

TRAILER CONSULTATION

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TrailerWIN

Trailer Consultation

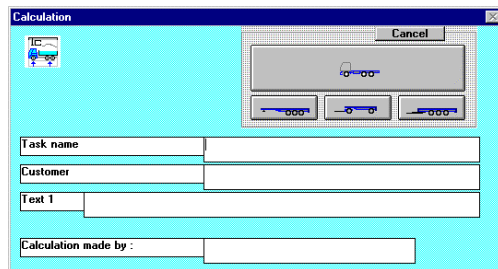
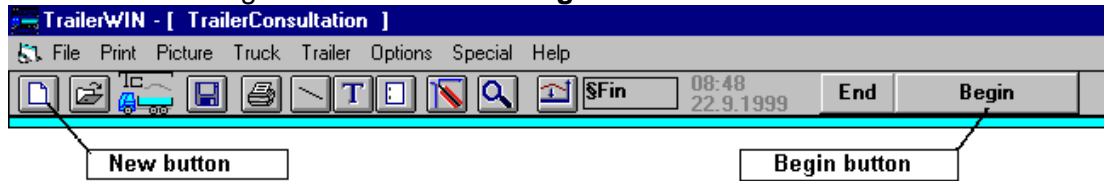


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The guided Example 1: Truck and Trailer

To start calculating a new vehicle click **Begin** on the Toolbox.

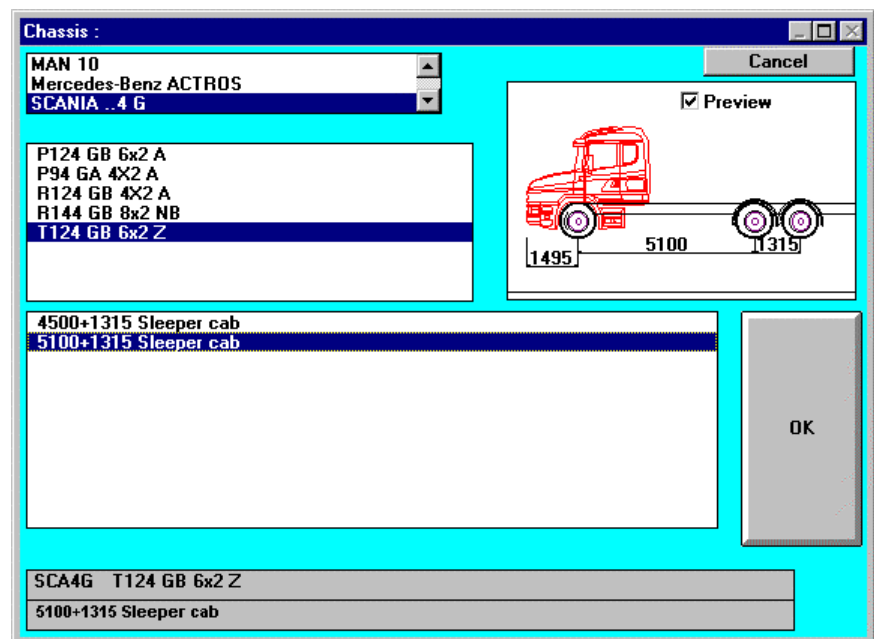


Then click on



Choosing Chassis

From Chassis Window you can choose the chassis fabricate, next model series and then wheelbase and cab



Now you can go through the chassis data, weights and dimensions.

Chassis :

SCANIA ..4 GA
SCANIA ..4 GB
SCANIA 93..113..143 .. 92..112..142

T124 GB 6x2 A (11.5+7.5)
T124 GB 6x2 Z
T124 GB 6x4 A
5100+1315
5100+1315 Sleeper cab
5300+1315

Choose the body by clicking here.

Preview

1495 5100 1315

Chassis

Choose the body type or fifth wheel

truck make	SCANIA
type	T124 GB 6x2 Z
model (wheelbase, cab etc.)	5100+1315 Sleeper cab
G.V.W. front axle	7500
G.V.W. rear axle	19000
G.V.W. total	25000
chassis weight, front axle	4724
chassis weight, rear axle	3308
basic wheelbase (front axle- first rear axle)	5100
bogie wheelbase	1315

Cancel

OK

Choosing Body

Choose the body by clicking on the BODY-button. In the BODY Window you can choose the body type or fifth wheel.

TrailerWIN :

File Print Picture Truck Trailer Options Special Help

13:35 2/6/01 0,500 End

Choose the body

Choose the body type or fifth wheel

Body

Own Body DXF
Container
NORBA 12
NORBA 35
NORBA 200
NORBA 300

6058

1495 5100 1315 10245

4864 { 60% }
4864 { 60% }

3308
3308

= 8172 kg

Continue with choosing the trailer coupling.

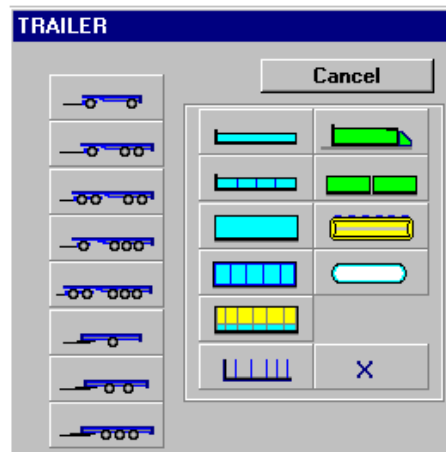


Choosing Trailer

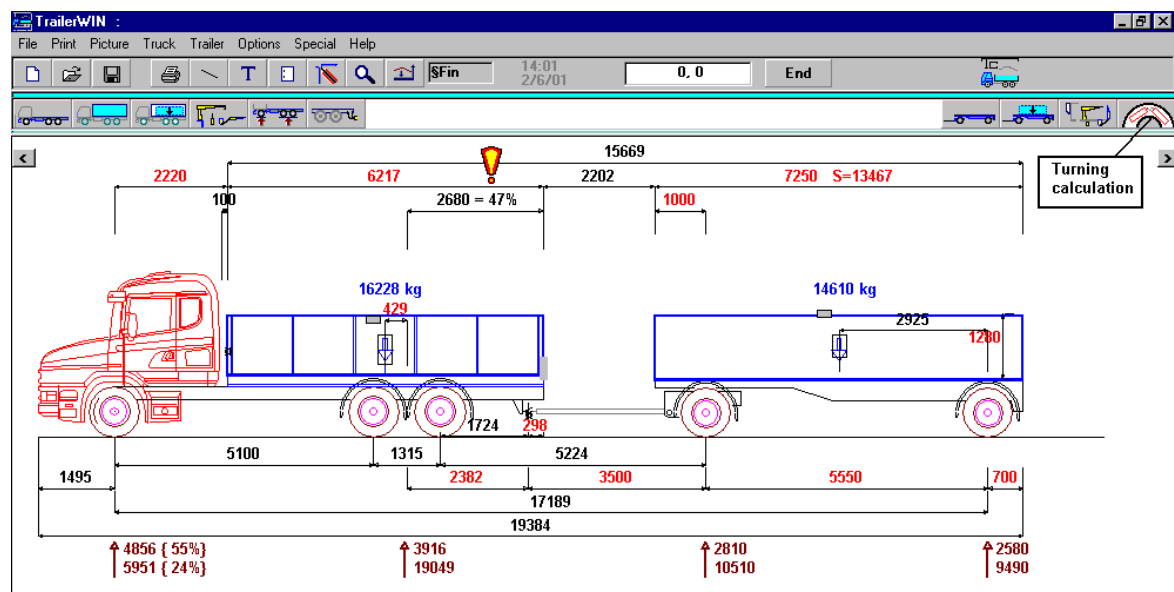
Now you can choose the trailer



after that choose the trailer type (how many axles...) and the body type of the trailer

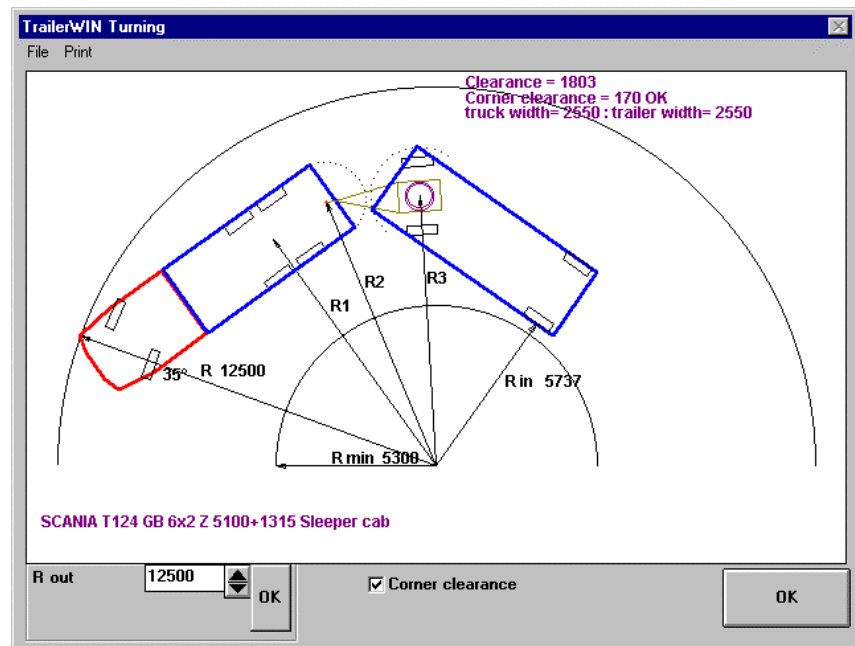


There you have a combination vehicle:



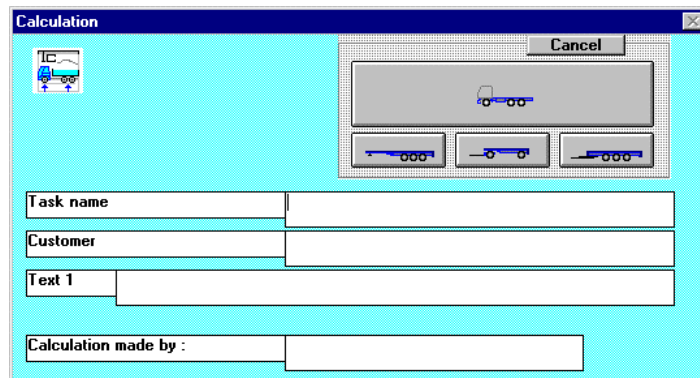
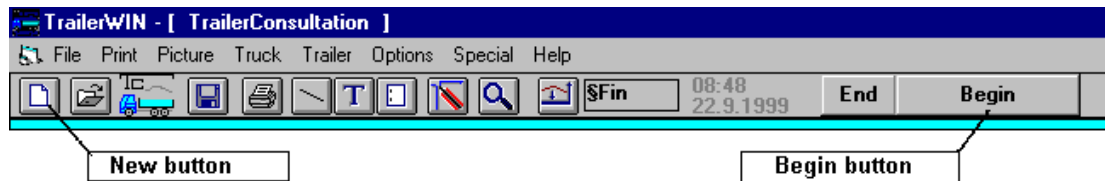
Checking Turning

By clicking on the turning circle icon you are able to see the result of the turning calculation:



The guided Example 2: Truck with Crane and Hooklift

To start calculating a new vehicle click on the **Begin** button or on the **New** button.



It helps to find this calculation later by typing the task name and customer name here.

Then click

on  for beginning with the truck.

Choosing Chassis

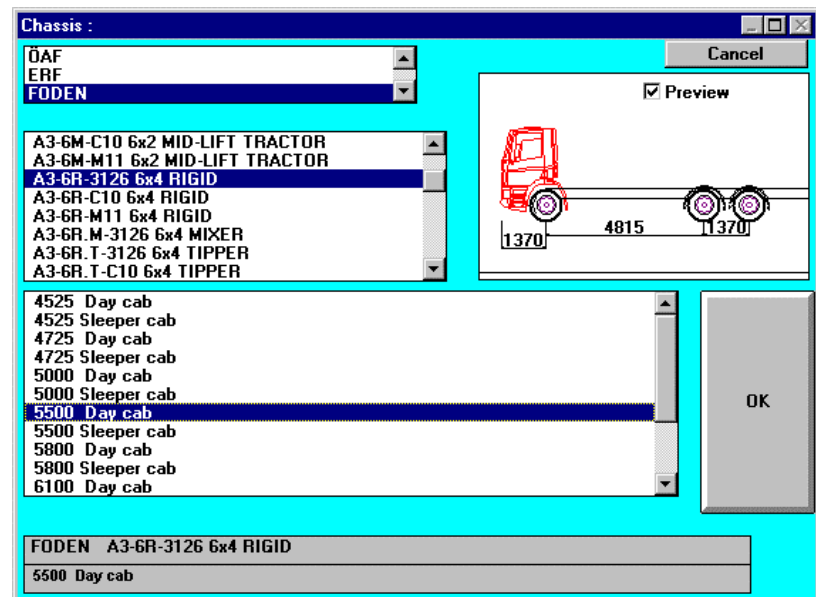
From Chassis Window you can choose the chassis fabricate, after that model series and then wheelbase and cab

In this example:

FODEN

A3-6R-3126 6x4 RIGID

5500 Day cab



In Chassis data window you can check chassis weights and dimensions

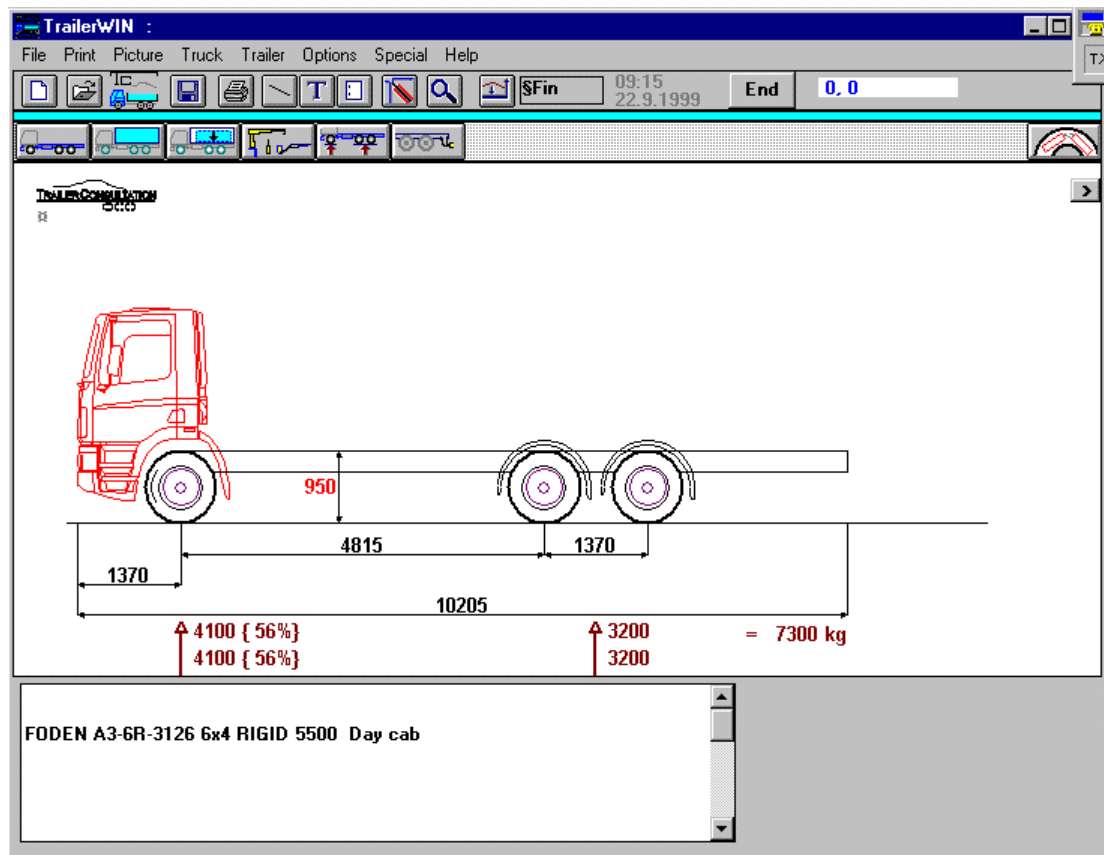
Chassis	
truck make	FODEN
type	A3-6R-3126 6x4 RIGID
model (wheelbase, cab etc.)	5500 Day cab
G.V.W. front axle	7500
G.V.W. rear axle	19000
G.V.W. total	26000
chassis weight, front axle	3960
chassis weight, rear axle	3200
basic wheelbase (front axle- first rear axle)	4815
boogie wheelbase	1370

Cancel

OK

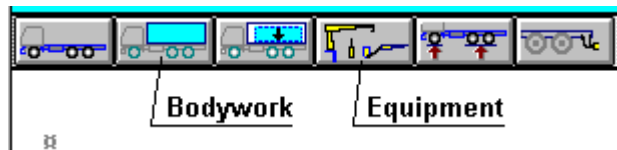
When you are ready, click OK.

You will get the chassis in the big picture.

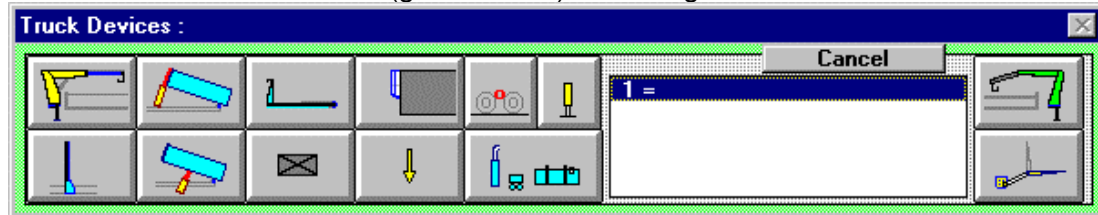


Choosing Crane:

Click on the **equipment** button to get a crane behind the cab.

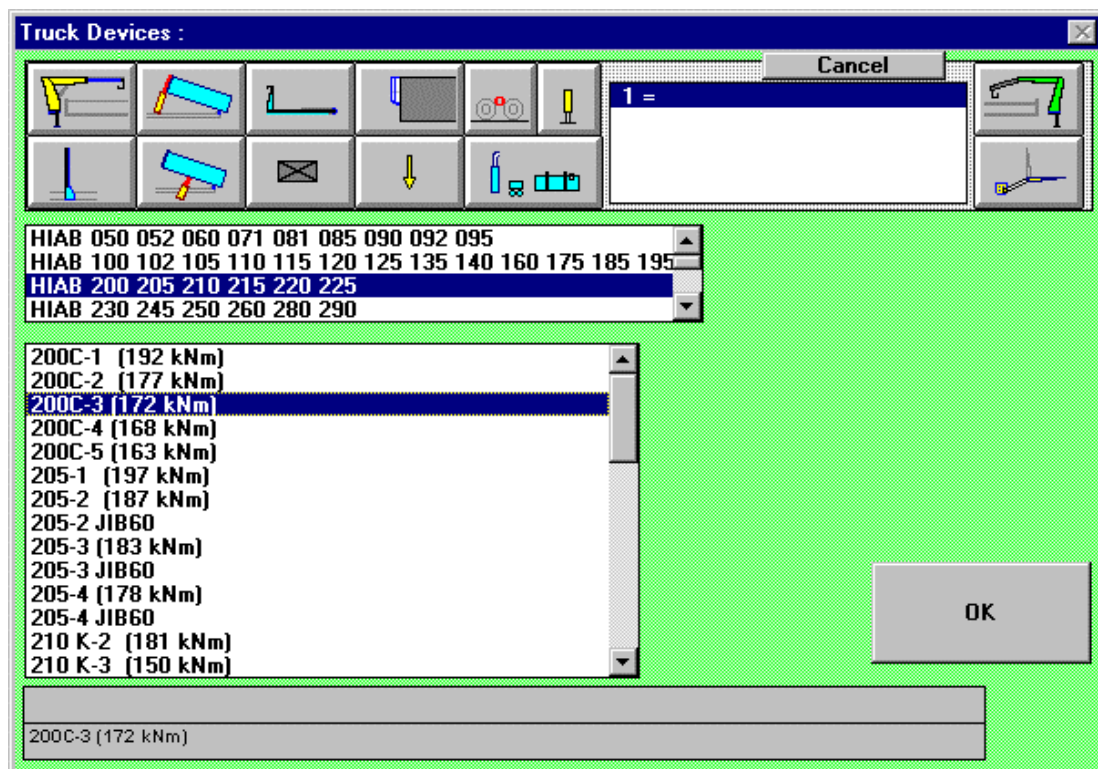


In following equipment window you will see the crane button (yellow crane) on the left side. The other crane button (green crane) on the right side is for rear-mounted crane.



