

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

JOHN HIRST

ID

JEH

Plate number (optional)

VIN/~~chassis~~ number

7A9E31012N2023160

Make

DOMETT

Component being certified:

Chassis

Load anchorage

Model (optional)

E3101

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: NZ HEAVY VEHICLE BRAKE SPECIFICATION.
 CARRY OUT BRAKE CALCULATIONS, INSPECTION AND ECU END OF LINE PROTOCOL.
 5AFT SPLIT TIPPER **RSS ON TYRE: 265 70 R19.5**
 FOR SYSTEM ARCHITECTURE, PLEASE REFER TO PDS WORKSHEET & SCHEMATIC.
 REASON FOR CERTIFICATE: **NEW TRAILER BUILD****

Code/standard/rule certified to

LTR 32015/5

Component load rating(s)

32 Tonnes GVM

General drawing number(s)

N/A

**16 Tonne (Front brake mass)
 19 Tonne (Rear brake mass)**

Supporting documents

BRAKE RULE CERTIFICATE

JH220825

BRAKE CALCULATION #

TP52554

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 (whether comes first)

Declaration

Designer's ID (if different from inspector below)

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.

Inspector's signature

Inspector's name (PRINT IN CAPS)

JOHN HIRST

ID number

JEH

Date

30-Aug-22

Number

814600

CoF vehicle inspector ID (if applicable)

CoF vehicle inspector signature (if applicable)

Date

All fields are mandatory unless otherwise stated.

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

distribution: DOMETT TRAILERS
 7A9E31012N2023160
 JH220825
 LT400: 814600

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! VABCOBrake V6.18.07.12 db 31.08.2018

vehicle manufacturer: DOMETT TRAILERS
 trailer model : SAFT SPLIT TIPPER
 trailer type : 5-axle-full-trailer
 remarks : air / hydraulic / VA suspension
 WABCO TRAILER - EBS E
 TRISTOP 3+4: T.14/24 [TSE1416HTLD 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,

	unladen	laden
total mass		
axle 1	P in kg	7000
axle 2	P1 in kg	1700
axle 3	P2 in kg	1700
axle 4	P3 in kg	1200
axle 5	P4 in kg	1200
wheel base	P5 in kg	1200
centre of gravity height	E in mm	5950 - 6050
	h in mm	1010

	axle 1	axle 2	axle 3	axle 4	axle 5
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	Co	6.0	6.0	6.0	6.0

Calculation:

chamber pressure(rdyn min)	pH at z=22,5%bar	2.4	2.4	2.0	2.0	2.0
chamber pressure(rdyn max)	pH at z=22,5%bar	2.4	2.4	2.0	2.0	2.0
chamber press.(servo)	pcha at pm6,5bar	6.6	6.6	4.2	4.2	4.2
piston force	ThA at pm6,5bar	7687	7687	3984	3984	3984
brake force(rdyn min)	T lad. at pm6,5bar	58227	58227	30080	30080	30080
brake force(rdyn max)	T lad. at pm6,5bar	58227	58227	30080	30080	30080
Brake force incl. 1 % rolling resistance		22.3	22.3	18.5	18.5	18.5

braking rate z laden 0.601 for rdyn min
 z = sum (TR)/PRmax 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: 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)

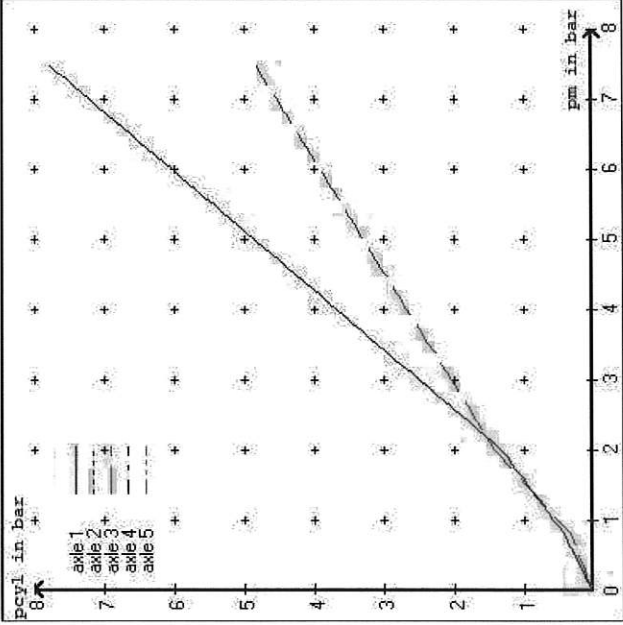
at pm 3.6 bar =>

test type III (ZIII = 0.06)

