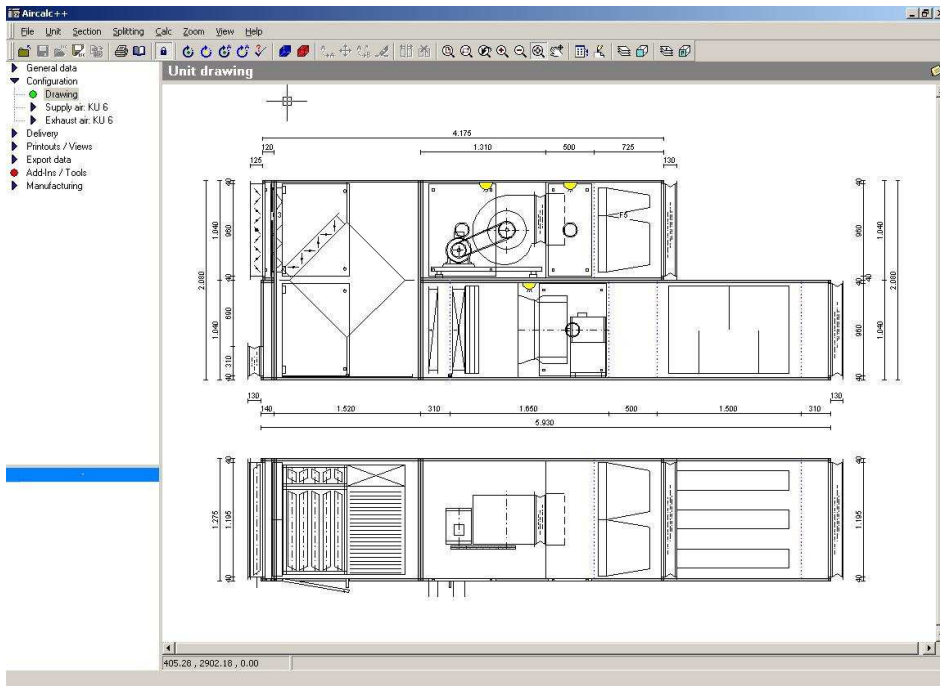


# USERS GUIDE



August 2005

English version

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## The first start of the program

After the program start ( double click on the icon Aircalc++ Office ) will be opened the login mask for the selection program. Please fill in the datas received by your program distributor :

Main license

Sub license

User name

Password

Language ( for program masks )

Save password ( if you select this option you avoid to type it again on every program start )



Use this button, if you received a license file from your program distributor !

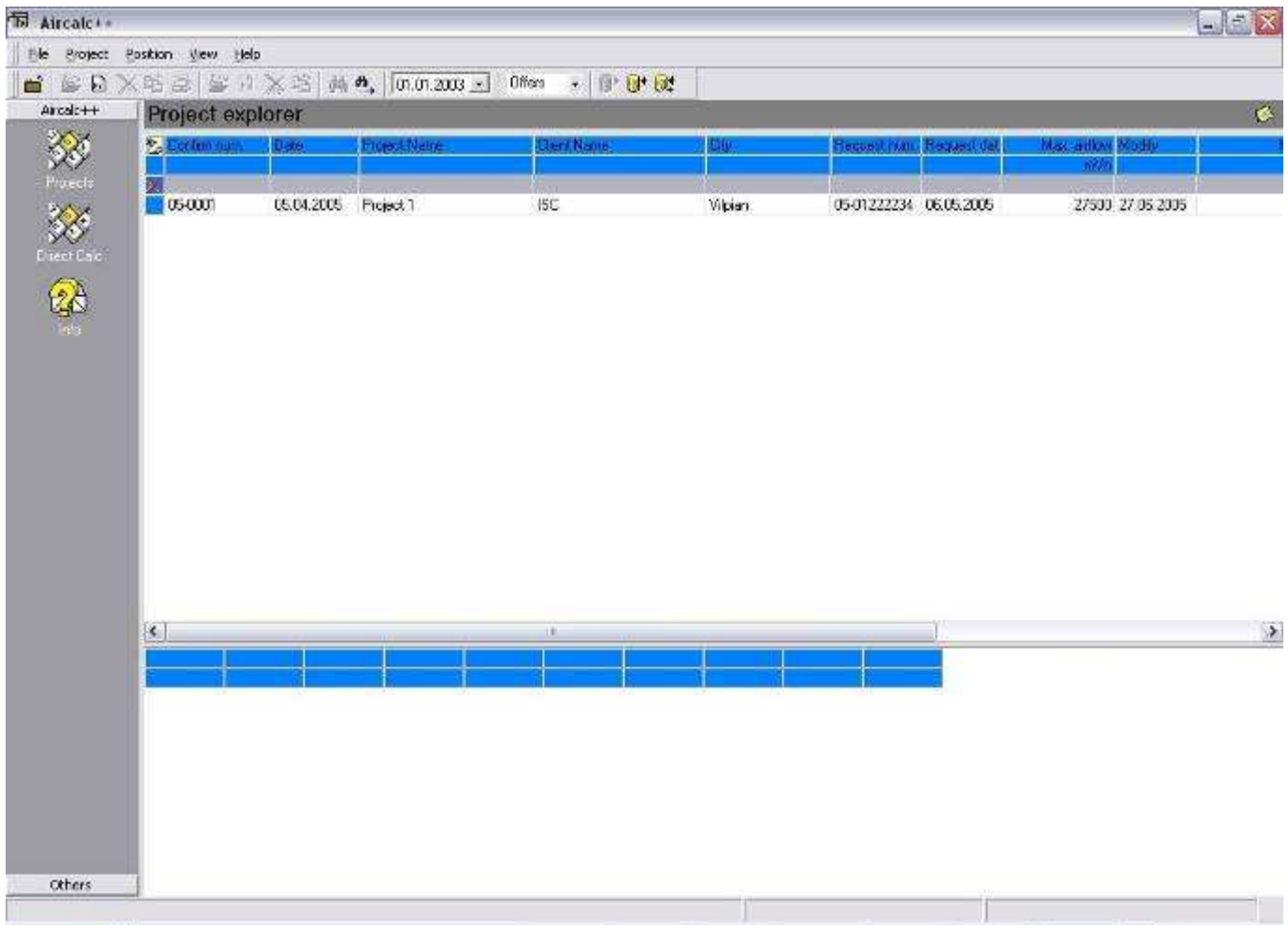
## The first mask



This is the first mask presented after the login on the program. Here the user can start to use the program and select between the following options :

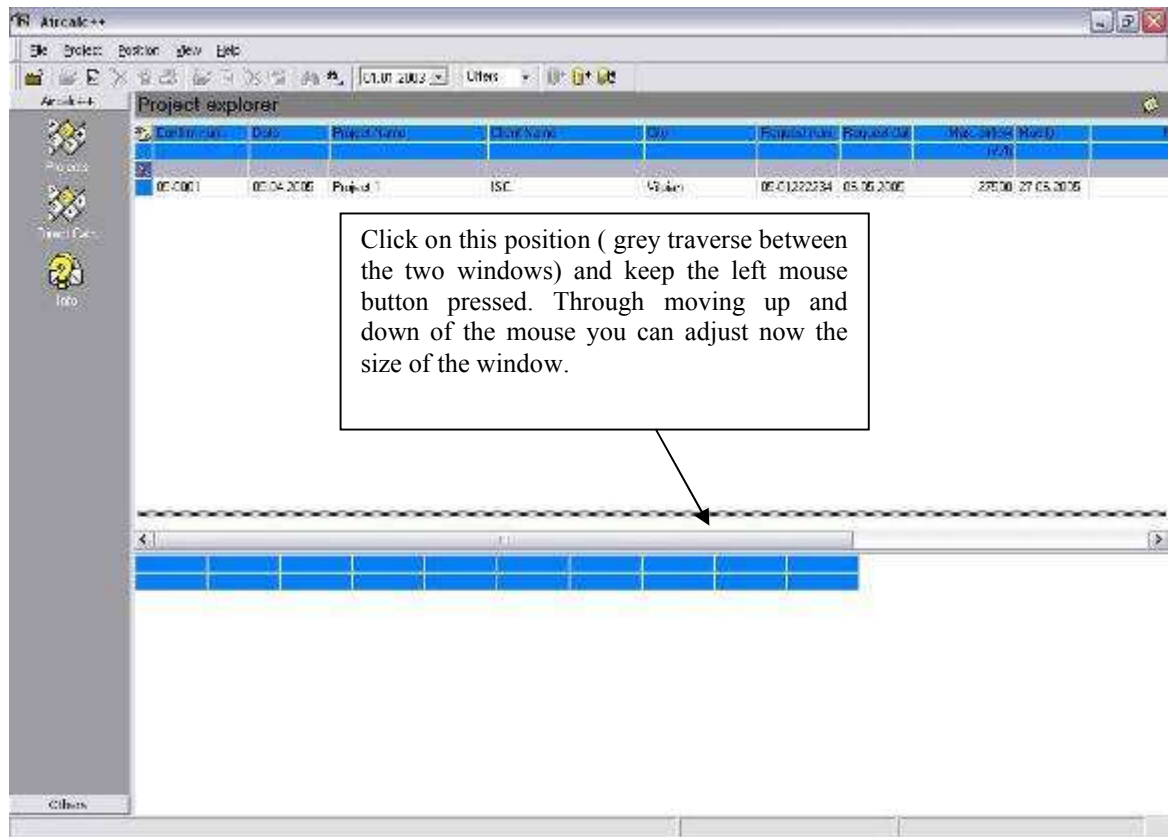
- **Projects**  
Click here, if you want to manage your projects, to open or change it. You can create new, empty projects, copy , export or import from other Aircalc users.
- **Direct calc**  
Click here, to make a selection without saving on the project explorer mask. Doing a selection with this programm point, the user can save the calculated unit to a separate file ( not to the program database file ) But there exist a possibility, to import this selection to the project explorer ( [click here](#) for more information )
- **Info**  
Click here, if you want to have some informations about your program distributor

## Project explorer

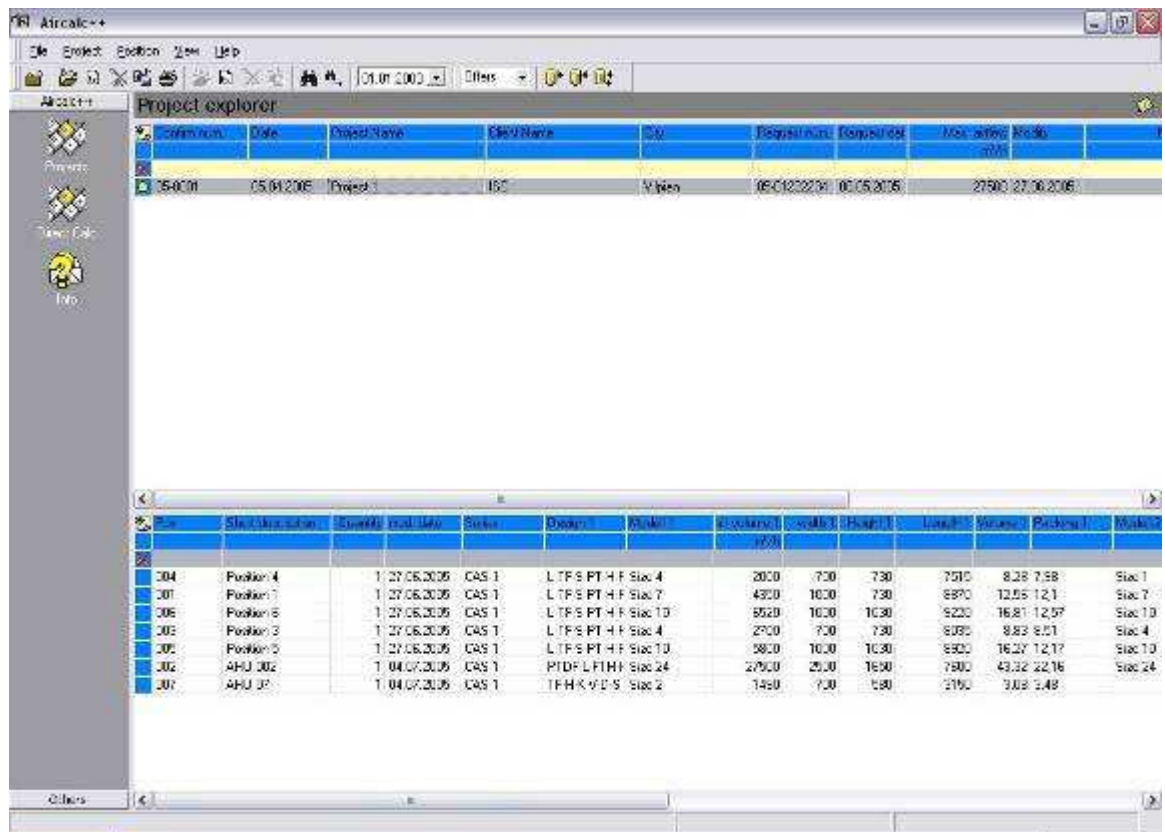


The Projectexplorer is be used for the administration of projects in the program. Projects (offers,orders) are stored in the data base and can become by means of the Project explorer simply worked on, changed, stored, deleted, etc.. In the top of the window you see the stored projects, in the lower part the positions pertinent to the project selected in each case.

The user can change the window size, by clicking with the mouse on the narrow horizontal bars between the two windows and then the mouse with pressed key upward or downward move. ( the pointer of mouse changes automatically its form as soon as you on the correct position between both windows is (see next illustration).




















- If you click on a line in the Projectexplorer (background of the selected line changes the color and becomes blue), then in the lower window the attached positions are indicated.
- By one doubleclick on a project line the project editor for working on the project one starts.





### Icons on the project explorer:



Icon	Description
	Close the windows
	Open the actual, selected project. To select a project, make a simple click with the left mouse key on the desired line. If you click with the right mouse key ( or make a double click with the left mouse key ), the program will open the project.
	Create a new, empty project
	Delete the actual project. If the user click on this symbol, all the positions will be erased.
	Copy of the actual project
	A project printout (collecting printout over several positions within the project). With this symbol the user has the possibility of starting by only one command the printouts of the technical data, prices, drawings ecc...
	Open the actual, selected position
	Create a new, blank position
	Delete the actual, selected position
	Copy the actual, selected position
	Searches for projects. If the program user have many projects in the list, then you can click simply into the desired column, in that you to search would like and then on the point of menu "searches".
	Search again
	Project date: With this date the user can define, from wich data the programm should start to show the projects on the project explorer
	Project type: Select here the type of the project, offer or order ( only the selected project type will be displayed on the mask !! )
	Export from projects. With this symbol you can projects export and completely with all positions in a file store. You can send this file then by means of E-Mail to other Aircalc users.
	Import of projects. Exported or by external users received projects can again be imported here.
	Import datas from a file created with the Direct calculation or from other projects

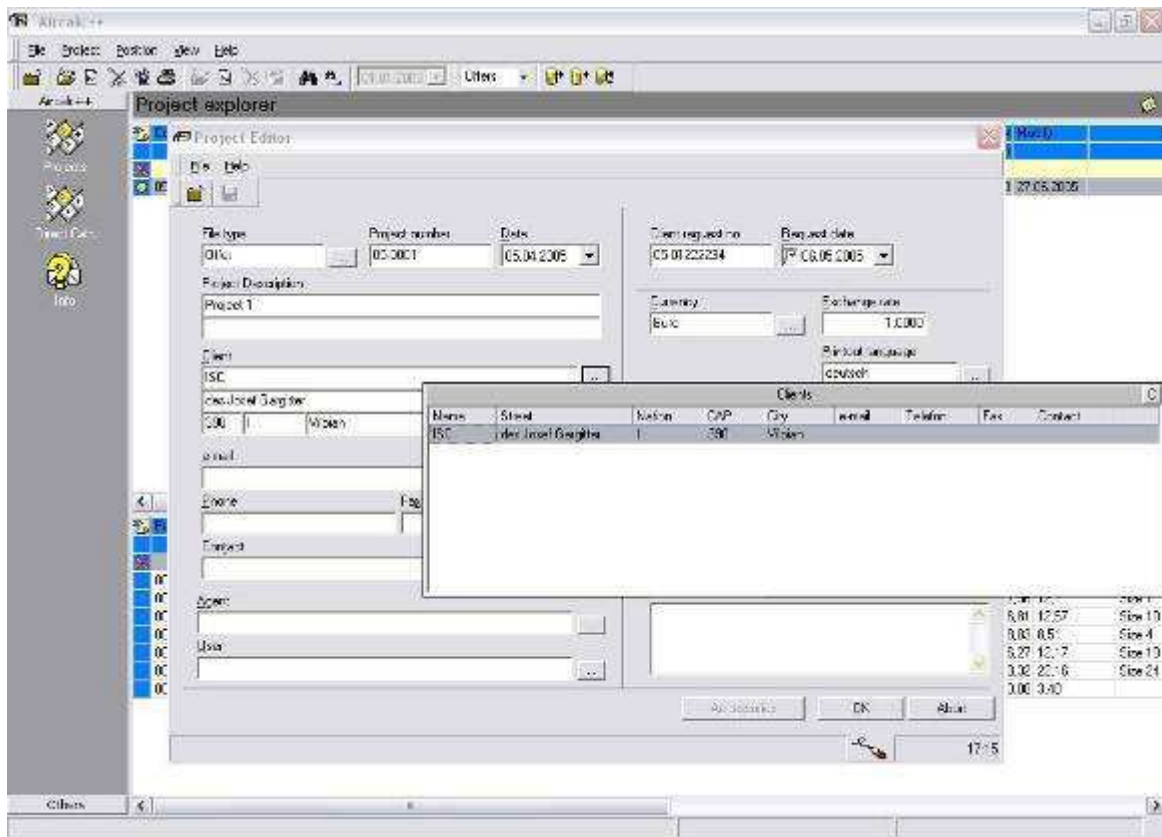


## Project editor

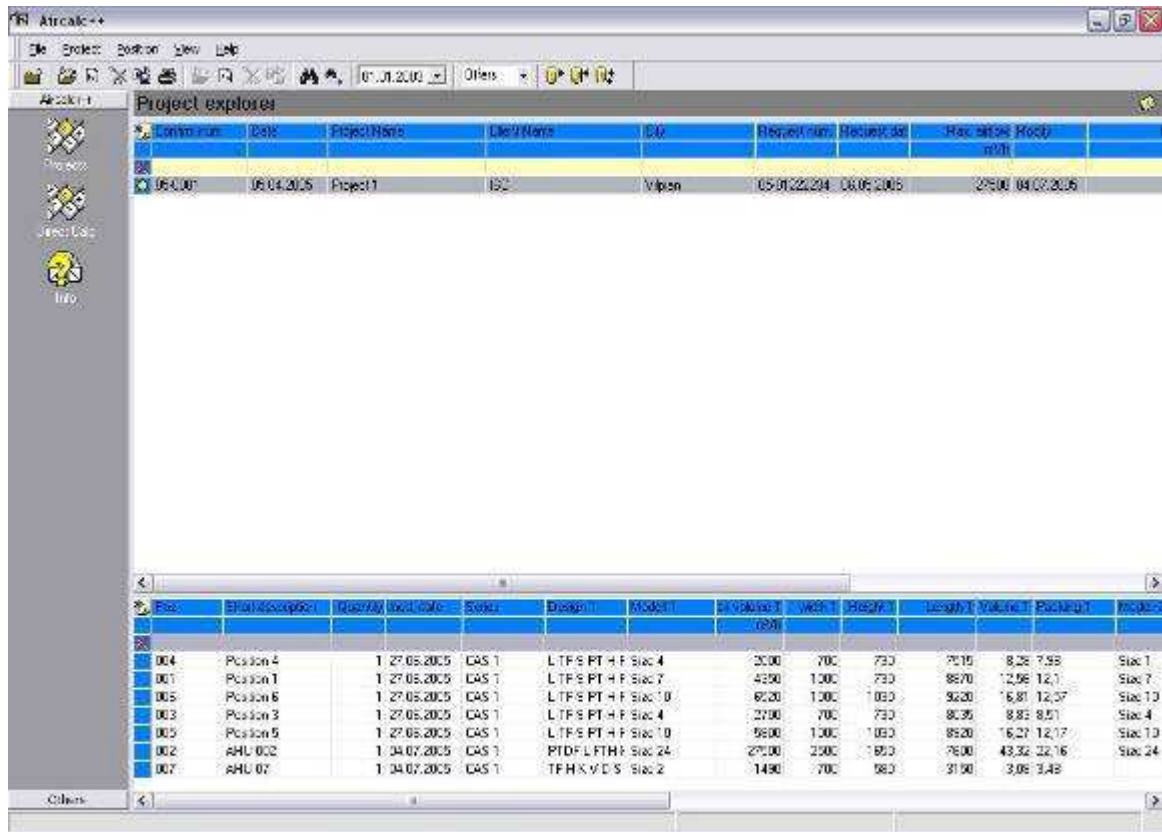
This mask is used to define the project. First it must be defined times whether it concerns with the project an offer or an order. Further obligation fields in the mask are project number and the project date. These are to equate with the offer/order number and offer/order date. The input of the description of the project is recommendable and customer names.

Enter also an estimated success rate and a planned "order date". You can work on offers by means of these fields aimed.

The customer (with pertinent data such as address, postal code, place, etc....) can be selected from a list. Simply on the button beside the field for the input of the customer name click, and the program looks for all customers with the pertinent data from the project data base of the program. If a new name is entered here, then this is then available starting from the next project to the selection. Into this field the user has to use also the possibility a search function. If it writes for example a T into the Fed of the customer name and operates then the switch for the selection of the customer, then the program lists all customers, who begin with initial letter T.



