

# Newsletter Special: SolidWorks 2012



## SolidWorks 2012 has arrived!

SolidWorks 2012 is the 20th release of the market leading 3D design solution. This release brings over 200 enhancements to the table (or drawing board, rather!), 90% of which were requested by users at SolidWorks World.

Every one of these enhancements promises to streamline and simplify the design process to improve efficiency and make designing your products even more enjoyable.

### SolidWorks 2012...

- Automates the design functions you use most often
- Improves performance and quality for a more continuous workflow
- Enables fundamental changes to your product development process
- Provides extensive support for collaboration and project connectivity

## LEARN FAST, WORK FAST WITH INTUITIVE DESIGN

### Learn fast

SolidWorks 2012's user interface is now even easier to learn and use.

- Automated Command Search takes you to any command instantly
- An extensive set of tutorials and support documentation keeps you progressing at a fast pace

### Work fast

Easy customisation allows you to dramatically increase productivity.

- Customise toolbars and in-context menus, hotkeys and environment settings
- Mouse gesture capabilities give you fast access to commands with a movement of the mouse

### Intuitive detailing capabilities

Intelligent design improves your productivity.

- Automatically detect and resolve modeling and detailing challenges that might otherwise be complex or time consuming



## MOVE QUICKLY FROM IDEA TO REALITY

### Part and assembly modeling

Design products for a broad range of industries and applications.

- 3D solid modeling, large assembly, sheet metal, weldments, piping / tubing



### Animations and photorealistic renderings

Clearly communicate your design intent with powerful visuals.

- Create photorealistic images and animations quickly and easily
- Take a virtual walkthrough of your design and record it to explain to others

### Design reuse and automation

Intelligent design to improve productivity.

- Automate repetitive design tasks using DriveWorksXpress
- Automatically create multiple versions of parts and assemblies, and save them in the same file for easy reference

### 2D drawings

Quickly create 2D drawings to communicate your designs for manufacture and assembly.

- Automate dimensioning and BOMs
- Keep drawings in sync with automated updates to 3D part and assemblies

## MEET COST TARGETS & MANUFACTURE DESIGNS RIGHT FIRST TIME

### Cost estimation

- Automatic estimates of manufacturing costs using built-in cost templates
- Make design decisions based on cost and automate your quoting processes

### Eliminate interferences

- Check for collisions, interferences and clearances between components in your design to ensure proper operation
- Use tolerance stack-up analysis to check the effects of tolerances on parts and assemblies and ensure consistent fit of components at assembly

### Design for manufacturability

- Check if aspects of your design are impossible or expensive to manufacture
- Automatically flatten your sheet metal design and document it for manufacturing

## SIMULATION ENSURES YOUR IDEAS WILL PERFORM AS DESIGNED

### Motion simulation

SolidWorks Motion checks the kinematics of your product to verify you have met your design goals throughout the operating cycle.

### Structural validation

Easily identify areas prone to failure and evaluate design changes to enhance product quality.

### Sustainability

Use SolidWorks SustainabilityXpress to assess the environmental impact of your design and to optimize material selection, part geometry, and sourcing.

### Fluid flow simulation

SolidWorks FloXpress provides initial fluid flow simulation and reporting.



# A DEEPER DIVE INTO SOLIDWORKS



Every year, tens of thousands of new users join the SolidWorks community. In fact, this year the total number of commercial and education users surpassed 1.5 million. Each and every one of these users design different products in different industries, each using SolidWorks in a different way. The thing that all of these users have in common is the need to get their jobs done faster, improve design processes and collaborate more effectively.

The solutions delivered by SolidWorks are driven by the needs of you, the customer. Thousands of enhancement requests are received each year to help improve our products and to make them even more powerful and easier to use.

Many of these enhancements suggest ways to automate common tasks, streamline design processes, or provide custom tools for specific industries. Regular customer visits also provide insight into how our products are used and ways in which we can help improve your business. These visits lead to industry firsts – innovations that provide real process improvements and real business benefits. This is what drives SolidWorks and in turn, helps to drive your business.

The expectations of the user community get higher with each and every release. We believe these expectations have been surpassed once again with this release.

