

Heavy Vehicle Specialist Certificate

Must be presented to a Transport Service Delivery Agent
 Heavy Vehicle Specialist Inspector and Inspecting Organisation

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

CHRIS CLARK

CJC

Vehicle Registration* VIN/Chassis Number

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

Component being certified:

<input type="checkbox"/> Chassis Modification	<input type="checkbox"/> Load Anchorage	<input type="checkbox"/> Log Bolsters
<input type="checkbox"/> Towing Connection	<input checked="" type="checkbox"/> Brakes	<input type="checkbox"/> SRT
<input type="checkbox"/> PSV Stability	<input type="checkbox"/> PSV Rollover	<input type="checkbox"/> Swept Path
<input type="checkbox"/> PBS		

Certification Category

HVEK

Description of Work

Copy of compliance to the NZ Heavy Vehicle Road Rule

Roll stability function activated.

Code/Standard/Rule Certified to

HVSR 32015/3 SR1005

Component Load Rating(s)

36000KG

General Drawing Number(s)

N/A

Supporting Documents

Roll Design Certificate - 11/11/0821

Special Conditions*

Rolling load not illuminate (SRT) switched on when

extinguish immediately or vehicle exceeds 7KPH

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

[Signature]

Inspector's Name (PRINT IN CAPS) ID Number

[Signature]

Date

23.09.2011

Number

484950

CoF Vehicle Inspector ID

CoF Vehicle Inspector Signature

Date

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

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

distribution: DOMETT
 7A9E10012E1023293
 7A9E10014E1023294, 7A9E10016E1023295
 7A9E10018E1023296, 7A9E1001XE1023297
 7A9E10011E1023298, 7A9E10013E1023299

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 (V6.14.04.20).
 -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 V6.14.04.20 db 08.07.2014

vehicle manufacturer: DOMETT
 trailer model : 5AFT TANKER
 trailer type : 5-axle-full-trailer
 remarks : air / hydraulic / VA suspension
 WABCO TRAILER - EBS E
 TRISTOP 3+4+5: 24/30
 265/70 R 19,5

axle 1 + 2 + 3 + 4 + 5 : Assali Stefen, B (350x200), TDB 0855 ECE,

		unladen	laden
total mass	P in kg	7090	36000
axle 1	P1 in kg	1640	7500
axle 2	P2 in kg	1640	7500
axle 3	P3 in kg	1270	7000
axle 4	P4 in kg	1270	7000
axle 5	P5 in kg	1270	7000
wheel base	E in mm	7200 - 7200	
centre of gravity height	h in mm	1066	1660

	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	2	2	2	2	2
The power output corresponds to	BC 0029.0BC	0029.0BC	0051.0BC	0051.0BC	0051.0
brake chamber manufacturer	WABCO	WABCO	WABCO	WABCO	WABCO
chamber size	24	24	24/30	24/30	24/30
lever length	127	127	127	127	127
brake factor	9.10	9.10	9.10	9.10	9.10
dyn. rolling radius	421	421	421	421	421
dyn. rolling radius	421	421	421	421	421
threshold torque	25.0	25.0	25.0	25.0	25.0

calculation:

chamber pressure(rdyn min)pH at z=22,5%bar	2.3	2.3	2.2	2.2	2.2
chamber pressure(rdyn max)pH at z=22,5%bar	2.3	2.3	2.2	2.2	2.2
chamber press.(servo)pcha at pm6,5bar bar	5.8	5.8	5.4	5.4	5.4
piston force ThA at pm6,5bar N	8116	8116	7676	7676	7676
brake force(rdyn min)T lad. at pm6,5bar N	44213	44213	41750	41750	41750
brake force(rdyn max)T lad. at pm6,5bar N	44213	44213	41750	41750	41750
brake force within 1 % rolling friction proportion %	19.8	19.8	20.1	20.1	20.1

braking rate z laden 0.605 for rdyn min
 z = sum (TR)/PRmax 0.605 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: WABCO 423 106 90. 0 / 423 106 96x 0

