

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

CHRIS CLARKE

ID

CJC

Plate number (optional)

VIN/chassis number

7A9D1001XN2023189

Make

DOMEtt

Model (optional)

D1001

Certification category

HVEK

Description of work

CERTIFY TO SCHEDULE 5 OF LTR 32015: NZ HEAVY VEHICLE BRAKE SPECIFICATION.

CARRY OUT BRAKE CALCULATIONS, INSPECTION AND ECU END OF LINE PROTOCOL.

4A TANKER

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)

26 Tonnes GVM

General drawing number(s)

15 Tonne (Front group ratings)

15 Tonne (Rear group ratings)

Supporting documents

BRAKE RULE CERTIFICATE

LC220613

BRAKE CALCULATION #

2022 WABCO 4A WPC

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)

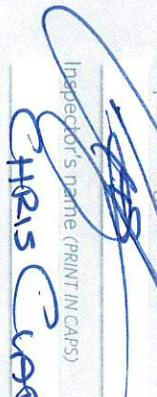
N/A [UNLESS MODIFIED]

Declaration

Designer's ID (if different from inspector below)

LANCE CAWTE**LPC**

Inspector's signature



Date

03.08.2022

Number

837663

CoF vehicle inspector ID (if applicable)

CoF vehicle inspector signature (if applicable)

Date

WABCO START-UP LOG

distribution: DOMETT 2022 WABCO 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 (V6.18.07.12).
 -the functional characteristics of our products
 -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 recommend to do a braking harmonisation!
 WABCBrake 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: 16/16
 265/70 R 19,5

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

	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	700	1492	

axle 1 axle 2 axle 3 axle 4

	1	1	1	1
no. of combined axles				
no. of brake chambers per axle line	KDZ	2	2	2
The power output corresponds to		BZ 122.1	BZ 122.1BC	0006.0BC
brake chamber manufacturer		Meritor	Meritor	WABCO
chamber size		20.	20.	16/16
lever length	1Bh	in mm	69	69
brake factor		[--]	23.03	23.03
dyn. rolling radius	rdyn min	in mm	421	421
dyn. rolling radius	rdyn max	in mm	421	421
threshold torque	Co	Nm	6.0	6.0

calculation:

chamber pressure (rdyn min) pH at z=22,5bar	2.3	2.3	2.2	2.2
chamber pressure (rdyn max) pH at z=22,5bar	2.3	2.3	2.2	2.2
chamber press. (servo)pcha at pm6,5bar bar	5.8	5.8	4.9	4.9
piston force ThA at pm6,5bar N	6702	6702	4974	4974
brake force(rdyn min)T lad. at pm6,5bar N	50729	50729	37673	37673
brake force(rdyn max)T lad. at pm6,5bar N	50729	50729	37673	37673
Brake force incl. 1 % rolling resistance proportion	26.5	26.5	23.5	23.5

braking rate z laden

0.601 for rdyn min
 0.601 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
EBS relay valve

WABCO

or 480 207 2.. 0

brake cylinder: Meritor 20HSCLD65

axle 2:

