

# 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 CLARKE GJC

Vehicle Registration\* VIN/Chassis Number  
7A9E15013E1023266

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  
 HUEK.

Description of Work

CARRY OUT COMPLIANCE TO THE NZ HEAVY VEHICLE BRAKE RULE.

Roll STABILITY FUNCTION ACTIVATED.

Code/Standard/Rule Certified to Component Load Rating(s)  
 HUEK 32015/3 SCHED 5. 34500.KG.

General Drawing Number(s)   
 N/A.

Supporting Documents

BRAKE DESIGN CERTIFICATE - SJH140709

OPT TURN EXEMPTION REF - HMRE14

Special Conditions\*

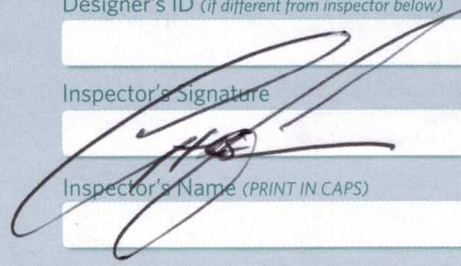
WARNING LAMP MUST ILLUMINATE WHEN IGNITION SWITCHED ON + THE VEHICLE MUST IMMEDIATELY OR WHEN VEHICLE EXCEEDS 7KPH.

Certification Expiry Date (if applicable) or Hubodometer Reading (whichever comes first)  
N/A

**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) ID Number  
CHRIS CLARKE 475244

Date Number  
10.07.2014 475244

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  
7A9E15013E1023266  
SODC: JH140709

please note!

This brake calculation is made under consideration of  
-the legal prescriptions mentioned above in the version valid at the time of making the program (V6.13.11.12).  
-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!  
WABCO Brake V6.13.11.12 db 20.02.2014

vehicle manufacturer: DOMETT  
trailer model : SAFT PLATFORM  
trailer type : 5-axle-full-trailer  
remarks : air / hydraulic / VA suspension  
WABCO TRAILER - EBS E  
TRISTOP 3+4: T.14/16  
265/70 R 19,5

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

		unladen	laden
total mass	P in kg	6500	34500
axle 1	P1 in kg	1750	7500
axle 2	P2 in kg	1750	7500
axle 3	P3 in kg	1000	6500
axle 4	P4 in kg	1000	6500
axle 5	P5 in kg	1000	6500
wheel base	E in mm	7500 -	
centre of gravity height	h in mm	1113	2117

	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	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.	18.	T.14/16	T.14/16	14.
lever length	lBh in mm	69	69	69	69
brake factor	[-]	23.03	23.03	23.03	23.03
dyn. rolling radius	rdyn min in mm	421	421	421	421
dyn. rolling radius	rdyn max in mm	421	421	421	421
threshold torque	Co Nm	6.0	6.0	6.0	6.0

calculation:					
chamber pressure (rdyn min) pH at z=22,5%bar	2.2	2.2	2.1	2.1	2.1
chamber pressure (rdyn max) pH at z=22,5%bar	2.2	2.2	2.1	2.1	2.1
chamber press. (servo) pcha at pm6,5bar	5.8	5.8	4.8	4.8	4.8
piston force ThA at pm6,5bar	6172	6172	4586	4586	4586
brake force (rdyn min) T lad. at pm6,5bar	46726	46726	34638	34638	34638
brake force (rdyn max) T lad. at pm6,5bar	46726	46726	34638	34638	34638
brake force within 1 % rolling friction proportion	%	21.2	21.2	19.2	19.2

braking rate z laden 0.583 for rdyn min  
z = sum (TR)/PRmax 0.583 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 18HSCLD64

axle 3:

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

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

brake cylinder: Meritor 1416HTLD64

axle 4:

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

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

brake cylinder: Meritor 1416HTLD64

axle 5:

