UNIST

Environmentally Friendly Lubrication

Saw Blade Lube Systems

Cutting Edge Technology

Cutting Edge Technology

Unist saw blade lubrication systems deliver all the benefits of Minimum Quantity Lubrication (MQL) to your band or circular saw in a durable, easy-to-install package. Longer lasting blades, better cut quality, fluid savings, and clean, dry chips are just a few of the reasons people love our systems and Coolube® lubricant.

If you're currently using flood coolant on your saw, switching to a Unist saw blade lubrication system will completely eliminate the need for coolant, alleviating the health and safety concerns it creates as well as the ongoing costs of treatment and disposal.

Unist offers numerous system options to make sure your saw blade lubrication system is perfect for your application and we'll work with you to make sure your system is a success. Start enjoying the benefits of MQL on your saw today!

- **Eliminate the mess of traditional flood coolant systems**
- **Save money with reduced fluid usage**
- **Extend blade life & reduce downtime**
- **Dry chips are worth more money when recycled**

MQL: A Better Way To Saw

Minimum Quantity Lubrication (MQL) replaces the flood coolant commonly used in sawing operations with a minute amount of high-quality lubricant precisely applied to the saw blade. The lubricant minimizes friction between the stock and the blade, greatly reducing the heat that is generated during sawing. In contrast, the purpose of traditional flood coolant is to absorb the heat after it has been created. MQL technology has been used for over 25 years and has proven its effectiveness in a broad range of sawing operations.

Sawing with coolant

Sawing with MQL

Coolant = Up to 15% of machining costs!

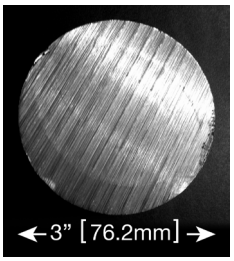
The cost of dealing with flood coolants, including mixing, treatment, circulation, and disposal can account for up to 15% of total machining costs.

Why Use MQL?

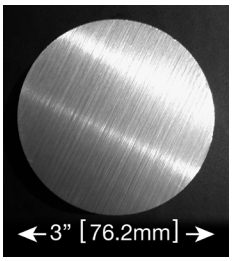
Many of the benefits of MQL are a direct result of eliminating flood coolant and the issues it creates. Studies have shown that the cost of dealing with flood coolants, including mixing, treatment, circulation, and disposal can account for up to 15% of total machining costs. Additionally, splashing coolant often coats equipment and surrounding areas, negatively affecting saw reliability and creating hazardous, slippery floors.

In contrast to using flood coolant, an MQL applicator dispenses environmentally friendly lubricant in such small amounts that it is often consumed in the process. This leaves little or no excess fluid to clean up or dispose of, and the chips produced are dry enough to be recycled without additional processing.

Images courtesy of Unist customer sawing 3" [76.2 mm] Inconel bar stock. Both cuts were made running at the same speed and feed.



Cut with coolant



Cut with Unist Coolube®

Improved Results Sawing With Unist

The photo on the left shows cut quality before the Unist system was added. This cut was made using flood coolant and shows excessive chatter and a large burr on the edge of the stock. The photo on the right shows the same material cut with an identical blade after a Unist system was installed. The cut was made using our Coolube® lubricant. Not only was the cut quality greatly improved, but blade life increased substantially! This customer was able to eliminate the cost and mess of flood coolant and also save considerably on blade costs.

