

COBUS ConCept GmbH

COBUS cad/cam solutions



Door Trade Solution



Get a grip on it!
Get a grip on

Get a grip on it!



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COBUS integrated web services - From Web to Machine



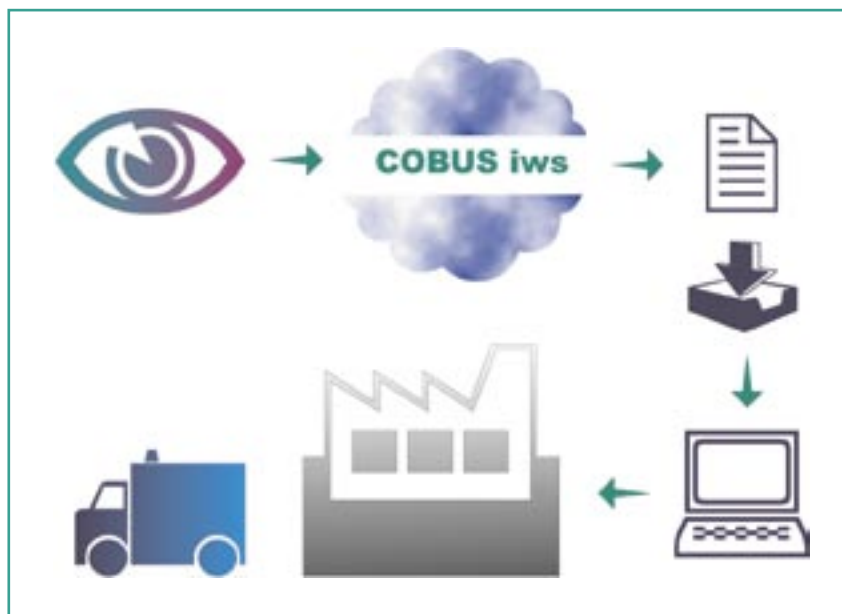
Web-capability is today's requirement. Modern times are formed by deadline pressure, and more and more customers take the fast route via the internet to get product information and even to purchase goods that way. Information has to be at hand immediately, and the order options should be most simple.

COBUS integrated web services (COBUS iws) are a tool that allows you now to offer your products via the internet.

It has been conceived for trades who produce to individual customers' desires. The customer can bring in his/her ideas online, and transmit them to the producer direct via the internet.

It is possible for example that a door manufacturer offers a number of door types in the internet, where the customer can bring in individual design requirements. The user can select a door type from the product stock and really design his/her door directly at the computer, live and online. It is only necessary to define dimensions, locks, hinges, door-opener type and surface pattern at the computer. The CAD-system works in the background and creates the construction drawing, from which the necessary production data can be generated. The work-piece drawing can also be printed.

The construction data which were generated online are transferred to the order recording system of the manufacturer via COBUS iws. There, the order is processed further and passed on to the COBUS cad/cam solutions. The elementary NCAD-module creates from this data automatically the necessary CNC-program. All this happens online and at once.



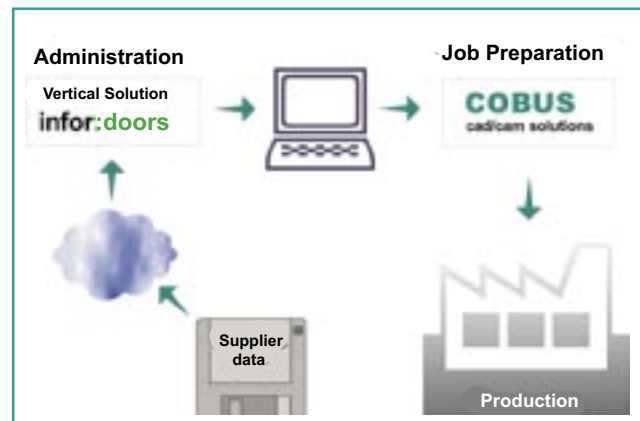
ERP/PPC-Integration - Customized to the Trade

Fast changing trends, individual customers' requirements and a high number of variants with short delivery times represent special challenges on the flexibility of door manufacturers. For integrated enterprise processes we can offer our customers a very useful tool: the trade solution infor:com for door manufacturing. It has been specially designed for the requirements of manufacturers of doors and windows.

