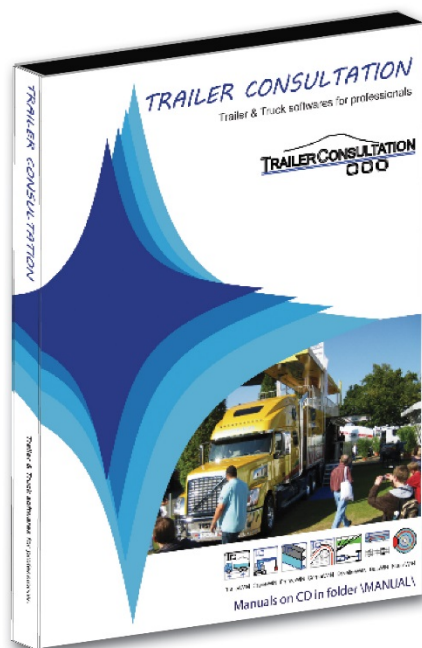


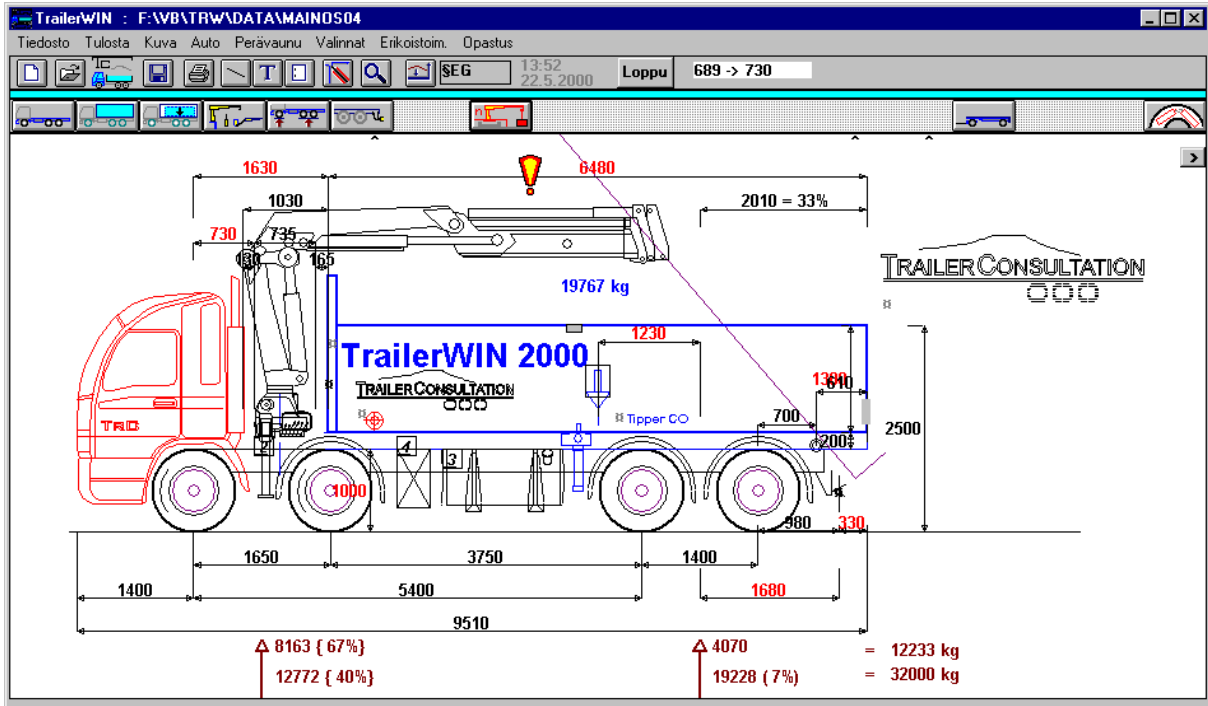
# Trailer Consultation Programs



Trailer Consultation



## Softwares for Commercial Vehicle Technical Calculations



### TrailerWIN

**Truck and trailer constructions :** weight distribution (axle loads), body building, mounting equipment (crane, rear lift, hook lift, truck mounted forklift, demountable, etc.) and turning calculation



