



AV32



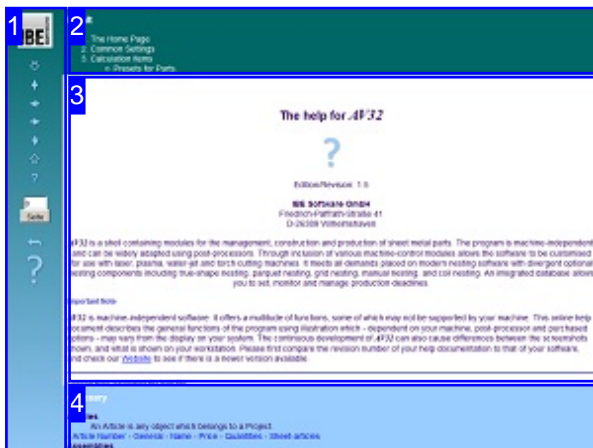
Online help SHEET METAL CENTER Plus

Calculation AV32



Welcome to the help for AV32

General Notes on Navigation



Select Navigation Method

There are two methods to navigate AV32's help files:

1. Interactive Navigation.

This allows you to control which texts you view by hovering the mouse over the relevant hotspots in the illustrations.

2. Consecutive Navigation.

This mode leads you sequentially through each help page. All available details are shown one after the other. Click the 'Next page' button (right arrow) in the left navigation panel [1] to move one step onwards.

Important Note

AV32 is machine-independent software. It offers a multitude of functions, some of which may not be supported by your machine. This online help document describes the general functions of the program using illustration which - dependent on your machine, post-processor and purchased options - may vary from the display on your system. The continuous development of AV32 can also cause differences between the screenshots shown, and what is shown on your workstation. Please first compare the revision number of your help documentation to that of your software, and check our [Website](#) to see if there is a newer version available.

The screen is divided into four areas: the menu to the left [1] with navigation buttons and the page number, which you can type in to jump to a specific side.

The content list is at the top [2], divided into chapters. The glossary is at the bottom [4], with key words and phrases linked throughout the help files. You can swap the glossary for an index list, as preferred. Simply click a keyword in either case to link straight through to a relevant help page.

The middle frame shows the current document [3].

There are two methods to navigate the help files:

Interactive

or

Consecutive

The Home Page

Start / Exit the Program, Navigate the Program.



This is AV32 's homepage. Click the 'Home' button from any other module to return to this page.

Click the IBE logo to visit IBE Software GmbH's website.

This requires an active internet connection.

Exit the program by clicking [File][Exit].

Important Note

You must allocate material groups to your machines to avoid errors during your parts' production. Material groups are given properties which relate to their technical possibilities. These settings also help avoid damage to your machines. You can work on the material groups by clicking [Edit] [Material and Machine Data Management]. The help page for this item is in the Admin's help pages.

AV32 is a shell containing integrated modules for management, construction and production of sheet metal parts. Calculating your parts' values carries particular worth and is made easy by the program's Item-oriented calculation method, which allows you to total various combinations of Parts, Articles and Cost Centers into accurate estimates for a complete job.

Cut parts can be nested on to stock sheets using standard machine values, allowing you to quickly discover production costs per Item. A typical estimate calculation process might look like this:

- o Enter the machines' Cost Centers (as foundation settings).
- o Enter the customer details (see Online help for the customer form in AV32).
- o Create a Part in the Parts Bin (see Online help for the Parts Bin in AV32).
- o Enter all Articles in the Articles Bin (see Online help for the Articles Bin in AV32).
- o Enter the Cost Centers (see Online help for Cost Centers in AV32).
- o Create a Project (see Online help for the Project form in AV32).
- o Combine the Project's various Items into Assemblies (see Online help for creating Assemblies in AV32).

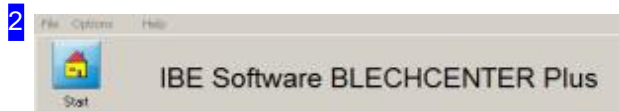
You can of course utilize each step individually. You can use a technology module to add technology data relevant to your machine to your drawings.

To ensure correct operation of the software, you must begin by setting it up to your workstation's requirements.



You can access each module individually while working. The following modules are the most important when calculating your parts' values:

- o 'Master Data' contains information about your regular customers, your Parts Bin, sheet stock, and extra data such as Cost Centers.
- o 'Orders' allows you to enter customer orders into the system.
- o Complete estimates can be combined into Projects and managed under 'Projects'.