Special emphasis is put on the reduction of stocks, improvement of ability to supply, exploitation of cost reduction potentials, reduction of machine setup times and the general acceleration of operating procedures.

This infor:com trade solution has been specially designed for door and window manufacturers by integrating the Trade Solution Doors of the COBUS cad/cam solutions and trade specific extensions of the ERP-systems infor:com. Both trade solutions are ideally **at-tuned to one another**. This clearly means: The data recorded as customers' orders are sufficient for the production and do not have to be entered once again or amended.

Further data can also be recorded by the CAD/CAM-system in the production planning department. Especially in that department is a high potential of cost reduction. The data for each position of a production order, such as material, edges, surface patterns, fillings etc., are recorded only once. Also the dimensions which allow the calculation of layouts and formats are recorded here. Technology data for rebates, locks, hinges, floor connections are stored in separate technology tables and do not have to be designed again when defining a door. It suffices to call up the article number from infor:com to have the data present.



Without further data input requisition notes for the purchase department can be generated from the part lists, just like the order data for the production department. The integration to the COBUS cad/cam solutions allows to import part lists into the infor:com program and use them there. At the same time required NC-programs are generated for production.

Default part of the trade solution is the integrated layout optimizer, with which various formats of well-known machine manufacturers are supported. Additionally, suppliers' data can be imported and integrated, e.g. for door locks and fittings.

And due to the graphical support locks and hinges can be controlled when entered, and also be printed for documentation purposes.

With the integration to ERP-systems COBUS ConCept has realized a data-flow for users, which leads to further savings of time and money.

Door cad light

The door trade solution offers already a wide range of features at the most basic level of the three pure construction modules.

Door cad light allows the comfortable construction of blank doors. No matter whether rectangle or arched doors are required, it is no problem for the starter solution.

The selection of standard light cutouts ranges from free definable polygons over arched and elliptical cutouts to cyma arches.

Fillings can be defined by simple commands. Lock cases, hinge holes, weatherboards and accessory parts can be chosen from self-defined lists.

Door cad light gives you the opportunity to enter order information together with the



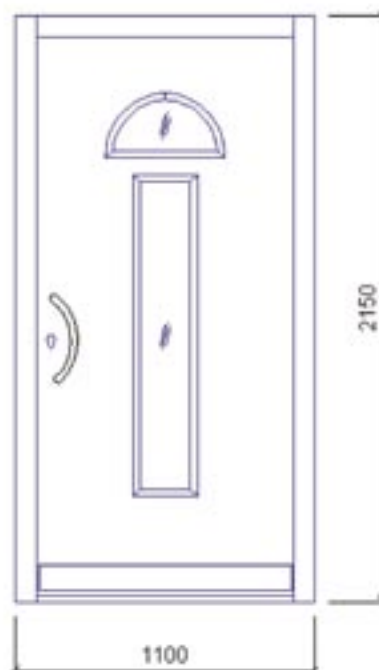
drawing. A complete offer drawing can easily be printed out for the customer. Just as quickly it is possible to put door plate and jamb post drawings for production on to paper.

In order to give you an easy start, samples for construction of blank doors have been integrated into the program.

Door cad light

Construction of blank doors

- rectangle doors
- arched doors
- standard light cutouts
- input of lock cases, hinge holes and accessory parts
- input of order information
- jamb post drawing
- door leaf drawing



Door cad comfort

Door constructions with a maximum of three doorway areas (fixed or movable leaves) and a fanlight cutout may be comfortably designed with the medium level solution door cad comfort.

With *Door cad comfort* both blank doors and frame doors can be designed on the computer without major effort. The jamb post can be defined as a segmental or round arch.

A particularly user-friendly option is the collection of complete sectors of a door construction into one element. Save in a list, elements may then be used upon request. These sector elements are saved with parameters. The result of each addition or alteration can be checked in a drawing on the monitor.