### CraneWIN

**Crane stability calculation for a crane mounted on truck**



### FrameWIN

**Subframe calculation for mounting a crane**



### CornerWIN

**Turning calculations**



### BusWIN

**Turning calculations for bus**



### BrakeWIN

**Brake calculations for trailer brakes**



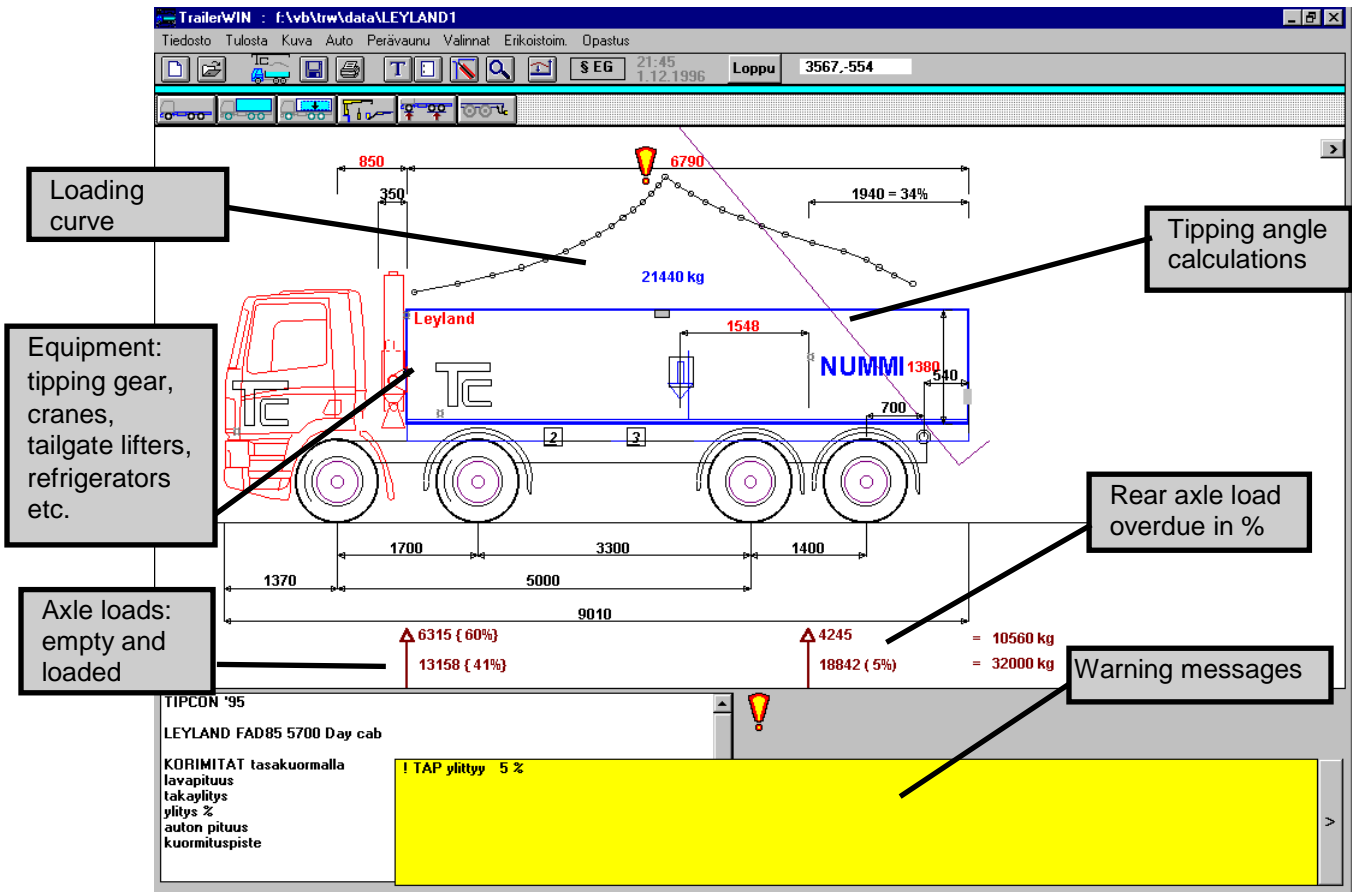
### DrivelineWIN

**Drive speeds and pulling force on tyres on all gears**

#### System requirements for TrailerWIN:

- PC Pentium computer,
- Memory at least 64 Mb
- Free space on hard disc 1800 Mb , when installing all truck- and equipment files
- Windows 95, 98, NT4, W2000 , XP, Vista, Windows 7, Windows 8 & 8.1 (32/64 bit), Windows 10 operating system

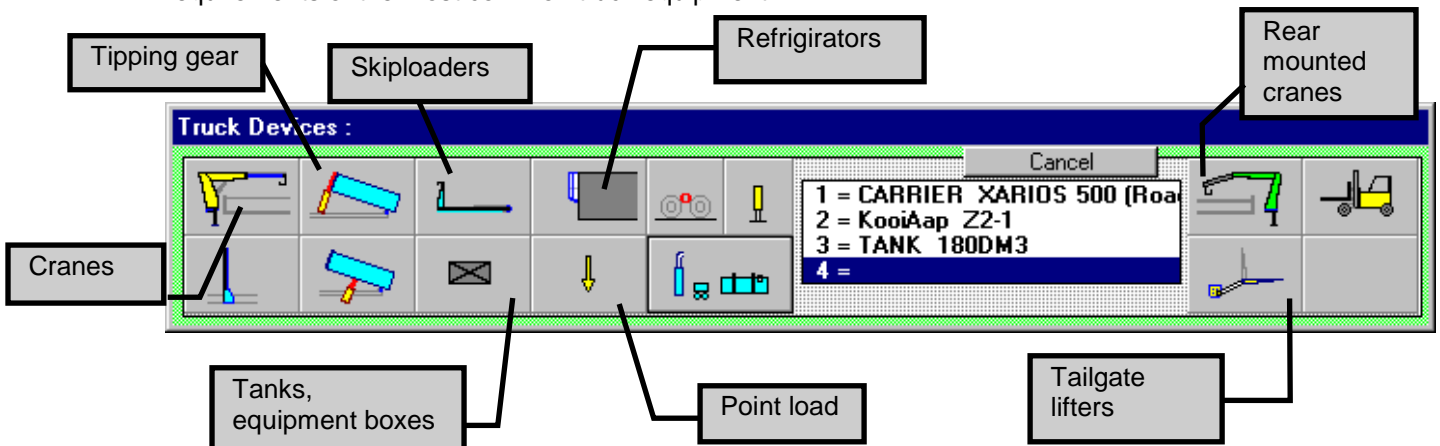
# TrailerWIN Software for commercial vehicle construction

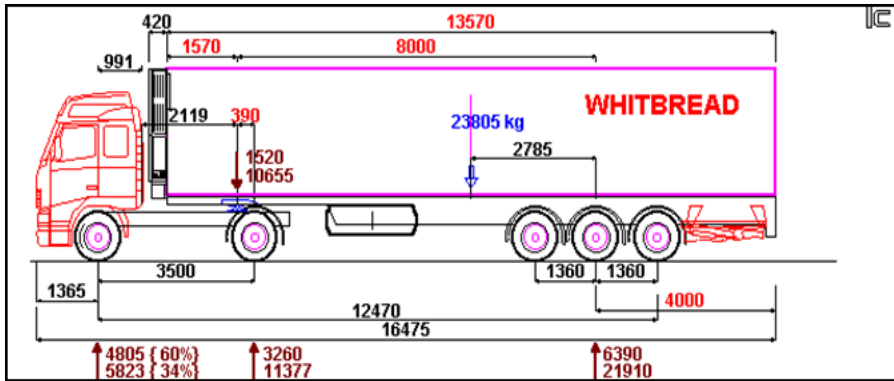


TrailerWIN does the truck body calculations in accordance with weight distribution, total vehicle length, load weight point etc.

TrailerWIN covers data on most models by a wide range of truck manufacturers and data can also be given or changed by the user if needed.

Truck and trailer may have various equipment such as a crane, a tipping gear, a rear lifter, a hook lift, forklift truck, a refrigerator and a lengthened cab etc. TrailerWIN also contains weight and space requirements of the most common truck equipment.





