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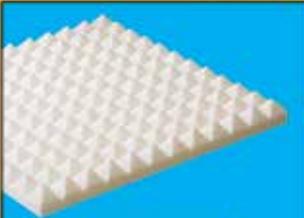
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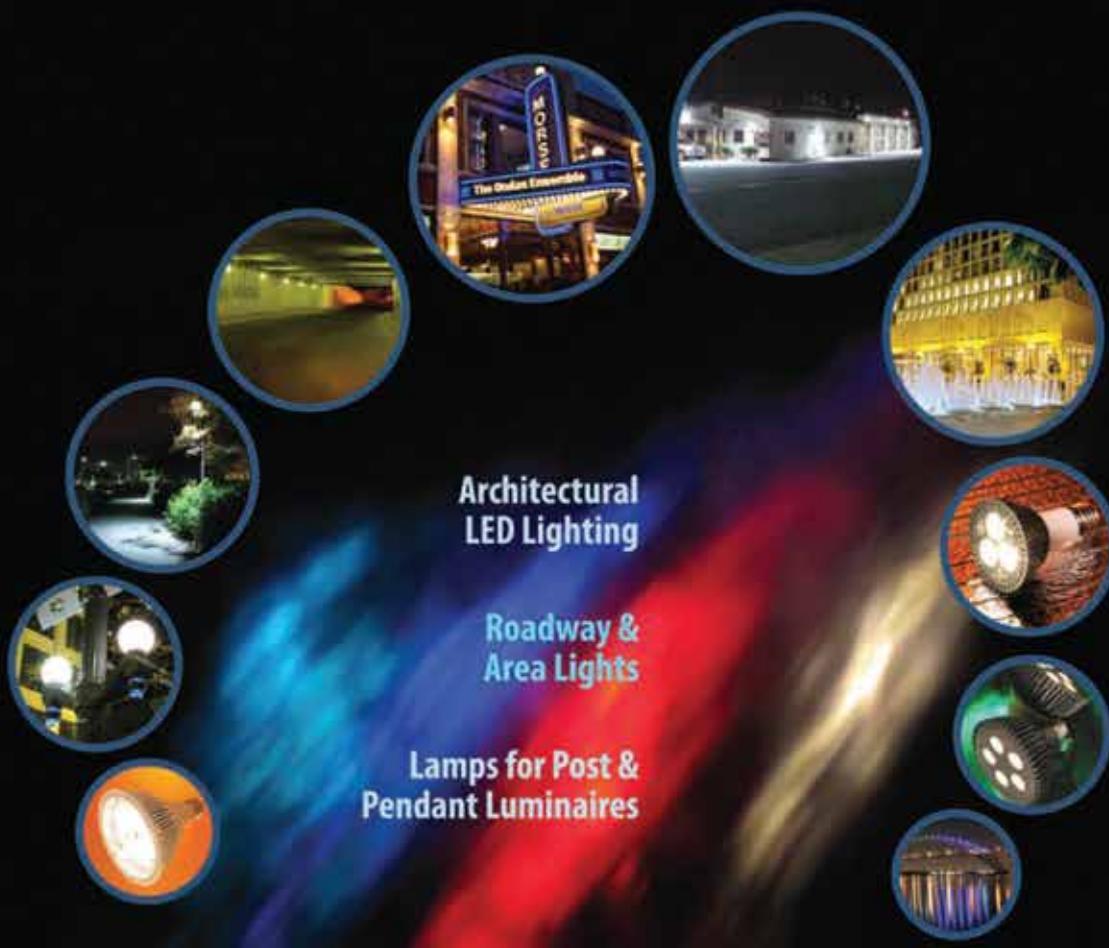


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Swivel Base of CS Unitec's MAB 525 SB Magnetic Drill Provides Easier Positioning

CS Unitec's MAB 525 SB portable magnetic drill features a swivel base for easier positioning when drilling on overhead or vertical surfaces. When attached to the workpiece, the drill provides 20° movement left and right and 5/8" forward and backward allowing the operator to adjust the center for precise drilling without deactivating the magnet and manually moving the drill.

The MAB 525 SB has a hole cutting capacity up to 2-1/2" dia. in structural steel and other metals. The 14.5 amp, double-insulated, reversible motor has a 2-speed oil bath gearbox (70-280 and 180-580 RPM) ideal for annular cutters and twist drills. Additional capabilities include twist drilling up to 1" dia., tapping up to 15/16" dia., reaming up to 7/8" dia. and countersinking up to 2". This unit has a quick-change keyless cutter system for 3/4" Weldon Shanks, saving time and money. With a 3/4" drill chuck or MT3, the MAB 525 SB easily converts to a standard drill press with a 5" stroke for conventional twist drills.

