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 T&T
7A9E25017B1023005
JH110914

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 T&T

trailer model : 5AX F/T STOCK

trailer type : 5-axle-full-trailer

remarks : air / hydraulic / VA suspension
WABCO TRAILER - EBS
TRISTOP 3+4+5: T.14/24
265/70 R 19,5

axle 1 + 2 + 3 + 4 + 5 : SAF, PAN 19-1, TDB 0749 ECE,

		unladen	laden
total mass	P in kg	5600	34200
axle 1	P1 in kg	1300	7500
axle 2	P2 in kg	1300	7500
axle 3	P3 in kg	1000	6400
axle 4	P4 in kg	1000	6400
axle 5	P5 in kg	1000	6400
wheel base	E in mm	6080 - 6080	
centre of gravity height	h in mm	1070	2500

		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	KDZ	2	2	2	2	2
The power output corresponds to		BZ 122.1	BZ 122.1	BZ 119.6	BZ 119.6	BZ 119.6
brake chamber manufacturer		Meritor	Meritor	Meritor	Meritor	Meritor
chamber size		14.	14.	T.14/16	T.14/16	T.14/16
lever length	lBh in mm	69	69	69	69	69
brake factor	[-]	23.03	23.03	23.03	23.03	23.03
dyn. rolling radius	rdyn min in mm	421	421	421	421	421
dyn. rolling radius	rdyn max in mm	421	421	421	421	421
threshold torque	Co Nm	6.0	6.0	6.0	6.0	6.0
calculation:						
chamber pressure(rdyn min)	pH at z=22,5%bar	2.5	2.5	2.0	2.0	2.0
chamber pressure(rdyn max)	pH at z=22,5%bar	2.5	2.5	2.0	2.0	2.0
chamber press.(servo)	pcha at pm6,5bar bar	6.6	6.6	4.4	4.4	4.4
piston force	ThA at pm6,5bar N	6389	6389	4185	4185	4185
brake force(rdyn min)	T lad. at pm6,5bar N	48367	48367	31599	31599	31599
brake force(rdyn max)	T lad. at pm6,5bar N	48367	48367	31599	31599	31599
brake force within 1 % rolling friction proportion	%	20.0	20.0	20.0	20.0	20.0

braking rate z laden	0.571	for rdyn min
z = sum (TR)/PRmax	0.571	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
           EBS relay valve

  brake cylinder: Meritor 14HSCLD64

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

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

  brake cylinder: Meritor 14HSCLD64

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

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

  brake cylinder: Meritor 1416HTLD64

axle 4:
valve 1: 971 002 ... 0 WABCO
EBS emergency valve

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

brake cylinder: Meritor 1416HTLD64

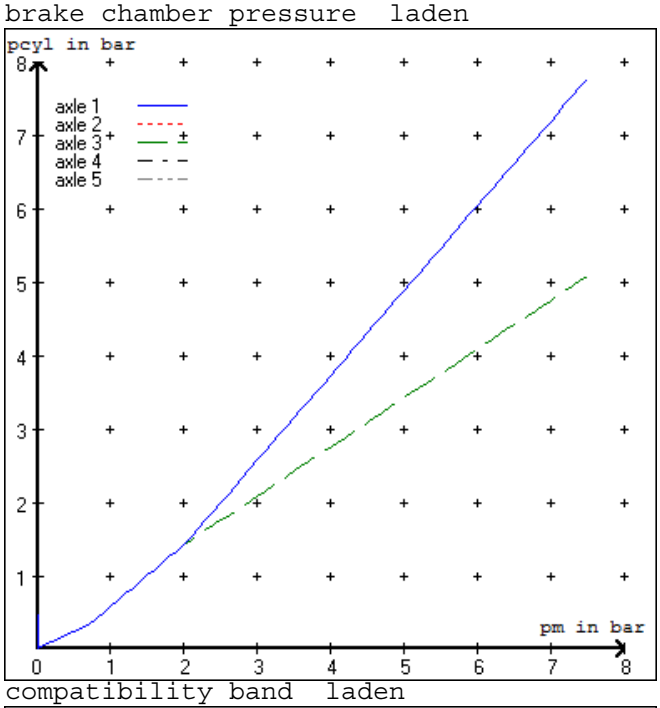
axle 5:
valve 1: 971 002 ... 0 WABCO
EBS emergency valve