In this mask if all data were then entered and confirmed with the click on OK , the program puts on the project and indicates it also directly in the Explorer.



### General notes to use the project / position explorer:

The method to display of the projects/positions can be changed by the user. So e.g. data can be sorted at will ( each column in the view indicated can as assortment be used ).

Manage views      Delete the filter      Sort / Move      Line to use the filter (yellow color)

Conf. num.	Date	Project Name	Client Name	City	Request num.	Request dat.	Max airflow m³/h	Modify
05-0001	09.04.2005	Project 1	Client 1	City 1	05-010203		7500	09.04.2005
05-0002	09.04.2005	Project 2	Client 2	City 2	05-010204			09.04.2005
05-0003	09.04.2005	Project 3	Client 3	City 3	05-010205			09.04.2005
05-0004	09.04.2005	Project 4	Client 4	City 4	05-010206			09.04.2005
05-0005	09.04.2005	Project 5	Client 5	City 5	05-010207			09.04.2005
05-0006	09.04.2005	Project 6	Client 6	City 6	05-010208			09.04.2005
05-0007	09.04.2005	Project 7	Client 7	City 7	05-010209			09.04.2005
05-0008	09.04.2005	Project 8	Client 8	City 8	05-010210			09.04.2005
05-0009	09.04.2005	Project 9	Client 9	City 9	05-010211			09.04.2005
05-0010	09.04.2005	Project 10	Client 10	City 10	05-010212			09.04.2005
05-0011	09.04.2005	Project 11	Client 11	City 11	05-010213			09.04.2005
05-0012	09.04.2005	Project 12	Client 12	City 12	05-010214			09.04.2005
05-0013	09.04.2005	Project 13	Client 13	City 13	05-010215			09.04.2005
05-0014	09.04.2005	Project 14	Client 14	City 14	05-010216			09.04.2005
05-0015	09.04.2005	Project 15	Client 15	City 15	05-010217			09.04.2005
05-0016	09.04.2005	Project 16	Client 16	City 16	05-010218			09.04.2005
05-0017	09.04.2005	Project 17	Client 17	City 17	05-010219			09.04.2005

Pos	Short description	Quantity	mod. date	Model	Config. SA	Size SA	volume SA m³/h	width SA	height SA	Length SA	volume SA
001	Position 1	1	09.02.2005	CAS 1	L-TF-S-PT-H-FR-K-V-D-S-L-TF	Size 7	4350	1000	730	8845	12,52 1
002	Position 2	1	09.02.2005	CAS 1	L-TF-S-PT-H-FR-K-V-D-S-L-TF	Size 5	3500	1015	740	7930	11,5 1
003	Position 3	1	09.02.2005	CAS 1	L-TF-S-PT-H-FR-K-V-D-S-L-TF	Size 3	2700	710	740	7777,5	8,72 €
004	Position 4	1	09.02.2005	CAS 1	L-TF-S-PT-H-FR-K-V-D-S-L-TF	Size 3	2000	710	740	7320	8,22 7
005	Position 5	1	09.02.2005	CAS 1	L-TF-S-PT-H-FR-K-V-D-S-L-TF	Size 7	5600	1015	1045	8845	16,5 1
006	Position 6	1	09.02.2005	CAS 1	L-TF-S-PT-H-FR-K-V-D-S-L-TF	Size 7	6520	1015	1045	8997,5	16,78 1
007	Position 7	1	09.02.2005	CAS 1	L-TF-S-PT-H-FR-K-V-D-S-L-TF	Size 5	4350	1015	740	8997,5	13 1
008	Position 8	1	09.02.2005	CAS 1	L-TF-S-PT-H-FR-K-V-D-S-L-TF	Size 5	4000	1015	740	8387,5	12,14 1
009	Position 9	1	09.02.2005	CAS 1	L-TF-S-PT-H-FR-K-V-D-S-L-TF	Size 5	3500	1015	740	8387,5	12,14 1
010	Position 10	1	09.02.2005	CAS 1	TF-PT-H-FR-K-V-D-S-L-TF	Size 5	4400	1015	740	7015	10,2 €
011	Position 11	1	09.02.2005	CAS 1	TF-PT-H-FR-K-V-D-S-L-TF	Size 5	5000	1015	740	7167,5	10,42 €
012	Position 12	1	09.02.2005	CAS 1	TF-PT-H-FR-K-V-D-S-L-TF	Size 5	5000	1015	740	7167,5	10,42 €

#### Manage views :

Each user sees this button, but only the administrator can use the option "change/create views" in the following menu window.

Here the user can select another view or export or print the current view

#### Line to use the filter :

The user can filter the view of the projects , i.e., he can change the quantity of the lines indicated by default by values or texts in the yellow filter line. So e.g. it possible only all projects is to be indicated, where the amount of air volume is in the positions at least 10000 m3/h, by entering into this column "> = 10000". In text fields can be filtered after partial text strings. Using e.g.. "= \* demo \*", then all are indicated those lines, where the text string seems to "demo". It is possible to filter several cells at the same time.


The following operators can be used:

=	equal
>	bigger than
<	smaller than
>=	bigger or equal than
<=	smaller or equal than

On a text field, in addition can be used the symbol „\* “. Use the following commands :

=*demo	text must finish with „demo“
=demo*	text must begin with „demo“
=*demo*	text must include „demo“

### Delete filters :

If the user click on the icon to delete the filter (  ), all applicated filters will be deleted. Individual filters in individual columns deleted by empty setting of the filter column

### Sort of columns:

Columns are sorted, by clicking simply on the header of the column concerned. Each further click causes a turning of the assortment. Normally only one column is sorted. If one clicks with the right mouse button into the title border of the columns and then with the left mouse button as used on the column for sorting, then the assortments of the other columns are considered effected from left to the right, i.e., the assortment on the basis of the first left column up to the current column, which can be sorted. A further right mouse-click waives the sort blocking again. Example: If I click first with the right mouse and then one behind the other on "customer name" and then on "Air volume", then all lines are sorted first according to customer names and within same customer names according to the air volume. Interesting this sort kind for lists, sorted according to customers and amount covered etc.. If you want to sort first however according to amount of air and then according to names, then you must shift first the column amount of air volume.

### Move columns or change the size size:

Columns can be arranged at will. For moving it is sufficient to click the cell concerned in the title to hold the left mouse button and to move the column to the desired place and release the mouse button there. Increase/a making smaller effected from columns, by moving the pointer of mouse in the title border between the columns concerned and then presses the left mouse button, and the column holds to the left or right pulls and then again releases.



## Position heat datas ( General )

If the project is for the first time entered, then we continue now with the input of the single air handling units. For this we click on position new and it appear the following input mask:

The screenshot shows a 'Project Editor - 05-0001' window with a 'General' tab. The fields are as follows:

Unit Ref.	004	Delivery group	1
Drawing ID	004		
LV-ID			
Description	Position 4		
Quantity	1	Pcs	
Calculated single price	120000	EUR	
Manually fixed single	0	EUR	Discount: 0 %
Price list	Pricelist 1		

Buttons at the bottom: Lock, Unlock, OK, Abort. Status bar: Changed, 17:18.

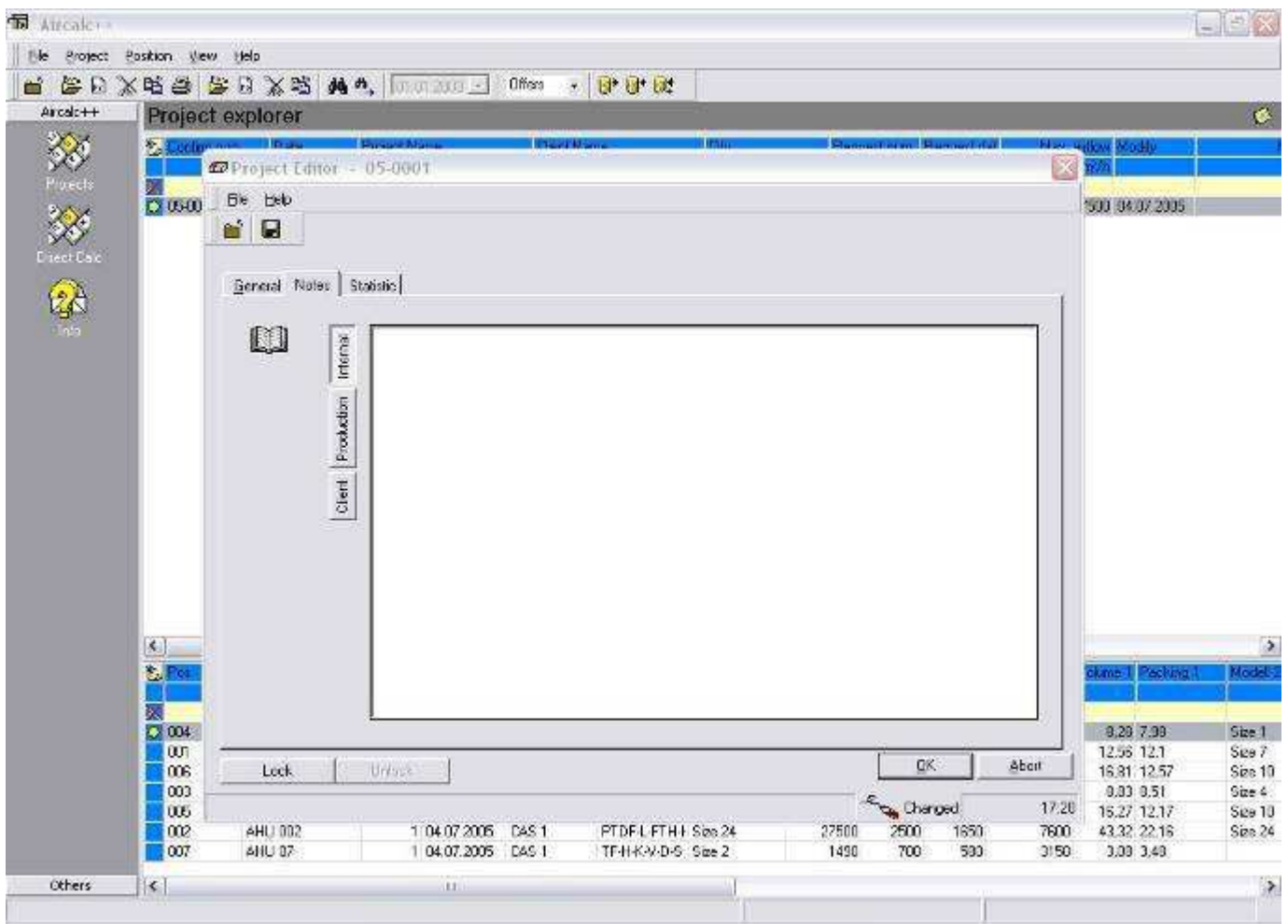
The only obligation fields are here the item number (position ID), the delivery's group and the quantity of air handling units. The default of a short asset description line is recommendable.

The delivery's group is used with material list. There it is to be listed possible in the case of large orders with several delivery sections the material summed up after delivery's groups.

If you enter something in the field of "manual one fixed price", then the program will accept this price as AHU price. There is no control whether the given manual price below the calculated lies or not.

Icon	Description
	By means of this button the user has the possibility of closing any position with a password so that other users do not have the possibility, to change anything in the selection.
	By means of this button the password protection is waived on the unit position. For this the password must however admits to be.

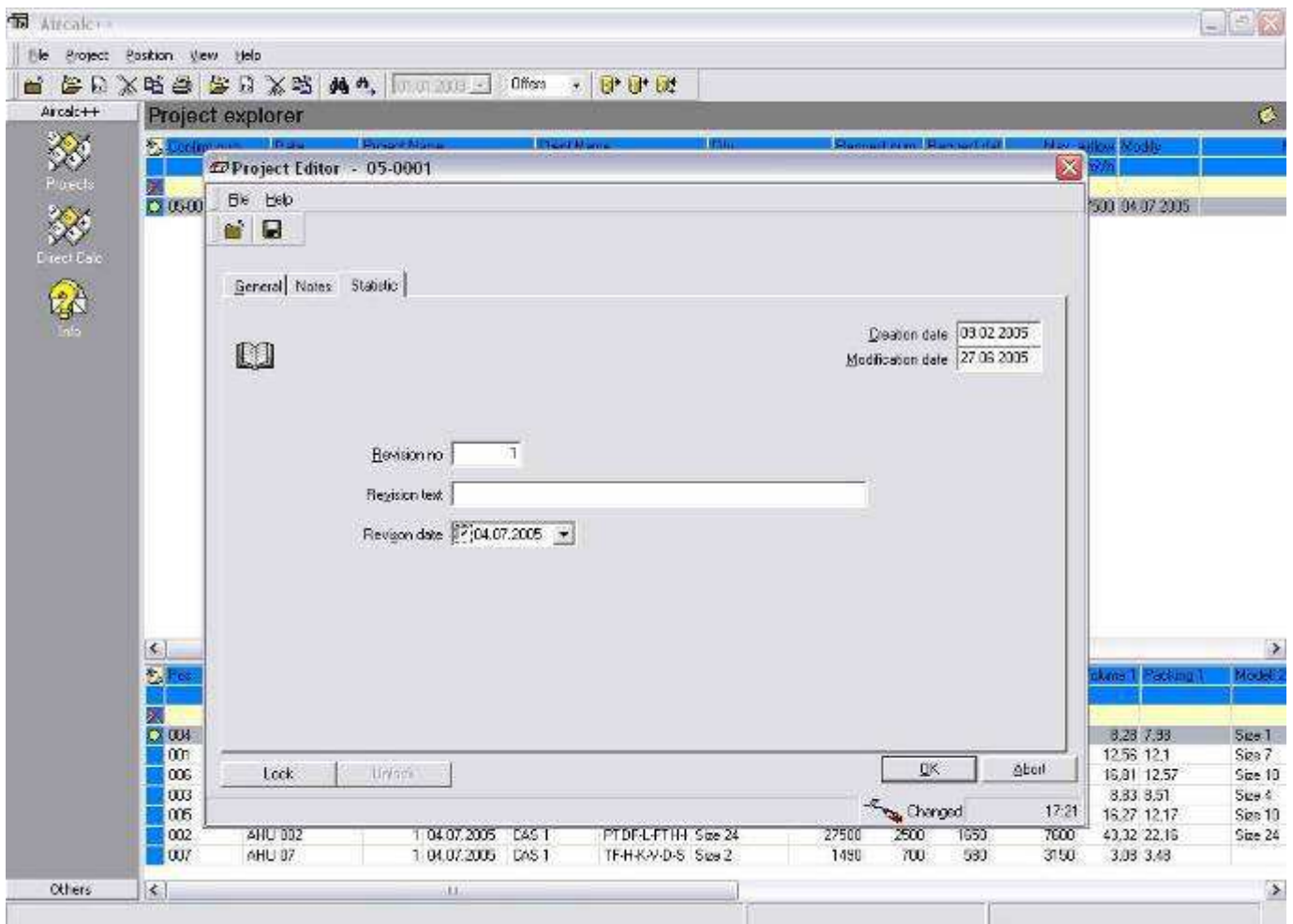
## Position head datas ( notes )



Under Notes the user have the possibility to enter some notes to the following points and to save them :

- notes for internal use
- notes for the production
- notes about the client

## Position head datas ( statistic )



In this mask the user have the possibility to enter and administrate revision number, revisionstext and revision date.

If the user filled in now all masks and fields to the position head and if this is confirmed also by OK, the program continues automatically to the next step: to the definition of the air handling unit.



## Definition of the air handling unit :

The screenshot shows the 'Definition of the air handling unit' dialog box. It contains the following fields and options:

- Destination:** A text input field.
- Atm. ref. data:** Fields for altitude (0 m), temperature (20,00 °C), humidity (30,0 %), density (1,20 kg/m³), and pressure (1.013 mbar).
- Unit design:** Radio buttons for:
  - A - single unit supply air
  - B - single unit exhaust air
  - C - Combined unit horiz. exhaust / supply
  - S - Combined unit stocked
  - N - Combined unit side by side
- Type of unit:** Dropdown menu set to 'Indoor Unit'.
- Series:** Dropdown menu set to 'Serie 1'.
- Supply:** Fields for flow rate (12000 m³/h) and size (Size 13).
- Model:** Dropdown menu set to 'CAS 1'.
- Quality (click on the desired cell to change):** A table with columns for Panel, Material, mm, and Color.
 

Panel	Material	mm	Color
External	galvanized steel	1,00	
Internal	galvanized steel	1,00	
Bottom	galvanized steel	1,00	
Comers			
Profiles			
Guides	galvanized steel		
- Access and connection side:** Radio buttons for:
  - on access side
  - connection opposite access side
- Other properties:** Fields for:
  - Supply [V]: 3x400
  - Frequency [Hz]: 50
  - Airflow steps [%]: 100

In this mask the user define the unit design, the unit serie, the size , casing and quality, ecc.

Place of assembly and atmospheric data are taken as basis for each calculation

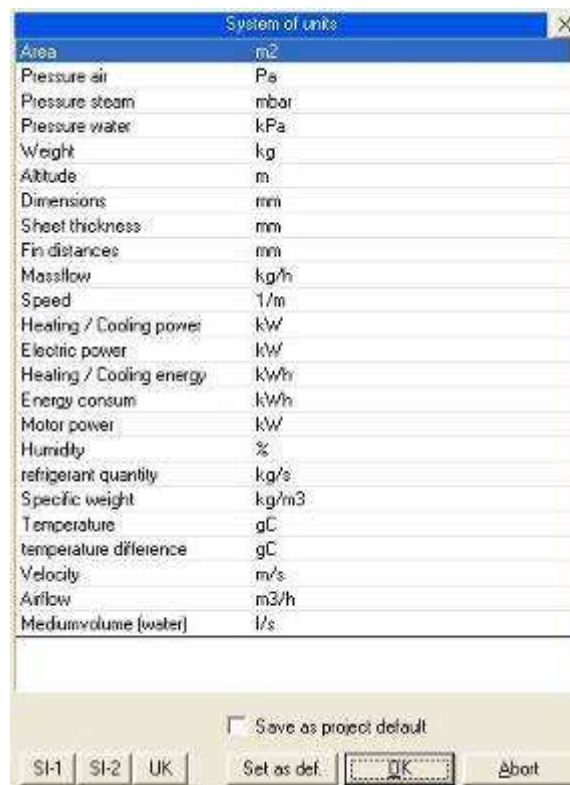
Click on the button beside the default fields, in order to select another default. The mask works according to "from above downward" the principle, i.e., you must enter the data/fields from above downward. Thus, first certification, then serie, then size of unit and then the kind of casing / quality.

Under „Certification“ you can find the following items :




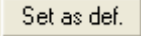

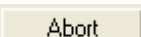
- Internal unit
- Weatherproof unit
- Standard unit
- Hygienic unit
- ecc.

The units for the computation of the air handling units can be set here. Click simply on the button "SI units".

## SI measurement units :



Select here, which system of units you want to use. Click directly on a unit, if you want to change only a particular.

Icon	Description
	Units 1 ( try out what happens )
	Units 2 ( try out what happens )
	UK Units
	Click here, in order to save the settings. This settings are stored and with each program start reloaded.
	Click on this button, if you want to conclude the setting of the desired units. Thus the program maintains the units up to the next program start.
	Click here, in order to leave this window. All made settings are put back again to the standard.
<input type="checkbox"/> Save as project default	The selected units are also for each project separately storable. Thus when opening the project again this setting is preloaded. For this it is sufficient to enable this check box.

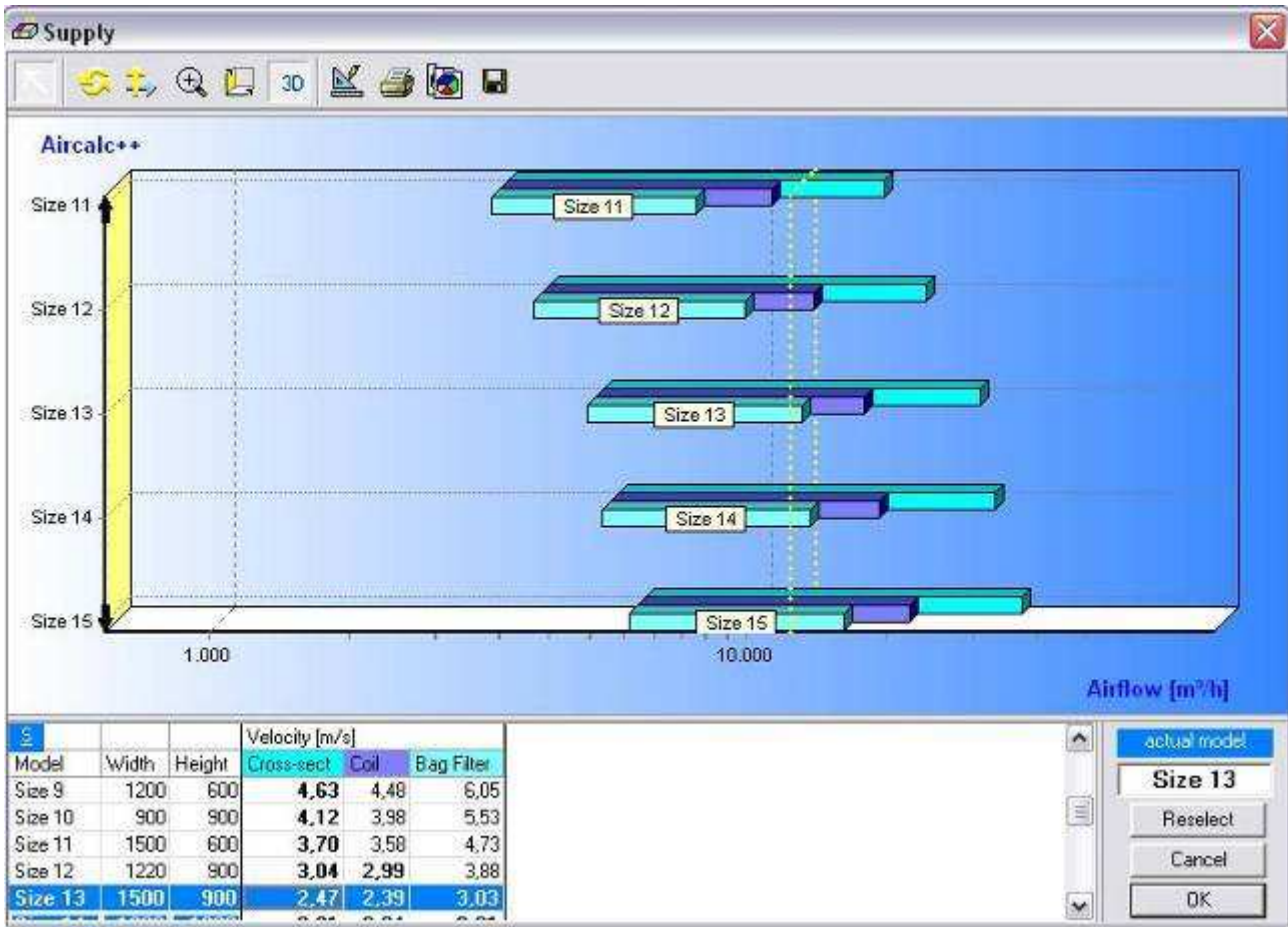
### Selection window:

In the program often you get a selection window. The following operation is to be considered:

- Click on a desired line, and that program takes over this line and closes the window. The background of the selected line is blue marked. Thus optically also recognizably, which was selected
- If you click on the button "standard", then the current value is removed, on "optimizes" or set to "default", depending on, which field it concerns.
- Click on the "X" or press the ESC key, in order to close the window without change



## Selection of the unit size:



As an assistance for the unit size selection the user can see two options in this window.