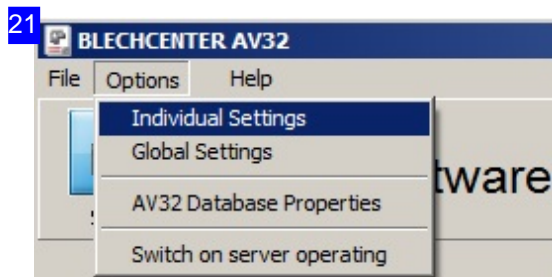


The 'Home' button always brings you back to this page.

The menu panel offers some useful navigation options. 'Exit' is under the [File] menu.

To make basic program settings or to optimize the program for the calculation in the editing, click [Options].

You can find information 'About' the program under [Help].

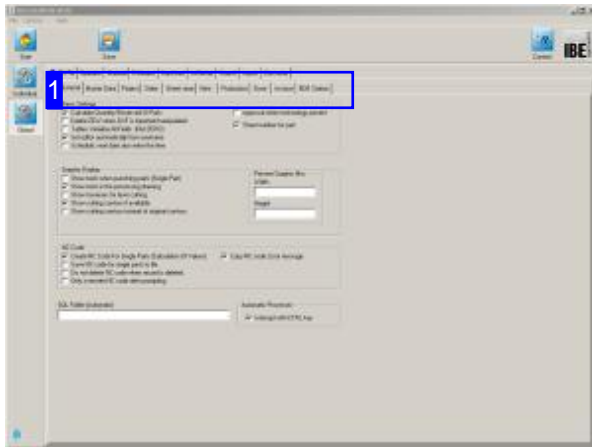


To make settings for individual users, click [Individual Settings]. This menu allows you to make settings for each individual user, eg. allowing a user access only to the estimate forms to give trimmed-down access as required.

For basic settings which will affect all users, click [Common Settings].

Common Settings

Program Settings



This screen allows you to make the basic settings for your estimates. These settings concern:

- o Quantity units.
- o Formulae for material estimates.
- o Sheet sizes and labels for standard sheets to allow provisional nesting, insuring accurate costings.
- o Cost Centers for machines to insure overheads are costed accurately.

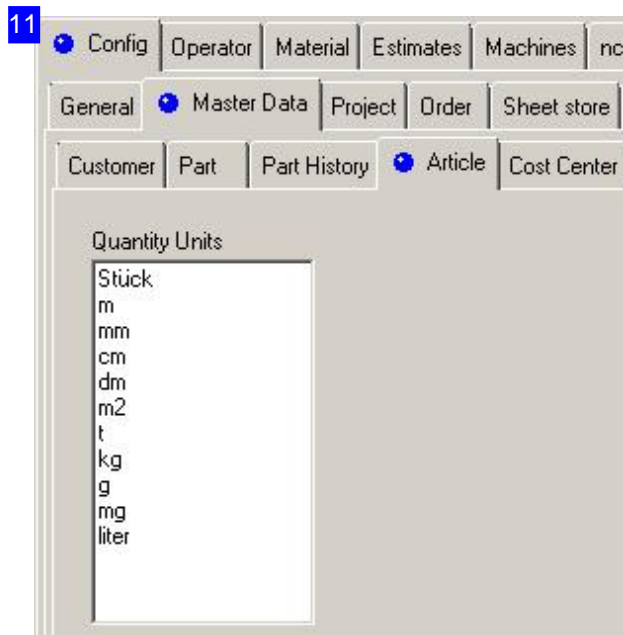
Settings which should be applied to all users can be made under [Options][Common Settings]. All users on your network can thus be given the same basic settings and conditions. You can find a description of the functions in the Admin's help pages.

The available settings are also described in their corresponding context help dialogs.



