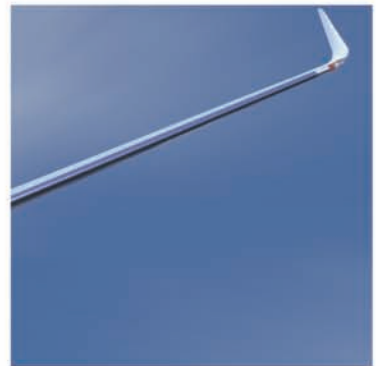




# Quality Tools for the Aviation Industry





## Quality Tools for the Aviation Industry

### 35th ANNIVERSARY

Headquartered in Miami, Florida and with satellite offices in Madrid, Sevilla and San Jose Dos Campos (Brasil), Delta International Inc. is one of the largest tool suppliers in the world.

We proudly serve the global aerospace market in the Americas, Europe and Asia Pacific. For 35 years, we have been expanding our global presence and product lines. Delta prides itself in providing tooling and services that our valued customers have come to expect and deserve which is why our company is well-known throughout the aircraft industry for exceptional quality aircraft tools and excellent service. We offer a variety of tools for aircraft manufacturing and maintenance.

If you are one of our valued customers we thank you for your ongoing business and support. We hope you enjoy this new tool, which we at Delta are proud to present. In this digital age when information is literally a click away, we received an overwhelming request for a paper catalog to which we happily complied.

If you are not familiar with Delta, we welcome you and would like to take a moment to assure you that we will do everything in our power to help you and assist your company with all your specific tool needs.

We have tried to include most of the tools and accessories we distribute, but if you need a product that is not shown in this catalog, please let us know, chances are we most probably carry it or can find it for you.

Our mission is to offer quality aircraft tools at competitive prices along with exceptional customer service. Delta's committed to offering innovative products and services. Our priority is you, the client and we welcome the opportunity to exceed your expectations.

#### TERMS AND CONDITIONS

**PRICING:** All prices quoted are Ex-Works Miami and in U.S. Dollars. Items over 50 Lbs. will incur an additional charge.

**MINIMUM ORDERS:** No minimum order required. A \$25 service charge will apply for orders under \$150.00.

#### PAYMENT METHODS:

- Open account, Net 30 day terms, on approved credit
- Approved credit cards
- Prepayment via company check or wire transfer
- All payments must be made in US Dollars.

**SHIPPING:** All items will be shipped via UPS or other designated U.S. carriers. International orders will be sent as per customer's instructions.

**RETURNS:** No merchandise will be accepted without prior authorization. All returns must be accompanied by a Return Material Authorization (RMA) number and will be evaluated for replacement, repair or credit. All exchanges or returns may be made must within 30 days from invoice date. Material must be in new-unused condition with all manuals, accessories and original packaging. A 20% restocking charge will be applied to all returns. Defective material may be returned to Delta with all freight pre-paid. All special order items are non returnable.

**WARRANTY:** All tools are subject to warranty of the original manufacturer.

**SHORTAGES:** All shortages must be reported within 24 hours of receipt of order.

**SALES TAX:** Customers located in Florida are subject to applicable sales tax rate in effect at time of purchase.

Delta International Inc. is a woman owned company Minority Business Enterprise (MBE) certified.

Cage code: 05XT5.

We are also ISO 9001 and AS9120 certified by Bureau Veritas.

**4970 SW 72nd Ave., Ste. 101  
Miami, FL 33155**

**Ph: 305.665.6573 Fax: 305.665.4323**

**Email: mail@deltaintl.com**



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## MP5160 Series

- 3,000 - 4,000 blows p/m.
- Rated for continuous production use.
- Precision feathering throttle for positive bit control.
- 360° exhaust deflector. No blow back of chips, air, dust.
- Patented interlock quick-change spring holds bits securely, permits easy, quick bit changes.
- Replaceable steel nose bushing saves on cost of replacing complete barrel (MP5164 and MP5168). Side to center 13/32" (27.8mm).



Part No.	Blows Per Minute	Bore		Stroke		Length		Weight	
		in	mm	in	mm	in	mm	lbs	kg
MP5161	4000	.75	19	1.9	49	7.0	178	3.4	1.5
MP5164	3000	.75	19	2.7	68	8.1	206	4.0	1.8
MP5168	3000	.75	19	2.7	68	8.1	206	9.0	4.1

## CLECO Series Riveters

- For driving 1/8"-1/4" (3-6mm) rivets.
- Standard beehive retainer.
- Built-in air regulator controls power output.
- Spool valve for precise speed control.



Part No.	Bore		Stroke		Blows Per Min.	For use with Rivet Set Shank Dia.		Length		Weight	
	in	mm	in	mm		in	mm	in	mm	lbs	kg
<b>F Series Riveters – Round Taper Nose – Pistol Grip</b>											
F2-PT-RT-B	0.56	14	2.0	52	3900	.401	10.2	6.7	170	2.7	1.2
F4-PT-RT-B	0.56	14	4.0	102	1700	.401	10.2	8.7	222	3.3	1.5

## Atlas Copco Riveting Hammers

- Protective Sleeve.
- Trigger with adjustable power.
- Air servo system. Gives efficient recoil dampening with values of less than 2.5 m/s<sup>2</sup>.
- Can easily cope with rivet diameters of up to 10mm.



Part No.	Nominal Max. Rivet diameter Capacity			Bucking bar model required
	Dural in	Steel in	Titanium in	
RRH04	3/32 - 3/16	3/21 - 5/32	-	RBB04 RBB10
RRN11	3/32 - 3/16	3/32 - 5/32	-	
RRH06	5/32 - 1/4	1/8 - 1/4	3/32 - 5/32	RBB10 RBB16
RRH08	3/16 - 5/16	5/32 - 1/4	1/8 - 1/4	RBB10 RBB16
RRH10	3/16 - 3/8	1/4 - 5/16	5/32 - 1/4	RBB16
RRH12	5/16 - 7/16	1/4 - 3/8	1/4 - 1/8	RBB16

## U.S. Industrial Professional Grade Rivet Guns

- Available in offset or straight handle (specify).
- Comes with retainer spring and regulator (TP2012).
- .401 shank diameter.
- Light feathered touch.
- Precision machined hardened and ground valve.
- "Sure Grip" powder coated finish.
- Teasing trigger.
- Precision machined and hardened cylinder for long life.
- Made in U.S.A.
- CE certified.



Part No.	Blows Per Min.	Capacity Alum.	Bore	Stroke	Length	Weight
US1X	3600	1/8"	9/16"	1-1/2"	5-11/16"	2.0 LBS.
US2X	2580	1/8"	1/2"	2-1/4"	6-11/16"	2.3 LBS.
US3X	2160	3/16"	1/2"	2-7/8"	7-5/16"	2.3 LBS.
US4X	1740	1/4"	1/2"	3-1/16"	8-1/2"	2.8 LBS.

## U.S. Industrial Professional Grade Rivet Guns

- Takes .401 shank rivet sets.
- Lightweight aluminum handle.
- Made in U.S.A.
- Teasing trigger.
- Price includes spring retainer & regulator (TP97).
- Precision machined hardened and ground valve.
- "Sure Grip" powder coated finish.
- Precision machined and hardened cylinder for long life.
- CE certified.



This "X" type feathering trigger riveter is the only rivet gun that allows you to slowly begin riveting without damage to the skin. This is critical in performing riveting operations. This gun is used by aircraft mechanics worldwide. It's also the perfect tool for kit builders.

Part No.	Blows Per Min.	Capacity Alum.	Bore	Stroke	Length	Weight
TP82	2580	1/8"	9/16"	1-1/2"	5-11/16"	2.4 LBS.
TP83	2160	3/16"	1/2"	2-7/8"	6-11/16"	2.5 LBS.
TP84	1740	1/4"	1/2"	3-1/16"	8-1/2"	2.75 LBS.

## U.S. Industrial Professional Grade Rivet Guns

- Teasing trigger.
- Available in offset handle only.
- Comes with retainer spring and regulator (TP2012).
- .401 or .498 shank diameter (specify).
- Precision machined hardened and ground valve.
- "Sure Grip" powder coated finish.
- Precision machined and hardened cylinder for long life.
- Made in U.S.A.
- CE certified.



Part No.	Blows Per Min.	Capacity Alum.	Bore	Stroke	Length	Weight
US5X	1560	1/4"	3/4"	2-11/16"	9-1/4"	5.0 LBS.
US7X	900	3/8"	3/4"	5-13/16"	11-1/2"	6.1 LBS.
US9X	1140	5/16"	3/4"	3-7/8"	10"	5.3 LBS.

**U.S. Industrial Professional Grade Limited Access Rivet Guns**



- Available in offset handle only.
- .401 special short shank sets required.
- Comes with retainer spring and regulator (TP97).
- Precision machined hardened and ground valve.
- "Sure Grip" powder coated finish.
- Teasing trigger.
- Precision machined and hardened cylinder for long life.
- Made in U.S.A.
- CE certified.

Part No.	Blows Per Min.	Capacity Alum.	Bore	Stroke	Length	Weight
US100B	2850	5/32"	9/16"	1-7/8"	3-5/8"	2.1 LBS.
US200B	2700	3/16"	9/16"	2-1/4"	5-3/8"	3.1 LBS.

**U.S. Industrial "Recoilless" Rivet Guns**



- Unique Viscoelastic dampening system reduces damaging low-frequency vibration.
- Ergonomic design - comfortable, balanced tool.
- Compact design.
- Reduced noise output.
- Few moving parts create a durable, reliable tool.
- TP1 swivel regulator supplied as standard equipment.
- Precision machined hardened and ground valve.
- "Sure Grip" powder coated finish.
- Teasing trigger.
- Precision machined and hardened cylinder for long life.
- CE certified.

Part No.	Capacity		Bore	Stroke	Blows Per Min.	Rivet Set Dia.	Overall Length	Weight	Inlet
	Alum.	Steel							
US2R	5/32"	1/8"	1/2"	2"	2250	.401	6-7/8"	2.8 LBS	1/4 NPT
US3R	3/16"	5/32"	1/2"	3"	1900	.401	7-7/8"	3.0 LBS	1/4 NPT
US4R	7/32"	3/16"	1/2"	4"	1650	.401	8-7/8"	3.3 LBS	1/4 NPT
US5R	1/4"	3/16"	1/2"	5"	1400	.401	9-7/8"	3.5 LBS	1/4 NPT

**.401 Shank Riveting Tools**



Part No. 909	Twin blade cutter	Part No. 910	Chisel
Part No. 911	Moil point	Part No. 912	Rivet Buster
Part No. 1955	Body ripper	Part No. 1960	Spotweld breaker
Part No. 1957	Panel cutter	Part No. 905	Scraper
Part No. 1959	Metal trimmer	Part No. SM97	Flush set

**.498 Shank Riveting Tools**

Part No. H1972	Chisel
Part No. H1997	Moil point
Part No. H1975	Rivet buster



**Retainer Springs**

- Quick Change Type: designed to make possible the speedy changing of rivet sets in your rivet gun.
- Beehive Type: designed to securely hold rivet sets in the rivet gun.



Retainer Spring Part No.	Beehive Type Tool No.	Quick Change	Safety Type Tool No.
A1006-234X	1X-2X3-4-E3-E5E2 2R-3R-4R-5R	N/A	N/A
A1007-234X	N/A	1X-2X-3X-4X E3-E5 R-3R-4R-5R	N/A
A1006-SAF	N/A	N/A	1X-2X-3X-4X E3-E5 2R-3R-4R-5R
A1006-579X	5X-7X-9X	N/A	N/A
A1007-579X	N/A	5X-7X-9X	N/A
A1006-100B	N/A	100B-200B	N/A

**90° Angle Attachment**

(Fits US 2X-3X-4X, US TP82-83-84, CP2X-3X-4X, Cleco E3-E4-E5) 1.8 lbs.

- Threads onto rivet gun.
- 5/32" capacity.
- 2-1/2" angle head height.
- Use .401 short shank rivet sets SMJ500 series.
- Allows for angle riveting in close quarters Rivet gun.

PN: TP347



## MultiFlex Swivel

- Rotates Freely through 360°

Part No.	Description
8202 1350 26	Multiflex swivel 1/4 NPT
8202 1350 28	Multiflex swivel 3/8 NPT
8202 1350 30	Multiflex swivel 1/2 NPT



## Brass Air Tool Regulator

- Solid brass construction.
- Chicago pneumatic type.
- Helps "feather" trigger.
- Has positive adjustment.
- Fits most air tool air inlets.
- 1/4" pipe thread.

PN: TP2012



## Steel Air Tool Regulator

- Steel construction.
- Great for rivet guns.
- Helps "feather" trigger.
- Has positive adjustment.
- Fits most air tool air inlets.
- 1/4" pipe thread.

PN: TP97



## U.S. Industrial Swivel Regulator

- 360° swivel to allow hose to drop down.
- Ball detent regulator.
- 1/4" connection.
- 25 CFM.

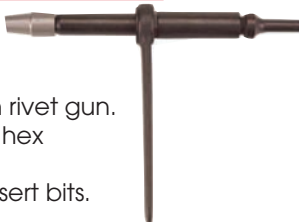
PN: TP1



## Rivet Gun Type Screw Removal Tools

- Useful in removing screws that are corroded or have stripped heads.
- .401 Parker taper shank for use in rivet gun.
- 3/8" square socket end with 1/4" hex adapter included.
- Use standard Phillips or Slotted insert bits.
- Rivet gun required.

PN: TP328



## SNAP-SOC Rivet Set Caps

The SNAP-SOC provides a protection zone between the rivet set and the rivet and permits perfect installation of the rivets.

- PN: 10330 1/32" White      PN: 10334 1/4" Blue  
 PN: 10331 1/8" Orange      PN: 10333 3/16" Yellow  
 PN: 10332 1/4" Green



## Rivet Cutters

This heavy-duty cutter is designed to quickly and easily shear aluminum rivets. Cuts diameters of 3/32", 1/8", 5/32", 3/16", 7/32" and 1/4". It is adjustable for 1/4" to 3/4" long rivets in 1/16" increments.

PN: TP346



## U.S. Industrial Rivet Fan Spacing Tool

This tool will save hours in layout time for rivet spacing. The rivet fan spacing tool easily expands or contracts while maintaining equal hole spacing. Made of all stainless steel for durability, this tool is a must for all sheet metal fabricators.

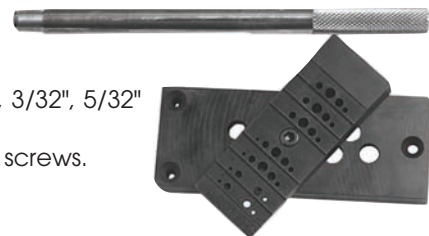
PN: TP621



## U.S. Industrial Bench Top Rivet Cutter

- Made of hardened and ground steel very easy to use.
- Cuts rivets 1/16", 1/8", 3/32", 5/32" and 3/16" diameter.
- Will also cut wire and screws.

PN: TP626



## Riveters Tape

3/4" wide x 72 yard roll

1" wide x 72 yard roll

- Riveters tapes are designed specifically for use during the riveting of aircraft parts.

Rivets are held securely in place prior to bucking, and are fully visible through the transparent, adhesive-free center window. Rivet does not come in contact with adhesive.

PN: TP808A

PN: TP808B



## Shop Head Rivet Gauge Set

This gauge measures the minimum acceptable height and minimum acceptable diameter of -3, -4, -5, & -6 rivets. Color coded for easy use, rivet size is permanently stamped on the gauge.

PN: TP854



## Rivet Length Gauge

Use this handy gauge to check the proper length of rivets before installing. Works with both flush and button head rivets. Sizes are permanently stamped on the gauge. Use with -3, -4, -5, & -6 rivets.

PN: TP853



## Rivet Removal Tool

Our rivet removal tool is designed to keep the drill bit centered on the AN470 rivet head. The cupped drill guide also keeps the bit from slipping off and ruining the sheet metal around it. This tool is completely adjustable for drilling depth. It comes complete with four guides and drill bits for #3, #4, #5, and #6 rivets. Made in the U.S.A.

PN: TP276



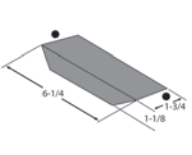
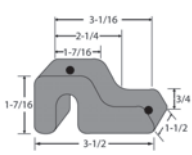
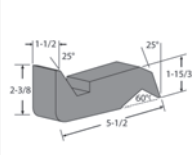
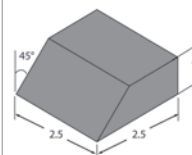
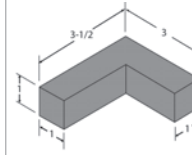
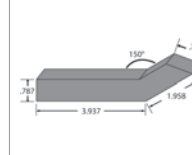
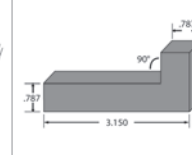
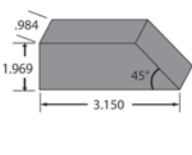
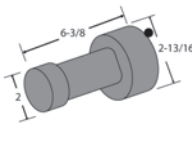
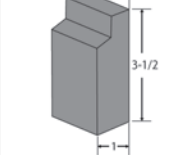
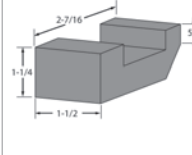
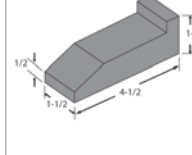
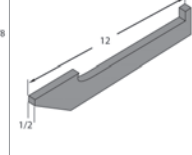
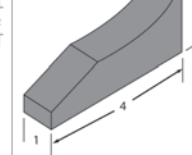
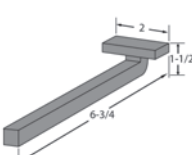
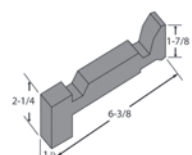
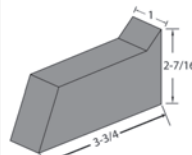
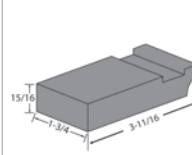
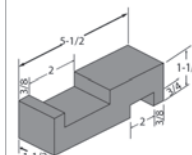
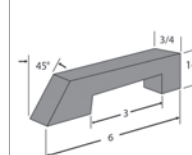
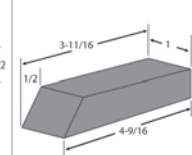
## Bucking Bars

These bucking bars are cast with ductile iron to insure non-porous finish which is very important in order to have that highly polished finish. The "●" Indicates polished side.

TP1500H	TP1520S	TP1525S	TP15050	TP1515C	TP1535S
TP1510A	TP1530S	TP1540S	TP2000B	TP2005B	TP2010B
TP2015B	TP2020B	TP2025B	TP2030B	TP2035B	TP2040B
TP0000H	TP3560H	TP777	TP3553H	TP3554H	TP3565H
TP3559H	TP3558H	TP3568H	TP0000H2	TP35500H-L	TP101B
TP463-10	TP601	TP605	TP610	TP614	TP619

TP633	TP634	TP638	TP639	TP643	TP646
TP647	TP649	TP658	TP662	TP667	TP669
TP670	TP671	TP683	TP690	TP692	TP701
TP715	TP721	TP723	TP730	TP736	TP750V-1
TP751	TP751V-1	TP752P-1	TP753	TP760B-1	TP760B-10
TP760C-1	TP763	TP777BB	TP1090	TP1111	TP1112



TP1177	TP3665H-1	TP1111T (Tungsten)	TP51T (Tungsten)	TP52T (Tungsten)	TP54T (Tungsten)	TP55T (Tungsten)
						
TP56T (Tungsten)	TP601T (Tungsten)	TP605T (Tungsten)	TP634T (Tungsten)	TP639T (Tungsten)	TP646T (Tungsten)	TP647T (Tungsten)
						
TP662T (Tungsten)	TP670T (Tungsten)	TP721T (Tungsten)	TP723T (Tungsten)	TP736T (Tungsten)	TP760B-1T (Tungsten)	TP760B-10T (Tungsten)
						

**Bucking Bar Kits**

**4 Piece Bucking Bar Kit**

Contains TP638, TP647, TP670, TP1112.

PN: TP150



**6 Piece Bucking Bar Kit**

Contains TP638, TP647, TP670, TP1112, TP669, TP1111.

PN: TP150-6



**10 Piece Bucking Bar Kit**

Contains TP638, TP647, TP670, TP1112, TP669, TP1111, TP692, TP736, TP751, TP1090.

PN: TP150-10



**15 Piece Bucking Bar Kit**

Contains TP638, TP647, TP670, TP1112, TP669, TP1111, TP692, TP736, TP751, TP1090, TP639, TP662, TP646, TP633, TP760B-1.

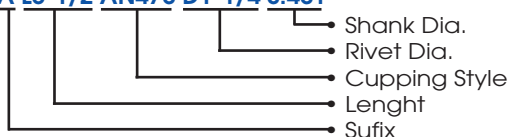
PN: TP150-15

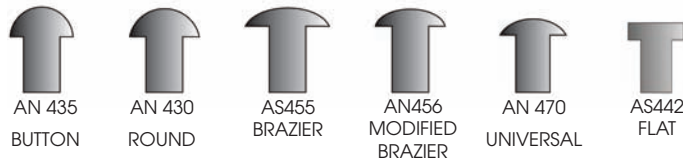


Rivet and Drive Sets

Image	Suffix & Description	Length "L"	Cupping Style						Rivet / Face / Huck Fastener Diameter "D"	Shank Diameter "S"						
			AN430	AN442	AN456	AN470	AN435	AN450			AN455					
	A - Offset Rivet Set 10 Convex Crowned Face	3-1/2", 5-1/2", 7-1/2"	Flush						1", 1-1/4"	.401 or .498						
	B - Offset Flush Rivet Set 10° Offset start 1" from end regular end	3-1/2", 5-1/2", 7-1/2"														
	C - Offset Flush Rivet Set 10° Offset start 1" from end Larger End	3-1/2", 5-1/2", 7-1/2"														
	D - Straight Rivet Set	2-1/2", 3-1/2", 5-1/2", 7-1/2", 10-1/2", 13-1/2"	X	X	X	X	X	X	X	1/16", 3/32", 1/8", 5/32", 3/16", 1/4"						
		1-3/16"	X	X	X	X	X	X	X							
	E - Straight Flush Rivet Set	3-1/2", 5-1/2", 7-1/2"	Flush						3/8", 1/2", 5/8"							
	F - Straight Bell Rivet Set	3-1/2", 5-1/2", 7-1/2", 10-1/2", 13-1/2"	X	X	X	X	X	X	X	1/2" 1/4", 5/16", 3/8"						
	G - Straight Drive Set for Hi-Shear Rivets	2-3/4", 3-1/2", 5-1/2", 7-1/2"	Hi-Shear Rivets						1/8", 5/32", 3/16", 1/4"	.401 for 1/8" & 5/32" .401 or .498 for the rest						
		1-17/64", 1-29/64", 1-7/16", 1-5/8", 1-29/64", 1-41/64", 1-5/8", 2-13/16"							1/8", 5/32", 3/16", 1/4"	.401: 1-17/64", 1-7/16", 1-29/64", 1-5/8" .498 for the rest						
		3-1/2", 5-1/2", 7-1/2"							5/16", 3/8"	.401 or .498						
	H - Offset Drive Set for Hi-Shear Rivets	3-1/2", 5-1/2", 7-1/2"	Hi-Shear Rivets						1/8", 5/32", 3/16", 1/4"	.401 for 1/8" & 5/32" .401 or .498 for the rest						
		5/16", 3/8"														
		4-1/2" Overall - 2" Cutout Length							1/8", 5/32", 3/16", 1/4", 5/16", 3/8"							
	I - Straight Drive Set for Hi-Shear Rivets w/ Cutout	4-1/2" Overall - 2" Cutout Length	Hi-Shear Rivets						1/8", 5/32", 3/16", 1/4", 5/16", 3/8"							
	J - Offset Rivet Set 10° Offset start 1" from end	3-1/2", 5-1/2", 7-1/2", 10-1/2", 13-1/2"							X	X	X	X	X	X	1/16", 3/32", 1/8", 5/32", 3/16", 1/4"	
	K - Offset Bell Rivet Set 10° Offset start 1" from end	5-1/2", 7-1/2", 10-1/2", 13-1/2"							X	X	X	X	X	X	1/4", 5/16", 3/8"	.401 or .498
	L - Double Offset Rivet Set	5-1/2"	X	X	X	X	X	X	X	1/16", 3/32", 1/8", 5/32", 3/16"						
	M - Flush Set With Rubber Guard	2-1/4"	Flush						3/4", 1", 1-1/4"							
	N - Flush Sets	2"							1-1/8"	.401						
		2-1/8"							3/4", 1", 1-1/4"							
	O - Mushroom Flush Set	2-7/8"	Flush						1", 1-1/2", 1-3/4", 2", 1-1/4"	.401 or .498						
		3-5/8"							1-1/4"							
	P - Flush Set - Swivel Type	3-1/2"	Flush						1-1/4"	.401						
	Q - Peening Tool Specify: Aluminum, Brass or Nylon	3-1/4"							1"							
	R - Gooseneck Rivet Set	6-5/8"							AN470 & Flush						3/32", 1/8", 5/32", 3/16", 1/4"	
	S - Flush Rivet Set Convex Crowned Face - Stubby	2-1/8"	Flush						3/4", 1", 1-1/8", 1-1/4"							

Part No. Example: **A L3-1/2 AN470 D1-1/4 S.401**





**.187 Shank Squeezer Sets**

**Squeezer Set for ROUND AN430 .187 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM200-4302	SM201-4302	SM202-4302	SM203-4302	SM204-4302
3/32"	SM200-4303	SM201-4303	SM202-4303	SM203-4303	SM204-4303
1/8"	SM200-4304	SM201-4304	SM202-4304	SM203-4304	SM204-4304
5/32"	SM200-4305	SM201-4305	SM202-4305	SM203-4305	SM204-4305
3/16"	SM200-4306	SM201-4306	SM202-4306	SM203-4306	SM204-4306
1/4"	SM200-4308	SM201-4308	SM202-4308	SM203-4308	SM204-4308

**Squeezer Set for FLAT AN442 .187 Shank**

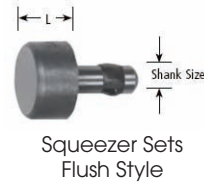
Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM200-4422	SM201-4422	SM202-4422	SM203-4422	SM204-4422
3/32"	SM200-4423	SM201-4423	SM202-4423	SM203-4423	SM204-4423
1/8"	SM200-4424	SM201-4424	SM202-4424	SM203-4424	SM204-4424
5/32"	SM200-4425	SM201-4425	SM202-4425	SM203-4425	SM204-4425
3/16"	SM200-4426	SM201-4426	SM202-4426	SM203-4426	SM204-4426
1/4"	SM200-4428	SM201-4428	SM202-4428	SM203-4428	SM204-4428

**Squeezer Set for BRAZIER AN455 .187 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM200-4552	SM201-4552	SM202-4552	SM203-4552	SM204-4552
3/32"	SM200-4553	SM201-4553	SM202-4553	SM203-4553	SM204-4553
1/8"	SM200-4554	SM201-4554	SM202-4554	SM203-4554	SM204-4554
5/32"	SM200-4555	SM201-4555	SM202-4555	SM203-4555	SM204-4555
3/16"	SM200-4556	SM201-4556	SM202-4556	SM203-4556	SM204-4556
1/4"	SM200-4558	SM201-4558	SM202-4558	SM203-4558	SM204-4558

**Squeezer Set for MOD. BRAZIER AN456 .187 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM200-4562	SM201-4562	SM202-4562	SM203-4562	SM204-4562
3/32"	SM200-4563	SM201-4563	SM202-4563	SM203-4563	SM204-4563
1/8"	SM200-4564	SM201-4564	SM202-4564	SM203-4564	SM204-4564
5/32"	SM200-4565	SM201-4565	SM202-4565	SM203-4565	SM204-4565
3/16"	SM200-4566	SM201-4566	SM202-4566	SM203-4566	SM204-4566
1/4"	SM200-4568	SM201-4568	SM202-4568	SM203-4568	SM204-4568



**Squeezer Set for UNIVERSAL AN470 .187 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM200-4702	SM201-4702	SM202-4702	SM203-4702	SM204-4702
3/32"	SM200-4703	SM201-4703	SM202-4703	SM203-4703	SM204-4703
1/8"	SM200-4704	SM201-4704	SM202-4704	SM203-4704	SM204-4704
5/32"	SM200-4705	SM201-4705	SM202-4705	SM203-4705	SM204-4705
3/16"	SM200-4706	SM201-4706	SM202-4706	SM203-4706	SM204-4706
1/4"	SM200-4708	SM201-4708	SM202-4708	SM203-4708	SM204-4708

**Squeezer Set for BUTTON AN435 .187 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM200-4352	SM201-4352	SM202-4352	SM203-4352	SM204-4352
3/32"	SM200-4353	SM201-4353	SM202-4353	SM203-4353	SM204-4353
1/8"	SM200-4354	SM201-4354	SM202-4354	SM203-4354	SM204-4354
5/32"	SM200-4355	SM201-4355	SM202-4355	SM203-4355	SM204-4355
3/16"	SM200-4356	SM201-4356	SM202-4356	SM203-4356	SM204-4356
1/4"	SM200-4358	SM201-4358	SM202-4358	SM203-4358	SM204-4358

**Squeezer Set FOR FLUSH STYLE 1/2" BODY DIAMETER .187 Shank**

Rivet Size	1/8" OAL	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL	7/8" OAL	1" OAL
	SM210	SM211	SM212	SM213	SM214	SM215	SM216	SM217

**.250 Shank Squeezer Sets****Squeezer Set for ROUND AN430 .250 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM220-4302	SM221-4302	SM222-4302	SM223-4302	SM224-4302
3/32"	SM220-4303	SM221-4303	SM222-4303	SM223-4303	SM224-4303
1/8"	SM220-4304	SM221-4304	SM222-4304	SM223-4304	SM224-4304
5/32"	SM220-4305	SM221-4305	SM222-4305	SM223-4305	SM224-4305
3/16"	SM220-4306	SM221-4306	SM222-4306	SM223-4306	SM224-4306
1/4"	SM220-4308	SM221-4308	SM222-4308	SM223-4308	SM224-4308
5/16"	SM220-43010	SM221-43010	SM222-43010	SM223-43010	SM224-43010
3/18"	SM220-43012	SM221-43012	SM222-43012	SM223-43012	SM224-43012

**Squeezer Set for FLAT AN442 .250 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM220-4422	SM221-4422	SM222-4422	SM223-4422	SM224-4422
3/32"	SM220-4423	SM221-4423	SM222-4423	SM223-4423	SM224-4423
1/8"	SM220-4424	SM221-4424	SM222-4424	SM223-4424	SM224-4424
5/32"	SM220-4425	SM221-4425	SM222-4425	SM223-4425	SM224-4425
3/16"	SM220-4426	SM221-4426	SM222-4426	SM223-4426	SM224-4426
1/4"	SM220-4428	SM221-4428	SM222-4428	SM223-4428	SM224-4428
5/16"	SM220-44210	SM221-44210	SM222-44210	SM223-44210	SM224-44210
3/18"	SM220-44212	SM221-44212	SM222-44212	SM223-44212	SM224-44212

**Squeezer Set for BRAZIER AN455 .250 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM220-4552	SM221-4552	SM222-4552	SM223-4552	SM224-4552
3/32"	SM220-4553	SM221-4553	SM222-4553	SM223-4553	SM224-4553
1/8"	SM220-4554	SM221-4554	SM222-4554	SM223-4554	SM224-4554
5/32"	SM220-4555	SM221-4555	SM222-4555	SM223-4555	SM224-4555
3/16"	SM220-4556	SM221-4556	SM222-4556	SM223-4556	SM224-4556
1/4"	SM220-4558	SM221-4558	SM222-4558	SM223-4558	SM224-4558
5/16"	SM220-45510	SM221-45510	SM222-45510	SM223-45510	SM224-45510
3/18"	SM220-45512	SM221-45512	SM222-45512	SM223-45512	SM224-45512

**Squeezer Set for MOD. BRAZIER AN456 .250 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM220-4562	SM221-4562	SM222-4562	SM223-4562	SM224-4562
3/32"	SM220-4563	SM221-4563	SM222-4563	SM223-4563	SM224-4563
1/8"	SM220-4564	SM221-4564	SM222-4564	SM223-4564	SM224-4564
5/32"	SM220-4565	SM221-4565	SM222-4565	SM223-4565	SM224-4565
3/16"	SM220-4566	SM221-4566	SM222-4566	SM223-4566	SM224-4566
1/4"	SM220-4568	SM221-4568	SM222-4568	SM223-4568	SM224-4568
5/16"	SM220-45610	SM221-45610	SM222-45610	SM223-45610	SM224-45610
3/18"	SM220-45612	SM221-45612	SM222-45612	SM223-45612	SM224-45612

**Squeezer Set for UNIVERSAL AN470 .250 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM220-4702	SM221-4702	SM222-4702	SM223-4702	SM224-4702
3/32"	SM220-4703	SM221-4703	SM222-4703	SM223-4703	SM224-4703
1/8"	SM220-4704	SM221-4704	SM222-4704	SM223-4704	SM224-4704
5/32"	SM220-4705	SM221-4705	SM222-4705	SM223-4705	SM224-4705
3/16"	SM220-4706	SM221-4706	SM222-4706	SM223-4706	SM224-4706
1/4"	SM220-4708	SM221-4708	SM222-4708	SM223-4708	SM224-4708
5/16"	SM220-47010	SM221-47010	SM222-47010	SM223-47010	SM224-47010
3/18"	SM220-47012	SM221-47012	SM222-47012	SM223-47012	SM224-47012

**Squeezer Set for BUTTON AN435 .250 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM220-4352	SM221-4352	SM222-4352	SM223-4352	SM224-4352
3/32"	SM220-4353	SM221-4353	SM222-4353	SM223-4353	SM224-4353
1/8"	SM220-4354	SM221-4354	SM222-4354	SM223-4354	SM224-4354
5/32"	SM220-4355	SM221-4355	SM222-4355	SM223-4355	SM224-4355
3/16"	SM220-4356	SM221-4356	SM222-4356	SM223-4356	SM224-4356
1/4"	SM220-4358	SM221-4358	SM222-4358	SM223-4358	SM224-4358
5/16"	SM220-43510	SM221-43510	SM222-43510	SM223-43510	SM224-43510
3/18"	SM220-43512	SM221-43512	SM222-43512	SM223-43512	SM224-43512

**Squeezer Set for TUBULAR AN450 .250 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM240-4502	SM241-4502	SM242-4502	SM243-4502	SM244-4502
3/32"	SM240-4503	SM241-4503	SM242-4503	SM243-4503	SM244-4503
1/8"	SM240-4504	SM241-4504	SM242-4504	SM243-4504	SM244-4504
5/32"	SM240-4505	SM241-4505	SM242-4505	SM243-4505	SM244-4505
3/16"	SM240-4506	SM241-4506	SM242-4506	SM243-4506	SM244-4506
1/4"	SM240-4508	SM241-4508	SM242-4508	SM243-4508	SM244-4508
5/16"	SM240-45010	SM241-45010	SM242-45010	SM243-45010	SM244-45010
3/18"	SM240-45012	SM241-45012	SM242-45012	SM243-45012	SM244-45012

**Squeezer Set FOR FLUSH STYLE 5/8" BODY DIAMETER .250 Shank**

Rivet Size	1/8" OAL	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL	7/8" OAL	1" OAL
	SM230	SM231	SM232	SM233	SM234	SM235	SM236	SM237

**.312 Shank Squeezer Sets**  
**Squeezer Set for ROUND AN430 .312 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM240-4302	SM241-4302	SM242-4302	SM243-4302	SM244-4302
3/32"	SM240-4303	SM241-4303	SM242-4303	SM243-4303	SM244-4303
1/8"	SM240-4304	SM241-4304	SM242-4304	SM243-4304	SM244-4304
5/32"	SM240-4305	SM241-4305	SM242-4305	SM243-4305	SM244-4305
3/16"	SM240-4306	SM241-4306	SM242-4306	SM243-4306	SM244-4306
1/4"	SM240-4308	SM241-4308	SM242-4308	SM243-4308	SM244-4308
5/16"	SM240-43010	SM241-43010	SM242-43010	SM243-43010	SM244-43010
3/18"	SM240-43012	SM241-43012	SM242-43012	SM243-43012	SM244-43012

**Squeezer Set for FLAT AN442 .312 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM240-4422	SM241-4422	SM242-4422	SM243-4422	SM244-4422
3/32"	SM240-4423	SM241-4423	SM242-4423	SM243-4423	SM244-4423
1/8"	SM240-4424	SM241-4424	SM242-4424	SM243-4424	SM244-4424
5/32"	SM240-4425	SM241-4425	SM242-4425	SM243-4425	SM244-4425
3/16"	SM240-4426	SM241-4426	SM242-4426	SM243-4426	SM244-4426
1/4"	SM240-4428	SM241-4428	SM242-4428	SM243-4428	SM244-4428
5/16"	SM240-44210	SM241-44210	SM242-44210	SM243-44210	SM244-44210
3/18"	SM240-44212	SM241-44212	SM242-44212	SM243-44212	SM244-44212

**Squeezer Set for BRAZIER AN455 .312 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM240-4552	SM241-4552	SM242-4552	SM243-4552	SM244-4552
3/32"	SM240-4553	SM241-4553	SM242-4553	SM243-4553	SM244-4553
1/8"	SM240-4554	SM241-4554	SM242-4554	SM243-4554	SM244-4554
5/32"	SM240-4555	SM241-4555	SM242-4555	SM243-4555	SM244-4555
3/16"	SM240-4556	SM241-4556	SM242-4556	SM243-4556	SM244-4556
1/4"	SM240-4558	SM241-4558	SM242-4558	SM243-4558	SM244-4558
5/16"	SM240-45510	SM241-45510	SM242-45510	SM243-45510	SM244-45510
3/18"	SM240-45512	SM241-45512	SM242-45512	SM243-45512	SM244-45512

**Squeezer Set for MOD. BRAZIER AN456 .312 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM240-4562	SM241-4562	SM242-4562	SM243-4562	SM244-4562
3/32"	SM240-4563	SM241-4563	SM242-4563	SM243-4563	SM244-4563
1/8"	SM240-4564	SM241-4564	SM242-4564	SM243-4564	SM244-4564
5/32"	SM240-4565	SM241-4565	SM242-4565	SM243-4565	SM244-4565
3/16"	SM240-4566	SM241-4566	SM242-4566	SM243-4566	SM244-4566
1/4"	SM240-4568	SM241-4568	SM242-4568	SM243-4568	SM244-4568
5/16"	SM240-45610	SM241-45610	SM242-45610	SM243-45610	SM244-45610
3/18"	SM240-45612	SM241-45612	SM242-45612	SM243-45612	SM244-45612

**Squeezer Set for UNIVERSAL AN470 .312 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM240-4702	SM241-4702	SM242-4702	SM243-4702	SM244-4702
3/32"	SM240-4703	SM241-4703	SM242-4703	SM243-4703	SM244-4703
1/8"	SM240-4704	SM241-4704	SM242-4704	SM243-4704	SM244-4704
5/32"	SM240-4705	SM241-4705	SM242-4705	SM243-4705	SM244-4705
3/16"	SM240-4706	SM241-4706	SM242-4706	SM243-4706	SM244-4706
1/4"	SM240-4708	SM241-4708	SM242-4708	SM243-4708	SM244-4708
5/16"	SM240-47010	SM241-47010	SM242-47010	SM243-47010	SM244-47010
3/18"	SM240-47012	SM241-47012	SM242-47012	SM243-47012	SM244-47012

**Squeezer Set for BUTTON AN435 .312 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM240-4352	SM241-4352	SM242-4352	SM243-4352	SM244-4352
3/32"	SM240-4353	SM241-4353	SM242-4353	SM243-4353	SM244-4353
1/8"	SM240-4354	SM241-4354	SM242-4354	SM243-4354	SM244-4354
5/32"	SM240-4355	SM241-4355	SM242-4355	SM243-4355	SM244-4355
3/16"	SM240-4356	SM241-4356	SM242-4356	SM243-4356	SM244-4356
1/4"	SM240-4358	SM241-4358	SM242-4358	SM243-4358	SM244-4358
5/16"	SM240-43510	SM241-43510	SM242-43510	SM243-43510	SM244-43510
3/18"	SM240-43512	SM241-43512	SM242-43512	SM243-43512	SM244-43512

**Squeezer Set for TUBULAR AN450 .312 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM240-4502	SM241-4502	SM242-4502	SM243-4502	SM244-4502
3/32"	SM240-4503	SM241-4503	SM242-4503	SM243-4503	SM244-4503
1/8"	SM240-4504	SM241-4504	SM242-4504	SM243-4504	SM244-4504
5/32"	SM240-4505	SM241-4505	SM242-4505	SM243-4505	SM244-4505
3/16"	SM240-4506	SM241-4506	SM242-4506	SM243-4506	SM244-4506
1/4"	SM240-4508	SM241-4508	SM242-4508	SM243-4508	SM244-4508
5/16"	SM240-45010	SM241-45010	SM242-45010	SM243-45010	SM244-45010
3/18"	SM240-45012	SM241-45012	SM242-45012	SM243-45012	SM244-45012

**Squeezer Set FOR FLUSH STYLE 5/8" BODY DIAMETER .312 Shank**

Rivet Size	1/8" OAL	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL	7/8" OAL	1" OAL
	SM250	SM251	SM252	SM253	SM254	SM255	SM256	SM257

### **.375 Shank Squeezer Sets** **Squeezer Set for ROUND AN430 .375 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM260-4302	SM261-4302	SM262-4302	SM263-4302	SM264-4302
3/32"	SM260-4303	SM261-4303	SM262-4303	SM263-4303	SM264-4303
1/8"	SM260-4304	SM261-4304	SM262-4304	SM263-4304	SM264-4304
5/32"	SM260-4305	SM261-4305	SM262-4305	SM263-4305	SM264-4305
3/16"	SM260-4306	SM261-4306	SM262-4306	SM263-4306	SM264-4306
1/4"	SM260-4308	SM261-4308	SM262-4308	SM263-4308	SM264-4308
5/16"	SM260-43010	SM261-43010	SM262-43010	SM263-43010	SM264-43010
3/18"	SM260-43012	SM261-43012	SM262-43012	SM263-43012	SM264-43012

### **Squeezer Set for FLAT AN442 .375 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM260-4422	SM261-4422	SM262-4422	SM263-4422	SM264-4422
3/32"	SM260-4423	SM261-4423	SM262-4423	SM263-4423	SM264-4423
1/8"	SM260-4424	SM261-4424	SM262-4424	SM263-4424	SM264-4424
5/32"	SM260-4425	SM261-4425	SM262-4425	SM263-4425	SM264-4425
3/16"	SM260-4426	SM261-4426	SM262-4426	SM263-4426	SM264-4426
1/4"	SM260-4428	SM261-4428	SM262-4428	SM263-4428	SM264-4428
5/16"	SM260-44210	SM261-44210	SM262-44210	SM263-44210	SM264-44210
3/18"	SM260-44212	SM261-44212	SM262-44212	SM263-44212	SM264-44212

### **Squeezer Set for BRAZIER AN455 .375 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM260-4552	SM261-4552	SM262-4552	SM263-4552	SM264-4552
3/32"	SM260-4553	SM261-4553	SM262-4553	SM263-4553	SM264-4553
1/8"	SM260-4554	SM261-4554	SM262-4554	SM263-4554	SM264-4554
5/32"	SM260-4555	SM261-4555	SM262-4555	SM263-4555	SM264-4555
3/16"	SM260-4556	SM261-4556	SM262-4556	SM263-4556	SM264-4556
1/4"	SM260-4558	SM261-4558	SM262-4558	SM263-4558	SM264-4558
5/16"	SM260-45510	SM261-45510	SM262-45510	SM263-45510	SM264-45510
3/18"	SM260-45512	SM261-45512	SM262-45512	SM263-45512	SM264-45512

### **Squeezer Set for MOD. BRAZIER AN456 .375 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM260-4562	SM261-4562	SM262-4562	SM263-4562	SM264-4562
3/32"	SM260-4563	SM261-4563	SM262-4563	SM263-4563	SM264-4563
1/8"	SM260-4564	SM261-4564	SM262-4564	SM263-4564	SM264-4564
5/32"	SM260-4565	SM261-4565	SM262-4565	SM263-4565	SM264-4565
3/16"	SM260-4566	SM261-4566	SM262-4566	SM263-4566	SM264-4566
1/4"	SM260-4568	SM261-4568	SM262-4568	SM263-4568	SM264-4568
5/16"	SM260-45610	SM261-45610	SM262-45610	SM263-45610	SM264-45610
3/18"	SM260-45612	SM261-45612	SM262-45612	SM263-45612	SM264-45612

### **Squeezer Set for UNIVERSAL AN470 .375 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM260-4702	SM261-4702	SM262-4702	SM263-4702	SM264-4702
3/32"	SM260-4703	SM261-4703	SM262-4703	SM263-4703	SM264-4703
1/8"	SM260-4704	SM261-4704	SM262-4704	SM263-4704	SM264-4704
5/32"	SM260-4705	SM261-4705	SM262-4705	SM263-4705	SM264-4705
3/16"	SM260-4706	SM261-4706	SM262-4706	SM263-4706	SM264-4706
1/4"	SM260-4708	SM261-4708	SM262-4708	SM263-4708	SM264-4708
5/16"	SM260-47010	SM261-47010	SM262-47010	SM263-47010	SM264-47010
3/18"	SM260-47012	SM261-47012	SM262-47012	SM263-47012	SM264-47012

### **Squeezer Set for BUTTON AN435 .375 Shank**

Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM260-4352	SM261-4352	SM262-4352	SM263-4352	SM264-4352
3/32"	SM260-4353	SM261-4353	SM262-4353	SM263-4353	SM264-4353
1/8"	SM260-4354	SM261-4354	SM262-4354	SM263-4354	SM264-4354
5/32"	SM260-4355	SM261-4355	SM262-4355	SM263-4355	SM264-4355
3/16"	SM260-4356	SM261-4356	SM262-4356	SM263-4356	SM264-4356
1/4"	SM260-4358	SM261-4358	SM262-4358	SM263-4358	SM264-4358
5/16"	SM260-43510	SM261-43510	SM262-43510	SM263-43510	SM264-43510
3/18"	SM260-43512	SM261-43512	SM262-43512	SM263-43512	SM264-43512

### **Squeezer Set for TUBULAR AN450 .375 Shank**

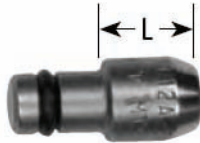
Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM260-4502	SM261-4502	SM262-4502	SM263-4502	SM264-4502
3/32"	SM260-4503	SM261-4503	SM262-4503	SM263-4503	SM264-4503
1/8"	SM260-4504	SM261-4504	SM262-4504	SM263-4504	SM264-4504
5/32"	SM260-4505	SM261-4505	SM262-4505	SM263-4505	SM264-4505
3/16"	SM260-4506	SM261-4506	SM262-4506	SM263-4506	SM264-4506
1/4"	SM260-4508	SM261-4508	SM262-4508	SM263-4508	SM264-4508
5/16"	SM260-45010	SM261-45010	SM262-45010	SM263-45010	SM264-45010
3/18"	SM260-45012	SM261-45012	SM262-45012	SM263-45012	SM264-45012

### **Squeezer Set FOR FLUSH STYLE 5/8" BODY DIAMETER .375 Shank**

Rivet Size	1/8" OAL	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL	7/8" OAL	1" OAL
	SM270	SM271	SM272	SM273	SM274	SM275	SM276	SM277

**Limited Access Squeezer Set  
Mini body AN470 .187 Shank**

- Cupped
- 3/8" body dia.
- .187 shank dia.



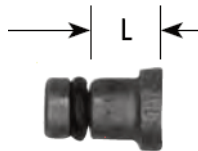
Rivet Size	5/32" OAL	1/4" OAL	3/8" OAL
3/32"	SM290-4703	SM291-4703	SM292-4703
1/8"	SM290-4704	SM291-4704	SM292-4704
5/32"	SM290-4705	SM291-4705	SM292-4705
3/16"	SM290-4706	SM291-4706	SM292-4706

**Limited Access Squeezer Set  
Modified Universal Bcar 15ft .187 Shank**



Rivet Size	5/32" OAL	1/4" OAL	3/8" OAL
3/32"	SM290-4703-BAC	SM291-4703-BAC	SM292-4703-BAC
1/8"	SM290-4704-BAC	SM291-4704-BAC	SM292-4704-BAC
5/32"	SM290-4705-BAC	SM291-4705-BAC	SM292-4705-BAC
3/16"	SM290-4706-BAC	SM291-4706-BAC	SM292-4706-BAC

**Limited Access Squeezer Set  
Flush Style .187 Shank**



1/8" OAL	1/4" OAL	3/8" OAL
SM295	SM296	SM297

If you not find what you are looking for here, ask us, we will happy to help you to find it.