Click the yellow crane on the left side.

Now it is possible to choose the crane model, in this example at first the group HIAB 200 ... 225, and then the model **HIAB 200C-3 (172 kNm)**



Click OK

On following Crane Data Window you can check and edit crane weight and dimension data. You can also choose stabiliser leg model and crane position: folded or unfolded.

1: HIAB 200C-3 (172 kNm)

Cancel TX

OK

HIAB 200C-3 (172 kNm)

Cranes first spot, measured backwards from front axle	450
length	846
Crane weight	2270
Mountings part weight	40

Support legs

- Manually 4730mm
- Manually 5430mm
- Man. (tiltable) 4790mm
- Man. (tiltable) 5490mm

Support legs weight 250

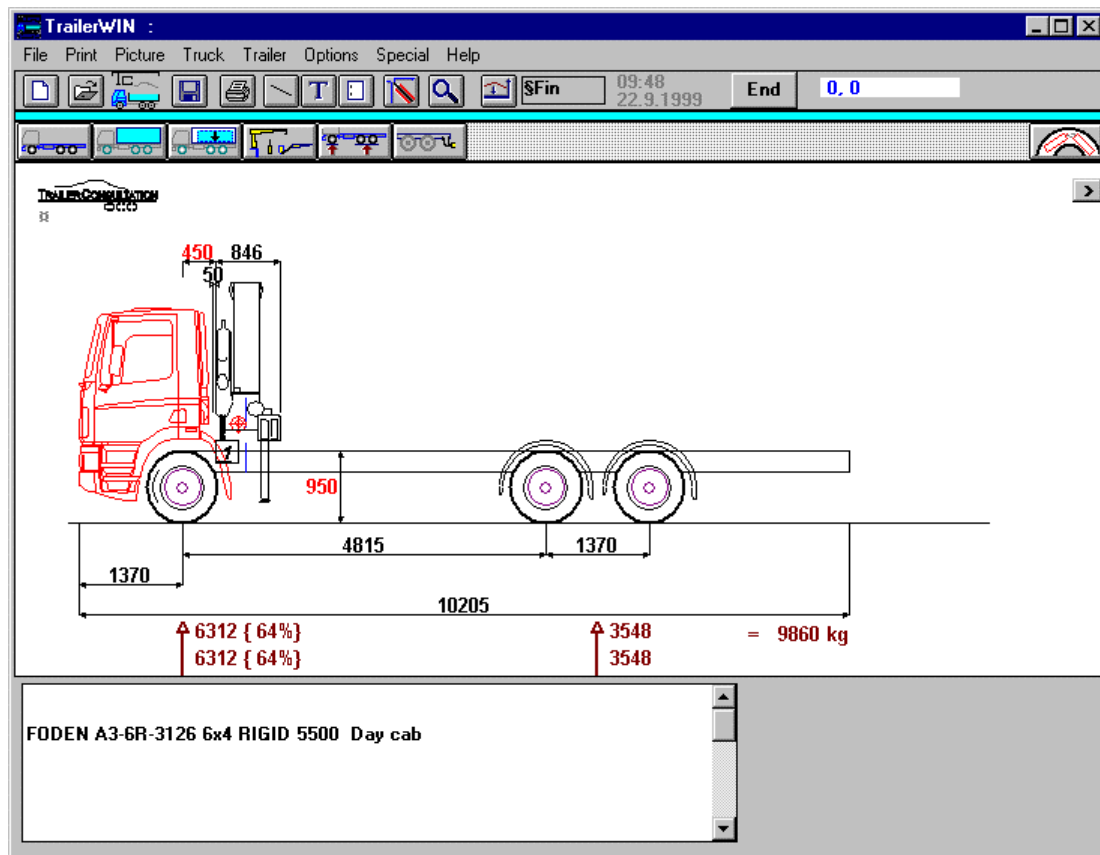
☐ Turn support legs

devices centre of gravities place, from centre of cranes frame

-102 1100

Distance Cranes slewing centre - Crane First point	399
devices corner width	2451
corner length (body - devices corner)	840

Click OK

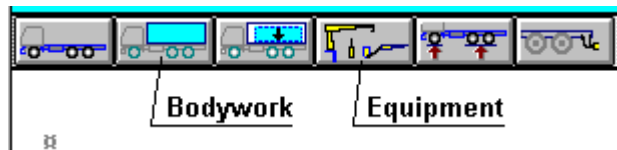


Now you have the crane on the chassis.

There are 3 different methods to move the crane 200 mm to the rear:

1. Double-Click on the red dimension number (hot dimension) 450, and type new value 650, and click then OK.
2. Drag the crane with mouse from the small grey rectangle under the crane. The crane moves to a new place. Very exact movements are difficult with this method.
3. Click on the Equipment button, and choose from the list this crane, so you will come back to the Crane Data Window. Type there the new value; 650

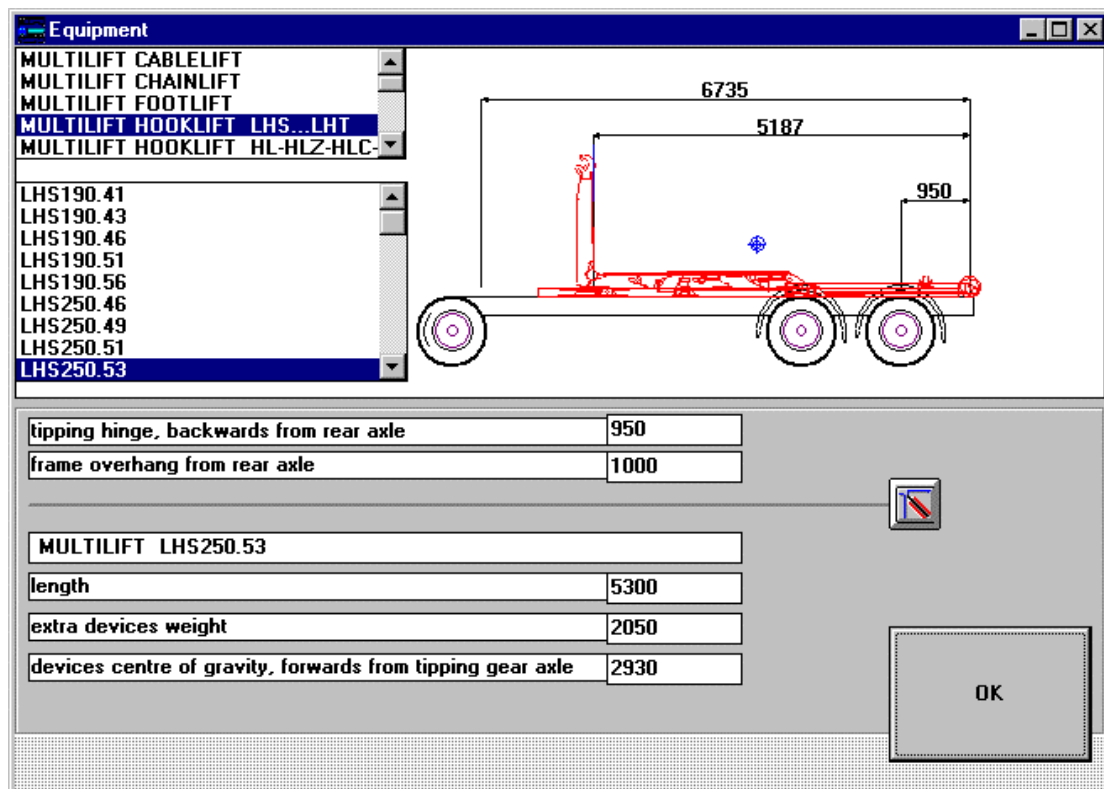
Choosing Demountable



Click on the **Equipment** button
and Click on the **Demountable** button (1. row; 3. from left,) in the following window



Then you will see the demountable window

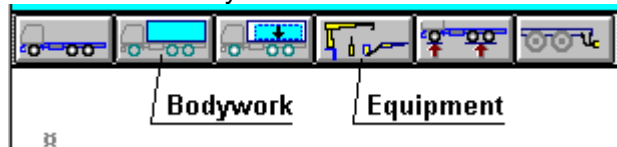


At first choose the demountable group in the list box on the top. Below it choose the model (second list box). The preview window shows the chosen model.

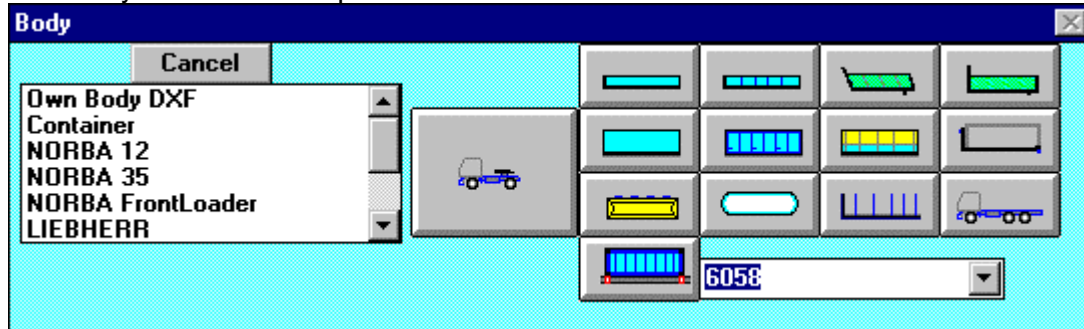
Type suitable values for **"tipping hinge, backwards from rear axle"** and **"frame overhang from rear axle"**

Choosing Bodywork

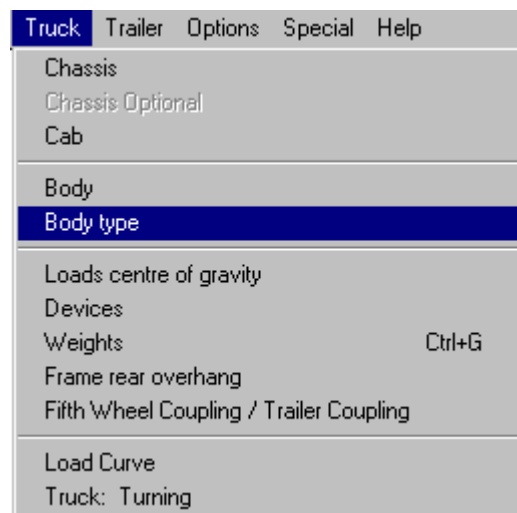
Click on the Bodywork button.



The Bodywork Window opens.



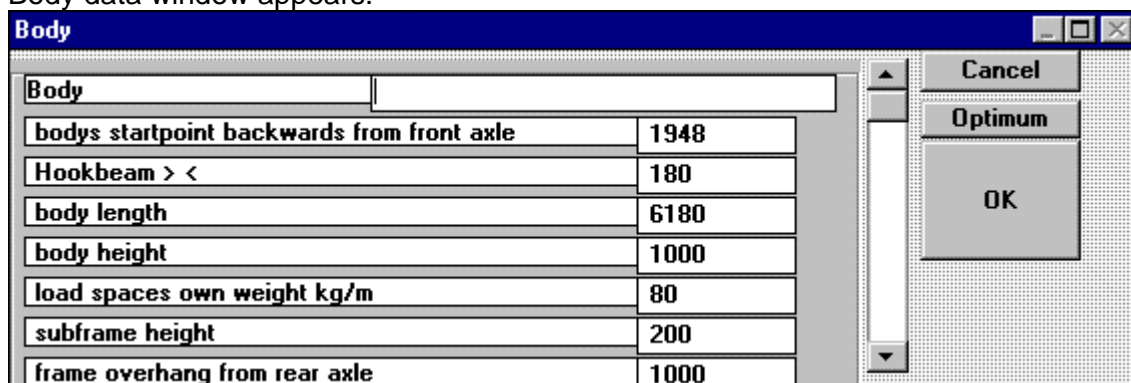
If you have already chosen the bodywork, you do not come to Bodywork Window by clicking on the Bodywork button. In that case choose **Menu: Truck - Body type**



Choose the Body type Button.

In this example we choose **Body frame** button  (Body frame for demountable)

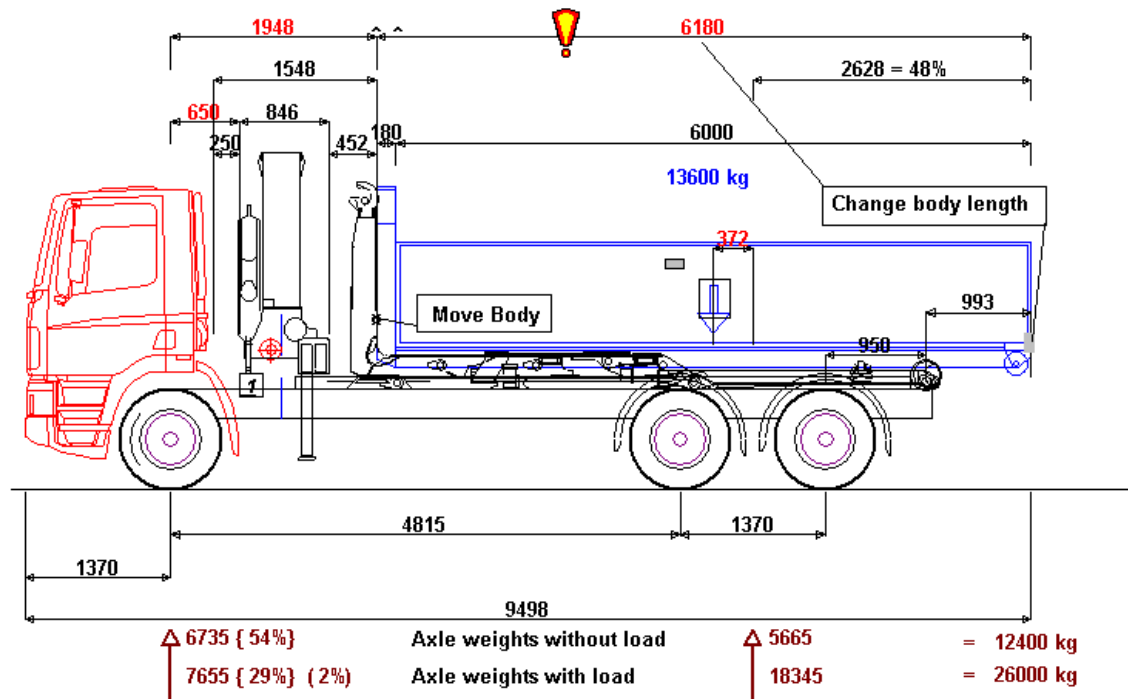
Body data window appears.



The program has at first calculated the body length so, that the rear axle weight is near maximum allowed, when the body is even loaded.

If you have a special length, which you like to have, you can type this length on the input box.

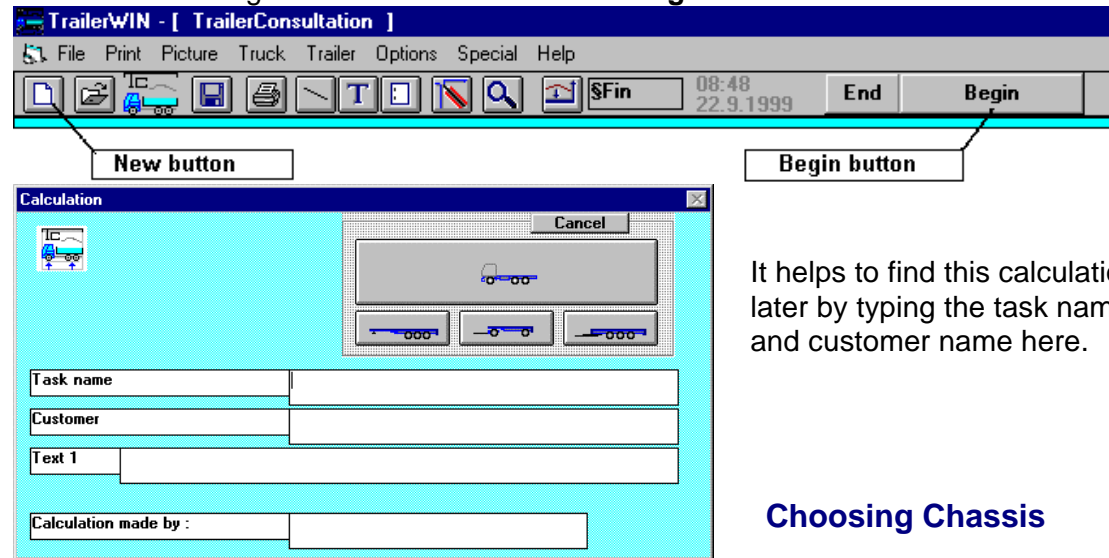
You can also change body length later from picture; double-click the red dimension or drag with mouse the small grey rectangle at the end of the body.



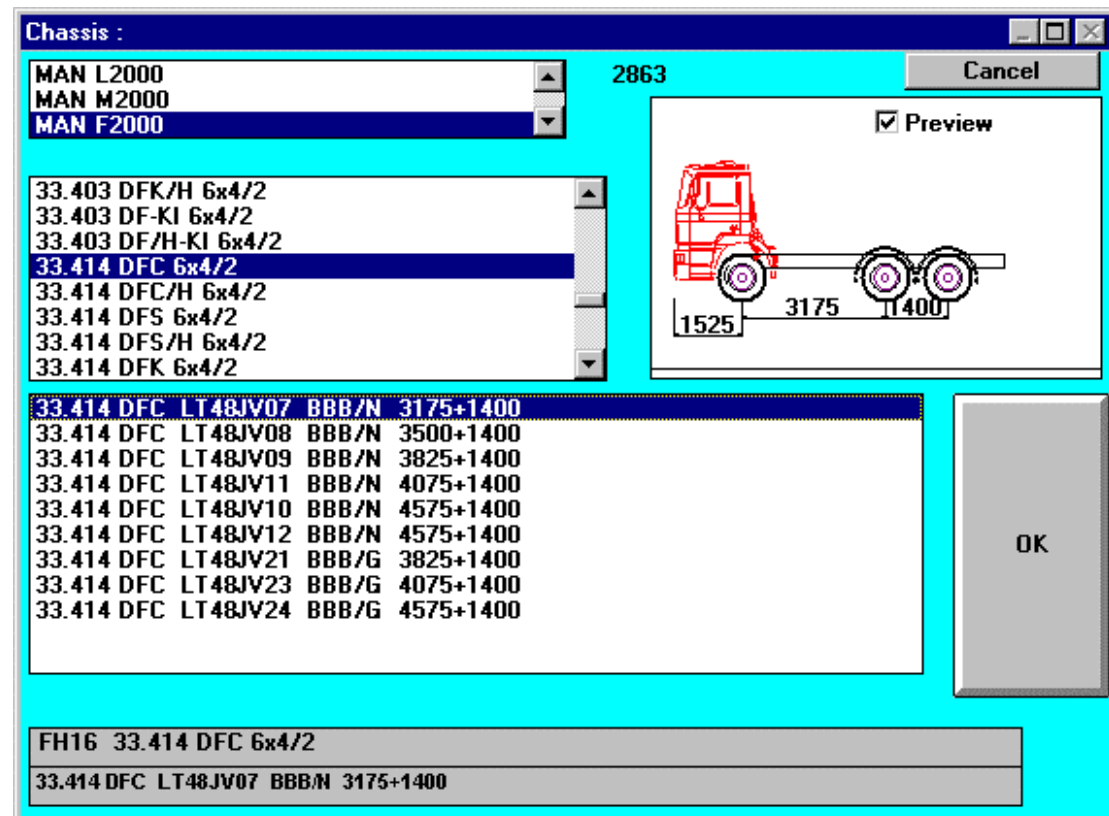
Axle weight with and without load is shown below the picture.

