

# 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)	ID
<b>Chris Clarke</b>	<b>CJC</b>

Vehicle Registration*	VIN/Chassis Number
	<b>7A9E25013F1023430</b>

Component being certified:

<input type="checkbox"/> Chassis	<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

**CERTIFY TO SCHEDULE 5**

**ROLL STABILTY FUNCTION ACTIVATED**

Code/Standard/Rule Certified to	Component Load Rating(s)
<b>HVBR 32015/3 Schedule 5</b>	<b>32000KG</b>

General Drawing Number(s)	
<b>N/A</b>	

Supporting Documents

**BRAKE RULE CERTIFICATE - CJC153461**

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)	or	Hubodometer Reading (whichever comes first)
<b>N/A</b>		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

**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)

Date

Hubodometer Reading

ID Number

Number

**CHRIS CLARKE**

**CJC**

**12-Nov-15**

**531361**

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	2015-06-12	Serial number	437001450100L
Serial number (modulator)	000000040920		
Fingerprint Customer EOL / Customer Development / Flash Program	W503643 / 2015-11-12 ; 00000000 / 0000-00-00 ; 00000000 / 0000-00-00		

WABCO		TRAILER EBS-E		GGVS/ADR TUEH TB 2007 - 019.00 TDB0749											
HERSTELLER MANUFACTURER CONSTRUCTEUR	DOMETT		GIO		Pin1	Pin3	Pin4								
TYP TYPE	5AFT STOCK		1	24V-01	---	---	---								
FAHRZEUG IDENTNR. CHASSIS NUMBER NUMERO DE CHASSIS	7A9E25013F1023430		2	---	---	---	---								
BREMSEBERECHNUNG-NR. BRAKE CALCULATION NO. CALCUL DE FREINAGE NO.	TP51310A		3	ALS2	ALS2	---	---								
POLRADZÄHNEZAHL, c-d   e-f POLE WHEEL TEETH c-d   e-f DENTS ROUE DENTÉE c-d   e-f	90	90	4	---	---	---	---								
RSS RSS RSS	Einfaßbereifung Single Tire Monte simple	Lenkachse Steering axle Essieu virer	5	DIAG	DIAG	DIAG	DIAG								
	Zwillingbereifung Twin Tire Monte jumelée	X	6	---	---	---	---								
		Kippkritisches Fahrzeug Critical Trailer Véhicule critique	7	---	---	---	---								
Subsystems	SB	I/O	24N												
	pm (bar)		6.5	pm (bar)	0.6	2.0	---	6.5							
ACHSE AXLE ESSIEU															
1	2400	1.1	3.3	8000	5.0	0.4	1.4	---	6.6	-	18	65	69	515	4634
2	2400	1.1	3.3	8000	5.0	0.4	1.4	---	6.6	-	18	65	69	515	4634
3	1800	0.8	2.1	6400	4.0	0.3	1.5	---	4.3	-	14 / 16	64	69	506	2667
4	1800	0.8	2.1	6400	4.0	0.3	1.5	---	4.3	-	14 / 16	64	69	506	2667
5	1800	0.8	2.1	6400	4.0	0.3	1.5	---	4.3	-	14	64	69	506	2667

## TEBS-E

Diagnostic memory	OK	Warning lamp control	OK
Parameter setting	carried out	Stop light power supply	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	Not tested
Signal inputs	Not tested	Tag axle test	Not tested

## Electronic Extension Module

Diagnostic memory	Not tested	Signal outputs	Not tested
TailGUARDlight	Not tested	TailGUARD	Not tested
Manufacturer	DOMETT	Vehicle ident. no	7A9E25013F1023430
Vehicle type	5AFT STOCK	Odometer reading	0.0 km
next Service	0 km	Trip reading	0.0 km
Tester	Chris Clarke	Signature	
Date	2015-11-12 10:45:44 a.m.		



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

CERTIFICATE No. JH151116

CUSTOMER NAME

DOMETT TRAILERS LTD

CUSTOMER ORDER No.

4467

DATE RECEIVED

August 2015

VEHICLE TYPE

5 AXLE FULL TRAILER

REG No.

CHASSIS No.

7A9E25013F1023430

**BRIEF SPECIFICATION AS CERTIFIED TO HVBR**

**BRAKE CHAMBERS:**

<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

**BRAKE SYSTEM:**

WABCO EBS : RSS ACTIVATED

**# TEST POINTS FITTED:**

3 4 5 7

**FRICITION LINING:**

(All) Lining Brand

OEM

JURID 539

Aftermarket

EBS CONTROL: SPECIAL CONDITIONS APPLY – SEE INSTRUCTION ON LT400:

VALVES: AS PER BRAKE CALCULATION TP51310 & SO206312

TYRE SIZE: 265 70 R 19.5

**NOTES**

PACKING SLIP NO.

