Screwdriving Robot

Generally, a screwdriving robot has separate controls and programming for its three components, namely the screwdriver, the positioning robot and the control device. To tackle this problem, Nitto Seiko and Yaskawa Electric integrate these components into unified management to improve fastening efficiency, shorten setup time, simplify operation and save energy.

Recently the Japanese products' appearances tend to be complicated and diversified. There is greater need to automate equipment by using vertical multi-joint robots. To that, Nitto Seiko developed and rolled out SR825AR Screwdrining Robot with Yaskawa Electric (multi-joint robot expert). This robot can automatically fasten screws from different angles onto products. It also integrates positioning data from the robot and torque data from the screwdriver to monitor fastening quality in real time.

FASTENER INNOVATION ALLEY

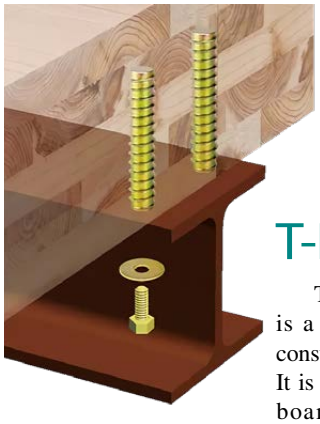
compiled by Fastener World

Insulating Bolt with PVDF Material

Developed by OHI Manufacturing, the patented OHI Insulating Bolt uses exclusive craftsmanship to coat PVDF (polyvinylidene fluoride) onto the bolt. PVDF is a material that can insulate against electricity, resist corrosion and weather impact. Coupling with a gasket, using the Bolt on the pipeline flange can prevent forming corrosive electric currents between heterogeneous materials.

Product features:

1. The PVDF coating is 0.7mm thick, strip-free and tear-free.
2. No gap between the coating and the bolt. Water-proof. Preventing microbes formation. Rust and corrosion-proof.
3. The insulating portion's external diameter is nearly the same as the bolt's.
4. Applicable temperature range: －60℃～＋120 ℃；－196℃～＋200 ℃
5. Material: SS-400, SNB7, SUS304, SUS316.
6. Size: M8-M72.
7. Target: Sewer, oil and gas, petrochemical plant, power plant, bridge, ship.



T-LSB Bolt

T-LSB made by Toneji is a bolt aimed at simplified construction and cost reduction. It is used for fastening attached boards and cross-laminated timber, and works great in wood and hybrid steel construction.

Features:

1. Different from the LSB series, T-LSB doesn't come with a hexagonal head and doesn't require countersinking on the wood.
2. Eliminating countersinking also eliminates the need to fill in epoxy resin.
3. Fastning T-LSB is simple with the use of a dedicated attachment bolt.
4. Cost-saving and shorter work time.

Loctite DRI 2250-W

Loctite DRI 2250-W offers high temperature resistance of over 200ºC and has excellent chemical resistance. Scott Simmons, Business Development Manager, North America, describes how its superior High Temperature Resistance addresses customers' frustrations with competing products: "Traditional products fail to maintain room temperature (RT) breakloose strength and can typically lose around 50 percent – and in some cases even more – of their strength at 150ºC. By contrast, DRI 2250-W maintains RT strength beyond 150ºC and in most cases can achieve this up to 200ºC."

Further advantages of Loctite DRI 2250-W include its low coefficient of friction. Tested on multiple plating surfaces, the material maintains a coefficient of friction between 0.10 – 0.16. It also shows superior performance on all plating types, including the newer zinc-flake coating, with added lubricity.

As a pre-applied film, the threadlocker is dry-to-the-touch and remains an inert coating until assembly. During assembly, microcapsules contained within the coating are crushed and release an active ingredient that initiates the anaerobic curing process. When cured, Loctite DRI 2250-W also acts as a thread sealant as well as a threadlocker. It eliminates the need to apply liquid sealants, adhesives, or any other mechanical locking or sealing device to threaded parts during manual or automatic assembly and is flow coatable for higher output speeds.