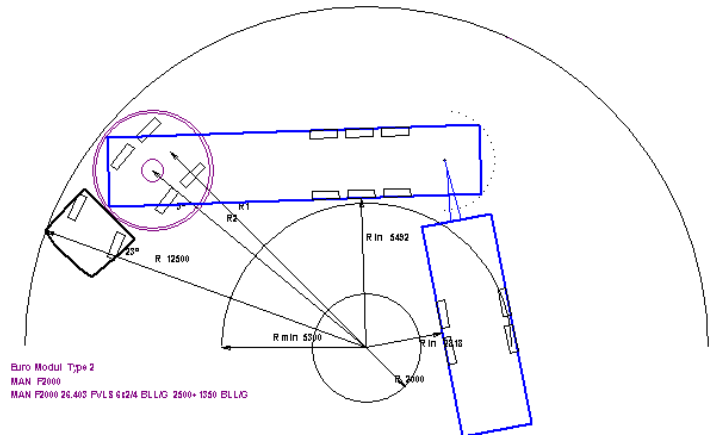
The **TrailerWIN** program identifies the following truck types: 2-5 axle trucks, 2-6 axle trailers, 1-4 axle semitrailers and 1-3 axle center-axle trailers as well as road trains with two trailers.

TrailerWIN allows you to select any truck and trailer combination. TrailerWIN will automatically optimize the dimensions of the trailer. Should these dimensions be

found inadequate, they can be modified to suit the requirements.

TrailerWIN carries out regulation check-ups of dimensions, weight distribution, overhangs, corner clearance and turning calculations of the truck and trailer combination.

The presentation of the truck cab and equipment are created as a real-life picture. You can also check measurements and measure distances with your mouse. It is also possible to add on textboxes to the picture. These can contain e.g. the customer's name or other data. The user has the possibility to draw simple shapes directly to the picture.

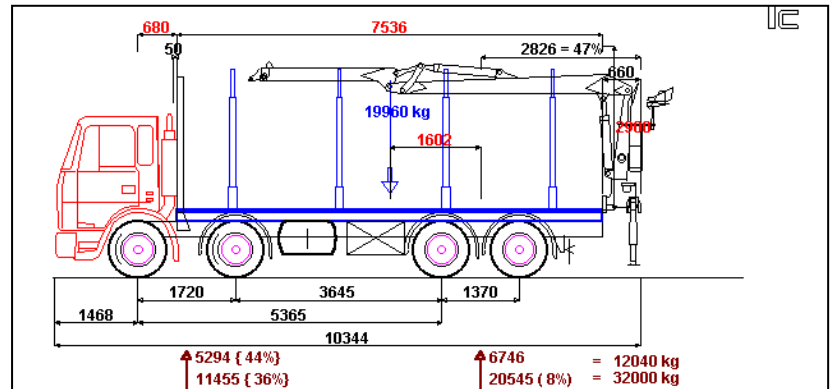


Euro Modul Type 2  
MAN F2000  
MAN F2000 25.403 PVL S 612M ELLAG 2500+ 1050 ELLAG

The calculation can be saved as a file and be brought up for later modification.

The picture of the truck or combination can be moved to other Windows programs by using clipboard. The picture can also be saved as a BMP-file or a DXF-file for later use in i.e. AutoCAD.

The program allows the use of own DXF-drawings from i.e. AutoCAD for truck body pictures.



**The TrailerWIN software is easy to use.**

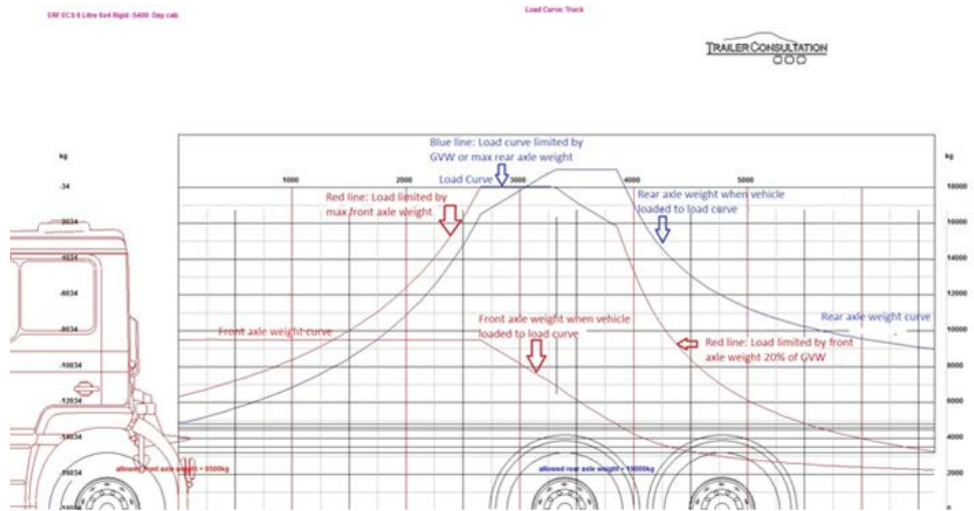
**The user does not have to be a computer wizard to master the program, he should however be familiar with the concept of building trucks.**

Painotaulukko				
	Mitta	Ea	Ta	yhteensä:
+ Alustan paino		5090	3580	8670
+ henkilöiden lukumäärä	2	0	176	-26
+ kuormatilan omapaino	80 kg/m	4152	172	368
1 NUMMI EWC 137-152/70	695	578	-18	560
2 Tank	2900	173	127	300
3 Tank 2	3910	125	215	340
= Painot tyhjänä :		6315	4245	10560
+ kantavuus	4152	6843	14597	21440
= Painot kuormattu :		13158	18842	32000
:: AUTOLLE SALLITUT PAINOT		14000	18000	32000

Weight calculation in table

## Examples of loading / de-loading curves in TrailerWIN:

**Loading curve.** Shows where to put COG of load and how much we must reduce total load if COG of load is placed forwards or rearwards from optimum. The diagram shows also the actual axle loads during loading.

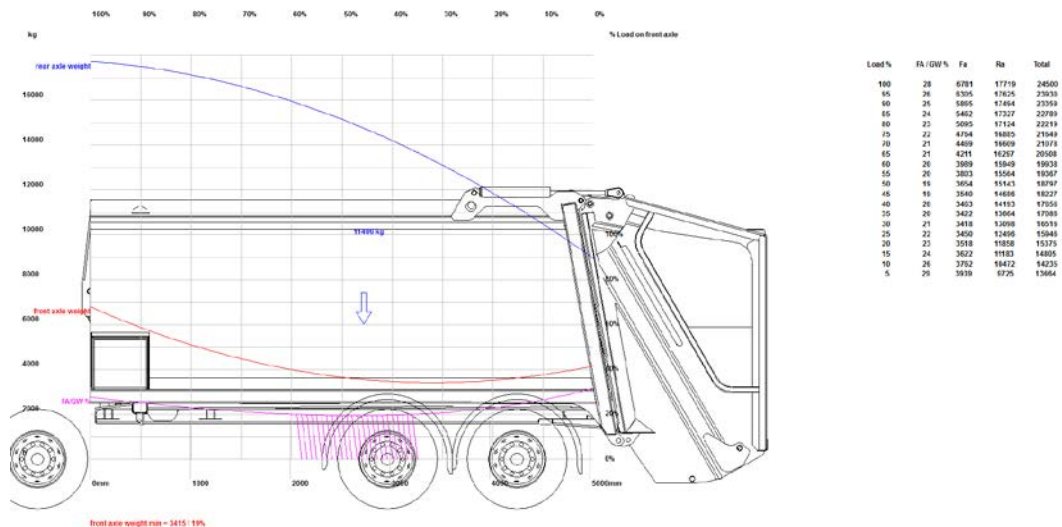


### De-loading Curve.

Shows axle weights in de-loading process when unloading from the back. Example: unloading a semi-trailer.