valve 1: 480 207 0.. 0
EBS relay valve

WABCO

or 480 207 2.. 0

brake cylinder: Meritor 20HSCLD65

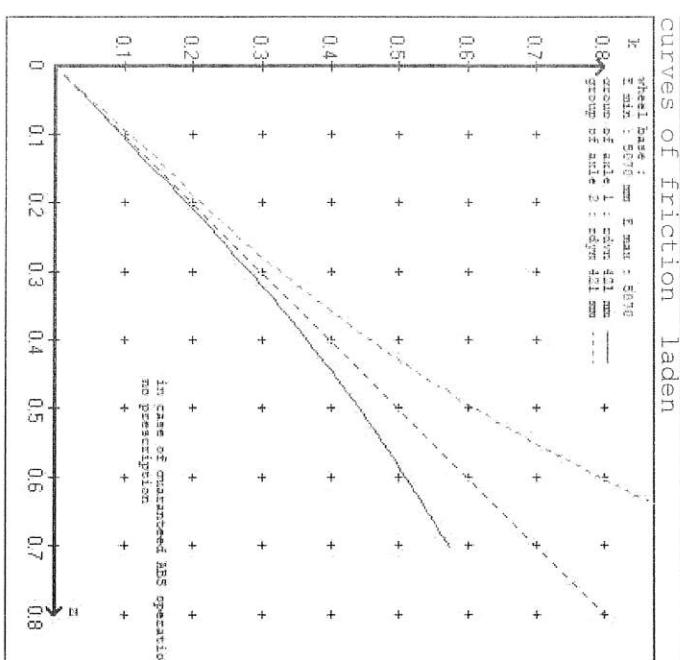
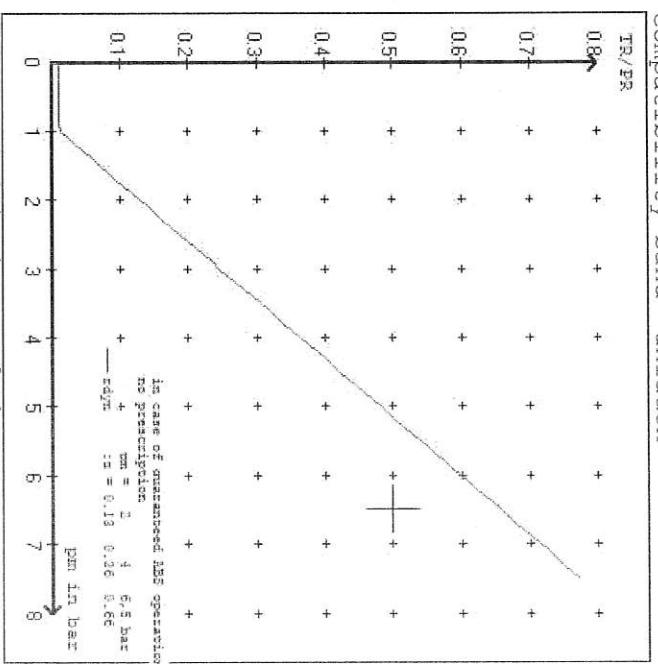
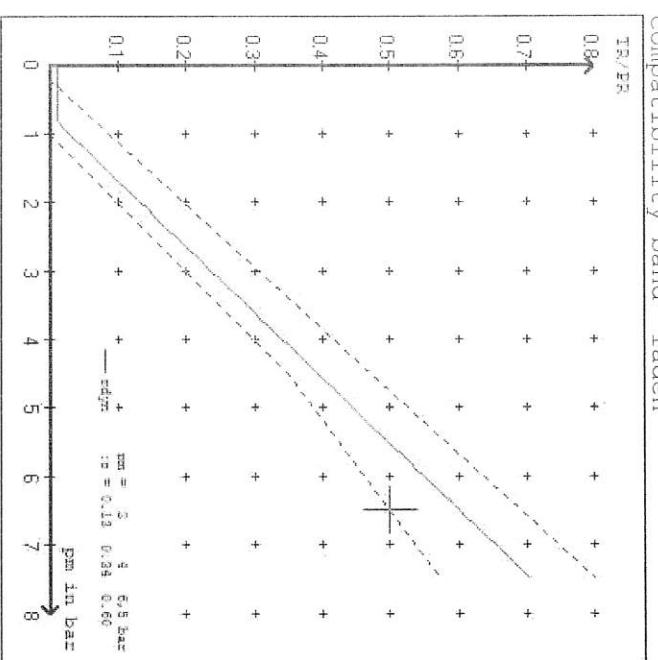
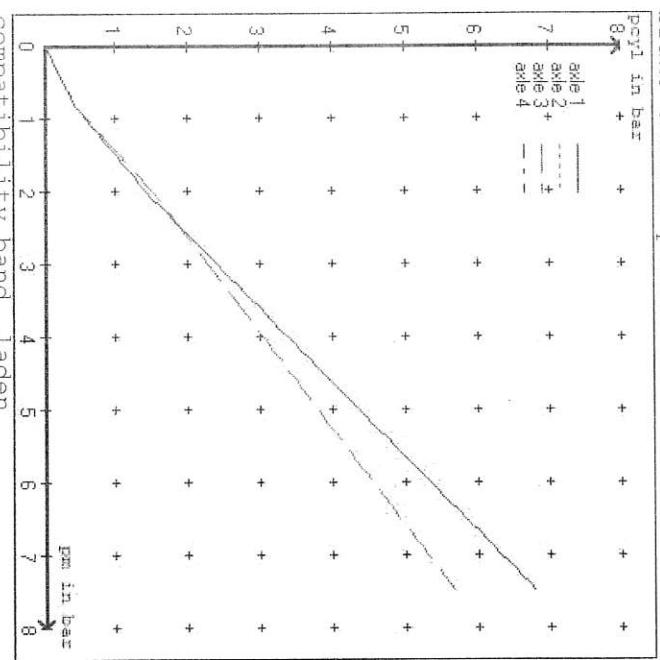
axle 3:

