

Weiss

CHALLENGES AXIS OF POWER, EFFICIENCY OF COST WITH 3-AXIS DESIGN

In an effort to advance palletizing applications that do not require the traditional Selective Compliance Assembly Robot Arm (SCARA) system's 4-axis design, Weiss has designed an economically advanced 3-axis design solution.

Traditional, tried-and-true SCARA robots remain a 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.

In terms of figures, a SCARA robot costs on average around the same, per axis, as a Weiss 3-axis solution. Eliminating the fourth axis when only three axes are required is more cost effective. Additionally, the work envelope of the SCARA is difficult and costly to guard. The Weiss 3-axis system offers a compact envelope allowing for a more cost effective safety solution.

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

The key to this 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 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 axes. Unlike a SCARA robot, the strokes of the axes can be matched to the dimensions of the tray.

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 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 does not fit in with a curved robot action radius. As a result, manual intervention is often the only option for relocating, rearranging, or completely exchanging the pallets.

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.

Given the combination of various handling and axis units, the Weiss automated process is more flexible. For example, two pick and place units can be positioned on a basic axis with a length of up to 4 m and can work independently of each other. Instead of eight axes, only six are required. The customer effectively pays for six axes (basic axis with two carriages and two pick and place units) and utilizes the rail of the basic axis twofold.

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

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 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. 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.

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

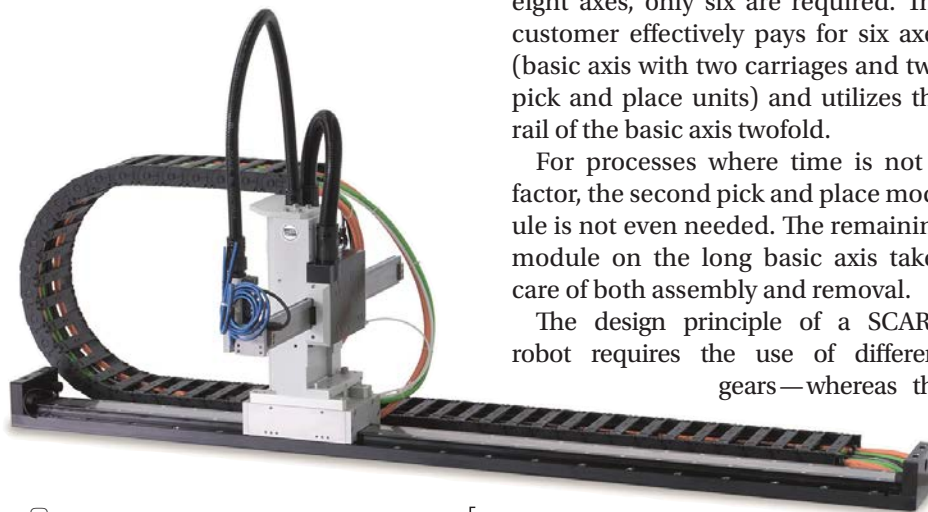
While designed for palletizing and tray packing applications, the 3-axis system can also be leveraged for a wide range of associated applications including automotive, medical, inspection and electronics. The system is currently being used for the inspection of circuits in the production of electronic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

For more information:

Weiss North America, Inc.
Phone: (888) 934-7762
www.weissna.com



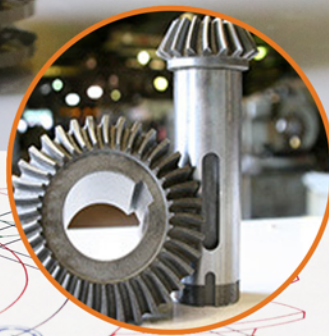


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Santasalo

LAUNCHES QUATRO+ PLANETARY GEARS

Santasalo recently introduced their new series of planetary gear units to the global industrial market. The new Quatro+ range offers higher torques without the requirement to increase the gear unit size or weight. In addition, an extended bearing life up to 200% higher than the original Quatro series, ensures enhanced availability of the gears and reduced operating costs.

The Quatro+ series offers nominal output torque up to 1,427 kNm, up to 30% increase on the torque of the original Quatro series but with no change to the size and weight of the gear unit. Its design can be highly customized to meet the requirements of a vast range of applications in many industries.