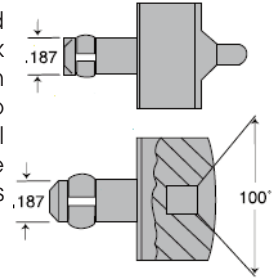
Dimpling sheet metal is one way of providing a depressed area for the rivet head to sit flush with the surface. This dimpling can be achieved through a variety of methods involving pressing or hammering a male and female punch and die while sandwiching the sheet metal in between. Several styles of dimple and die sets are as follows:

**Dimple & Die Set For Rivet Squeezers**

This style dimple and die is designed to be used in manually or pneumatically operated compression riveters, both portable and stationary.

They are available in several sizes and degrees as well as a choice of shank diameters, .187 the most common while .250, .312, and .375 are also available on special orders. Individual male and female dimple dies are available upon request. Ask our sales staff for assistance.

\*Can be used in conjunction with TP93 Bucking Block



**Dimple & Die Sets.187 Shank**

Part No.	Rivet Size
<b>AN426-100° Rivet</b>	
TP4263*	3/32"
TP4264*	1/8"
TP4265*	5/32"
TP4266*	3/16"
TP4268*	1/4"
<b>AN509-100° Screw</b>	
TP5094	#6
TP5095	#8
TP5096	#10
TP5098	1/4"
TP50910	5/16"

**Spring Back Dimple & Die Set**

These newly designed dimple dies are the answer to producing exact dimples every time. They actually press the dimple a few thousandths deeper than normal and when the pressure is released, the sheetmetal "memory" will allow the dimple to "springback" to a perfect 100°. These are ideal for the sheet metal aircraft kit builders.

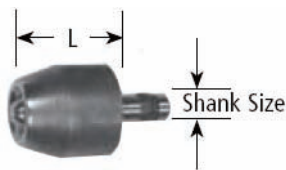
- .187 diameter shank
- 1/2" body diameter

PN: TP4263SB (3/32")

PN: TP4264SB (1/8")



### Squeezer Set For Semi-Tubular Rivets AN450 .187 Shank



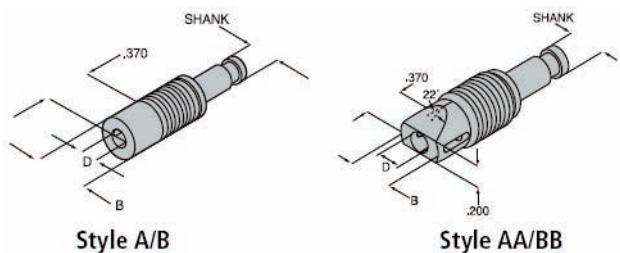
Rivet Size	1/4" OAL	3/8" OAL	1/2" OAL	5/8" OAL	3/4" OAL
1/16"	SM200-4502	SM201-4502	SM202-4502	SM203-4502	SM204-4502
3/32"	SM200-4503	SM201-4503	SM202-4503	SM203-4503	SM204-4503
1/8"	SM200-4504	SM201-4504	SM202-4504	SM203-4504	SM204-4504
5/32"	SM200-4505	SM201-4505	SM202-4505	SM203-4505	SM204-4505
3/16"	SM200-4506	SM201-4506	SM202-4506	SM203-4506	SM204-4506
1/4"	SM200-4508	SM201-4508	SM202-4508	SM203-4508	SM204-4508
5/16"	SM200-45010	SM201-45010	SM202-45010	SM203-45010	SM204-45010

### Oval Head .187 Shank

Rivet Size	1/4" OAL
1/16"	SM200-2-Oval
3/32"	SM200-3-Oval
1/8"	SM200-4-Oval
5/32"	SM200-5-Oval
3/16"	SM200-6-Oval
1/4"	SM200-8-Oval
5/16"	SM200-10-Oval

### Spring Loaded Flush Set

- 1 - 1/2" O.A.L.



Part No.	"D"	"B"	"Shank Size"
SM305-100A-Set	0.500	0.750	.187
SM305-100B-Set	0.625	0.825	.187
SM305-200A-Set	0.500	0.750	.250
SM305-200B-Set	0.625	0.825	.250
SM305-100AA-Set	0.500	0.750	.187
SM305-100BB-Set	0.625	0.825	.187
SM305-200AA-Set	0.500	0.750	.250
SM305-200BB-Set	0.625	0.825	.250

### Gooseneck Adapters



Part No.	B Dimension	A Diameter	Shank Diameter
MM-209-1	15/16"	.406	.401 or .498
MM-209-2	1"	.531	

### "C" Rivet Set with 3/16" Hole



This handy "C" Set features a 3/16" hole on the end so that you can use any standard rivet squeezer set (sold separately) to access fasteners in hard to reach areas. By inserting Squeeze Sets into the 3/16" hole at the tip of the "C", you can access and shoot rivets in what would otherwise be impossible areas. Inside dimensions of the "C" are 3" high x 1-3/8" deep. 6-1/4" overall length. Industry standard .401 shank.

PN: 10198

### "C" Rivet Set with 3/16" Hole



Flush face is at a 60 degree angle and is perfect for accessing hard to reach areas. Face is highly polished to a mirror finish and properly heat treated for long life. Entire tool is 6-1/2" overall length. .401 shank.

PN: 10076



## Heavy Duty Hand Rivet Squeezers

This versatile tool is available individually as a 1", 2", 3" or 5" model or as combination units. By simply removing 3 hardened pins you can change the yoke to match your riveting or dimpling application. Longer, redesigned handle for increased force and easy operation.

- Capable of forces in excess of 3600 lbs.
- 3/16" shank rivet holes.
- Removable "C" yokes.
- Made from ductile steel.

PN: 12031



PN: TP116



PN: TP888

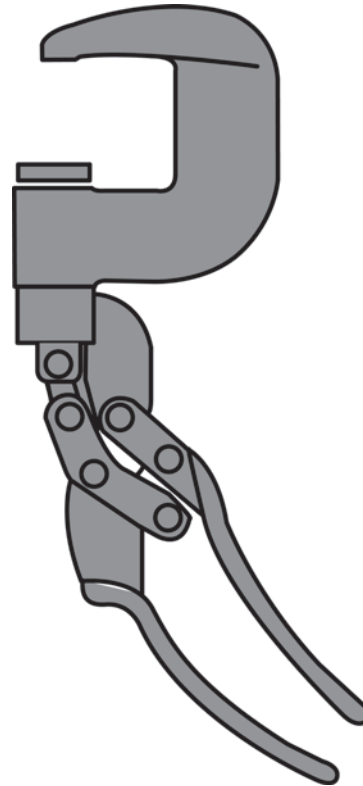


Part No.	Yoke Reach	GAP
TP888-1	1"	1-1/4"
TP888-2	2"	1-1/4"
TP888-3	3"	1-1/4"
TP888-4	2" & 3" C-Yokes	1-1/4"
TP888-5	1", 2", 3" C-Yokes	1-1/4"
TP888-6	5"	2-3/8"
TP888-7	1", 2", 3", 5" C-Yokes	1-1/4" & 2-3/8"
12031	1-1/2"	1-1/4"
	3"	1-1/4"
12036	1-1/2"	1-1/4"
12040	3"	1-1/4"
12042	1-1/2"	1-1/4"
	3"	1-1/4"
TP116	1-1/2"	1-1/2"

## 360° Hand Swivel Squeezer

360° Swivel yoke can be locked in any position with adjustable set holder. (Max. .590").

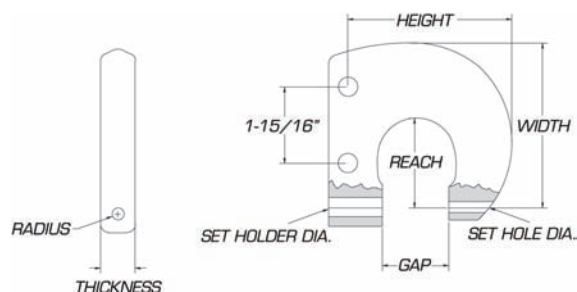
PN: NZ62



Rivet Shank	Stroke	Rivet Capacity Without C-Yoke	
		Aluminum	Steel
in. (mm)	in. (mm)	in. (mm)	in. (mm)
3/16" (4.75)	5/16" (8)	3/32" (2.4)	5/64" (2)

## C-Yokes for NZ62

Part No.	For Rivet Shank	Dimensions	
		Reach	Gap
	in. (mm)	in. (mm)	in. (mm)
417002	3/16" (4.75)	1-6/32" (30)	1-25/32" (45)
417007		1-9/16" (40)	1-25/32" (45)
417012		2-23/64" (60)	1-25/32" (45)
417052		1-9/16" (40)	2-6/8" (70)
417057		2-23/64" (60)	2-6/8" (70)
417062		3-15/16" (100)	2-6/8" (70)

**C-Yokes Squeezers****C-Yoke, Single Cylinder**

Model/ Part No.	C-Yoke Assy. No.		Capacity		Yokes Available		Set Holder Plunger		Net Weight	Length
			Aluminum	Steel	Reach	Gap	Max Force (90 PSI)	Part of Stroke at Max Force (Final)		
	3/16" Set Hole	1/4" Set Hole	in. (mm)	in. (mm)	in. (mm)	in. (mm)	Pounds	in. (mm)	lbs. (kg.)	in. (mm)
705HF 8520	538	6336	5/32" (4.0)	3/32" (2.4)	1 1/2" (38.1)	1 1/4" (31.7)	4500	1/32" (0.8)	4 1/2 (2.0)	10 1/4" (260)
	958	9562			2" (50.8)	1 1/4" (31.7)				
	959	9561			2 1/2" (63.5)	1 3/8" (34.9)				
	960	9563			3" (76.2)	1 1/2" (38.1)				
	961	9564			3 1/2" (88.9)	1 1/2" (38.1)				
3000C			1/8" (3.2)	3/32" (2.4)	1 1/2" (38.1)	1 1/4" (31.7)	3000	1/16" (1.6)	4 1/2 (2.0)	10 1/4" (260)
					2" (50.8)	1 1/4" (31.7)				
					2 1/2" (63.5)	1 3/8" (34.9)				
					3" (76.2)	1 1/2" (38.1)				
					3 1/2" (88.9)	1 1/2" (38.1)				
US114CC			5/32" (4.0)	1/8" (3.2)	1 1/2" (38.1)	1 1/4" (31.7)	4200	1/16" (1.6)	3 (1.4)	10 1/4" (260)
US114C			1/8" (3.2)	3/32" (2.4)	1 1/2" (38.1)	1 1/4" (31.7)	3000		3 (1.4)	10 1/4" (260)
CP0214CELEL			1/8" (3.2)	3/32" (2.4)	1 1/2" (38.1)	1 1/4" (31.7)	3000	1/20" (1.3)	4 1/2 (2.0)	10 5/16" (262)
CP0214SETEL			1/8" (3.2)	3/32" (2.4)	1 1/2" (38.1)	1 1/4" (31.7)	3000	1/20" (1.3)	4 1/2 (2.0)	10 5/16" (262)



705HF



US 114 C



3000 C



CP 0214 CELEL / ESTEL

**C-Yoke, Tandem Cylinder**

Model/ Part No.	C-Yoke Assy. No.		Capacity		Yokes Available		Set Holder Plunger		Net Weight	Length
			Aluminum	Steel	Reach	Gap	Max Force (90 PSI)	Part of Stroke at Max Force (Final)		
	3/16" Set Hole	1/4" Set Hole	in. (mm)	in. (mm)	in. (mm)	in. (mm)	Pounds	in. (mm)	lbs. (kg.)	in. (mm)
720HF 8522	538	6336	1/4" (6.4)	3/16" (4.8)	1 1/2" (38.1)	1 1/4" (31.7)	9000	1/32" (0.8)	5 1/2 (2.5)	14" (362)
	958	9562			2" (50.8)	1 1/4" (31.7)				
	959	9561			2 1/2" (63.5)	1 3/8" (34.9)				
	960	9563			3" (76.2)	1 1/2" (38.1)				
	961	9564			3 1/2" (88.9)	1 1/2" (38.1)				
6000C			3/16" (4.8)	5/32" (4.0)	1 1/2" (38.1)	1 1/4" (31.7)	6000	1/16" (1.6)	5 1/2 (2.5)	14" (362)
					2" (50.8)	1 1/2" (38.1)				
					2 1/2" (63.5)	1 1/2" (38.1)				
					3" (76.2)	1 1/2" (38.1)				
					3 1/2" (88.9)	1 3/4" (44.5)				
US114TCC			1/4" (6.4)	3/16" (4.8)	1 1/2" (38.1)	1 1/4" (31.7)	7700		5 1/2 (2.5)	14" (362)
US114TC			1/8" (3.2)	3/32" (2.4)	1 1/2" (38.1)	1 1/4" (31.7)	3000		3 (1.4)	10 1/4" (260)
CP0214FALEL			3/16" (4.8)	5/32" (4.0)	1 1/2" (38.1)	1 1/4" (31.7)	6000	1/16" (1.6)	5 1/2 (2.5)	14" (362)
CP0214KETEL			3/16" (4.8)	5/32" (4.0)	1 1/2" (38.1)	1 1/4" (31.7)	6000	1/16" (1.6)	5 1/2 (2.5)	14" (362)



720 HF



US 114 TC



6000C



CP 0214FALEL-KETEL

**C-Yoke, Tandem Cylinder**



CP 0351 Series



US 151C



RTC950C3/1.5-6B



735

Model/ Part No.	Yoke Ordering No.		Capacity		Reach in. (mm)	Gap in. (mm)	Closed Height in. (mm)	Set Holder Plunger			Net Weight lbs. (kg.)	Length in. (mm)
	3/16" Set Hole	1/4" Set Hole	Aluminum	Steel				Max Travel in. (mm)	Max Force (90 PSI) Pounds	Part of Stroke at Max Force (Final) in. (mm)		
			in. (mm)	in. (mm)								
CP0351CUDEL			3/16" (4.8)	5/32" (4.0)	2-1/8" (54)	1-5/32" (29)	25/32" (20)	9/16" (14.3)	6000	1/8" (3.5)	12 1/2 (5.7)	17 1/2 (445)
CP0351FUDEL			1/4" (6.4)	7/32" (5.6)	2 1/8" (54)	1-5/32" (29)	25/32" (20)	9/16" (14.3)	12000	1/8" (3.5)	15 1/4 (6.9)	21 3/4" (552)
US155			1/4" (6.4)	7/32" (5.6)	2-1/8" (54)	1-7/8" (47.6)	25/32" (20)	7/8" (22)	12000		21 (9.5)	20" (508)
US151C			3/16" (4.8)	5/32" (4.0)	2-1/8" (54)	1-3/16" (30)	25/32" (20)	9/16" (14.3)	6000		9.5 (4.3)	17-1/2" (445)
US151TC			1/4" (6.4)	7/32" (5.6)	2-1/8" (54)	1-3/16" (30)	25/32" (20)	9/16" (14.3)	12000		12.5 (5.7)	21-3/4" (552)
RTC950C3/1.5-6B			5/16" (8)	1/4" (6.4)	3" (76)	1-1/2" (38)			14000		13.5 (6.1)	27" (686)
735 16357	7479	3052	5/16" (8)	1/4" (6.4)	1-1/2" (38)	1-1/4"			11000	1/8" (3.5)	10.1 (4.6)	21" (525)
	7481				2" (51)	1-1/2"						
	7482				3" (76.2)	1-1/2"						
	7483				1-1/2" (38)	2"						
	7484				2-1/2" (64)	1-3/8"						
	7485				2-1/2" (64)	1-3/4"						
					1-1/2" (38)	1-1/4"						
					2" (51)	1-1/2"						
	3" (76.2)	1-1/2"										
	1-1/2" (38)	2"										
	2-1/2" (64)	1-3/8"										
	2-1/2" (64)	1-3/4"										
740 9475	991	7353	3/16" (4.8)	5/32" (4.0)	2-1/8" (54)	1-3/32" (28)	13/16" (21)	6000	1/8" (3.2)	12-3/4 (5.7)	17-3/4" (451)	
	993				2-1/2" (64)	1-9/16" (40)	1-5/8" (41)					
	994				3-3/4" (95)	1-1/4" (32)	1-1/8" (29)					
	995				3-5/16" (84)	3" (76.2)	2-13/16" (72)					
	996				3-1/4" (83)	1-1/16" (27)	15/16" (24)					
	997				3-3/4" (95)	1-1/4" (32)	1-1/8" (29)					
	998				2-3/8" (60)	1-1/4" (32)	1" (25.4)					
					2-1/8" (54)	1-3/32" (28)	13/16" (21)					
					2-1/2" (64)	1-9/16" (40)	1-5/8" (41)					
					3-3/4" (95)	1-1/4" (32)	1-1/8" (29)					
					3-5/16" (84)	3" (76.2)	2-13/16" (72)					
					3-1/4" (83)	1-1/16" (27)	15/16" (24)					
					3-3/4" (95)	1-1/4" (32)	1-1/8" (29)					
					2-3/8" (60)	1-1/4" (32)	1" (25.4)					
745 6532	7479	3052	5/16" (8)	1/4" (6.4)	1-1/2" (38)	1-1/4" (32)		10000	1/8" (3.2)	10 (4.5)	17-1/2" (444)	
	7481				2" (51)	1-1/2" (38)						
	7482				3" (76.2)	1-1/2" (38)						
	7483				1-1/2" (38)	2" (51)						
	7484				2-1/2" (64)	1-3/8" (35)						
	7485				2-1/2" (64)	1-3/4" (45)						
					1-1/2" (38)	1-1/4" (32)						
					2" (51)	1-1/2" (38)						
					3" (76.2)	1-1/2" (38)						
					1-1/2" (38)	2" (51)						
	2-1/2" (64)	1-3/8" (35)										
	2-1/2" (64)	1-3/4" (45)										

**444 Series "C" Yoke Squeezers**

Model No.	Yoke		Force at 90 PSI*		Capacity		Max Ram Travel	Stroke At Max Power
	Reach	Gap	Lbs	(KN)	Alum	Steel		
<b>444CFH</b>	2 1/8	1 1/2	12,000	-53.4	5/16 (7/9)	1/4 (19.05)	5/8 (19.05)	3/32 (2.38)
<b>444CSH</b>	2 1/8	1 1/2	12,000	-53.4	5/16 (7/9)	1/4 (19.05)	5/8 (19.05)	3/32 (2.38)

**444 CFH**

Model No.	Overall Length		Weight	
	Less Yoke	w/Standard Yoke	Lbs	(KG)
<b>444CFH</b>	19 23/32 (500.8)	23 3/16 (588.96)	15 1/2	(7.05)
<b>444CSH</b>	19 23/32 (500.8)	23 3/16 (588.96)	16 1/2	(7.50)

**Pneudralic****C-Yoke**

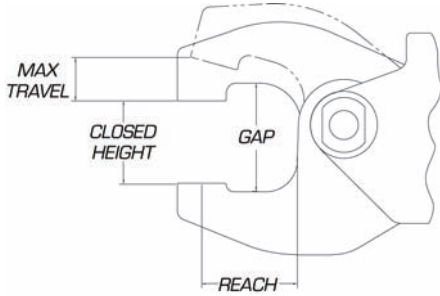
- Patented "Pneudralic™" air-hydraulic riveter.
- Riveting Capacity:  $\varnothing$  9/32" (7.14 mm).
- Lock-off throttle: Reduces risk of accidental operation.
- Versatile: Can accommodate various rivet lengths and joint thickness by adjustment of air pressure (reducing setting times and eliminating the need to use set length spacer shims with the rivet set).

PN: CP0341

**CPO 341**

Capacity		Standard Jaw			Moving Jaw			Net Weight with Jaws	Length
Aluminum	Steel	Reach	Gap	Closed Height	Max Travel	Max Force (90 PSI)	Part of Stroke at Max Force (Final)		
in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	Pounds	in. (mm)	lbs. (kg.)	in. (mm)
9/32" (7.1)	1/4" (6.4)	2-1/8" (54)	2-3/4" (70)	1" (25.4)	1-1/4" (31.8)	13500	Full Stroke	13-1/2 (6.1)	19-7/8 (505)

**Alligator Squeezers**



**Model 702  
Compression Riveter**

- Ultra Compact (7-21/64" in length).
- High Force.
- Safety throttle lever.
- Epoxy coated aluminum housing.
- Rivet capacity up to 1/8" aluminum and 3/32" steel.
- Smooth controlled throttle movement.



RIVET SQUEEZERS

**Alligator, Single Cylinder**

Model/ Part No.	Ordering No. (Jaw Assembly)		Capacity		Standard Jaw			Moving Jaw			Net Weight with Jaws	Length
			Aluminum	Steel	Reach	Gap	Closed Height	Max Travel	Max Force (90 PSI)	Part of Stroke at Max Force (Final)		
	3/16" Set Hole	1/4" Set Hole	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	Pounds	in. (mm)	lbs. (kg.)	in. (mm)
<b>NEW 702</b>	22342 22360		1/8"(3.2)	3/32"(2.4)	1"(25.4)	1-7/64"(28.1)	5/6"(22)	3/8"(9.5)	2000	1/32"(0.8)	2.2 (1)	7-21/64" (186.1)
<b>710AHF 8521</b>	7360 7362 7364	7361 7363 7365	3/16"(4.8) 5/32"(4.0) 1/8"(3.2)	5/32"(4.0) 1/8"(3.2) 3/32"(2.4)	1 1/2"(38) 2 1/4"(57) 3"(76)	1-5/8"(41) 1-3/4"(44.5) 2-1/8"(54)	7/8"(23) 7/8"(23) 7/8"(23)	5/8"(16) 7/8"(23) 7/8"(23)	4500 3300 2700	1/32"(0.8) 3/64"(1.2) 1/16"(1.6)	3 3/4 (1.7) 4 1/4 (1.9) 4 3/4 (2.1)	9 3/16"(233) 10 1/8"(257) 10 7/8"(276)
<b>3000A</b>			1/8"(3.2) 1/8"(3.2) 1/8"(3.2)	3/32"(2.4) 3/32"(2.4) 3/32"(2.4)	1 1/2"(38) 2 1/4"(57) 3"(76)	1-5/8"(41) 2 1/8"(54) 2 1/8"(54)	7/8"(23) 7/8"(23) 7/8"(23)	5/8"(16) 7/8"(23) 1 1/4"(32)	3000 2200 1800	1/16"(1.6) 3/32"(2.4) 1/8"(3.2)	3 3/4 (1.7) 4 1/4 (1.9) 4 3/4 (2.1)	9 3/16"(233) 10 1/8"(257) 10 7/8"(276)
<b>US114A</b>			1/8"(3.2) 1/8"(3.2) 3/32"(2.4) 3/32"(2.4)	3/32"(2.4) 3/32"(2.4) 1/16"(1.6) N/A	1 1/2"(38) 2 1/4"(57) 3"(76.2) 5 1/2"(140)	1-5/8"(41.3) 1-7/64"(28.1) 1-23/64"(34.5) 2-1/8"(53.9)	7/8"(23) 7/8"(23) 7/8"(23) 7/8"(23)	5/8"(16) 7/8"(23) 1 1/4"(32) 15/16"(24)	3000 2200 1800 1250	3 3/4 (1.7) 4 1/4 (1.9) 4 1/2 (2) 6 1/2 (3)	3 3/4 (1.7) 4 1/4 (1.9) 4 1/2 (2) 6 1/2 (3)	9 3/16"(233) 10 1/8"(257) 10 3/4"(273) 13 1/4"(336)
<b>US114AA</b>			5/32"(4.0) 1/8"(3.2) 3/32"(2.4) 3/32"(2.4)	3/32"(2.4) N/A N/A N/A	1 1/2"(38) 2 1/4"(57) 3"(76.2) 5 1/2"(140)	1-5/8"(41.3) 1-7/64"(28.1) 1-23/64"(34.5) 2-1/8"(53.9)	7/8"(23) 7/8"(23) 7/8"(23) 7/8"(23)	5/8"(16) 3900 3400 2200	1/16"(1.6) 3/32"(2.4)	3 3/4 (1.7) 4 1/4 (1.9) 4 1/2 (2) 6 1/2 (3)	3 3/4 (1.7) 4 1/4 (1.9) 4 1/2 (2) 6 1/2 (3)	9 3/16"(233) 10 1/8"(257) 10 3/4"(273) 13 1/4"(273)
<b>CP0214 ANBEL</b>			1/8" (3.2)	3/32" (2.4)	1 1/2" (38)	1-5/8" (41)	7/8" (23)	5/8" (15.9)	3000	1/20" (1.3)	3 3/4 (1.7)	9 3/16" (233)
<b>CP0214 ANFEL</b>				3/32" (2.4)	2 1/4" (57.1)	2 1/8" (54)	7/8" (23)	7/8" (22.2)	2200	3/32" (2.4)	4 1/4 (1.9)	10" (254)
<b>CP0214 ANGEL</b>				3/32" (2.4)	3" (76.2)	2 1/8" (54)	7/8" (23)	1 1/4" (31.8)	1800	7/125" (1.4)	4 1/2 (2.0)	10 3/4" (273)



**710 HF**



**US 114 A**



**3000A**



**CP 0212 ANBEL-ANFEL-ANGEL**

**Alligator, Tandem Cylinder**

Model/ Part No.	Ordering No. (Jaw Assembly)		Capacity		Standard Jaw			Moving Jaw			Net Weight with Jaws	Length
			Aluminum	Steel	Reach	Gap	Closed Height	Max Travel	Max Force (90 PSI)	Part of Stroke at Max Force (Final)		
	3/16" Set Hole	1/4" Set Hole	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	in. (mm)	Pounds	in. (mm)	lbs. (kg.)	in. (mm)
<b>725AHF 8523</b>	7360 7362 7364	7361 7363 7365	1/4"(6.4) 3/16"(4.8) 5/32"(4.0)	3/16"(4.8) 5/32"(4.0) 1/8"(3.2)	1-1/2"(38) 2-1/4"(57) 1/8"(3.2)	1-5/8"(41) 1-3/4"(45) 2-1/8"(54)		5/8"(16) 7/8"(22) 1-1/4"(32)	9000 6450 5100	1/32"(0.8) 3/64"(1.2) 1/16"(1.6)	5 1/2 (2.5) 6 (2.7) 6 1/4 (2.8)	12"(305) 13"(330) 13 3/4"(350)
<b>6000A</b>			3/16"(4.8) 5/32"(4.0) 1/8"(3.2) 1/8"(3.2)	5/32"(4.0) 1/8"(3.2) 3/32"(2.4) 3/32"(2.4)	1 1/2"(38) 2 1/4"(57) 3"(76) 3 1/2"(89)	1-5/8"(41) 2 1/8"(54) 2 5/16"(58) 3 5/16"(84)	7/8"(23) 1"(25) 1"(25) 1"(25)	5/8"(16) 1"(25) 1"(25) 1"(25)	6500 5000 4000 3500	5 1/2"(2.5) 6"(2.7) 6 1/4"(2.8) 6 1/2"(2.9)	5 1/2 (2.5) 6 (2.7) 6 1/4 (2.8) 6 1/2 (2.9)	12"(305) 13"(330) 13 3/4"(350) 14 1/4"(362)
<b>US114TA</b>			3/16"(4.8) 5/32"(4.0) 1/8"(3.2) 1/8"(3.2)	5/32"(4.0) 1/8"(3.2) 3/32"(2.4) N/A	1 1/2"(38) 2 1/4"(57) 3"(76.2) 5 1/2"(140)	1-5/8"(41.3) 1-7/64"(28.1) 1-23/64"(34.5) 2-1/8"(53.9)	7/8"(23) 7/8"(23) 7/8"(23) 7/8"(23)	5/8"(16) 7/8"(22.2) 1 1/4"(32) 15/16"(24)	6000 4300 3400 2600		5.0 (2.26) 5.5 (2.5) 6.0 (2.72) 7.9 (3.6)	12"(305) 13"(330) 13 3/4"(350) 16"(406)
<b>US114TAA</b>			1/4"(6.4) 3/16"(4.8) 3/16"(4.8) 5/32"(4.0)	3/16"(4.8) 5/32"(4.0) 1/8"(3.2) N/A	1 1/2"(38) 2 1/4"(57) 3"(76.2) 5 1/2"(140)	1-5/8"(41.3) 1-7/64"(28.1) 1-23/64"(34.5) 2-1/8"(53.9)	7/8"(23) 7/8"(23) 7/8"(23) 7/8"(23)	5/8"(16) 6300 5600 3000	1/16"(1.6) 3/32"(2.4) 1/8"(3.2)	5.0 (2.26) 5.5 (2.5) 6.0 (2.72) 7.9 (3.6)	5.0 (2.26) 5.5 (2.5) 6.0 (2.72) 7.9 (3.6)	12"(305) 13"(330) 13 3/4"(350) 16"(406)
<b>CP0214 ENGEL</b>			1/8" (3.2)	3/32" (2.4)	3" (22.2)	2 1/8" (53.9)	7/8" (23)	1 1/4" (31.8)	3400	0.104" (2.6)	5 1/2 (2.5)	13 1/2" (343)
<b>CP0214 ENFEL</b>				5/32" (4.0)	2 1/4" (57.1)	2 1/8" (53.9)	7/8" (23)	7/8" (22.2)	4300	0.094" (2.4)	5 1/4 (2.4)	12 3/4" (324)
<b>CP0214 ENBEL</b>				3/16" (4.8)	5/32" (4.0)	1 1/2" (38.1)	1 5/8" (41)	7/8" (23)	6000	1/16" (1.6)	4 3/4 (2.2)	11 15/16" (303)



**725 AHF**



**US 114 TA**



**6000A**



**CP 0214 ENGEL - ENFEL - ENBEL**

### Alligator Squeezers

Model No.	Jaw Reach	Ordering No. (Jaw Assembly)		Capacity				Max. Force (90 PSI)	Part of Stroke at Max. Force		Net Weight with Jaws		Overall Length	
		3/16" Set Hole	1/4" Set Hole	Aluminum		Steel			in.	mm	lbs.	kg.	in.	mm
735A 17283	3"	17148	17149	1/4"	6.4	3/16"	4.8	10000			9	4	20-1/4"	513
	5"	17146	17147	3/16"	4.8	5/32"	4.0	6800			11	5		
	7"	19000	19010	5/32"	3.2	1/8"	3.2	4400			13	6		
740A 1825 1825-268	2-7/8"	2460	6134	3/16"	4.8	5/32"	4.0	8150	1/8"	3.2	16-1/2	7.5	19-3/4"	501
	5"	1767	1768	5/32"	4.0	1/8"	3.2	4695	1/8"	3.2	21-3/4	9.9	21-3/4"	552
	7"	1769	1770	1/8"	3.2	3/32"	2.4	3350	3/16"	4.8	25-1/2	11.6	23-3/4"	603
	9-1/8"	449	1771	1/8"	3.2	3/32"	2.4	2570	1/16"	1.6	26	11.8	25-3/4"	654
745A 9476	2-7/8"	2460	6134	3/16"	4.8	5/32"	4.0	6000	1/16"	1.6	13	5.9	17-1/2"	444
	5"	1767	1768	5/32"	4.0	1/8"	3.2	3450	1/16"	1.6	16	7.2	22-1/2"	571
750A 2087	2-7/8"	2460	6134	5/16"	7.9	1/4"	6.4	16300	1/8"	3.2	19	8.6	25"	635
	5"	1767	1768	1/4"	6.4	3/16"	4.8	9300	3/16"	4.8	24-1/4	11	27"	685
	7"	1769	1770	3/16"	4.8	5/32"	4.0	6700	1/16"	1.6	28	12.7	29"	736
	9-1/8"	449	1771	3/16"	4.8	5/32"	4.0	5140	1/16"	1.6	29	13.1	31-1/8"	790
90A15	1-1/2"			1/4"	6.4	3/16"	4.8	9000	1/16"	1.6	7	3.17	16"	406
90A22	2-1/4"			3/16"	4.8	5/32"	4.0	7000	3/32"	2.36	7-1/2	3.4	16-3/4"	425
90A30	3"			3/16"	4.8	5/32"	4.0	5200	1/8"	3.2	8	3.6	17-1/2"	445
US151A	2-7/8"			5/32"	4.0	1/8"	3.2	5200			15	6.8	19-1/2"	495
	5"			1/8"	3.2	3/32"	2.4	3400			19	8.6	21-5/8"	549
	7"			1/8"	3.2	3/32"	2.4	3000			23	10.4	23-5/8"	600
	9-1/8"			1/8"	3.2	3/32"	2.4	3000			25	11.3	25-3/4"	654
	4"			3/16"	4.8	5/32"	4.0	6500			20-1/2	9.3	20-5/8"	524
	3-1/4"			7/32"	5.6	3/16"	4.8	8800			15-1/4	6.9	18-3/4"	476
US151TA	2-7/8"			1/4"	6.4	3/16"	4.8	10400			17 1/2	7.9	23-3/4"	603
	5"			3/16"	4.8	5/32"	4.0	6800			21 1/2	9.8	25-7/8"	657
	7"			3/16"	4.8	5/32"	4.0	6000			26	11.8	27-7/8"	657
	9-1/8"			3/16"	4.8	5/32"	4.0	6000			28	12.7	30"	762
	4"			7/32"	5.6	3/16"	4.8	11000			23	10.3	25"	635
	3-1/4"			7/32"	5.6	1/4"	6.4	15000			21 1/2	9.8	24-1/2"	622
RTC750A2-6B	2"			1/4"	6.4	3/16"	4.8	9000			6	2.7	20"	508
RTC750A3-6B	3"			3/16"	4.8	5/32"	4.0	8200			7-1/2	3.4	21-1/2"	546
RTC750A5-6B	5"			3/16"	4.8	5/32"	4.0	6200			9	4	23-1/2"	567
RTC1200A3-6B	3"			1/4"	6.4	3/16"	4.8	10500			8-1/2	3.8	26"	660
RTC1200A5-6B	5"			1/4"	6.4	3/16"	4.8	8400			11-1/2	5.2	21-1/2"	546
RTC1200A7-6B	7"			3/16"	4.8	5/32"	4.0	6200			13	6	23-1/2"	567
RTC1400A3-6B	3"			5/16"	7.9	1/4"	6.4	13000			16-1/2	7.5	29-1/2"	749
RTC1400A5-6B	5"			1/4"	6.4	3/16"	4.8	9400			18	8	31-1/2"	800
RTC1400A7-6B	7"			1/4"	6.4	3/16"	4.8	8500			21	9.5	33-1/2"	850
RTC1400A9-6B	9"			3/16"	4.8	5/32"	4.0	6500			24-1/2	11.1	37"	940
RTC1400-3	3"			5/16" +	7.9 +	1/4" +	6.4 +	16000	5/6"	21.3	12	5.5	25"	635
RTC1400-5	5"			5/16"	7.9	1/4"	6.4	10500	33/25"	33.5	14	6.4	27"	686
RTC1400-7	7"			1/4"	6.4	3/16"	4.8	7800	9/5"	46.0	20	9.1	29"	737
RTC1400-9	9-1/8"			1/4"	6.4	3/16"	4.8	7600	7/3"	58.9	24	10.9	32"	813
CP0351ASGEL	2-7/8"			5/32"	4.0	1/8"	3.2	5200	1/8"	3.2	15-3/4	7.1	19-1/2"	495
CP0351ASKEL	5"			1/8"	3.2	3/32"	2.4	3400	3/16"	4.8	19-3/4	9	21-5/8"	549
CP0351ASVEL	9-1/8"			1/8"	3.2	3/32"	2.4	3000	1/16"	1.6	26-1/4	12	25-3/4"	654
CP0351ESKEL	5"			3/16"	4.8	5/32"	4.0	6800	3/16"	4.8	22 1/2	10.2	25 7/8"	657
CP0351ESREL	7"			3/16"	4.8	5/32"	4.0	6000	3/16"	4.8	27	12.2	27 7/8"	708
CP0351ESVEL	9 1/8"			3/16"	4.8	5/32"	4.0	6000	1/16"	1.6	29	13.2	30"	762
CP0351ESGEL	2 7/8"			1/4"	6.4	3/16"	4.8	10400	1/8"	3.2	18 1/2	8.4	23 3/4"	603



735A



750A



RTC 750A2-6B

### 444 Series Alligator Squeezers

Model	Reach		Force at 90 PSI*		Capacity		Length		Weight	
	Inch	(mm)	lbs	(KN)	Alum	Seel	Inch	(mm)	lbs	(KGS)
444AFH	LESS JAWS						19 1/4	470	8.5	-3.86
444AFH-A32	3 1/4	82.5	9800	43.61	7/32	7/32	22.5	571	14.5	-6.78
444AFH-A52	5 1/4	133.3	6800	30.25	1/4	3/16	24.5	622	16	-7.26
444AFH-A72	7 1/4	184.1	6000*	26.7	3/16	5/32	26.5	673	17.5	-7.94
444AFH-A92	9 1/8	231.7	6000**	26.7	3/16	5/32	28.5	724	21.5	-9.8
444ASH	LESS JAWS						19 1/4	470	9.5	-4.32
444ASH-A32	3 1/4	82.5	9800	43.61	7/32	7/32	22.5	571	15.5	-7.03
444ASH-A52	5 1/4	133.3	6800	30.25	3/4	3/16	24.5	622	17	-7.71
444ASH-A72	7 1/4	184.1	6000*	26.7	3/16	5/32	26.5	673	18.5	-8.39
444ASH-A92	9 1/8	231.7	6000**	26.7	3/16	5/32	28.5	724	22.5	-10.2



444AFH Series

Actual static force as Tested  
 \*As Tested with Wedge #4082  
 \*\* As Tested with Wedge #4090 FH- Fixed Head SH - Swivel Head

## Bench Squeezers

The 8000CSA features a deep reach 12-1/2" heavy-duty "C" yoke. The mounting pedestal incorporates built-in filter, lubricator and regulator. It is shipped complete with all hoses, connectors, and air fittings. It requires 90-100 PSI air connection. This unit is also available with 9-1/2" reach and the mounting pedestal is optional equipment.



6000 CS



8000CS



3000AS



15KSA

Each stationary unit is equipped with either our FC-1 or FC-2 foot control and guard, all hoses and connectors. Each foot control is supplied with a heavy-duty ribbed rubber base. A 1/4" NPT female fitting is provided for simple adaption to your air system. All foot control valves are designed for heavy-duty everyday use. They are simple and reliable. As an added safety feature, all tools **reverse direction immediately** when the operator's foot is removed.

## Bench Models

PART NO.	REACH	GAP	CAPACITY (ALU - STEEL)	CLOSED YOKE HEIGHT	LENGTH	FORCE
C60B	6	3-1/2	-	1-3/8	-	27
C90B	9	3-1/2	-	1-5/8	-	55
C120B	12	4	-	2-3/8	-	175
C180B	18	4	-	2-3/4	-	400
8000CSA	9-1/2	5	5/16 - 1/4	2-3/8	29-3/8	180
8000CSA	12-1/2	5	5/16 - 1/4	2-3/8	33-3/4	220
8000CSA	24-1/2	5	5/16 - 1/4	2-3/8	78-1/4	680
15KCSA	9-1/2	5	3/8 - 5/16	2-3/8	29-3/4	183
15KCSA	12-1/2	5	3/8 - 5/16	-	33-3/4	226
15KCSA	24-1/2	5	-	-	78-1/4	686

## "C" Yokes Specs

PART NO.	CAP. ALUM	CAP. STEEL	REACH	GAP	FORCE LBS.	MAX TRAVEL	WEIGHT
C15	1/4	3/16	1-1/2	1-1/4	9000	9/16	1
C20	3/16	5/32	2	1-1/4	6000	9/16	1.2
C25	3/16	5/32	2-1/2	1-1/4	6000	9/16	1.5
C30	3/16	5/32	3	1-1/4	6000	9/16	2.0
US114TCC-98	3/16	1/4	9	3-1/2	7700	9/16	62
US114TCC-98G	3/16	1/4	10	3-1/2	7700	9/16	70
3000CS-6	1/8	3/32	6	3-1/2	3000	9/16	28
60C120B	3/16	5/32	12	4	6000	9/16	175
60C180B	3/16	5/32	18	4	6000	9/16	400
6000CS-6	3/16	5/32	18	3-1/2	6000	9/16	29

## Alligator Jaw Specs

PART NO.	REACH	GAP	CAPACITY (ALU - STEEL)	CLOSED YOKE HEIGHT	LENGTH	FORCE
A15	1-1/2	1-5/8	1/4 - 3/16	7/8	5-1/4	9000
A22	2-1/4	2-1/8	3/16 - 5/32	7/8	6-1/8	7200
A30	3	2-1/8	3/16 - 5/32	7/8	6-1/8	5200
3000AS-1-1/2	1-1/2	1-5/8	3/16 - 5/32	7/8	14	4200
3000AS-2-1/4	2-1/4	1-3/4	1/8 - 3/32	7/8	14-3/4	3000
3000AS-3	3	2-1/8	3/32 - 1/8	7/8	15-3/4	2500
6000AS-1-1/2	1-1/2	1-5/8	7/32 - 3/16	7/8	16-3/4	6500
6000AS-2-1/4	2-1/4	1-3/4	3/16 - 5/32	7/8	18-1/2	5000
6000AS-3	3	2-1/8	5/32 - 9/64	7/8	18-1/2	4000
6000AS-3-1/2	3-1/2	2-1/8	5/32 - 1/8	7/8	19	3500

**Huck-Clinch / Huck Max****Model 2013**

- Pneumatic
- High speed production
- Small, light-weight tool for fast, uniform installations.



99-3442



99-1333



99-3443



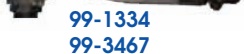
99-1336



99-1335



99-1334



99-3467

NAS Part No.	Cherrymax Part No.	Military Part No.	Boeing Part No.	Huckmax Part No.
NAS9301B	CR3213	M7885/2		HR3213
NAS9301E	CR3229			HR3223
NAS9302B	CR3212	M7885/3		HR3212
NAS9302E	CR3222			HR3222
NAS9303B	CR3214			HR3214
NAS9303E	CR3224			HR3224
NAS9304B	CR3243	M7885/6	BACR15FRQBJOR	HR3243
NAS9304E	CR3253		BACR15FRQEJOR	HR3253
NAS9305B	CR3242	M7885/7	BACR15FPQBJOR	HR3242
NAS9305E	CR3252		BACR15FPQJOR	HR3252
NAS9306B	CR3245			HR3245
NAS9306E	CR3255			HR3255
NAS9307M	CR3523	M7885/4		HR3523
NAS9307MP	CR3523P			
NAS9308M	CR3522	M7885/5		HR3522
NAS9308MP	CR3522P			
NAS9309M	CR3524			HR3524
NAS9309MP	CR3524P			
NAS9310M	CR3553	M7885/8		HR3553
NAS9313MP	CR3553P		BACR15FRQMPQR	
NAS9310C	CR3853		BACR15FRQMQR	
NAS9311M	CR3552	M7885/9	BACR15FPQMQR	HR3552
NAS9311MP	CR3552P		BACR15FPQMPQR	
NAS9311C	CR3852			
NAS9312M	CR3555			
NAS9312MP	CR3555P			

**Nose Assemblies for all Diameters of HUCK-CLINCH**

Huckmax Rivets	Part No.
Straight in-line long nose assembly	99-1335
Straight in-line heavy duty nose assembly, 4 gripper jaws	99-3442
Straight in-line long heavy duty nose assembly, 4 gripper jaws	99-3443
Offset single jaw nose assembly	99-1333
Offset unitized jaw nose assembly	99-1336
90° angle nose assembly	99-1334
90° angle nose for 202 or 212 tool	99-3467
Straight in line for 202 or 2012 tool	99-3458-202

**Unimatic Single Action - Blind Bolt**

MS21141UQ(UBR-EU) 4B100-T08  
 MS90354U9Q(UBR-T) MS21140UQ(UB-100-EU)  
 MS90353S(SB100-T) MS90353UQ(UB100-T)  
 MS90354(SBP-T) MS21140S(UBO-EU)  
 OBSP-EUQ MS21141S(UBP-EU)  
 OBP-EUQ OSB100-EUQ  
 OBP-TQ OB100-EUQ  
 UBP-MVQ OB100-TQ  
 SB100-T05 & 06 SB100-EU05 & 06  
 S7B100-EU S4B100-T06

**Model 244**

- Pneumatic
- High speed production

**Model 244 OS**

- Pneumatic
- High speed production

**Model 202/2025**

- Pneumatic
- High volume production

**Model 206-375/A206-375**

- Hydraulic
- Limited clearance

**Model 2480/A2480/5202/A2505**

- Hydraulic
- High speed production



Fastener Diameters	Installation Tool Model No.	Nose Assy Part No.	Nose Assy Part No. (if required)	Stroke Limiter Needed in Tool
5/32 (-05)	2025, 244 and 202 pneumatics tool	99-2071 or 99-2702	-	-
	2440S	99-3712 or 99-3712-1	-	Adjustable stroke
	245/255 Pneumatic Tool	99-2701 or 99-2702	10243	-
		99-2074 or 99-2705	-	-
		99-3712 or 99-3712-1	119400-1 w/118362	118362
	206-375 / A206-375 Hydraulic Tool	99-3712 or 99-2702	-	-
		99-3712 or 99-3712-1	122145-3	Self-contained
	2502 Hydraulic Tool/ A2502	99-2701 or 99-2702	102463	-
		99-2704 or 99-2705	-	-
	705BB Hydraulic Tool	99-3712 or 99-3712-1	119400-1	-
Self-contained		-	-	
3/16 (-06)	Pneumatic Tool 2025, 202/244	99-2702 or 99-2708	-	-
	2440S Pneumatic	99-3713 or 99-3713-1	-	Adjustable stroke
	245 / 255 Pneumatic Tool	99-2707 or 99-2708	102463	-
		99-2710 or 99-2711	-	-
		99-3713 or 99-3713-1	119400-1 w/118362	118362
	705BB Hydraulic Tool, A705BB	99-3713 or 99-3713-1	-	-
	2480 Hydraulic Tool, A2480	99-2707 or 99-2708	-	-
		99-3713 or 99-3713-1	-	-
	2502 Hydraulic Tool, A2502	99-2707 or 99-2708	-	-
		99-2710 or 99-2711	-	-
2580 Hydraulic Tool, A2580	99-3713 or 99-3713-1	119400-1	-	
	99-2707 or 99-2708	102463	-	
706BB Hydraulic Tool, A706BB	99-2710 or 99-2711	-	-	
	99-3713 or 99-3713-1	119400-1	-	
Self-contained	-	-		

**Note:** 2480, 2502, 705BB, 2580 require 940 power rig. A2480, A2502, A2580, A705BB require 956 power rig.



## Unimatic Single Action - Blind Bolt

MS21141UQ(UBR-EU)	4B100-T08
MS90354U9Q(UBR-T)	MS21140UQ(UB-100-EU)
MS90353S(SB100-T)	MS90353UQ(UB100-T)
MS90354(SBP-T)	MS21140S(UBO-EU)
OBS-P-EUQ	MS21141S(UBP-EU)
OBP-EUQ	OSB100-EUQ
OBP-TQ	OB100-EUQ
UBP-MVQ	OB100-TQ
SB100-T05 & 06	SB100-EU05 & 06
S7B100-EU	S4B100-T06

### Model 202S

- Pneudraulic
- High volume production



### Model 245/255

- Pneudraulic
- High speed production



### Model 246/256

- Pneudraulic
- High speed production



### Model 700/A700 Series

- Hydraulic
- Limited clearance
- Built-in nose assembly for convenience and dependability in an extremely small package



Fastener Dia.	Installation Tool Model No.	Nose Assy. Part No.	Nose Assy. Adapters (if required)
1/4 (-08)	202S Pneudraulic Tool	99-2713 or 99-2714	-
		99-3714 or 99-3714-1	122145-3
	206-375, A206-375 Hydraulic Tool	99-3714 or 99-3714-1	-
		99-2713 or 99-2714	102463
	245 / 255 Pneudraulic Tool	99-2716 or 99-2717	-
		99-3714 or 99-3714-1	119400-1
	2480 Hydraulic Tool, A2480	99-2713 or 99-2714	-
		99-3714 or 99-3714-1	122145-3
	2502 Hydraulic Tool, A2502	99-2713 or 99-2714	102463
		99-2716 or 99-2717	-
258 Hydraulic Tool, A2580	99-3714 or 99-3714-1	119400-1	
	99-2713 or 99-2714	102463	
5/16 (-10)	246 / 256 Pneudraulic Tool	99-2719 or 99-2720	-
		99-2719 or 99-2720	-
	2502 Hydraulic Tool, A2502	99-2719 or 99-2720	-
		99-2719 or 99-2720	-
	701BB Hydraulic Tool, A710BB	Self contained	-
3/8 (-12)	246 / 256 Pneudraulic Tool	99-2722 or 99-2723	-
		99-2722 or 99-2723	-
	2502 Hydraulic Tool, A2502	99-2722 or 99-2723	-
		99-2722 or 99-2723	-
712BB Hydraulic Tool, A712BB	Self contained	-	

**Note:** 2480, 2502, 705BB, 2580 require 940 power rig. A2480, A2502, A2580, A705BB require 956 power rig.

## Unimatic Single Action - Blind Rivet

NAS1919BQ0S	NAS1919CQ0S	NAS1921M0Q0S	OSMLS100Q	OSMLSPQ
NAS1919M0Q0S	NAS1921Q0S	NAS1912C0Q0S	SMLS100-BT	SMLS0-BT

### Model 202

- Pneudraulic
- High volume production



### Model 2012

- Pneudraulic
- Medium production



### Model 245/255

- Pneudraulic
- High speed production



### Model 244 OS

- Pneudraulic
- Application: where offset tooling is being used
- 99-37XX series nose mount direct on tool without adapters
- Noses rotate 90°



Installation Tools and Nose Assemblies required for installation of UNIMATIC® Blind Rivets		
Fastener Diameter	Installation Tool Model No. and Tool Type	Nose Assemblies
1/8, 5/32, 3/16	HK150-5456 Field Hand Tool	99-S456 with 1/8, 5/32 & 3/16 insert
1/8 (04)	2012 & 202S In-line Pneumatic Tool	99-2724 short, 99-2725 me-dium, 99-2726 long
	244OS Pneumatic Tool in-line	99-3715 1" offset 99-375-1 1-3/8" offset
	206-375, A206-375 Offset Hydraulic Tool	99-3715 1" offset or 99-36715-1 1-3/8" offset
	704BR, A704BR	Self-contained
5/32 (05)	202, 2012 & 202S In-line Pneumatic Tool	99-2730 short, 99-2731 medium, 99-2732 long
	244OS Pneumatic Tool in-line	99-3716 1" offset 99-3716-1 1-3/8" offset
	206-375, A206-375 Offset Hydraulic Tool	99-3716 1" offset or 99-3716-1 1-3/8" offset
	705BR, A705BR	Self-contained
3/16 (06)	202, 2012 & 202S In-line Pneumatic Tool	99-2736 short, 99-2737 medium, 99-2738 long
	244OS Pneumatic Tool in-line	99-3717 1" offset or 99-3717-1 1-3/8" offset
	206-375, A206-375 Hydraulic Tool Offset	99-3717 1" offset or 99-3717-1 1-3/8" offset
	706BR, A706BR	Self-contained
1/4 (08)	245 In-line Pneumatic Tool	99-2745 short, 99-2746 medium, 99-2747 long
	206-375, A206-375 Hydraulic Tool Offset	99-3718 1" offset 39-3718-1 1-3/8" offset
	708BR, A708BR	Self-contained

**Note:** 700 Series & 206-375 require 940 power rig. A700 Series & A206-375 require 956 power rig.

NAS1919BQ0SQ	NAS1921M0SQ0S	SMLS100EUQ-0U	OSMLSPM0-0U
NAS1919CQ0SQ	MLSPB0-0U	SMLS100M0-0U	OSMLS100B0-0U
NAS1919M0SQ0	SMLSPEU0-0U	OSMLSPB0-0U	OSMLS100EU0-0U
NAS1921BQ0SQ	SMLSPM0-0U	OSMLSPEU0-0U	OSMLS100M0-0U
NAS1921CQ0SQ	SMLS100B0-0U	OSMLSPM0-0U	

### Model 202

- Pneudraulic
- High volume production



### Model 2012

- Pneudraulic
- Medium production



Installation Tools and Nose Assemblies required for installation of NAS1919/1921U Blind Rivets		
Fastener Diameter	Installation Tool Model No. and Tool Type	Nose Assemblies
1/8, 5/32, 3/16	202, 2012 Pneumatic Tool	99-3458-202 straight 2.136 long
	2012, 202 Pneumatic Tool	99-3459-202 straight 4.636 long
	2012 Pneumatic Tool	99-3466 offset
	2012	99-3467 right angle

**ASP FASTENERS**

2Asp509F 2AspFF & FP	2Asp509F & 509P 2AspPF & PP
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The Asp fastening system provides a simplified method of fastening composite, soft core, metallic, or other materials which are sensitive to fastener clamp-up or installation force considerations. Clamping force can be infinitely adjusted and the sustained by installation - accommodating the unique requirements of a give structural design.