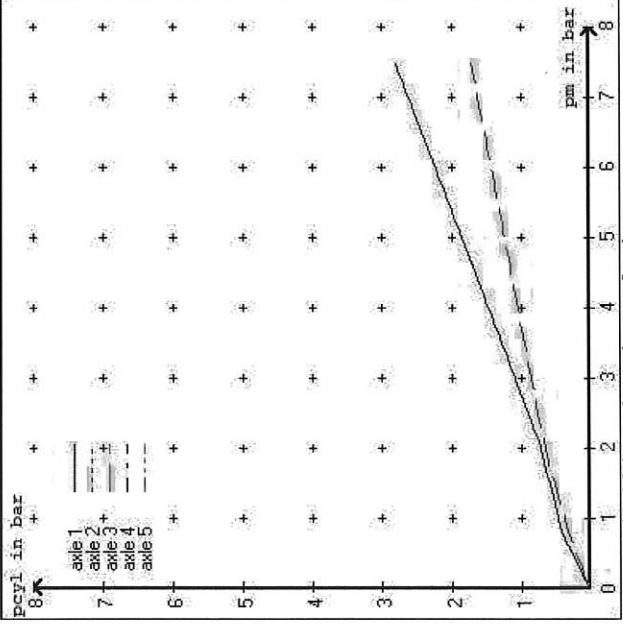
at pm 1.3 bar =>

for rdyn min : axle1 axle2 axle3 axle4 axle5
pcha in bar : 3.2 3.2 2.4 2.4
for rdyn min : axle1 axle2 axle3 axle4 axle5
pcha in bar : 0.8 0.8 0.8 0.8 0.8

