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Volume 5 Issue 1

Entertainment Engineering

LICENSING TECHNOLOGY

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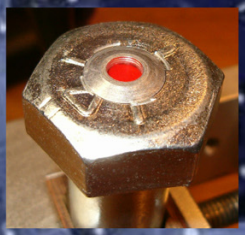
PLASTIC BEARINGS

SPECIAL EFFECTS



SAFETY BOLTS

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VOLUME 5 ISSUE 1
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INTERNATIONAL DESIGN EXCELLENCE COMPETITION

My thoughts about Industrial Designers always include a healthy respect for the leap-frog products these people help bring about through processes that seem to resemble art as much as science.

I can't help but wonder about the design of products I come in contact with every day. Whether it's a cell phone or a microwave or a concert hall, the components used — as well as the final products — are not only designed for function, but for aesthetics, for comfort.

Competitions are created to help push the envelope on these developments. One such competition is IDEA 2008, an industrial design competition that opened for submissions a few weeks ago. They accept entries from designers, students, and companies worldwide. The deadline to prepare an application is February 29, 2008.

IDSA is a group that is concerned with the ergonomics of a product, as much as it's aesthetics. Their competition is filled with Industrial Designers who help companies create satisfied customers by designing products, interfaces, and services that are desirable, accessible, comfortable, ecologically responsible, innovative, safe, and easy to use. In this way, industrial designers have a quiet but profound presence in almost everything people encounter during the day, including entertainment.

The submissions will be accepted online for the first round of judging. For the first time, however, applicants who make it to the second round in certain categories will be invited to submit physical samples. For other categories, finalists will be asked to send in video, scale models, prototypes, extra images, product spec sheets or other category-specific materials.

For more information and to apply online for the IDEA 2008 competition, visit http://www.idsa.org/IDEA

Bruce Wiebusch
bruce@entertainmentengineering.com

Entertainment Engineering

TECHNOLOGY. CREATIVITY. FUN. Volume 5 Issue 1

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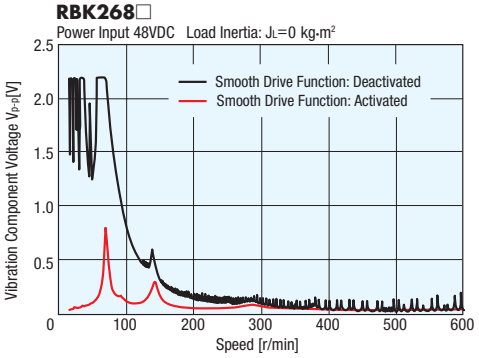
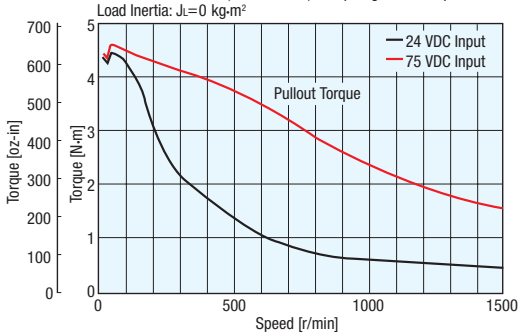


Wide Voltage Range Driver

The **RBK** Series utilizes a constant current driver with a wide voltage range of 20 to 75 VDC and 4.5 A/phase effective value (6.3A/phase peak value). This enables it to support a wide range of power sources.

Comparison of Speed–Torque Characteristics



*Raising the power supply voltage enables increased torque during high-speed operation.

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VARIABLE-FREQUENCY DRIVES SAVE THOUSANDS IN ENERGY COSTS AT POOLS

To achieve $7K annually in energy savings in operation of pumps, South Windsor, CT Community Pool Complex retro-engineered with new drives

In the town of South Windsor, Connecticut, the community swimming pool complex is a much-loved summer entertainment hotspot for children and adults. Once merely a pond, the local swimming hole evolved over the years into a full-fledged aquatics center. The modernized complex houses three separate outdoor swimming pools: a training pool for children; a lap pool; and the main pool.

The pools stay open from the first weekend in June until the last weekend in August, and they attract an average of 600-800 visitors per day during the hottest months.

While the pools themselves are a relaxing escape for members of the community, keeping the more than one million gallons of water utilized in the three pools clean is a demanding, round-the-clock task. Since the pool water constantly must be kept flowing through a system of purification filters, the three pools are equipped with high-power pumps to pull the water from the bottom of the pool, through a series of gutter systems and into surge tanks – one tank per pool. From each tank, the water then is pumped through a series of chemical-purification filters and back into the pool.