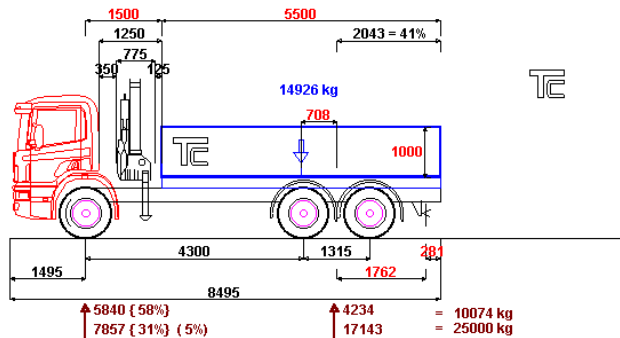


**Loading curve for garbage truck.** The program also gives you the opportunity to check axle weights when the body is being loaded from the rear, i.e. garbage trucks.



## CraneWIN

A software for crane stability calculation



The **CraneWIN** software is designed to be used together with TrailerWIN.

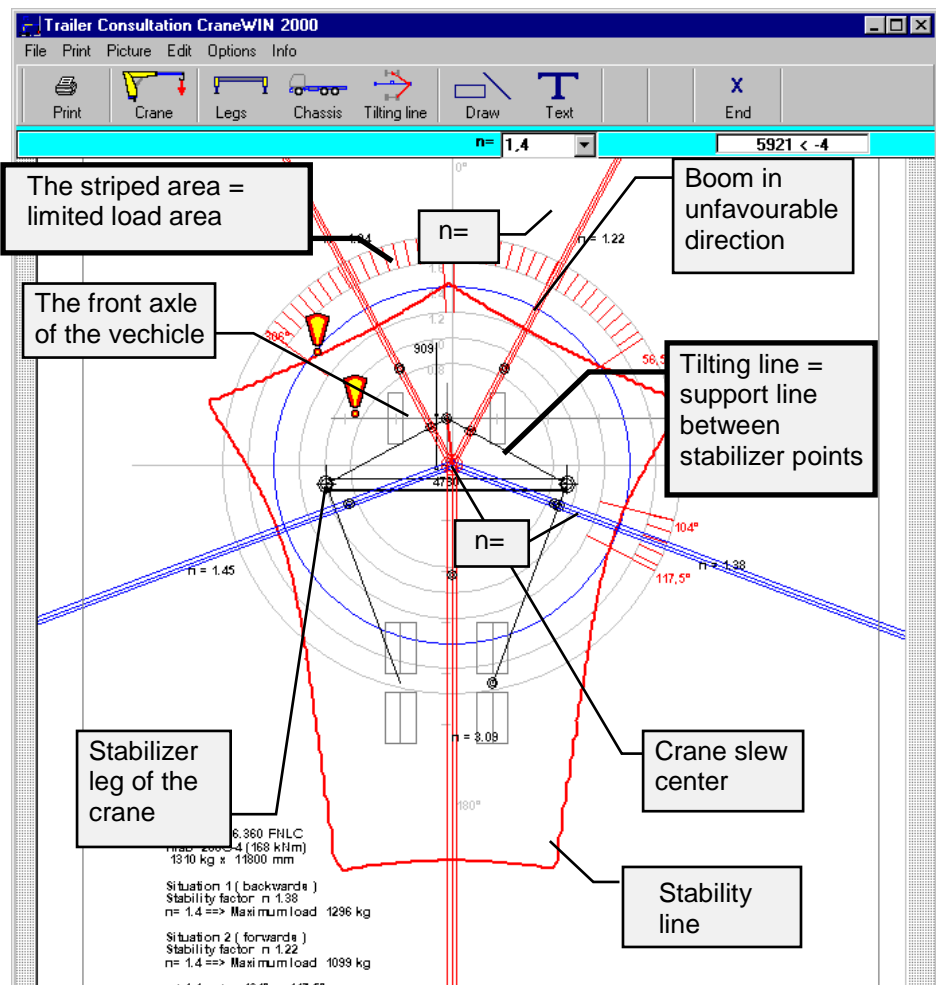
Building up the truck with crane and making the weight calculations is to be done in TrailerWIN. After this we can continue to CraneWIN for checking the stability of the vehicle.

CraneWIN shows a circle diagram with stability factors  $n$  in all directions.

The stability is shown as a red curve in the diagram. The picture also shows a striped area where the stability is smaller than the required stability factor  $n$ .