ASP® INSTALLATION EQUIPMENT			
Fastener Diameter	Hex Wrench Size	Sleeve Driver HUCK Part No.	Max. Installation Torque (1)
13/64" (06)	5/64"	106524	20 Inch Pounds
17/64" (08)	3/32"	106525	30 Inch Pounds
21/64" (10)	1/8"	107735	40 Inch Pounds

(1) Installation torque must be adjusted to determine the controlled clamping force required for the soft-core material being fastened. Over-torquing could result in damage to the installation sleeve driver.

**Model 244OS**

- Pneudraulic

**Note:**

- (1) Requires adapter part number 102463
- (2) Requires adapter part number 119400-1
- (3) 244OS adapter not required



Fastener Diameter	HUCK Installation Tool Model No.	HUCK Nose Assy. Standard Length	HUCK Nose Assy. Long Length
13/64" (06)	244OS/202/2012 & 244	99-2642 Straight	99-2643
	245	99-2642 (1) Straight	99-2643 (1)
	245	99-3728 (2) Offset	-
	2502 or A2502	99-2642 (1) Straight	99-2643 (1)
	2502 or A2502	99-3728 (2) Offset	-
	206-375 or A206-375	99-3728 Offset	-
17/64" (08)	244OS/202/2012 & 244	99-2645	99-2646
	245	99-2645 (1)	99-2646
	245	99-3729 (2)	-
	2502 or A2502	99-2645 (1)	99-2646 (1)
	2502 or A2502	99-3729 (2)	-
	206-375 or A206-375	99-3729	-
21/64" (10)	245	99-2648	99-2649
	245	99-3730 (2)	-
	2502 or A2502	99-2648	99-2649
	2502 or A2502	99-3730 (2)	-
	206-375 or A206-375	99-3730	-

Removal Instructions: When removal is required the installed fastener can be removed by drilling through the pin head using the hex as a center. Drill to depth of head only.

Fastener Diameter	Drill Guide Bushing
13/64" (06)	103617
17/64" (08)	103618
21/64" (10)	103619

Drill Diameter	Drill Depth
.1562"	3/64"
.1875	1/16"
.2880	5/64"

**Model 200**

The Model 200 is designed to install fasteners requiring double action installation tooling. It provides a separate lock collar driving function - the double action that drives the lock of blind rivet, and blind bolt fasteners.

- Pneudraulic
- 10.5 lbs.
- 90-100 PSI
- 18 CFM (0.009 m3/s) based on 30 fastener installation per minute
- Rebuilds available



Part Number	Description
101300	Test Kit

**Note:** Tool requires adjusting for different size fasteners. Use 101300 kit

**Double Action Fastener - Blind Bolts**

Nose Assembly Specifications for:

MS21141(BP-EU) MS90354(BP-T) OBP-EU05 & 06	MS21140(B100-EU) MS90353(B100-T) OB100-EU05 & 06	OBP-T05 & 06 7B100-EU05 & 06 4B100-T06	OB100-T05 & 06 7B120-EU06 4B100-EU06
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99-600



NOSE ASSEMBLY SPECIFICATIONS		
Part Number	Fastener Size	Adapter Required
99-600	-5	-
99-600-1	-5	-
99-589	-6	-
99-589-1	-6	-

**Aluminum Double Action Fastener - Blind Rivets**

Nose Assembly Specifications for:

NAS1919B NAS1921B	MLSP MLS100
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78972



99-458



NOSE ASSEMBLY SPECIFICATIONS		
Part Number	Size	Adapter
78972	-4	104406
78973	-5	104406
78974	-6	104406
99-1013	-4	-
99-458	-5	-
99-459	-6	-
99-740	-8	-

**Model And A-286 Double Action - Blind Rivet**

Nose Assembly Specifications for:

NAS1919M NAS1919C 7MLS100M	NAS1931M NAS1921C
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78972



99-459



NOSE ASSEMBLY SPECIFICATIONS		
Part Number	Size	Adapter
78972	-4	104406
99-1013	-4	-
99-458	-5	-
99-459	-6	-

**Lockbolt Fastener - LGP**

LGPL2SC/SP	CIL8SC
LGPL4SC/SP	MLGPL22SC/SP
LGPL7SC	MLGPL28SC
LGPL8SC	MLGPL29SC/SP
LGPL9SC/SP	MCIL28SC
LGPL12SP	MCIL29SC/SP
CIL9SC/SP	

**Model 244**  
 • Pneudraulic  
 • High speed production



**Model 244 OS**

• Pneudraulic  
 • High speed production



**Model 245/255**

• Pneudraulic  
 • High speed production



**Model 246/256**

• Pneudraulic  
 • High speed production



**Model 206-375/  
A206-375**

• Hydraulic  
 • Limited clearance



Fastener Dia.	Fastener Part No.	Installation Tool Model No.	Installation Tool Nose Assembly	Installation Pull-In Nose Assembly
5/32" (05)	( )LGPL2SCEB05( ) ( ) ( )LGPL2SPEB05( ) ( )	244	99-2500 In-line Short 99-2501 In-line Medium 99-2502 In-line Long	99-1840
3/16" (06)	( )LGPL2SCEB06( ) ( ) ( )LGPL2SCEB06( ) ( )	244	99-2506 In-line Short 99-2507 In-line Medium 99-2508 In-line Long	99-1841
1/4" (08)	( )LGPL2SCEB08( ) ( ) ( )LGPL2SCEB08( ) ( )	245/255 245/255	99-2515 In-line Short 99-2516 In-line Medium 99-2517 In-line Long	99-1845

Fastener Dia.	Installation Tool Model No.	Installation Tool Nose Assembly No.	Tool/Adapter
5/32" (05)	244 Pneumatic	99-2500 In-line Short 99-2501 In-line Medium 99-2502 In-line Long	-
	245 Pneumatic 2502/A2502 Hydraulic 2503/A2503 Hydraulic	99-2503 In-line Short 99-2504 In-line Medium 99-2505 In-line Long	-
	A206-375 2060375 Hydraulic	99-3700 Offset 99-3700-1 Offset	Noses can be used on 244OS w/o adapter
3/16" (06)	244 Pneudraulic	99-2506 In-line Short 99-2507 In-line Medium 99-2508 In-line Long	-
	245/255 Pneudraulic 2502/A2502 Hydraulic 2503/A2503 Hydraulic	99-2509 In-line Short 99-2510 In-line Medium 99-2511 In-line Long	-
	206-375 Hydraulic A206-375	99-3701 Offset 99-3701-1 Offset	Can be used on 244OS w/o adapter
	706LGP/A706LGP	Self-contained	-
1/4" (08)	244 Pneudraulic	99-2512 In-line Short 99-2513 In-line Stub Long 99-2514 In-line Long	-
	245/255 Pneudraulic 246/256 Pneudraulic 2502/A2502 Hydraulic 2503/A2503 Hydraulic	99-2515 In-line Short 99-2516 In-line Medium 99-2517 In-line Long 99-2590 Shark bite	-
	A206-375 206-375 Hydraulic 708LGP/A708LGP	99-3702 Offset 99-3702-1 Offset Self-contained	Noses can be used on 244OS w/o adapter
	7/32" (07)	245/255 206-375 / A206-375	99-2678 In-line Medium 99-3762 Offset
5/16" (10)	245/255 Pneudraulic 246/256 Pneudraulic 2502/A2502 Hydraulic 2503/A2503 Hydraulic	99-2518 In-line Short 99-2518 In-line Medium 99-2520 In-line Long 99-2951 Shark bite	-
	208-625 Hydraulic 710LGP/A710LGP	99-1719DG Offset Self-contained	-
	245 Pneudraulic 246 Pneudraulic	99-2521 In-line Short 99-2522 In-line Medium	-
3/8" (12)	2502/A2502 Hydraulic 2503/A2503 Hydraulic	99-2523 In-line Long 99-2956 Shark bite	Raise hydraulic pressure to 8400 PSI
	208-625 Hydraulic 712LGP/A712LGP	99-1754DG Offset Self-contained	-
			-

**Lockbolt Fastener - GP, Shear And Tension**

**Model 244**  
 • Pneudraulic  
 • High speed production



**Model 244 OS**  
 • Pneudraulic  
 • High speed production



**Model 245/255**

• Pneudraulic  
 • High speed production



**Model 700/A700 Series**

• Hydraulic  
 • Limited clearance  
 • Built-in nose assembly for convenience and dependability in an extremely small package



Fastener Dia.	Installation Tool Model No.	Installation Tool Nose Assembly No.	Tool Adapter
1/8" (04)	244 Pneudraulic	99-2651 In-line Standard	-
5/32" (05)	244 Pneudraulic	99-2549S In-line Medium 99-2549T In-line Medium	-
	244 Pneudraulic 2502/A2502 Hydraulic 2503/A2503 Hydraulic	99-2552S In-line Medium 99-2552T In-line Medium	-
	244OS Pneudraulic 206-375/A206-375 Hydraulic	99-3703S 99-3703S-1 99-3703 Offset 99-3703T 99-3703-1 Offset 99-3703T-1	-
3/16" (06)	244 Pneudraulic	99-2555 In-line Medium	-
	245/255 Pneudraulic 2502/A2502 Hydraulic 2503/A2503 Hydraulic	99-2557 In-line Short 99-2558 In-line Medium 99-2559 In-line Long	-
	706GP/A706GP	Self-contained	-
	244OS Pneudraulic 206-375/A206-375 Hydraulic	99-3704 Offset 99-3704-1	-
1/4" (08)	244 Pneudraulic	99-2560 In-line Short 99-2561 In-line Medium 99-2562 In-line Long	-
	245/246 Pneudraulic 2502/A2502 Hydraulic 2503/A2503 Hydraulic	99-2563 In-line Short 99-2564 In-line Medium 99-2565 In-line Long	-
	244OS Pneudraulic 206-375/A206-375 Hydraulic	99-3705 Offset 99-3705-1 Offset	-
5/16" (10)	708GP/A708GP	Self-contained	-
	245/246 Pneudraulic 2502/A2502 Hydraulic 2503/A2503 Hydraulic	99-2566 In-line Short 99-2567 In-line Medium 99-2568 In-line Long	-
3/8" (12)	245/246 Pneudraulic	99-2569 In-line Short 99-2570 In-line Medium	-
	2502/A2502 Hydraulic 2503/A2503 Hydraulic	99-2571 In-line Long	Increase pull pressure to 8400 PSI
	208-625/A208-625 Hydraulic 712GP/A712GP	99-1756 Offset Self-contained	-

## CherryMAX® Power Riveters

- Unit installs 1/8", 5/32" & 3/16" CherryMAX rivets
  - Split Power Riveter allows installation in many limited access areas
  - Includes 3" hose for long reach on SH
  - Includes 3" hose for long reach on SR
- PN: **G704B**



STANDARD MODEL			
Part No.	Stroke	Pulling Force	Weight
<b>G704B</b>	.510"	3100 lbs.	4.25 lbs.

SPLIT POWER MODEL			
Part No.	Stroke	Pulling Force	Weight
<b>G704B-40SH</b>	.510"	3100 lbs.	6 lbs.
<b>G704B-SR</b>	.510"	3136 lbs.	4.5 lbs.

**Note:** Pulling heads ordered separately.

## Lightweight CherryMAX® Power Tool

- Lightweight ergonomic design with high pulling force
  - Uses existing CherryMAX tooling
  - 15° angled head allows user to install rivets using a natural hand position
  - Unit installs 1/8", 5/32" & 3/16" CherryMAX rivets
- PN: **G747**



STANDARD MODEL			
Part No.	Stroke	Pulling Force	Weight
<b>G747</b>	.437"	2100 lbs.	3.5 lbs.

## CherryMAX® Power Tool

- Unit installs 1/8", 5/32" & 3/16" CherryMAX, AB and CherryLock "A"
- PN: **G746A**



STANDARD MODEL			
Part No.	Stroke	Pulling Force	Weight
<b>G746A</b>	.875"	1850 lbs.	4.25 lbs.

## CherryMAX® Pulling Heads

Part No.	Description	Tool Used On
<b>H753A-456 99-1334</b>	Right Angle for installing 1/8", 5/32", & 3/16" nominal and oversize CherryMAX rivets	HUCK 2013 Cherry G704B/G746A/G747
<b>H781-456 99-1333</b>	Offset for installing 1/8", 5/32", & 3/16" nominal and oversize CherryMAX rivets	For G700/G784 adapter 680B205
<b>H701B-456 99-3442 H680B-200A</b>	Straight for installing 1/8", 5/32", & 3/16" nominal and oversize CherryMAX rivets	HUCK 2013 Cherry G704B/G746A/G747
<b>H680B208</b>	1/4" CherryMAX rivets	G784/G700
<b>H827-8</b>	Offset for installing 1/4" nominal and oversize CherryMAX rivets Note: for G744 only	For G83/G84 use adapter 744-200
<b>H828-8</b>	Right Angle for installing 1/4" nominal and oversize CherryMAX rivets Note: for G744 only	For G83/G84 use adapter 744-200
<b>H84A-8</b>	Straight for installing 1/4" nominal and oversize CherryMAX rivets	Cherry G83/G84 HUCK 244

### Right Angle Pulling Heads

PN: **H753A-456**



### Offset Pulling Heads

PN: **H781-456 Offset**



### Offset Pulling Heads

PN: **H827-8**



### Right Angle Pulling Heads

PN: **H828-8**



### Straight Pulling Heads

PN: **H701B-456**



### Straight Pulling Heads

PN: **H680B-200A**



### Straight Pulling Heads

PN: **H680B-208**



### Straight Pulling Heads

PN: **H84A-8**



## CherryMAX® Hand/Hydraulic Riveters

- Great in areas with limited access or power limitations
- Pulling head is an integral part of tool
- Unit installs 1/8" CherryMAX® rivets

PN: G27



Part No.	Description	Weight
G27	Tool only	0.8 lbs.
G27KIT	Kit includes tool, gauge, selection card & box	

## Lightweight Hand Hydraulic Riveter

- Lightweight, compact & versatile
- Double stage hydraulic pump for rapid advance, low
- Simple, durable construction
- Unit installs:
  - 4, -5, & -6 CherryMAX® rivets
  - 4, -5, & -6 CherryMAX® "A" rivets
  - 4 & -5 Maxibolt rivets
  - 4, -5 & -6 InterMAX rivets

PN: G750A



PN: H750A-8

Part No.	Stroke	Pulling Force	Weight
G750A	.750"	4200 lbs.	1.9 lbs.
H750A-8	Pulling head for 1/4" CherryMAX®		
Part No. Complete Kit	Pulling Head Included	Accessories Included	
G750A CMR	Straight Pulling Head H781-4458 (Offset) H753A-456 (Right Angle)	750A088 adapter Molded plastic case & ball necessary manuals	

- Lightweight & versatile kit
- Unit installs -4, -5, & -6 CherryMAX® rivets

## Cherry® 209 Type Hand Nipper

PN: 209



Part No.	Description
209	Rivet Stem Trimmer

## Rivet Hole Size Gage



These are precision ground, go/no-go gages used to check holes drilled for CherryMAX® rivets. They are made in both nominal and oversize rivet diameters.

PN: T172

Rivet Diameter	Gage No.	National Stock No.	Rivet Dia.	Gage No.	National Stock No.
1/8" Nominal	T172-4	5220-00-478-4135	1/8" Oversize	T172-400	5220-00-478-4127
5/32" Nominal	T172-5	5220-01-021-3276	5/32" Oversize	T172-500	5220-00-478-4140
3/16" Nominal	T172-6	5220-00-478-4136	3/16" Oversize	T172-600	5220-00-478-4141
1/4" Nominal	T172-8	5220-00-478-4139	1/4" Oversize	T172-800	5220-01-374-1340

## Cherry® Gauges

PN: 269C3



Part No.	Description
269C3	Rivet Grip & Diameter Gauge
269C5	Material Thickness & Grip Gauge
269B12	Maxibolt Gauge

## Pulling Heads Extensions



- Great for limited access areas
- Any combination may be used to reach desired length
- Increases overall length of H753A-456 to approximately 2-3/16"
- Better reach in limited areas

Part No.	Description
753B21	Right angle pulling head extension

For G747, G704B, HUCK 2013	
Part No.	Extension Length
704A12-2	2"
704A12-4	4"
704A12-6	6"
704A12-12	12"

## Cherry® Riveter Accessories



PN: 701B32  
PN: 670A20

Part No.	Description
701B32	<b>Magnetic Driving Anvil Catcher</b> Slips on nose of pulling head, no permanent attachment.
670A20	<b>Stem Catcher Bag</b> Plastic bag with heavy-duty zipper. Fits G701A, G704B, G744, G845A & G846 riveters.

## CherryLOCK® Universal Power Riveter

- H681 series pulling heads fit directly on this tool
- Unit installs 1/8" to 1/4" CherryLock rivets in all materials (bulbed and standard)
- Rebuilds available

PN: G784



Part No.	Stroke	Pulling Force	Weight
G784	7/8"	2600 lbs.	8 lbs.

## CherryLOCK® H681 Pulling Heads



- Nominal head length is 2-9/16"
- Fit directly on all Cherry hydroshift riveters
- Separate pulling head is required for each diameter rivet

PN: H681

Part No.	Type	Size
H681-3C	Universal Countersunk Head (MS 20426)	3/32"
H681-4C	Universal Countersunk Head (MS 20426)	1/8"
H681-4F	Countersunk Head (156°)	
H681-4S	Countersunk Head (NAS 1097)	
H681B166-4	Uni-Sink Head	
H681-5C	Universal Countersunk Head (MS 20426)	
H681-5F	Countersunk Head (156°)	5/32"
H681-5S	Countersunk Head (NAS 1097)	
H681B166-5	Uni-Sink Head	
H681-6C	Universal Countersunk Head (MS 20426)	3/16"
H681-6F	Countersunk Head (156°)	
H681-6S	Countersunk Head (NAS 1097)	
H681B166-6	Uni-Sink Head	
H681-8C	Universal Countersunk Head (MS 20426)	1/4"
H681-8S	Countersunk Head (NAS 1097)	

## CherryLOCK® "A" Rivet

- Great in areas with limited access or power limitations
- Pulling head is an integral part of tool
- Unit installs 3/32" "A" code rivets

PN: G30

Part No.	Stroke	Pulling Force	Weight
G30	3/4"	1000 lbs.	13 oz.



## Cherry® Nut-Plate Power Riveter

- Designed specifically for efficient installation of Cherry nutplate rivets
- Can be operated in any position with one hand
- Unit installs Cherry nut-plate rivets

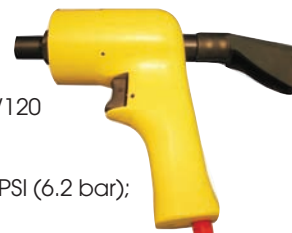
PN: G702A



PN: H702-3 NPR

Part No.	Stroke	Pulling Force	Weight
G702A	3/4"	1100 lbs.	3.5 lbs.
Pulling Heads for G702A Riveter			
Part No.	Included Nosepieces		
H702-3NPR	728A9-3 (3/32") & 728A9-104 (1/8")		
Pulling Heads for G747 Riveter			
Part No.	Included Nosepieces		
H747-3NPR	728A9-3 (3/32") & 728A9-104 (1/8")		

## Lightweight Nut-Plate Power Tool



- Air Pressure 90 PSI (6.2 bar) min./120 PSI (8.2 bar) max.
- Stroke .75 in. (19.05 mm)
- Pulling Force 550 lbs (2.45 kn) @ 90 PSI (6.2 bar); 730 lbs @ 120 PSI
- Cycle Time Approximately one second
- Weight 2 lbs (.91 kg)
- Noise Level 60 dB (A)
- Vibration less than 2.5 m/s<sup>2</sup>
- Air Consumption .05 SCF/Cycle (1.42 L/cycle)

PN: G902

## Cherry® Nut-Plate Hand Riveter

- Great in areas with limited access or power limitations
- Includes 728A9-3 (3/32") & 728A9-104 (1/8") nosepieces
- Unit installs 3/32" & 1/8" Cherry nut plates rivets

PN: G29



Part No.	Pulling Force	Weight
G29	1000 lbs.	0.8 oz.

## Maxi-Bolt® Power Riveter

- Compatible with Huck 244/202 riveter pulling heads
- Unit installs Cherry Maxibolt 5/32", 3/16" & 1/4"

PN: G83



Part No.	Stroke	Pulling Force	Weight
G83	7/16"	3750 lbs.	4.95 lbs.
G84	9/16"	5750 lbs.	7.7 lbs.

Note: Pulling heads ordered separately.

## Maxi-Bolt® Pulling Heads

PN: H828MB



PN: H83B-5MB



Part No.	Description	Tool Required
H83B-5MB	Straight for installing 5/32" Maxi-Bolts	G83, G84 HUCK 244/202
H83B-6MB	Straight for installing 3/16" Maxi-Bolts	
H84A-8MB	1/4 Maxi-Bolt	G84
H828MB-5MB	Right Angle for installing 5/32" Maxi-Bolts	G83 with 744-200 adapter G84 no adapter required
H828MB-6MB	Right Angle for installing 3/16" Maxi-Bolts	
H828MB-8MB	Right Angle for installing 1/4" Maxi-Bolts	G84

## Adapters for Pulling Heads

Part No.	For Use With	Allows
680B46	All Cherry Hydroshaft riveters G700/G784	H9015 pulling heads H9055 pulling heads
680B57		H9040 pulling heads
704A6	G701, G704 & G749 CherryMAX riveters HUCK 2013	H9040 screw-on type pulling head
704A9		H9055 & H9015 screw-on type pulling head
689B205	G686S, G689, G700 & G784 riveters	H701-456, H753A-456 & H781-546 pulling heads
750A-088	G750A	H701-456, H781-456 H753A-456 pulling heads

PN: 680B46



PN: 680B57



PN: 704A6



PN: 680B205



## Cordless Blind Riveter

- Fast & Efficient
  - Ergonomically Balanced
  - Over 1900 lbs of Pulling Force
  - Install Monobolts®, Magna-Lok® & Megagrip
- PN: POP MCS5800



<b>Pulling Force:</b>	4000 lbs (1815 kg)	<b>Weight:</b>	4.85 LBS (w/battery)
<b>Stroke Max:</b>	.787: (20.3mm)	<b>Power Source:</b>	3.2 Ah, 12 vdc (Nickel-Metal )
<b>Dimensions:</b>	11-7/8 X 10-3/8 X 2-5/8 (304.5 X266 X 67.2 mm)	<b>Charger Source:</b>	120 volt, 220 volt
<b>Housing Material:</b>	Impact Resistant Glass Filled Nylon	<b>Charger Cycle Time:</b>	30 Min.

## Riveter Tool Selection Chart

To Install	Use Tool
CherryMAX® type blind rivets	G747, G704B, G746A, G750A, G27, G83, G84, G744*
SST® blind rivets	G747, G704B, G746A, G750A, G27, G83, G84
CherryMAX® 'AB' type blind rivets	G747, G704B, G746A, G750A, G27, G83, G84
CherryLOCK® rivets	G700, G784, G689, G686B-S, 695B
CherryLOCK® 'A' rivets	G746A, G704B, G747, G750A, G30
MBC® and MBC® lock creator rivets	G746A, G704B, G747, G750A
MS type blind rivets	G704B, G746A, G747, G784, G689, G686B-S, G29
Nut-plate blind rivets	G747, G704B, G29, G746A, G702A, G902, G902-15
Maxibolt™ blind bolts	G83, G84, G84LS, G87D, G750A, G85D-S, G744*
Lockbolts	G83, G84, G84LS, G87D, G85D-S

## Precision Drilling Spacematic Drillmotor



M 2000



M 1000 II

### Standard Features

- Ergonomic design.
- Consistent clamp force—min to max collet spacing.
- Choice of template foot, concentric collet, Keller foot or taper lock.
- 10 spindle speed selection.
- Fully adjustable feed rate.
- Positive mechanical depth stop.
- Spindle rotation during retract.
- Locking trigger for unattended operation.
- Precision spindle bearings.

PN: M 2000

### Optional Features

- Air pressure intensifier for increased thrust and clamp force.
- Drill point and thru spindle coolant systems.
- Spindles compatible to various cutter designs.
- Variable clamp force control unit.

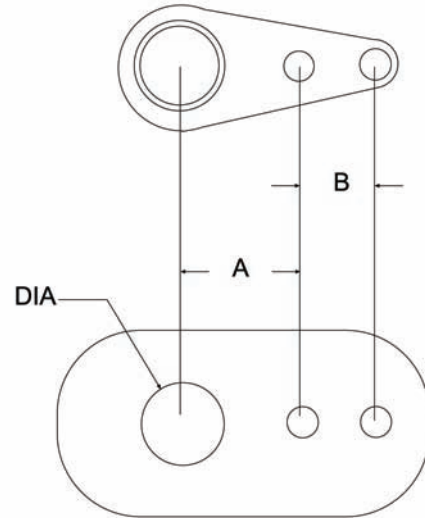
PN: M 1000 II

	M2000	M1000II
Feed Stroke	2.25 (57mm)	1.18 (30mm)
Drill to Collet Spacing	1.00 Min - 4.50 Max	.75 Min - 3.00 Max
Spindle Length Adjustment	.25 (6.4 mm)	.25 (6.4 mm)
Feed Control	Self-contained hydraulic control module. Fully adjustable .001 to .012 I.P.R. at 90 PSI (.025 mm - .3 mm per rev)	
Spindle Speeds (RPM)	450, 800, 1600, 1250, 1600, 2000, 2500, 3500, 4000, 6000, 9000	300, 450, 700, 1500, 1800, 2500, 4500, 6000, 9000, 12500
Drill+C'Sink Dia. (Max.)	.5000/8.8120 (12.7/20.6 mm)	.3125/.6250 (7.9/15.9mm)
Stall Torque (4500 RPM)	110 in Lbs. (127 kg-cm)	79 in - Lbs. (91 kg - cm)
Drill Thrust	270 Lbs. (122.6 kg)	210 Lbs. (95 kg)
Clamp Force	700 Lbs. (318 kg)	540 Lbs. (95 kg)
Motor Power	2.2 HP (1.62 kw)	1.5 HP (1.1 kw)
Air Consumption (.375 inside dia. (12.7mm) hose)	60 CFM @ 90 psi	45 CFM @ 90 psi
C'Sink Depth Accuracy	+/- .0005 in (+/- 0.013 mm)	+/- .005in (+/- 0.013 mm)
Collet Stroke	.875 (22.2 mm)	.625 (17.1) mm
Weight	15 lbs. (6.7 kg)	8.5 lbs. (3.8 kg)
Standar Features	Trigger lock hands-off operation. Automatic spindle rotation during retract.	
Optional Features	Drill pointer lubricator. Clamp thrust intensifier. Special spindle designs.	
	Feed control safety cap.	

Form must be complete before ordering. Please ask for it.



**Spacematic Nutplate II/IIB**



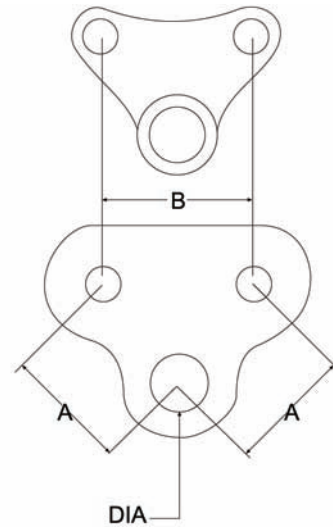
Single-Wing Nutplate

**Standard Features**

- Ergonomic design.
- Fully adjustable feed rate.
- Standard foot assembly, collet-mandrel and cutters from previous model.
- 3 lbs. lighter than previous model.
- Accomodates all nutplate spindle spacings from .219 to 1.125 inches.
- Popular metric spacings available on special request.

**Optional Features**

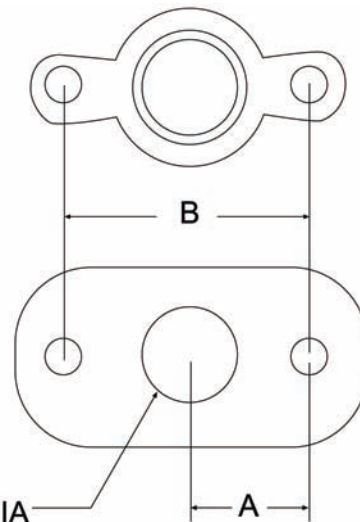
- C-Yoke foot attachment for edge applications.
- Booster pump to increase clamp and thrust forces for drilling in tough materials.
- Coolant-lubricant system for improved cycle time and increased drill life.
- Forward, rearward, right or left exhaust direction.



Mickey Mouse Nutplate

<b>Drill Stroke Length</b>	0.500 inches
<b>Available Spindle Speeds</b>	600 and 7000 RPM
<b>Feed Rate Range</b>	0.001 to 0.012 inches per revolution
<b>Motor Power</b>	0.54 HP
<b>Maximum Air Consumption</b>	18 CFM at 90 PSI
<b>Collet Stroke Length</b>	0.250 inch
<b>Weight</b>	4.75 lbs.

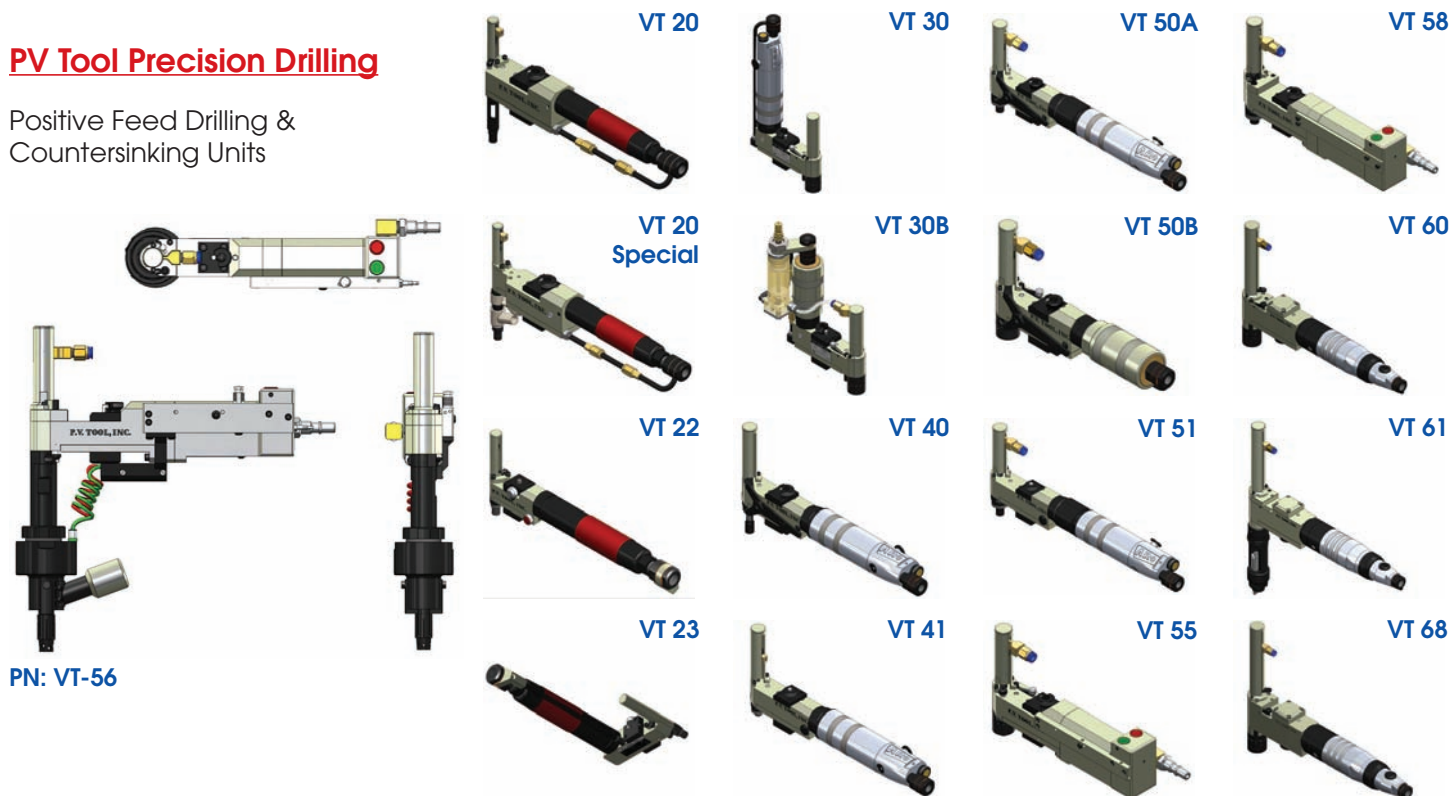
*Form must be complete before ordering. Please ask for it.*



Double-Wing Nutplate

## PV Tool Precision Drilling

Positive Feed Drilling & Countersinking Units



Part No.	Features	Drilling / Countersinking Capacity	Speeds	Feed/Rev	Stroke
VT 20	Fully automatic for drilling. Manual for countersinking.	Ø 1/4	200	0.0006	3.5in
VT 20 Special	Drill or countersink (Titanium, Composites, Aluminum Alloys.)	Ø 1/4	325	0.0013	Max.
VT 22	Rapid Conversion from drilling to countersinking. (Patented)	Ø 1/4	450	0.0025	-
VT 23	Feed Changes by changing one gear only. (Patented)	Ø 1/4	600	0.004	-
VT 30	Cooling fluid through spindle available.	Ø 3/8	1100	0.006	-
VT 30B	Countersinking depth accuracy plus/minus .001in.	Ø 3/8	1850	0.007	-
-	Orientation device (Clocking) available.	-	2400	-	-
VT 40	Fully automatic for drilling. Manual for countersinking.	Ø 5/16	200	0.0006	2.5in
VT 41	Drill or countersink (Titanium, Composites, Aluminum Alloys.)	Ø 1/2	325	0.0013	Max.
-	Small spindle offset for critical access.	-	450	0.0025	-
-	Smaller unit available with countersinking capability.	-	600	0.004	-
-	Can be changed from drilling to countersinking with ease.	-	1100	0.006	-
-	Can be operated as fully automatic unit, with idle at end of return stroke. Rapid return speed. (approximately 10x speed).	-	1850	0.007	-
-	Orientation device (clocking) available.	-	-	-	-
VT 50A	Fully automatic for drilling. Manual for countersinking.	Ø 3/8	200	0.0006	3.5in
VT 50B	Drill or countersink (Titanium, Composites, Aluminum Alloys.)	Ø 3/8	325	0.0013	Max.
VT 51	Rapid Conversion from drilling to countersinking. (Patented)	Ø 5/8	450	0.0025	-
VT 55	Feed Changes by changing one gear only. (Patented)	Ø 3/8	600	0.004	-
VT 56	Cooling fluid through spindle available.	Ø 3/8	1100	0.006	-
VT 58	Countersinking depth accuracy plus/minus .001in.	Ø 3/8	1850	0.007	-
-		-	2400	-	-
VT 60		Ø 1" Aluminum Ø 3/4" Titanium/steel	125	0.0005	5in.
VT 61		Ø 1 1/4"	250	-	Max.
VT 68		Ø 1" Aluminum Ø 3/4" Titanium/steel	325	0.0012	-
-	Drill or countersink (Titanium, Composites, Aluminum Alloys.)	-	375	-	-
-	Rapid Conversion from drilling to countersinking. (Using Patented Attachment)	-	400	0.0025	-
-	Feed Changes by changing one gear only. (Patented)	-	550	-	-
-	No ratcheting at end of return stroke. Lifting system (patented).	-	650	0.004	-
-	Cooling fluid through spindle available.	-	375	-	-
-	Rapid return speed. (approximately 10x speed).	-	1000	0.005	-
-		-	1100	-	-
-		-	1425	0.006	-
-		-	2000	-	-
-		-	2375	0.0075	-
-		-	2450	-	-

## Hi-Shear CXT-II



Max Air Consumption Size		45 SCFM @ 90 PSI				
Minimum Hose		3/8" Diameter				
Weight		3 lbs.				
Model No. & Basic Speed	Part No.	Chuck Assemblies				
		0 - 1/4" (0 - 6.3 mm)		0 - 3/8" (0 - 9.5 mm)		5/64" - 1/2" (2 - 12.5 mm)
		Regular	With Guard	Regular	With Guard	Regular Only
750 - CXT II	19452	-		4248	19013	4251
1000 - CXT II	19433	-				
1500 - CXT II	19412	-				
2000 - CXT II	19454	-				
2800 - CXT II	19432	-				
4500 - CXT II	19451	4249	4250	19015	19014	-
6000 - CXT II	19407	-				
20000 - CXT II	19453	-				

## Hi-Shear CXD



Max Air Consumption Size		20 SCFM @ 90 PSI			
Minimum Hose		1/4" Diameter			
Weight		1.75 lbs.			
Model No. & Basic Speed	Part No.	Chuck Assemblies			
		0 - 1/4" (0 - 6.3 mm)		0 - 3/8" (0 - 9.5 mm)	
250 - CXD	19382				
450 - CXD	19383				
750 - CXD	19384				
1000 - CXD	19385				
1500 - CXD	19386				
2800 - CXD	19387	4246		4247	
4500 - CXD	19388				
25000 - CXD	19389				

## Cleco

### 600 - 2600 RPM

0.7 hp (0.5 kW)

- Sand cast handle.
- Hardened steel back cap.
- Governor speed control.
- Variable speed.



Model No.	Speed (rpm)		Chuck Capacity*		Length		Weight	
	Free	Governed	in	mm	in	mm	lbs	kg
0.7 hp (0.5 kW) - Variable Speed								
135DPV-7B-43	600	150-550	3/8	10	9 - 5/8	244	3 - 5/8	1.6
135DPV-7B-50	600	150-550	1/2	13	9 - 5/8	244	3 - 5/8	1.6
135DPV-14B-50	1250	400-1200	1/2	13	9 - 5/8	235	3 - 3/8	1.5
135DPV-14B-51	1250	400-1200	3/8	10	9 - 1/4	235	3 - 3/8	1.5
135DPV-28B-51	2600	700-2400	3/8	10	9 - 1/4	216	3 - 1/8	1.4

## DOTCO Pistol Grip Drills

### 14CF / 14CS / 14CN Series

330 - 29000RPM

0.4- 0.9 hp (0.30-0.67 kW)

- Non-reversible.
- Ergonomically critical finger and thumb guides fit the hand to aid in control.
- Excellent for aerospace, metal fab and woodworking.



Model No.	Free Speed rpm	Drill Diameter Capacity	Weight**		length**		Geared Chuck Size	Air Inlet Size	
			lbs.	kgs.	in.	mm			
14CF Series - 0.4 hp (0.30 kW) - Non-reversible									
14CFS90-38	29000	1/4"	1.5	0.68	5.7	145	3/8"	1/4"	
14CFS91-38	5200	1/4"	1.5	0.68	5.7	145	3/8"	1/4"	
14CFS92-38	3800	1/4"	1.5	0.68	5.7	145	3/8"	1/4"	
14CFS93-38	3200	1/4"	1.5	0.68	5.7	145	3/8"	1/4"	
14CFS94-38	2400	1/4"	1.6	0.72	5.7	145	3/8"	1/4"	
14CFS95-38	1000	1/4"	1.8	0.82	6.9	175	3/8"	1/4"	
14CFS96-38	700	1/4"	1.8	0.82	6.9	175	3/8"	1/4"	
14CFS97-38	600	1/4"	1.8	0.82	6.9	175	3/8"	1/4"	
14CS Series - 0.6 hp (0.45 kW) - Non-reversible									
14CSL90-38	14CSL90-40	20000	1/4"	2.1	0.95	6.3	160	1/4"	1/4"
14CSL98-38	14CSL98-40	6000	1/4"	2.1	0.95	6.3	160	1/4"	1/4"
14CSL91-38	14CSL91-40	5200	1/4"	2.1	0.95	6.3	160	1/4"	1/4"
14CSL92-38	14CSL92-40	3200	1/4"	2.1	0.95	6.3	160	1/4"	1/4"
14CSL95-38	14CSL95-40	1300	3/8"	2.9	1.31	8.1	205	3/8"	1/4"
14CSL97-38	14CSL97-40	500	3/8"	2.9	1.31	8.1	205	3/8"	1/4"
14CN Series - 0.9 hp (0.67 kW) - Non-reversible									
14CNL90-38	14CNL90-40	20000	1/4"	2.2	1.00	6.8	173	1/4"	1/4"
14CNL98-38	14CNL98-40	6000	1/4"	2.2	1.00	6.8	173	1/4"	1/4"
14CNL91-38	14CNL91-40	5200	3/8"	2.4	1.08	7.2	183	3/8"	1/4"
14CNL92-38	14CNL92-40	3200	3/8"	2.4	1.08	7.25	183	3/8"	1/4"
14CNL95-38	14CNL95-40	1300	3/8"	2.8	1.27	8.6	218	3/8"	1/4"
14CNL97-38	14CNL97-40	500	1/2"	3.5	1.59	9.1	231	1/2"	1/4"

## DOTCO Variable Speed Drills

32000 - 6000 RPM

1.4 hp (1.04 kW)

- Trigger Start.
- Non Reversible.
- Rear Exhaust.

PN: 14CHL



Model	Termination	RPM	Weight		Length		Air Inlet
			lbs	kg	in	mm	
14CHL92-40	3/8"-24 External threads	3200	2.37	1.08	5.50	140	3/8"
14CHL92-38	1/4" Jacobs Chuck	3200	2.63	1.20	6.53	166	3/8"
14CHL92-51	3/8" Jacobs Chuck	3200	2.83	1.29	7.05	179	3/8"
14CHL92-53	1/2" Jacobs Chuck	3200	3.79	1.72	7.44	189	3/8"
14CHL98-40	3/8"-24 External threads	6000	2.37	1.08	5.50	140	3/8"
14CHL98-38	1/4" Jacobs Chuck	6000	2.63	1.20	6.53	166	3/8"
14CHL98-51	3/8" Jacobs Chuck	6000	2.83	1.29	7.05	179	3/8"
14CHL98-53	1/2" Jacobs Chuck	6000	3.79	1.72	7.44	189	3/8"

**Atlas Copco Pistol Grip Drills****PN: LBB 37 Series****PN: LBB 26 EPX 033****PN: LBB 16 EPX-033****PN: LBB 16 EPX-005**

Model No.	Free speed rpm	Chuck capacity mm	Weight Kg	Hose size mm	Air inlet thread BSP	Sound level dB(A)	Power hp	Spindle thread in	Collet or chuck capacity mm	Air con. l/s	Mild steel (20-30 m/min) mm	Titanium (9-20 m/min) mm	Cast iron (5-20 m/min) mm	Aluminum and bronze (50-80 m/min) mm	Wood and board (80-150 m/min) mm	Composite (50-100 m/min) mm
LBB 37H006-U	600	-	1.2	10	1/8	83	1.1	1/2 UNF	-	20.5	14.0-19.0	5	-	-	-	-
LBB 37H037	3700	10	1.2	10	3/8	83	1.1	3/8-24 UNF	10	20.5	2.0-4.0	-	1.5-3.0	5.0-10.0	8.0-13.0	5.0-10.0
LBB 37H065	6500	6.5	1.2	10	3/8	83	1.1	3/8-24 UNF	6.5	20.5	1.0-2.0	-	-	2.5-5.0	4.0-8.0	1.0-5.0
LBB 26EPX 033	3300	8	0.69	10	1/4	80	0.7	3/8-24 UNF	8	13.5	2.0-4.0	-	1.5-3.0	5.0-10.0	8.0-13.0	5.0-10.0
LBB 16EPX-033	3300	6.5	0.6	6.3	1/4	78	0.45	-	-	9.5	2.0-4.0	-	1.5-3.0	5.0-10.0	5.0-12.0	5.0-12.0
LBB 16EPX-005	500	10	0.7	6.3	1/4	78	0.45	-	-	9.5	-	5	-	-	-	-

**Master Power Pistol Grip Drills**

- Nominal Motor Power 0.3 hp / 0.22 kW.
- Ergonomic design with comfort grip.
- Small size ideal for tight access areas; handle is almost 90° to the spindle.
- Variable speed trigger.
- Handle exhaust.
- Only 1.5 lbs.