Precision Fluid Application

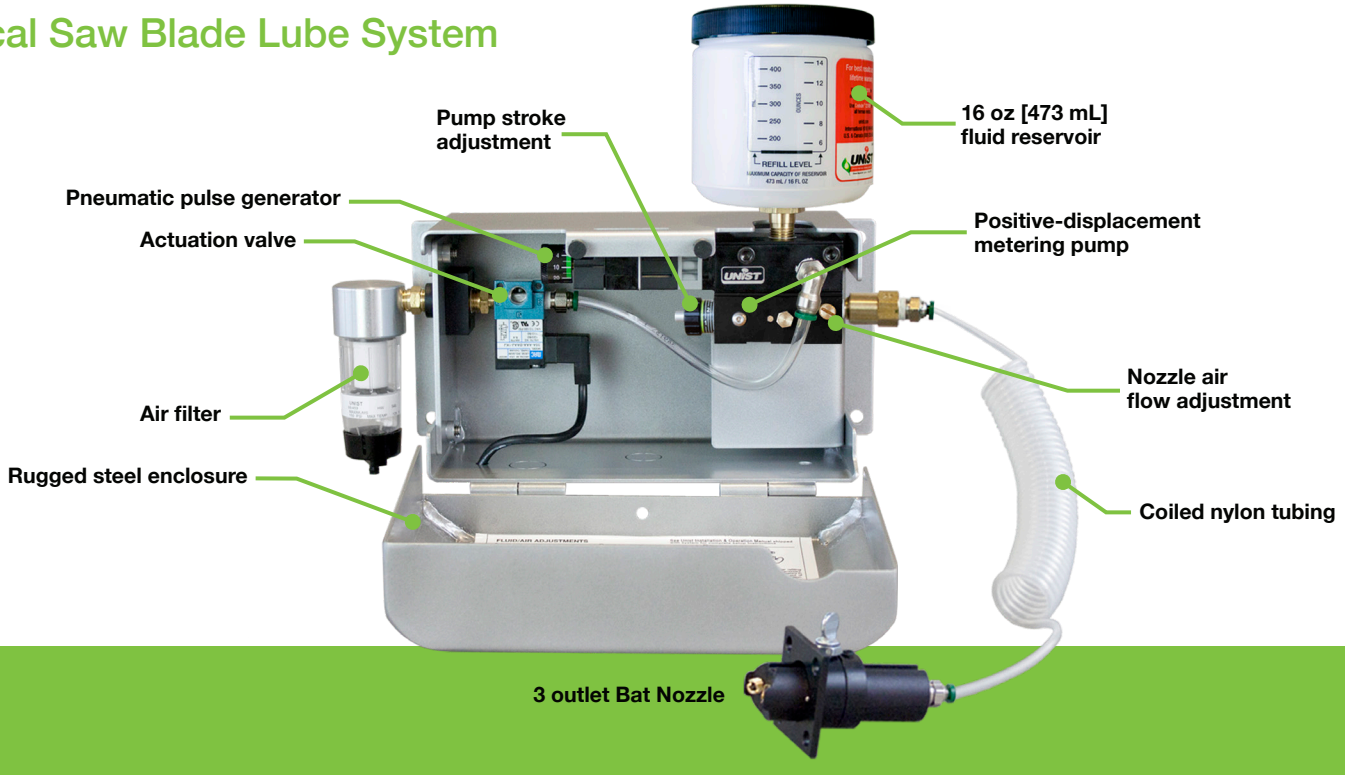
Precise fluid application is the key to maximizing the benefits of Minimum Quantity Lubrication. Applying too much lubricant is a waste and can adversely affect chip formation, whereas inadequate lubricant reduces blade life. Precise fluid application requires accurate pumps for consistent lubricant delivery and appropriate nozzles to create and direct the spray.

The adjustable positive-displacement pumps used in our systems have a proven track record of consistency and reliability. Each pump module includes a stroke adjustment for the pump output and a precise metering screw for the nozzle air flow. The combination of these adjustments provides complete control of the spray output.

Although supplying the perfect amount of fluid is important, it doesn't do any good unless it is properly delivered to the cutting tool/work piece interface. To make this possible, Unist has developed several nozzles to precisely apply the lubricant in nearly any metal sawing operation.

Easily adjust cycle rate, pump stroke, and air flow for the perfect spray.

Typical Saw Blade Lube System



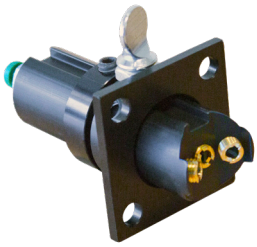
Saw Blade Lube Systems *Cutting Edge Technology*

Saw Blade Lube Systems & Coolube®

Maximize the benefits of sawing with MQL by filling your system reservoir with Unist Coolube®. Coolube® is a 100% natural biodegradable lubricant derived from renewable vegetable products that are friendly to the environment and operators. When applied properly, Coolube® is completely consumed in the sawing process and the mess of traditional flood coolant is eliminated. As an added benefit, when a saw blade lube system is used exclusively with Coolube®, Unist guarantees the pumps forever!