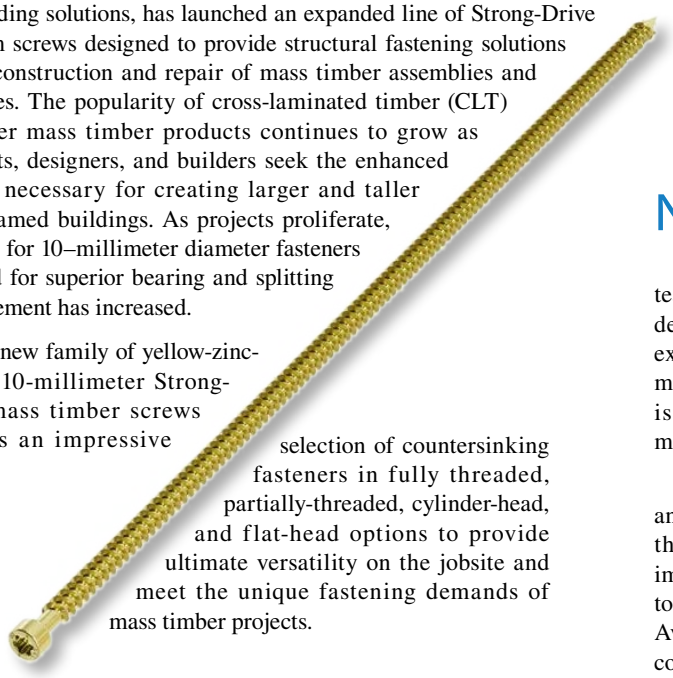
Multi-Bit Drivers with 26 Precision Tips Stored in Handle

Klein Tools introduces the 27-in-1 Precision Multi-Bit Screwdrivers, which house all the bits you need for everyday precision driving, plus an integrated 3.5 mm nut driver.

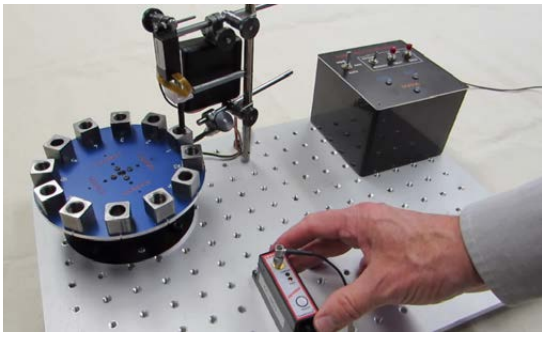
- 27-in-1 Multi-Bit Precision Screwdrivers
- On-board storage of 26 different precision tips and a 3.5 mm nut driver
- Barrel contains powerful Rare-Earth magnets for securing bits and fasteners
- Spin cap for optimum and precise control
- Industrial-strength, double-sided bits are conveniently housed in the handle, eliminating the need for a bulky bit block or case
- Cat. No. 32328 includes bits to repair most Apple® products
- Stainless steel barrel provides great impact and wear resistance
- Cushion-Grip handle for maximum comfort.

10mm Premium Strong-Drive® Structural Screws

Simpson Strong-Tie, the leader in engineered structural connectors and building solutions, has launched an expanded line of Strong-Drive premium screws designed to provide structural fastening solutions for the construction and repair of mass timber assemblies and structures. The popularity of cross-laminated timber (CLT) and other mass timber products continues to grow as architects, designers, and builders seek the enhanced rigidity necessary for creating larger and taller wood-framed buildings. As projects proliferate, the need for 10–millimeter diameter fasteners designed for superior bearing and splitting reinforcement has increased.



The new family of yellow-zinc-coated, 10-millimeter Strong-Drive mass timber screws includes an impressive selection of countersinking fasteners in fully threaded, partially-threaded, cylinder-head, and flat-head options to provide ultimate versatility on the jobsite and meet the unique fastening demands of mass timber projects.



