

Heavy vehicle specialist inspector's or manufacturing inspecting organisation's name (PRINT IN CAPS) ID
RON PRATT TRSP

Vehicle registration (optional) VIN/chassis number
7A9D10018J1023738

Make **DOMETT** Chassis Load anchorage
 Model (optional) Log bolsters Towing connection Brakes
 Certification category SRT PSV stability PSV rollover
HVEK Swept path PBS

Description of work
CERTIFY TO HEAVY VEHICLE BRAKE RULE 32015/4.
NEW ZEALAND HEAVY VEHICLE BRAKE SPECIFICATION.

Code/standard/rule certified to Component load rating(s)
SCHEDULE 5 **GVM 26,000 Kgs.**
 General drawing number(s) **BRAKES 30,000 Kgs**
N/A

Supporting documents
BRAKE CODE CERTIFICATE LC180906
SODC LC180906
 Special conditions (optional)

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)
[] [] [] [] [] [] [] [] [] []

UNTIL MODIFIED or CHANGE OF USE
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
RON PRATT TRSP
 Date Number
4-Sep-18 652375

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

All fields are mandatory unless otherwise stated.

(Cnr Kerrs & Ash Road, Wiri. PO Box 98 971, Manukau City 2241, NZ)

Statement of Design Compliance**S.O.D.C. number: LC180906**For Heavy Vehicle Brake Specification
(Schedule 5) of HV Brake Rule 32015/4**Vehicle details:**

Make: DOMETT TRUCK & TRAILER
Model: D1001
Chassis#: 1739
Vin#: 7A9D10018J1023739
GCM (kgs): N/A
GVM (kgs): 30,000
Wheelbase (mm): 5070
Axle test report #: 31600516
Axle type: ROR, ASSALI STEFEN DISC, HALDEX
Suspension: ROR ASSALI STEFEN, SL9 LRC
Trailer type: 4AFT DISC BRAKE

Component Details:

	Axle 1 & 2	Axle 3 & 4
Leaver length (mm):	76mm	76mm
Brake chamber size:	HALDEX 20, BC0175 / BERTOCCO 1624, BZ130.0	
Tyre size:	265/70R 19.5	265/70R 19.5
Drawing number:	DOM-BRAKE-FONT-2010	
(for component reference)		
Brake calculation#:	TP2018 ROR 4A WPC CALC	

I declare that I am a Heavy Vehicle Specialist Certifier – Engineer and I hold a current valid appointment. I certify that this vehicle component design and this certification comply in all respects with the Land Transport Rule:

***Vehicle Standards Compliance 2002;** my Deed of Appointment and applicable requirements. To the best of my knowledge the information contained in this certificate is true and correct.*

Date: 4th SEPTEMBER 2018**Name:** Lance Cawte (HVEK)

Certifier ID: LPC

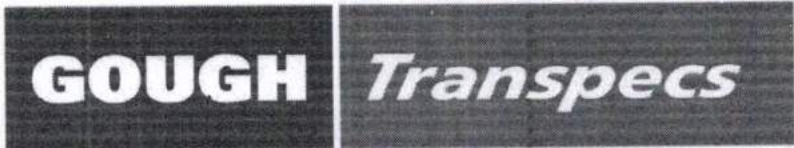
I, RON PRATT..., certify that the braking system has been assembled and programmed*) to the requirements of this Design Certificate.

Signed: R S PRATT

LT400 652375

Dated: 10/09/2018

*) Programmed according to WABCO's End of Line protocol requirements where applicable and that the air suspension parameter pressures suit the suspension design & air bellow size.



HEAVY VEHICLE BRAKE RULE
32015/4 WORKSHEET
PROCEDURE DOCUMENTATION SHEET- (PDS)
&
CONFIRMATION OF COMPLIANCE

CERTIFICATE NO: LC180906
CUSTOMER NAME: DOMETT TRAILERS
CUSTOMER ORDER NO: 5330 DATE RECEIVED: 3/09/2018
VEHICLE TYPE: FULL TANKER
VIN / CHASSIS NO: 7A9D10018J102373 X9 AIR

BRIEF SPECIFICATION AS CERTIFIED TO SCHEDULE 5

BRAKE VALVES:	MAKE	.TYPE
PRIMARY RELAY:	WABCO	480 102 064 0
SECONDARY RELAY:	WABCO	480 207 001 0
SPRING BRAKE RELAY:	SEALCO	110701
PARK BRAKE VALVE:	SEALCO	17600B
LOCKED RATIO:		
MAKE:		
SETTING:		

