

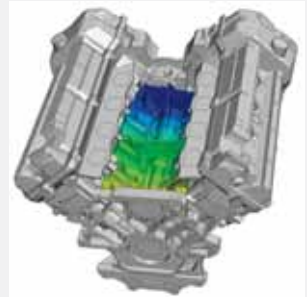


Software Spotlight

Analysis software

Dassault Systèmes' version 6.6 of ABAQUS FEA software features upgraded capabilities such as vibration analysis, automatic multi-level substructuring that extracts natural frequencies in large linear systems, and material-failure characterization with a laminate damage and failure model for layered composites. Analysts can represent the effects of bolt threads without creating detailed thread models. Other improved features include tire modeling, adaptive remeshing, postprocessing for nonlinear analysis, and computing performance. Open-system links to major CAD and CAE packages and technical innovations enable manufacturers to achieve realistic simulations of product behavior, according to the company, and accelerate the high-fidelity analysis process.

For more information, circle 1



Web studio

The **InduSoft** Web Studio 6.1 SP1 HMI/SCADA (human machine interaction/supervisory, control, alarm, and data acquisition) software system runs on various configurations of the **Microsoft** Windows platform, including personal digital assistants and smartphones, as well as on diskless embedded processors and panel PCs.



By using a single development tool, engineers can generate operator displays, visual basic scripts, trends, alarm, logs, and other functions that can run on desktop computers or handheld devices. Other improvements include a trend object tool, screen translations, an advanced development environment, remote management tool, super symbols interface, and two database management functions.

For more information, circle 2

Faster multiphysics

COMSOL has released version 3.2 of COMSOL Multiphysics—the previous version was known as FEMLAB 3.1. The software now reads geometry files created with major CAD packages, and v3.2 introduces COMSOL Script, a stand-alone product featuring command-line modeling. The graphical user interface encourages the use of a consistent system of engineering units, and a moving-mesh feature allows models to simulate moving parts and parametric geometries. Improved solvers can handle models with millions of degrees of freedom.

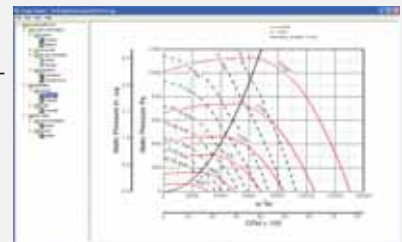
For more information, circle 3



Graphing/analysis software

OriginLab has launched the Origin Viewer, a free downloadable **Microsoft** Windows application. The software enables OriginLab users to share data, graphs, and analysis with colleagues who use other scientific software products. Instrument manufacturers whose software outputs data files can now choose to save data using the Origin "OPJ" format, using the same application support files that come with the Origin Viewer. They then can offer their customers the ability to read and/or write OPJ files that contain their instrument data and associated meta data.

For more information, circle 4



CFD add-on

The newest release of STAR-CAD Gateways, V4.02, from **CD-adapco**, provides access to the full capabilities of STAR-CD V3.26 and STAR-CCM+ V1.08 directly within the CAD environment. Because the CFD model is fully associated with the CAD geometry, any design changes made in response to simulation results or other factors are automatically reflected in the CFD model, and subsequently the solution. Solution times are decreased with the implementation of faster mesh generation and increased solver speed, and critical engineering data is now automatically presented in a fully automatic HTML report.

For more information, circle 5



Data transfer

CT Core Technologies offers 3D Evolution software, which can directly interface with native file formats and simplify CAD models for analysis. Users can visually review all problematic surfaces within a model and decide what errors are critical and what are acceptable based on user-defined tolerance allowances. Pre-defined scripts control the conversion process, and FEA tools quickly establish viable models. Various quality control functions define suspect curves, surfaces, faces, and topology errors to allow repair; communication and collaboration are seamlessly exchanged, according to the company.

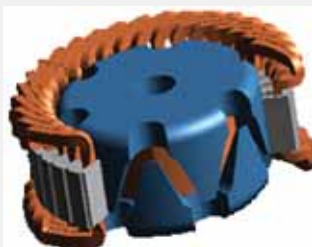
For more information, circle 6



Electromechanical design tool

Infolytica's MagNet, ElecNet, OptiNet, and ThermNet software applications include both 32-bit and 64-bit versions. The 32-bit versions are between 1.2 and 2 times faster than before. While the increased memory is a key ingredient of the 64-bit applications, the speed-ups have been significant in their own right, with all of the 64-bit solvers up to 30% faster than the 32-bit versions.