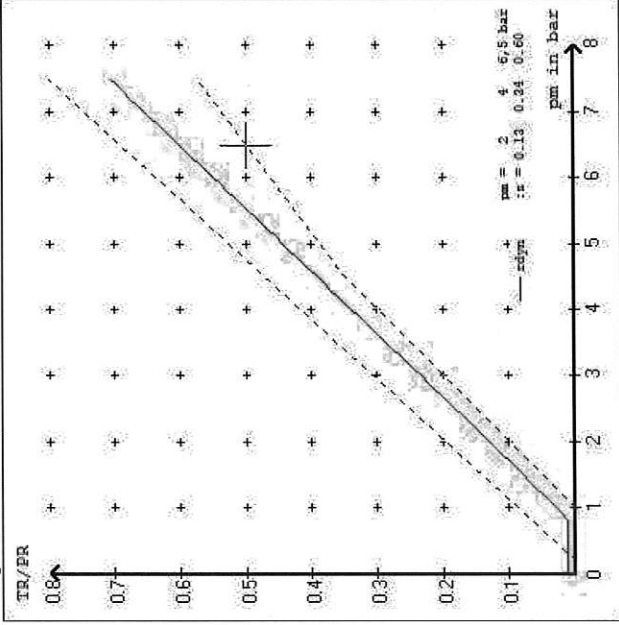
brake chamber pressure laden



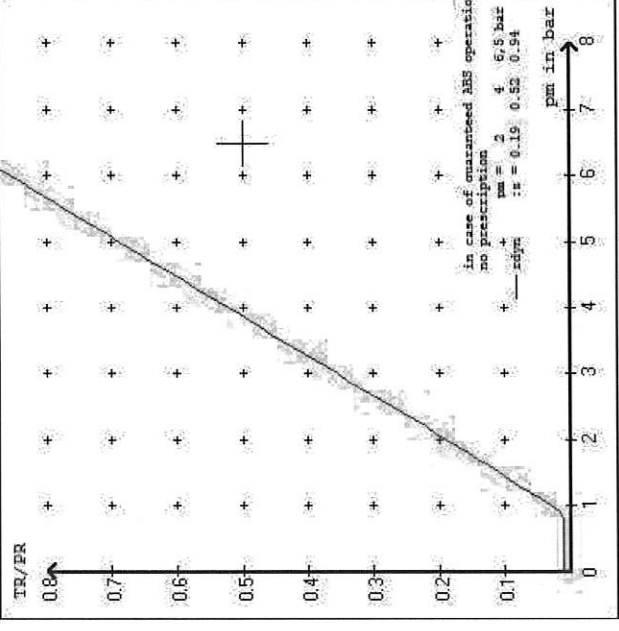
brake chamber pressure unladen



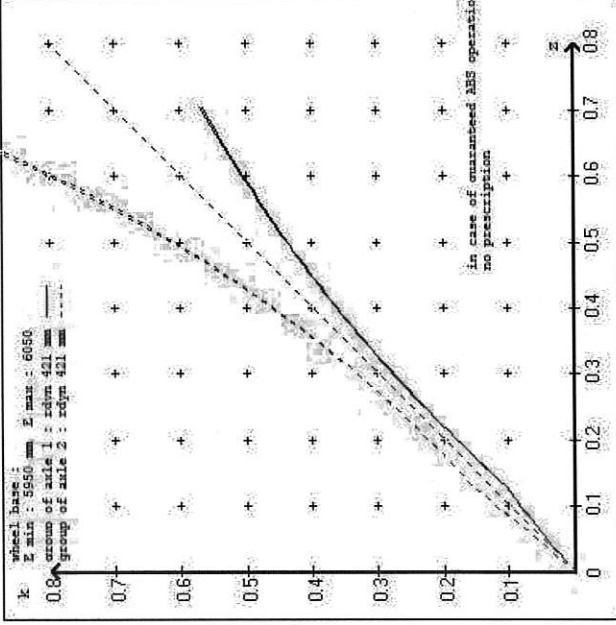
compatibility band laden



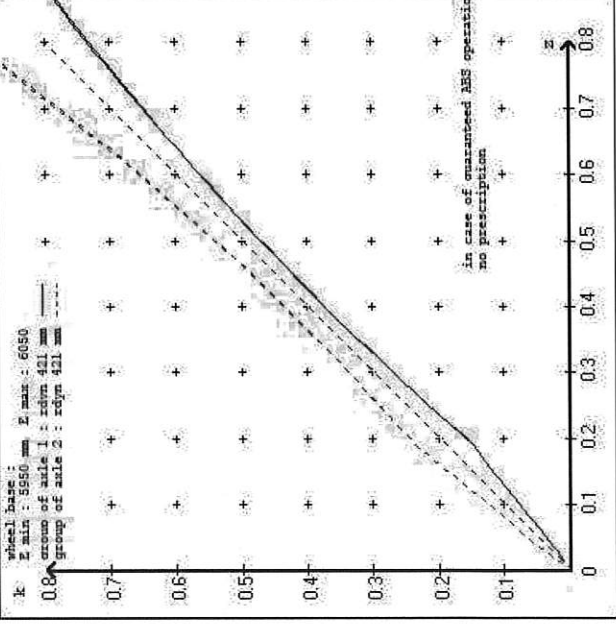
compatibility band unladen



curves of friction laden



curves of friction unladen



vehicle manufacturer: DOMETT TRAILERS
 trailer model : SAFT SPLIT TIPPER
 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 : SAFT SPLIT TIPPER
 trailer type : 5-axle-full-trailer
 brake calculation no. : TP 52554A

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
 2.0 bar z = 0.134
 (Laden condition) 6.5 bar z = 0.600

axle	control pressure pm		control pressure pm		brake pr. laden			
	axle load unladen	bellow pr. unladen	brake pr. unladen	axle load laden	bellow pr. laden	brake pr. laden		
1	1700	to be	2.4	8000	to be	0.4	1.3	6.6
2	1700	entered by	2.4	8000	entered by	0.4	1.3	6.6
3	1200	the vehicle	1.5	6350	the vehicle	0.3	1.4	4.2
4	1200	manufact.	1.5	6350	manufact.	0.3	1.4	4.2
5	1200	manufact.	1.5	6350	manufact.	0.3	1.4	4.2

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	pcyl	axle load	pcyl	axle load	pcyl	axle load	pcyl	axle load	pcyl
1700	2.4	1700	2.4	1200	1.5	1200	1.5	1200	1.5
2200	2.7	2200	2.7	1700	1.8	1700	1.8	1700	1.8
2700	3.1	2700	3.1	2200	2.0	2200	2.0	2200	2.0
3200	3.4	3200	3.4	2700	2.3	2700	2.3	2700	2.3
3700	3.7	3700	3.7	3200	2.5	3200	2.5	3200	2.5
4200	4.1	4200	4.1	3700	2.8	3700	2.8	3700	2.8
4700	4.4	4700	4.4	4200	3.1	4200	3.1	4200	3.1
5200	4.7	5200	4.7	4700	3.3	4700	3.3	4700	3.3
8000	6.6	8000	6.6	6350	4.2	6350	4.2	6350	4.2