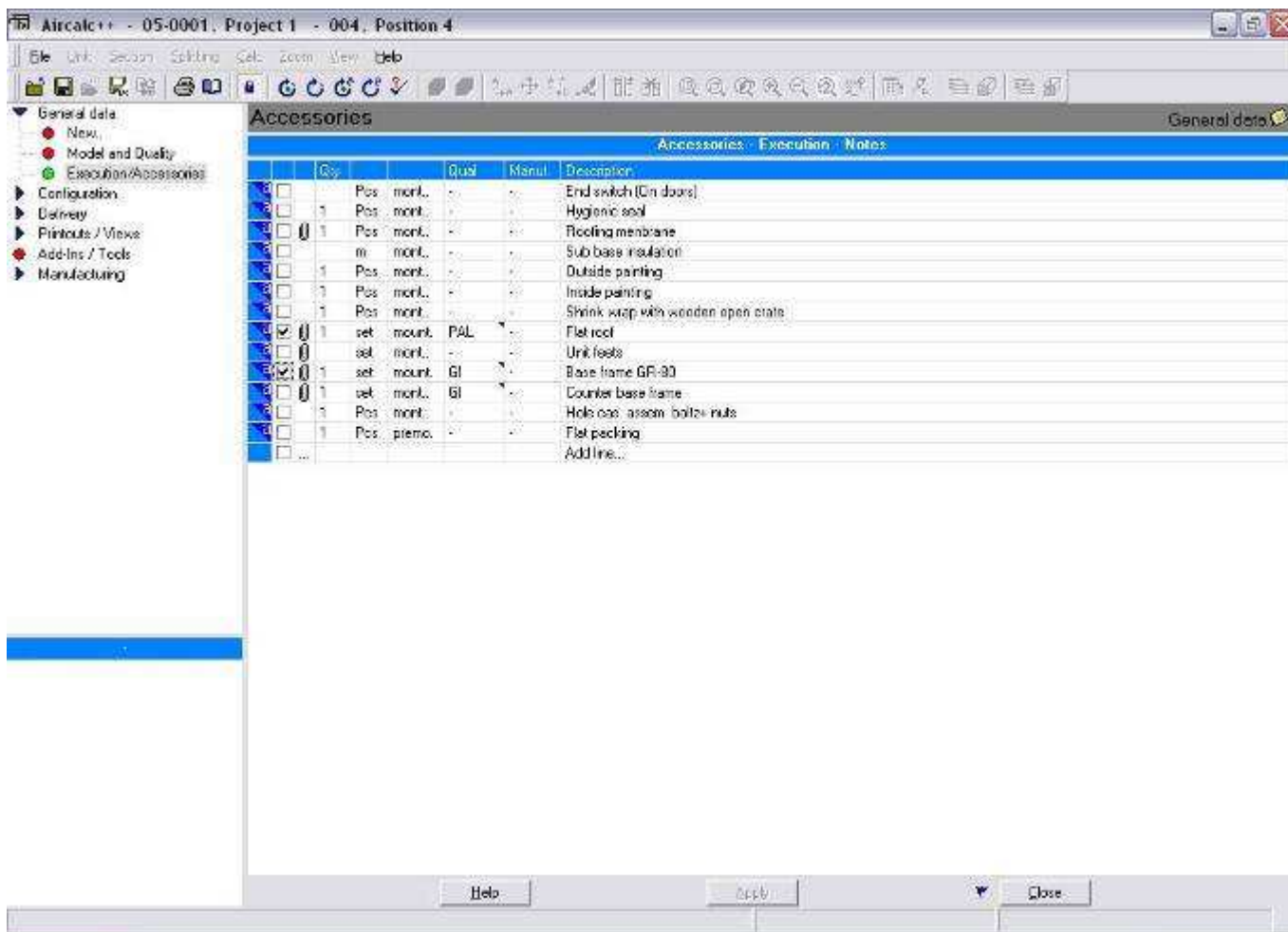
In the diagram the bars of the possible (recommended) amounts of air volumes for each component are represented, in the lower table you can see the approximate air velocity.

Indicated air velocities are not 100 % exactly, only approximately , since the component admits only during the computation becomes.

In the table besides all possible unit sizes with blue background in the "Model" column are represented.

You can click here on the diagram or select on the line concerned in the table around the desired size.

## General accessories and executions:



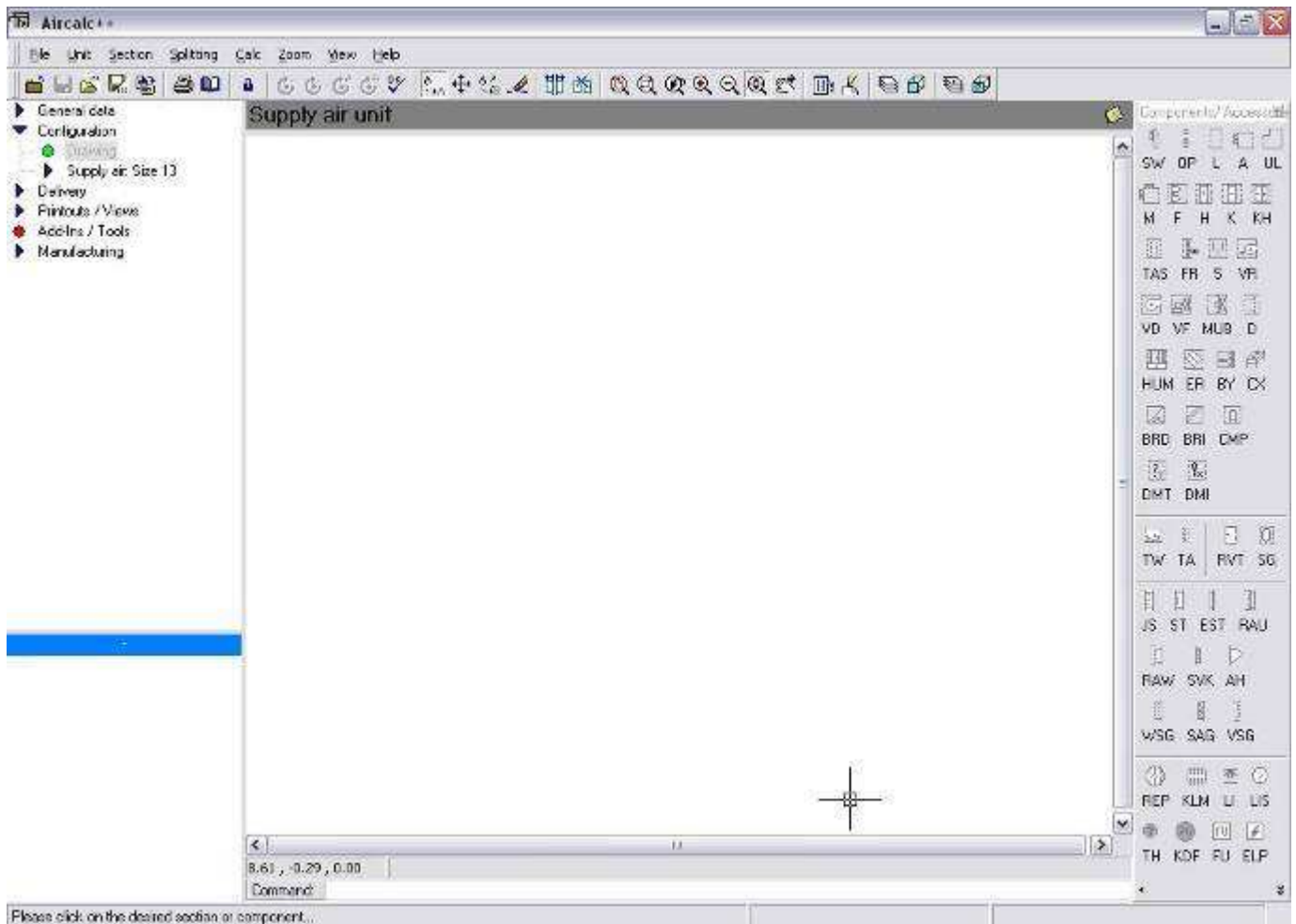
After you defined the unit size size and quality-moderately, you can select here different accessories or remarks, which are valid for the air handling unit.

Click in addition completely simply on the check box of the line concerned. If a staple symbol is in a line, then you can click also on this symbol, but only after the line with a checkmark were activated. Thus you can select e.g. different materials or base frame heights.

Remove a line, by clicking completely simply on the checkmark.

If you would like to put on accessories or want you a note manually insert, then you click simply on the line with the reference "Add line..." Then you can insert any accessories, any execution or note. This is then printed also on the technical data.

## Unit design – CAD – Start:



This mask appear, after you have defined the unit ( serie, casing, casing quality, ecc ).

You see now also an additional menu bar with symbols for air handling unit components. If you start the program the first time, perhaps then this icon bar is at the upper edge of screen. Click they simply with the mouse on the title to this carry out and pull them there where you want to have the menu bar.

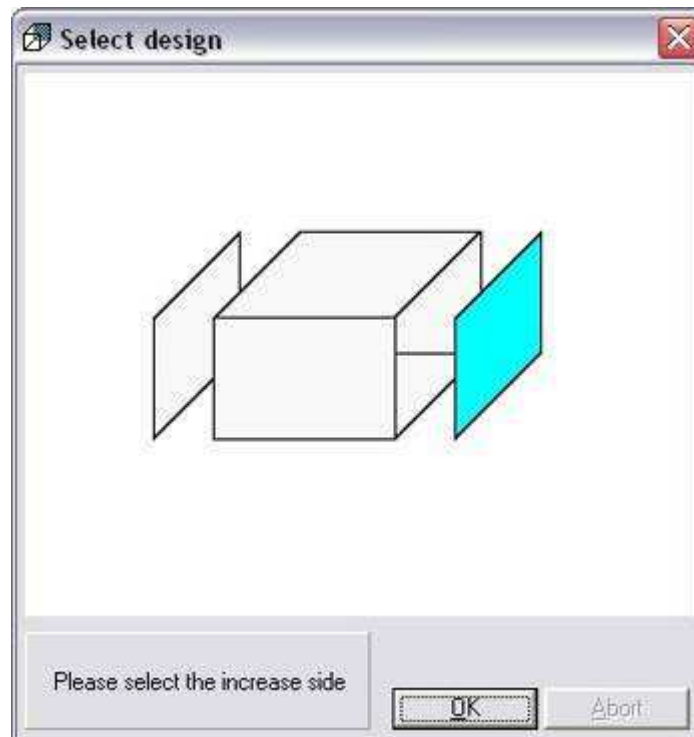
Now you can develop the unit design. Click on the desired symbol in the menu bar and the component in the design are automatically placed. Start every time to design the unit in air direction.

You can remove, shift or exchange also components again. Click in addition completely simply on the desired command symbol in the upper main menu and follow them the instructions in the status border at the left lower edge of window.

There exists also a possibility, to design the unit drawing with a command line.

For this you need to click only into the command line, and to in sequence enter the codes for the sections. Ask your program distributor, which will communicate the list with the usable instructions to you.

## Unit design – CAD – Definition of the air direction:

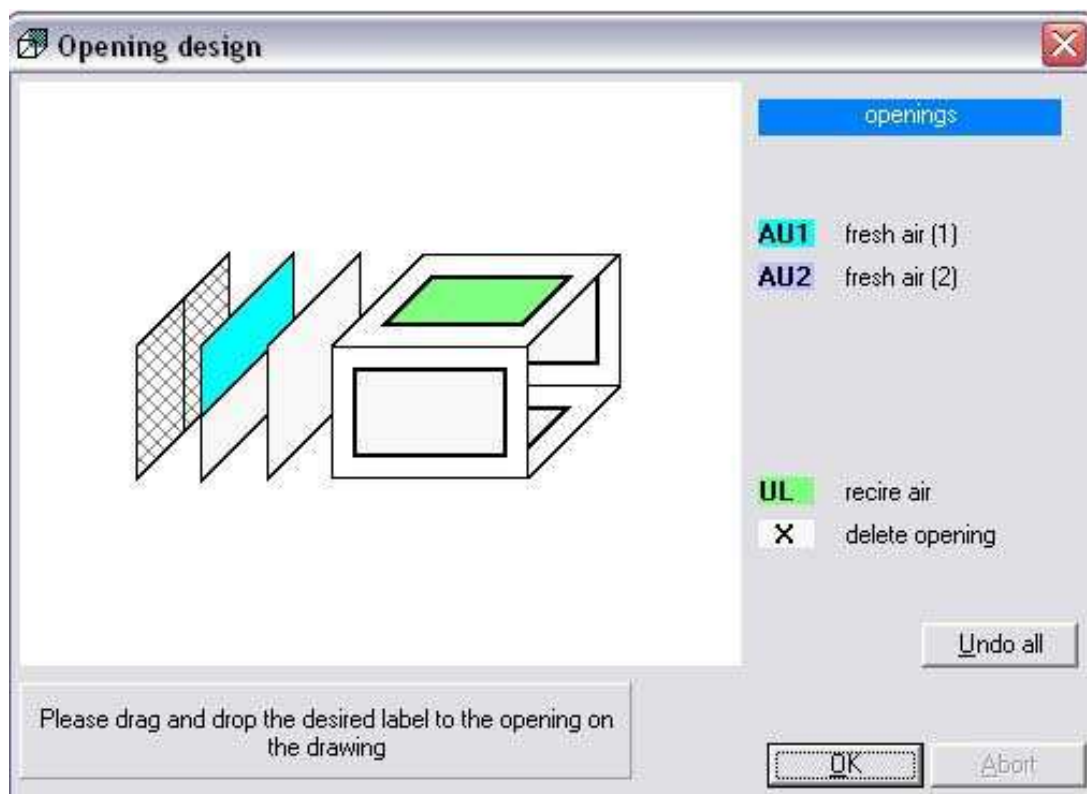


If you select the first component, then asked by the program, where you would like to insert the next component, then indicate as the air direction.

You have to click simply on the desired side of the box around the direction to determine, where the next element is to be inserted.



## Unit design – CAD – Definition of openings



If you select a inlet plenum or mixing box, you have to define also the single openings ( position of them ).

Make a simple click on the desired position or drag & Drop the „ Air Color“ to the desired position in the drawing.

On double mixing section ( combined air handling unit ) you can select the openings with the left and also with the right mouse key.

If you select a fan section as the first section, you get also this mask. If fan unit is not the first section in the unit or you would not like to define openings, close this window by pressing the “Abort” button.

If you positioned an opening wrongly and already confirmed, you delete the component and add them then a new or you exchange completely simply for a same component. By one click with the right mouse button into the section opens the program a window, which lists all components, openings, small components on openings and revision doors for section concerned. By the selection of the desired field the user knows rapidly inputs makes here (see illustration below).

If the user clicks for example on delete in the desired line, then the program deletes this component away. If the user select the column input , then the program lists all necessary input fields for the selected line. By clicking on position the user can amend fast the position wrongly selected openings, without having to away-delete the section completely. The same applies also to amending the fan position. Rapidly can hereby between the desired positions (V1... V10) to be changed.

**Delete:**  
If you click in this column on the desired line, the program delete the selected component in this section.

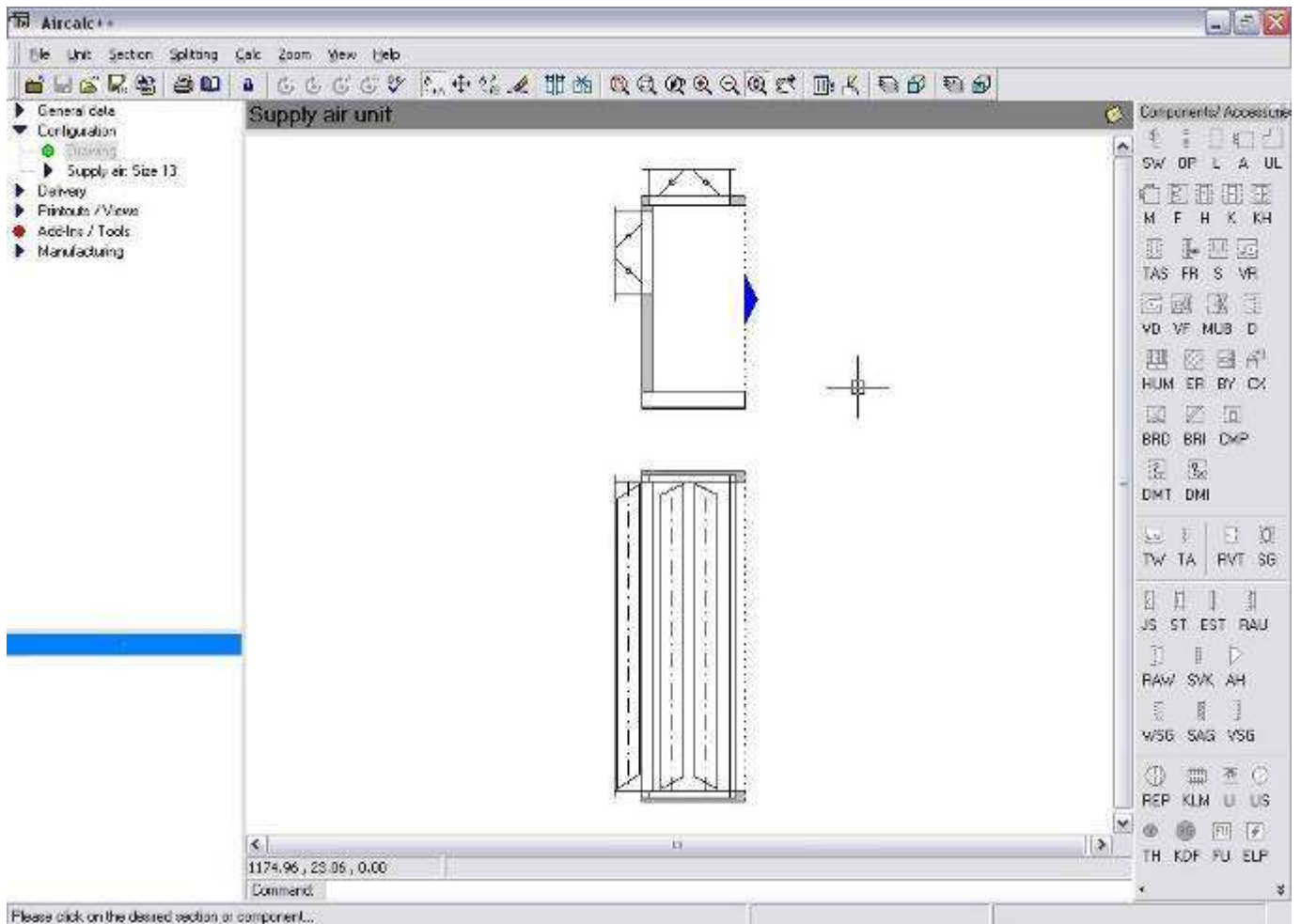
**Input:**  
If you click in this column on the desired line, the programm will open a window with all input fields for the selected component, section .

Type	Description	Delete	Input	Position
SE_	Simple mixing section	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
CO	Mix air	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OP	Opening UM (Top)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SC	Damper	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OP	Opening AU (Frontal top horizontal)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SC	Damper	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Position:**  
If you click in this column on the desired line, the programm will open a new mask, where you can change the the position for the selected opening.

Please click on the desired section or component...

## Unit design – CAD – step by step



Now the user have defined the air direction and the position for the dampers.