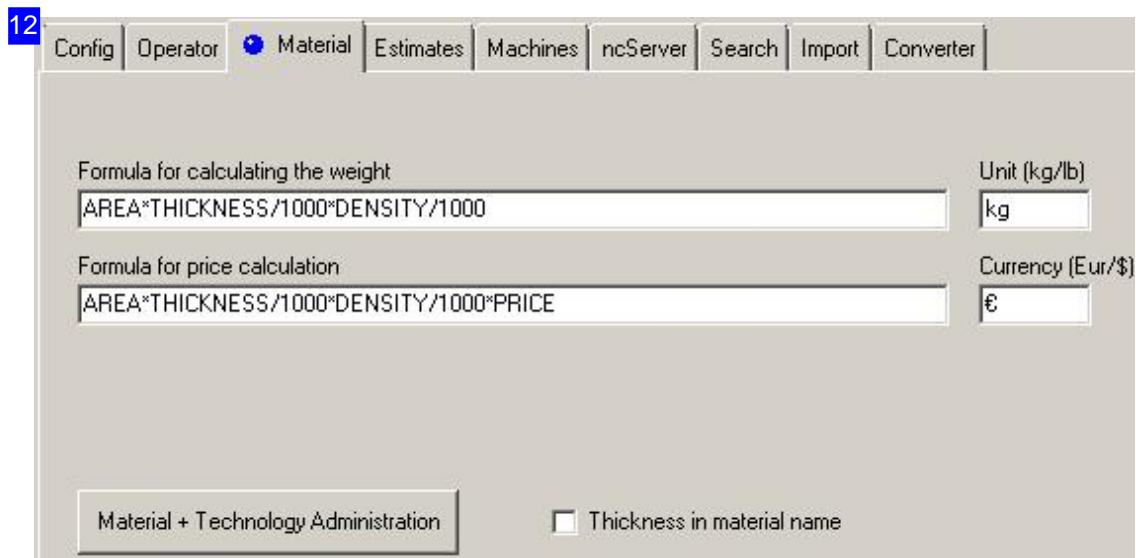
The top tab row links to the program's various modules. The second tab row is context sensitive, containing options as shown here:

- o Quantity Units: 'Config', 'Master Data', 'Article'
- o Formulae for Material Estimates: 'Material'
- o Sheet Sizes: 'Material'
- o Cost Centers: 'Machines', 'Calculation'



Select 'Config', 'Master Data', 'Article'

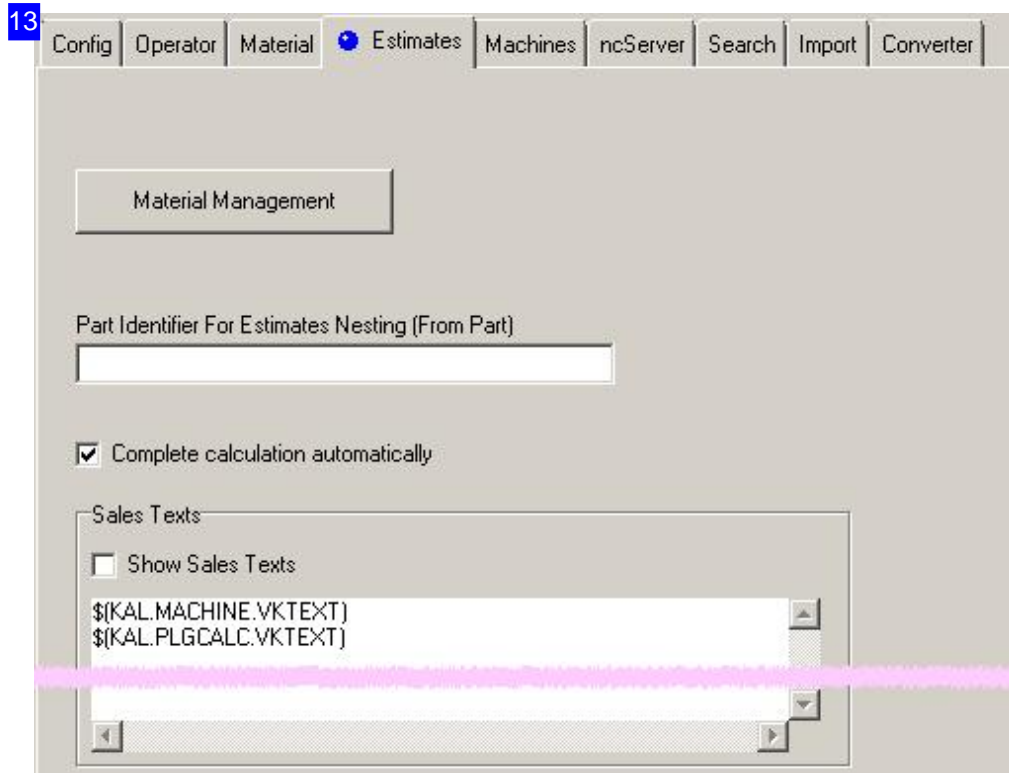
This frame contains settings for the quantity units used in your estimates. Set the units as required. Right-click the list to open a menu allowing editing or input of new entries.



Select 'Material'.

