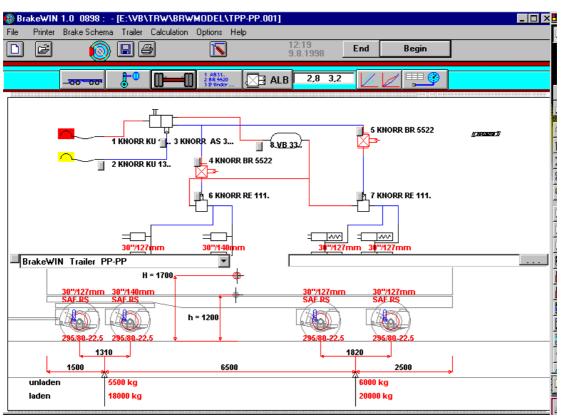
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BrakeWIN Trailer Consultation

The theoretical brake calculation of the trailer.



Begin the calculation The screen data (BrakeWIN brake schema) Buttons Menus Trailer weights and dimensions Brakecylinders, brake levers Axles Load Sensing Valves (ALB) BrakeWIN brake schema Modification Modification of the valveserie

Curves Pressure table Brake Force Table Trailer Consultation



Begin

Button 'begin' opens this window

on begin opens uns window		
en Calculation		
Dpen Calculation		Cancel
BrakeWIN Model Calcution		
1-axle semitrailer (air suspension) 1-axle semitrailer (mechanical suspension)	<u> </u>	
2-axle semitrailer (air suspension) 2-axle semitrailer (mechanical suspension)		
3-axle semitrailer (Air suspension) 3-axle semitrailer (mechanical suspension) 	•	Open Model Calcution
BrakeWIN Model Calcution CAD-Brake Scema		
S0003P : 2-axle semitrailer (Air suspension) S0003M : 2-axle semitrailer (mechanical suspension)	<u> </u>	
S0003m : 2-axie semitrailer (inechanical suspension) S0001P : 3-axie semitrailer Typ1 (Air suspension)		
S0006P : 3-axle semitrailer Typ2 (air suspension)		위 원원
S0006M : 3-axle semitrailer Typ2 (mechanical suspension)		
D0005P : 2-axle trailer (Air suspension)		Open CAD Model Calcution
D0005M : 2-axle trailer (mechanical suspension)		Calcuton
	•	

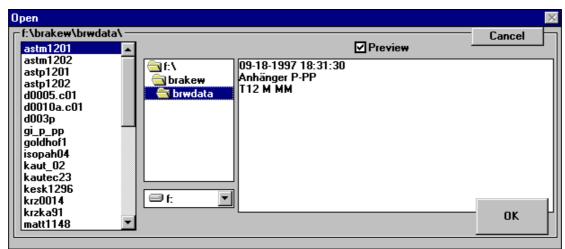
The calculation can be chosen by 3 different ways, three different methods:

- 1. Open a previously saved calculation. When You have done some calculations and saved them, You can begin a new case by opening a previously saved calculation first and then modify it, by doing all the required changes to the saved calculation.
- 2. BrakeWIN program's own calculation models. These calculations use the program's own brake schema handlind procedure. Brake schema can be modifyed on the screen.
- 3. BrakeWIN calculation models, that have a CAD brake schema as a basis. The schemas are originally from brake component manufacturer's model schemas .

Ipen Calculation	X
Open a saved calculation.	Cancel
BrakeWIN Model Calcution	
1-axle semitrailer (air suspension) 1-axle semitrailer (mechanical suspension)	
2-axle semitrailer 2-axle semitrailer BrakeWIN program's own pre-calculations.	
3-axle semitrailer (, 3-axle semitrailer (, 3-axle semitrailer	Open Model Calcution
BrakeWIN Model Calcution CAD-Brake Schema	
S0003P : 2-axle semitrailer (Air suspension) S0003M : 2-axle semitrailer (mechanical suspension) S0001P : 3-axle semitrailer Typ1 (Air suspension)	
S0006P : 3-axle s S0006M : 3-axle s CAD-picture as a brake schema.	Open CAD Model
D0005M : 2-axle t	Calcution