Non-Contact ThreadChecker

The ThreadChecker by Kaman Precision Products is a teachable eddy current inspection tool, widely used for thread detection, plating presence, and absence of heat treatment, as examples. Any physical property difference that relates to material conductivity is readily detected. The ThreadChecker is ideal for use in any automated inspection process in manufacturing.

Consisting of a single electronics module compatible with any probe/material combination, the ThreadChecker can check threads regardless of part cleanliness, reducing the cost of implementation. It features five internal probes, ranging from 2 to 10 millimeters (mm) and two external probes, 6mm and 8mm. Available with a rail mounting option, ThreadChecker is CE-compliant and features IP-67 rated probes and electronics.

M12 Resin Double Nut

With unique processing technology in injection molding, Japanese Sanko Kasei manufactures industrial plastic products and has production facilities in Mexico and China. It established a production system able to manufacture large-width and complex-shape products made of long glass fiber. It has rolled out products under its original brand including lightweight and anti-corrosion resin bolts. It was successful in developing the patented one-piece and anti-loosening "M12 resin double nut" that can be coated with fluorine and can improve parts management and fastening performance.

Surface Treatment Machine for Stainless Steel Parts

The EU Construction Products Directive published in 2013 requires the use of stainless steel fasteners in exposed part of buildings which are expected to last for over 25 years. Earlier, construction fasteners were mostly in carbon steel and they can finish drilling, threading fixating and fastening in one process. While this saves time, it jeopardizes building safety due to long exposure and corrosion.

MIRDC (Metal Industries Research & Development Centre, Taiwan) said construction fasteners sold on the market are mostly bi-metal self-drilling screws comprising carbon steel and stainless steel, possessing the hardness of carbon steel and corrosion resistance of stainless steel. However, they have a complicated processing procedure, and could potentially break apart from the welded spot or be corroded on the carbon steel section.

MIRDC developed a surface treating machine to handle anti-corrosion and surface hardening treatment for stainless steel parts, providing solutions to deficient stainless steel hardness, weakened corrosion resistance and inability of mass-production. The machine can make for stainless steel surface hardness up to over HV1,200, much higher than with carbon steel and without undermining corrosion resistance.

Furthermore, the machine can batch process a large number of stainless steel parts. It can also handle complicated shapes and form an evenly hardened layer at the parts' surface. It uses AI for precise control of temperature, time and other parameters. Meanwhile, MIRDC provides IoT solutions tailored to production lines to facilitate smart manufacturing.

High Grip Insert Nut

Insert nuts are used to fasten screws and bolts into resin products. The High Grip Insert Nut by Tange Products increases the area of contact with resin and therefore doesn't easily come off from resin. A major feature is that the company makes the surface of High Grip Insert Nuts uneven only by means of stamping, which makes it easier to mass-produce High Grip Insert Nuts than machined insert nuts. The Nut has 200% to 300% more pull-out strength and greatly improves rotational torque. It is made of cod-rolled steel plates and it is toxin-free, cheap and can be used in the automotive and electrical engineering industries. Currently the company offers M4, M5 and M6 sizes and expects to sell 500 thousand pieces per month a year later.

Japanese Yahata Self-service Screw Vending Kiosk for Home Centers

Home centers are among one of Yahata Neji's sales routes. The company now rolls out a self-service vending kiosk for retailing screws. Customers will input codes representing the position of their desired screws on the shelf, as well as the amount or screw length, and the kiosk will print out a receipt. The customer will take the receipt and the products from the shelf to the cashier who will scan the barcode on the receipt to complete the purchase. This lessens workload for home center staff and reduces the time customers have to wait.

Ultra Low Head Bolt

Simply by fastening the ultra-low head bolt made by Daimaru Byoura Seisakusho, its seal ring under the head prevents leaking. This reusable bolt passed 20MPa water leak test. The ultra-low-head design enables users to mount the bolt in tight spaces without damaging the appearance. The bolt can be mounted on thin materials that don't allow countersinking, thereby reducing costs.

Features:

- Leak prevention. Improved work efficiency.
- High waterproof performance.
- Compact & lightweight.
- Cost-saving.
- Reusable. ■