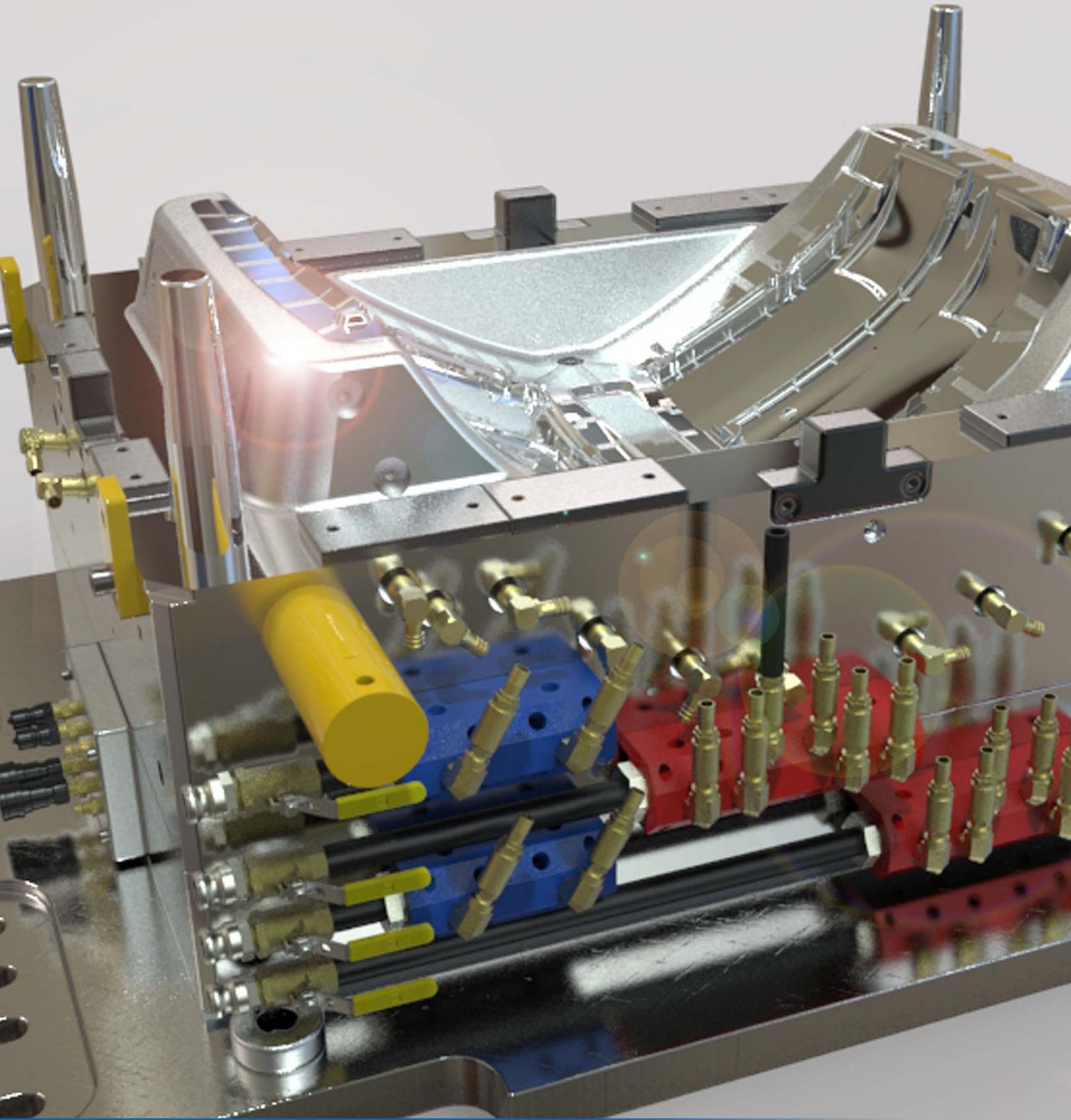


# KEYCREATOR<sup>®</sup> 2014

What's New

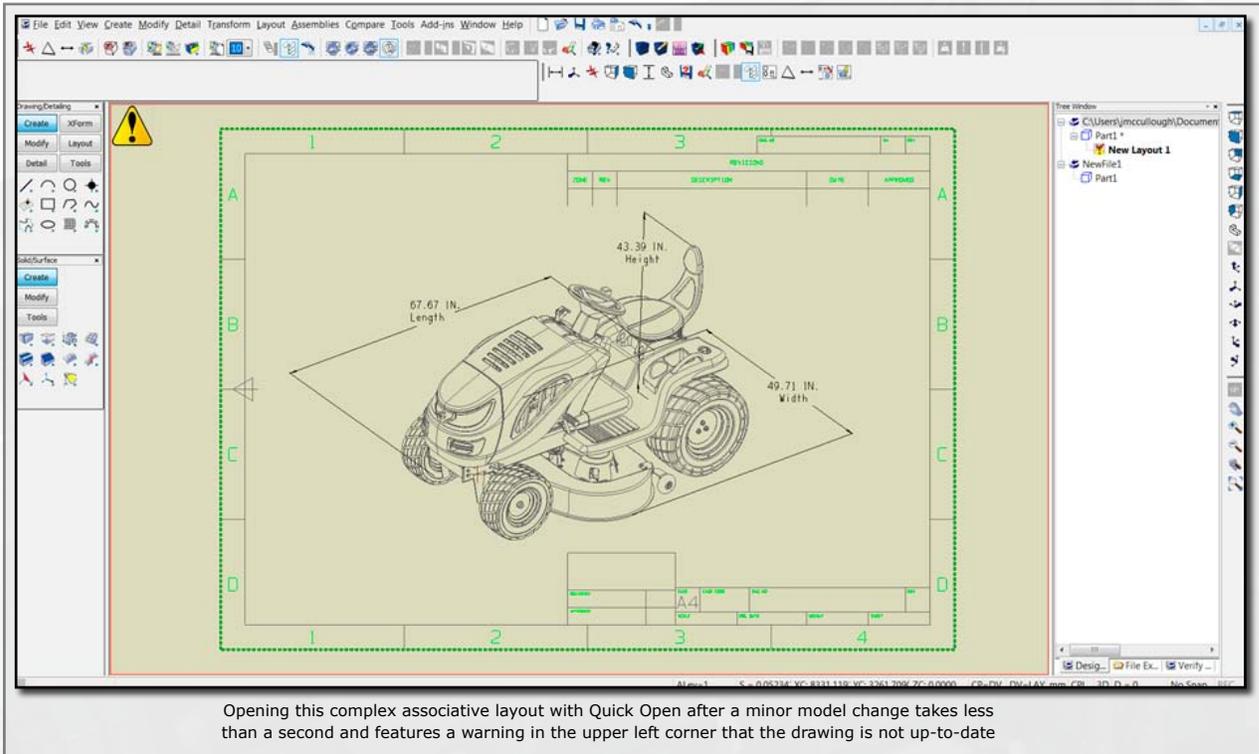


## Major Enhancements

KeyCreator 2014 provides three significant new capabilities driven by user requests which will save typical users considerable time and likely become indispensable tools.

### Quick Open Layout

- To save time when opening complex layouts, the Quick Open option skips reprocessing precise hidden line views. This special layout mode is useful on occasions when updated views are not important but time is.



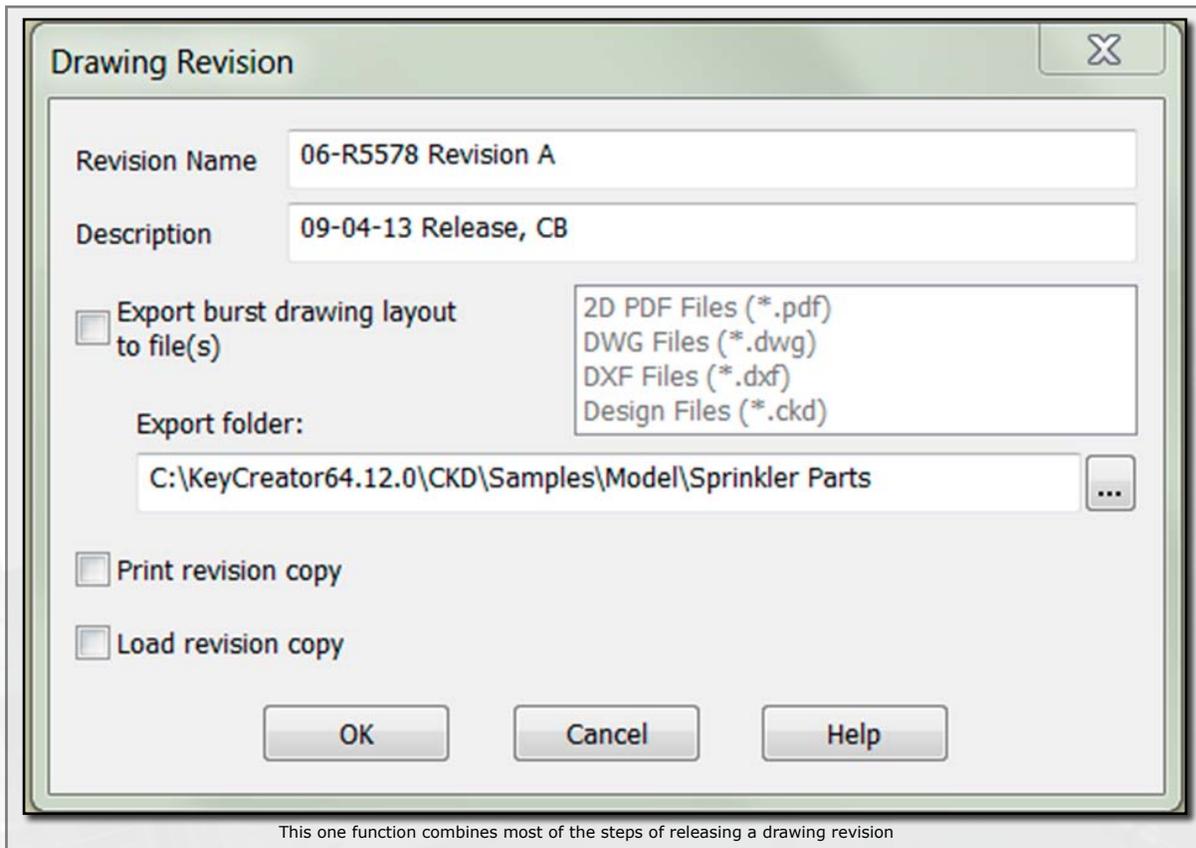
Opening this complex associative layout with Quick Open after a minor model change takes less than a second and features a warning in the upper left corner that the drawing is not up-to-date