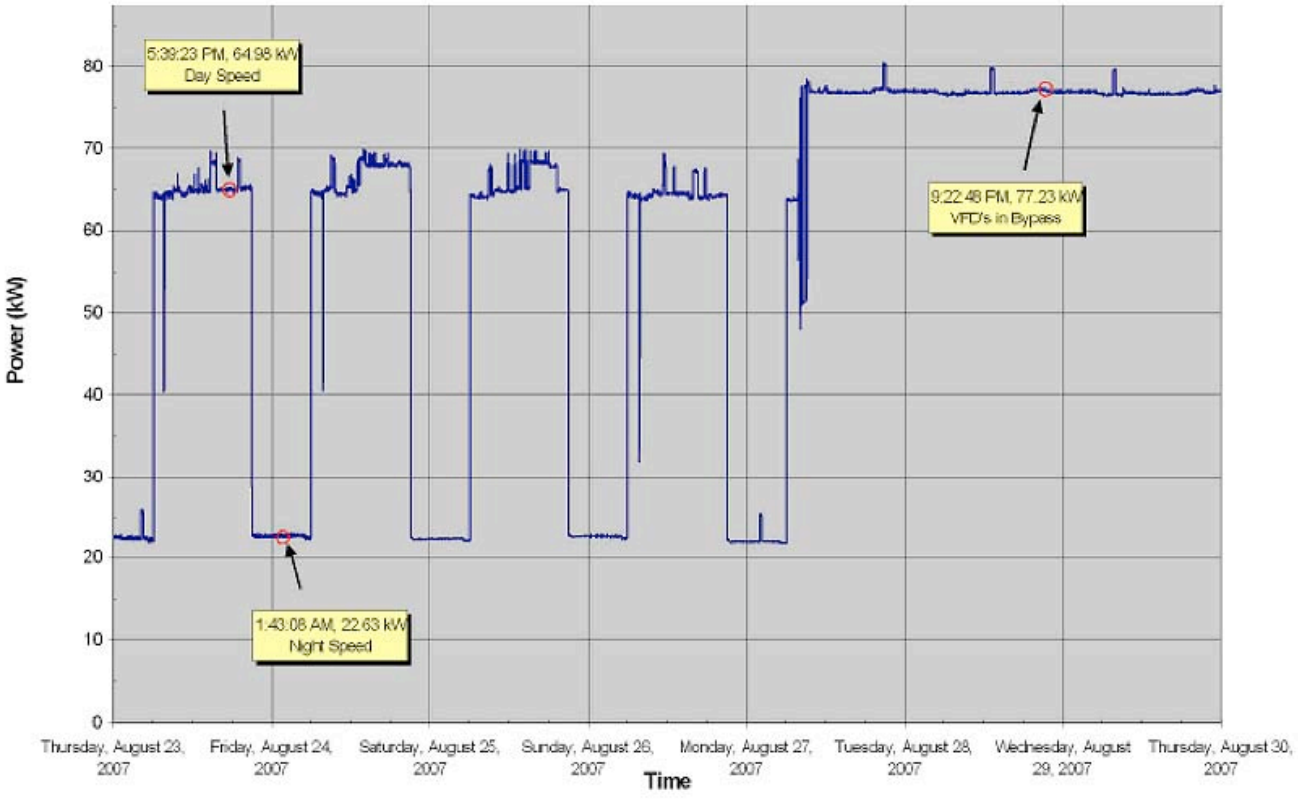
To meet the high demands of this constant flow, the 152,000-gallon lap pool draws water through the system with a 10 HP, 200V, 3-phase pump. The 156,000-gallon training pool uses a 20 HP, 200V, 3-phase pump, and the 755,000-gallon main pool uses two (2) 30 HP, 200V, 3-phase pumps.

The Opportunity for Cost Savings

The electricity required to run four pumps on a 24/7 basis is by far the pools' and city's largest operational expense. Accordingly, Tim Friend, plant supervisor, constantly is looking for ways to improve efficiency and reduce costs. With tens of thousands of dollars worth of utility costs each season, Friend wanted to address the high-energy usage resulting from always running the pumps at full power. So he evaluated ways to reduce energy consumption while still maintaining water purity.

"We knew we were wasting energy via running the pumps at full power -- especially after hours."

"We wanted to lower our high power bills," says Friend, "We knew we were wasting energy via running the pumps at full power -- especially after hours. Fewer impurities are in the water when nobody is swimming, so by slowing the flow at night we knew we could still



Actual KW readings taken after the installation

maintain adequate filtration in the pool and the same levels of water quality."

Initial Efforts to Improve Pump Efficiency

In an effort to save energy at night, Friend and his team tried implementing several strategies with limited success. The first attempt they made was to shut off completely the pumps each night for a period of time; but doing so made it so difficult for them to maintain water quality that they had to abandon the tactic altogether. They then tried throttling the valves to achieve the proper flow rate through the pumps, but since the pumps ran on single-speed motors, doing so also drove up the motor amps, back-flushing the equipment.

Knowing better alternatives existed, Friend drew on similar situations he had experienced in the past while working with water treatment and purification plants. To find the best solution for the pools, he turned to FlowTech Inc., a South Windsor, CT based distributor for ABB products who had assisted him on a number of previous projects. Friend worked closely with Brian Robinson, FlowTech sales engineer, and upon thorough examination, they determined that ABB variable frequency drives (VFD)could provide a major power savings.

"By installing ABB variable frequency drives at the pool, we could reduce the motor speed, but still run our system with the valves completely open, all the while achieving the full flow rate we need to run the filtration systems," says Friend. "The drives created the perfect solution in that regard."

The lap pool was their guinea pig. "Our goal was to demo the existing flow system, install the by-pass and VFD, and get it back up and running the same day," says Friend. "Since it was the smallest pump, we had the most physical space with which to work, and we were successful in accomplishing out goal."

The crew then completed installation of a 20-hp pump in a day. They spent another day on two 30-hp motors. After installation, the pump speeds were set back using the onboard time clocks that initiate pre-programmed pre-set speeds in the VFDs. Pumps were programmed to run at 90 percent power during open pool hours and to ramp down to 60 percent for the 12 hours each night after the pool closed. These settings were said to yield an energy consumption reduction of more than 65,000 KWH per season, which saved the city more than $7000.00 in operational cost annually. See the accompanying chart for the actual KW readings taken after drive installation.

