

Heavy vehicle specialist inspector's or manufacturing inspecting organisation's name (PRINT IN CAPS)	ID
CHRIS CLARKE	CJC

Vehicle registration (optional)	VIN/chassis number
	7A9E23019L1023965
Make	Component being certified:
DOMETT	<input type="checkbox"/> Chassis <input type="checkbox"/> Load anchorage
Model (optional)	<input type="checkbox"/> Log bolsters <input type="checkbox"/> Towing connection <input checked="" type="checkbox"/> Brakes
E2301	<input type="checkbox"/> SRT <input type="checkbox"/> PSV stability <input type="checkbox"/> PSV rollover
Certification category	<input type="checkbox"/> Swept path <input type="checkbox"/> PBS
HVEK	

Description of work

CERTIFY TO SCHEDULE 5 OF LTR 32015/5: NZ HEAVY VEHICLE BRAKE SPECIFICATION.
 CARRY OUT BRAKE CALCULATIONS, INSPECTION AND ECU END OF LINE PROTOCOL.
 5AFT TIP CURTAINSIDE RSS ON TYRE: 265 70 R19.5
 FOR SYSTEM ARCHITECTURE, PLEASE REFER TO PDS WORKSHEET & SCHEMATIC.

Code/standard/rule certified to	Component load rating(s)
LTR 32015/5	32 Tonnes GVM
General drawing number(s)	16 Tonne (Front group ratings)
N/A	19 Tonne (Rear group ratings)

Supporting documents

BRAKE RULE CERTIFICATE	JH200614
BRAKE CALCULATION #	TP52051

Special conditions (optional)

WARNING LAMP MUST ILLUMINATE WHEN IGNITION IS SWITCHED ON & THEN EXTINGUISH IMMEDIATELY OR WHEN VEHICLE SPEED EXCEEDS 7 KM/H

Certification expiry date (if applicable)	or	Hubodometer reading (whichever comes first)
N/A [UNLESS MODIFIED]		<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) ID number

CHRIS CLARKE **CJC**

Date Number

24-Jun-20 **748047**

CoF vehicle inspector ID (if applicable)	CoF vehicle inspector signature (if applicable)	Date

All fields are mandatory unless otherwise stated.

WABCO START-UP LOG

System	Trailer EBS-E	WABCO part number	480 102 084 0
Production date	2019-10-09	Serial number	437008118500F
Serial number (modulator)	000000501892		
Fingerprint Customer EOL / Customer Development / Flash Program	W503643 / 2020-06-11 ; 00000000 / 0000-00-00 ; 00000000 / 0000-00-00		

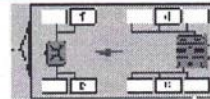
WABCO

TRAILER EBS-E

GGVS/ADR TUEH TB 2007 - 019.00
ATRP0185

HERSTELLER MANUFACTURER CONSTRUCTEUR	DOMETT TRAILERS		
TYP TYPE TYPE	5AFT CURTAINSIDE		
VEHICLE IDENT. NUMBER CHASSIS NUMBER NUMERO DE CHASSIS	7A9E20016L1023968		
BREMSBERECHNUNGS-NR. BRAKE CALCULATION NO. CALCUL. DE FREINAGE NO.	TP52078A		
POLRADZAHNEZAHN c-d e-f POLE WHEEL TEETH c-d e-f DENTS ROUE DENTÉE c-d e-f	100	100	ABS-System ABS-System Système ABS 4S/3M
RSS RSS RSS	Einfachbereifung Single Tire Monte simple	Lenkachse Steering axle Essieu vireur	
	Zwillingsbereifung Twin Tire Monte jumelle	X	Kippkritisches Fahrzeug Critical Trailer Véhicule critique
Subsystems	SB	I/O	24N

GIO	Pin1	Pin3	Pin4
1	TAV1	MH	TAV1
2	eTASC	---	eTASC
3	ALS2	ALS2	---
4	---	---	LS1
5	DIAG	DIAG	DIAG
6	24V-O1	---	---
7	---	---	---