### Drawing Revision

- The new Drawing Revision function streamlines the process of creating a permanent "snapshot" drawing layout from an associative "working" layout drawing - saving time and reducing errors.

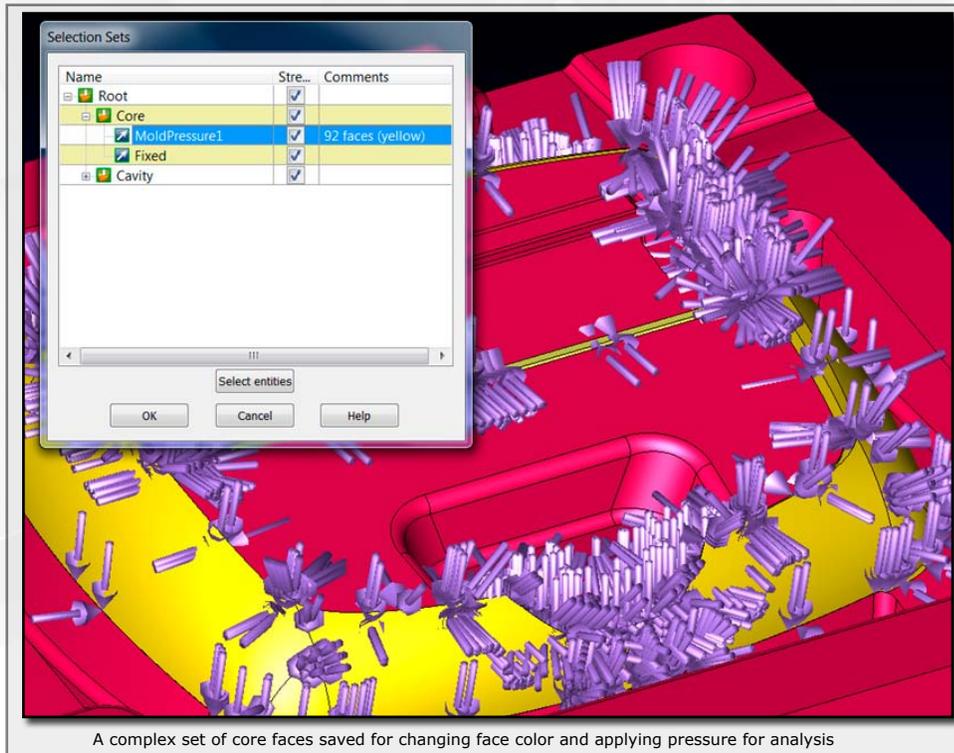
Drawing Revision capabilities:

- Copy the selected layout
- Append incremented revision letter onto new layout name
- Burst all instances to prevent updating
- Disable field codes in text to prevent updating
- Optionally export to PDF, DXF, DWG, and CKD
- Optionally print
- Optionally load the revision layout



## Save Selection Sets

- Complex selections of entities and/or faces can be saved for quick re-selection in later functions. The Selection Sets dialog supports managing selections with names, comments, and folders.



## **Interoperability**

The 2014 release of KeyCreator improves the extensive import capabilities with several significant interoperability updates.

### **ACIS SAT/SAB R24**

- Dassault Systemes Spatial ACIS SAT/SAB support has been extended to R24 files.

### **AutoCAD DWG/DXF 2013**

- Autodesk AutoCAD DWG/DXF support has been extended to version 2013 files.

### **Inventor Version 2013**

- Autodesk Inventor Import has been enhanced to support version 2013 files.

### **NX (UG) Import Version 8.5**

- Siemens PLM NX Import has been enhanced to support version 8.5 files.

### **CATIA V5 R23**

- Dassault Systemes CATIA V5 Import has been enhanced to support R23 version files.

### **STEP Reads Volume, Area, and Centroid**

- STEP Import will read Volume, Area, and Centroid values, if included by the program that wrote the STEP file. This information is especially useful for non-solid models which would require extra modeling to support calculation of this information.

## Level to References

- The new Level to References function automates conversion of a level managed assembly into an equivalent referenced assembly for clean export of part structure to CAD software which supports only references.

Level Name	LNu...	✓	COU...
Model Mode L...			
3TNV76	1		0
Block	20	✓	14
Head	22	✓	19
Cover	24	✓	12
Ignition	26	✓	12
Exhaust	28		14
Bell	30	✓	13
Flywheel	32		9
Starter	34		3
Bearing	36		10
Front	40	✓	0 (...
Cover	40.41	✓	38
Alternator	40.42	✓	5
Fan	40.44	✓	6
Water Pu...	40.46	✓	14
Lower	50		2
Pan	52		18
Fuel	60		0 (48)

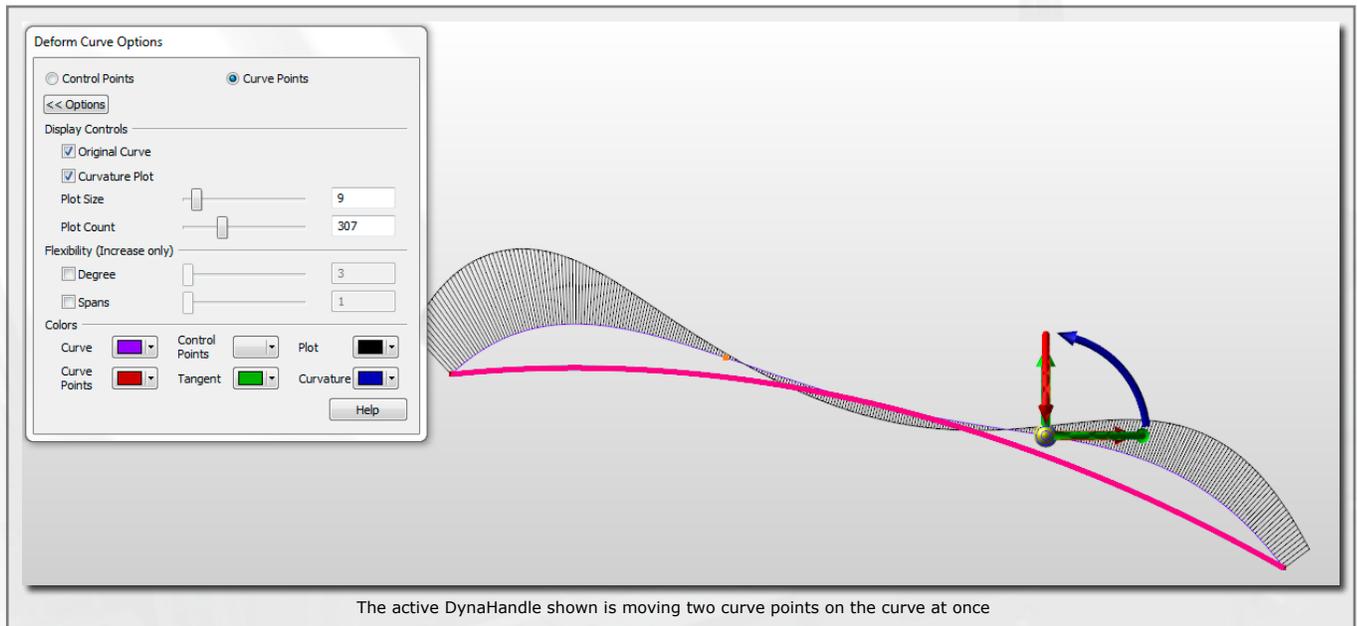
Reference Name	Reference To File
Model Mode ...	
Starter(34)	Starter(34).ckd ...
Pan(52)	Pan(52).ckd ...
Lower(50)	Lower(50).ckd ...
Ignition(26)	Ignition(26).ckd ...
Head(22)	Head(22).ckd ...
Fuel(60)	Fuel(60).ckd ...
Front(40)	Front(40).ckd ...
Water P...	Water Pump(40.46)
Fan(40.4...	Fan(40.44).ckd
Alternat...	Alternator(40.42).ck
Cover(4...	Cover(40.41).ckd
Flywheel(32)	Flywheel(32).ckd ...
Exhaust(28)	Exhaust(28).ckd ...
Cover(24)	Cover(24).ckd ...
Block(20)	Block(20).ckd ...
Bell(30)	Bell(30).ckd ...
Bearing(36)	Bearing(36).ckd ...

