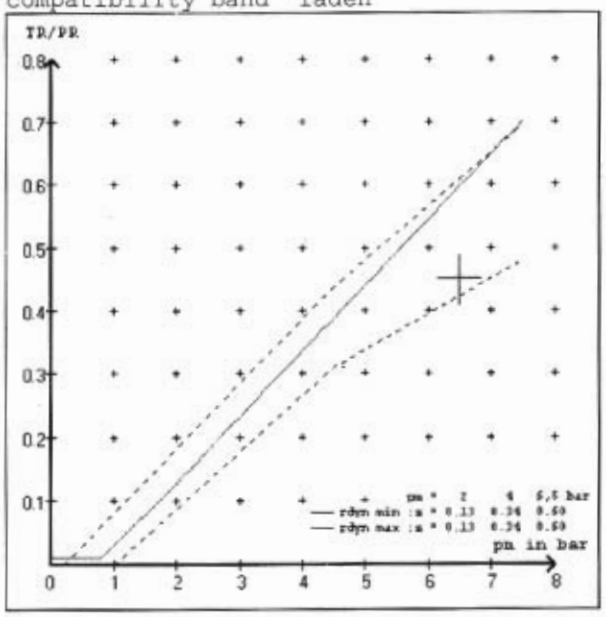
brake chamber pressure laden



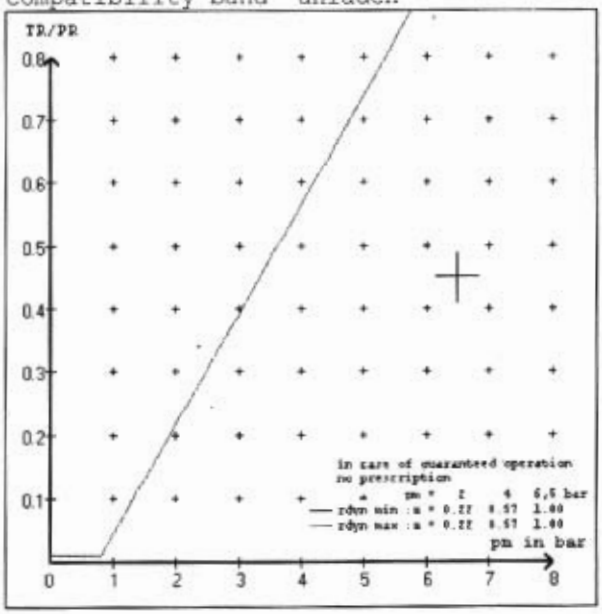
brake chamber pressure unladen



compatibility band laden



compatibility band unladen



vehicle manufacturer: Domett
trailer model : QUAD Semi
trailer type : 4-axle-semi-trailer

brake chamber and lever length :
axle 1 : 2 x type/diameter T.16/24 (Meritor) lever length 74 mm
axle 2 : 2 x type/diameter T.16/24 (Meritor) lever length 74 mm
axle 3 : 2 x type/diameter 16. (Meritor) lever length 74 mm
axle 4 : 2 x type/diameter 16. (Meritor) lever length 74 mm

brake diagram :

valve :
480 102 0.. 0 WABCO EBS trailer modulator
480 207 0.. 0 WABCO EBS relay valve

EBS input data
==========
vehicle manufacturer: Domett
trailer model : QUAD Semi
trailer type : 4-axle-semi-trailer
brake calculation no. : TP 72S

tire circumference main axle : 2825 for rdyn max
tire circumference auxiliary axle : 2825 for rdyn max

assignment pm / deceleration z: pm 0.8 bar z = 0.000
(laden condition) 2.0 bar z = 0.126
6.5 bar z = 0.600

control pressure pm			6,5	control pressure pm		0.8	2.0	6.5
axle	axle load unladen	bellow pr. unladen	brake pr. unladen	axle load laden	bellow pr. laden	brake pr. laden		
1	1200	to be entered by the vehicle manufact.	2.1	7000	to be entered by the vehicle manufact.	0.5	1.6	6.1
2	1200		2.1	7000		0.5	1.6	6.1
3	1200		2.1	7000		0.5	1.6	6.1
4	1200		2.1	7000		0.5	1.6	6.1
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 4	
axle load	pcyl	axle load	pcyl	axle load	pcyl	axle load	pcyl
1200	2.1	1200	2.1	1200	2.1	1200	2.1
1700	2.1	1700	2.1	1700	2.1	1700	2.1
2200	2.3	2200	2.3	2200	2.3	2200	2.3
2700	2.7	2700	2.7	2700	2.7	2700	2.7
3200	3.1	3200	3.1	3200	3.1	3200	3.1
3700	3.5	3700	3.5	3700	3.5	3700	3.5
4200	3.9	4200	3.9	4200	3.9	4200	3.9
4700	4.3	4700	4.3	4700	4.3	4700	4.3
7000	6.1	7000	6.1	7000	6.1	7000	6.1