ACHSE AXLE ESSIEU	6.5		0.8		2.0		6.5		TYP TYPE	(mm)	(mm)	(bar)			
	pm (bar)	6.5	pm (bar)	0.8	2.0	6.5	1.0	Pz							
	Pz		Pz		Pz		Pz					TR (daN)			
1	1600	0.6	1.6	8000	4.7	0.4	1.3	---	5.7	-	20	65	69	518	4256
2	1600	0.6	1.6	8000	4.7	0.4	1.3	---	5.7	-	20	65	69	518	4256
3	1300	0.4	1.3	6350	3.5	0.3	1.4	---	4.7	-	14 / 16	64	69	498	2891
4	1300	0.4	1.3	6350	3.5	0.3	1.4	---	4.7	-	14 / 16	64	69	498	2891
5	1300	0.4	1.3	6350	3.5	0.3	1.4	---	4.7	1	14	64	69	498	2891

TEBS-E

Diagnostic memory	OK	Warning lamp control	OK
Parameter setting	carried out	Stop light supply	OK
EBS pressure test	OK	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 test	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 TRAILERS	Vehicle ident. no	7A9E20016L1023968
Vehicle type	5AFT CURTAINSIDE	Odometer reading	0.0 km
next Service	0 km	Trip reading	0.0 km

Tester	Chris Clarke	Signature 
Date	2020-06-11 10:47:06 AM	



**NEW ZEALAND HEAVY VEHICLE BRAKE RULE 32015-5
WORKSHEET, PROCEDURE DOCUMENTATION SHEET
& CONFIRMATION OF COMPLIANCE**

CLIENT

MANUFACTURER:	DOMETT TRAILERS
ADDRESS:	TAURIKURA DRIVE, TAURANGA 3110
FLEET:	KIWITRANS

VEHICLE DETAILS

VEHICLE TYPE:	5AFT TIP CURTAINSIDE	CERT #:	JH200614
YEAR:	2020	CALCULATION #:	TP52051
MAKE:	DOMETT	REGO #:	N/A
MODEL:	E2301	LT400 #:	
CHASSIS #:	1965	ORDER #:	7240
VIN #:	7A9E23019L1023965		
GVM: t	32	PRIME MOVER:	EBS / EUROPEAN
LOAD CONFIGURATION:	UNIFORM DENSITY		
GROUP RATINGS: t	FRONT	REAR	
	16	19	
WHEEL BASE: m	6.775		
	UNLADEN COG m	MAX HEIGHT m	HEIGHT DECK m
	0.665	4.3	1.21
COG: m	2.141		
	FRONT	REAR	TOTAL
TARE: t	4.9	4.5	9.4
	FRONT	REAR	
TYRE SIZE:	265 70 R19.5	265 70 R19.5	
ROLLING CIRCUMFERENCE: mm	2645	2645	
AXLE SPACING: m	1.3	2.51	

BRAKE & AXLE DETAILS

	MAKE	MODEL	TEST REPORT
AXLE:	SAF	SAF-ZI9W	TDB0749
POLE WHEEL FRONT:	90	POLE WHEEL REAR:	90
LINING MATERIAL:	JURID 539	BRAKE FACTOR:	23.03
SENSED AXLES:	2 + 4	NOTES:	
SERIAL NUMBERS:	1	N/A	N/A
	2	N/A	N/A
	3	N/A	N/A
	4	N/A	N/A
	5	N/A	N/A

CHAMBER AND VALVING DETAILS

CHAMBERS:	AXLE 1 & 2	AXLE 3 & 4	AXLE 5
BRAND:	TSE_CHAMBERS	TSE_CHAMBERS	TSE_CHAMBERS
SIZE:	20HSCLD	1416HTLD	14HSCLD
STROKE: mm	65	64	64
TEST REPORT #:	BC 0041.0 Jul '07	BC0143.0	BZ 122.1 Sep '00
SPRINGBRAKE FORCE: kN	N/A	6.16	N/A
HOLDOFF PRESSURE: Bar	N/A	4.5	N/A
FOUNDATION BRAKE:	WABCO PAN19	WABCO PAN19	WABCO PAN19
LEVER LENGTH: mm	69	69	69
BRAKE VALVES:	MAKE:	PART NUMBER:	PM PRESS. kPa
ECU PART #:	WABCO	480 102 020 0 (12v)	80 kPa
3RD MODULATOR #:	WABCO	480 207 202 0 (12V)	80 kPa
ANTI-COMPOUNDING:	YES		
SPRING BRAKE RELAY:	WABCO_PREV	971 002 900 0	
YARD RELEASE VALVE:	WABCO-PREV	971 002 900 0	
INLINE RELAY FITTED:	N/A	N/A	
ECU DIRECTION:	<input checked="" type="checkbox"/> FRONT	<input type="checkbox"/> REAR	FRONT FRICTION: μ 0.49

