



Hi-Lok® Installation Tools and Roller Ratchets®

Unique aircraft fasteners require specialized tooling for proper installation. Omega's extensive line of installation hand tools is unparalleled, and our brand is rapidly becoming the industry standard.

We specialize in tools used for "Broached Pin" installation. This includes Hi-Lok®, Hi-Lite®, Hi-Tigue®, and Torque Controlled fasteners. Omega also produces gauges to determine the correct fastener length for a hole, and to check the pin protrusion of the completed installation.

We are committed to further innovation and increased productivity in this ever-changing market. Our staff is available to give recommendations and develop solutions to unique needs. We welcome input, and strive to help our customers increase efficiency and lower costs.

Roller Ratchets®

Box Ratchets

Hand Ratchets

The "Tight Squeeze" Hand Tool

Sockets

Hex Keys

ATHA & ATHR Assemblies

Pin Protrusion Gauges

Grip Scales



Roller Ratchets®

Roller Ratchets® were developed in response to the need for very small ratchet wrenches for use in extremely tight areas where handle 'swing' was limited by obstructions, and by the need to have a ratchet that would engage with very little handle movement. The Roller Ratchet® satisfies both of these requirements, and this modular tool is now widely used in the aerospace community worldwide.



Omega Technologies Inc. has been at the forefront of continued research and development to improve the variety of tools available. With particular emphasis on strength, durability, and quality, we maintain the functionality and cost-effectiveness of the entire line of tools.

The Roller Ratchet® functions as a hand ratchet, yet its size greatly increases its versatility by allowing it to be used in tighter areas. The incorporation of a special 'toothless' clutch eliminates all lost motion, allowing even the slightest movement to engage the tool. The modular platform allows for multiple configurations. A through-hole also makes the tool compatible with Hi-Lok®, Hi-Lite®, and Eddie Bolt® systems.

- Small design allows for use in tight areas
- Modular platform provides versatility
- Through-hole permits use with Hi-Lok®, Hi-Lite®, and Eddie Bolt®
- Revolutionary clutch design
- Torque ratings from 150-600 lb-in.

Standard Roller Ratchet®

The standard Roller Ratchet® comes in a wide range of sizes and strengths. Its reversible spindle allows the tool to be used in any application for installation or removal.



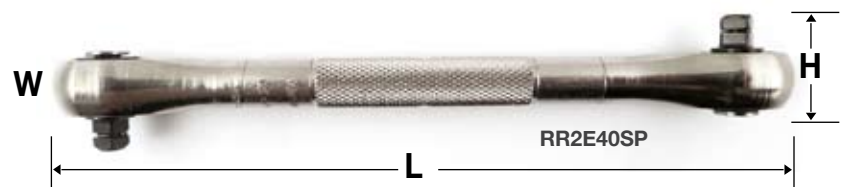
Standard Roller Ratchets®

| PART NUMBER | MAX TORQUE (lb/in.) | SQUARE DRIVE | HEIGHT (H) | WIDTH (W) | LENGTH (L) |
|-------------|---------------------|--------------|------------|-----------|------------|
| RR40S-SP* | 150 | 1/4 | 0.91 | 0.65 | 3.5 |
| RR40SP* | 150 | 1/4 | 0.91 | 0.65 | 5.5 |
| RR80SP | 200 | 1/4 | 1.37 | 0.60 | 6.25 |
| RR130SP | 250 | 1/4 | 0.92 | 0.87 | 7.2 |
| RR250SP | 400 | 3/8 | 1.21 | 1.00 | 7.9 |
| RR400SP | 600 | 3/8 | 1.21 | 1.31 | 8.7 |

*Furnished with reversible spindle

Double-Ended Roller Ratchet®

The Double-Ended Roller Ratchet® eliminates the need for a reversible spindle, reducing the occurrence of foreign object damage.