For more information, circle 7



Meshing software

Gridgen Version 15.09 CFD meshing software from **Pointwise** features solid modeling and solid meshing. Importing solid data directly or assembling solids in Gridgen enables the mesher to distill the geometry implicit from the CAD topology, eliminating proximity computation and improving efficiency. The

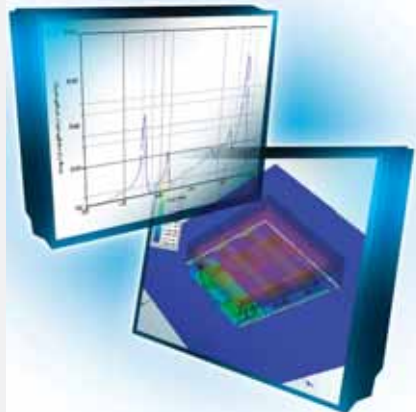


software also supports quilts, or topologically linked surfaces meshed as a single unit. Other features include a deformation-based scheme for pyramid cell generation in hybrid meshes and a native interface.

For more information, circle 8

Simulation methodology

Ansoft offers a simulation methodology to predict electromagnetic induction/electromagnetic compatibility of insulated-gate bipolar transistor (IGBT) packages used in hybrid-electric vehicles. Based on data exchange links, Q3D Extractor is used to create or im-



port a 3-D solid model of the physical layout of the complete IGBT package by extracting partial inductance, resistance, and capacitance. Engineers construct models of the entire system in Simplorer, calculating the power as an input source for HFSS, which then calculates the electric field at a user-defined distance.

For more information, circle 9



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Battery analyzers

Argus Analyzers' AA series of handheld battery analyzers offers users predictive diagnostic capabilities and is intended for use as a proactive analysis tool. The analyzer's Crank-Check and High Frequency Impedance technologies are its two main features. Crank-Check analyzes battery performance during the starting sequence, providing real-time information about the starting capacity of the battery relative to actual load. High frequency impedance measures the internal resistance of the battery, and can be checked when the battery is in use.

For more information, circle 10



Machine control

Gleaner combines from **AGCO** are equipped with the GTA Console II in-cab terminal, the operations control center for the Fieldstar II yield monitoring and machine control system. Able to display and record output from almost all combine sensors via a CAN bus system, the Console II offers improved machine function and crop harvest monitoring. The digital card slot and GTA100 PC software allow data downloads to a personal computer for analysis. Operators can observe functions of the combine in real-time on the color screen; fuel consumption, engine temperatures, oil pressure, geo-referenced grain yield, and moistures can all be monitored using touch screens, soft keys, and rotary dial controls.

For more information, circle 11



Mobile computer

The JETT•XL mobile handheld computer from **Two Technologies** features a **Microsoft** Windows CE.NET 5.0 operating system and incorporates an **Intel** PXA270 XScale technology processor to deliver 624 MHz of information processing. Features include XScale-reduced instruction-set computer with voltage and frequency scaling, rugged and dust-tight packaging, 8-h operating life, chemical resistance, a backlit keypad, sunlight-readable touch screen, and an operating temperature range of -20 to +50°C (-4 to +122°F). Customized options are available.

For more information, circle 12



quire a remote inside release. The rugged construction is incorporated into round tubing to support the opening and closing functions of the door and offers improved ergonomics over direct releases. The release is easy to install and is available in 25-mm (1-in) steel tubing diameters or offered as an inside release sub-assembly.

For more information, circle 14



Bent-axis motors

Parker-Hannifin's Hydraulic Pump Division has added four displacement sizes to its line of heavy-duty, fixed-displacement, piston-type bent-axis motors. The units include the F11-12 with a displacement of 12.5 cm³/rev; the F11-14 with a displacement of 14.3 cm³/rev; the F12-90 with a displacement of 93 cm³/rev; and the F12-125 with a displacement of 125 cm³/rev. Suitable for hydraulic power applications that require high starting torque and continuous operating speeds, the F11-12 and F11-14 feature a continuous pressure of 350 bar (5075 psi), while the F12-90 and F12-125 offer 420 bar (6090 psi).

