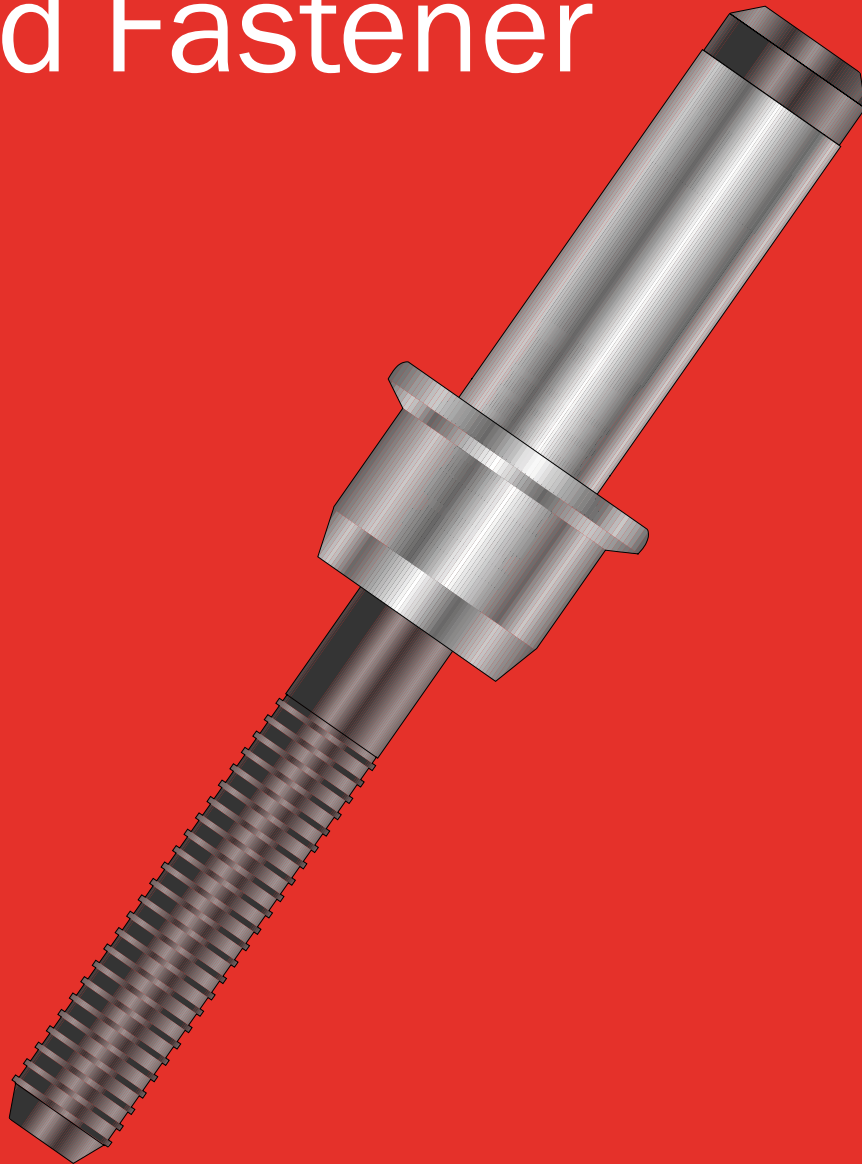




# Avbolt® Structural Blind Fastener



# Avbolt®

The Avbolt® structural fastener is a high strength, tamper resistant, blind steel fastener designed for use in heavy-duty structural applications such as automotive, construction, container, railway and mining.

It expands the range of Avdel structural bolts by offering high tensile and shear strength (normally only possible with non blind lockbolts) with the versatility of single sided installation; ideal for areas with restricted access.

The Avbolt® fastener is 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.



