

Alcoa
Fastening
Systems



BobTail®

The Next
Generation Small
Diameter HuckBolt®.

No Pintail
Fast Installation
Vibration Resistant

3/16"-3/8"

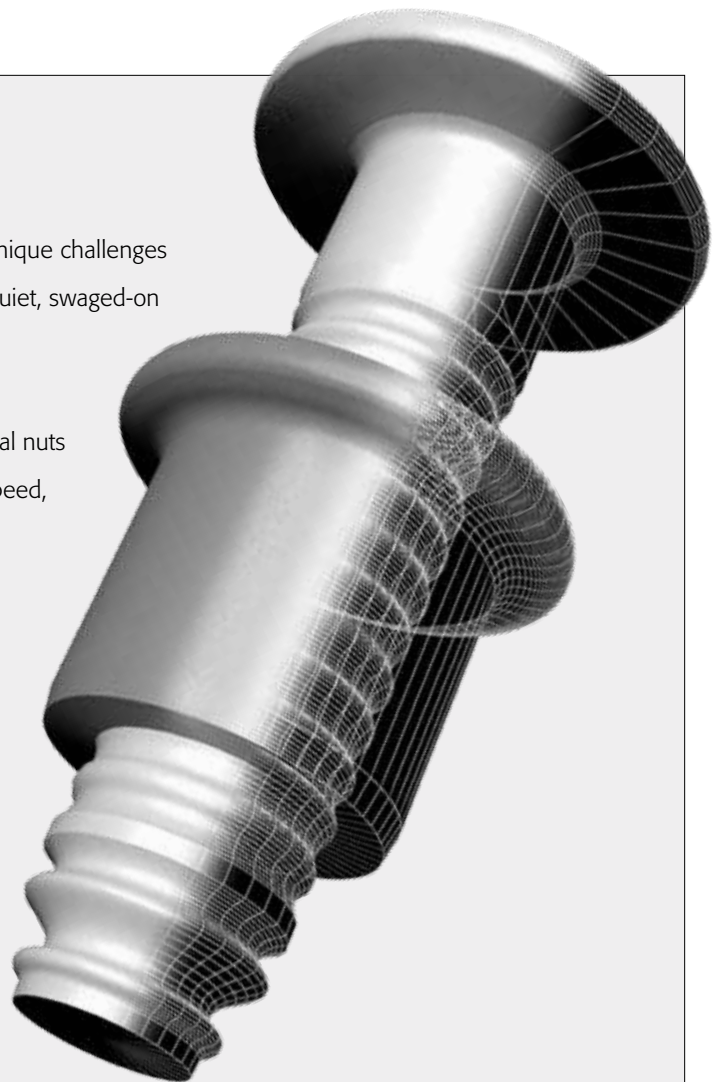


The Huck BobTail® System

Engineered for the highest level of performance and reliability.

The Huck BobTail® system was developed to meet the unique challenges of a wide range of assembly applications, offering safe, quiet, swaged-on installation technology in an advanced HuckBolt® design.

Offering up to 10 times the fatigue strength of conventional nuts and bolts, BobTail delivers ultimate strength, installation speed, and vibration resistance. It has been designed to provide superior joining strength in even the most extreme environments. Available in a wide range of sizes, grades, and materials, BobTail often provides an overall lower installed cost when you factor in the cost of the fasteners with installation speeds and inspection labor.



Unlike conventional nuts and bolts, which have gaps on the thread flanks even when tightened, the BobTail system is designed for full metal-to-metal contact around the bolt thread by the collar. An installed BobTail has no gaps and delivers a more secure connection, providing reliability even in the most severe environments.

Installed Gap Comparison

HuckBolt



The swaged collar forms over the lock thread, and eliminates the gap.

