trailer (full, semi-, centre-axle) with air brake system acc. to
71/320/EEC, last amended by 98/12/EC and 2006/96/EC or UN/ECE-R.13.11

distribution: DOMETT
7A9C20038B1023008
JH111007

please note!

This brake calculation is made under consideration of
-the legal precriptions mentioned above in the version valid
alt the time of making the program (V6.10.05.21).
-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 V6.10.05.21 db 26.05.2010

vehicle manufacturer: DOMETT
trailer model : 3AX B FRONT
trailer type : 3-axle-semi-trailer
remarks : air / hydraulic / VA suspension
WABCO TRAILER - EBS
TRISTOP 1+2: 14/24
265/70 R 19,5

axle 1 + 2 + 3 : BPW, TSB 3709, 361-041-08 ECE,

			unladen		laden
total mass	P in kg	6000 -	6500	30000 -	30000
king-pin	PS kg	1500 -	2000	9000 -	9000
axle 1	P1 in kg		1500		7000
axle 2	P2 in kg		1500		7000
axle 3	P3 in kg		1500		7000
total axle mass	PR in kg		4500		21000
wheel base	E in mm	6850 -	6900		
centre of gravity height	h in mm		1295		2300
K-factor		Kv min	1.7528	Kc min	0.9896
K-factor		Kv max	1.7568	Kc max	0.9922

		axle 1	axle 2	axle 3
no. of combined axles		1	1	1
no. of brake chambers per axle line	KDZ	2	2	2
The power output corresponds to		BZ 107.0	BZ 107.0	BZ 106.0
brake chamber manufacturer		BPW	BPW	BPW
chamber size		14/24	14/24	14
lever length	lBh in mm	80	80	80
brake factor	[-]	20.50	20.50	20.50
dyn. rolling radius	rdyn min in mm	421	421	421
dyn. rolling radius	rdyn max in mm	421	421	421
threshold torque	Co Nm	12.0	12.0	12.0

calculation:

chamber pressure(rdyn min)pH at z=22,5%bar		2.7	2.7	2.7
chamber pressure(rdyn max)pH at z=22,5%bar		2.7	2.7	2.7
chamber press.(servo)pcha at pm6,5bar	bar	6.1	6.1	6.1
piston force	ThA at pm6,5bar N	4987	4987	4987
brake force(rdyn min)T lad. at pm6,5bar	N	38368	38368	38368
brake force(rdyn max)T lad. at pm6,5bar	N	38368	38368	38368
brake force within 1 % rolling friction proportion	%	33.3	33.3	33.3

braking rate z laden 0.559 for rdyn min
z = sum (TR)/PRmax 0.559 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: 480 102 ... 0 WABCO
  EBS trailer modulator

  brake cylinder: BPW 05.444.38.....

axle 2:
  valve 1: 971 002 ... 0 WABCO
  EBS emergency valve

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

  brake cylinder: BPW 05.444.38.....

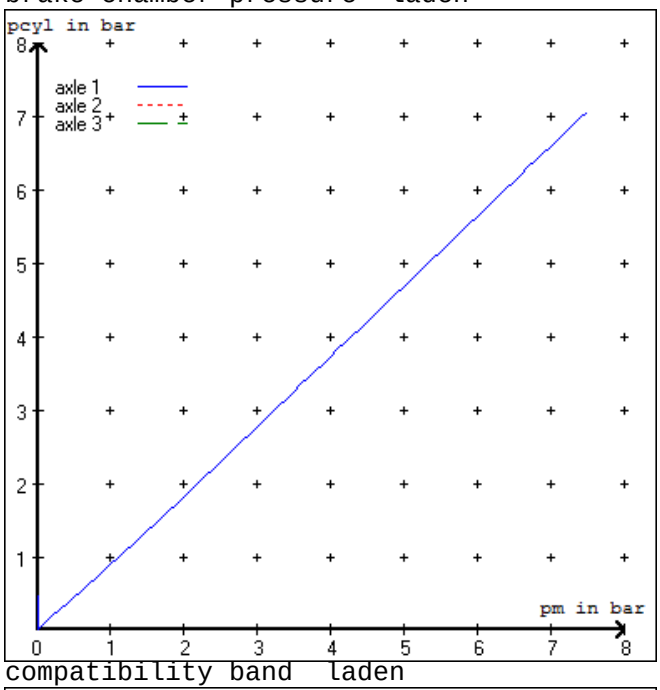
axle 3:
  valve 1: 971 002 ... 0 WABCO
  EBS emergency valve

