



# WORKHOLDING FASTENERS

## Overview

Get rid of clamps and bolts and replace them with Invert-A-Bolt™ (IVB) Fasteners\*. These unique, patented, flush-mounted captive fasteners, eliminate obstructions to machining, reduce vibration in your setup, and most importantly lower your cost by cutting setup times and improving your efficiencies. Think of them as a quick change bolt. Never waste time looking for the “right” bolt again. Never waste time by grinding a bolt to size again. Never stop your machine to change clamps again. Never “warp” your part because a clamp has been misused again. These bolts are always there in your fixture and always the same length. Simply screw the larger diameter (the housing) into the fixture plate and bring the inner diameter (the stud) up into your stock material for a superior holding solution.

\* Protected by multiple patents & patents pending

## Uses

High-Speed Machining, Modular Tooling, Assembly Jigs, Dedicated Fixturing



## General Specifications

### Studs, housings, caps

**Material:** Alloy steel or stainless steel

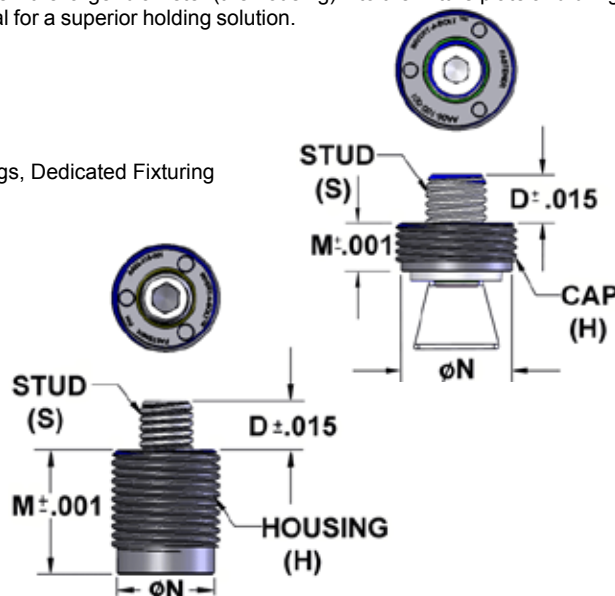
**Finish:** Black or nickel plated finish for all AA02 or AA03 type studs. Housings, nickel plated or no finish (for stainless steel housings). Covers, black or no finish (for stainless steel covers). Call for specific information. Black finish for AA06-xxx-xxx P/N's studs & caps

### Other internal components

**Material:** Steel or stainless steel

**Installation:** Use Insertion Tool as specified

**Access to stud w/ Hex wrench:** Front & back for all fasteners except AA06-010-001 & AA06-100-001 which can only be accessed from the front.



## FASTENERS

	Part Number	Stud Size (S)	Stud Engagement (D)	Housing Size (H)	Housing Length (M)	Minor Diameter (N)	Hex Size	Max Torque
	AA02-250-001	5/16"-18 UNC-2A	.450"	1"-12 UNF-2A-LH	1.150"	.905"	7/64"	5 ft.lbs.
	AA02-300-001	3/8"-16 UNC-2A	.450"	1"-12 UNF-2A-LH	1.150"	.905"	3/16"	28 ft.lbs.
<b>BEST SELLER!</b>	AA02-015-001C	1/2"-13 UNC-2A	.450"	1"-12 UNF-2A-LH	1.150"	.905"	1/4"	64 ft.lbs.
	AA02-015-001N*	1/2"-13 UNC-2A	.450"	1"-12 UNF-2A-LH	1.150"	.905"	7/32"	44 ft.lbs.
	AA02-005-001	1/2"-20 UNC-2A	.286"	1"-12 UNF-2A-LH	.900"	.905"	1/4"	64 ft.lbs.
	AA03-015-001C	1/2"-13 UNC-2A	.450"	1 1/4"-12 UNF-2A-LH	1.150"	1.139"	1/4"	64 ft.lbs.
	AA03-015-001N*	1/2"-13 UNC-2A	.450"	1 1/4"-12 UNF-2A-LH	1.150"	1.139"	7/32"	44 ft.lbs.

\* These items may not be stocked and include a 3-4 week lead time. Please call for availability.



## FASTENERS (CONT'D)

	AA06-010-001	1/2"-13 UNC-2A	.500"	1 1/4"-12 UNF-2A-LH	.500"	1.139"	1/4"	64 ft.lbs.
	AA03-150-001C	5/8"-11 UNC-2A	.450"	1 1/4"-12 UNF-2A-LH	1.150"	1.139"	1/4"	64 ft.lbs.
	AA03-150-001N*	5/8"-11 UNC-2A	.450"	1 1/4"-12 UNF-2A-LH	1.150"	1.139"	7/32"	44 ft.lbs.
	AA06-100-001	5/8"-11 UNC-2A	.500"	1 1/4"-12 UNF-2A-LH	.500"	1.139"	1/4"	64 ft.lbs.
 	IVB-M10x1.5-001	M10x1.5 6g	11mm	M20x1.5 6g	29mm	18.34mm	M5	35 ft.lbs.

