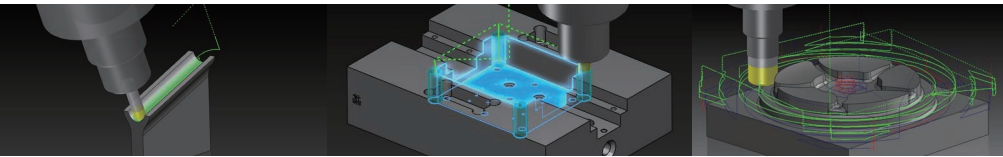


 **SOLIDWORKS**

CG⁺ SERIES

3D CAD/CAM system for Molds & Dies



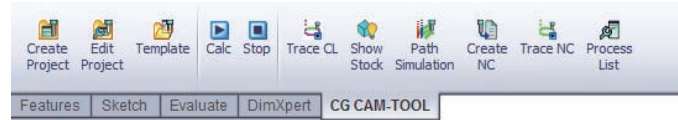
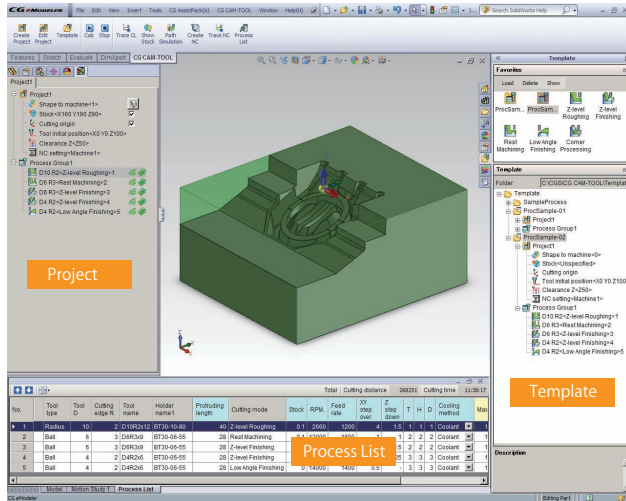
CG CAM-TOOL

CGS
C&G SYSTEMS INC.

CG CAM-TOOL

High-precision CAM system with totally simplified operating environment, utilizing the reliable “CAM calculation program”.

USER INTERFACE

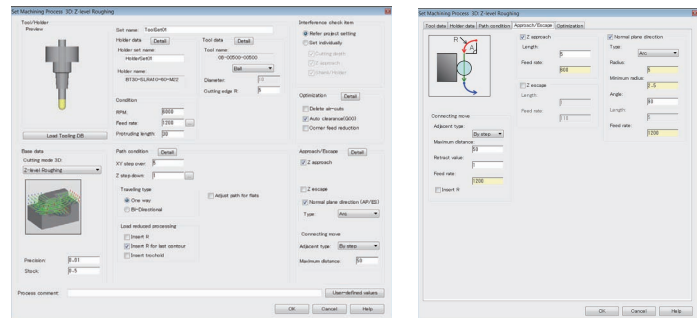


[Main Menu]

The user-friendly interface enables the user to create NC data easily, using the main menu in order from the left. To create NC data, users only need to prepare a machining project and apply a template, then start CAM calculation and check the results.

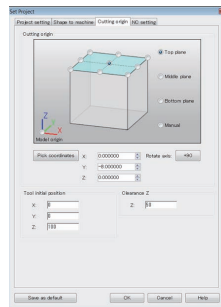
[Process List]

“Process List”, corresponding to the project tree view, assists in the safe and accurate operation. Some parameter values can be confirmed and revised on “Process List” too.



[Project Setting]

All parameters related with machine settings, such as “Project type” (3-axis or Multi-axis), “Shape to machine”, “Stock”, “Cutting origin” and “Tool initial position”, can be specified on the single dialog box.



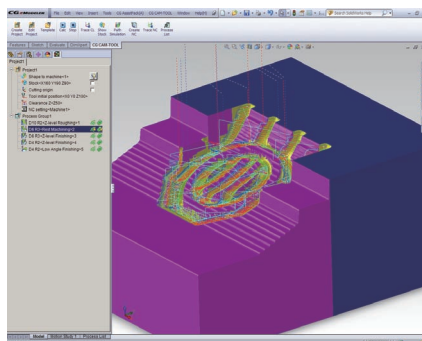
[Template]

Template is the function to save and recall standardized processes. Users can apply reliable machining processes easily after machining projects or processes are registered as “Favorites”.