Door cad comfort allows a wide range of forms and constructional liberties. Straight and arched posts as well as cyma posts can be inserted in a jamb post door. The form and type of fillings, even filling doublings, is

declared by defined commands. For fanlight cutouts the amount of vertical or horizontal steps is defined by one single command and may be altered later just as easily.

After completing the design each post and filling can be put out individually as a contour. In the production planning department these contours can then be used for easy assignment of machining cycles. Just as important for production planning is the possibility to divide arched posts into definable raw parts.

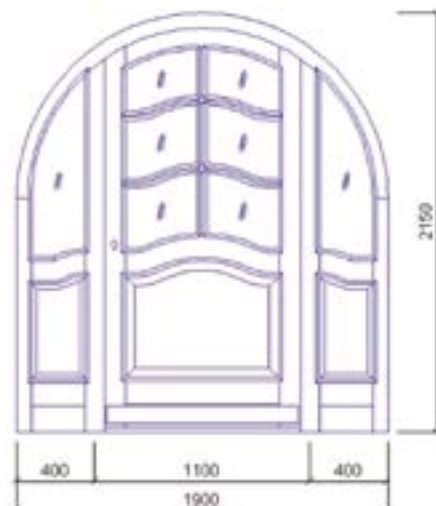
Furthermore, the user may define and assign a profile which makes it possible for the program to automatically define a counter profile for the joint profile for the front side of the post. The combination of profile system information and post contour data builds the basis for fully automatic machining assignment to individual post raw parts - directly out of design engineering.

With its many options the *comfort*-level has been designed for the requirements of ambitious door designers, but it still remains cost-efficient.

Door cad comfort

Construction of door installations with blank and frame doors

- up to 3 doorway areas and on fanlight possible
- jamb post definable with straight or round arch
- sector elements definable with different upper and lower posts
- free design of posts in sector elements
- various filling types
- segmentation of round arches into raw parts
- output of individual post and filling geometries as a contour



Door cad professional

Door *cad professional* is the module for the design of unique door installations. Even one-of-a-kind designs can be planned without problem. The number and design of the particular door elements may be chosen individually and can be combined in any possible way. Give your fancy full scope! Design your door constructions with mostly free outer form and sector definition or even two-winged portals – no problem for Door cad professional. The only limit is the fabrication realization.

Of course, all features contained in *Door cad comfort* are also included in the *professional*-level. Additionally, jamb posts can be defined without any sector restriction. Self created post forms may be defined and saved just as easily. The user can activate already defined post forms and simply apply them later to other doors.

Door cad professional

additional to the *Door cad comfort* features

- 2-winged door designs
- free jamb post definition without sector restriction
- option to define and save own post forms



Door cam – Efficient Door Manufacturing

The expert recognizes masterly workmanship based on the exact fitting of glass fillings of doors. Those who want to fit their work absolutely exactly either need much time or software support for their manufacturing.

For a long time it has been the privilege of major factories to efficiently organize machinery and labor. With the subdivision of the door trade solution into the four levels

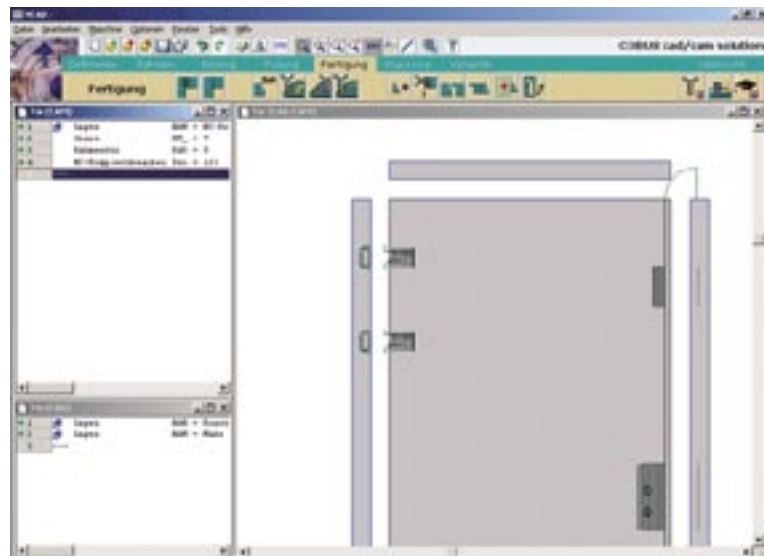
- *Door cam light,*
- *Door cam comfort single components,*
- *Door cam professional single components and*
- *Door cam professional leaf door*