Integrated sensors in the MAB 525 SB include magnet overheating protection, visual magnet adhesion indication and an Electronic Safety Shutoff Sensor to automatically shut down the drill motor if the magnet loses contact with the material. An internal cable routing system helps protect the motor power cord from external damage. The magnet has a holding force of 8,000 lbs.




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Strategic Partnership and Licensing Agreement Between Two Market Leaders: OSG Cutting Tools with The Haimer Safe-Lock™ System

In April 2015 the OSG Corporation, a world leader in round cutting tools, and Haimer GmbH, market leader in tool holding technology, signed a strategic partnership and licensing agreement. The OSG-Group is bringing their round endmill cutting tools to the global market now with the HAIMER Safe-Lock™-System.

The OSG-Group, Japanese market leader for solid carbide endmills, has begun offering their high quality cutting tools with the HAIMER Safe-Lock™ system worldwide.

The unique Safe-Lock™ design in cutting tools and tool-holders combines a high precision press fit clamping with a positive form locking mechanism. This prevents round cutting tools from being rotated or completely pulled out from its tool holder during heavy machining. The combination of symmetrical pull out protection, highest concentricity and excellent balance of the Safe-Lock™ system, results in a vibration free machining process. This leads to a more efficient metal removal rate, that is superior when compared to conventional Milling chucks or Weldon shanked cutting tools and toolholders.

OSG has been testing various systems for pull out security over the past several months. Only the technology of the Safe-Lock™ system could convince the high-tech Japanese company. Jiro Osawa, Technical Managing Director at OSG headquarters and CEO for North America, explains: "Our field testing proved that the combination of our endmills with Safe-Lock™ resulted in higher RPMs and feed rates even with difficult-to-machine materials. This enables our customers to obtain a significant increase in their current metal removal rates, while at the same time having a higher security in their machining processes. Safe-Lock™ also has a very positive effect on tool wear."

For the globally oriented corporation that is represented in 29 countries with 52 subsidiaries, over 5,000 employees and annual sales of approx. one billion US dollars, there was one further crucial factor, as Jiro Osawa argues: "In addition to the absolute technical superiority of Safe-Lock™ compared

to alternative systems, it is the only system that is actually in high demand globally and also available in various clamping methods. Since we are not only in Japan but also well represented in North America and in Europe, we have decided to sign this license agreement and integrate the Safe-Lock™ design into our tools worldwide." OSG is headquartered in Toyokawa, south east from Tokyo, where it has its solid carbide endmill production, coating facilities and production halls with the most modern CNC grinding machines. Due to these manufacturing capabilities, the company is able to insure the highest level of quality and availability of their tools. An additional global production network enables the demands of local markets and customer needs to be met with fast delivery and the highest of service and support.

Andreas Haimer, President of the Haimer Group, explains: "We have established Safe-Lock™ as a standard in roughing and heavy machining for which a variety of tools are available worldwide. We are very proud and happy to have reached a strong partnership with OSG, one of the largest and leading producers of tools in the world."

Since its launch in 2007, the Safe-Lock™ System has developed very successfully and excited many international customers. Last year alone, the growth was four times higher compared to previous years. This boom can be attributed to recognizing that the productivity increases resulting from the pull out protection is not restricted to typical aerospace applications but the cost and time savings can also be used in any typical milling application.



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DP Technology Corp. Announces the Release of its Innovative CAM Solution ESPRIT 2015 to Increase Productivity and Automation

Industry innovator DP Technology Corp. is pleased to announce the release of a new version of its pioneering flagship product ESPRIT® 2015. ESPRIT helps increase productivity for a full range of machine tool applications by generating more efficient toolpaths while also saving time by providing substantial improvements in computer numerical control (CNC) programming productivity. Besides increasing productivity, the release also provides many new and improved features specifically in the areas of intelligent machining, strategic machining, CAD-CAM data exchange and Cloud-Enabled CAM.

Intelligent Machining

Intelligent machining features in ESPRIT 2015 accelerates the machining process by providing new and unique 5-Axis cycles that reduce cycle time. This makes it possible to completely machine blades in a single setup. ESPRIT's

5-Axis Blade Roughing tool motion is morphed across the blade from any size stock shape to uniformly offset stock allowance so it can be immediately followed by a finishing cycle.