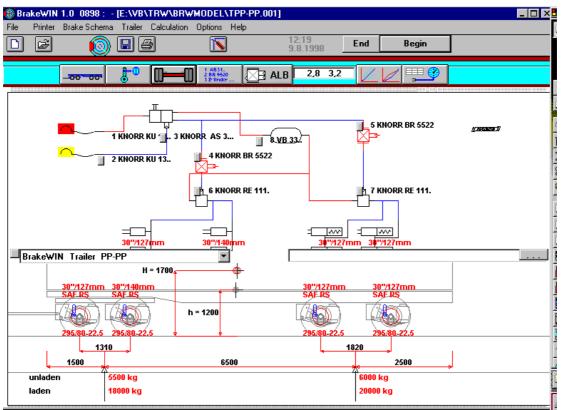
Open a previously saved calculation.

By choosing this opens a BrakeWIN file opening window.

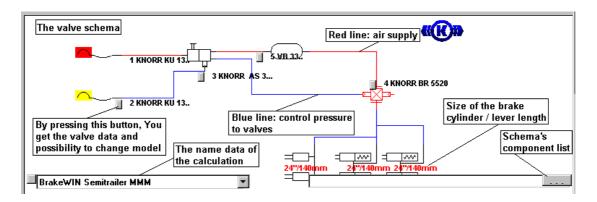


As a default directory for saved files is programdirectory's subdirectory BRWDATA, usually C:\BRAKEW\BRWDATA.

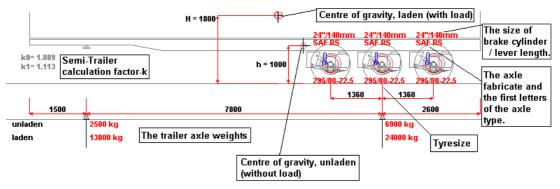
Screen Data



The brake schema You can edit.



Picture of the trailer.



The picture shows trailer model / type and the dimensions. The picture also shows the suspension structure as a basic drawing without specific details.

The trailer dimensions on the screen (overhang, wheelbase, height of the centre of gravity) and weights can be modified on the screen easily straight from the measure.

Click the measure with the mouse. An editing box will appear on top of the measure.



Type here the new measure and press OK.



The weights and measures and the structure of suspension can also be modified by pressing the button trailer dimensions .

If You need to modify many dimensions and/or weights, this method is much easier to use.

Screen Data with CAD Schema

You can not modify the CAD Schema on the screen.

You can modify the valve list and valve order for the calculation, but the Schema does not change. Trailer Data editing as above.

Buttons

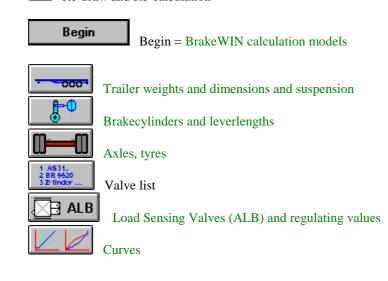
Ê

New: Begin a new calculation by opening a new calculation model or file.

Open a calculation

Save Print

Re-draw and Re-calculation





Menus

Menu File

🛞 BrakeWIN 1.0-0898 : -	- [F:\BRAKE	
File		
BrakeWIN Model Calcution		
New		
Open	Ctrl+F12	
Save As	F12	
Save As Model Calculation		
Picture onto Clipboard		
CAD Picture onto Clipboard		
Show Clipboard		
End	Ctrl+X	

New, BrakeWIN Calculation model: = 'Choose the model' window Open = open a previously saved file

Save = save the calculation as a file. Same function as the button: Save as a calculation model

This choice is not recommended, because the next update can change calculation models.

Picture on the Clipboard : Takes the brake schema and the picture of the trailer on Windows Clipboard.

CAD-picture on the Clipboard : Takes only the CAD-brake schema on the Windows Clipboard. Clipboard is a temporary store for Windows, from where the picture can be taken into other Windows programs: Using Menu Edit - Paste commands. The picture will then be taken as a Bitmap.

Show clipboard

End

Exit the program

Most easy way, is to make own examples and save it using names for example:

Trailer 1+1 axle air suspension

Semitrailer 2 axle air suspension

and so on,

Then you can later open this examples and begin with these.

