CG Cam-Tool

3D CAD/CAM system for Molds & Dies

C&G Systems Inc.
High-precision CAM system with totally simplified operating environment, utilizing the reliable “CAM calculation program”.

**USER INTERFACE**

![User Interface Image]

- **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 manufactures from WEB site.

- **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.

**CAM FUNCTIONS**

- **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.

- **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.

- **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.

- **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.

- **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”.

- **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.

- **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.
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.

* 2013 Release
- Software & Hardware Requirements -

**OS**
- Microsoft® Windows XP® Professional SP3
- Microsoft® Windows XP® Professional x64 Edition SP2
- Windows 7® Professional 32bit
- Windows 7® Professional 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 April 2011.
Information in this catalogue is subject to change without notice.

---

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

[YouTube](http://www.youtube.com/user/cgsys0777)
[Facebook](http://www.facebook.com/CGSYS)