Door producers of any operational size can now speed up production and significantly improve their quality. The final level *Door cam professional* has been further divided into two specialized program types, that is for leaf doors and for jamb posts. This allows the optimum program layout for the production specific requirements of each of those two door types.

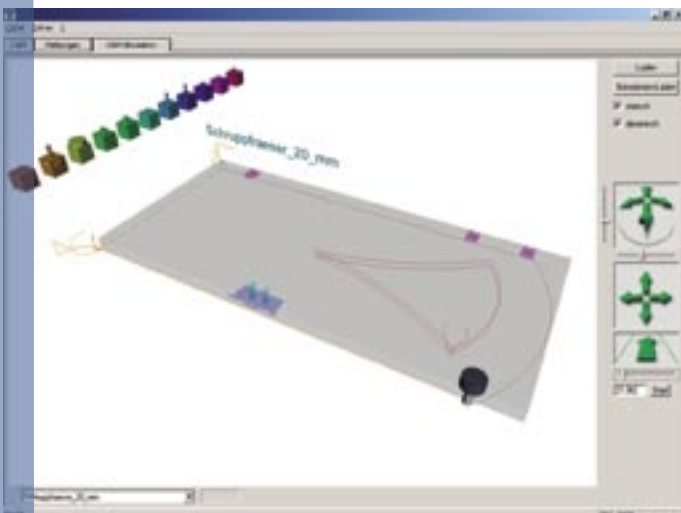
The technical production requirement for this purpose is the application of a CNC-machine. Such machines are to be found in increasing numbers of wood workshops. The technical organization of data is performed by using the adequate door cam module of the COBUS cad/cam solutions. The decisive factor is the kind of door that is to be produced.

With further optional modules production can be made to work even more efficiently. Depending upon the type of machine, e.g. when manufacturing frame doors, the tool equipment manager can make suggestions for the most skillful equipment of the machine. Automatic vacuum clamp positioning ensures the collision-free positioning of work pieces on the machine table.

The optional module 3D-Simulation allows to create a 3-dimensional model of a work piece and of its machinings. This can be a static presentation, but may also be a dynamic presentation so that the movement of a routing



tool for example can be followed-up along the programmed path. Even the implementation of specific tool models is possible in the extended version of the 3D-Simulation.



Door cam light

How much easier and cheaper could a house door be manufactured, if there were not traps such as time consuming design and supplementary alterations of measures. Misunderstandings and transfer faults regularly cause annoyance. Those who want to design door leafs comfortably and simultaneously produce a CNC-program with these data, need **Door cam light**.

The distinct feature of the starter solution is its easy user-friendly handling. There is a command for every elementary machining process – for example „door format“ or „cut-out milling“. Lock cases, hinge millings and accessory parts can be chosen from self-defined lists. Often recurring CNC-machinings are easily saved in blocks and activated when required. Once measures and accessory parts for the doors are defined, one command suf-

fices to automatically create a CNC-program for these data. Door parameter definitions allow to release dependencies of any kind.

If there are unexpected alterations before production starts, the entry dialogue is reopened and the altered parameters are brought up-to-date. Once the alterations have been made the new CNC-program can be created with only one key stroke.

With this starter solution rectangle and arched door leafs (blank or frame doors) can be machined entirely on a CNC-machine.