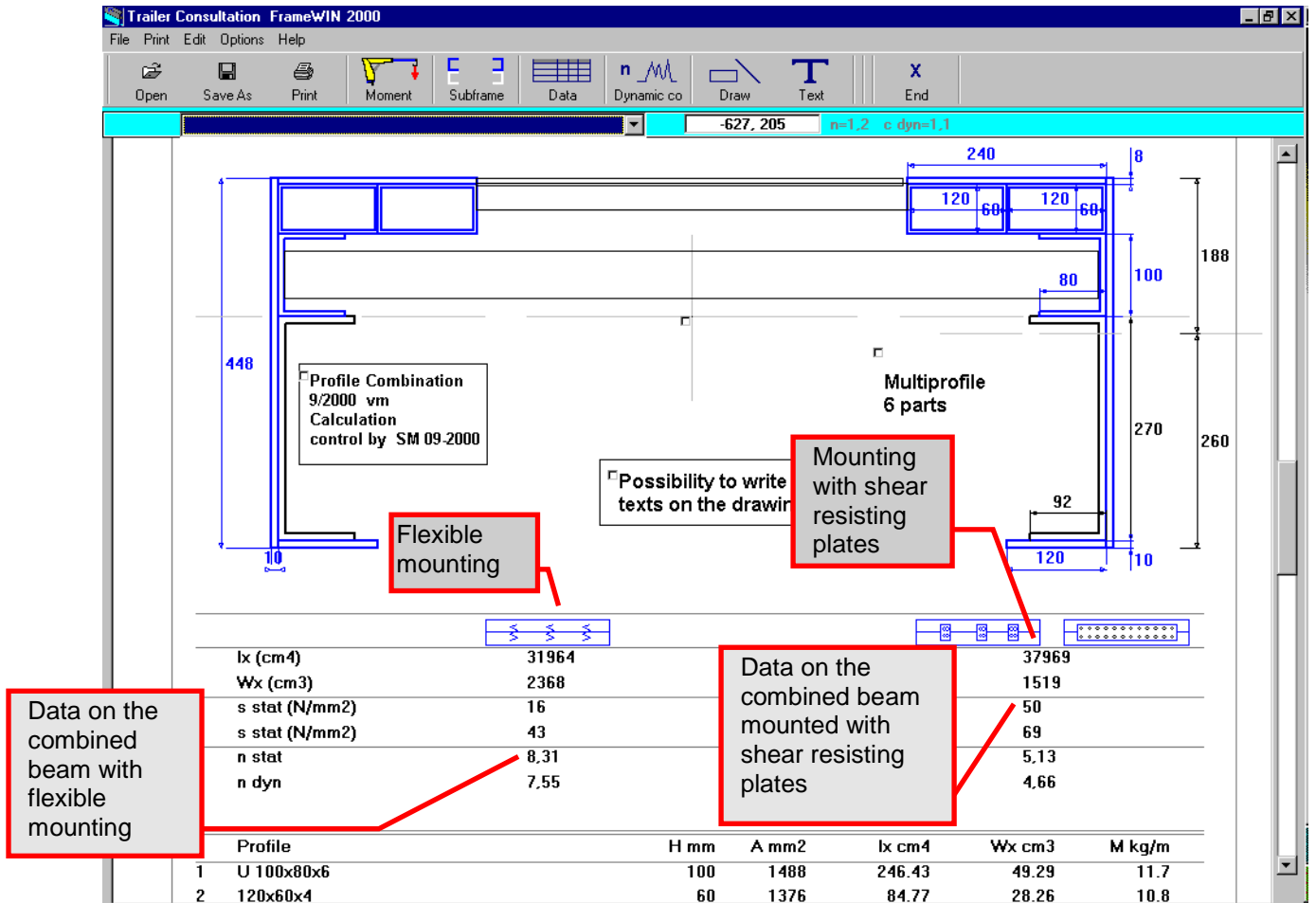
You can also see all the support points and tilting lines as well as the stability factors ( $n$ ) and the maximum allowed load in all critical directions.

This calculation method follows the SFS 4677 standard. The requirements on the size of the stability factor varies in different situations and between different countries. According to the SFS requirement, the stability factor ( $n$ ) should be at least 1,4.



# FrameWIN

## Subframe calculation



FrameWIN is a software created for subframe calculation and it helps you to choose a suitable subframe-profile when assembling crane and tailgate lifters.

Data on lifting capacity and forces on frame beams will be transferred automatically from TrailerWIN to FrameWIN.

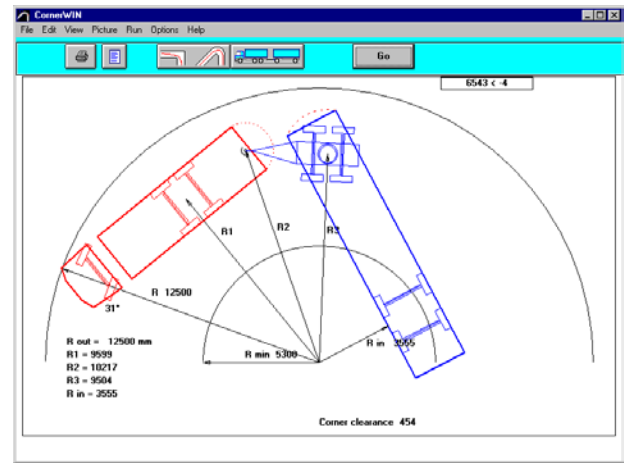
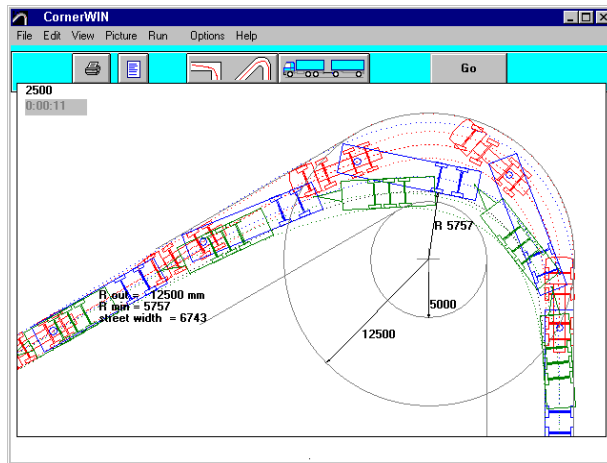
In the picture shown above you can see a cross section of the calculated chassis frame with the subframe mounted on top of it. On the left side of the picture, beams are mounted flexibly. On the right side of the picture, beams are mounted with shear resisting plates.

Below the beams you will see the calculation results for the combined beam:

Second moment of area	lx	( cm <sup>4</sup> )
Section modulus	Wx	( cm <sup>3</sup> )
Stress (on the subframe)	s	( N/mm <sup>2</sup> )
Stress (on the chassis frame)	s	( N/mm <sup>2</sup> )
Safety Factor Static	n stat	
Safety Factor Dynamic	n dyn	

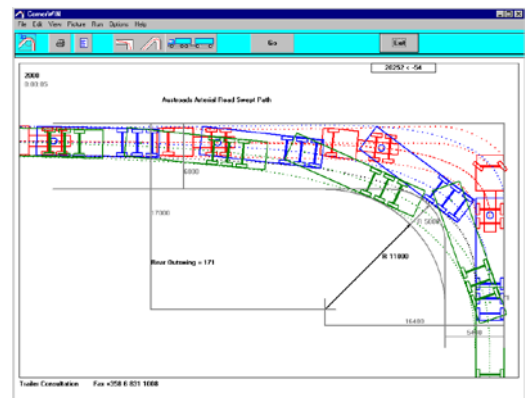
The program gives you the option to use the EN12999/13001 standard.