**PN: MP1454-38**

- Nominal Motor Power. 1 hp / 0.745 kW.
- Non-Reversible.
- Steel front end for industrial applications.
- 2 step throttle for easy starts.
- Built-in no-clog mufflers for quiet operation.
- Double row ball bearings on output spindle for excellent alignment and true running bits.
- Parts interchangeable with Master Power screwdrivers.
- Hardened and ground precision parts for extended service life.

**PN: MP1457-51**

- Nominal Motor Power. 1 hp / 0.745 kW.
- Reversible.
- 2 step throttle for easy starts.
- Built-in no-clog mufflers for quiet operation.
- Ball bearings on output spindle for excellent alignment and true running bits.
- Parts interchangeable with Master Power screwdrivers Steel front end for industrial applications.
- Hardened and ground precision parts for extended service life.

**PN: MP1463-51**

- Nominal Motor Power. 1.2 hp / 0.894 kW.
- Non-reversible.
- Steel front end for industrial applications.
- 2 step throttle for easy starts.
- Built-in no-clog mufflers for quiet operation.
- Ball bearings on output spindle for excellent alignment and true running bits.
- Parts interchangeable with Master Power screwdrivers.
- Hardened and ground precision parts for extended service life.

**PN: MP1858-55**

Model No.	Free Speed	Hp	Chuck Capacity	Length		Weight		Spindle Offset		Air Consumption CFM	Air Inlet
	RPM			in.	mm	lbs.	kg	in.	mm		
MP1454-38	3000	0.3	1/4"	5.5	139.7	1.5	.68	-	-	12	1/4"
MP1457-51	2800	1.0	3/8"	7.5	191.0	1.9	.85	.84	20.6	25	1/4"
MP1463-51	1800	1.0	3/8"	6.8	172.7	2.5	1.1	.84	20.6	-	1/4"
MP1858-55	1400	1.2	1/2"	9.0	228.6	2.1	.95	.84	20.6	-	1/4"

## Angle Grip Drill

### US Industrial US7092 DARE Series



### US Industrial US7092 DARE-CTL Series



Model No.	Max. Drill Dia.	RPM	Weight	Length	Internal thread	Collet sizes available
US7092DARE-4500	1/4"	4500	2.3lbs / 1 kg	12.6" / 320 mm	1/4"-28	-
US7092DARE-2800	1/4"	2800	2.3lbs / 1 kg	12.6" / 320 mm	1/4"-28	-
US7092DARE-CTL-4500	#11	4500	2.3lbs / 1 kg	12.6"	-	#40, #30, #28, #21, #12, #11
US7092DARE-CTL-2800	#11	2800	2.3lbs / 1 kg	12.6"	-	#40, #30, #28, #21, #12, #11

## Atlas Copco Angle Drills



Model No.	Free Speed rpm	Type of Angle Drills	Weight kg	Hose size mm	Air inlet thread	Sound level dB(A)	Power hp	Collet or chuck capacity mm	Internal thread in	Air consumption l/s	Mild steel (20-30 m/min) mm	Aluminum and bronze (50-80 m/min) mm
LBV 16 032-592	3200	Small angle head. 90°	0.45	6.3	1/4 BSP	76	0.4	1/4"-28	1/4"-28	9	4	5
LBV 16 032-30	3200	Small angle head. 30°	0.5	6.3	1/4 BSP	76	0.4	5	-	9	4	5

## Atlas Copco Straight Drills



Model	Free Speed RPM	Chuck Capacity in	Weight		Air consumption at Free Speed		Hose size		Air Inlet Thread NPT	Sound level at free speed dB(A)	With Chuck Ordering No.	Without Chuck	
			kg	lb	l/s	cfm	mm	in				Model	Ordering No
LBB34 S060	6000	3/8	1.1	2.4	10	21	10.0	3/8	39817	88	8421 0309 41	-S060U	8421 0309 74
LBB34 S026	2600	3/8	1.1	2.4	10.0	21.0	10.0	3/8	1/4	88	8421 0309 25	-S026U	8421 0309 82
LBB34 S013	1300	3/8	1.5	3.3	10.0	21.0	10.0	3/8	1/4	87	8421 0309 17	-S013U	8421 0309 90

## Atlas Copco Drills with Integrated Micro Stop



Model	Free Speed RPM	Spindle Thread in/mm	Stroke		Setting Range ±		Weight		Hose Size		Air Consumption at Free Speed		Sound level at free speed dB(A)	Air Inlet Thread NPT	Ordering No
			mm	in	mm	in	kg	lb	mm	in	l/s	cfm			
LBS24 H045-40M	4500	M6x1	40	1.6	6	1/4	1.1	2.4	6.3	1/4	5.9	12.5	74	1/4	8421 0220 10
LBS24 H045-40	4500	1/4"-28	40	1.6	6	1/4	1.1	2.4	6.3	1/4	5.9	12.5	74	1/4	8421 0220 30
LBS24 H010-40M	1000	M6x1	40	1.6	6	1/4	1.2	2.8	6.3	1/4	5.9	12.5	73	1/4	8421 0220 50
LBS24 H010-40	1000	1/4"-28	40	1.6	6	1/4	1.2	2.8	6.3	1/4	5.9	12.5	73	1/4	8421 0220 70
LBS36 H033-40	3300	1/4"-28	40	1.6	6	1/4	1.2	2.6	10	3/8	16.5	34.9	81	3/8	8421 0220 80
LBS36 H013-40	1300	1/4"-28	40	1.6	6	1/4	1.5	3.3	10	3/8	16.5	34.9	81	3/8	8421 0220 90

**DOTCO Right Angle Drills**

320 - 5600 RPM

0.4 - 0.9 hp (0.30 - 0.67 kW)

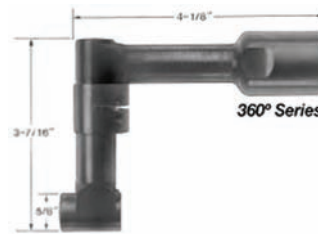


Model No.	Free Speed rpm	Drill Diameter Capacity	Type Housing	Weight		Length		Spindle Size	Air Inlet Size
				lbs	kg	in	mm		
<b>Light Duty Head - 15LF Series - 0.4 hp (0.30 kW) - Rear Exhaust</b>									
15LF281-62	5300	1/4"	C	1.6	0.75	10.7	272	1/4"-28*	1/4"
15LF282-62	4000	1/4"	C	1.6	0.75	10.7	272	1/4"-28*	1/4"
15LF283-62	3300	1/4"	C	1.6	0.75	10.7	272	1/4"-28*	1/4"
15LF284-62	2400	1/4"	C	1.8	0.85	11.1	282	1/4"-28*	1/4"
15LF285-62	1000	1/4"	C	1.9	0.85	11.8	300	1/4"-28*	1/4"
15LF286-62	750	1/4"	C	1.9	0.85	11.8	300	1/4"-28*	1/4"
15LF287-62	600	1/4"	C	1.9	0.85	11.8	300	1/4"-28*	1/4"
<b>Light Duty Head - 15LS Series - 0.6 hp (0.45 kW) - Rear Exhaust</b>									
15LS281-62	5430	1/4"	C	2.3	1.05	11.5	292	1/4"-28*	1/4"
15LS282-62	3370	1/4"	C	2.3	1.05	11.5	292	1/4"-28*	1/4"
15LS283-62	2010	1/4"	C	2.3	1.05	11.5	292	1/4"-28*	1/4"
15LS284-62	1660	1/4"	C	1.8	0.82	12.4	345	1/4"-28*	1/4"
15LS285-62	1360	1/4"	C	1.9	0.85	12.7	323	1/4"-28*	1/4"
15LS286-62	840	1/4"	C	1.9	0.85	12.7	323	1/4"-28*	1/4"
15LS287-62	500	1/4"	C	1.9	0.85	12.7	323	1/4"-28*	1/4"
<b>Light Duty Head - 15LN Series - 0.9 hp (0.67 kW) - Rear Exhaust</b>									
15LN288-62	5600	1/4"	C	2.5	1.15	12.0	305	1/4"-28*	1/4"
15LN281-62	5000	1/4"	C	2.5	1.15	12.0	305	1/4"-28*	1/4"
15LN282-62	3100	1/4"	C	2.5	1.15	12.0	305	1/4"-28*	1/4"
15LN284-62	1530	1/4"	C	2.5	1.15	12.0	305	1/4"-28*	1/4"
<b>Heavy Duty Head - 15LF Series - 0.4 hp (0.30 kW) - Rear Exhaust</b>									
15LF281-52	3700	1/4"	C	1.7	0.75	11.0	280	1/4"-28*	1/4"
15LF282-52	2800	1/4"	C	1.7	0.75	11.0	280	1/4"-28*	1/4"
15LF283-52	2300	1/4"	C	1.7	0.75	11.0	280	1/4"-28*	1/4"
15LF285-52	700	1/4"	C	2.0	0.95	12.0	305	1/4"-28*	1/4"
15LF286-52	525	1/4"	C	2.0	0.95	12.0	305	1/4"-28*	1/4"
15LF287-52	420	1/4"	C	2.0	0.95	12.0	305	1/4"-28*	1/4"
<b>Heavy Duty Head - 15LS Series - 0.6 hp (0.45 kW) - Rear Exhaust</b>									
15LS281-52	3800	1/4"	C	2.4	1.05	11.0	280	1/4"-28*	1/4"
15LS282-52	2360	1/4"	C	2.4	1.05	11.0	280	1/4"-28*	1/4"
15LS283-52	1410	1/4"	C	2.4	1.05	11.0	280	1/4"-28*	1/4"
15LS287-52	350	1/4"	C	2.8	1.25	12.3	310	1/4"-28*	1/4"
<b>Heavy Duty Head - 15LN Series - 0.9 hp (0.67 kW) - Rear Exhaust</b>									
15LN288-52	3900	1/4"	C	2.6	1.15	11.5	310	1/4"-28*	1/4"
15LN281-52	3500	1/4"	C	2.6	1.15	11.5	310	1/4"-28*	1/4"
15LN282-52	2170	1/4"	C	2.6	1.15	11.5	310	1/4"-28*	1/4"
15LN283-52	1300	1/4"	C	2.6	1.15	11.5	310	1/4"-28*	1/4"
15LN284-52	1070	1/4"	C	3.0	1.35	12.8	343	1/4"-28*	1/4"
15LN285-52	870	1/4"	C	3.0	1.35	12.8	343	1/4"-28*	1/4"
15LN286-52	540	1/4"	C	3.0	1.35	12.8	343	1/4"-28*	1/4"
15LN287-52	320	1/4"	C	3.0	1.35	12.8	343	1/4"-28*	1/4"

\* Internal Thread

**Optional Angle Heads**

Termination	Spindle Thread
<b>600 Series Mini Angle Head</b>	
-61	#10-32 Internal
-62	1/4"-28 Internal
-63	9/32"-40 Internal
-64	5/16"-24 Internal



Termination	Spindle Thread
<b>360 Degree Mini Angle Head</b>	
-91	#10-32 Internal
-92	1/4"-28 Internal



Termination	Spindle Thread
<b>500 Series Heavy Duty Angle Head</b>	
-52	1/4"-28 Internal
-53	9/32"-40 Internal
-54	5/16"-24 Internal
-55	3/8"-24 Internal
-59	1/4" Cap. 3 jaw chuck
-59NC	3/8"-24 Male Thread



Termination	Spindle Thread
<b>700 Series Compact Angle Head</b>	
-72	1/4"-28 Internal
-73	9/32"-40 Internal
-74	5/16"-24 Internal



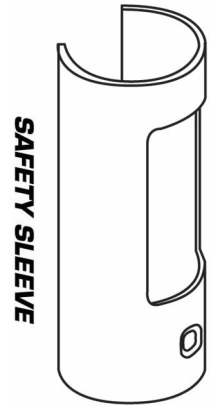
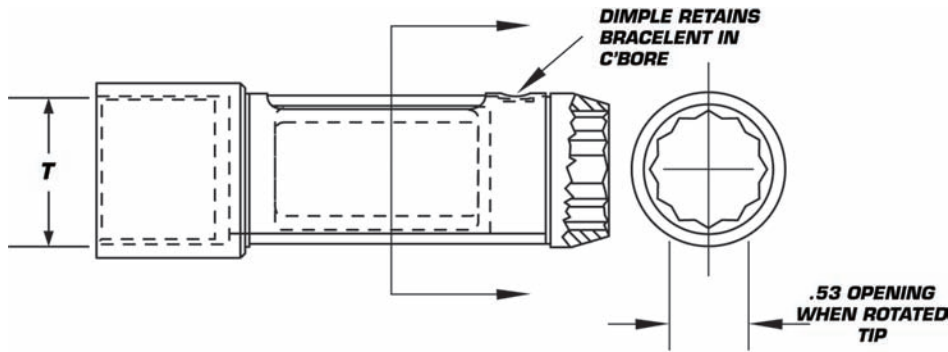
Termination	Spindle Thread
<b>45 Degree Mini Angle Head</b>	
-42	1/4"-28 Internal
-43	9/32"-40 Internal
-44	5/16"-24 Internal

## ZT627AD Motor Adapter

The ZT627AD Motor Adapters are designed to be used in conjunction with a hex body flat offset angle drill attachments and the boeing quick change chuck.

### Features

- Threads directly onto your pneumatic drill.
- 11/16" 12 point hex.
- Safety sleeve that protects the user from rotating drive shaft and quick change chuck.

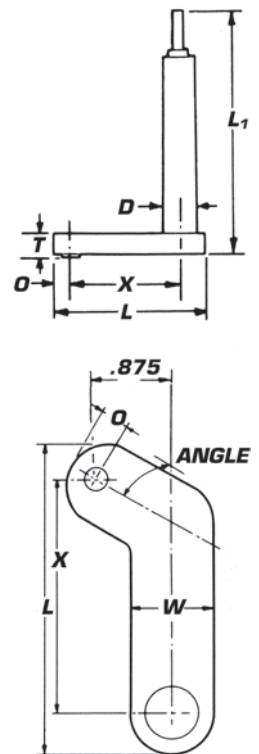


SAFETY SLEEVE

Part No.	Motor Thread T	Overall Length	Adapter Hex	Body Diameter	Motor Model
ZT627AD	1"-20 LH	3.450"	11/16" 12 Point	1.030"	Dotco
ZT627AD-1.25	1-1/4-18 LH	3.165"			Ingersoll-Rand
ZT627AD-M36	M36X1.5 LH	3.340"			Atlas Copco LBB36

## Flat Offset Angle Drills

Drill Name & Description	Part No.	Spindle Thread	Spindle Offset O	Drill Offset X	Overall Length L	Length L <sub>1</sub>	Body Thickness T	Body Width W	Mount Dia. D	Angle	Drill Cap
Flat Offset Angle Drill Extra thin which allow access into tight areas	ZT562	10-32	9/32"	2-5/8"	3-7/16"	5-11/16"	1/4"	7/8"	N/A	30° R. H.	1/8"
	ZT563									30° L. H.	
	ZT561			3-3/64"	3-13/16"	1-13/66"				Straight	
	ZT762			2-5/8"	3-7/16"					30° R. H.	
	ZT763			3-3/64"	3-13/66"	30° L. H.					
	ZT761					Straight					
180° Flat Offset Angle Drill Heavy Duty For inaccessible places	ZT528-B	5/16-24	3/8"	2-5/8"	3-11/16"	2-1/8"	5/8"	N/A	11/16"	180°	5/16"
	ZT528-C	1/4-28									
180° Flat Offset Angle Drill Extra reach type	ZT535-C	1/4-28	5/16"	3-13/16"	4-35/64"	1-61/64"	17/32"	N/A	11/16"	180°	1/4"
	ZT535-D	10-32									
	ZT535-G	5-40									
180° Flat Offset Angle Drill Reverse spindle type	ZT622-C	1/4-28	5/16"	3-1/8"	3-7/8"	1-61/64"	17/32"	N/A	11/16"	180°	1/4"
	ZT622-D	10-32									
	ZT622-G	5-40									
180° Flat Offset Angle Drill	ZT721-C	1/4-28	5/16"	2-29/64"	3-13/64"	1-15/16"	1/2"	N/A	11/16"	180°	3/16"
	ZT721-D	10-32									
	ZT721-G	5-40									
	ZT733-C	1/4-28									
	ZT733-D	10-32									
	ZT733-G	5-40									



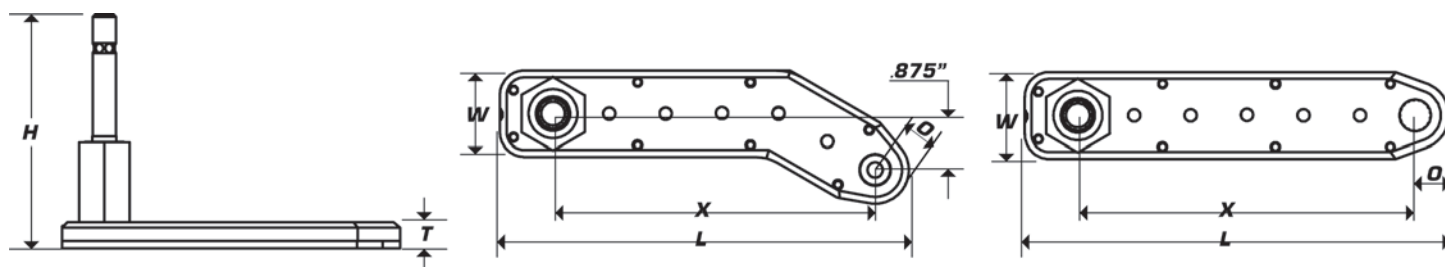
**NOTE:** All housings encase heat treated gears, with hardened and precision ground shafts.

## High Speed Angle Drill Attachments

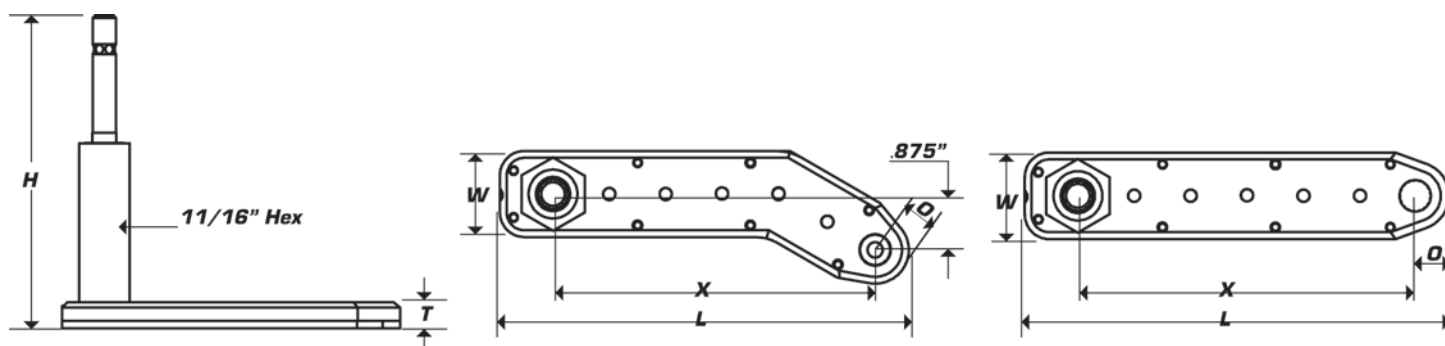
The ZT556/ZT557/ZT558 series flat offset angle drill attachments have been designed to run at any speed up to 6000 rpm in the tightest and most demanding applications. This angle drill is well suited for all metallic, graphite and composite materials used in the aircraft industry today.

### Features

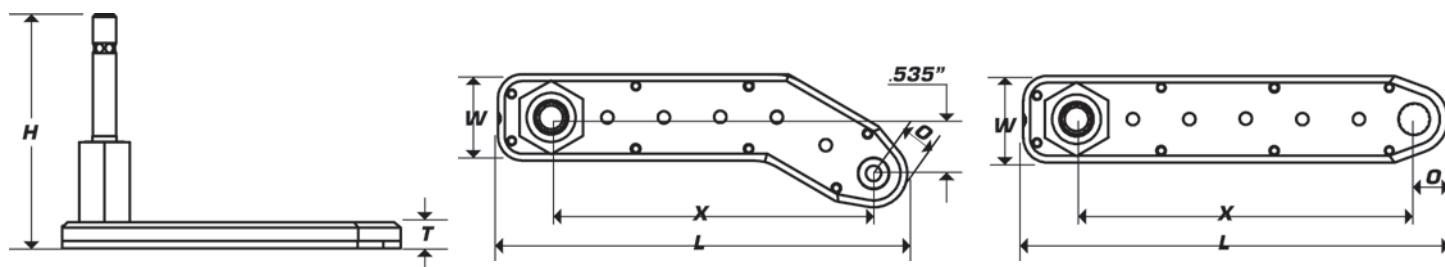
- Standard duty.
- Drive shaft and idler gear shafts are all supported by ball bearings.
- Drive shafts are available with 1/4" round (no suffix), 1/4" round with three flats (TF) and quick change (QC) drive shafts.
- Spindle gears are available with standard 10-32 (D) and 1/4-28 (C) internal threads.



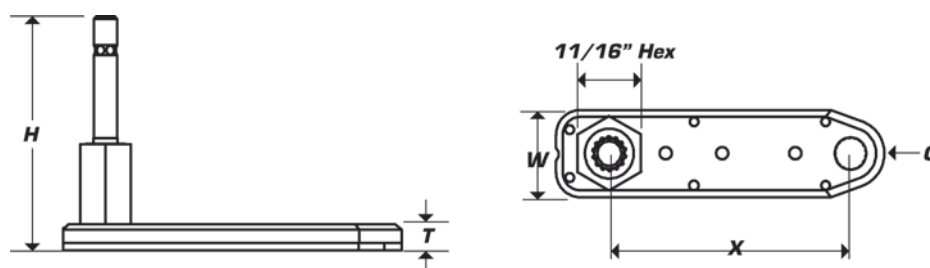
ZT556/ZT557/ZT558



ZT627/ZT628/ZT629



ZT727/ZT728/ZT729





Model No.	Spindle Thread	Spindle Offset O	Drill Offset X	Overall Length L	Overall Height H	Body Thickness T	Body Width W	Angle	Drill Capacity	Speed							
ZT556-D	10-32	.250	3.125	3.812	5.75	.312	.562	Straight	1/4" Aluminum	Up to 3000 rpm							
ZT556-D-QC																	
ZT556-D-TF																	
ZT556-C																	
ZT556-C-QC	1/4-28																
ZT556-C-TF																	
ZT557-D			10-32														
ZT557-D-QC																	
ZT557-D-TF																	
ZT557-C	1/4-28																
ZT557-C-QC																	
ZT557-C-TF																	
ZT558-D	10-32	.345	2.750	3.312	4.00	.335"	.880	30° LH	1/4" Aluminum	Up to 6000 rpm							
ZT558-D-QC																	
ZT558-D-TF																	
ZT558-C																	
ZT558-C-QC	1/4-28																
ZT558-C-TF																	
ZT627-D			10-32	.345				3.381			4.227	4.00	.335"	.880	Straight	1/4" Aluminum	Up to 6000 rpm
ZT627-D-QC																	
ZT627-D-TF																	
ZT627-C																	
ZT627-C-QC	1/4-28																
ZT627-C-TF																	
ZT628-D		10-32															
ZT628-D-QC																	
ZT628-D-TF																	
ZT628-C	1/4-28																
ZT628-C-QC																	
ZT628-C-TF																	
ZT629-D	10-32	.300	3.239	4.083	2.34	.335"	.880	30° RH	1/4" Aluminum	Up to 6000 rpm							
ZT629-D-QC																	
ZT629-D-TF																	
ZT629-C																	
ZT629-C-QC	1/4-28																
ZT629-C-TF																	
ZT677-D			10-32	.300				2.23			3.07	2.34	.335"	.880	Straight	1/4" Aluminum	Up to 6000 rpm
ZT677-D-QC																	
ZT677-D-TF																	
ZT677-C																	
ZT677-C-QC	1/4-28																
ZT677-C-TF																	
ZT777-D		10-32															
ZT777-D-QC																	
ZT777-D-TF																	
ZT777-C	1/4-28																
ZT777-C-QC																	
ZT777-C-TF																	
ZT727-D		10-32	.300	3.383	4.227	2.34	.335"	.880	30° LH	1/4" Aluminum	Up to 6000 rpm						
ZT727-D-QC																	
ZT727-D-TF																	
ZT727-C																	
ZT727-C-QC	1/4-28																
ZT727-C-TF																	
ZT728-D		10-32															
ZT728-D-QC																	
ZT728-D-TF																	
ZT728-C	1/4-28																
ZT728-C-QC																	
ZT728-C-TF																	
ZT729-D		10-32	.300	3.230	4.170	2.34	.335"	.880	30° RH	1/4" Aluminum	Up to 6000 rpm						
ZT729-D-QC																	
ZT729-D-TF																	
ZT729-C																	
ZT729-C-QC	1/4-28	3.239															
ZT729-C-TF		3.230															

### Strap Duplicators

These strap duplicators are used to drill holes in overlapping skins. The hole to be duplicated is drilled through the bushing when the pilot is in place. The inverted tool is used when you need to duplicate a hole where sheets cannot be pried apart. Tapered back end of handles are convenient for prying sheets apart.

#### Standard Strap Duplicator - Bushing Type



#### Inverted Strap Duplicator - Bushing Type



#### Strap Duplicator - Punch Type



Standard			Inverted			Punch Type		
Part No.	Pilot Drill Size	Length	Part No.	Pilot Drill Size	Length	Part No.	Pilot Drill Size	Length
MM-250-1	#40	6-1/4"	MM-255-1	#40	6-1/4"	MM-260-1	#40	6-1/4"
MM-250-2	#30		MM-255-2	#30		MM-260-2	#30	
MM-250-3	#21		MM-255-3	#21		MM-260-3	#21	
MM-250-4	#19		MM-255-4	#19		MM-260-4	#19	
MM-250-5	#10		MM-255-5	#10		MM-260-5	#10	
MM-250-6	#5		MM-255-6	#5		MM-260-6	#5	
MM-250-7	"F"		MM-255-7	"F"		MM-260-7	"F"	
MM-250-8	1/4"		MM-255-8	1/4"		MM-260-8	1/4"	
MM-250-11	#40	13-1/4"	MM-255-11	#40	13-1/4"	MM-260-11	#40	13-1/4"
MM-250-12	#30		MM-255-12	#30		MM-260-12	#30	
MM-250-13	#21		MM-255-13	#21		MM-260-13	#21	
MM-250-14	#19		MM-255-14	#19		MM-260-14	#19	
MM-250-15	#10		MM-255-15	#10		MM-260-15	#10	
MM-250-16	#5		MM-255-16	#5		MM-260-16	#5	
MM-250-17	"F"		MM-255-17	"F"		MM-260-17	"F"	
MM-250-18	1/4"		MM-255-18	1/4"		MM-260-18	1/4"	

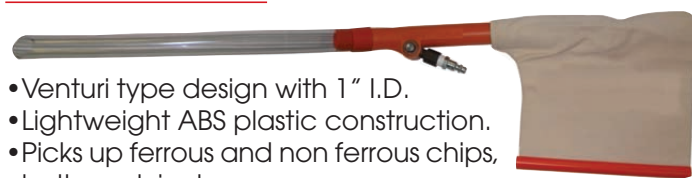
### Drill Bushing Housings

Two styles are available to accommodate standard 1/2"-13 Threaded Drill Bushings, and 1/2" OD Slip-Renewable Drill Bushings. A locking Screw on the Slip-Renewable Housing permits positive retention of the slip-fit bushing, thus reducing FOD concerns.



Part No.	Description
OM589AA	1/2"-13 Threaded Housing
OM589EA	1/2" I.D. Slip-Fit Housing

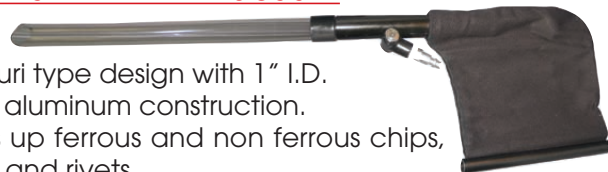
### Mini Air Vacuum



- Venturi type design with 1" I.D.
- Lightweight ABS plastic construction.
- Picks up ferrous and non ferrous chips, bolts and rivets.
- Throttle with special lock on feature.
- TP575-10-18" flexible hose included.
- 1/4" inlet.

PN: TP 675

### Aluminum Mini Air Vacuum



- Venturi type design with 1" I.D.
- Cast aluminum construction.
- Picks up ferrous and non ferrous chips, bolts and rivets.
- Throttle with special lock on feature.
- TP575-10-18" flexible hose included.
- 1/4" inlet.

PN: TP 575

### Irwin Unibit® Self-Starting Step Drills

- Many other styles available, please inquire.



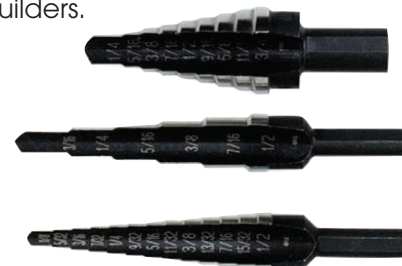
Part No. Fractional H.S.S.	Number of Holes	Hole Sizes	Increments	Shank Size	Max. Material Thickness
TPA5611	13	1/8" to 1/2"	1/32"	1/4"	1/8"
TPA5612	6	3/16 to 1/2"	1/16"	1/4"	3/8"
TPA5610	9	1/4" to 3/4"	1/16"	3/8"	1/8"
TPA5613	12	3/16" to 7/8"	1/16"	3/8"	1/8"
TPA5614	10	1/4" to 1-3/8"	1/8"	1/2"	1/8"

PN: TPA5611

### Irwin Unibit® Step Drill Sets

- 3 Piece Set
- Money saving sets provide a range of holes sizes.
- Preferred By Homebuilders.

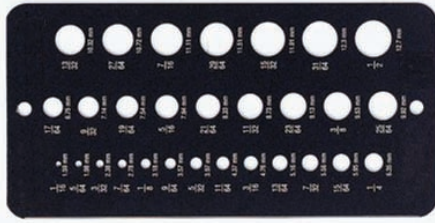
PN: TPA561 Kit



3 Piece Set.  
Hole Size: 1/8" to 3/4" (1/8" material) & 3/16" to 1/2" (3/8" material).

## Drill Gauges

- Made of heavy gauge steel, machined & ground to close tolerance.
- Hole size & decimal equivalent permanently etched into Face.



Part No.	Description
TP565A	Fractional Sized Drills (1/16" to 1/2" x 64ths)
TP565B	Number Size Drills (1 to 60)
TP565C	Letter Sized Drills (A to Z)
TP565M	Metric Sized Drills (to 13 mm x .05 mm)

## Drill Stops



Part No.	Drill Size	Hole Dia.	Color Coded
DL-DS 50	50	73	Black
DL-DS 41	41	97	Copper
DL-DS 40	40	99	Zinc
DL-DS 30	30	130	Copper
DL-DS 28	28	145	Zinc
DL-DS 27	27	146	Zinc
DL-DS 21	21	161	Black
DL-DS 20	20	163	Zinc
DL-DS 17	17	175	Copper
DL-DS 16	16	179	Black
DL-DS 12	12	191	Brass
DL-DS 11	11	193	Zinc
DL-DS 10	10	196	Brass
DL-DS 7	7	203	Brass
DL-DS 6	6	206	Black
DL-DS 1/4	1/4	257	Copper
DL-DS 5/16	5/16	315	Copper
DL-DS 7/32	7/32	221	Copper
DL-DS 9/2	9/2	284	Copper

## Chip Chasers



Chip chasers are designed to remove chips and burrs that accumulate between sheets after holes have been drilled for riveting.

Part No.	Tool	Description
SP200	Handle, Chip Chaser, interlocking, die cast, for SP2000-blades	
SP20002	Blade, Chip Chaser	pointed hook, 5-7/8" length.
SP20003		blunt hook, 5-7/8" length.
SP20004		pointed hook, 2-3/4" length.
SP20005		blunt hook, 2-3/4" length.
SP200-1		Complete Chip Chaser
SP200-2	SP200 Handle with SP20003 blade.	
SP200-3	SP200 Handle with SP20004 blade.	
SP200-4	SP200 Handle with SP20005 blade.	

## Angle Drill Chuck

- For use on all types of angle attachments.
- 1-5/16" length.
- Keyed type Jacobs Chuck.
- 5/32" capacity.
- 1/4" x 28 male threaded spindle.
- Includes key.

PN: JO532



## Replacement Drill Chucks

- SM1G61-3/8-24 1/4" capacity, 8 oz.
- SM4G61-3/8-24 3/8" capacity, 8.5 oz.
- Designed to fit any 3/8" x 24 spindle.
- Light duty.
- 3 jaws.
- Key included.

PN: SM1G61

PN: SM4G61



## Keyless Drill Chucks

- TP248 1/4" capacity
- TP248A 3/8" capacity
- .38 lb.
- Designed to fit any 3/8" x 24 spindle.
- 3 jaws.

PN: TP248

PN: TP248A



## Jacob's Keyless Chuck

- 3/8 x 24 spindle thread.
- 0-3/8" capacity.

PN: TP248B



## Heavy Duty Industrial Chucks

- 7BA 3/8-24 1/4" capacity, .75 lbs.
- 41BA 3/8-24 3/8" capacity, .88 lbs.
- Designed to fit any 3/8" x 24" spindle.
- 3 jaws.
- Key included.
- Industrial quality designed for years of use.

PN: 7BA

PN: 41BA



## Cone Jaw Chuck

Heavy duty yet mini size fits any angle drill or attachment with 1/4" x 28 threads. It's just what you need for close quarter drilling.

- Capacity from 1/16" to 1/4".
- 3/4" length.
- Wrench included.

PN: TP57



## U.S. Industrial Tool Quick Change Chuck Adapter

TP0800 3/8-24 female thread  
TP0801 1/4-28 male thread for 90°  
TP0800W Removal wrench

This chucking system allows quick changing of tooling in seconds, yet provides unparalleled accuracy opposed to any other competitor's design chucking system.

- Designed specifically for quick change tools.
- Drilling bits, countersinks and sanding attachments.
- Run out accuracy .003 T.I.R.
- Precision ground.

PN: TP0800

PN: TP0801

PN: TP0800W



## Air Tool Grease Gun & Grease

This handy little all steel grease gun has a needle fine point in order to get into the smallest grease holes on your pneumatic tools.

Part No.	Size
70105-05	5 Gal. Pail
70105-07	15 Gal. Drum
70105-09	55 Gal. Drum



## Boelube

A Space Age Lubricant developed by The Boeing Company that fights friction at the interface of the cutting edge and the workpiece. The reduction of friction at these surfaces minimizes heat generation and concurrent chip weld. Tools retain their cutting edge longer, leading to closer tolerances and prime chip yield.

## Pastes

70302 Blue (soft) / 70305 Pink (hard) / 70307 Blue (medium)



Part No.	Size	Quantity
70307-02	2 Oz. Jar	350 Per Box
70307-L	4 Oz. Jar	120 Per Box
70307-05	35 Lb. Pail	1 Pail
70307-11	5 Lb. Tub	5 or 8 per Case
70307-12	12 Oz. Jar	12 Per Box / 36 Per Case
70307-07	120 Lb. Drum	1 Drum
70307-09	400 Lb. Drum	1 Drum

## Solids

70200 White / 70201 Pink



Part No.	Size	Quantity
70200-00	14.5 Oz. Cartridge	24 per Case
70200-13	1.6 Oz. Push Tube	100 per Box / 288 per Case
70200-14	4 Oz. Block	25 per Box / 150 per Case
70200-18	2 Oz. Stick	64 per Box / 384 per Case
70200-40	3.5 Oz. Push Tube	32 per Box / 192 per Case

## Water-Soluble Fluid

70105



Part No.	Size	Quantity
70105-05	5 Gal. Pail	1 Pail
70105-07	15 Gal. Drum	1 Drum
70105-09	55 Gal. Drum	1 Drum

## Liquids

70104 Red (100A) / 70106 Clear (100F) / Boelube 90 Clear (70090)



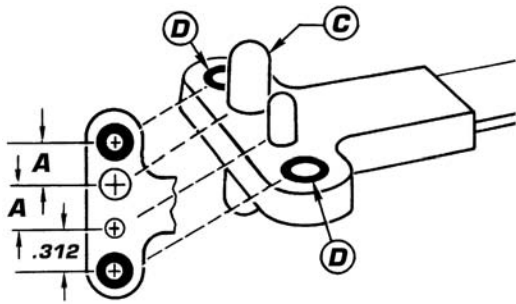
Part No.	Size	Quantity
70104-04	1 Gal. Container	6 Per Case
70104-05	5 Gal. Pail	1 Pail
70104-07	15 Gal. Drum	1 Drum
70104-09	55 Gal. Drum	1 Drum
70090-L	4 Oz. Bottle	36 per Box

## Plate Nut Drill Jigs

These drill jigs are designed for accurate drilling of rivet holes for plate nuts. Manufactured with flexible handle to provide hand clearance when jig is in use.



### One Lug - Single Wing Standard (SWS)



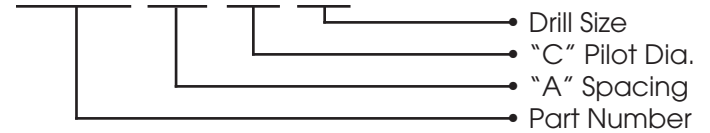
Part No.	Bolt Size Ref.	Spacing A	Pilot Diameter C	Drill Size D	
AT518G	#6	.344	.139	#40	
AT518H	#8		.164		
AT518J	#10		.191		
AT518K	1/4		.248		
AT518RM	#10		.1875		
AT518RO	1/4	.500	.248	#30	
AT518NAS-D-A5	5/16	.359	.312		
AT518NAS-D-A6	3/8	.414	.372		
AT518RP	5/16	.500	.3105		
AT518RG			.3145		
AT518FH			.372		
AT518RH	3/8	.373			
AT518RJ	7/16	.435			
AT518RB	#6	.344	.1425		#40
AT518RL	#8		.1645		
AT518RC			.1675		
AT518RD	#10		.192		
AT518L			.213		
AT518RU			.2265		
AT518RE	1/4		.2555		
AT518LF	#8/#10		.2810		
AT518RW	1/4		.500	.3105	
AT518RF				.2555	
AT518RX		.3105			
AT518YF		.343			

## Ordering Information

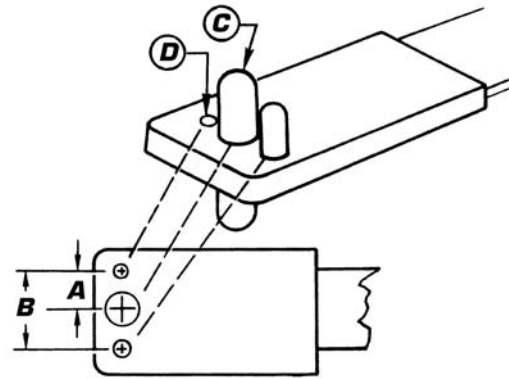
- Please order as follows:

### Part Number Example:

**AT518G-.344-.139-#40**

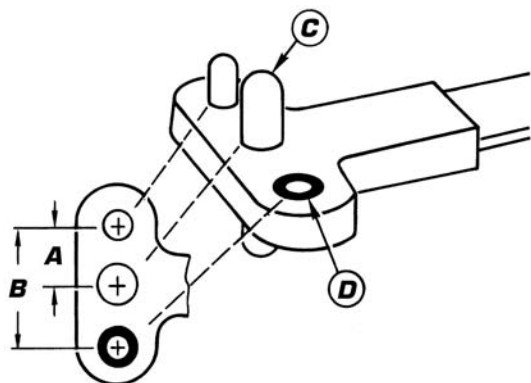


### Two Lug - Double Wing Miniature (DWM)



Part No.	Hole Spacing A	Hole Spacing B	Pilot Dia. C	Drill Size D
AT518NA	0.2030	0.4060	0.1120	#40
AT518NB	0.2180	0.4360	0.1390	
AT518NC	0.2340	0.4680	0.1640	
AT518ND	0.2500	0.5000	0.1910	
AT518NE	0.2871	0.5620	0.2840	
AT518NF	0.3125	0.6250	0.3120	#30
AT518AF		0.6250	0.3430	
AT518BG	0.3590	0.7180	0.3730	#40
AT518AA	0.2030	0.4060	0.1400	
AT518BA		0.4370	0.1800	
AT518AB	0.2185	0.4370	0.1660	
AT518BB		0.4680	0.2055	
AT518NG	0.2340	0.4680	0.1925	
AT518AC		0.4680	0.1930	
AT518NH		0.4680	0.2270	
AT518BC		0.4680	0.2340	
AT518NJ		0.5000	0.1875	
AT518AD	0.2500	0.5000	0.2180	
AT518BD		0.5000	0.2570	
AT518AE	0.2810	0.5620	0.2810	
AT518BE		0.5620	0.3230	
AT518NAS-1474-A3	0.2950	0.5900	0.1910	
AT518ZX	0.5390	0.2695	0.2480	
AT518NAS-A-A02	0.1250	0.2500	0.0860	#51
AT518NAS-A-A03	0.1325	0.2650	0.0990	
AT518NAS-A-A04	0.1480	0.2960	0.1120	
AT518NAS-A-A06	0.1715	0.3430	0.1390	

Two Lug - Double Wing Standard (DWS)



Ordering Information

• Please order as follows:

Part No. Example:

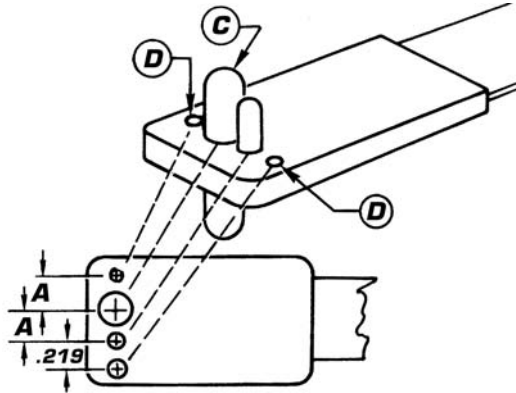
**AT518G-.344-.139-#40**



Part No.	Bolt Size Ref.	Spacing A	Spacing B	Pilot Dia. C	Drill Size D
AT518A	#6	.344	.688	.139	#40
AT518B	#8			.164	
AT518C	#10			.191	
AT518D	1/4	.500	1.000	.248	#30
AT518E	5/16			.312	
AT518F	3/8			.372	
AT518HO	#10	.375	.750	.248	#40
AT518KL		.344	.688	.1875	
AT518M		.375	.750	.4375	
AT518NAS-A-A5		.359	.718	.312	#30
AT518NAS-A-A6		.414	.828	.372	
AT518HF		.500	1.000	.191	
AT518HJ				.248	
AT518KN	5/16			.3105	
AT518KF				.3145	
AT518GK				.343	
AT518KG	3/8			.373	
AT518GD				.375	
AT518HG				.389	
AT518KP	3/8			.457	
AT518HD				.500	
AT518HS		.561			
AT518GB		.593			
AT518HT		.624			
AT518N		.6875			
AT518GA		.702			
AT518GP		.562	1.124	.4375	
AT518HW		.592	1.184	.811	
AT518GN		.595	1.190	.592	
AT518KH	7/16	.625	1.250	.435	
AT518HB		.687	1.375	.191	
AT518HC				.405	
AT518KJ	1/2			.498	
AT518GE				.500	

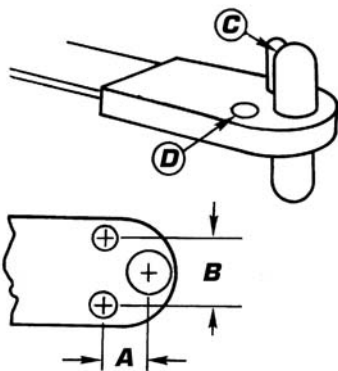
Part No.	Bolt Size Ref.	Spacing A	Spacing B	Pilot Dia. C	Drill Size D
AT518HK		.687	1.375	.656	#30
AT518GC				.718	
AT518HA				.749	
AT518P				.811	
AT518HU		.938			
AT518HY		.700	1.400	.850	#40
AT518HE		.3125	.625	.187	
AT518HM				.218	
AT518KA		.344	.688	.1185	
AT518KB				.1425	
AT518KK	#8			.1645	
AT518KC				.1675	
AT518KD	#10			.192	
AT518GL	#8/#10			.218	
AT518KT				.2265	
AT518KU				.2555	
AT518BF				.281	
AT518HL				.290	
AT518GM		.312			
AT518HP		.375	.750	.281	
AT518HH				.372	
AT518GH				.397	
AT518GF				.437	
AT518HN			.467		
AT518GT		.4375	.8750	.373	
AT518HX		.450	.900	.372	
AT518KM		.500	1.000	.248	
AT518KE	1/4			.2555	
AT518GR				.271	
AT518GJ				.281	
AT518GS				.2955	
AT518KV	1/4			.3105	
AT518DF		.343			
AT518GG			.656		

**One Lug - Single Wing Miniature (SWM)**



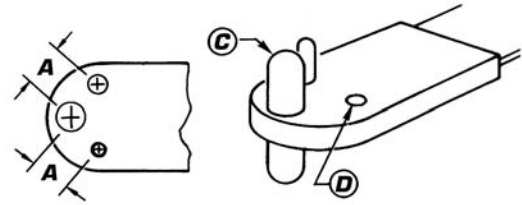
Part No.	Bolt Size Ref.	Spacing A	Pilot Diameter C	Drill Size D
AT518PA	#	.203	.112	#40
AT518PB	#6	.218	.139	
AT518PC	#8	.234	.164	
AT518PD	#10	.250	.191	
AT518PE	1/4	.281	.248	
AT518JA	#4	.203	.140	
AT518JB	#6	.218	.166	
AT518JC	#8	.234	.193	
AT518PF		.250	.1875	
AT518JD	#10		.218	
AT518JE	1/4	.281	.281	
AT518NAS-B-A02	#2	.125	.086	#51
AT518NAS-B-803	#3	.133	.099	
AT518NAS-B-804	#4	.148	.112	
AT518NAS-B-806	#6	.171	.139	

**Miniature Anchor Nut (SLM)**



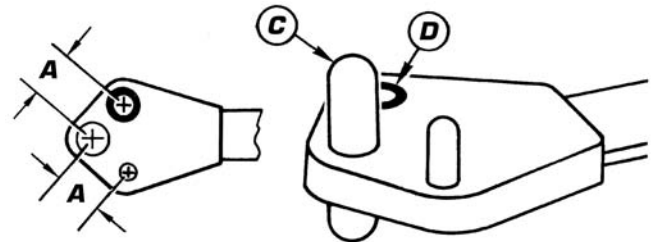
Part No.	Hole Spacing A	Hole Spacing B	Pilot Diameter C	Drill Size D
AT518TA	0.2500	0.2190	0.1910	#40
AT518TB	0.2810			
AT518NAS-D-A08	0.2340			
AT518TC	0.3120	0.2500	0.3120	#30
AT518TD	0.3590	0.2690	0.3125	
AT518NAS-D-A5			0.3120	
AT518NAS-D-A6			0.3720	
AT518TE	0.2500	0.2190	0.1875	

**Corner Wing Miniature (CWM)**



Part No.	Hole Spacing A	Pilot Diameter C	Drill Size D
AT518SA	0.2030	0.1120	#40
AT518SB	0.2180	0.1390	
AT518SC	0.2340	0.1640	
AT518SD	0.2500	0.1910	
AT518SF	0.3120	0.3120	
AT518UF		0.3430	
AT518UA	0.2030	0.1400	
AT518UB	0.2180	0.1660	
AT518UC	0.2340	0.1930	
AT518SJ	0.2500	0.1875	
AT518UD		0.2180	
AT518SE		0.2480	
AT518UE	0.2810	0.2810	
AT518NAS-C-A02	0.1250	0.0860	#51
AT518NAS-C-A03	0.1380	0.0990	
AT518NAS-C-A04	0.1480	0.1120	
AT518NAS-C-A06	0.1720	0.1390	

**Corner Wing Standard (CWS)**



Part No.	Hole Spacing A	Pilot Diameter C	Drill Size D
AT518S	0.3440	0.1640	#40
AT518T		0.1910	
AT518U		0.2480	
AT518NAS-C-AS	0.3580	0.3120	#30
AT518MN	0.5000	0.3110	
AT518V		0.3120	
AT518MF		0.3140	
AT518W		0.3720	
AT518MP		0.3730	
AT518MR	0.5620	0.4350	#40
AT518X		0.4375	
AT518MB	0.3440	0.1425	
AT518R		0.1390	
AT518MK		0.1645	
AT518MC		0.1675	
AT518ML		0.1875	
AT518MD		0.1920	
AT518MT		0.2265	

## High Speed Steel Threaded Shank Drills

High speed steel drills are for drilling general to medium duty, low tensile strength materials in confined areas.

