

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

Vehicle registration (optional) _____ VIN/chassis number **7 A 9 D 1 0 0 1 6 L 1 0 2 3 9 5 3**

Make **DOMETT** Component being certified: Chassis Load anchorage

Model (optional) _____ Log bolsters Towing connection Brakes

Certification category **HVEK** SRT PSV stability PSV rollover

Swept path PBS

Description of work
CERTIFY TO SCHEDULE 5 OF LTR 32015/5
NEW ZEALAND HEAVY VEHICLE BRAKE SPECIFICATION.
4A TANKER

Code/standard/rule certified to **LTR 32015/5**

Component load rating(s) **26 Tonnes GVM**

General drawing number(s) **N/A**

30 Tonnes (Group ratings)
RSS TWIN TYRES

Supporting documents
BRAKE RULE CERTIFICATE LC200402
BRAKE CALCULATION # 823LPC

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) **N/A [UNLESS MODIFIED]**

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 

Inspector's name (PRINT IN CAPS) **CHRIS CLARKE** ID number **C J C**

Date **09-Jun-20**

Number **748020**

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	480 102 064 0
Production date	2019-04-15	Serial number	436064108600G
Serial number (modulator)	000000506143		
Fingerprint Customer EOL / Customer Development / Flash Program	W503643 / 2020-06-09 ; 00000000 / 0000-00-00 ; 00000000 / 0000-00-00		

WABCO TRAILER EBS-E

GGVS/ADR TUEH TB 2007 - 019.00
361-005-16

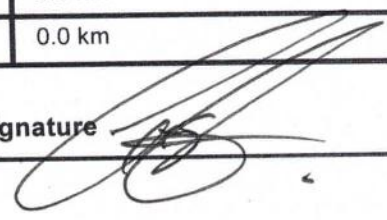
HERSTELLER MANUFACTURER CONSTRUCTEUR	DOMETT			GIO	Pin1	Pin3	Pin4
TYP TYPE TYPE	4A TANKER, D1001			1	24V-O1	---	---
VEHICLE IDENT. NUMBER CHASSIS NUMBER NUMERO DE CHASSIS	7A9D10016L1023953			2	---	---	---
BREMSBERECHNUNGS-NR. BRAKE CALCULATION NO. CALCUL DE FREINAGE NO.	823LPC, 2020ROR4AWPC			3	ALS2	ALS2	---
POLRADZAHNEZAHL c-d e-f POLE WHEEL TEETH c-d e-f DENTS ROUE DENTEE c-d e-f	90	90	ABS-System ABS-System Système ABS	4	---	---	---
			4S/3M	5	DIAG	DIAG	DIAG
RSS RSS RSS	Einfachbereifung Single Tire Monte simple		Lenkachse Steering axle Essieu avant	6	---	---	---
	Zwillingsbereifung Twin Tire Monte jumelle	X	Kippkritisches Fahrzeug Critical Trailer Véhicule critique	7	---	---	---
Subsystems	---	I/O	24N				

ACHSE AXLE ESSIEU	6.5			0.8			2.0			6.5			(bar)		
	pm (bar)			pm (bar)			pm (bar)			pm (bar)			1.0	Pz	
1	1400	0.4	1.5	7500	4.4	0.4	1.3	---	5.5	-	20	65	76	539	4277
2	1400	0.4	1.5	7500	4.4	0.4	1.3	---	5.5	-	20	65	76	539	4277
3	1200	0.3	1.2	7500	4.4	0.4	1.5	---	4.6	-	16 / 24	64	76	479	3078
4	1200	0.3	1.2	7500	4.4	0.4	1.5	---	4.6	-	16 / 24	64	76	479	3078
5	0	---	---	0	---	---	---	---	---	-	---	---	---	---	---

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	Vehicle ident. no	7A9D10016L1023953
Vehicle type	4A TANKER, D1001	Odometer reading	0.0 km
next Service	0 km	Trip reading	0.0 km
Tester	Chris Clarke	Signature 	
Date	2020-06-09 11:36:07 AM		