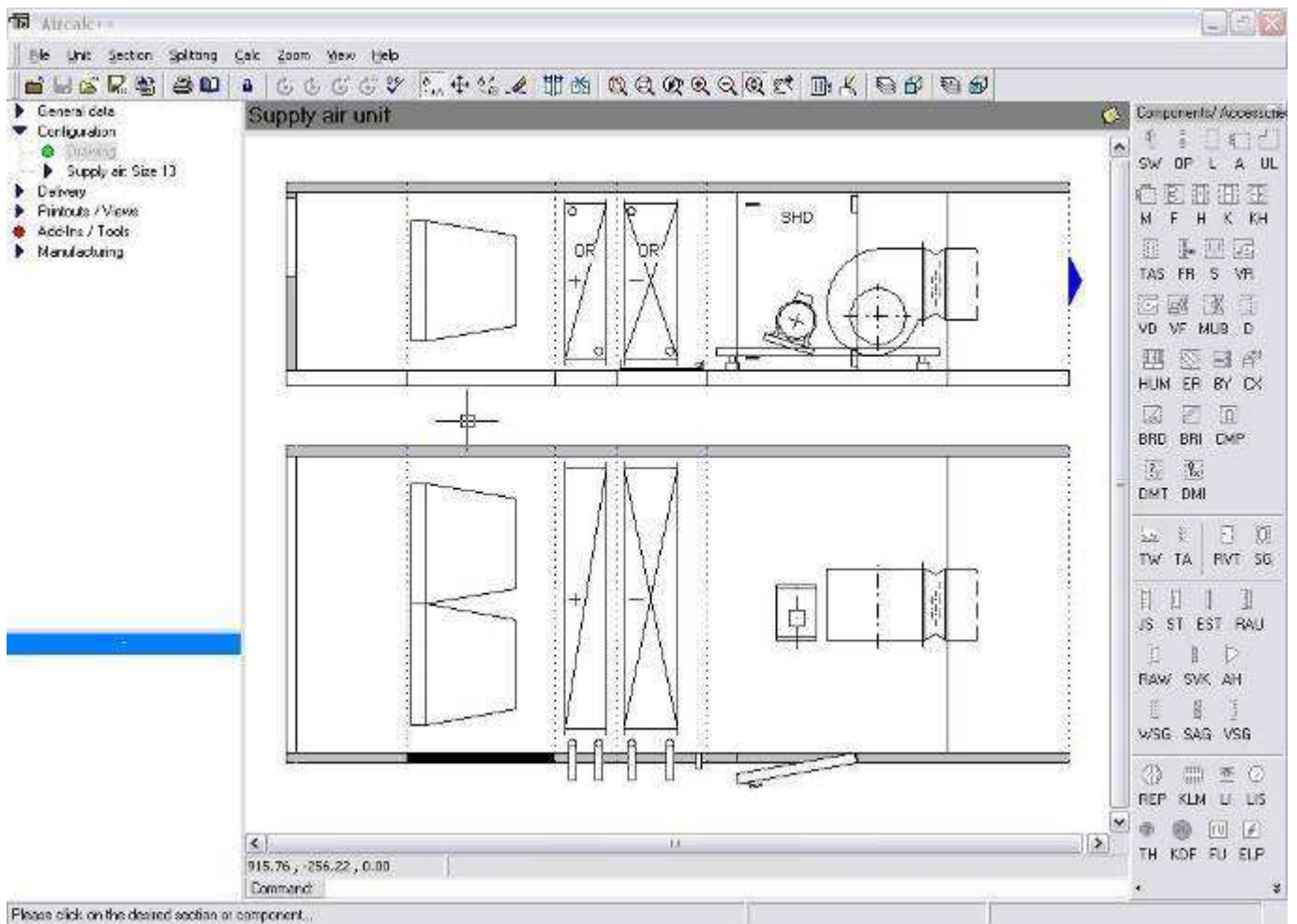
You can see a coloured arrow in the drawing. If this arrow is red colored, it means, that the programm is on the design of the exhaust air unit. If the arrow is blue, then the unit is the supply air unit

Shift the arrow completely simply, by clicking on that side of the box concerned, where you want to have the arrow.

Insert components by setting the arrow between components.

If you developed the unit design press in the upper menu border on "Lock" and the program begins with the technical default data.

## Unit design – CAD – Accessories on openings



















If you settled the design of the unit, you can set still additional opening accessories such as dampers, flexible connections, weather louvre etc.. Click in addition on the appropriate symbol and then on the desired opening. The program is then in a "repeating mode", i.e., they can click successively openings and set for components without these everyone in the symbol border to click times again. Close the "repeating mode", by clicking somewhere with the right mouse key near the drawing of the unit.

E.g. if a silencer is at the end of air handling unit and if you would like to add to this part a flexible connecting, then you set first a front panel, by positioning the arrow at the desired side and then the front wall symbol in the symbol bar. Afterwards you can set for opening accessories here.

Doors can position you likewise, by clicking first on the symbol and then on the desired box side of the component (for entering the doors there is however still another separate input mask, which makes it possible very simply to insert and position a revision door fast. This is described still more exactly on side.....).

## Unit design – CAD – Icon list

Icon	Description
	Close the window / Turn back to project explorer
	Save the unit ( also not calculated AHU's can be saved )
	Open a AHU's from a file
	Save AHU in a file ( not in the project explorer !!!! )
	Save a unit in the library
	Disabled
	Disabled
	Lock the unit design and change to the technical computation
	Technical calculation : Calculation of all components in the background, not computed yet. Components already laid out are not no more computed. This point is the usually used point of menu. E.g. if a filter is changed, then the new filter part knows and in consequence the fan section to be designed by means of simple clicks for this switch.
	Technical calculation: This point of menu serves the same purpose as (6), however with the difference that each component not laid out yet is indicated in sequence here and the user must start the calculation with each suggested component. This has however the advantage that the user get a list with many components to the selection .
	Technical calculation : New calculation of all components in the background, the air handling unit is technically laid out again perfectly again in the background
	Technical calculation : New calculation of all components in the foreground, the air handling unit is made available again perfectly again to the computation. All components are set first not designed for "", the user can accomplish component for component the calculation then.
	Complete the unit calculation : If you calculated the unit technically, it is far not enough . Still e.g. the division of the delivery sections must be defined, the weight should be determined, prices is necessary. All this settles this key in the background. If you possess a very fast computer, then you can click instead of the key "calculation in the background" on "complete the selection" simply. The computation not computed components in the background is implemented automatically here.
	Supply air : this icon can be used to change to the supply air unit
	Exhaust air : this icon can be used to change to the exhaust air unit
	Insert a new component on the drawing

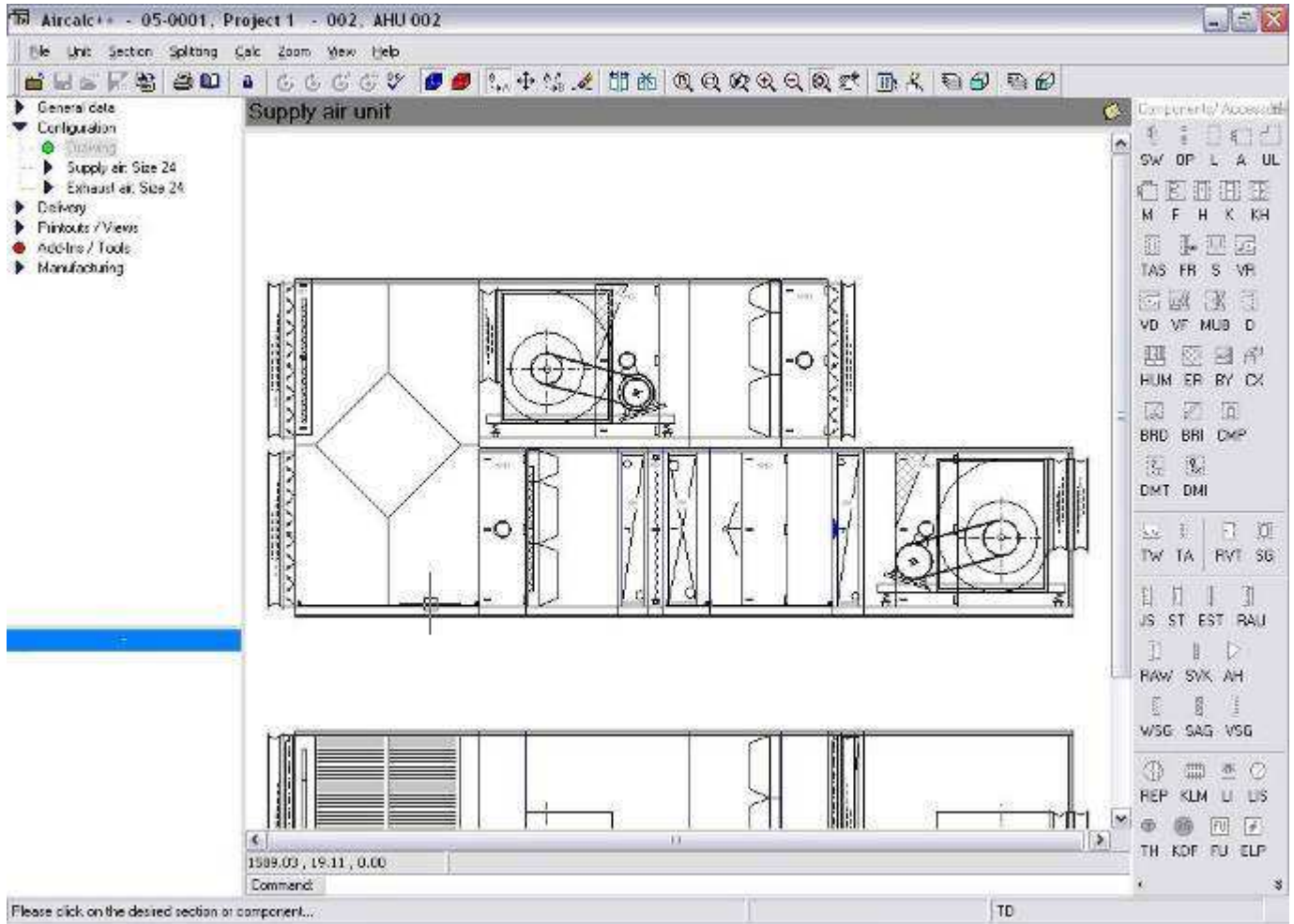


Icon	Description
	Move a component on the drawing
	Change a component with another one on the drawing
	Delete a component: Click on the side wall on a section, the program delete the hole section, click on a revision door to delete them or click on the small component on openings.
	Insert a manual casing division : The symbol for completing normally causes an automatic computation of the casing divisions . If the division should be however fixed, then you can insert divisions with this symbol. Position in addition the arrow simply at the desired side and click them on this button. diesen Taster.
	Delete a manual casing division : Position the arrow on the division which can be deleted and click them on this button.
	The unit will be located in the window and you can zoom it in and out
	Zoom window: Select the area in the drawing , which should be zoomed in
	Zoom back: reset the last action of zooming
	Zoom+ : enlarge the size of the drawing on the video, if you click more times, the drawing will be enlarged by every mouse click
	Zoom- : the same function as before, but doing the apposite ( make smaller )
	Autoscale function: if this button is enabled, the unit will be up-dated automatically after each modification. The activation of this key is recommended.
	Pan function: Move the drawing on the drawing area. You can close this function with a single click with the right mouse key on the drawing area.
	Regen: If the design is not represented correctly at the screen, then clicking this switch causes a new drawing of the unit . The coming on reason of the technical data is completely again developed.
	Redraw: with this key the window is updated. If lines should be interrupted or something similar, then this switch arranges the operating system the window "refresh"
	View layers: Here you can select , wich layers will be showed on the drawing view. For example its possible to not show the dimensions .
	View sides : Here you can selecte the showed views of the air handling unit. ( front, rear, top, bottom, left , right) Try it out !!
	Printout layers: Here you can select, wich layers will be printed on the drawing. For example its possible , to print out the drawing without indication of the dimensions
	Print views: Here you can select the views, that the program should print on the drawing ( front, rear, top, bottom, left, right )

Reference to the "redraw button": the program draws, which is given in the technical data. That is, it does not draw also "correct" dimensions or symbols, if such are given. Thus the user receives a controller, in order to examine also optically, what it changed. If the program interrupts during a fan section regulation with the drive, since this cannot be determined, then involves that the fan component cannot be represented correctly. If you change e.g. the size of unit of equipment already calculated and if the program cannot automatically adapt all components in the background, then also a not correct design is represented. This is not an error, since the program draws everything, which was given. Correct so a case the technical pre-set values and implement them again the calculation. If this is then correctly implemented, then also the design is again correct.

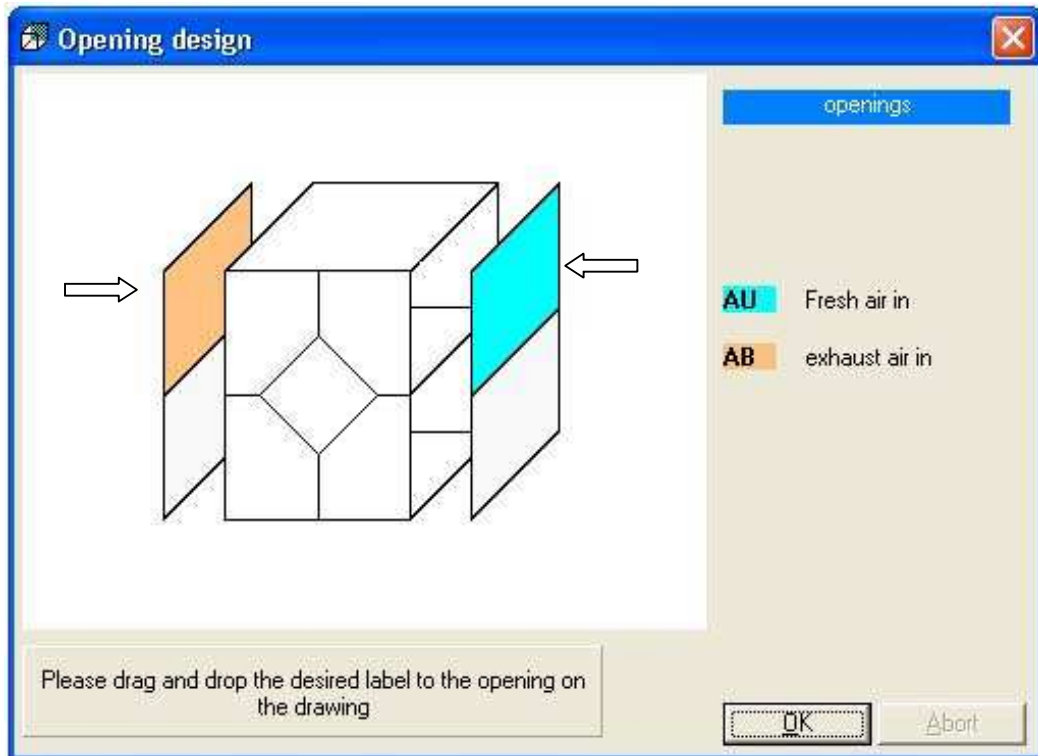


## Unit design – CAD – Combined units

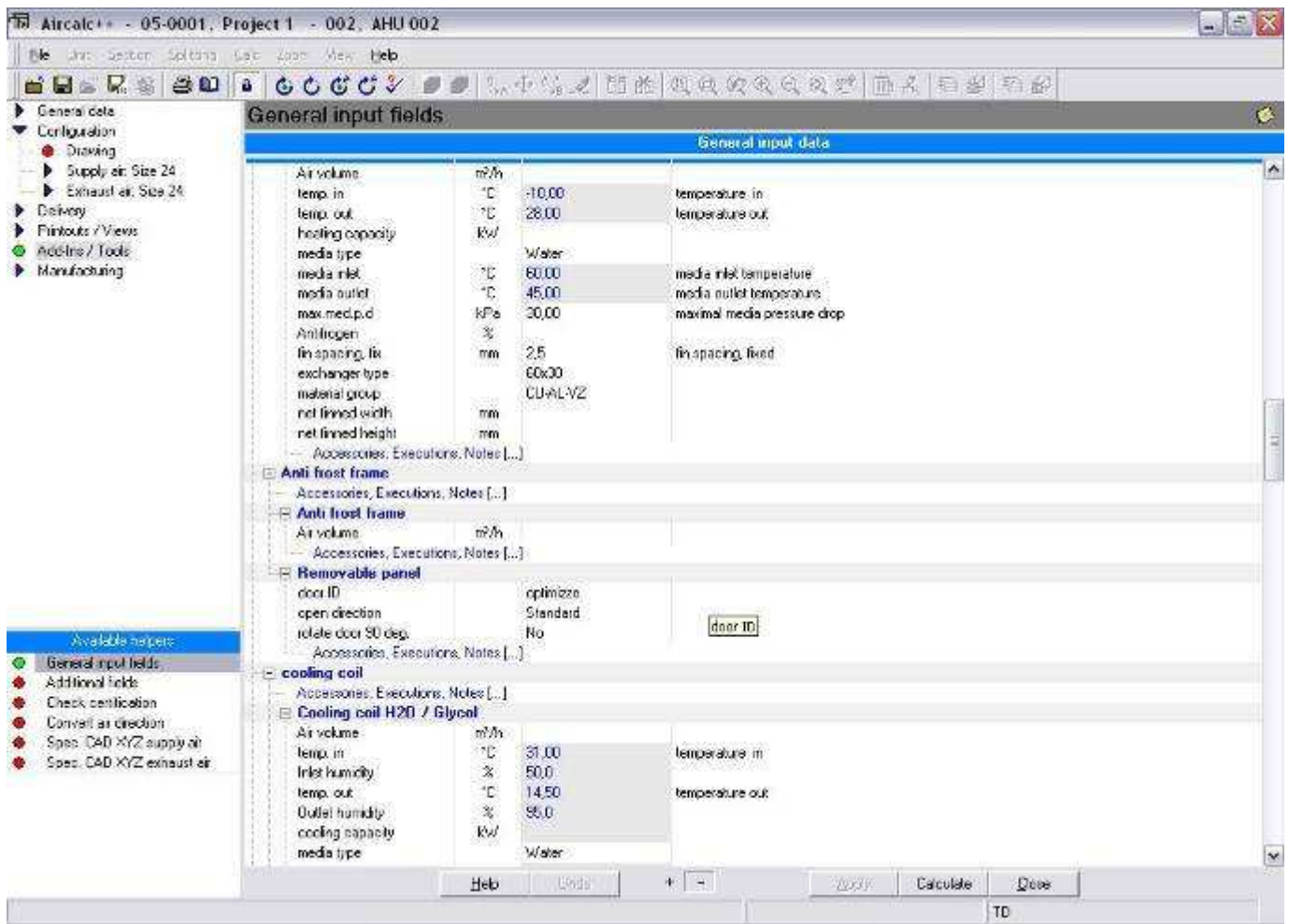


On combined units some important points are to be considered :

- After the selection of the unit size, the program starts always with the exhaust air unit .
- Supply / exhaust air units in a line ( Inline Extract / supply unit ) must always include a double mixing box. Start to set the exhaust air unit, after selecting the mixing box the program switch automatically to the supply air unit.
- Supply / exhaust air units side by side or stacked always must have a connecting part. Connecting parts are: doubled mixing box or heat recovery section .
- On air handling units with heat wheels or plate heat exchanger you MUST select this section as first . After this you can design the rest in all the directions.
- Run around coil systems can be set everywhere separately in the unit (heater or cooler ). With units side by side or stacked is sufficient it to develop first the exhaust air and click then on the second coil in the run around system (heater or cooler ). Thus you create the connection to the supply air unit.
- For the positioning of plate exchanger, heat wheels etc. you get here from the program automatically further queries for the positioning selecting them the directions as with the mixing boxes. Note: always the entrance of air into the component is queried, thus always imagines it an air directional marker outside of the component, which points to the color surface.



## Technical datas – fast selection:



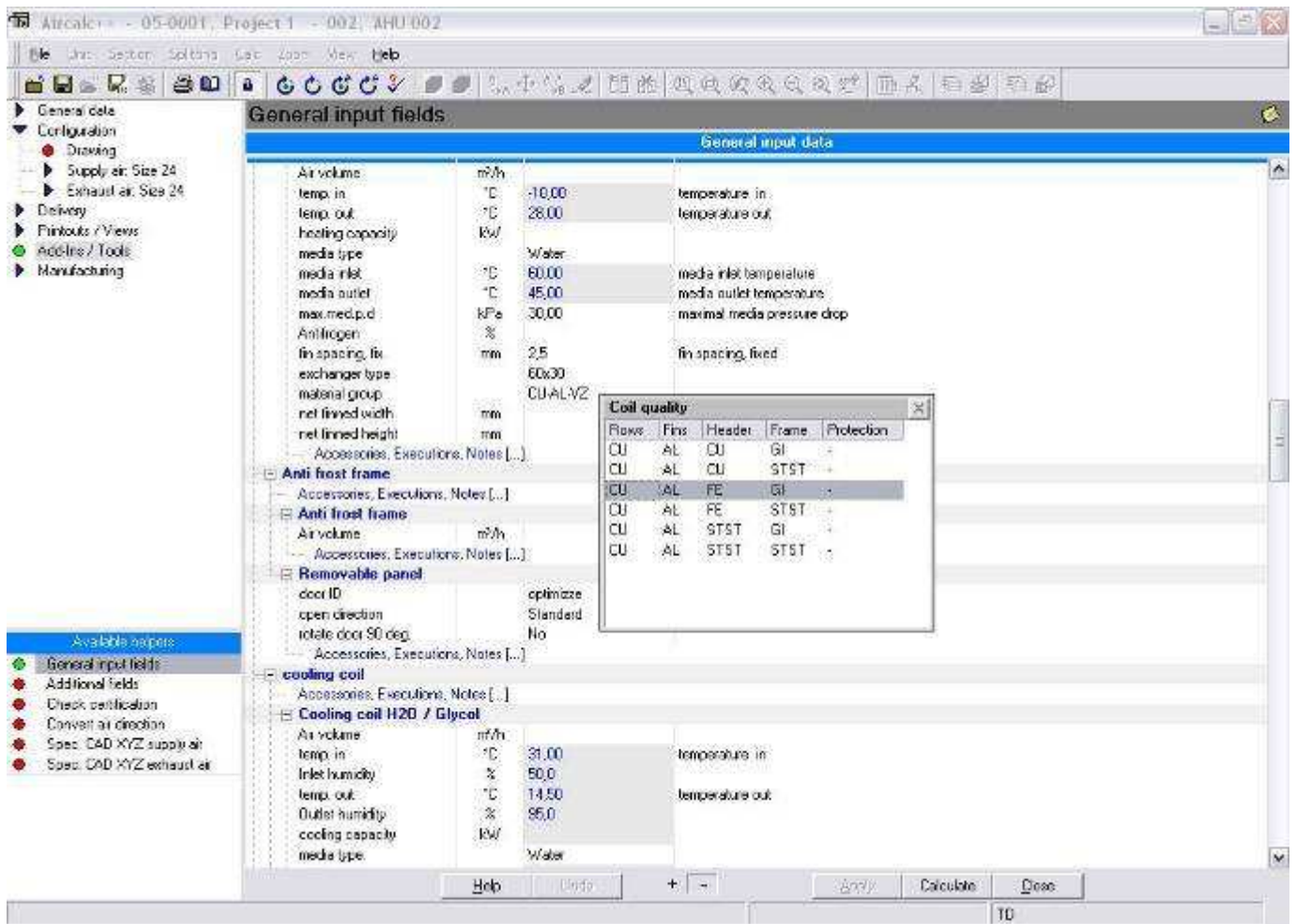
After you have the design of the air handling unit by means of "Lock" button closed, you get above mask for giving all data in principle and necessary of the contained components. You get just suggestions/filled out fields, which you can amend at any time. The number of fields, which you have available, varies depending upon product and software setting by your program distributor.