The guided example 3: Truck with Hooklift

To start calculating a new vehicle. Click on the **Begin** button or **New** button.



Then click on  for beginning with the truck.



From Chassis Window you can choose the chassis fabricate, next model series and then wheelbase and cab

In this example:

MAN F2000

F2000 33.323 DFC LT18T 07 6x4/2

3175+ 1400 BBB/N

In Chassis data window you can check chassis weights and dimensions

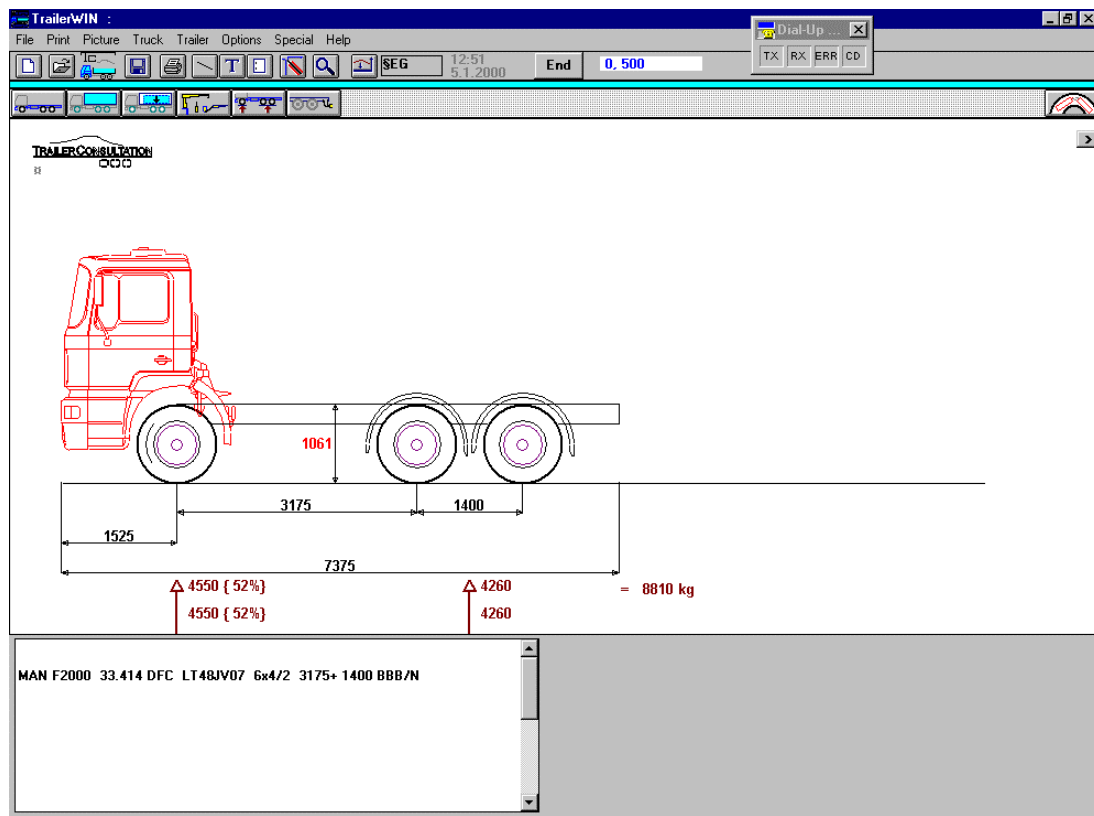
Chassis	
truck make	MAN
type	F2000 33.414 DFC LT48JV07 6x4/2
model (wheelbase, cab etc.)	3175+ 1400 BBB/N
G.V.W. front axle	7500
G.V.W. rear axle	19000
G.V.W. total	26000
chassis weight, front axle	4475
chassis weight, rear axle	4260
basic wheelbase (front axle- first rear axle)	3175
boogie wheelbase	1400

Cancel

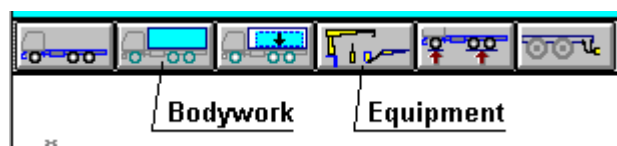
OK

When you are ready, click OK.

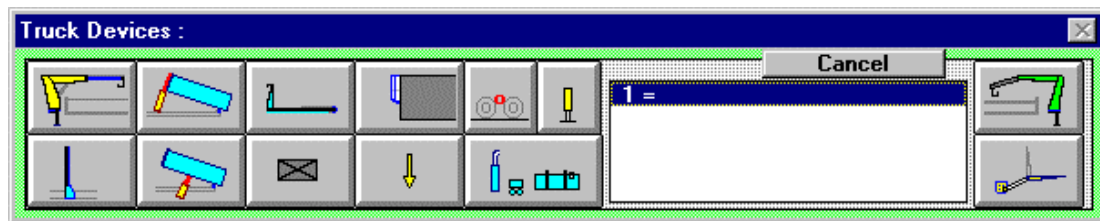
Now you will get the chassis in the big picture.



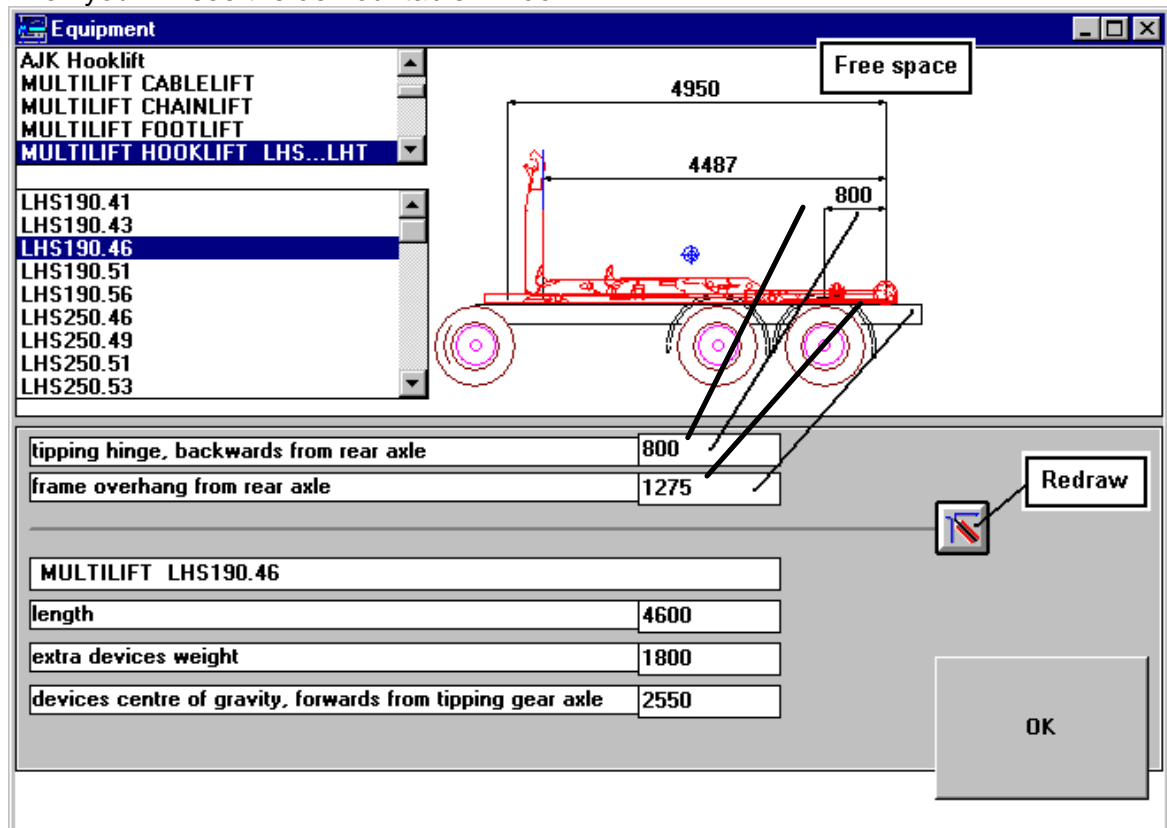
Choosing demountable



Click on the **Equipment** button
and click on the **demountable** button (1. row; 3. from left,) in the following window



Then you will see the demountable window



At first choose the demountable group in the list box on the top. Below it choose the model (second list box). The preview window shows the chosen model.

Type suitable values for "**tipping hinge, backwards from rear axle**" and "**frame overhang from rear axle**"

Activating new values to drawing click on the Redraw button.

Continue with:

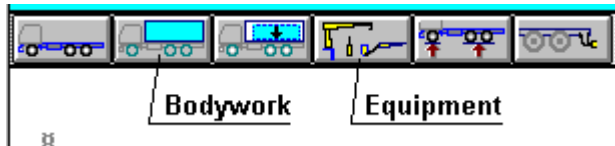
Choosing Container Bodywork (you can choose length and height etc.)

or

Choosing Standard Container Bodywork (fixed dimensions)

Choosing Container Bodywork (you can choose length and height etc.)

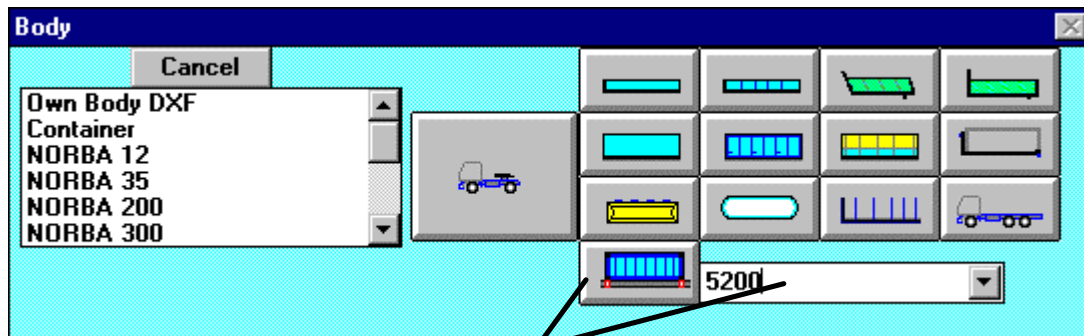
Click on the Bodywork button.



(If you have already chosen the bodywork, you do not come to Bodywork Window by clicking the Bodywork button. In that case use **Menu: Truck - Body type**)

The Bodywork Window opens.

This example shows how to get a 5200 mm long container

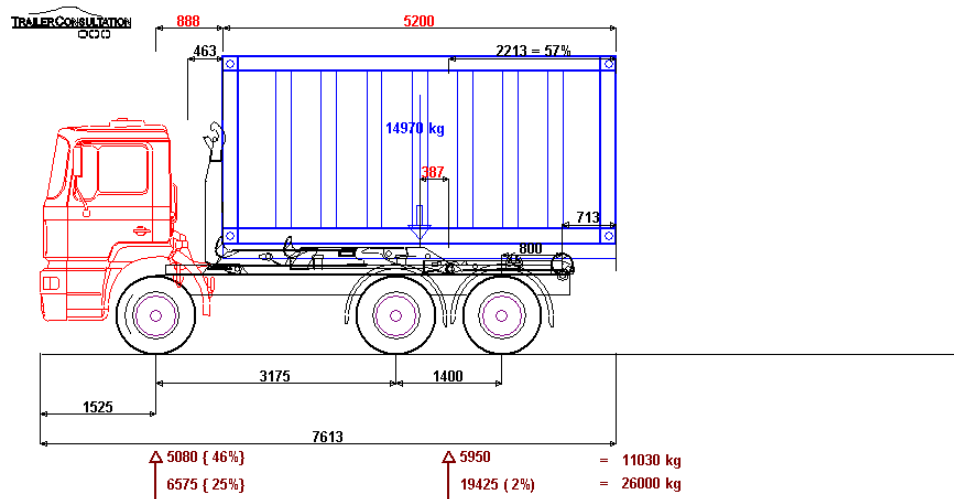


Write length 5200 here

Click then the Container Button

Body data window appears. You can choose container dimensions. Click then OK.

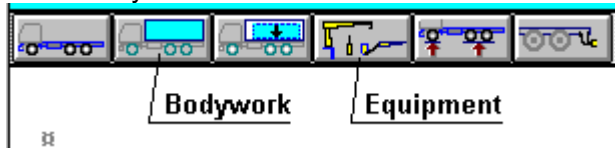
Following picture shows the result.



other possibility is to Choose Standard Container Bodywork with fixed dimensions

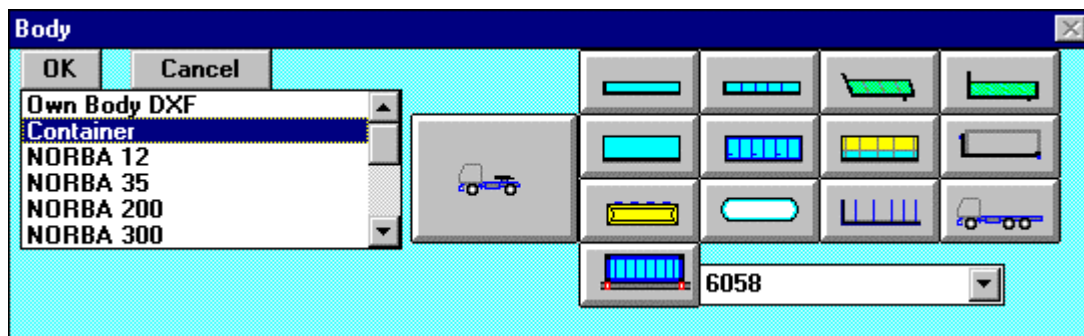
Choosing Standard Container Bodywork (fixed dimensions)

Click Bodywork button.



(If you have already chosen the bodywork, you do not come to Bodywork Window by clicking the Bodywork button. In this case use **Menu: Truck - Body type**)

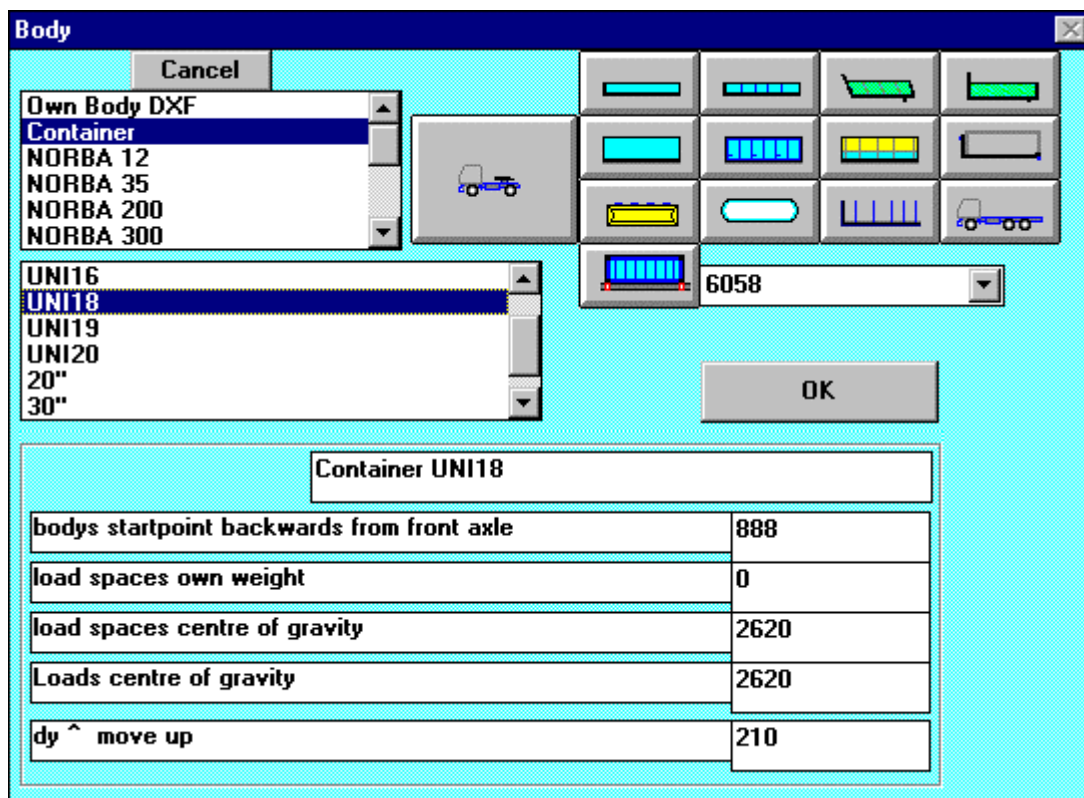
The Bodywork Window opens.



Click row **Container** on the standard bodywork listbox.

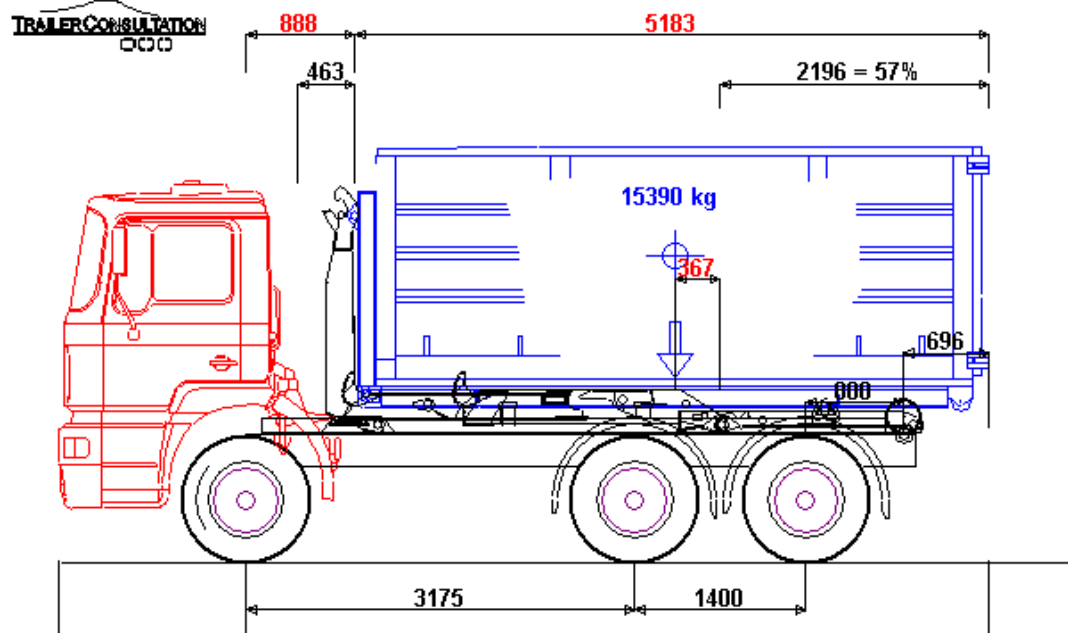
Bodywork Windows opens more:

Click UNI18 on the Container Listbox



Change data if needed, and click **OK**.

You will get a standard body UNI18



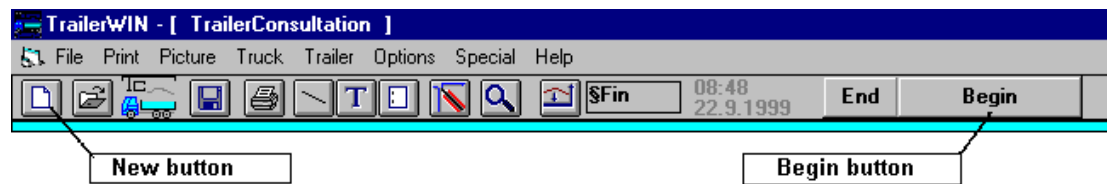
You cannot change any dimensions in this case, because the drawing is now a fixed drawing, not programmatically made as in previous cases.