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

CLIENT

MANUFACTURER:	DOMETT TRUCK and TRAILERS
ADDRESS:	Taurikura Drive, Tauranga 3110
FLEET:	FONTERRA

VEHICLE DETAILS

VEHICLE TYPE:	4A TANKER	CERT #:	LC200402
YEAR:	2020	CALCULATION #:	823LPC
MAKE:	DOMETT	REGO:	
MODEL:	D1001	LT400 #:	748020
CHASSIS #:	1953	ORDER NUMBER:	7151
VIN #:	7A9D10016L1023953		
GVM: TONNES	26	PRIME MOVER:	EBS / EUROPEAN
LOAD CONFIGURATION:	UNIFORM DENSITY		
GROUP RATINGS: TONNES	FRONT	REAR	
	15	15	
WHEEL BASE: METRES	5.07		
	UNLADEN COG	MAX HEIGHT	HEIGHT DECK
	0.7	2.485	1
COG: METRES	1.534		
	FRONT	REAR	TOTAL
TARE: TONNES	2.8	2.4	5.2
	FRONT	REAR	
TYRE SIZE:	265 70 R19.5	265 70 R19.5	
ROLLING CIRCUMFERENCE: MM	2645	2645	
AXLE SPACING: METRES	1.3	1.3	

BRAKE & AXLE DETAILS

	MAKE	MODEL	TEST REPORT
AXLE:	ROR_ASSALI_STEFEN	ROR-SL9 LRC DISC	361-005-16
POLE WHEEL FRONT:	90	POLE WHEEL REAR:	90
LINING MATERIAL:	MAT 5200-215	BRAKE FACTOR:	22.37
SENSED AXLES:	2 + 4	NOTES:	
SERIAL NUMBERS:	1		
	2		
	3		
	4		

CHAMBER AND VALVING DETAILS

CHAMBERS:	AXLE 1 & 2	AXLE 3 & 4	
BRAND:	HALDEX_CHAMBERS	HALDEX_BERTOCCO	
SIZE:	20, (125 200)	1624 (C476 16 5)	
STROKE: <i>MILLIMETRES</i>	66	57	
TEST REPORT #:	BC0175.0	BZ 130.0	
SPRINGBRAKE FORCE: <i>kN</i>	N/A	7.66	
HOLDOFF PRESSURE: <i>kPa</i>	N/A	5	
FOUNDATION BRAKE:	HALDEX	HALDEX	
LEVER LENGTH: <i>MILLIMETRES</i>	76	76	
BRAKE VALVES:	MAKE:	PART NUMBER:	PM PRESS. <i>kPa</i>
ECU PART #:	WABCO	480 102 064 0 (24V)	80 kPa
3RD MODULATOR #:	WABCO	480 207 001 0 (24V)	80 kPa
ANTI-COMPOUNDING:	YES		
SPRING BRAKE RELAY:	SEALCO_SBR	110701	
YARD RELEASE VALVE:	SEALCO_YR	17600B	
INLINE RELAY FITTED:	N/A	N/A	
ECU DIRECTION:	<input checked="" type="checkbox"/> FRONT	<input type="checkbox"/> REAR	FRONT FRICTION: μ 0.51

SMARTBOARD/OPTILINK: SMARTBOARD OPTI-LINK**ELEX:** ELEX 446 122 070 0 TAILGUARD**SUSPENSION**

	FRONT	REAR
SUSPENSION TYPE:	PNEUMATIC	PNEUMATIC
MAKE:	ROR_AIRSPRING	ROR_AIRSPRING
MODEL:	ROR_INTRA	ROR_INTRA
BELLOW SIZE:	SL9 LRC	SL9 LRC
HEIGHT CONTROL VALVE:	464 008 011 0	464 008 011 0
OTHER VALVES:	N/A	N/A
RIDE HEIGHT <small>MM</small>:	250	250
HANGER HEIGHT <small>MM</small>:		
PEDESTAL HEIGHT <small>MM</small>:		
LIFTAXLE:		N/A
DUMP SWITCH:		PNEUMATIC
LIFTAXLE VALVE:		N/A
PRESSURE LIMITING:		N/A