Drills are manufactured to NAS 965 Type B construction with 135° P-3 split points.

### Features

- Type B threaded hex shank.
- HSS Adapter drill - NAS 965.
- 1/4-28 UNF Class 2A thread.
- Surface treated-steam oxide.

Drill Size	Series	A	C	D
#40 to 1/8" .98 to .125	Stub	1/8"	1/2"	5/16"
	Short	1/4"	1"	9/16"
	Long	1/4"	2-1/8"	7/8"
#30 to #10 .1285 to .1935	Stub	1/8"	9/16"	5/16"
	Short	1/4"	1-1/4"	9/16"
	Long	1/4"	2-1/8"	1-1/8"
#9 to F .1960 to .2570	Stub	1/4"	5/8"	5/16"
	Short	5/16"	1-1/4"	9/16"
	Long	5/16"	2-1/8"	1-1/8"

## Stub Series

Part No. High Speed Steel	Part No. Cobalt	Size	A Hex +0 - 1/32	C Overall Length	D Flute Length
111-0980	152-0980	#40	1/8"	1/2"	5/16"
111-1285	152-1285	#30		9/16"	
111-1440	152-1440	#27			
111-1590	152-1590	#21			
111-1610	152-1610	#20			
111-1770	152-1770	#16			
111-1850	152-1850	#13			
111-1910	152-1910	#11			
111-1935	152-1935	#10			
111-1990	152-1990	#8	1/4"	5/8"	
111-2460	152-2460	LTR-"D"			
111-1250	152-1250	1/8"	1/8"	1/2"	
111-2500	152-2500	1/4"	1/4"	5/8"	

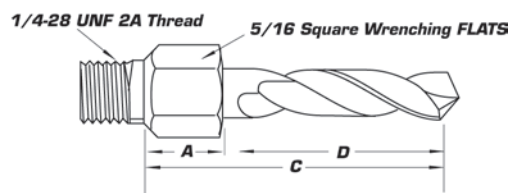
## Cobalt Threaded Shank Drills

Cobalt drills are for drilling hard, tough, high tensile strength materials in confined areas.

Drills are manufactured to NAS 965 Type D construction with 135° P-9 split points.

### Features

- Type D threaded square shank cobalt adapter.
- Drill - NAS 965.
- 1/4-28 UNF Class 2A thread.
- Surface treated-steam oxide.



Drill Type	Part No. Prefix		
	Stub	Short	Long
High Speed Steel	111	211	311
Cobalt	152	252	352

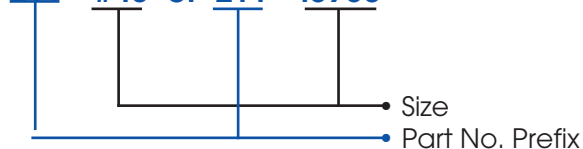


## Ordering Information

- To determine your part number, add the desired size to the Part Number Prefix.

### Part No. Example:

211 - #40 or 211 - .0980



**NOTE: Additional sizes upon request.**



**Short Series**



Part No. High Speed Steel	Part No. Cobalt	Size	A Hex +/- 1/32	C Overall Length	D Flute Length
211-0980	252-0980	#40	1/4"	1"	9/16"
211-1285	252-1285	#30			
211-1440	252-1440	#27			
211-1590	252-1590	#21			
211-1610	252-1610	#20			
211-1770	252-1770	#16			
211-1850	252-1850	#13			
211-1910	252-1910	#11			
211-1935	252-1935	#10			
211-1990	252-1990	#8			
211-1460	252-1460	LTR-"D"	5/16"	1-1/4"	9/16"
211-2570	252-2570	LTR-"F"			
211-1250	252-1250	1/8"	1/4"	1"	9/16"
211-1562	252-1562	5/32"			
211-1875	252-1875	3/16"	5/16"	1-1/4"	9/16"
211-2188	252-2188	7/32"			
211-2500	252-2500	1/4"			

**Long Series**



Part No. High Speed Steel	Part No. Cobalt	Size	A Hex +/- 1/32	C Overall Length	D Flute Length
311-0980	352-0980	#40	1/4"	2-1/8"	7/8"
311-1285	352-1285	#30			
311-1440	352-1440	#27			
311-1590	352-1590	#21			
311-1610	352-1610	#20			
311-1770	352-1770	#16			
311-1850	352-1850	#13			
311-1910	352-1910	#11			
311-1935	352-1935	#10			
311-1990	352-1990	#8			
311-2460	352-2460	LTR-"D"	5/16"	2-1/8"	1-1/8"
311-2570	352-2570	LTR-"F"			
311-1250	352-1250	1/8"	1/4"	2-1/8"	7/8"
311-1562	352-1562	5/32"			
311-1875	352-1875	3/16"	1/4"	2-1/8"	1-1/8"
311-2188	352-2188	7/32"			
311-2500	352-2500	1/4"			

**6" & 12" Aircraft Extensions**

Our aircraft extension drills are manufactured to provide long life. Our cobalt drills are used for drilling in tough, high tensile strength materials like stainless steel, titanium and inconel.

Drills incorporates a heavy flute design and a 135° split point.

**Features**

- Type B & Type J split point.
- Steam oxide.

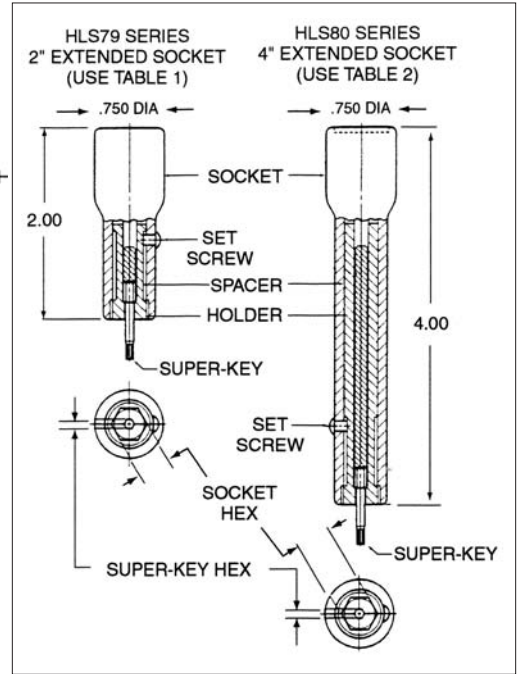
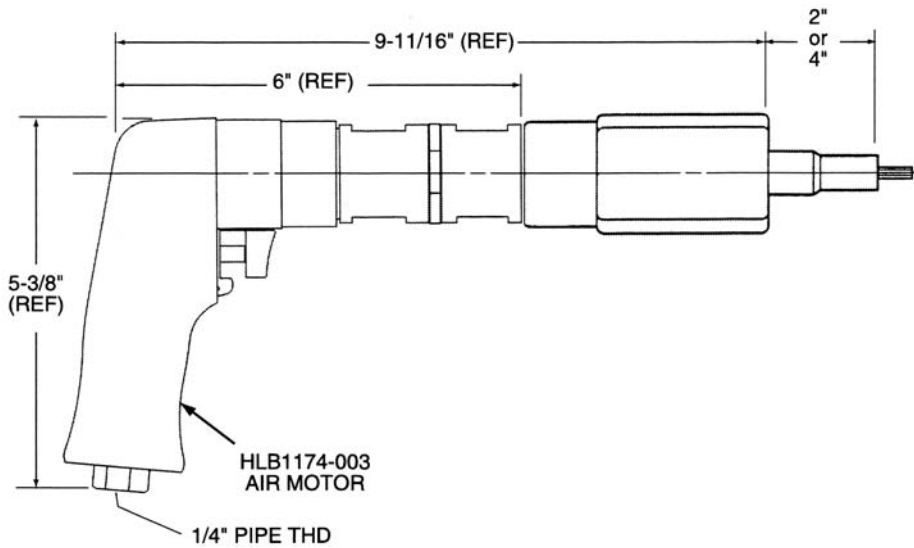
**NOTE:** Additional sizes upon request.



Part No. High Speed Steel	Part No. Cobalt	Size	Flute Length	Overall Length
4010-0980	4040-0980	#40	1-3/8"	6
4030-0980	4070-0980			12
4010-1285	4040-1285	#30	1-5/8"	6
4030-1285	4070-1285			12
4010-1440	4040-1440	#27	1-7/8"	6
4030-1440	4070-1440			12
4010-1590	4040-1590	#21	2-1/8"	6
4030-1590	4070-1590			12
4010-1610	4040-1610	#20	2-1/8"	6
4030-1610	4070-1610			12
4010-1770	4040-1770	#16	2-3/16"	6
4030-1770	4070-1770			12
4010-1850	4040-1850	#13	2-5/16"	6
4030-1850	4070-1850			12
4010-1910	4040-1910	#11	2-5/16"	6
4030-1910	4070-1910			12
4010-1935	4040-1935	#10	2-7/16"	6
4030-1935	4070-1935			12
4010-1990	4040-1990	#8	2-7/16"	6
4030-1990	4070-1990			12
4010-2460	4040-2460	LTR-"D"	2-3/4"	6
4030-2460	4070-2460			12
4010-2570	4040-2570	LTR-"F"	2-7/8"	6
4030-2570	4070-2570			12
4010-1250	4040-1250	1/8"	1-5/8"	6
4030-1250	4070-1250	12		
4010-1562	4040-1562	5/32"	2"	6
4030-1562	4070-1562			12
4010-1875	4040-1875	3/16"	2-5/16"	6
4030-1875	4070-1875			12
4010-2188	4040-2188	7/32"	2-1/2"	6
4030-2188	4070-2188			12
4010-2500	4040-2500	1/4"	2-3/4"	6
4030-2500	4070-2500			12

## Super HLA 1051

Straight Driver Assembly  
with Extended Socket  
and Super-Key™ (T-series)



Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Driver Assy. Part No. w/ HLS79 Series 2\"/>			
3/16"	1/16"	HLA1051-187-062T	3/16"	3/16"	HLA1051-187X-062T
7/32"		HLA1051-218-062T	7/32"		HLA1051-218X-062T
1/4"		HLA1051-250-062T	1/4"		HLA1051-250X-062T
9/32"		HLA1051-281-062T	9/32"		HLA1051-281X-062T
5/16"		HLA1051-312-062T	5/16"		HLA1051-312X-062T
11/32"		HLA1051-343-062T	11/32"		HLA1051-343X-062T
7/32"		HLA1051-218-078T	7/32"		HLA1051-218X-078T
1/4"	5/64"	HLA1051-250-078T	1/4"	1/4"	HLA1051-250X-078T
9/32"		HLA1051-281-078T	9/32"		HLA1051-281X-078T
5/16"		HLA1051-312-078T	5/16"		HLA1051-312X-078T
11/32"		HLA1051-343-078T	11/32"		HLA1051-343X-078T
3/8"		HLA1051-375-078T	3/8"		HLA1051-375X-078T
5/16"	3/32"	HLA1051-312-094T	5/16"	5/16"	HLA1051-312X-094T
11/32"		HLA1051-343-094T	11/32"		HLA1051-343X-094T
3/8"		HLA1051-375-094T	3/8"		HLA1051-375X-094T
7/16"		HLA1051-437-094T	7/16"		HLA1051-437X-094T

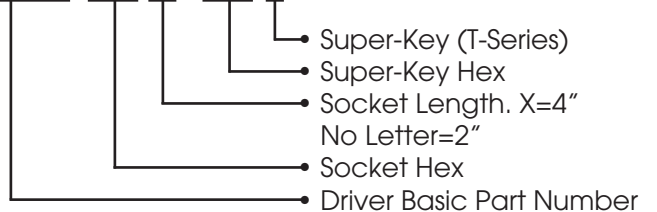
TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.70
Max Torque Rating (Motor)	300 in. lb. @ 90 PSIA	Air Consumption	22 SCFM
Socket RPM @ Max HP (Under Max. Load)	125 RPM	Weight	3.8 lb.

### Ordering Information

- Match pin and collar hexes with Super-Key Hex and Socket Hex.
- See table for corresponding complete driver assy part number.

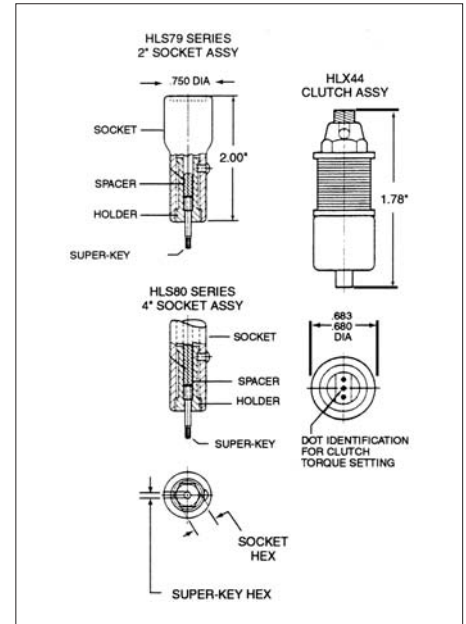
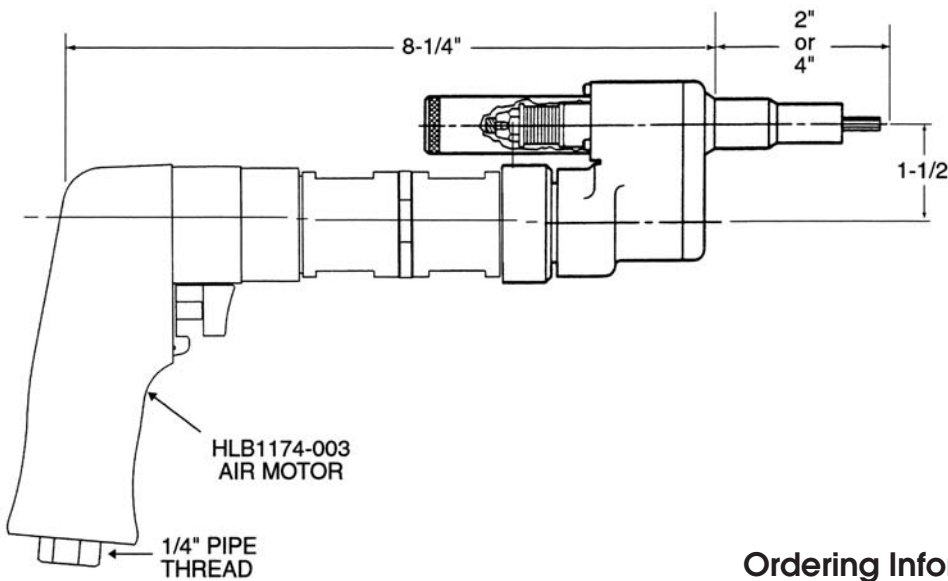
### Part No. Example:

#### HLA1051-312(X)-078-T



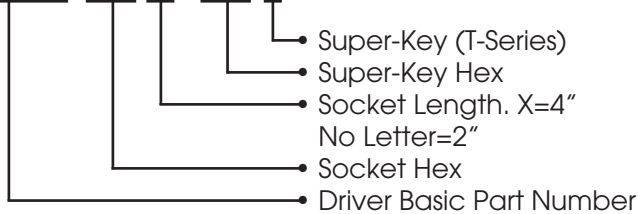
## Super HLA 1066

### Offset Driver Assembly with Clutch, Extended Socket and Super-Key™ (T-series)



#### Part Number Example:

**HLA1066-312(X)-078-T**



#### Ordering Information

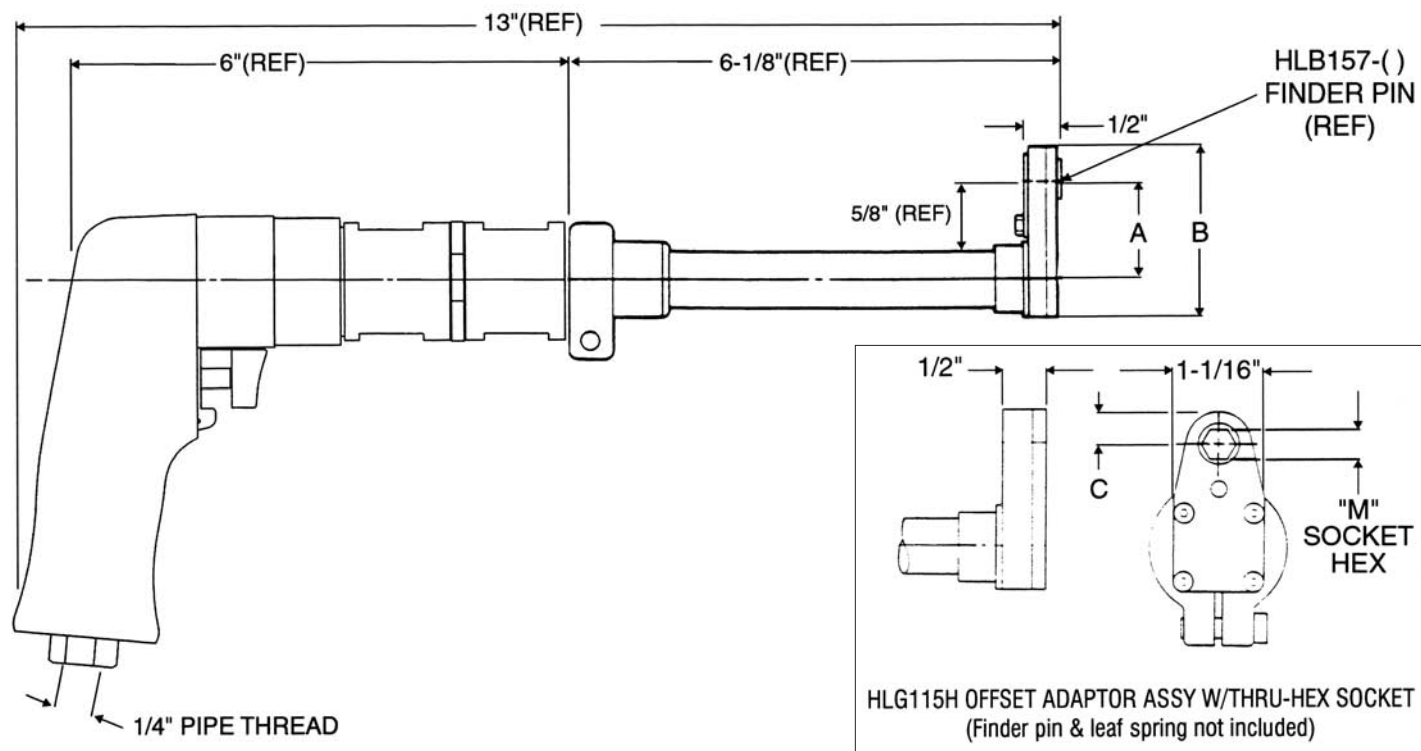
- Match pin and collar hexes with Super-Key Hex and Socket Hex.
- See table for corresponding complete driver assembly part number.

TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.70
Max Torque Rating (Motor)	300 in. lb. @ 90 PSIA	Air Consumption	22 SCFM
Socket RPM @ Max HP (Under Max. Load)	125 RPM	Weight	3.8 lb.

Collar Driving Hex (Matches Socket Hex)	Pin Recess hex (Matches Super-Hex Key)	Complete Driver Assy. Part No.		B Dia.	HLAX4 Clutch Assemblies		
		w/HLS79 Series 2" Extended Socket	w/HLS80 Series 4" Extended Socket		Part No.	Dot ID	Torque Setting
1/4"	1/16"	HLA1066-250-062T	HLA1066-250X-062T	0.468	HLXA4-5	•	8-10 in./lb.
9/32"		HLA1066-281-062T	HLA1066-281X-062T	0.468			
5/16"		HLA1066-312-062T	HLA1066-312X-062T	0.500			
11/32"		HLA1066-343-062T	HLA1066-343X-062T	0.500			
1/4"	5/64"	HLA1066-250-078T	HLA1066-250X-078T	0.468	HLXA4-6	••	18-20 in./lb.
9/32"		HLA1066-281-078T	HLA1066-281X-078T	0.468			
5/16"		HLA1066-312-078T	HLA1066-312X-078T	0.500			
11/32"		HLA1066-343-078T	HLA1066-343X-078T	0.500			
3/8"	3/32"	HLA1066-375-078T	HLA1066-375X-078T	0.550	HLXA4-8	•••	30-32 in./lb.
5/16"		HLA1066-312-094T	HLA1066-312X-094T	0.500			
11/32"		HLA1066-343-094T	HLA1066-343X-094T	0.500			
3/8"		HLA1066-375-094T	HLA1066-375X-094T	0.550			
7/16"		HLA1066-437-094T	HLA1066-437X-094T	0.625			

## Super HLA 1071

1 Inch Offset Driver Assembly  
with Interference Fit Flush Socket



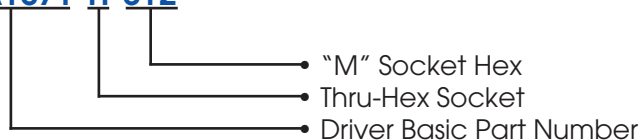
Part No. Example 1:

**HLA1071-312**



Part No. Example 2:

**HLA1071-H-312**



TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.70
Max Torque Rating (Motor)	300 in. lb. @ 90 PSIA	Air Consumption	22 SCFM
Socket RPM @ Max HP (Under Max. Load)	125 RPM	Weight	3.8 lb.

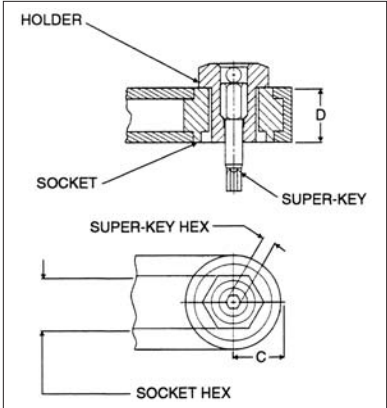
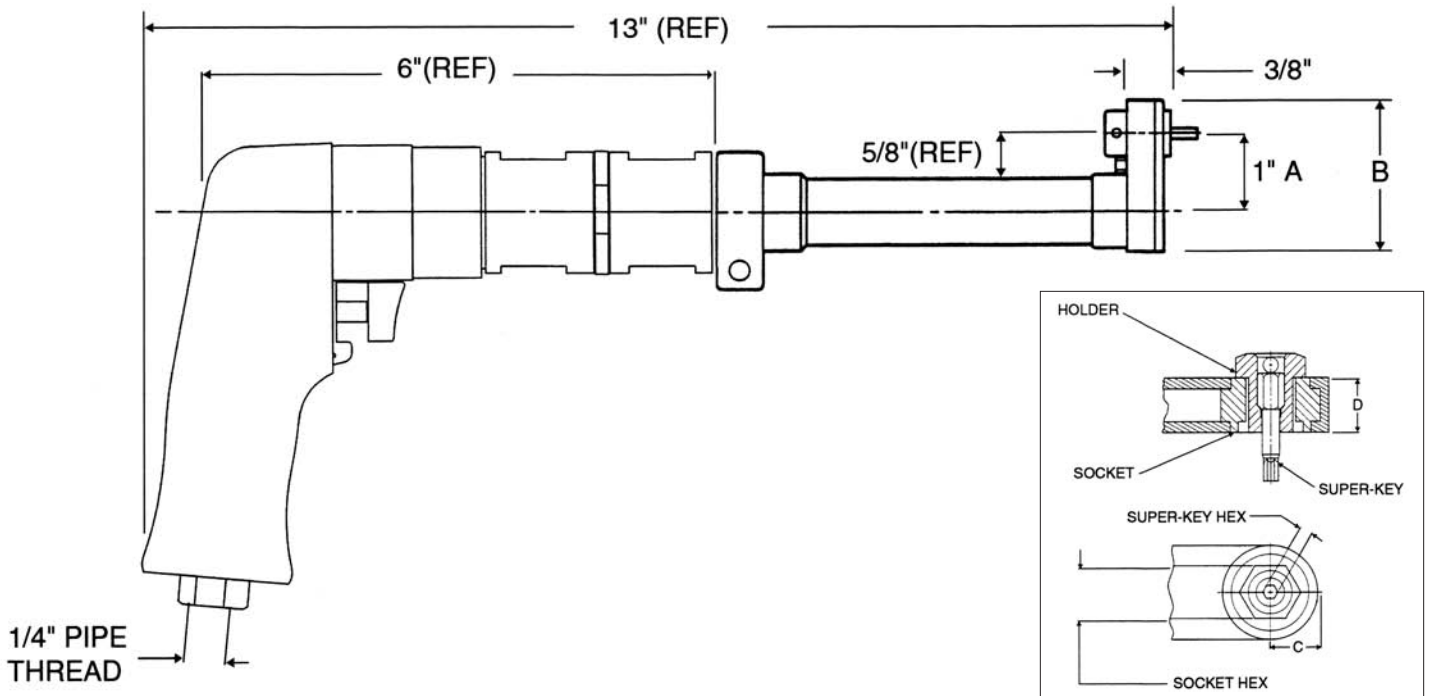
### Ordering Information

- Determine collar driving hex dimensions of the fasteners to be installed.
- See table 1 for "M" socket hex to match collar driving hex dimensions. Determine complete tool assembly part no. (Example 1).
- See table 2 for complete tool assembly part nos. to obtain an offset adaptor assembly featuring a thru-hex socket, less finder pin and leaf spring.

Collar Hex Size	A C to C	B Overall	C Edge Distance	Table 1			Table 2			
				Collar Driving Hex (Matches Socket Hex)	Complete Tool Assy. Part No.	Offset Adaptor Assy. Part No. (ref.)	Offset Adaptor Assy. Part No. (ref.)	Collar Driving Hex (Matches Socket Hex)	Complete Tool Assy. Part No.	Offset Adaptor Assy. Part No. (ref.)
up to 3/8"	1.375	2.330	0.431	5/16"	HLA1071-312	HLG115-312	HLB157-312	5/16"	HLA1071H-312	HLG115H-312
7/16" and up	1.420	2.450	0.500	11/32"	HLA1071-343	HLG115-343	HLB157-343	11/32"	HLA1071H-343	HLG115H-343
				3/8"	HLA1071-375	HLG115-375	HLB157-375	3/8"	HLA1071H-375	HLG115H-375
				7/16"	HLA1071-437	HLG115-437	HLB157-437	7/16"	HLA1071H-437	HLG115H-437

# Super HLA 1072

## 1 Inch Offset Driver Assembly with Thin Flush Socket and Super-Key™ (T-Series)

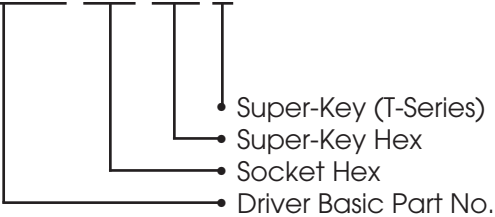


TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.70
Max Torque Rating (Motor)	300 in. lb. @ 90 PSIA	Air Consumption	22 SCFM
Socket RPM @ Max HP (Under Max. Load)	125 RPM	Weight	3.8 lb.

Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Driver Assy.	Offset Adaptor & Socket Assy.
3/16"	1/16"	HLA1072-187-062T	HLG137-187-062T
7/32"		HLA1072-218-062T	HLG137-218-062T
1/4"		HLA1072-250-062T	HLG137-250-062T
9/32"		HLA1072-281-062T	HLG137-281-062T
5/16"		HLA1072-312-062T	HLG137-312-062T
11/32"		HLA1072-343-062T	HLG137-343-062T
7/32"	5/64"	HLA1072-218-078T	HLG137-218-078T
1/4"		HLA1072-250-078T	HLG137-250-078T
9/32"		HLA1072-281-078T	HLG137-281-078T
5/16"		HLA1072-312-078T	HLG137-312-078T
11/32"		HLA1072-343-078T	HLG137-343-078T
3/8"		HLA1072-375-078T	HLG137-375-078T
6/16"	3/32"	HLA1072-312-094T	HLG137-312-094T
11/32"		HLA1072-343-094T	HLG137-343-094T
3/8"		HLA1072-375-094T	HLG137-375-094T
7/16"		HLA1072-437-094T	HLG137-437-094T
3/8"		HLA1072-375-125T	HLG137-375-125T
7/16"		HLA1072-437-125T	HLG137-437-125T
3/8"	1/8"	HLA1072-375-125T	HLG137-375-125T
7/16"		HLA1072-437-125T	HLG137-437-125T

Part No. Example:

**HLA1072-312-078-T**



### Ordering Information

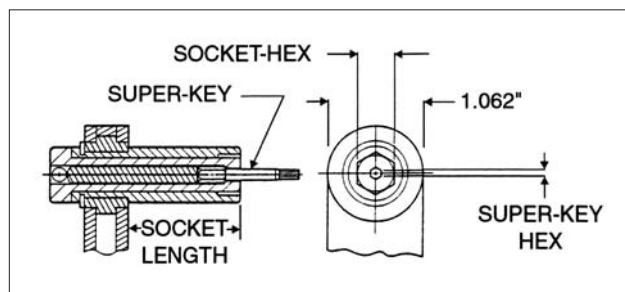
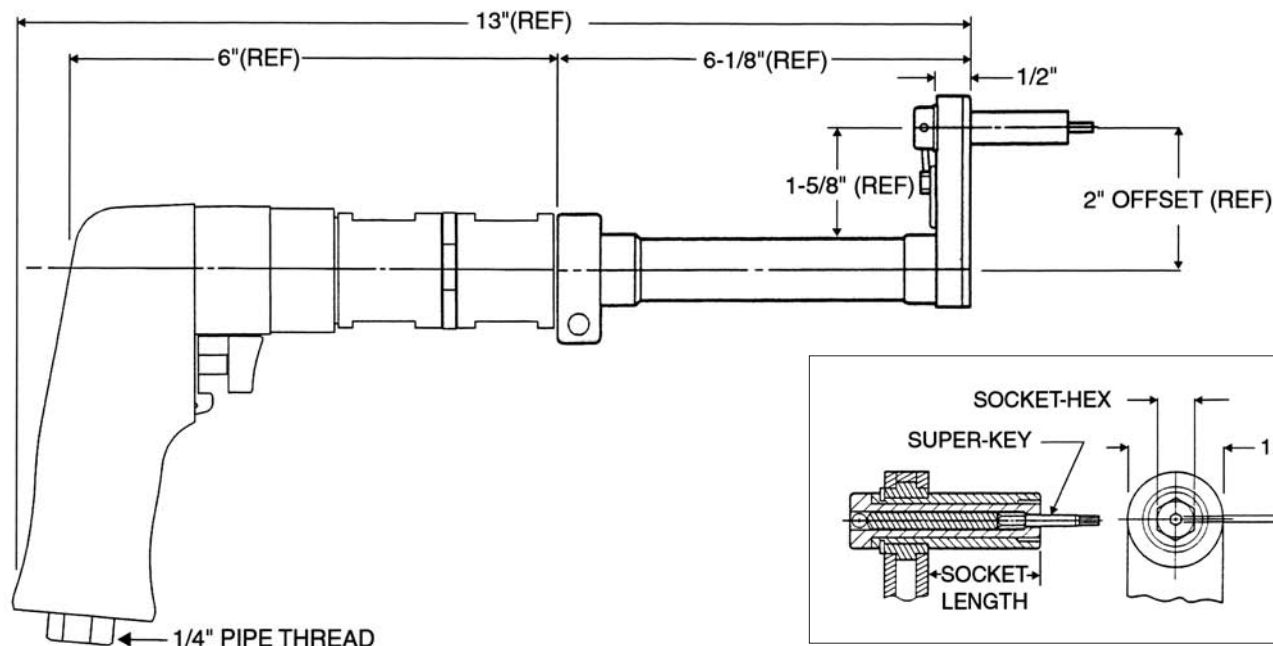
- Match pin and collar hexes with Super-Key Hex and Socket Hex.
- See table for corresponding complete driver assembly part number.

Collar Hex Size	A C to C	B Overall
Up to 3/8"	1.375	2.338
7/16" and up	1.420	2.418

FASTENER INSTALLATION & REMOVAL - PISTOL GRIP DRIVER

## Super HLA 1076

2 Inch Offset Driver Assembly  
with Multi Length Socket  
and Super-Key™ (T-Series)

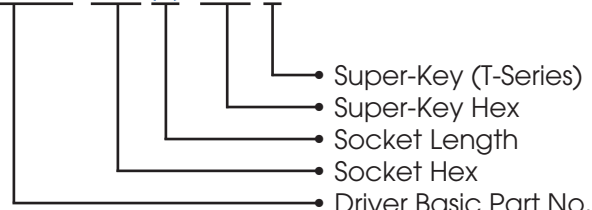


TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.70
Max Torque Rating (Motor)	300 in. lb. @ 90 PSIA	Air Consumption	22 SCFM
Socket RPM @ Max HP (Under Max. Load)	125 RPM	Weight	3.8 lb.

Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Driver Assy.	Offset Adaptor & Socket Assy.
3/16"	1/16"	HLA1076-187(-)-062T	HLA1076-187(-)-062T
7/32"		HLA1076-218(-)-062T	HLA1076-218(-)-062T
1/4"		HLA1076-250(-)-062T	HLA1076-250(-)-062T
9/32"		HLA1076-281(-)-062T	HLA1076-281(-)-062T
5/16"		HLA1076-312(-)-062T	HLA1076-312(-)-062T
11/32"		HLA1076-343(-)-062T	HLA1076-343(-)-062T
7/32"	5/64"	HLA1076-218(-)-078T	HLA1076-218(-)-078T
1/4"		HLA1076-250(-)-078T	HLA1076-250(-)-078T
9/32"		HLA1076-281(-)-078T	HLA1076-281(-)-078T
5/16"		HLA1076-312(-)-078T	HLA1076-312(-)-078T
11/32"		HLA1076-343(-)-078T	HLA1076-343(-)-078T
3/8"	3/32"	HLA1076-375(-)-078T	HLA1076-375(-)-078T
5/16"		HLA1076-312(-)-094T	HLA1076-312(-)-094T
11/32"		HLA1076-343(-)-094T	HLA1076-343(-)-094T
3/8"		HLA1076-375(-)-094T	HLA1076-375(-)-094T
7/16"	1/8"	HLA1076-312(-)-094T	HLA1076-312(-)-094T
3/8"		HLA1076-375(-)-125T	HLA1076-375(-)-125T
7/16"		HLA1076-437(-)-125T	HLA1076-437(-)-125T

Part No. Example:

**HLA1076-312(E)-078-T**



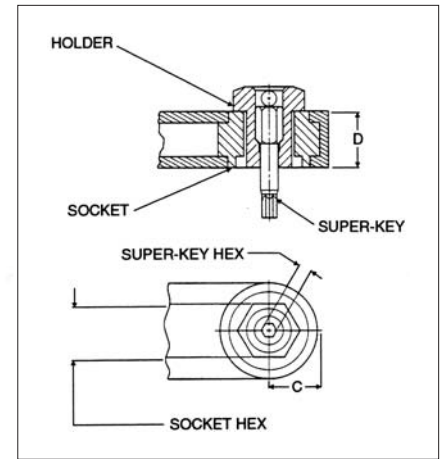
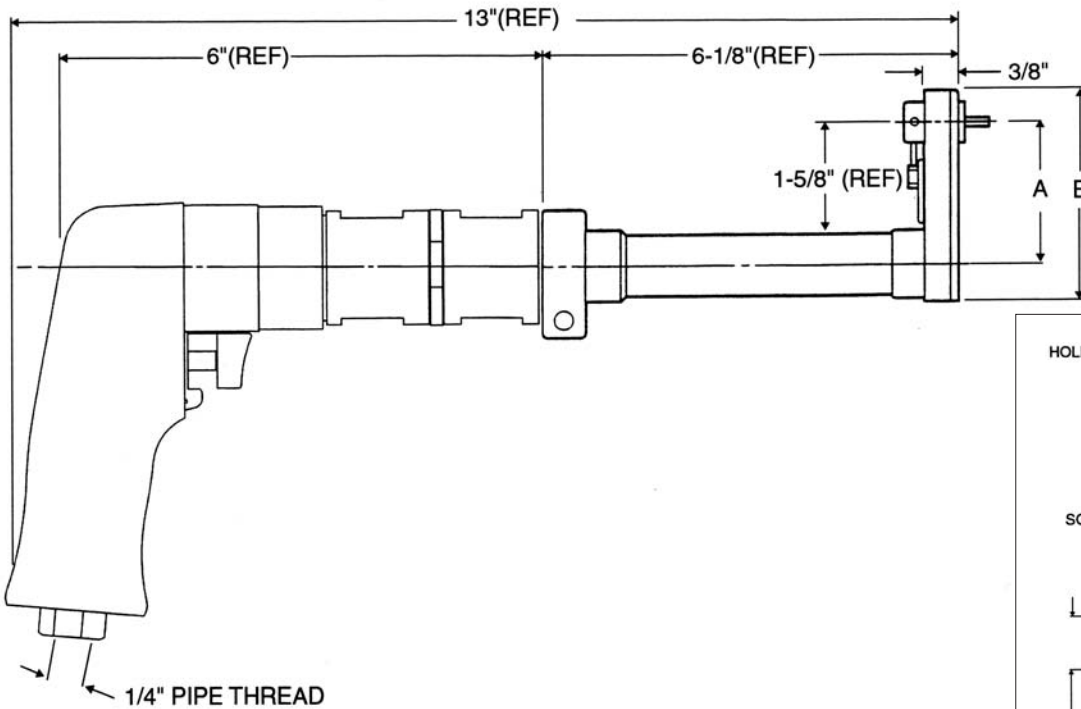
### Ordering Information

- Match pin and collar hexes with Super-Key Hex and Socket Hex.
- See table for corresponding complete driver assembly part number and socket length code.

Socket Length	
A = 0.50	E = 0.75
B = 1.00	F = 1.75
C = 1.50	X = 4.00
D = 2.00	

## Super HLA 1079

### 2 Inch Offset Driver Assembly with Thin Flush Socket and Super-Key™ (T-Series)

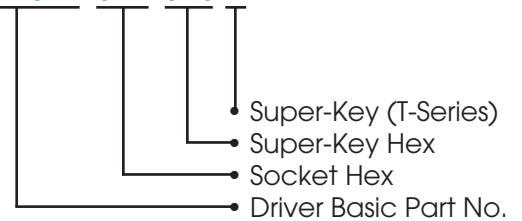


TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.70
Max Torque Rating (Motor)	300 in. lb. @ 90 PSIA	Air Consumption	22 SCFM
Socket RPM @ Max HP (Under Max. Load)	125 RPM	Weight	3.8 lb.

Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Driver Assy.	Offset Adaptor & Socket Assy.	
3/16"	1/16"	HLA1079-187-062T	HLG148-187-062T	
7/32"		HLA1079-218-062T	HLG148-218-062T	
1/4"		HLA1079-250-062T	HLG148-250-062T	
9/32"		HLA1079-281-062T	HLG148-281-062T	
5/16"		HLA1079-312-062T	HLG148-312-062T	
11/32"		HLA1079-343-062T	HLG148-343-062T	
7/32"	5/64"	HLA1079-218-078T	HLG148-218-078T	
1/4"		HLA1079-250-078T	HLG148-250-078T	
9/32"		HLA1079-281-078T	HLG148-281-078T	
5/16"		HLA1079-312-078T	HLG148-312-078T	
11/32"		HLA1079-343-078T	HLG148-343-078T	
3/8"		HLA1079-375-078T	HLG148-375-078T	
5/16"	3/32"	HLA1079-312-094T	HLG148-312-094T	
11/32"		HLA1079-343-094T	HLG148-343-094T	
3/8"		HLA1079-375-094T	HLG148-375-094T	
7/16"		HLA1079-312-094T	HLG148-437-094T	
3/8"		1/8"	HLA1079-375-125T	HLG148-375-125T
7/16"			HLA1079-437-125T	HLG148-437-125T

Part No. Example:

**HLA1079-312-078-T**



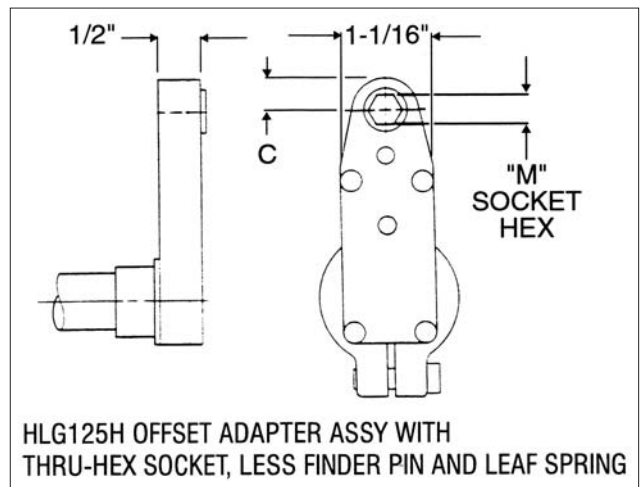
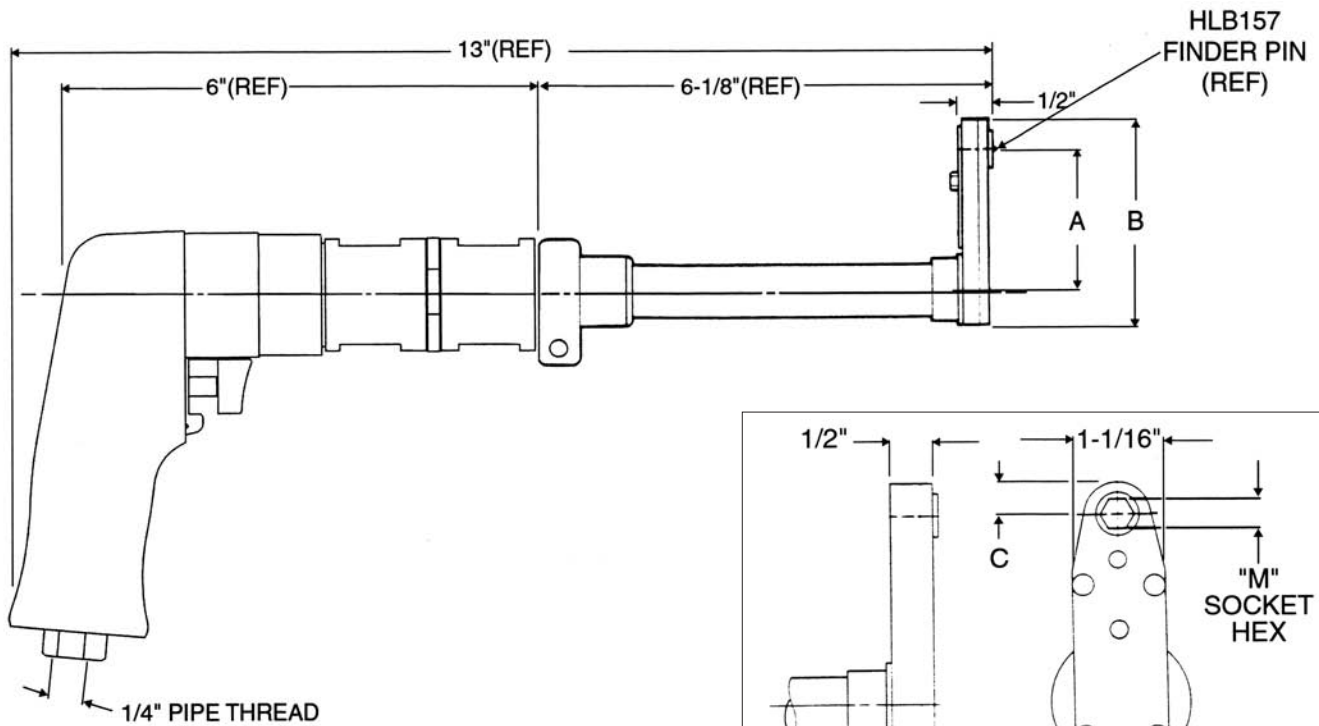
#### Ordering Information

- Match pin and collar hexes with Super-Key Hex and Socket Hex.
- See table for corresponding complete driver assembly part number.

Collar Hex Size	A C to C	B Overall	C Edge Distance	D Width
Up to 3/8"	2.210	3.175	0.431	0.375
7/16" and up	2.250	3.254	0.470	0.375

## Super HLA 1084

2 Inch Offset Driver Assembly  
with Interference Fit Flush Socket



Part No. Example 1:

**HLA1084-312**



Part No. Example 2:

**HLA1084-H-312**



TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.70
Max Torque Rating (Motor)	300 in. lb. @ 90 PSIA	Air Consumption	22 SCFM
Socket RPM @ Max HP (Under Max. Load)	125 RPM	Weight	3.8 lb.

### Ordering Information

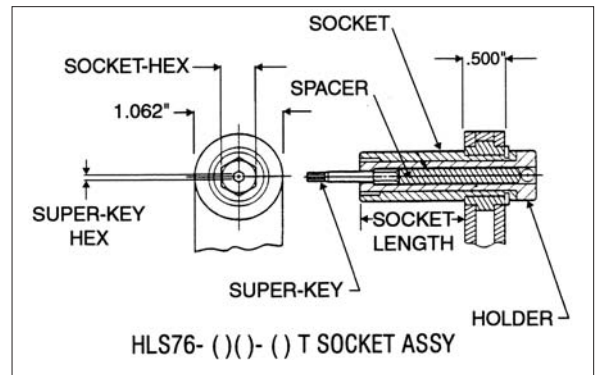
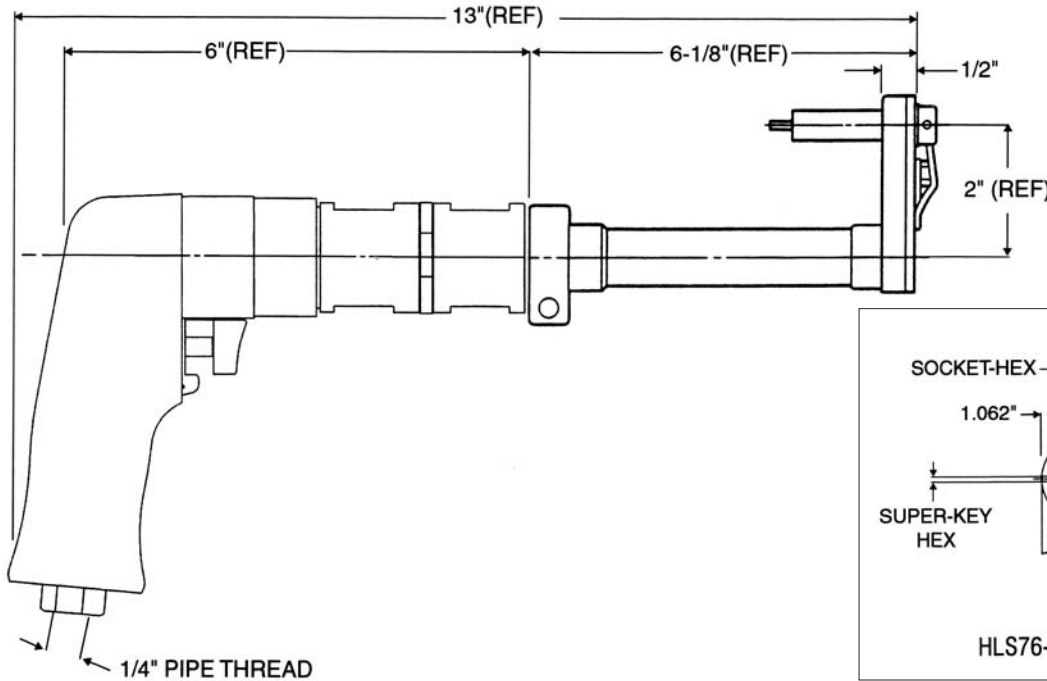
- Match pin and collar hexes with Super-Key Hex and Socket Hex.
- See tables 1 & 2 for corresponding complete driver assembly part number.