"ESPRIT 2015 offers unique features in 5-axis to make complex machining more efficient, allowing users to have more tool path options with features like blade roughing and chamfering," said Cedric Simard, Global Marketing & Communication Director of DP Technology. "ESPRIT 2015 blade roughing enables users to remove material down to uniform stock around the blade and eliminates the need to follow semi-finish cycles. Users in the aerospace, energy, medical and automotive industries will benefit the most from these time-saving operations for precision parts."

The Port Roughing cycle, another intelligent machining improvement in ESPRIT 2015, is a brand new 5-Axis cycle.



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It creates a 5-axis roughing operation to remove the material inside an area where the tool must enter through a restricted opening. The shape of the toolpath is an offset of the port surfaces, starting at the surface and proceeding inward at a constant stepover.

Productivity Boost

ESPRIT 2015 also includes features that increase machining productivity. The new Bottom Up roughing strategy helps take ESPRIT's ProfitMilling high speed material removal cycle to the next level. The new Bottom Up strategy lets you attain a small residual stock height during the stock removal process. Even more, it can be combined with ProfitMilling – our unique high-speed machining roughing technology – for a major improvement in overall productivity. ProfitMilling optimizes toolpaths with engagement angle, chip load, lateral cutter force and material removal rate to massively reduce cycle time and increase tool life.

Strategic Machining

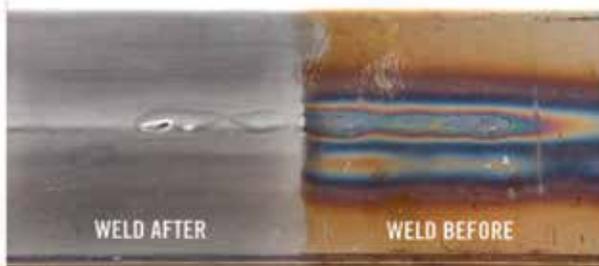
The strategic machining capabilities of ESPRIT 2015 have been expanded with completely redesigned stock automation capabilities for multi-tasking machines with mill, turn and drill capabilities. Available for the Facing, Contouring and Pocketing milling cycles, the new stock automation function maintains awareness of the stock removed by previous operations to generate cutting passes only in areas where stock remains. This function greatly reduces air cutting which in turn drastically reduces cycle time.

Additional strategic machining improvements have been made by providing support for slot mill tools in the Port Milling and Composite cycles. Slot mill tools save machining time on operations as tee-slotting and square shoulder milling and their geometry generates lower cutting forces in soft materials and unstable setups which increases tool life. Barrel-shaped cutters are now supported in 5-Axis Blade and Composite cycles. Barrel-shaped cutters provide a much better surface finish than ball end mills because their geometry provides a larger effective radius of engagement, resulting in smaller cusps between toolpaths.

CAD to CAM

New data exchange features in ESPRIT 2015 make it easier ever before to move information from your CAD system into the CAM environment. Three new geometry types -- sketches, feature profiles and curves -- are now available through ESPRIT FX data exchange from Dassault Systeme

