EZCAM
CAD/CAM system

EZCAM Release 2019

10/2018

www.ezcam.com
EZCAM Solutions Inc.

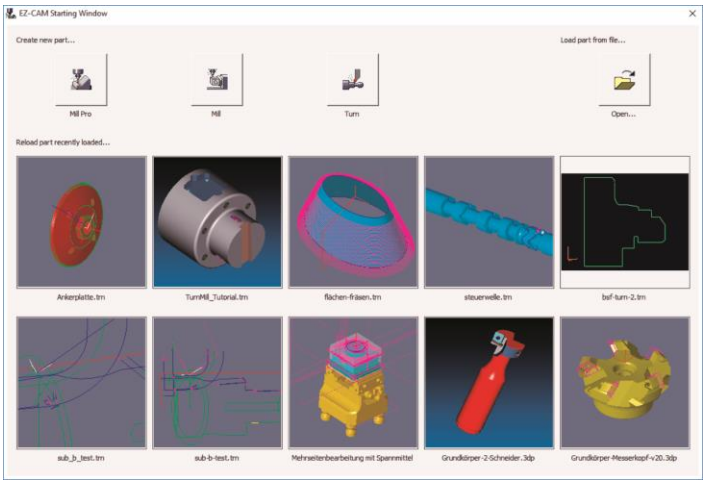
Based on valuable customer feedback over the last year – a very good one for us – we have made the EZ-CAM 2019 CAD/CAM system even better, with new features and functions. You'll find an overview of these in the following pages. Feel free to contact us with any questions.

Your EZ-CAM Team

Content

MILL / MILL-Pro / TURN – New Startup Window

The small dialog for selection of the current EZ-CAM module that came up in previous versions when the *File/New* command was selected has been replaced by a splash-screen dialog having many more options. When starting EZ-CAM or selecting the *File/New* command, the new dialog enables selection of the most recent part files for both MILL and TURN modes. In addition, when the desired file is not among these, one may alternatively click the "*Open*..." button to browse and find the file and open it. Either way the system will automatically start in the correct mode according to the selected file type. And, as with the old dialog, clicking any of the "MILL-PRO", "MILL" or "TURN" buttons will start the system with an empty document in the mode selected.



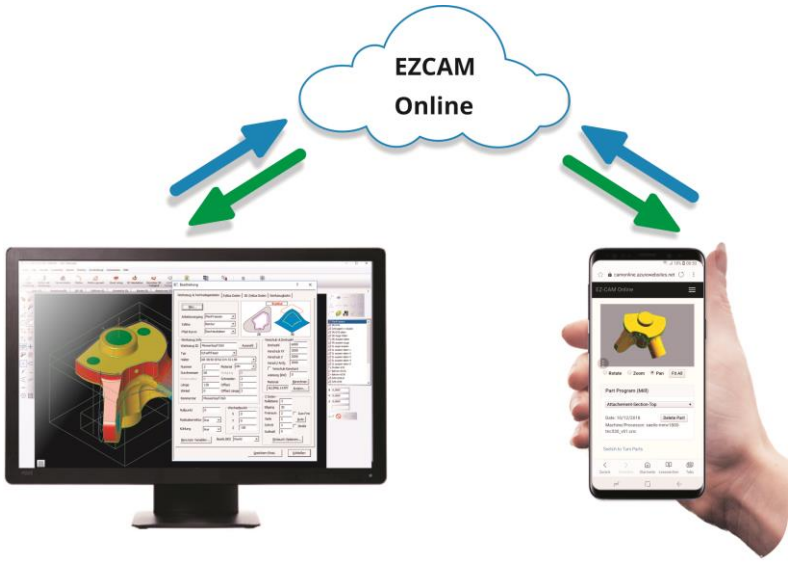
MILL / MILL-Pro / TURN – Improved Drag & Drop Functionality

In addition to the new splash screen mentioned above, drag & drop files onto the EZ-CAM icon or the application window (an overlooked but very handy feature), has been reworked as well.

- Dropping any file onto the desktop icon opens the application in the correct mode depending on the file type (MILL or TURN)
- When dropping a file onto an existing EZ-CAM window, the file will be loaded on top of the already existing data. If the file type is different to the existing session, as for example dropping a "TURN" file onto a "MILL" session, an automatic restart in the new mode is done before loading the data.
- Any EZ-CAM supported CAD file (DXF, IGES, STEP, etc.) dropped onto the application window will automatically be imported.