valve 1: 480 102 .. 0
EBS trailer modulator

WABCO

brake cylinder: WABCO 925 464 4.. 0 / 925 484 96. 0

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axle 4:  
valve 1: 480 102 ... 0 WABCO  
          EBS trailer modulator  
  
brake cylinder: WABCO 925 464 4.. 0 / 925 484 96. 0  
  
test type III (zIII = 0.30) for rdyn min : axle1 axle2 axle3 axle4  
at pm 3.6 bar => pcha in bar : 3.0 3.0 2.7 2.7  
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
```



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 69 mm
 axle 2 : 2 x type/diameter 20. (Meritor) lever length 69 mm
 axle 3 : 2 x type/diameter 16/16 (WABCO) lever length 69 mm
 axle 4 : 2 x type/diameter 16/16 (WABCO) lever length 69 mm

brake diagram :

valve : 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 2022A

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		control pressure pm		0.8	2.0	6.5
axle	axle load unladen	bellows pr. unladen	brake pr. unladen	axle load laden	bellows pr. laden	brake pr. laden
1	1400	to be	1.5	7500	to be	0.4
2	1400	entered by	1.5	7500	entered by	0.4
3	1200	the vehicle	1.2	7500	the vehicle	0.4
4	1200	manuf.	1.2	7500	manuf.	0.4
5	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	1400	1.2
1900	1.9	1900	1.5
2400	2.2	2400	2.2
2900	2.6	2900	2.6
3400	2.9	3400	2.9
3900	3.3	3900	3.3
4400	3.6	4400	3.6
4900	4.0	4900	4.0
5.8	5.8	7500	4.9

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

axle 1 : reference axle: SAF	SBW 1937 TDB 0749 ECE	brake lining: Jurid 539 date: 20130930 30.09.2013
axle 2 : reference axle: SAF	SBW 1937 TDB 0749 ECE	brake lining: Jurid 539 date: 20130930 30.09.2013