Santasalo showcased the Quatro+ for the first time at the 2015 Hannover Fair in Germany in April. Experts on the Santasalo planetary product range were there to represent the product launch and provide experience and knowledge on both the Quatro+ and all other planetary gears offered by the business.

"Upgrading the power rating of Santasalo's original Quatro series has al-



lowed us to provide our customers with a new range of drives that fulfill the most demanding high torque application needs," said Pasi Jokela, senior vice president of Santasalo Capital Sales. "With the Quatro + series, we can deliver very cost competitive drive solutions for, not only new machines, but as a replacement of existing Santasalo Quatro drives and competitor gear units. We are excited to launch this advanced technology to the global market for heavy duty planetary gear units."

For more information:

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www.santasalo.com

Suhner's

SU-FLOCK SILENT FLEX SHAFTS REDUCE NOISE IN POWER SEATS AND SUNROOFS

Flexible shafts do not create noise, but they can transmit vibrations from the power source, thus creating unacceptable sound levels. Suhner Mfg., Inc. has longtime expertise in flexible shafts technology and know-how in

noise-dampening shafts—especially for automotive applications. They supply ready-to-use assemblies according to various specs that are: proven, simple, ready-to-use solutions; virtually maintenance-free; durably designed; and environmentally friendly.

Suhner also recently developed a heavy-duty flexshaft able to exceed 3,500 inch-pound in braking torque while offering a bend radius of less than 20 inches. This 1" core diameter shaft is characterized by its strength and flexibility, allowing it to achieve the most difficult tasks.

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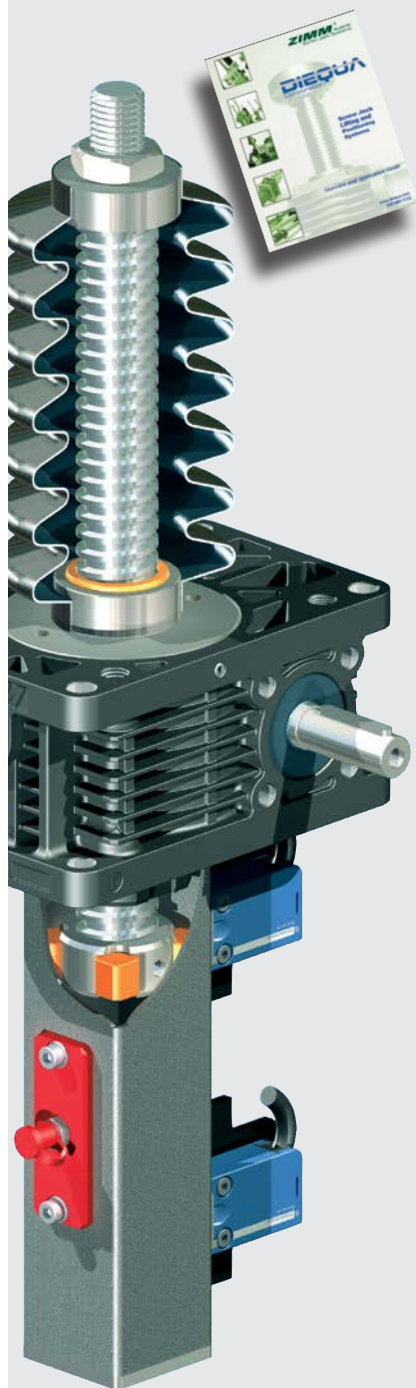
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Control-Flex Couplings

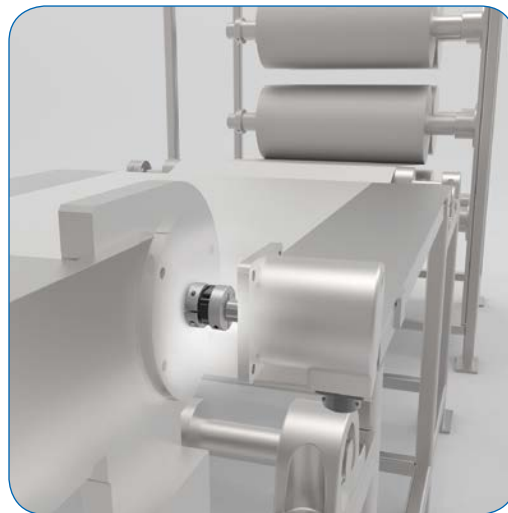
FROM ZERO-MAX OFFER ELECTRICALLY ISOLATED DESIGN

Control-Flex couplings from Zero-Max are designed for encoder applications. Where speed and positioning feedback in a system is critical, Control-Flex couplings help minimize a system's reaction forces for more precise and repeatable operation and longer life.

