
10 WAYS THAT

Pro/ENGINEER[®]

SPEEDS UP YOUR WORK

AND HOW ORDINARY 3D CAD SLOWS YOU DOWN

The best things come to those who don't wait.

WHAT DO YOU LOOK FOR IN A CAD TOOL?

If you're like most design engineers, you want a system that lets you get the job done quickly and completely. Not one that holds you back or slows you down. You want a CAD solution that delivers both performance and completeness.

Performance is a measure of a CAD tool's responsiveness — its ability to help you progress quickly through tasks like retrieving and updating product designs, creating drawings, and making BOMs. For these frequently performed activities, efficiency is a must.

Completeness refers to the scope of capabilities and solutions your CAD tool offers to help you reach your goal: a sound finished design. A good system includes extended solutions for styling and surfacing, analysis, tooling development, machining, and verification.

Some CAD tools, however, require you to hook together two or more separate applications in order to finish the job. This so-called "best in class" approach has a number of drawbacks. Do you really want to integrate different CAD tools? Do you want to waste hours transferring data? What happens when a change is made? How well will your design propagate across the different applications? If you can't be sure, you can't work with confidence.

When it comes to performance and completeness, Pro/ENGINEER® is unmatched. Easy to use and backed by legendary geometric robustness and lightning-quick responsiveness, Pro/ENGINEER is the most complete CAD/CAM/CAE solution available.

With Pro/ENGINEER, you burn through work. In recent tests, Pro/ENGINEER performed over **3 times faster** than ordinary 3D CAD packages in a wide range of common tests.

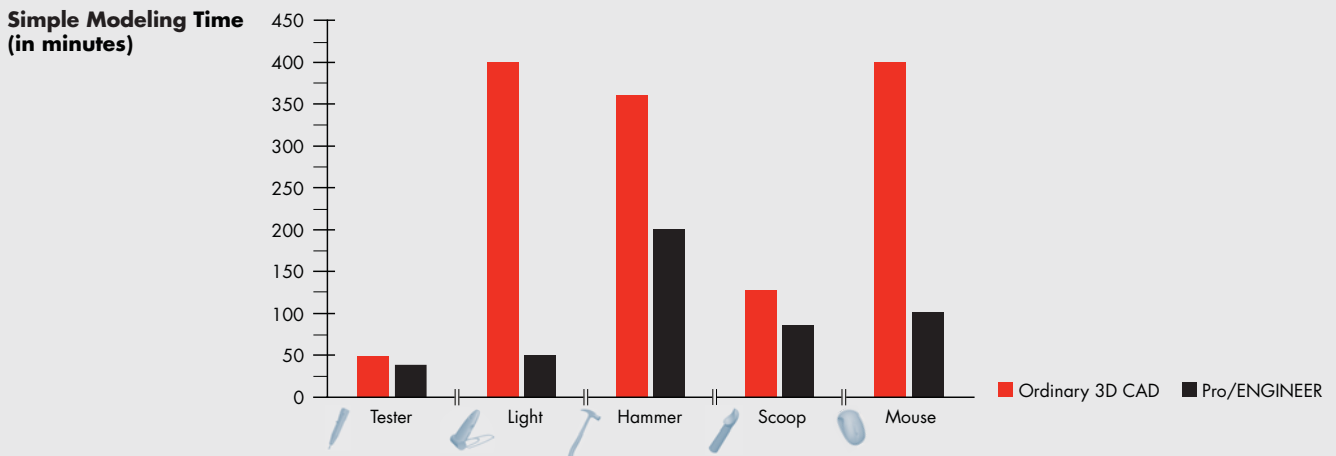
In fact the only thing that ordinary 3D CAD can do that Pro/ENGINEER can't, is slow you down. Want Proof? Turn the page...

The 1ST WAY Pro/ENGINEER SPEEDS UP WORK: MODELING CAPABILITIES

MORE FUNCTIONALITY: Pro/ENGINEER HAS MORE COMPREHENSIVE MODELING TOOLS

You can't do the job right if you don't have all the tools you need. Other CAD tools just don't deliver.

Pro/ENGINEER offers design engineers greater depth of functionality. Instead of wasting time finding workarounds, Pro/ENGINEER users can access multiple options for quickly and easily creating any geometry, in the case below modeling a part over 9 times faster than an ordinary 3D CAD tool.