Other way is following:

Make own modification ...Save as model using Menu

File:

- Save As Model Calculation

- Save as BrakeWIN Model

Then you save into directory BRWMODEL; Name logic must be following: T = Trailer S = Semitrailer C = Centre Axle Trailer M = Mechanical Suspension P = Air Suspension (Pneumatical) File name extension must be .001 Examples:

TM-MM.001 = model for Trailer; 1 front axle with mechanical suspension and 2 rear axles with mechanical suspension

S-PPP.001 = model for Semitrailer; 3 rear axles with air suspension

IMPORTANT NOTICE ! If you use this method !!!! Save Copies of your own model files also into some other directory. When we send an update, and you install it, then the setup program Overwrites your model files in BRWMODEL directory. If you do not have copies somewhere, you will lose these totally.

Menu Printer



Print : Prints the Calculation Choose the printer : Opens the Windows Print Manager.

Menu Brake schema, when used the calculation with CAD-brake schema

Brake Schema	
Valve Catalog	
Open Brake Schem	а
Edit Valve Serie	

Valve list : Shows the component list (catalog).

Open brake schema : You can choose some other brake schema. Edit the Valveserie : Choose the valves, modify the mutual order of the valveserie.

Menu Brake schema, when not used calculation with CAD brake schema

Brake Schema	
Redraw	F9
Valve Catalo)g
Edit Brake S Edit Valve O	0.10.11.2
Edit Valve S	erie

Redraw : Draws the pictures again, does the calculations again. With this You can make sure that all the changes have been taken into consideration.

Valve list: Shows the component list (catalog).

Modification of the brake schema : Modification of the location of the valves and pipelines of the BrakeWIN schema.

Modification of the order of valves : Modify the order of valveserie valves on the screen. From where the pressure goes to which valve.

Modification of the valveserie : Choose the valves, modify the order of the valves in valveserie.

Menu Trailer

Trailer	
Redr	aw
Meas Susp	sures ension
	/Tyre size der /Lever
Brake	eforce table for an Axle

Redraw : Draws the pictures again, does the calculations again. With this You can make sure that all the changes have been taken into consideration.

- 000	
கூற	L

쓰

Trailer weights and dimensions and the structure of suspension

Axles, tyres

Brakecylinders and lever lengths

Brakeforce table for an axle : Shows separately the technical data of the chosen axle.

Menu Calculation

Calculation
Task name
Calculation
Table: Braking Force / Axle Weight / Friction Pressure table Parking Brake ANHANG VII Calculation ALB-Type Plate

Task name : The name for the calculation task Calculation Table: Braking force / Axle weight / Friction Pressure table : Shows the table of pressures-out from different valves. Parking brake : Shows the results of the parkingbrake calculation. ANHANG VII calculation: Shows the results of ANHANG VII calculation. ALB-type plate: Shows the ALB-type plate.

Menu Options

Options	
Coordinates	
Language 🕨	🖌 English
Time Date	Deutsch
	Finnish
	Svenska
	French
	Danska

Coordinates : Coordinate window on / off (off: can not be seen). Shows the location of the mouse on screen in X- and Y- coordinates.

Language : Choose the language on use.

Time, date : Change the time and date in Windows. This will affect also on the clock of the operating system and on all the other programs.



Menu Help



BrakeWIN Help: This help-text.

BrakeWIN Info: Information on the program, on Trailer Consultation and on hardware setups.

Trailer Weights and Dimensions

Measures , Weights	Suspension		Cance	
			_	
trailer wheelbase [to centre of b	ogie]	6500		6
trailer front overhang		1500	_ 0000	
rear overhang (to centre of bogi	e]	2500		
trailer length [without shaft]		1050	ō	
front bogie wheelbase		1310		
rear bogie wheelbase		1820		
front axle weight loaded		18000	-	
rear axle weight loaded		20000	38000	
front axle weight unloaded		5500	_	
rear axle weight unloaded		6000	11500	
centre of gravitys place (loaded) height from ground	1700		
centre of gravitys place (unload	ed) height from ground	1200		

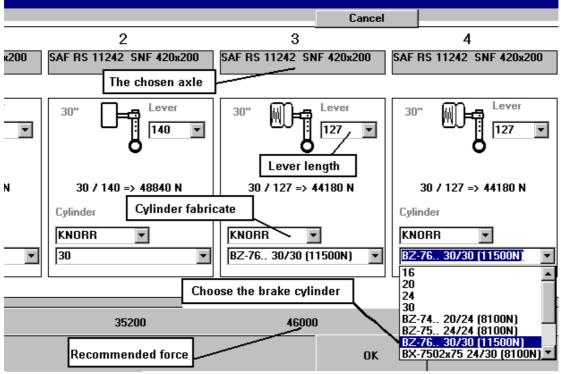
Modification of the trailer dimensions. Overhang dimensions do not actually count on calculations, they only affect on the outlook of the picture.