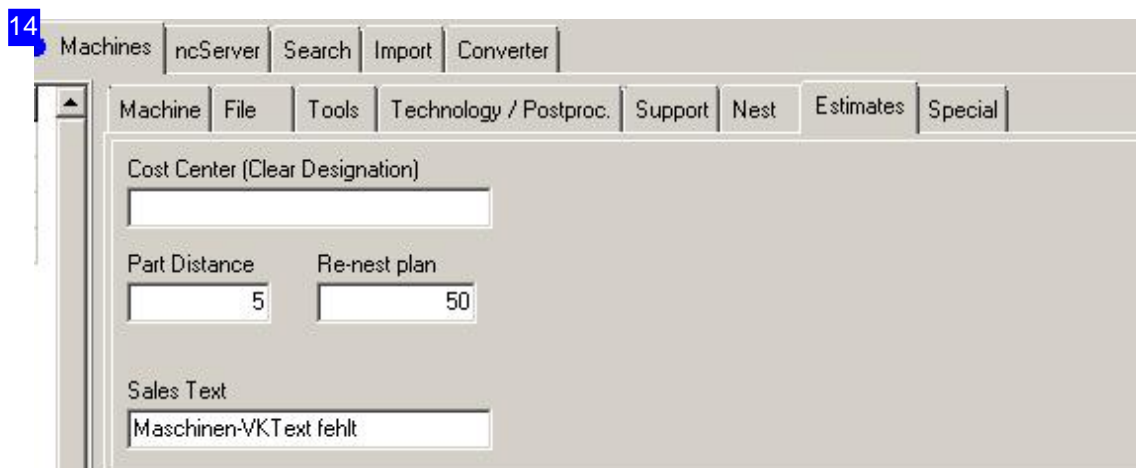
Material management is an important part of AV32 . Material groups are used to define properties of materials, and allow accurate estimation of total costs. For more details, view the relevant Admin help page.

Weights and prices of materials are calculated based on the formulae contained in these cells. Presets for the calculations are made in the Material and Technology management table.



Select 'Calculation'.

Set the standard sheet sizes for estimates here. Adjust the entries to your requirements. Right-click in the list to open a menu with options for editing and adding entries. Presets for the calculations are made in the Material management table.



Select 'Machines', 'Calculation'.

A Cost Center can be allocated to each machine in order to accurately represent the overhead costs associated to it. You can add programming costs here too. For help entering setup times, see the Online help for Cost Centers in AV32.



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Name	Number	Mat. Group	Density	Price	Tens. Str. Frd	Tens. Str. To	Rotation Ang
▶ ALMG3	00000005	AL		2.7	0.8	300	500
ALMG3	00000010	AL		2.7	0.8	300	500
S235J	1.0038	ST		7.9	0.7	290	540
S235J	1.0038	ST		7.9	0.7	290	540
S355N	1.0545	ST		7.9	0.8	470	630
S355N	1.0545	ST		7.9	0.8	470	630
Si37	00000011	ST		7.9	0.8	300	500 90
X5CrNi18-10	1.4301	VA		7.9	0.8	510	520
X5CrNi18-10	1.4301	VA		7.9	0.8	510	520
X6CrNiMoTi17-12-2	1.4571	VA		7.9	0.8	510	520
X6CrNiMoTi17-12-2	1.4571	VA		7.9	0.8	510	520

The densities and prices of materials are held ready for your calculations in the 'Material and Technology management' table.

Important for the calculation of weights. The density and the price can be specified in each case in different units. Put a formula under Common [Settings],[Material] in what units price and weight should be calculated.

Enter 'Sheet-articles' in the calculation as a basis if different prices for different thicknesses are used. You can enter prices individually in the article list. Once you have set a price for calculation for an article selected here, the price specified here is ignored. Is no panel selected item or its price 0, the value entered here is used as a price.

For more information see the relevant Admin help page.



Calculation Items

Managing Calculation Items



This chapter illustrates the individual Items which can be used to construct a Project.

The following list shows the individual Items you can use in your calculations.

- o Parts
- o Articles
- o Cost Centers

Select the screen in the navigation panel to the left [1]. The screens allow you to list the existing Items and select them for use. New Items can be added or existing Items edited under Record Navigation.

Individually prices can be managed for sheets. Assign a sheet to an article and maintain the price on thus generated 'Sheet-article'. Generate a necessary number of standard sheets for your estimation with sheet-articles and assign a priority number to each sheet-article. This allows you to organize the sheets for selection.

Select the menu item 'Edit', 'Sheet Prices' to adjust the prices for estimation for all sheets with a priority.

Once all Items are in the database, you can combine them to make a Project. A Project may contain any number of individually-calculable assemblies made up of combinations of Items.



The navigation panel offers direct access to the various screens. A new Project can be bound to one customer; in this case you should enter the customer details first.