It is also possible to draw own standard body models in AutoCAD and use these in theTrailerWIN.

See details in the TrailerWIN manual.

The guided example 4: Tractor and Semitrailer

To start calculating a new vehicle click on the Begin button or New button.



It helps to find this calculation later by typing the task name and customer name here.

Choosing Chassis

Then click



on for beginning with the truck.

From Chassis Window you can choose the chassis fabricate, next model series and then wheelbase and cab

In this example:

MERCEDES-BENZ ACTROS
SN 2531LS 6X2/4
2550+1350 F015

(in the listbox: MB ACTROS)
model
wheelbases, cabin model code

In the picture you see small arcs on first and also on second axle. This means, that in this model also the second axle is steer axle.

In Chassis data window you can check chassis weights and dimensions

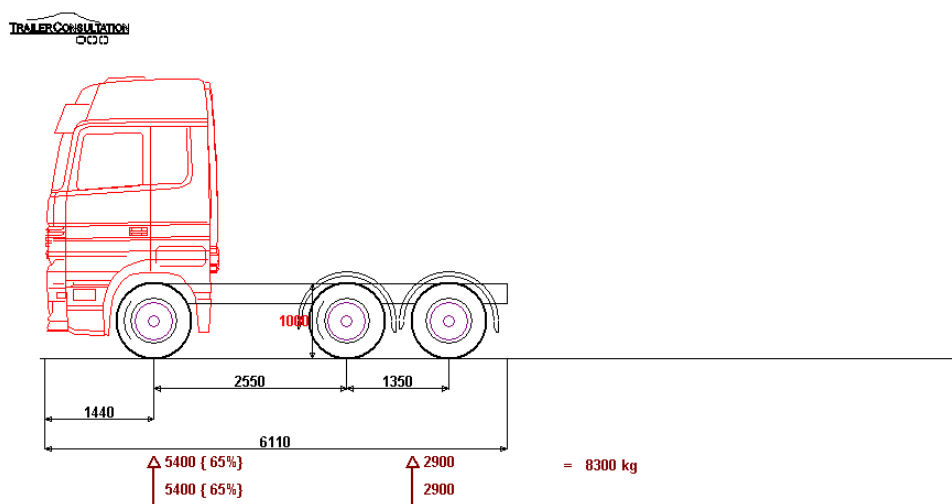
Chassis	
truck make	MERCEDES-BENZ
type	SN 2531LS 6X2/4
model (wheelbase, cab etc.)	2550+1350 F015
G.V.W. front axle	7100
G.V.W. rear axle	18600
G.V.W. total	25000
chassis weight, front axle	5325
chassis weight, rear axle	2900
basic wheelbase (front axle- first rear axle)	2550
bogie wheelbase	1350

Cancel

OK

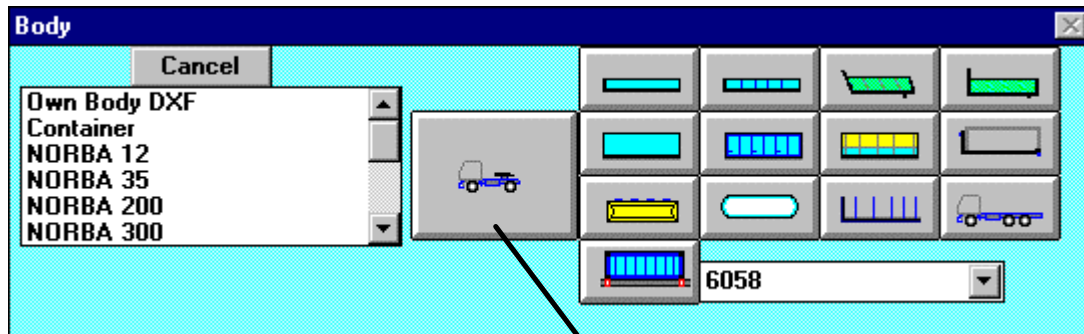
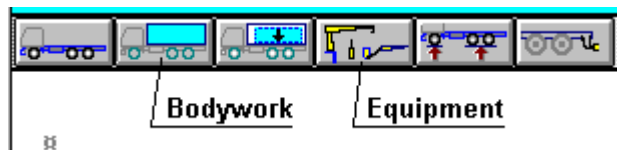
When you are ready, click OK.

Now you will get the chassis in the big picture.

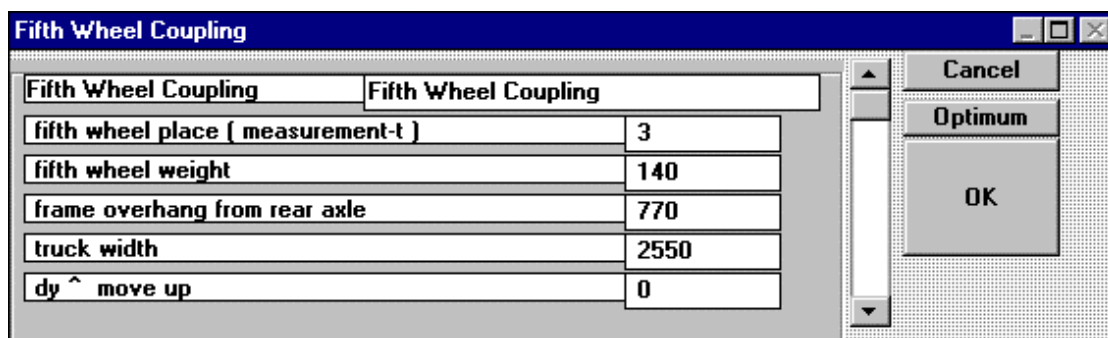


Choosing Fifth Wheel Coupling

Click on the Bodywork button.



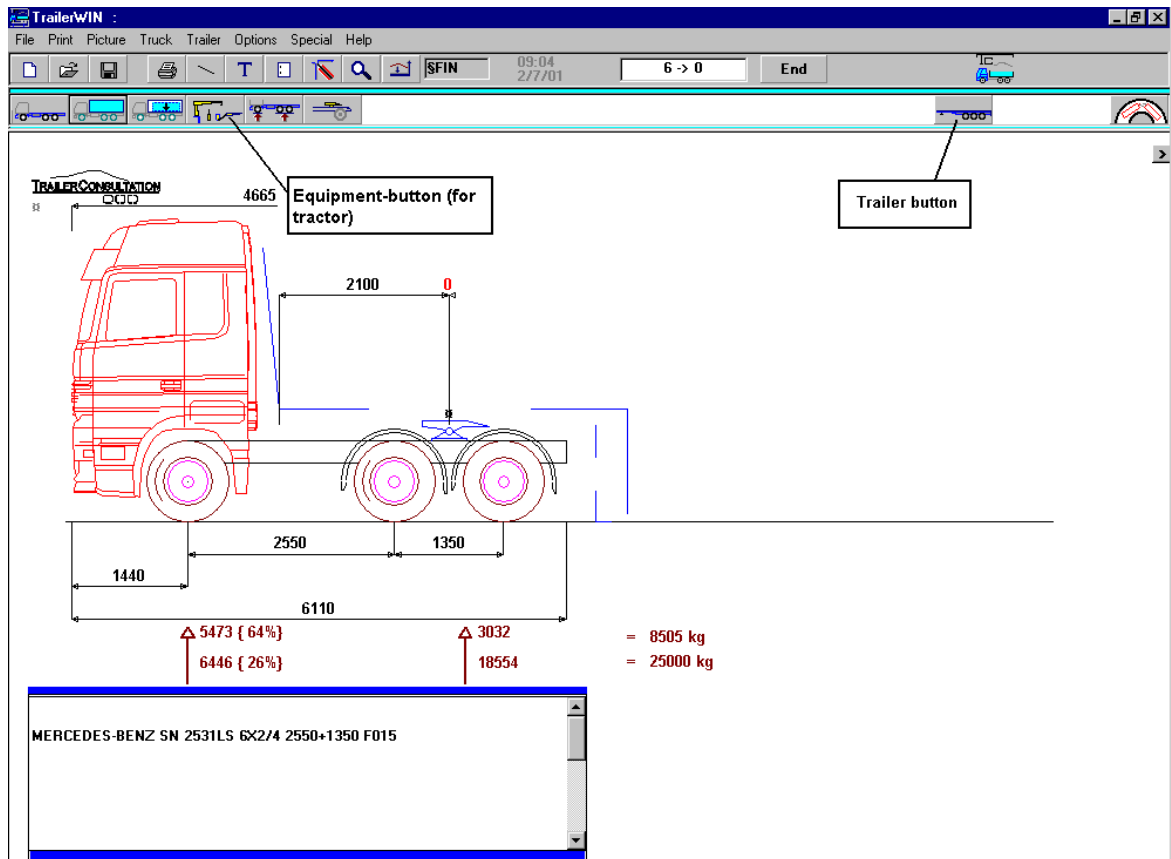
Click the button for the Fifth Wheel Coupling



The program has at first calculated the Fifth Wheel Place so, that the rear axle weight is near maximum allowed, when total weight is on maximum (loading on the fifth wheel is on maximum).

You can change data on this window, if needed. Click OK.

Now the Tractor unit is ready. If you want to add some pieces of equipment, you can choose this using **Equipment - button**.



Axle weights without load and with load on Fifth Wheel Coupling, you see under the picture.

Choosing the Semitrailer

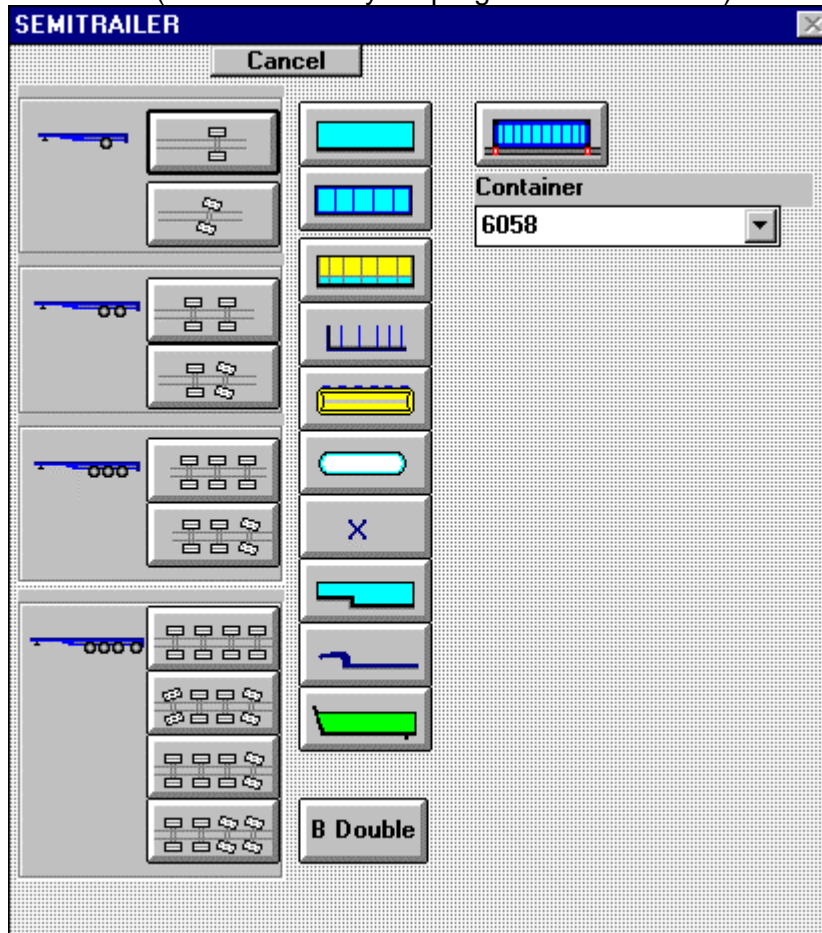
Click on Trailer button



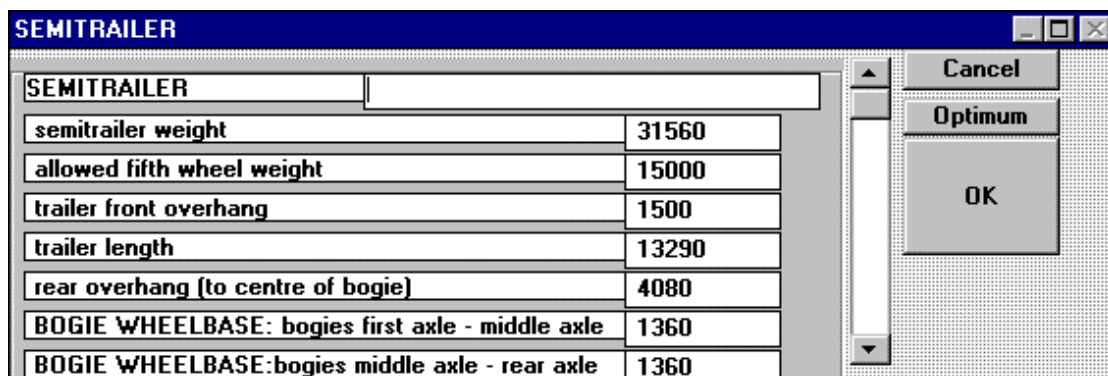
You will get a button group for choosing semitrailer.

You have to make two choices:

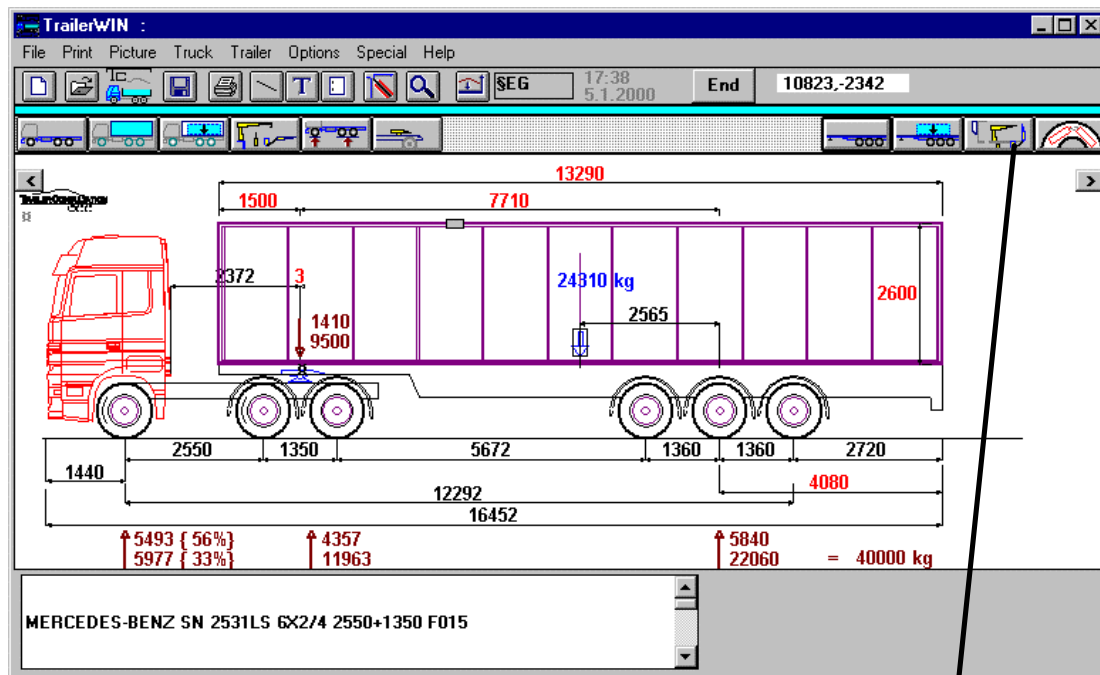
- * From the left column: how many axles on trailer and the steering properties
- * From other buttons: Body type, if container, choose also the length of the container (B Double is only for programs for Australia)



When you have made these two choices, you see the semitrailer data window.



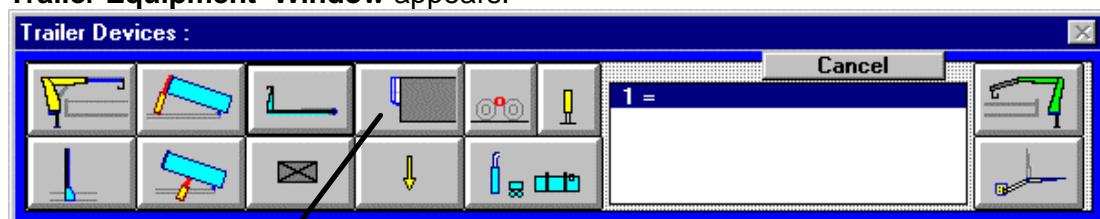
The program has made a calculation for finding the optimum semitrailer. Combination length near the maximum, weight distribution correct and turning in EU circle possible. If needed, you can change the values.



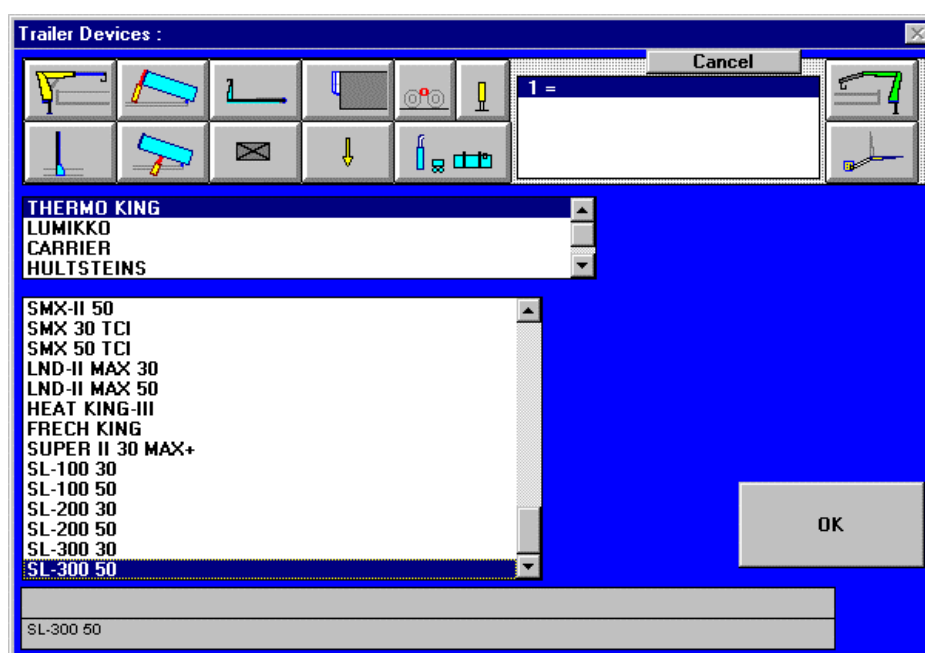
Choosing equipment on the Semitrailer

For taking equipment on the semitrailer or trailer click the **Trailer Equipment** button near right side of the screen.

Trailer Equipment Window appears.



Click **Refrigerator** button.