Some dimensions can be switched off at the checkboxes (on the right corner) so that they will not come on printouts.

1 TRAILER		
Measures , Weights	Suspension	Cancel
front axles:	rear axles:	
air spring 2-axle bogie leaf spring 2-axle bogie	air spring 2-axle bogie leaf spring 2-axle bogie air spring 2-axle bogie (asymmetrical) leaf spring 2-axle bogie (asymmetrical 2-axle bogie (mech air spring) 2-axle bogie (air -, leaf spring))

Choose the suspension structure for front- and rearaxles.

Brake Cylinder, Brake Lever



Choose the brake cylinder and the lever length for each axle.

Choose first the fabricate of the cylinder and then the type of the cylinder. At the same time You choose if the axle has got a parking brake or not.

The lever length options are different according to the chosen axle model. You should always check the lever length when You change the axle model.

Below the listboxes is the approximate default value for the brake force and the corresponding pressure , calculated by the program. The force corresponding the chosen measures will be seen below the cylinder / lever-symbol, for example $30 / 127 \Rightarrow 44180$ N stands for: 30 square inch cylinder and 127 mm lever length.

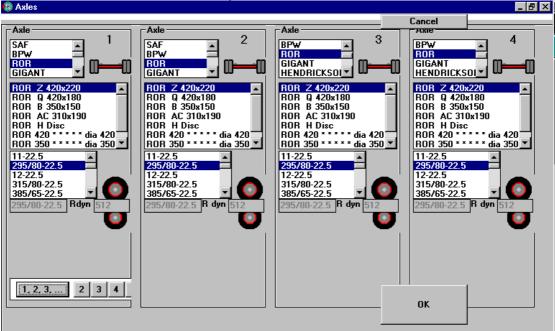


Symbols show the chosen structure:

Brake cylinder,

Spring Brake combi cylinder, Brake cylinder + crank as a parking brake.

Axles



Choose the axle fabricate / model and the tyre size.

Choose first the fabricate of the axle. The model table gives You the models to choose from. Please notice that the tyre-size-table does not change along with the axle models. The program does not automatically check if the tyre size matches the chosen axle or not.

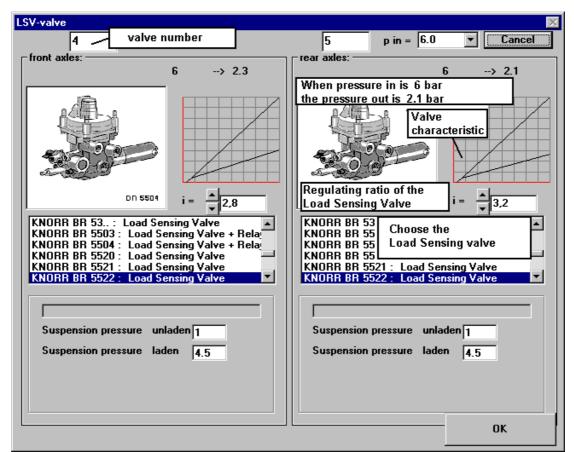
If all the axles of the trailer are same kind, You can first choose the data on axle number 1. The data for the rest of the axles will be the same if You press the button 1,2,3,.... For example: only the axle number 2 will have the same data as axle number 1: by pressing the button 2'.

The options in choosing the lever length are different according to the chosen axle model. You should always check the lever length when the axle model is changed.

Load Sensing Valves (ALB)



Choosing the model and the regulating value of the Load Sensing Valve (ALB).



You can choose the regulating ratio of the valve (i) from editing box (i =...), below the curve. Changing the regulating ratio changes the characteristic of the valve also. Please notice that the regulating

ratio i is not the pressure-out.

The pressure-out for chosen regulating ratio can be seen above the characteristic of the valve.