Following Items can be entered into the database when creating estimates:

- o Parts (Cut parts)
- o Articles (Bought components/Sheet-article)
- o Sheets
- o Cost Centers

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 Customer Parts Bin Sheet store Article Cost Center	Customer No	<input type="text" value="00000001"/>	<input type="button" value="New Project >"/>	
	Name / Company	<input type="text" value="Klug"/>		
	Address 1	<input type="text" value="Bestelage"/>		
	Postal Code	<input type="text" value="54355"/>	City	<input type="text" value="Schöndorf"/>
	Foreign countries	<input type="text"/>		
	Contact	<input type="text" value="A.Schlau"/>		
	Telephone	<input type="text" value="471112"/>	Fax	<input type="text" value="471113"/>
	E-Mail	<input type="text" value="schlau@klug.de"/>		
	Internet	<input type="text"/>		<input type="button" value="Browse"/>

See the relevant chapter for detailed help on entering your customers' details .

Entering your customer data is important if you plan to print your offer and include the customer's address and the name of your contact.



12

See the relevant chapter for help entering Parts' data into your Parts Bin.

The parts form has a 'Estimation' frame in the top-right corner, where you can enter more detailed information for the price calculation.

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Art. No.	Name	ME	Price	Amount
00000001	Dichtung	kg	4.95	
00000002	Gummibalp	Stück	44.95	
00000003	Schrauben M10x30	Stück	0.95	
00000004	Scheiben M10	Stück	0.12	
00000005	Schelle 340	Stück	5.15	
00000013	Baustahl	kg		

See the relevant chapter for help entering Articles' data into your Articles Bin.

An article may also be a sheet, assigned to an article. For a so generated 'sheet-article', an individual price can be set for each sheet. You can adapt these prices quickly for your estimation. Select the menu item 'Edit', 'Sheet prices' in the header to get the appropriate dialog.



16

<ul style="list-style-type: none"> Customer Pats Bin Sheet store Article Cost Center 	Sheet No. < Article	Name
	00000013	Baustahl
	From Sheet No.	Priority for calculation
		1
	Material	Thickness
	S137	2
		<input type="checkbox"/> Offcut
	Width	Height
	2000	1200
	Certificate < Certificate	Grain direction
	<input checked="" type="radio"/> As Required <input type="radio"/> X ... <input type="radio"/> Y ...	
Operator		
Comments		

You can allocate an article in the articles-archive to a sheet in the sheets-archive. Click the button '<Article' in the header and you go to the 'Sheet-articles'. Here you can set an individual price for a sheet. For assignment, an article is created with the same item number as the sheet number. If the item number already exists, you must change this, or assign a free number to the sheet manually.

It is important that you enter a priority for the estimation of a sheet with a sheet-article. Only sheets with a priority are listed for estimation.

See the relevant chapter 'Article' in the online help to AV32 for entering an article.

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<ul style="list-style-type: none"> Customer Pats Bin Sheet store Article Cost Center Macros 	Cost Center No.	Name
	Group	Group Name
	H. Rate TR	H. Rate TE
	H. Rate TG	Setup Time (Per Sheet In Min)
		Setup Time (Per Tool In Min)

See the relevant chapter for help entering Cost Center data.



15

Estimates

Quantity Price

1

Estimates

Enter the required number of parts in this frame. Click 'Calculation' to enter the Calculation Grid Object (KGO) editor to edit the back-office formulae and variables.

4

Edit Search Options Help

Adopt sheet into plan

"Direct Production Plan"

Change Field In All Records

Recalculate Graphic-Dependent Fields ▶

Copy Record

Delete Records

Divide Record

Edit File ▶

Edit Parameter File

Edit sheet prices

Material + Technology Administration

You can adjust the price for estimation for all sheets, which have a sheet article and a priority > 0. Click on 'Sheet prices' and a dialogue opens with the list of sheets.

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Edit sheet prices

Help

Name	Selection Tab	Material	Thickness	Width	Height	ME	Price	Stock (pcs)
Baustahl	00000013	St37	2	2000	1200	kg		31
Baustahl	00000005	St37	10			Stück	5.15	1
	00000004	X5CrNi18-10	20	2000	1000	Stück	0.12	19

You access this dialog via the menu item 'Edit', 'Sheet prices' in the header. All sheets will be listed, which are associated with a sheet-article and a priority > 0. You can put the prices up to date and adjust



them for estimation in the table. If the price is 0, the price of the material management is used for estimation.