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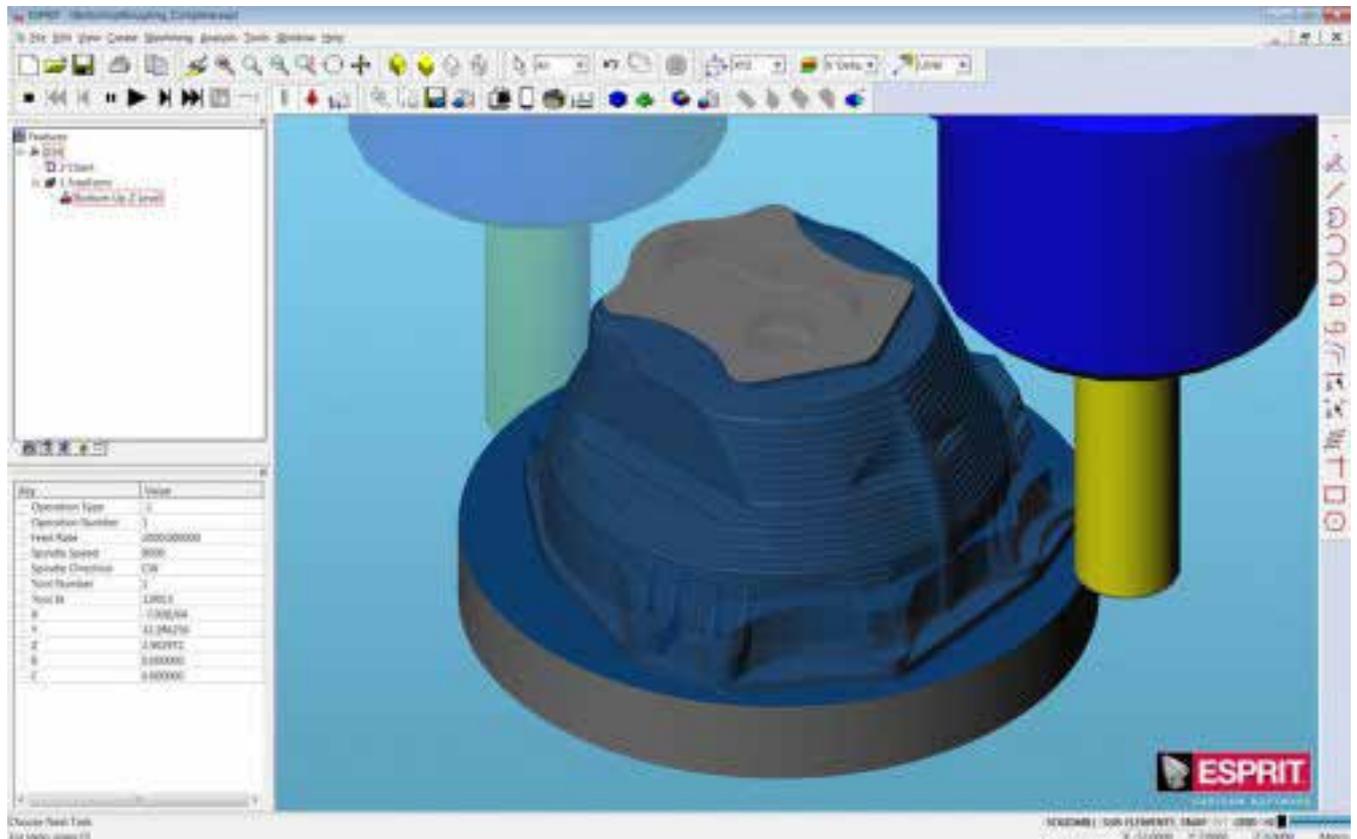
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mes CATIA, Parametric Technology Pro/ENGINEER and Siemens NX/UG. The additional information obtained from these geometry types can be easily manipulated to cover complex areas for roughing operations or extend surfaces to get a better finish on edges.

ESPRIT 2015 provides another important improvement to shorten programming time by increasing the accuracy of automated feature recognition. The enhanced Auto Chain support for solid faces, loops and edges lets you create chain features directly on solid models. In addition, a redesigned wall feature recognition command automatically recognizes the upper and lower limits of walls, even tapered walls, in a solid model.

Cloud-Enabled CAM

ESPRIT 2015 allows you to select tools based on the features of your parts in minutes — saving you the drudgery of flipping through catalogs to find ideal tooling. With the ESPRIT MachiningCloud Connection, programmers have access to complete and up-to-date tooling product data, cutting hours of programming time by eliminating manual tool creation. ESPRIT 2015 simplifies the selection of cutting tools and automatically obtains the recommended ones.



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Waterjet systems manufacturer Jet Edge Minnesota Solar Vehicle Project (UMN) composite chassis components

St. Michael-based Jet Edge is one of several Minnesota companies helping the student solar car team design and manufacture its two-person Cruiser Class car that will compete in the 3-day Formula Sun Grand Prix track race at Circuit of the Americas in Austin, Texas, in July and the 3000 km (1877 mile) World Solar Challenge in Australia in October.

The 40-member student-run team has been working on Eos for a year and a half and plans to unveil it sometime in early July, said team engineer Jacob Herbers. Until then, all design improvements are being kept under wraps.

Eos is the UMNSVP's 12th car since the project's inception in 1990. The project has raced numerous times in both the American Solar Challenge and the World Solar Challenge. Over the years, the project's teams have placed either first or second 15 times and have travelled to Canada, Australia, Japan, and Taiwan. The project has given students invaluable real world experience as they are responsible for designing, funding, building, testing, and racing each vehicle. It also has helped advance solar technology by serving as an innovation test bed, and has helped advance electric motor technologies, paving the way for today's successful electric car companies.