  valve 2: 480 102 ... 0 () WABCO or 480 207 0.. 0
  EBS trailer modulator

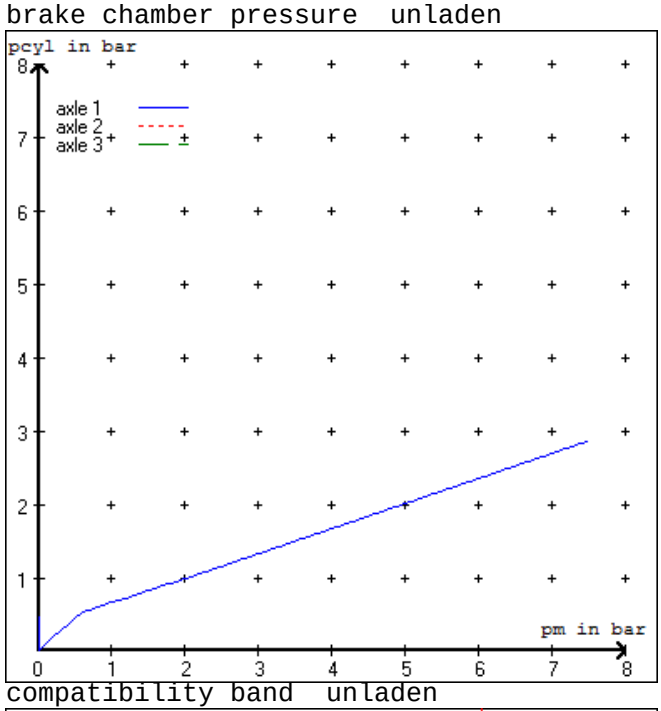
  brake cylinder: BPW 05.444.30.....

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	
at pm 3.7 bar =>	pcha in bar :	3.5	3.5	3.5	
test type III (zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	
at pm 1.2 bar =>	pcha in bar :	1.0	1.0	1.0	