[Machining Process]

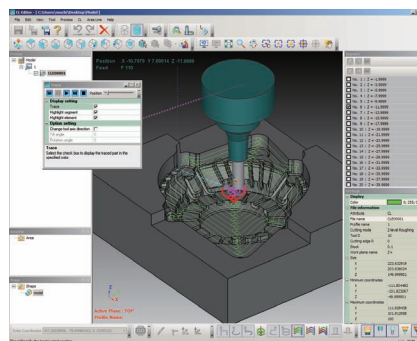
Main dialog box consists of only main parameters. Others are allocated on detail dialog box. Specifying a formula by using “Macro variables” as a parameter value is also available. This allows the revision of some input values automatically, such as lead-in radius relating with tool diameter, when tool-diameter or feed-rate, etc. are changed.

CAM FUNCTIONS



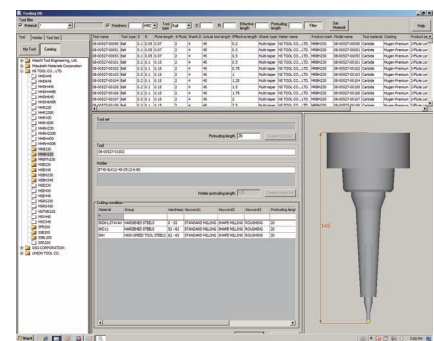
[Optimization / Cutting Simulation]

In addition to the Optimization system like CAM-TOOL's, there is a Simulation process that uses the Tool and Holder data from the Tooling DB to verify safe results. “Delete air-cut”, “Auto clearance” and etc. help users to create more efficient and safer tool-paths too.



[CL Editor]

CAM-TOOL's reputable CL editor is adopted into the system, which provides the verification and edit functions of tool-paths, such as “CL Display”, “CL Information”, “Move/Copy”, “Delete”, “Change Approach Position”, “Change F Value” and etc.

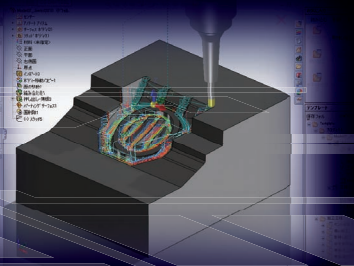


[Tooling DB]

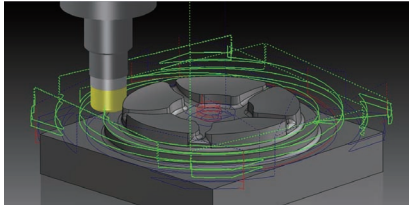
“Tooling DB” manages cutting-tools, holders and machining conditions. Users can define the shank with multistage taper or R-shape, and this makes an interference check more precise. Cutting-tools and holders can be prepared easily by downloading catalog data of tool/holder manufacturers from WEB site.

For 3D CAM, the reputable CAM-TOOL's CAM strategies for polygon and surface shapes are adopted.

High-precision and high-efficient machining can be provided, as users operate the system to match the required products quality.

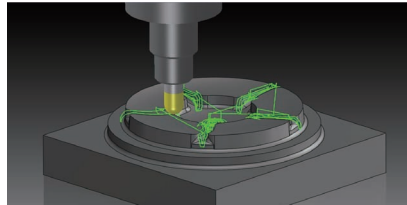


3DCAM



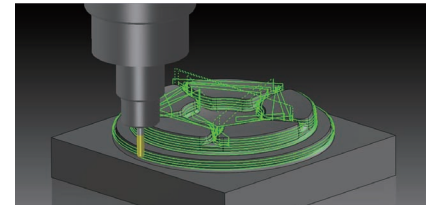
[Z-level Roughing]

Create Z-level offset tool-paths for roughing. "Insert trochoid" and "Insert R" reduce the cutting-load, and contribute to keeping a constant feed-rate. Non-rectangular solid can be specified as "Stock", which allows users to create flexible tool-paths corresponding to machining conditions.



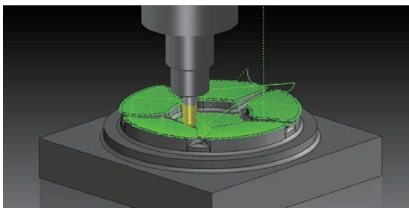
[Rest Machining]

The system automatically detects the uncut area of previous process, and generates tool-paths for the remains. It is possible to machine efficiently for each portion, cutting by along-surface tool-paths at gently sloping area, and cutting by Z-level tool-paths at steep and groove area. The uncut area can be recognized correctly since any types of cutting-tool (ball/radius/square end-mill) can be utilized.



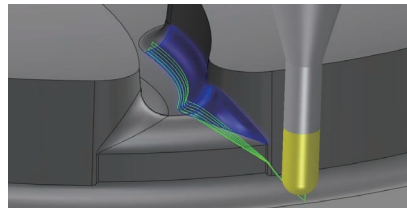
[Z-level Finishing]

"Z-level Finishing", which performs climb milling, assures quality high speed and high-precision machining. Spiral tool-paths can be also created, which contributes to the reduction of connecting-moves. This is the best way to machine automatically since gently sloping area and horizontal area can be also executed at once.