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: WABCO 423 106 90. 0 / 423 106 96x 0

axle 3:

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

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

brake cylinder: WABCO 925 376 005 0 / 925 376 2.. 0

axle 4:

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

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

brake cylinder: WABCO 925 376 005 0 / 925 376 2.. 0

axle 5:

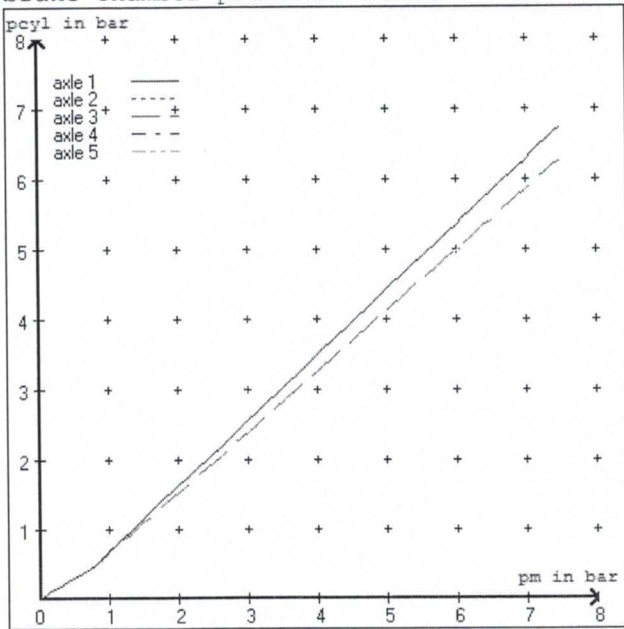
valve 1: 971 002 ... 0 WABCO
 EBS emergency valve

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

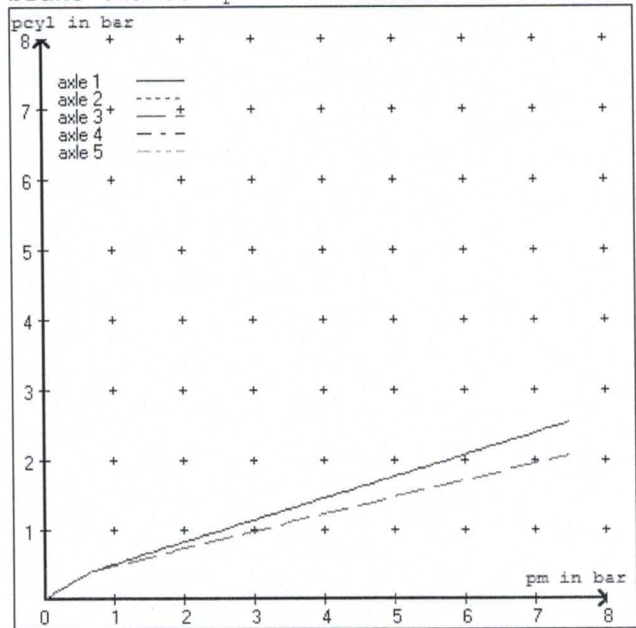
brake cylinder: WABCO 925 376 005 0 / 925 376 2.. 0

test type III	(zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	axle5	
at pm	3.5 bar =>	pcha in bar :	3.0	3.0	2.8	2.8	2.8	2.8
test type III	(zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	axle4	axle5	
at pm	1.1 bar =>	pcha in bar :	0.8	0.8	0.8	0.8	0.8	0.8