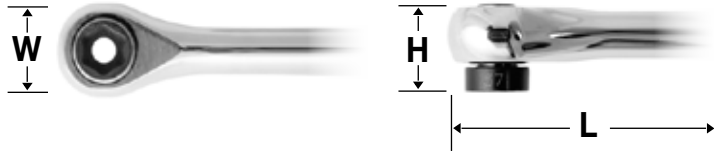


Double Ended Roller Ratchets®

| PART NUMBER | MAX TORQUE (lb/in.) | SQUARE DRIVE | HEIGHT (H) | WIDTH (W) | LENGTH (L) |
|-------------|---------------------|--------------|------------|-----------|------------|
| RR2E40S-SP | 150 | 1/4 | 0.91 | 0.65 | 4.5 |
| RR2E40SP | 150 | 1/4 | 0.91 | 0.65 | 6.5 |
| RR2E80SP | 200 | 1/4 | 1.37 | 0.60 | 6.7 |
| RR2E130SP | 250 | 1/4 | 0.92 | 0.87 | 6.6 |
| RR2E250SP | 400 | 3/8 | 1.21 | 1.00 | 8.9 |
| RR2E400SP | 600 | 3/8 | 1.21 | 1.31 | 8.9 |

Integrated Socket Roller Ratchet®

The Integrated Socket Roller Ratchet® incorporates a low-profile socket and comes in a wide range of sizes. Available fixed or reversible.

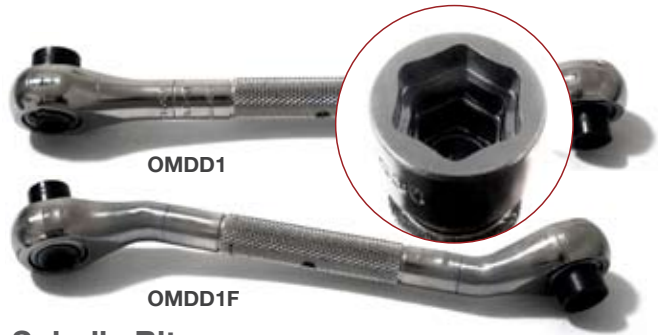


Roller Ratchets® with Built-in Socket

| Socket Hex Opening | 150 lb-in Max Torque | 150 lb-in Max Torque | 200 lb-in Max Torque | 250 lb-in Max Torque | 400 lb-in Max Torque |
|--------------------|----------------------------|----------------------------|------------------------------|--|-----------------------------|
| | H = .76 L = 3.5 | H = .76 L = 5.5 | H = 1.23 L = 6.25 | H = .78 & 1.01 L = 7.25 | H = 1.16 L = 7.9 |
| 3/16 | RR40A18S-SP | RR40A18SP | - | - | - |
| 7/32 | RR40A21S-SP | RR40A21SP | - | - | - |
| 1/4 | RR40A25S-SP | RR40A25SP | RR80A25SP | RR130A25SP | - |
| 9/32 | RR40A28S-SP | RR40A28SP | RR80A28SP | RR130A28SP | - |
| 5/16 | RR40A31S-SP | RR40A31SP | RR80A31SP | RR130A31SP | - |
| 11/32 | RR40A34S-SP | RR40A34SP | RR80A34SP | RR130A34SP | - |
| 3/8 | RR40A37S-SP | RR40A37SP | - | RR130A37SP | - |
| 7/16 | RR40A43S-SP | RR40A43SP | - | RR130A43SP | - |
| 1/2 | - | - | - | - | RR250A50SP |

The OMDD with Stepped Sockets

The OMDD series roller ratchets incorporate five integral sockets into a single wrench, allowing the installation of collar hex sizes 7/32, 1/4, 5/16, 11/32, and 3/8 inch. This one wrench covers most -5, -6, -8, -10, and -12 collars. Available straight (OMDD1) or offset 15° (OMDD1F)..



Bit Holders

The Bit Holder Roller Ratchet® is fitted with a 1/4" bit holder, making it compatible with any hex insert screwdriver bit.



Spindle Bits

The integrated spindle bit allows the wrench to accept the bit directly. The exclusion of the lengthier bit holder allows greater clearance, while still maintaining easy reversible capability.



The RRQC-BH1/4 quick change replacement for the 1/4" square drive spindle accommodates multiple insert bits

Box Ratchets

Perfect for installing Hi-Lok® fasteners, our box ratchets are made of high quality, heat-treated steel and finished with a nickel-chrome plating. The result is a durable, long-lasting tool.

Small size and variable shape make the box ratchet ideal for use in tight areas. Even without line of sight, the head fits easily onto a collar, while the shoulder ring prevents the collar from slipping through the socket. An optional collar ejector pin quickly discards the removed collar.