For more information:

ABB US Home: www.abb.us.com
ABB Drives and Motors: www.abb-drives.com
ABB World Home: http://www.abb.com
ABB Low-Voltage Drives:
http://www.abb.us/drives

David Hughes, Broadcast Pix Operations Manager for Europe, Asia, Middle East and Africa.

MOBILE STUDIO BUILT INSIDE A VAN

An extensive road show through Europe meant that a demonstration van had to featuring a complete production studio.

Broadcast Pix has created an innovative approach to customer demonstrations that takes its Slate live production system to broadcasters and production professionals across Europe. The company built a small but complete broadcast production studio in a mobile demo van that featured a fully functional Slate live

production system. The road show began in the United Kingdom and will be followed by tours in Holland, Slovenia, and Germany, eventually crossing all 27 countries of the European Union through 2008 and beyond.

Like most products, the Broadcast Pix Slate system may have a great reputation, but to be fully appreciated it must be seen in a complete studio configuration that mimics an authentic studio environment. According to David Hughes, Broadcast Pix Operations Manager for Europe, Africa and the Middle East, "The investment in a demonstration van allows us to convey the full strength of the Slate platform to more people in a more effective manner."

The Broadcast Pix Slate system, available in three configurations to meet the different needs of broadcast and production professionals, integrates a production switcher, production control panel, Inscriber CG, transitional effects, chroma-keyer, clip store, 16:9 and 4:3 aspect ratio treatment, and multi-view monitoring, among other functions, in a single workstation-based system.

Outside Broadcast Van professionals E to E of Leeds, England, integrated the studio in the Broadcast Pix European Demonstration Van. The comprehensive studio configuration will feature a complete Slate 1000 system plus camera control and a Yamaha audio mixer.

More demos, less time

The OB Van integration means that the company will save at least two hours per demonstration compared to the previous method of unloading, setting up, and tearing down each demonstration, allowing representatives to schedule more presentations per day or cover a wider territory during a specific demo tour. Set up now requires only a convenient parking spot. The van can run from its power or a convenient power outlet.

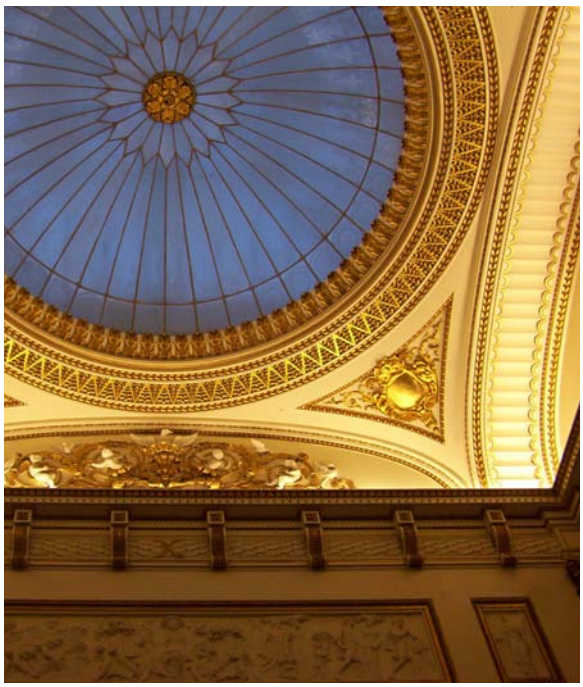
"With a conventional control room comprised of individual components, a mobile studio with this kind of power would require a large truck," said Ken Swanton, President of Broadcast Pix. "With Broadcast Pix, this all fits into a conventional Mercedes van, which makes it even easier to show the nimble solutions made possible by our systems."

For More Information:

Broadcast Pix Home: http://www.broadcastpix.com
Broadcast Pix Products: http://www.broadcastpix.com/The-Switcher-Redefined/

BUCKINGHAM PALACE
USES LEDS IN CHANDELIERS

The Royal Household needed a way to reduce energy consumption and maintenance costs.



LED bulbs make a royal impression at Buckingham Palace. Bespoke Lighting, recently merged with LEDtronics to combine their skills in developing a unique method of illuminating chandeliers using light emitting diodes (LEDs).

The project was undertaken at the request of The Royal Household, in an effort to reduce energy consumption and maintenance costs. The center room chandelier was nominated and all 32, twenty-five watt tungsten lamps were removed, and a low voltage system controlling 2.8 watt light emitting diode lamps (Queens Chandelier STL610-48-XIW-024M) were installed. The energy savings in the swap was over 80 percent. As for maintenance, the next re-lamping will not be needed until 2020.

The next chandelier to be converted will be fitted with a warmer version of LED lamps, perfectly recreating the color temperature of tungsten lamps. “The aesthetics of the respective rooms is a major consideration and consequently we needed an option on the color of the lamps. Bespoke Lighting and LEDtronics have succeeded in providing the perfect solution for The Royal Household, and their energy saving strategy has been greatly enhanced,” said Pervaiz Lodhie, president and founder of LEDtronics and co-owner of Bespoke Lighting International. “We are now perfecting an LED candle lamp for The Palace that will again assist them in their commitment to saving energy.”

The Grand Staircase in Buckingham Palace was recently fitted with 32,000 LEDs, which included a combination of warm white combined with red, green, and blue LEDs. This provided a range of several thousand color temperatures, all controlled remotely by radio transmitter.