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 = 26.7	% Fe
axle 2	(rdyn 421 mm)	T = 26.7	% Fe
axle 3	(rdyn 421 mm)	T = 16.5	% Fe
axle 4	(rdyn 421 mm)	T = 16.5	% Fe
axle 5	(rdyn 421 mm)	T = 16.5	% 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 = 7687 N
axle2	ThA = 7687 N
axle3	ThA = 3984 N
axle4	ThA = 3984 N
axle5	ThA = 3984 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 = 45449	N
axle 2	(rdyn 421 mm)	T = 45449	N
axle 3	(rdyn 421 mm)	T = 23573	N
axle 4	(rdyn 421 mm)	T = 23573	N
axle 5	(rdyn 421 mm)	T = 23573	N

braking rate of the vehicle

(item 4.3.2 to appendix 2 to annex 11)

basic test	type III
of subject	(calculated)
trailer (E)	residual
	(hot)braking
	0.60
	0.47

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 = 45449	N
axle 2	(rdyn 421 mm)	T = 45449	N
axle 3	(rdyn 421 mm)	T = 23573	N
axle 4	(rdyn 421 mm)	T = 23573	N
axle 5	(rdyn 421 mm)	T = 23573	N

basic test	type III
of subject	(calculated)
trailer (E)	residual
	(hot)braking
	0.60
	0.47

braking rate of the vehicle

(item 4.3.2 to appendix 2 to annex 11)

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.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	4.8	4.8
	plus in bar	

calculation:

ratio until road 3.9674 3.9674
 $iFb = 1Bh * \eta_{ta} * C * r_{rBt} / (r_{Bn} * r_{stat})$
 for rstat in mm 401 401
 brake force of spring br. Tf in N 48188 48188
 $Tf = (TFZ * KDZ - 2 * Co / 1Bh) * iFb$
 braking rate z_f laden 0.290
 $z_f = \text{sum}(Tf) / P + 0,01$

Test of the frictional connection required by the parking brake

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

$$\text{min Ef} = E * (1 - PR/P + zferf * h/E) / (1 - zferf / (fz_{zul} * n_f/ng))$$

min Ef = 4681 mm for E = 5950 mm
 =====
 min Ef = 4750 mm for E = 6050 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
 fz_{zul} = 0.80 maximum permissible frictional connection required
 zferf = 0.18 maximum required braking ratio of the parking brake
 h = 2140 mm height of center of gravity - laden
 PR = 19050 kg maximum bogie mass - laden
 P = 35050 kg maximum total mass - laden
 n_f = 2 no. of axle(s) with TRISTOP spring brake actuators
 ng = 3 no. of bogie axle(s)