OTHER VALVES

OTHER VALVES	MAKE:	TYPE	SETTING	

BRAKE CHAMBERS

	FRONT	REAR	5TH
MAKE:	HALDEX	BERTOCCO	0
SIZE:	20, 125-200-001	1624	0
STROKE: MM	62mm	57mm	0
SLACK LENGTH: MM	DISC, 76mm	DISC, 76mm	0

BRAKE CALIPERS

BRAKE CALIPERS: HALDEX

FRICTION MATERIAL:

OEM Aftermarket

LINING BRAND

LINING BRAND

FRONT	REAR
MAT 5200-215	MAT 5200-215

OTHERS

TYRES:	FRONT	REAR
	265/70R 19.5	265/70R 19.5

COMMENTS

EBS, SPECIAL CONDITIONS APPLY. SEE INSTRUCTIONS ON LT400 # 652375 RP

NOTES:

PACKING SLIP NO. _____ PROCESS TIME _____

CONFIRMATION OF COMPLIANCE

I CONFIRM THAT THE VEHICLE IDENTIFIED IN PAGES 1 AND 2 OF THIS CONFIRMATION OF COMPLIANCE COMPLIES WITH ALL RELEVANT REQUIREMENTS OF THE CURRENT NEW ZEALAND HEAVY VEHICLE BRAKE RULE 32015/4, SCHEDULE 5.

DATE: 4/09/2018 SIGNED: 

NAME & ID: LANCE CAWTE (LPC)

PHONE (BUS): 09 980 7300 FAX (BUS): 03 3083277

POSTAL ADDRESS: TRANSPORT SPECIALTIES LTD
PO BOX 98-971,
MANUKAU CITY,
AUCKLAND 2241

POSITION: Brake certifier HVEK

I CONFIRM THE BRAKE SYSTEM OF THE VEHICLE IDENTIFIED IN 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 BRAKE RULE 32015/4 SCHEDULE 5.

DATE: _____ SIGNED: _____

NAME: _____

CERTIFIERS ID: _____ POSITION: _____

PHONE (BUS): _____ FAX (BUS): _____

COMMENTS: _____

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

.....
(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 ISO7638 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.



(HVEK)

Service Bulletin

Wabco Welding Warning

From: John Hirst, OE Braking Product Manager
Ref: JH-TSL-091115

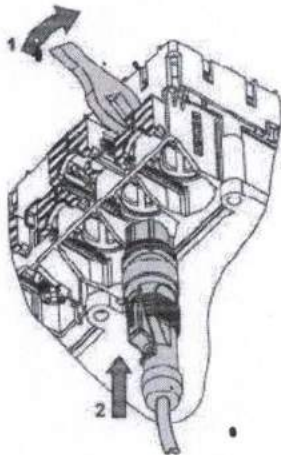
Date: 9 November 2015

NB: Any sort of arc welding can cause damage to an ECU fitted to a trailer. The inverter that we supply is also susceptible to damage from welding arcs.

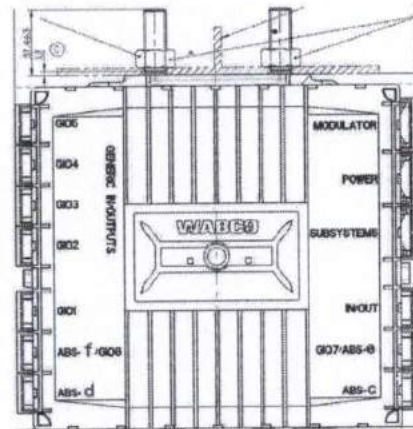
Prevention is less costly than the cure.

Please follow the following recommendation from Wabco for all ABS and EBS models:

1. Remove all the main power cables and diagnostic cables from the ECU as they have non interchangeable connections.
2. Leave the sensor cables that are plugged into the ECU and disconnect them at the wheel end. This will cover the protection against welding, and at the same time will prevent mixing them up at the ECU end.



Above: Wabco TEBS E Modulator – Plugs and dismantling of cables and protective caps.



Above: Diagram of a Wabco ECU.