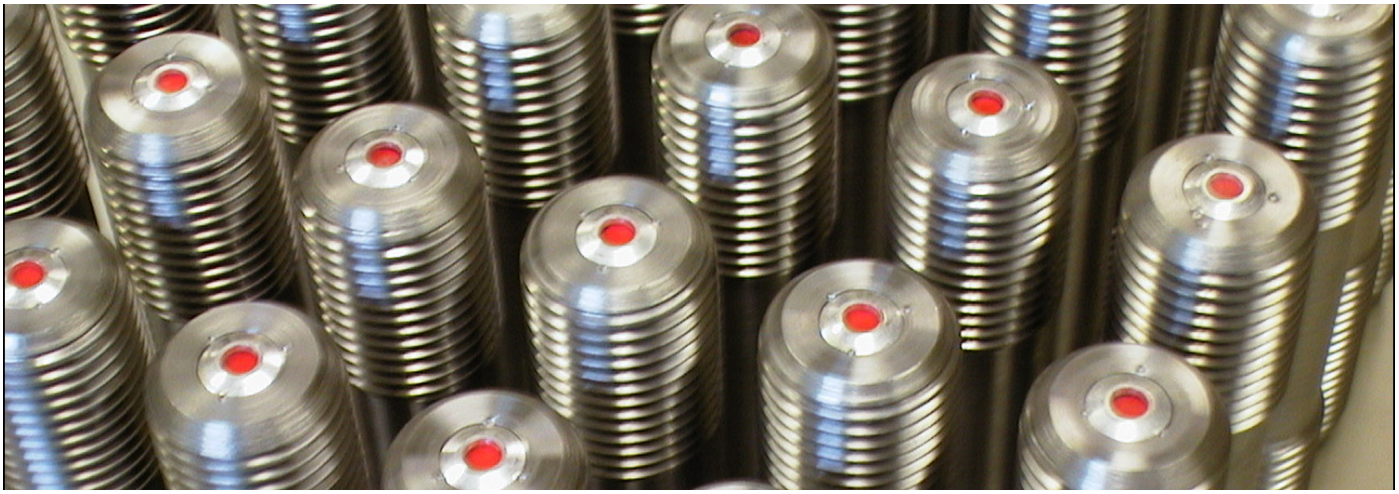
For More Information:

LEDtronics Home: http://www.LEDtronics.com

FLIGHT SIMULATOR USES SAFETY BOLT SYSTEM

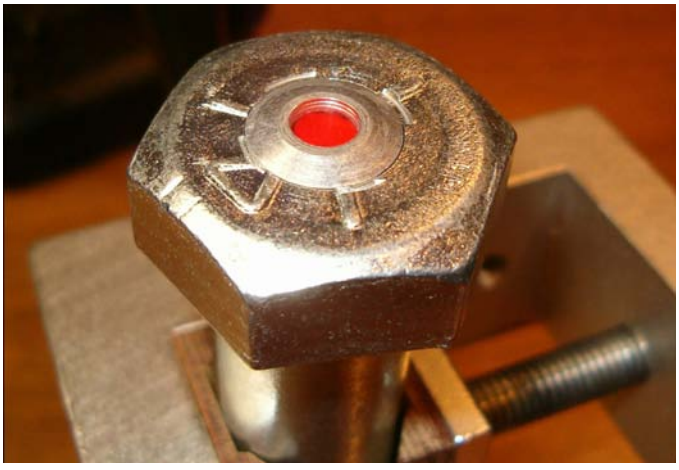
By Bruce Boyers

Simulators need to be in top working order throughout their stressful career. Using the right components, even down to the right bolts, is a design concern.



There are many applications in which it is crucial that a proper bolt preload be applied, usually involving critical safety and reliability concerns. One company, that designs and fabricates flight simulators for commercial and military aircraft personnel training, discovered a solution for obtaining and monitoring optimum bolt clamp load.

"A torque wrench is not always an accurate means of measuring preload, as you're having to overcome friction and other factors," according to the senior mechanical engineer with the company. "Additionally, our hardware is in locations that are difficult to access." The method in which the bolts are mounted allows access to the bolt head but not the nut. In order to apply even the inaccurate measure of clamp load with a torque wrench, the nut must be accessible as well. Hence, without a visual inspection method, one can only hope the bolt is maintaining its optimum preload.



The solution came in the form of Direct Tension Indicator (DTI) SmartBolts, a product invented and developed by Stress Indicators of Bethesda, Maryland. The device contains a visual indicator on the bolt head, which changes color when optimum preload is reached. Before tightening, the bolt is bright red. When it reaches the specified preload, the indicator becomes black. Not only is the bolt at its correct tensile state when first applied, but it can be easily inspected and replaced or re-tightened if it becomes loose.

As one might expect, the company's flight simulators have strict hardware torque requirements. A simulator consists of a cockpit, which from the pilot's perspective is identical to the aircraft. The cockpit's visual system is mounted on a frame, which in turn is mounted on top of a complex motion system, consisting of six hydraulic rams. The rams provide all six degrees of freedom of motion—pitch, roll, and yaw translation in either of the three major axes, or combinations thereof. Each pair of hydraulic rams come together in what is called a knuckle pad, and each knuckle pad contains eight SmartBolts.