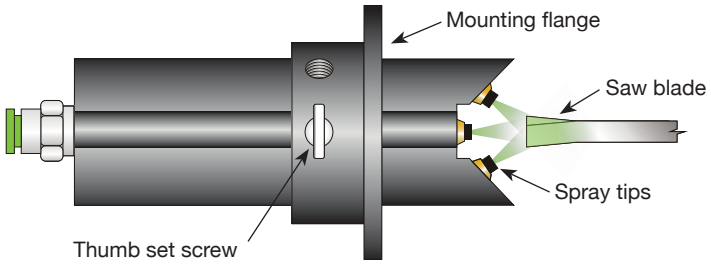
Coolube® 2210 & 2210EP are USDA certified biobased products

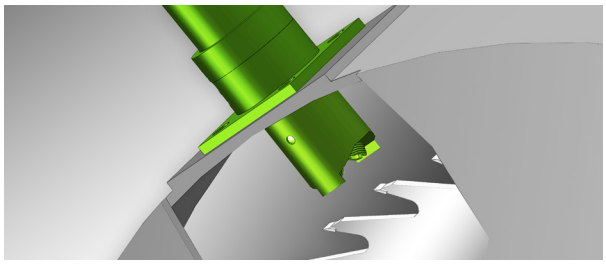
Saw Nozzle Options

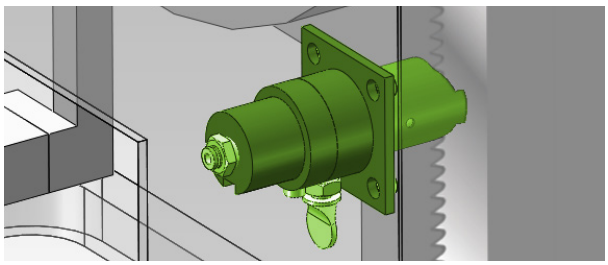


Bat Nozzle

The Bat Nozzle was designed to easily fit on a wide variety of circular saws, vertical band saws, and horizontal band saws. The nozzle includes a 1.75” [44.5 mm] square mounting flange that can be attached to the blade guard. A 1” [25.4 mm] diameter hole drilled through the guard allows the nozzle to be centered over the blade. The nozzle position can then be adjusted as close to the blade as required with a thumb screw. Two outlets on the sides of the blade and a third outlet spraying directly into the gullet of the teeth assure proper application of lubricant to the saw blade. The Bat Nozzle is available in various lengths to accommodate a broad range of saws.







Easily mount a Bat Nozzle to a circular saw or band saw.

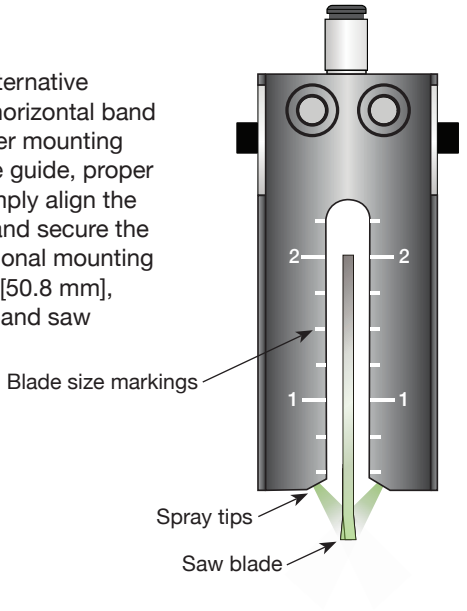
Ideal For:

- **Circular saw:** Blade 20” [508 mm] or under
- **Horizontal band saw:** All blade sizes
- **Vertical band saw:** All blade sizes

LIFETIME PUMP WARRANTY
Your Unist saw blade lubrication system's pump is guaranteed for life when used exclusively with Unist Coolube® Lubricant

Band Saw Blade Nozzle

The Band Saw Blade (BSB) Nozzle provides users with alternative mounting options and delivers an ideal spray pattern for horizontal band saw blade lubrication. Its smaller footprint makes for easier mounting and less intrusive installation. When mounted to the blade guide, proper positioning is easy when using the built-in ruler guide. Simply align the top of the blade with the appropriate blade size marking and secure the nozzle in place. The available mounting kit provides additional mounting flexibility. The BSB Nozzle is available in 1" [25.4 mm], 2" [50.8 mm], and 3" [76.2 mm] sizes to accommodate most common band saw blade widths.



