

Autodesk® Inventor CAM™ 2020.1 Update

Release Notes

Build 7.0.0.xxxxx / xx June 2019

Autodesk, Inc.

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This document covers all three Inventor CAM products:

- Inventor CAM Express
- Inventor CAM Premium
- Inventor CAM Ultimate

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WHAT'S NEW

The following changes have been made in the current update (2020.1):

Milling Toolpaths

- Fixed an issue where 3D Adaptive Clearing with rest machining can fail with complex remaining stock. (#13622)
- Fixed several issues in which the toolpath computations for Adaptive Clearing could fail on Mac. (#12188)
- Improved Adaptive for tighter model contours; it now finds a starting point on the stock boundary. (#12095)
- Improved start entries for Adaptive Clearing toolpaths so that the toolpath starts in corners/endpoints rather than in the middle of a stock line. (#12238)
- Fixed an issue where calculating a 2D Adaptive toolpath with rest machining from a face selection could result in a large area being machined. (#13030)
- Fixed an issue in Adaptive where using a ballnose cutter as a reference tool was giving the wrong toolpath. (#14000)
- Removed machine orientation information from the Adaptive toolpath geometry tab. (#14294)
- Fixed a crash that could occur in some cases after deleting the contour selection associated with a flat pattern. (#11055)
- Fixed an issue where preserve order was not respected in 2D Profile toolpaths. (#12127)
- Fixed an issue that could occur when creating bore, circular and threading toolpaths around cylindrical bosses. (#14593)
- Fixed a problem in Contour toolpaths where ramps might not be connected to their cutting moves, resulting in an unexpected lift and plunge to cover the gap. (#13822)
- Fixed an issue that introduced unnecessary retracts in Ramp operations. (#13747)
- Fixed an issue which caused irregular cutting passes for Scallop toolpaths. (#13757)
- Fixed an issue where a Constant Scallop toolpath might not calculate when up/down milling and 'other-way' linking was enabled. (#13172)

Turning Toolpaths

- Fixed an issue where an angled turning tool was incorrectly previewed in the tool library. (#13725)

- Fixed a problem in turning profile roughing operations with turning mode set to face profiling where the toolpath was not regenerated after the direction parameter in the operation was changed. (#14313)
- Added an option for a turn parting operation to keep the parting tool down at the final toolpath point X coordinate or retract it to the clearance X coordinate. (#12779)
- Fixed an issue for turning face and chamfer operations with a turning or grooving tool. For certain combinations of the spindle direction and handedness of the holder, the Safe Z coordinate was based upon the wrong side of the insert. (#12454)
- Fixed an issue where a grooving operation could fail if the back and front Z limits coincided with the extents of the groove geometry. (#10978)
- Fixed a memory leak for some turning grooving jobs. (#13390)

Tool Library

- Fixed turning tool preview in the tool library when the spindle rotation was changed. (#13998)
- Fixed a problem with the visualization of a round shank external grooving tool in simulation. (#13797)

User Interface

- Fixed a problem in which an error message about "invalid machine configuration" was incorrectly displayed. (#14475)
- Fixed a problem where retracting z levels were machine areas that had already been cleared in lower levels. (#14035)
- Fixed a problem in which stock properties defaulted to selection of faces, and required selecting some face and clearing it before you could select the actual stock. (#13966)
- Fixed a crash that could occur when using drag-and-drop to import a tool library from Windows Explorer into the tool library window. (#14382)
- Fixed a crash that could occur during simulation if a toolpath removed nearly all of the stock. (#11142)
- Fixed a problem in certain operation dialogs that caused incorrect display of group parameters if the group was re-displayed due to a change to another parameter. (#14155)
- Fixed a problem that occurred when creating operations from a template containing a Manual NC operation. No tool will be assigned to the Manual NC. (#12703)