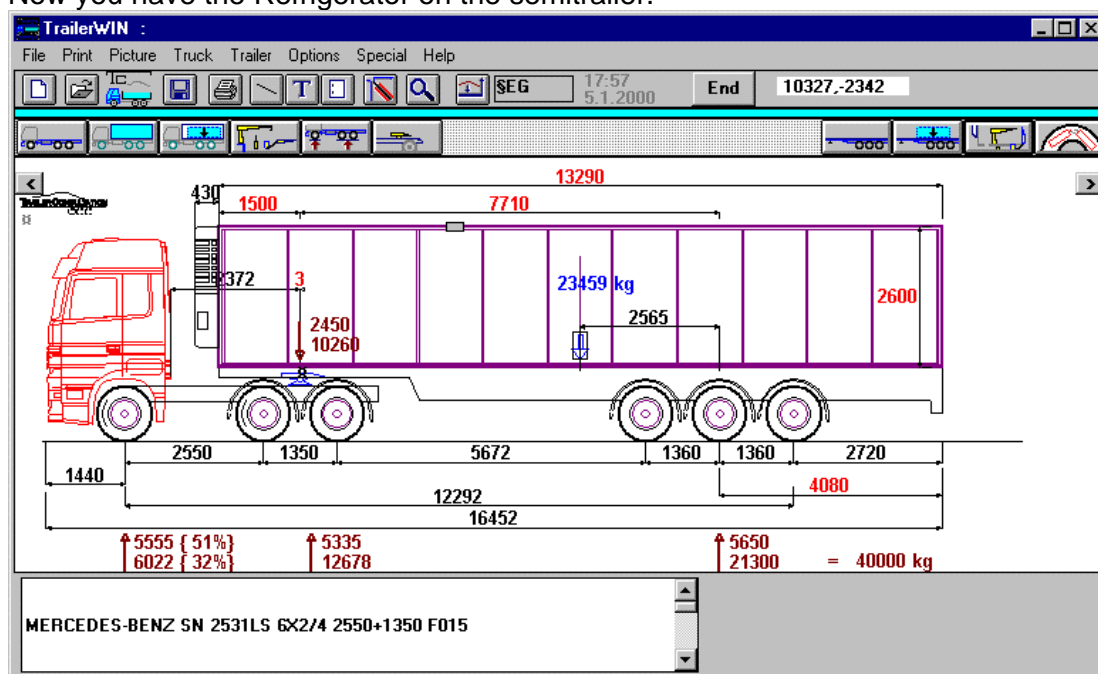


Now we can choose refrigerator fabricate and model, in this example THERMO KING SL-300 50, and go to data window.

1		Cancel
extra devices name	THERMO KING SL-300 50	
extra devices weight	851	OK
length	430	
refridgerating machines height	2235	
--->	0	
^	0	
devices corner width	1600	
corner length (body - devices corner)	430	

On data window you can edit data if needed. Click OK on data window.

Now you have the Refrigerator on the semitrailer.



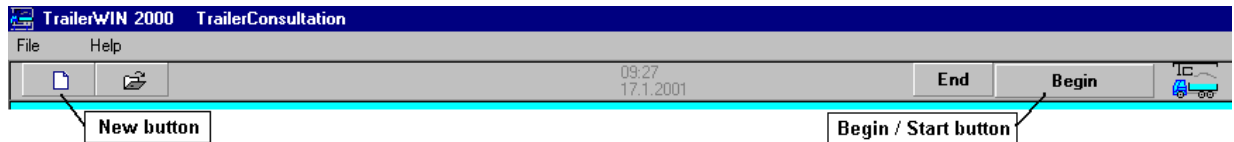
Weight for this refrigerator is calculated also on axle loads, which you can see on the screen.

Notice that the semitrailer weight on the fifth wheel coupling has influence on axle weights on the tractor. When tractor was alone, without the semitrailer, we were calculating axle loads, with maximum possible load on the fifth wheel. When the semitrailer is known, we use as load on the fifth wheel this support reaction force, which semitrailer needs on fifth wheel. If you move the loading point on the semitrailer, also axle weights on the tractor will change.

The guided example 5: Truck + Crane Calculation with TrailerWIN and CraneWIN:

Starting the Calculation

To start calculating a new vehicle. Click the Begin button or New button.



The 'Calculation' dialog box has a title bar with 'Calculation' and a 'Cancel' button. It contains a 'Task name' field, a 'Customer' field, a 'Text 1' field, and a 'Calculation made by :' field. There is also a 'New' button with a truck icon and a 'Begin' button with a crane icon. A callout box points to the 'Begin' button with the text 'Begin / Start button'.

It helps you to find this calculation later by typing the task name and customer name here.



Then click on  for beginning with the truck.

Choosing Chassis

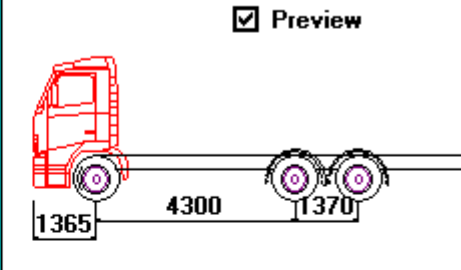
Chassis :

UNIMOG
VOLVO FH12
VOLVO FH16

FH12 6x2 Tractor Fixed pusher
FH12 6x4 20tonnes rear axle
FH12 6x4 26tonnes rear axle
FH12 6x4 All air suspension
FH12 6x4 Rear air suspension
FH12 6x4 Tipper 26tonnes rear axle
FH12 6x4 Tractor
FH12 6x4 26to Tractor

-4200+1370 Short cab (front air intake)
-4200+1370 Long cab
-4200+1370 Long cab (front air intake)
-4200+1370 Globetrotter
-4300+1370 Short cab
-4300+1370 Short cab (front air intake)
-4300+1370 Long cab
-4300+1370 Long cab (front air intake)
-4300+1370 Globetrotter
-4600+1370 Short cab
-4600+1370 Short cab (front air intake)

Preview



OK

FH12 FH12 6x4 20tonnes rear axle
-4300+1370 Short cab

From Chassis Window you can choose the chassis fabricate, next model series and then wheelbase and cab

In this example we choose:

VOLVO

FH12 6x4

4300+1370 Short cab

In Chassis data window you can check and change chassis weights and dimensions
Maybe you have to change for example allowed weights, therefore that your chassis has not standard tyres.

Chassis

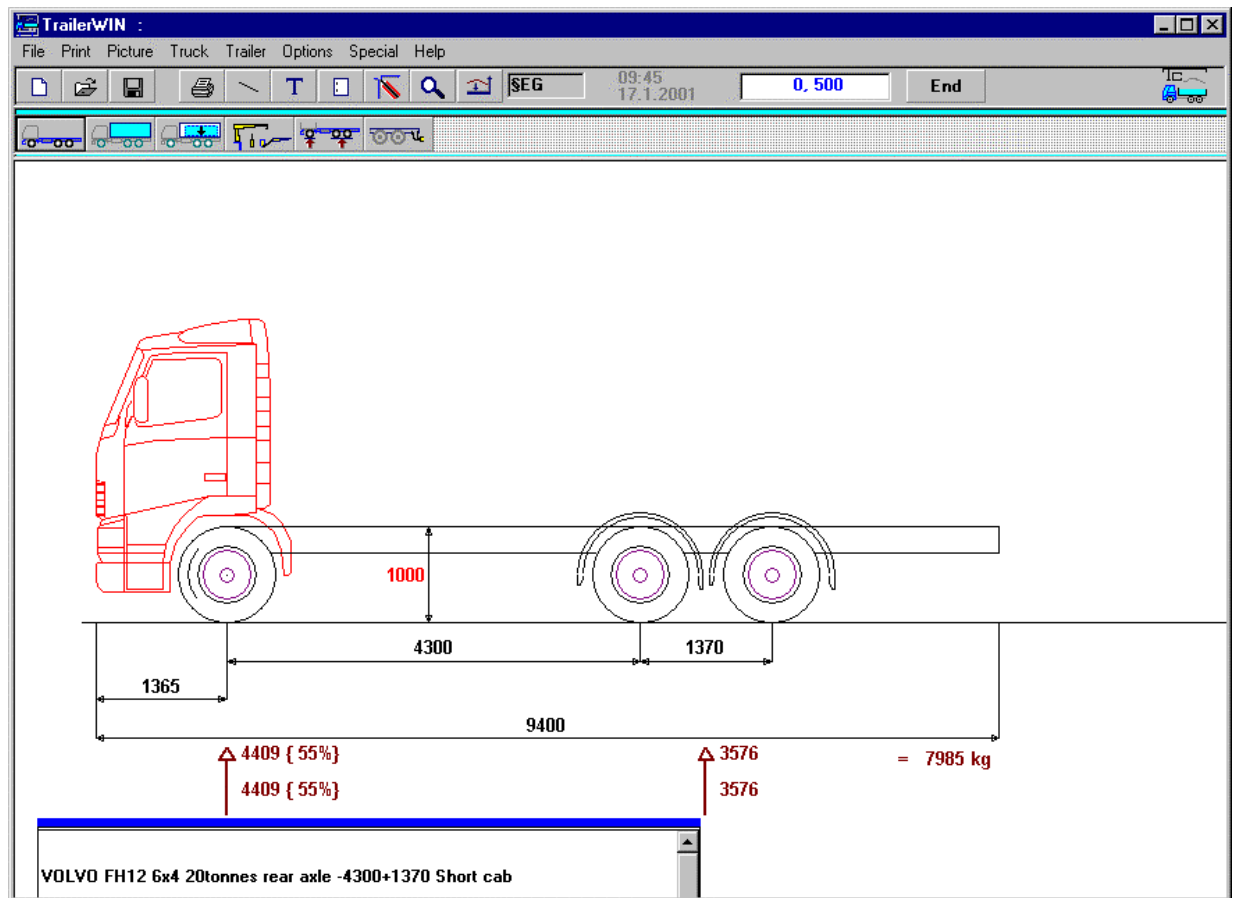
truck make	VOLVO	
type	FH12 6x4 20tonnes rear axle	
model (wheelbase, cab etc.)	-4300+1370 Short cab	
G.V.W. front axle	6700	
G.V.W. rear axle	19000	
G.V.W. total	25700	
chassis weight, front axle	4334	
chassis weight, rear axle	3576	
basic wheelbase (front axle- first rear axle)	4300	
bogie wheelbase	1370	

Cancel

OK

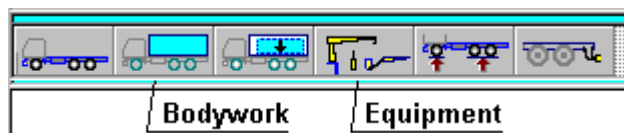
When you are ready, click OK.

Now you will get the chassis in the big picture.

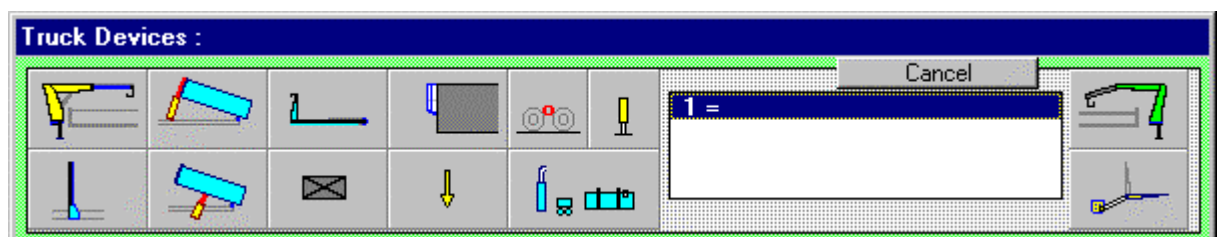


Choosing Crane:

To have a crane behind the cab do as follows
Click on the **Equipment** button.



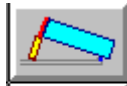
In following equipment window you will see the crane button (yellow crane) on the left side. The other crane button (green crane) on the right side is for rear-mounted crane.



Buttons for choosing the device type:



Crane (front of the body)



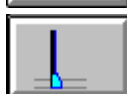
Tipping gear (Front Tipping Gear or Underbody Tipping Gear)



Interchangeable body



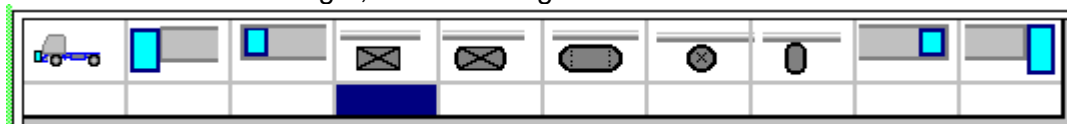
Refrigerator



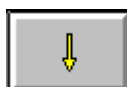
Cab safety wall



Point weight, with following alternatives



1. For example Winch front
2. Box between the cab and body
3. Box inside the body (e.g. toolbox inside the tank)
4. Rectangular Box
5. Box with rounded corners
6. Box with round ends
7. Circular Box
8. Air dryer
9. Box inside the rear body
10. Box behind the body



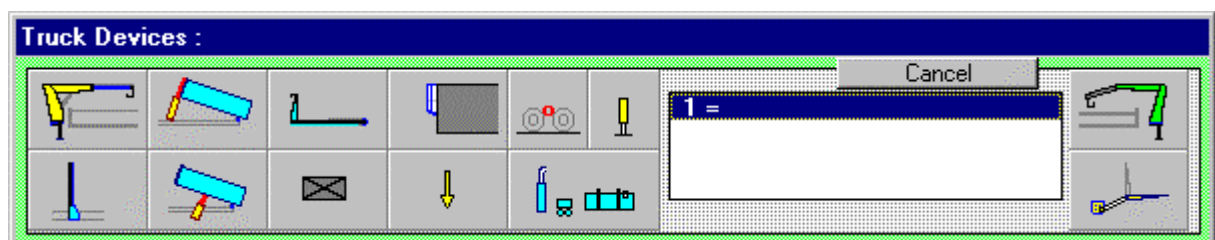
Point weight (as vector)



Rear Crane

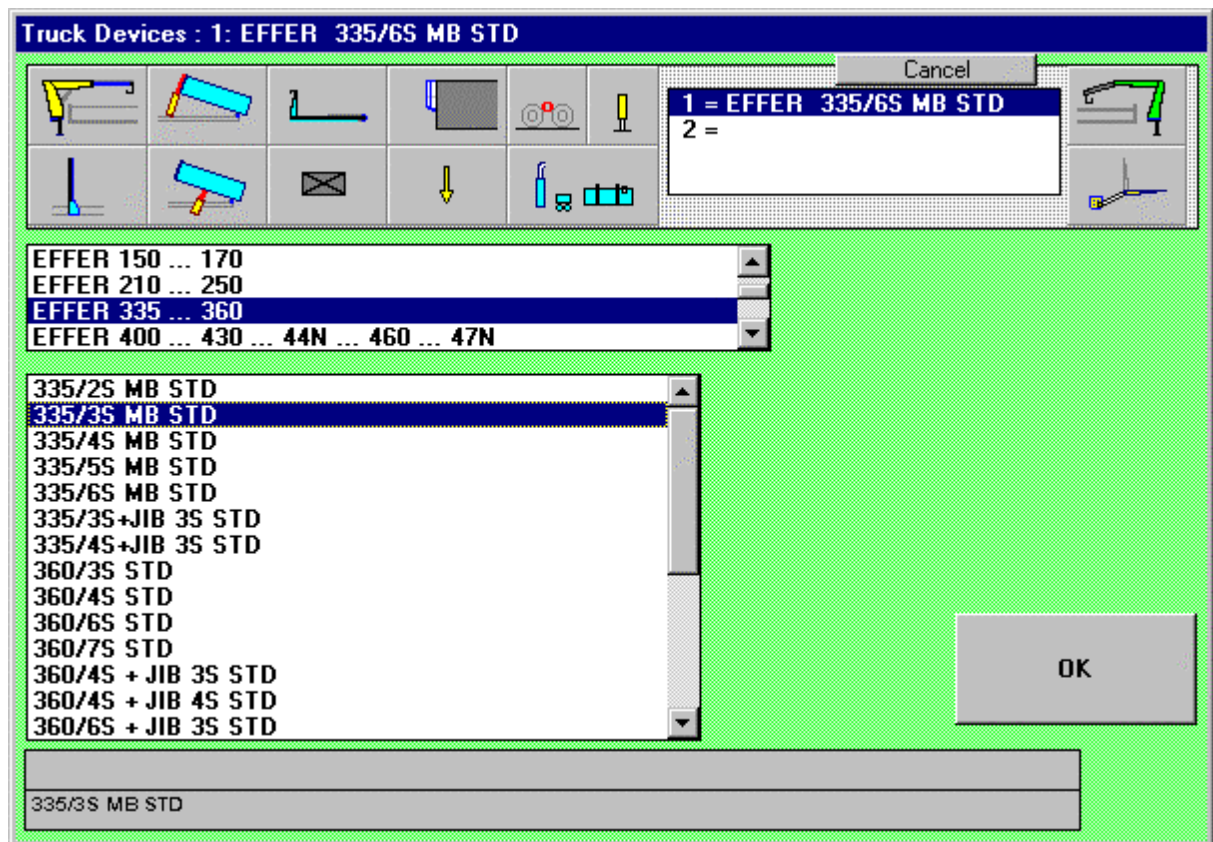


Rear Lifter (Tail Gate)



Click the yellow crane on the left side.

Then we can choose the crane model, in this example at first the group EFFER 335 ... 360, and then the model EFFER **335/3S MB STD**



Click OK. On following Crane Data Window you can check and edit crane weight and dimension data. You can also choose stabilizer leg model and crane position folded or unfolded.

1: EFFER 335/3S MB STD
Cancel

EFFER 335/3S MB STD

Cranes first spot, measured backwards from front axle	650
length	1070
Crane weight	3530
Mountings part weight	0

Support legs

Support legs weight

0

☐ Turn support legs

devices centre of gravitys place, from
centre of cranes frame

115

1025

Distance Cranes slewing centre - Crane First point

490

devices corner width

2495

corner length (body - devices corner)

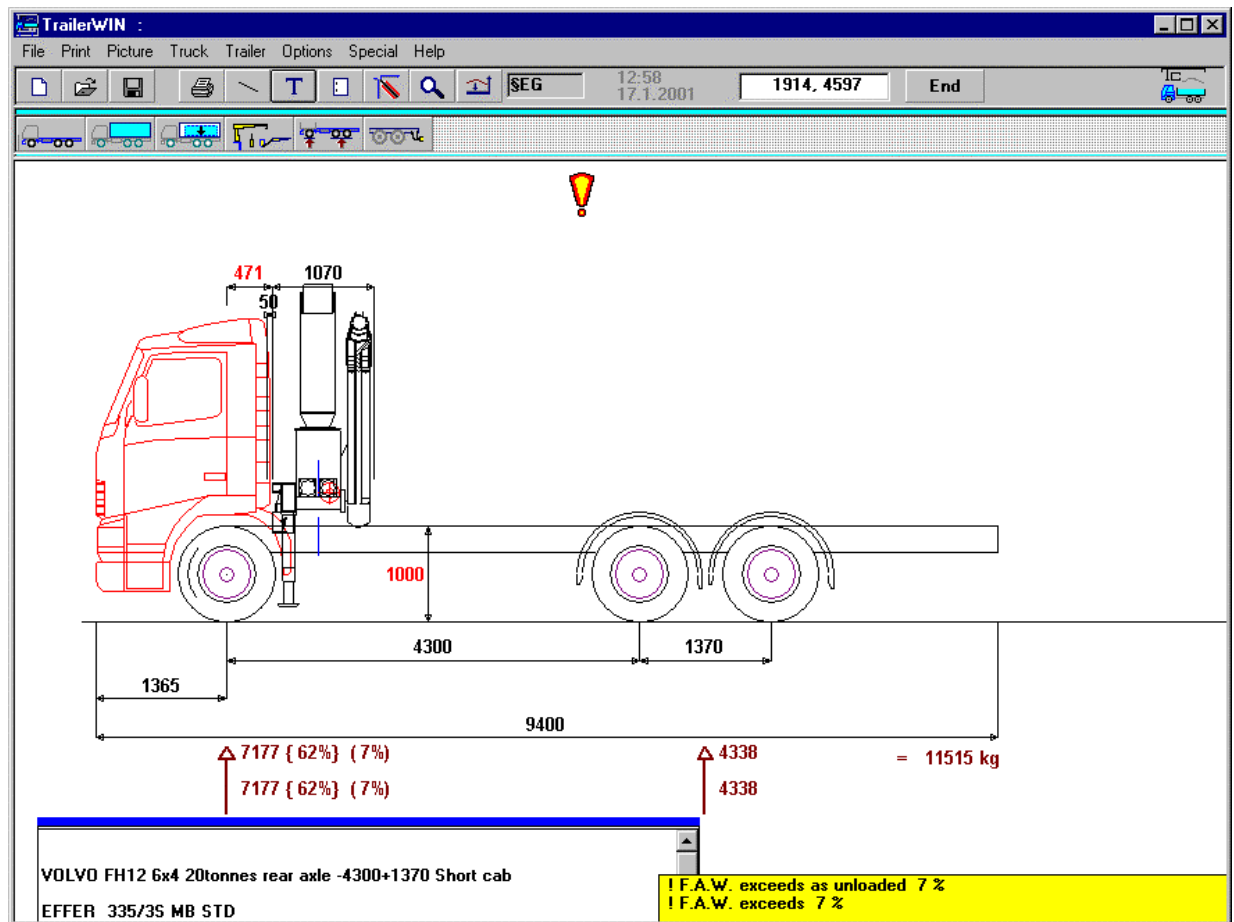
1070

OK

Click OK

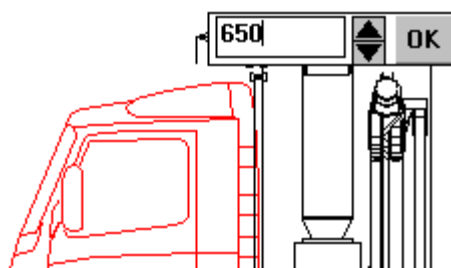
TrailerWIN : Guided examples

33



Now you see the crane on the chassis.
 We want to move the crane to the rear.
 We can make it on 3 different methods.