2



You can list the current database entries from each of the program's forms. Select 'List' in the bottom tab panel and click 'All' in the header panel. Select the required Item in the list and switch to the 'Fields' tab.

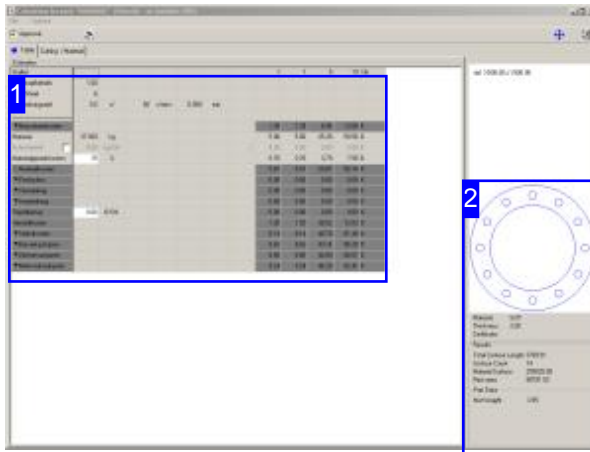
3



You can print your work from any of the program's forms. Click 'Print' to open the form editor, which offers wide-ranging options for formatting your printed sheets - more details can be found in the relevant help chapter.



Presets for Parts.



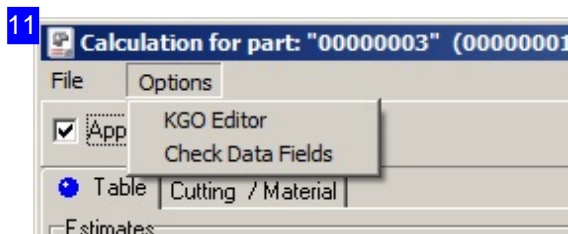
The table [1] contains an Object in each row (KGO or Calculation Grid Object, named in column 0) with its data in the corresponding cells in columns 1 through 12. The cells are managed according to rules defined in the 'KGO Editor'.

You can access the 'KGO Editor' through the [Options] menu in the header panel.

You can see the Part in the right frame [2] with its technical data as calculated from the entries in the Calculation Grid.

The calculation data are held in a table as individually editable Objects, enabling the complete calculation of all parts. The Objects (KGO, Calculation Grid Objects) are each defined in one row of the table. The individual cells can be edited to your requirements using the 'KGO Editor'.

Access this window from the 'Parts Bin' ('Estimate').



Access the 'KGO Editor' from the [Options] menu.



1

Table Cutting / Material		Estimates					
Staffel				1	1	5	10 Stk
Mehrkopfbetrieb	1.00						
Part/Sheet	6						
Bearbeitungszeit	0.0 s/	60 s/min=	0.000 min				
▼ Maschinenkosten				1.39	1.39	6.94	13.89 €
Material	37.920 kg			5.06	5.06	25.28	50.56 €
Schrottanteil <input type="checkbox"/>	0.00 kg/Stk	/.		0.00	0.00	0.00	0.00 €
Materialgemeinkosten	15 %			0.76	0.76	3.79	7.58 €
▷ Materialkosten				5.81	5.81	29.07	58.14 €
▼ Production				0.00	0.00	0.00	0.00 €
▼ Veredelung				0.00	0.00	0.00	0.00 €
▼ Anarbeitung				0.00	0.00	0.00	0.00 €
Fremdbezug	0.00 €/Stk			0.00	0.00	0.00	0.00 €
Herstellkosten				7.20	7.20	36.02	72.03 €
▼ Selbstkosten				8.14	8.14	40.70	81.40 €

This table contains all Calculation Grid Objects (KGOs) for the Part. The cells in columns 1 through 12 are managed by set rules (formulae) which can be edited in the KGO Editor. You can also expand the table with your own values.

Columns 9 through 11 allow you to set pricing steps. You can set different sized order quantities in the top row.

Access the KGO Editor through the [Options] menu in the header panel.

The cutting data required for a calculation are calculated by executing a virtual cutting process of the selected parts on a predefined standard sheet. Sheet s election, time and quantity calculation are set using variables in the 'Cutting / Material' tab.

Individual areas can be folded or unfolded, in order to increase clarity in the table. The lines respectively indicate the results of the closed area. This feature requires an entry for an area in the customer-specific KGO; usually this is the 'USER.KGO'.



12

To calculate the cutting time for a Part, the Part must first be processed in a virtual cutting routine. This tab allows you to select a standard sheet and the nesting method, and make settings for time calculations. A dialog opens in which all 'Sheet-articles' are listed if you click on 'Sheet selection'. Only sheets are listed with a predefined priority. If you have defined standard sheets, you can always reuse these sheets.