P.O.Box 98-971

South Auckland Mail Centre

DATE	4-Sep-18	LOAD SENSED	WABCO TEBS "E"
CERT. NO.	LC180906	CALLIPER TYPE	HALDEX
VIN / CHASSIS	7A9D10018J102373X7		
BRAKE CHAMBERS FRONT	HALDEX	20, 125-200-001	62mm
BRAKE CHAMBERS REAR	BERTOCCO	1624	57mm
SLACK LENGTH FRONT	DISC, 76mm	TYRE SIZE FRONT	265/70R 19.5
SLACK LENGTH REAR	DISC, 76mm	TYRE SIZE REAR	265/70R 19.5
THIS VEHICLE COMPLIES WITH THE NZ		LINING MATERIAL FRONT	
HEAVY VEHICLE BRAKE RULE 32015/4, SCHEDULE 5		MAT 5200-215	
		LINING MATERIAL REAR	
		MAT 5200-215	

ROR TANKER

Tare CoG 0.9

GVM 26000
Tare mass 5200

Payload CoG

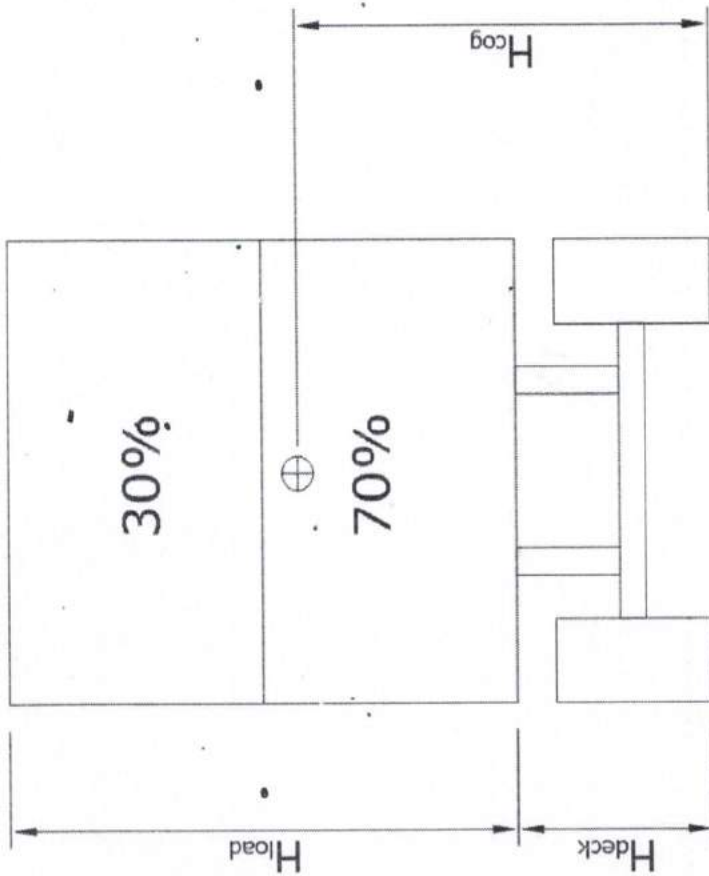
H_{deck} 0.911
 H_{load} 1.573
 H_{cog} 1.698

Payload mass 20800

Freight option
- mixed freight - 0.4
- uniform density - 0.5

Combined CoG 1.538

Mixed Freight





$$H_{cog} = 0.4H_{load} + H_{deck}$$

WABCO

TRAILER EBS-E

GGVS/ADR TUEH TB 2007 - 019.0X
361-005-16

HERSTELLER MANUFACTURER CONSTRUCTEUR		DOMETT		GIO		Pin1		Pin3		Pin4	
TYP TYPE TYPE		4A TANKER, D1001		1		24V-01		---		---	
VEHICLE IDENT. NUMBER CHASSIS NUMBER NUMERO DE CHASSIS		7A9D10018J1023739		2		---		---		---	
BREMSBERECHNUNG-NR. BRAKE CALCULATION NO. CALCUL DE FREINAGE NO.		TP2018ROR		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 Systeme ABS		4S/3M		4	
RSS RSS RSS		Einfachbereifung Single Tire Monte simple		X		Lenkachse Steering axle Essieu avant				5	
		Zwillingsbereifung Twin Tire Monte jumele				Kippkritisches Fahrzeug Critical Trailer Vehicule critique				6	
Subsystems		SB		I/O		24N					

ACHSE AXLE ESSIEU	pm# (bar)		pm (bar)		0.8		2.0		---		6.5		TYP TYPE		(mm)		(mm)		(bar)	
	1.0	Pz	1.0	Pz	1.0	Pz	1.0	Pz	1.0	Pz	1.0	Pz	1.0	Pz	1.0	Pz	1.0	Pz	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	---	---	---	---	---	-	---	---	---	---	---					