SO206312

PROCESS TIME:

1

BRAKE CALC #TP51310. THE MERITOR CHAMBERS ARE THE TSE VARIANT. THE 1424HTLD64 IN THE CALC ARE USED TO DETERMINE THE SERVICE BRAKE PERFORMANCE. 1616HTLD64 ARE USED TO DETERMINE THE PARK BRAKE PERFORMANCE.

COMPLETION DATE : 11<sup>th</sup> November 2015

SIGNATURE (pp.): \_\_\_\_\_

## 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: 11<sup>th</sup> November 2015

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





**NOTICE TO VEHICLE OPERATOR**

***THIS VEHICLE HAS A BRAKE SYSTEM WHICH HAS BEEN DESIGNED AND FITTED IN ACCORDANCE WITH THE LAND TRANSPORT HEAVY VEHICLE BRAKE RULE 32015/3.***

***IF THIS VEHICLE IS OPERATED IN CONJUNCTION WITH NON-CERTIFIED VEHICLES, THERE MAY BE OPERATIONAL FACTORS WHICH NEED TO BE TAKEN INTO CONSIDERATION.***

***PLEASE REFER TO THE CERTIFIER FOR FURTHER INFORMATION.***

**EXCERPT FROM LAND TRANSPORT RULE; HEAVY-VEHICLE BRAKES RULE 32015/3. SECTION 10,**

**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 this rule;
- 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 person or organisation appointed to carry out specialist inspection and certification of heavy vehicle brakes.

***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 New Zealand Transport Authority if dissatisfied with a Compliance issue. (Refer NZTA Deed Of Appointment Para 47.4) NZTA Helpdesk 0800 699 000***

(p.p.).....  
(J.Hirst (JEH) HVEK)

**NOTICE TO VEHICLE OPERATOR**

This trailer is equipped with an Electronic Brake System.

To comply with the New Zealand Heavy Vehicle Brake Rule 32015/3, 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.

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

(p.p.) \_\_\_\_\_  
J E Hirst  
(JEH HVEK)  
(09 980 7300)



**NOTICE TO VEHICLE OPERATOR**

**WABCO Park Release Emergency Valve**  
**(PREV)**

This trailer is equipped with a WABCO PREV  
Part # 971 002 900 0

Application of the park brake via the cab control valve will actuate and apply all service brakes on the trailer. In the event of a leak in the service brake system the Spring Brakes will automatically override and hold the vehicle in compliance to Land Transport Rule: Heavy-vehicle Brakes Rule 32015/3.

When the vehicle is presented for COF the trailer park brake system is tested by pulling the red actuation knob on the PREV, situated mid way down the chassis rail. The cab control in the prime mover does not have to be applied for this test procedure.

**If you are unsure of any aspect relating to this instruction please contact either the vehicle manufacturer or myself.**

(p.p.) \_\_\_\_\_  
J E Hirst  
(JEH HVEK)  
(09 980 7300)

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

distribution: DOMETT  
 7A9E25013F1023430  
 SODC: JH151116  
 LT400: CJC

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 (V6.14.04.20).  
 -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 STOCK  
 trailer type : 5-axle-full-trailer  
 remarks : air / hydraulic / VA suspension  
 WABCO TRAILER - EBS  
 TRISTOP 3+4: T.14/24 (TSE1416HTLD64 ACTUALLY FITTED  
 - SEE PAGE 7 FOR PERFORMANCE DATA)  
 265/70 R 19,5

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

		<u>unladen</u>	<u>laden</u>
total mass	P in kg	10200	35200
axle 1	P1 in kg	2400	8000
axle 2	P2 in kg	2400	8000
axle 3	P3 in kg	1800	6400
axle 4	P4 in kg	1800	6400
axle 5	P5 in kg	1800	6400
wheel base	E in mm	6795 - 6795	
centre of gravity height	h in mm	1050	2238