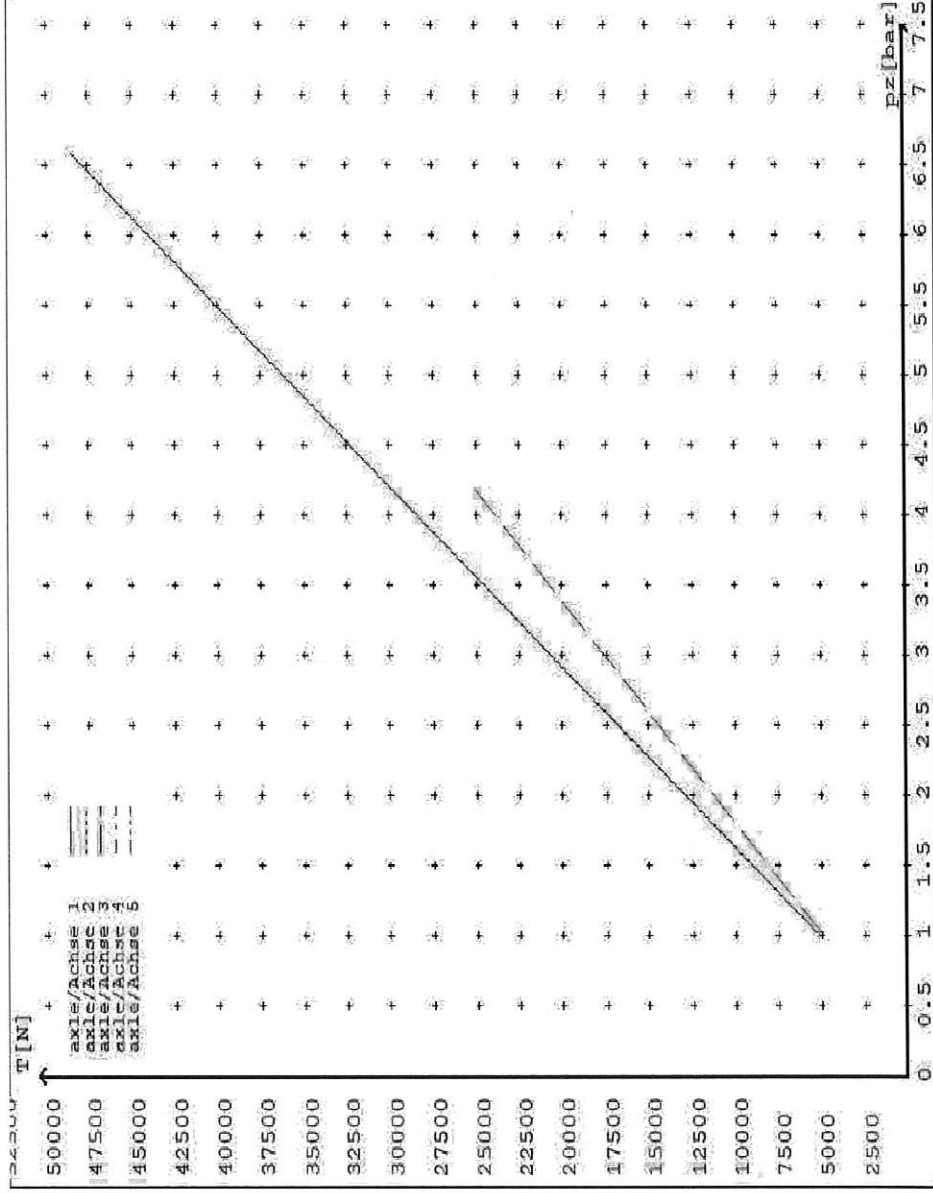
reference values