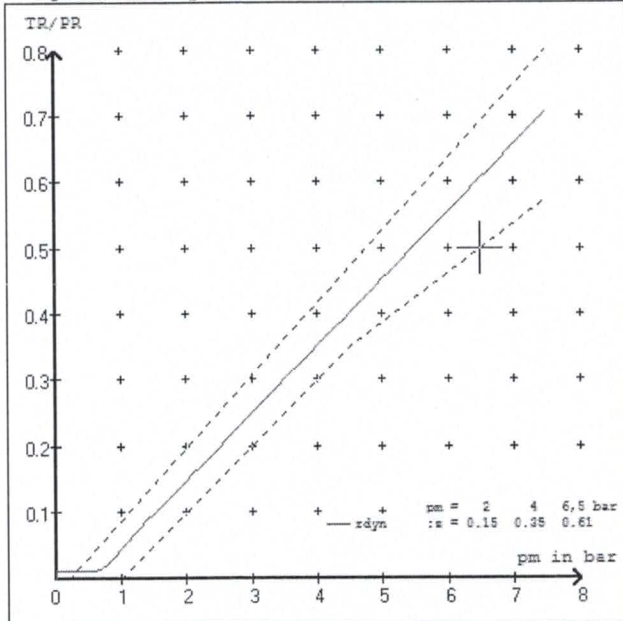
brake chamber pressure laden



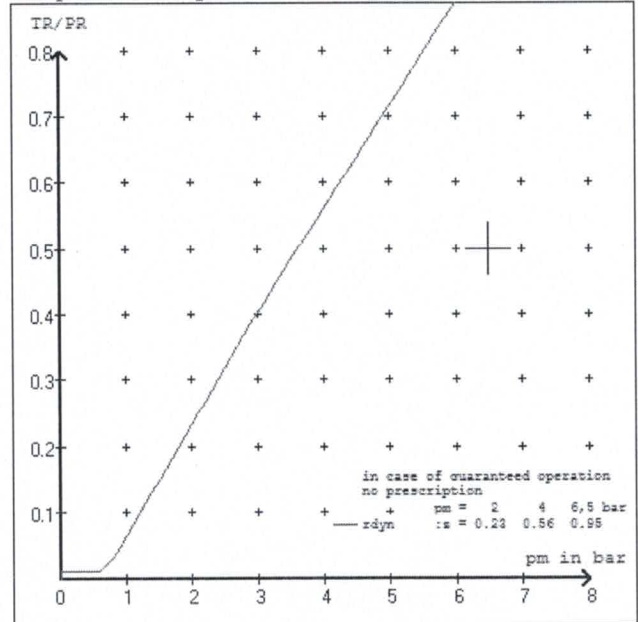
brake chamber pressure unladen



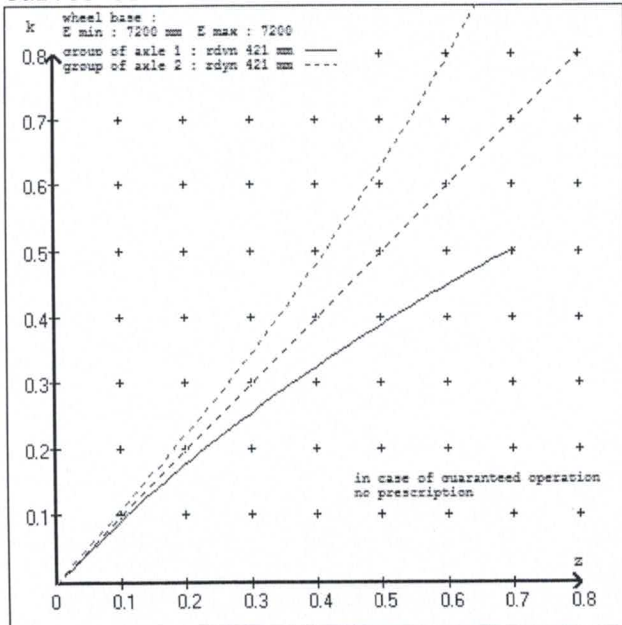
compatibility band laden



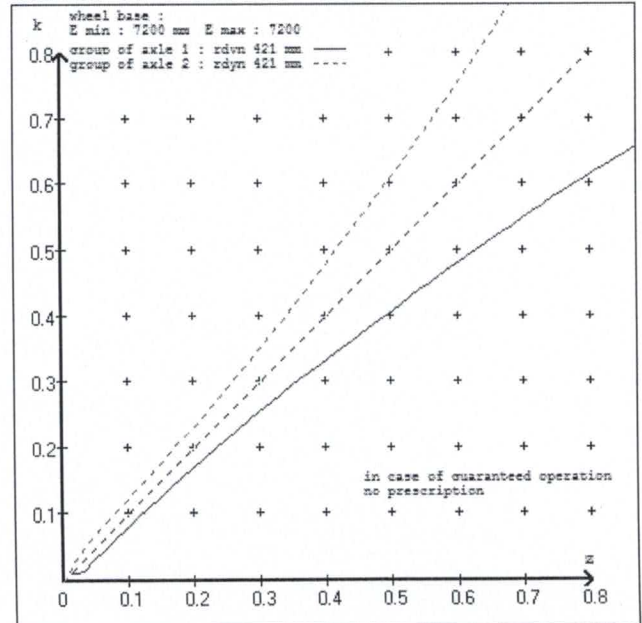
compatibility band unladen



curves of friction laden



curves of friction unladen



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

brake chamber and lever length :

axle 1 : 2 x type/diameter 24 (WABCO) lever length 127 mm
 axle 2 : 2 x type/diameter 24 (WABCO) lever length 127 mm
 axle 3 : 2 x type/diameter 24/30 (WABCO) lever length 127 mm
 axle 4 : 2 x type/diameter 24/30 (WABCO) lever length 127 mm
 axle 5 : 2 x type/diameter 24/30 (WABCO) lever length 127 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

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vehicle manufacturer: DOMETT
 trailer model : 5AFT TANKER
 trailer type : 5-axle-full-trailer
 brake calculation no. : TP 51104A

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

control pressure pm			6,5	control pressure pm			0.7	2.0	6.5
axle	axle load unladen	bellow pr. unladen	brake pr. unladen	axle load laden	bellow pr. laden	brake pr. laden			
1	1640	to be	2.2	7500	to be	0.4	1.6	5.8	
2	1640	entered by	2.2	7500	entered by	0.4	1.6	5.8	