The project has benefited from the tremendous support of Twin Cities businesses, noted Herbers, who recently completed his undergraduate degree in mechanical engineering.

"There are hundreds of different parts in the car, including the carbon composite outer shell, the carbon and fiberglass composite chassis panels, aluminum and steel mechanical components, solar cells, electric motors and controllers, lithium-ion batteries, electrical wiring, etc.," he explained. "Our project would be impossible without the help of local manufacturers, who have helped us with layups, laser-cutting, tube bending, CNC milling and lathing, heat-treating, soldering and waterjet cutting."

Herbers explained that the car's chassis components and other parts are cut from as light of material as possible to help the car achieve faster speeds. The team's previous car topped out at 80 miles per hour.

"The finished weight is estimated to be 500 pounds," he said. "Every added pound of weight on the car would cause us to have to drive slower in the race."

Jet Edge's role in the project was to cut 14 parts from a 0.53" thick composite material that consisted of a layer of fiberglass on either side of 0.5" thick aramid honeycomb core. The waterjet manufacturer cut the parts in its St. Michael test lab, using its



ge, Inc. recently helped the University of (SVP) by waterjetting several fiberglass parts for the team's new car, "Eos."

latest EDGE X-5® 5-axis waterjet cutting system.

Prior to cutting the parts, Jet Edge's R&D engineer Michael Wheeler and Machinist Brian Wallace worked with the team to create DXF files from 3D files supplied by the team. They then used IGEMS waterjet CAD/CAM/nesting software to produce the complicated bevels and to create the CNC programs. While the parts were already nested by the team, Wallace fine-tuned the nesting using IGEMS to save material.

"We cut the parts at 78,000 psi using a 0.010/0.030 orifice/nozzle combination," said Wallace. "We used 0.4 pounds per minute of 80 grit garnet abrasive. We cut the holes at 10 inches per minute and the external shapes at 60 inches per minute. We adjusted the speed down appropriately for the bevels cuts. We only had one sheet of material to work with, so we utilized our nesting software to get the most parts out of that sheet. It took about 30 minutes to cut all 14 parts."

"This was first time I've cut a honeycombed composite material with the 5-axis," Wallace said. "It worked perfect. We probably could have cut the part without abrasive, but we didn't have a lot of material to experiment with, so I decided to use abrasive. The material wasn't hard, but with the honeycomb and the bevels, you're cutting through open areas that interrupt the waterjet, and you are cutting through thicker and thinner material as it bevels."



To Herbers' knowledge, the team has always used waterjet to cut its composite components.

"It is very precise and ensures a good fit when we assemble the chassis panels," he said.

Herbers encouraged other students to get involved in the Solar Vehicle Project. The UMNSVP is open to all University of Minnesota students, regardless of their area of study, he noted. Members can have as much or as little involvement as they want, but everyone works on designing and manufacturing a part of the car and more experienced members hold leadership positions.

"It is very interesting to visit with local manufacturers and see their processes," said Herbers, who is pursuing a career that will allow him to use his knowledge to save energy and protect the environment. "I've learned a lot about how to design parts for manufacturability, and have gotten to see firsthand how parts of different materials get made, which are things that mostly aren't taught in school, and will definitely help prepare me for a career in mechanical engineering."