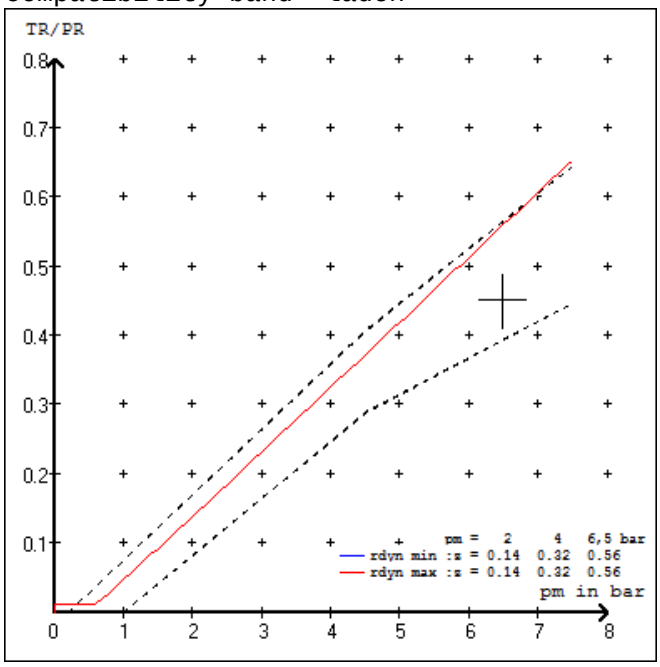
brake chamber pressure laden



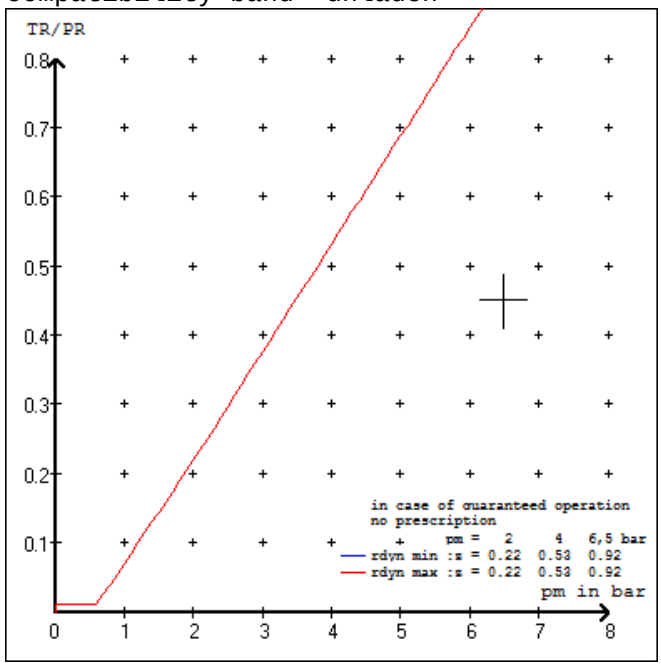
brake chamber pressure unladen



compatibility band laden



compatibility band unladen



vehicle manufacturer: DOMETT
trailer model : 3AX B FRONT
trailer type : 3-axle-semi-trailer

brake chamber and lever length :
axle 1 : 2 x type/diameter 14/24 (BPW) lever length 80 mm
axle 2 : 2 x type/diameter 14/24 (BPW) lever length 80 mm
axle 3 : 2 x type/diameter 14 (BPW) lever length 80 mm

brake diagram :

valve :
971 002 ... 0 WABCO EBS emergency valve
480 102 ... 0 WABCO EBS trailer modulator
480 102 ... 0 WABCO EBS trailer modulator or 480 207 0.. 0

EBS input data
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vehicle manufacturer: DOMETT
trailer model : 3AX B FRONT
trailer type : 3-axle-semi-trailer
brake calculation no. : TP 50547S

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

assignment pm / deceleration z: pm 0.6 bar z = 0.000
(laden condition) 2.0 bar z = 0.134
6.5 bar z = 0.560

control pressure pm			6,5	control pressure pm		0.6	2.0	6.5
axle	axle load unladen	bellow pr. unladen	brake pr. unladen	axle load laden	bellow pr. laden	brake pr. laden		
1	1500	to be entered by the vehicle manufact.	2.5	7000	to be entered by the vehicle manufact.	0.5	1.8	6.1
2	1500		2.5	7000		0.5	1.8	6.1
3	1500		2.5	7000		0.5	1.8	6.1
4	0		0,0	0		0,0	0,0	0,0
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 load	pcyl	axle load	pcyl	axle load	pcyl
1500	2.5	1500	2.5	1500	2.5
2000	2.8	2000	2.8	2000	2.8
2500	3.2	2500	3.2	2500	3.2
3000	3.5	3000	3.5	3000	3.5
3500	3.8	3500	3.8	3500	3.8
4000	4.1	4000	4.1	4000	4.1
4500	4.5	4500	4.5	4500	4.5
5000	4.8	5000	4.8	5000	4.8
7000	6.1	7000	6.1	7000	6.1

data sheet to EC/ECE vehicle type-approval certificate concerning braking equipment: according to 98/12/EC annex IX 2.7.4 / ECE R13 annex 11

axle 1 : reference axle: BPW D 115-2 brake lining: BPW 8200
test report : 361-041-08 EC date : 28.04.2009
axle 2 : reference axle: BPW D 115-2 brake lining: BPW 8200
test report : 361-041-08 EC date : 28.04.2009
axle 3 : reference axle: BPW D 115-2 brake lining: BPW 8200
test report : 361-041-08 EC date : 28.04.2009

calc. verif. of residual (hot) braking force type III
(item 4.2 of appendix I to annex VII)

axle 1	(rdyn 421 mm)	T = 18.3 % Fe
axle 2	(rdyn 421 mm)	T = 18.3 % Fe
axle 3	(rdyn 421 mm)	T = 18.3 % Fe

calculated actuator stroke in mm
(item 4.3.1.1 of appendix I to annex VII)

axle 1	(sp = 51 mm)	s = 47 mm
axle 2	(sp = 51 mm)	s = 47 mm
axle 3	(sp = 55 mm)	s = 47 mm