axle 3 : reference axle: SAF	SBW 1937 TDB 0749 ECE	brake lining: Jurid 539 date: 20130930 30.09.2013
axle 4 : reference axle: SAF	SBW 1937 TDB 0749 ECE	brake lining: Jurid 539 date: 20130930 30.09.2013
test report :	TDB 0749 ECE	
test report :	TDB 0749 ECE	
test report :	TDB 0749 ECE	
test report :	TDB 0749 ECE	

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)	S = 39 mm
axle 1 (sp = 58 mm)	S = 39 mm
axle 2 (sp = 58 mm)	S = 39 mm
axle 3 (sp = 51 mm)	S = 39 mm
axle 4 (sp = 51 mm)	S = 39 mm

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

ThA = 6702 N	T = 39620 N
ThA = 4974 N	T = 29492 N
ThA = 4974 N	T = 29492 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 = 39620 N
axle 2 (rdyn 421 mm)	T = 39620 N
axle 3 (rdyn 421 mm)	T = 29492 N
axle 4 (rdyn 421 mm)	T = 29492 N

basic test type III
of subject (calculated)
trailer (E)

residual
(hot)braking

0.47

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

0.60

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 = 39620 N
axle 2 (rdyn 421 mm)	T = 39620 N
axle 3 (rdyn 421 mm)	T = 29492 N
axle 4 (rdyn 421 mm)	T = 29492 N

basic test type III
of subject (calculated)
trailer (E)

residual
(hot)braking

0.47

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

0.60

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	1Bh	1Bh
lever length	16/16	16/16
stat. tyre radius	rstat max in mm	401
at a stroke of		
min. force of spring brake	s in mm	30
sp. brake chamber no 925	TFZ in N	6282
sp. brake chamber no 925	464	4.. 0464
release pressure	pLs in bar	484 96. 0484 96. 0
		5.0

calculation:

ratio until road

$$iFb = 1Bh * Eta * C * rBt / (rBn * rstat)$$

for rstat in mm

