

## KeyCreator and Edge Data

### Did you know that ...

... **KeyCreator®** was formerly known as CADKey®, and was first introduced in 1984 as a CAD Package with its own 3D Digitizing capabilities?

... **Kubotek Corporation** purchased CADKey in 2003, renamed the software **KeyCreator**, beefed up R&D substantially, added advanced 3D, NC, and universal CAD translation?

... **Edge Data** has been providing New England with CAD products and training since 1983?

... Edge Data was one of the first AutoCAD dealers in the country?

... Today Edge Data is an Authorized Kubotek Service Center, has two training classrooms in Leominster, and provides excellent CAD training classes for KeyCreator and other software?

## PFBs - the Scoop

A "PFB" is a **Parametric Feature-Based** CAD Solid Modeler. Pro/Engineer® was the mother of the PFB, born in 1985. Sam Geisberg, then President of Parametric Technology Corp, is credited as its father.

Several "Me-Too" PFBs such as CATIA®, SDRC IDEAS®, UniGraphics® quickly evolved. Then came the "Mini-Me" PFBs such as SolidEdge®/SolidWorks®, IronCAD®, and Autodesk®'s [Designer®/Mechanical Desktop®/Inventor®].

The PFB requires the CAD user to define parameters to drive dimensions of a part. By having parameters provide relationships to other features in the 3D part, the PFB constrains that part so it can be easily designed and changed.

PFBs are not without their shortcomings, however.

- Each PFB has its own proprietary file format for defining parameters, features, and order of building the part; you can't readily exchange files among PFBs.
- When working on an existing PFB part or assembly, a new user will often find it difficult to figure out the PFB's feature tree so that he can make changes.

- Assemblies can be time consuming to set up and manipulate.
- There's no such thing as stand-alone 2D. In a PFB, you must design 3D parts first and then spin off the associated 2D.
- Surface modeling is not easy to use. The "Mini-Me" PFB's surface modeling is not sophisticated.

### KeyCreator has directly addressed these shortcomings.

First and foremost, **KeyCreator is not a PFB**. KeyCreator is a free-form 3D and 2D CAD Modeler. **KeyCreator does, however, have the capability of generating its own feature tree and its own dimensions for driving geometry.**

Second, KeyCreator is a comprehensive 2D drafting package. Just 2D, if you like. KeyCreator uses levels (aka layers) to manage 2D information.

And it has all the drafting and detailing features that are contained in the major 2D drafting CAD software available today. And, of course, KeyCreator easily produces complete 2D drawing sheets associated to the 3D model.

Third, KeyCreator reads in all the PFB file formats mentioned above, both 2D and/or 3D. How does it do this? Effortlessly. It reads in the pure geometry, ignores the PFB data, and re-creates a straightforward feature tree of its own. In KeyCreator, the resulting model is easily changed without having to suffer by the rigid rules of the PFB constraints.

Fourth, KeyCreator has excellent surface modeling tools, too, in addition to solid modeling. KeyCreator can create a free-form surface model and then convert it to a solid model to facilitate operations like shell and fillet. Intrinsic in this procedure are excellent healing tools to insure that the part is completely contiguous. The healing tools come into play when importing PFB data as well.

Fifth, for assembly modeling, KeyCreator can manage all data in a single file. It does this by using level management mentioned above, that same invaluable 2D tool which is noticeably absent in the PFBs. If level management gets unwieldy, KeyCreator can export a part in the assembly to a single file and instead reference that part file as a simple single entity.

Although KeyCreator stands alone as a complete CAD solution, KeyCreator is also used as a companion product to the PFBs, for the reasons mentioned above.



# New England KeyCreator Users Group

When: Third Wednesday of Jan., March, May, Sept., & Nov.  
from 6:30PM to 8:00PM

Where: Edge Data, unless otherwise noted

Agenda: General discussion, followed by a  
Guest Speaker Presentation

The purpose of the group is to bring together people with a common interest in KeyCreator and mechanical CAD applications to discuss and share what they and others are doing with CAD, CAM, CAE, or computer graphics applications.  
To join, go to

<http://tech.groups.yahoo.com/group/NEKUG/>

You will then receive more information from the group via email, mainly to remind you of the time, place, and topics for the next meeting.

## Case Studies

*These case studies have been developed by Rich O'Reilly, our applications expert in KeyCreator CAD design. We will be happy to show you these case studies in detail if you believe they are relevant to your business.*

- **Plastic Bottle Case Study** - We'll build a plastic bottle, use some surface modeling techniques to design some elegant free-form geometry. Then we'll show how to design a cavity for use in blow-molding this part.
- **Fan Design Case Study** - We'll build a 3-bladed fan fixture using a 3D technique for helical splines. Then we will show you how to easily design the core-cavity.
- **Reverse Engineering Case Study** - Using a digital camera, we'll show you the digital pictures of a household hair dryer. We'll use those scanned images and import them into KeyCreator as a starting point for designing the hair dryer parts. We'll even produce some ergonomic free-form geometry by converting to surfaces first. Then we'll beautify the design, convert back to solids, healing all surfaces as we go.
- **2D to 3D Case Study** - We'll show you how to import an AutoCAD 2D drawing and transform it into 3D.
- **Core-Cavity Mold for Medical part** - We'll build a medical part, similar to one Rich produced for a client. Then we'll build the core-cavity mold for it. For virtual prototyping, we export the part design to HOOPS so that anyone in the company can spin the part around on their computer.

# KeyCreator and AutoCAD

## KeyCreator

- reads all native AutoCAD drawing versions.
- can edit all drawings in 2D or 3D, same as AutoCAD.
- saves in any AutoCAD version as well.  
(example: read ACAD 2007, save as ACAD 2002.)
- reads all native Inventor drawing versions.
- without fixing or healing, edits the 3D models.
- saves in IGES or STEP for easy version migration.
- reads native Solidworks, Pro/E, etc. drawings.

## Software and Training

### KeyCreator 3D Solid & Surface Modeling

- Complete 3D, 2D (Associative and/or stand-alone)
- Sheet Metal, Core-Cavity.
- Reads Native and General CAD Formats  
No fixing, no healing, just read it in and GO.

### Annual Upgrade Contract

- includes next year upgrade and tech support.

### Add-in Software

- Read additional Native CAD Formats  
Pro/Engineer, SDRC/Ideas, Unigraphics, CATIA4&5.
- 2½ and 3-Axis NC CAM
- XMD Expert Mold Designer.  
Vendor support for  
DME, DMS, Hasco, FACE,  
BMS, CARR Lane etc.;  
BOMS, Water cooling tools,  
full 3D plates for machining  
and more.

### Training Classes

- KeyCreator Basic 2D Training, 3 days.
- KeyCreator Solids and 3D Hybrid Training, 2 days.

Call Edge Data for additional information at 978-537-9800.  
Or visit our website [www.edgedata.com](http://www.edgedata.com).