For more information, circle 15



Signal conditioner

Model 5005 three-channel, low-noise signal conditioner from **VIP Sensors** accepts three channels of piezoelectric, piezoelectric with integral electronics, or voltage transducer types. A double integration stage allows the output voltage to be proportional to acceleration, velocity, or displacement. Model 5005 is also capable of reading transducer electronic data sheets; transducer output data is displayed on the front panel LED and can be controlled via the communication interface using a computer and control software.

For more information, circle 13



Fuel purifier

Dieseldraft Fluid Engineering offers the model 2006-1 compact fuel purifier to remove more than 99% of the water and 95% of

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the natural contaminants found in diesel fuel without the use of replaceable, changeable, or cleanable filter elements. Based on cyclone separation technology, the purifier draws clean air out of the unit and into the system's primary fuel filter, draining water and contamination from the bottom. Designed for fuel pumps that deliver less than 1 gal/min (4 L/min), model 2006-1 is 3.1 in (80 mm) in diameter and 9 in (230 mm) in height and features no external moving parts.
 For more information, circle 16



Cylindrical connectors

Restriction of hazardous substance-compliant versions of Amphenol connectors from **Amphenol Industrial Operations** provide electromagnetic interface shielding and are suitable for a range of harsh environments in commercial and industrial applications. The quick-mating and self-locking connectors are environmentally resistant to IP67 and are lightweight, corrosion-resistant, and durable. Available in sizes 9 through 25, design features include positive shell-to-shell coupling, grounding fingers, electroless nickel plating, long coupling durability, an anti-vibration mechanism, and electrolytic erosion prevention.
 For more information, circle 17



PTFE seals

OmniSeal spring-energized polytetrafluoroethylene seals from **Saint-Gobain Performance Plastics** are used in safety-critical applications in

ball valves as double piston effect seals, in valve seats, and to reduce fugitive emissions as environmental valve stem seals. With materials approved to NORSOK M710 specifications, other seal applications include valve body/bonnet seals, butterfly valve seats, down-hole tools, and cryogenic swivel seals.
 For more information, circle 18



Air control actuator

NORAM's 3 3/4-in stroke pressurized air control (PAC) Actuator II requires 0.5-A draw for electrical clutches, reducing electrical loads in lawn-and-garden equipment applications. Requiring no system upgrades or special engine modifications, the actuator eliminates severe shock loads and is capable of engaging a mower deck at idle speed. Other features include recessed terminals to guard against breakage and single-button, fail-safe operation that defaults to off position when the 12-V power supply is exhausted.
 For more information, circle 19



Off-highway seat

Grammer's Black Edition model B12 entry-level seat was designed for off-highway vehicles with cramped seating conditions. Offered in two versions—one with a seat switch and one without—the B12 features black imitation-leather cushion covers and a suspension system integrated into the backrest. The seat can be adjusted to the driver's weight in three steps to optimally use the suspension travel of 40 mm (1.5 in). Fore-aft adjustment takes place in 15-mm (0.6-in) steps over 150 mm (6 in), and back

strain is reduced by infinite adjustment of the backrest angle up to 15°. A lap belt is optional.
 For more information, circle 20



Fitting system

The Uniport 10K port/fitting system offered by **Fluid Line**

Products incorporates two seal points to prevent leakage. The double seal conical metal-to-metal seal helps insure extrusion resistance of the O-ring seal to form a leak barrier, while the swivel feature eliminates the need for adapters and allows for a compact design. The fitting can be used as a tube connection or as part of a hose assembly; sizes range from 0.25 to 1.5 in (6 to

38 mm) in diameter. Ports are machined in pumps, valves, manifolds, and cylinders, and applications include hydraulics, pneumatics, engine fuel systems, and military vehicles.
 For more information, circle 21



Open-loop pump

The PVG open-loop pump series from **Oilgear** offers high pressure and performance in a compact design. Computer-optimized and available in five displacements and multiple frame sizes, the pump provides an instantaneous response to system commands through four-way pilot-operated control. Features include maximum pressure of 5800 psi