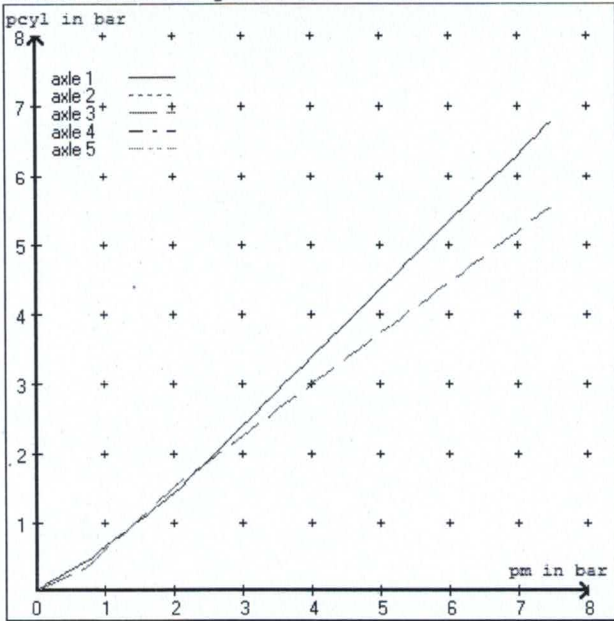
valve 1: 971 002 ... 0 WABCO  
EBS emergency valve

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

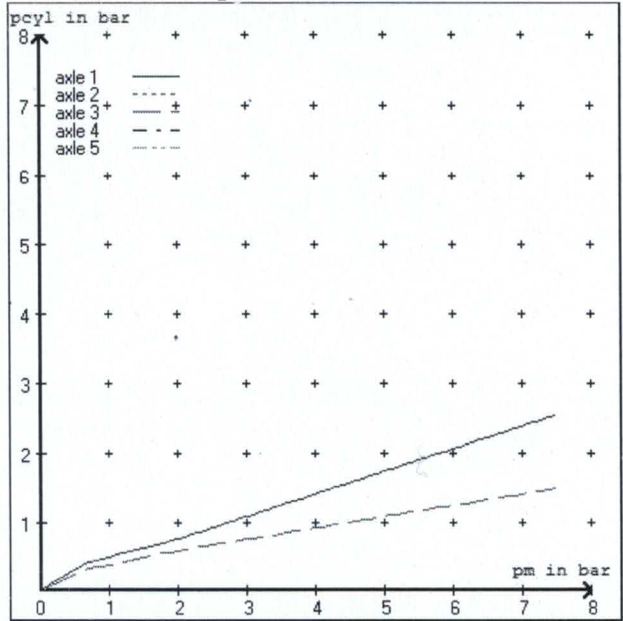
brake cylinder: Meritor 14HSCLD64

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	axle5	
at pm 3.6 bar =>	pcha in bar :	3.0	3.0	2.7	2.7	2.7	
test type III (zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	axle4	axle5	
at pm 1.2 bar =>	pcha in bar :	0.8	0.8	0.8	0.8	0.8	