Click with your right mouse button on the input mask, this way you can close the open part and the illustration will be clearer. Click once again, and so you can reopen that part.

You can open or close it specifically clicking on the indicated symbol of "+" or "-".

Press on "Calculate" at the lower edge of the window and the unit will be calculated (background selection). If the computation is successful, then you see the dimensions in the drawing.

Different input fields produce a button at the right edge of field if one into the field click. Click on this button such a way receive it different selection windows for selecting e.g. material qualities, makes etc..



## Tecnical datas – accessories

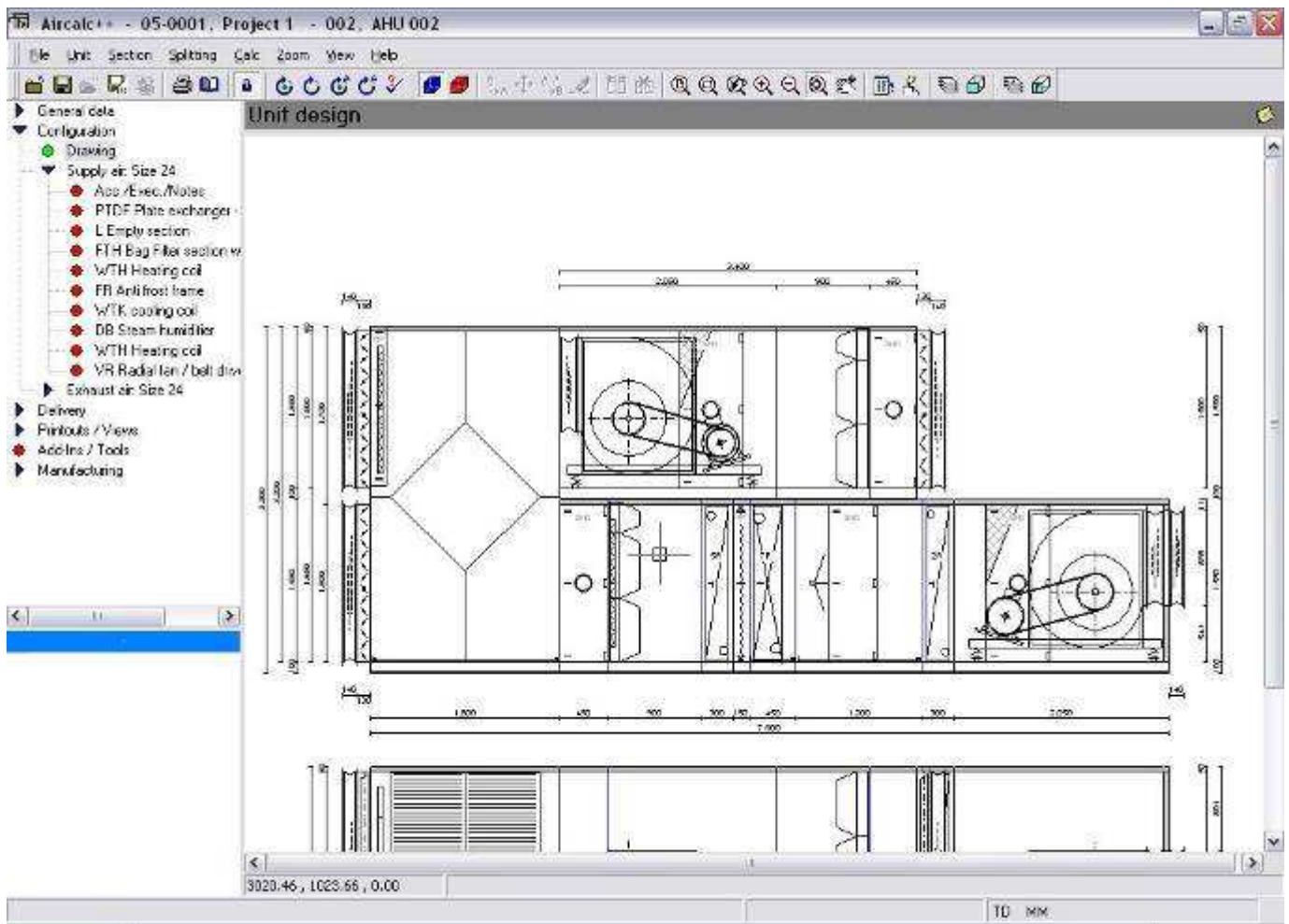
Accessories, Executions, Notes						
Component #9 Radial fan						
		Qty		Qual	Manul.	Description
<input checked="" type="checkbox"/>		1	set	mount.	-	Fan-motor baseframe
<input type="checkbox"/>		1	set	mont..	G1	Fan outlet protection
<input type="checkbox"/>		1	set	mont..	-	Fan inlet eye guards
<input type="checkbox"/>		1	set	mont..	-	Fan inspection door
<input checked="" type="checkbox"/>		1	set	mount.	-	Fan scroll drain plug
<input type="checkbox"/>		1	set	mont..	-	Shaft protection
<input type="checkbox"/>		1	set	mont..	-	Inlet guide vanes
<input type="checkbox"/>						Spark proof fan
<input type="checkbox"/>						Fan anti-corrosion protection
<input type="checkbox"/>						Plummer block bearings
<input type="checkbox"/>						Shaft in stainless steel
<input type="checkbox"/>	...					Add line...

Click on the line: “Accessories, Executions, Notes {...}”, this way you get a new window with the possible criterions for the selection.

Select here the desired accessories, the method of the selection is every time the same .



## Tecnical datas – concluding the unit calculation

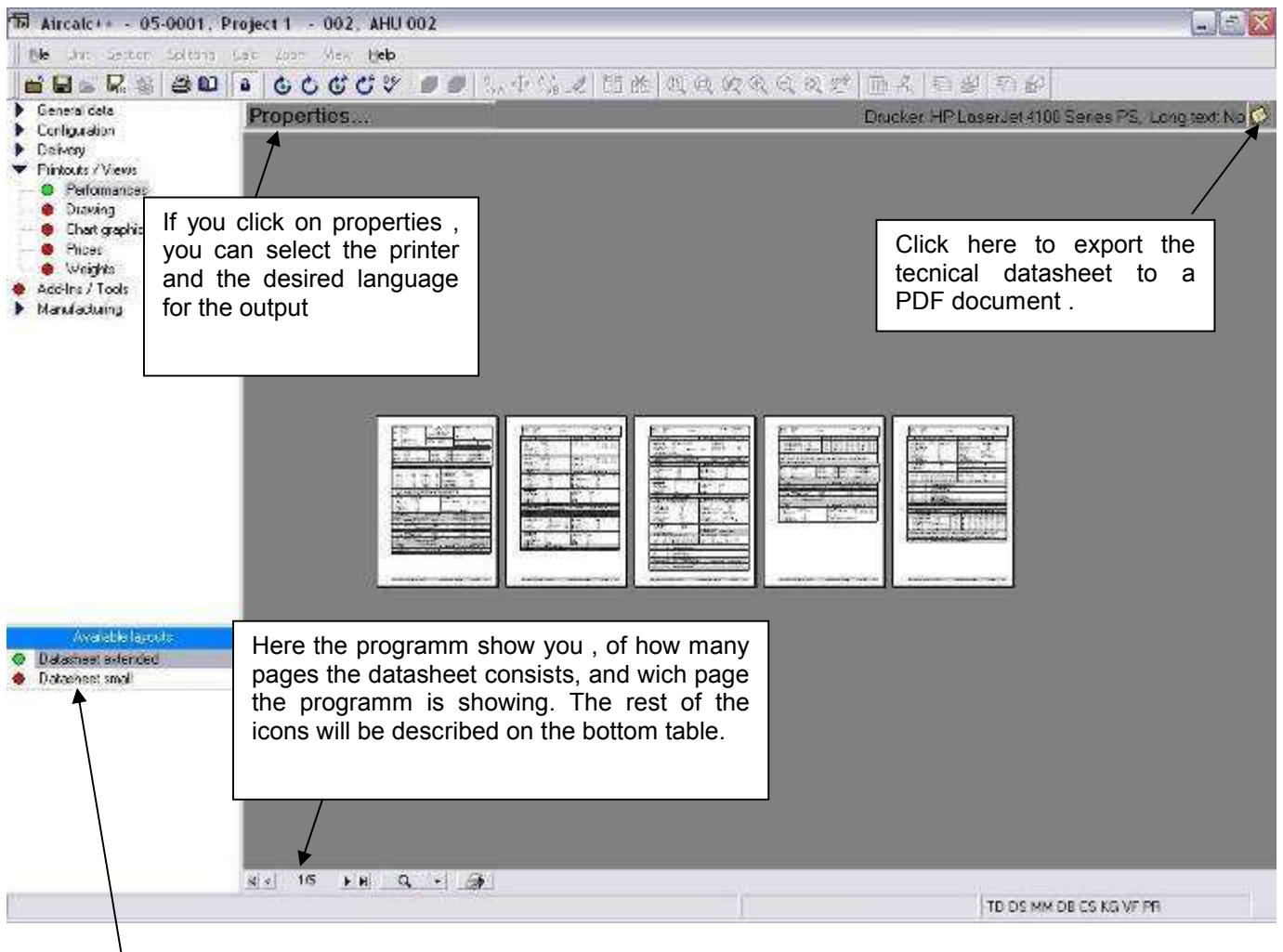


If you calculated the unit technically, it is far not enough . Still e.g. the division of the delivery sections must be defined, the weight should be determined, prices is necessary. All this settles this key in the background. If you possess a very fast computer, then you can click instead of the key “calculation in the background” on “complete the selection” simply. The computation not computed components in the background is implemented automatically here.

After this step, the unit calculation is completed and ready for the print.



## Printouts – Tecnical data sheet



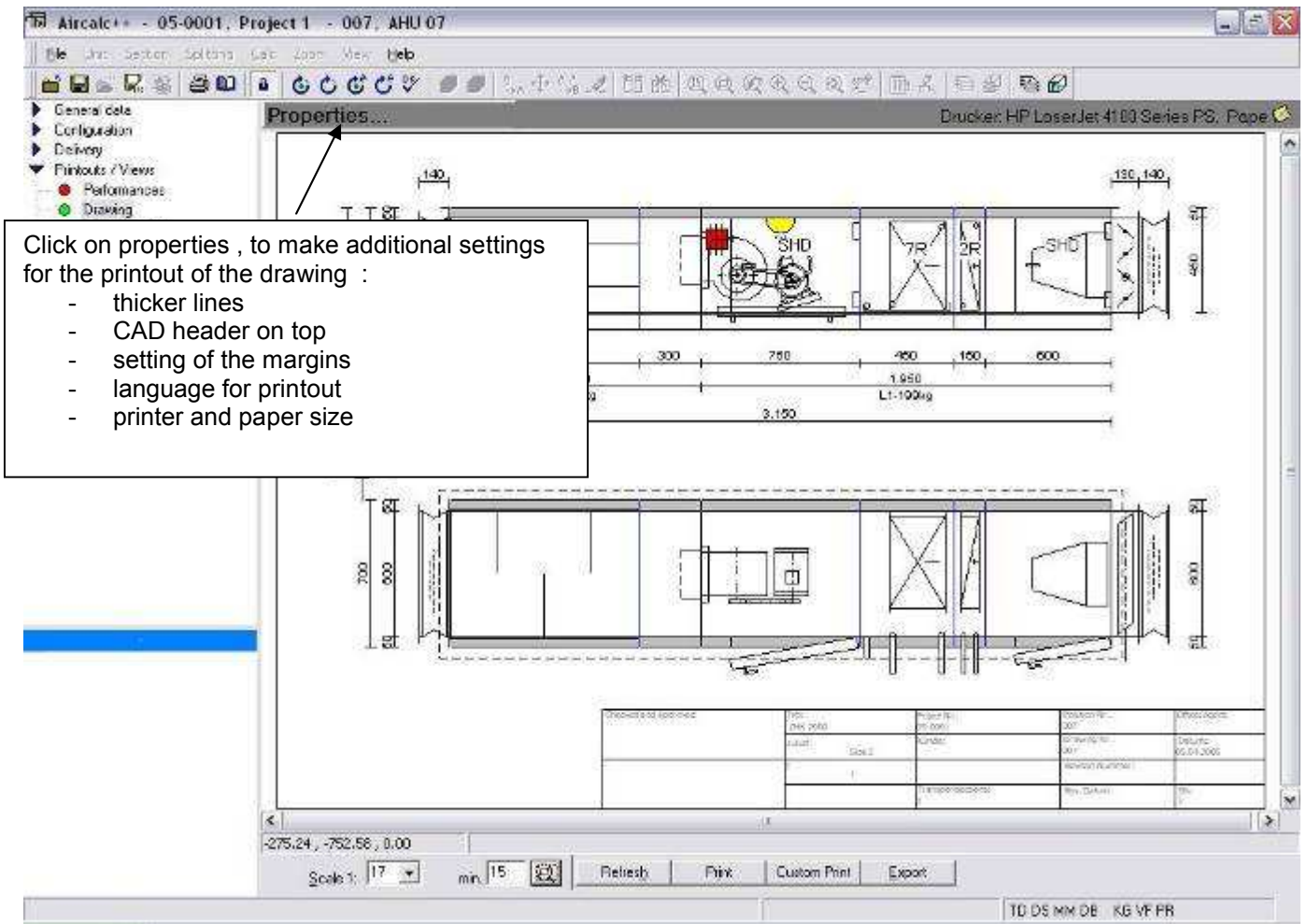
Select here, wich formular you want to print ( if more than one layout is available in the program ).

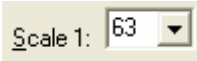
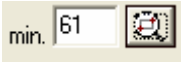


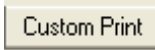
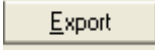
With this symbols ( indicated in the next table ) the user can do the following settings or start the printout on the printer .

Icon	Description
	Change to the first page in the datasheet
	Go one page back
	Go to the next page
	Change to the last page in the datasheet
	Factor for the zoom on the video
	Start the output on the printer

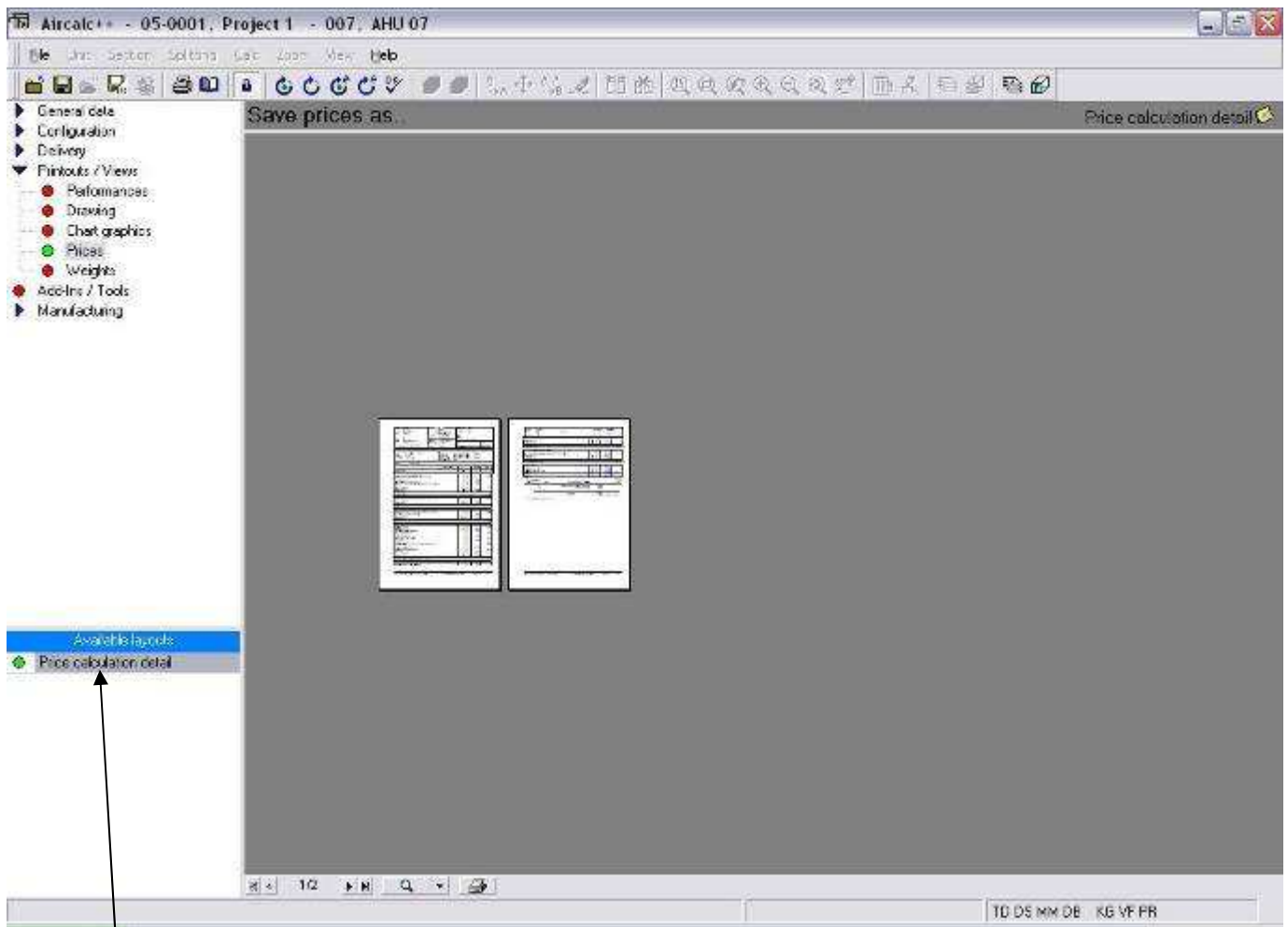


## Printouts – Unit drawing



Icon	Description
	Place the desired yardstick one. You can select one from the list or register every other permissible number by hand. Do not forget after the change of the yardstick on "refresh" to click, so that the design is again generated.
	You can click also on the magnifying glass right from the yardstick. With this key the design is set on maximally possible representation. Since to be made smaller (would be no longer readable this with large devices there) the minimum indicated yardstick cannot change the dimension lines /writings around the same factor as the design slightly. Click simply repeatedly on the magnifying glass and you get a correct drawing .
	"Refresh" the view on the screen
	Start the print of the drawing
	The button "Custom print" is for experts. Thus details can be selected to print and still many other parameters to be set. This Tool is available only in English. Try it out, there are many possibilities.
	The drawing can be exported to a file. You will be able to create the following files : DWG or DXF files, all type of files for AutoCAD ( all versions are supported ), or export the drawing to a BMP or WMF file ( grafic file )

## Printouts – Price sheet

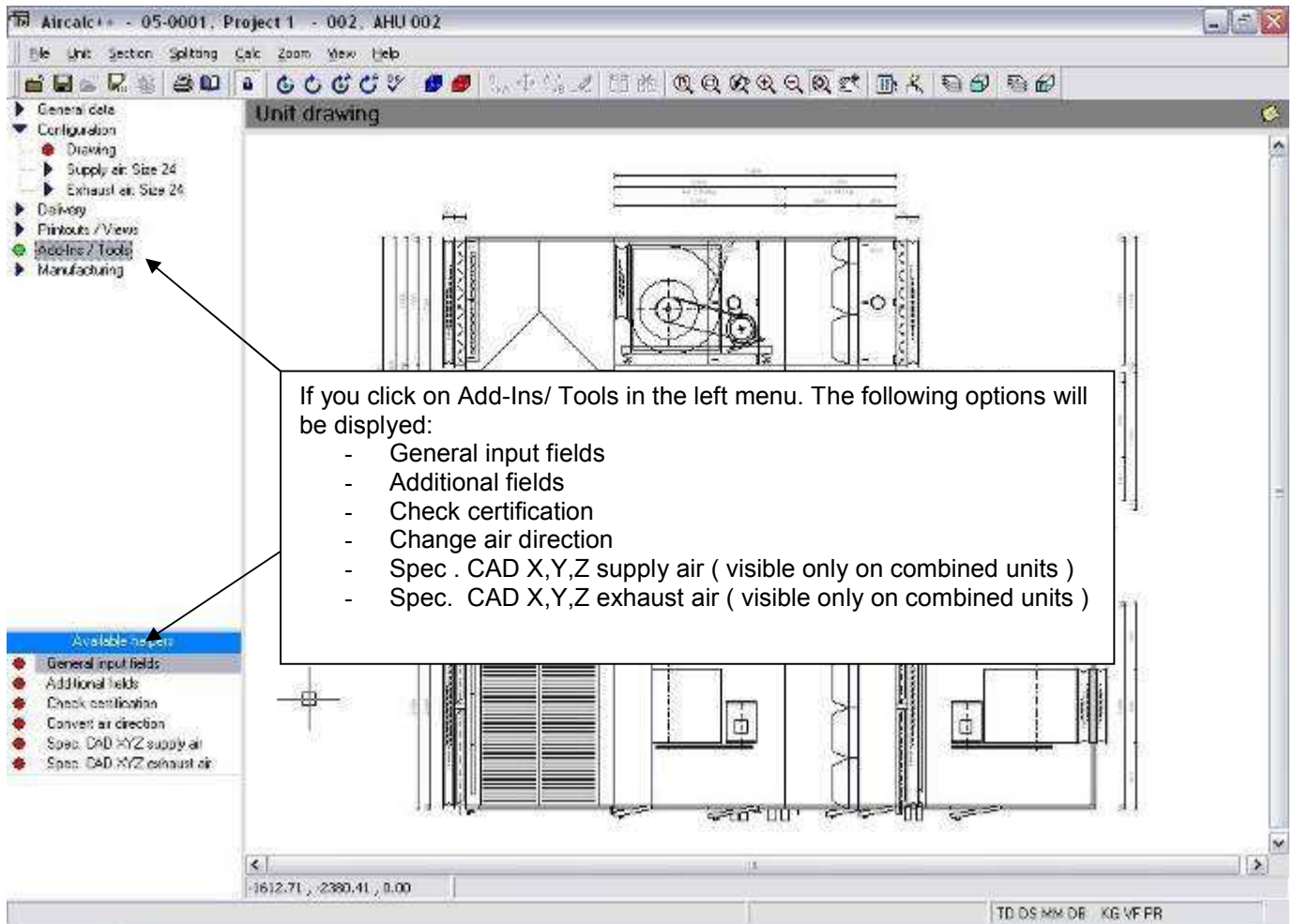


Select here, which form you want to print ( if more than one layout is available in the program ).

