

Huck® Lockbolts by Star Fasteners: an alternative to welding

For years, welding was seen as the only way to ensure the integrity of joints in demanding load-bearing or high-vibration structures

So, companies manufacturing heavy-duty equipment or fabricating large, metal structures continued to employ the universally accepted process of welding joints together. However, today there are alternatives to welding, one of the foremost being direct-tension installed, swaged Lockbolts, such as the Huckbolts.

These unique engineered fasteners, proven in such demanding applications as truck suspensions and chassis, railroad track crossings, and heavy defence vehicles, are now being used in a number of products and structures where welding was once the only option.

Huck Lockbolts are precision engineered two-piece fasteners that, once installed, no matter how vibration-intensive the environment, never come loose. Huck Lockbolts provide direct metal-to-metal contact when installed, which eliminates the transverse vibration often found in conventional nuts and bolts.

Engineered for a wide range of applications, Huck Lockbolts deliver superior joining strength, shear, and tensile strength for an unmatched fastening solution.

Strong, stable, and vibration-resistant

The Huck BobTail fasteners are available in a wide range of sizes (up to 1-3/8 inch). It is a two-part fastening system which consists of a pin and a collar. These advanced fasteners are installed using a direct tension technique, in which the pin is pulled and the collar is simultaneously swaged into the locking grooves of the pin, deforming the collar into the grooves.

Maintenance-free Huck Bobtail fastening system

Manufacturers of heavy equipment are actively investigating the possibility of using direct-tension Lockbolts in their assembly

process. Even taking into consideration the need to prepare a hole, installing a Lockbolt is significantly faster than welding a joint. A quick visual inspection is all that is required to confirm the accuracy and quality of the installation.

Two-second installation

An operator requires a minimal amount of training in order to be proficient in their installation and a BobTail can be installed in



as little as two seconds. The pin is inserted into the prepared hole and the collar can either be placed straight onto the pin, or for a pre-installed assembly can be spun by



Installed BobTail Lockbolt Fasteners

hand onto the pin. When the installation tool is applied and the tool is activated, the action of the puller engaging onto the pin, together with the anvil swaging the collar completes the installation. The swage and eject sequence is programmed to complete the cycle without any additional installer input. The process ensures excellent gap closing capability. With a simple change of nose assembly to the BobTail collar cutter the fastener can be removed swiftly.

Declared by DIBt as 'maintenance free', the 12, 14, 16, 20mm and one-inch diameter BobTail is approved to be used in both static and dynamic civil engineering applications

12944 standard and chrome six free – was also found to retain its integrity as there is no exposed area after the fastener is installed.

The DIBt test confirmed that a BobTail is maintenance-free during the lifetime of the joint it is fastening, which is not the case when using traditional nut and bolt products. As a result, it can be integrated into a range of applications with complete confidence by civil engineering designers.

Key health and safety benefits

Through its advanced fastener design the BobTail system offers a strong connection.

Following a rigorous testing programme, the Huck BobTail Lockbolt fastener has earned the prestigious German national technical approval, otherwise known as *allgemeine bauaufsichtliche Zulassungen (abZ)*. The accreditation was awarded by internationally recognised approval body *Deutsches Institut für Bautechnik (DIBt)*

as there isn't a pintail to break off. The elimination of the shock load and reduced noise can offer real and significant health and safety benefits.

Using the Huck BobTail in key joining applications eliminates all of the housekeeping and safety issues that are integral to the welding process. There are no sparks to start fires or cause explosions, nor any debris on the floor that can lead to slips and falls.