The part structure of this sample engine was converted from levels to part references for export



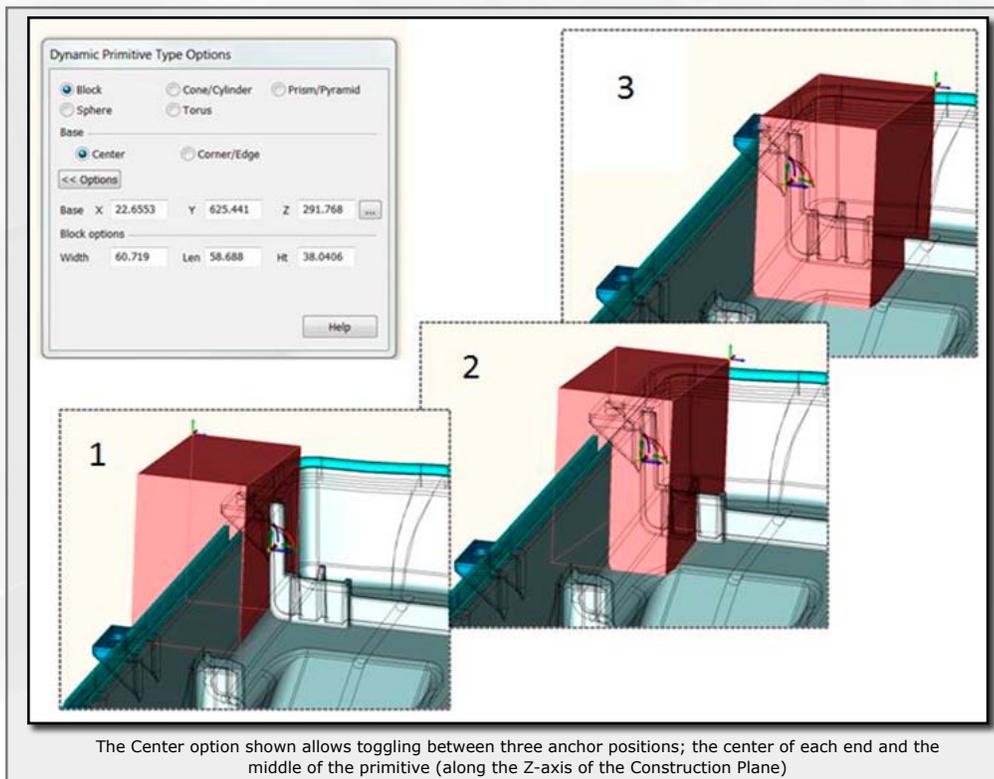
## Deform Multiple Curve Points

- Deform Curve function adds support for moving and aligning multiple curve points for improved control of curve editing



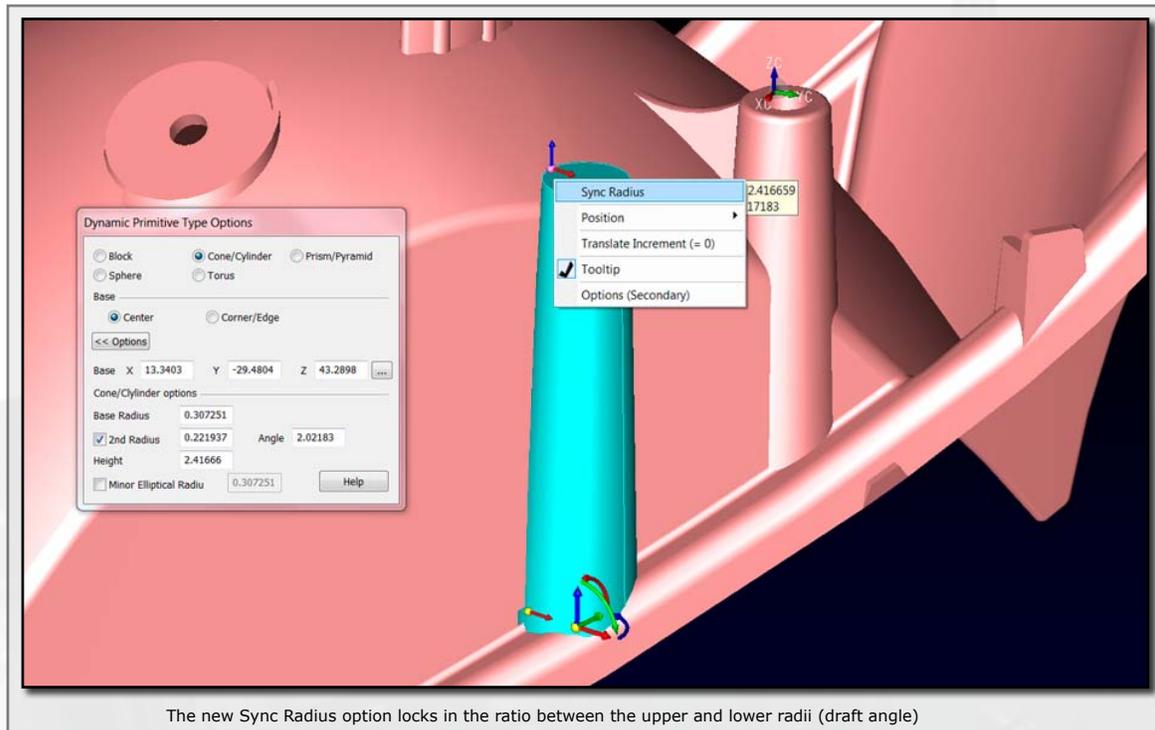
## Dynamic Primitive Anchor Toggling

- Dynamic Primitive function supports quick toggling of the anchor position of the base DynaHandle to allow inserting of the new solid in its proper position relative to other solids.



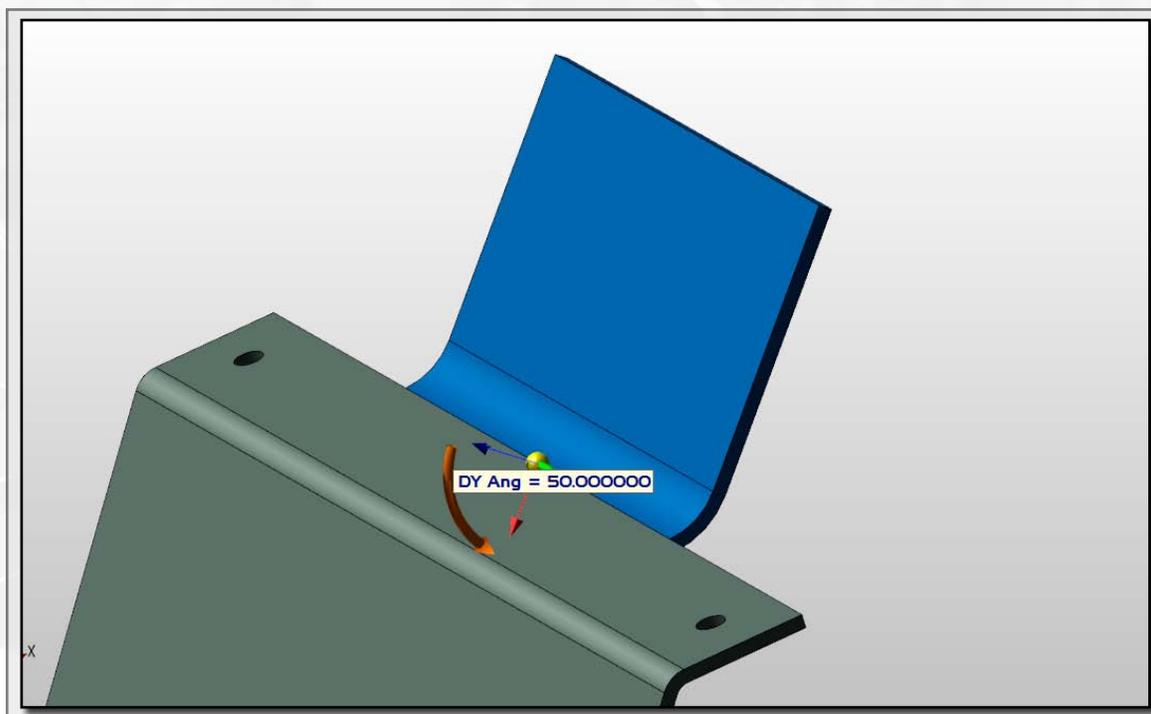
## Synchronize Primitive Radius

- The Cone/Cylinder and Prism/Pyramid options of the Dynamic Primitive function feature a Sync Radius option to link the Y axis of the upper and lower secondary DynaHandles.