## CornerWIN A software for turning simulations



CornerWIN provides the following simulation possibilities:

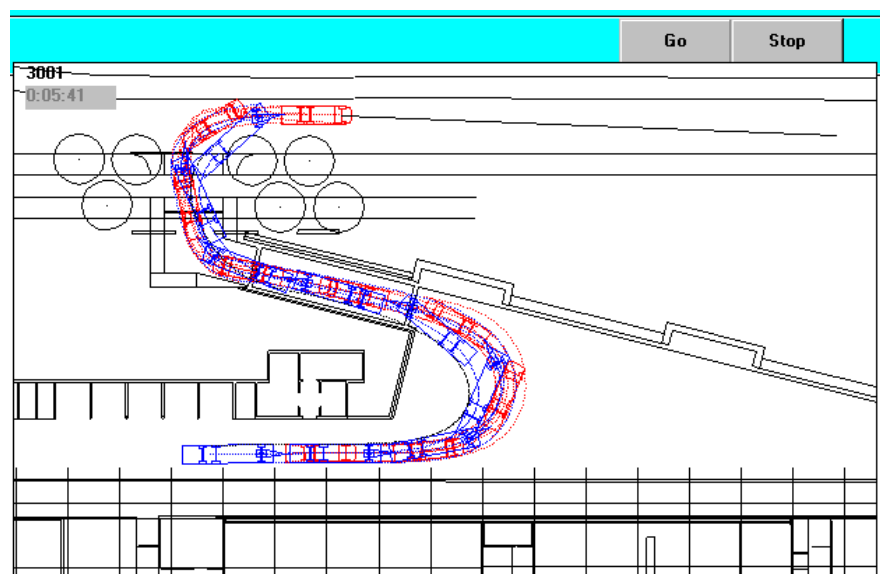
- Turning in EU-circle (12,5 m circle)
- Turning in 120° arc, Turning in 180° arc etc.
- Driving in continuous circle,
- 90° rectangular corner. (Swedish rule).
  
- Turning in 360° arc
- Turning in arc, with chosen angle
- Pull feature which allows you to drive the combination with the mouse.
- Possibility to add own DXF-drawings as street- or yardview
  
- The picture can be saved as a DXF-file for further use in a CAD program.



CornerWIN is normally used in conjunction with **TrailerWIN**. The dimensions for the truck and trailer are made in TrailerWIN and this combination will be transferred automatically to CornerWIN.

CornerWIN also contains modelcombinations, such as trailers where all tyres are steerable and specialtrailers with up to 15 axles.

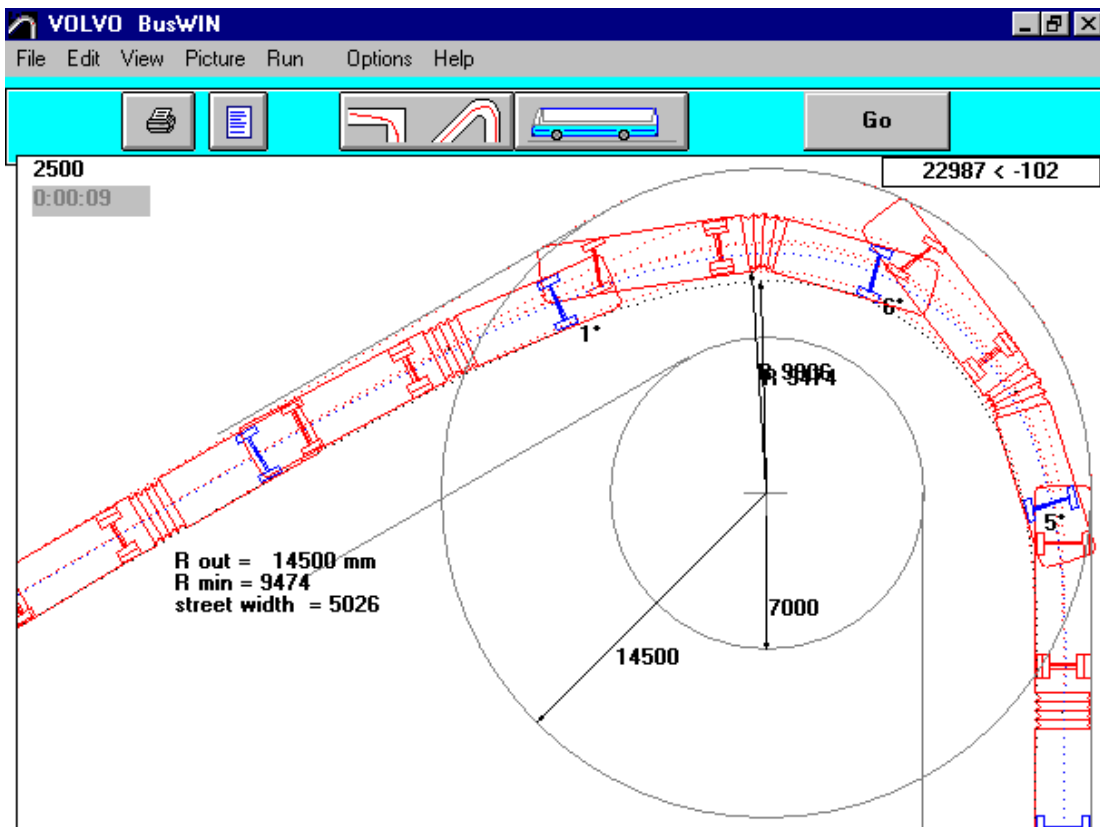
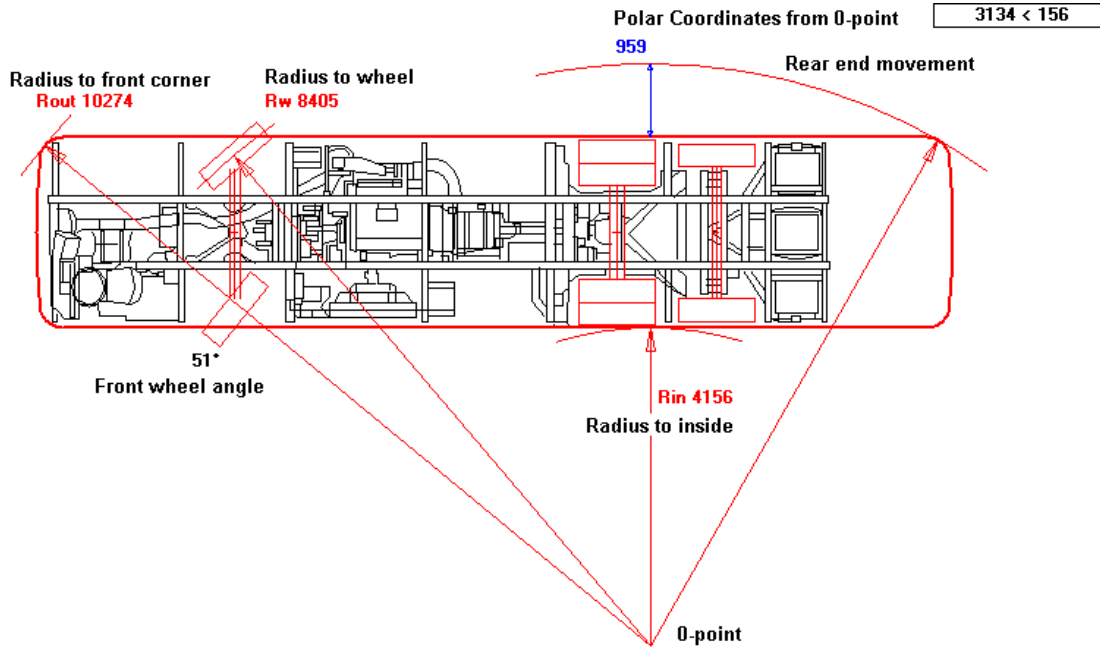
It is also possible to use **CornerWIN** as a standalone module without TrailerWIN.