MILL / MILL-Pro / TURN – New Web-Tools for remote Editing of Worksteps

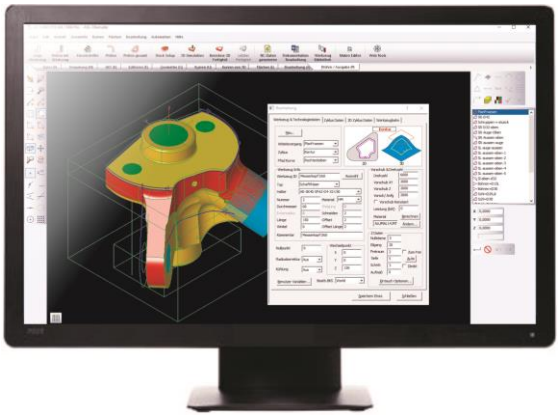
When starting up new parts, users very often modify CAM generated NC code directly on the machine, due to part, tool, or machine-specific reasons. To keep the associated CAM file current, the machinist typically needs to note any changes and manually update the associated CAM file. Then, only after re-posting, will the code for this part include the changes.
Now, with EZ-CAM *"Web-Tools"*, we introduce a new method to revolutionize this process by enabling the user to remotely edit workstep-related parameters. With *Web-Tools*, part data (workstep parameter & snapshot image) can be uploaded to our new web service, EZ-CAM Online. The data can then be accessed via any web browser, running on any operating system (Android, iOS, Windows) on hardware such as tablets, smart phones, or laptops. Any modifications done via the remote devices can later be downloaded to EZ-CAM through *Web-Tools* to update the original part file on the PC.



- Access to EZ-CAM Online service for registered users.
- EZ-CAM Online is supported in any browser on mobile devices using Android, iOS, or Microsoft Mobile operating systems.
- Only workstep related machining information is shared, no sensitive part data (dimensions, geometry, surfaces, toolpaths, etc.) is uploaded.

MILL / MILL-Pro / TURN – New "Floating Spreadsheet"

EZ-CAM's unique *Spreadsheet* control – displaying the most important workstep related machining data for easier editing – can now be opened as a *floating window* to be moved around on the same machine's screen or even on an external monitor. Such dual-monitor users will greatly benefit from keeping the separate spreadsheet window constantly open, allowing direct editing on one side while viewing the part and verifying the toolpath on the other.

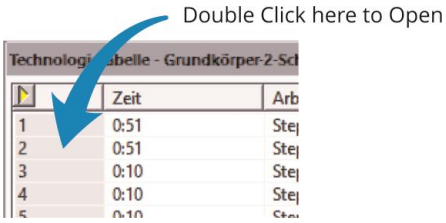


Monitor #1 displaying EZ-CAM's main application window

„Floating Spreadsheet" as separate window on second Monitor

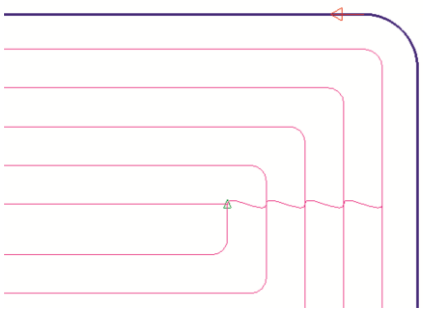
MILL / MILL-Pro / TURN – Double-Click on Spreadsheet to open Full Machining Dialog

Although many key machining settings are directly accessible via the spreadsheet, sometimes users need to modify other settings and accordingly will open the full machining dialog. In previous versions this was not possible from inside the spreadsheet. Now in release 2019, the full machining dialog can be opened by a simple double-click in the first column of the spreadsheet in the row of the workstep to be edited.