The simulator is an extremely accurate duplication of the operation and sensation of aircraft operation. "If a pilot is 'flying' the aircraft and pitches down, for example, the visual scene gives him the visual cue that he's pitching down," the senior mechanical engineer explains. "The motion system physically moves him to a pitch down position so he feels the accelerations that he would feel in transitioning from level flight to a pitch. His orientation changes so that he knows that he's moved—he's actually looking down. And all of

This shot, taken from an earlier issue of Entertainment Engineering (Volume 2 Issue 3), shows what a pilot might see while operating the simulator.

this is in response to what the pilot is doing." An audio system also provides sounds such as engine noises or the chirp of tires when the engine hits the runway.

The reason simulators must be so realistic is that airlines will use these simulators to train pilots, and with today's simulators a pilot can actually be certified without ever having been off the ground. Simulators must meet strict FAA (Federal Aviation Administration) requirements in order to be used for such training.

Simulators offer training advantages that could not be offered in real aircraft. For example, an instructor can program a strong side wind or a downdraft when a pilot is coming in for a landing, or can actually have a tire blow or an engine fail. Obviously, with a real aircraft such situations contain a high level of danger, but with a simulator, if a pilot doesn't perform, the instructor simply resets the program and begins again.

Since simulators cost less to operate than an actual aircraft, they are also utilized to keep pilots' airtime up both in commercial and military applications, and are used for military mission training so that a pilot will be familiar with the flight of a mission before it even takes place.

It comes as no surprise, then, that obtaining and maintaining accurate preloads of the bolts within the motion systems is extremely vital. Using SmartBolts within the simulators means that accurate preload is always maintained, and can be visually verified. The bolts can be constantly monitored after the simulator has shipped by the customer's maintenance crew. An additional benefit comes to facilities that may not even possess equipment such as torque wrenches to check or even install the bolts. SmartBolts can be applied with ordinary wrenches, and can then be visually inspected thereafter.

OFF-ROAD VEHICLE COMPETITION

Canadian students take top honors at multinational competition with the aid of plastic bearings.

For the second consecutive year, a student team from the Université de Sherbrooke, located in Québec, Canada, used iglide® plastic bearings from igus® Inc. The team of ten students employed iglide Q on a student-designed, student-built and student-operated, off-road vehicle for competition in the Society of Automotive Engineers (SAE) Baja Competition. The bearings, donated through igus' Y.E.S. (Young Engineers Support) Program, were used at various pivot points on both the rear suspension and throttle and break controls of the vehicle.

As part of the competition, the students' vehicle had to negotiate its way through tough, rugged terrain, in all types of weather without incurring damage. Unlike metal or bronze bearings, iglide Q is able to endure various environmental elements such as rain, mud, salt, and dirt without corroding or failing. Iglide Q's lightweight, plastic construction paired with its ability to handle up to 14,500 pounds per square inch was also a big plus for the team. It enabled the students to build strong, yet lighter weight suspension and breaking systems, which made the vehicle faster and more compact.

"Iglide Q bearings enabled us to design a torsion bar integrated into the pivot of our trailing-arm rear suspension," said Benoit Poulin, Université de Sherbrooke SAE team member. "Compared with regular ball bearings, we saved weight and gained a maintenance-free bearing with trouble-free operation. Both systems worked really well without wear or friction."

The team competed in both the Baja SAE UCF (University of Central Florida) and Baja SAE RIT (Rochester Institute of Technology). The team turned in impressive performances, coming in first overall at UCF and second overall at RIT. Among a number of other awards, the students took home top honors in the endurance race and for vehicle design at both competitions.

Iglide Q from igus can be paired with an array of different shaft materials such as stainless steel or hard-anodized aluminum; and its high-load capacity makes it a viable choice for material-handling machinery, scissor lifts, motorcycle stands, lift tables, and amusement park rides.

For More Information:

igus Home: http://www.igus.com

Université de Sherbrooke's SAE team: http://mecano.gme.usherbrooke.ca/~baja/bajasite/index.htm

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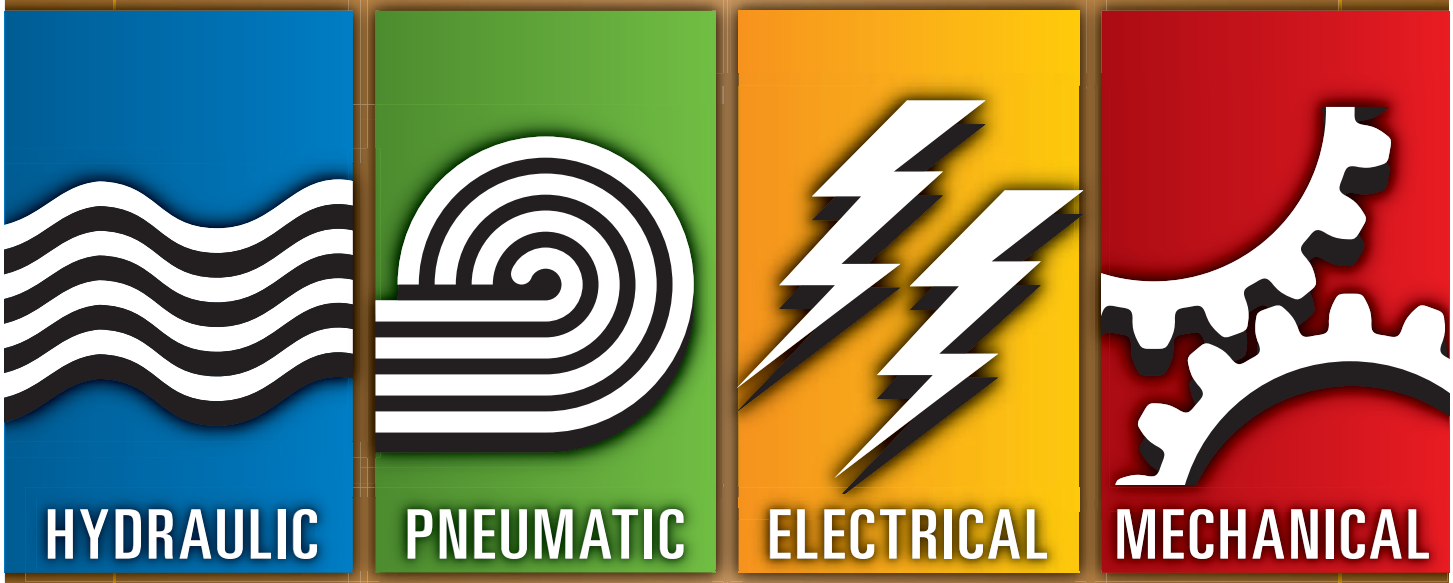