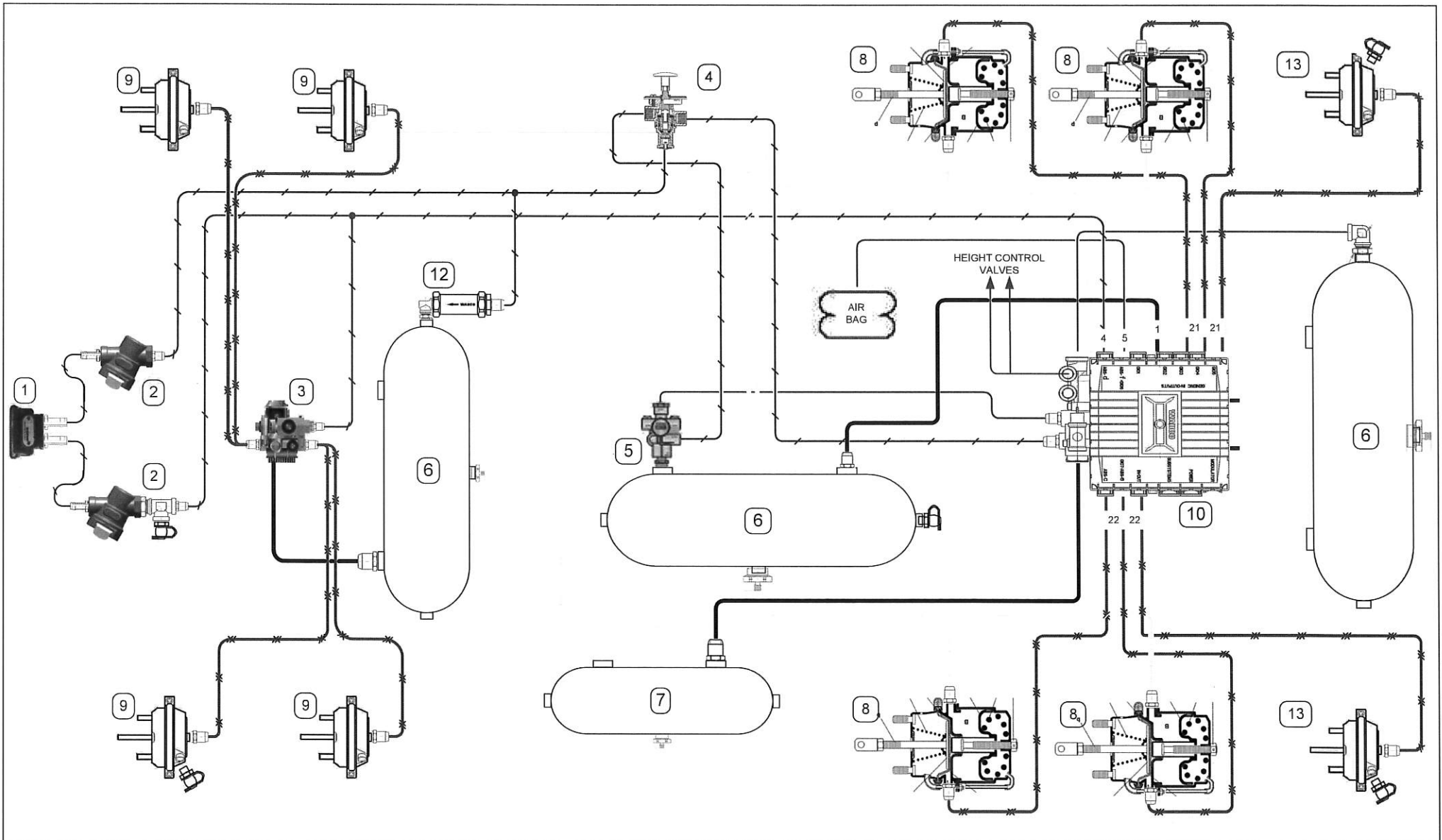
reference values for z = 50% for max rdyn: 421 mm