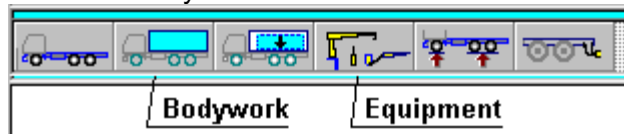
1. Double-Click the red dimension number (hot dimension) 471, and type new value 650, and click then OK.



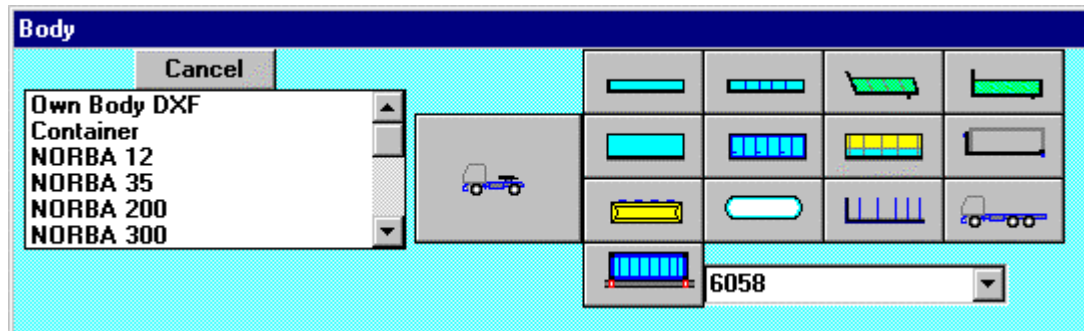
2. Drag the crane with mouse from the small grey rectangle under the crane. The crane moves on a new place, but very exact movements are difficult with this method.
3. Click on the Equipment button, and choose from the list this crane, so you will come back to the Crane Data Window. Type there the new value; 650

Choosing the Bodywork

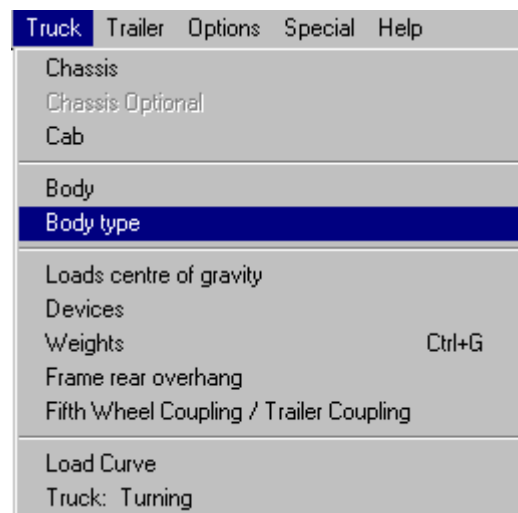
Click the Bodywork button.



The Bodywork Window opens.



If you have already chosen the bodywork, you do not come to Bodywork Window by clicking the Bodywork button. In this case use **Menu: Truck - Body type**



Choose the Body type Button. In this example we choose Open Body button



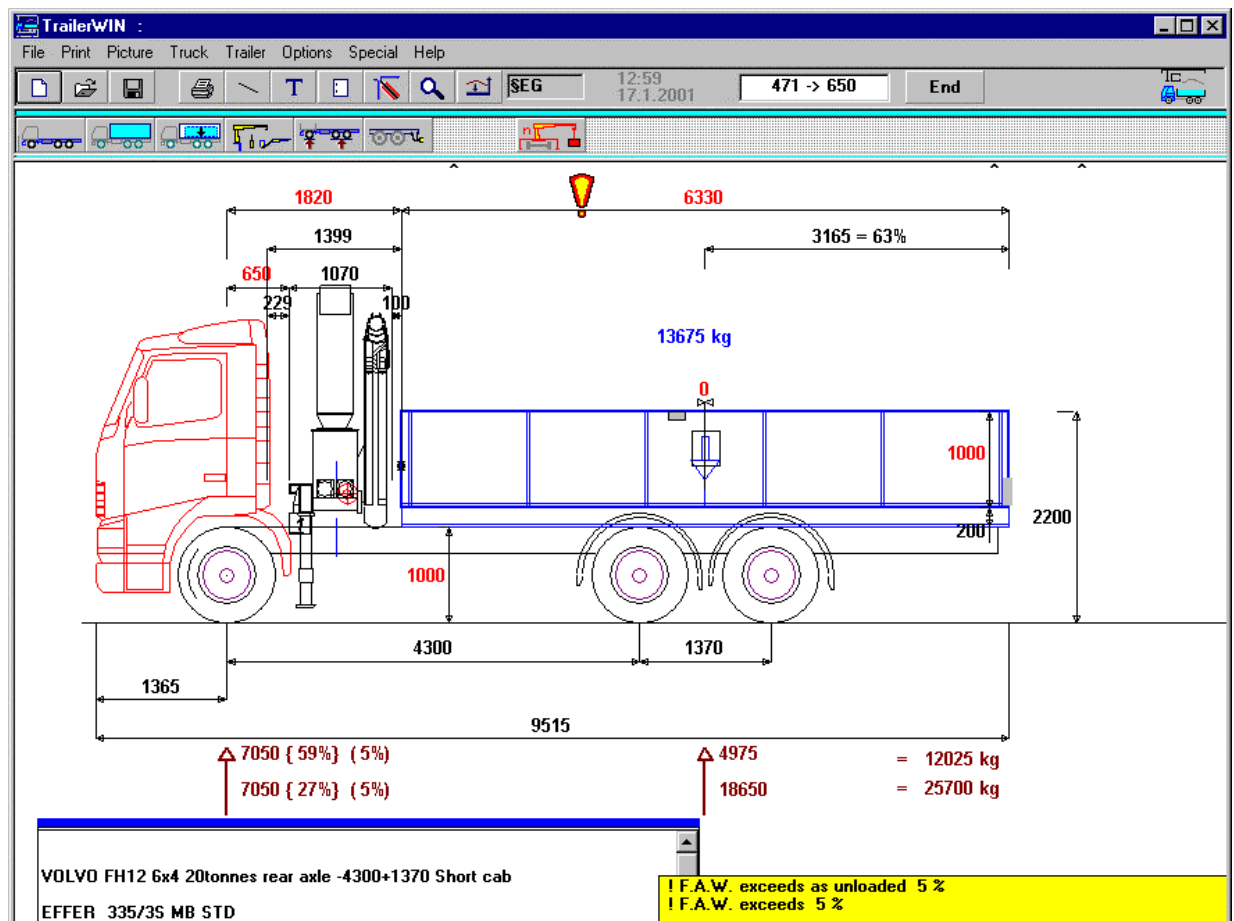
Body data window appears.

Body	
body startpoint backwards from front axle	1820
body length	6330
body height	1000
load spaces own weight kg/m	80
subframe height	200
frame overhang from rear axle	2365
truck width	2550

The program has at first calculated the body length so, that the rear axle weight is near maximum allowed, when the body is even loaded.

If you have a special length, which you like to have, you can type this length on the input box.

You can also change body length later from picture; double-click the red dimension or drag with mouse the small grey rectangle at the end of the body.



Axle weight without load and with load, you can see under the picture.

First row shows axle loads without payload and the second row with payload.

The numbers on brackets "{59%}" means that the front axle takes 59% of the vehicle weight. Second brackets "(5%)" means overload 5%.

Also now we have 5% overload on the front axle.

For correcting this, we have to take smaller crane or to choose this truck with heavier axle (bigger load capacity).

For changing the max. front axle load, click the chassis button

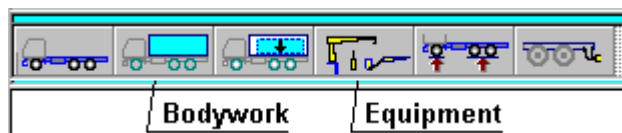


Chassis	
truck make	VOLVO
type	FH12 6x4 20tonnes rear axle
model (wheelbase, cab etc.)	-4300+1370 Short cab
G.V.W. front axle	7500
G.V.W. rear axle	19000
G.V.W. total	26000
chassis weight, front axle	4334
chassis weight, rear axle	3576
basic wheelbase (front axle- first rear axle)	4300
basic wheelbase	1270

Buttons: Cancel, OK

Change **G.V.W. front axle** to 7500 kg, then we can also add the total weight to 26000 kg. Click OK button.

If we want now to see, what is the optimum body length with these weights, click again Bodywork button.

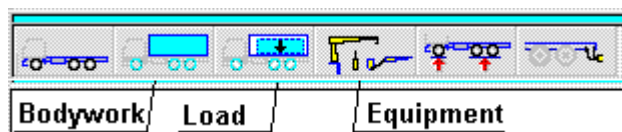


Body	
Body	
bodys startpoint backwards from front axle	1820
body length	6295
body height	1000
load spaces own weight kg/m	80
subframe height	200
frame overhang from rear axle	1550
truck width	2550

Buttons: Cancel, Optimum, OK

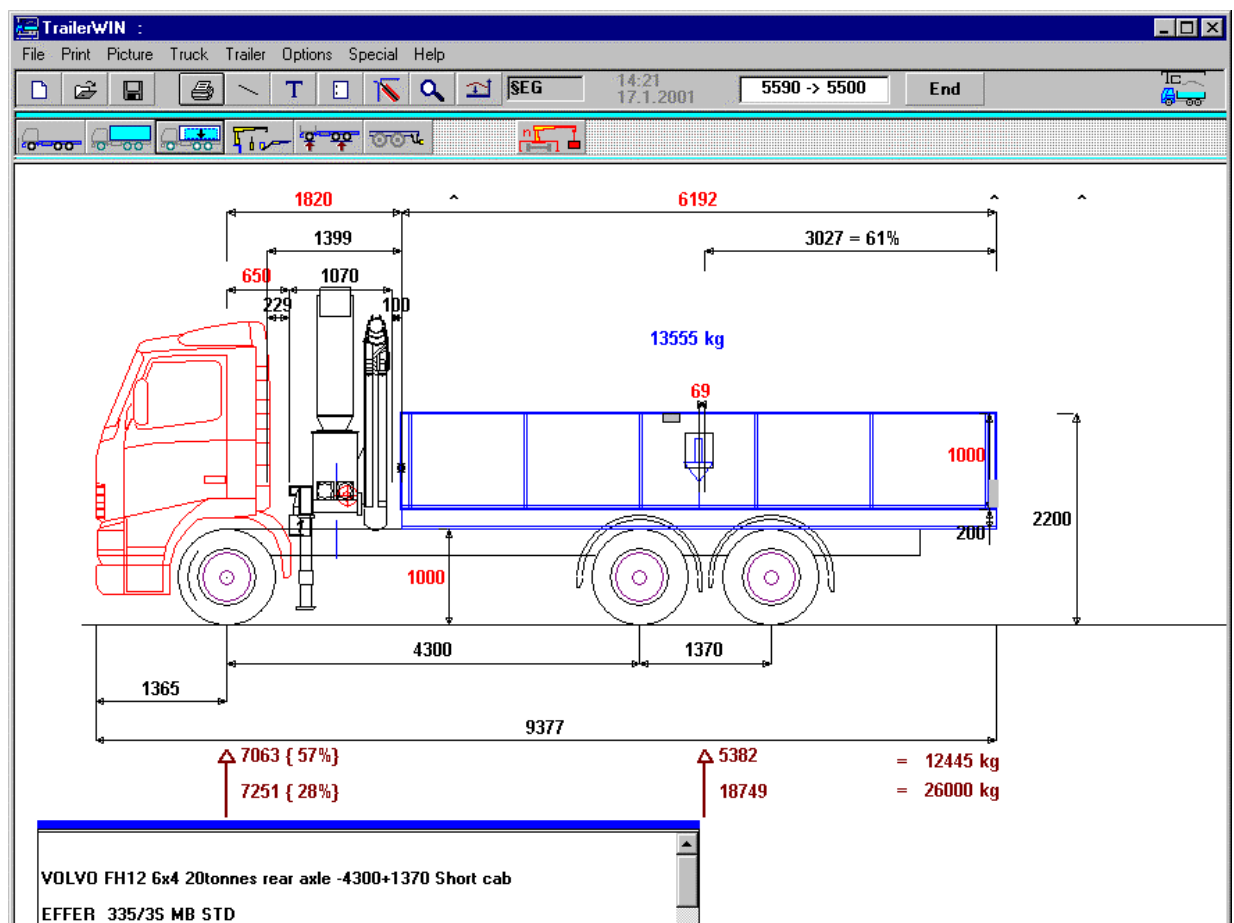
In bodywork window, click the **Optimum** button
You will see that the body length changes.

If we did not notice to change body weight (load spaces own weight) on the previous window, we can make it later from Load data.



Click the Load button on the toolbar.

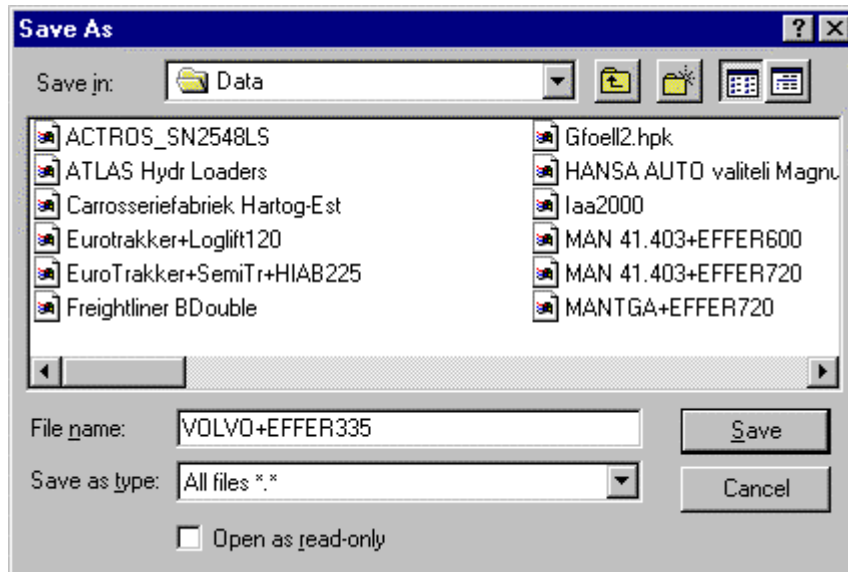
We change **load spaces own weight kg/m** to value 150 kg/m.
Then click OK.



!! Remember to save the calculation regularly:

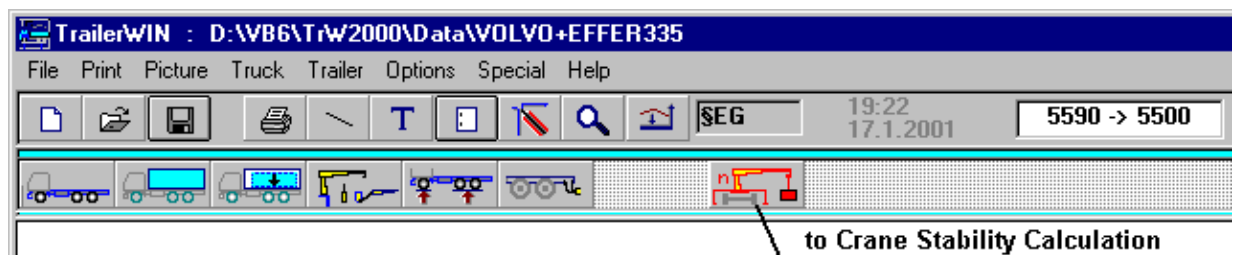


Click on the Save Button:



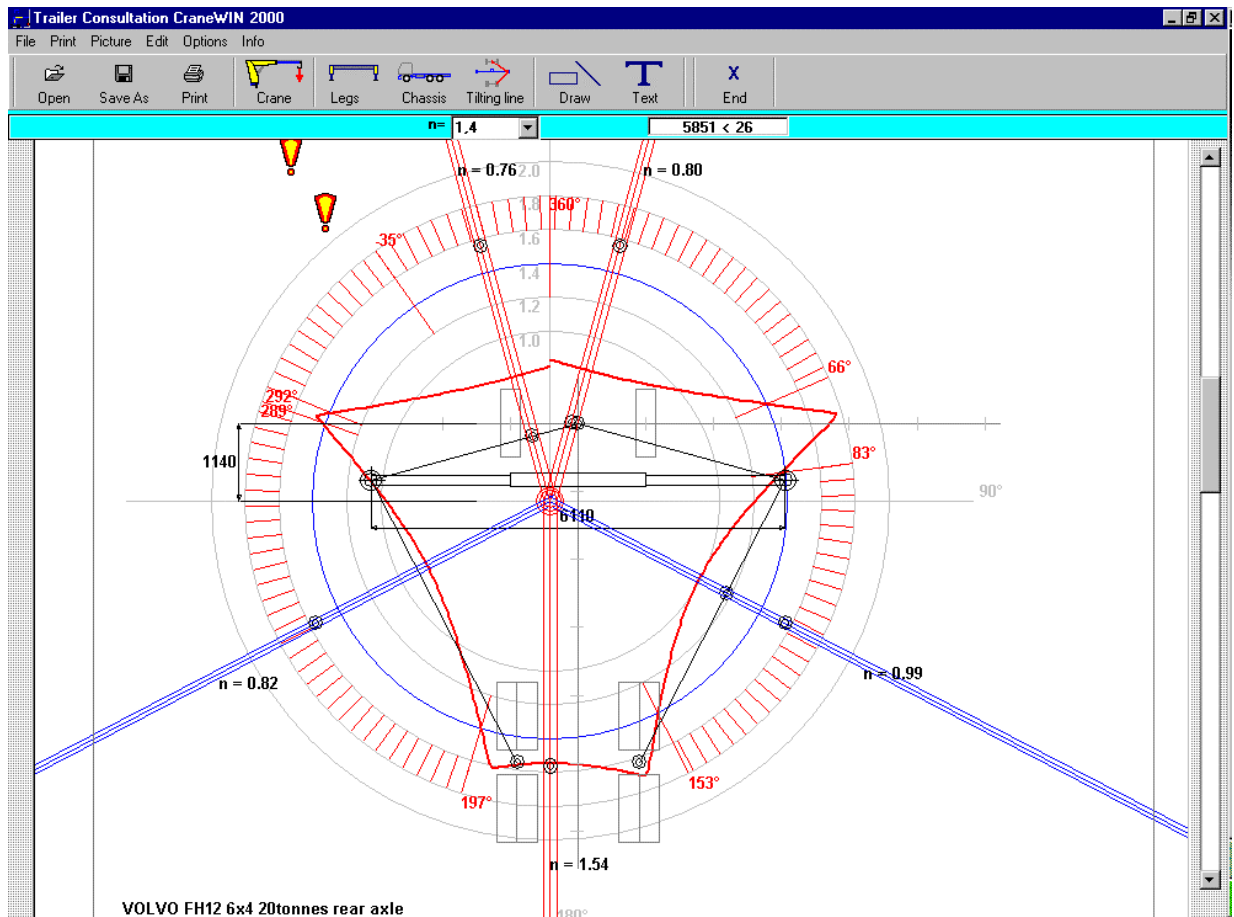
Use logical name. It helps you to find this calculation later.