**INFORMATION REQUIRED FOR TRAILERS
TO COMPLY WITH THE NZ HVBR 32015/4**



CLIENT

BUILDER: DOMETT TRUCK and TRAILER

CUSTOMER: FONTERRA GROUP

ADDRESS: Cnr TAURIKURA DRIVE & KENNEDY RD TAURANGA

VEHICLE DETAILS

VEHICLE TYPE:	FULL TANKER .	CERT / SODC #:	LC180906
YEAR:	2018	LT400:	652375 RP
MAKE:	DOMETT	CHASSIS #:	1739
VIN #:	7A9D10018J10237389		
GVM: TONES	26	MODEL:	D1001
BODY TYPE:	4	REGO:	
GROUP RATINGS: TONES	FRONT	REAR	
	15	15	
WHEEL BASE: METERS	5.07		
	DECK HEIGHT	MAX HEIGHT	
	0.9	2.484	
COG: METERS	1.534	1.538	
	FRONT	REAR	TOTAL
TARE: TONES	2.8	2.4	5.2
	FRONT	REAR	
TYRE SIZE:	265/70R 19.5	265/70R 19.5	
	FRONT	REAR	
AXLE SPACING: METERS	1.3	1.3	
	MAKE	MODEL	TEST REPORT
AXLE:	ROR, Assali Stefen	R, LM,LC,TM	36100516

BRAKE DETAILS

LINING MATERIAL: MAT 5200-215 MAT 5200-215

SERIAL NUMBERS:

- 1
- 2
- 3
- 4
- 5

BRAKE DETAILS

CHAMBERS:

	FRONT 1,2	REAR 3,4	REAR 5
BRAND:	HALDEX	BERTOCCO	
SIZE:	20, 125-200-001	1624	
STROKE: <i>MILLIMETERS</i>	62mm	57mm	
TEST REPORT:	BC 0175.0	BZ 130.0	
SPRINGBRAKE FORCE: <i>kN</i>		7.85 @ 28mm	
HOLDOFF PRESSURE: <i>kPa</i>		500	

SLACK LENGTH: *MILLIMETERS*

	FRONT 1,2	REAR 3,4	REAR 5
	DISC, 76mm	DISC, 76mm	

BRAKE VALVES:

PART#	CRACK PRESS. <i>kPa</i>

SERVICE RELAY 1ST:

480 102 064 0	80 kPa COUPLING
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SERVICE RELAY 2ND:

480 207 001 0	80 kPa COUPLING
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ANTI-COMPOUNDING:

	YES
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SPRING BRAKE RELAY:

SEALCO	110701
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PARK BRAKE:

SEALCO	17600B
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HEIGHT CONTROL:

<input type="checkbox"/> Electronic	<input checked="" type="checkbox"/> Pneumatic
-------------------------------------	---

SMART BOARD:

N/A

OPTI TURN:

N/A

TIPPING DUMP SWITCH:

N/A

ETASC:

N/A

SUSPENSION TYPE:

<input type="checkbox"/> Reactive	<input checked="" type="checkbox"/> Non-Reactive
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MAKE:

ROR, Assali Stefen	ROR, Assali Stefen
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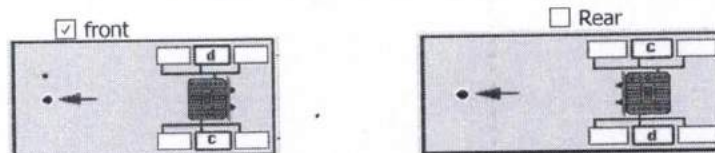
MODEL:

SL9 LRC	SL9LRC
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BELLOW SIZE:

STD ROR Assali Stefen	STD ROR Assali Stefen
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ECU DIRECTION:



AIR TANKS

AIR TANKS STANDARD:

SAE J10

SIZE FRONT: *L*

46L

SIZE REAR: *L*

46L

AUXILLARY: *L* / PROTECTED:

46L	WABCO PEM
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AIR LINES**TEST POINTS:**

FRONT CHAMBER:	1	RATIO IN:	N/A
REAR CHAMBER:	2 ECU	RATIO OUT:	N/A
TANK:	1	CONTROL LINE:	1
DUOMATIC COLOUR CODED:	YES		
CLEARED ON SEMI:	N/A		
SENSORS ON AXLES:	1 & 3		

ELECTRONIC HEIGHT SENSOR CALIBRATION

	TIMER TICKS	MILLIMETRE	
UPPER LEVEL:			
NORMAL LEVEL:			
LOWER LEVEL:			
RESPONSE TIME:	MODULATOR 2.1	MODULATOR 2.2	RELAY VALVE
ms:			


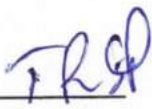
I UNDERSTAND AND DECLARE THAT I AM THE CERTIFIER IDENTIFIED BELOW AND HOLD A CURRENT VALID APPOINTMENT. I CERTIFY THAT AT THE TIME OF INSPECTION THE ABOVE MENTIONED VEHICLE COMPONENT DESIGN AND THIS CERTIFICATION COMPLIES IN ALL RESPECTS WITH THE LAND TRANSPORT RULE VEHICLE STANDARDS COMPLIANCE 2002 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 /4, SCHEDULE 5.