Avbolt® 3/8", 1/2" and 5/8" (10 mm, 12,7 mm and 16 mm):  
3 piece design (sleeve, collar, stem)

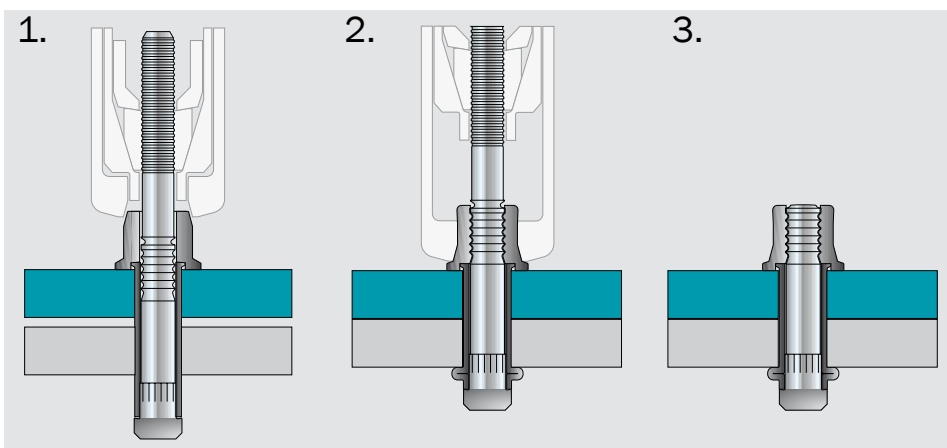


Avbolt® 3/16", 1/4" and 5/16" (4.8, 6.4 and 8.0 mm):  
2 piece design (sleeve with collar, stem)

## Key features and benefits

- Use on blind sided application
- High tensile and shear strength for heavy-duty applications
- Wide grip capability suits a variety of material thicknesses
- Locking feature creates a vibration resistant joint and prevents loose stems
- Ideal for areas with restricted access
- Fast installation
- High security tamper resistance
- Simple tooling requires minimal operator skill

## Typical placing sequence (3 piece design)



1. Insert the Avbolt® fastener in the hole and insert the stem into the nose piece of the placing tool.

2. First operation pulls the pintail to form the bulb. The sleeve is band annealed (soft zone) to ensure the bulb forms in exactly the right place. Once the bulb has formed, the clamp up force is applied to the joint pulling the work pieces together. The collar material is then swaged into the pin lock grooves, trapping the clamp up load and forming a tamper proof lock.

3. At a pre-determined load, the pin breaker groove fractures; the pintail is detached and the joint is complete.

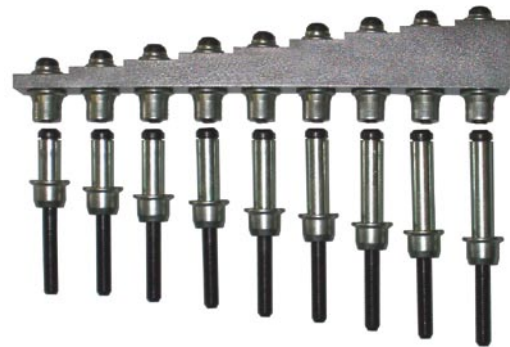
## Removal

Avbolt® fasteners are designed to create a permanent fixing. This provides security benefits and enables the fastener to be TIR approved. If removal is needed, the fasteners can be removed using an angle grinder and punch. For details see removal procedure on the Avdel website.

# Structural Blind Fastener for Heavy Duty Applications

## Range

- 3/16" (4.8 mm) with 11 different lengths to cover thickness from .093" to .783" (2.36 mm to 19.89 mm)
- 1/4" (6.4 mm) with 11 different lengths to cover thickness from .093" to .783" (2.36 mm to 19.89 mm)
- 5/16" (8 mm) with 7 different lengths to cover thickness from .188" to 1.062" (4.78 mm to 26.97 mm)
- 3/8" (10 mm) with 9 different lengths to cover thickness from .188" to 1.313" (4.78 mm to 33.35 mm)
- 1/2" (12.7 mm) with 11 different lengths to cover thickness from .251" to 1.626" (6.38 mm to 41.30 mm)
- 5/8" (16 mm) with 5 different lengths to cover thickness from .250" to 1.500" (6.35 mm to 38.10 mm)



3/8" (10 mm) Avbolt® fastener range

## Material and finish

- Stem - Alloy steel
  - Black oxide
- Sleeve - Carbon steel
  - Zinc plated and clear passivated (Chrome-VI free) to achieve 240 hours resistance to red corrosion (ASTM B117)
- Collar - Carbon steel
  - Zinc plated and clear passivated (Chrome-VI free) to achieve 240 hours resistance to red corrosion (ASTM B117)

Special plating options may be available on request.