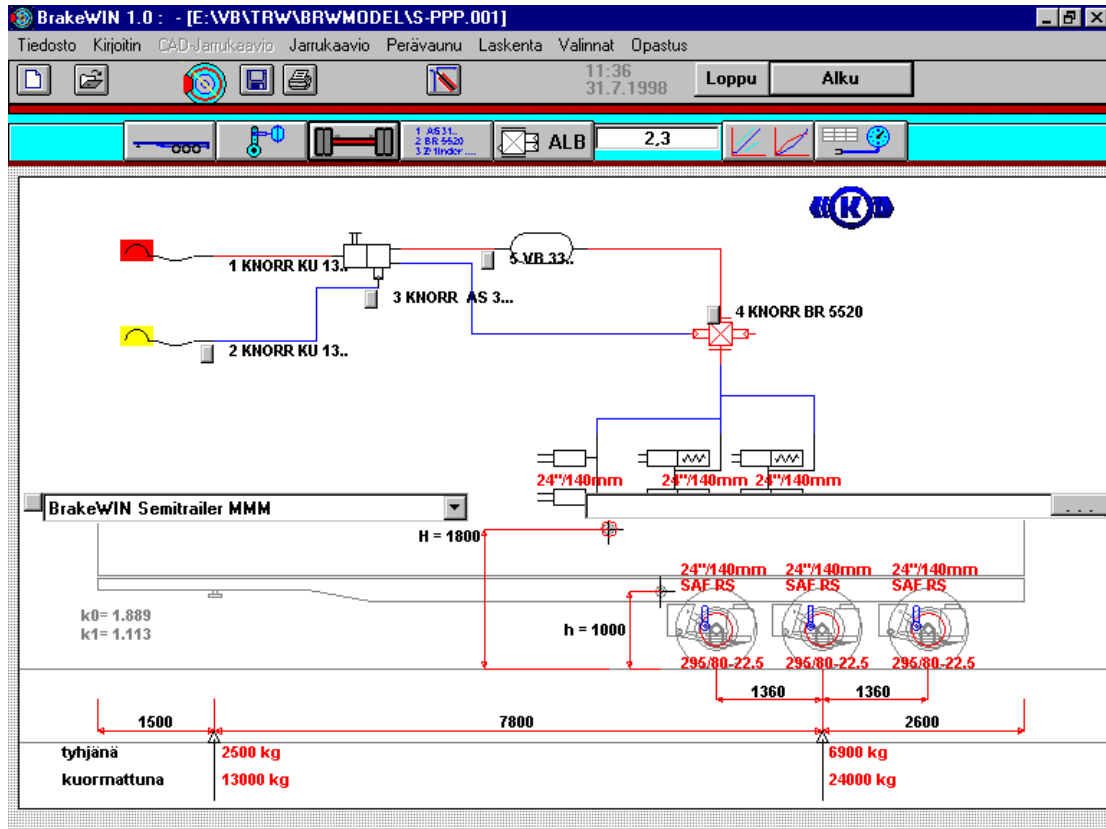
## BusWIN Turning Calculations for Bus

Same functions as in CornerWIN, but specifically designed for buses.



# BrakeWIN

## A software for Trailer brake calculation

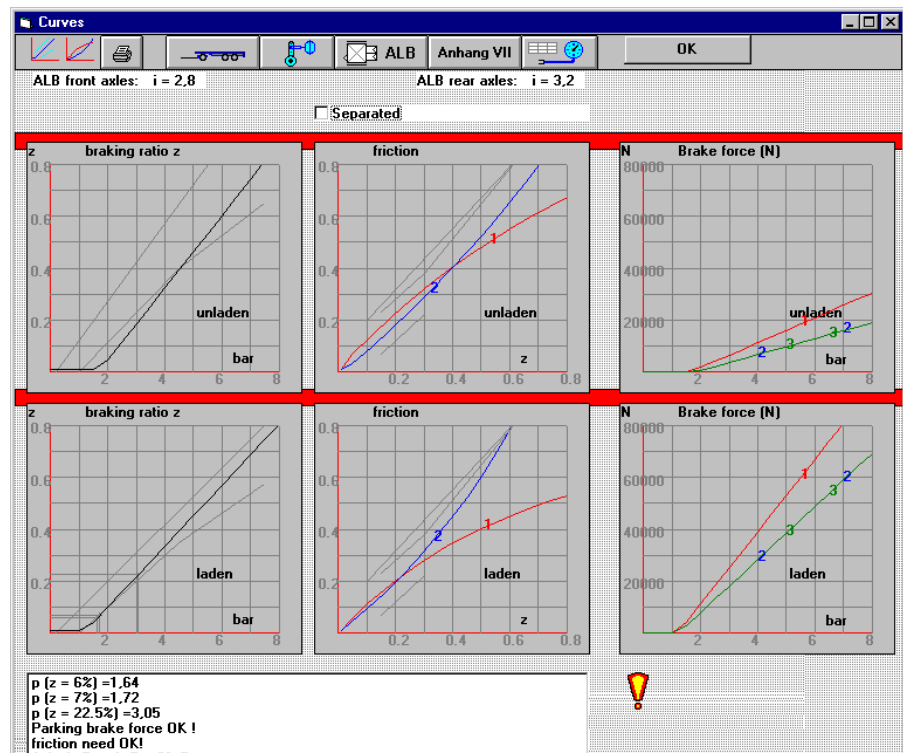


**BrakeWIN** does the theoretical brake calculation for trailer brakes.

The user can choose: axles, tyres, brake cylinders, levers, valves (also EBS valves included), from the menu in listboxes.