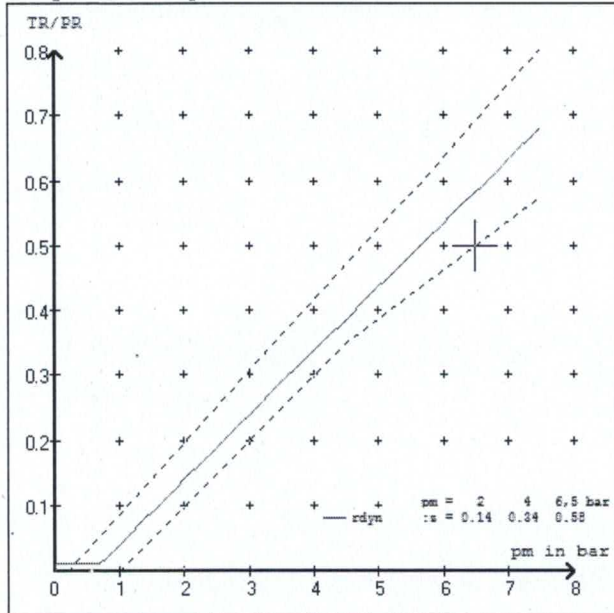
brake chamber pressure laden



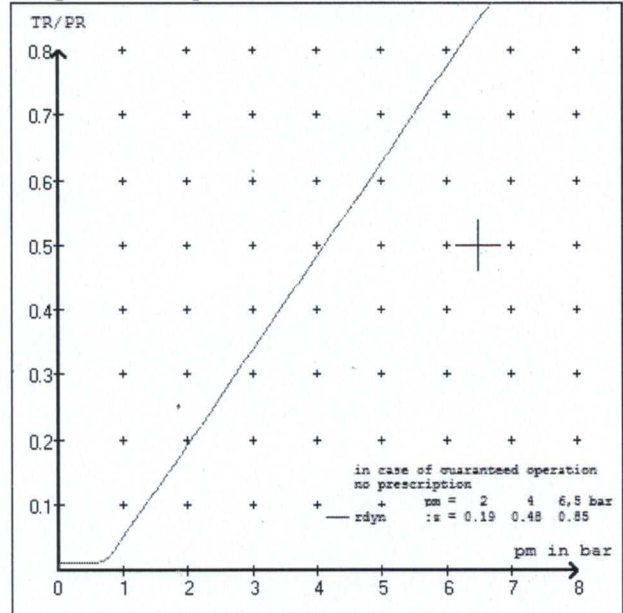
brake chamber pressure unladen



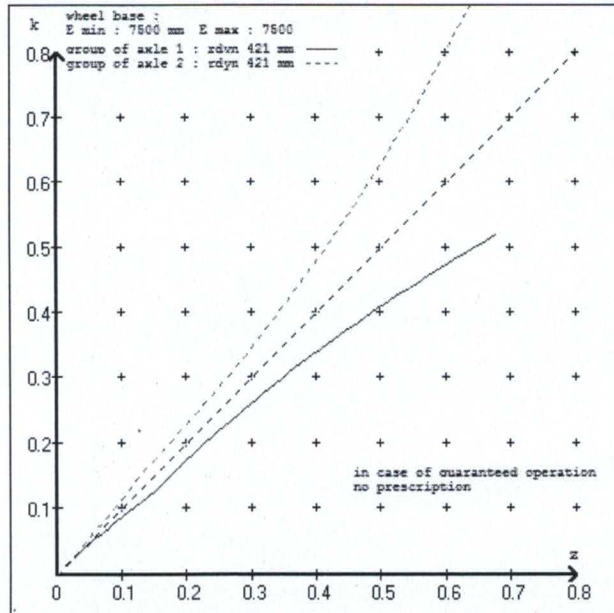
compatibility band laden



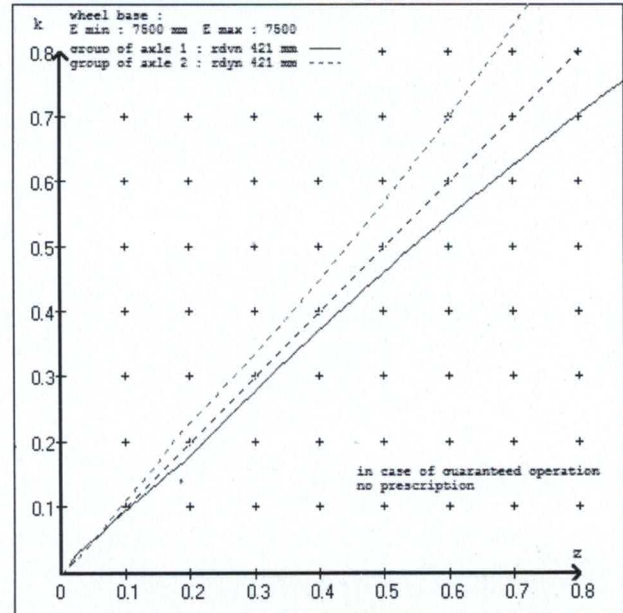
compatibility band unladen



curves of friction laden



curves of friction unladen





vehicle manufacturer: DOMETT  
 trailer model : SAFT PLATFORM  
 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.14/16 (Meritor) lever length 69 mm  
 axle 4 : 2 x type/diameter T.14/16 (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  
 trailer model : SAFT PLATFORM  
 trailer type : 5-axle-full-trailer  
 brake calculation no. : TP 51080A