		<u>axle 1</u>	<u>axle 2</u>	<u>axle 3</u>	<u>axle 4</u>	<u>axle 5</u>
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 122.1
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:

chamber pressure(rdyn min)pH at z=22,5%bar		2.4	2.4	2.1	2.1	2.1
chamber pressure(rdyn max)pH at z=22,5%bar		2.4	2.4	2.1	2.1	2.1
chamber press.(servo)pcha at pm6,5bar bar		6.6	6.6	4.3	4.3	4.3
piston force ThA at pm6,5bar N		7072	7072	4085	4085	4085
brake force(rdyn min)T lad. at pm6,5bar N		53577	53577	30842	30842	30842
brake force(rdyn max)T lad. at pm6,5bar N		53577	53577	30842	30842	30842
brake force within 1 % rolling friction proportion	%	21.2	21.2	19.2	19.2	19.2

braking rate z laden 0.578 for rdyn min  
 z = sum (TR)/PRmax 0.578 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    1424HTLD64

axle 4:

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

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

brake cylinder: Meritor 1424HTLD64

axle 5:

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

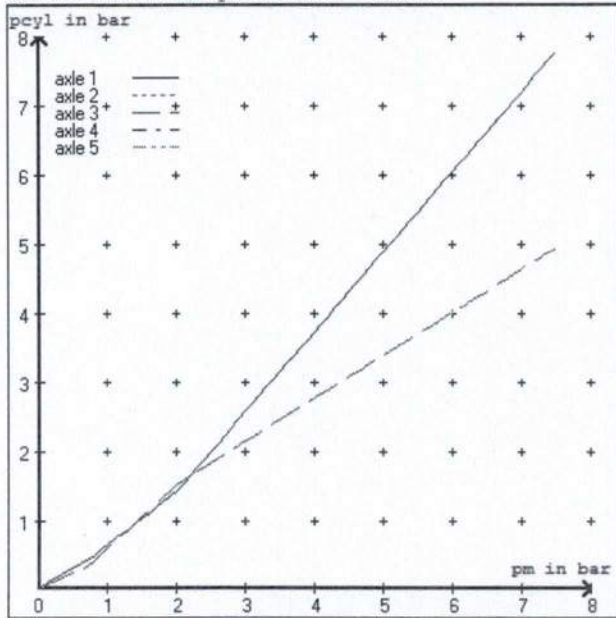
valve 2: 480 102 ... 0 WABCO  
EBS trailer modulator

brake cylinder: Meritor 14HSCLD64

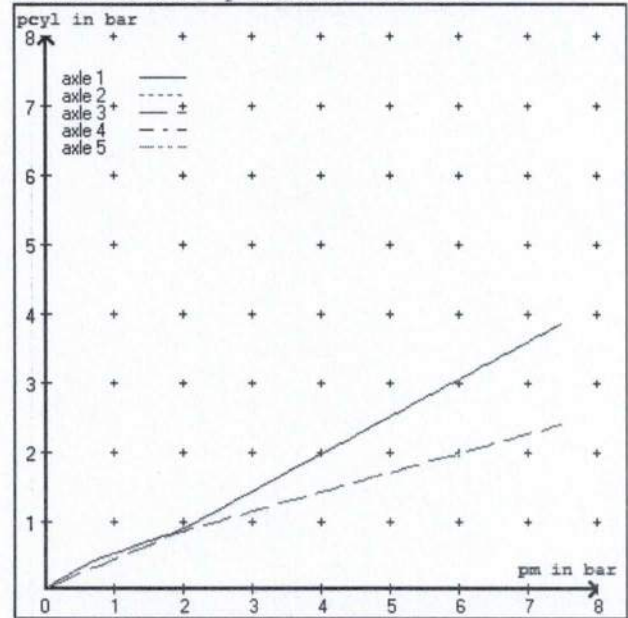
test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	axle5	
at pm 3.7 bar =>	pcha in bar :	3.3	3.3	2.5	2.5	2.5	
test type III (zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	axle4	axle5	
at pm 1.2 bar =>	pcha in bar :	0.8	0.8	0.8	0.8	0.8	