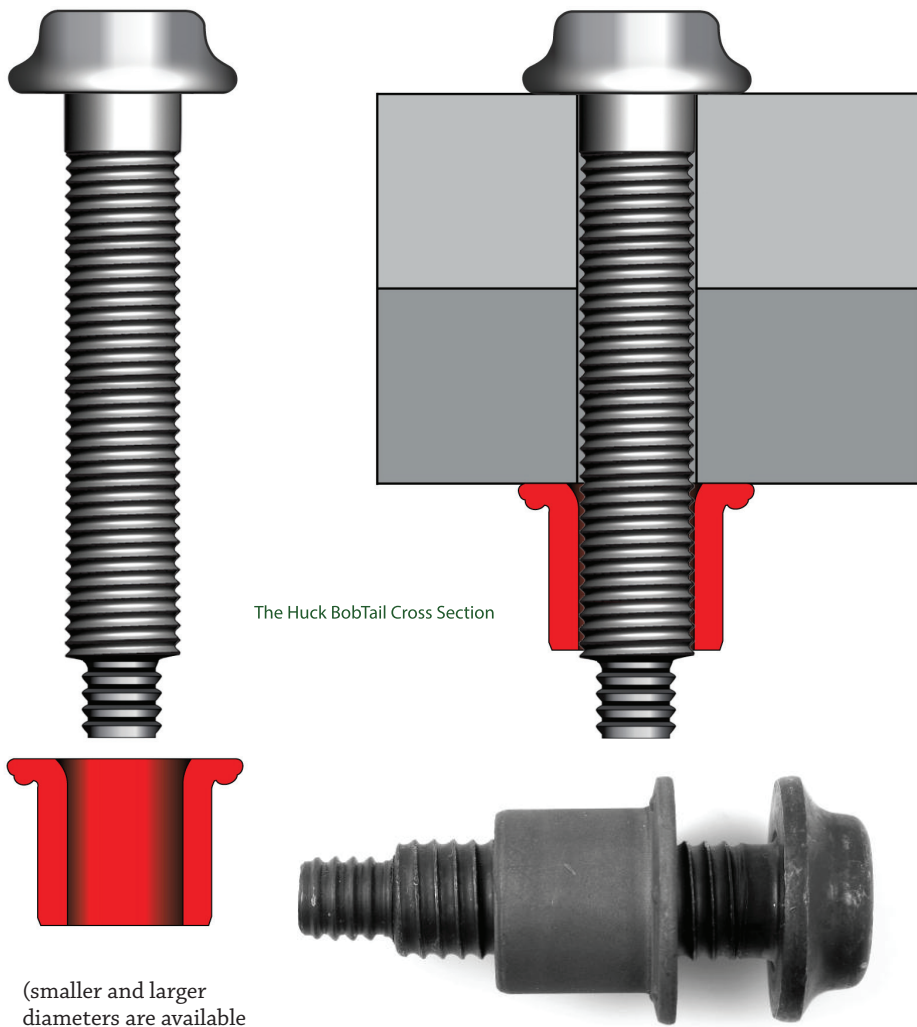
Eliminating the effects of vibration

Compared to conventional nut and bolt installations, which can loosen in high-vibration environments, Huckbolts have proven to be impervious to the effect of vibration in a number of very demanding applications.

The secret to this performance difference can be found in the unique Huckbolt design, in which the collar is fully swaged into the locking grooves of the pin. Huckbolts can be effectively used with virtually any metal, and dissimilar metals with dissimilar coefficients of thermal expansion present no problems.

Varying material thicknesses in a joint are readily accommodated, and surface finishes are not damaged. Most importantly, Huckbolts are proven to hold up over years of service in demanding high-stress, high-vibration environments. Industries using Huckbolts include heavy-duty trucks, over-the-road trailers, railroad track and crossing, railcar and locomotives, agricultural equipment and implements, aerospace, mining shaker screens and shaft construction, defence vehicles and oilfield equipment.

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The Huck BobTail Cross Section

The Huck BobTail Pin and Collar Lockbolt

(smaller and larger diameters are available by request).

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The test results met DIN EN 1993 (EURO Code 3 – Design of Steel Structures), DIN 18800-1 (Steel Structures – Design and Construction) and BSEN 1090 (Execution of steel structures and aluminium structures) standards. The coating – resistant to ISO

One key advantage of this fastener over conventional Lockbolting systems is that it doesn't have a pintail to break off. As a result, there is no waste material to collect and dispose of post-installation. The added benefit of this is that the tools are lighter and smaller as they do not need the force to break the pintail of a traditional Lockbolt.

The Bobtail is installed using a quiet, jolt-free swaging action, eliminating the potential for repetitive stress syndrome issues. It has significantly reduced noise levels, typically less than seventy decibels