FASTENER INNOVATION ALLEY

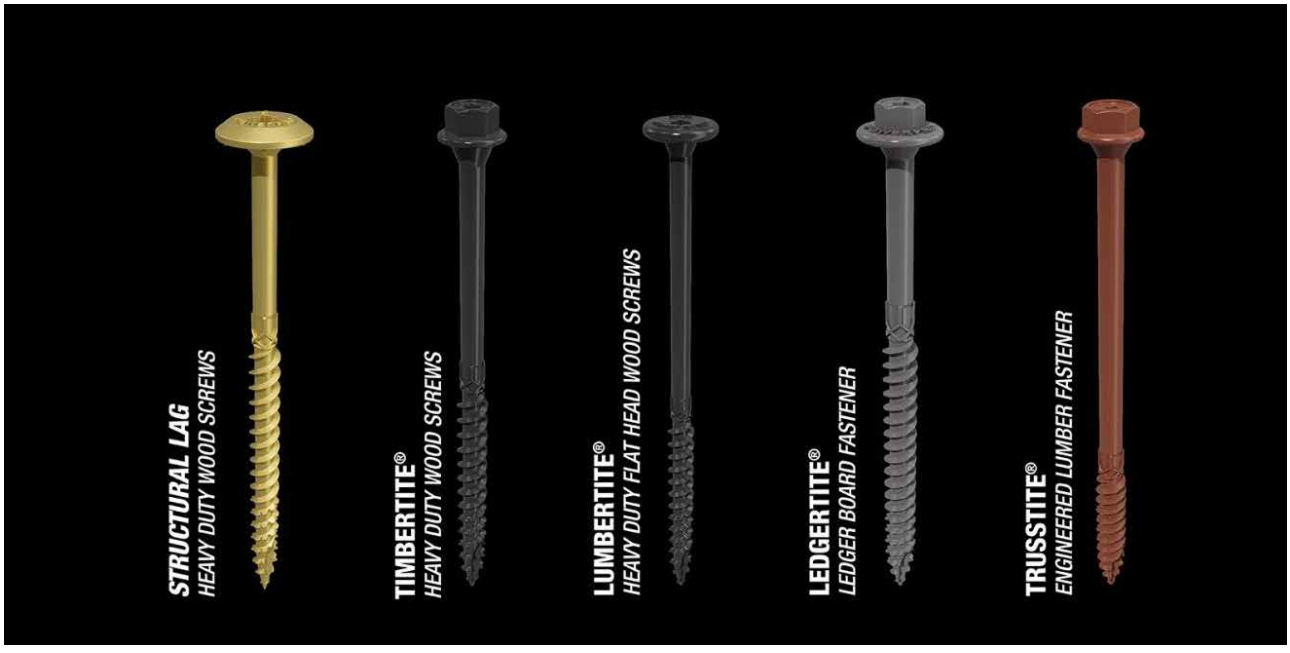
compiled by Fastener World

扣件新品大道

PowerPro® Structural Wood Screws

PowerPro® Structural Wood Screws available from Hillman are engineered for speed, low energy consumption, strength, and durability. A complete line of innovative Building Code Approved Structural Screws that outperform other fasteners. The new program provides a vast selection of screw sizes and head styles. The patented screw design offers features that are unmatched in the category and set a new benchmark for performance.

- Structural LAG – General purpose structural fastener designed for wood-to-wood construction and ideal for a variety of indoor and outdoor projects. Star-drive screw with low-profile head. 1/4", 5/16" & 3/8" diameters, lengths up to 12".
- TIMBERTITE® – Heavy-duty structural fastener ideal for landscape walls, decks, fencing, and other wood-to-wood connections. Hex-head screw. 1/4" diameter, lengths up to 10".
- LUMBERTITE® – General purpose, heavy-duty structural wood fastener designed for wood-to-wood construction without pre-drilling. Star-drive screw with low-profile flat head. 1/4" diameter, lengths up to 12".
- LEDGERTITE® – Designed to fasten the ledger board directly to the rim joist of a house without pre-drilling or the need for a washer. Hex-head screw with built-in washer. 5/16" diameter, 3-5/8" & 5" lengths.
- TRUSSTITE®– Designed to join engineered lumber together (LVL, PSL and LSL). Typically, these are joined with through bolts or nailing/screwing on both sides. Hex-head screw with built-in washer colored red for easy post-inspection identification.