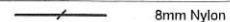

	pz [bar]	T [N]	T [N]
axle 1	1.0	5061	
	6.6	48441	
axle 2	1.0	5061	
	6.6	48441	
axle 3	1.0		4864
	4.2		25025
axle 4	1.0		4864
	4.2		25025
axle 5	1.0		4864
	4.2		25025

VIN - no.:

brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	Axle (s) / Achse (n)			
	20./	20./	T.14/24	T.14/24
Maximum stroke smax = ...mm maximaler Hub smax =mm	65	65	64	64
Lever length = ...mm Hebellänge =mm	69.08	69.08	69.08	69.08



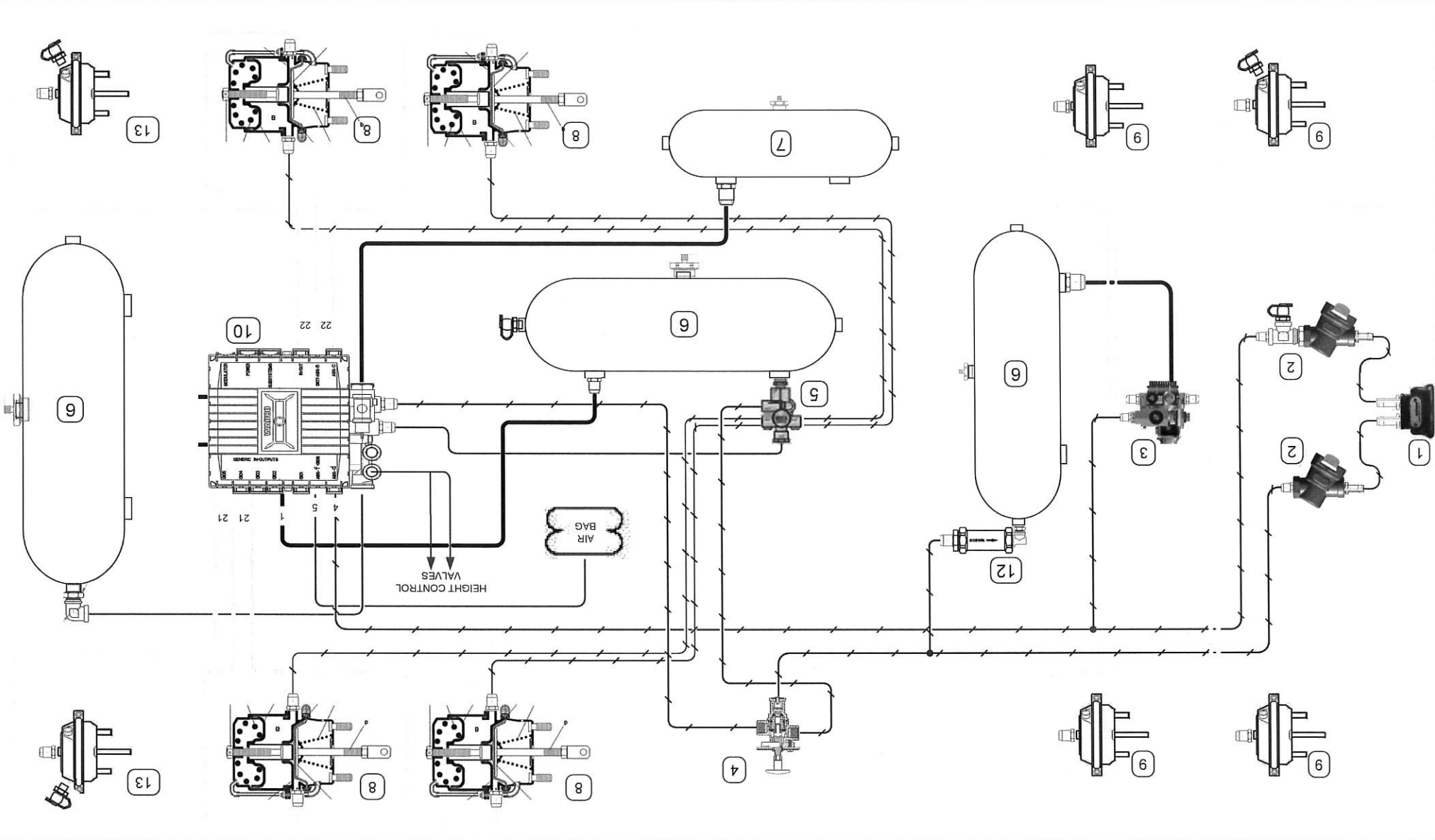


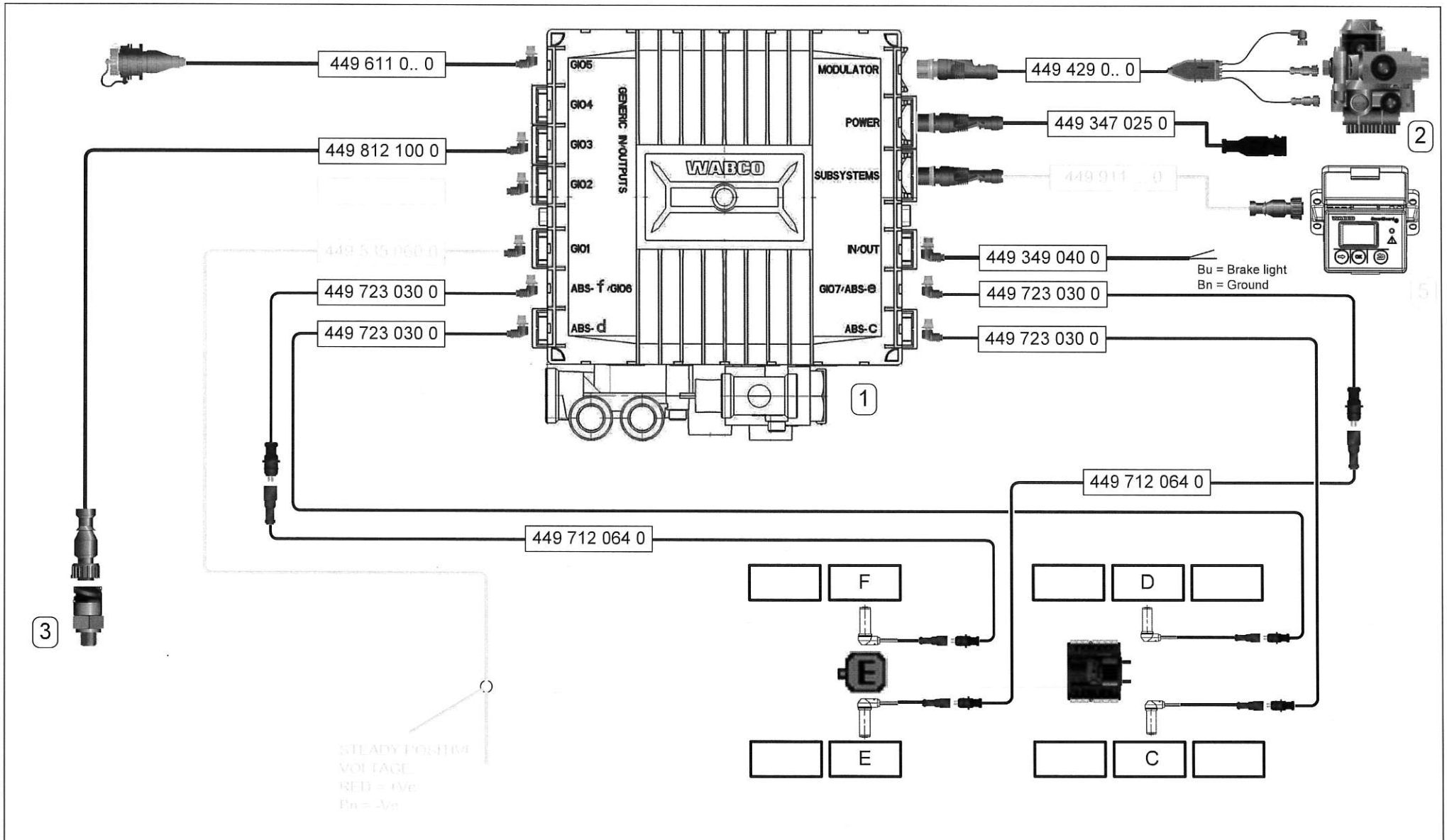
DOMETT TRAILERS		ITEM	QTY.	PART NO.	DESCRIPTION	ITEM	QTY.	PART NO.	DESCRIPTION	PIPING LEGEND:
		1	1	452 804 001 0	WABCO DUOMATIC	9	4	20HSCLD65	TSE BRAKE CHAMBERS	
		2	2	432 500 020 0	WABCO LINE FILTER	10	1	480 102 08. 0	WABCO EBS ECU	
5AFT SPLIT TIPPER		3	1	480 207 202 0	WABCO EBS 3 RD MODULATOR	11	1	480 102 08. 0	WABCO EBS ECU	
		4	1	17600B	SEALCO YARD RELEASE	12	1	434 014 000 0	WABCO CHECK VALVE	
		5	1	110701	SEALCO S.B.C.V.	13	2	14HSCLD64	TSE BRAKE CHAMBER	
		6	3	9TA3104600	46 LTR AIR TANK					
Copyright Transpecs 2010	SIZE A4	SPEC REFERENCE 2160	SERVICE BRAKE LINES	REV 1	7	1	9TA2462502	25 LTR AIR TANK		
All rights reserved	SCALE				8	4	1416HTLD64	TSE BRAKE CHAMBERS		

DOMETT TRAILERS