brake force of spring br. Tf in N

$$Tf = (TFZ * KDZ - 2 * Co / 1Bh) * iFb$$

braking rate

$$zf = \text{sum} (Tf) / P + 0,01$$

zf laden

$$0.344$$

Test of the frictional connection required by the parking brake

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

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

$$\min Ef = 3617 \text{ mm} \quad \text{for } E = 5070 \text{ mm}$$

$$\min Ef = 3617 \text{ mm} \quad \text{for } E = 5070 \text{ mm}$$

min Ef = minimum distance between front axle(s) (trailer) or support (semitrailer) and the rear axle(s) (resultant of the bogie)

E = wheel base

$$\begin{aligned} fzul &= 0.80 && \text{maximum permissible frictional connection required} \\ zferf &= 0.18 && \text{maximum required braking ratio of the parking brake} \\ h &= 1492 \text{ mm} && \text{height of center of gravity - laden} \\ PR &= 15000 \text{ kg} && \text{maximum bogie mass - laden} \\ P &= 30000 \text{ kg} && \text{maximum total mass - laden} \\ nf &= 2 && \text{no. of axle(s) with TRISTOP spring brake actuators} \\ ng &= 2 && \text{no. of bogie axle(s)} \end{aligned}$$

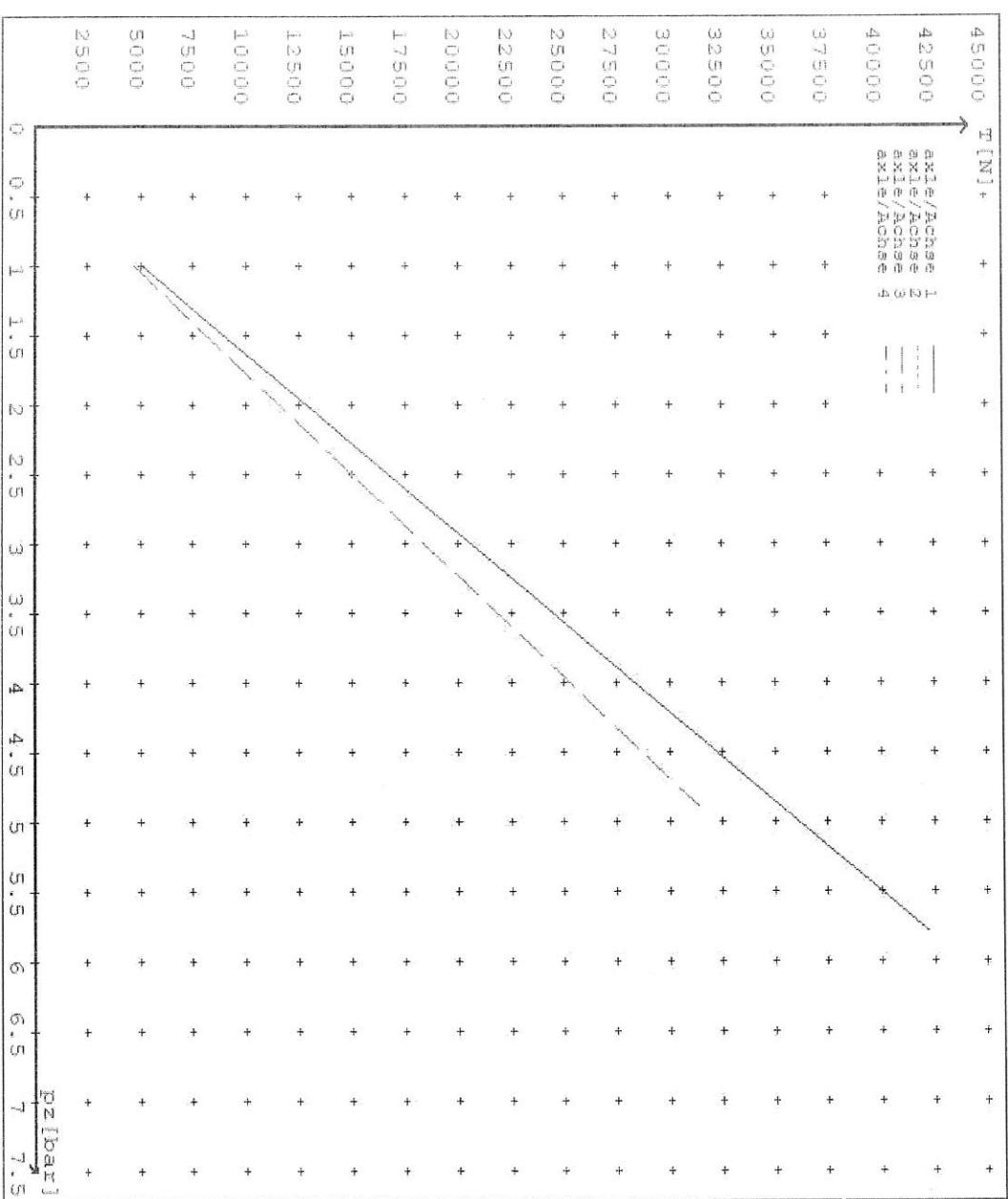
reference values

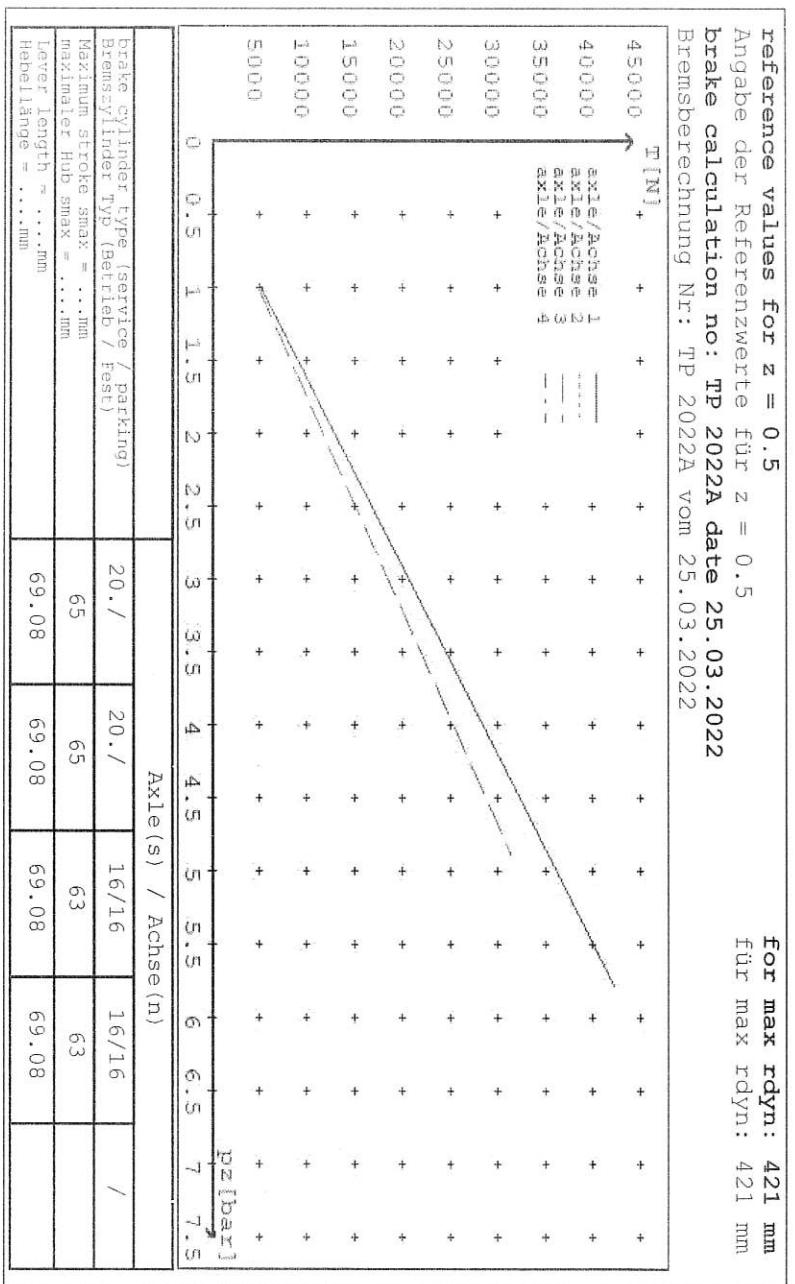
reference values for $z = 50\%$ for max r_{dyn} : 421 mm

	p _z [bar]	T [N]	T [N]
axle 1	1.0 5.8	5021 42203	
axle 2	1.0 5.8	5021 42203	
axle 3	1.0 4.9		4662 31342
axle 4	1.0 4.9		4662 31342

VIN - no.:

	Axe(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	20./ 65	20./ 65	16/16 63	16/16 63	/
Maximum stroke s _{max} = ... mm					
maximaler Hub s _{max} = ... mm					
Lever Length = ... mm	69.08	69.08	69.08	69.08	
Hebellänge = ... mm					