Now you can check to Crane Stability.
We go to CraneWIN Program.

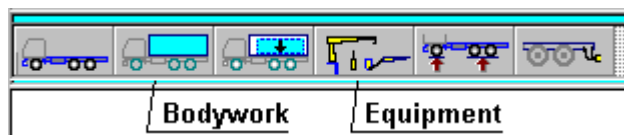


Click on the "to Crane Stability Calculation" button.

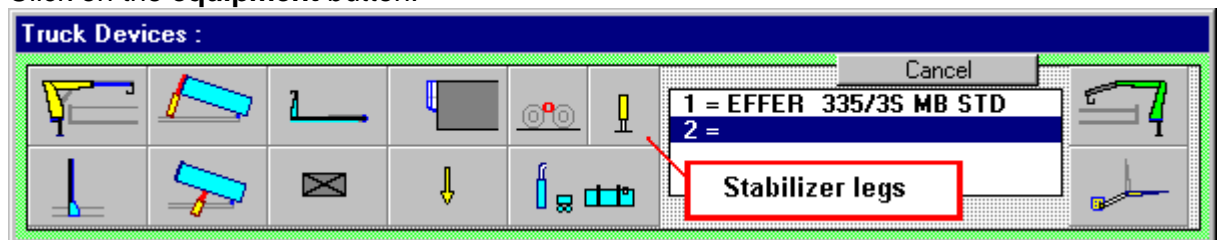
CraneWIN will start:



This diagram shows, that stability is very bad.
Extra stabilizer legs are absolutely needed.
Click on the **End**-button for going back to the TralerWIN picture.

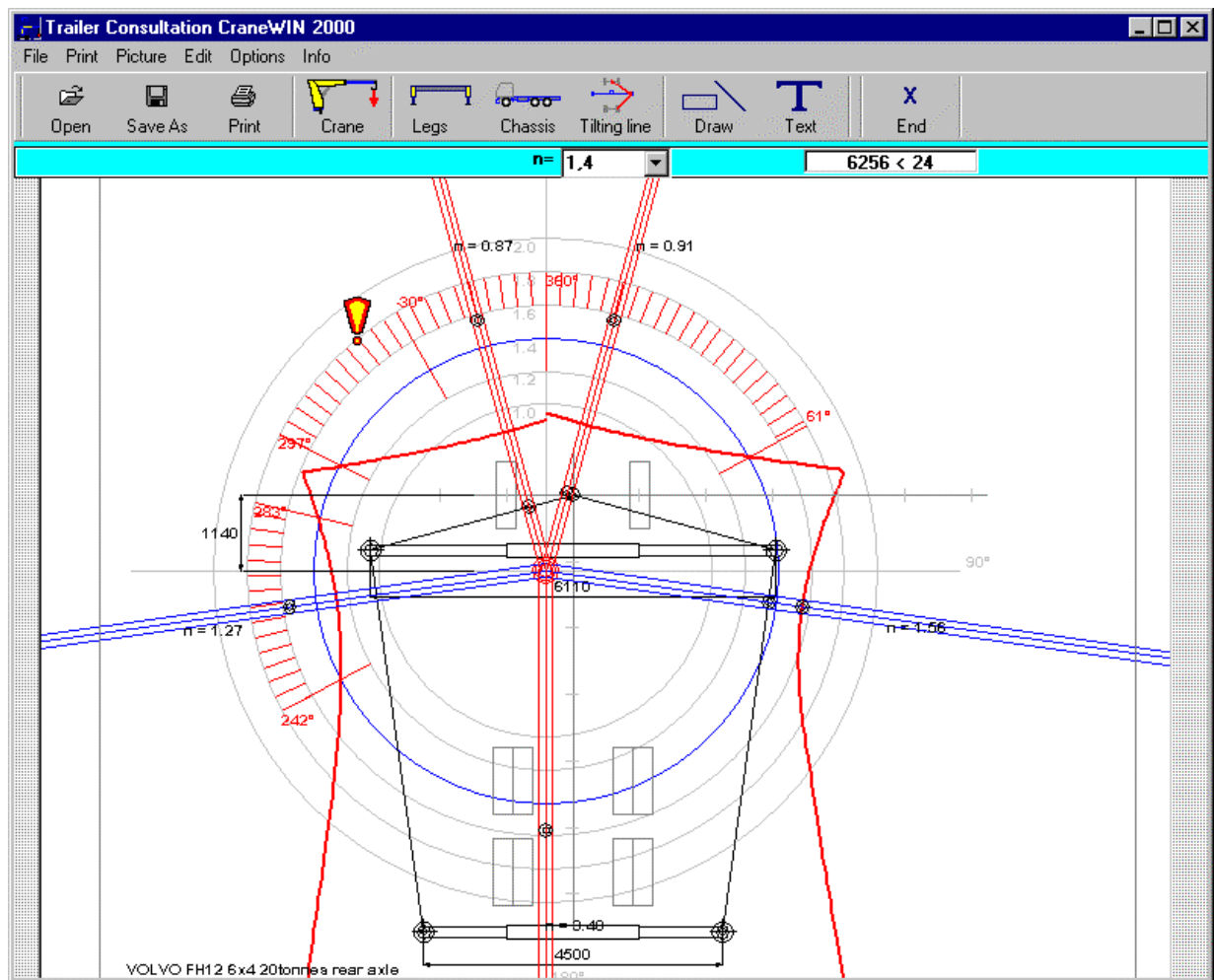


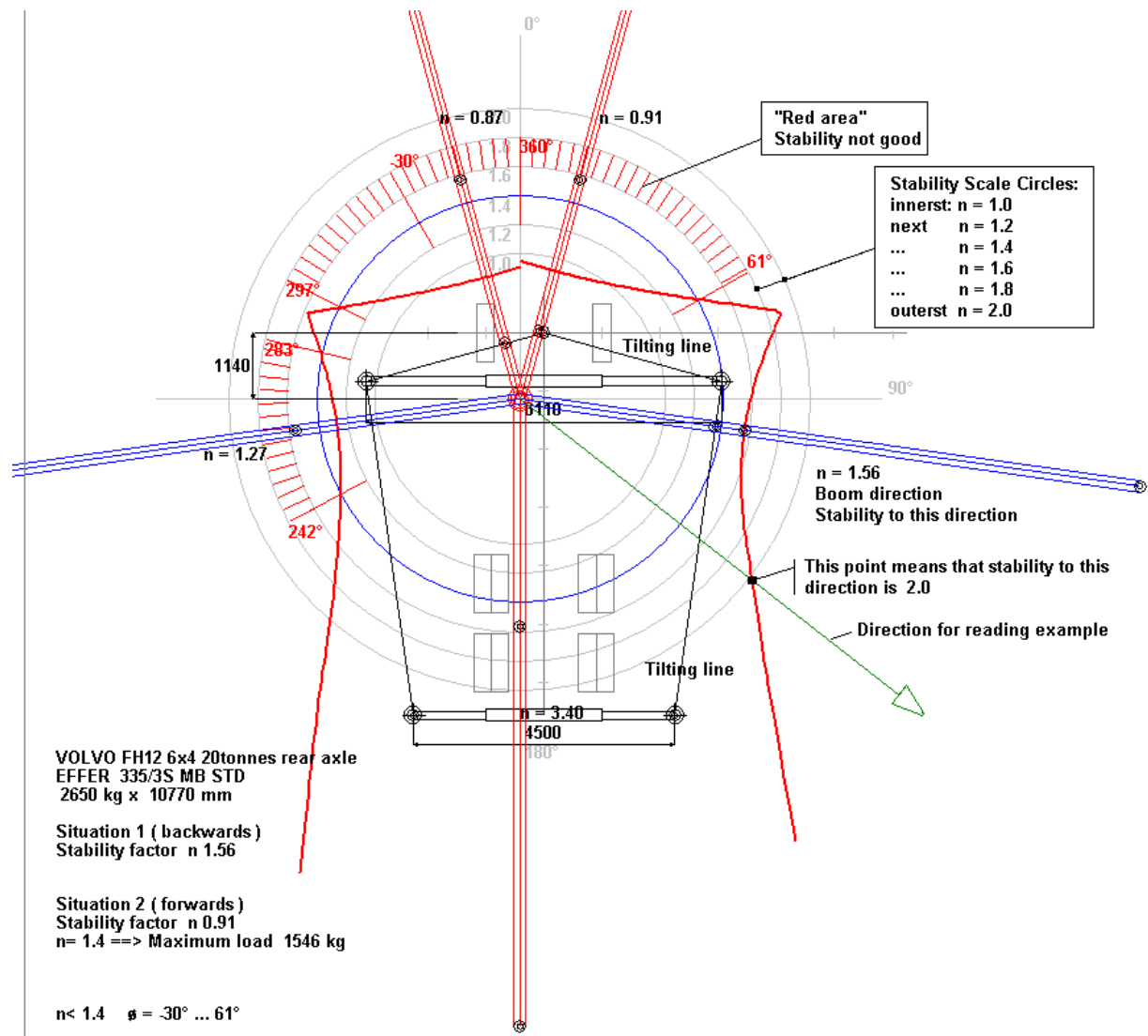
Click on the **equipment** button.



Choose Stabilizer legs-button
and type correct weight and width data.

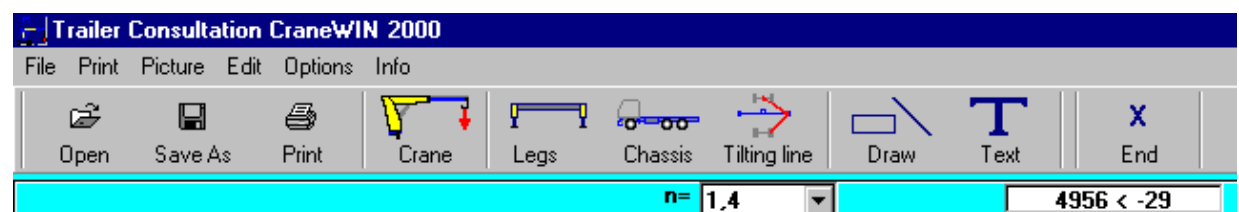
Reading the stability diagram:





The circle diagram shows stability to all directions. Imagine the boom in the picture to this direction, for which you want to read stability. Where the boom direction line crosses the red stability curve, this point shows the stability. If this point is for example on scale circle 2.0, the stability is 2.0 to this direction (see example point on the picture).

Modifications in CraneWIN



You can make many changes also in the CraneWIN; e.g. change load, outreach, stabilizer width, chassis weights etc. If you change something in the CraneWIN, it doesn't have any influence to the TrailerWIN calculation.


For changing Crane load, outreach etc; click on the Crane-button.

Task name / Loading Moment	
Task name	
Customer	
Truck	VOLVO FH12 6x4 20tonnes rear axle
Crane	EFFER 335/3S MB STD



Loading Moment	
Lifting capacity kg	2650
Outreach mm	10770
M1 = 285 kNm	

Weight of base kg	1790
Weight of boom kg	1740
Dist. Cranes slew. centre - COG of booms at max outreach mm	3900
M2 = 68 kNm	
M1 + M2 = 353 kNm	

Cancel



OK



For changing Stabilizer legs data click on **Legs**-button.

Legs [X]

Distance Cranes slewing centre - First front axle mm 1140

Span of support legs mm 3055 3055 6110

Dist. Cranes slew. centre - Centre of support legs beam -305 -305 -305

Weight of support legs kg 0

Dist. Cranes slew. centre - Centre line of truck mm -410

Span of extra support legs mm 4500

Weight of extra support legs kg 550

Distance Extra support legs - Front axle mm 6570

OK

On this screen the Weight of support legs is 0 kg therefore, that EFFER has given data so, that crane weight includes the standard support legs.

Text Page

VOLVO FH12 6X4 20TONNES REAR AXLE
EFFER 335/3S MB STD

Distance Cranes slewing centre - First front axle	mm	1140
Crane weight	kg	3530
Weight of base	kg	1790
Weight of boom	kg	1740
Dist. Cranes slew. centre - COG of booms at max outreach	mm	3900
Outreach	mm	10770
Lifting capacity	kg	2650
Chassis weight Front axle	kg	4347
Chassis weight Rear axle	kg	4493
Dist. Cranes slew. centre - Centre of support legs beam	mm	-305
Span of support legs	mm	6110
Weight of support legs	kg	0
Distance Extra support legs - Front axle	mm	6570

Span of extra support legs	mm	4500
Weight of extra support legs	kg	550
Distance First front axle - Front axle support point	mm	0
Distance Front axle - Rear axle support point	mm	4985
Track front axle	mm	2000
Track Rear axle	mm	1800

CRANES STABILITY CALCULATION (Measures from tilting line)

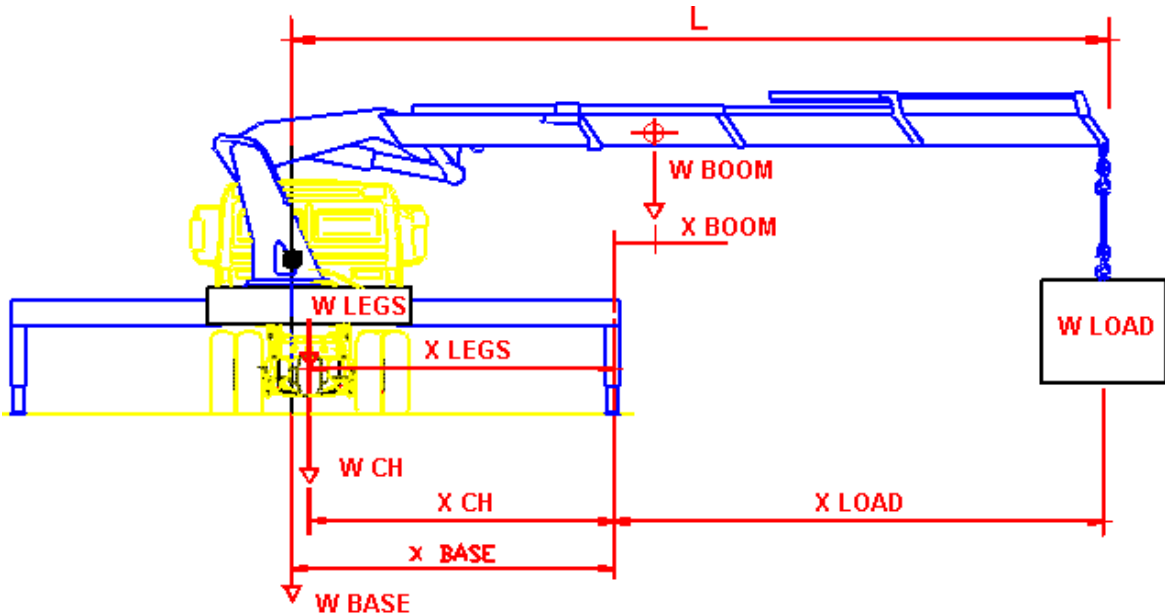
Chassis weight Front axle	4347 x	3,14141	=	13655
Chassis weight Rear axle	4493 x	2,448477	=	11001
Weight of support legs	0 x	3,025342	=	0
Weight of extra support legs	550 x	2,228157	=	1225
Weight of base	1790 x	3,388965	=	6066
Stabilizing moment	Sum			= 31948

Weight of boom	1740 x	0,5110	=	889
Load * Max outreach	2650 x	7,381035	=	19559
Tilting moment	Sum			= 20449
Stability factor n	31948 / 20449			= 1.56

Chassis weight Front axle	4347 x	0	=	0
Chassis weight Rear axle	4493 x	4,80862	=	21605
Weight of support legs	0 x	0,805456	=	0
Weight of extra support legs	550 x	6,33754	=	3485
Weight of base	1790 x	1,207762	=	2161
Stabilizing moment	Sum			= 27253

Weight of boom	1740 x	2,692238 =	
4684,495			
Load * Max outreach	2650 x	9,562239 =	
25339,93			
<hr/>			
Tilting moment		Sum =	30024
Stability factor n	27253 / 30024	=	0.91
n= 1.4 ==> Maximum load 1546 kg			

Principle formulas as follows:



CRANES STABILITY CALCULATION (Measures from tilting line)

Chassis weight	Front axle	WchFront	x	xChFront	= xxx
Chassis weight	Rear axle	WchRear	x	xChRear	= xxx
Weight of support legs		WLegs	x	xLegs	= xxx
Weight of base		Wbase	x	xBase	= xxx
Stabilizing moment					Sum = xxxxx

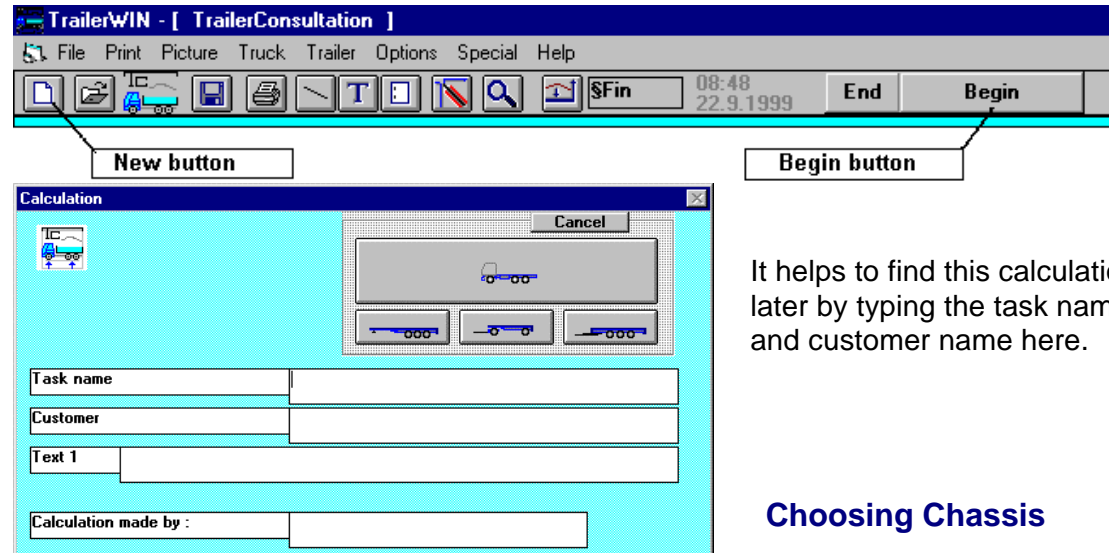
Weight of boom		WBoom	x	xBoom	= xxx
Load * Max outreach		Wload	x	xLoad	= xxx
Tilting moment					Sum =
xxxxxx					

Stability factor n Stabilizing moment / Tilting moment =
n

The guided example 6: B-Double (Tractor + Semitrailer + Semitrailer)

Not allowed on all countries!

To start calculating a new vehicle click on the **Begin** button or **New** button.