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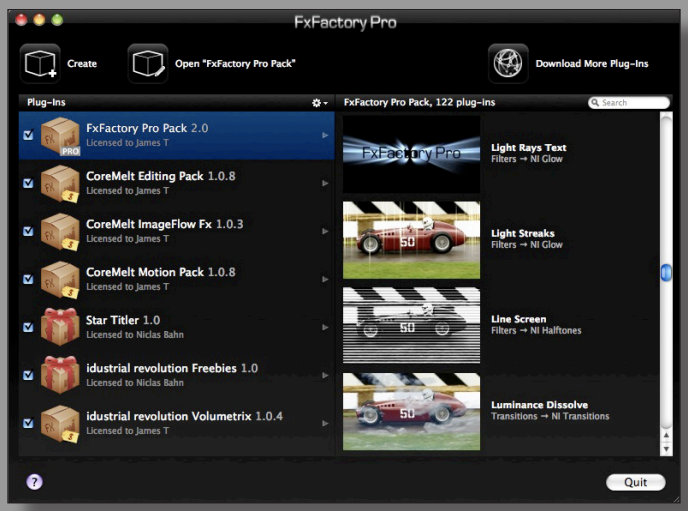
- Final Cut Pro 5.1.2
- Motion 2.1.2
- Mac OS X v10.4.7
- Macintosh computer with PowerPC or Intel processor qualified to run Final Cut Studio
- Core Image-capable AGP or PCI Express graphics card with at least



This visual effects package for Final Cut Studio, FxFactory, offers over 100 GPU-accelerated plug-ins based on the company's FxPlug architecture. Users get high performance and seamless integration inside both Final Cut Pro and Motion.

FxFactory is the first expandable effects package for Final Cut Studio, sporting a plug-in management system tied to the FxMarket online visual effects repository. New plug-ins can be downloaded from FxMarket and installed on any system with just one click of the mouse. The company's pay-per-use solution allows users to try new effects for free, and to purchase only the effects needed for the particular project.

Unlike other effects packages, FxFactory does not limit the user to the effects and parameters developed by the company. Existing plug-ins can be improved to perform specific tasks required by any projects. New ones can be developed from scratch to lend a fresh look to a special project being worked on. FxFactory is the only software that lets the user do all this without writing a single line of code.

FxFactory leverages modern graphics technologies at the heart of Mac OS X to accelerate all plug-ins via the graphics card, and renders in a fraction of the time of traditional approaches. Based on the node-based compositing engine Quartz Composer and CoreImage, all pixel computations are performed with floating point color accuracy without sacrificing performance.

For More Information:

Noise Industries Home:
http://www.noiseindustries.com
Noise Industries Products:
http://www.noiseindustries.com/products/index.html

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High-performance, energy-efficient power supplies meet the demanding requirements of enthusiasts and performance seekers

The Corsair TX Series design features include a dedicated single +12V rail and energy-efficient circuitry capable of delivering greater than 80% efficiency ratings across 20%, 50%, and 100% load conditions, making the power supplies suitable for high-end PCs using dual-graphics cards for both gaming and professional audio and video applications.

Available in 650Watt and 750Watt models, the Corsair TX Series deliver clean and reliable, fully rated output, even at 50ºC ambient temperature. They have two and four PCI-Express 8-pin (6+2) cables on the 650W and 750W models respectively. The TX Series has been thoroughly tested and is compatible with today's NVIDIA®'s SLI® and ATI®'s Crossfire® solutions.

With active Power Factor Correction (PFC) circuitry providing a PF value of 0.99 under full load and 80% or more energy efficiency under a wide range of loading conditions, the TX Series of power supplies generates minimal heat during operation. The high quality thermally controlled double ball-bearing 140mm fan (120mm on 650W) delivers excellent air flow with quiet operation.

For More Information

Corsair Home: http://www.corsair.com.
TX Power Supplies: http://www.corsair.com/products/tx.aspx

EYE-POPPING BEAUTY
AND STUNNING EFFECTS FOR MUSIC VIDEOS

Avril Lavigne, Beyonce, Eve, Ne-yo, Velvet Revolver, Kelly Rowland and Madonna are among artists who benefit from Boutique's Creativity.

STEELE, the post-production, finishing, and visual effects boutique based in Santa Monica, has performed dazzling effects and beauty work on its latest batch of music videos for a variety of clients. Long known for its expertise in improving the look of images, the Santa Monica-based facility deployed its Quantel eQ and iQ systems to create eye-popping visuals for some of today's most popular and exciting musical performers.

