

# Fastener

紧固件新品大道

# INNOVATION Alley

## New SBW4 Rail Fastening System

### 全新SBW4轨道紧固系统



Voestalpine Fastening Systems has launched the SBW4 rail fastening system, an innovative upgrade to the long-standing SBW3 system widely used in Poland's railway infrastructure. Building on decades of experience, the new SBW4 addresses key

challenges such as assembly ergonomics, electrical resistance, material weight, and automation compatibility. The SBW4 features a redesigned SB3/5 cast iron anchor and WIW60C insulating clamp that standardize clamp positioning and simplify manual installation. A hollow anchor head reduces weight by 20%, cutting production and transport costs while lowering environmental impact. The PWE6094R rail pad's improved lateral ribs enhance electrical resistance, consistently exceeding safety standards (EN 13481-2). The system is designed for integration into automated assembly lines, boosting efficiency and reducing errors. Tested rigorously at the Railway Institute in Warsaw, the SBW4 meets stringent quality and safety criteria, with all components patented for innovation. This system promises faster, more reliable track laying with a smaller carbon footprint, offering economic and ecological advantages for rail construction and maintenance.

## Next-Generation Power Pro® Fastener

### 新世代Power Pro®紧固件

This advanced wood screw by Hillman features a dual thread design that enables 30% faster installation while maintaining strong holding power. Tim Ferguson, Hillman's VP of Product and Engineering, highlighted the fastener's ability to eliminate pre-drilling with a self-starting tip and optimized threads that reduce wood splitting. The screw also includes a star drive to prevent cam-out, integrated countersinking blades for clean finishes, and a no-split twist shank for durability.

Designed for decks, subfloors, framing, and fences, the Power Pro fasteners improve speed and efficiency in wood construction. Hillman plans to release complementary accessories in Q3 2025, such as magnetic tool holders and TrapJaw® spring-loaded pouches, along with durable beams and joist tapes.



## Hidden-Fastener Solar Mount

### 太阳能支架用的隐藏式紧固件

Martin Roofing and Solar has won a prize from the U.S. Department of Energy's Solar Energy Technologies Office (SETO) as a semifinalist in the American-Made Solar Prize program. The company's innovation, the Hidden-Fastener Solar Mount (HFSM), is designed for asphalt shingle and composite slate roofs and eliminates the need to drill holes in the exterior roofing layer.

Unlike traditional solar mounts that penetrate all roof layers, HFSM installs beneath the roofing layer by attaching through the nail strip. This method avoids removing shingles; installers simply lift the shingle seal, install the mount, then reseal the shingles to cover fasteners. It can be used on existing roofs or integrated during reroofing, a common time for solar installation.

Constructed from durable, U.S.-made 5052-grade aluminum, each mount weighs just 0.6 lbs. Preston Nelson, Martin Solar's director, highlights HFSM's ability to virtually eliminate leak risk, offering installers greater confidence in rooftop solar installations.



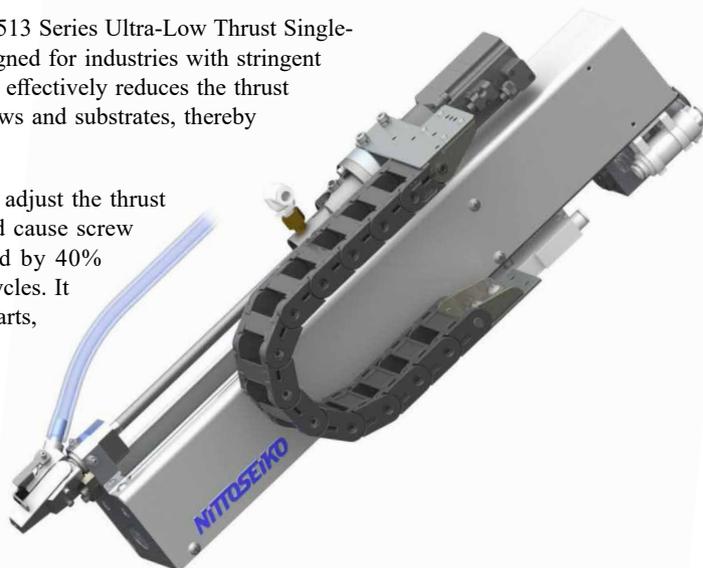
Ultra-low Thrust Single-axis Automatic Screw Driving Machine

超低推力单轴自动螺丝锁付机

Nitto Seiko (Japan) officially announced the new "FEEDMAT® FM513 Series Ultra-Low Thrust Single-Spindle Automatic Screw Driving Machine." This new product is designed for industries with stringent component performance requirements such as the automotive sector. It effectively reduces the thrust applied during screw fastening, minimizing the risk of damage to screws and substrates, thereby enhancing product quality.