AIR TANKS

AIR TANKS STANDARD:	SAE J10A / EN286-2	
	FRONT	REAR
BRAKE TANK SIZE: <small>L</small>	12113P, 46L	12113P, 46L
AUXILLARY TANK SIZE: <small>L</small>		12113P, 46L
PRESSURE PROTECTION:	SEALCO 1300	

AIR LINES**TEST POINTS:**

CONTROL LINE:	FILTER X 1	TANK:	ECU X 1
REAR CHAMBER:	ECU X 2	FRONT CHAMBER:	LEFT 1st X 1
TRIOMATIC 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:			

NOTES AND SPECIAL CONDITIONS

SUSPENSION DUMP VALVE	3042402	3/2 way manual valve
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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: 9/06/2020

SIGNED:



CERTIFIER NAME & ID:

LANCE CAWTELPC

SODC BY:

CHRIS CLARKECJC

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

distribution: DOMETT
2020.1 ROR 4A WPC

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 (V6.18.07.12).
 -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
 trailer model : 4A TANKER, D1001
 trailer type : 4-axle-full-trailer
 remarks : air / hydraulic / VA suspension
 WABCO TRAILER - EBS
 TRISTOP 3+4: T.16/24
 265/70 R 19,5

axle 1 + 2 + 3 + 4 : Assali Stefen, R, 361-005-16 ECE,

		<u>unladen</u>	<u>laden</u>
total mass	P in kg	5200	30000
axle 1	P1 in kg	1400	7500
axle 2	P2 in kg	1400	7500
axle 3	P3 in kg	1200	7500
axle 4	P4 in kg	1200	7500
wheel base	E in mm	5070 - 5070	
centre of gravity height	h in mm	700	1534

	<u>axle 1</u>	<u>axle 2</u>	<u>axle 3</u>	<u>axle 4</u>
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 122.1	BZ 122.1	BZ 119.6	BZ 119.6
brake chamber manufacturer	Meritor	Meritor	Meritor	Meritor
chamber size	20.	20.	T.16/24	T.16/24
lever length lBh in mm	76	76	76	76
brake factor [-]	22.37	22.37	22.37	22.37
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	2.1	2.1	2.1	2.1
chamber pressure(rdyn max)pH at z=22,5%bar	2.1	2.1	2.1	2.1
chamber press.(servo)pcha at pm6,5bar bar	5.5	5.5	4.6	4.6
piston force ThA at pm6,5bar N	6332	6332	4555	4555
brake force(rdyn min)T lad. at pm6,5bar N	51239	51239	36884	36884
brake force(rdyn max)T lad. at pm6,5bar N	51239	51239	36884	36884
Brake force incl. 1 % rolling resistance proportion %	26.7	26.7	23.3	23.3

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: 480 207 0.. 0 WABCO or 480 207 2.. 0
EBS relay valve

brake cylinder: Meritor 20HSCLD65

axle 2:

valve 1: 480 207 0.. 0 WABCO or 480 207 2.. 0
EBS relay valve

brake cylinder: Meritor 20HSCLD65

axle 3:

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

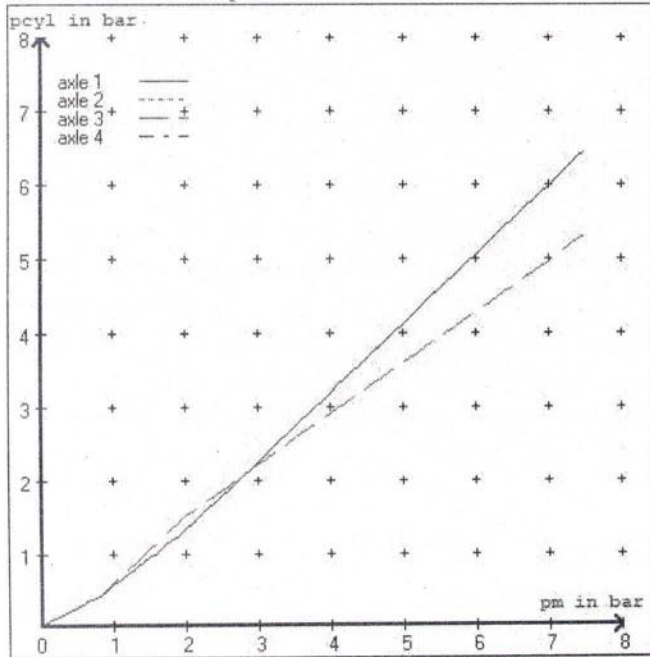
brake cylinder: Meritor 1624HTLD64

axle 4:

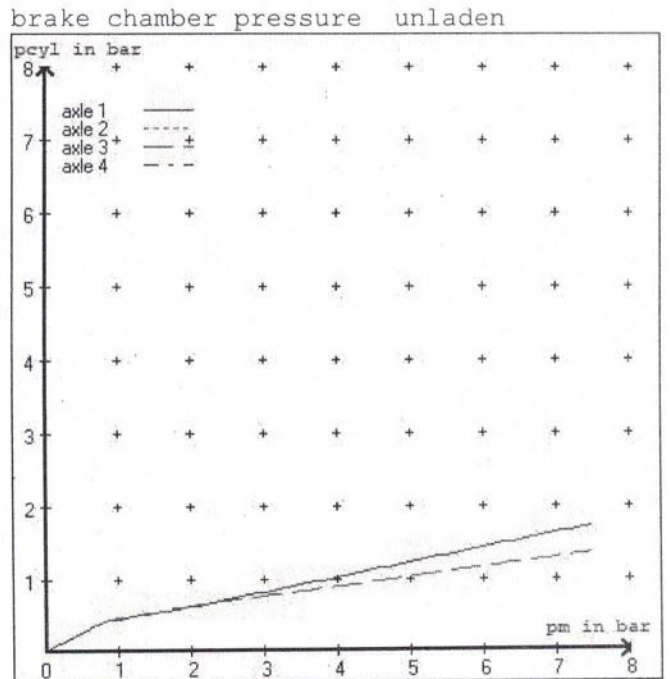
valve 1: 480 102 ... 0 WABCO
EBS trailer modulator

brake cylinder: Meritor 1624HTLD64

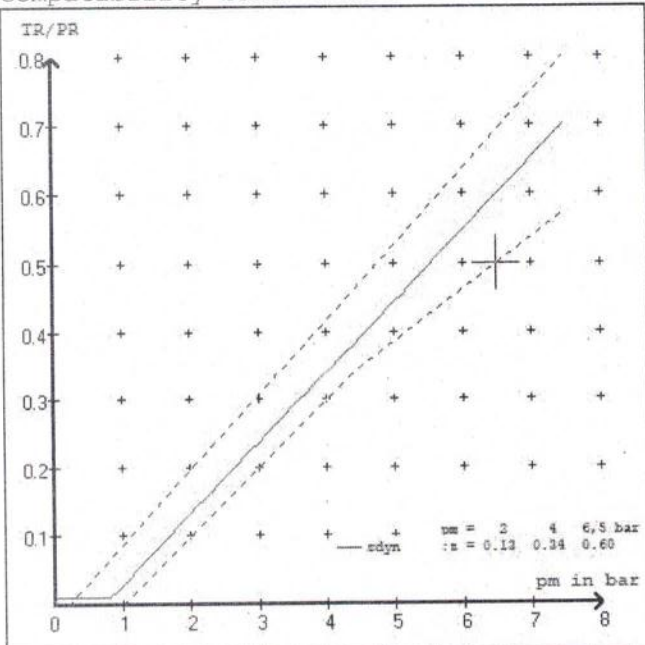
test type III	(zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	
at pm	3.6 bar	=>	pcha	in bar :	2.8	2.8	2.6 2.6
test type III	(zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	axle4	
at pm	1.3 bar	=>	pcha	in bar :	0.8	0.8	0.9 0.9