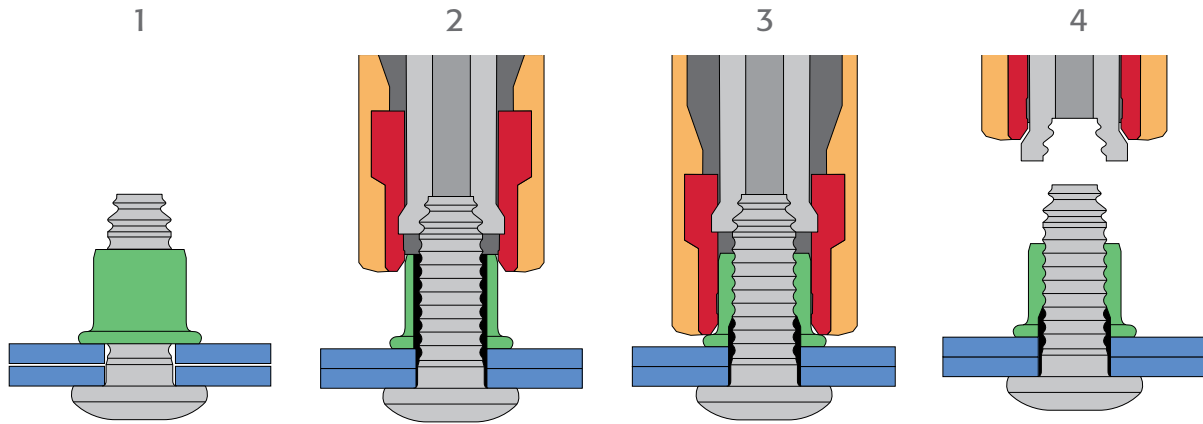
Standard Bolt



Regular nuts and bolts have gap, which allows for loosening by vibration.

Unmatched Speed of Installation

The BobTail® System delivers a lightening-quick installation cycle time for greater productivity. This quick cycle is due, in part, to the short time required to apply the tool to the pin and complete the installation cycle. Once the operator engages the trigger, the swage sequence begins. Releasing the trigger ejects the fastener.



The pin is inserted into the prepared hole, and the collar is placed onto the pin.

The installation tool is applied to annular pull grooves. When the tool is activated, a puller in the nose assembly draws the pin into the tool, tension loading the joint and drawing up any sheet gap.

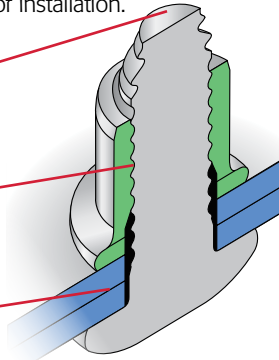
At a predetermined force, the anvil begins to swage the collar into the pin's lockgrooves. Continued swaging elongates the collar and pin, developing precise clamp.

When swaging of the collar into the pin lockgrooves is complete, the tool ejects the fastener and releases the puller to complete the sequence.

Secure, Fast Installation

Combining an advanced fastener design with the latest in easy-to-use, ergonomic installation tooling, the BobTail system delivers a strong connection and sets a new standard for ease of installation.

- Pintail-less design means reduced noise, no waste, and improved corrosion resistance.
- Collar material swaged into the lockgrooves forms a permanent, vibration-resistant connection.
- Low-swage technology allows for faster, lighter weight tooling that costs less.



Visual Inspection



Before Swaging



After Swaging

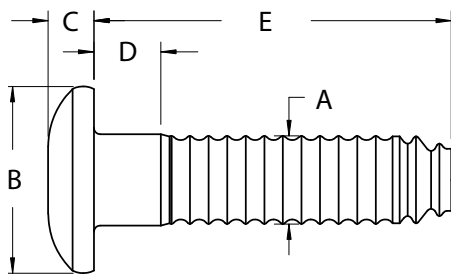
The swaging process deforms and changes the color of the collar.