The new model employs digital thrust control technology to finely adjust the thrust during the fastening process, preventing excessive pressure that could cause screw seizing or substrate deformation. It also increases fastening speed by 40% compared to traditional products, significantly shortening production cycles. It is especially suitable for fastening screws in deep or specially shaped parts, meeting the demands for both "finer" and "faster" fastening.

Nitto Seiko emphasizes that this product integrates a screw feeder, fastening unit, and controller into a comprehensive system. Combined with last year's high-precision low-torque NX driver, it creates a rare complete screw fastening solution in the industry, providing a more efficient and reliable technological platform for automated production lines.



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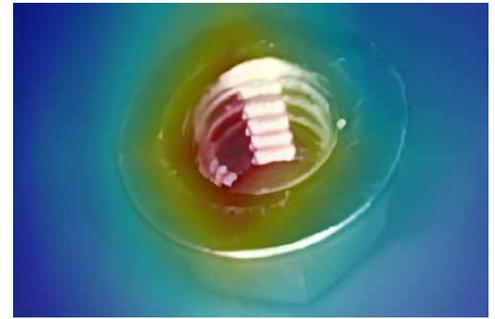


## AI Inspection Machine QV-7100AI

### AI检测装置QV-7100AI

K&K Engineering's new inspection machine, the "QV-7100AI," utilizes AI to distinguish between good and defective products, while also enhancing the user operation experience. The goal is to reduce the workload of on-site inspection tasks.

The QV series inspection machines are centered around "High Quality Vision System," offering customized models tailored to different inspection targets and building a solid track record. The newly launched "QV-7100AI" emphasizes operational efficiency and user experience on the shop floor. Through repeated research, the AI-based recognition function is integrated with an intuitive user interface, enabling quick setup and precise inspection. This model further expands the QV series product line and strengthens the company's technological presence in the field of automated inspection.



## 4.8 Tension Control Bolt

### 4.8张力控制螺栓

Tsukimori Kougyo developed this product to enable visual confirmation of fastening completion while ensuring stable axial force. Testing on M20 specifications under 280Nm tightening torque showed that after a 17-minute NAS vibration test, traditional hexagonal 4.8 bolts retained only 180Nm (64% of the original torque), whereas this product maintained 260Nm (93%), improving the axial force retention by 44%. The technology originated from a 2021 R&D project subsidized by Japan's Ministry of Economy, Trade and Industry, and secured a patent in 2022. Combining specialized wrenches with cold forging techniques, it streamlines installation while ensuring torque accuracy, supporting specifications up to M36 and offering innovative solutions for anti-loosening needs in construction parts. ■



Compiled by Fastener World

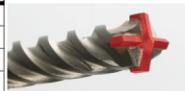


CONCRETE SCREW SUPPLIER

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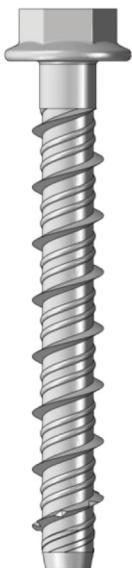
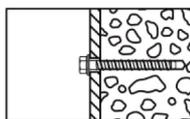
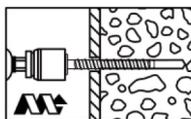
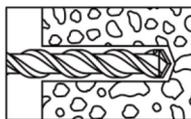
#### ANSI-B212.15

Anchor Size (mm)	Nominal Diameter of Drill Bit (mm)	Tolerance Range (mm)-(D)
M6	6.0	6.15-6.40
M8	8.0	8.20-8.45
M10	10.0	10.20-10.45
M12	12.0	12.20-10.50

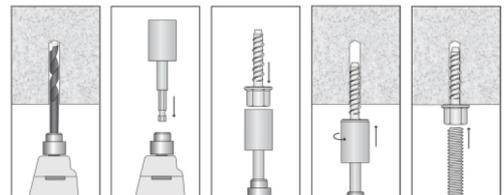
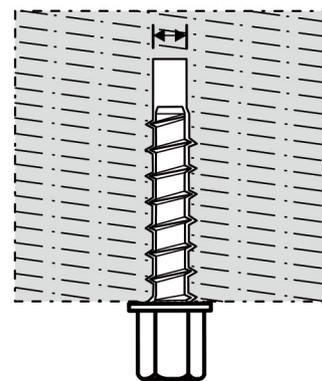


#### Installation information

- Using the proper size carbide bit, drill a pilot hole at least 0.5 deeper than the desired anchor embedment.
- Clean the hole using a nylon brush and compressed air.
- A. Solid Concrete:** Using an electric impact wrench, or socket wrench, insert anchor through the fixture into hole and tighten anchor until fully seated. If using an electric impact wrench, start on light torque setting to prevent over-torquing or damaging threads.
- B. Concrete Block:** Using a socket wrench insert anchor into hole and hand tighten anchor until full seated. Do not use an impact wrench for installation into Concrete Block walls.



Drilling Diameter (metric)



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