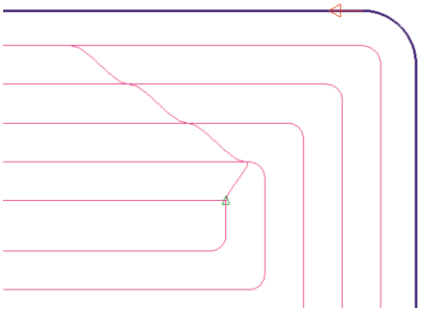


MILL / MILL-Pro – Pocketing Cycle with new smooth Stepover Type

The standard contour parallel *Pocketing* cycle operation (HSM=OFF) is now using a new strategy to compute the toolpath, offering two big improvements over previous releases. First to name is the unlimited number of islands that can now be defined. The second and probably most important is the new smooth stepover type. In high feedrate environments, the old style "S" type often caused the machine to drastically reduce their cutting speed in order to perform the stepover. The new smooth type completely eliminates this drawback while also reducing tool wear. In addition, if the "*Minimize Jumps"* option is activated, the system tries to eliminate Z-rapid moves by moving to sub-regions at cutting depth if possible.



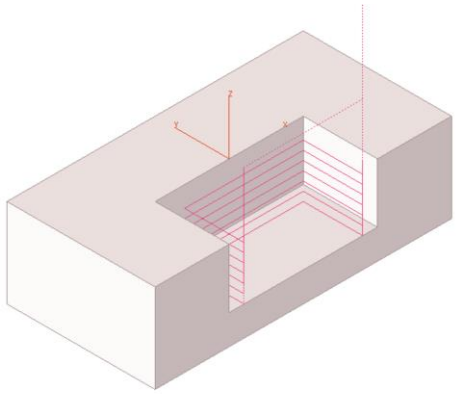
Old style "S" type stepover moves



New smooth stepover type

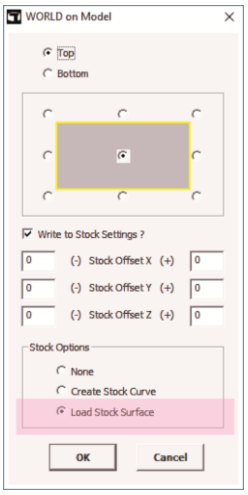
MILL / MILL-Pro – 3D-Wizard – Constant-Z Finishing with Flat Regions

A new update to the 3D-Wizard's Constant-Z Finishing method always includes passes for "flat regions".



MILL / MILL-Pro – Updated World on Model command, loads "Stock Model"

A new "*Load Stock*" option was added to the *World on Model* command, originally introduced in version 2018. This option loads any 3D file format with surfaces to be merged into one closed surface named "*stockSrf*", representing the stock model with transparent color (white). In addition, the "*Stock Type*" on the "*Stock Setup*" dialog is automatically set to "*Custom stock*".



MILL / MILL-Pro – Zig-Zag Cycle – Finishing Path with Ramps Moves

The *Finishing Pass* of the *Zig-Zag* cycle, intended to clean the ridges along the machined profile, now includes *automatic lead-in moves* to avoid over-stressing the tool when entering the remaining material. The lead-in length is automatically set to 50% of the defined *Step Over* distance.

MILL / MILL-Pro / TURN – Enhanced Toolpath Display Performance

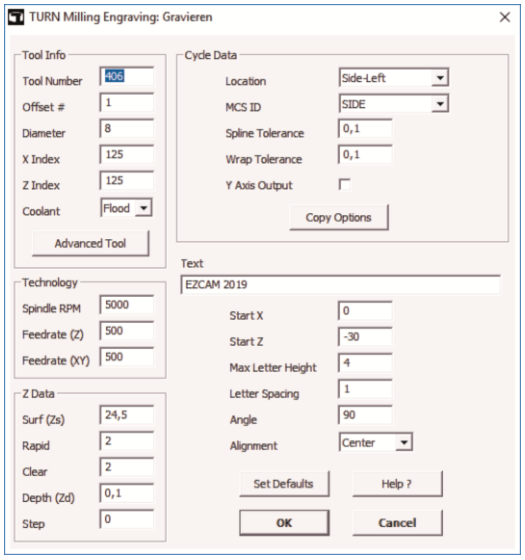
The display performance of very large toolpaths has been updated and greatly improved.