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

axle1	ThA = 4987 N
axle2	ThA = 4987 N
axle3	ThA = 4987 N

calc. residual (hot) braking force in N
(item 4.3.1.4 of appendix I to annex VII)

axle 1	(rdyn 421 mm)	T = 36126 N
axle 2	(rdyn 421 mm)	T = 36126 N
axle 3	(rdyn 421 mm)	T = 36126 N

	basic test of subject trailer (z)	type III (calculated) residual (hot)braking
braking rate of the vehicle (item 4.3.2 to appendix I to annex VII)	0.56	0.53
required braking rate (items 1.3.3 and 1.6.2 to annex II)		>= 0,4 and >= 0,6*z (0.34)

calc. residual (hot) braking force in N
(item 4.3.1.4 of appendix I to annex VII)

axle 1	(rdyn 421 mm)	T = 36126 N
axle 2	(rdyn 421 mm)	T = 36126 N
axle 3	(rdyn 421 mm)	T = 36126 N

	basic test of subject trailer (z)	type III (calculated) residual (hot)braking
braking rate of the vehicle (item 4.3.2 to appendix I to annex VII)	0.56	0.53
required braking rate (items 1.3.3 and 1.6.2 to annex II)		>= 0,4 and >= 0,6*z (0.34)

data sheet to EC/ECE vehicle type-approval certificate concerning braking equipment: according to 98/12/EC annex IX 2.7.4 / ECE R13 annex 11

axle 1 : reference axle: BPW D 115-2 brake lining: BPW 8101
test report : 361-041-08 EC date : 16.03.2009
axle 2 : reference axle: BPW D 115-2 brake lining: BPW 8101
test report : 361-041-08 EC date : 16.03.2009
axle 3 : reference axle: BPW D 115-2 brake lining: BPW 8101
test report : 361-041-08 EC date : 16.03.2009

calc. verif. of residual (hot) braking force type III
(item 4.2 of appendix I to annex VII)

axle 1	(rdyn 421 mm)	T = 18.3 % Fe
axle 2	(rdyn 421 mm)	T = 18.3 % Fe
axle 3	(rdyn 421 mm)	T = 18.3 % Fe

calculated actuator stroke in mm
(item 4.3.1.1 of appendix I to annex VII)

axle 1	(sp = 51 mm)	s = 48 mm
axle 2	(sp = 51 mm)	s = 48 mm
axle 3	(sp = 55 mm)	s = 48 mm

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

axle1	ThA = 4987 N
axle2	ThA = 4987 N
axle3	ThA = 4987 N

calc. residual (hot) braking force in N
(item 4.3.1.4 of appendix I to annex VII)

axle 1	(rdyn 421 mm)	T = 34780 N
axle 2	(rdyn 421 mm)	T = 34780 N
axle 3	(rdyn 421 mm)	T = 34780 N

	basic test of subject trailer (z)	type III (calculated) residual (hot)braking
braking rate of the vehicle (item 4.3.2 to appendix I to annex VII)	0.56	0.51
required braking rate (items 1.3.3 and 1.6.2 to annex II)		>= 0,4 and >= 0,6*z (0.34)

calc. residual (hot) braking force in N
(item 4.3.1.4 of appendix I to annex VII)

axle 1	(rdyn 421 mm)	T = 34780 N
axle 2	(rdyn 421 mm)	T = 34780 N
axle 3	(rdyn 421 mm)	T = 34780 N

	basic test of subject trailer (z)	type III (calculated) residual (hot)braking
braking rate of the vehicle (item 4.3.2 to appendix I to annex VII)	0.56	0.51
required braking rate (items 1.3.3 and 1.6.2 to annex II)		>= 0,4 and >= 0,6*z (0.34)

spring parking brake

		axle 1	axle 2
no of TRISTOP-actuators per axle line	KDZ	2	2
TRISTOP-actuator type		14/24	14/24
lever length	lBh in mm	80	80
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	5809	5809
sp.brake chamber no BPW		05.444.38	05.444.38
release pressure	pLs in bar	4.9	4.9

calculation:

ratio until road		4.0898	4.0898
iFb = lBh*Eta*C*rBt/(rBn*rstat) for rstat	in mm	401	401
brake force of spring br. Tf	in N	46288	46288
Tf = (TFZ*KDZ-2*Co/lBh)*iFb			
braking rate	zf laden	0.325	
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 = 3727 mm for E = 6850 mm
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min Ef = 3749 mm for E = 6900 mm
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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	=	2300 mm	height of center of gravity - laden
PR	=	21000 kg	maximum bogie mass - laden
P	=	30000 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 = 45% for max rdyn: 421 mm

	pz [bar]	T [N]	T [N]
axle 1	1.0 6.1		3218 30886
axle 2	1.0 6.1		3218 30886
axle 3	1.0 6.1		3218 30886

VIN - no.:

	Axle(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	14/24	14/24	14/	/	/
Maximum stroke smax = ...mm maximaler Hub smax = ...mm	57	57	60		
Lever length = ...mm Hebellänge = ...mm	80	80	80