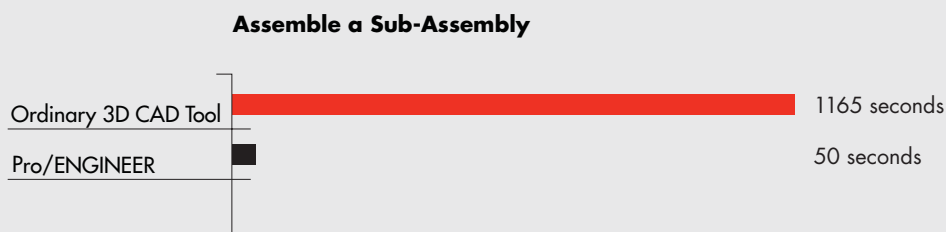
THE 2ND WAY Pro/ENGINEER SPEEDS UP WORK: ASSEMBLING A SUB-ASSEMBLY

50 SECONDS vs. 19+ MINUTES: Pro/ENGINEER OUTPERFORMS ORDINARY CAD TOOL

A fundamental design task like assembling a sub-assembly should be lightning fast. Some ordinary 3D CAD tools, however, keep you waiting.

Pro/ENGINEER optimally manages your computer's memory allocation. Instead of slowing your system down, it reads into memory only the essential information for the task you want to perform. Other, ordinary 3D CAD does not.

So you wait. And wait.



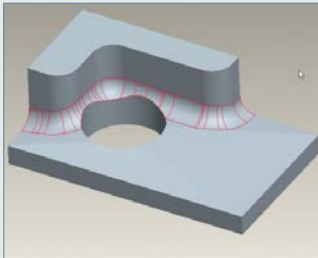
THE 3RD WAY Pro/ENGINEER SPEEDS UP WORK: GEOMETRY KERNEL

COMPLETE FEATURE SET:

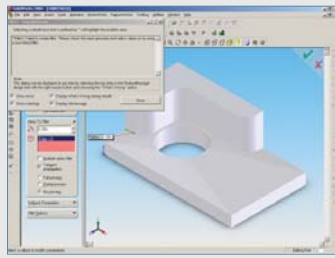
Pro/ENGINEER CREATES MORE ACCURATE AND COMPLETE DESIGNS

You need your design to be accurate and fully defined, from start to finish. With ordinary 3D CAD, there's no guarantee.

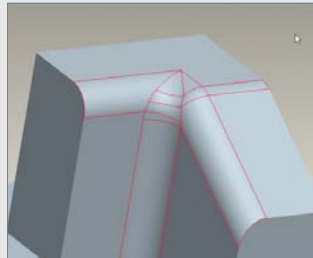
Pro/ENGINEER is built on PTC's own robust and associative Granite® kernel. So whether it's the intent manager, making sure that sketches are accurate and fully defined from the beginning of the design process, or the advanced round tools, enabling the easy creation and manufacturability of any complex shape, Pro/ENGINEER is more complete than ordinary 3D CAD, thanks to Granite.



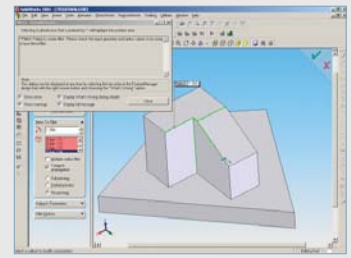
Pro/ENGINEER can create the geometry.



Ordinary 3D CAD cannot, due to the proximity of the hole.



Pro/ENGINEER can create the geometry.



Ordinary 3D CAD cannot, due to the consumed edge.

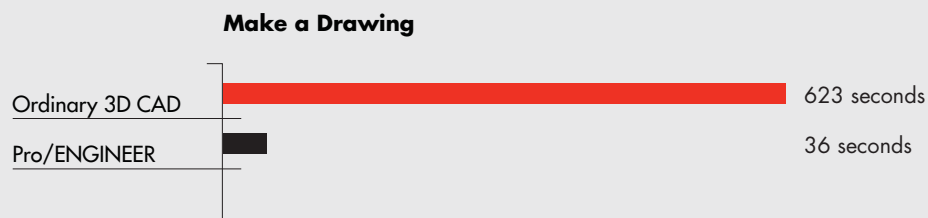
THE 4TH WAY Pro/ENGINEER SPEEDS UP WORK: CREATING DRAWINGS

36 SECONDS vs. 10+ MINUTES:

Pro/ENGINEER OUTPERFORMS ORDINARY 3D CAD TOOL

Drawings are still the most common way to communicate designs. But with ordinary 3D CAD, common drawing tasks are slow.

Creating drawings takes time if assemblies are not managed efficiently. Pro/ENGINEER uses advanced assembly representation management, coupled with streamlined memory usage, resulting in the best performance for creating drawings. When tested against just the basic Pro/ENGINEER assembly functions, ordinary 3D CAD cannot match the efficiency of Pro/ENGINEER.