DATE:

4/09/2018

SIGNED:

NAME & ID:

LANCE CAWTE (LPC)

PHONE (BUS):

09-980-7300

FAX:

03 3083277

POSTAL ADDRESS:

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

distribution: DOMETT
 2018 ROR 4A WPC

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 20.04.2016

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, K, 361-005-16,

		unladen	laden
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	900	1538

		axle 1	axle 2	axle 3	axle 4
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 within 1 % rolling friction 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

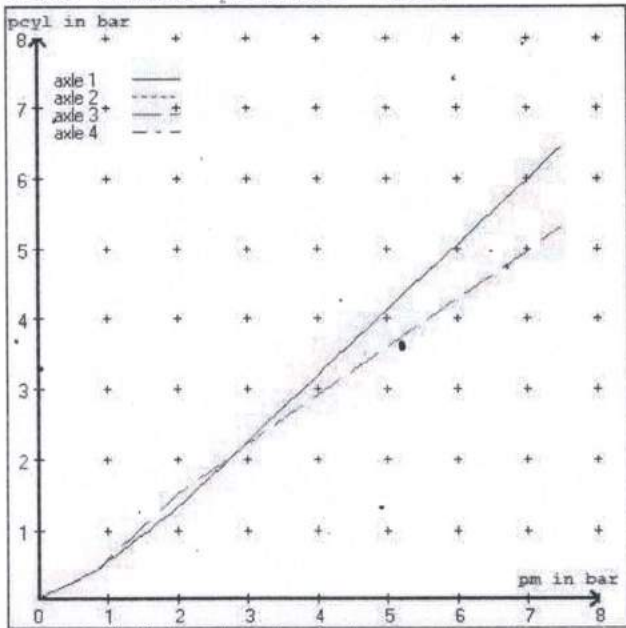
axle 4:

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

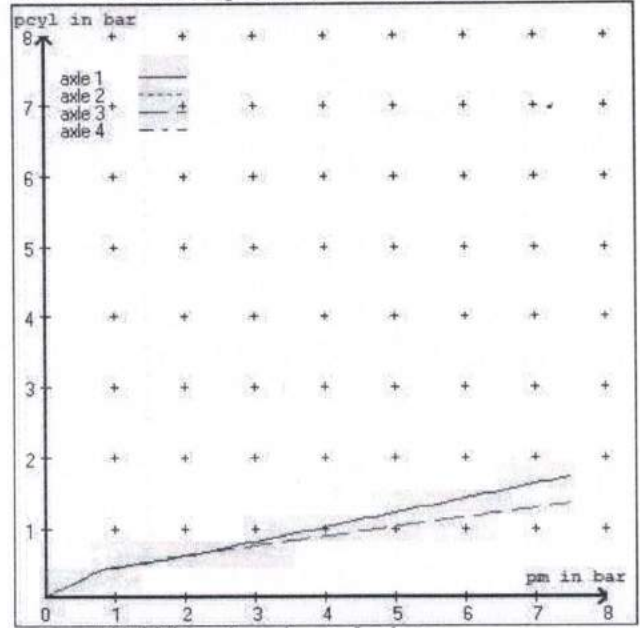
brake cylinder: Meritor 1624HTLD64

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	

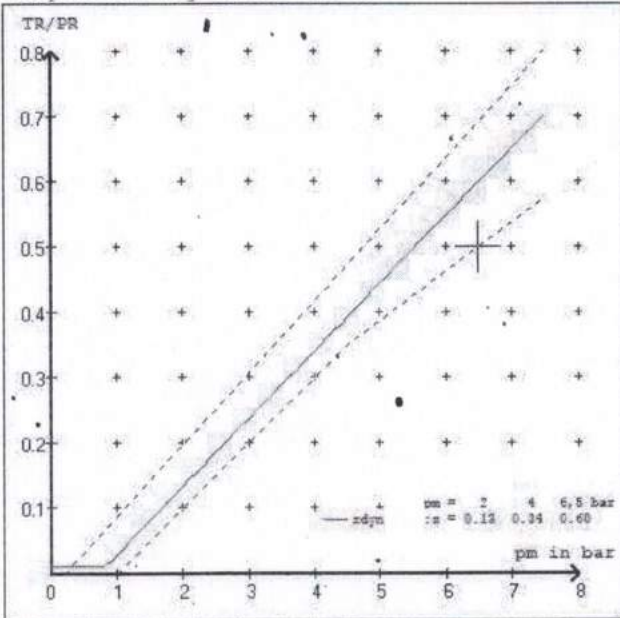
brake chamber pressure laden



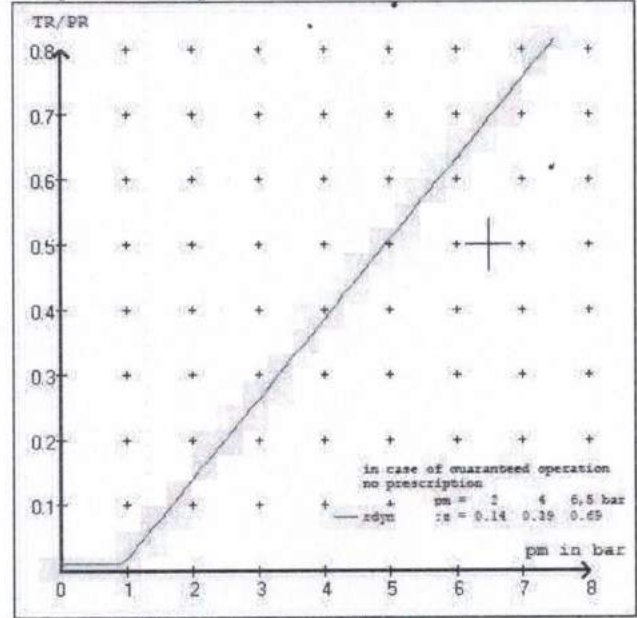
brake chamber pressure unladen



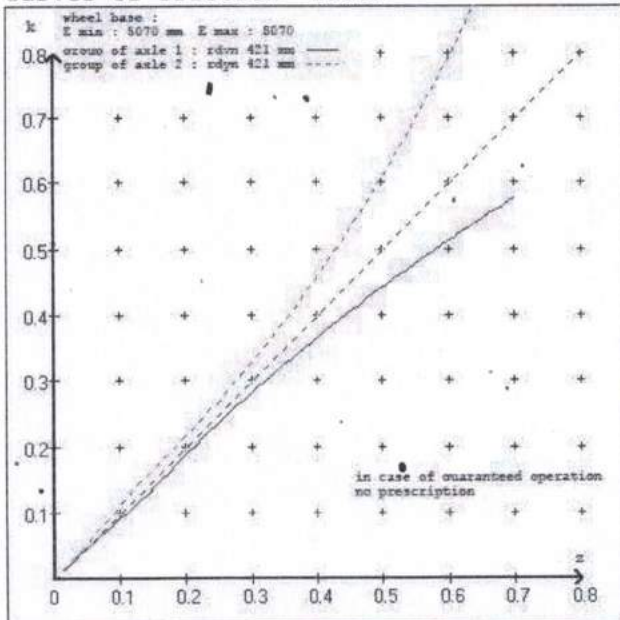
compatibility band laden



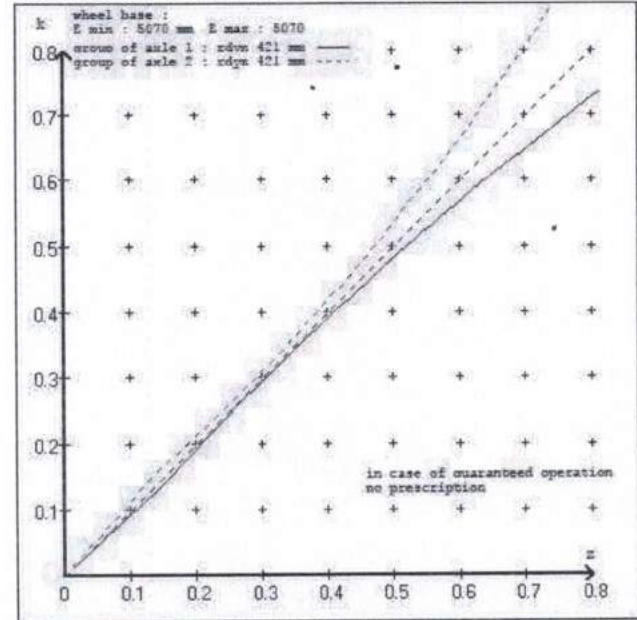
compatibility band unladen



curves of friction laden



curves of friction unladen



vehicle manufacturer: DOMETT
 trailer model : 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 G.. 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 : 4A TANKER, D1001
 trailer type : 4-axle-full-trailer
 brake calculation no. : TP 2018A

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.