Designed with a parallel linkage-style flexible disc, Control-Flex provides radial flexibility to reduce reaction forces such as side loads on shaft bearings and seals that can be caused by shaft misalignment. The Control-Flex disc allows parallel, angular and axial shaft misalignments while maintaining constant transmission of torque and angular velocity.

Designed with aluminum clamp-style, zero backlash hubs, the Control-Flex provides a low weight/low inertia solution. Electrically insulating flex discs prevent electrical current passing between the system shafts through the coupling. These discs are made of a compound selected for its flexible durability and dielectric qualities.

Precision designed, Control-Flex couplings consist of two hubs (to be attached to the system shafts) and a center flex member. This flexible member is affixed to the hubs through quality pins that make separating easy if required. Two versions of the coupling are available: a single-flex disc ver-



sion for standard torque capacity, and a two-flex disc version for increased torque capacity and torsional stiffness.

Control-Flex couplings are a better option for high-precision applications than standard beam style couplings which tend to vibrate and break. Control-Flex also offers electrical isolation and lower reaction loads than many other coupling options. Control-Flex couplings are ideal for use in packaging, medical device, machine tool, conveying and automated assembly systems that utilize encoder feedback devices.

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www.zero-max.com

Fenner's

NEW HIGH PERFORMANCE CONVEYOR
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DOWNTIME

Fenner Drives recently announced the launch of a new high performance link belt for conveying: Tango Belting. Tango Belting offers customers a conveying solution without the unwanted downtime of welding. Available in standard profiles, Tango Belting drops right into existing equipment.

Tango Belting offers many benefits over traditional polyurethane belting: no welding; easy, fast installation; longer belt life; and resistance to harsh



environments. Making Tango to length onsite eliminates the need to purchase and hold numerous different spare endless belt lengths.

For more information:

Fenner Drives
Phone: (717) 665-2421
www.fennerdrives.com

TB Wood's Sure-Flex Plus Sleeves

OFFER HIGHER TORQUE RATING

TB Wood's new Sure-Flex Plus EPDM and Neoprene sleeves have a 30% higher torque rating, allowing many common applications to use a one-size-smaller coupling at an average 25% cost savings. This lowers the cost of both the initial coupling purchase and future sleeve replacements.

Testing has shown that size-for-size Sure-Flex Plus sleeves last more than 3X longer than the competition. The longer service life in demanding applications reduces required maintenance and associated replacement cost.

The Sure-Flex Plus sleeve design is 100% compatible with all existing TB Wood's and competitive coupling flanges. Retrofitting a sleeve eliminates the need to replace the full coupling. A new, easy-to-use online selection program, 3-D CAD models, e-catalog, and interchange guide are available at www.tbwoods.com/sureflexplus.

For more information:

Altra Industrial Motion
Phone: (815) 389-6227
www.tbwoods.com



Krohne

INTRODUCES THE OPTIWAVE 5200 C/F

Krohne, Inc. recently introduced the Optiwave 5200 C/F, a new 10 GHz FMCW radar level meter for liquid applications in up to a 30m/98 foot measuring range. The cost effective 2-wire loop powered device measures level and volume in storage or process tanks with process conditions up to 250°C/482°F and pressures up to 40 bar/580 psi. for general purpose or hazardous locations. (Class 1/Div 1)

Together with the recently launched

Optiwave 2200 C/F TDR level meter, the Optiwave 5200 C/F has been designed and developed for use in SIL 2 safety-related systems according to IEC 61508.

The Optiwave 5200 C/F electronics are compatible with a wide selection of antennas. The PP and PTFE Wave Horn antennas are process sealed by their antenna material instead of a traditional process seal construction with "O" ring gaskets. These gasket free antennas are suited for corrosive environments. The PP antenna can be mounted on process connections as small as 1½ inch. The metallic horn and waveguide antennas use a dual seal mechanism, which is a combination of "O" ring gaskets with Krohne's Metaglas process interface design, for a completely hermetic seal in highly toxic or explosive applications.