BobTail® Benefits

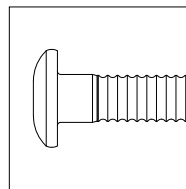
- No pintail
- Unmatched installation speed
- Low overall installed cost
- Superior fatigue strength
- Vibration resistance
- Ergonomically designed installation tooling
- Silent installation
- No repetitive stress injuries
- Eliminates need for secondary operations
- No special training or skills required for operators
- Quick visual inspection is all that's needed for a quality-assured joint

Data and dimensions

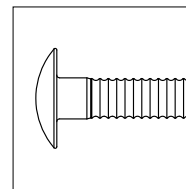
Head Style Options



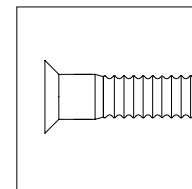
Trazier



98T



90°



Fastener Dimensions

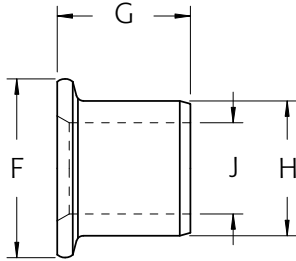
| Diameter | Trazier | | | 98T | | 90° | |
|----------|----------|-------------|-------------|-------------|-------------|-------------|-------------|
| | A | B | C | B | C | B | C |
| 3/16" | .187 max | — | — | .488 — .468 | .110 — .090 | .354 — .328 | .085 — .075 |
| 1/4" | .249 max | .537 — .507 | .140 — .120 | — | — | .473 — .437 | .113 — .104 |
| 5/16" | .313 max | .680 — .640 | .175 — .150 | — | — | .589 — .547 | .141 — .127 |
| 3/8" | .374 max | .820 — .780 | .210 — .190 | — | — | .709 — .656 | .168 — .152 |

Grip Tables

| Grip | Grip Range | 3/16" (6) | | 1/4" (8) | | 5/16" (10) | | 3/8" (12) | |
|------|---------------|-----------|-------|----------|-------|------------|-------|-----------|-------|
| | | D | E | D | E | D | E | D | E |
| 4 | .125 - .375 | 0.187 | 0.835 | 0.187 | 1.000 | 0.187 | 1.156 | 0.187 | 1.310 |
| 6 | .250 - .500 | 0.312 | 0.960 | 0.312 | 1.125 | 0.312 | 1.281 | 0.312 | 1.435 |
| 8 | .375 - .625 | 0.437 | 1.085 | 0.437 | 1.250 | 0.437 | 1.406 | 0.437 | 1.560 |
| 10 | .500 - .750 | 0.562 | 1.210 | 0.562 | 1.375 | 0.562 | 1.531 | 0.562 | 1.685 |
| 12 | .625 - .875 | 0.687 | 1.335 | 0.687 | 1.500 | 0.687 | 1.656 | 0.687 | 1.810 |
| 14 | .750 - 1.000 | 0.812 | 1.460 | 0.812 | 1.625 | 0.812 | 1.781 | 0.812 | 1.935 |
| 16 | .875 - 1.125 | 0.937 | 1.585 | 0.937 | 1.750 | 0.937 | 1.906 | 0.937 | 2.060 |
| 18 | 1.000 - 1.250 | 1.062 | 1.710 | 1.062 | 1.875 | 1.062 | 2.031 | 1.062 | 2.185 |
| 20 | 1.125 - 1.375 | 1.187 | 1.835 | 1.187 | 2.000 | 1.187 | 2.156 | 1.187 | 2.310 |

Collar Dimensions

| Diameter | F | G | H | J |
|----------|---------------|---------------|-----------|---------------|
| 3/16" | 0.370 - 0.390 | 0.270 - 0.290 | 0.287 MAX | 0.187 - 0.192 |
| 1/4" | 0.485 - 0.515 | 0.360 - 0.380 | 0.396 MAX | 0.250 - 0.255 |
| 5/16" | 0.610 - 0.640 | 0.458 - 0.478 | 0.500 MAX | 0.316 - 0.322 |
| 3/8" | 0.730 - 0.770 | 0.545 - 0.565 | 0.600 MAX | 0.376 - 0.384 |