- Durable
- Perfect for tight areas
- Shoulder ring inside socket
- Optional collar ejector pin
- Available straight or offset 20°



**Flat Box Ratchet
ATBR3134**



**Flat Box Ratchet
with Ejector Buttons
ATBR3137E**



**Offset (20°) Box Ratchet
with Collar-Stop
ATBRO3134**



**Offset (20°) Box Ratchet
with Collar-Stop and Ejector Buttons
ATBRO3134E**

Box Ratchets

| HEX 1 | HEX 2 | FLAT | FLAT WITH EJECTOR | OFFSET | OFFSET WITH EJECTOR |
|-------|-------|----------|-------------------|-----------|---------------------|
| 7/32 | 1/4 | ATBR2125 | ATBR2125E | ATBRO2125 | ATBRO2125E |
| 1/4 | 9/32 | ATBR2528 | ATBR2528E | ATBRO2528 | ATBRO2528E |
| 1/4 | 5/16 | ATBR2531 | ATBR2531E | ATBRO2531 | ATBRO2531E |
| 9/32 | 5/16 | ATBR2831 | ATBR2831E | ATBRO2831 | ATBRO2831E |
| 5/16 | 11/32 | ATBR3134 | ATBR3134E | ATBRO3134 | ATBRO3134E |
| 5/16 | 3/8 | ATBR3137 | ATBR3137E | ATBRO3137 | ATBRO3137E |
| 7/16 | 1/2 | ATBR4350 | ATBR4350E | ATBRO4350 | ATBRO4350E |

Larger sizes available on request

Hand Ratchets • "Tight Squeeze"

Hand Ratchets

Manufactured from high quality materials and nickel-plated for durability, these ratchets are available in a variety of sizes and are suitable for a wide range of installations, including Hi-Lok® systems.

Our selection of hand ratchets provide the user with a range of options to get the job done. A through-hole in the head of the ratchets make them compatible with Hi-Lok® systems. By increasing the number of teeth in the head (up to 72, depending on size), the ratchet engages with less movement. Finally, an ergonomic thumb switch changes the direction of the ratchet, allowing it to be used for installation or removal.

- Versatility of use
- Durable
- Easily reversible
- Compatible with Hi-Lok® system
- Engages with minimal movement



Hand Ratchets

| PART NUMBER | SQUARE DRIVE | THROUGH HOLE DIAMETER | HEAD WIDTH | SIDE TO CENTER | HEAD HEIGHT | OVERALL LENGTH | WEIGHT (LBS.) |
|-------------|--------------|-----------------------|------------|----------------|-------------|----------------|---------------|
| ATHR-MINI | 1/4 | 0.11 | 0.92 | 0.46 | 0.40 | 4.60 | 0.20 |
| ATHR250 | 1/4 | 0.11 | 1.08 | 0.50 | 0.44 | 5.50 | 0.35 |
| ATHR-TILT | 1/4 | 0.11 | 0.90 | 0.45 | 0.40 | 6.25 | 0.30 |
| ATHR375 | 3/8 | 0.21 | 1.40 | 0.70 | 0.60 | 7.85 | 0.85 |
| ATHR500 | 1/2 | 0.29 | 1.74 | 0.87 | 0.75 | 10.35 | 1.50 |

The "Tight Squeeze" Hand Tool

The Tight Squeeze is one of the newest innovations from our engineering team. It is a full function hand tool for Hi-Lok® and Hi-Lite® fasteners. The tool's unique profile allows for one-handed operation in tight spots, blind areas, and around corners. The operation is identical to pneumatic installation tools, but is more affordable and versatile.

Interchangeable hex keys and sockets fit an entire range of pin/collar combinations. We have also incorporated our toothless ratcheting system from the Roller Ratchet® which allows the slightest movement to engage the tool. This elegant solution turns impossible jobs into routine work.