The modular design of the housing with its unique bayonet

locking system and antenna extensions ensures suitability for a variety of mounting positions and applications. To make the display screen easy to read, the quick coupling system permits 360° housing rotation. The housing can also be removed under process conditions. The remote converter version Optiwave 5200 F features full display and configuration capability up to 100 m/328 feet away from the antenna.

Fully compatible with all installed Krohne BM 70 flange systems, this new meter can also upgrade any BM 702 radar level meter with enhanced measurement performance and features and is compliant to newer requirements such as SIL and NAMUR guidelines.

For more information:

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With its recently extended ranges of DC motor controllers, Sprint Electric has a comprehensive offering of products incorporating the latest digital DC drive technology. All DC Drive products and their ancillary items are now available from stock. The product lines include a wide range of DC motor control, with over 450 models covering both 1 phase and 3 phase, regenerative and non-regenerative DC motor applications, together with field controllers, digital slip ring motor controllers and external thyristor stack controllers.

"We know how important it is for our customers to receive their orders without delay," said Gary Keen, managing director of Sprint Electric. "The ex-stock availability of our products, often with direct equivalents for competitor models, allows users to source the DC drives they need without having to suffer a lengthy lead time. We operate predominantly in the upgrade/retrofit marketplace where downtime on machines cost money."

According to Keen, up to 87% of orders get dispatched from the factory in Arundel on the day of ordering.

The product offering includes DC drives of the PLX range, which are able to regenerate energy back to the mains supply under braking without the need

for expensive, complex intermediate storage, resistive dumping or additional power bridges. PLX DC drives are compact, powerful, flexible and easy to program, and available in current ratings between 12 and 2250 Amps at supply voltages up to 690 VAC.

Designed for use with permanent magnet brushed DC servo motors, DC motor controllers of the XLV range are rated from 2 to 12 Amps and suitable for use on DC supplies up to 48 V. The miniature, fast response DC motor speed controllers are offered in a compact, easy to use DIN rail mounting package.

The full range of products covers analogue DC drives from 2 up to 330 Amps, digital DC drives from 12 up to 2250 Amps and digital slip ring motor controllers from 12 to 1680 Amps. Whether in retrofits or original equipment, DC drives from Sprint Electric are being used in many different applications including metal processing, the pulp and paper industry, rubber and plastic processing, lifting equipment, food processing, leisure industries and many more.

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NKE recently introduced all-in-one bearing units designed for use in agricultural machines that require a rotating union between a disc-shaped tool and its mounting arm. They have dubbed these rolling bearings Agri Units.

Whereas producers of agricultural machinery previously often had to buy and assemble up to ten separate components, Agri Units are a single part in the form of a fully assembled bearing unit. This cuts down on costs for the customer, since purchasing, storage and spares inventories are limited to just one component and no prior assembly is needed.

One design is for use in disc harrows with a disc diameter of up to 650 mm. The design, which is comparable with existing solutions of similar size, has a number of special features: an optimized internal geometry that maximizes load capacity and resistance to tilting motions; and a high quality grease filling in a sufficiently high quantity for the operating conditions to ensure a long lubricant and therefore bearing life as well as good corrosion protection; a highly efficient combination of seals to prevent dirt ingress into the bearing (Fig. 2). In addition to the current standard version, NKE can adapt the unit's external geometry to allow customers to integrate the unit

into existing designs or tailor it to new applications.

Agri Units can also be used in seeding discs and for liquid manure spreader discs. These bearing units aim to replace the conventional and often no longer satisfactory solutions consisting of deep-groove or double-row angular-contact ball bearings with an all-in-one compact bearing unit. In addition to optimizing the internal structure, lubrication, sealing and ease of handling of the bearing units for disc harrows, the designers focused on minimizing the unit's external dimensions.

Besides its new Agri Units product line, NKE offers standard and specialty bearings for applications such as balers, power take-off (PTO) gearboxes and track systems. NKE also offers comprehensive technical support, including application consulting and the development of customer-specific solutions as well as commercial and logistic services, such as just-in-time (JIT) delivery. NKE products are distributed in North America by Ritbearing.