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

CLIENT

MANUFACTURER:

ADDRESS:

FLEET:

VEHICLE DETAILS

VEHICLE TYPE:

4A TANKER

CERT #:

LC220613

YEAR:

2022

CALCULATION #:

2022 WABCO 4A WPC

MAKE:

DOMETT

REGO #:

MODEL:

D1001

LT400 #:

837663

CHASSIS #:

2189

ORDER #:

8879

VIN #:

7A9D1001XN2023189

GVM: t

26

PRIME MOVER:

EBS / EUROPEAN

LOAD CONFIGURATION:

GROUP RATINGS: t

FRONT

REAR

WHEEL BASE: m

UNLADEN COG m

0.7

MAX HEIGHT m

2.38

HEIGHT DECK m

1.00

COG: m

1.492

TARE: t

2.8

FRONT

REAR

TOTAL

TYRE SIZE:

265 70 R19.5

FRONT

REAR

FITTED

ROLLING CIRCUMFERENCE: MM

2645

FRONT

REAR

FITTED

AXLE SPACING: m

1.3

FRONT

REAR

FITTED

BRAKE & AXLE DETAILS

	MAKE	MODEL	TEST REPORT
AXLE:	SAF	SAF-Z19W	TDB0749

POLE WHEEL FRONT:

90

POLE WHEEL REAR:

90

LINING MATERIAL:

JURID 539

BRAKE FACTOR:

23.03

SENSED AXLES:

NOTES:
1 + 3

SERIAL NUMBERS:

- 1
- 2
- 3
- 4
- 5

CHAMBER AND VALVING DETAILS**CHAMBERS:** AXLE 1 & 2 AXLE 3 & 4 AXLE 5

BRAND:

TSE_CHAMBERS

WABCO_CHAMBERS

N/A

SIZE:

20HSCLD

1616 (925/464/461/0)

N/A

STROKE: mm

65

63

N/A

TEST REPORT #:

BC 0041.0 Jul '07

BC 0006.0

SPRING BRAKE FORCE: kN

N/A

6.28

N/A

HOLDOFF PRESSURE: Bar

N/A

5

N/A

FOUNDATION BRAKE:

WABCO PAN19

WABCO PAN19

N/A

LEVER LENGTH: mm

69

69

N/A

BRAKE VALVES:

MAKE:

PART NUMBER:

PM PRESS. kPa

ECU PART #:

WABCO

480 102 08. 0 (MV)

80 kPa

3RD MODULATOR #:

WABCO

480 207 001 0 (24V)

80 kPa

ANTI-COMPOUNDING:

YES

SPRING BRAKE RELAY:

SEALCO_SBR

110701

N/A

YARD RELEASE VALVE:

SEALCO_YR

17600B

N/A

INLINE RELAY FITTED:

N/A

N/A

ECU DIRECTION:

 FRONT REARFRONT FRICTION: μ

0.51

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:	NORGREN 3042402	NORGREN 3042402
RIDE HEIGHT MM:	250	250
HANGER HEIGHT MM:		
PEDESTAL HEIGHT MM:		
LIFT AXLE:	N/A	
TIPPING DUMP SWITCH:	PNEUMATIC	
LIFTAXLE VALVE:	N/A	
PRESSURE LIMITING:	N/A	

AIR TANKSAIR TANKS STANDARD: **FRONT****REAR**

Brake tank size: <i>L</i>	<input type="text" value="C51902, 48L"/>	<input type="text" value="C51902, 48L"/>
Auxiliary tank size: <i>L</i>	<input type="text" value="C51901, 25L x 2"/>	
Pressure protection:	<input type="text" value="WABCO PEM: 461 513 002 0"/>	

AIR LINES**TEST POINTS:**CONTROL LINE: TANK: REAR CHAMBER: FRONT CHAMBER: DUOMATIC COLOUR CODED:

ELECTRONIC HEIGHT SENSOR CALIBRATION

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

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

MODULATOR 2.1

MODULATOR 2.2

RELAY VALVE

RESPONSE TIME: ms: **NOTES AND SPECIAL CONDITIONS**

3/12/2021 received est build schedule. 15/12/2021 request to do project, receive drawings etc.
24/3/2022 start files, request and receive product and trailer data. 25/3/2022 do calculations
and ECU files.

29/03/2022 Advised air reservoirs changed. Redo paperwork to reflect change.

22/06/2022 Complete paperwork, SODC, ECU file & send.

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.

RULE / STD COMPLIED TO:

NEW ZEALAND HEAVY VEHICLE BRAKE RULE 32015, SCHEDULE 5, ADR-35, ECE-R13, FMVSS-121

DATE:

5/08/2022

SIGNED:

Lance Cawte

CERTIFIER NAME & ID:

CHRIS CLARKECJC

SODC BY:

LANCE CAWTELPC

PHONE (BUS):

09-980-7300

FAX:

POSTAL ADDRESS:

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