SUBSYSTEMS: SMARTBOARD OPTI-LINK CAN ROUTER 446 122 050 0 ELEX 446 122 070 0 TAILGUARD**SUSPENSION**

	FRONT	REAR
SUSPENSION TYPE:	PNEUMATIC	PNEUMATIC
MAKE:	SAF_AIRSPRING	SAF_AIRSPRING
MODEL:	SAF_INTRA	SAF_INTRA
BELLOW SIZE:	2619, 300mm	2619, 300mm
HEIGHT CONTROL VALVE:	464 008 011 0	464 008 011 0
OTHER VALVES:	N/A	N/A
RIDE HEIGHT mm :	250	240
HANGER HEIGHT mm :	200	200
PEDESTAL HEIGHT mm :	5	5
LIFTAXLE:		N/A
TIPPING DUMP SWITCH:		N/A
LIFTAXLE VALVE:		N/A
PRESSURE LIMITING:		N/A

AIR TANKS

AIR TANKS STANDARD:	SAE J10A / EN286-2	
	FRONT	REAR
BRAKE TANK SIZE: L	46	46 + 25
AUXILLARY TANK SIZE: L	N/A	46
PRESSURE PROTECTION:	WABCO PEM: 461 513 002 0	

AIR LINES**TEST POINTS:**

CONTROL LINE:	X 1	TANK:	X 1
REAR CHAMBER:	X 2	FRONT CHAMBER:	X 1
DUOMATIC COLOUR CODED:	YES		

ELECTRONIC HEIGHT SENSOR CALIBRATION

	TIMER TICKS [F/R]	MILLIMETRE [F / R]
UPPER LEVEL:	N/A	N/A
NORMAL LEVEL:	N/A	N/A
LOWER LEVEL:	N/A	N/A

CHECKS AT COMMISSION OF VEHICLECHAMBER BUNGS REMOVED: VALVE MOUNTING: ECU BLANKING PLUGS CHECKED:

RESPONSE TIME:	MODULATOR 2.1	MODULATOR 2.2	RELAY VALVE
ms:	200	205	365

NOTES AND SPECIAL CONDITIONS

REASON FOR CERTIFICATION: NEW TRAILER

I UNDERSTAND AND DECLARE THAT I AM THE CERTIFIER IDENTIFIED BELOW AND HOLD A CURRENT VALID APPOINTMENT. I CERTIFY THAT AT THE TIME OF INSPECTION THE ABOVE MENTIONED VEHICLE COMPONENT DESIGN 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.

NEW ZEALAND HEAVY VEHICLE BRAKE RULE 32015/5, SCHEDULE 5.

DATE: 24/06/2020

SIGNED:

CERTIFIER NAME & ID:

CHRIS CLARKECJC

SODC BY:

JOHN HIRSTJEH

PHONE (BUS):

09-980-7300

FAX:

POSTAL ADDRESS:

P.O. Box 98-971, Manukau 2241
New Zealand

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 32015/5.

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 32015/5. 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 32015/5, 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
(J E 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 32015/5.

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 TRAILERS
 7A9E23019L1023965
 SODC: JH200614
 LT400: CJC 748047

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 (V6.18.07.12).
 -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!
 WABCOBrake V6.18.07.12 db 31.08.2018

vehicle manufacturer: DOMETT TRAILERS
 trailer model : 5AFT TIPPING C'SIDE
 trailer type : 5-axle-full-trailer
 remarks : air / hydraulic / VA suspension
 WABCO TRAILER - EBS E
 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	9400	35050
axle 1	P1 in kg	2450	8000
axle 2	P2 in kg	2450	8000
axle 3	P3 in kg	1500	6350
axle 4	P4 in kg	1500	6350
axle 5	P5 in kg	1500	6350
wheel base	E in mm	6700 - 6900	
centre of gravity height	h in mm	665	2150

	<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	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	20.	20.	T.14/24	T.14/24	14.
lever length	69	69	69	69	69
brake factor	23.03	23.03	23.03	23.03	23.03
dyn. rolling radius	421	421	421	421	421
dyn. rolling radius	421	421	421	421	421
threshold torque	6.0	6.0	6.0	6.0	6.0

calculation:					
chamber pressure(rdyn min)pH at z=22,5%bar	2.3	2.3	2.0	2.0	2.0
chamber pressure(rdyn max)pH at z=22,5%bar	2.3	2.3	2.0	2.0	2.0
chamber press.(servo)pcha at pm6,5bar	6.2	6.2	4.5	4.5	4.5
piston force ThA at pm6,5bar	7194	7194	4285	4285	4285
brake force(rdyn min)T lad. at pm6,5bar	54502	54502	32352	32352	32352
brake force(rdyn max)T lad. at pm6,5bar	54502	54502	32352	32352	32352
Brake force incl. 1 % rolling resistance proportion	22.3	22.3	18.5	18.5	18.5

braking rate z laden 0.599 for rdyn min
 z = sum (TR)/PRmax 0.599 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 20HSCLD65