BrakeWIN calculates braking ratio, coefficient of friction, brake forces, etc. for different control pressures.

The program allows you to print the brake corridors and other documents needed for trailer brake approval.



## DrivelineWIN Driving speeds and pulling forces on all gears

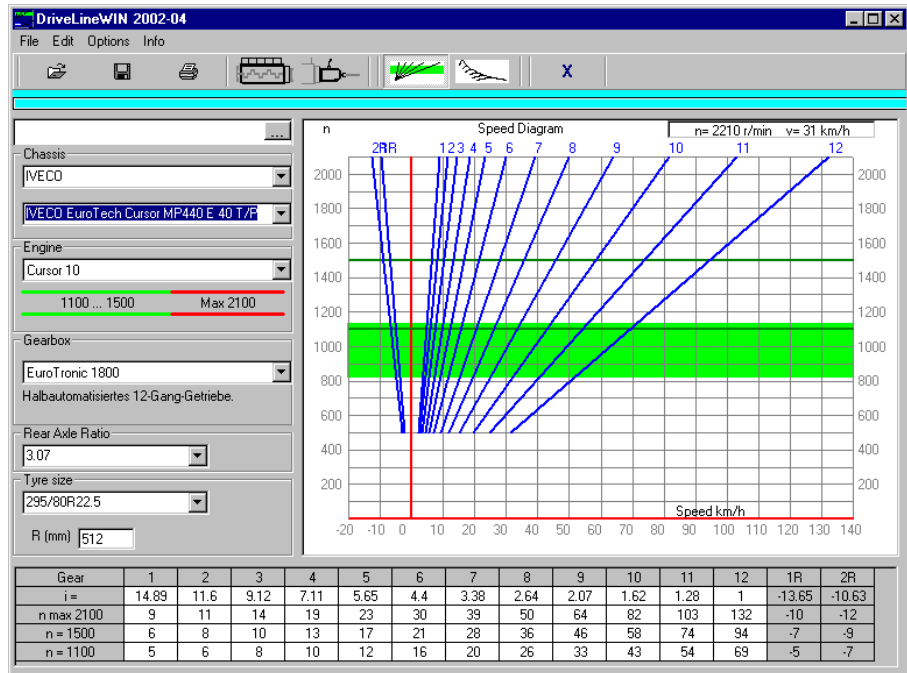


DrivelineWIN is a software for calculating the driving speeds and pulling forces on all gears.

The program contains data on a variety of truck models.

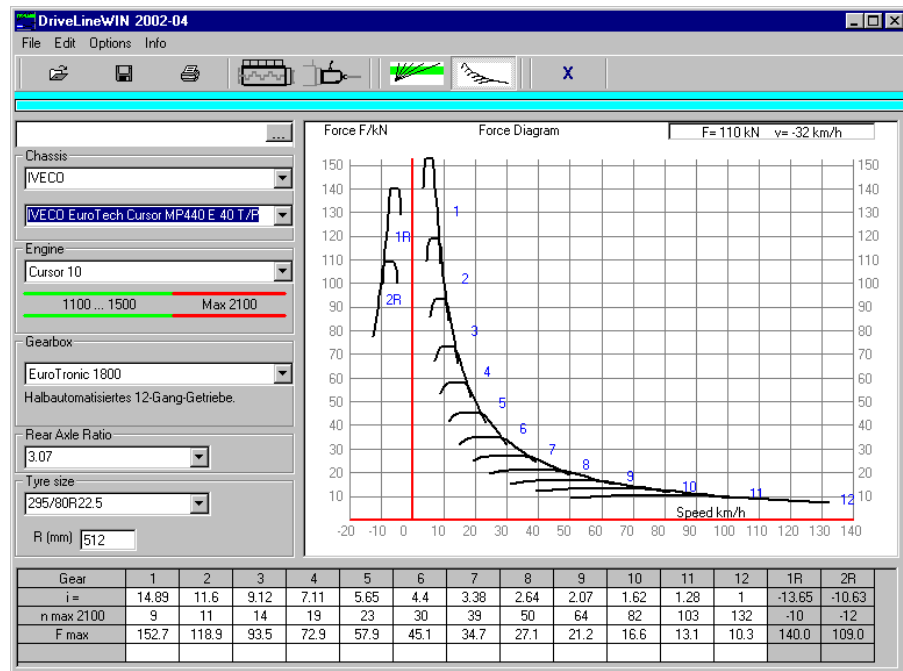
The user can modify this data to match their own needs.

It is also possible to add own engines and gearboxes.



DrivelineWIN is mainly used for trucks and buses, but it is also possible to calculate such diagrams for passenger cars.

The program also contains hill climbing performance diagrams.



## Retailers

For other regions please contact Trailer Consultation

### Germany, Austria and Switzerland :

FAHRZEUGTECHNIK KLUG  
Hans-Peter Klug  
Muthstr. 20 a 74889 SINSHEIM  
Germany  
Tel + 49 (0)726 164 776  
Fax + 49 (0)726 124 83  
[www.klug-fzt.de](http://www.klug-fzt.de)

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Hans Haueter  
Laubisrütistrasse 74 8712 STÄFA  
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Fax + 41 44 928 30 19

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[www.pto.no](http://www.pto.no)

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Mobile + 32 478 387 374  
[www.trailerwin.be](http://www.trailerwin.be)

### UK and Ireland :

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Alan Lines  
17 Hangleton Way, Hove, E. Sussex BN3 8AA  
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Mobile + 44 7802 690 858

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TRANSPORT CERTIFICATION SERVICES  
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VICTORIA 3156 Australia  
Phone + 61 3 98 87 39 95  
Fax + 61 3 98 87 37 75  
[www.transportengineer.com](http://www.transportengineer.com)

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