=====

axle 1	axle 2	axle 3	axle 4
axle load pcyl	axle load pcyl	axle load pcyl	axle load pcyl
1400	1.5	1200	1.2
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: FER 5200-215
test report : 361-005-16	date : 09-02-2016
axle 2 : reference axle: Assali SteFLM or LC or TMen	brake lining: FER 5200-215
test report : 361-005-16	date : 09-02-2016
axle 3 : reference axle: Assali SteFLM or LC or TMen	brake lining: FER 5200-215
test report : 361-005-16	date : 09-02-2016
axle 4 : reference axle: Assali SteFLM or LC or TMen	brake lining: FER 5200-215
test report : 361-005-16	date : 09-02-2016

calc. verific. 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 = 37 mm
axle 2 (sp = 58 mm)	s = 37 mm
axle 3 (sp = 57 mm)	s = 37 mm
axle 4 (sp = 57 mm)	s = 37 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 = 49452 N
axle 2 (rdyn 421 mm)	T = 49452 N
axle 3 (rdyn 421 mm)	T = 35608 N
axle 4 (rdyn 421 mm)	T = 35608 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)

0.60 0.58

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

>= 0,4 and
>= 0,6*E (0.36)

axle 1 (rdyn 421 mm)	T = 49452 N
axle 2 (rdyn 421 mm)	T = 49452 N
axle 3 (rdyn 421 mm)	T = 35608 N
axle 4 (rdyn 421 mm)	T = 35608 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)

0.60 0.58

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

>= 0,4 and
>= 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.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 $Tf = (TFZ * KDZ - 2 * Co / lBh) * iFb$	63816	63816
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

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

$$\min Ef = 3628 \text{ mm} \quad \text{for } E = 5070 \text{ mm}$$

$$\min Ef = 3628 \text{ mm} \quad \text{for } E = 5070 \text{ mm}$$

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 = 1538 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)

axle manufacturer
type of brake
type of axle

axle 1 + 2 + 3 + 4
Assali Stefen
K
LM or LC or TM
361-005-16

test report of characteristic value

adm. stat. axle load
tested axle load
max. adm. tyre radius
adm. cam. torque (6,5 bar)
lining area per brake
no. of brake cylinder
brakefactor (SB) Bf
brakefactor (PB) Bf
threshold torque (Co,dec)

Pstat in kg 11000
Pe in kg 10200
Rezul in mm 999
Czul in Nm 940
AB in cm² 304
- 2
- 22.37
- 22.37
Mo in Nm 6

date
brake lining
cam torque
brake force
stroke
tested tyre radius
tested lever length
threshold torque (Co,e)

09-02-2016
FER 5200-215
Ce in Nm 638
TeIII in daN 5366
seIII in mm 37
Re in mm 518
le in mm 76
in Nm 6