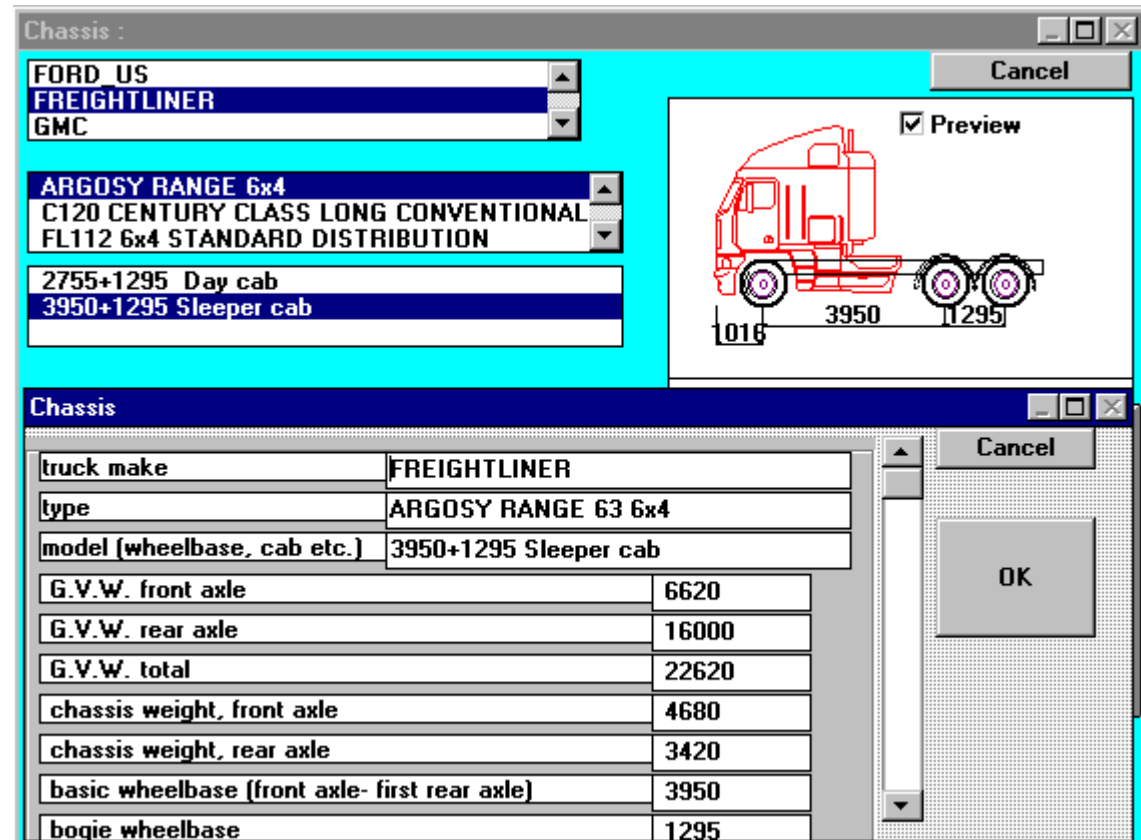


It helps to find this calculation later by typing the task name and customer name here.

Choosing Chassis

Then click

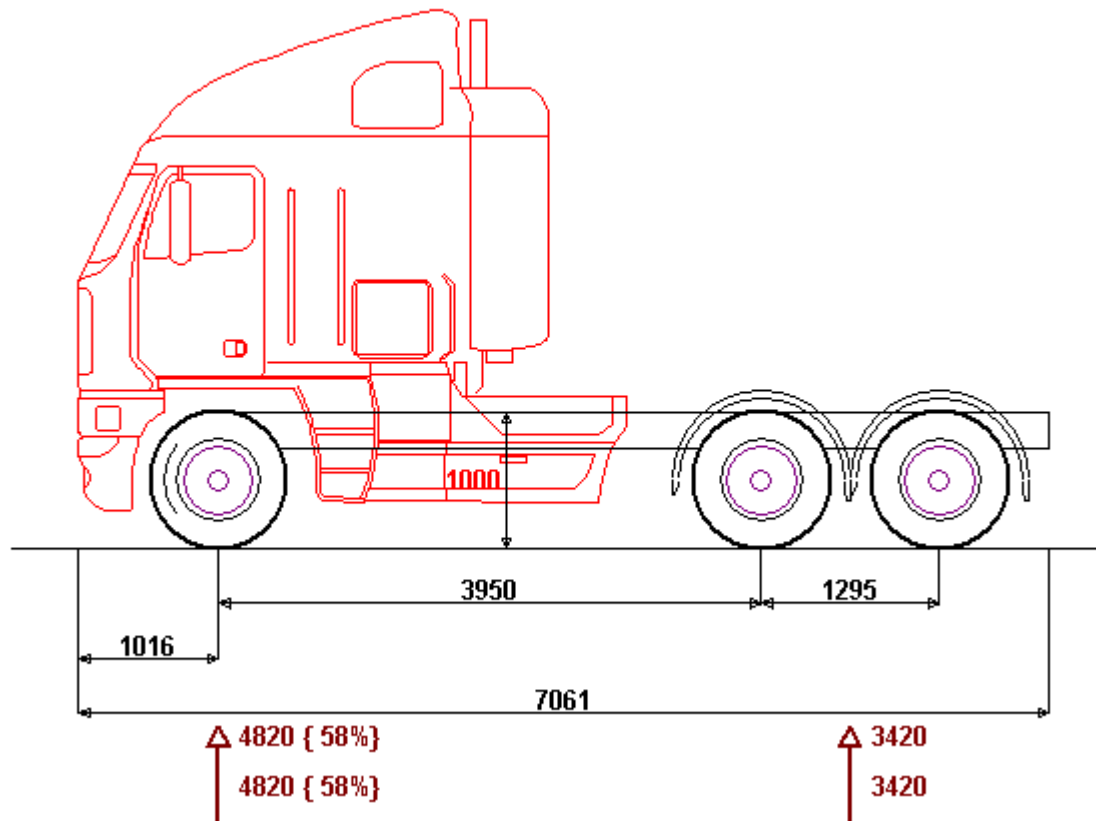
on  for beginning with the truck.



From Chassis Window you can choose the chassis fabricate, then model series and then wheelbase and cab.

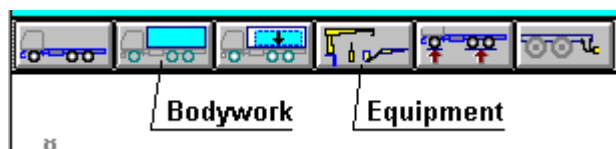
In Chassis data window you can check chassis weights and dimensions

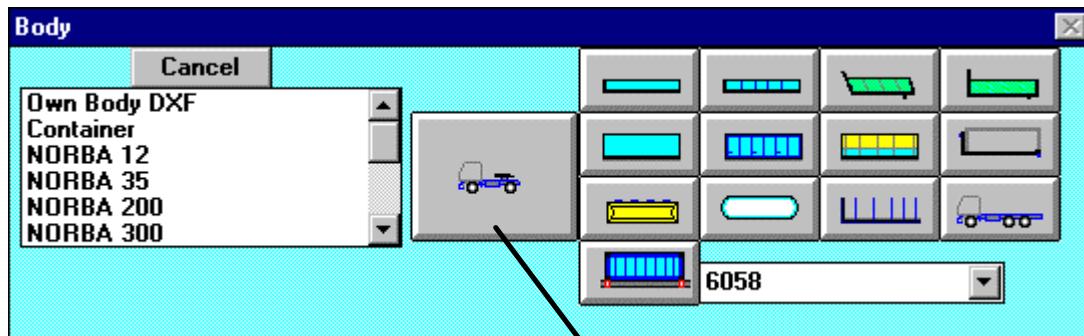
When you are ready, click OK.



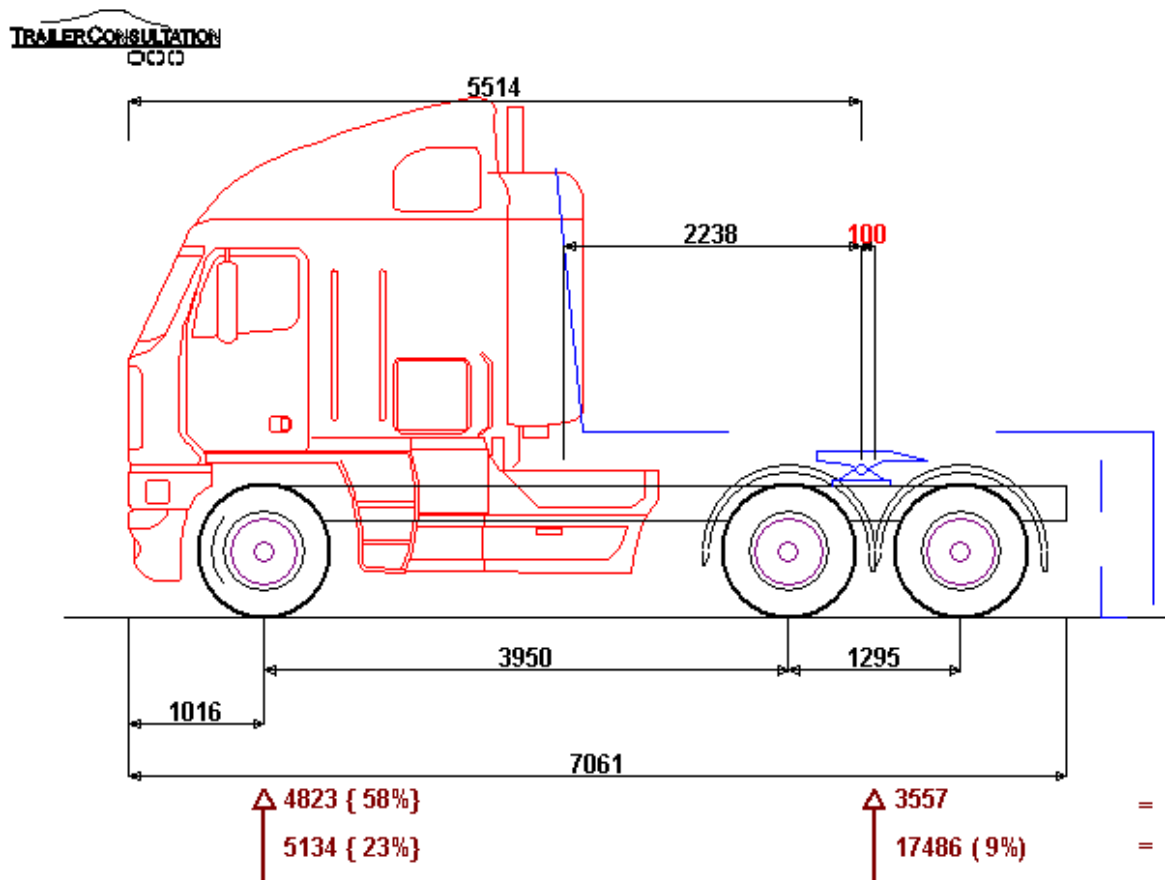
Choosing Fifth Wheel Coupling

Click on the Bodywork button.





Click on the button for the Fifth Wheel Coupling and choose the place.



The program has at first calculated the Fifth Wheel Place so, that the rear axle weight is near maximum allowed, when total weight is on maximum (loading on the fifth wheel is on maximum).

Now the Tractor unit is ready. If you want to add some pieces of equipment, you can choose them using **Equipment - button**.

Axle weights without load and with load on Fifth Wheel Coupling, you see under the picture.

Choosing the Semitrailer

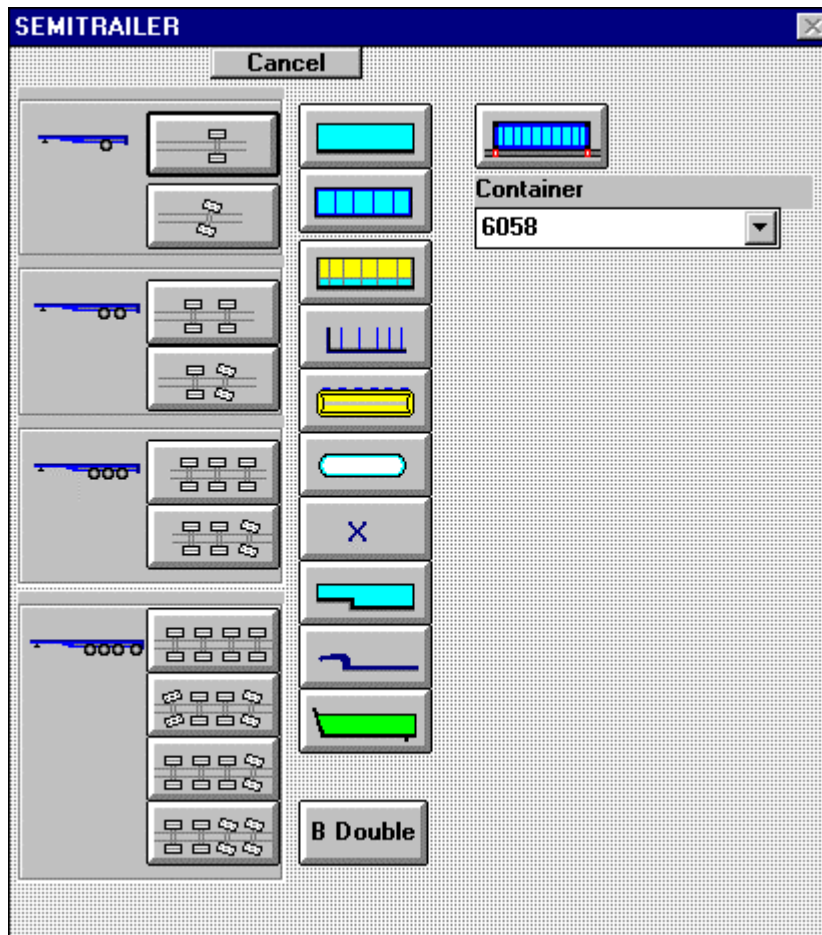
Click on Trailer button



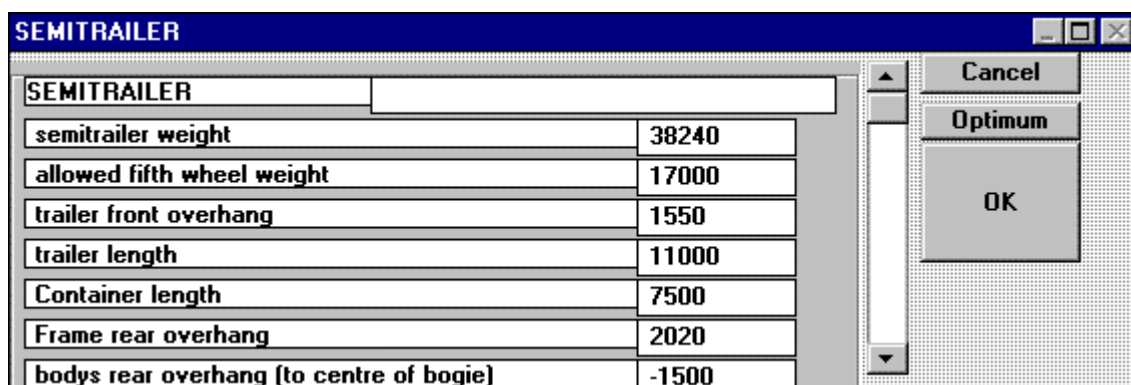
You will get a button group for choosing semitrailer.

You have to make two choices:

- * From the left column: how many axles on trailer and the steering properties
- * From other buttons: Body type, now choose B Double

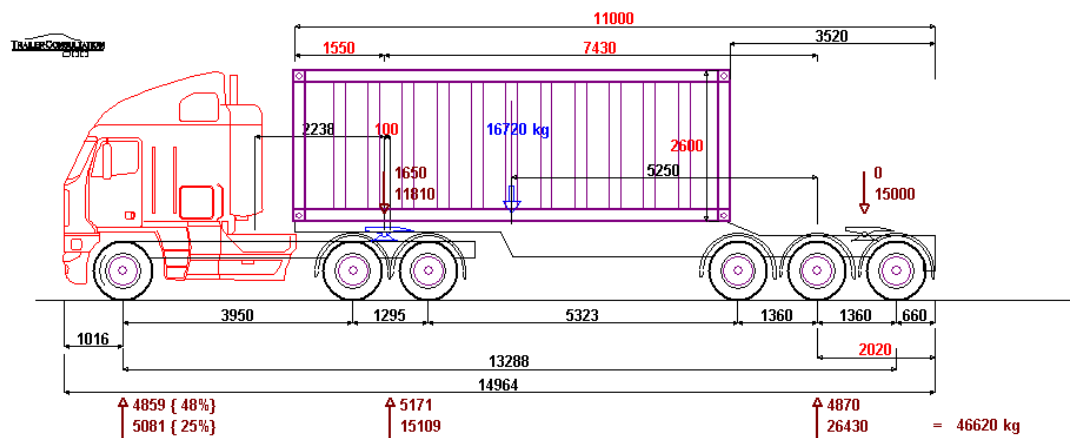


When you have made these two choices, you see the semitrailer data window.



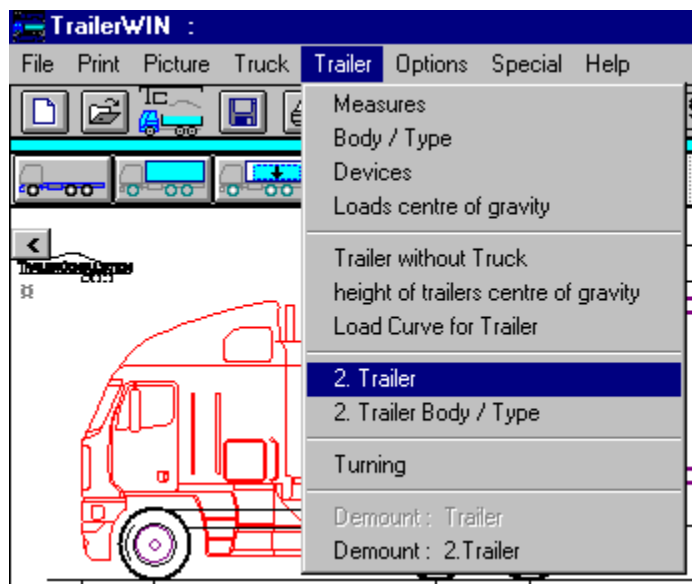
The program has made a calculation for finding the optimum semitrailer. Combination length near the maximum, weight distribution correct and turning in EU circle possible. If needed, you can change the values.

First semitrailer on B-Double is now always as model Container.
 For choosing the container place, use body's rear overhang (to centre of bogie) = for example -1500



Choosing second Semitrailer

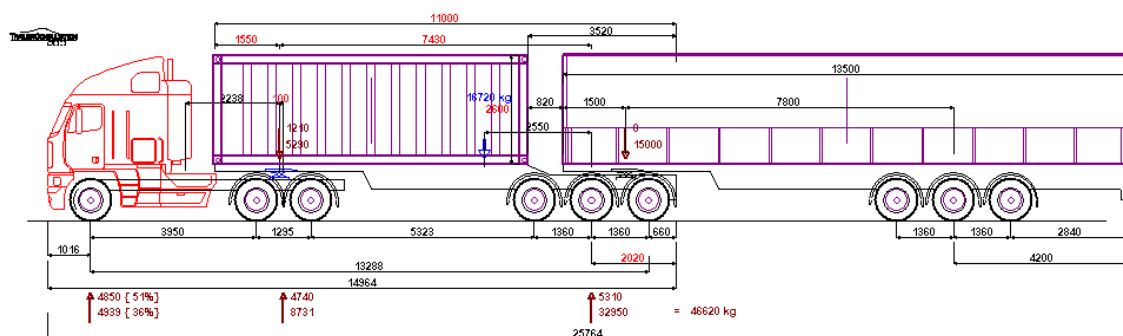
Use **Menu Trailer – 2. Trailer**



Choose axle type and body type for the 2. Trailer.

TRAILER 2	
towing couplings under body measurement_2	1200
SEMITRAILER	
semitrailer weight	36000
allowed fifth wheel weight	17000
trailer front overhang	1500
trailer length	13500
rear overhang (to centre of bogie)	4200
BOGIE WHEELBASE: bogies first axle - middle axle	
	1360

The first item on this screen "towing couplings under body measurement_2" means also the place of the second fifth wheel.



Remember that if you want to change data for 2.Trailer, you have to go through the **Menu Trailer – 2. Trailer** or **Menu Trailer – 2. Trailer Body/Type**