For example in the picture $6 \rightarrow 2.3$ means that: when pressure-in for valve is 6 bar the pressure-out is 2.3 bar, when the regulating ratio is i=2.8 as chosen in here.

BrakeWIN Modification of the Brake Schema

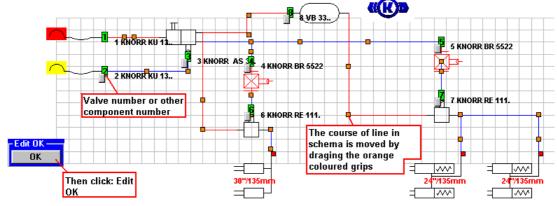
Pipelines: The control pressure has been marked with blue lines in the schema, supply pressure has been marked with red lines.

Menu : <u>Brake schema - Modification of the brake schema</u> gives a possibility to modify the location of the valves and to modify the pipelines in schema.

The green rectangles with numbers ; grips show the numbers of the valves or other components. By dragging the grip with mouse, You can move the component from one place to another.

The orange grips control the course of line. Each pressure line goes from one component to another and on the line

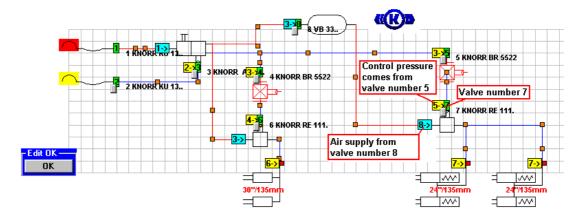
there are 2 grips. By pulling with these grips You can control the course of the line.



Menu : **<u>Brake schema-Modification of the valve order</u>** Gives a possibility to modify the pipeline between the valves.

Grip, with mark 2-> means that pressure to this port connection comes from component number 2. If You want to modify the pressure to come from some other component, drag this grip (2->) with mouse on top of that component's green, numbered grip from which You want the pressure to come from.

When everything is ready, press Edit - OK button.



Modification of the Valve Serie

dit Valve S	șerie	_	
	1112 - Uses Counting Councils for (Darf)	Cancel	
2 : KNORR K	U 13. : Hose Coupling, Supply line (Red) U 13. : Hose Coupling, Control line (Yellow)		
3:KNORR A	AS 3 : Relay Emergency Valve		
4 : KNORR B 5 : KNORR B	IR 5522 : Load Sensing Valve IR 5522 : Load Sensing Valve		
6 : KNORR R	IE 111. : Relay Valve		
7 : KNURH H 8 : VB 33 : A	IE 111. : Relay Valve Air Reservoir		
1			
•	10	Valve	
KNORR KU	ак	Remove Valve	
	• 7	Add Valve	
	p in from	Valve Type	
	air from		
– Edit Valve (, Arder		
	2346000000		
Axle 1 Axle 2	2346000000		
		ОК	
Axle 3 Axle 4	2357000000	UK	
Axie 4	2357000000		
			_
	Cancel OK		

In the window Modification of the valveserie You can add valves, remove valves, change their type and change their mutual order. The functions are targeted on the valve which is chosen from the valvelist. On the right You see the buttons

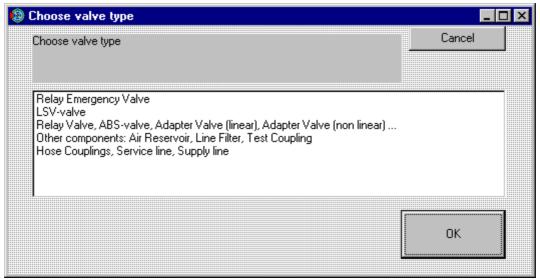
Valve : Shows the data on chosen valve, the picture , the characteristics and settings (if needed) Possibility to change the valve fabricate or valve model.

Remove valve: Remove the valve: Remove the valve that is chosen on the valvelist.

After the removing this component number will be empty.

Add valve : Add a new valve on the list. New valve is added on end of the list with a new number. If there are empty places in the list, You should do the adding by choosing a number of an empty place on the list and then choose a suitable type with button "valve type".
Valve Type : Choose a suitable type. Should use for example if a valve that is already on the list should be replaced with a different type of component. The 'choose valve type' window can be seen below.