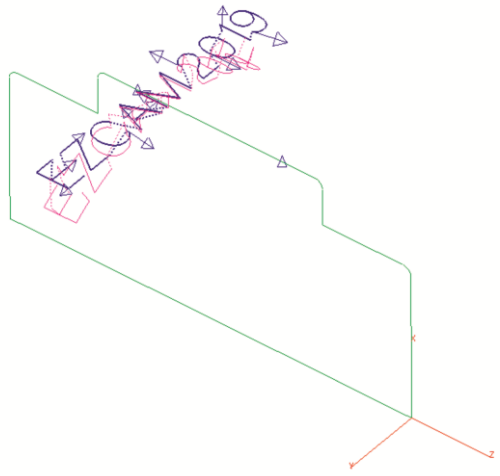
TURN – Roughing Cycles – New "Peck Step" option

EZ-TURN introduces the new "*Peck Step*" parameter for *Turn*, *Bore* and *Face* roughing cycles. Clearance distance between two pecking steps is 0.1 mm, and retract and engage moves are controlled by *"Engage Angle*", "*Clearance*", "*Withdraw Angle*" and "*Withdraw Distance*" parameters.

TURN – New "Engraving" Cycle

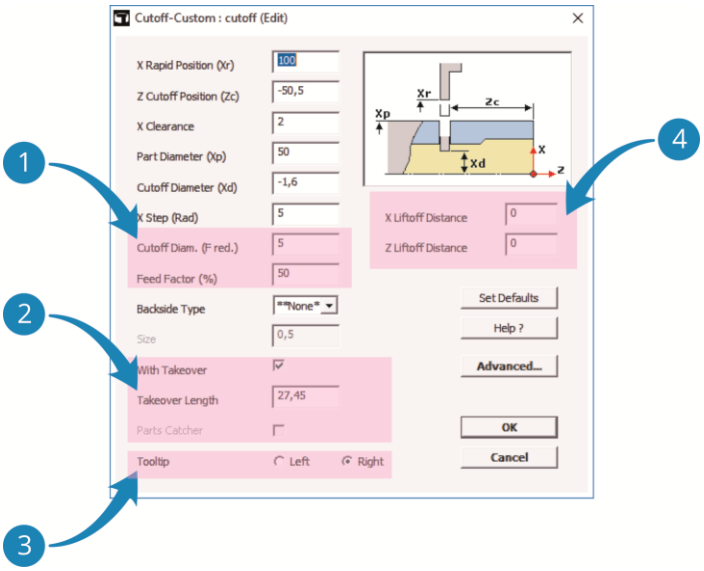
Improving on previous releases, the new "*Engraving*" cycle lets you define the technology data, as well as the engraving specific parameters, all in one dialog. The path curve is created automatically, and toolpath can be verified right away, anytime. Modifying the text only requires opening the workstep, changing the text, closing the dialog and then re-verifying or posting the toolpath.





TURN – Enhanced Cutoff Cycle

The *Cutoff* cycle has gotten a major upgrade with the addition of some very frequently requested features:



1

The new settings "*Cutoff Diameter (F-reduced)*" and "*Feed Factor*" allow performing the final stage of the cutoff process using a reduced feedrate.

2

As an alternative to the (newly updated) *Parts Catcher* option, the user can also define a "*Takeover Length*" that is passed to the NC code that handles part takeover on Sub-Spindle machines.

3

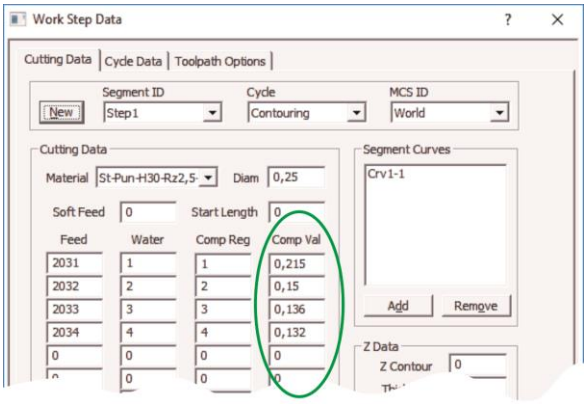
Regular EZ-CAM cycles always explicitly use the left edge of a *Cutoff* tool – the new "*Tooltip*" option of the "*Cutoff*" cycle, however, allows you to select which edge of the tool, left or right, is measured and defined by the corresponding offset on the machine. For this, the cycle will use the workstep's "*Tool Width*" setting to correctly calculate toolpath and NC code, respectively.