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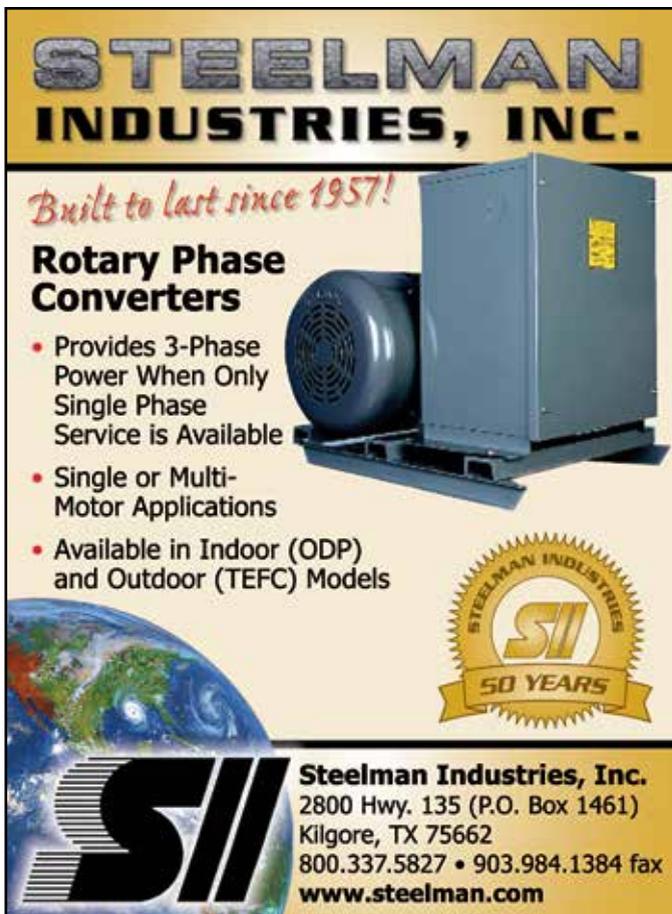
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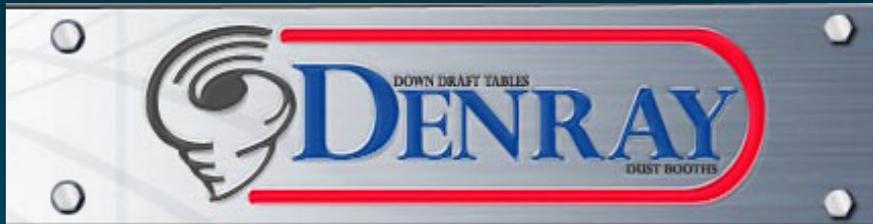
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STANLEY® Introduces Point and Click Measuring With New Bluetooth® Laser Distance Measurer

STANLEY® introduces the new lightweight and compact TLM99s Laser Distance Measurer – model STHT77343 – with Bluetooth® connectivity that syncs the TLM99s to smart phones and tablets via the STANLEY® Floor Plan App.

Senior product manager Dustin Prevete said “The TLM99s Laser Distance Measurer was designed by our team of world-class engineers and industrial designers to be a versatile electronic tool that delivers connectivity, accuracy, convenience and reliability in a simple design.”

With its automatic calculations, the Laser Distance Measurer makes job estimates quick and easy, instantly calculating square footage, volume, and distance. The multi-functional TLM99s Laser Distance Measurer is small enough to fit in a pocket and is a great tool for builders, remodelers, real estate agents, contractors, landscapers, painters, and do-it-yourselfers.

With a range of 100’ (30m), the TLM99s Laser Distance Measurer is accurate to within +/-3/32” (2mm) and allows one user to take long measurements without assistance. The simple design allows for measuring distance, calculating square-footage, and even cubic-footage. The continuous measurement function allows users to find their target distance quickly and easily.

TLM99s features an addition and subtraction function for convenient calculations in the field and can be

set to work in English or metric, or fractional or decimal modes. The handheld, battery-powered device features state-of-the-art electronics and an easy to read LCD screen that simplifies the process of taking long measurements or performing calculations.

The TLM99s can be used alone or with the new STANLEY® Floor Plan App. Available for iOS and Android™ devices, STANLEY® Floor Plan allows users to quickly and accurately create floor plans. Using a Smartphone’s or tablet’s camera, STANLEY® Floor Plan users can stand in the center of a room, automatically generating a floor plan by tapping on the screen to designate placement of room corners and doors. The STANLEY® Floor Plan App’s intuitive software estimates measurements from point to point creating a drawing of the room with dimensions. Individual room plans can easily be linked together to create a complete floor plan.

To ensure accurate room measurements, the TLM99s Bluetooth® connectivity allows users to select any dimension on the floor plan and automatically sync with the distance captured on the TLM99s. No manual entry of dimensions is necessary – in your floor plan select the dimension you want to verify, point and click the TLM99s, and move on to the next dimension. The end result is a floor plan with dimensions accurate to within the accuracy of the LDM – 3/32” (2mm).

The STANLEY® Floor Plan App automatically displays each room’s dimensions and square footage calculations providing quick reference for paint, flooring or other building materials estimates. The STANLEY® Floor Plan App also allows you to add objects such as furniture, appliances, windows, doors, and more making it an excellent space-planning tool.

Floor plans can be saved and organized in project folders for future reference, or shared with other STANLEY® Floor Plan users for free. Floor plans can also be purchased to be exported as pdf, jpeg, excel, or dxf files to be printed, shared via email, social media, or sent directly to retailers.