Door cam light

Complete NC-processing of door leafs

- rebate cutting
- hinge milling
- straight or tilted hinge drilling
- light cutouts
- definition commands for each elementary machining process
- machinings for the articles are inserted by list selection
- saving door variants with complete parameters
- input of order information



Door cam comfort and Door cam professional Frame Doors

The comfortable design of complete door installations is possible with the *cad comfort*-solution. The production of frame doors puts very special demands to a software due to the many single parts that have to be processed differently and then be assembled. For this purpose the modules *Door cam comfort single components* and *Door cam professional single components* have been developed.

Door cam comfort single parts

Already with the *cam comfort*-level plus the *cad-comfort* module or plus the *cad professional* module the designed door geometries can be dissected into single components. The single components and the fillings and glazing beads can be produced by manual allocation of profile processings and connections based on the saved geometry information.

Door cam professional Single Components

Even further reaches the solution *cam professional single components*. This allows the production of frame doors on complete machining level. Based on the CAD-modules of the Door Trade Solution the transfer of all post geometries and profile data as well as the allocation of tools for further processings of single components is effected automatically. This fulfills the condition for fully automatic single component machining. The combination of both *professional*-modules of the CAD-part and the CAM-part allows for the maximum of freedom of design and production integration.

Door cam comfort Single Components

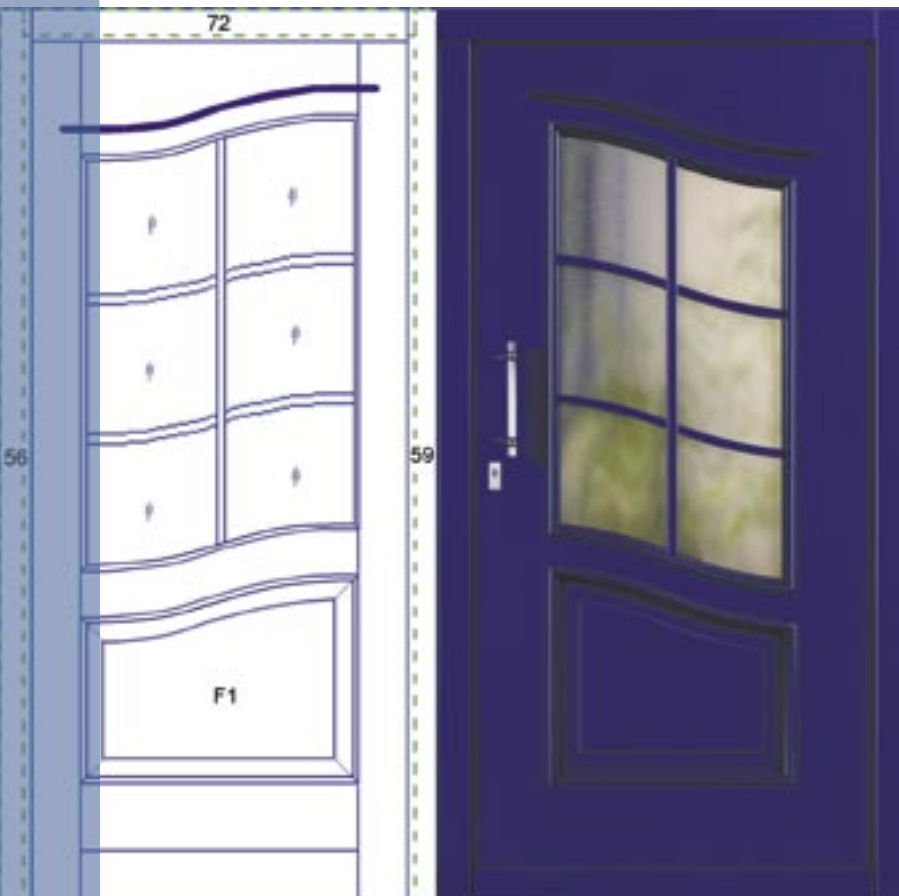
additional to the features of
Door cam light

- Acquisition of post geometries and profile data from the CAD part to allow for half-automatic single component machining

Door cam professional Single Components

additional to the features of
Door cam light and
Door cam comfort single components

- fully automatic transfer of post geometries and profile data from the CAD-part
- automatic tool allocation



Door cam light and Door cam professional Leaf Doors

Door cam professional Leaf Door

Door manufacturers who want to work successfully need to be able to meet all requirements of their customers. Architectural conditions require free combination of a wide range of forms, materials and accessory parts. This causes a very high level of variants in leaf door manufacture, which has to be met by production technologies. To meet this demand, we have designed the module **Door cam professional leaf door**. Amongst other things it aims at the acquisition of production data from order recording systems and thus allows the construction of an integrated production system.