Please notice that modifications made with these functions do not change the CAD-drawing !



Valves are in 4 groups:

- 1. Relay Emergency valve
- 2. Load Sensing Valve
- 3. Relay valve, ABS- valve, Adapter valve (linear), Adapter valve (non-linear), etc.
- 4. Other components: Air reservoir, Line filter, Test coupling, etc. components that do not actually function as valves.

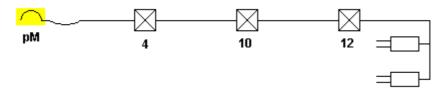
When You have edited the valve series, as the last step You have to control the valve working order for every axle.

You can do this from the textboxes, below the valve list.

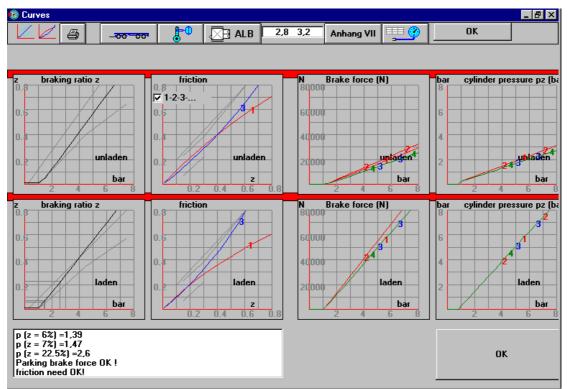
For every axle there is its own number series.

For example the text: Axle 1: 4 10 12

This means that when calculating the cylinder pressure for axle number 1, the program takes the control line pressure go first to valve number 4, then the output pressure from valve 4 goes to the valve number 10 and that the output pressure from valve 10 goes to the valve number 12. From last valve, the number series (valve 12) the pressure goes to the brake cylinder.



Curves



On the screen You can see results of the calculation as curves. On the top unladen (without load) and below laden (with load).

The numbers and colors express different axles.

The checkbox 'V 1-2-3-...' gives a possibility to choose if the friction curves are calculated so that each axle is as its own graph (curve), (V-mark on the checkbox), or so that the front axle is as one graph (curve) and the rear axle is as another graph (curve), (no mark on the checkbox).

Text p(z = 6%) = 1.47 means that the braking ratio: 6 % corresponds to control line pressure 1.47 bar.

On the same list You can see also results of the calculations : parking brake's brakeforce and the result of needed friction.

From the icons in the window 'Curves' You can go to other functions as follows:

Ourves		
	ALB 2,8 3,2	Anhang VII
Print Trailer weights & Cylinders dimensions Levers	Load Sensing Valves and Regulating ratios	Anhang VII Pressure table

Pressure Table

			Prir	nt				Cance	el		
A	\xle	A 1	A 1	A 1	A 2	A 2	A 2	A 3	A 3	A 3	
bar V	/alve	4	10	18	4	11	18	4	11	18	1
)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1
ō		0.21	0.00	0.00	0.21	0.00	0.00	0.21	0.00	0.00	
)		0.73	0.41	0.28	0.73	0.42	0.28	0.73	0.42	0.28	
ī		1.25	0.59	0.47	1.25	0.60	0.47	1.25	0.60	0.47	
)		1.77	0.77	0.66	1.77	0.79	0.66	1.77	0.79	0.66	
5		2.29	0.95	0.86	2.29	0.97	0.86	2.29	0.97	0.86	
)		2.81	1.13	1.05	2.81	1.16	1.05	2.81	1.16	1.05	
5		3.32	1.31	1.25	3.32	1.34	1.25	3.32	1.34	1.25	
)		3.84	1.49	1.44	3.84	1.53	1.44	3.84	1.53	1.44	
5		4.36	1.67	1.63	4.36	1.71	1.63	4.36	1.71	1.63	
)		4.88	1.85	1.83	4.88	1.90	1.83	4.88	1.90	1.83	
5		5.40	2.03	2.02	5.40	2.08	2.02	5.40	2.08	2.02	
)		5.92	2.21	2.21	5.92	2.27	2.21	5.92	2.27	2.21	
i		6.44	2.39	2.41	6.44	2.46	2.41	6.44	2.46	2.41	
)		6.96	2.56	2.60	6.96	2.64	2.60	6.96	2.64	2.60	
j i		7.48	2.74	2.80	7.48	2.83	2.80	7.48	2.83	2.80	
)		8.00	2.92	2.99	8.00	3.01	2.99	8.00	3.01	2.99	
)		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	

Pressure table shows the pressure-out from the valves. Horizontal rows of the table show pressures from different serviceline. (pM bar).