3	1270	the vehicle manufact.	1.8	7000	the vehicle manufact.	0.4	1.5	5.4	
4	1270		1.8	7000		0.4	1.5	5.4	
5	1270		1.8	7000		0.4	1.5	5.4	

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 4		axle 5	
axle load	pcyl	axle load	pcyl	axle load	pcyl	axle load	pcyl	axle load	pcyl
1640	2.2	1640	2.2	1270	1.8	1270	1.8	1270	1.8
2140	2.5	2140	2.5	1770	2.1	1770	2.1	1770	2.1
2640	2.8	2640	2.8	2270	2.4	2270	2.4	2270	2.4
3140	3.1	3140	3.1	2770	2.7	2770	2.7	2770	2.7
3640	3.4	3640	3.4	3270	3.1	3270	3.1	3270	3.1
4140	3.7	4140	3.7	3770	3.4	3770	3.4	3770	3.4
4640	4.0	4640	4.0	4270	3.7	4270	3.7	4270	3.7
5140	4.4	5140	4.4	4770	4.0	4770	4.0	4770	4.0
7500	5.8	7500	5.8	7000	5.4	7000	5.4	7000	5.4

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

axle 1 : reference axle: Assali SteftM / LM / LCen	brake lining: ROR 685 AF
test report : TDB 0855 ECE	date : 20110721
axle 2 : reference axle: Assali SteftM / LM / LCen	brake lining: ROR 685 AF
test report : TDB 0855 ECE	date : 20110721
axle 3 : reference axle: Assali SteftM / LM / LCen	brake lining: ROR 685 AF
test report : TDB 0855 ECE	date : 20110721
axle 4 : reference axle: Assali SteftM / LM / LCen	brake lining: ROR 685 AF
test report : TDB 0855 ECE	date : 20110721
axle 5 : reference axle: Assali SteftM / LM / LCen	brake lining: ROR 685 AF
test report : TDB 0855 ECE	date : 20110721