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 = 0.138  
 6.5 bar z = 0.580

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	1750	to be	2.2	7500	to be	0.4	1.4	5.8	
2	1750	entered by	2.2	7500	entered by	0.4	1.4	5.8	
3	1000	the vehicle manufact.	1.3	6500	the vehicle manufact.	0.3	1.5	4.8	
4	1000		1.3	6500		0.3	1.5	4.8	
5	1000		1.3	6500		0.3	1.5	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 2	axle 3	axle 4	axle 5
axle load pcy1	axle load pcy1	axle load pcy1	axle load pcy1	axle load pcy1
1750 2.2	1750 2.2	1000 1.3	1000 1.3	1000 1.3
2250 2.5	2250 2.5	1500 1.6	1500 1.6	1500 1.6
2750 2.8	2750 2.8	2000 1.9	2000 1.9	2000 1.9
3250 3.1	3250 3.1	2500 2.3	2500 2.3	2500 2.3
3750 3.5	3750 3.5	3000 2.6	3000 2.6	3000 2.6
4250 3.8	4250 3.8	3500 2.9	3500 2.9	3500 2.9
4750 4.1	4750 4.1	4000 3.2	4000 3.2	4000 3.2
5250 4.4	5250 4.4	4500 3.5	4500 3.5	4500 3.5
7500 5.8	7500 5.8	6500 4.8	6500 4.8	6500 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 = 22.8 % Fe
axle 2	(rdyn 421 mm)	T = 22.8 % Fe
axle 3	(rdyn 421 mm)	T = 18.6 % Fe
axle 4	(rdyn 421 mm)	T = 18.6 % Fe
axle 5	(rdyn 421 mm)	T = 18.6 % 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 = 56 mm)	s = 39 mm

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

axle1	ThA = 6172 N
axle2	ThA = 6172 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 = 36515 N
axle 2	(rdyn 421 mm)	T = 36515 N
axle 3	(rdyn 421 mm)	T = 27113 N
axle 4	(rdyn 421 mm)	T = 27113 N
axle 5	(rdyn 421 mm)	T = 27113 N

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

braking rate of the vehicle  
(item 4.3.2 to appendix 2 to annex 11)

0.58      0.46

required braking rate  
(items 1.5.3 and 1.7.2 to annex 11)

>= 0,4 and  
>= 0,6\*E (0.35)

axle 1	(rdyn 421 mm)	T = 36515 N
axle 2	(rdyn 421 mm)	T = 36515 N
axle 3	(rdyn 421 mm)	T = 27113 N
axle 4	(rdyn 421 mm)	T = 27113 N
axle 5	(rdyn 421 mm)	T = 27113 N

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

braking rate of the vehicle  
(item 4.3.2 to appendix 2 to annex 11)

0.58      0.46

required braking rate  
(items 1.5.3 and 1.7.2 to annex 11)

>= 0,4 and  
>= 0,6\*E (0.35)



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	6160	6160
sp.brake chamber no Meritor.....	4	4
release pressure                      pLs in bar	4.5	4.5

calculation:

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	48188	48188
$Tf = (TFZ * KDZ - 2 * Co / lBh) * iFb$		
braking rate                      zf laden	0.295	
$zf = \text{sum}(Tf) / P + 0,01$		

Test of the frictional connection required by the parking brake

minimum wheelbase/minimum supporting width min Ef necessary to fulfil the regulations

$$\text{min Ef} = E * (1 - PR/P + zferf * h/E) / (1 - zferf / (fzul * nf/ng))$$

min Ef = 5497 mm for E = 7500 mm  
 =====  
 min Ef = 5497 mm for E = 7500 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 = 2117 mm height of center of gravity - laden  
 PR = 19500 kg maximum bogie mass - laden  
 P = 34500 kg maximum total mass - laden  
 nf = 2 no. of axle(s) with TRISTOP spring brake actuators  
 ng = 3 no. of bogie axle(s)