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 20HSCLD65

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:

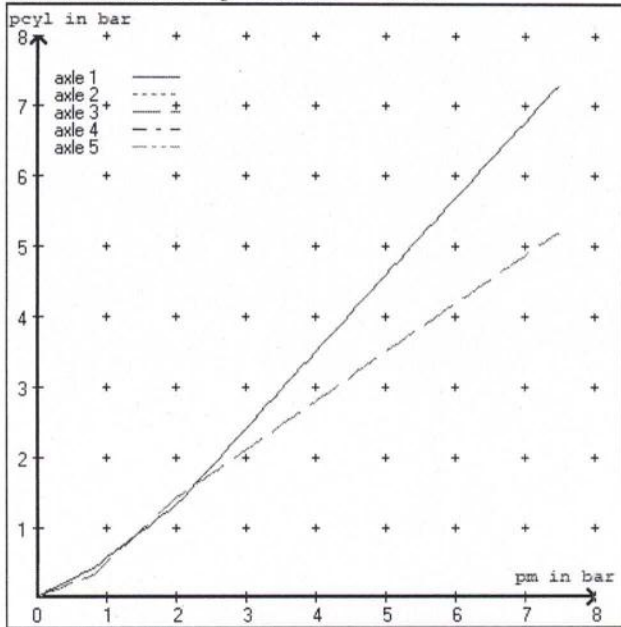
valve 1: 971 002 ... 0 WABCO
 EBS emergency valve

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

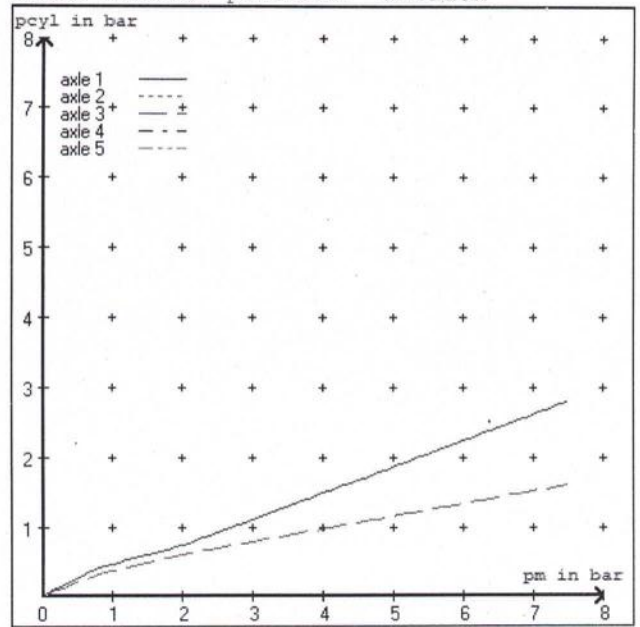
brake cylinder: Meritor 14HSCLD64

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	axle5	
at pm 3.6 bar =>	pcha in bar :	3.1	3.1	2.5	2.5	2.5	
test type III (zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	axle4	axle5	
at pm 1.3 bar =>	pcha in bar :	0.8	0.8	0.8	0.8	0.8	