Socket Size	Table 1								Table 2		
	A C to C	B Overall	C Edge Distance	D Width	"M" Socket Hex (Matches Collar Driving Hex)	Complete Tool Assy. Part No.	Offset Adaptor Assy. Part No. (ref.)	Finder Pin Part No.	"M" Socket Hex (Matches Collar Driving Hex)	Complete Tool Assy. Part No.	Offset Adaptor Assy. Part No. (ref.)
Up to 3/8"	2.210	3.182	0.431	0.500	1/4"	HLA1084-250	HLG125-250	HLG157-250	1/4"	HLA1084H-250	HLG125H-250
7/16" and up	2.250	3.283	0.500	0.500	5/16"	HLA1084-312	HLG125-312	HLG157-312	5/16"	HLA1084H-312	HLG125H-312
					11/32"	HLA1084-343	HLG125-343	HLG157-343	11/32"	HLA1084H-343	HLG125H-343
					7/16"	HLA1084-437	HLG125-437	HLG157-437	7/16"	HLA1084H-437	HLG125H-437



# Super HLA 1086

## 2 Inch Offset Back Drive Driver Assembly with Extended Socket and Super-Key™ (T-Series)

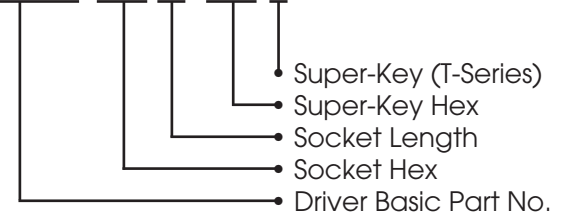


TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.70
Max Torque Rating (Motor)	300 in. lb. @ 90 PSIA	Air Consumption	22 SCFM
Socket RPM @ Max HP (Under Max. Load)	125 RPM	Weight	3.8 lb.

Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Driver Assy.	Offset Adaptor & Socket Assy.	Extended Socket Assy. Part No.
3/16"	1/16"	HLA1086-187(-)-062T	HLG222-187(-)-062T	HLS76-187(-)-062T
7/32"		HLA1086-218(-)-062T	HLG222-218(-)-062T	HLS76-218(-)-062T
1/4"		HLA1086-250(-)-062T	HLG222-250(-)-062T	HLS76-250(-)-062T
9/32"		HLA1086-281(-)-062T	HLG222-281(-)-062T	HLS76-281(-)-062T
5/16"		HLA1086-312(-)-062T	HLG222-312(-)-062T	HLS76-312(-)-062T
11/32"		HLA1086-343(-)-062T	HLG222-343(-)-062T	HLS76-343(-)-062T
7/32"	5/64"	HLA1086-218(-)-078T	HLG222-218(-)-078T	HLS76-218(-)-078T
1/4"		HLA1086-250(-)-078T	HLG222-250(-)-078T	HLS76-250(-)-078T
9/32"		HLA1086-281(-)-078T	HLG222-281(-)-078T	HLS76-281(-)-078T
5/16"		HLA1086-312(-)-078T	HLG222-312(-)-078T	HLS76-312(-)-078T
11/32"		HLA1086-343(-)-078T	HLG222-343(-)-078T	HLS76-343(-)-078T
3/8"		HLA1086-375(-)-078T	HLG222-375(-)-078T	HLS76-375(-)-078T
5/16"	3/32"	HLA1086-312(-)-094T	HLG222-312(-)-094T	HLS76-312(-)-094T
11/32"		HLA1086-343(-)-094T	HLG222-343(-)-094T	HLS76-343(-)-094T
3/8"		HLA1086-375(-)-094T	HLG222-375(-)-094T	HLS76-375(-)-094T
7/16"		HLA1086-312(-)-094T	HLG222-312(-)-094T	HLS76-312(-)-094T
3/8"	1/8"	HLA1086-375(-)-125T	HLG222-375(-)-125T	HLS76-375(-)-125T
7/16"		HLA1086-437(-)-125T	HLG222-437(-)-125T	HLS76-437(-)-125T

Part No. Example:

**HLA1086-312(B)-078-T**



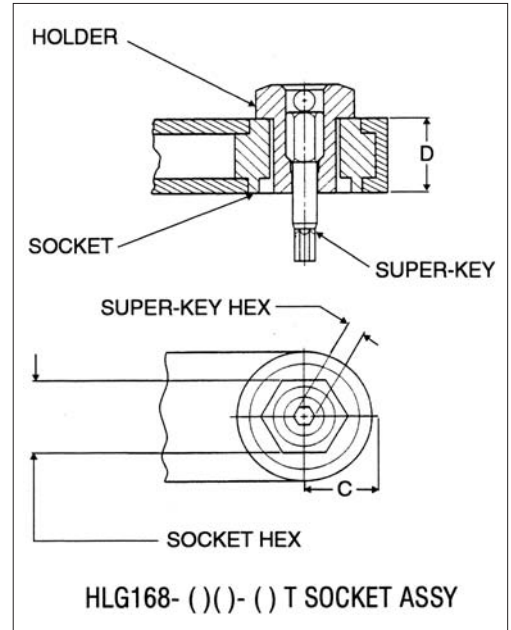
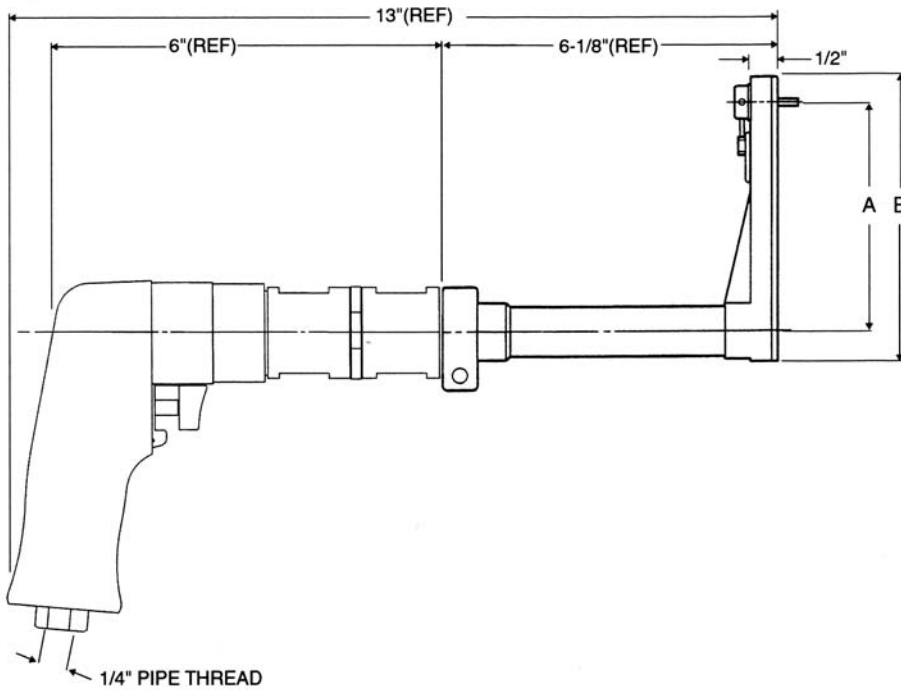
### Ordering Information

- Match pin and collar hexes with Super-Key Hex and Socket Hex.
- See table for corresponding complete driver assembly part number and socket length code.

Socket Length	
A = 0.50	E = 0.75
B = 1.00	F = 1.75
C = 1.50	X = 4.00
D = 2.00	

## Super HLA 1097

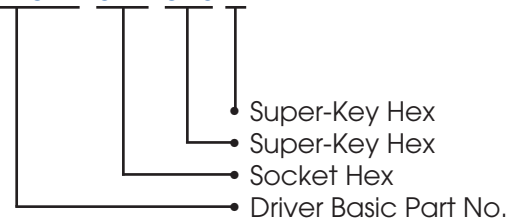
4 Inch Offset Driver Assembly  
with Flush Socket  
and Super-Key™ (T-Series)



TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.70
Max Torque Rating (Motor)	300 in. lb. @ 90 PSIA	Air Consumption	22 SCFM
Socket RPM @ Max HP (Under Max. Load)	125 RPM	Weight	3.8 lb.

Part No. Example:

**HLA1097-312-078-T**



Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Driver Assy.	Offset Adaptor & Socket Assy.
3/16"	1/16"	HLA1097-187-062T	HLG168-187-062T
7/32"		HLA1097-218-062T	HLG168-218-062T
1/4"		HLA1097-250-062T	HLG168-250-062T
9/32"		HLA1097-281-062T	HLG168-281-062T
5/16"		HLA1097-312-062T	HLG168-312-062T
11/32"		HLA1097-343-062T	HLG168-343-062T
7/32"	5/64"	HLA1097-218-078T	HLG168-218-078T
1/4"		HLA1097-250-078T	HLG168-250-078T
9/32"		HLA1097-281-078T	HLG168-281-078T
5/16"		HLA1097-312-078T	HLG168-312-078T
11/32"		HLA1097-343-078T	HLG168-343-078T
3/8"		HLA1097-375-078T	HLG168-375-078T
6/16"	3/32"	HLA1097-312-094T	HLG168-312-094T
11/32"		HLA1097-343-094T	HLG168-343-094T
3/8"		HLA1097-375-094T	HLG168-375-094T
7/16"		HLA1097-437-094T	HLG168-437-094T
3/8"		HLA1097-375-125T	HLG168-375-125T
7/16"		HLA1097-437-125T	HLG168-437-125T

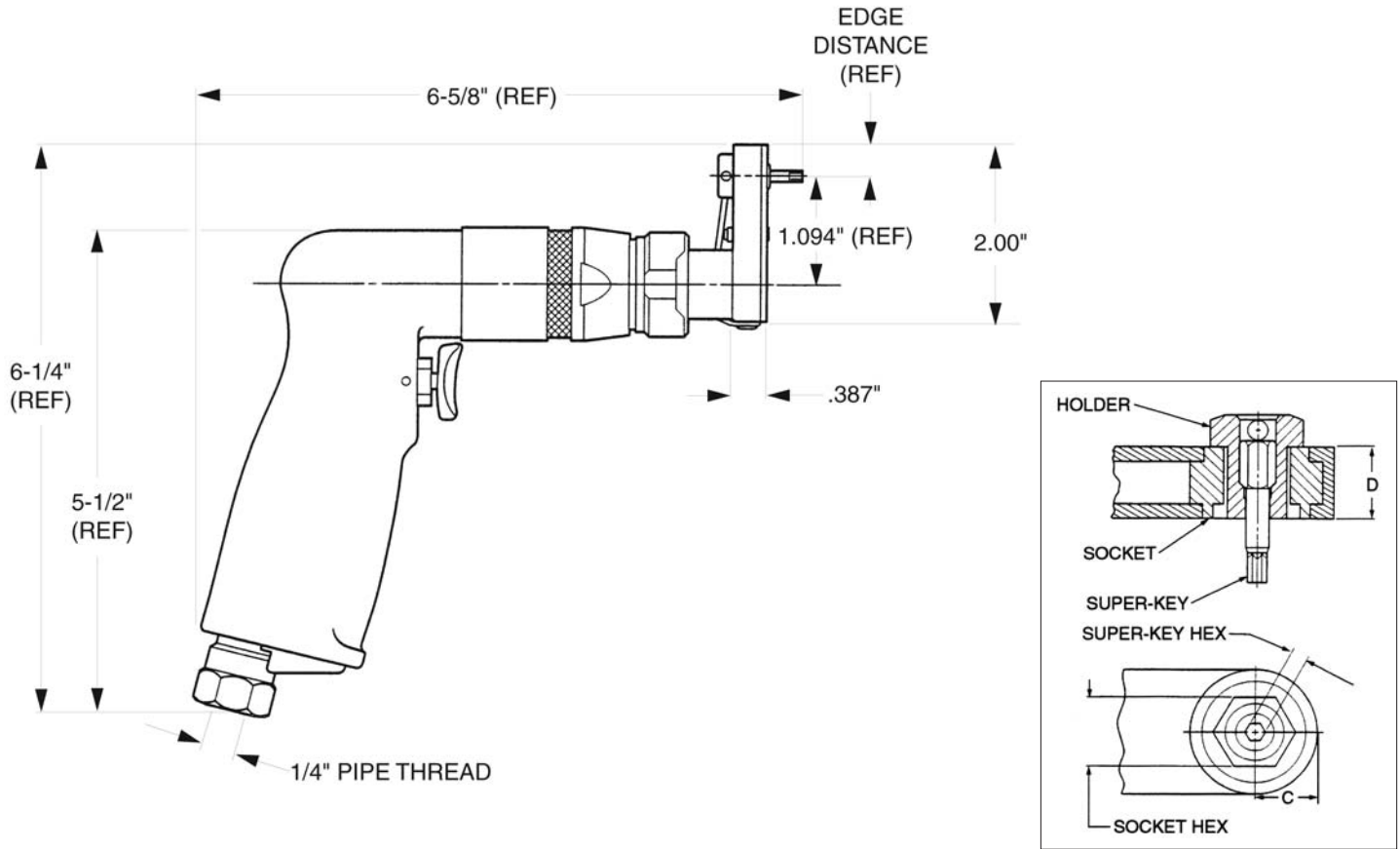
### Ordering Information

- Match pin and collar hexes with Super-Key Hex and Socket Hex.
- See table for corresponding complete driver assembly part number.

Collar Hex Size	A C to C	B Overall	C Edge Distance	D Width
Up to 11/32"	4.470	5.502	0.450	0.500
3/8" and up	4.512	5.594	0.500	0.500

## Super HLA 1201

### 1 Inch Offset Mini Driver Assembly with Thin Flush Socket and Super-Key™ (T-Series)



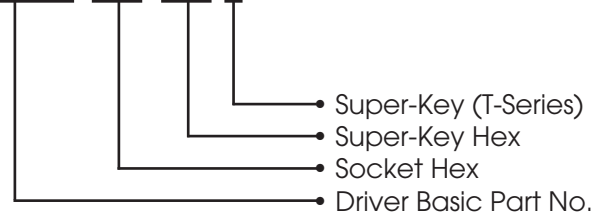
TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.20
Max Torque Rating (Motor)	60 in. lb. @ 90 PSIA	Air Consumption	20 SCFM
Socket RPM @ Max HP (Under Max. Load)	222 RPM	Weight	2 lb.

Socket Size	A C to C	B Overall	C Edge Distance	D Width
ALL	1.094	2.000	0.360	0.387

Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Driver Assy.	Offset Adaptor & Socket Assy.
3/16"	1/16"	HLA1201-187-062T	HLG326-187-062T
7/32"		HLA1201-218-062T	HLG326-218-062T
1/4"		HLA1201-250-062T	HLG326-250-062T
9/32"		HLA1201-281-062T	HLG326-281-062T
5/16"		HLA1201-312-062T	HLG326-312-062T
11/32"		HLA1201-343-062T	HLG326-343-062T
7/32"	5/64"	HLA1201-218-078T	HLG326-218-078T
1/4"		HLA1201-250-078T	HLG326-250-078T
9/32"		HLA1201-281-078T	HLG326-281-078T
5/16"		HLA1201-312-078T	HLG326-312-078T
11/32"		HLA1201-343-078T	HLG326-343-078T

Part No. Example:

**HLA1201-312-078-T**

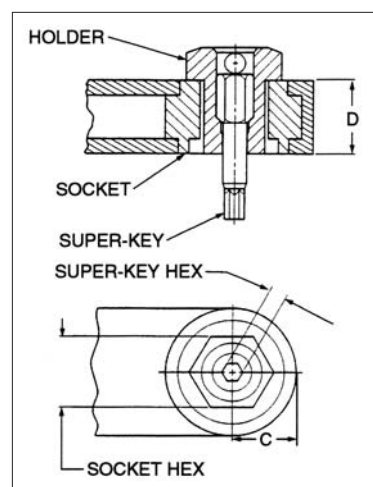
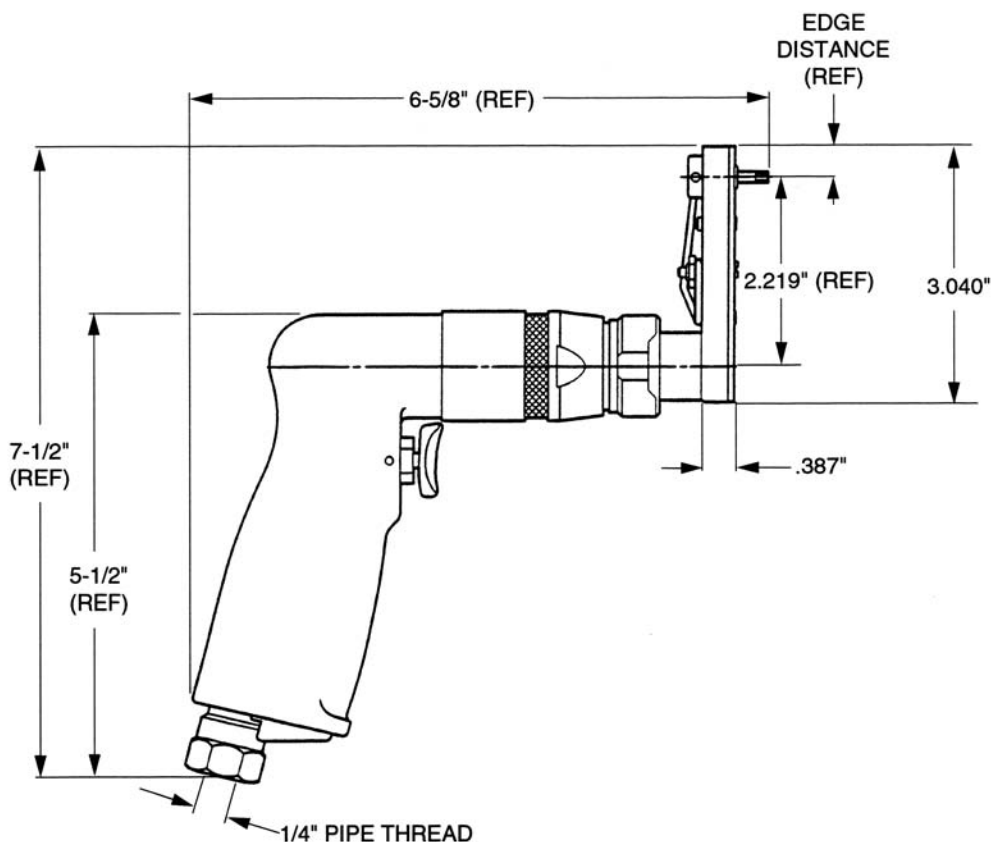


#### Ordering Information

- Match pin and collar hexes with Super-Key Hex and Socket Hex.
- See table for corresponding complete driver assembly part number and socket length code.

## Super HLA 1202

2 Inch Offset Mini Driver Assembly with Thin Flush Socket and Super-Key™ (T-Series)



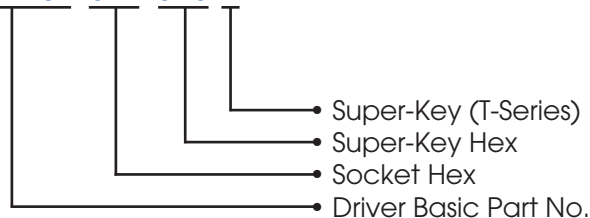
TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.20
Max Torque Rating (Motor)	60 in. lb. @ 90 PSIA	Air Consumption	20 SCFM
Socket RPM @ Max HP (Under Max. Load)	222 RPM	Weight	2 lb.

Socket Size	A C to C	B Overall	C Edge Distance	D Width
ALL	2.219	3.040	0.360	0.387

Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Driver Assy.	Offset Adaptor & Socket Assy.
3/16"	1/16"	HLA1202-187-062T	HLG327-187-062T
7/32"		HLA1202-218-062T	HLG327-218-062T
1/4"		HLA1202-250-062T	HLG327-250-062T
9/32"		HLA1202-281-062T	HLG327-281-062T
5/16"		HLA1202-312-062T	HLG327-312-062T
11/32"		HLA1202-343-062T	HLG327-343-062T
7/32"	5/64"	HLA1202-218-078T	HLG327-218-078T
1/4"		HLA1202-250-078T	HLG327-250-078T
9/32"		HLA1202-281-078T	HLG327-281-078T
5/16"		HLA1202-312-078T	HLG327-312-078T
11/32"		HLA1202-343-078T	HLG327-343-078T

Part No. Example:

**HLA1202-312-078-T**

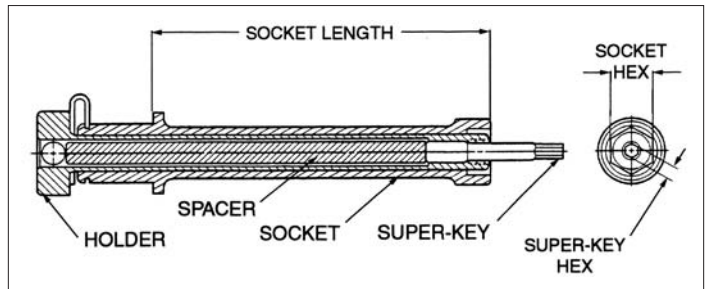
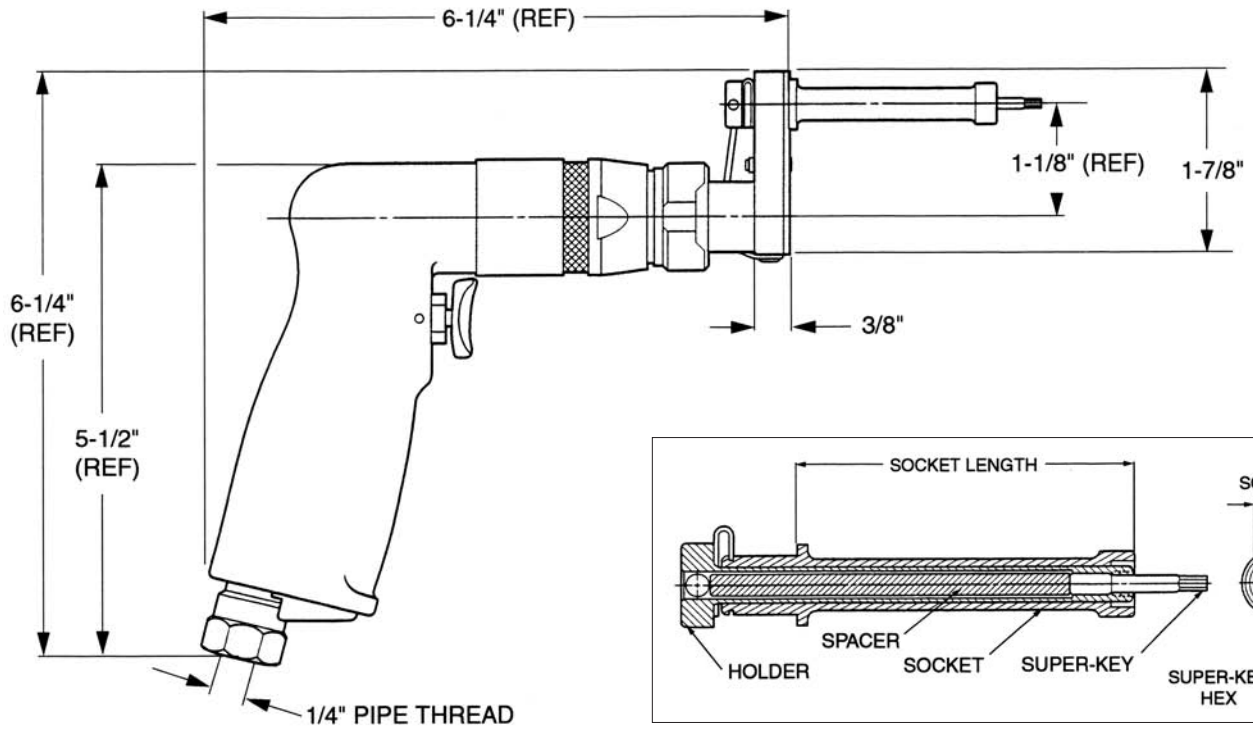


### Ordering Information

- Match pin and collar hexes with Super-Key Hex and Socket Hex.
- See table for corresponding complete driver assembly part number and socket length code.

## Super HLA 1203

### 1 Inch Offset Mini Driver Assembly with Multi Length Socket and Super-Key™ (T-Series)



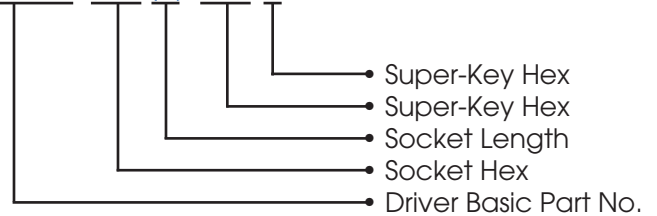
Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Driver Assy.	Offset Adaptor & Socket Assy.
7/32"	1/6"	HLA1203-218-062T	HLS32-218(-)-062T
7/32"	5/64"	HLA1203-218-078T	HLS32-218(-)-078T
1/4"	1/16"	HLA1203-250-062T	HLS32-250(-)-062T
1/4"	5/64"	HLA1203-250-078T	HLS32-250(-)-078T
9/32"	1/16"	HLA1203-281-062T	HLS32-281(-)-062T
9/32"	5/64"	HLA1203-281-078T	HLS32-281(-)-078T
5/16"	1/16"	HLA1203-312-062T	HLS32-312(-)-062T
5/16"	5/64"	HLA1203-312-078T	HLS32-312(-)-078T
5/16"	3/32"	HLA1203-312-094T	HLS32-312(-)-094T
11/32"	1/16"	HLA1203-343-062T	HLS32-343(-)-062T
11/32"	5/64"	HLA1203-343-078T	HLS32-343(-)-078T
11/32"	3/32"	HLA1203-343-094T	HLS32-343(-)-094T

Socket Length	
A = 0.50	E = 0.75
B = 1.00	F = 1.75
C = 1.50	X = 4.00
D = 2.00	

TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.20
Max Torque Rating (Motor)	60 in. lb. @ 90 PSIA	Air Consumption	20 SCFM
Socket RPM @ Max HP (Under Max. Load)	222 RPM	Weight	2 lb.

Part No. Example:

**HLA1203-312(B)-078-T**

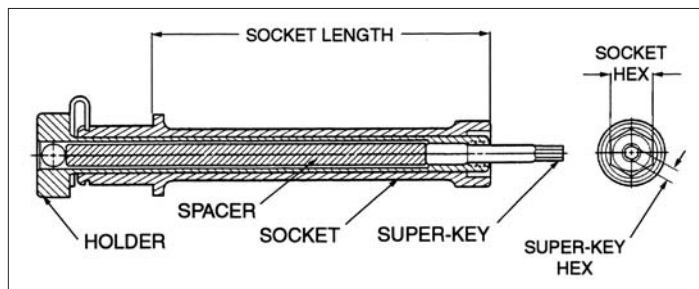
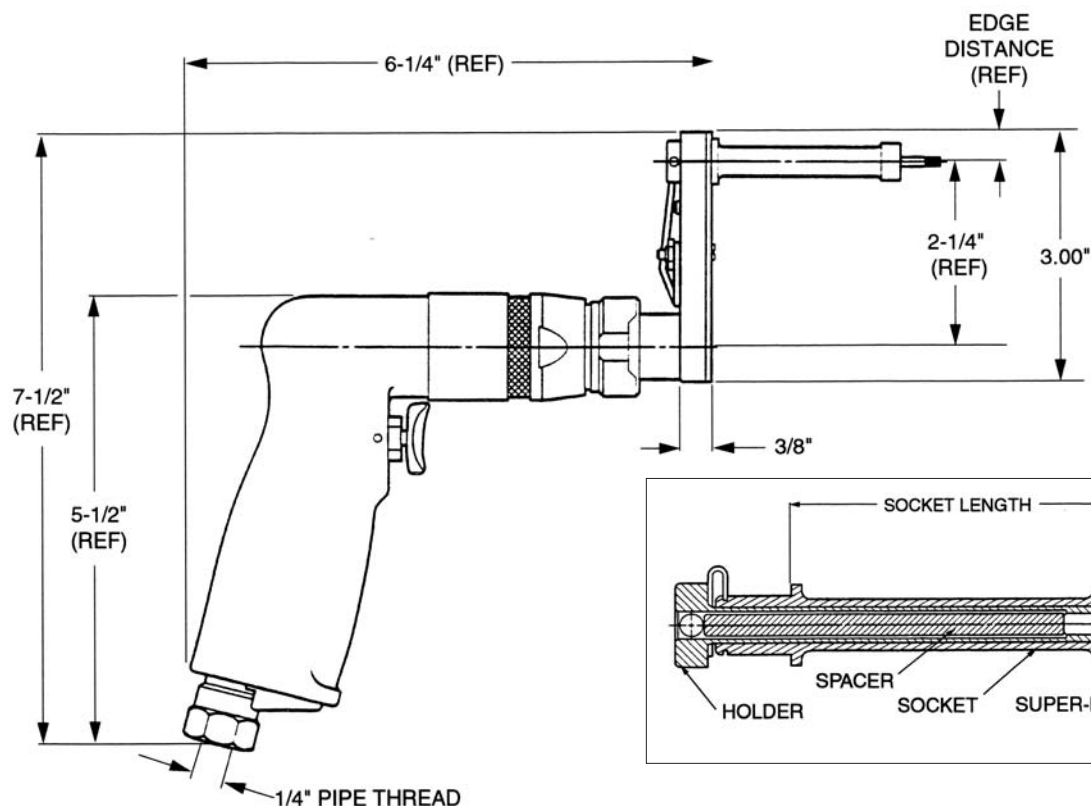


#### Ordering Information

- Match pin and collar hexes with Super-Key Hex and Socket Hex.
- See table for corresponding complete driver assembly part number and socket length code.

## HLA 1204

2 Inch Offset Mini Driver Assembly with Multi Length Socket and Super-Key™ (T-Series)



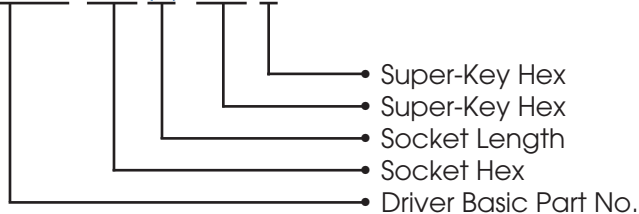
Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Driver Assy.	Offset Adaptor & Socket Assy.
7/32"	1/6"	HLA1204-218-062T	HLS32-218(-)-062T
7/32"	5/64"	HLA1204-218-078T	HLS32-218(-)-078T
1/4"	1/16"	HLA1204-250-062T	HLS32-250(-)-062T
1/4"	5/64"	HLA1204-250-078T	HLS32-250(-)-078T
9/32"	1/16"	HLA1204-281-062T	HLS32-281(-)-062T
9/32"	5/64"	HLA1204-281-078T	HLS32-281(-)-078T
5/16"	1/16"	HLA1204-312-062T	HLS32-312(-)-062T
5/16"	5/64"	HLA1204-312-078T	HLS32-312(-)-078T
5/16"	3/32"	HLA1204-312-094T	HLS32-312(-)-094T
11/32"	1/16"	HLA1204-343-062T	HLS32-343(-)-062T
11/32"	5/64"	HLA1204-343-078T	HLS32-343(-)-078T
11/32"	3/32"	HLA1204-343-094T	HLS32-343(-)-094T

Socket Length	
A = 0.50	E = 0.75
B = 1.00	F = 1.75
C = 1.50	X = 4.00
D = 2.00	

TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.20
Max Torque Rating (Motor)	60 in. lb. @ 90 PSIA	Air Consumption	20 SCFM
Socket RPM @ Max HP (Under Max. Load)	222 RPM	Weight	2 lb.

Part No. Example:

**HLA1204-312(B)-078-T**

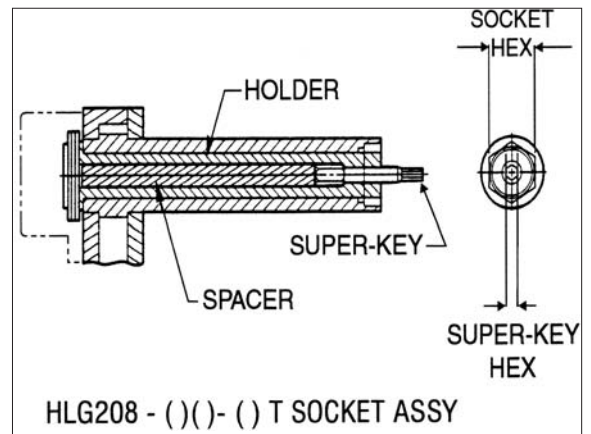
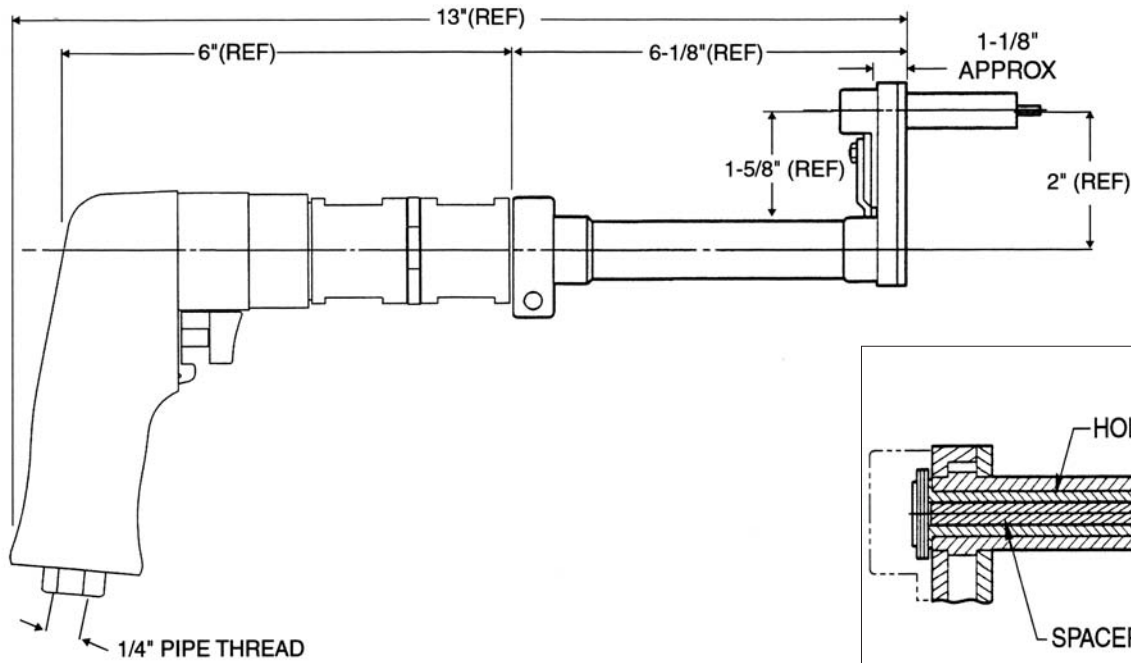


### Ordering Information

- Match pin and collar hexes with Super-Key Hex and Socket Hex.
- See table for corresponding complete driver assembly part number and socket length code.

## Super HLA 2068

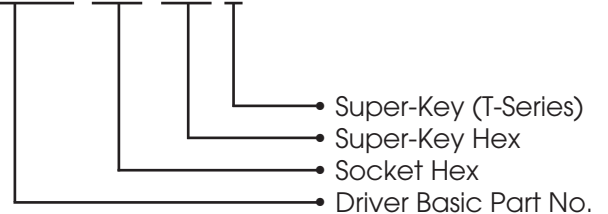
### Heavy Duty 2 Inch Offset Driver Assembly with 2 Inch Extended Socket and Super-Key™ (T-Series)



TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.70
Max Torque Rating (Motor)	300 in. lb. @ 90 PSIA	Air Consumption	22 SCFM
Socket RPM @ Max HP (Under Max. Load)	125 RPM	Weight	3.8 lb.

Part No. Example:

**HLA2068-312-078-T**



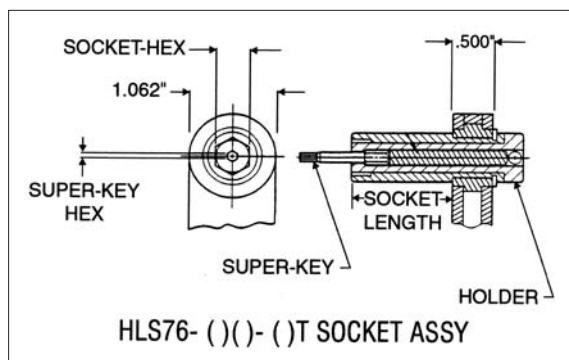
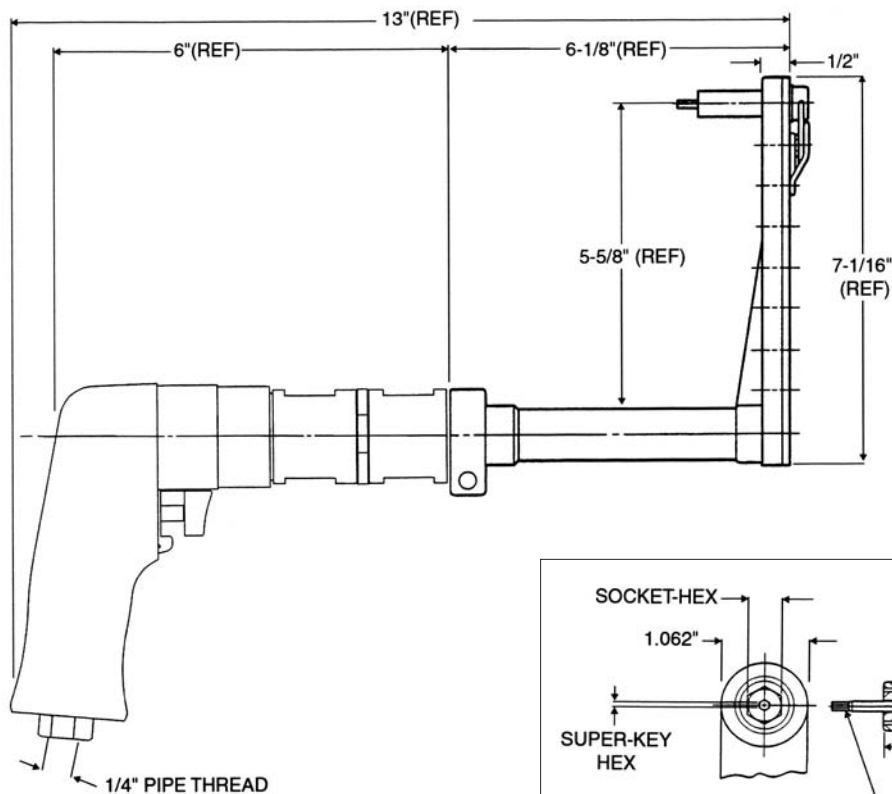
Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Driver Assy.	Offset Adaptor & Socket Assy.
5/16"	1/16"	HLA2068-312-062T	HLG208-312-062T
11/32"		HLA2068-343-062T	HLG208-343-062T
5/16"	5/64"	HLA2068-312-078T	HLG208-312-078T
11/32"		HLA2068-343-078T	HLG208-343-078T
3/8"		HLA2068-375-078T	HLG208-375-078T
5/16"	3/32"	HLA2068-312-094T	HLG208-312-094T
11/32"		HLA2068-343-094T	HLG208-343-094T
3/8"		HLA2068-375-094T	HLG208-375-094T
7/16"		HLA2068-437-094T	HLG208-437-094T
3/8"		HLA2068-375-125T	HLG208-375-125T
7/16"	1/8"	HLA2068-437-125T	HG208-437-125T

#### Ordering Information

- Match pin and collar hexes with Super-Key Hex and Socket Hex.
- See table for corresponding complete driver assembly part number and socket length code.

## Super HLA 3023

### 6 Inch Offset Back Drive Driver Assembly with Extended Socket and Super-Key™ (T-Series)

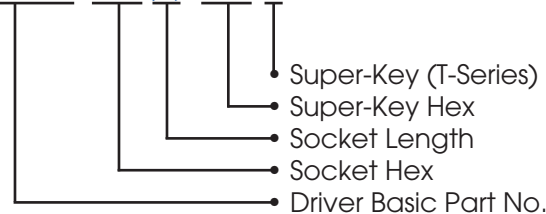


Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Driver Assy.	Offset Adaptor & Socket Assy.	Extended Socket Assy. Part No.
3/16"	3/16"	HLA3023-187(-)-062T	HLG329-187(-)-062T	HLS76-187(-)-062T
7/32"		HLA3023-218(-)-062T	HLG329-218(-)-062T	HLS76-218(-)-062T
1/4"		HLA3023-250(-)-062T	HLG329-250(-)-062T	HLS76-250(-)-062T
9/32"		HLA3023-281(-)-062T	HLG329-281(-)-062T	HLS76-281(-)-062T
5/16"		HLA3023-312(-)-062T	HLG329-312(-)-062T	HLS76-312(-)-062T
11/32"		HLA3023-343(-)-062T	HLG329-343(-)-062T	HLS76-343(-)-062T
7/32"	7/32"	HLA3023-218(-)-078T	HLG329-218(-)-078T	HLS76-218(-)-078T
1/4"		HLA3023-250(-)-078T	HLG329-250(-)-078T	HLS76-250(-)-078T
9/32"		HLA3023-281(-)-078T	HLG329-281(-)-078T	HLS76-281(-)-078T
5/16"		HLA3023-312(-)-078T	HLG329-312(-)-078T	HLS76-312(-)-078T
11/32"		HLA3023-343(-)-078T	HLG329-343(-)-078T	HLS76-343(-)-078T
3/8"		HLA3023-375(-)-078T	HLG329-375(-)-078T	HLS76-375(-)-078T
5/16"	5/16"	HLA3023-312(-)-094T	HLG329-312(-)-094T	HLS76-312(-)-094T
11/32"		HLA3023-343(-)-094T	HLG329-343(-)-094T	HLS76-343(-)-094T
3/8"		HLA3023-375(-)-094T	HLG329-375(-)-094T	HLS76-375(-)-094T
7/16"		HLA3023-312(-)-094T	HLG329-312(-)-094T	HLS76-312(-)-094T
3/8"		HLA3023-375(-)-125T	HLG329-375(-)-125T	HLS76-375(-)-125T
7/16"		HLA3023-437(-)-125T	HLG329-437(-)-125T	HLS76-437(-)-125T

TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.70
Max Torque Rating (Motor)	300 in. lb. @ 90 PSIA	Air Consumption	22 SCFM
Socket RPM @ Max HP (Under Max. Load)	125 RPM	Weight	3.8 lb.

Part No. Example:

**HLA3023-312(B)-078-T**



### Ordering Information

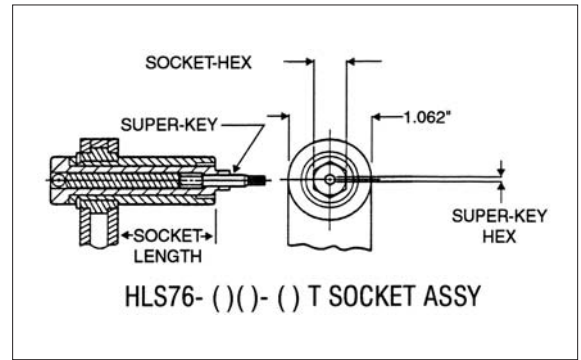
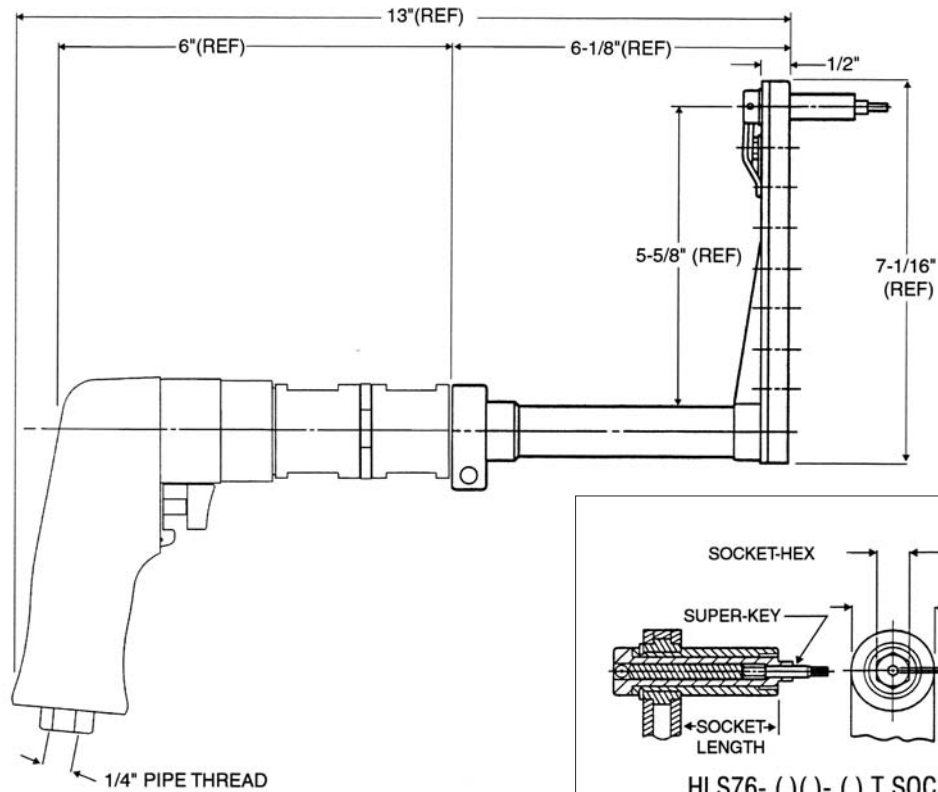
- Match pin and collar hexes with Super-Key Hex and Socket Hex.
- See table for corresponding complete driver assembly part number and socket length code.

Socket Length	
A = 0.50	E = 0.75
B = 1.00	F = 1.75
C = 1.50	X = 4.00
D = 2.00	



# Super HLA 3025

## 6 Inch Offset Driver Assembly with Multi Length Socket and Super-Key™ (T-Series)



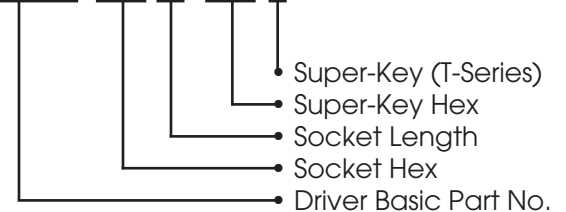
Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Driver Assy.	Offset Adaptor & Socket Assy.	Extended Socket Assy. Part No.
3/16"	3/16"	HLA3025-187(-)-062T	HLG331-187(-)-062T	HLS76-187(-)-062T
7/32"		HLA3025-218(-)-062T	HLG331-218(-)-062T	HLS76-218(-)-062T
1/4"		HLA3025-250(-)-062T	HLG331-250(-)-062T	HLS76-250(-)-062T
9/32"		HLA3025-281(-)-062T	HLG331-281(-)-062T	HLS76-281(-)-062T
5/16"		HLA3025-312(-)-062T	HLG331-312(-)-062T	HLS76-312(-)-062T
11/32"		HLA3025-343(-)-062T	HLG331-343(-)-062T	HLS76-343(-)-062T
7/32"	7/32"	HLA3025-218(-)-078T	HLG331-218(-)-078T	HLS76-218(-)-078T
1/4"		HLA3025-250(-)-078T	HLG331-250(-)-078T	HLS76-250(-)-078T
9/32"		HLA3025-281(-)-078T	HLG331-281(-)-078T	HLS76-281(-)-078T
5/16"		HLA3025-312(-)-078T	HLG331-312(-)-078T	HLS76-312(-)-078T
11/32"		HLA3025-343(-)-078T	HLG331-343(-)-078T	HLS76-343(-)-078T
3/8"		HLA3025-375(-)-078T	HLG331-375(-)-078T	HLS76-375(-)-078T
5/16"	5/16"	HLA3025-312(-)-094T	HLG331-312(-)-094T	HLS76-312(-)-094T
11/32"		HLA3025-343(-)-094T	HLG331-343(-)-094T	HLS76-343(-)-094T
3/8"		HLA3025-375(-)-094T	HLG331-375(-)-094T	HLS76-375(-)-094T
7/16"		HLA3025-312(-)-094T	HLG331-312(-)-094T	HLS76-312(-)-094T
3/8"	1/8"	HLA3025-375(-)-125T	HLG331-375(-)-125T	HLS76-375(-)-125T
7/16"		HLA3025-437(-)-125T	HLG331-437(-)-125T	HLS76-437(-)-125T

Socket Length	
A = 0.50	E = 0.75
B = 1.00	F = 1.75
C = 1.50	X = 4.00
D = 2.00	

TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.70
Max Torque Rating (Motor)	300 in. lb. @ 90 PSIA	Air Consumption	22 SCFM
Socket RPM @ Max HP (Under Max. Load)	125 RPM	Weight	3.8 lb.