Door cam professional Leaf Door

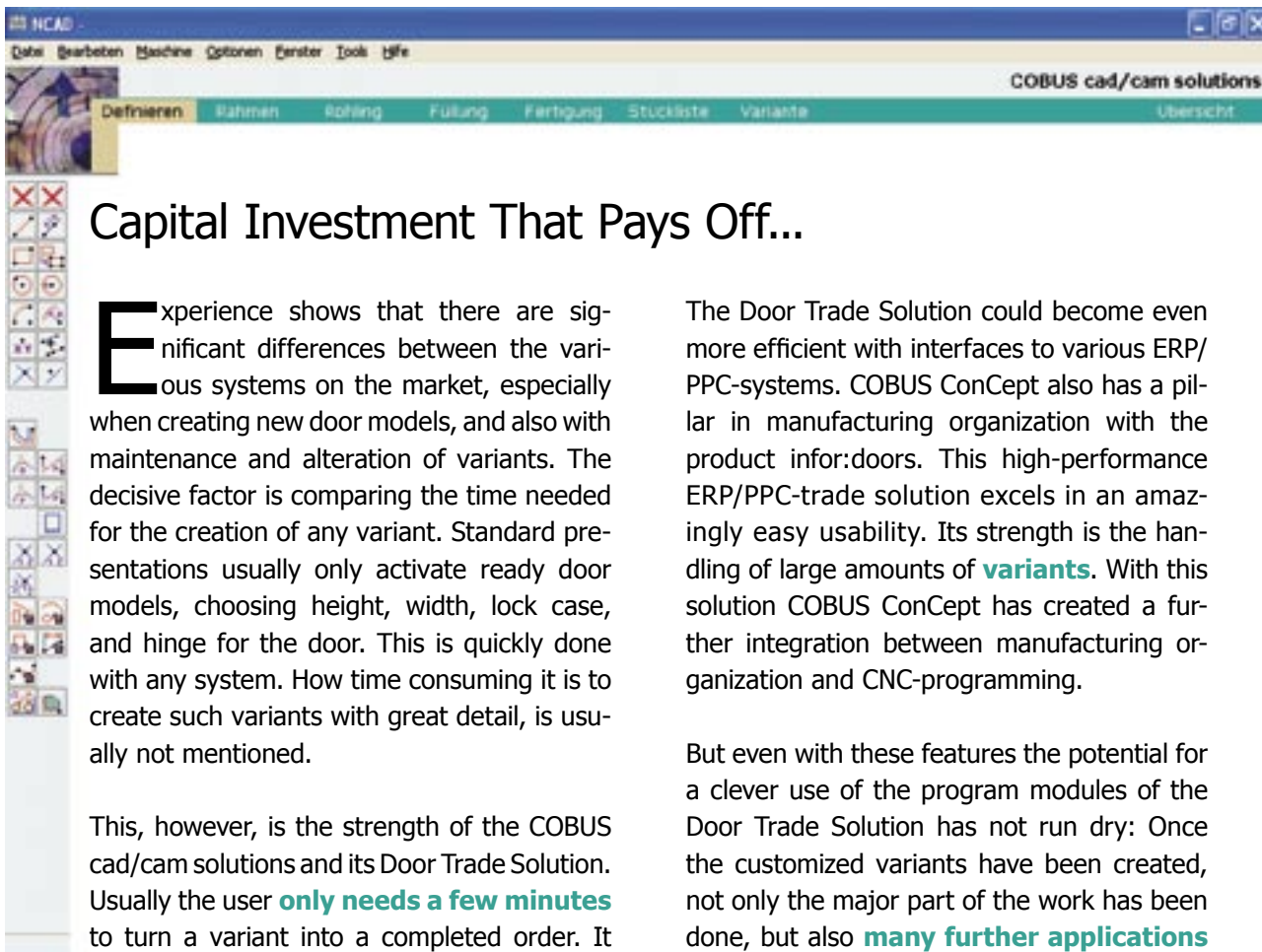
additional to the Door cam light features