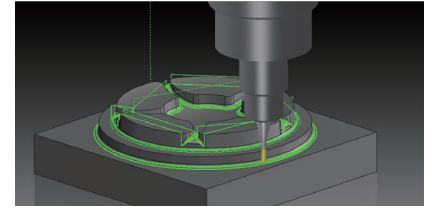
[Low Angle Finishing]

The system extracts gently sloping portion automatically by specified angle, and generates tool-paths there. Users can select "Scanning" or "Offset Path" (around the area) as a traveling type, so that it is possible to machine efficiently corresponding to the feature of "Shape to machine".



[Surface Finishing]

Creating tool-paths along the mesh direction of the specified surface. This cutting mode is useful for additional-machining and part-machining, and also considers the safety of processing for the gap between surfaces.



[Corner Processing]

Creating tool-paths for concave ridge-line portion where smaller cutting tool is often used. It is possible to reduce the cutting-load because the system controls cutting direction automatically corresponding to the angle of the ridge-line. Moreover, "Driving-in", which removes the stock step by step, contributes to maintain a consistent cutting-load.

[Horizontal Area Cutting]

The system automatically extracts horizontal area from "Shape to machine", and generates tool-paths there. Tool-paths are supposed to travel around the area with climbing-cut direction. This cutting mode is useful to machine horizontal area with radius or square end-mill.

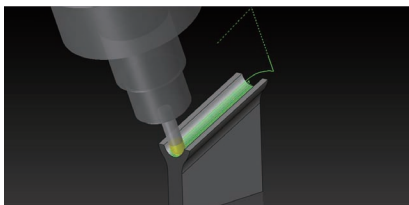
[Curve Cutting]

This cutting mode corresponds to the engraving for "Sketch" or "3D Sketch" entities. It is possible to machine groove-portion, edge-line and letters-on-surface precisely, utilizing "Drive Z" function.

[Pencil Cutting]

Not only ball end-mill but also radius and square end-mill can be used for pencil cutting. Tool-paths are created along the edge-line which the system automatically detects.

MULTI-AXIS CAM

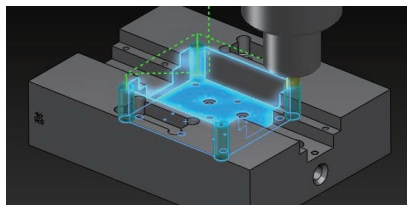


[3+2 Axis]

High-precision 3+2 axis machining data of HOLE/ 2.5D/3D millings can be created, defining the machining direction for each process. "Delete air-cut" for multi-axis machining is also available in "Optimization".

[Simultaneous 5-Axis] * Scheduled in future

2.5D/HOLE



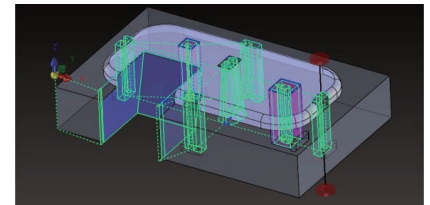
[HOLE]

It is possible to create drilling data on not only a plate but also 3D surfaces.

[2.5D]

It is possible to create 2.5D machining data, by recognizing "Sketch" entities or "3D model data".

Wire



[Wire]

Wire-cut contours can be recognized easily from model data. The system provides users necessary wire-cut data, with high-flexible cutting pattern and variety of lead-in type.



- Software & Hardware Requirements -

OS	Windows 7® Professional 64bit Windows 8® Pro 64bit
CPU	Intel® Core™ 2 Duo or more
MEM	2GB or more
HDD	16GB or more
Graphics	3D Accelerator OpenGL® board
Office	Microsoft® Excel2007 or newer

SolidWorks is a registered trademark of SolidWorks Corporation.
The company name and the brand name described in the rest are the trademarks or registered trademarks of each company.

The contents of this catalogue are created as of February 2014.
Information in this catalogue is subject to change without notice.



CGS C&G SYSTEMS INC.
<http://www.cgsys.co.jp>

Youtube <http://www.youtube.com/user/cgsys0777>
Facebook <http://www.facebook.com/CGSYS>

Tennozu Central Tower 19F 2-2-24 Higashishinagawa Shinagawa-ku, Tokyo, 140-0002, JAPAN
TEL.: +81-3-6864-0777 FAX.: +81-3-6864-0778 MAIL: overseas@cgsys.co.jp

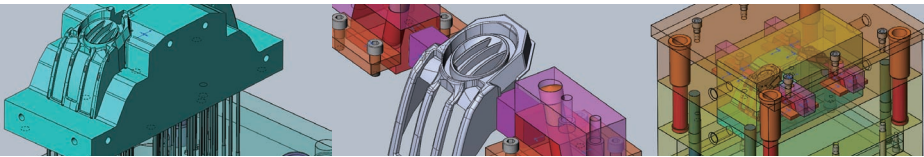
CGS NORTH AMERICA INC.(CANADA) www.camtool.com