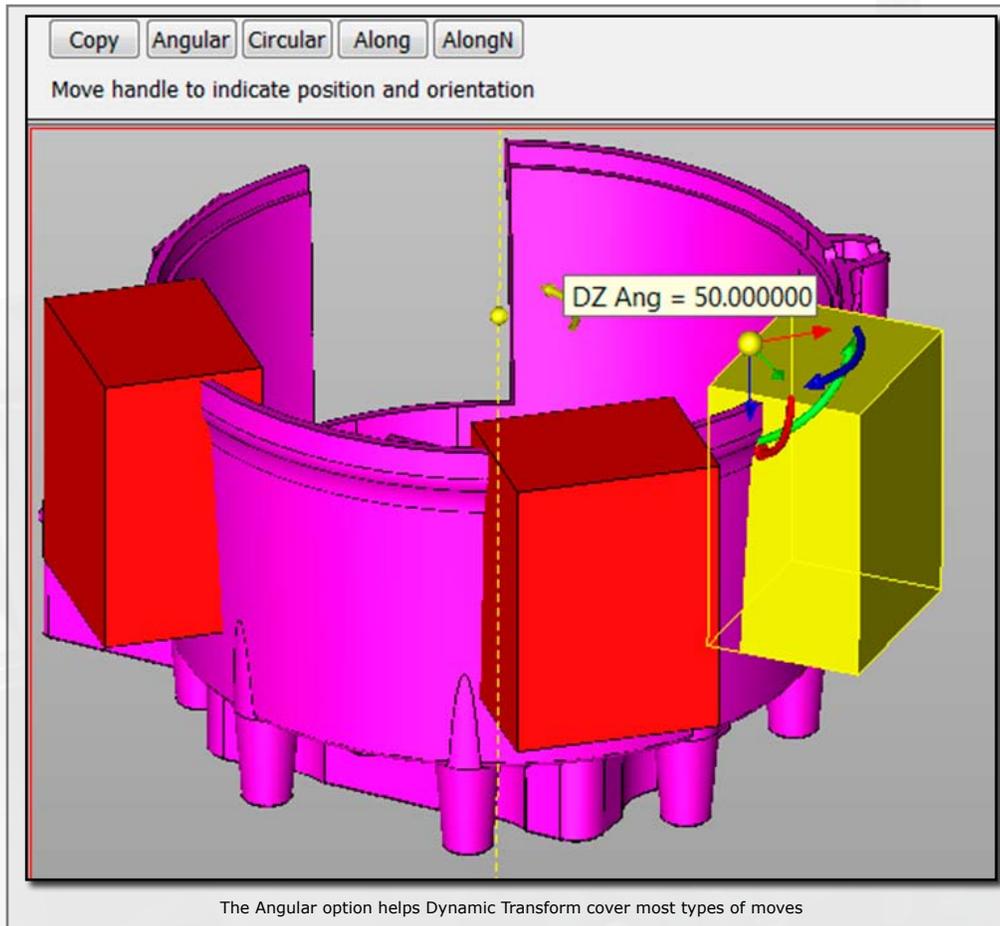
## DynaHandle for Flange

- Create Feature Flange now uses a standard DynaHandle interface.



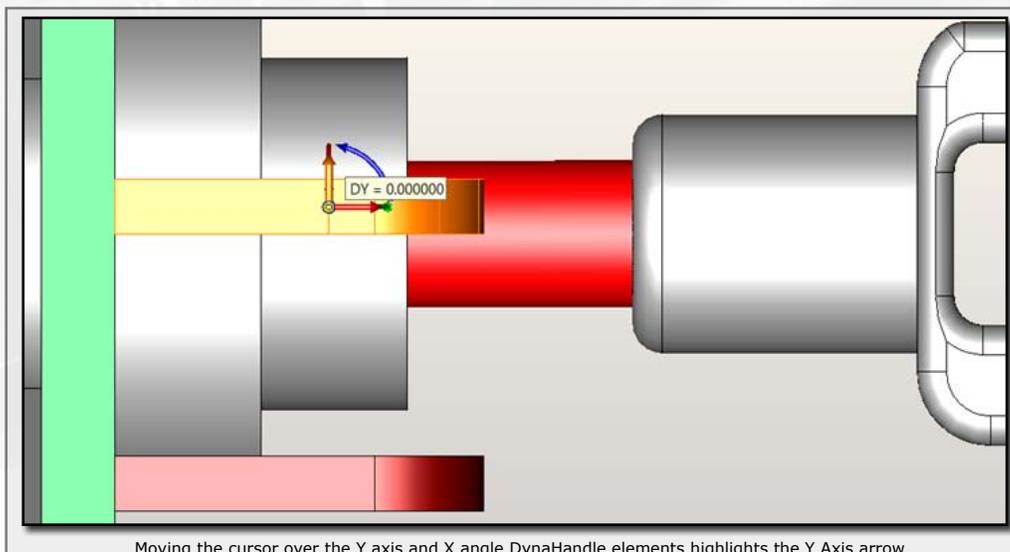
## Angular and Circular Dynamic Transform

- Dynamic Transform function provides new Angular and Circular options for dynamic moves around a secondary DynaHandle axis.



## DynaHandle Arrow Selection Priority

- DynaHandle arrow selection prioritizes the more commonly used straight arrows over circular arrows in overlapping orientations to save the user the need to toggle the selection.

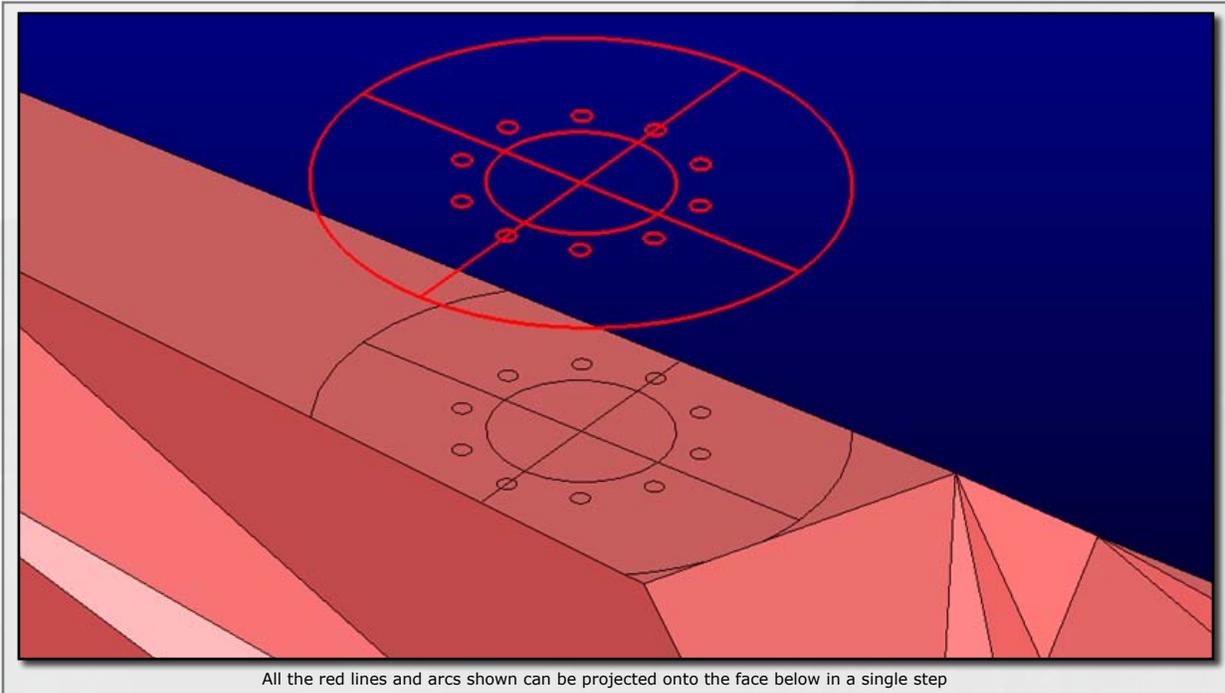


## Modeling

Several minor improvements in modeling capabilities aid users in getting special tasks done more efficiently.

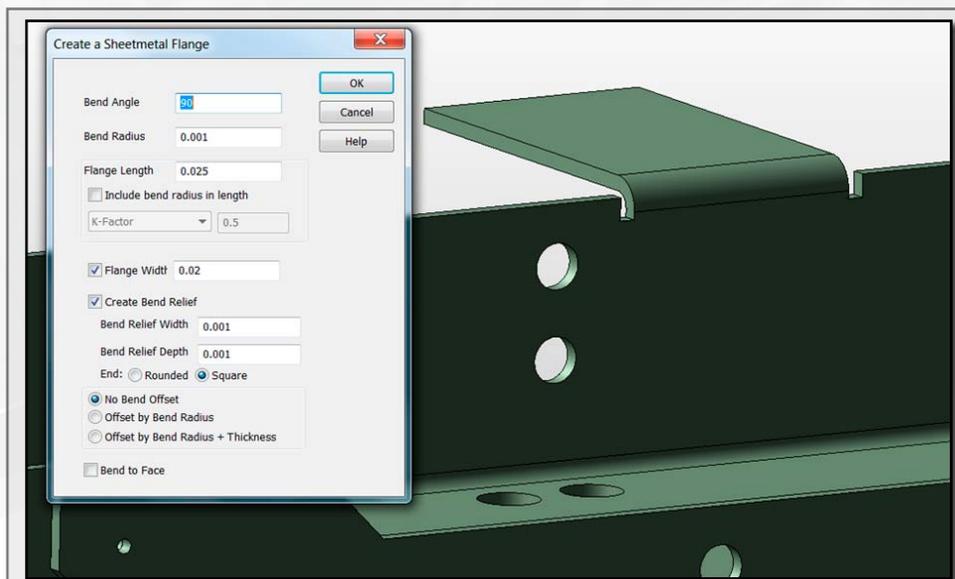
### Imprint Multiple Curves

- The Modify>Topology>Imprint function supports multiple sets of connected curves for significant time savings with text and bolt circle types of curve geometry.