New Fastener Accessory for Threaded Holes (NJD-2506)

"I'm a contractor and I wanted to create a new fastener accessory that can be used when re-inserting a screw in a damaged threaded hole," said an inventor, from Milltown, N.J., "so I invented the NO MORE LOOSE SCREWS. My design would increase friction, allowing you to effortlessly drive the screw into the threaded hole."

The invention provides an effective way to help secure loose screws in wood with applications including cabinets, door hinges, and strikeplates. In doing so, it eliminates the spinning issues associated with damaged threads. As a result, it increases efficiency and it eliminates the need to re-drill and re-thread a hole. The invention features a practical design that is easy to install and use so it is ideal for contractors and do-it-yourselfers.

The original design was submitted to the New Jersey sales office of InventHelp. It is currently available for licensing or sale to manufacturers or marketers.

Disruptive Sealing Technology by JPB Système

The 5mm Smart Washer is a disruptive smaller-sized smart washer sealing technology that improves MRO efficiencies by reducing the need to manually check the torque level because of the touchless and wireless measurement of bolt axial load.

The thickness of the washer has been reduced by more than one-third. JPB Système from France has leveraged improvements in strain gauge technology to develop a smaller Smart Washer variant that is much easier to integrate and retrofit while delivering the same functional benefits as its larger counterpart. The smaller size of the washer allows for it to be used across an increased number of areas within the aircraft, whereas the original 7.6mm washer is more suitable to experimental scenarios in on-the-ground test environments.

The washer uses intelligent connectivity by incorporating a proprietary strain gauge, as well as a transmission system into the washer, which through an accompanying reading device (Smart Reader), relays the information to maintenance engineers. Engineers can be quickly alerted to fasteners that are too tight or too loose and can address them accordingly to limit aircraft downtime.

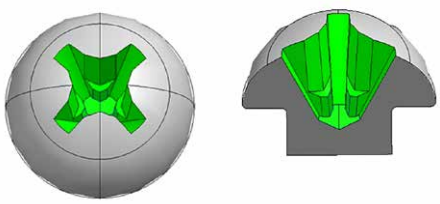
JPB now allows the engineers to view the percentage of the tension rather than just the value of the bolt axial load due to the relative measurement which calibrates the Smart Washer directly on the customer's bolt. This has increased the accuracy of the device from +/- 6% to +/- 2.5%.

The new validated redundancy measurement allows Smart Washer to 'control' itself to eliminate incorrect readings in the unlikely event of a software issue. This is enabled by doubling the number of measurement points on the washer, which means that upon a false reading, the system immediately alerts the engineer before taking another measurement from another area of the device.

TAKECOAT-1000 from Japan

"TAKECOAT" developed by TAKENAKA SEISAKUSHO from Japan is claimed to take the highest share in the fluorocarbon polymer market globally. It can provide excellent rust and corrosion resistance in harsh environments such as in the sea and desert. It has 6-times the durability of hot-dip galvanizing as tested in a salt spray test.

TAKECOAT® -1000 has a two-layer structure of fluorocarbon polymer as the upper film and a special under-treatment layer. Combined with a special treatment technology, the thin films are excellent in corrosion and rust resistance and have high lubricity, suited for fasteners. TAKECOAT has been used on bolts and metal parts used on bridges, insert pipes, marine structures and oil refineries.



Share Cross Drive Recess for Bits of Similar Sizes

In manual fastening and loosening of screws at construction sites and other workplaces, it is time-consuming to change bits for each screw drive recess, which causes users to disassemble and assemble with a bit that does not fit the recess, thus resulting in a collapsed recess.

To solve this problem, Japanese Nitto Seiko has developed "Share Cross" that can be used with bits of similar sizes. "Share Cross" is suited for various types of fastening and improves work efficiency in manufacturing operations.

"Share Cross" is a small cross-recess with another large cross-recess superimposed on it, so that bits of similar sizes (e.g., #2 or # 3) can be used on the same screw head recess. The structure is such that the drive surfaces for transmitting torque can be shared, which achieves the optimum fit of the bit and maximizes the performance.