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: ROR	.../... .../K	brake lining: ROR 8616 AF		
test report :	36102202	date	: 07.06.2002	
axle 2 : reference axle: ROR	.../... .../K	brake lining: ROR 8616 AF		
test report :	36102202	date	: 07.06.2002	
axle 3 : reference axle: ROR	.../... .../K	brake lining: ROR 8616 AF		
test report :	36102202	date	: 07.06.2002	
axle 4 : reference axle: ROR	.../... .../K	brake lining: ROR 8616 AF		
test report :	36102202	date	: 07.06.2002	

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

axle 1	(rdyn 449 mm)	T = 19.1 % Pe
axle 2	(rdyn 449 mm)	T = 19.1 % Pe
axle 3	(rdyn 449 mm)	T = 19.1 % Pe
axle 4	(rdyn 449 mm)	T = 19.1 % Pe

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

axle 1	(sp = 57 mm)	s = 50 mm
axle 2	(sp = 57 mm)	s = 50 mm
axle 3	(sp = 57 mm)	s = 50 mm
axle 4	(sp = 57 mm)	s = 50 mm

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

axle1	ThA = 6161 N
axle2	ThA = 6161 N
axle3	ThA = 6161 N
axle4	ThA = 6161 N

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

axle 1	(rdyn 449 mm)	T = 34880 N
axle 2	(rdyn 449 mm)	T = 34880 N
axle 3	(rdyn 449 mm)	T = 34880 N
axle 4	(rdyn 449 mm)	T = 34880 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)	0.60	0.51
required braking rate (items 1.3.3 and 1.6.2 to annex II)		>= 0,4 and >= 0,6*z (0.36)

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

axle 1	(rdyn 449 mm)	T = 34880 N
axle 2	(rdyn 449 mm)	T = 34880 N
axle 3	(rdyn 449 mm)	T = 34880 N
axle 4	(rdyn 449 mm)	T = 34880 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)	0.60	0.51
required braking rate (items 1.3.3 and 1.6.2 to annex II)		>= 0,4 and >= 0,6*z (0.36)

spring parking brake

		axle 1	axle 2
no of TRISTOP-actuators per axle line	KDZ	2	2
TRISTOP-actuator type		T.16/24	T.16/24
lever length	lBh in mm	74	74
stat. tyre radius	rstat max in mm	432	432
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:

ratio until road		3.4773	3.4773
iFb = lBh*Eta*C*rBt/(rBn*rstat)			
	for rstat in mm	432	432
brake force of spring br. Tf	in N	51950	51950
Tf = (TFZ*KDZ-2*Co/lBh)*iFb			
braking rate	zf laden	0.262	
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 = 5872 mm for E = 8500 mm
==========
min Ef = 5872 mm for E = 8500 mm
==========