Enter the parts distance and the number of torches in the middle region and on the tab 'Nest', the number of the parts to be nested.

You can enter time-corrections in the 'Time calculation' frame and set cutting speeds on the tab 'Input'.

15

This list shows you all articles of 'Sheet-articles', which have the same values in material and thickness, which the workpiece requires for manufacturing.

13

Enter the number of parts required in the 'Nest' tab. Click 'Nest' to open the 'Pricing Nesting' dialog, which contains functions equivalent to true-shape nesting. For more information on true-shape nesting, see the relevant Online help page.



14 Time calculation

Calculated Entry

Cutting Speed

Lead In Time

Enter the cutting speed and lead-in time here to obtain an accurate final estimate.

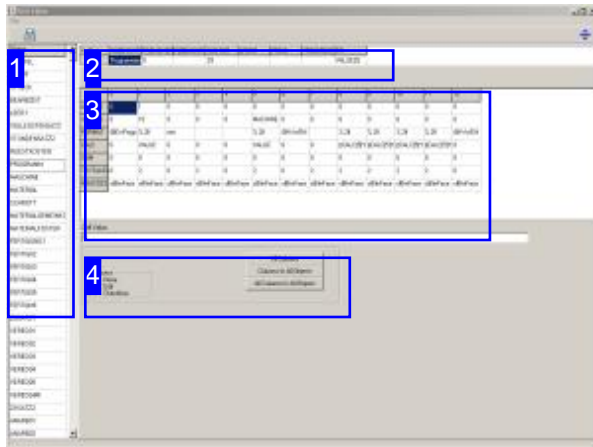
2

Material:	St37
Thickness:	2.00
Certificate:	
Results	
Total Contour Length	3769.91
Contour Count	14
Material Surface	255025.00
Rest area	90791.03
Part Data	
Net Weight	3.95

This frame shows the cut part currently being worked along with its technical data. The data are calculated from the cutting data and calculation presets for the material group.



The KGO Editor.



The Objects in the Calculation Grid are defined one in each row and listed in the object list [1]. Columns 0 through 12 are populated with the corresponding Object's details for each Object / row in the table [3]. The list shows the selected Object.

The KGO Editor is a tool for entering and maintaining the rules and formulae required by the Calculation Grid.



This list shows all of your Project's Objects. To edit an Object's properties, highlight it in the list, and click the relevant cell in the table [3].



2

KaZeit	AGBESCHR	FREMDVER	FZBESCHR	KOSTNR	LFDNR	PREIS	PREISFEST	TR
	Programmier	0		29				VALUE[1]

This table contains rules and formulae for variables which are not used in the cutting process, but are of value when creating estimates. You can, for example, include data on outsourced work here.

3

	0	1	2	3	4	5	6	7	8
ACCESS	0	1	0	0	0	0	0	0	0
VALUES	0	10	0	0	0	MACHINE.	0	0	0
FORMAT	@D=Progr:	%.2lf	min			%.2lf	@W=WEH		%.2lf
CALC	0	VALUE	0	0	0	VALUE	0	0	((CALC[5]*C
SUM	0	0	0	0	0	0	0	0	0
TEXTALIG	0	2	6	2	6	2	6	2	2

This table contains the detailed values for each Calculation Object. Column 0 of the Calculations Grid contains the Object's identifier, while columns 1 through 12 contain the relevant information. Mark the cell to be edited. The content can be edited in the input field below the table. If the cell is a selection rather than input value (eg. text direction or color) then a selection list will be shown below the table.

Remember to save any changes you make, or they will be lost. Click the 'Save' icon in the header panel.

The rows contain following properties:

- o ACCESS - Access rights for a cell (editability).
- o VALUE - Shows the cell's value, eg. hourly rate.
- o FORMAT - Describes the display format when outputting the value.
- o CALC - Formula for calculation of the value, where required.
- o SUM - Used to generate column sums.
- o TEXTALIG - Sets the text alignment within a field.
- o NOACCESS - Allows a different-colored display for fields which may not be accessed.