SAFT SPLIT TIPPER
PARK BRAKE LINES

SCALE	A4	2160	PARK BRAKE LINES
SIZE	3 SPEC REFERENCE		
REV	1		

ITEM	QTY.	PART NO.	DESCRIPTION	ITEM	QTY.	PART NO.	DESCRIPTION
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2	2	432 500 020 0	WABCO LINE FILTER	10	1	480 102 08. 0	WABCO EBS ECU
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5	1	110701	SEALCO S.B.C.V.	13	2	14HSCLD64	TSE BRAKE CHAMBER
6	3	97A3104600	46 LTR AIR TANK				
7	1	97A2462502	25 LTR AIR TANK				
8	4	1416HTLD64	TSE BRAKE CHAMBERS				





	DOMETT TRAILERS		<table border="1"> <thead> <tr> <th>ITEM</th> <th>QTY.</th> <th>PART NO.</th> <th>DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>1</td> <td>480 102 084 0</td> <td>WABCO T-EBS ECU</td> </tr> <tr> <td>2</td> <td>1</td> <td>480 207 202 0</td> <td>WABCO 3RD MODULATOR</td> </tr> <tr> <td>3</td> <td>1</td> <td>441 044 101 0</td> <td>WABCO PRESSURE SENSOR</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	ITEM	QTY.	PART NO.	DESCRIPTION	1	1	480 102 084 0	WABCO T-EBS ECU	2	1	480 207 202 0	WABCO 3 RD MODULATOR	3	1	441 044 101 0	WABCO PRESSURE SENSOR												
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A4	2160	GIO ASSIGNMENT	1																												
SCALE																															