2160 Fasan Drive Oldcastle (Windsor) Ontario, Canada N0R 1L0
TEL.: +1-519-737-6009 FAX.: +1-519-737-1647

 **SOLIDWORKS**

CG SERIES

3D CAD/CAM system for Molds & Dies



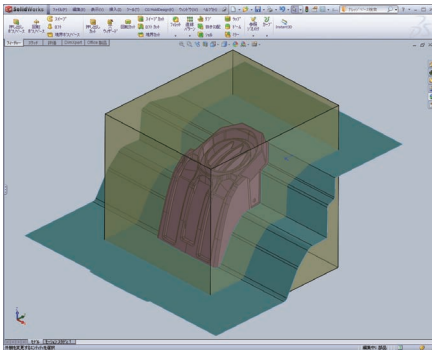
CG MOLD DESIGN

CGS
C&G SYSTEMS INC.

CG MOLD DESIGN

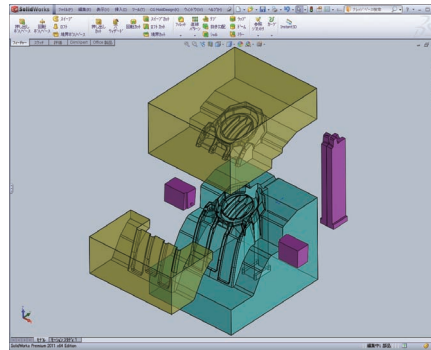
This is a perfect tool that totally supports processes from mold design to drawing creation.

Cavity-Core Design



[Cavity-Core Split]

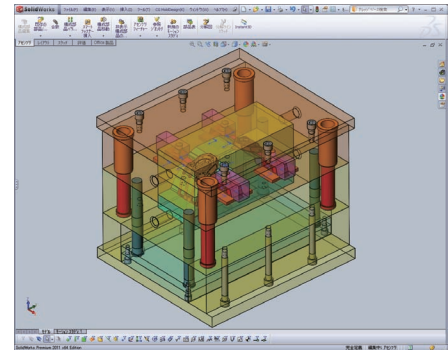
A cavity-core is created by directly setting its size or specifying the amount of the clearance from the product model. You can set the dimensions while checking the size in the preview. It automatically creates the cavity part by figuring out the difference between the product model and cavity-core. The modification to the product shape will be reflected in the cavity-core shape. In order to divide the cavity-core, we provide the commands which support parting surface creation including filling holes and knitting surfaces.



[Core Pin/Insert]

Creates "Core Pin" and "Insert" from the models which are split into cavity and core, utilizing sketch or surface entities. It is possible to consider "Flange" and "Escape" for the extracted insert shape.

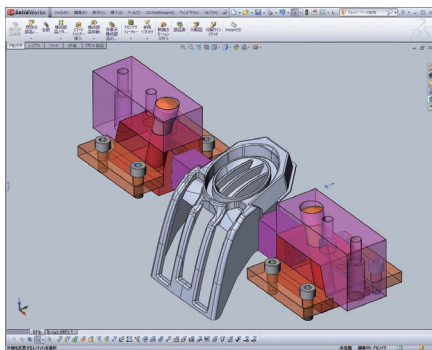
Base Design



[Mold Base]

FUTABA standard mold base will be created automatically. Created mold base will be displayed as wire frame on mode of template base, so dimension easy to set upon checking cavity and core. And, customized mold base which is your company original is available.

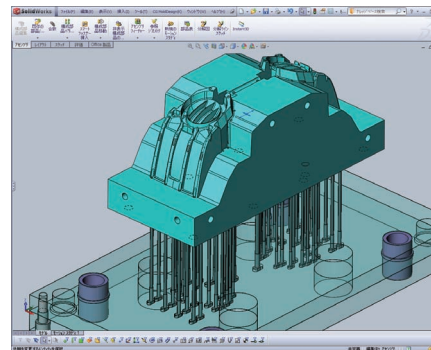
Slide Design



[Create Slide]

Slide parts will be created easily, because of calculated parameter from formula. And length of angular pin will be calculated automatically through amount of undercut. And hole of angular pin will be created at the same time.

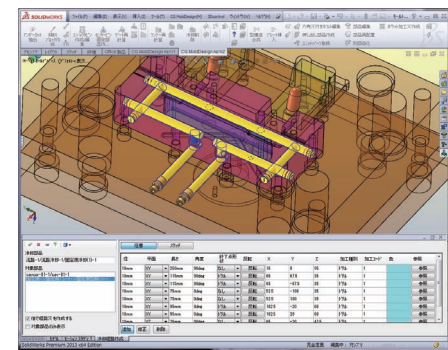
Ejector Design



[Create Ejector Pin]

It calculates heights of ejector pins based on their developed sketches and creates the standard or original pins. You can set the tip treatment, ejector lock, and machining hole attributes at the same time.