Click on save prices as, to export the price schedule to a pdf-file.

Depending on the settings on the layout of the price schedule can be different as this example, or for example not be visible for some usergroup of the program.

## Additional functions



If you finished the selection of the air handling unit and would like to change the size of unit or to again see the quality, or would like them completely simply the input fields all, as at the beginning, then click on the desired point of menu or click them on "AddIns/ Tools ". You will get then in the left lower window the following program functions:

### - General input fields:

If the user selects this option, then the program lists all input fields in a mask, which are needed for the selection. The same list sees the user also, as soon as it changes from the CAD structure of the AHU into the technical design (symbol with the lock).

### - Additional fields:

Here the user has the possibility, to fill in some informations in 9 available fields. Ask your program distributor, if these fields will be printed on one of the several lists ( technical data, drawing, production documents, ... ).

### - Check certification:

If you click on this point of program, then the program examines different rules, which were integrated by the program distributor in the data base.

E.g. certain accessories are active, which are not permissible with a certain unit configuration, or must a certain section certain accessories always have, and the user did not select this. Thus this is hereby examined. This point of program does not have to be selected however separately, the program makes this automatically before it completing the unit computation continue can.

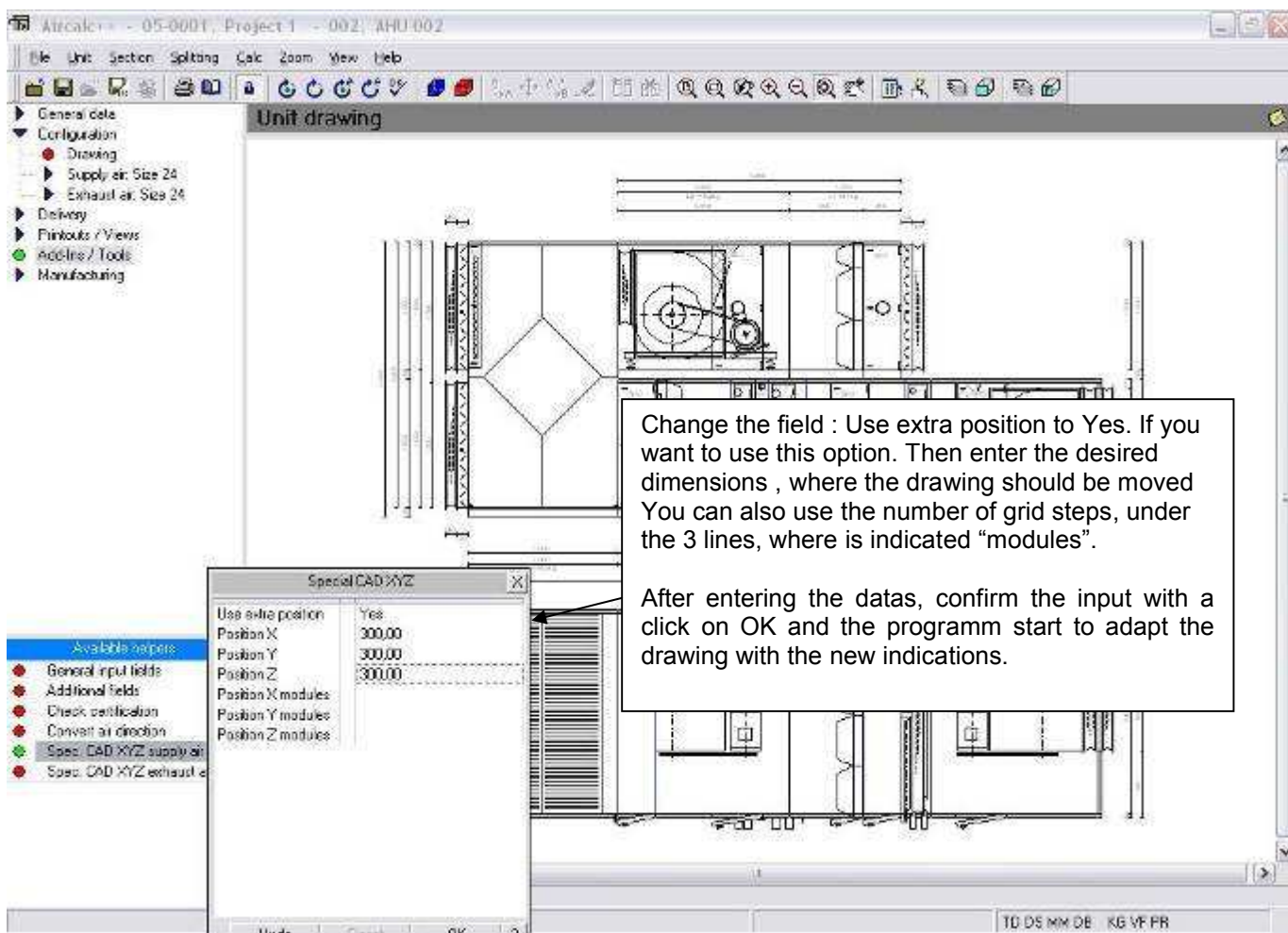


### - Change air direction:

Simple command to change the air direction on the air handling unit .

### - Special CAD X,Y,Z supply air :

If this is selected, then the user can separate the supply air unit by input of the desired coordinates from the exhaust air unit ( for the drawing ) .

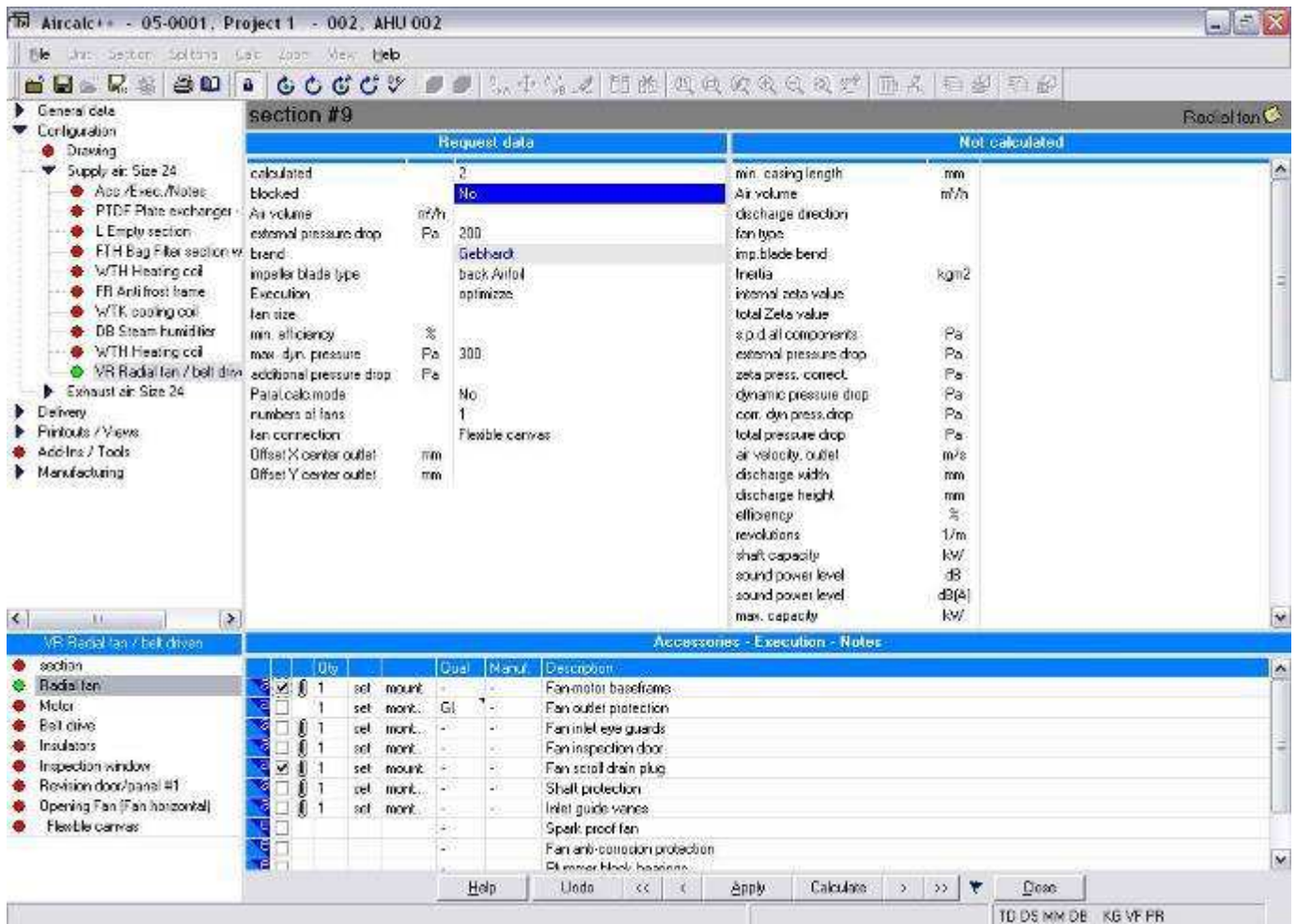


### - Spec. CAD X,Y,Z exhaust air :

The same function us before, but valid for the exhaust air unit.






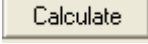


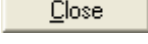
## Other – detailed modification of components



If you do not find in the "general input fields " everything which you to select would like or you would like to look at certain selection results , then you select the desired component in the left tree menu completely simply. You come to the indicated mask also, if you select "foreground calculation" in the menu .

If you click in the left lower window on the desired line, then you get default input datas and result datas in the main window.

The following keys are available :

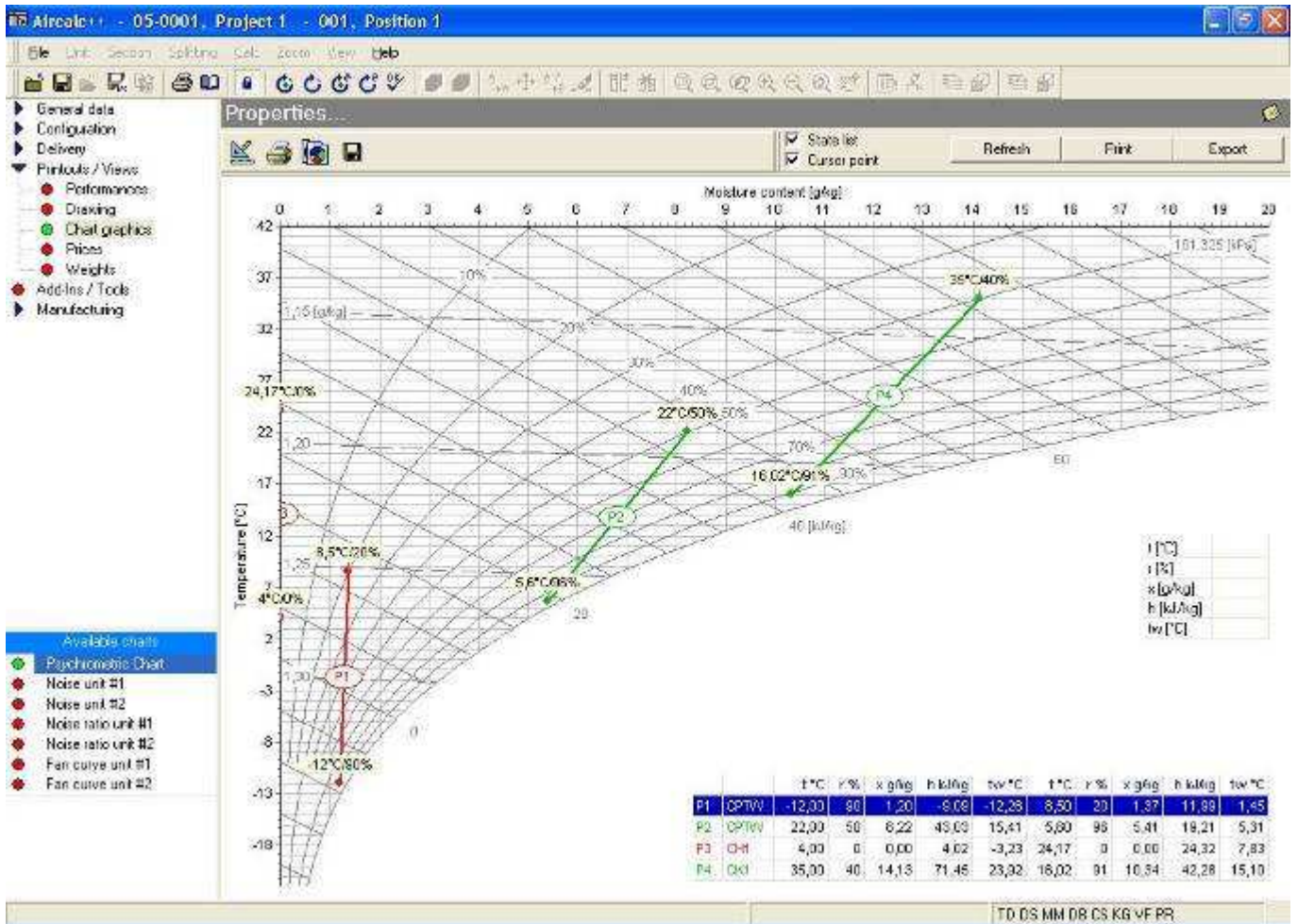
Icon	Description
	Go back to the section before
	One line back in the actual section
	Save changed datas
	Save changed datas and start the calculation
	One line forward in the actual section
	Change to the next section
	Save the datas , close the window and turn back to the drawing

If you start the computation e.g. for a fan directly on this section , then you get a list with all the possibilities.

Fans												
Name	Price %	Motor	Cas. mm	Size	Eta %	Revo. 1/m	SPow. kW	dB	Dyn Pa	Tot Pa	Max 1/m	Max kW
RZR 11-630	65	M2QA 180 L4A	1.982,5	630	81,1	1.460	11,50	90	86	1.218	1.838	13,00
RZR 11-710	73	M2QA 180 M4A	2.135,0	710	82,3	1.196	10,70	87	55	1.156	1.627	16,00
RZR 15-630	75	M2QA 180 L4A	1.982,5	630	81,1	1.460	11,50	90	86	1.218	1.880	33,00
RZR 19-630	91	M2QA 180 L4A	1.982,5	630	81,1	1.460	11,50	90	86	1.218	1.880	33,00
RZR 13-630	98	M2QA 180 L4A	1.982,5	630	81,1	1.460	11,50	90	86	1.218	2.380	33,00
RZR 12-630	100	M2QA 180 L4A	1.982,5	630	81,1	1.460	11,50	90	86	1.218	1.838	13,00

In this list you have the possibility of sorting all data as desired. Click on the column title and the data are ascending sorted. If you click again on the column title, the program sorts descending. Thus the program offers an optimal possibility of selecting the desired component.

## Printouts Chart grafics – psychometric chart

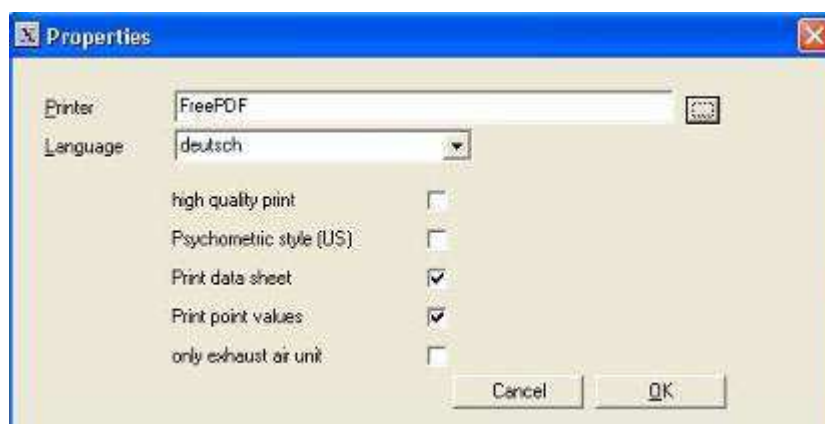


The psychometric chart is available in 2 versions:

- european psychometric chart
- american psychometric chart





For the 2 diagrams the printout can be done with portrait or landscape orientation

If you click on properties you can make the following settings :



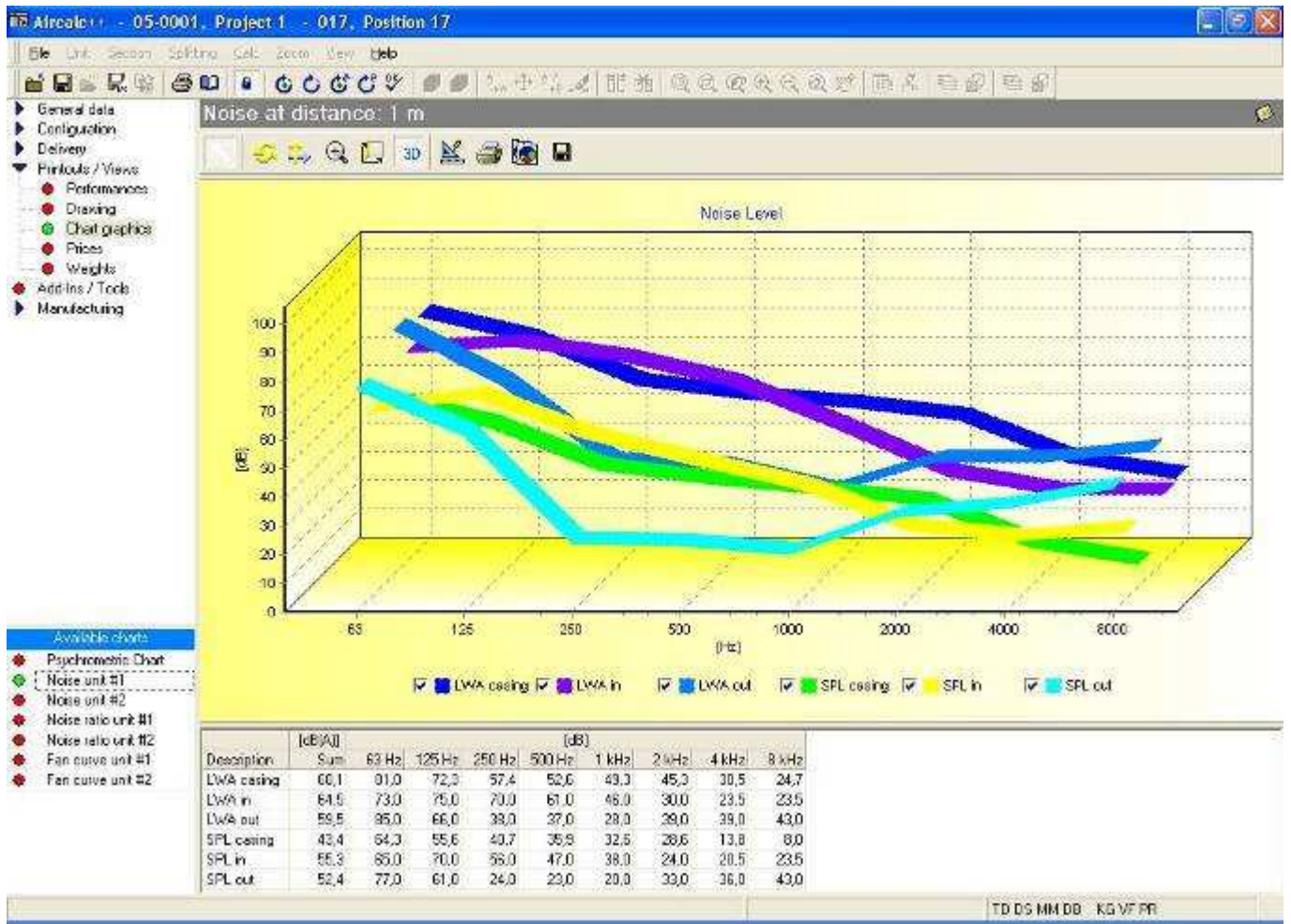
Further: Selection of the printer and the target language, print in a higher resolution, psychometric style (US), printout of the point values, or is to be printed out about only the supply unit on the psychometric chart?