PATENT PENDING
TSQ25-312-079

- Single-Handed operation
- Zero backlash or "toothless" ratchet
- Cost-effective



"Tight Squeeze"

| COMPLETE TOOL PART NUMBER | SOCKET SIZE | SOCKET PART NUMBER | HEX KEY SIZE | HEX KEY PART NUMBER |
|---------------------------|-------------|--------------------|--------------|---------------------|
| TSQ25-218-062 | 7/32 | ATHS218 | 1/16 | TSQ-062 |
| TSQ25-250-062 | 1/4 | ATHS250 | 1/16 | TSQ-062 |
| TSQ25-281-062 | 9/32 | ATHS281 | 1/16 | TSQ-062 |
| TSQ25-312-062 | 5/16 | ATHS312 | 1/16 | TSQ-062 |
| TSQ25-281-078 | 9/32 | ATHS281 | 5/64 | TSQ-078 |
| TSQ25-312-078* | 5/16 | ATHS312 | 5/64 | TSQ-078 |
| TSQ25-343-078* | 11/32 | ATHS343 | 5/64 | TSQ-078 |
| TSQ25-437-078 | 7/16 | ATHS437A | 5/64 | TSQ-078 |
| TSQ25-312-094 | 5/16 | ATHS312 | 3/32 | TSQ-094 |
| TSQ25-343-094 | 11/32 | ATHS343 | 3/32 | TSQ-094 |
| TSQ25-437-094 | 7/16 | ATHS437A | 3/32 | TSQ-094 |

*Most popular

Sockets (ATHS) • Hex Keys

Sockets (ATHS)

Anti-FOD Sockets are manufactured to fit conventional square drives. They feature a generous through-hole to enable the use of hex keys when necessary for Hi-Lok®, Hi-Lite®, and Hi-Tigue® installations. A set screw is provided to positively retain the sockets onto the square drives as an anti-FOD measure.



ATHS437



Anti-Fod Hex Sockets

Socket (ATHS) Measurements

| PART NUMBER | HEX OPENING (6-POINT) | SQUARE DRIVE-SIZE | NOSE DIAMETER | OVERALL LENGTH |
|-------------|-----------------------|-------------------|---------------|----------------|
| ATHS156 | 5/32 | 1/4 | 0.280 | 0.86 |
| ATHS187 | 3/16 | 1/4 | 0.312 | 0.86 |
| ATHS218 | 7/32 | 1/4 | 0.312 | 0.86 |
| ATHS250 | 1/4 | 1/4 | 0.375 | 0.88 |
| ATHS281 | 9/32 | 1/4 | 0.410 | 0.88 |
| ATHS312 | 5/16 | 1/4 | 0.467 | 0.88 |
| ATHS343 | 11/32 | 1/4 | 0.508 | 0.88 |
| ATHS375 | 3/8 | 3/8 | 0.560 | 1.00 |
| ATHS375A | 3/8 | 1/4 | 0.560 | 0.88 |
| ATHS437 | 7/16 | 3/8 | 0.640 | 1.00 |
| ATHS437A | 7/16 | 1/4 | 0.600 | 0.86 |
| ATHS500 | 1/2 | 3/8 | 0.710 | 1.00 |

Hex Keys

Hex keys for hand-tool applications, and replacement tips for most popular air-tool systems.

Hex Keys and Replacement Tips

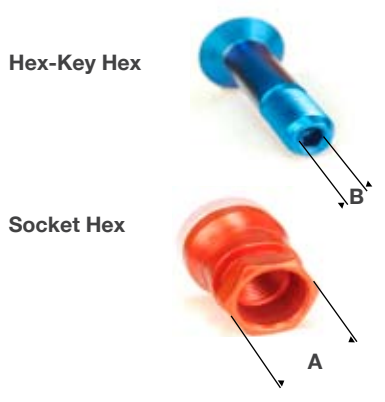
| Hand-Held Hex Keys | | | Replacement Tips | | | |
|--------------------|----------------|-----------|--------------------|---------------------|--------------------|---------------|
| HEX KEY SIZE | PLASTIC HANDLE | T-HANDLE | HI-SHEAR® STANDARD | HI-SHEAR® SUPER KEY | VOI-SHAN KWIK-KEY® | LOK-FAST QRS® |
| 1/16 (0.062) | ATHK062 | - | HLT140-062 | HLT140K062 | KK101-06 | QRK5 |
| 5/64 (0.079) | ATHK079 | - | HLT140-078 | HLT140K078 | KK101-07 | QRK6 |
| 3/32 (0.094) | ATHK094 | ATHK094TP | HLT140-094 | HLT140K094 | KK101-09 | QRK8 |
| 1/8 (0.125) | ATHK125 | ATHK125TP | HLT140-125 | HLT140K125 | - | QRK10 |
| 5/32 (0.156) | - | ATHK156TP | HLT140-156 | HLT140K156 | - | QRK12 |
| 3/16 (0.187) | - | ATHK187TP | HLT140-187 | HLT140K187 | - | - |
| 7/32 (0.218) | - | ATHK218TP | - | - | - | - |
| 1/4 (0.250) | - | ATHK250TP | - | - | - | - |