Columns: (above is A1), stand for the valves affecting on braking of axle number 1. On the second row is the number of each valve. The table contains all those valves, that are defined to be included in axle's valveseries in "modify the valveserie" window.

In the table the figures are calculated first unladen (without load) and then again as laden (with load).

Brake Force Table

			Print					Car	ncel					
	Axle	A1	A 2	A 3	Α4	A1	A 2	A 3	A 4	A1	A2	A 3	A 4	
рM		FBr (N)	FBr (N)	FBr (N)	FBr (N)	N (N)	N (N)	N (N)	N (N)	u	u	u	u	
0.0	0.01	0	0	0	0	88292	88292	98099	98098	0.01	0.01	0.01	0.01	-
1.0	0.01	0	0	0	0	88292	88292	98099	98098	0.01	0.01	0.01	0.01	
2.0	0.14	12006	13365	12006	12006	95331	94037	91706	91706	0.14	0.15	0.14	0.14	
3.0	0.28	24553	27196	24553	24553	102612	100094	85037	85037	0.25	0.28	0.30	0.30	
4.0	0.42	37100	41028	37100	37100	109893	106152	78367	78367	0.35	0.40	0.48	0.48	
4.5	0.49	43373	47943	43373	43373	113534	109181	75033	75033	0.39	0.45	0.59	0.59	
5.0	0.56	49646	54859	49646	49646	117174	112210	71698	71698	0.43	0.50	0.70	0.70	
6.0	0.69	62193	68690	62193	62193	124455	118267	65029	65029	0.51	0.59	0.97	0.97	
7.0	0.83	74740	82521	74740	74740	131736	124325	58359	58359	0.58	0.67	1.29	1.29	
8.0	0.97	87287	96353	87287	87287	139017	130383	51690	51690	0.64	0.75	1.70	1.70	
0.0	0.01	0	0	0	0	26980	26980	29427	29427	0.01	0.01	0.01	0.01	
1.0	0.01	0	0	0	0	26980	26980	29427	29427	0.01	0.01	0.01	0.01	
2.0	0.13	3437	3919	2876	2876	28397	27937	28241	28241	0.13	0.15	0.11	0.11	
3.0	0.27	7750	8674	6650	6650	30119	29240	26728	26728	0.27	0.31	0.26	0.26	1
4.0	0.42	12063	13428	10423	10423	31842	30542	25216	25216	0.39	0.45	0.42	0.42	
4.5	0.49	14219	15805	12310	12310	32704	31193	24459	24459	0.44	0.52	0.51	0.51	
5.0	10	40070	10100	4 44 07	14107	00505	01044	00700	00700	0.50	0.50	0.04	0.04	a f

The Table shows the Brake Force (FBr in Newton), the Dynamically calculated Axle Weight (N in Newton) and the

Minimum friction factor needed (u) for every axle (A1, A2, ...) with different control line pressures (pM) .

All these in laden (with load) situation and unladen (without load).

Save

Menu File - Save or click the button

Opens the Windows Save Dialog.

As a default directory is programdirectory's subdirectory BRWDATA,

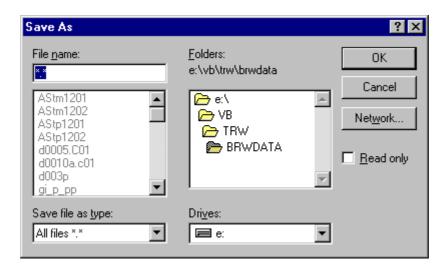
usually C:\BRAKEW\BRWDATA, but You can also choose some other directory.

If You use the same name that You have given to some other file earlier, will that earlier saved file with the same name be lost. The program will give a warning about this.

Because this program is made to function also in 3.11 Windows, it gives limits to the name when saving the file: The length of name can be 8 characters at the most, then a point and 3 characters.