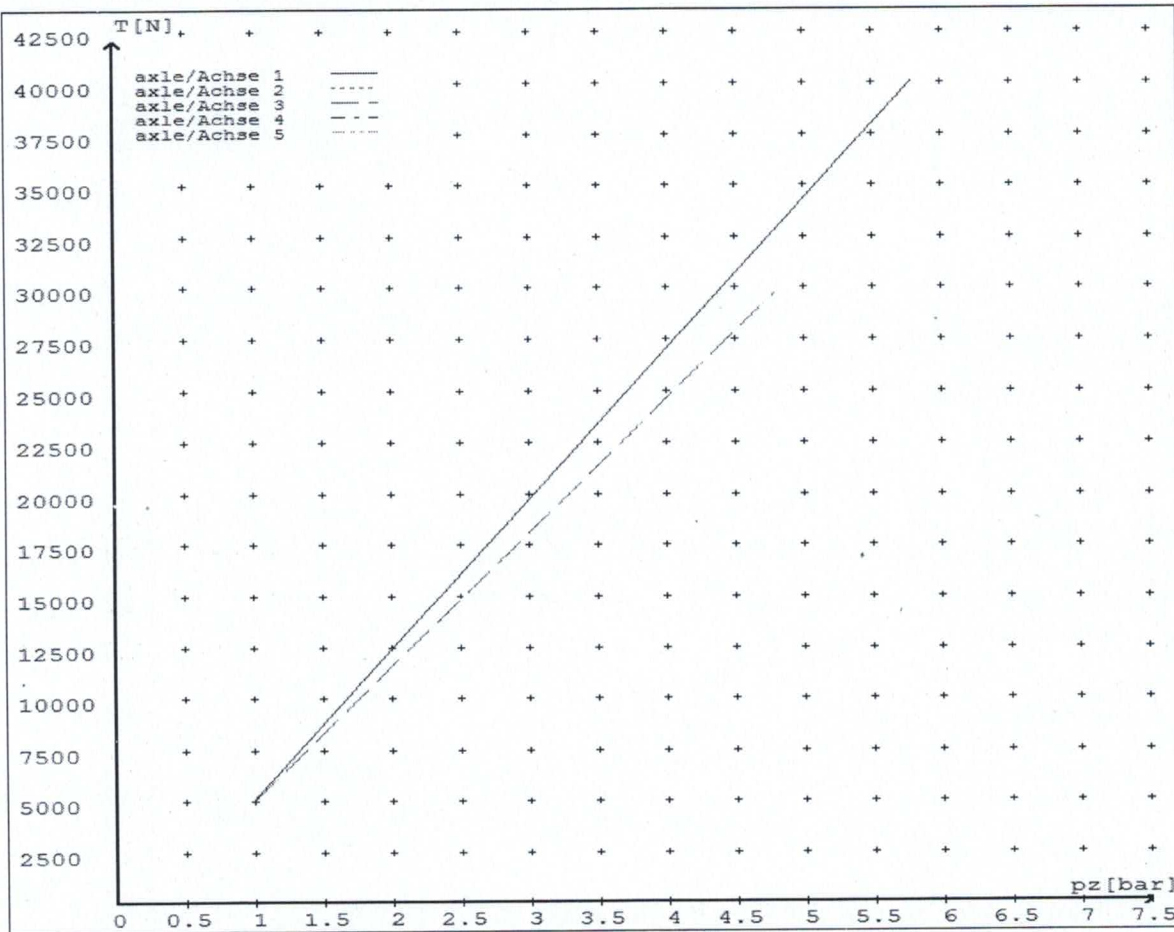
**reference values**

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

	pz [bar]	T [N]	T [N]
axle 1	1.0 5.8	5072 40074	
axle 2	1.0 5.8	5072 40074	
axle 3	1.0 4.8		5027 29707
axle 4	1.0 4.8		5027 29707
axle 5	1.0 4.8		5027 29707