Smaller housing size allows for denser pattern and greater stock savings!

## REFURBISHMENT KITS

Part Number	
Consists of Stud, Spring, Cover, Retaining Ring and Cap for the AA02 and AA03 type refurb. The IVB type refurb Consists of Stud, Spring and Cover.	
	<b>AA02-250-001RFB</b>
	<b>AA02-300-001RFB</b>
	<b>AA02-015-001CRFB</b>
	<b>AA02-005-001RFB</b>
	<b>AA02-015-001NRFB*</b>
	<b>AA03-015-001NRFB*</b>
	<b>AA03-015-001CRFB</b>
	<b>AA03-150-001CRFB</b>
	<b>AA03-150-001NRFB*</b>
	<b>IVB-M10x1.5-001RFB</b> See also: IVB-M20x1.5-AssyKit
	<b>AA06-010-001RFB</b> Refurbishment Stud + Spring
	<b>AA06-100-001RFB</b> Refurbishment Stud + Spring

## REFURBISHMENT STUDS

Part Number	Use With Fastener
 <b>AA02-250-013</b>	AA02-250-001
 <b>AA02-300-013</b>	AA02-300-001
 <b>AA02-015-013</b>	AA02-015-001C
 <b>AA02-016-013*</b>	AA02-015-001N*
 <b>AA02-005-013</b>	AA02-005-001
 <b>AA03-015-013</b>	AA03-015-001C
 <b>AA03-016-013*</b>	AA03-015-001N*
 <b>AA03-150-013</b>	AA03-150-001C
 <b>AA03-151-013*</b>	AA03-150-001N*
 <b>IVB-M10x1.5-013</b>	IVB-M10x1.5-001

## REFURBISHMENT COVERS

Part Number
 <b>AA02-015-008</b> Use with AA02 type fasteners
 <b>AA03-150-008</b> Use with AA03 type fasteners and precision locators
 <b>IVB-M10x1.5-008</b> Use with IVB-M10 type fasteners





Workholding Fastener P/N AA02-005-001 shown with cap.

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# FASTENER ACCESSORIES


## INSERTION TOOLS

Part Number	
	<b>AA03-002-002</b> Insertion tool (spanner wrench) for: AA02, AA03 and AA06 fasteners Drive: 3/8" Finish: black
	<b>IVB-METRIC-INSTALL</b> Insertion tool (spanner wrench) for: Metric fasteners

## STRAIGHT HEX BITS

Part Number	
	<b>ALLEN H73261</b> Width: 7/32" Length: 5.9" Use with: AA02-015-001N, AA03-015-001N and AA03-150-001N
	<b>BONDHUS H732121</b> Width: 7/32" Length: 12" Use with: AA02-015-001N, AA03-015-001N and AA03-150-001N
	<b>ALLEN H1461</b> Width: 1/4" Length: 6.4" Use with: AA02-015-001C, AA03-015-001C and AA03-150-001C
	<b>BONDHUS H14121</b> Width: 1/4" Length: 12" Use with: AA02-015-001C, AA03-015-001C and AA03-150-001C

## METRIC ACCESSORIES

Part Number	
	<b>ADT-M20x1.5-001</b> Assembly/Dis-assembly Tool
	<b>PA-001-001</b> Press Attachment for IVB-M10x1.5-001
	<b>IVB-M20x1.5-Assy Kit</b> Includes the ADT-M20x1.5-001 Assembly/Dis-assembly Tool and the PA-001-001 Press Attachment



## CAPS

Part Number	
	<b>AA02-015-011</b> Qty of 50 flush mount plastic caps with extraction slot for 1/2" diameter stud fasteners (except AA06 type fastener)
	<b>AA03-150-011</b> Qty of 50 flush mount plastic caps with extraction slot for 5/8" diameter stud fasteners (except AA06 type fastener)
	<b>AA02-300-011</b> Qty of 50 flush mount plastic caps with extraction slot for AA02-300-001 fastener
	<b>AA02-250-011</b> Qty of 50 plastic caps for AA02-250-001 fastener

## PLUGS

Part Number	
	<b>AA02-040-110</b> Blank plug OD: 1 1/4"-12 UNF-2A LH Fits: AA03-0XX-001 Insertion tool P/N: AA03-002-002
	<b>AA03-050-110</b> Blank plug OD: 1 1/4"-12 UNF-2A LH Fits: AA03-0XX-001 Material: Aluminum Insertion tool P/N: AA03-002-002
	<b>AA02-040-012</b> 1 Dia. IVB Plug (1"-12 LH) ID Thread: 1/2"-13 Height: 1.15" Material: Stainless Steel
	<b>AA02-040-014</b> 1 Dia. IVB Plug (1"-12 LH) ID Thread: 3/8"-16 Height: 1.15" Material: Stainless Steel

## HIGH SPEED STEEL LEFT HAND TAP

Part Number	
	<b>BT-1.00-12-001-HSS</b> HSS LH Tap: 1"-12 Call for discounts of qty 6+
	<b>BT-1.25-12-001-HSS</b> HSS LH Tap: 1.25"-12 Call for discounts of qty 6+