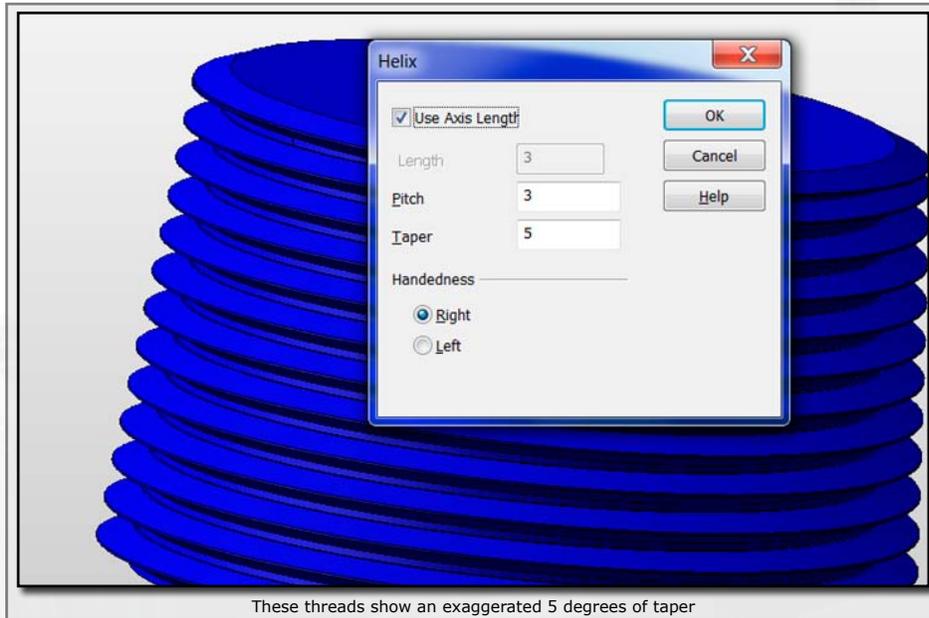
### Square Notches

- The Sheetmetal Flange function has a new option for square end notches on bend reliefs.



## Helical Sweep with Taper Angle

- Helical Sweep adds taper angle support for forming pipe threads and also adds an option for entering a length value.

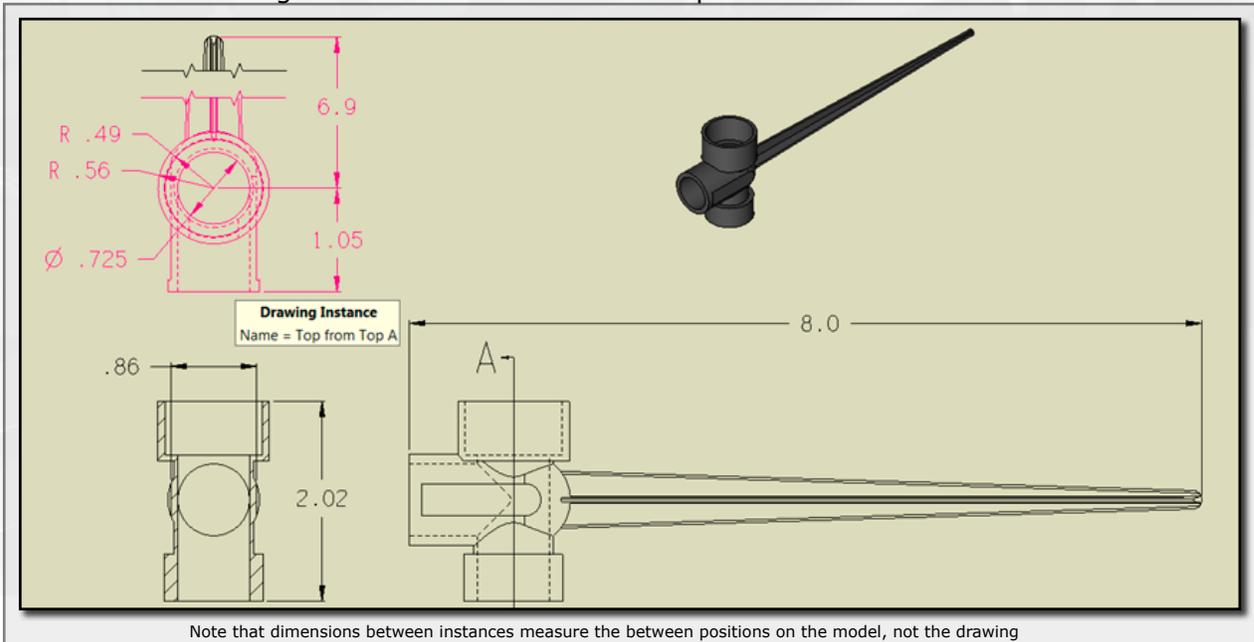


## Detailing

Besides the major enhancements targeted at drawing productivity covered previously, KeyCreator 2014 provides several other meaningful detailing improvements.

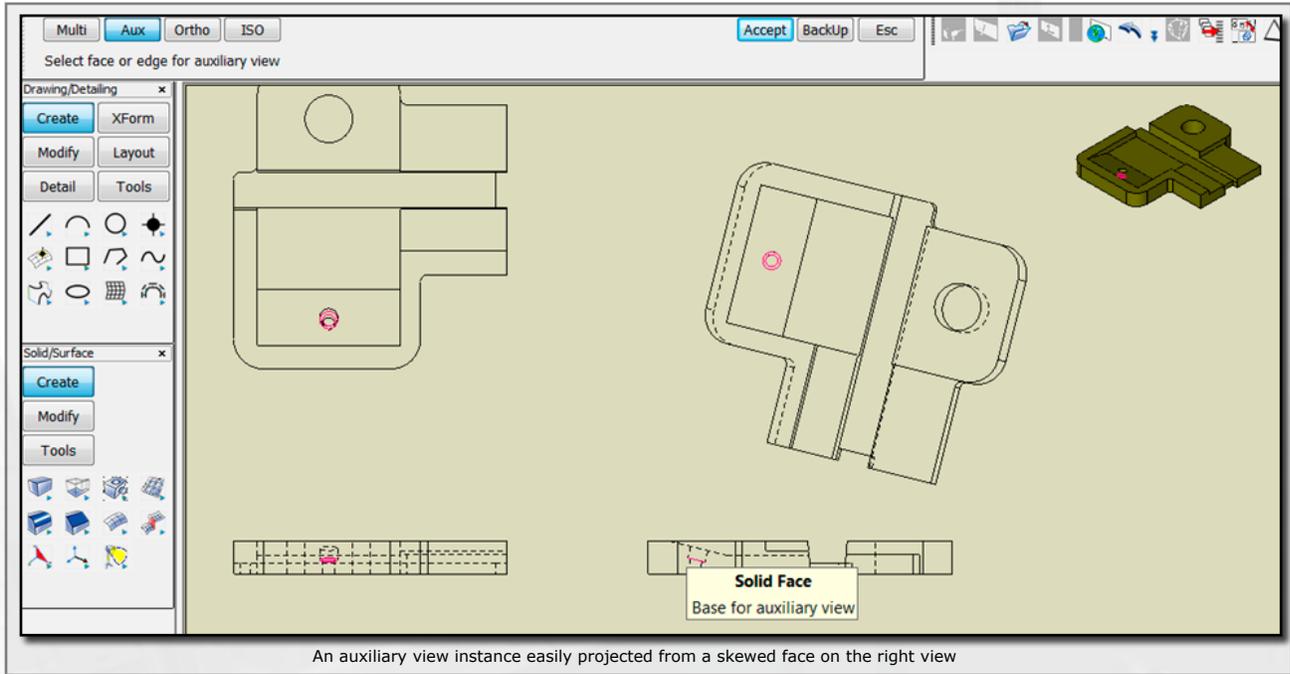
## Automated Broken Views

- A new function breaks long view instances into two trimmed instances with break symbols in just 4 clicks. This saves significant time over the manual process.