THE 5TH WAY Pro/ENGINEER SPEEDS UP WORK: EXTENDED APPLICATIONS

NO TRANSLATING DATA:

Pro/ENGINEER COVERS ALL FUNCTIONAL AREAS ON A SINGLE ARCHITECTURE

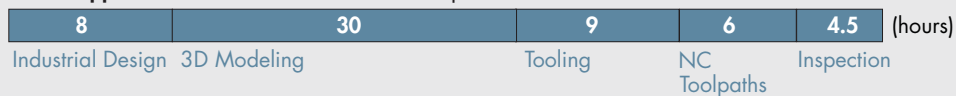
When using ordinary 3D CAD with third party plug-in applications, you can waste up to 70% of your total working time waiting for data to be translated between these applications.

For a typical one week project using separate applications, you could waste up to two days translating data.

Unlike ordinary 3D CAD, which relies on third parties to provide extended applications, Pro/ENGINEER is a complete solution. That means no data conversion, and no lost time. Pro/ENGINEER lets you freely move designs across all functional areas — from concept through NC tool path creation—so you can work with complete confidence.

Typical 5-Stage Design Project

Native applications: 0 hours data translation required



3rd party applications: 16.5 hours data translation required



■ Work time per stage (in hours)

□ Data translation time between stages (in hours)

Source: ITI

THE 6TH WAY Pro/ENGINEER SPEEDS UP WORK: SAVING DRAWINGS

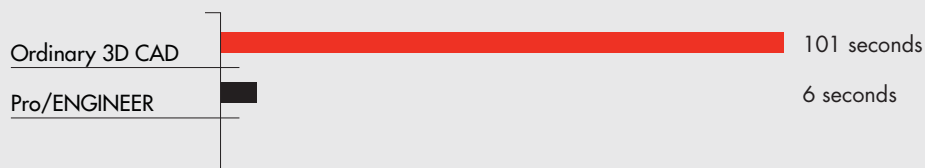
6 SECONDS vs. 1.7 MINUTES:

Pro/ENGINEER OUTPERFORMS ORDINARY 3D CAD TOOL

Creating drawings can be a painstaking process. So is saving them, if you're using an ordinary 3D CAD tool.

Pro/ENGINEER drawings use lightweight, yet accurate representations of the geometry. As a result, drawing files are smaller and can be saved more quickly and easily. So you spend your time creating, not waiting.

Save a Drawing

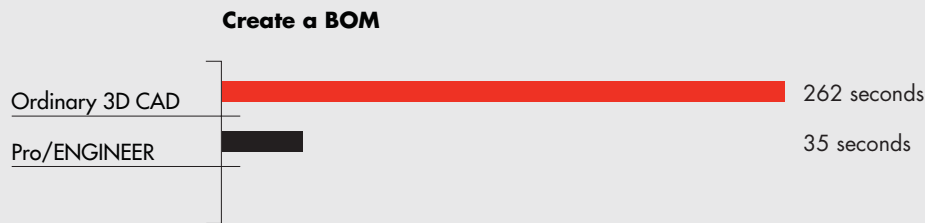


THE 7TH WAY Pro/ENGINEER SPEEDS UP WORK: CREATING A BILL OF MATERIALS (BOM)

35 SECONDS vs. 8.7 MINUTES: Pro/ENGINEER OUTPERFORMS ORDINARY 3D CAD TOOL

Creating a BOM with ordinary 3D CAD? It might be faster just to write it out by hand.

Since Pro/ENGINEER models efficiently store all essential information, including relevant production details, creating BOMs in Pro/ENGINEER drawings is naturally fast.