Jerry Steele, Senior Creative Director, Visual Effects Supervisor and co-owner of STEELE, and Compositor/

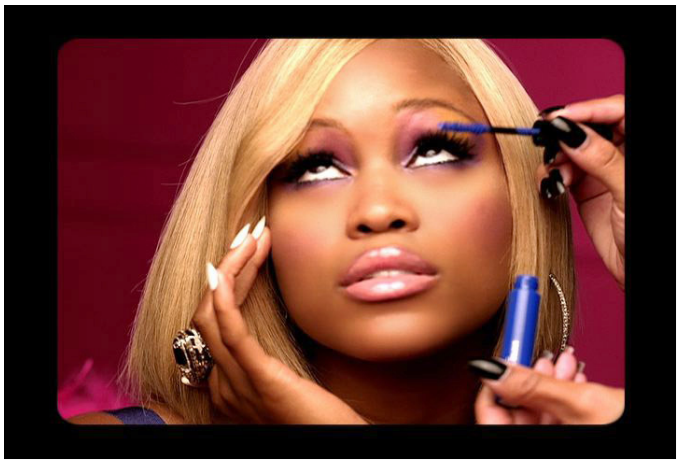
"It helped create beauty, improve color, and generate some really amazing visuals for these videos."

Digital Artist Monique Eissing, worked hands-on with the footage until they were satisfied with the final outcome. "We set very high standards," says Jerry Steele. "There was no 3D work to be done on these latest videos. We used the eQ and iQ for all of them. That worked out really well and we spent anywhere from a few days to as long as 90 hours on each one, depending on what was required to get the look just perfect."

STEELE purchased its first eQ system back in 2002, and bought the second unit a year later as a result of growing demand for HD, both in commercial and music video work. Recently STEELE upgraded one of the eQ sytems to an iQ, which is Quantel's fast and seamless system designed specifically for long-form work.

STEELE was drawn to the Quantel eQ from the outset by its elegance: it is essentially a powerful, comprehensive post-production system within a single box. Its toolset includes effects, editing, color grading, titling, versioning and restoration—with 10-bit processing throughout. "We used eQ for all sorts of enhancements," says Jo Steele, Jerry's wife, who serves as the facility's CEO, CFO and Senior Executive Producer. "It helped create beauty, improve color, and generate some really amazing visuals for these videos."

In particular, she cites Beyonce's "Suga Mama" and "Upgrade U," Eve's Tambourine, and Ne-Yo's "Because of You." All three were directed by Melina of Black Dog Films. "Melina is incredibly talented, and very hands-on" said Jerry Steele. "She sat by me all the way through



all of these. She liked the speed with which you can get things done on the Quantel eQ and iQ, but most importantly she liked the flexibility of being able to modify anything and everything at any given point. It gave her a very open workflow and allowed her to finesse the look the exact way she wanted it."

STEELE also applied its beauty work to Velvet Revolver's "Last Fight," which was directed by Rocco Guarino, represented by Merge @ Crossroads, and to Kelly Rowland's "Like This," directed by Michael Ruiz, who is represented by DNA.

Most recently, STEELE again used its magic on "Hot," the latest music video from pop artist Avril Lavigne, who is pushing her career to the next level with a new, sophisticated look. It was directed by acclaimed photographer Matthew Rolston, and features rapid cuts of Lavigne in concert and other settings to which

"What we do is make visuals that are delicious to watch..."

STEELE added elements of high glamour.

STEELE also enhanced the visuals for two commercials featuring Madonna that were made for Japans's Brillia Mare Ariake, a high-end real estate company. The Spots were directed by Steven Klein, renowned for his brilliant stylized technique, and edited by Yuki Matsumoto of Shuffle LA. In the spots the diva has a cool, sophisticated look that completely captivates the viewer.

Most of the original footage for these music videos was shot on 35mm film, ensuring that STEELE would have the highest possible quality and resolution to work with. Following the telecine process, the material was converted to DigiBeta and delivered to STEELE for clean-up and beautification. Conforming was done using both eQ and iQ from Quantel. The shots were then composited and beautified, then re-conformed back together.

Jerry Steele stresses that while the soundstages where the footage was shot are clean and simplistic, "in reality it's impossible to make the sets as clean as you want them in the video. That's what we did electronically. That's part of what beautifying means."

"What we do is make visuals that are delicious to watch," adds Jo Steele. "We beautify the video. Jerry is a real expert at creating eye candy."

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REASONS TO CONSIDER TECHNOLOGY LICENSING

Henry Fradkin, who started the Technology Commercialization Office at Ford and wrote the following story, says that there are many good reasons companies should consider licensing technology

When we started up the Technology Commercialization Office at Ford Motor Company, we needed to define our potential customer base for licensing out and otherwise commercializing Ford IP and technologies. As such, we faced a very critical hurdle that is best captured by the question: Should we license to Ford's competition?

This certainly is not a unique issue as I have encountered this "question" many times while working as a consultant with clients who are trying to improve the effectiveness of their licensing efforts.

It is vital to appreciate and acknowledge that all such efforts must be consistent with the business strategy and objectives of the company or organization. Licensing cannot proceed as an isolated tactic as it could prove harmful to the company.

So, when should your company consider licensing technology to your competitors? You should not do so until your company's technology has established a clear advantage in the marketplace. This is another way of saying that out-licensing has to be consistent with the basic business of the company; so, "advantage" may take the form of market share gain as a result of utilizing the technology in a product or process or recognized leadership in that technology sphere.