4

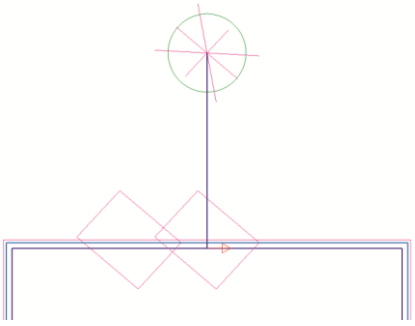
"X Liftoff Distance" = X retract distance when doing multiple X steps during the cutoff.
"Z Liftoff Distance" = Z retract distance after cutoff move.

EDM – Verification now with "Real Wire Offset"

The *Contouring*, *XYUV* and *Die/Punch* cycles now verify the wirepath using different offset values for multiple passes. If the technology table provides valid offset values (between 0 and twice the wire diameter), the system will use these, otherwise it will compute a standard value between the wire radius and wire diameter for each pass. In the case of multiple passes, the interval will be divided equally among those.



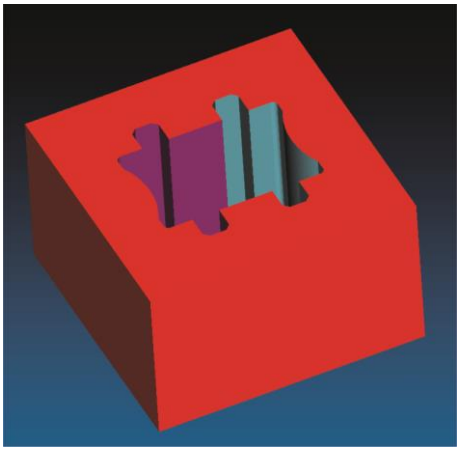
The "*Comp-Val*" section where the offset for each pass is defined



Verified toolpath with multiple passes (offsets)

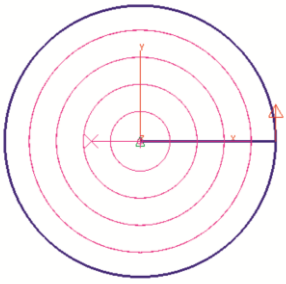
EDM – Enhanced Wirepath 3D Simulation

The updated 3D simulation now uses different colors for each pass along a certain profile and hides the bodies split away from the stock automatically. In addition, the background color of the simulation window has been changed to a gradient display.

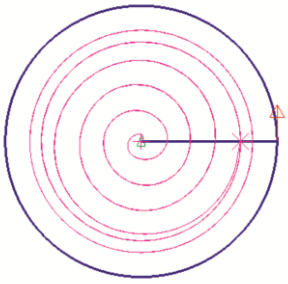


EDM – Pocketing Cycle – New "Radial" Option

In release 2018, the Pocketing cycle's wirepath was converted to the more efficient trochoidal style. In the 2019 release the new "*Radial*" setting gives the option to switch between old-style parallel pocketing (Radial=Off) and the new trochoidal style (Radial=On). In addition, the trochoidal style has seen several improvements in respect to reduced cut/thread occurrences and better wire/part collision checks while moving inside the pocket at rapid feedrates.



Radial ☐



Radial ☑

MILL / MILL-Pro / TURN – Post Processor ID and G-Code File Extension stored in Part Files

The name of the last used *post processor* (machine specific NC code configuration file) is now directly saved into the part file together with the file extension used for the *G-Code file*. This information is then restored automatically when the partfile is opened again.

MILL / MILL-Pro / TURN – Updated Worksheet Document

Create Worksheet Document now includes the image of the part at the top of the page.

All Modules – Enhanced STEP and AutoCAD 2018 DWG Import

The CAD import filters for STEP data has been modified and updated extensively. In addition, the AutoCAD DWG import has been upgraded to support latest 2018 file types.

All Modules – CAD Import – Automatic Geometry Cleanup

Overlapping lines/arcs are deleted during CAD import so that chain command can now be used on the solid wireframe geometry as an alternative method for rapid curve creation.

All Modules – Gradient 3D Simulation Background

Gradient is now the standard background color for the simulation window of all EZCAM modules.

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