Through Hole Extensions

Available in 2" and 4" lengths





This is a hand tool assembly for the installation of the Hi-Lok® or Hi-Lite® fastening systems. The ATHA Series consists of a hand ratchet wrench (ATHR250) with a through hole, a socket, and a plastic handle Allen® wrench.

The through hole in the ratchet allows for the insertion of an Allen® key. While any Allen® key style may be used in conjunction with the ratchet, a plastic handle or a "T" handle Allen® wrench with a replaceable blade is furnished. The socket is held to the square drive with a set screw, eliminating FOD.

This entire assembly is completely interchangeable with the Hi-Shear equivalent (see Appendix I: Cross Reference p. 73).

Standard Ratchet Assembly (ATHA Series)



Roller Ratchet® Assembly (ATRR Series)



Integral Socket Assembly (RRXXA Series)



ATHA, ATRR, and RRXXA Assembly

| Normal Pin Diameter | | | Part Numbers | | |
|----------------------|-------------------|--------------------|-------------------------------------|---------------------------------|----------------------------------|
| SOCKET HEX WIDTH (A) | HEX KEY WIDTH (B) | SQUARE DRIVE SIZE* | STANDARD RATCHET 3-PIECE ASSEMBLY** | ROLLER RATCHET 3-PIECE ASSEMBLY | INTEGRAL SOCKET 2-PIECE ASSEMBLY |
| 3/16 (0.187) | 1/16 (0.062) | 1/4 | ATHA1 | ATRR1 | RR40A187-062 |
| 7/32 (0.218) | 1/16 (0.062) | 1/4 | ATHA2 | ATRR2 | RR40A218-062 |
| 1/4 (0.250) | 1/16 (0.062) | 1/4 | ATHA3 | ATRR3 | RR40A250-062 |
| 9/32 (0.281) | 1/16 (0.062) | 1/4 | ATHA4 | ATRR4 | RR40A281-062 |
| 5/16 (0.312) | 1/16 (0.062) | 1/4 | ATHA5 | ATRR5 | RR40A312-062 |
| 11/32 (0.343) | 1/16 (0.062) | 1/4 | ATHA6 | ATRR6 | RR40A343-062 |
| 7/32 (0.218) | 5/64 (0.078) | 1/4 | ATHA7 | ATRR7 | RR40A218-078 |
| 1/4 (0.250) | 5/64 (0.078) | 1/4 | ATHA8 | ATRR8 | RR40A250-078 |
| 9/32 (0.281) | 5/64 (0.078) | 1/4 | ATHA9 | ATRR9 | RR40A281-078 |
| 5/16 (0.312) | 5/64 (0.078) | 1/4 | ATHA10 | ATRR10 | RR40A312-078 |
| 11/32 (0.343) | 5/64 (0.078) | 1/4 | ATHA11 | ATRR11 | RR40A343-078 |
| 3/8 (0.375) | 5/64 (0.078) | 1/4 | ATHA12 | ATRR12 | RR40A375-078 |
| 5/16 (0.312) | 3/32 (0.094) | 1/4 | ATHA13 | ATRR13 | RR130A312-094 |
| 11/32 (0.343) | 3/32 (0.094) | 1/4 | ATHA14 | ATRR14 | RR130A343-094 |
| 3/8 (0.375) | 3/32 (0.094) | 1/4 | ATHA15 | ATRR15 | RR130A375-094 |
| 7/16 (0.437) | 3/32 (0.094) | 3/8 | ATHA16 | ATRR16 | RR130A437-094 |
| 1/2 (0.500) | 3/32 (0.094) | 3/8 | ATHA21 | ATRR21 | RR250A500-094 |
| 3/8 (0.375) | 1/8 (0.125) | 3/8 | ATHA17 | ATRR17 | RR130A375-125 |
| 7/16 (0.437) | 1/8 (0.125) | 3/8 | ATHA18 | ATRR18 | RR130A437-125 |
| 1/2 (0.500) | 1/8 (0.125) | 3/8 | ATHA22 | ATRR22 | RR250A500-125 |
| 7/16 (0.437) | 5/32 (0.156) | 3/8 | ATHA19 | ATRR19 | RR130A437-156 |
| 1/2 (0.500) | 5/32 (0.156) | 3/8 | ATHA20 | ATRR20 | RR250A500-156 |