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 = 21.1 % Fe
axle 2	(rdyn 421 mm)	T = 21.1 % Fe
axle 3	(rdyn 421 mm)	T = 20.2 % Fe
axle 4	(rdyn 421 mm)	T = 20.2 % Fe
axle 5	(rdyn 421 mm)	T = 20.2 % Fe

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

axle 1	(sp = 71 mm)	s = 54 mm
axle 2	(sp = 71 mm)	s = 54 mm
axle 3	(sp = 63 mm)	s = 54 mm
axle 4	(sp = 63 mm)	s = 54 mm
axle 5	(sp = 63 mm)	s = 54 mm

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

axle1	ThA = 8116 N
axle2	ThA = 8116 N
axle3	ThA = 7676 N
axle4	ThA = 7676 N
axle5	ThA = 7676 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 = 36353 N
axle 2	(rdyn 421 mm)	T = 36353 N
axle 3	(rdyn 421 mm)	T = 34313 N
axle 4	(rdyn 421 mm)	T = 34313 N
axle 5	(rdyn 421 mm)	T = 34313 N

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

braking rate of the vehicle (item 4.3.2 to appendix 2 to annex 11)	0.61	(hot)braking 0.50
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required braking rate (items 1.5.3 and 1.7.2 to annex 11)	>= 0,4 and >= 0,6*E (0.36)
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axle 1	(rdyn 421 mm)	T = 36353 N
axle 2	(rdyn 421 mm)	T = 36353 N
axle 3	(rdyn 421 mm)	T = 34313 N
axle 4	(rdyn 421 mm)	T = 34313 N
axle 5	(rdyn 421 mm)	T = 34313 N

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

braking rate of the vehicle (item 4.3.2 to appendix 2 to annex 11)	0.61	(hot)braking 0.50
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required braking rate (items 1.5.3 and 1.7.2 to annex 11)	>= 0,4 and >= 0,6*E (0.36)
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spring parking brake

	axle 3	axle 4	axle 5
no of TRISTOP-actuators per axle line KDZ	2	2	2
TRISTOP-actuator type	24/30	24/30	24/30
lever length lBh in mm	127	127	127
stat. tyre radius rstat max in mm	401	401	401
at a stroke of s in mm	30	30	30
min. force of spring brake TFZ in N	6360	6360	6360
sp.brake chamber no 925	376 005 0376	005 0376	005 0
sp.brake chamber no 925	376 2.. 0376	2.. 0376	2.. 0
release pressure pLs in bar	4.9	4.9	4.9

calculation:

ratio until road	2.8820	2.8820	2.8820
$iFb = lBh * \eta * C * rBt / (2 * rBn * rstat)$ for rstat in mm	401	401	401
brake force of spring br. Tf in N	35525	35525	35525
$Tf = (TFZ * KDZ - 2 * Co / lBh) * iFb$			
braking rate zf laden	0.312		
$zf = \text{sum}(Tf) / P + 0,01$			

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 = 4257 mm for E = 7200 mm

min Ef = 4257 mm for E = 7200 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 = 1660 mm height of center of gravity - laden
- PR = 21000 kg maximum bogie mass - laden
- P = 36000 kg maximum total mass - laden
- nf = 3 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	4720	
	5.8	36540	
axle 2	1.0	4720	
	5.8	36540	
axle 3	1.0		5196
	5.4		34504
axle 4	1.0		5196
	5.4		34504
axle 5	1.0		5196
	5.4		34504

VIN - no.:

	Axle(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	24/	24/	24/30	24/30	24/30
Maximum stroke smax = ...mm maximaler Hub smax =mm	82	82	64	64	64
Lever length =mm Hebellänge =mm	127	127	127	127	127