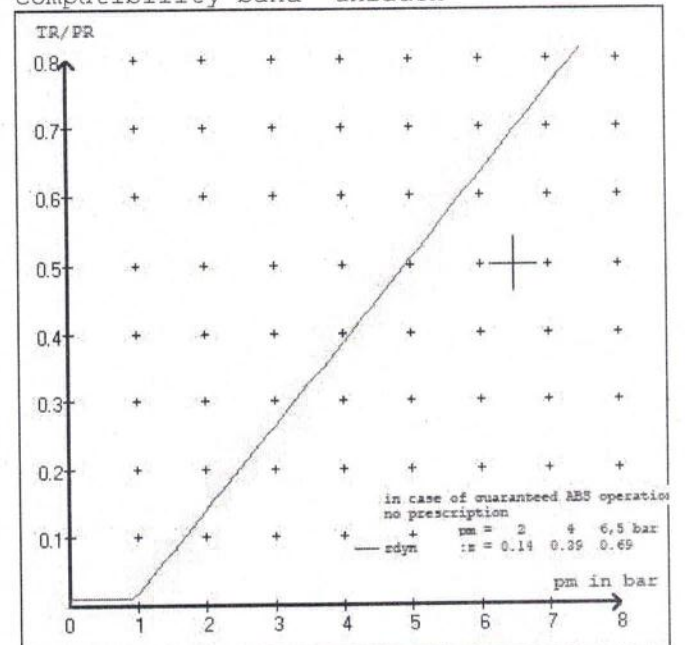
compatibility band laden



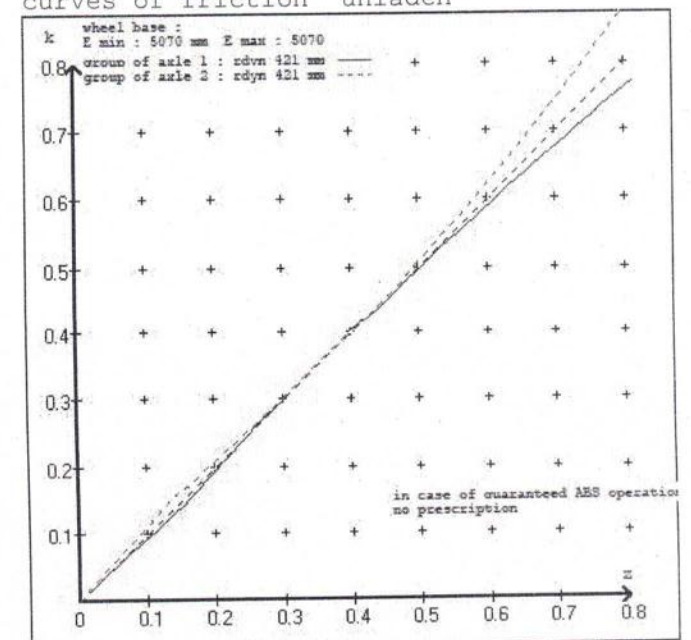
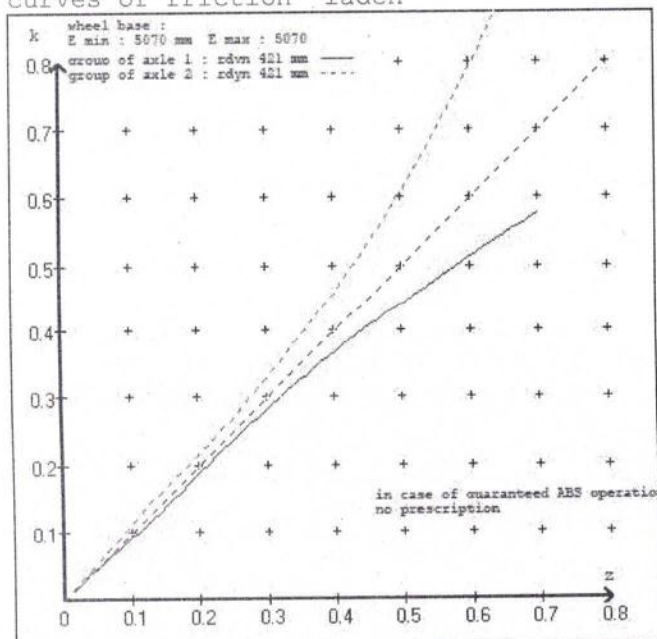
compatibility band unladen