Installed Fastener Values - lbf (KN)

| Diameter | Carbon Steel | | | | | | Aluminum | | | Stainless Steel | | |
|----------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| | Grade 2 R | | | Grade 5 BR | | | 2024 C | | | 305 U | | |
| | Clamp | Tensile | Shear | Clamp | Tensile | Shear | Clamp | Tensile | Shear | Clamp | Tensile | Shear |
| 3/16" | 1,025 (4.6) | 1,650 (7.3) | 1,725 (7.7) | 1,200 (5.3) | 2,200 (9.8) | 2,430 (10.8) | 550 (2.4) | 1,000 (4.4) | 1,050 (4.7) | 1,025 (4.6) | 1,455 (6.5) | 2,000 (8.9) |
| 1/4" | 1,805 (8.0) | 3,000 (13.3) | 3,050 (13.6) | 2,300 (10.2) | 3,700 (16.4) | 4,300 (19.1) | 950 (4.2) | 1,800 (8.0) | 1,875 (8.3) | 1,805 (8.0) | 2,750 (12.2) | 3,550 (15.8) |
| 5/16" | 2,810 (12.5) | 4,600 (20.5) | 4,725 (21.0) | 4,200 (18.7) | 6,000 (26.7) | 6,700 (29.8) | 1,500 (6.7) | 2,850 (12.7) | 2,925 (13.0) | 2,810 (12.5) | 4,250 (18.9) | 5,525 (24.6) |
| 3/8" | 4020 (17.9) | 6,500 (28.9) | 6,825 (30.3) | 5,980 (26.6) | 9,300 (41.4) | 9,600 (42.7) | 2,200 (9.8) | 4,200 (18.7) | 4,200 (18.7) | 4,020 (17.9) | 6,100 (27.1) | 7,950 (35.4) |

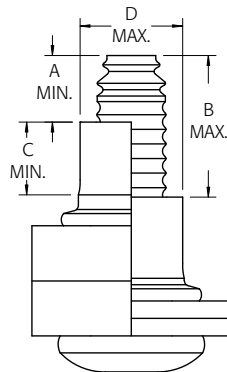
Inspection Data

| Diameter | A min | B max | C min | D max |
|----------|-------|-------|-------|-------|
| 3/16" | 0.155 | 0.461 | 0.195 | 0.271 |
| 1/4" | 0.225 | 0.535 | 0.260 | 0.361 |
| 5/16" | 0.280 | 0.600 | 0.325 | 0.457 |
| 3/8" | 0.345 | 0.665 | 0.390 | 0.542 |

Hole Data

| Diameter | Max Hole |
|----------|----------|
| 3/16" | 0.219 |
| 1/4" | 0.281 |
| 5/16" | 0.359 |
| 3/8" | 0.422 |

Should "A" or "B" dimensions exceed the given values, the fastener is out-of-grip. A "C" dimension less than the given value indicates an incomplete swage. A "D" dimension greater than the given values indicates an incorrect or worn anvil on the installation tool.



BobTail® Installation Tooling

Our unique design means easier, quicker installation.

Lightweight, Technologically Advanced Tooling

Newly designed BobTail tooling makes the installation process quicker and easier by reducing the force required to install each fastener. More compact and lighter weight than previous Huck lockbolt production tooling, BobTail installation tools also offer greater operator flexibility as well as extended reach into difficult areas.

For tight, space-constrained applications, BobTail tools allow the operator to position his or her hand at a safe distance from the working structure during installation.

Tooling Selection

| Diameter | Tool | Installation Nose | Cutter Nose |
|----------|-----------|-------------------|-------------|
| 3/16" | 244BT | 99-7921 | 99-7921CC |
| | 2480 | 99-7921 | — |
| 1/4" | 244BT | 99-7922 | 99-7922CC |
| | 2480 | 99-7922 | 99-7922CC |
| 5/16" | 256BT | 99-7923 | 99-7923CC |
| | 2503 | 99-7923 | — |
| 3/8" | 256BT | 99-7924 | 99-7924CC |
| | 2503 | 99-7924 | 99-7924CC |
| | SFBTT8-12 | — | — |