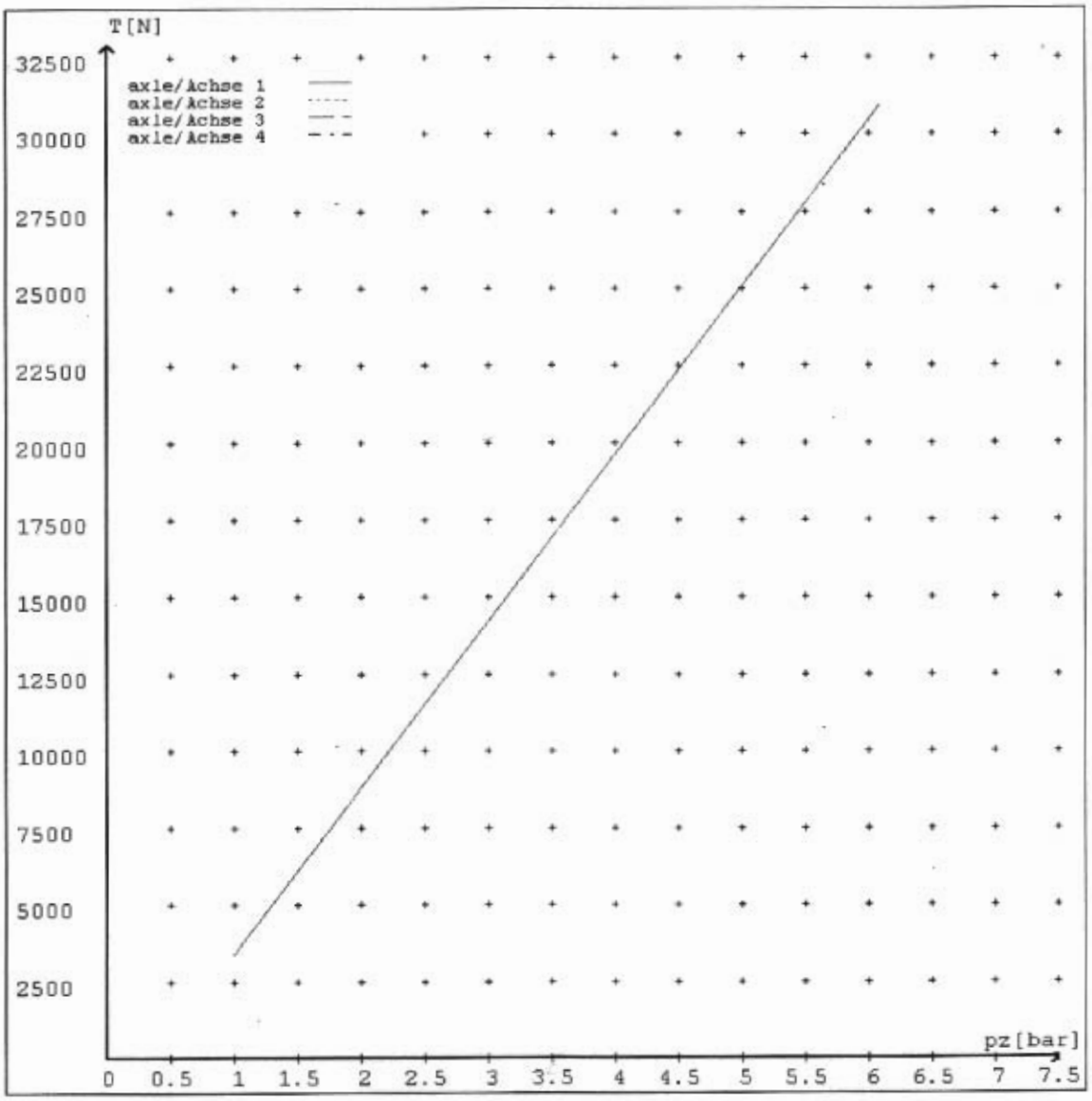
min Ef	=		minimum distance between front axle(s) (trailer) or support (semitrailer) and the rear axle(s) (resultant of the bogie)
E	=		wheel base
fzul	=	0.80	maximum permissible frictional connection required
zferf	=	0.18	maximum required braking ratio of the parking brake
h	=	2200 mm	height of center of gravity - laden
PR	=	28000 kg	maximum bogie mass - laden
P	=	42000 kg	maximum total mass - laden
nf	=	2	no. of axle(s) with TRISTOP spring brake actuators
ng	=	4	no. of bogie axle(s)

reference values

reference values for z = 45%

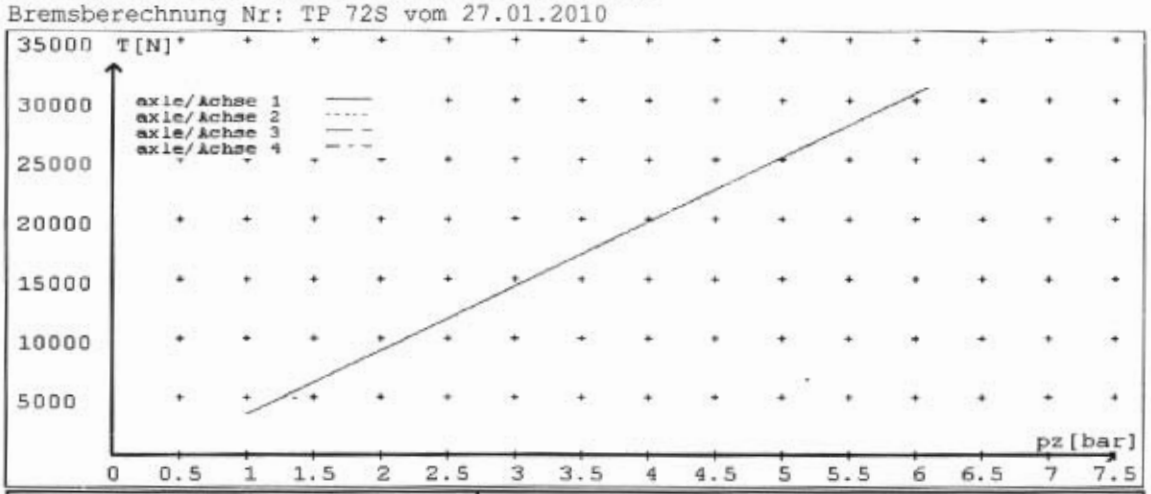
	pz [bar]	T [N]	T [N]
axle 1	1.0 6.1	3362 30911	
axle 2	1.0 6.1	3362 30911	
axle 3	1.0 6.1		3362 30911
axle 4	1.0 6.1		3362 30911

VIN - no.:



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

reference values for z = 0.45
Angabe der Referenzwerte für z = 0.45
brake calculation no: TP 72S date 27.01.2010
Bremsberechnung Nr: TP 72S vom 27.01.2010



	Axle(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	T.16/24	T.16/24	16./	16./	/
Maximum stroke smax = ...mm maximaler Hub smax = ...mm	64	64	64	64	
Lever length = ...mm Hebellänge = ...mm	74	74	74	74	