Ideal For:

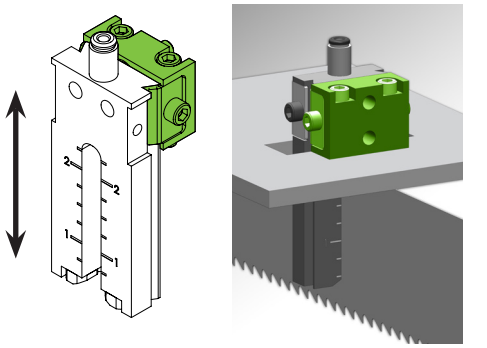
- **Horizontal band saw blades up to 3" [76.2 mm]**
- **Mounting on blade guides**
- **When spraying from the top of the blade is preferred**

Band Saw Guide Nozzle

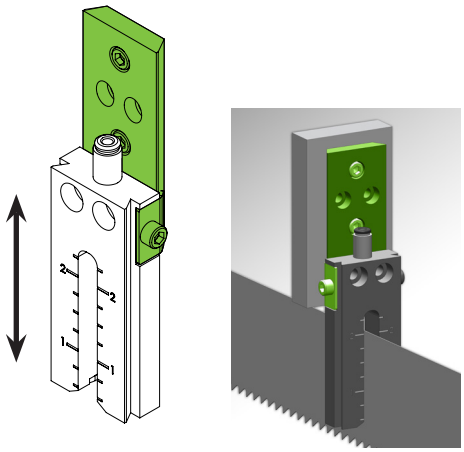
When blade guide lubrication is required, the Band Saw Guide (BSG) Nozzle will lubricate the sides of the blade to help minimize friction. The BSG Nozzle can be mounted directly to a guide block, to the BSB Nozzle, or installed with the mounting kit. When paired with a BSB Nozzle, this will provide lubrication for both the cutting edge and the sides of the blade.

Mounting Kit

For maximum flexibility, every Band Saw Nozzle Mounting Kit includes two mounting brackets. The block mount allows either a blade or the guide nozzle to be held 90 degrees from the mounting surface. The rail mount allows the vertical height of the BSB or BSG Nozzles to be easily adjusted by sliding the nozzle up or down and tightening the clamp at the side.



Block mount



Rail mount

For more information visit: unist.com/sawbladelubesystem

Configuration Options

1-3 outlet enclosure

Number Of Outputs

Operate up to 3 pumps for 3 individual outputs. Outputs can be configured to operate independently or simultaneously. Various sized enclosures are available depending on the number of pumps.

Air Valves

Control saw blade lubrication system operation with the following valve options:

- **Solenoid valve**
  For actuation using an electrical signal from the machine

(Available in 24, 110, 220, 440 VAC and 12 or 24 VDC)

- **Manual valve**
  3-way slide valve for simple manual on/off control

- **Air pilot valve**
  For use with a low flow air signal

- **Foot valve**
  For hands-free manual operation
  (Used with air pilot valve)

Pumps

Choose the appropriate pump output and type for each application.

- **Standard 1-drop pump**
  (0.03 mL per stroke)

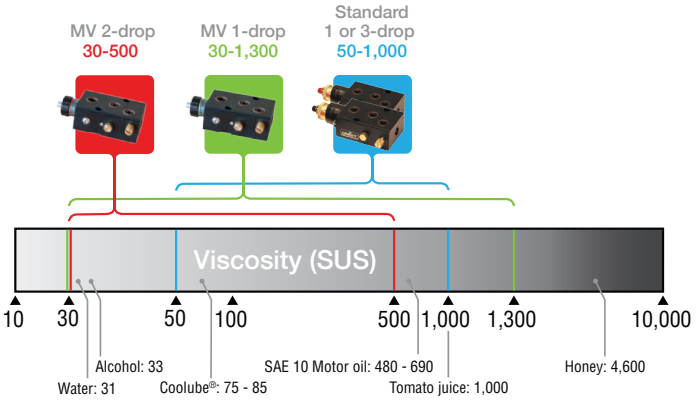
- **Standard 3-drop pump**
  (0.10 mL per stroke)

- **Multi-Viscosity 1-drop pump**
  (0.045 mL per stroke)

- **Multi-Viscosity 2-drop pump**
  (0.10 mL per stroke)

The fluid viscosity will determine the type of Unist pump required.

- For Coolube® and other fluids between 50 SUS and 1,000 SUS, choose the standard 1 or 3-drop pump.
- For fluids less than 50 SUS, choose the Multi-Viscosity (MV) 1 or 2-drop pump.



Need assistance configuring your system? We can help!

Reservoirs

A wide variety of fluid reservoirs are available.

16 oz [473 mL] Polyethylene

32 oz [946 mL] Polyethylene

64 oz [1893 mL] Polyethylene with low level switch

(Also available without a low level switch)

Air trap for use with a pressurized fluid supply

Mounting

System enclosures can come with or without magnetic mounts.