There is also the possibility of exporting the diagram into a pdf document. Click for this simply on the export button and define where the file should be saved.

Icon	Description
	This symbol starts a tool ( available only in English ), with which you can edit the settings for the psychometric chart. Try it out !
	Print preview for the diagram. Here still different settings can be selected such as printer, margins etc..
	Make a copy of the psychometric chart
	Save the graphic to a separate file ( bmp, jpg or Pdf )
<input checked="" type="checkbox"/> State list <input checked="" type="checkbox"/> Cursor point	State list shows a table with the values for every component Cursor point show a small table with the values on the position of the cursor
<input type="button" value="Refresh"/>	„Refresh“ the view
<input type="button" value="Print"/>	Start the print of the chart grafic
<input type="button" value="Export"/>	Export the chart to a file ( PDF )

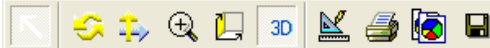













**Printouts Chart graphics – sound calculation**



In this diagram the sound computation for the air handling unit is represented ( if the user calculate a combined unit , then for each unit such a diagram is provided separately). The user has the possibility of changing the representation diagram as desired to in/fade out as well as data to print out or into the intermediate file copy and into other programs insert (e.g.. Word).

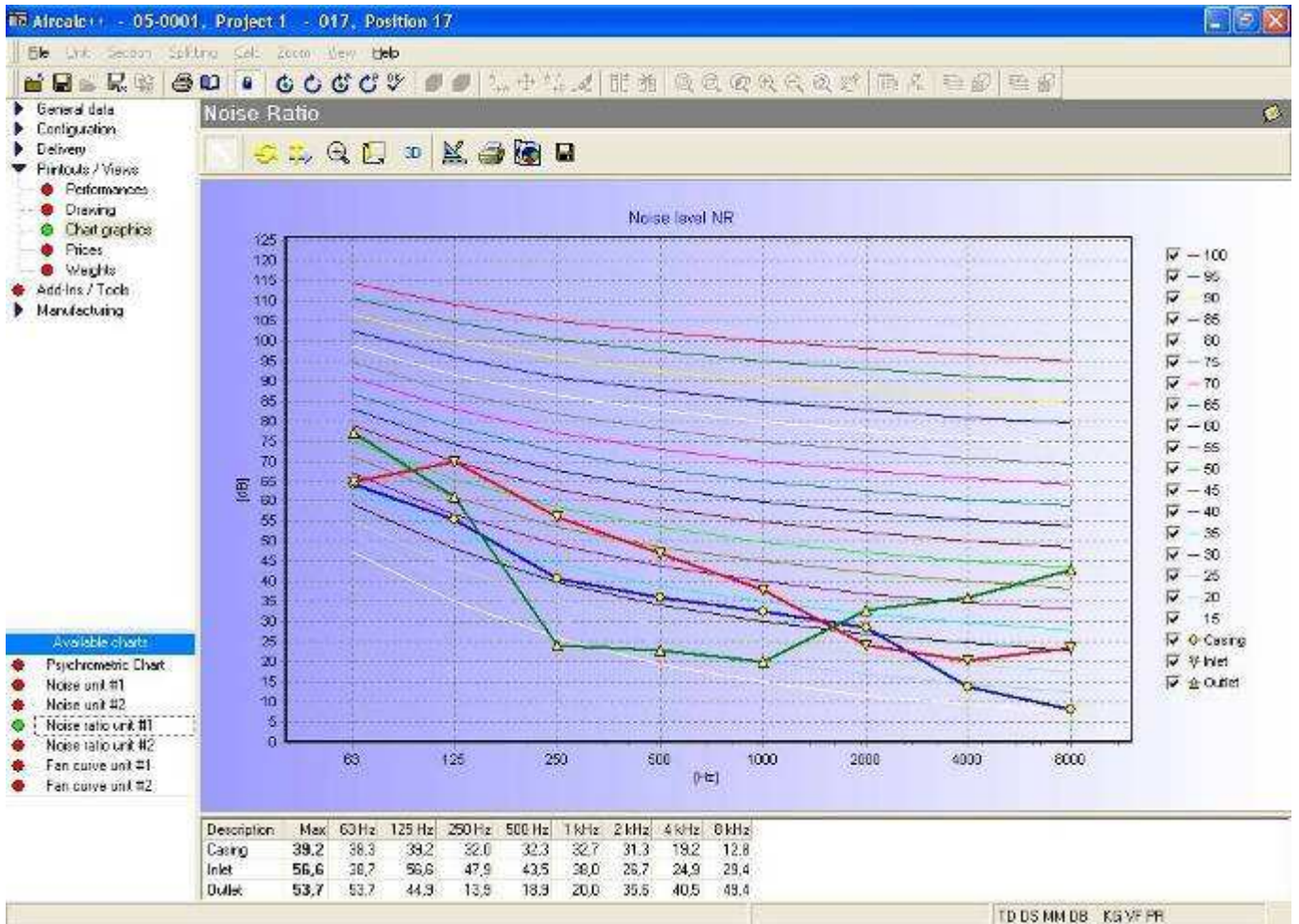
Noise at distance: 1 m



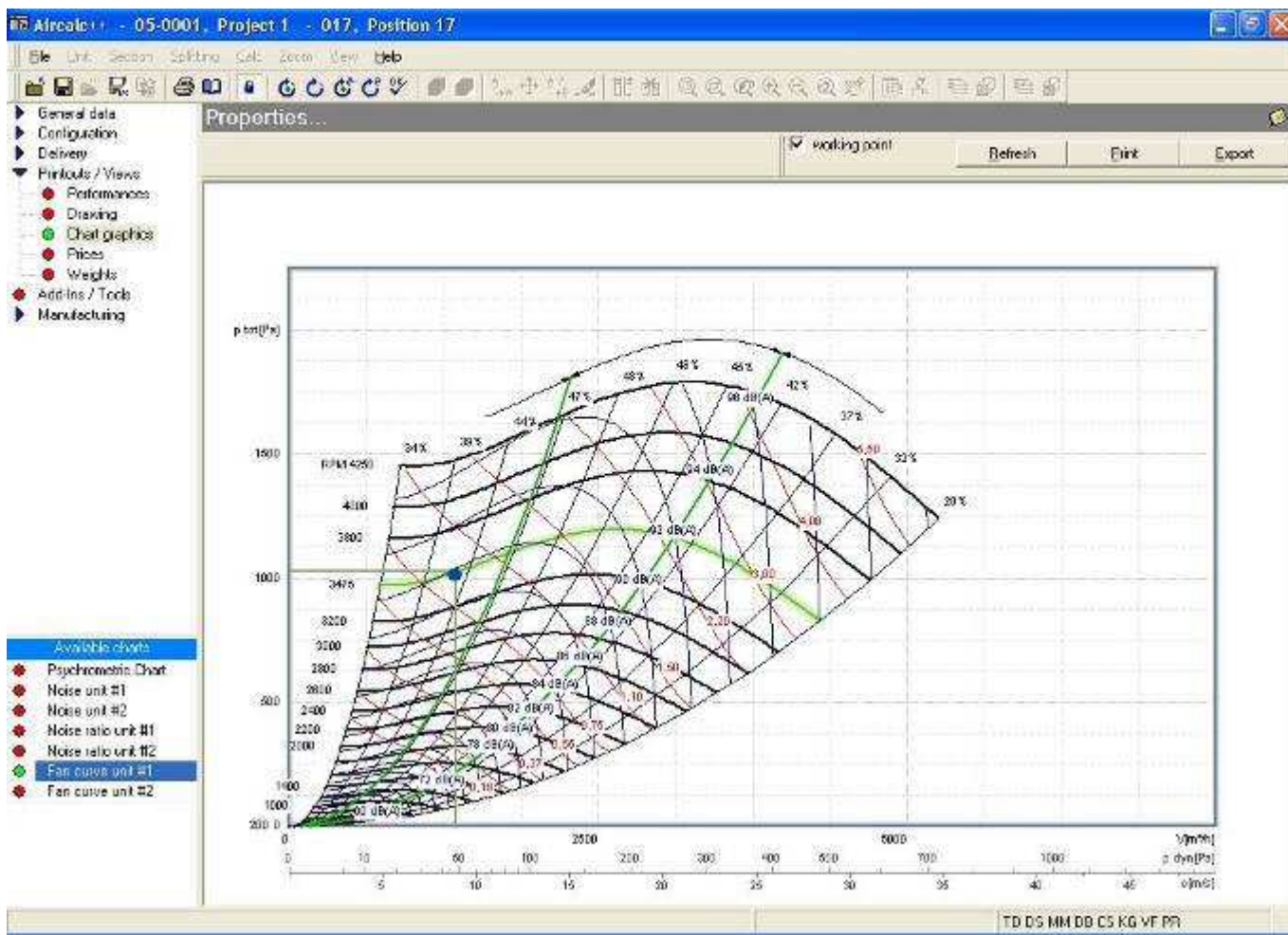
Icon	Description
	With this button the user can select the desired distance for the sound value computation. Further whether the program is to count on or without insertion insulation, and whether the table with the data is to be printed out also on the data sheet.
	
	Rotate the chart graphic on the desired direction
	Move the chart in x,y direction
	Zoom ( + , - ) of the diagramm
	Change the depth of the diagram
	Change between normal or 3D view of the diagram
	Make settings ( colors, labels ..) on the diagramm
	Print the diagramm
	Copy the diagram
	Save the diagramm to a file ( bmp, jpg, pdf or other file formats )



## Printouts Chart grafics – Noise Ratio



## Printouts Chart grafics – fan curve



This diagram shows the fan curve with the working point of the fan. For each unit the program will create a separate diagram. ( Fan curve unit #1, Fan curve unit #2 in this case )

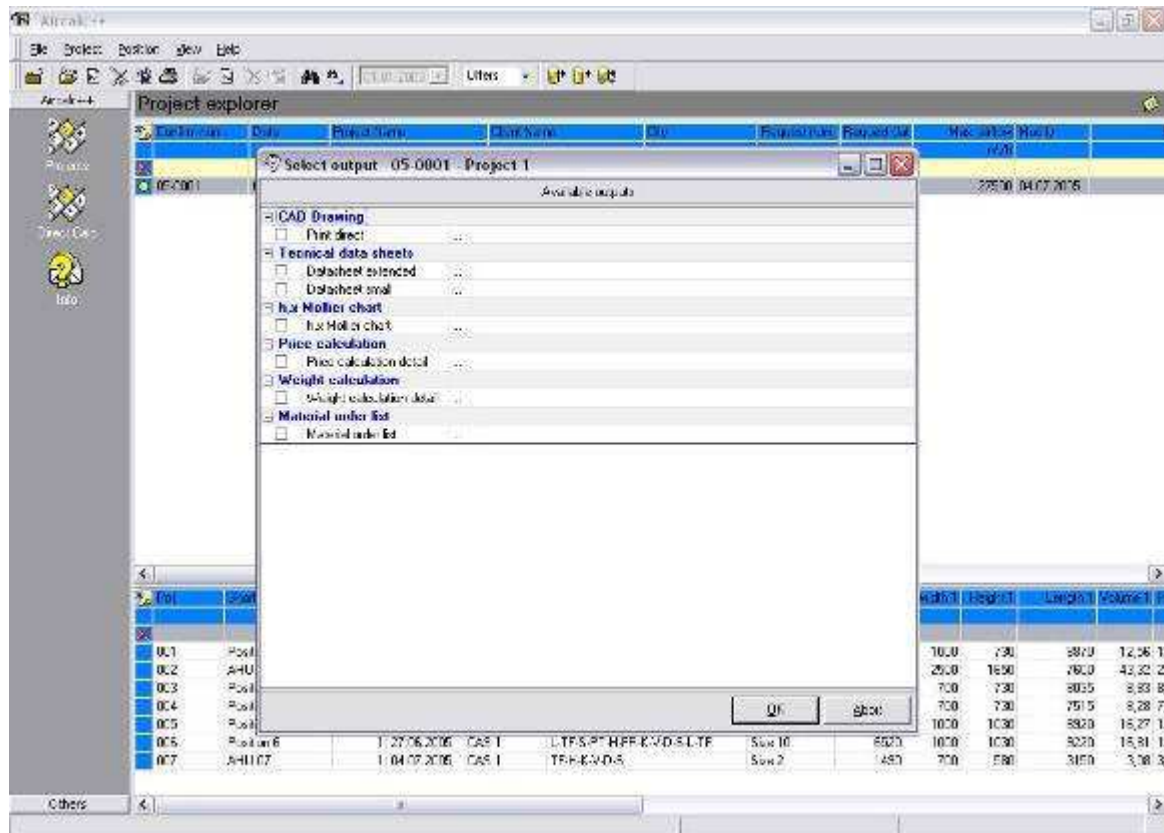
Properties...

working point
 Refresh
Print
Export

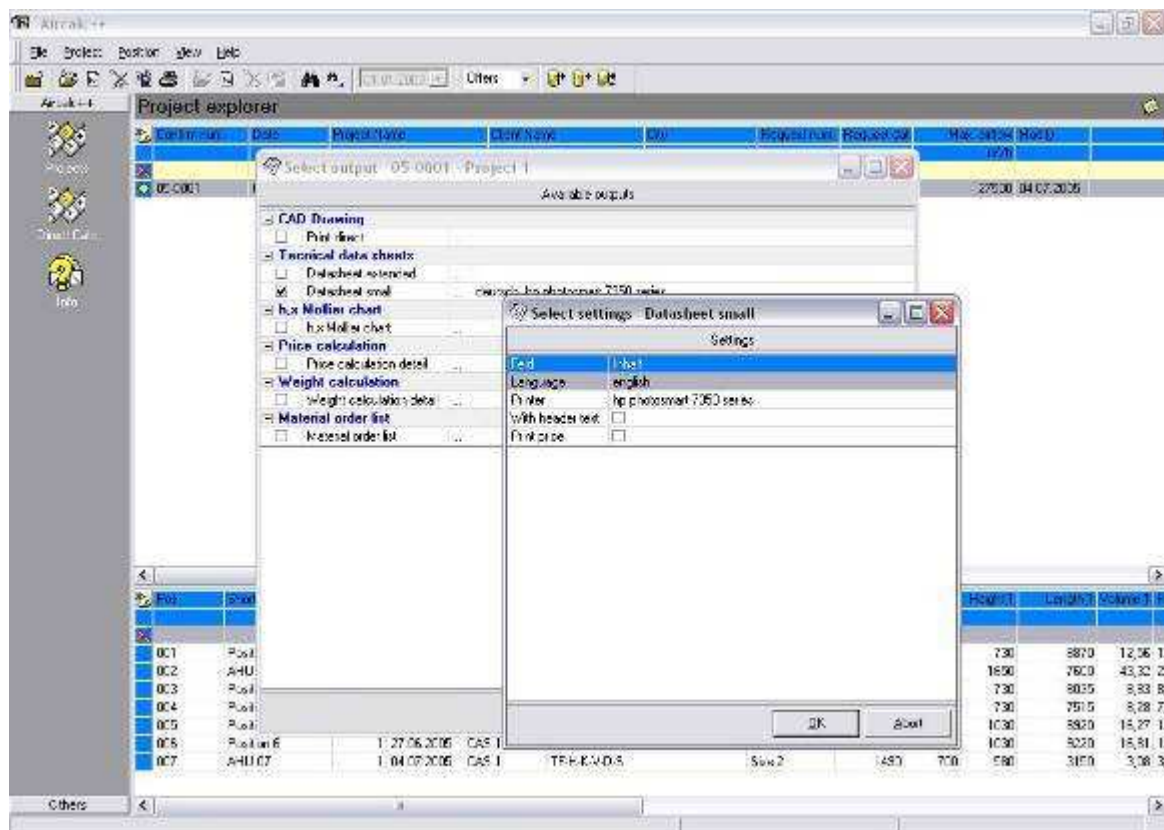
Icon	Description
<input checked="" type="checkbox"/> working point	Enable this checkbox if you want to see the working point of the fan in this diagram or not.
<span style="border: 1px solid gray; padding: 2px 10px;">Refresh</span>	Refresh the view of the diagram
<span style="border: 1px solid gray; padding: 2px 10px;">Print</span>	Start the print of the diagram
<span style="border: 1px solid gray; padding: 2px 10px;">Export</span>	Export the diagram ( bmp format )

## Making a printout on the project explorer

The user has the possibility to do a printout of the hole project at once. You don't need to do the printout during the calculation. To start the printout for the hole project, you have to do this in the project explorer. First you select the desired project and then you click on the printer symbol. The program will open the next mask.

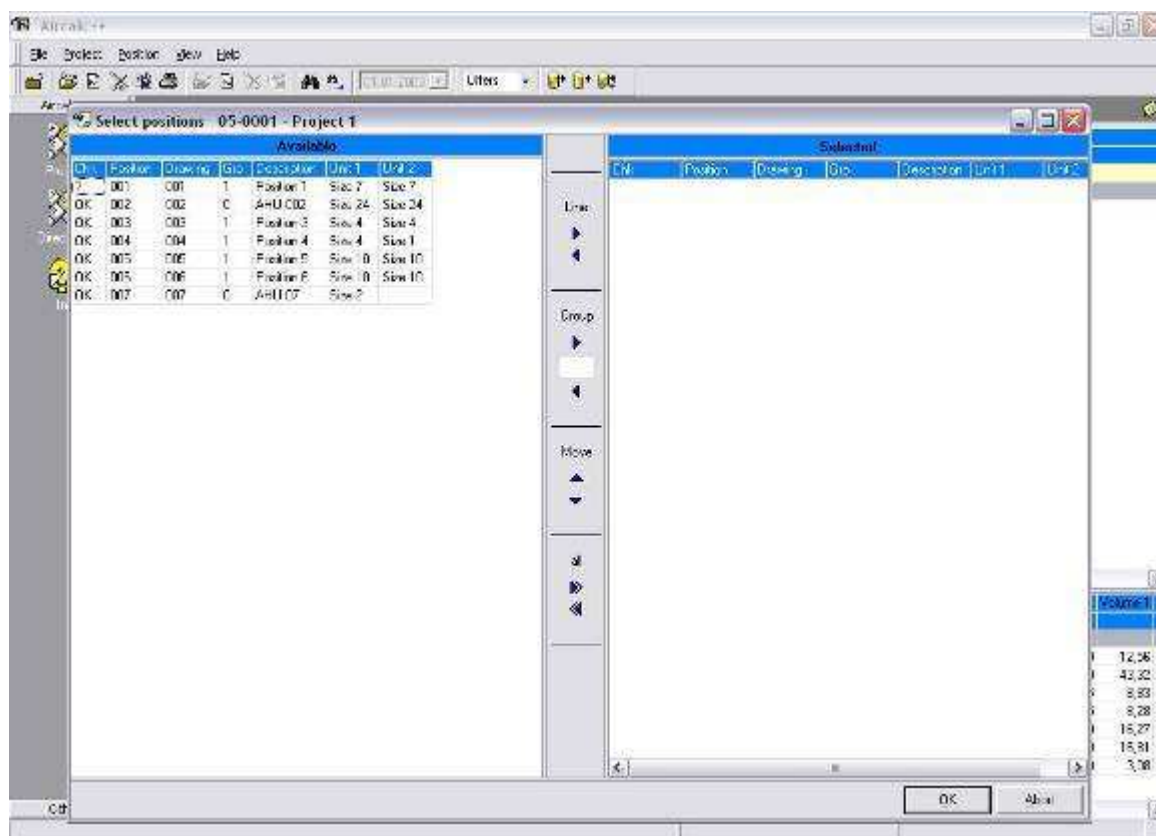


Now you can select, which printouts you want to start. Click on the desired checkbox to select the desired output and define other details.



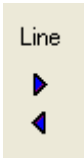

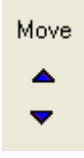



After the definition of the details confirm your choice with the OK button.