Tooling Weight and Dimensions

| Model | Type | Weight | Length | Height | Width |
|-----------|-------------|----------|--------|--------|-------|
| 244BT | pneudraulic | 6.3 lbs | 5.99" | 12.79" | 1.44" |
| 256BT | pneudraulic | 11 lbs | 6.99" | 14.85" | 1.50" |
| 2480 | hydraulic | 2.2 lbs | 8.21" | 6.55" | 1.82" |
| 2503 | hydraulic | 4.62 lbs | 7.87" | 6.08" | 2.00" |
| SFBTT8-12 | hydraulic | 4.0 lbs | 4.72" | 2.29" | 1.70" |



Model
256BT

Model
244BT

Cost-Efficient Operation

The BobTail System's low swage technology directly contributes to longer tool and component life, while allowing extended tool maintenance cycles. As a result, costs for parts and overall support are reduced, while system uptime is increased.

Safe and Silent Performance

The BobTail fastener is installed without a pin-break, contributing to the dramatic reduction of noise on the shop floor, and subsequently, improved worker hearing safety. Instances of foreign object damage (FOD) and loose pintail injuries are eliminated. Because BobTail tooling features a smooth, shock-free installation sequence, repetitive stress injuries are eliminated, and overall safety is increased.



This BobTail installation tool was specifically designed to perform in tight spaces with less than 5-1/2" of clearance.

Model
SFBTT8-12

Ordering Information

Follow the form below to construct a part number for ordering BobTail pins and their respective collars. Refer to the Grip Tables (page 4) for grip numbers.

Pins

BT (HEAD STYLE) - (MATERIAL) (DIAMETER) - (GRIP NUMBER) (FINISH)

Example: BT-BR8-8GA is a BobTail Pin, Grade 5 Carbon Steel, 1/4" Diameter, Grip 8, Zinc Plated

| Head Style | Prefix |
|------------|--------|
| Trazier | BT |
| 98T | BT98T |
| 90° | BT90 |

| Material | Code |
|----------------------|------|
| Grade 2 Carbon Steel | R |
| Grade 5 Carbon Steel | BR |
| 2024 Aluminum | C |
| 305 Stainless Steel | U |
| 430 Stainless Steel | 4U |

| Diameter | Code |
|----------|------|
| 3/16" | 6 |
| 1/4" | 8 |
| 5/16" | 10 |
| 3/8" | 12 |

Refer to Grip Table on page 4

| Finish | Suffix |
|----------------------|--------|
| Zinc, clear chromate | GA |

Collars

Collars BTC (GRADE) - (MATERIAL) (DIAMETER) (FINISH)

Example: BTC5-R8UA is a BobTail Collar, Grade 5 Carbon Steel, 1/4" Diameter, Zinc Plated

| Grade | Prefix |
|---------|--------|
| Grade 2 | BTC |
| Grade 5 | BTC5 |
| Grade 8 | BTC8 |

| Material | Code |
|---------------------|------|
| Low Carbon Steel | R |
| Aluminum | 2B |
| 305 Stainless Steel | U |
| 430 Stainless Steel | 4U |

| Diameter | Code |
|----------|------|
| 3/16" | 6 |
| 1/4" | 8 |
| 5/16" | 10 |
| 3/8" | 12 |

| Finish | Suffix |
|-------------------|--------|
| Zinc Plate (Gr 2) | GAH |
| Zinc Plate (Gr 5) | UA |
| Zinc Plate (Gr 8) | BL |



Alcoa Fastening Systems



For more than 120 years, the name Alcoa has been recognized worldwide as a strong leader in product quality and customer support. These strengths are found in every product manufactured for Alcoa Fastening Systems, offering the greatest breadth and depth of fastening system solutions in the industry.

Alcoa Fastening Systems (AFS) maintains company offices in the United States and in many other countries. AFS fastener distributors are also located in many of the world's industrial centers, where they provide a ready source of AFS fasteners, installation tools, tool parts, and application assistance.

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