Post Processor

- Functionality has been restored to the alert, promptKey, and promptKey2 API calls. These now work as before, but are supported only on Windows. (#14452)
- Fixed a regression where tool.getExtent() could return an empty bounding box, causing the setup sheet to incorrectly scale the tool image. (#13848)
- Added a mechanism to define which rotary axes support TCP in the post processor. This simplifies the code needed to disable TCP for a single axis. (#13282)
- Added new global function 'isNewWorkPlane(section)' which returns true if the passed section requires new workplane calls. This simplifies the 'newWorkPlane' checks that are typically done inside of post processors (#13278)
- Added global variables 'minimumProgramNumber' and 'maximumProgramNumber' to post processor. (#13276)
- Post properties that you set when using a post processor are now saved to a file. This allows using the post processor on other computers with confidence that the previously used properties will continue to be applied. (#13233)
- Added the onManualNC function that will handle all Manual NC commands, and the expandManualNC function that handles all Manual NC commands using the historical method. (#12839)
- Fixed the behavior of mapToWCS, so that it can be changed multiple times in the post. (#12733)
- Added cancelRotation and cancelTranslation methods. (#8965)

NC Editor

- Updated HSMEdit to fix an issue in which the display of text was corrupted. (#14524)
- Updated HSMEdit to correct a problem with the backplotting function. (#14428)

Licensing

- Fixed a problem that could occur when activating Inventor CAM with an HSM Ultimate network license. (#15164)
- Fixed an issue in which administrator privileges were required when activating a license. (#14902)

The following changes were made in an earlier update (2020.0):

General Improvements

- The HSMEditor has been updated to the latest version for the 2020 release. (CAM-12417)
- Many icons in the user interface have been refreshed to improve consistency with Inventor. (CAM-11316)
- CAM functions for 2D Profile are now enabled when the Flat Pattern environment is active in Inventor. (CAM-10631)
- A warning is now issued if you edit a machine configuration that is being used in multiple setups, since the changes you make will affect all setups that reference the machine. (CAM-10281)

Post Processor Improvements

- New functions 'section.getModelOrigin' and 'section.getModelPlane' were added to provide access to the work coordinate system of the CAD model. (CAM-12614)
- A 'reset' parameter has been added to the createAxis function, which can reset the current rotary axis position to zero prior to scanning the section for the optimal rotary starting position. There are also corresponding 'axis.getReset' and 'axis.setReset' functions. (CAM-12300)
- Post Processor: A new variable 'machineParameter.spindleSpeedDwell' has been added which specifies a dwell time in seconds when the spindle speed changes during a drilling cycle. This can be used to correct expanded gun-drilling cycles. (CAM-9495)

General Fixes

- Fixed an issue in which the stock contours preview was incorrect when another tool orientation was selected in the operation. (CAM-12649)
- Fixed several issues in which toolpaths were not being invalidated when specific parameters were changed: Safe Z, Origin or Chuck Front in a turning setup, Entry and Pre-drill positions, Bottom Height 'from selected point'. (CAM-13938, CAM-13360, CAM-12632, CAM-13218, CAM-12991)
- Avoid incorrect parenting of the Machine Select dialog, which could lead to a crash. (CAM-13443)

Toolpath Fixes

- When using a cutter with a corner radius in 2D Adaptive, the upper edge of a pocket could be gouged in some circumstances; this is corrected. (CAM-11596)
- Allow machining two open bores within the same operation. (CAM-11647)
- Fixed an issue where the software could hang when calculating helical ramps on a contour pass. (CAM-12129)
- Fixed an issue in which toolpaths might not get created when using the "Fillet" option (Mac only). (CAM-12279)
- Fixed an issue where faceting could occur in Scallop operations. (CAM-12326)
- Fixed an issue in which helical links were detached from their cutting segment and a further lift and plunge was inserted in between to join them. (CAM-12364)
- Jet will now provide the user with a better warning when no path can be computed. (CAM-12953)
- Contour with Both Way and Roughing Passes used to produce partial toolpaths. This has now been fixed. (CAM-13309)
- Fixed an issue in which entry positions were inadvertently removed from 2D Chamfer operations. (CAM-13676)
- Fixed an issue which caused irregular cutting passes for the scallop strategy. (CAM-13757)
- Fixed an issue where some arcs were misformed when offset. (CAM-13135)
- Fixed an issue which could have caused gouges when smoothing for sampling strategies is enabled. (CAM-13266)
- Fixed an issue in which a toolpath would not be regenerated after smoothing was turned on or off. (CAM-12599)