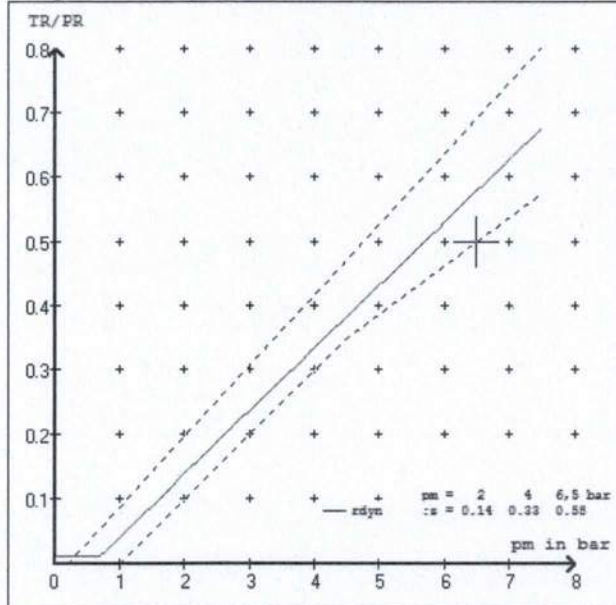
brake chamber pressure laden



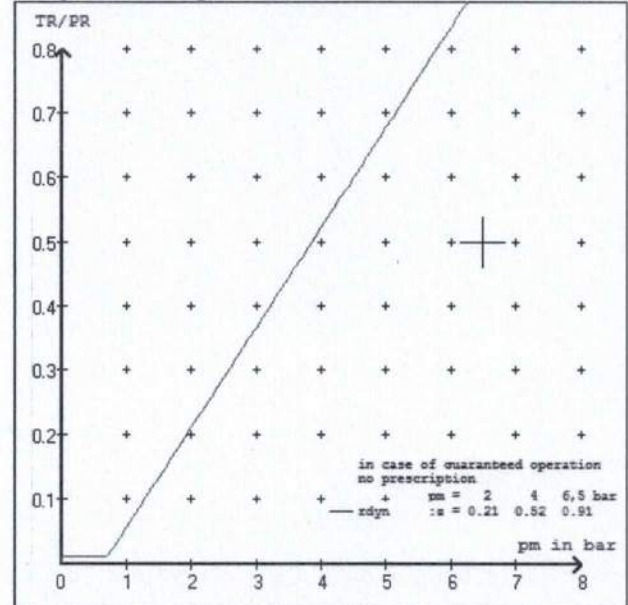
brake chamber pressure unladen



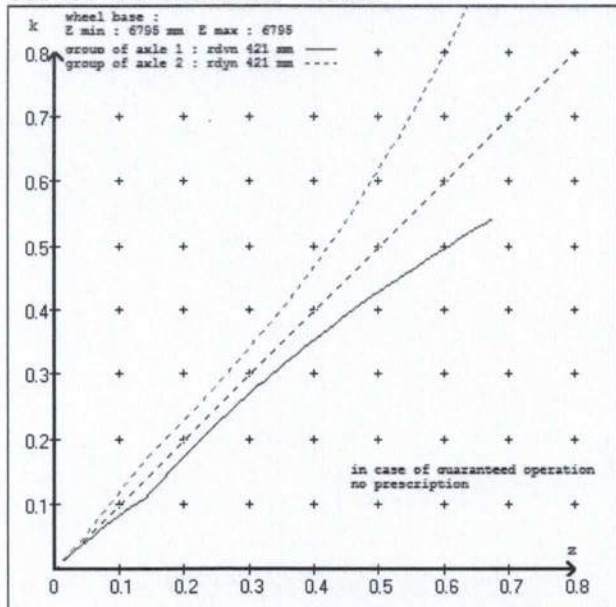
compatibility band laden



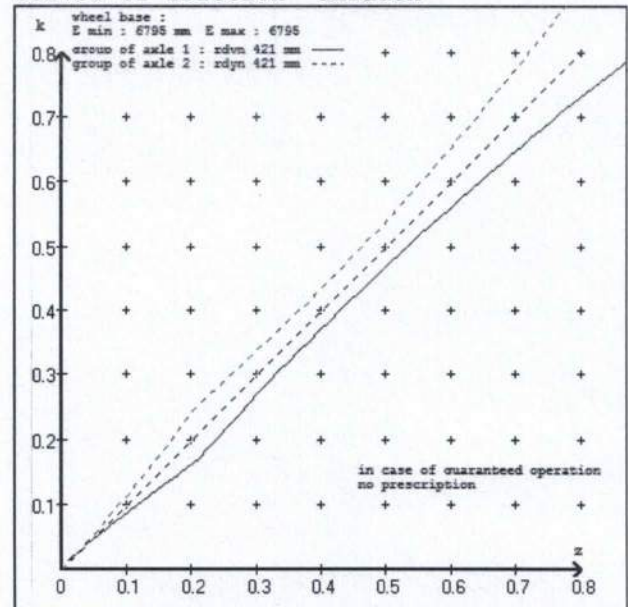
compatibility band unladen



curves of friction laden



curves of friction unladen



vehicle manufacturer: DOMETT  
 trailer model : 5AFT 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 :  
 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 : 5AFT STOCK  
 trailer type : 5-axle-full-trailer  
 brake calculation no. : TP 51310A