- definition of various rebate types
- definition of various sealing grooves
- definition of door leafs as doorway or fixed wing
- definition of complete locks, hinges, accessories and their machinings by article definition
- transmission of variable data from integrated ERP/PPC-systems or databases
- presentation and printing of fittings as drawing
- creation of customer and production drawings

The *professional*-solution for leaf doors allows the fully automatic production of rectangle door leafs (blank or frame doors). Just like the *light*-level it allows for the definition of rebate types, sealing grooves and fire protection grooves, light cutouts and the declaration of door leafs as doorway or fixed wings.

Complete machinings, e.g. for rebates, hinges, locks and floor seals, can be saved as articles in a database or a PPC-system. With the integration to NCAD complete locks, hinges and accessory parts with their corresponding machinings can then be called up as an article. Even the graphical presentation of the fittings is possible, and the drawing can be printed. Standardized production processes are pre-programmed and allow for highly automated production. And if you then use the optional module COBUS production management system, the CNC-machine can even be run uncrewed if using a stacking automat. This way you get the fully automated production control and supervision.





Capital Investment That Pays Off...

Experience shows that there are significant differences between the various systems on the market, especially when creating new door models, and also with maintenance and alteration of variants. The decisive factor is comparing the time needed for the creation of any variant. Standard presentations usually only activate ready door models, choosing height, width, lock case, and hinge for the door. This is quickly done with any system. How time consuming it is to create such variants with great detail, is usually not mentioned.

This, however, is the strength of the COBUS cad/cam solutions and its Door Trade Solution. Usually the user **only needs a few minutes** to turn a variant into a completed order. It does not take much more time to print out the offer drawing, glazing order and door frame drawing.

If all necessary information is available, the skilled user will not need more than half an hour to create a brand-new machining program for lock case, hinge, or dress plate machining. This job only has to be done **once** because the lock case or hinge machining program may be used for all door variants. If the programmer only needs to copy and alter an existing machining program it would usually only take half of the time.

The process is similar to the machining of components. Creating drilling templates in a profile system should not take more than 15 minutes. The assignments of profiles and counter profiles does not take significantly longer. A definition step is needed **only once** for a profile system. A new profile system may then be created quickly by copying an existing system.

The Door Trade Solution could become even more efficient with interfaces to various ERP/PPC-systems. COBUS ConCept also has a pillar in manufacturing organization with the product infor:doors. This high-performance ERP/PPC-trade solution excels in an amazingly easy usability. Its strength is the handling of large amounts of **variants**. With this solution COBUS ConCept has created a further integration between manufacturing organization and CNC-programming.

But even with these features the potential for a clever use of the program modules of the Door Trade Solution has not run dry: Once the customized variants have been created, not only the major part of the work has been done, but also **many further applications** for the sales organization are possible. Even lesser experienced people can easily design doors according to their ideas because the variants only need to be "filled" with measures and accessory data.

One prospect, for example, could be the use of variants by the sales department or by independent sales partners. Just as well one could imagine the implementation by the end consumer, e.g. at a hardware store terminal or via the home page of a manufacturer. In both cases data could be exchanged via internet and **COBUS iws**.

The Door Trade Solution thus becomes the ideal link between your sales department and your production.

Please note:

More information on further applications for the COBUS cad/cam solutions is available from our Product Profile and from further information leaflets on special subjects, such as the Production Management System.

Naturally fitting!





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COBUS ConCept is a software and service provider for integrated production concepts.

It is our effort to compile a solution concept for you as our prospective customer, which considers your individual needs and requirements.

If you wish to receive more detailed information on our products, please do not hesitate to contact us.

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