- Fixed an issue in which rapid retracts of undercutting tools could fail to report some collisions. (CAM-11401)

Turning Fixes

- Fixed leads when "Use fixed lead direction" was turned off for certain inside and face grooving operations. (CAM-10679)
- Use more accurate round shank holders (instead of square) for visualization and simulation of some turning tools. (CAM-11423)
- Fixed issues with toolpath verification, simulation and NC code when an angled turning tool with compensation set to tip tangent was used for profiling, facing or chamfering. (CAM-11617)
- Fixed an issue where the compensation point for a boring tool was incorrectly previewed in the tool library. (CAM-12236)
- The non-functional 'Radial dimension mode' dropdown was removed from the turning / turn-mill setup dialog. (CAM-12448)
- Fixed an issue in which the tangent compensation point for a turning tool was incorrect when changing the tool direction. (CAM-12856)

Post Processor Fixes

- Fixed an issue in which "getOptimizedTCPMode" was returning an incorrect value. (CAM-11367)
- A post processor error is no longer generated when a multi-axis operation has a constant tool axis of 0,0,1. (CAM-11794)
- The post processor now considers a drilling operation to be an axial center drilling operation instead of a milling operation when it is within a tolerance of X=0, Y=0. (CAM-8185)
- Fixed a problem in which linear values from the machine configuration dialog were not recalculated according to the output units. (CAM-11877)

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SYSTEM REQUIREMENTS

- Autodesk Inventor CAM 2020 supports Microsoft Windows 7 64-bit and Windows 10 64-bit.
- Inventor CAM 2020 is compatible with the 2017, 2018, 2019 and 2020 versions of Inventor, Inventor Professional, and Inventor LT.

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INSTALLATION

New installation

- **Inventor must be installed prior to installing Inventor CAM**
- If you need to install Inventor, it should be available to you in the Autodesk Account Portal
- Before you install Inventor CAM 2020, please make sure to run Windows Update, install all Windows Updates that are pending on your machine, and reboot:
 - For Windows 10: Windows Update is available in the Update and Security section of Windows Settings, which is available from the Windows menu.
 - Windows 7: Windows Update is located in the Control Panel, which is accessible from the Start menu.
- It is sometimes necessary to perform a Windows Update multiple times to completely update your operating system.
- Verify that enough disk space is available on your machine to install Inventor CAM 2020.
- Before installing Inventor CAM 2020, please uninstall all prior Autodesk beta products.
- Download Inventor CAM 2020 from the Autodesk Account Portal (preferred) or cam.autodesk.com.
- Follow the instructions to download and launch the installer. Temporary extraction is to your temp folder. Operating system errors regarding very long path names can occur if the temporary location is nested too many levels deep.

- If the installer does not launch, browse to the folder where the files were extracted, and double-click setup.exe.

Updating an existing installation

- When a new update is available, an update notification will appear in the Autodesk Desktop App.
- Please download and install the update package.

Before installing an update there is no need to uninstall a previous Inventor CAM release; but if you prefer to do so, you can uninstall the relevant release in Programs and Features in Windows Control Panel by accessing "View installed updates".

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FEEDBACK

We encourage you to provide your feedback to us and help make Inventor CAM even better. If you encounter issues not covered in this document, please report them to Autodesk through your reseller, on the [CAM discussion forum](#), or to the Inventor CAM team using 'Send Feedback' on the 'Help' menu.

The Autodesk CAM Team

For more information visit us at: <http://cam.autodesk.com>

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