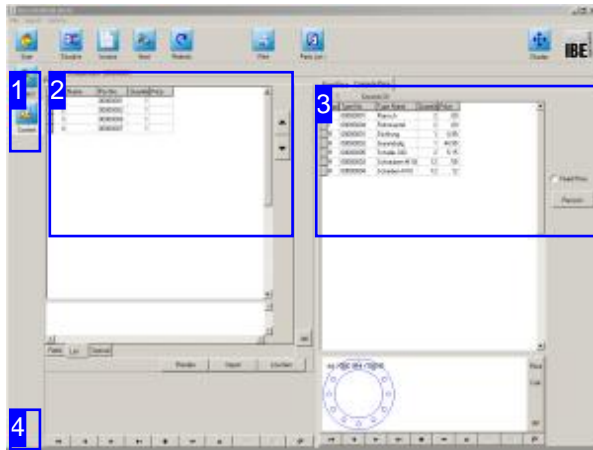
4

The screenshot shows a software interface with a selection list on the left and three buttons on the right. The selection list is titled 'Access' and contains three radio button options: 'None' (which is selected), 'Edit', and 'Checkbox'. The three buttons on the right are stacked vertically and labeled 'All Columns', 'Columns In All Objects', and 'All Columns In All Objects'.

This frame offers selection lists corresponding to the cell's content. In this case the selection made was 'Access' and these are the available options. Use the buttons to the right to apply the setting to multiple cells. Always consider any unwelcome side-effects when making changes to multiple cells!

Projects

Projects as Containers.

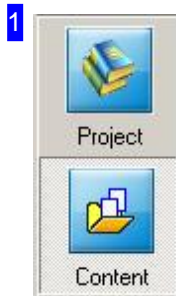


A project's positions can consist of all types of Items. The Project Wizard will help you to assemble your projects from Parts , Articles and Cost Centers. You can even include sub-Projects in your final Project.

To edit the content of a Project, select 'Content' from the left navigation panel [1]. You can 'List' the content [2] and select relevant Items for processing. You can add new Items easily using the Project Wizard.

To print your offer, click 'Print' in the header panel.

A Project creates a working frame for calculating your estimate. Projects can include any Items (cut parts (Parts), bought components (Articles) and machine costs (Cost Centers)) and also sub-Projects eg. to represent sub-assemblies, and outsourcing costs. The Project Wizard will help you populate the positions when creating your Projects.



Click 'Content' from the Project form to access this screen.



2

Project: Kompensator (00000001)

Positions

P	Name	Pos No.	Quantity	Price
▶ 1		00000001	1	
▶ 2		00000002	1	
▶ 3		00000006	1	
▶ 4		00000007	1	

This list shows the contents of your Project. Select a position to see more detailed information on how its price was calculated [3].

3

Fixed Price Compute Price

Pos: 1 Consists Of

Type	Type No.	Type Name	Quantity	Price
▶ T	00000001	Flansch	2	.00
T	00000004	Rohrmarkel	2	.00
R	00000001	Dichtung	1	4.95
R	00000002	Gummibalg	1	44.95
R	00000005	Schelle 340	2	5.15
R	00000003	Schrauben M10:	12	.55
R	00000004	Scheiben M10	12	.12

Fixed Price

Record >

Prices can either be calculated dynamically based on database tables, or entered here as fixed concrete values. Switch to the 'Fixed Price' tab to enter a fixed price. Remember to mark the checkbox to the right if you wish to use a fixed price.

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Fixed Price Compute Price

Enter Unit Price

For Pos: 1

If you wish to enter a fixed cost for a Project position [2], then enter it in this input field and mark the checkbox to the right of the 'Calculate Price' frame.

4



Click the arrow button at the bottom of the left navigation panel to return to this screen from any of the Items' screens.

Glossary

Articles

An Article is any object which belongs to a Project.

Article Number	10
General	7
Name	10
Price	10
Quantities	10
Sheet-articles	7

Assemblies

Assembled Parts, which consist of various Items.

Content	21
General	20
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Items	7
Project Wizard	20

Calculation-Nesting

Nest your Parts in order to calculate the production costs.

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Part Offset	16
Parts Quantity	16
Selection	16
Torch Quantity	16

Calculation

Calculating the Prices for an assembly.

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Cost Centers

Calculate Production costs using data on each specific machine.

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Customers

Information about the people who order sheet metal parts from you.

Entry	9
General	7

Form Editor

Editor to format printed pages individually as required by your business.

Starting point	13
----------------	----



Item

An Item is a concrete thing like a part, article, or other thing.

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Parts	10
Print	13
Purchased Parts	10
Selection	9

Machines

Cutting Machines using different cutting methods for Production of metal parts.

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Material

Sheets from varying materials, from which your parts will be cut.

Formulae	5
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Material Groups	7
Price	7
Thicknesses	7

Parts

Workpieces as individual components of an assembly.

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Projects

A Project is a collection of assemblies for the Calculation of a price estimate, or a parts list.

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