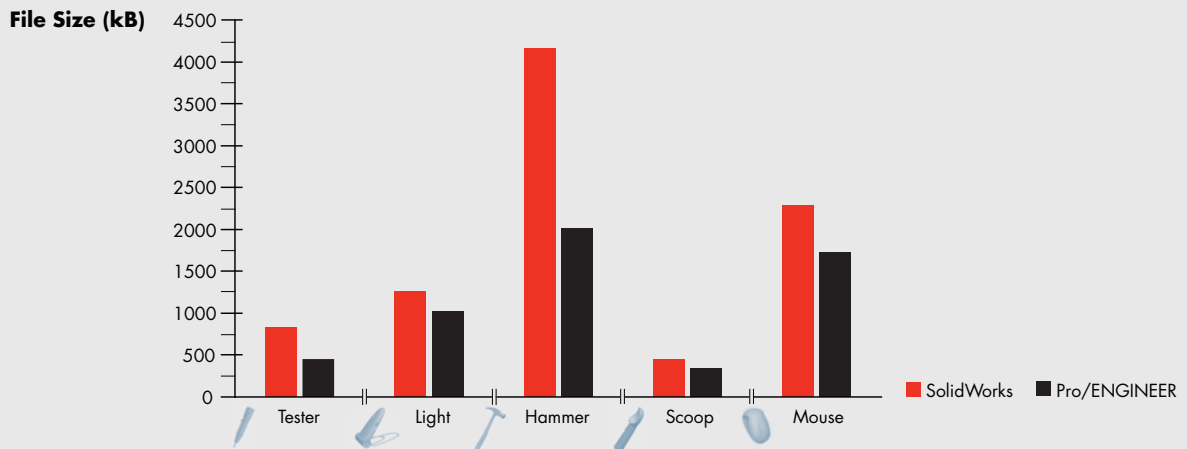


THE 8TH WAY Pro/ENGINEER SPEEDS UP WORK: FILE SIZE

MORE EFFICIENT FILES: Pro/ENGINEER USES LESS SPACE TO STORE MORE INFORMATION

Bigger definitely isn't better when it comes to file sizes.

Pro/ENGINEER geometric information is stored more efficiently, thanks to a unique storage capability. Instead of storing the whole design, our part files describe how to construct the design, for more streamlined use of disk space. And with smaller, more efficient files, everything else is faster, too.



THE 9TH WAY Pro/ENGINEER SPEEDS UP WORK: RETRIEVING AND UPDATING ASSEMBLIES

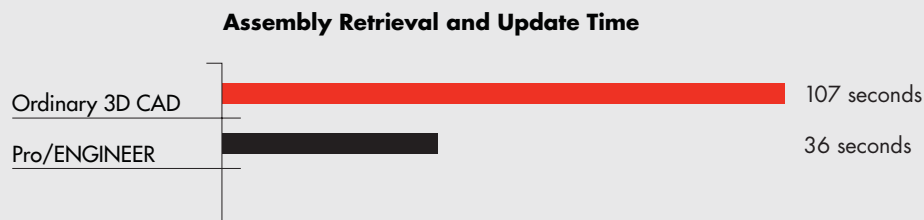
36 SECONDS vs. 1.8 MINUTES:

Pro/ENGINEER OUTPERFORMS ORDINARY 3D CAD TOOL

If you frequently retrieve designs made of multiple parts, you can't afford the long waits with ordinary 3D CAD.

Pro/ENGINEER assemblies are extremely efficient, with no data duplication. Only the necessary information to create the assembly is stored, such as assembly instructions and assembly feature information.

The time you save with Pro/ENGINEER adds up. If you retrieve and update a similar assembly 100 times during the course of a project, ordinary 3D CAD can slow you down by up to two full hours, sometimes more. We're sure you can find better ways to spend that time.



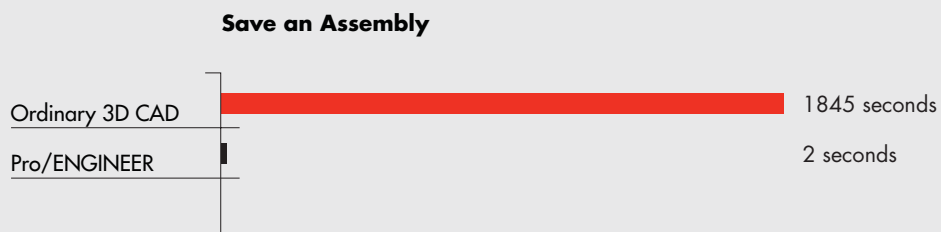
THE 10TH WAY Pro/ENGINEER SPEEDS UP WORK: SAVING AN ASSEMBLY

2 SECONDS vs. 30+ MINUTES:

Pro/ENGINEER OUTPERFORMS ORDINARY 3D CAD TOOL

Waiting for a CAD assembly to save with ordinary 3D CAD can take a very long time. Pro/ENGINEER minimizes the time you have to wait.

Pro/ENGINEER uses intelligent reference management to track assembly design changes. So, instead of re-saving the whole assembly, Pro/ENGINEER saves only the features and part files you've altered since your last save.



What are you waiting for?

True CAD ease-of-use and productivity is about more than just a familiar interface and pretty icons. **It's about getting the whole job done, quickly and completely.**

For creating assemblies and drawings, producing BOMs, creating geometry, and allowing you to expand using native capabilities like CAE and CAM, **Pro/ENGINEER offers unmatched performance and capability—for the same price as Ordinary 3D CAD.**

EASY TO USE, POWERFUL and **AFFORDABLE**, discover the ways that Pro/ENGINEER can speed you up. Have a PTC representative contact you today. They will be happy to answer any questions you may have. **Visit www.ptc.com/go/contactme**