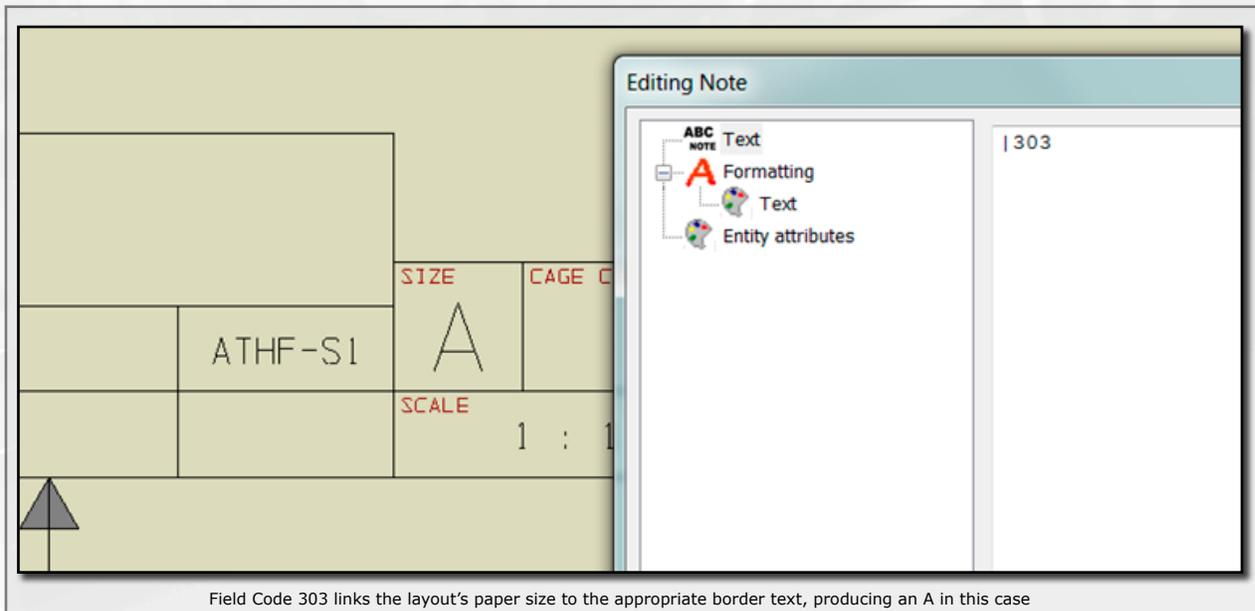
## Simplified Projected Views

- The interface of the Projected Instance function has been simplified with new menu options for auxiliary, orthographic, and isometric only modes.



## New Field Codes

- Note entities include new field codes to support associative updating to match the name of a specified entity and the layout paper size.

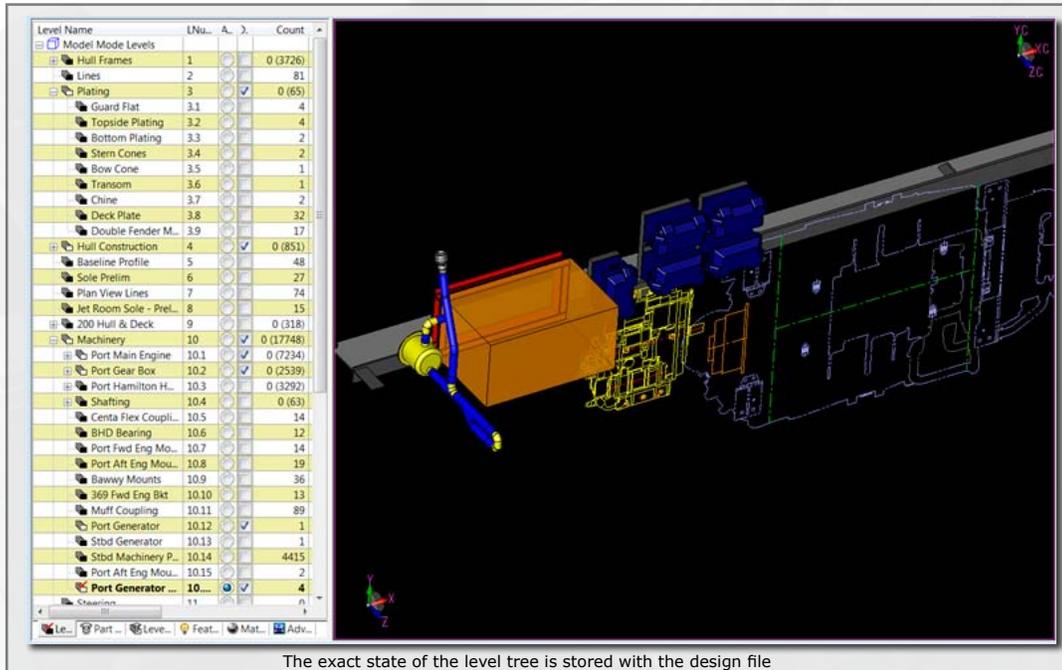


## Visualization

Being able to immediately and clearly see details in graphical design information from various views and configurations is one of the major overall benefits of CAD and 3D modeling. Kubotek continues to strengthen KeyCreator in this important area by handling the minutiae, which add up to serious productivity advantages.

### 'Level List' State Remembered

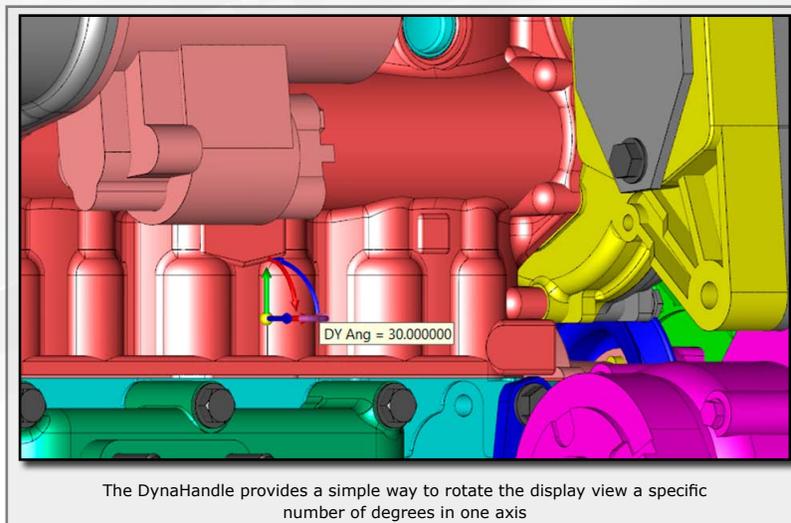
- Levels expand/collapse status and column layout is now saved in the design file. This is a big help for users with complex sub-level trees to be able to view the child levels expanded in the previous session.



The exact state of the level tree is stored with the design file

### View by DynaHandle

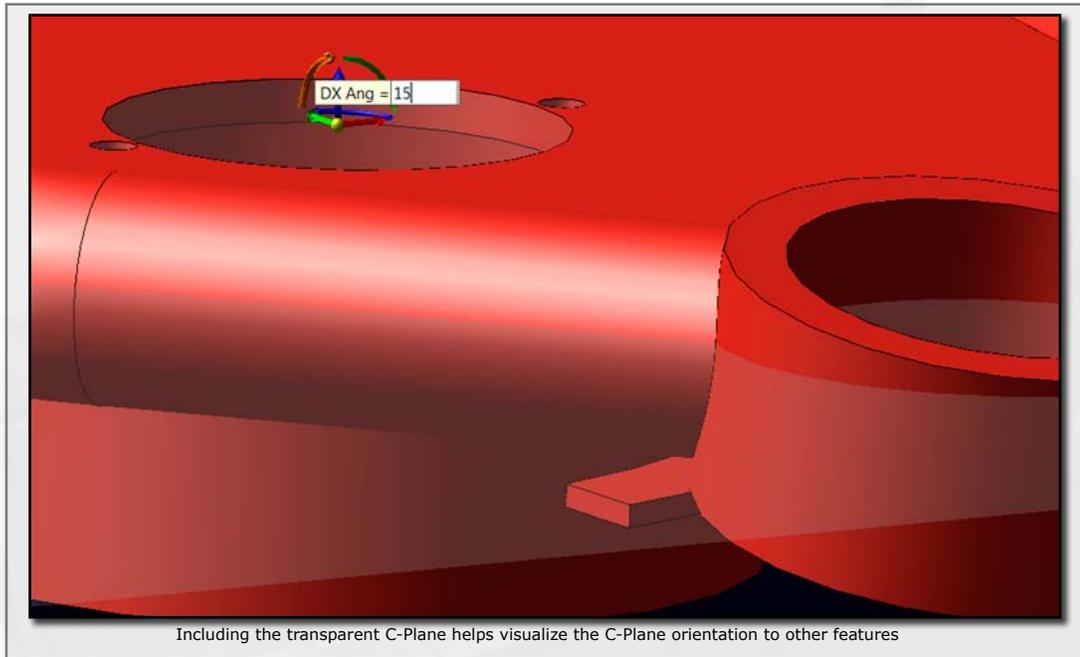
- A new Display View function option provides a DynaHandle to define the new view orientation.