Bolt-on

Magnetic mount

Enclosure Lock

Upgrade from the standard thumb latch to a keyed lock and prevent tampering.

Nozzle Tubing

Coiled or straight nylon single line tubing is available for connecting nozzles to a saw blade lubrication system. Standard length is 10 feet [3 m] coil tubing with 10 feet [3 m] straight tubing. Longer lengths are available upon request.

Saw Nozzles

Unist has a wide variety of MQL nozzle types to fit each specific sawing application.

Bat Nozzle

(Available in 1.63" [41.4 mm], 3" [76.2 mm] and 7" [177.8 mm] sizes.)

BSB Nozzle

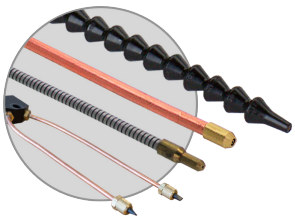
(Available in 1" [25.4 mm], 2" [50.8 mm] and 3" [76.2 mm] sizes.)

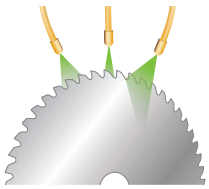
BSG Nozzle

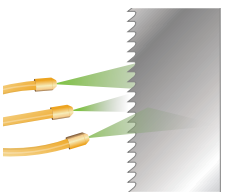
(Recommended when guide lubricant is required.)

Other Nozzles

Unist has a wide variety of MQL nozzle types to fit each specific sawing application including stainless steel, copper, flexible plastic and splitter nozzles. Air blow-off nozzle options are also available to aid in chip removal.





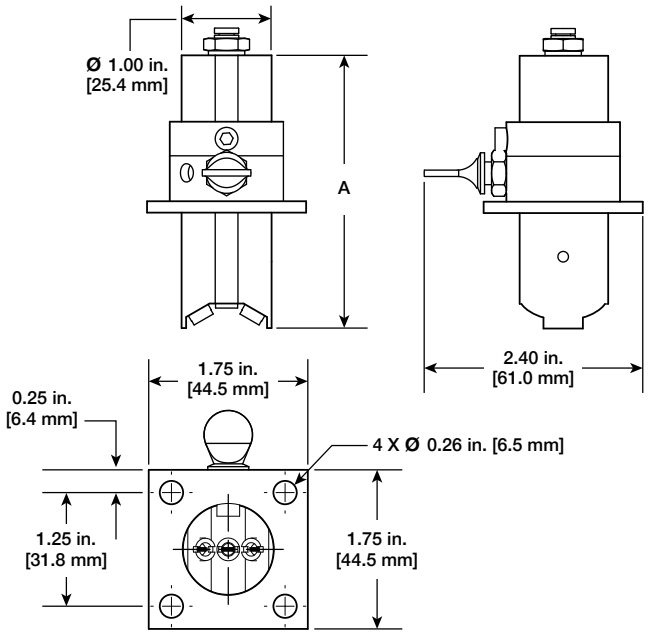


Nozzle Dimensions

Bat Nozzle

The Bat Nozzle comes in 3 different lengths to accommodate a broad range of saws.

Part number	Dimension A
3S-1.63	1.63” [41.4 mm]
3S-3	3” [76.2 mm]
3S-7	7” [177.8 mm]

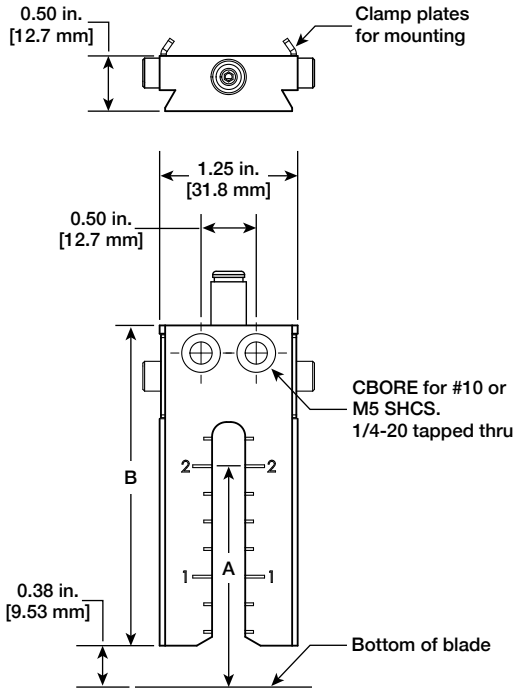


Band Saw Blade Nozzle

The BSB Nozzle comes in 3 different lengths to accommodate various blade sizes.