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 = 0.138  
 6.5 bar z = 0.580

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	2400	to be	3.3	8000	to be	0.4	1.4	6.6
2	2400	entered by the vehicle manufact.	3.3	8000	entered by the vehicle manufact.	0.4	1.4	6.6
3	1800		2.1	6400		0.3	1.5	4.3
4	1800		2.1	6400		0.3	1.5	4.3
5	1800		2.1	6400		0.3	1.5	4.3

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
2400 3.3	2400 3.3	1800 2.1	1800 2.1	1800 2.1
2900 3.6	2900 3.6	2300 2.3	2300 2.3	2300 2.3
3400 3.9	3400 3.9	2800 2.6	2800 2.6	2800 2.6
3900 4.2	3900 4.2	3300 2.8	3300 2.8	3300 2.8
4400 4.5	4400 4.5	3800 3.1	3800 3.1	3800 3.1
4900 4.8	4900 4.8	4300 3.3	4300 3.3	4300 3.3
5400 5.1	5400 5.1	4800 3.5	4800 3.5	4800 3.5
5900 5.4	5900 5.4	5300 3.8	5300 3.8	5300 3.8
8000 6.6	8000 6.6	6400 4.3	6400 4.3	6400 4.3



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 = 25.6 % Fe
axle 2	(rdyn 421 mm)	T = 25.6 % Fe
axle 3	(rdyn 421 mm)	T = 17.4 % Fe
axle 4	(rdyn 421 mm)	T = 17.4 % Fe
axle 5	(rdyn 421 mm)	T = 17.4 % 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 = 7072 N
axle2	ThA = 7072 N
axle3	ThA = 4085 N
axle4	ThA = 4085 N
axle5	ThA = 4085 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 = 41842 N
axle 2	(rdyn 421 mm)	T = 41842 N
axle 3	(rdyn 421 mm)	T = 24166 N
axle 4	(rdyn 421 mm)	T = 24166 N
axle 5	(rdyn 421 mm)	T = 24166 N

	basic test	type III
	of subject	(calculated)
	trailer (E)	residual
braking rate of the vehicle		(hot)braking
(item 4.3.2 to appendix 2 to annex 11)	0.58	0.45
required braking rate		>= 0,4 and
(items 1.5.3 and 1.7.2 to annex 11)		>= 0,6*E (0.35)

axle 1	(rdyn 421 mm)	T = 41842 N
axle 2	(rdyn 421 mm)	T = 41842 N
axle 3	(rdyn 421 mm)	T = 24166 N
axle 4	(rdyn 421 mm)	T = 24166 N
axle 5	(rdyn 421 mm)	T = 24166 N

	basic test	type III
	of subject	(calculated)
	trailer (E)	residual
braking rate of the vehicle		(hot)braking
(item 4.3.2 to appendix 2 to annex 11)	0.58	0.45
required braking rate		>= 0,4 and
(items 1.5.3 and 1.7.2 to annex 11)		>= 0,6*E (0.35)

spring parking brake

	<u>axle 3</u>	<u>axle 4</u>
no of TRISTOP-actuators per axle line KDZ	2	2
TRISTOP-actuator type	T.14/16	T.14/16
lever length	69	69
stat. tyre radius	401	401
at a stroke of	30	30
min. force of spring brake	6160	6160
sp.brake chamber no Meritor.....	4	4
release pressure	4.5	4.5

calculation:

ratio until road	3.9674	3.9674
$iFb = lBh \cdot \eta \cdot C \cdot rBt / (rBn \cdot rstat)$		
for rstat in mm	401	401
brake force of spring br. Tf in N	48188	48188
$Tf = (TFZ \cdot KDZ - 2 \cdot Co / lBh) \cdot iFb$		
braking rate	0.289	
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

$$\min Ef = E \cdot (1 - PR/P + zferf \cdot h/E) / (1 - zferf / (fzul \cdot nf/ng))$$

min Ef = 5270 mm for E = 6795 mm  
 =====  
 min Ef = 5270 mm for E = 6795 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 = 2238 mm height of center of gravity - laden  
 PR = 19200 kg maximum bogie mass - laden  
 P = 35200 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	5158	
	6.6	46347	
axle 2	1.0	5158	
	6.6	46347	
axle 3	1.0		5062
	4.3		26680
axle 4	1.0		5062
	4.3		26680
axle 5	1.0		5062
	4.3		26680

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	64
Lever length = ....mm Hebellänge = ....mm	69.08	69.08	69.08	69.08	69.08