VIN - no.:

	Axle(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	18./	18./	T.14/16	T.14/16	14./
Maximum stroke smax = ...mm maximaler Hub smax = ....mm	65	65	64	64	64
Lever length = ....mm Hebellänge = ....mm	69.08	69.08	69.08	69.08	69.08





**HVBR WORKSHEET**  
(PROCEDURE & COMPLIANCE DOCUMENTATION SHEET)

CERTIFICATE No. JH140709

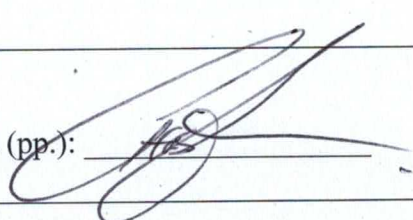
CUSTOMER NAME DOMETT TRAILERS LTD

CUSTOMER ORDER No. 4217 DATE RECEIVED June 14

VEHICLE TYPE 5 AXLE FULL TRAILER

REG No.  CHASSIS No. 7A9E15013E1023266

**BRIEF SPECIFICATION AS CERTIFIED TO HVBR**

<b>BRAKE CHAMBERS:</b>			
<u>Ax #</u>	<u>Make/model</u>	<u>Max stroke</u>	<u>Lever length</u>
1&2	TSE 18HSCLD65	65 mm	69 mm
3&4	TSE 1416HTLD64	64 mm	69 mm
5	TSE 14HSCLD64	64 mm	69 mm
<b>BRAKE SYSTEM:</b>		WABCO EBS : RSS ACTIVATED	
<b># TEST POINTS FITTED:</b>		3 <u>4</u> 5 7	
<b>FRICITION LINING:</b>		<u>OEM</u>	Aftermarket
(All) Lining Brand		JURID 539	
<b><u>EBS CONTROL:</u></b> SPECIAL CONDITIONS APPLY – SEE INSTRUCTION ON LT400:			
<b><u>VALVES:</u></b> AS PER BRAKE CALCULATION TP 51080 & SO1555250			
<b><u>TYRE SIZE:</u></b> 265 70 R 19.5			
<b>NOTES</b>			
<b>PACKING SLIP NO.</b>	<span style="border: 1px solid black; padding: 2px 20px;">SO1555250</span>	<b>PROCESS TIME:</b>	<span style="border: 1px solid black; padding: 2px 10px;">1</span>
BRAKE CALC #TP51080			
OPTITURN EXEMPTION REF: HMRE14/...			
<b>COMPLETION DATE :</b> 9 <sup>th</sup> July 2014		<b>SIGNATURE (pp.):</b> 	

## Statement of Compliance with the New Zealand Heavy Brake Rule

Documentation required supporting Statements of Compliance with the New Zealand Heavy Brake Rule, to be made available to the Statutory Authority on request, must include all calculations and test reports.

### Confirmation of compliance

I confirm that the vehicle identified on page 1 of this Statement of Compliance complies with all relevant requirements of the current New Zealand Heavy Vehicle Brake Rule 32015/3, Schedule 5.

Date: 9<sup>th</sup> July 2014

Signed (pp.):



### Certifier's identification

Name: J E Hirst

Phone (bus): (09) 980 7300 Fax (bus): (09) 980 7306

Postal address: Transport Specialties, Cnr Kerrs & Ash Roads  
Wiri, Auckland, PO Box 98 971 Manukau City 2241

Position: JEH

### Confirmation of continued compliance of modification

I confirm the brake system of the vehicle identified on page 1 of this Statement of Compliance as modified by myself, continues to comply with all the relevant requirements of the current New Zealand Heavy Vehicle Brake Rule 32015/3, Schedule 5.

Date: \_\_\_\_\_

Signed: \_\_\_\_\_

Certifier's identification: JEH

Name:

Phone (bus): (09) 980 7300 Fax (bus): (09) 980 7306

Postal address: Transport Specialties Ltd  
Cnr Kerrs & Ash Roads, Wiri, Auckland  
PO Box 98 971, Manukau City 2241