But why license your competitors? We now have arrived at the rationale for why licensing your competitor(s) is a "good thing." I used this line of reasoning to convince executives at Ford that my office should be allowed to license out even core technologies once a market and/or technology advantage had been achieved. Licensing can also be an effective way to settle infringement cases. Everything being equal, your competitor has to pay more for the technology. The competitor has to pay a royalty for the right to use the technology.

Licensing also keeps competitors from designing around your company's inventions. Licensing out your technology to a competitor or an industry supplier…and

"Licensing keeps competitors from designing around your company's inventions."

crafting a fair deal for all parties…generally discourages your competitor from conducting its own in-house R&D to design around your IP. The implications are that your company then gains control over the technology and it decreases any likelihood that your competitor could "leapfrog" your company's technology.

Additionally, depending on how well you negotiate, you can try to include a "grant-back" clause whereby

any improvements made by your licensee either would belong to or would be licensed royalty free to your company. In effect, this would make your competitor a "product development" source for your company.

Once a competitor has gained the rights to use your company's certain IP and technology, it often provides an incentive for your company's employees to develop the next generation…and thereby recapture technological leadership. An ancillary benefit is that development of a next generation or improvement could provide a new source of revenue by giving the licensing office the opportunity to create a deal leveraging the new invention's appeal.

"…development of a next generation…could provide a new source of revenue…"

If an industry has certain technology standards, then advanced efforts to license out your company's technology to competitors can establish both a "defacto" standard and become the basis for a "real" standard. Simply put, it is much better to have an industry standard based on your own technology rather than being forced to use another company's technology.

Licensing out of a technology can promote economies of scale. For technologies that may provide only a small or no competitive advantage, licensing out competitors through industry suppliers can yield substantial increases in shareholder value. For example, at Ford, we found that we could create "win-win" deals with suppliers that generated new sources of revenue through earned royalties but, perhaps more importantly, reduce part or system costs by allowing the supplier to increase its business by leveraging your company's technology…while providing a means for the suppliers to increase their profits.

Lastly, it could also be considerably less costly for a firm to recruit a key employee or employees from your company versus starting up from ground-zero to develop a technology your company is successfully utilizing. By licensing your competitor, you remove the incentive to make such a raid.

Some of what I said in the above rationale may sound like a "glaring glimpse of the obvious." Yet, I found when I was at Ford and now in providing guidance for my clients that these seemingly simple arguments convey a great deal of weight in changing entrenched company policy not to "help" competitors in any way.

Henry E. Fradkin is the founder and principal of Value Extraction LLC and formerly was the director of the Technology Commercialization Office of Ford Global Technologies, Inc., a wholly owned subsidiary of Ford Motor Company.

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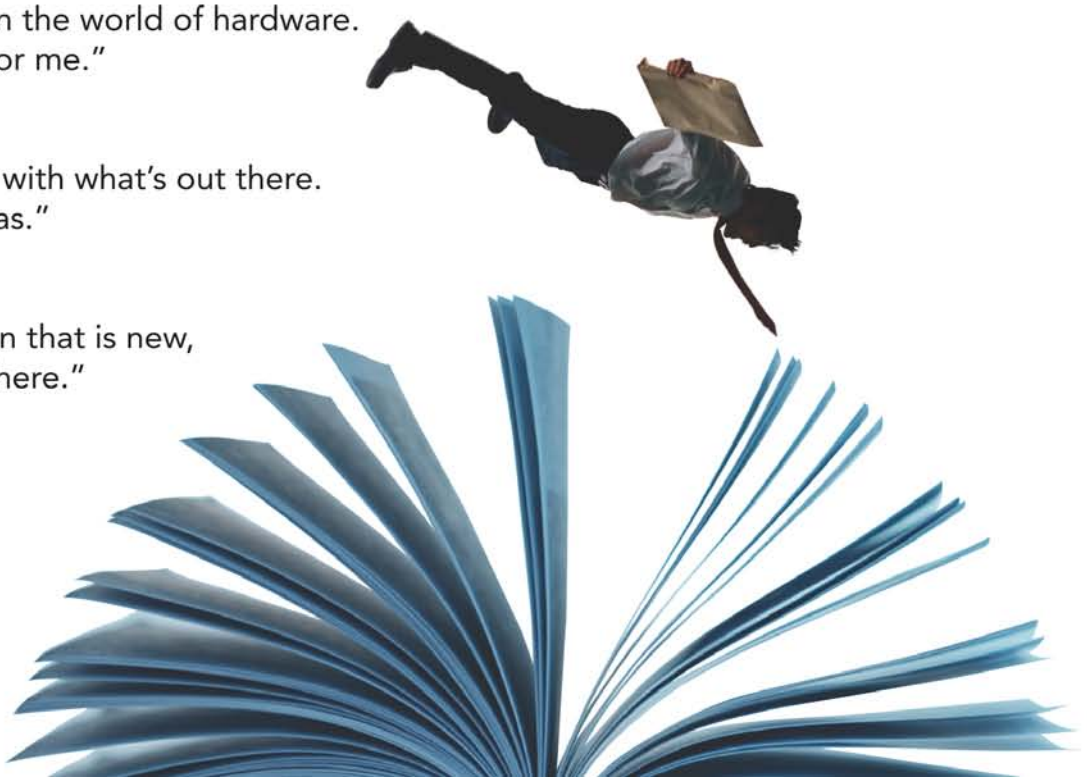

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