- There are over 200 enhancements in SolidWorks 2012
- Over 90% of these enhancements were requested directly by customers

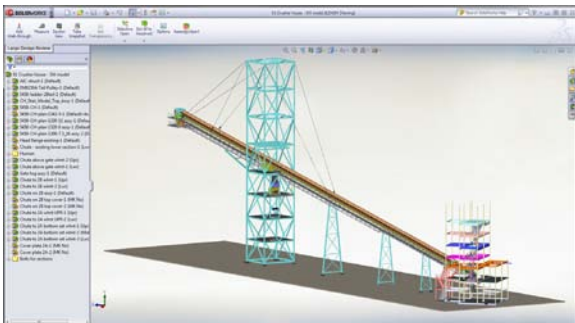
With SolidWorks 2012, you'll experience faster design, a more continuous workflow, shorter development times and more efficient collaboration. New automated functionality makes your design process go more smoothly with less work and improved performance creates a more continuous workflow. New productivity features reduce cycle time and speed up product development, while extensive connectivity and collaboration support enables project teams to work from around the world.

SolidWorks 2012 represents yet another ground-breaking release incorporating many enhancements from a diverse cross-section of users. SolidWorks 2012 is packed full of innovations to help you get your job done faster. From simple time-saving shortcuts, to complete process automation; improved performance and quality to reduce time and rework; and tools that help you collaborate and communicate more effectively.

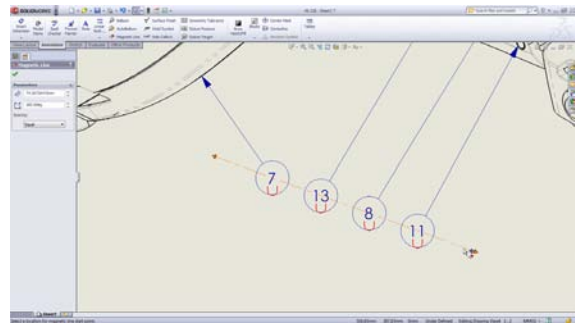
**SOLIDWORKS 2012 HAS  
SOMETHING FOR  
EVERYBODY**

# SOLIDWORKS PREMIUM 2012

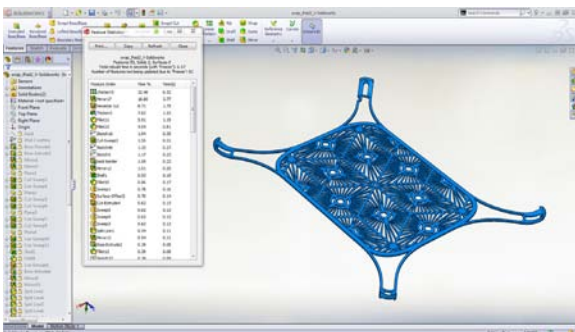
## SOME OF THE ENHANCEMENTS IN THIS RELEASE OF SOLIDWORKS



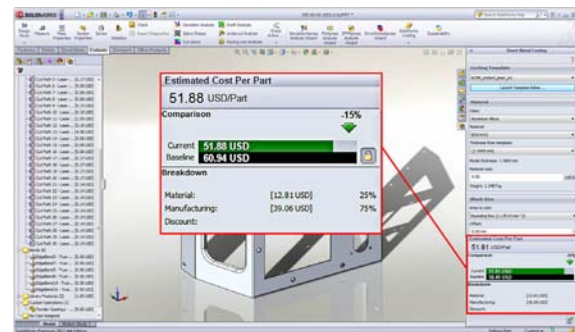
Large Design Review mode allows massive assemblies to be opened quickly for easy access in design reviews.



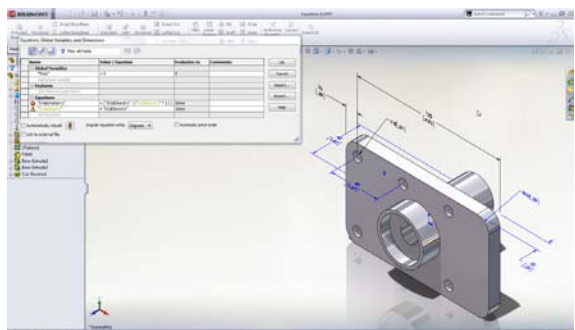
Multiple balloons can now be aligned with a Magnetic Line to make drawings more readable.



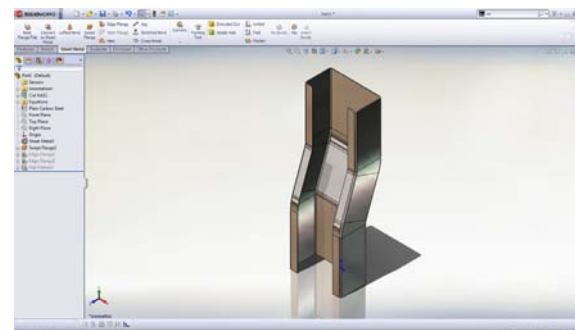
Rebuild times can be significantly reduced with Feature Freeze.