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(400 bar), increased operational life, resistance to contamination, use of hydrodynamic bearings, a rugged cylinder design, quiet valve plate, large selection of controls, and operation with low-viscosity or other special fluids. For more information, circle 22



Rapid prototyping

The Eden500V from **Stratasys** is a large-format Polyjet rapid prototyping system that boasts a larger build envelope than its predecessors—which permits the construction of bigger models. Measuring 19.7 x 15.7 x 7.9 in (500 x 400 x 200 mm), the Eden500V allows multiple models to be produced in a single run. New speed and resolution settings allow users to match these properties to specific projects. The Eden500V also employs a

clean and safe modeling process. The sealed liquid resin cartridges inject only the amount needed to build the model, reducing waste. For more information, circle 23



Delay timer

The ADOD Series timer from **Amperite** is designed to operate a vehicle's auxiliary equipment—radio, lighting, computers—for a specified time after the engine has been turned off. The timer contains a set of relay contacts that provide power to the auxiliary load when the ignition circuit of the vehicle is turned on. When the engine is stopped, the contacts remain closed. The ADOD timer features a standard 45-min timing cycle and a temperature range of -40° to +70°C (-40° to +158°F).

For more information, circle 24



Torque-reducing lubricant

NYTORQ lubricant from **Nylok** is designed to reduce the installation torque for thread-forming screws commonly used in manufacturing. The lubricant can be used on any fasteners that require controlled or lower drive torque during installation. NYTORQ is also intended to help reduce assembler fatigue. The lubricant is nontoxic and has a melting temperature of 7°C (45°F).

For more information, circle 25



Crimp tester

The **Cirris** DCR 1000 crimp resistance measuring system measures the resistance in micro-ohms between the crimp barrel and the emerging copper wire. Using electric field detection, the quality of the crimp interface can be measured directly without invasion of the connector or insulation. Measurement is repeatable, is performed in seconds, and is accurate to better than 10%. Crimp structures can be accommodated on wires from 4 to 18 mm (0.16 to 0.7 in) in diameter. The DCR 1000 is sensitive to contaminated or oxidized surfaces and low crimp pressure.

For more information, circle 26



Double-density connector

The 12-41 connector from **Deutsch** offers more connectors than a standard shell, reducing the weight of the wiring harness

in the vehicle and increasing density to allow designers more flexibility when considering cable infrastructure. The double-density connector uses contacts that are optimized for AWG24 to AWG30 gauge wire, allowing 41 connectors in a size 12 connector shell. The 12-41 features a locking mechanism, operates at temperatures from -55 to +175°C (-67 to +347°F), and shows no damage when exposed to most fluids in off-highway applications.

For more information, circle 27



Dual-purpose battery

The Odyssey PC 1500 from **Energys** is a starting, lighting, and ignition (SLI) battery that features a dual-purpose Group 34/78 footprint—making it versatile enough for both light truck and marine applications. The 12-V battery has a six- to eight-year service life, and a two-year storage life (if kept at room temperature). Its rugged construction provides vibration resistance and the sealed drycell construction prevents acid leakage and external corrosion. In addition, the battery's container and cover are made from oil-resistant plastic.

For more information, circle 28

Electronic pedal control

MICO's new Electronic Pedal Control is designed with materials that are engineered for long life in harsh, off-highway applications.



Intended for uses which require an electronic signal proportional to pedal travel—such as engine throttle and accelerator pedals that control the speed of machines with hydrostatic engines—the device is also built for reliability. To provide durability, the device uses two noncontacting Hall-effect sensors in place of potentiometers. Each of the sensors also comes equipped with the independent circuits required for redundant systems.

For more information, circle 29

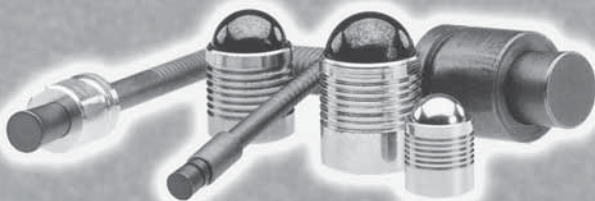
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