curves of friction laden



curves of friction unladen



vehicle manufacturer: DOMETT
 trailer model : 4A TANKER, D1001
 trailer type : 4-axle-full-trailer

brake chamber and lever length :

axle 1 : 2 x type/diameter 20. (Meritor) lever length 76 mm
 axle 2 : 2 x type/diameter 20. (Meritor) lever length 76 mm
 axle 3 : 2 x type/diameter T.16/24 (Meritor) lever length 76 mm
 axle 4 : 2 x type/diameter T.16/24 (Meritor) lever length 76 mm

brake diagram :

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 : 4A TANKER, D1001
 trailer type : 4-axle-full-trailer
 brake calculation no. : TP 2020A

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	1400	to be	1.5	7500	to be	0.4	1.3	5.5	
2	1400	entered by the vehicle manufact.	1.5	7500	entered by the vehicle manufact.	0.4	1.3	5.5	
3	1200		1.2	7500		0.4	1.5	4.6	
4	1200		1.2	7500		0.4	1.5	4.6	
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.

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axle 1	axle 2	axle 3	axle 4
axle load pcyl	axle load pcyl	axle load pcyl	axle load pcyl
1400	1.5	1400	1.5
1900	1.8	1700	1.5
2400	2.2	2200	1.7
2900	2.5	2700	2.0
3400	2.8	3200	2.3
3900	3.1	3700	2.5
4400	3.5	4200	2.8
4900	3.8	4700	3.1
7500	5.5	7500	4.6

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

axle 1 : reference axle: Assali StefLM or LC or TMen	brake lining: MAT 5200-215
test report : 361-005-16 ECE	date : HL090216 09.02.2016
axle 2 : reference axle: Assali StefLM or LC or TMen	brake lining: MAT 5200-215
test report : 361-005-16 ECE	date : HL090216 09.02.2016
axle 3 : reference axle: Assali StefLM or LC or TMen	brake lining: MAT 5200-215
test report : 361-005-16 ECE	date : HL090216 09.02.2016
axle 4 : reference axle: Assali StefLM or LC or TMen	brake lining: MAT 5200-215
test report : 361-005-16 ECE	date : HL090216 09.02.2016

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 = 24.4 % Fe
axle 2	(rdyn 421 mm)	T = 24.4 % Fe
axle 3	(rdyn 421 mm)	T = 19.7 % Fe
axle 4	(rdyn 421 mm)	T = 19.7 % Fe

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

axle 1	(sp = 58 mm)	s = 42 mm
axle 2	(sp = 58 mm)	s = 42 mm
axle 3	(sp = 57 mm)	s = 42 mm
axle 4	(sp = 57 mm)	s = 42 mm

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

axle1	ThA = 6332 N
axle2	ThA = 6332 N
axle3	ThA = 4555 N
axle4	ThA = 4555 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 = 37175 N
axle 2	(rdyn 421 mm)	T = 37175 N
axle 3	(rdyn 421 mm)	T = 26822 N
axle 4	(rdyn 421 mm)	T = 26822 N

	basic test	type III
	of subject	(calculated)
braking rate of the vehicle	trailer (E)	residual
(item 4.3.2 to appendix 2 to annex 11)	0.60	(hot)braking
		0.43

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 = 37175 N
axle 2	(rdyn 421 mm)	T = 37175 N
axle 3	(rdyn 421 mm)	T = 26822 N
axle 4	(rdyn 421 mm)	T = 26822 N

	basic test	type III
	of subject	(calculated)
braking rate of the vehicle	trailer (E)	residual
(item 4.3.2 to appendix 2 to annex 11)	0.60	(hot)braking
		0.43