### Part No. Example:

**HLA3025-312(B)-078-T**



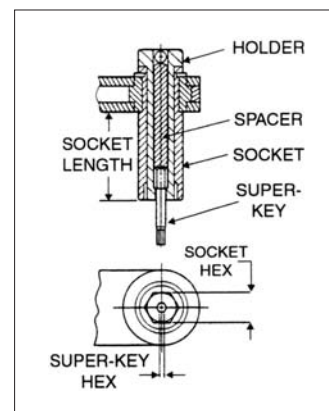
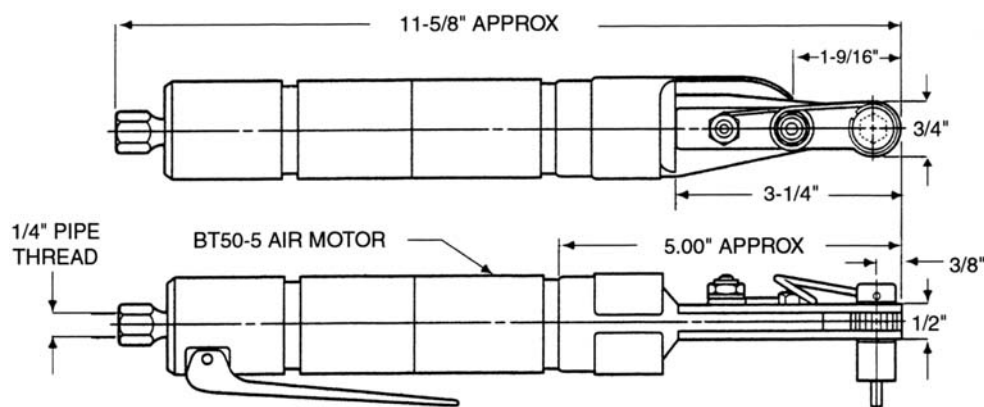
### Ordering Information

- Match pin and collar hexes with Super-Key Hex and Socket Hex.
- See table for corresponding complete driver assembly part number and socket length code.

FASTENER INSTALLATION & REMOVAL - PISTOL GRIP DRIVER

## Super HLA 2002

### Straight Ratchet Wrench Driver Assembly with Multi-Length Socket and Super-Key™ (T-Series)

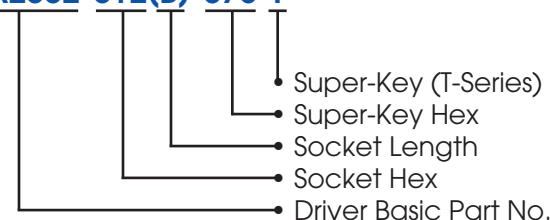


TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.50
Max Torque Rating (Motor)	110 in. lb. @ 90 PSIA	Air Consumption	22 SCFM
Socket RPM @ Max HP (Under Max. Load)	143 RPM	Weight	2 lb.

Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Driver Assy.	Offset Adaptor & Socket Assy.	Extended Socket Assy. Part No.
3/16"	1/16"	HLA2002-187(-)-062T	HLR252-187(-)-062T	HLS76-187(-)-062T
7/32"		HLA2002-218(-)-062T	HLR252-218(-)-062T	HLS76-218(-)-062T
1/4"		HLA2002-250(-)-062T	HLR252-250(-)-062T	HLS76-250(-)-062T
9/32"		HLA2002-281(-)-062T	HLR252-281(-)-062T	HLS76-281(-)-062T
5/16"		HLA2002-312(-)-062T	HLR252-312(-)-062T	HLS76-312(-)-062T
11/32"		HLA2002-343(-)-062T	HLR252-343(-)-062T	HLS76-343(-)-062T
7/32"	5/64"	HLA2002-218(-)-078T	HLR252-218(-)-078T	HLS76-218(-)-078T
1/4"		HLA2002-250(-)-078T	HLR252-250(-)-078T	HLS76-250(-)-078T
9/32"		HLA2002-281(-)-078T	HLR252-281(-)-078T	HLS76-281(-)-078T
5/16"		HLA2002-312(-)-078T	HLR252-312(-)-078T	HLS76-312(-)-078T
11/32"		HLA2002-343(-)-078T	HLR252-343(-)-078T	HLS76-343(-)-078T
3/8"		HLA2002-375(-)-078T	HLR252-375(-)-078T	HLS76-375(-)-078T
5/16"	3/32"	HLA2002-312(-)-094T	HLR252-312(-)-094T	HLS76-312(-)-094T
11/32"		HLA2002-343(-)-094T	HLR252-343(-)-094T	HLS76-343(-)-094T
3/8"		HLA2002-375(-)-094T	HLR252-375(-)-094T	HLS76-375(-)-094T
7/16"		HLA2002-312(-)-094T	HLR252-312(-)-094T	HLS76-312(-)-094T

Part No. Example:

**HLA2002-312(B)-078-T**



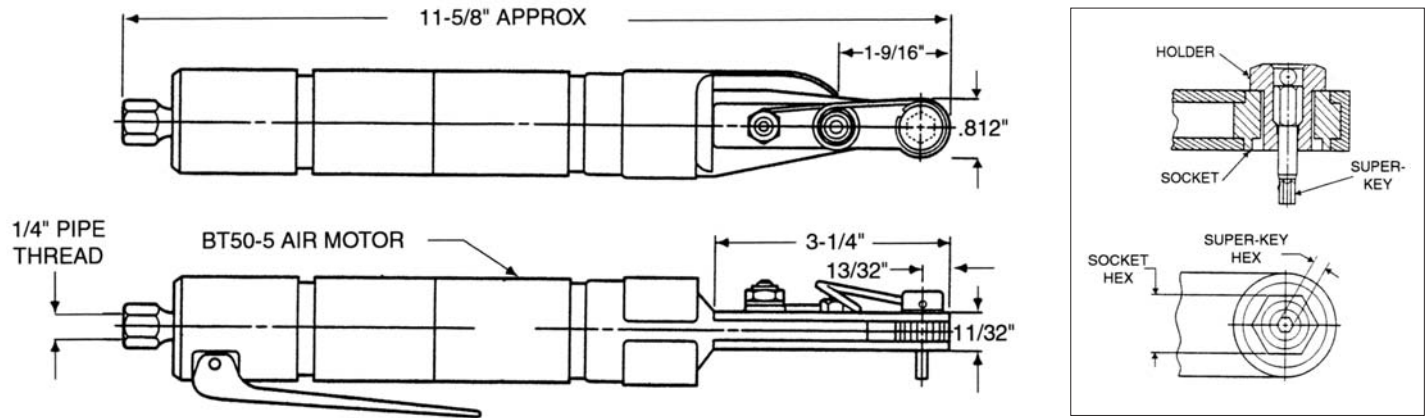
Socket Length	
A = 0.50	E = 0.75
B = 1.00	F = 1.75
C = 1.50	X = 4.00
D = 2.00	

### Ordering Information

- Match pin and collar hexes with Super-Key Hex and Socket Hex.
- See table for corresponding complete driver assembly part number and socket length code.

## Super HLA 2006

### Straight Ratchet Wrench Driver Assembly with Flush Socket and Super-Key™ (T-Series)

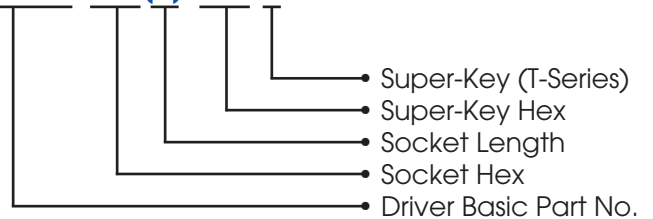


TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.50
Max Torque Rating (Motor)	110 in. lb. @ 90 PSIA	Air Consumption	22 SCFM
Socket RPM @ Max HP (Under Max. Load)	143 RPM	Weight	2 lb.

Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Driver Assy.	Offset Adaptor & Socket Assy.
3/16"	1/16"	HLA2006-187(-)-062T	HLR256-187(-)-062T
7/32"		HLA2006-218(-)-062T	HLR256-218(-)-062T
1/4"		HLA2006-250(-)-062T	HLR256-250(-)-062T
9/32"		HLA2006-281(-)-062T	HLR256-281(-)-062T
5/16"		HLA2006-312(-)-062T	HLR256-312(-)-062T
11/32"		HLA2006-343(-)-062T	HLR256-343(-)-062T
7/32"	5/64"	HLA2006-218(-)-078T	HLR256-218(-)-078T
1/4"		HLA2006-250(-)-078T	HLR256-250(-)-078T
9/32"		HLA2006-281(-)-078T	HLR256-281(-)-078T
5/16"		HLA2006-312(-)-078T	HLR256-312(-)-078T
11/32"		HLA2006-343(-)-078T	HLR256-343(-)-078T
3/8"		HLA2006-375(-)-078T	HLR256-375(-)-078T
5/16"	3/32"	HLA2006-312(-)-094T	HLR256-312(-)-094T
11/32"		HLA2006-343(-)-094T	HLR256-343(-)-094T
3/8"		HLA2006-375(-)-094T	HLR256-375(-)-094T
7/16"		HLA2006-312(-)-094T	HLR256-312(-)-094T

Part No. Example:

**HLA2006-312(B)-078-T**

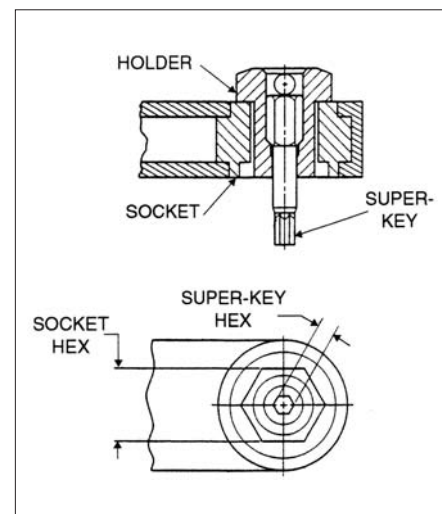
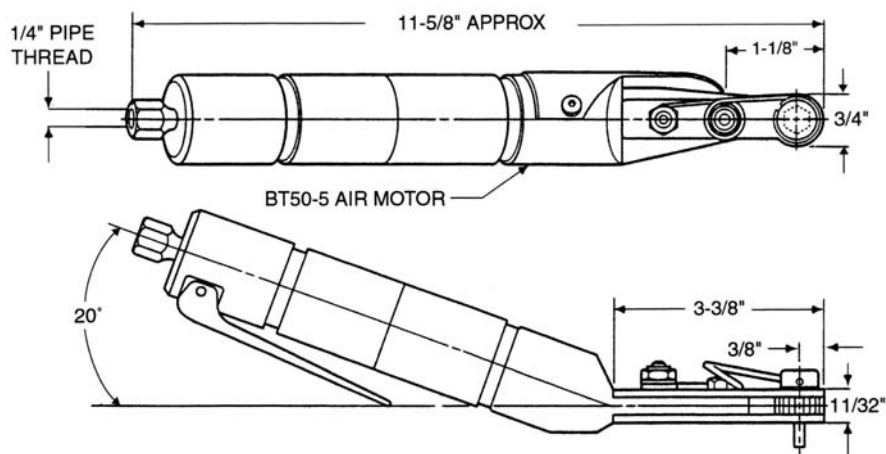


#### Ordering Information

- Match pin and collar hexes with Super-Key Hex and Socket Hex.
- See table for corresponding complete driver assembly part number.

## Super HLA 2008

### 20° Offset Ratchet Wrench Driver Assembly with Flush Socket and Super-Key™ (T-Series)

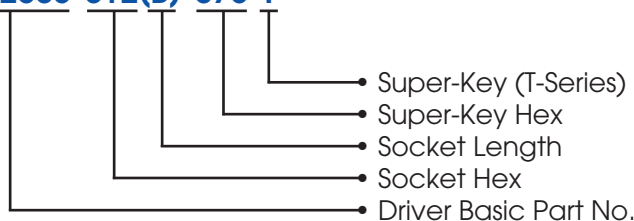


TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.50
Max Torque Rating (Motor)	110 in. lb. @ 90 PSIA	Air Consumption	22 SCFM
Socket RPM @ Max HP (Under Max. Load)	143 RPM	Weight	2 lb.

Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Driver Assy.	Offset Adaptor & Socket Assy.
3/16"	1/16"	HLA2008-187(-)-062T	HLR255-187(-)-062T
7/32"		HLA2008-218(-)-062T	HLR255-218(-)-062T
1/4"		HLA2008-250(-)-062T	HLR255-250(-)-062T
9/32"		HLA2008-281(-)-062T	HLR255-281(-)-062T
5/16"		HLA2008-312(-)-062T	HLR255-312(-)-062T
11/32"		HLA2008-343(-)-062T	HLR255-343(-)-062T
7/32"	5/64"	HLA2008-218(-)-078T	HLR255-218(-)-078T
1/4"		HLA2008-250(-)-078T	HLR255-250(-)-078T
9/32"		HLA2008-281(-)-078T	HLR255-281(-)-078T
5/16"		HLA2008-312(-)-078T	HLR255-312(-)-078T
11/32"		HLA2008-343(-)-078T	HLR255-343(-)-078T
3/8"		HLA2008-375(-)-078T	HLR255-375(-)-078T
5/16"	3/32"	HLA2008-312(-)-094T	HLR255-312(-)-094T
11/32"		HLA2008-343(-)-094T	HLR255-343(-)-094T
3/8"		HLA2008-375(-)-094T	HLR255-375(-)-094T
7/16"		HLA2008-312(-)-094T	HLR255-312(-)-094T

#### Part No. Example:

**HLA2008-312(B)-078-T**

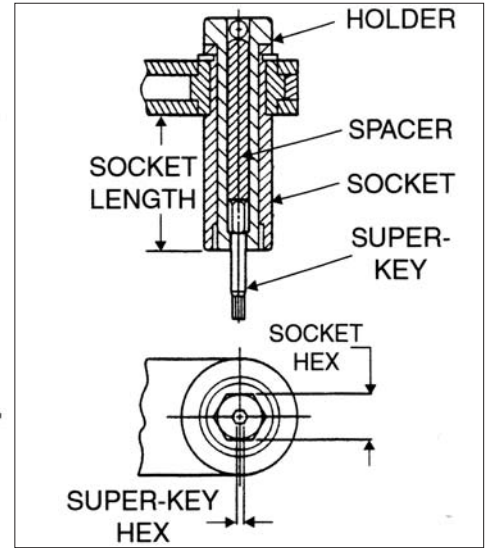
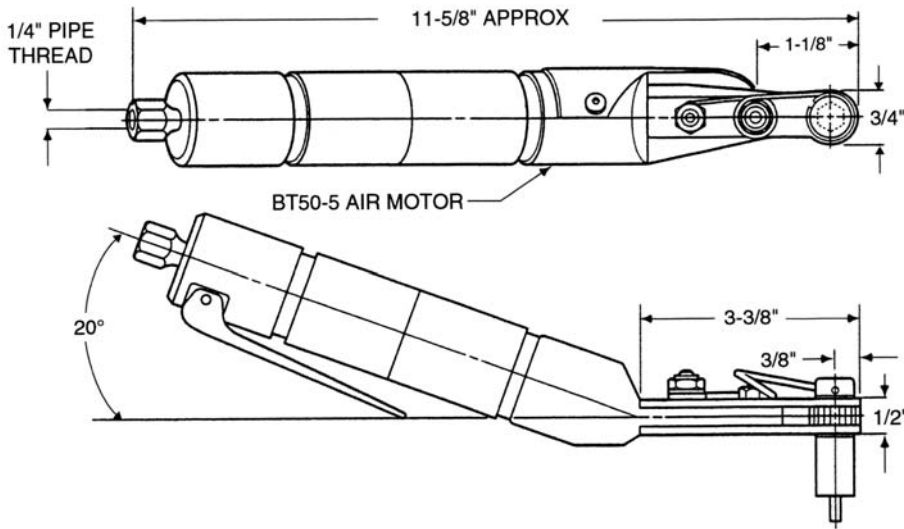


#### Ordering Information

- Match pin and collar hexes with Super-Key Hex and Socket Hex.
- See table for corresponding complete driver assembly part number.

## Super HLA 2016

### 20° Offset Ratchet Wrench Driver Assembly with Multi-Length Socket and Super-Key™ (T-Series)



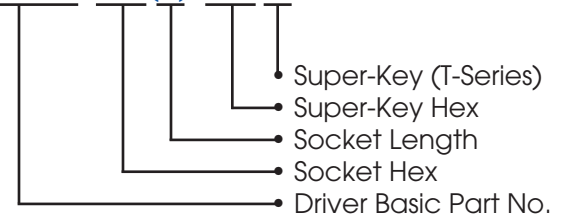
TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.50
Max Torque Rating (Motor)	110 in. lb. @ 90 PSIA	Air Consumption	22 SCFM
Socket RPM @ Max HP (Under Max. Load)	143 RPM	Weight	2 lb.

Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Driver Assy.	Offset Adaptor & Socket Assy.	Extended Socket Assy. Part No.
3/16"	1/16"	HLA2016-187(-)-062T	HLR251-187(-)-062T	HLS76-187(-)-062T
7/32"		HLA2016-218(-)-062T	HLR251-218(-)-062T	HLS76-218(-)-062T
1/4"		HLA2016-250(-)-062T	HLR251-250(-)-062T	HLS76-250(-)-062T
9/32"		HLA2016-281(-)-062T	HLR251-281(-)-062T	HLS76-281(-)-062T
5/16"		HLA2016-312(-)-062T	HLR251-312(-)-062T	HLS76-312(-)-062T
11/32"		HLA2016-343(-)-062T	HLR251-343(-)-062T	HLS76-343(-)-062T
7/32"	5/64"	HLA2016-218(-)-078T	HLR251-218(-)-078T	HLS76-218(-)-078T
1/4"		HLA2016-250(-)-078T	HLR251-250(-)-078T	HLS76-250(-)-078T
9/32"		HLA2016-281(-)-078T	HLR251-281(-)-078T	HLS76-281(-)-078T
5/16"		HLA2016-312(-)-078T	HLR251-312(-)-078T	HLS76-312(-)-078T
11/32"		HLA2016-343(-)-078T	HLR251-343(-)-078T	HLS76-343(-)-078T
3/8"		HLA2016-375(-)-078T	HLR251-375(-)-078T	HLS76-375(-)-078T
5/16"	3/32"	HLA2016-312(-)-094T	HLR251-312(-)-094T	HLS76-312(-)-094T
11/32"		HLA2016-343(-)-094T	HLR251-343(-)-094T	HLS76-343(-)-094T
3/8"		HLA2016-375(-)-094T	HLR251-375(-)-094T	HLS76-375(-)-094T
7/16"		HLA2016-437(-)-094T	HLR251-437(-)-094T	HLS76-437(-)-094T

Socket Length	
A = 0.50	E = 0.75
B = 1.00	F = 1.75
C = 1.50	X = 4.00
D = 2.00	

Part No. Example:

**HLA2016-312(B)-078-T**

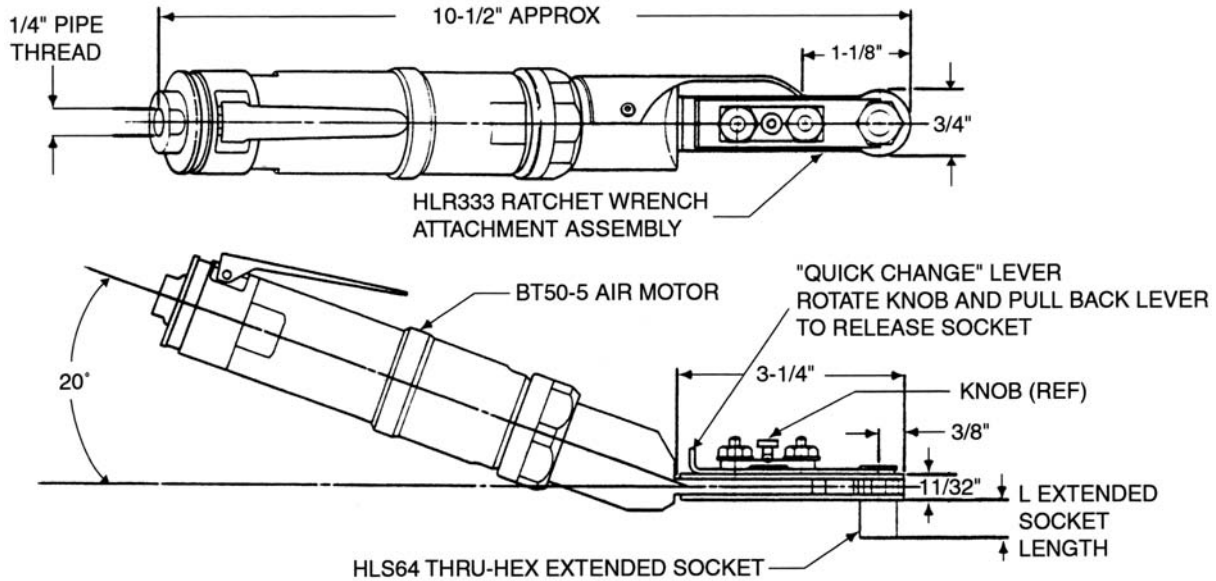


#### Ordering Information

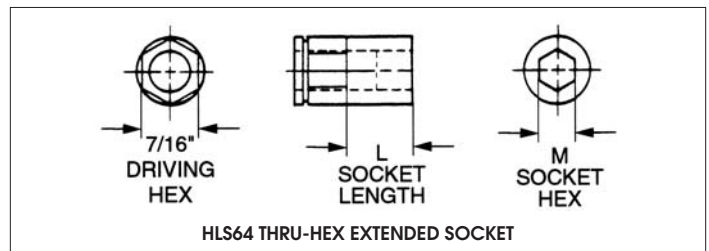
- Match pin and collar hexes with Super-Key Hex and Socket Hex.
- See table for corresponding complete driver assembly part number and socket length code.

## Super HLA 2026

Small 20° Offset Ratchet Wrench  
Tool Assembly with "Quick Change"  
Thru-Hex Extended Socket



TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.50
Max Torque Rating (Motor)	110 in. lb. @ 90 PSIA	Air Consumption	22 SCFM
Socket RPM @ Max HP (Under Max. Load)	143 RPM	Weight	2 lb.

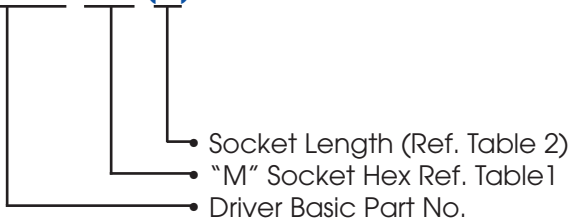


### Ordering Information

- Match "M" Socket Hex with collar driving hex dimension.
- See table for socket length code.

### Part No. Example:

**HLA2026-312 (A)**

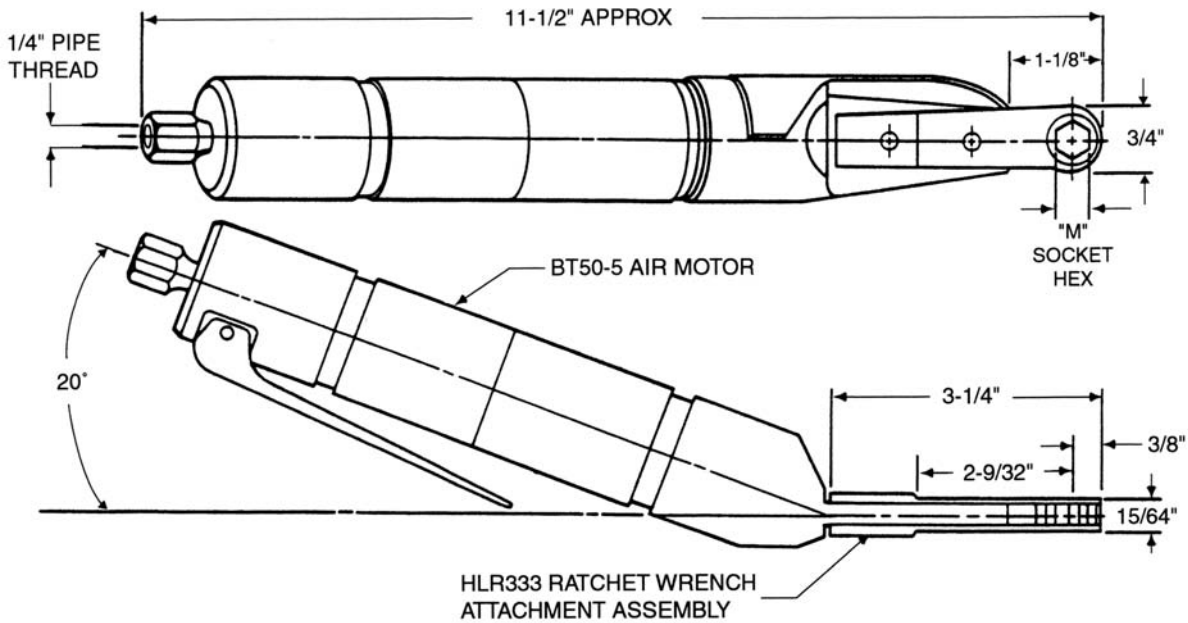


"M" Socket Hex (Matches Collar Driving Hex)	Complete Tool Assy. Part No.	Ratchet Wrench Attachment Assy. Part No. (Ref.)	Extended Socket Assy. Part No.
3/16"	HLA2026-187( )	HLR333-187( )	HLS64-187( )
7/32"	HLA2026-218( )	HLR333-218( )	HLS64-218( )
1/4"	HLA2026-250( )	HLR333-250( )	HLS64-250( )
9/32"	HLA2026-281( )	HLR333-281( )	HLS64-281( )
5/16"	HLA2026-312( )	HLR333-312( )	HLS64-312( )
11/32"	HLA2026-343( )	HLR333-343( )	HLS64-343( )

Socket Length	
A = 0.50	E = 0.75
B = 1.00	F = 1.75
C = 1.50	X = 4.00
D = 2.00	

## Super HLA 2033

Small 20° Offset Ratchet Wrench  
Tool Assembly with  
Interference Fit Extra Thin Socket



TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.50
Max Torque Rating (Motor)	110 in. lb. @ 90 PSIA	Air Consumption	22 SCFM
Socket RPM @ Max HP (Under Max. Load)	143 RPM	Weight	2 lb.

"M" Socket Hex (Matches Collar Driving Hex)	Complete Tool Assembly Part No.	Ratchet Wrench Attachment Assembly Part No. (Ref.)
5/16"	HLA2033-312	HLR231-312
11/32"	HLA2033-343	HLR231-343
3/8"	HLA2033-375	HLR231-375

Part No. Example:

**HLA2033-312**

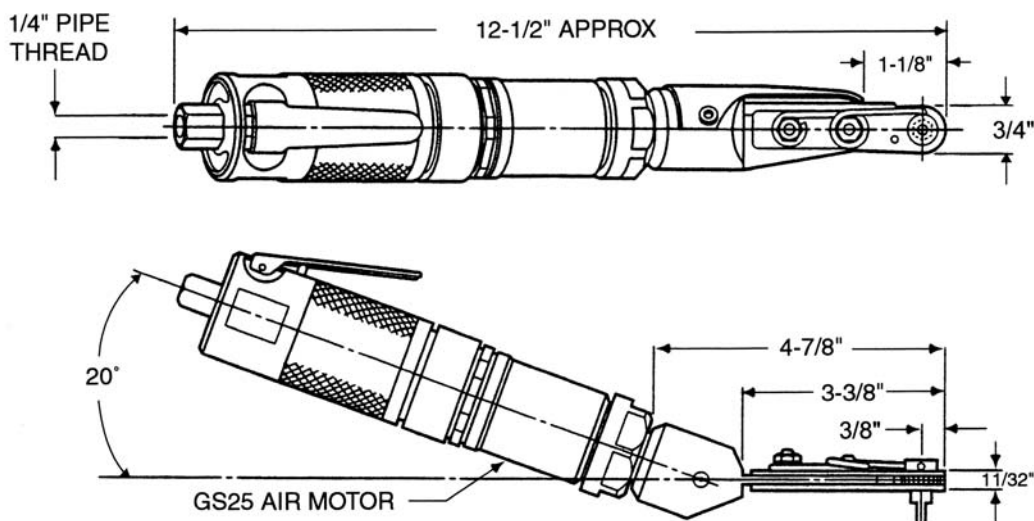


### Ordering Information

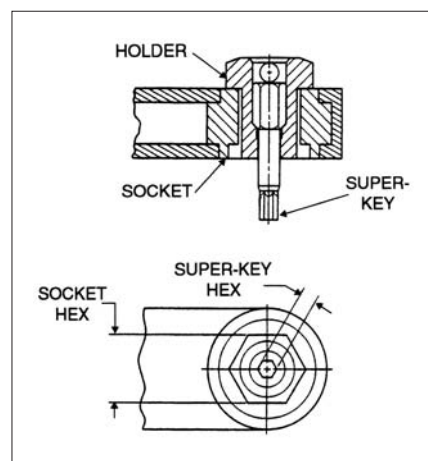
- Match "M" Socket Hex with collar driving hex dimension.

## Super HLA 2073

Medium 20° Offset Ratchet Wrench Driver Assembly with Thin Flush Socket and Super Key™ (T-Series)



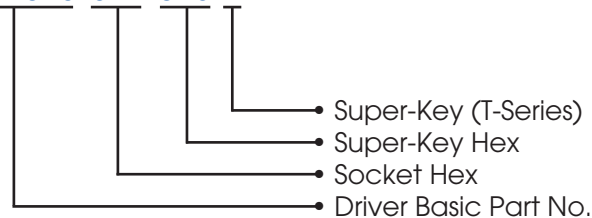
TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.50
Max Torque Rating (Motor)	220 in. lb. @ 90 PSIA	Air Consumption	22 SCFM
Socket RPM @ Max HP (Under Max. Load)	72 RPM	Weight	2 lb.



Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Driver Assy.	Ratchet Wrench Attachment Assy. Part No.
3/16"	1/16"	HLA2073-187-062T	HLR255-187-062T
7/32"		HLA2073-218-062T	HLR255-218-062T
1/4"		HLA2073-250-062T	HLR255-250-062T
9/32"		HLA2073-281-062T	HLR255-281-062T
5/16"		HLA2073-312-062T	HLR255-312-062T
11/32"		HLA2073-343-062T	HLR255-343-062T
7/32"	5/64"	HLA2073-218-078T	HLR255-218-078T
1/4"		HLA2073-250-078T	HLR255-250-078T
9/32"		HLA2073-281-078T	HLR255-281-078T
5/16"		HLA2073-312-078T	HLR255-312-078T
11/32"		HLA2073-343-078T	HLR255-343-078T
3/8"		HLA2073-375-078T	HLR255-375-078T
5/16"	3/32"	HLA2073-312-094T	HLR255-312-094T
11/32"		HLA2073-343-094T	HLR255-343-094T
3/8"		HLA2073-375-094T	HLR255-375-094T
7/16"		HLA2073-437-094T	HLR255-437-094T
3/8"	1/8"	HLA2073-375-125T	HLR255-375-125T
7/16"		HLA2073-437-125T	HLR255-437-125T

Part No. Example:

**HLA2073-312-078-T**



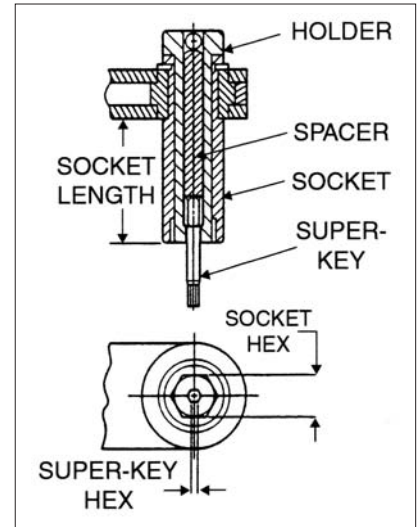
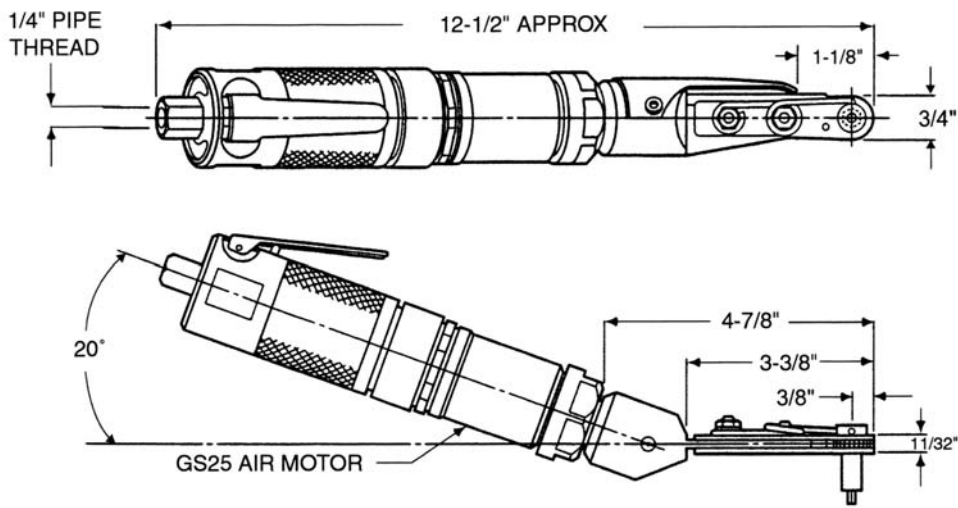
### Ordering Information

- Match pin and collar hexes with Super-Key Hex and Socket Hex.
- See table for corresponding complete driver assembly part number.



## Super HLA 2075

### Medium 20° Offset Ratchet Wrench Driver Assembly with Multi-length Socket and Super Key™ (T-Series)

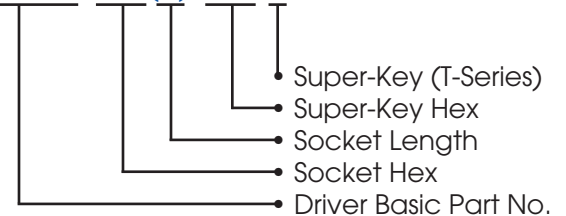


TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.50
Max Torque Rating (Motor)	220 in. lb. @ 90 PSIA	Air Consumption	22 SCFM
Socket RPM @ Max HP (Under Max. Load)	75 RPM	Weight	2 lb.

Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Driver Assy.	Offset Adaptor & Socket Assy.	Extended Socket Assy. Part No.
3/16"	1/16"	HLA2075-187(-)-062T	HLR206-187(-)-062T	HLS78-187(-)-062T
7/32"		HLA2075-218(-)-062T	HLR206-218(-)-062T	HLS78-218(-)-062T
1/4"		HLA2075-250(-)-062T	HLR206-250(-)-062T	HLS78-250(-)-062T
9/32"		HLA2075-281(-)-062T	HLR206-281(-)-062T	HLS78-281(-)-062T
5/16"		HLA2075-312(-)-062T	HLR206-312(-)-062T	HLS78-312(-)-062T
11/32"		HLA2075-343(-)-062T	HLR206-343(-)-062T	HLS78-343(-)-062T
7/32"	5/64"	HLA2075-218(-)-078T	HLR206-218(-)-078T	HLS78-218(-)-078T
1/4"		HLA2075-250(-)-078T	HLR206-250(-)-078T	HLS78-250(-)-078T
9/32"		HLA2075-281(-)-078T	HLR206-281(-)-078T	HLS78-281(-)-078T
5/16"		HLA2075-312(-)-078T	HLR206-312(-)-078T	HLS78-312(-)-078T
11/32"		HLA2075-343(-)-078T	HLR206-343(-)-078T	HLS78-343(-)-078T
3/8"		HLA2075-375(-)-078T	HLR206-375(-)-078T	HLS78-375(-)-078T
5/16"	3/32"	HLA2075-312(-)-094T	HLR206-312(-)-094T	HLS78-312(-)-094T
11/32"		HLA2075-343(-)-094T	HLR206-343(-)-094T	HLS78-343(-)-094T
3/8"		HLA2075-375(-)-094T	HLR206-375(-)-094T	HLS78-375(-)-094T
7/16"		HLA2075-437(-)-094T	HLR206-437(-)-094T	HLS78-437(-)-094T
1/2"		HLA2075-500(-)-094T	HLR206-500(-)-094T	HLS78-500(-)-094T
3/8"		1/8"	HLA2075-375(-)-125T	HLR206-375(-)-125T
7/16"	HLA2075-437(-)-125T		HLR206-437(-)-125T	HLS78-437(-)-125T
1/2"	HLA2075-500(-)-125T		HLR206-500(-)-125T	HLS78-500(-)-125T

#### Part No. Example:

#### HLA2075-312(B)-078-T



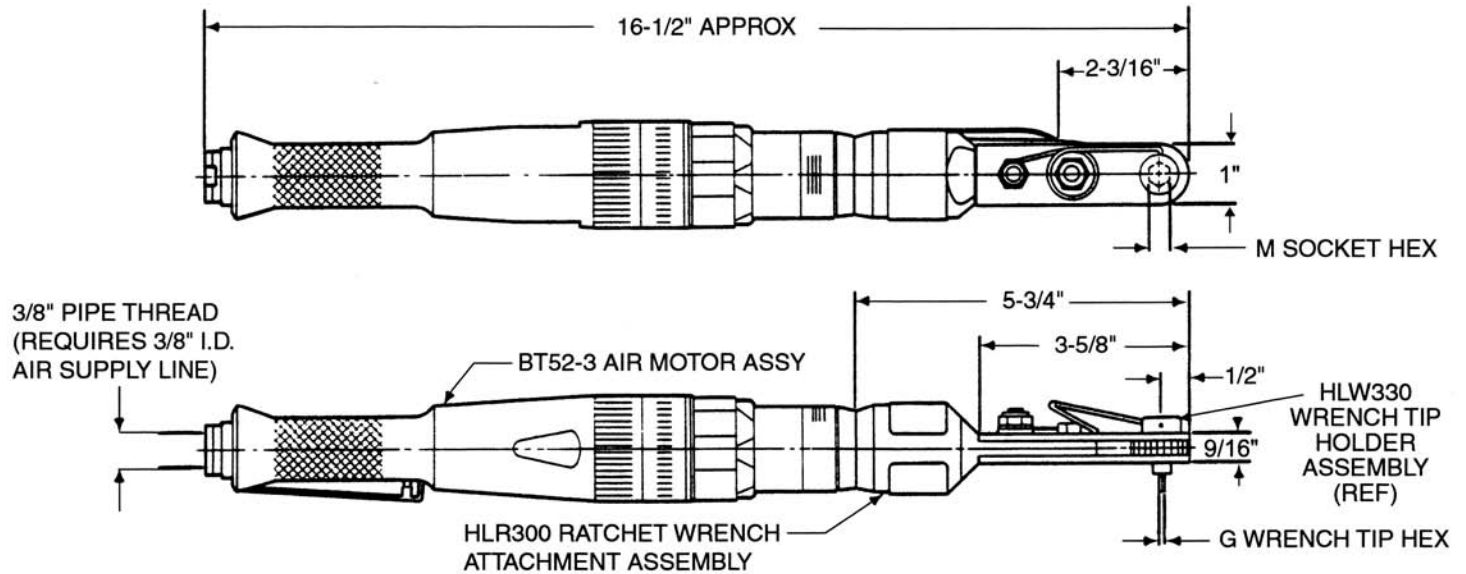
#### Ordering Information

- Match pin and collar hexes with Super-Key Hex and Socket Hex.
- See table for corresponding complete driver assembly part number and socket length code.

Socket Length	
A = 0.50	E = 0.75
B = 1.00	F = 1.75
C = 1.50	X = 4.00
D = 2.00	

## Super HLA 3000

Large Straight Ratchet Wrench  
Tool Assembly  
with Flush Socket and Super Key™ (T-Series)

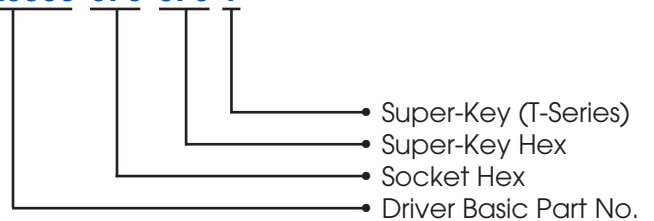


TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.70
Max Torque Rating (Motor)	300 in. lb. @ 90 PSIA	Air Consumption	22 SCFM
Socket RPM @ Max HP (Under Max. Load)	125 RPM	Weight	3.8 lb.

"M" Socket Hex (Matches Collar Driving Hex)	Pin Recess Hex (Matches Pin Recess Hex)	Complete Tool Assy. Part No.	Ratchet Wrench Attachment Assy. Part No. (Ref.)
3/8"	1/8"	HLA3000-375-125T	HLR300-375-125T
7/16"		HLA3000-437-125T	HLR300-437-125T
1/2"		HLA3000-500-125T	HLR300-500-125T
9/16"		HLA3000-562-125T	HLR300-562-125T
7/16"	5/32"	HLA3000-437-156T	HLR300-437-156T
1/2"		HLA3000-500-156T	HLR300-500-156T
9/16"		HLA3000-562-156T	HLR300-562-156T
5/8"		HLA3000-625-156T	HLR300-625-156T

Part No. Example:

**HLA3000-375-078-T**

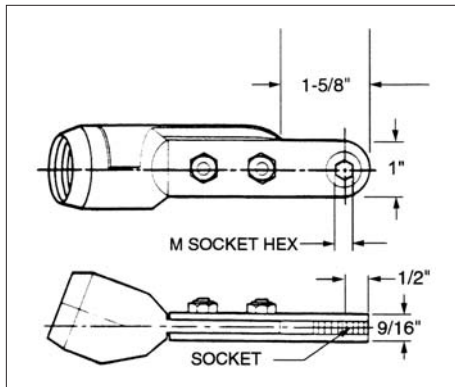
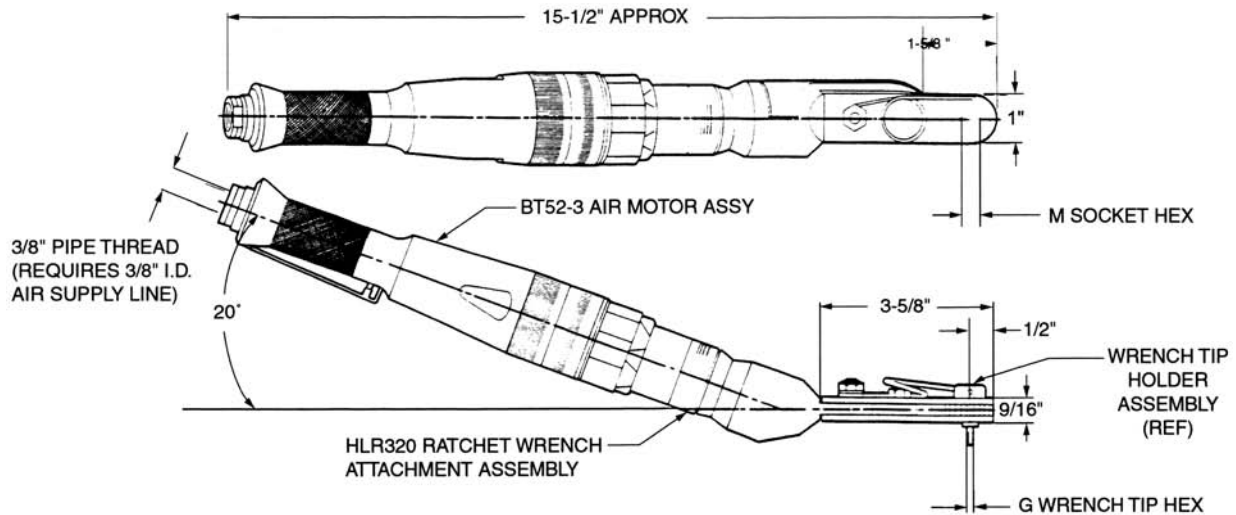


### Ordering Information

- Match pin and collar hexes with Super-Key Hex and Socket Hex.
- See table for corresponding complete driver assembly part number.

# Super HLA 3020

## Large 20° Offset Ratchet Wrench Tool Assembly with Flush Socket



Part No. Example:

**HLA3020-375-078T**



### Ordering Information

- Determine collar driving hex dimensions of the fasteners to be installed.
- See table for "M" socket hex to match collar driving hex dimensions. Determine complete tool assembly part no.
- See table for complete tool assy. part no. to obtain an offset adaptor assembly featuring a thru-hex socket, less finder pin and leaf spring.

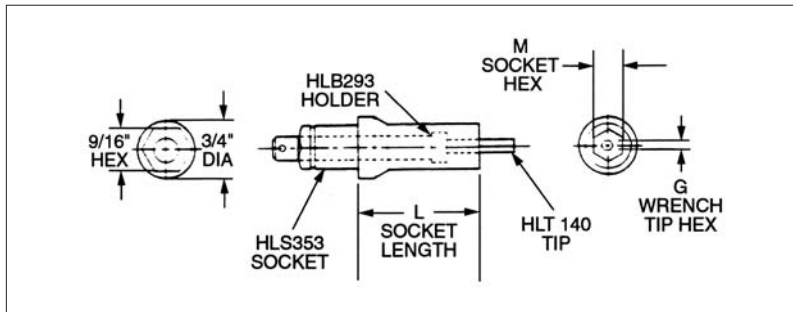
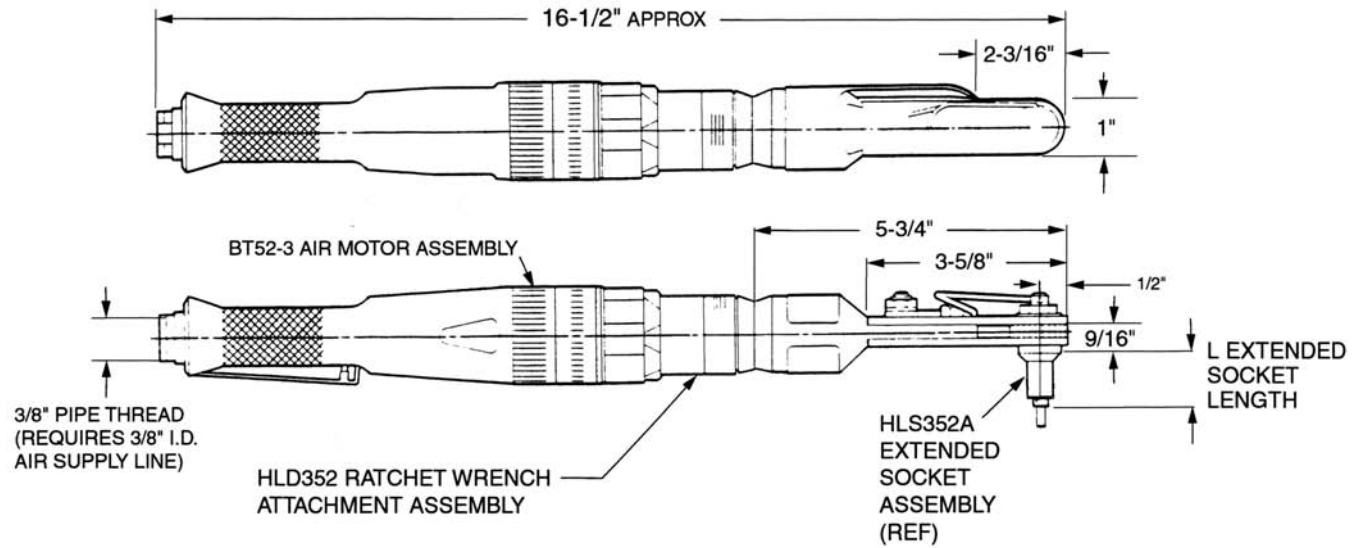
TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.70
Max Torque Rating (Motor)	300 in. lb. @ 90 PSIA	Air Consumption	22 SCFM
Socket RPM @ Max HP (Under Max. Load)	125 RPM	Weight	3.8 lb.