Part number*	A (blade size)	Dimension B
303710-1-A	Up to 1” [25.4 mm]	1.90” [48.3 mm]
303710-2-A	Up to 2” [50.8 mm]	2.90” [73.7 mm]
303710-3-A	Up to 3” [76.2 mm]	3.90” [99.1 mm]

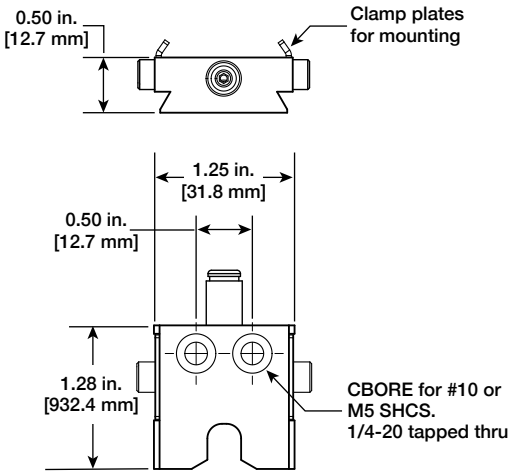
***** *Nozzle shown without mounting kit, but is included with all “-A” part numbers*



Band Saw Guide Nozzle

Part number*	BSG length
303710-G-A	1.28” [932.4 mm]

***** *Nozzle shown without mounting kit, but is included with all “-A” part numbers*



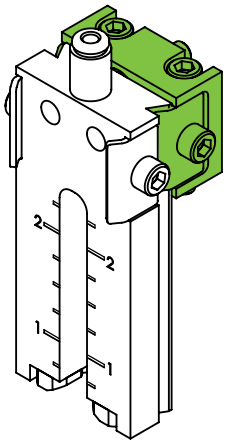
Need assistance configuring your system? We can help!

Band Saw Nozzle Mounting Kit

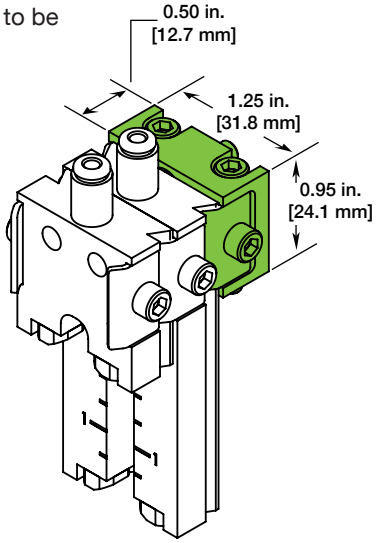
(The Band Saw Nozzle Mounting Kit includes the block mount, rail mount, clamp plates, and required socket head cap screws)

Block Mount

The block mount adds 0.50” [12.7 mm] to thickness and allows the nozzle to be placed at right angle to the mounting surface.



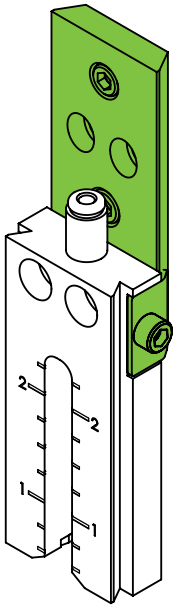
BSB with block mount



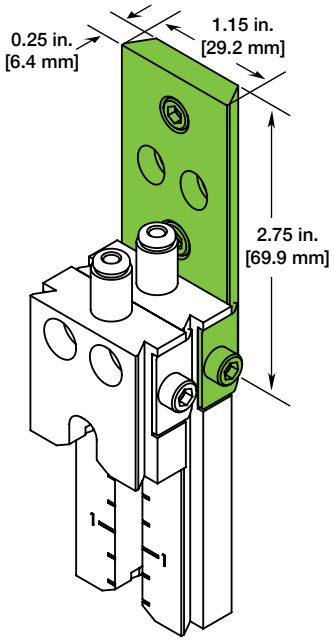
BSB and BSG with block mount

Rail Mount

The rail mount adds 0.25” [6.4 mm] to thickness and allows 1.88” [47.8 mm] of additional vertical adjustment.



BSB with rail mount



BSB and BSG with rail mount

Notes

Notes

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