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

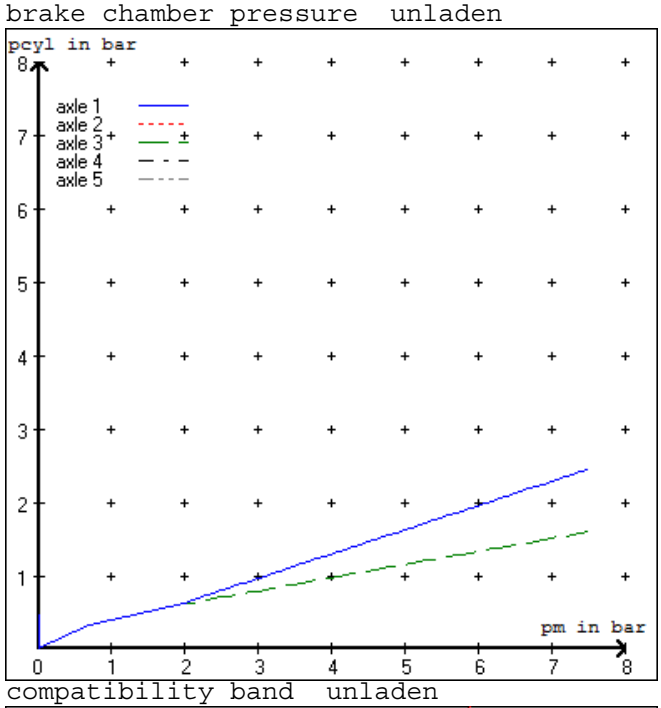
brake cylinder: Meritor 1416HTLD64

test type III (zIII = 0.30)	for rdyn min :	axle1	axle2	axle3	axle4	axle5
at pm 3.7 bar =>	pcha in bar :	3.4	3.4	2.5	2.5	2.5
test type III (zIII = 0.06)	for rdyn min :	axle1	axle2	axle3	axle4	axle5
at pm 1.2 bar =>	pcha in bar :	0.8	0.8	0.8	0.8	0.8