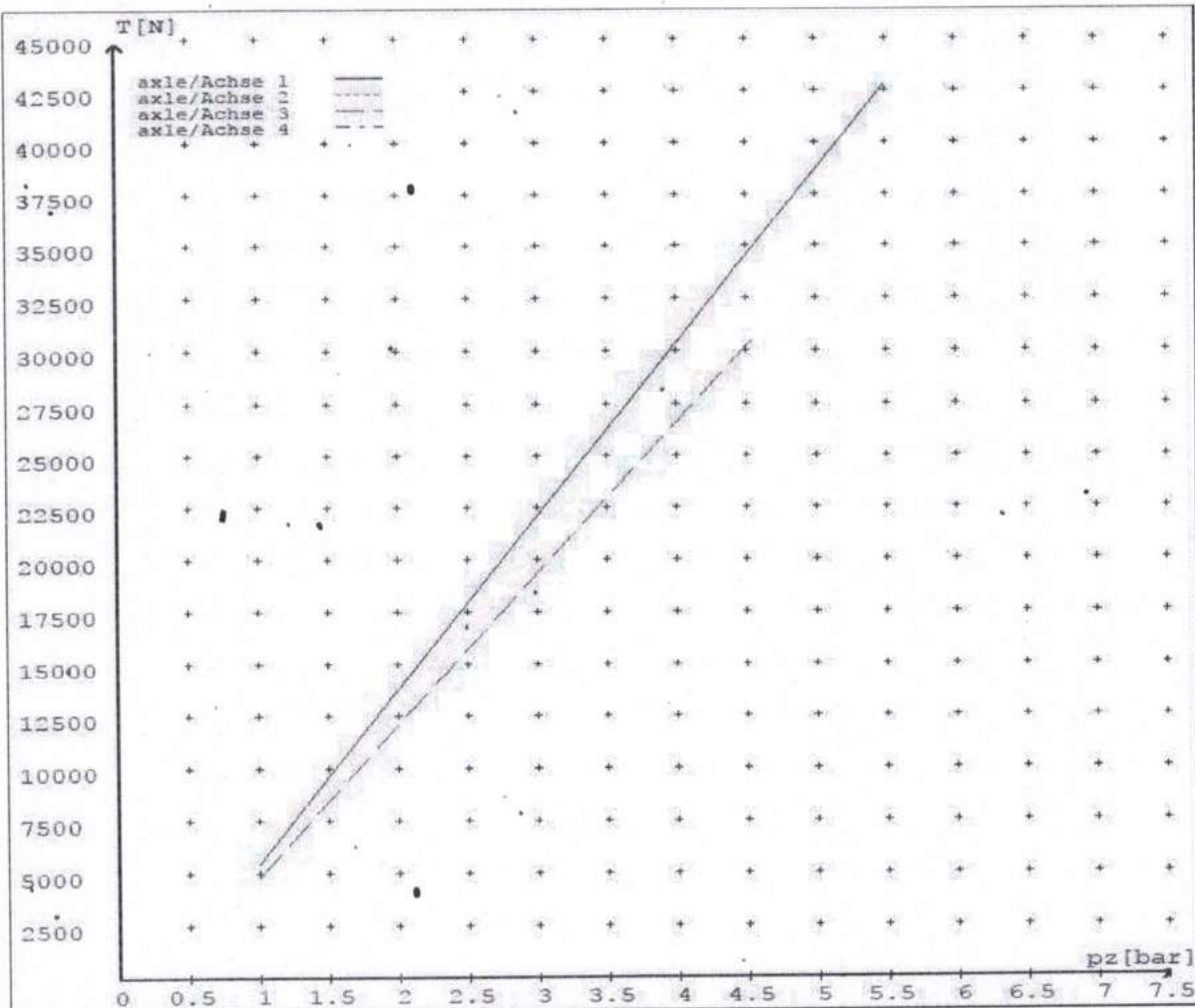
reference values

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 Hebelänge =mm	76	76	76	76	



reference values for $z = 0.5$

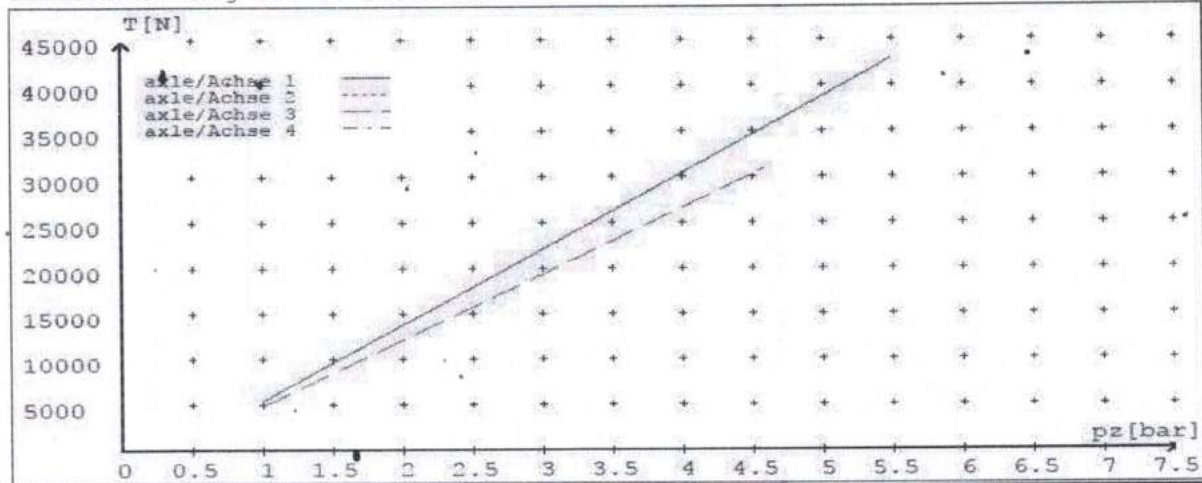
for max rdyn: 421 mm

Angabe der Referenzwerte für $z = 0.5$

für max rdyn: 421 mm

brake calculation no: TP 2018A date 20.03.2018

Bremsberechnung Nr: TP 2018A vom 20.03.2018



	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	