## Placing performance

When an Avbolt® fastener is placed in maximum recommended grip, the stem breaks flush to the collar. When placed in minimum grip, the stem breaks above collar and the bulb is spread more providing a larger foot print.

The flange on the collar (21001 series) prevents the anvil from contacting and damaging the work surface.



Avbolt® fastener in max. and min. grip, front side of the work piece



Avbolt® fastener in max. and min. grip, rear side of the work piece

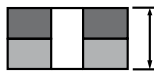



## Assembly applications

- Automotive
- Construction
- Container
- Renewable energies
- Railway
- Mining
- Security fencing



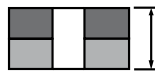



# Typical values of the standard Avbolt® fastener

## 2 piece design, 21021 Series



Ø nom.			Max. under- head length	Part No/ref
	min.	max.		
3/16" (4.8 mm)  .208 - .222	.093	.157	.488	21021-00602
	.157	.220	.551	21021-00603
	.220	.282	.614	21021-00604
	.282	.345	.677	21021-00605
	.345	.407	.738	21021-00606
	.407	.470	.801	21021-00607
	.470	.532	.864	21021-00608
	.532	.595	.927	21021-00609
	.595	.657	.988	21021-00610
	.657	.720	1.051	21021-00611
1/4" (6.4 mm)  .277 - .292	.093	.157	.650	21021-00802
	.157	.220	.713	21021-00803
	.220	.282	.775	21021-00804
	.282	.345	.838	21021-00805
	.345	.407	.900	21021-00806
	.407	.470	.963	21021-00807
	.470	.532	1.025	21021-00808
	.532	.595	1.088	21021-00809
	.595	.657	1.150	21021-00810
	.657	.720	1.213	21021-00811
5/16" (8.0 mm)  .348 - .368	.188	.313	.917	21021-01004
	.313	.438	1.042	21021-01006
	.438	.563	1.167	21021-01008
	.563	.688	1.292	21021-01010
	.688	.813	1.417	21021-01012
	.813	.938	1.542	21021-01014
	.938	1.062	1.667	21021-01016

all dimensions in inch

## 3 piece design, 21001 Series

Ø nom.			Max. under- head length	Part No/ref
	min.	max.		
3/8" (10 mm)  .413 - .435	.188	.313	.988	21001-01204
	.313	.438	1.113	21001-01206
	.438	.563	1.238	21001-01208
	.563	.688	1.363	21001-01210
	.688	.813	1.488	21001-01212
	.813	.938	1.613	21001-01214
	.938	1.063	1.738	21001-01216
	1.063	1.188	1.863	21001-01218
	1.188	1.313	1.988	21001-01220
	1/2" (12.7 mm)  .546 - .581	.251	.376	1.253
.376		.501	1.378	21001-01606
.501		.626	1.503	21001-01608
.626		.751	1.628	21001-01610
.751		.876	1.753	21001-01612
.876		1.001	1.878	21001-01614
1.001		1.126	2.003	21001-01616
1.126		1.251	2.127	21001-01618
1.251		1.376	2.250	21001-01620
1.376		1.501	2.373	21001-01622
5/8" (16 mm)  .687 - .728	.250	.500	1.549	21001-02004
	.500	.750	1.799	21001-02008
	.750	1.000	2.049	21001-02012
	1.000	1.250	2.299	21001-02016
	1.250	1.500	2.549	21001-02020

## Performance Data

Ø nom.		
	lbf min.	lbf min.
3/16" (4.8 mm)	2800	1800
1/4" (6.4 mm)	5100	3250
5/16" (8.0 mm)	8200	5300
3/8" (10 mm)	10115	7250
1/2" (12.7 mm)	20150	13000
5/8" (16 mm)	29000	20500

## Installation tools

Avdel offers a range of tooling for fast and secure installation of Avbolt® fasteners. Please visit our website [www.avdel-global.com](http://www.avdel-global.com) or contact your local Avdel representative for more information.



**722 Model**  
Hydro-pneumatic tool for Avbolt® Ø 3/16" to 5/16"



**7287 Model**  
Hydro-pneumatic split tool with lightweight placing head for Avbolt® Ø 3/16" to 5/16"



**734 Model**  
Hydraulic power units for Avbolt® Ø 5/16" to 5/8"

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