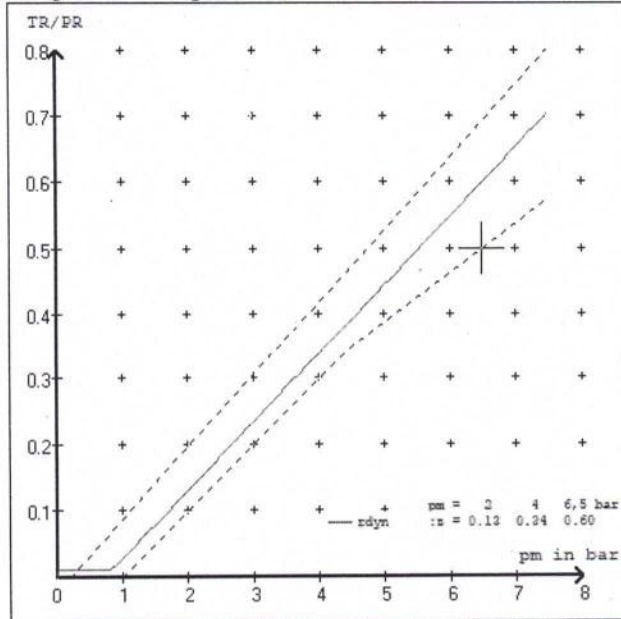
brake chamber pressure laden



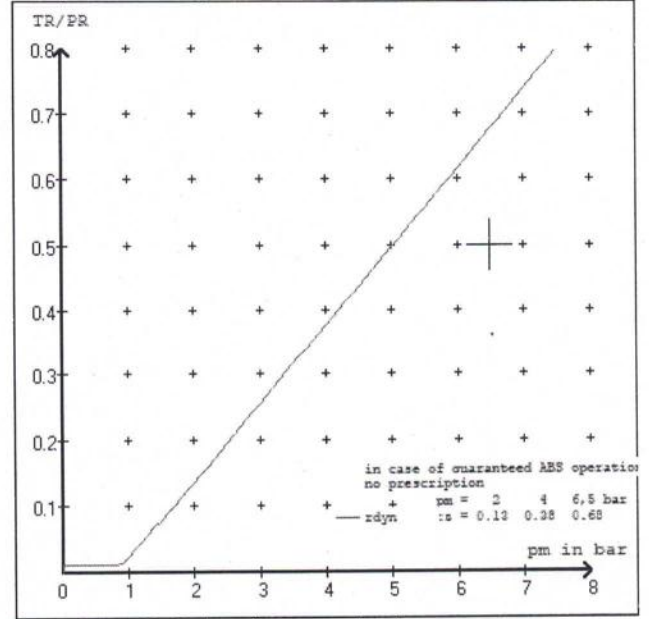
brake chamber pressure unladen



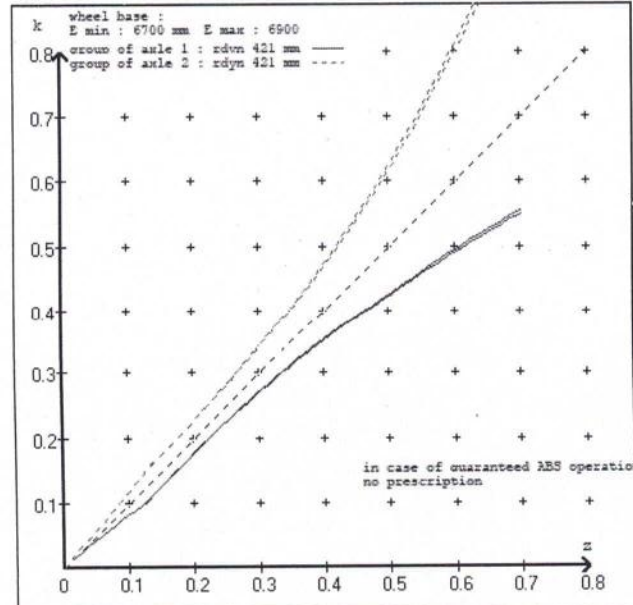
compatibility band laden



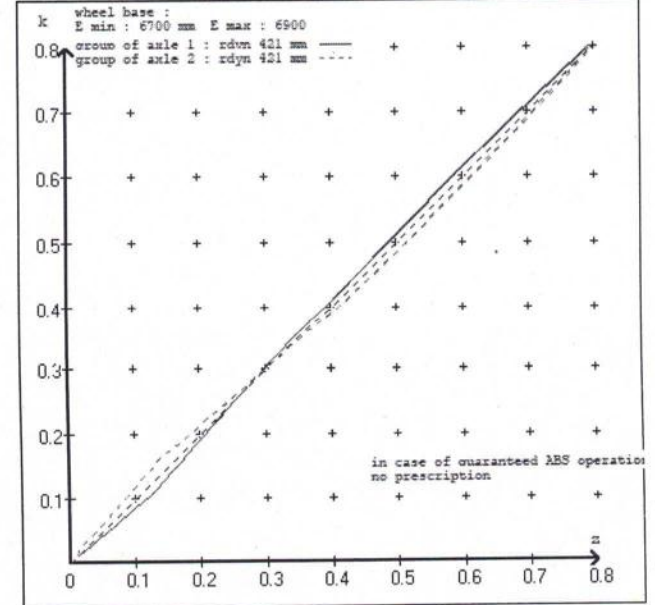
compatibility band unladen



curves of friction laden



curves of friction unladen



vehicle manufacturer: DOMETT TRAILERS
 trailer model : 5AFT TIPPING C'SIDE
 trailer type : 5-axle-full-trailer