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

		<u>axle 3</u>	<u>axle 4</u>
no of TRISTOP-actuators per axle line KDZ		2	2
TRISTOP-actuator type		T.16/24	T.16/24
lever length	lBh in mm	76	76
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	7605	7605
sp.brake chamber no Meritor.....		4	4
release pressure	pLs in bar	4.8	4.8

calculation:

ratio until road		4.2397	4.2397
$iFb = lBh * \eta * C * rBt / (rBn * rstat)$			
	for rstat in mm	401	401
brake force of spring br. Tf in N		63816	63816
$Tf = (TFZ * KDZ - 2 * Co / lBh) * iFb$			
braking rate	zf laden	0.444	
$zf = \text{sum}(Tf) / P + 0,01$			

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 = 3627 mm for E = 5070 mm

=====

min Ef = 3627 mm for E = 5070 mm

=====

min Ef = minimum distance between front axle(s) (trailer) or support (semitraile)
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 = 1534 mm height of center of gravity - laden

PR = 15000 kg maximum bogie mass - laden

P = 30000 kg maximum total mass - laden

nf = 2 no. of axle(s) with TRISTOP spring brake actuators

ng = 2 no. of bogie axle(s)

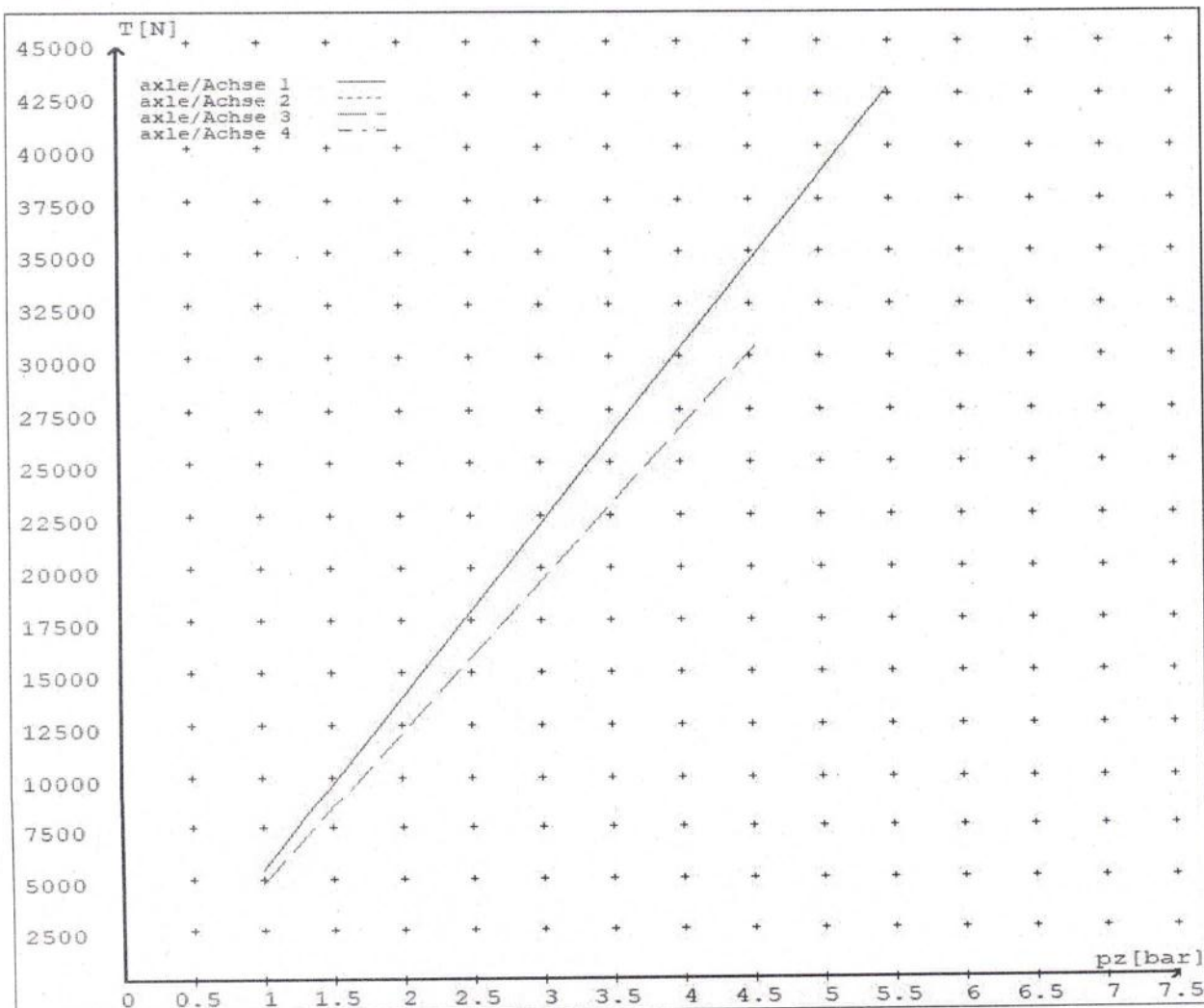
reference values

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

	pz [bar]	T [N]	T [N]
axle 1	1.0	5394	
	5.5	42770	
axle 2	1.0	5394	
	5.5	42770	
axle 3	1.0		4794
	4.6		30788
axle 4	1.0		4794
	4.6		30788

VIN - no.:

	Axle(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	20./	20./	T.16/24	T.16/24	/
Maximum stroke smax = ...mm maximaler Hub smax = ...mm	65	65	64	64	
Lever length =mm Hebellänge =mm	76	76	76	76	



reference values for $z = 0.5$

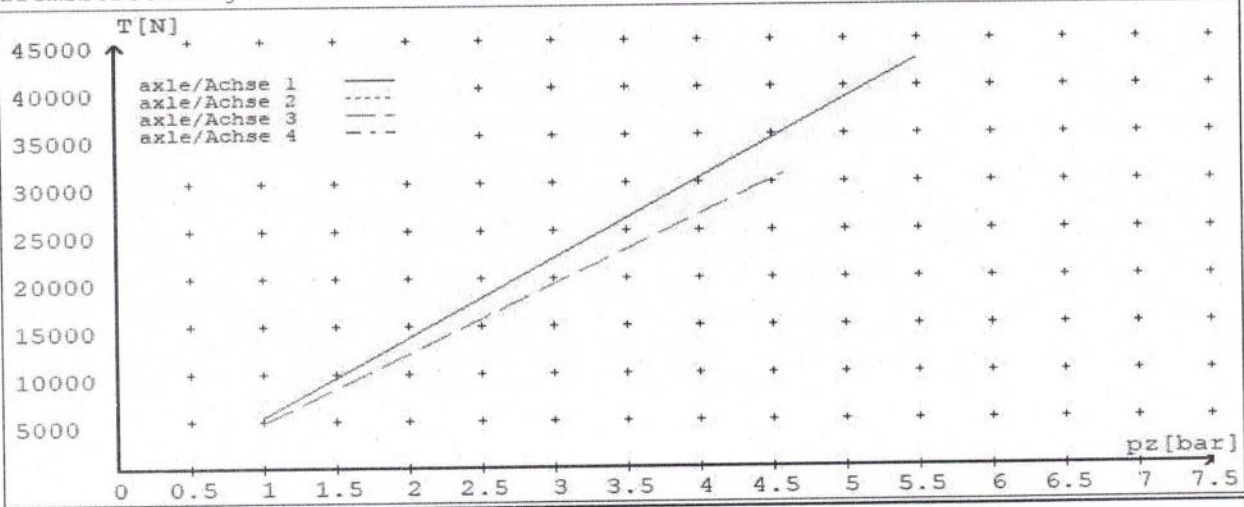
for max rdyn: 421 mm

Angabe der Referenzwerte für $z = 0.5$

für max rdyn: 421 mm

brake calculation no: TP 2020A date 16.04.2020

Bremsberechnung Nr: TP 2020A vom 16.04.2020



	Axle (s) / Achse (n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	20./	20./	T.16/24	T.16/24	/
Maximum stroke $s_{max} = \dots$ mm maximaler Hub $s_{max} = \dots$ mm	65	65	64	64	
Lever length = \dots mm Hebellänge = \dots mm	76	76	76	76	