Costing allows sheet metal and machined component costs to be instantly calculated inside SolidWorks Professional.



Equations with multiple syntax highlighting and message to help you troubleshoot troublesome equations.



Channels with bends in multiple directions can now be easily created using Swept Flange.



# SOLIDWORKS HELPS INNOVATIVE TECHNOLOGY

The Cambridge region is well known as "Silicon Fen", for its pioneering hi tech business in electronics, medical and bio technology. It is probably less known for its expertise in the oil extraction industry, yet Innova Systems customer and SolidWorks user, Camcon Oil Ltd. is a company set to revolutionise the oil industry with a solution that takes on the challenge of enhanced oil recovery head-on.

## THE PROBLEM IN FOCUS

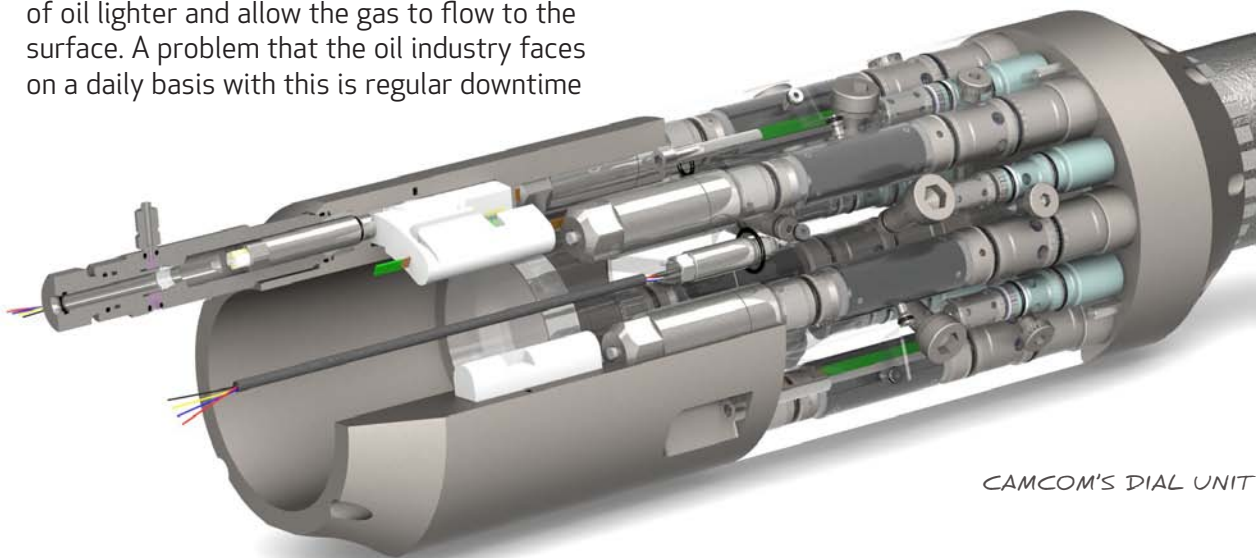
The world is aware of a decline in crude oil production – the oil wells are drying up, we are told. The reality is that oil still remains in existing fields. However, the efficiency of oil extraction is fairly low due to the archaic technologies that have been in use for some 50 years.

The problem is, that as you take more oil from a well, the pressure drops. This means you need something to lift the oil, either by raising the pressure or pumping it to the surface. So the ideal solution is to make the column of oil lighter and allow the gas to flow to the surface. A problem that the oil industry faces on a daily basis with this is regular downtime

involved in dealing with the varying levels of pressure of oil flow to the surface.

Existing gas-lift technologies use side pocket mandrels which require pressure-level configuration upon deployment. When oil pressure changes, as it ultimately does, the gas-lift needs to be reconfigured. In the case of side pocket mandrels this means lifting the unit to the surface and swapping it for another. In the course of this, oil extraction is interrupted for up to 30 days incurring production losses, in multiples of \$10,000 or \$100,000 per day. To make this worse, there is no way of predicting or measuring a need for a change other than witnessing a decrease in the flow of oil to the surface.

In response to market-led demands from the oil industry, the company has taken its solution from conception through to design and manufacture. The product is now coming off the back of very stringent testing procedures with plans in place for it to be deployed for the first time in Oman by the end of the year.