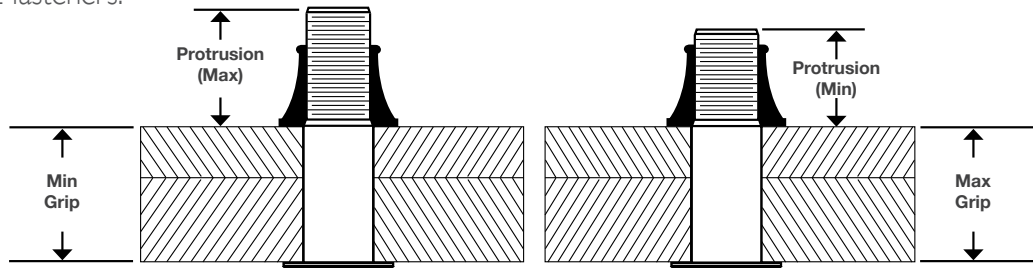
*Square Drive size does not apply to Roller Ratchet assemblies, as socket is built in.

**ATHA1-ATHA15 assemblies come with the ATHR-250 hand ratchet. To substitute a smaller hand ratchet (ATHR-MINI), add "M" to part number, i.e. "ATHA10M"

Pin Protrusion Gauges

Pin Protrusion Gauges are manufactured for use on all types of frangible and torque-control fasteners. These gauges determine if the correct length pin has been installed by determining if the pin's protrusion is between the allowable minimum and maximum limits shown on the gauge.

Gauges are available for Hi-Lok®, Hi-Lite®, and Hi-Tigue® systems. To select the correct gauge for the fastener, select the one that corresponds to the appropriate pin diameter. If the pin falls short of the minimum limit or exceeds the maximum, it must be removed, and a more appropriate size selected. Exceeding the maximum limit requires a shorter pin, and falling short the minimum limit requires a longer pin. The correct pin will lie between the maximum and minimum limitations giving a proper ratio of grip to protrusion. These are complete sets that include gauges for -5 to -12 fasteners.



Pin Protrusion Gauging

Hi-Lok® Standard Protrusion Gauges (OM2-1522)



Hi-Lok® Aerospace "B" Gauge Set (OM2-1522-B)



Hi-Lok® Large Diameter Gauge Set (OM2-1522-2, OM2-1522-B-2)



Hi-Lite® Standard Protrusion Gauges (OM2-1522 HST)



Hi-Lite® Aerospace "B" Gauge Set (OM2-1522HST-B)



Hi-Lite® Large Diameter Gauge Set (OM2-1522HST-2)