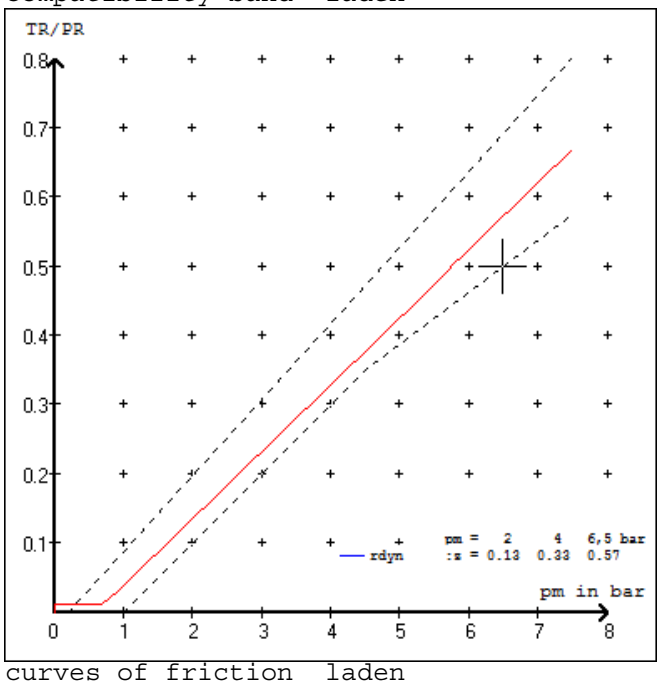
brake chamber pressure laden



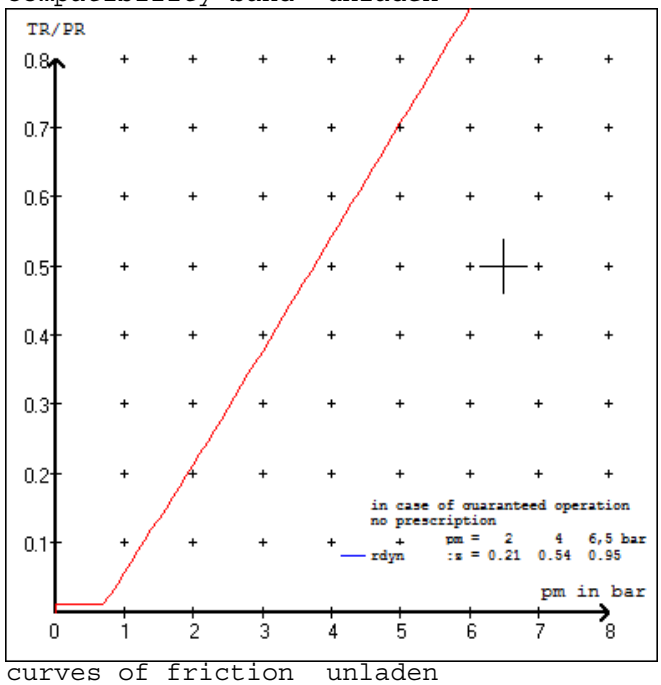
brake chamber pressure unladen



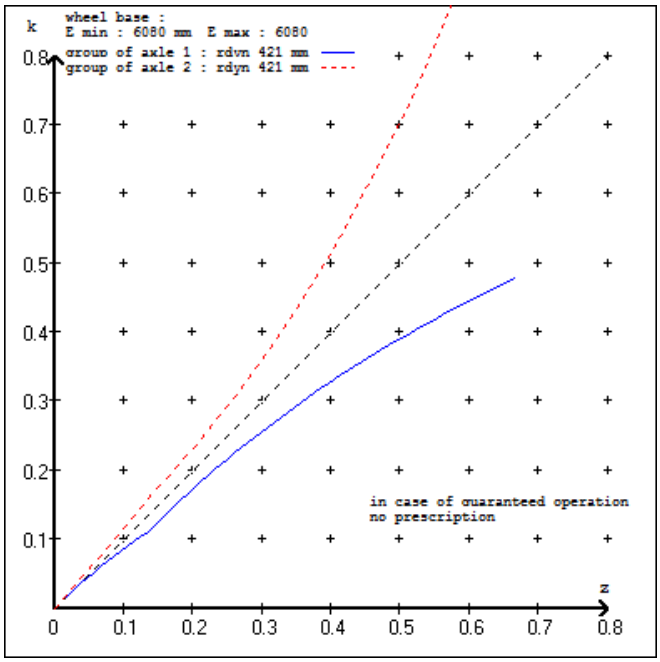
compatibility band laden



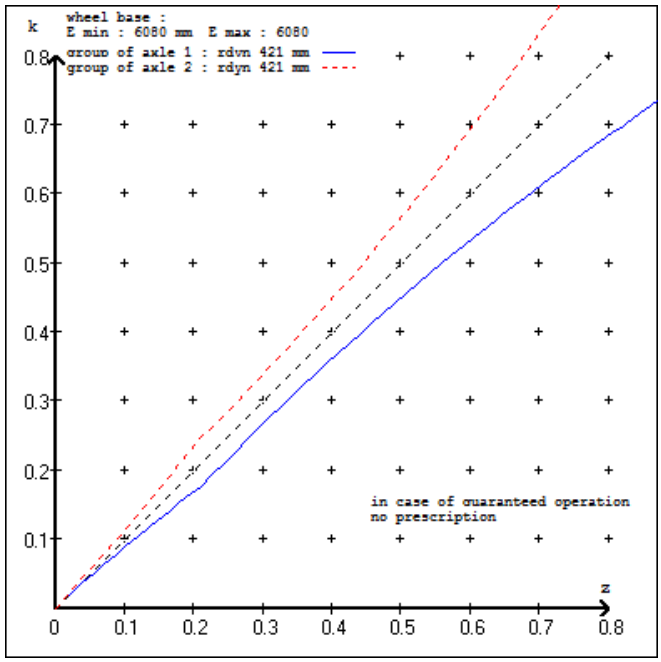
compatibility band unladen



curves of friction laden



curves of friction unladen



vehicle manufacturer: DOMETT T&T
trailer model : 5AX F/T STOCK
trailer type : 5-axle-full-trailer

brake chamber and lever length :
axle 1 : 2 x type/diameter 14. (Meritor) lever length 69 mm
axle 2 : 2 x type/diameter 14. (Meritor) lever length 69 mm
axle 3 : 2 x type/diameter T.14/16 (Meritor) lever length 69 mm
axle 4 : 2 x type/diameter T.14/16 (Meritor) lever length 69 mm
axle 5 : 2 x type/diameter T.14/16 (Meritor) lever length 69 mm

brake diagram :

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

EBS input data
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vehicle manufacturer: DOMETT T&T
trailer model : 5AX F/T STOCK
trailer type : 5-axle-full-trailer
brake calculation no. : TP 50533A

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

assignment pm / deceleration z: pm 0.7 bar z = 0.000
(laden condition) 2.0 bar z = 0.128
6.5 bar z = 0.570

control pressure pm			6,5	control pressure pm		0.7	2.0	6.5
axle	axle load unladen	bellow pr. unladen	brake pr. unladen	axle load laden	bellow pr. laden	brake pr. laden		
1	1300	to be entered by the vehicle manufact.	2.1	7500	to be entered by the vehicle manufact.	0.3	1.4	6.6
2	1300		2.1	7500		0.3	1.4	6.6
3	1000		1.4	6400		0.3	1.4	4.4
4	1000		1.4	6400		0.3	1.4	4.4
5	1000		1.4	6400		0.3	1.4	4.4