The DynaHandle provides a simple way to rotate the display view a specific number of degrees in one axis

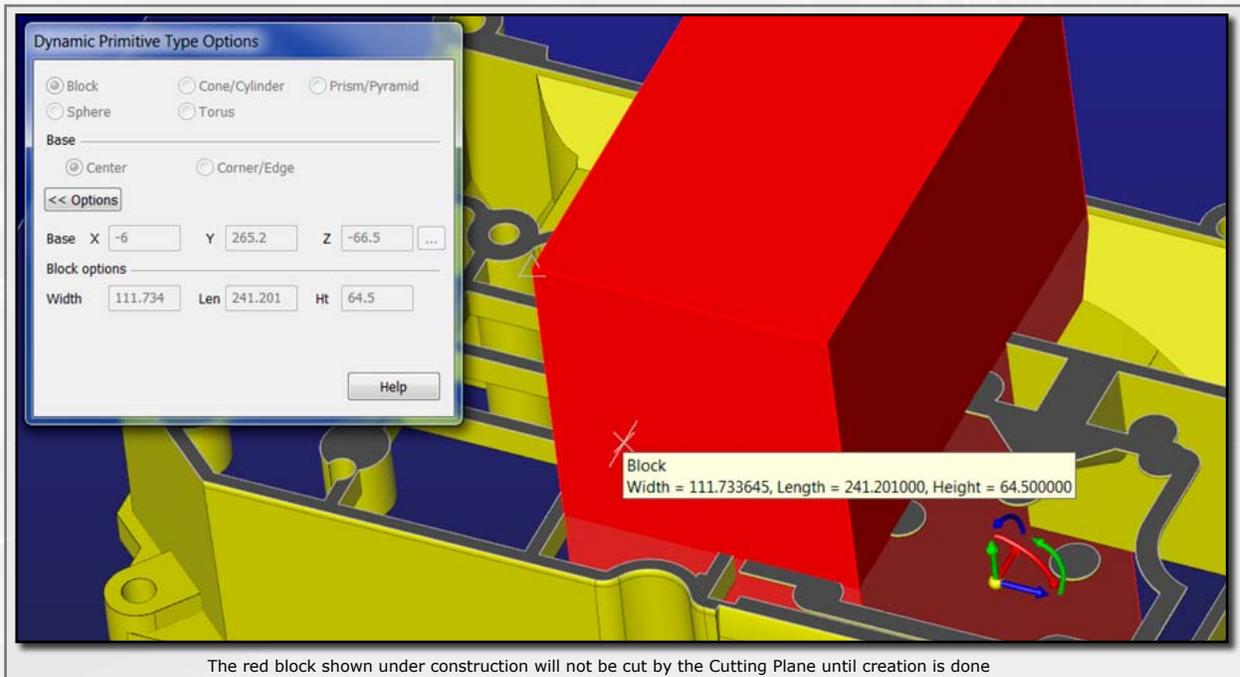
## Dynamic C-Plane Shown Transparently

- DynaCP menu option in the Set C-Plane function now always displays the transparent C-Plane for visual clarity.



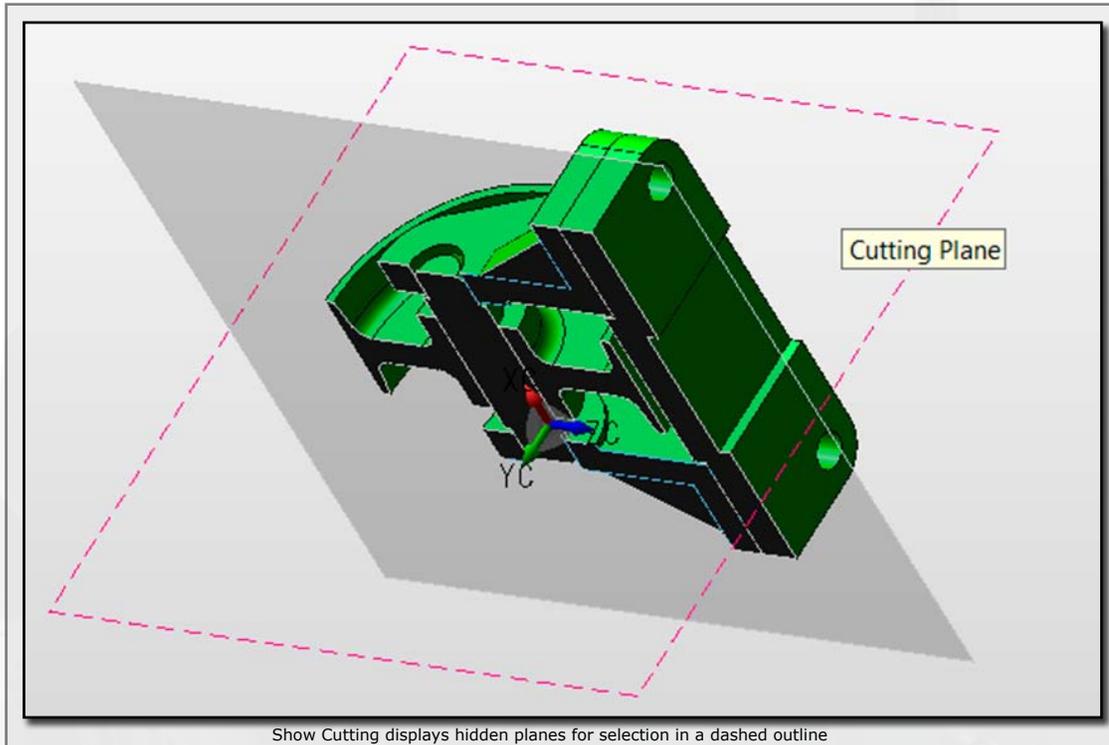
## Animation Ignores Cutting Plane

- Cutting Planes no longer act on animation of entity creation so that users can fully visualize the location and construction.



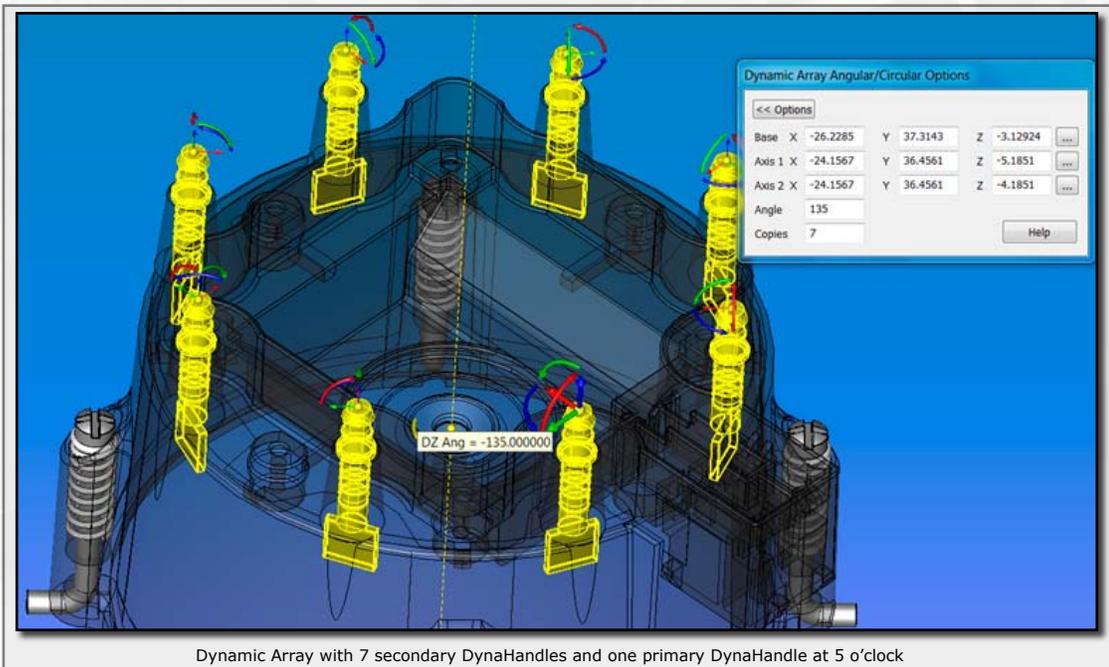
## Hide Cutting Planes

- Cutting Planes can now be disabled one-by-one as an alternative to deletion. Hiding a carefully placed cutting plane saves time over deleting and recreating later.



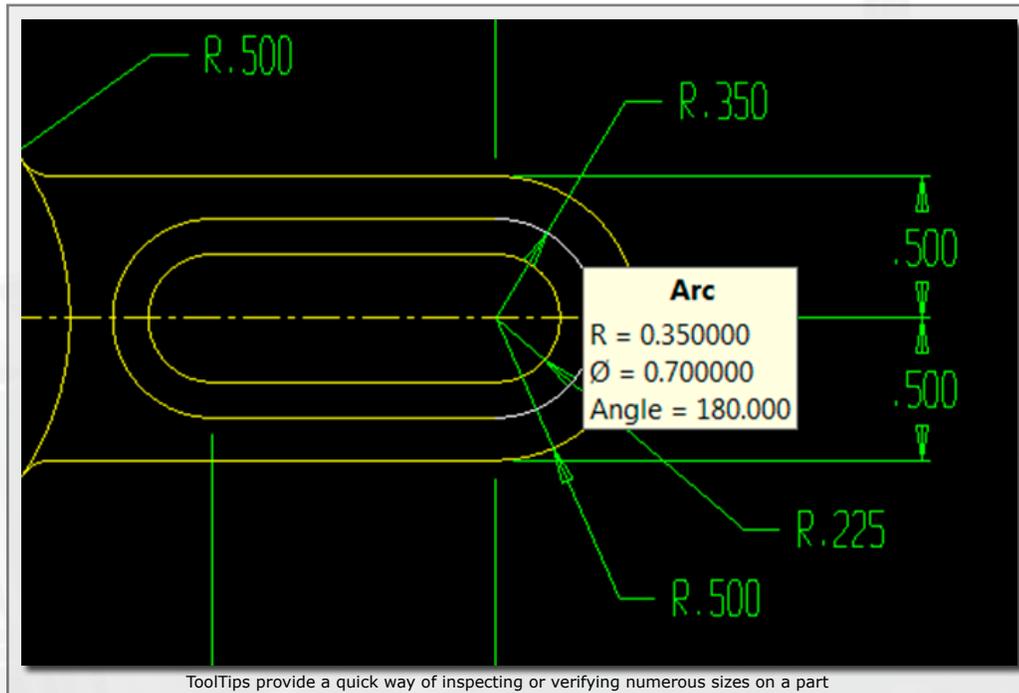
## Secondary DynaHandles

- Secondary DynaHandles are displayed at a smaller scale than the primary DynaHandle to help distinguish them from each other.