STANLEY® Floor Plan is now available for download through iTunes® or Google Play™. It will be free to download with a \$2.99 fee per floor plan to export, a \$9.99 monthly subscription, or a \$99.99 yearly subscription for unlimited floor plans.

The STANLEY® TLM99s Laser Distance Measurer will be available in March 2015 at mass retailers, home centers, and independent retailers for approximately \$119.99.



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Weiss Challenges Axis of Power, Efficiency & Cost: Intelligent 3-Axis System Surpasses Traditional 4-Axis SCARA Robotic Performance.

Industry leading specialist for rotary tables and automation, WEISS (Buchen, Germany), and its subsidiary WEISS North America, Inc. (Wilmington, OH), is a pioneer of direct-drive pick & place and multiple-axis modules. In an effort to advance palletizing applications that do not require the traditional SCARA (Selective Compliance Assembly Robot Arm) system's 4-axis design, WEISS has designed an economically advanced 3-axis design solution.



The major advantage of WEISS' 3-axis system is that end-users only pay for what they actually need. Thus, procurement costs for the three axes are significantly lower when compared with a 4-axis SCARA.

The key to this intelligent handling solution relies on standard components that have been proven in thousands of applications and can be combined to create perfectly matched sub-systems. For this specific palletizing example, WEISS selected a

Four Axes Are Excessive:

Traditional, tried-and-true SCARA robots remain a very popular solution for palletizing and tray packing applications. However, their typical design configuration features four axes consisting of two rotary axes and one lifting swivel unit—which is generally not needed for most palletizing applications. The bottom line is, there's no need to invest in 4 axes for the application.

In terms of figures, a SCARA robot costs on average around \$13,000—therefore the end-user pays roughly \$3,250 per axis. On average, the WEISS handling axes cost the same—but only three are required. This results in a figure of approximately \$9,750 for a handling system that covers a working space of 70 x 225 x 200 mm. Additionally, the WEISS 3-axis solution allows for an additional modular swivel unit to be used where necessary.

Ultimately, 4-axis SCARA robots typically have one axis too many for a lot of applications, can be costly, and take too long to program—especially when simpler and more economical alternatives like WEISS' 3-axis intelligent system is available.

Three Axes Are Optimal:



type HN 100 linear motor axis as the basic axis.

Permanently connected to the basic axis is the HP series direct-drive pick & place module—which forms the 2nd and 3rd axis (see Figure I below). Unlike a SCARA robot, the strokes of the axes can be precisely matched to the dimensions of the tray.

Weiss Axis Of Efficiency:

Vital efficiency advantages in the assembly process also come to the forefront when comparing the work process of the two concepts.

The operating range of a SCARA robot is limited to a semi-circle in front of it—however, the standardized DIN pallet is always rectangular. This means the SCARA robot is often seen with only three pallets, which just fit into its working range. This semicircular arrangement then makes it extremely difficult to achieve linear 'advancing' of the pallets within a fully automated assembly process—as is the norm in modern, flowing conveyor belt production processes. Furthermore, once pallets of different sizes come into play, the system has severe difficulties. A square pallet simply does not fit in with a curved robot action radius (see Figure II below). As a result, manual intervention is often the only option which may include: relocating, rearranging, or completely exchanging the pallets.

One Axis Combo Vs. Two Scara Robots:

When comparing the assembly and removal process, the difference between the two systems becomes even clearer as both stations are often positioned close together. In the SCARA scenario, there is usually only one response to this—using one robot for assembly and one for removal. This translates to a total of eight axes—with each axis costing roughly \$3,250 per unit.



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Given the sophisticated combination of various handling and axis units, the WEISS automated process is considerably more flexible. For example, two pick & place units can be positioned on a basic axis with a length of up to four meters and can work independently of each other (see Figure I & III below). Instead of eight axes, only six are required. The customer effectively pays for six axes (basic axis with two carriages and two pick & place units) and utilizes the rail of the basic axis twofold—making cost advantages compared to the eight SCARA axes even more significant.

For processes where time is not a factor, the second pick & place module is not even needed. The remaining module on the long basic axis takes care of both assembly and removal.

Axis Of Gearless Direct-Drive Advantage:

The design principle of a SCARA robot requires the use of different gears—whereas the handling solution from WEISS operates completely without gears, which is made possible by linear drives. This gearless design makes the handling system significantly more precise than the SCARA robot—which offers positioning with an accuracy of up to 0.01 mm, whereas the conventional SCARA can only manage 0.05 mm or more.