Specialcharacters are not allowed and it is recommended also not to use the scandic letters: ä,ö,å . Examples of allowed filenames:

HAKKINEN.011 COULTHAR.PV1 SCHUMACH.MIK IAA98 HANNOVER



Print

1.1	L
ΙÉ	ñ
	 2

The command Print opens this window.

Print				×
b	Printer : Canon LBP-8 III			Cancel
9	Colors			
	Trailer	•		
	Brake Schema			
	Curves			OK
	Valve Serie			
	ANHANG VII Calculation			
	Pressure table			
	Table: Braking Force / Axle Weight / Friction			
	ALB-Type Plate			
	Parking Brake			
	Brake Data Formular			
L				
Ca	alculation made by		-Number of	f Copies
Γ				

You choose what to print out by using the check boxes.

When You press OK, the program will print out the pictures, curves and tables that You have marked in the check boxes.

If You want to print only a certain specific part of the program, You just mark it on the check boxes. By marking the box: colors, You get the colorprinter to printout the curves and pictures in color. You should not try this with Black-White printer, because it only slows the functions down and the result can be worse than normal Black-White picture. For example Red will come as light grey.

On the box 'Calculation made by' You can type the name or initials of user. They will also be on the printout papers.

The printout uses Windows printer manager and therefore also WindowsPrinter Drivers. If there are any trouble with the printout, should You try and change the Printer Driver and then try again.

Axle Data Table

Brakeforcetabelle for an Axle			_ 🗆 ×
SAF BPW ROR GIGANT	Print	OK	
SAF RS 11242 SNF 420x200 SAF RZ 11242 SNF 420x200 SAF RBM 11242 SNF 420x200 SAF SK RS 11242 SNF 420x200 SAF SK RS 11242 SNF 420x200 SAF SK RZ 11242 SNK 420x200 SAF SK RZ 11242 SNK 420x200 SAF RS 9042 SNF 420x180 SAF RZ 8442 SNF 420x180 SAF RS 8442 SNF 420x180		▲ 11-22.5 514mm 295/80-22.5 512mm 12-22.5 527mm 315/80-22.5 519mm 385/65-22.5 520mm 425/65-22.5 545mm 365/80R20 535mm	×
SAF RS 11242 SNF 420x200 rBt (mm) 210 brake drum radius n 0.85 brake efficiency C 1.61 characteristic value n * C 1.37 fb 10,8858 fb 10,8858 torque ratio rn (mm) rn (mm) 13,2 S-cam radius MAL (Nm) 30 threshold torque SAF RS 11242 SNF 420x200 tyre sizes used on calculations: 11-22 in" / I(mm) p(bar) Tha(N) 20 127 1 974 20 127 3 3410 20 127 4.5 5237 20 127 6 7064 20 127 6.5 7673	.5 Rdyn(mm) 514 Mbr(Nm) 2040 5408 8775 13827 18879 20563	T(N) 3969 10521 17073 26901 36729 40005	

Choose the axle fabricate / model and the size of tyre.

The program makes a table from that specific axle's brake torque and brakeforce with different brake cylinder / lever length alternatives.

The choice of tyre affects on the breakforce, but not on the brake torque.

Trailer Consultation

Trailer Consultation Kauppatori 2 as 10 67100 Kokkola

Telephone:06-831 9905Fax:06-831 1008

E-mail: info@trailerwin.com Internet address: www.trailerwin.com

Licensing Clauses, Guarantee

Licensing clauses

Order / offer / delivery includes the program for the use of one office or house. Inside the same office or house the programs can be used in more than one computer. The person that uses this program in work have the right to use the program also at home.

Copying the program for other use than mentioned above is prohibited.

Guarantee

Due to the great variety of calculation-variations, it is possible that there may appear some errors. In case the user should find errors in the program, please inform the manufacturer of program.

If there are any errors in the program they will be corrected without charge as quickly as possible. The guarantee is valid for period of a year.

The files included in the program (Axle data, Valve data, Schema etc.) have been received from the manufacturers.

We do our best for getting the correct data and latest models, but it is possible that there is also same old data or false data.

Possible costs caused by a programming error, file error, component data error or some error on the program will not be compensated by the program manufacturer or by dealer.

Program update:

The update includes:

- Axle model supplementation.
- Valve model supplementation.
- Brake schema development and supplementation.
- New versions as the program develops.

Payment per year in accordance with agreement.

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