CAMCOM'S DIAL UNIT

# 10,000 PSI CAMCON OIL LTD WITH SOLIDWORKS TECHNOLOGY FOR OIL EXTRACTION

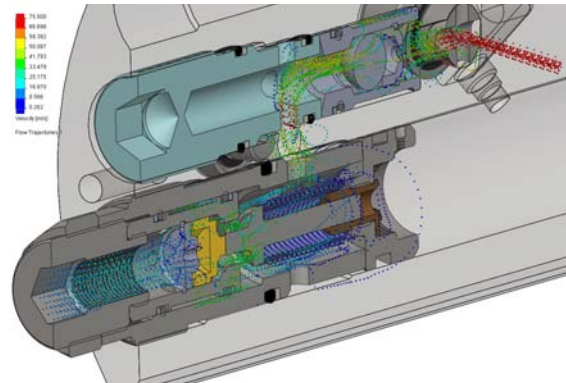
## CAMCON'S DIGITAL INTELLIGENT ARTIFICIAL LIFT (DIAL)

Camcon's revolutionary product is configurable from ground level, meaning that reconfiguration results in a no downtime, saving a company many hundreds of thousands of dollars. The device can make use of six valves (sizes as specified by the client) that can be engaged electronically from the surface in response to readings from pressure gauges. The solution is therefore a proactive one that involves minimal downtime and optimum yield. Similar products have been conceived in the past, but have failed at the test stage. Camcon's DIAL unit has already passed some stringent test and design requirements laid down by an industry leader and is now ready for its first big test.

## SOLIDWORKS DESIGN AND SIMULATION PLAYS ITS PART

As is all too evident to us all, safety in the oil industry is a major concern. High temperatures of over 175°C and high pressures of up to 10,000psi mean that any unit involved in the extraction process must be able to withstand immense stress in accordance with not only functional requirements but safety also. The components used in Camcon's DIAL are high tolerance machined parts made up of very hard expensive nickel alloys and very high chrome content stainless steels.

There are high costs involved in the physical testing stage – it is therefore important that



GAS FLOW THROUGH THE DIAL USING SIMULATION

this testing is not an experiment but rather a verification of its functionality. "There's no point throwing one in, in hope of it working. SolidWorks Simulation gives us the confidence that it is fit for purpose and the safety factors it will work at", says Peter Watson, Project Manager. "In our experience, it is very much a 'works first time' situation when you go into testing after carrying out Simulation in SolidWorks. Analysis is an iterative process and allows us to make the changes and validate the results quickly."

Oil producers are concerned about how much gas mixes with the crude oil and therefore want to know how much gas will flow through the unit. SolidWorks Flow Simulation analysis allows Camcon to answer their client's questions and give them a good idea of how much gas will be used in a day by the device. "SolidWorks Simulation is a very strong tool but the beauty is that it is so easy to use."

*"We have valued the expertise from Innova Systems. Their training and support provides us with experienced guidance from exceptionally good engineers to help us concentrate and use SolidWorks to design our products."*

# DESIGN COMPANIONS FOR SOLIDWORKS

## PERIPHERALS

### 3Dconnexion 3D mice

Revolutionise the way you work with 3D applications. Pan, zoom and rotate the model or camera as if you're holding it in your hand. It's a level of control that's simply not possible with a traditional mouse and keyboard.

Price: from £99.00 (excl. VAT)



## SELF-STUDY BOOKS AND MANUALS

### Creating Animations with SolidWorks

Learn the fundamentals of animating SolidWorks assemblies at your own speed, as you progress from simple to more complex animations.

Price: £57.50 (converted price)



### Improving large assembly design

Learn the tools and techniques to more efficiently use SolidWorks in the design of large assemblies and projects. Explore the different elements that constitute efficient assemblies.

Price: £44.70 (converted price)



### Photorealistic rendering using SolidWorks and Photoview 360

Learn the fundamentals of photorealistic rendering at your own speed, as you progress from simple to more complex renderings. Includes a DVD-ROM.

Price: £58.80 (converted price)



## HARDWARE

### Dell Precision M6600 Mobile Workstation

The Dell Precision series of mobile workstations unites exceptional processing and graphics performance and productivity-boosting features in a sleek and dependable professional system.



- Windows 7 Professional 64bit
- Intel i7 2.50GHz Quad Core
- Screen resolution: 1900 x 1080
- NVIDIA Quadro 4000m 2GB
- 12GB DDR3 RAM
- Price: around £2,700