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Maxon recently expanded its line of EC-i 40 brushless motors with three iron-core internal rotor drives. The drives have a diameter of 40mm and feature high dynamics, a low cogging torque, and high output torque. The strongest motor in this series offers a maximum nominal torque of 234 mNm and is 56 millimeters in length. It exceeds the performance of its precursor model by up to 70%.

The three new brushless DC motors are cost-effective and targeted towards the robotics, prosthetics, and industrial automation industries. The compact design offers a solution in applications with space constraints. When needed, the EC-i 40 High Torque motors can be combined with maxon gearheads, servo controllers, or position controllers.

For more information:

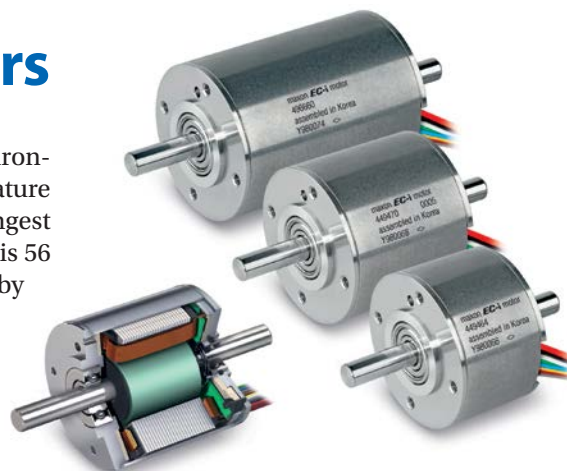
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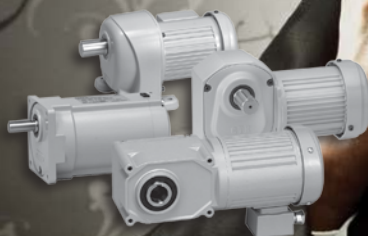
ENSURES MOTOR PROTECTION

Etel has recently introduced the IMTHP, a thermal module that serves as an accessory to Etel's torque motors, and is designed to provide absolute motor protection from overheating. It is designed to be a supplement for KTY thermistors.

KTY sensors are accurate but have a delay in their output signal if the temperature change is too quick. The IMTHP provides a corrected analog temperature signal, allowing the user to have a precise and continuous monitoring of the actual temperature in the mo-



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tor. While monitoring readings from three KTY sensors (*one on each phase which is standard on all Etel torque motors*), it uses a built-in algorithm which detects any steady increase in the KTY sensor output. It also outputs a simple digital warning/error signal that can be used without complex data processing on the controller's part and has the machine properly react if any problem is ever detected. This ensures a reliable safety measure for prototype testing and the ability to handle unexpected loads.

The IMTHP is able to take the input of sensors on each of the three phases and output them as one signal so even if the controls operating the motor only have one sensor input, all three phases can still be monitored. This is also invaluable under stall conditions where one phase would have significantly more current than the other two.

The IMTHP has the advantage of allowing engineers to not have to oversize a motor for an application, or put a limit on the current input for fear of overheating. That way an optimum motor can be selected, without incurring the cost of having to order an extra-large motor.

All these benefits ensure that fewer safety measures are necessary during motor operation, allowing optimum performance of the machine and a quick response to any unexpected overheating preventing any machine downtime when operating in the field. Etel products are distributed in North America by Heidenhain.

For more information:

Heidenhain
(847) 519-4702
kstoneski@heidenhain.com
www.etelusa.com

Warner Electric Custom X-Small Magnetic Brakes

REDUCE SIZE WITHOUT SACRIFICING STRENGTH

The X-Small brakes are designed primarily for engaged/disengaged holding applications – such as seat adjustment on an aeroplane – though they can provide a low cycle rate stopping action in emergency situations. As they are electrically released, they will remain engaged in the event of a power failure, which makes them suited to applications where the integrity of the holding force is imperative.

The range consists of 6 standard sizes which range from 22 mm – 33.5 mm diameter (30g – 100g) and offer up to 50Ncm of static torque. Customized bespoke adaptor flanges are available.

For more information:

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