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 5	
axle load	pcyl	axle load	pcyl	axle load	pcyl	axle load	pcyl	axle load	pcyl
1300	2.1	1300	2.1	1000	1.4	1000	1.4	1000	1.4
1800	2.5	1800	2.5	1500	1.7	1500	1.7	1500	1.7
2300	2.8	2300	2.8	2000	2.0	2000	2.0	2000	2.0
2800	3.2	2800	3.2	2500	2.2	2500	2.2	2500	2.2
3300	3.6	3300	3.6	3000	2.5	3000	2.5	3000	2.5
3800	3.9	3800	3.9	3500	2.8	3500	2.8	3500	2.8
4300	4.3	4300	4.3	4000	3.1	4000	3.1	4000	3.1
4800	4.6	4800	4.6	4500	3.3	4500	3.3	4500	3.3
7500	6.6	7500	6.6	6400	4.4	6400	4.4	6400	4.4

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: SAF	SBW 1937-...	brake lining: Jurid 539	
test report :	TDB 0749 ECE	date	: 13.10.2008
axle 2 : reference axle: SAF	SBW 1937-...	brake lining: Jurid 539	
test report :	TDB 0749 ECE	date	: 13.10.2008
axle 3 : reference axle: SAF	SBW 1937-...	brake lining: Jurid 539	
test report :	TDB 0749 ECE	date	: 13.10.2008
axle 4 : reference axle: SAF	SBW 1937-...	brake lining: Jurid 539	
test report :	TDB 0749 ECE	date	: 13.10.2008
axle 5 : reference axle: SAF	SBW 1937-...	brake lining: Jurid 539	
test report :	TDB 0749 ECE	date	: 13.10.2008

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

axle 1	(rdyn 421 mm)	T = 24.0 % Fe
axle 2	(rdyn 421 mm)	T = 24.0 % Fe
axle 3	(rdyn 421 mm)	T = 17.5 % Fe
axle 4	(rdyn 421 mm)	T = 17.5 % Fe
axle 5	(rdyn 421 mm)	T = 17.5 % Fe

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

axle 1	(sp = 57 mm)	s = 39 mm
axle 2	(sp = 57 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 = 6389 N
axle2	ThA = 6389 N
axle3	ThA = 4185 N
axle4	ThA = 4185 N
axle5	ThA = 4185 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 = 38082 N
axle 2	(rdyn 421 mm)	T = 38082 N
axle 3	(rdyn 421 mm)	T = 24914 N
axle 4	(rdyn 421 mm)	T = 24914 N
axle 5	(rdyn 421 mm)	T = 24914 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)	0.57	0.45
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 = 38082 N
axle 2	(rdyn 421 mm)	T = 38082 N
axle 3	(rdyn 421 mm)	T = 24914 N
axle 4	(rdyn 421 mm)	T = 24914 N
axle 5	(rdyn 421 mm)	T = 24914 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)	0.57	0.45
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 3	axle 4	axle 5
no of TRISTOP-actuators per axle line	KDZ	2	2	2
TRISTOP-actuator type		T.14/16	T.14/16	T.14/16
lever length	lBh in mm	69	69	69
stat. tyre radius	rstat max in mm	401	401	401
at a stroke of	s in mm	30	30	30
min. force of spring brake	TFZ in N	6160	6160	6160
sp.brake chamber no Meritor.....		4	4	4
release pressure	pLs in bar	4.8	4.8	4.8

calculation:

ratio until road		3.9674	3.9674	3.9674
iFb = lBh*Eta*C*rBt/(rBn*rstat)	for rstat in mm	401	401	401
brake force of spring br. Tf	in N	48188	48188	48188
Tf = (TFZ*KDZ-2*Co/lBh)*iFb				

braking rate	zf laden	0.441
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 = 4022 mm for E = 6080 mm
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min Ef = 4022 mm for E = 6080 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	=	2500 mm	height of center of gravity - laden
PR	=	19200 kg	maximum bogie mass - laden
P	=	34200 kg	maximum total mass - laden
nf	=	3	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 6.6	5218 42353	
axle 2	1.0 6.6	5218 42353	
axle 3	1.0 4.4		5124 27670
axle 4	1.0 4.4		5124 27670
axle 5	1.0 4.4		5124 27670

VIN - no.:

	Axle(s) / Achse(n)				
brake cylinder type (service / parking) Bremszylinder Typ (Betrieb / Fest)	14./	14./	T.14/16	T.14/16	T.14/16
Maximum stroke smax = ...mm maximaler Hub smax = ...mm	64	64	64	64	64
Lever length = ...mm Hebellänge = ...mm	69.08	69.08	69.08	69.08	69.08