

**Breakstem Rivets**

- [Avdelmate](#)
- Avex
- Avibulb
- Avinox
- Avseal II
- Bulbex
- Hemlok
- Interlock
- Klamp-Tite
- Klamp-Tite (Structural)
- Monobolt
- N Rivet
- Q Rivet
- Stavex
- T Rivet
- T-Lok

**Lockbolts**

- Avbolt
- Avdelok
- Avdelok LD
- Maxlok

**Speed Fasteners**

- Avlug
- Avsert
- Avtronic
- Briv
- Chobert
- Grovit
- Rivscrew
- Rivscrew PL

**Threaded Inserts**

- DK
- DL
- Eurosert
- Hexsert
- High Strength Hexsert
- Squaresert
- Supersert

## AVBOLT

A Structural Blind Fastener for Heavy Duty Applications.

The Avbolt structural fastener is a high strength, tamper resistant, blind fastener designed for use in heavy-duty structural applications such as automotive, construction, container, railway and mining. The Avbolt fastener is available in steel in 3/8" or 5/8" diameter. It is a unique three piece assembly consisting of a stem, sleeve and collar and is comparable in performance to standard lockbolt fasteners. Unlike standard lockbolt fasteners, the Avbolt fastener does not require access to both sides of the work piece for installation.

During installation, the nose equipment of the placing tool slides over the collar and swages the collar into locking grooves on the fastener stem.

Material from the collar flows into the grooves locking the stem in place and creating a virtually tamper proof joint. Additionally, as the nose piece moves further along the collar, collar material flows toward the base of the collar and forms a flange on the surface of the application. This prevents tool contact and possible damage to the application and creates a load bearing surface, which absorbs the force of setting the fastener. Otherwise the setting force, or clamp load, might spread into the application and damage the material.

The Avbolt fastener enlarges the wide range of Avdel structural bolts by offering a high tensile and shear strength (normally only possible with non blind lockbolts) with the versatility of blind products. The Avbolt fastener is ideal for areas with restricted access. It's simple to use with fast, positive single sided installation requiring minimal operator skill. The locking feature creates a vibration resistant joint and prevents loosening stems. Ease of inspection for correct installation and excellent tamper resistance are further advantages.

**Features & Benefits**

- Use on blind sided application



- TSN
- Versa-Nut

- High shear and tensile strength
- Excellent vibration resistance
- Speed of installation
- High grip capability
- Tamper resistant
- Ideal for areas with restricted access
- Collar can be easily removed

## Key Characteristics

### **Optimized Stem**

The stem has optimized heat treatment to reduce the risk of hydrogen embrittlement in the fastener. Additionally, the top of the stem head (the area in contact with the sleeve) is flat. This allows the stem head to interact properly with the sleeve during the rivet placing sequence and collapse it into a bulb shape against the rear sheet (discussed in **How It Works** below).

### **Pulling Serrations**

Pulling serrations are manufactured onto the tail of the stem making it easier for the jaws of the placing tool to grip the stem. Otherwise, the jaws of the tool would dig into the stem and shave metal off the stem body. Metal shavings can accumulate in the jaws of the tool, decrease tool performance and increase maintenance time.

### **Break Notch**

The break notch is cut into the stem above the locking grooves. Stresses accumulate at the break notch during the fastener placing sequence and cause the stem to break at the right place at the right time.

### **Locking Grooves**

Locking grooves are located on the stem just below the breaker groove and serve two purposes. First, as the tool nose piece moves over the collar during the fastener placing sequence, the collar material is swaged into the locking grooves, which locks the stem in place once the fastener is installed. Second, the accumulation of material in the locking grooves increases the force required to pull the mandrel. This supports the function of the break notch.

### **Band Annealed Sleeve**

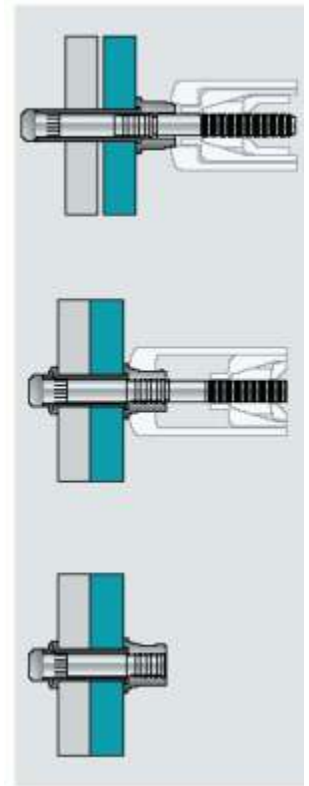
The sleeve is band annealed to ensure the bulb formation on the application rear side forms in exactly the right place.

### **Swaged Collar**

The swaged collar provides improved tamper resistance as the collar material is swaged into the stem locking grooves, which locks the stem in place once the fastener is installed. Additionally, during the installation process a flange is formed at the base of the collar on the surface of the application. This prevents damage from tool contact with the application and helps provide consistent clamp loads.

## How It Works

1. The Avbolt fastener is inserted into a prepared hole in the workpiece and the tool nose piece is placed over the Avbolt stem.
2. When the tool is activated, the jaws of the placing tool lock onto pulling serrations on the stem and pull the stem axially forcing the outer nose casing against the collar.
3. As the placing tool continues to pull the stem, the stem head is forced against the sleeve of the fastener causing the sleeve to collapse toward the rear sheet. A bulb formation forms against the rear application piece, firmly pulling/clamping the material sheets together.
4. The nose casing then moves over the collar and toward the application. The collar is pressed against the grooves in the stem and material from the collar flows into the grooves locking the collar onto the stem.
5. Additionally, material from the collar flows down the length of the collar toward the application to form a flange.
6. The force required for the nose casing to travel over the collar increases throughout the placing action and accumulates at the stem breaker groove until finally the stress is so high that the stem breaks.



### Specifications

Series	Material (Stem / Sleeve / Collar)	Size	Head Style	Finish (Stem / Sleeve / Collar)
21001	Steel / Steel / Steel	3/8, 5/8	Flanged Collar	Black Oxide / Trivalent Zinc Clear / Trivalent Zinc Clear

### Markets

#### Assembly Materials:

Metal to metal

#### Typical Applications:

Automotive, Construction, Container, Railway, Mining



### Installation Tools

<b>Tool</b>	<b>Fastener Material</b>	<b>3/16"</b>	<b>1/4"</b>	<b>5/16"</b>	<b>3/8"</b>
722	Aluminum Stainless Steel				
73411 (T10)	Aluminum Stainless Steel	--	--	--	
G2LB	Aluminum Stainless Steel			--	--
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