## ToolTip Improvement

- ToolTips on arcs of less than 360 degrees now include diameter which is helpful information when the arc represents part of a machined feature. The ToolTip also now abbreviates the words diameter and radius to reduce the size of the ToolTip so it obscures less of the display.

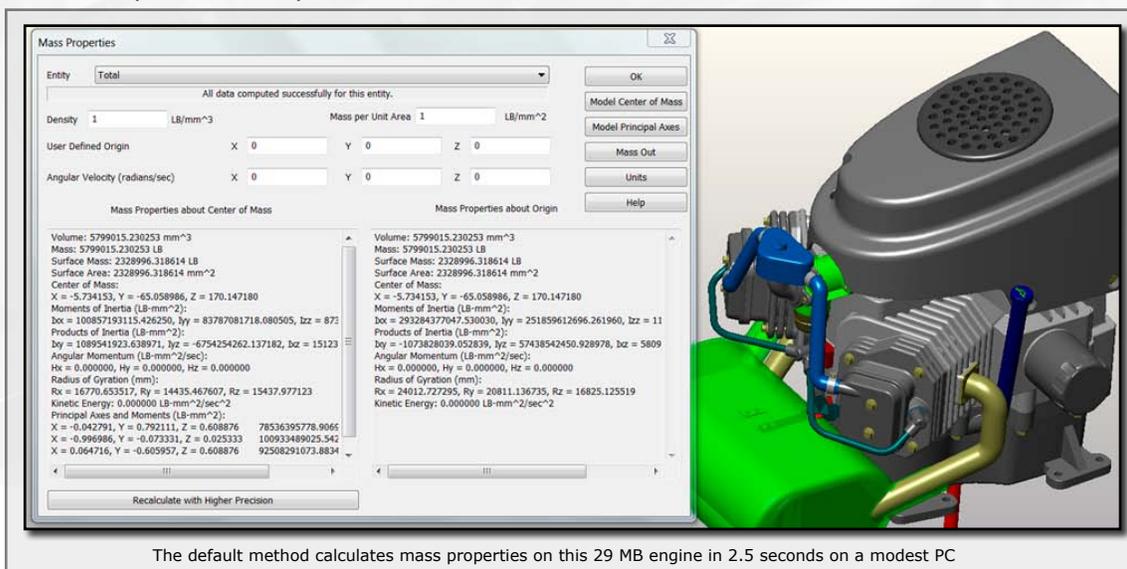


## Mass Properties

Kubotek continues to measure and drive improvements to the execution speed of calculation and memory intense functions to reduce user time spent waiting for results.

## Performance Mode

- The Mass Properties verify function now defaults to use of fast facet-based calculation method.



## Optional High Precision

- Mass Properties supports recalculation using more precise solids-based method at the highest possible precision. The optional precise solids-based mass properties results are saved with the solids and do not require recalculation again unless the solids have been edited.

Mass Properties about Center of Mass

Volume: 5617187.796787 mm<sup>3</sup>  
Mass: 5617187.796787 LB  
Surface Mass: 2332552.965179 LB  
Surface Area: 2332552.965179 mm<sup>2</sup>  
Center of Mass:  
X = -9.706706, Y = -61.783444, Z = 170.357728  
Moments of Inertia (LB-mm<sup>2</sup>):  
Ixx = 99450848753.840027, Iyy = 81262819229.596420, Izz = 8328  
Products of Inertia (LB-mm<sup>2</sup>):  
Ixy = -897830897.219635, Iyz = -6811205519.867595, Ixz = 104801  
Angular Momentum (LB-mm<sup>2</sup>/sec):  
Hx = 0.000000, Hy = 0.000000, Hz = 0.000000  
Radius of Gyration (mm):  
Rx = 16713.051640, Ry = 14310.300629, Rz = 15379.037824  
Kinetic Energy: 0.000000 LB-mm<sup>2</sup>/sec<sup>2</sup>  
Principal Axes and Moments (LB-mm<sup>2</sup>):  
X = 0.025422, Y = 0.757853, Z = 0.651930 75373474846.1893  
X = 0.997618, Y = -0.061066, Z = 0.032086 99509177706.0375  
X = -0.064127, Y = -0.649562, Z = 0.651930 89118260286.4503

Recalculate with Higher Precision

Precise recalculation of the same 29 MB engine takes just over a minute and results in a more accurate (3.2% lower)

## Dialog Simplified

- The Verify Mass Properties dialog has been simplified for improved readability.

Mass Properties

Entity: Solid ID: 5871 Color: 5 Level: Model (3)

All data computed successfully for this entity.

Density: 1 LB/IN<sup>3</sup> Mass per Unit Area: 1 LB/IN<sup>2</sup>

User Defined Origin: X 0 Y 0 Z 0

Angular Velocity (radians/sec): X 0 Y 0 Z 0

Mass Properties about Center of Mass

Volume: 117.130733 IN<sup>3</sup>  
Mass: 117.130733 LB  
Surface Mass: 315.382229 LB  
Surface Area: 315.382229 IN<sup>2</sup>  
Center of Mass:  
X = -6.425221, Y = 2.255695, Z = -0.815033  
Moments of Inertia (LB-IN<sup>2</sup>):  
Ixx = 1581.301892, Iyy = 1083.769980, Izz = 2633.591523  
Products of Inertia (LB-IN<sup>2</sup>):  
Ixy = -164.671953, Iyz = 1.321722, Ixz = 12.741824  
Angular Momentum (LB-IN<sup>2</sup>/sec):  
Hx = 0.000000, Hy = 0.000000, Hz = 0.000000  
Radius of Gyration (IN):  
Rx = 3.674278, Ry = 3.041817, Rz = 4.741751  
Kinetic Energy: 0.000000 LB-IN<sup>2</sup>/sec<sup>2</sup>  
Principal Axes and Moments (LB-IN<sup>2</sup>):  
X = -0.288277, Y = -0.957542, Z = 0.003088 1034.189742  
X = 0.012175, Y = -0.000441, Z = 0.999926 2633.746083  
X = -0.957470, Y = 0.288293, Z = 0.003088 1630.727570

Mass Properties about Origin

Volume: 117.130733 IN<sup>3</sup>  
Mass: 117.130733 LB  
Surface Mass: 315.382229 LB  
Surface Area: 315.382229 IN<sup>2</sup>  
Center of Mass:  
X = -6.425221, Y = 2.255695, Z = -0.815033  
Moments of Inertia (LB-IN<sup>2</sup>):  
Ixx = 2255.089306, Iyy = 5997.140376, Izz = 8065.134285  
Products of Inertia (LB-IN<sup>2</sup>):  
Ixy = 1532.943501, Iyz = 216.662660, Ixz = -600.644818  
Angular Momentum (LB-IN<sup>2</sup>/sec):  
Hx = 0.000000, Hy = 0.000000, Hz = 0.000000  
Radius of Gyration (IN):  
Rx = 4.387796, Ry = 7.155445, Rz = 8.297942  
Kinetic Energy: 0.000000 LB-IN<sup>2</sup>/sec<sup>2</sup>

Recalculate with Higher Precision

Results shown in the dialog match the unchanged format of the optional text output

## Setup

Added settings options allow users to configure function output to match their styles and preferences.

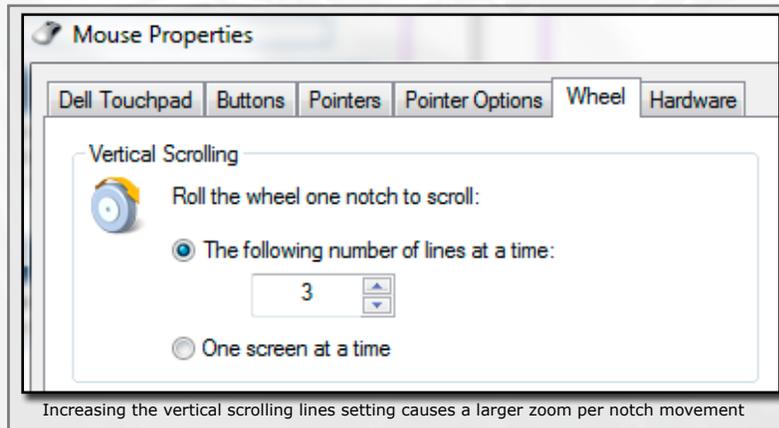
### Mouse Wheel Zoom

#### Reverse

- New option to reverse the mouse wheel zoom direction (wheel forward zooms in) to match the camera movement logic used in 3D programs like MasterCAM and others. This setting makes zooming more comfortable for users who frequently switch between programs for different tasks.

#### Sensitivity

- Mouse wheel zoom sensitivity now respects the Windows mouse driver setting for vertical scrolling. This supports much faster zooming in and out to navigate large designs quickly.



### DynaHandle Appearance

- New options to control appearance of DynaHandle are available from a single dialog box. This change has helped simplify the DynaHandle context menus.