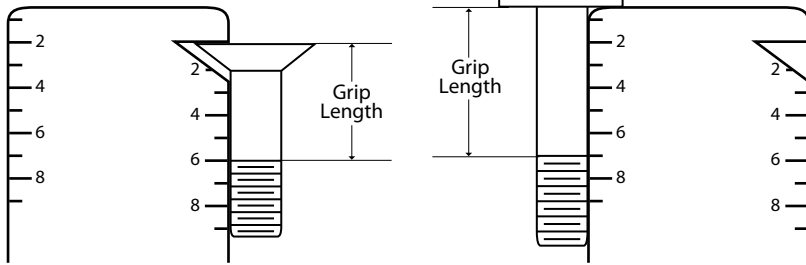
Protrusion Gauges

| Dash Sizes | Nominal Pin Diameter | | OM2-1522 Pin Protrusion Limits* | | OM2-1522-B Pin Protrusion Limits** | | OM2-1522 HST Pin Protrusion Limits* | | OM2-1522 HST-B Pin Protrusion Limits** | |
|------------|----------------------|---------|-----------------------------------|-------|-------------------------------------|-------|--------------------------------------|-------|--|-------|
| DECIMAL | FRACTION | DECIMAL | MIN | MAX | MIN | MAX | MIN | MAX | MIN | MAX |
| -5 | 5/32" | 0.1560 | 0.302 | 0.384 | 0.302 | 0.389 | 0.270 | 0.352 | 0.270 | 0.352 |
| -6 | 3/16" | 0.1875 | 0.315 | 0.397 | 0.315 | 0.402 | 0.280 | 0.362 | 0.280 | 0.362 |
| -8 | 1/4" | 0.2500 | 0.385 | 0.467 | 0.385 | 0.472 | 0.310 | 0.392 | 0.310 | 0.392 |
| -10 | 5/16" | 0.3125 | 0.490 | 0.572 | 0.490 | 0.577 | 0.370 | 0.452 | 0.370 | 0.452 |
| -12 | 3/8" | 0.3750 | 0.535 | 0.617 | 0.535 | 0.622 | 0.410 | 0.492 | 0.410 | 0.492 |
| Dash Sizes | Nominal Pin Diameter | | OM2-1522-2 Pin Protrusion Limits* | | OM2-1522-2B Pin Protrusion Limits** | | OM2-1522HST-2 Pin Protrusion Limits* | | OM2-1522 HST-B-2 Pin Protrusion Limits** | |
| -14 | 7/16" | 0.4375 | 0.625 | 0.707 | 0.625 | 0.707 | 0.475 | 0.557 | 0.475 | 0.557 |
| -16 | 1/2" | 0.5000 | 0.675 | 0.757 | 0.675 | 0.757 | 0.515 | 0.597 | 0.515 | 0.597 |
| -18 | 9/16" | 0.5625 | 0.760 | 0.842 | 0.760 | 0.842 | 0.590 | 0.672 | 0.590 | 0.672 |
| -20 | 5/8" | 0.6250 | 0.815 | 0.897 | 0.815 | 0.897 | 0.650 | 0.732 | 0.630 | 0.712 |
| -24 | 3/4" | 0.750 | 1.040 | 1.122 | 1.040 | 1.122 | - | - | - | - |

*OM2-1522 and OM2-1522 HST are interchangeable with Hi-Shear 2-1522 and 2-1522 HST respectively

**Values per BAC5004-2

Our grip scales serve two purposes: first, to measure the “grip-length” of Hi-Lok® and Hi-Lite® pins, Shear Lockbolts, structural screws, and bolts (the thick side of the tool); second, to measure the thickness of materials to be fastened so that the proper length pin may be chosen (the thinner side of the tool).

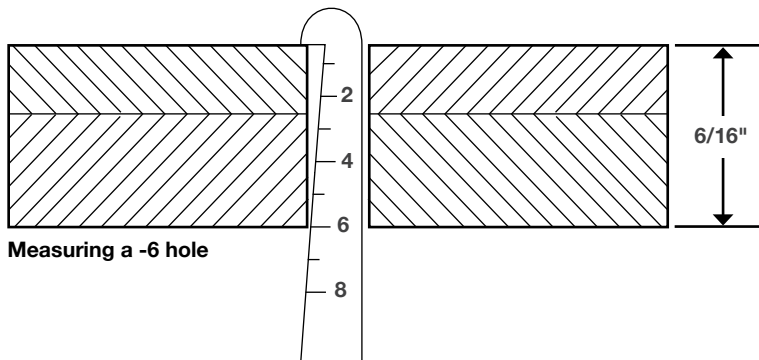


Measuring a -6 grip length countersink head pin

Measuring a -7 grip length protruding head pin

The scale is satin finished .018 stainless steel with inch (red) and metric (black) measurements. Our CATGS1 is equivalent to the Hi-Shear 2-612 Grip Scale.

CATGS1 Grip Scale
(alternate to Hi-Shear 2-612)



Measuring a -6 hole

As shown here, when measuring material which is 6/16" thick, a -6 grip length fastener would be selected

OM2-651 Grip Scale and Slide Assembly
(alternate to Hi-Shear 2-651)



OM2-615 Grip Scale Slide
(alternate to Hi-Shear 2-615)