Eventually with age, the imprecision increases further due to wear on the gears. Of course, the smaller the parts, the more significant this becomes. Greater precision notably pays off even for parts with an edge length of under 100 mm. The time-consuming processes required by the SCARA robot for its image processing system and position correction are no longer necessary.

In terms of productivity, the axis combination is in another

league as the drives are screwed on directly—giving the overall system its enormous rigidity. This allows for faster acceleration and shorter cycle times.

Weiss 3-Axis Conclusion:

WEISS' 3-axis system provides a myriad of combinations that are more economical than SCARA robots for a multitude of handling tasks.

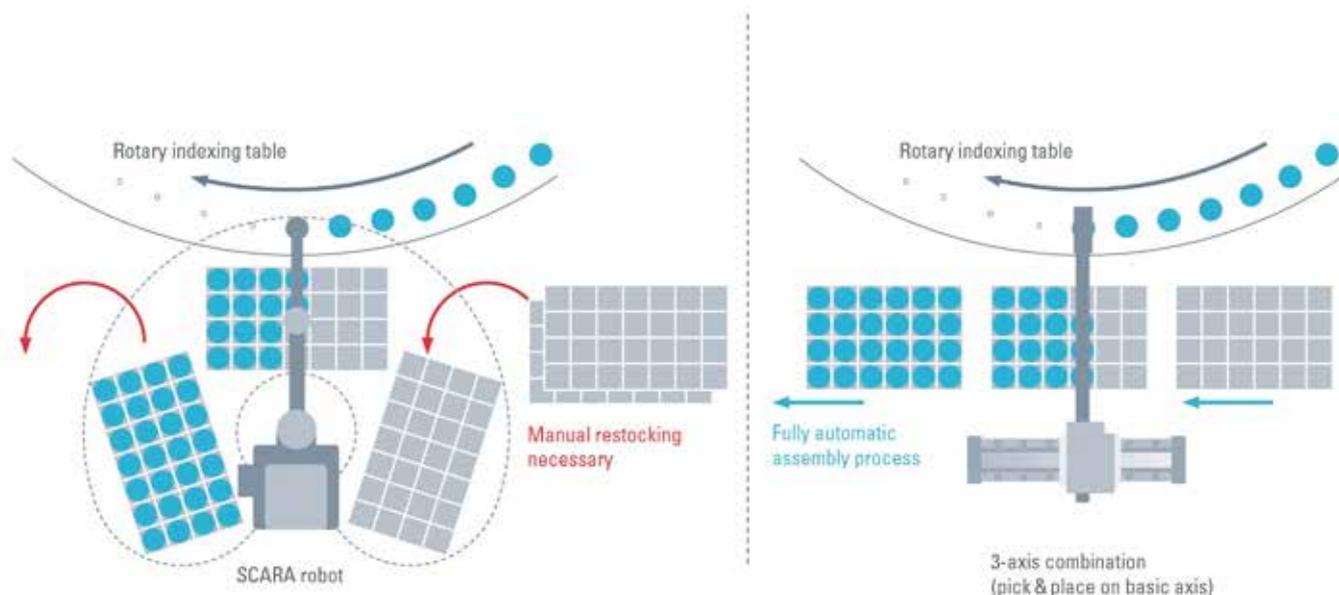
While ideal for palletizing and tray packing applications, the 3-axis system can also be leveraged for a wide range of associated applications including: automotive, medical, inspection, and electronics. In fact, the system is currently being used for the inspection of circuits in the production of electronic cigarettes.

Importantly, end-users can leverage the WEISS Application Software (WAS) to enable simple and intuitive commissioning of the system's most important parameters. This makes life easier for smaller and medium-sized plant engineering companies in particular. In contrast, the programming process for the software of a SCARA robot is still a major barrier for these firms.

Finally, the axis combinations are not only easy to commission—the demounted individual modules can also be used in other automation processes at a later stage. This may take some time to pay off, but significant dividends are ultimately achieved.

Note: Whereas the example in this study utilizes the HP 140, WEISS' HP 70 direct-drive pick & place module also can be leveraged as an option to achieve specified end-user requirements for desired results.

Comparison of SCARA robot with 3-axis combination from WEISS





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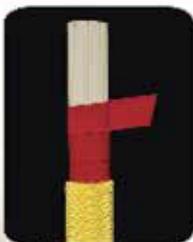
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