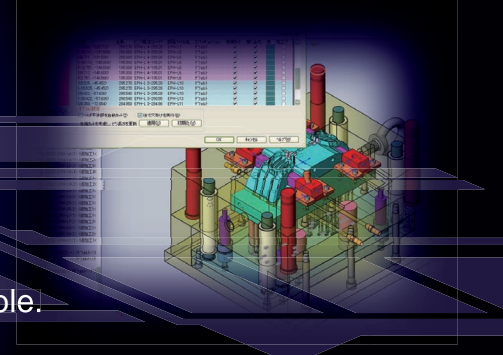
Mold Structure Design



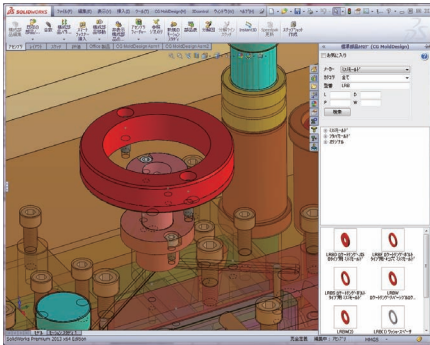
[Water hole / Cooling tank]

Course of water hole will be created three-dimensional and intuitively. Positioning of cooling parts is available, and hole of pipe thread is also available. And in case of creating cooling tank, height of cooling tank will be calculated automatically with keeping thickness from sketch circle.

On board standard parts for mold design,
 customized data structure and on demand standardization is available.

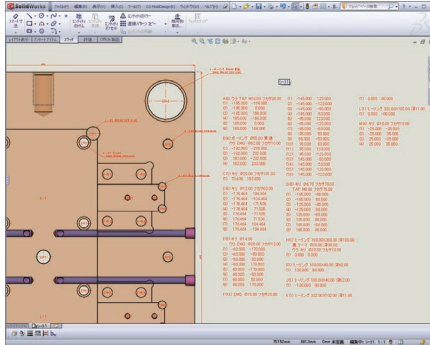


Standard Parts

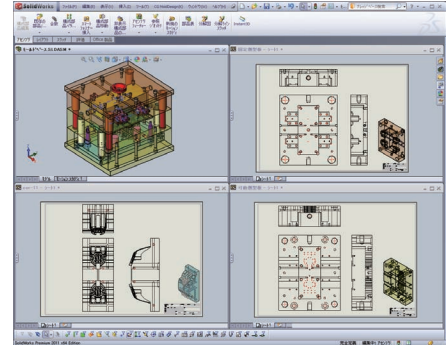


[Create Standard Parts]
 CG Mold Design will support more than 4,000 standard parts of FUTABA and MISUMI. (Original parts is available to register as standard parts.) And parameter of length and position is easy to set upon checking with pre-view. Machining template is on boarded as standard, so even importunate machining attribute is available to set with one click operation. And plural parts will be registered as UNIT. Positioning and machining attribute will be kept as well.

Drawing

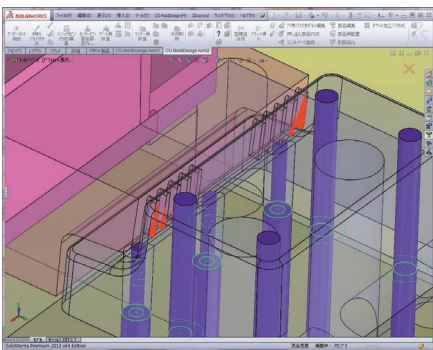


[Hole Dimension/Hole List]
 You can create dimensions for machining holes with attributes. Also, when you specify a view, all the existing machining holes are retrieved and output to a list. The display sequence of hole attributes can be registered as a master.

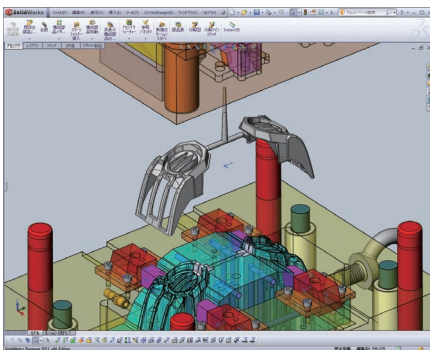


[Parts Release]
 Whole parts from assembly will be list up on the screen, so you can select parts drawing which you want from assembly drawing. Title block, paper size, dimension and hole list will be created with parts drawing at the same time.