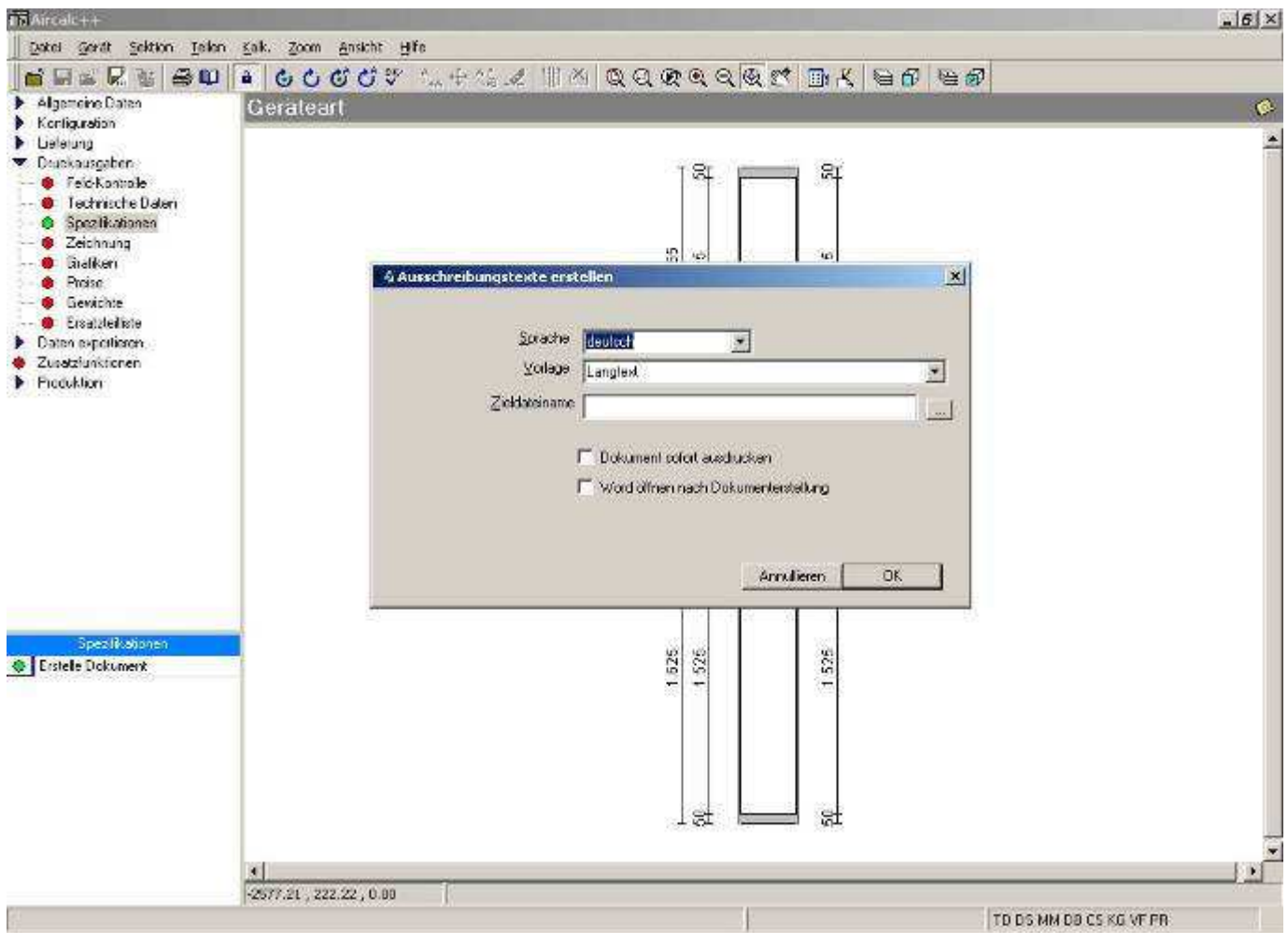


In this mask you can make now the desired positions for which you the output want to define. Make simply for one doubleclick on the desired line and the program push these into the right side of the window. After you selected all positions confirm with ok and the program start with the desired output. With a simple click on the desired column, the programm will sort the sequence for the printout.

Additional description about the available commands :

Icon	Description
	Select first the position by a simple click with the left mouse button and click you then on these arrow keys. In the left side of the window are all available positions. The positions in the right side of the window are printed out by the program. This button is to shifts individual positions suitably.
	Enter in the white field the delivery's group (value in the column Grp) and click you on arrow to the left or right. Thus you can shift fast the desired delivery's group into the other side of the window.
	By this command you can define still the sequence for the printout. Click the desired position by a simple click on and bring you these then into the desired order. The program prints out the positions in that order, as you are located in the right window.
	By means of these keys you can shift rapidly all positions of the left into the right side of the window.

## **Printouts specifications**



The user has the possibility under printouts, specifications to generate a long text specification for the air handling unit . This file can be worked on then in Microsoft Word (or by other programs ). Select the desired language for the printout, the layout for the document and the filename (under target file name). Further you can still select here whether the document is to be printed out immediately after generating or opened with Microsoft Word.

If the printout is started directly from the project explorer, the user has the possibility to select from 2 different variants:

1. Long text data sheet – Single document
2. Long text data sheet – summary for all units

If you select option nr. 2 , the programm will do the following:

The program looks for itself first for all air handling unit positions of the project the A-texts (general descriptions of the unit, sections, components) together. That is called to print the program tried on the first sides in each case 1 x a certain text block.

Example: You have a project with 10 positions, where 8 units are with 35 mm panells and 2 units with 50 mm. The programm will print for the A-Text 1x the text for the 35 mm panell and 1 x for the 50 mm panell.

After this, the program begins with the listing of the unit positions, whereby each unit position on a new side begins. For each unit are listed all sections and components with accessories etc.. With the components now no more described, how the housing looks, it will be referred only to the description in part of A.

## **Exchange projects with other Aircalc users**



The program offers the possibility to each user of exchanging with other Aircalc users of projects over data media or email. Aimed entire projects can be exported and sent away. If a project has very many positions (air handling units ), then the user can select also here purposefully, which positions are to be stored into a file.

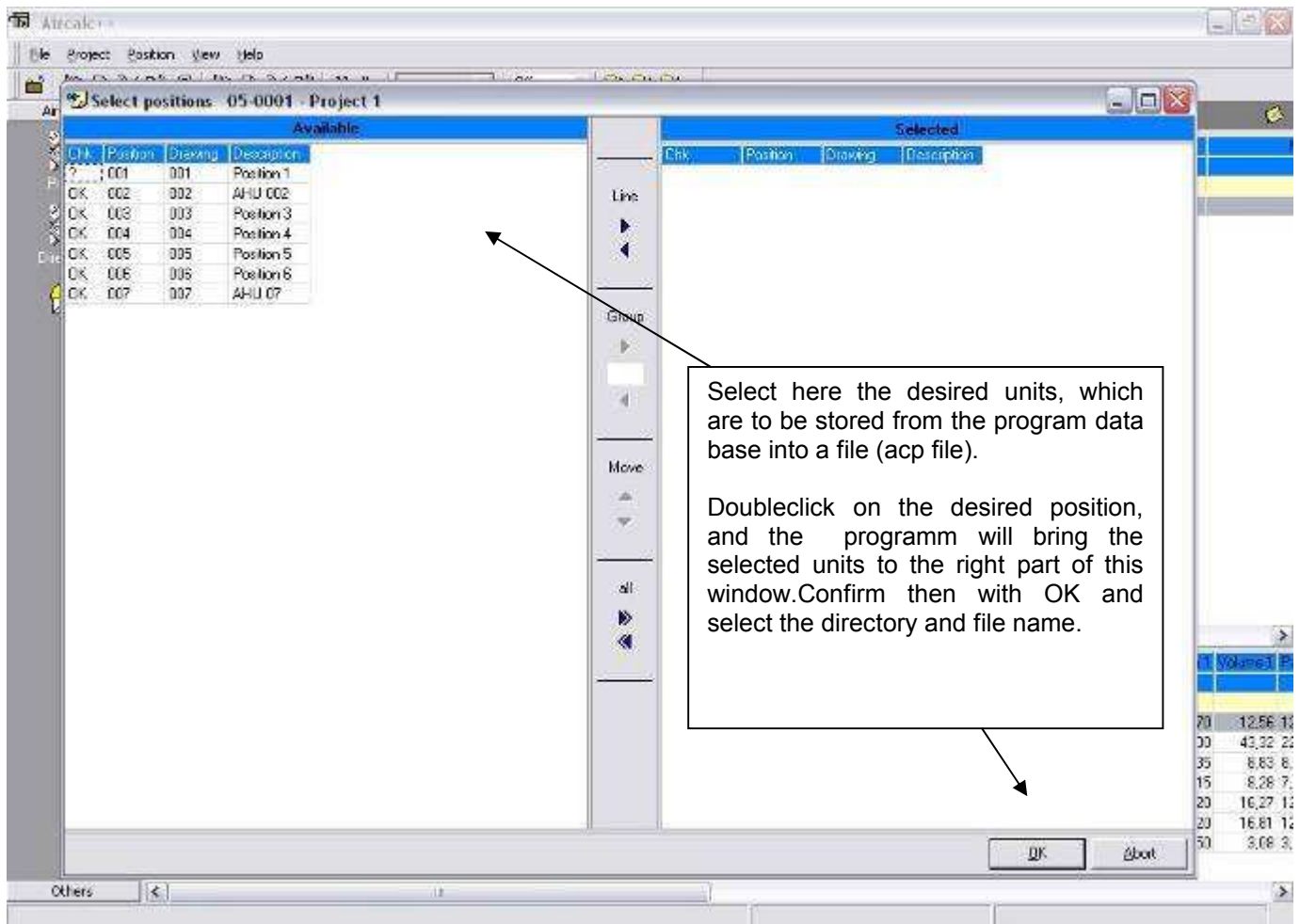
Already in the description of the Project explorer we have seen the the following 3 symbols. Now we want to look at that again in the detail:

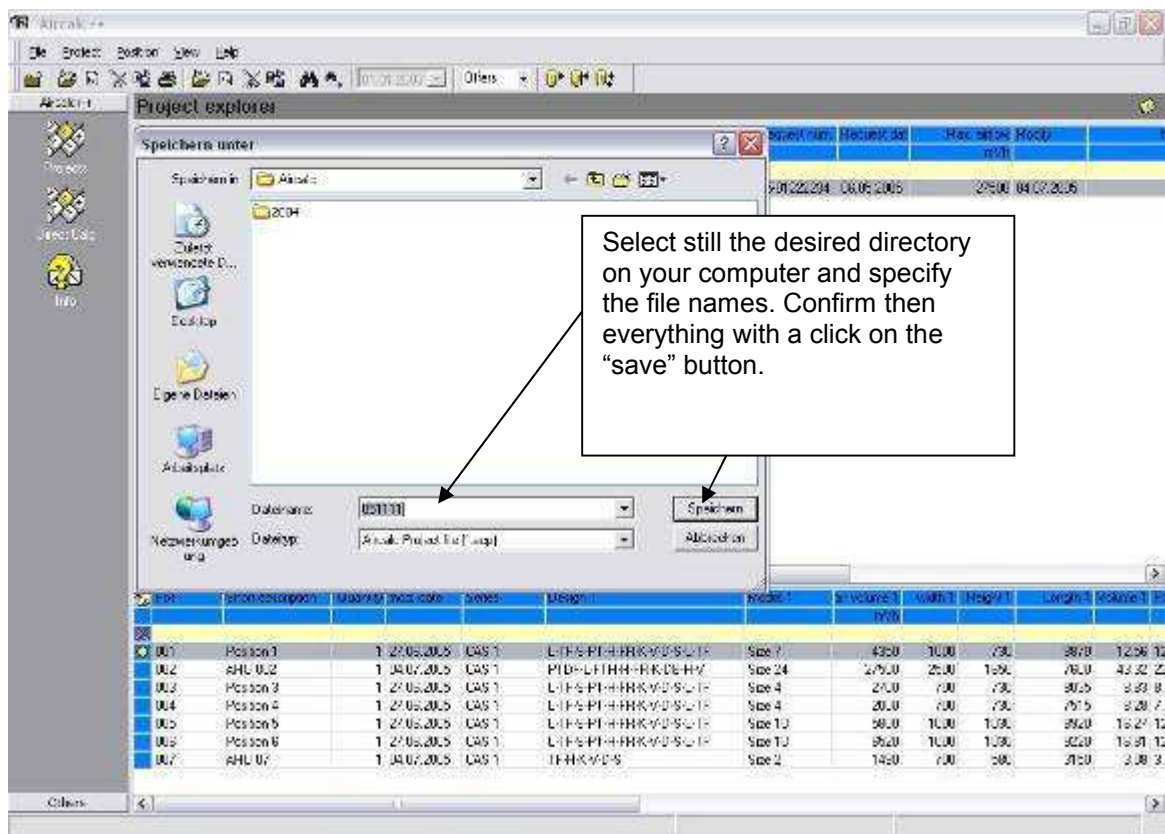
## - Export



Export from projects. With this symbol you can projects export and completely with all positions in a file store. You can send this file then by means of E-Mail to other Aircalc users.

Select before the project , that should be saved in a file. After this select this icon and the programm will open a window like the following:



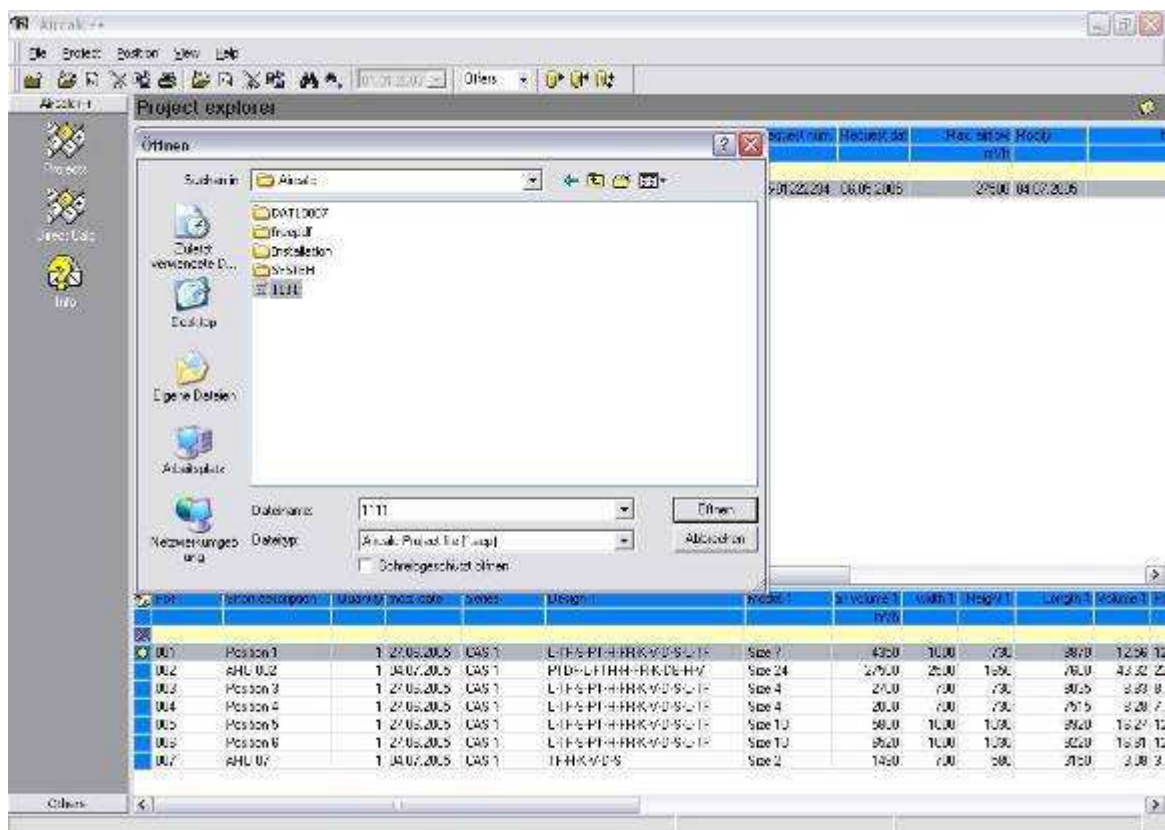


## - Import



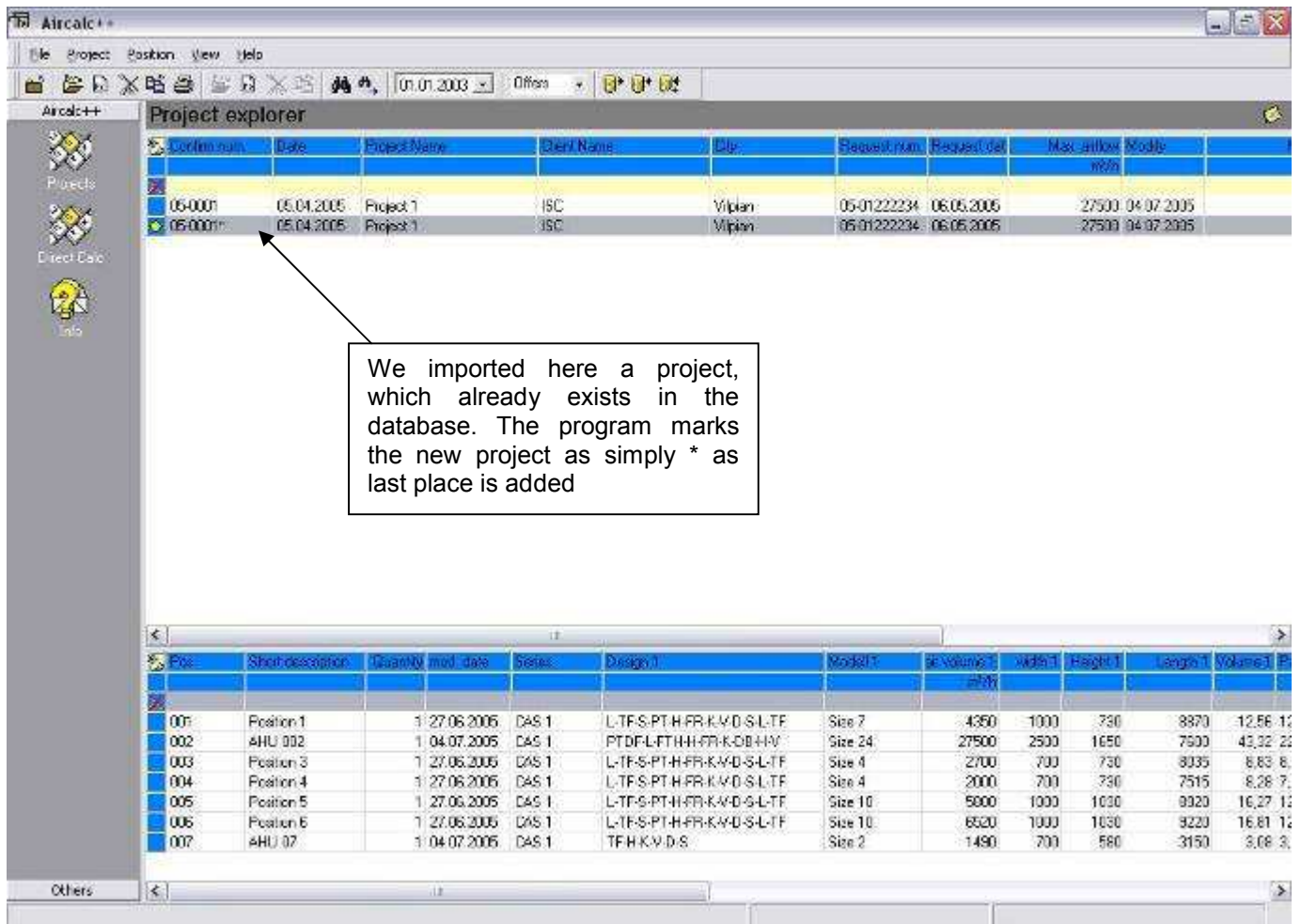
Import of projects. Exported or by external users received projects can again be imported to your programm with this icon.

If you click on this icon, the programm ask you for the file name to import. Make a double click on the desired file or open the file selecting it and clicking on the button "Open".



Before the program copy the file to import to the database checks if there is just existing a project with this name. In this case the program will apply a "\*" at the end of the project name.

So we have not the problem, to overwrite some existing project !!



Confirmation	Date	Project Name	Client Name	City	Request ref.	Request date	Max airflow m³/h	Modifi
05-0001	05.04.2005	Project 1	ISC	Vipian	05-01222234	06.05.2005	27500	04.07.2005
05-0001*	05.04.2005	Project 1	ISC	Vipian	05-01222234	06.05.2005	27500	04.07.2005

We imported here a project, which already exists in the database. The program marks the new project as simply \* as last place is added

Pos.	Short description	Quantity	mod. date	Series	Design	Modell	Flowing	width	Height	Length	Volume
001	Position 1	1	27.06.2005	DAS 1	L-TF-S-PT-H-FR-K-V-D-S-L-TF	Size 7	4350	1000	730	8870	12.56
002	AHU 002	1	04.07.2005	DAS 1	PTDFL-FTHH-FR-K-DB-H-V	Size 24	27500	2500	1650	7500	43.32
003	Position 3	1	27.06.2005	DAS 1	L-TF-S-PT-H-FR-K-V-D-S-L-TF	Size 4	2700	700	730	8035	6.83
004	Position 4	1	27.06.2005	DAS 1	L-TF-S-PT-H-FR-K-V-D-S-L-TF	Size 4	2000	700	730	7515	8.28
005	Position 5	1	27.06.2005	DAS 1	L-TF-S-PT-H-FR-K-V-D-S-L-TF	Size 10	5000	1000	1030	9320	16.27
006	Position 6	1	27.06.2005	DAS 1	L-TF-S-PT-H-FR-K-V-D-S-L-TF	Size 10	6520	1000	1030	9220	16.81
007	AHU 07	1	04.07.2005	DAS 1	TFH-K-V-D-S	Size 2	1490	700	580	3150	3.08

## - Attach an air handling unit from a file



Import datas from a file created with the Direct calculation or from other projects

This option can be used, in order to store units from other orders/offer or from a fast selection (naturally in a file one stored) into the project.

Is the same as the import of the project, with the difference that also the file format, ACP file (project file) or ACD file (file from fast selection), which can be imported, can be selected here.