brake chamber and lever length :

axle 1 : 2 x type/diameter 20. (Meritor) lever length 69 mm
 axle 2 : 2 x type/diameter 20. (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 TRAILERS
 trailer model : 5AFT TIPPING C'SIDE
 trailer type : 5-axle-full-trailer
 brake calculation no. : TP 52051A

tire circumference main axle : 2650 for rdyn max
 tire circumference auxiliary axle : 2650 for rdyn max

assignment pm / deceleration z: pm 0.8 bar z = 0.010
 (laden condition) 2.0 bar z = 0.134
 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	2450	to be	2.4	3000	to be	0.4	1.3	6.2	
2	2450	entered by the vehicle manufact.	2.4	8000	entered by the vehicle manufact.	0.4	1.3	6.2	
3	1500		1.4	6350		0.3	1.4	4.5	
4	1500		1.4	6350		0.3	1.4	4.5	
5	1500		1.4	6350		0.3	1.4	4.5	

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	axle load	axle load	axle load	axle load
pcyl	pcyl	pcyl	pcyl	pcyl
2450	2450	1500	1500	1500
2.4	2.4	1.4	1.4	1.4
2950	2950	2000	2000	2000
2.7	2.7	1.7	1.7	1.7
3450	3450	2500	2500	2500
3.1	3.1	2.0	2.0	2.0
3950	3950	3000	3000	3000
3.4	3.4	2.4	2.4	2.4
4450	4450	3500	3500	3500
3.8	3.8	2.7	2.7	2.7
4950	4950	4000	4000	4000
4.1	4.1	3.0	3.0	3.0
5450	5450	4500	4500	4500
4.5	4.5	3.3	3.3	3.3
5950	5950	5000	5000	5000
4.8	4.8	3.6	3.6	3.6
8000	8000	6350	6350	6350
6.2	6.2	4.5	4.5	4.5

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 = 25.4 % Fe
axle 2	(rdyn 421 mm)	T = 25.4 % 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 = 7194 N
axle2	ThA = 7194 N
axle3	ThA = 4285 N
axle4	ThA = 4285 N
axle5	ThA = 4285 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 = 42560 N
axle 2	(rdyn 421 mm)	T = 42560 N
axle 3	(rdyn 421 mm)	T = 25336 N
axle 4	(rdyn 421 mm)	T = 25336 N
axle 5	(rdyn 421 mm)	T = 25336 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)	0.60	0.47

required braking rate >= 0,4 and
(items 1.5.3 and 1.7.2 to annex 11) >= 0,6*E (0.36)

axle 1	(rdyn 421 mm)	T = 42560 N
axle 2	(rdyn 421 mm)	T = 42560 N
axle 3	(rdyn 421 mm)	T = 25336 N
axle 4	(rdyn 421 mm)	T = 25336 N
axle 5	(rdyn 421 mm)	T = 25336 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)	0.60	0.47

required braking rate >= 0,4 and
(items 1.5.3 and 1.7.2 to annex 11) >= 0,6*E (0.36)

spring parking brake

	axle 3	axle 4
no of TRISTOP-actuators per axle line KDZ	2	2
TRISTOP-actuator type	T.14/16	T.14/16
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	0.290	
$zf = \sum (Tf) / P + 0,01$		

Test of the frictional connection required by the parking brake

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

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

$$\min Ef = 5201 \text{ mm} \quad \text{for } E = 6700 \text{ mm}$$

$$\min Ef = 5339 \text{ mm} \quad \text{for } E = 6900 \text{ mm}$$

- 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 = 2150 mm height of center of gravity - laden
- PR = 19050 kg maximum bogie mass - laden
- P = 35050 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	5078	
	6.2	45494	
axle 2	1.0	5078	
	6.2	45494	
axle 3	1.0		4880
	4.5		27005
axle 4	1.0		4880
	4.5		27005
axle 5	1.0		4880
	4.5		27005

VIN - no.:

	Axle(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	20./	20./	T.14/24	T.14/24	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