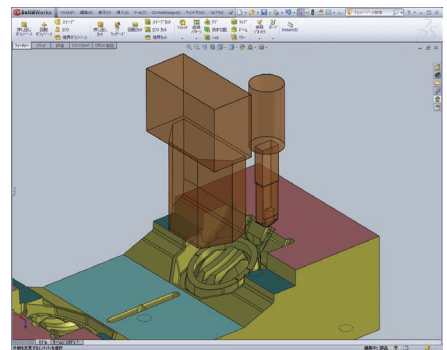
Others



[Interference confirmation of Slide and Ejector]
 You can check interference confirmation of slide core and ejector pin. System will show you place of interference between slide and ejector pin. Interference place will be colored, so easy to check the place.



[Check Simulated Molding Parts]
 It calculates the space in the specified area and makes a simulated molded part. The created shape can be saved as model data, so you can use it for flow analysis.



[Electrode]
 We provide the commands which support electrode creation. You can easily create an electrode by specifying its oscillation type and placement. You can select an oscillation type from Spherical, Circular, and Angular.



- Software & Hardware Requirements -

OS	Windows 7® Professional 32bit Windows 7® Professional 64bit Windows 8® Pro 64bit
CPU	Intel® Core™ 2 Duo or more
MEM	2GB or more
HDD	16GB or more
Graphics	3D Accelerator OpenGL® board
Office	Microsoft® Excel2007 or newer

SolidWorks is a registered trademark of SolidWorks Corporation.
The company name and the brand name described in the rest are the trademarks or registered trademarks of each company.

The contents of this catalogue are created as of February 2014.
Information in this catalogue is subject to change without notice.



CGS C&G SYSTEMS INC.
<http://www.cgsys.co.jp>

Youtube <http://www.youtube.com/user/cgsys0777>
Facebook <http://www.facebook.com/CGSYS>

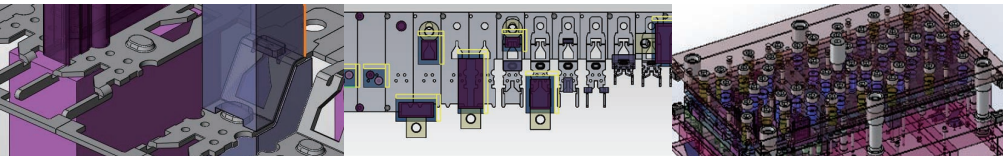
Tennozu Central Tower 19F 2-2-24 Higashishinagawa Shinagawa-ku, Tokyo, 140-0002, JAPAN
TEL.: +81-3-6864-0777 FAX.: +81-3-6864-0778 MAIL: overseas@cgsys.co.jp

CGS NORTH AMERICA INC.(CANADA) www.camtool.com
2160 Fasan Drive Oldcastle (Windsor) Ontario, Canada N0R 1L0
TEL.: +1-519-737-6009 FAX.: +1-519-737-1647

 **SOLIDWORKS**

CG SERIES

3D CAD/CAM system for Molds & Dies



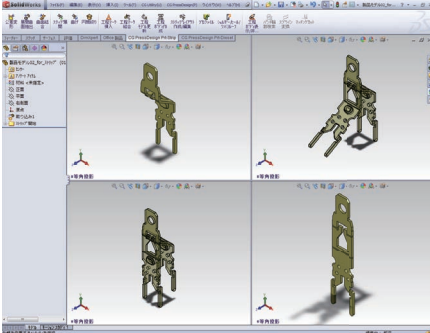
CG PRESS DESIGN

CGS
C&G SYSTEMS INC.

CG PRESS DESIGN

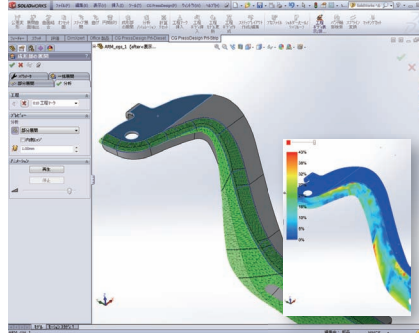
CG PressDesign is superior for Layout development, Auto design, and smart association"

Blank Development



[Process body creation]

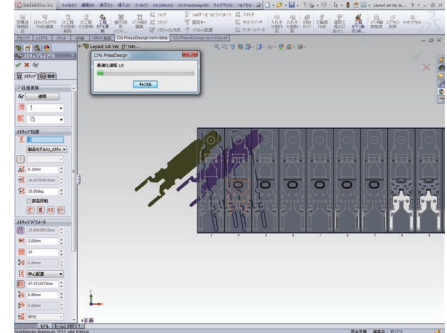
Blank body will be created through development of bending plane and die draw. Radius and angle of bending part is recognized automatically, and blank body will be created automatically with K factor from master. Furthermore various development is available such as unnatural bending, burring, spring back, bending restore and so on.



[2D Blank / Partial Blank] *Option

2D blank will be developed forming parts at one time. It will show analysis and simulation based on material data. (animation view, analysis for strain, stress, material thickness rate of decline) Partial blank will be developed forming parts from selected place. Considering of unfolding model is available, because of appoint of development angle, hold tip, adjust development direction.

Layout Design



[Layout Development]

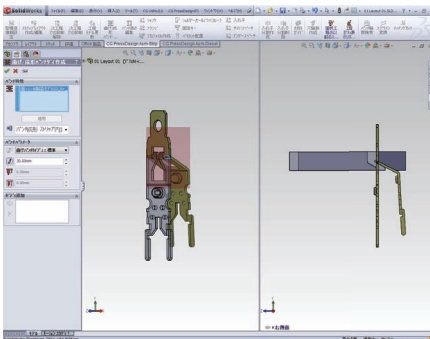
Process body will be placed into each stage automatically. Blank layout for nesting, hound's-tooth placement, mirror placement is also available.

In addition, layout development for material width, border amount, sending pitch and number of stage are freely considered.

[Layout Design others]

- Pilot placement
- Insert creation
- Shank creation
- Spacer creation
- Fixed key creation
- Material guide creation

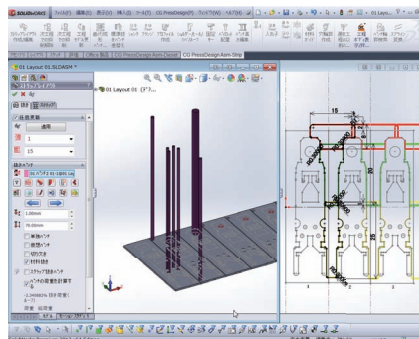
So you can amend/edit easily because of feature function of history base. We utilize SolidWorks interface, so forming parts also will be developed with ordinary function of SolidWorks.



[Bending/Forming Punch]

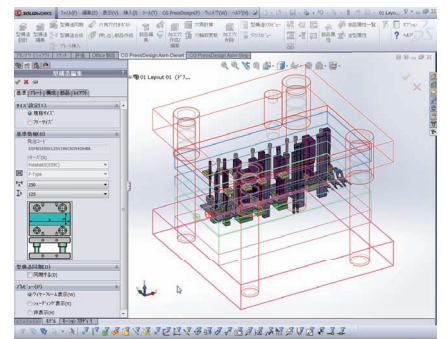
Bending/forming punch will be created smoothly from cylinder face from bending part and/or forming part.

Created bending/forming punch is associated with product, so the designer can check the gaps between product and bending/forming punch, it is easy to confirm and will reduce mistakes during the designing process.



[Piercing Punch]

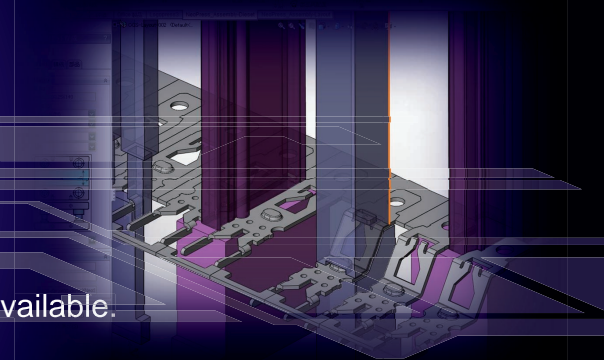
Pierce punch will be created one time, because system recognize a hole automatically. In case there are lot of pierce hole, this function is effective. And, cutting edge of variant form is drawn by sketch function freely, and profile of products will be traced automatically. And, sketch of cutting edge profile for plural pierce punch is able to create at one time. So, design of punch with matching is available. And/more, we have library for matching, heel, roof, shank, frame.



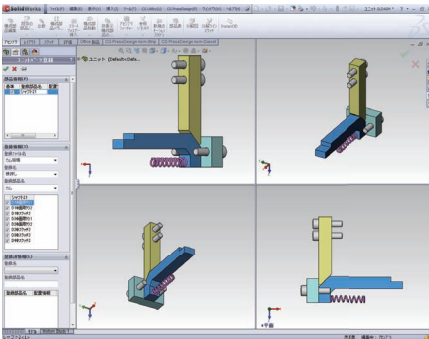
[Information of Die structure]

In case of designing layout or estimation time, image of die structure appear (including plate thickness, XY size), so created punch dimension will be associated with plate thickness, and position of punch will follow die structure position automatically. So designer easy to consider layout image.

On board standard parts for press design, customized data structure and on demand standardization is available.

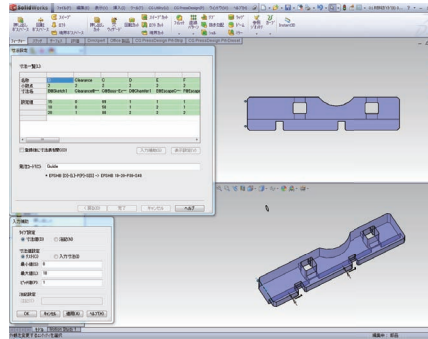


Die Structure



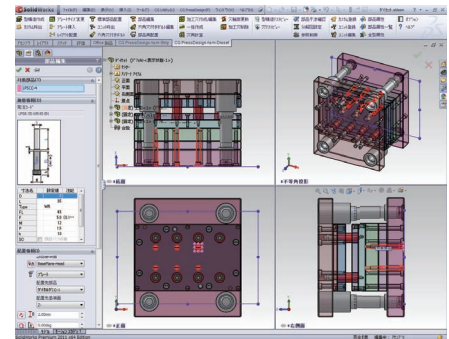
[Unit]

Internal standard parts such as springs and suspension bolts, inserts and bolts will be registered as standard unit parts. Adding coincidence, dimensional binding, relational formula between parts, each part size, each part place will be up-dated automatically. So design standardization and a reduction in design time will be possible.



[Customized parts]

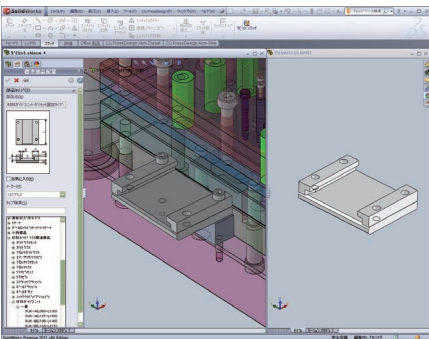
Ordinary internal parts will be registered as customized parts, so you can create your own catalogue. Registration work is an intuitive and easy operation.



[Die Set]

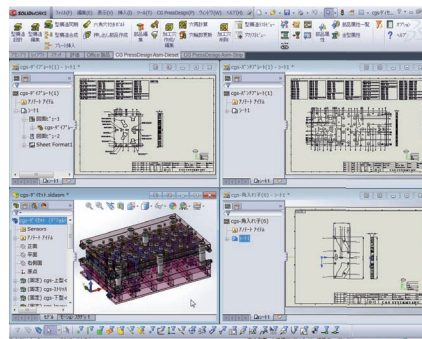
CG PressDesign supports standard die set from FUTABA. It is easy to change plate size, and easy to insert new plate etc., so customized die set is available. Frequently used parts such as clamping bolt, knock-out pin, stripper bolt, register to customized die set, so it reduces design time for the die set.

Drawing Supports



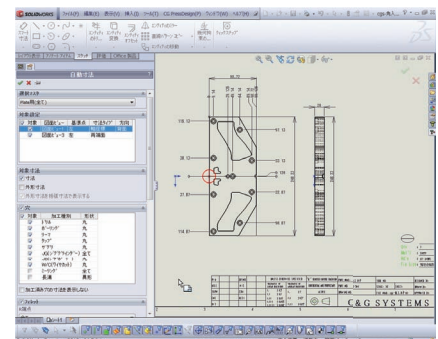
[Standard Parts]

There are 6,200 libraries for Futaba and Misumi standard parts. Standard parts image appear in the screen, so easy to set for value of position and length on the plate. And template of machining is standard feature, so easy to set attribute of hole. And L dimension is associative with plate thickness, so length of pin will be optimized automatically.



[Parts Release]

2D drawing will be created automatically from assembly file and parts file. And parts list, purchasing sheet, title block will be created same time. Hole list, auto dimension will appear on the title block after parts release.



[Auto Dimension]

Dimension will be created automatically on the drawing. Dimension type is able to select each projection and hole attribution base is available. Dimension pattern will be registered in to the master, so dimension will be created separately each plate such as punch plate, die plate.



- Software & Hardware Requirements -

OS	Windows 7® Professional 32bit Windows 7® Professional 64bit Windows 8® Pro 64bit
CPU	Intel® Core™ 2 Duo or more
MEM	2GB or more
HDD	16GB or more
Graphics	3D Accelerator OpenGL® board
Office	Microsoft® Excel2007 or newer

SolidWorks is a registered trademark of SolidWorks Corporation.
The company name and the brand name described in the rest are the trademarks or registered trademarks of each company.

The contents of this catalogue are created as of February 2014.
Information in this catalogue is subject to change without notice.



CGS C&G SYSTEMS INC.
<http://www.cgsys.co.jp>

Youtube <http://www.youtube.com/user/cgsys0777>
Facebook <http://www.facebook.com/CGSYS>

Tennozu Central Tower 19F 2-2-24 Higashishinagawa Shinagawa-ku, Tokyo, 140-0002, JAPAN
TEL.: +81-3-6864-0777 FAX.: +81-3-6864-0778 MAIL: overseas@cgsys.co.jp

CGS NORTH AMERICA INC.(CANADA) www.camtool.com
2160 Fasan Drive Oldcastle (Windsor) Ontario, Canada N0R 1L0
TEL.: +1-519-737-6009 FAX.: +1-519-737-1647