"M" Socket Hex (Matches Collar Driving Hex)	"G" Wrench Tip Hex (Matches Pin Recess Hex)	Complete Tool Assy. Part No.	Ratchet Wrench Attachment Assy. Part No. (Ref.)
3/8"	1/8"	HLA3020-375-125T	HLRA320-375-125T
7/16"		HLA3020-437-125T	HLRA320-437-125T
1/2"		HLA3020-500-125T	HLRA320-500-125T
9/16"		HLA3020-562-125T	HLRA320-562-125T
7/16"	5/32"	HLA3020-437-156T	HLRA320-437-156T
1/2"		HLA3020-500-156T	HLRA320-500-156T
9/16"		HLA3020-562-156T	HLRA320-562-156T
5/8"		HLA3020-625-156T	HLRA320-625-156T

"M" Socket Hex (Matches Collar Driving Hex)	Complete Tool Assy. Part No.	Ratchet Wrench Attachment Assy. Part No. (Ref.)
3/8"	HLA3020H-375	HLRA320H-375
7/16"	HLA3020H-437	HLRA320H-437
1/2"	HLA3020H-500	HLRA320H-500
9/16"	HLA3020H-562	HLRA320H-562
7/16"	HLA3020H-437	HLRA320H-437
1/2"	HLA3020H-500	HLRA320H-500
9/16"	HLA3020H-562	HLRA320H-562
5/8"	HLA3020H-625	HLRA320H-625

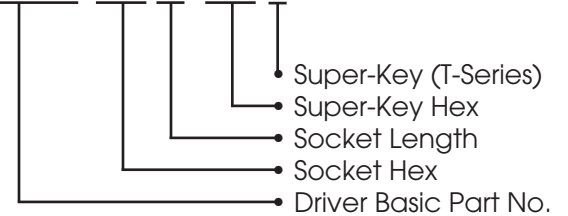
## Super HLA 3502

Large Straight Ratchet Wrench  
Tool Assembly with  
Extended Socket



Part No. Example:

**HLA3502-437(B)-125-T**



TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.50
Max Torque Rating (Motor)	220 in. lb. @ 90 PSIA	Air Consumption	22 SCFM
Socket RPM @ Max HP (Under Max. Load)	125 RPM	Weight	2 lb.

### Ordering Information

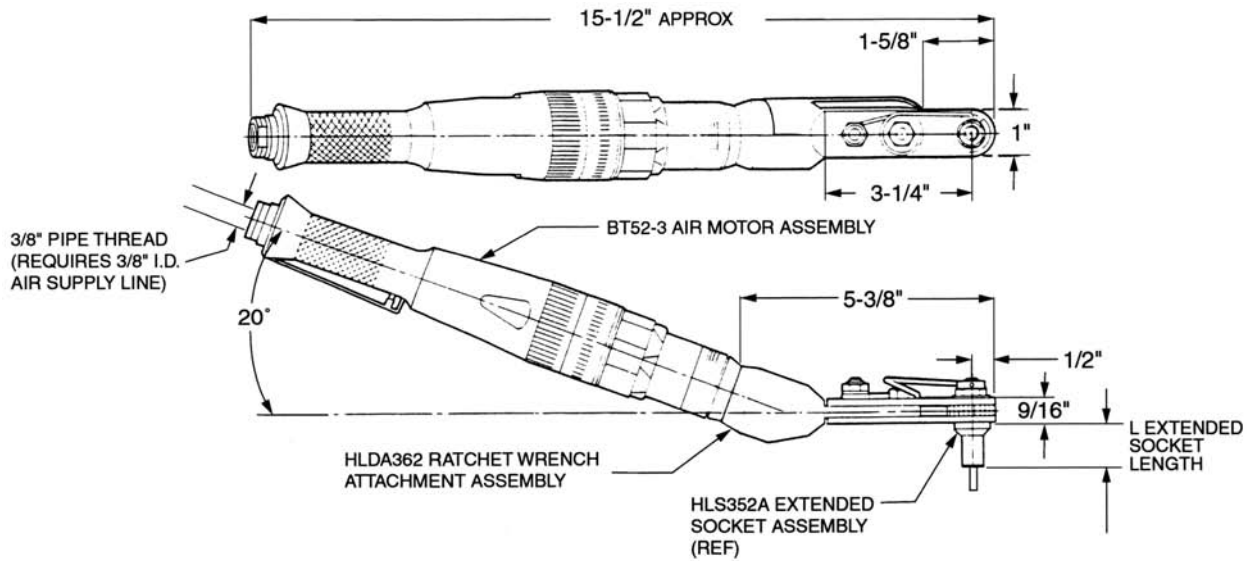
- Match pin and collar hexes with Super-Key Hex and Socket Hex.
- See table for corresponding complete driver assembly part number and socket length code.

Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Driver Assy.	Offset Adaptor & Socket Assy.	Extended Socket Assy. Part No.
7/16"	1/8"	HLA3502-437(-)-125T	HLD352-437(-)-125T	HLS352A-437(-)-125T
1/2"		HLA3502-500(-)-125T	HLD352-500(-)-125T	HLS352A-500(-)-125T
9/16"		HLA3502-562(-)-125T	HLD352-562(-)-125T	HLS352A-562(-)-125T
5/8"		HLA3502-625(-)-125T	HLD352-625(-)-125T	HLS352A-625(-)-125T
11/16"		HLA3502-687(-)-125T	HLD352-687(-)-125T	HLS352A-687(-)-125T
7/16"	5/32"	HLA3502-437(-)-156T	HLD352-437(-)-156T	HLS352A-437(-)-156T
1/2"		HLA3502-500(-)-156T	HLD352-500(-)-156T	HLS352A-500(-)-156T
9/16"		HLA3502-562(-)-156T	HLD352-562(-)-156T	HLS352A-562(-)-156T
5/8"		HLA3502-625(-)-156T	HLD352-625(-)-156T	HLS352A-625(-)-156T
11/16"		HLA3502-687(-)-156T	HLD352-687(-)-156T	HLS352A-687(-)-156T

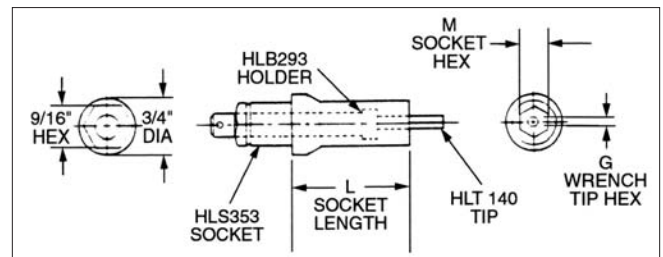
Socket Length	
A = 0.50	E = 0.75
B = 1.00	F = 1.75
C = 1.50	X = 4.00
D = 2.00	

# Super HLA 3522

## Large 20° Offset Ratchet Wrench Tool Assembly with Extended Socket and Super-Key™ (T-Series)



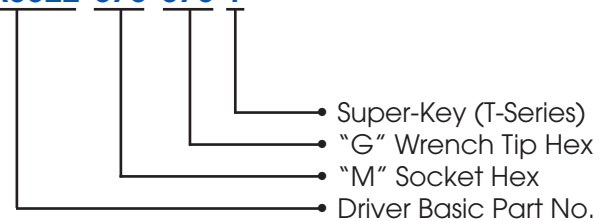
TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.65
Max Torque Rating (Motor)	400 in. lb. @ 90 PSIA	Air Consumption	30 SCFM
Socket RPM @ Max HP (Under Max. Load)	125 RPM	Weight	4.2 lb.



"M" Socket Hex (Matches Collar Driving Hex)	Complete Tool Assy. Part No.	Ratchet Wrench Attachment Assy. Part No. (Ref.)	Extended Socket Assy. Part No.
7/16"	HLA3522-437()-125T	HLDA362-437()-125T	HLS352A-437()-125T
1/2"	HLA3522-500()-125T	HLDA362-500()-125T	HLS352A-500()-125T
9/16"	HLA3522-562()-125T	HLDA362-562()-125T	HLS352A-562()-125T
5/8"	HLA3522-625()-125T	HLDA362-625()-125T	HLS352A-625()-125T
11/16"	HLA3522-687()-125T	HLDA362-687()-125T	HLS352A-687()-125T
7/16"	HLA3522-437()-156T	HLDA362-437()-156T	HLS352A-437()-156T
1/2"	HLA3522-500()-156T	HLDA362-500()-156T	HLS352A-500()-156T
9/16"	HLA3522-562()-156T	HLDA362-562()-156T	HLS352A-562()-156T
5/8"	HLA3522-625()-156T	HLDA362-625()-156T	HLS352A-625()-156T
11/16"	HLA3522-687()-156T	HLDA362-687()-156T	HLS352A-687()-156T

Part No. Example:

**HLA3522-375-078-T**



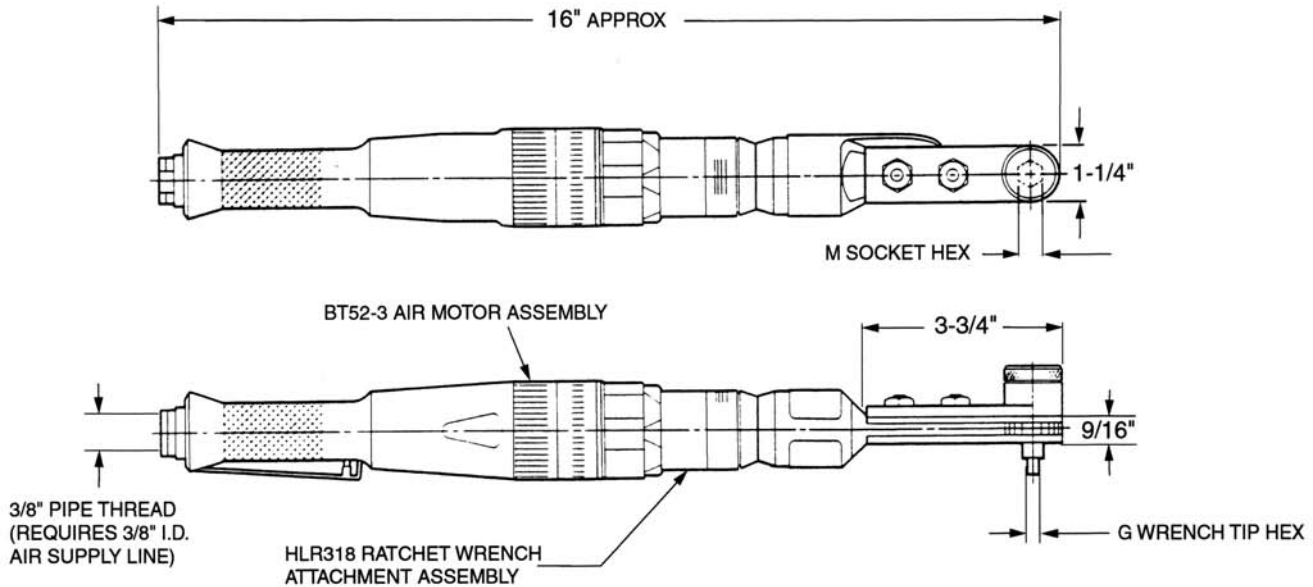
### Ordering Information

- Determine collar driving hex dimensions of the fasteners to be installed.
- See table for "M" socket hex to match collar driving hex dimensions. Determine complete tool assembly part no.
- See table for complete tool assembly part nos. to obtain an offset adaptor assembly featuring a thru-hex socket, less finder pin and leaf spring.

Socket Length	
A = 0.50	E = 0.75
B = 1.00	F = 1.75
C = 1.50	X = 4.00
D = 2.00	

**Super HLA 4001**

Large Straight Heavy Duty  
Ratchet Wrench Tool Assembly  
with Flush Socket

**TECHNICAL DATA**

Operating Pressure	90 PSIA	Horsepower Rating	0.65
Max Torque Rating (Motor)	400 in. lb. @ 90 PSIA	Air Consumption	30 SCFM
Motor Speed	170 RPM	Weight	4.2 lb.

Part No. Example:

**HLA4001-437-156**

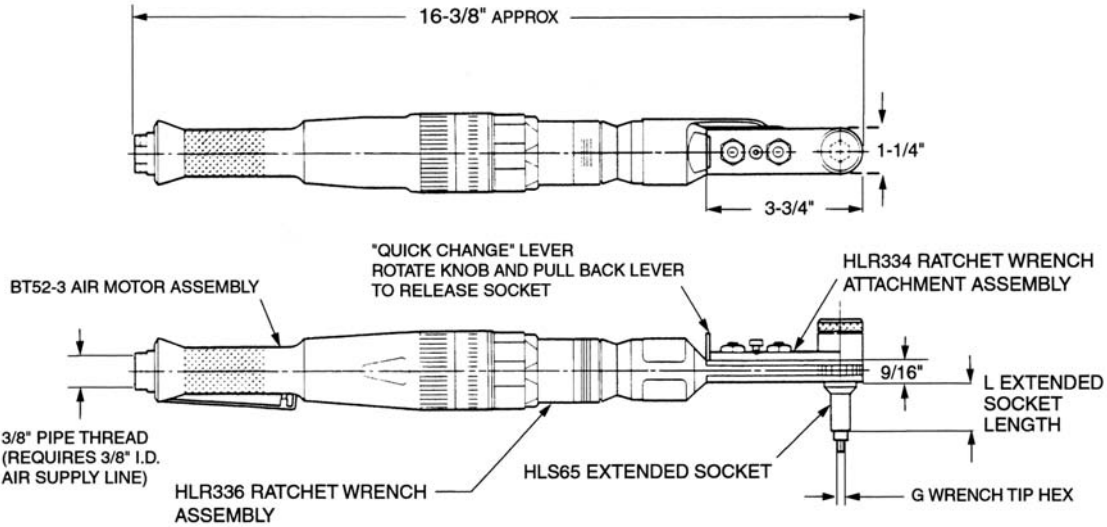
**Ordering Information**

- Determine driving hex & pin recess hex dimensions of the fasteners to be installed.
- See table for "M" socket hex & "G" wrench tip combo to match collar & pin dimensions. Determine complete tool assembly part no.

"M" Socket Hex (Matches Collar Driving Hex)	"G" Wrench Tip Hex (Matches Super-Key Hex)	Complete Tool Assy. Part No.	Ratchet Wrench Attachment Assy. Part No. (Ref.)
7/16"	1/8"	HLA4001-437-125	HLR318-437-125
1/2"		HLA4001-500-125	HLR318-500-125
9/16"		HLA4001-562-125	HLR318-562-125
5/8"		HLA4001-625-125	HLR318-625-125
11/16"		HLA4001-687-125	HLR318-687-125
7/16"	5/32"	HLA4001-437-156	HLR318-437-156
1/2"		HLA4001-500-156	HLR318-500-156
9/16"		HLA4001-562-156	HLR318-562-156
5/8"		HLA4001-625-156	HLR318-625-156
11/16"		HLA4001-687-156	HLR318-687-156
9/16"	3/16"	HLA4001-562-187	HLR318-562-187
3/4"		HLA4001-750-187	HLR318-750-187
11/16"	7/32"	HLA4001-687-218	HLR318-687-218

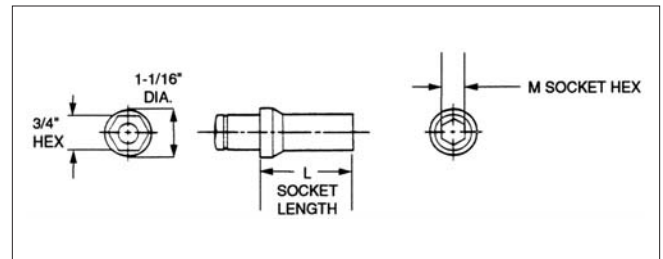
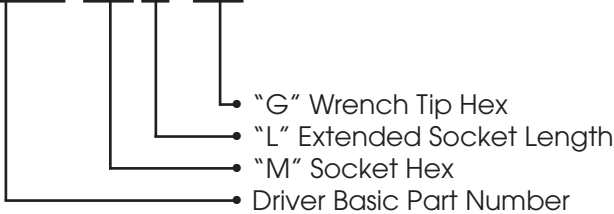
# Super HLA 4007

## Large Straight Heavy Duty Ratchet Wrench Tool Assembly with "Quick Change" Extended Socket



### Part Number Example:

### HLA4007-437(F)-156



TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.65
Max Torque Rating (Motor)	400 in. lb. @ 90 PSIA	Air Consumption	30 SCFM
Motor Speed	170 RPM	Weight	4.2 lb.

### Ordering Information

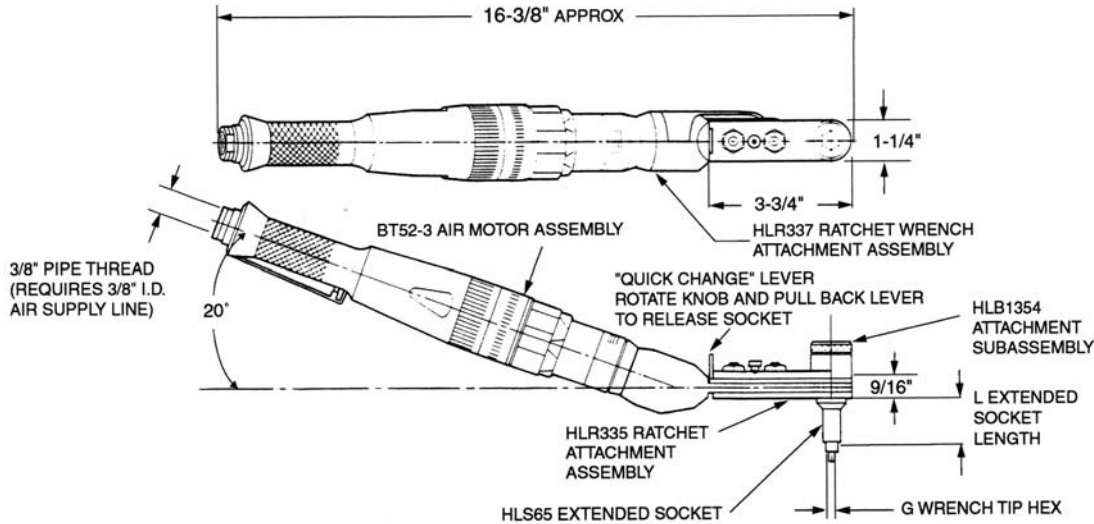
- Determine collar driving hex & pin recess hex dimensions of the fasteners to be installed.
- See table for "M" Socket hex & "G" wrench tip combo to match collar and pin dimensions.
- See table for "L" extended socket length.

"M" Socket Hex (Matches Collar Driving Hex)	"G" Wrench Tip Hex (Matches Pin Recess Hex)	Complete Tool Assy. Part No.	Ratchet Wrench Attachment Assy. Part No. (Ref.)	Extended Socket Assy. Part No.
7/16"	1/8"	HLA4007-437(-)-125	HLR336-437(-)-125	HLR336-437
1/2"		HLA4007-500(-)-125	HLR336-500(-)-125	HLR336-500
9/16"		HLA4007-562(-)-125	HLR336-562(-)-125	HLR336-562
5/8"		HLA4007-625(-)-125	HLR336-625(-)-125	HLR336-625
11/16"		HLA4007-687(-)-125	HLR336-687(-)-125	HLR336-687
7/16"	5/32"	HLA4007-437(-)-156	HLR336-437(-)-156	HLR336-437
1/2"		HLA4007-500(-)-156	HLR336-500(-)-156	HLR336-500
9/16"		HLA4007-562(-)-156	HLR336-562(-)-156	HLR336-562
5/8"		HLA4007-625(-)-156	HLR336-625(-)-156	HLR336-625
11/16"		HLA4007-687(-)-156	HLR336-687(-)-156	HLR336-687
9/16"	3/16"	HLA4007-562(-)-187	HLR336-562(-)-187	HLR336-562
3/4"		HLA4007-750(-)-187	HLR336-750(-)-187	HLR336-750
11/16"		HLA4007-687(-)-218	HLR336-687(-)-218	HLR336-687

Socket Length	
A = 0.50	E = 0.75
B = 1.00	F = 1.75
C = 1.50	X = 4.00
D = 2.00	

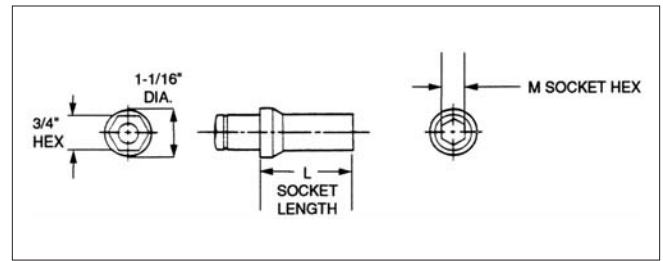
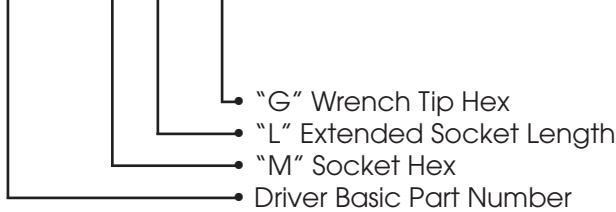
## Super HLA 4008

Large 20° Offset Heavy Duty Ratchet Wrench Tool Assembly with "Quick Change" Extended Socket



Part No. Example:

**HLA4008-437(F)-156**



TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.65
Max Torque Rating (Motor)	400 in. lb. @ 90 PSIA	Air Consumption	30 SCFM
Motor Speed	170 RPM	Weight	4.2 lb.

### Ordering Information

- Determine collar driving hex & pin recess hex dimensions of the fasteners to be installed.
- See table for "M" Socket hex & "G" wrench tip combo to match collar and pin dimensions.
- See table for "L" extended socket length.

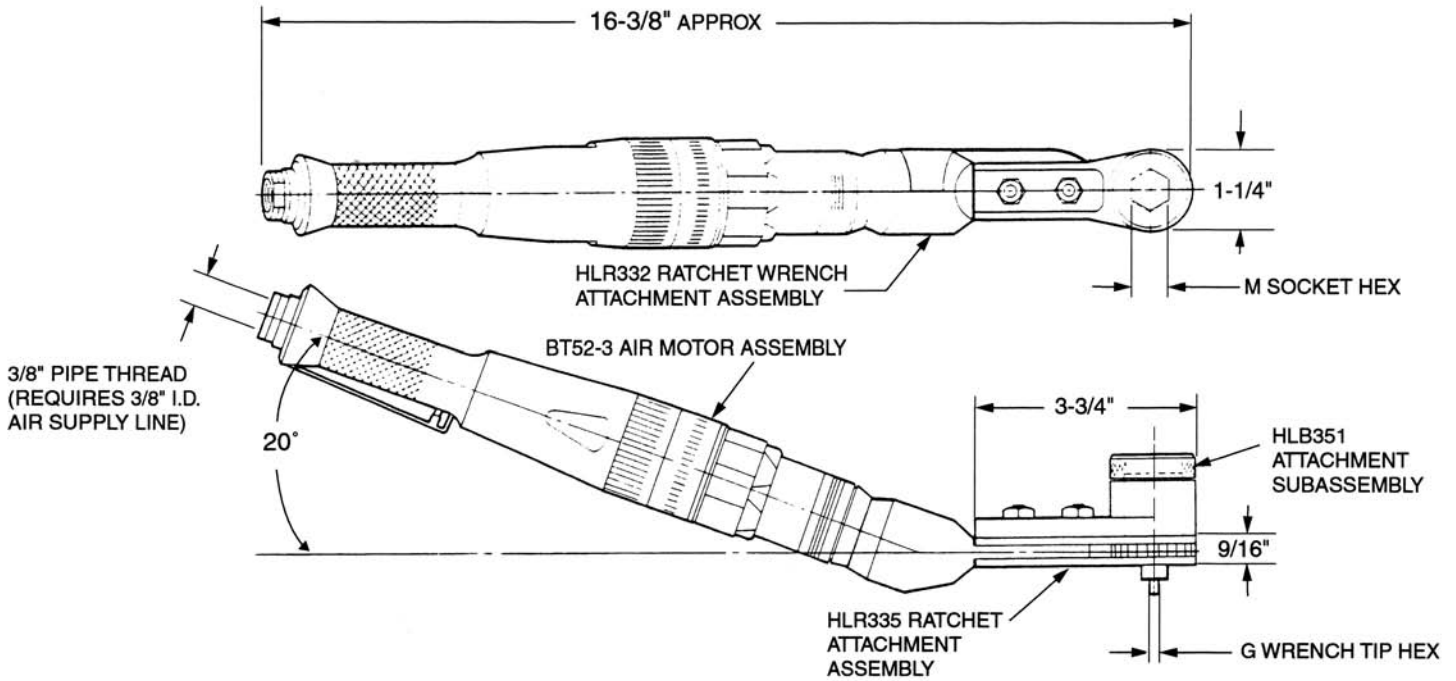
"M" Socket Hex (Matches Collar Driving Hex)	"G" Wrench Tip Hex (Matches Pin Recess Hex)	Complete Tool Assy. Part No.	Ratchet Wrench Attachment Assy. Part No. (Ref.)	Extended Socket Assy. Part No.
7/16"	1/8"	HLA4008-437(-)-125	HLR337-437(-)-125	HLR336-437
1/2"		HLA4008-500(-)-125	HLR337-500(-)-125	HLR336-500
9/16"		HLA4008-562(-)-125	HLR337-562(-)-125	HLR336-562
5/8"		HLA4008-625(-)-125	HLR337-625(-)-125	HLR336-625
11/16"		HLA4008-687(-)-125	HLR337-687(-)-125	HLR336-687
7/16"	5/32"	HLA4008-437(-)-156	HLR337-437(-)-156	HLR336-437
1/2"		HLA4008-500(-)-156	HLR337-500(-)-156	HLR336-500
9/16"		HLA4008-562(-)-156	HLR337-562(-)-156	HLR336-562
5/8"		HLA4008-625(-)-156	HLR337-625(-)-156	HLR336-625
11/16"		HLA4008-687(-)-156	HLR337-687(-)-156	HLR336-687
9/16"	3/16"	HLA4008-562(-)-187	HLR337-562(-)-187	HLR336-562
3/4"		HLA4008-750(-)-187	HLR337-750(-)-187	HLR336-750
11/16"		HLA4008-687(-)-218	HLR337-687(-)-218	HLR336-687

Socket Length	
A = 0.50	E = 0.75
B = 1.00	F = 1.75
C = 1.50	X = 4.00
D = 2.00	



## Super HLA 4020

### Large 20° Offset Heavy Duty Ratchet Wrench Tool Assembly with Flush Socket



FASTENER INSTALLATION & REMOVAL - RATCHET DRIVER

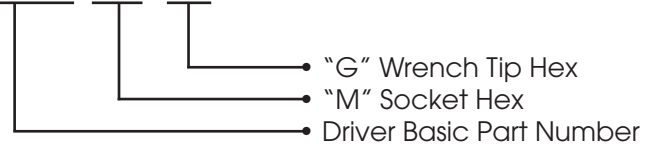
### Ordering Information

- Determine collar driving hex & pin recess hex dimensions of the fasteners to be installed.
- See table for "M" Socket hex & "G" wrench tip combo to match collar and pin dimensions.

TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.65
Max Torque Rating (Motor)	400 in. lb. @ 90 PSIA	Air Consumption	30 SCFM
Motor Speed	170 RPM	Weight	4.2 lb.

### Part No. Example:

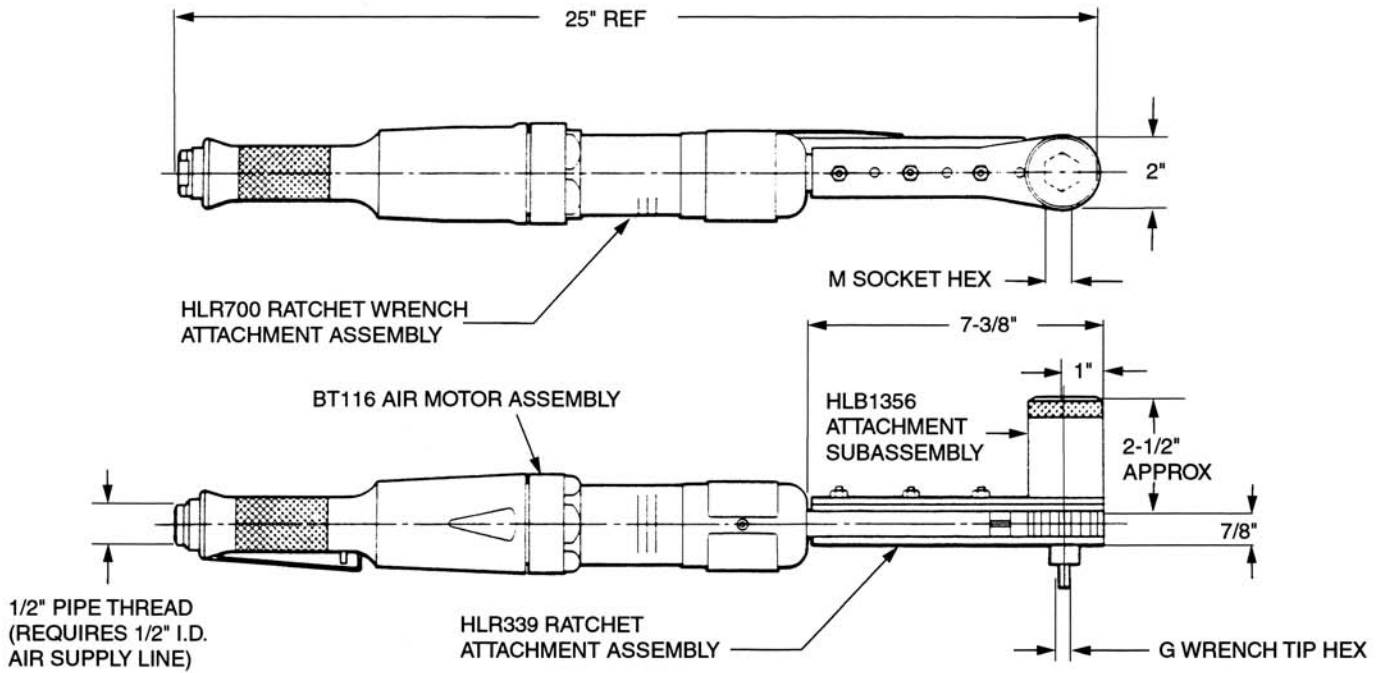
**HLA4020-437-156**



"M" Socket Hex (Matches Collar Driving Hex)	"G" Wrench Tip Hex (Matches Pin Recess Hex)	Complete Tool Assy. Part No.	Offset Adaptor & Socket Assy. Part No.	Extended Socket Assy. Part No. (Ref.)	Ratchet Attachment Assy. Part No.
7/16"	1/8"	HLA4020-437-125	HLR332-437-125	HLB351-437-125	HLR335-437
1/2"		HLA4020-500-125	HLR332-500-125	HLB351-500-125	HLR335-500
9/16"		HLA4020-562-125	HLR332-562-125	HLB351-562-125	HLR335-562
5/8"		HLA4020-625-125	HLR332-625-125	HLB351-625-125	HLR335-625
11/16"		HLA4020-687-125	HLR332-687-125	HLB351-687-125	HLR335-687
7/16"	5/32"	HLA4020-437-156	HLR332-437-156	HLB351-437-156	HLR335-437
1/2"		HLA4020-500-156	HLR332-500-156	HLB351-500-156	HLR335-500
9/16"		HLA4020-562-156	HLR332-562-156	HLB351-562-156	HLR335-562
5/8"		HLA4020-625-156	HLR332-625-156	HLB351-625-156	HLR335-625
11/16"		HLA4020-687-156	HLR332-687-156	HLB351-687-156	HLR335-687
9/16"	3/16"	HLA4020-562-187	HLR332-562-187	HLB351-562-187	HLR335-562
3/4"		HLA4020-750-187	HLR332-750-187	HLB351-750-187	HLR335-750
11/16"		HLA4020-687-218	HLR332-687-218	HLB351-687-218	HLR335-687

## Super HLA 7000

Large Straight Heavy Duty Ratchet Wrench Tool Assembly with Flush Socket

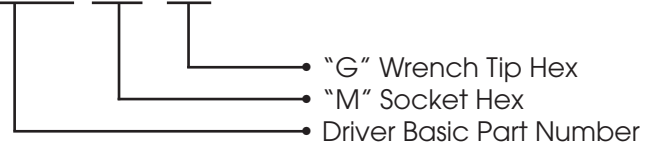


### Ordering Information

- Determine collar driving hex & pin recess hex dimensions of the fasteners to be installed.
- See table for "M" Socket hex & "G" wrench tip combo to match collar and pin dimensions.

### Part No. Example:

**HLA7000-625-156**

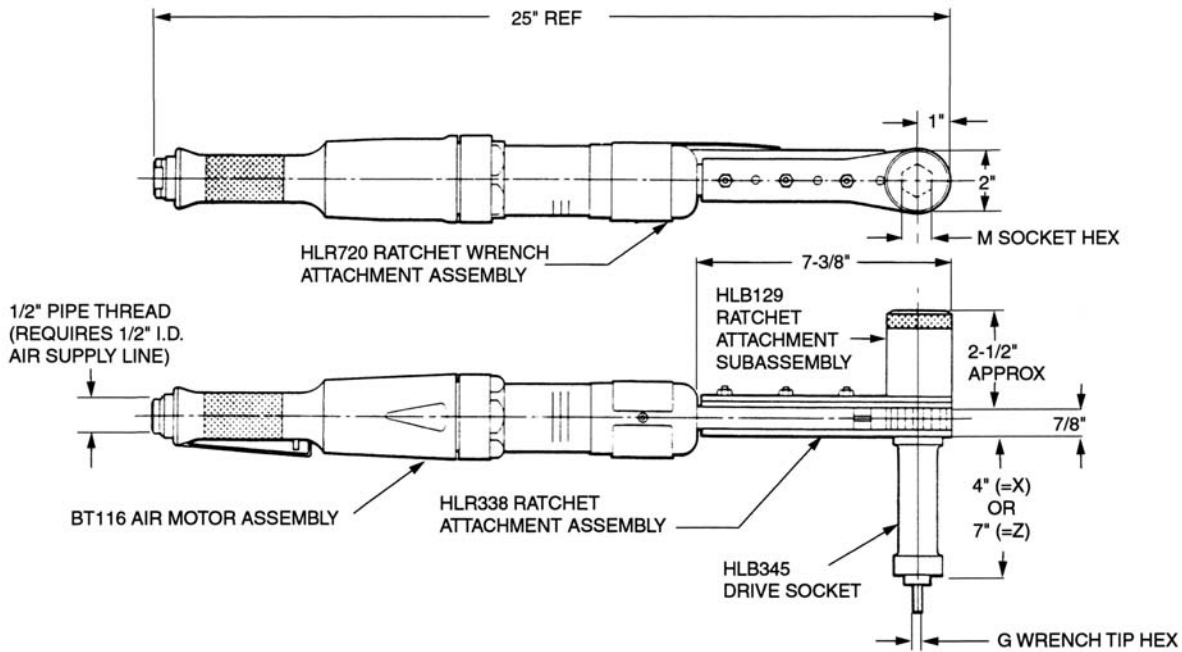


TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	2.70
Max Torque Rating (Motor)	185 ft. lb. @ 90 PSIA	Air Consumption	55 SCFM
Motor Speed	75 RPM	Weight	15 lb.

"M" Socket Hex (Matches Collar Driving Hex)	"G" Wrench Tip Hex (Matches Pin Recess Hex)	Complete Tool Assembly Part No.	Ratchet Wrench Attachment Assembly Part No. (Ref.)	Attachment Sub-Assembly Part No. (Ref.)
1/2"	5/32"	HLA7000-500-156	HLR700-500-156	HLB1356-500-156
5/8"		HLA7000-625-156	HLR700-625-156	HLB1356-625-156
3/4"	3/16"	HLA7000-750-187	HLR700-750-187	HLB1356-750-187
7/8"	7/32"	HLA7000-875-218	HLR700-875-218	HLB1356-875-218
1"	1/4"	HLA7000-1000-250	HLR700-1000-250	HLB1356-1000-250
1-1/8"	5/16"	HLA7000-1125-312	HLR700-1125-312	HLB1356-1125-312

# Super HLA 7020

## Large Straight Heavy Duty Ratchet Wrench Tool Assembly with Extended Socket



### Ordering Information

- Determine collar driving hex & pin recess hex dimensions of the fasteners to be installed.
- See table for "M" Socket hex & "G" wrench tip combo to match collar and pin dimensions.

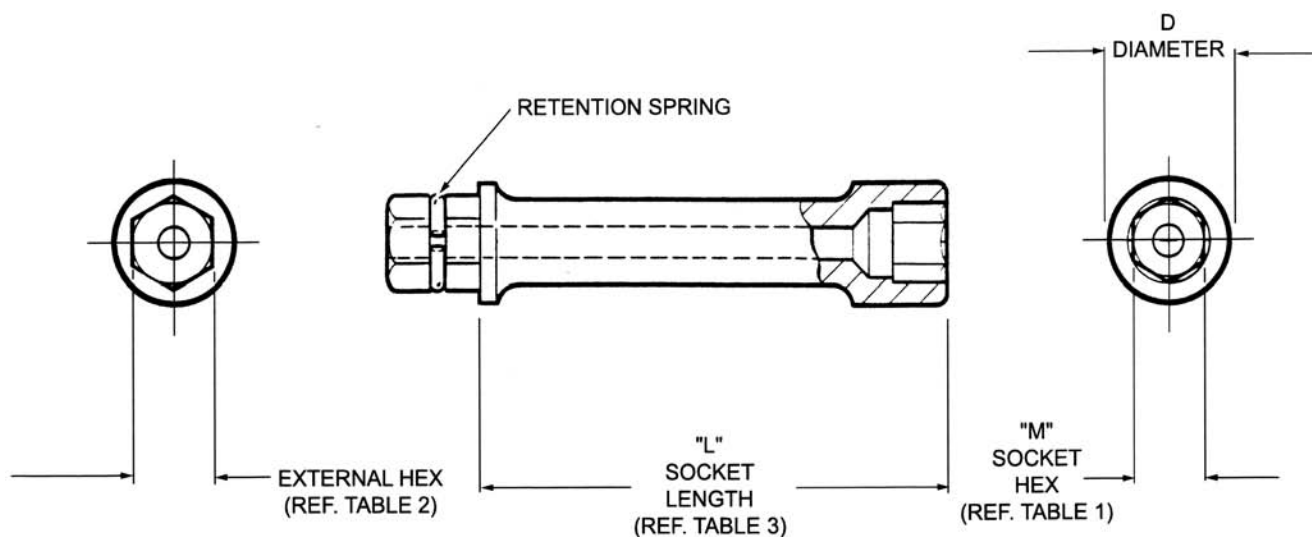
### Part No. Example:

**HLA7020-625-(X)-156**

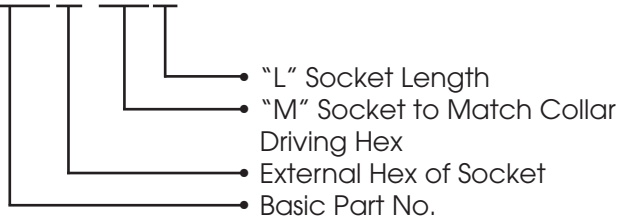
- "G" Wrench Tip Hex
- Extended Socket Length  
X = 4", Z = 7"
- "M" Socket Hex
- Driver Basic Part Number

TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	2.70
Max Torque Rating (Motor)	185 ft. lb. @ 90 PSIA	Air Consumption	55 SCFM
Motor Speed	75 RPM	Weight	15 lb.

"M" Socket Driving Hex (Matches Socket Hex)	"G" Wrench Recess Hex (Matches Super-Key Hex)	Complete Tool Assembly Part No.	Ratchet Wrench Attachment Assembly Part No. (Ref.)	Extended Socket Part No.	Attachment Sub-Assembly Part No. (Ref.)
1/2"	5/32"	HLA7020-500X-156	HLR720-500X-156	HLB345-500X	HLB129-500X-156
5/8"		HLA7020-625X-156	HLR720-625X-156	HLB345-625X	HLB129-625X-156
9/16"	3/16"	HLA7020-562X-187	HLR720-562X-187	HLB345-562X	HLB129-562X-187
3/4"		HLA7020-750X-187	HLR720-750X-187	HLB345-750X	HLB129-750X-187
11/16"	7/32"	HLA7020-687X-218	HLR720-687X-218	HLB345-687X	HLB129-687X-218
7/8"		HLA7020-875X-218	HLR720-875X-218	HLB345-875X	HLB129-875X-218
7/8"	1/4"	HLA7020-875X-250	HLR720-875X-250	HLB345-875X	HLB129-875X-250
1/2"	5/32"	HLA7020-500Z-156	HLR720-500Z-156	HLB345-500Z	HLB129-500Z-156
3/4"	3/16"	HLA7020-750Z-187	HLR720-750Z-187	HLB345-750Z	HLB129-750Z-187
7/8"	7/32"	HLA7020-875Z-218	HLR720-875Z-218	HLB345-875Z	HLB129-875Z-218
7/8"	1/4"	HLA7020-875Z-250	HLR720-875Z-250	HLB345-875Z	HLB129-875Z-250
1"		HLA7020-1000Z-250	HLR720-1000Z-250	HLB345-1000Z	HLB129-1000Z-250
1-1/8"	5/16"	HLA7020-1125Z-312	HLR720-1125Z-312	HLB345-1125Z	HLB129-1125Z-312

**HLS25****Extended Socket Assembly  
for Use with HLA Thru-Hex Ratchet Wrenches****Ordering Information**

- Determine collar driving hex of the fasteners to be installed.
- See table for "M" Socket hex to match collar driving hex dimension.
- Determine the thru-hex size of the HLA ratchet wrench being used.
- See table for a socket external hex code to match the HLA ratchet thru-hex dimension.
- See table for proper code letter representing desired "L" extended socket length.
- See example of Complete Socket Assembly Part No.
- This extended socket is for installing HST/HL/HLT Collars on interference fit or non-interference fit HST/HL/HLT pins.

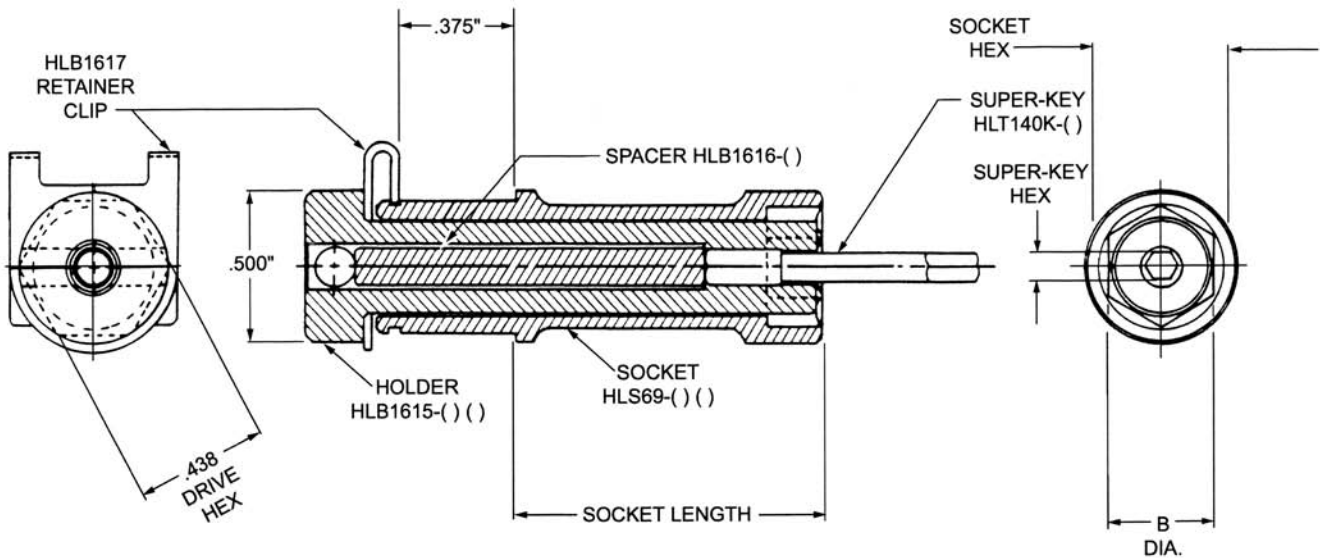
**Part No. Example:****HLS25M-218G**

"M" Socket Hex	Complete Socket Assy. Part No.	D Diameter
7/32"	HLS25()-218()	0.438
1/4"	HLS25()-250()	
5/16"	HLS25()-312()	0.500
11/32"	HLS25P-343()	
3/8"	HLS25P-375()	
7/16"	HLS25P-437()	

Code	Socket Ext. Hex	Code	"L" Ext. Socket Length
M	11/32"	B	1.00
P	7/16"	G	1.25
		F	1.75

# HLS30

## Multi Length Socket Assembly with Super-Key™ (T-Series)

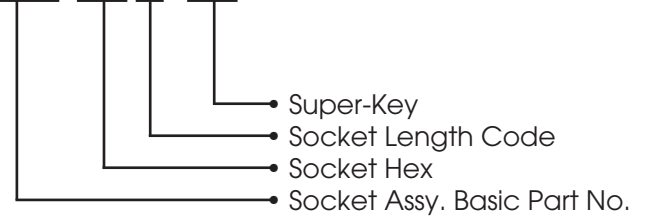


### Ordering Information

- Match pin and collar hexes with Super-Key hex & Socket Hex.
- See table for corresponding complete socket assembly part number.

### Part No. Example:

**HLS30-312(B)-078**

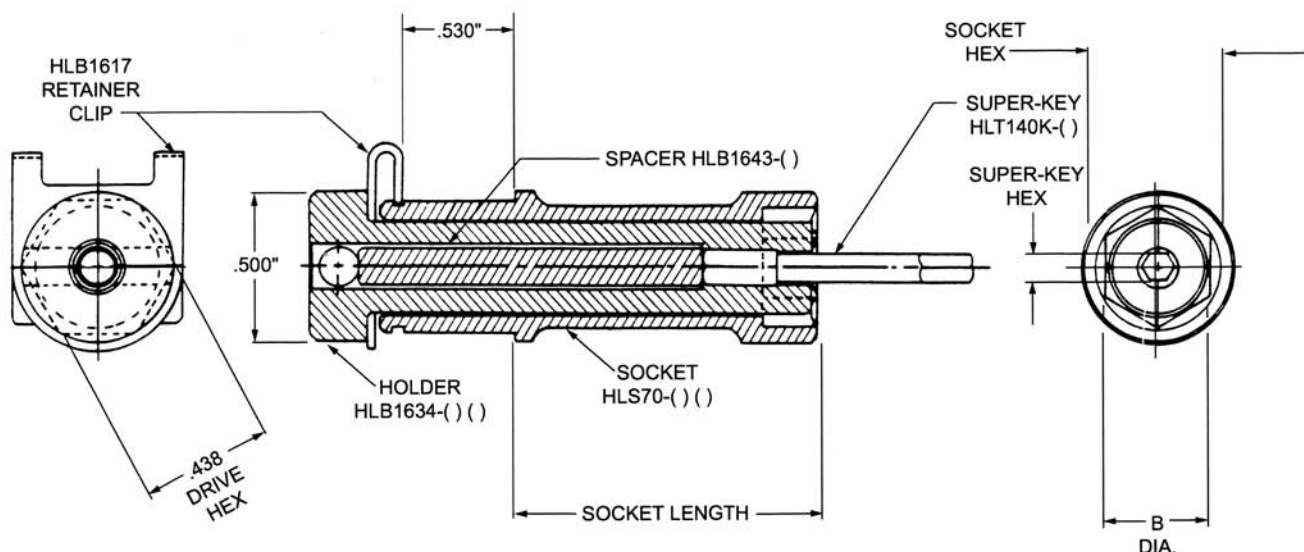


Socket Length
B=1.00
C=1.50
D=2.00

Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Socket Assy. Part No.	Socket Part No.	Super-Key Holder Part No.	Super-Key Part No.	Super-Key Spacer Part No.	B Diameter
7/32"	1/16"	HLS30-218(-)-062	HLS69-218(-)	HLB1615-218(-)	HLT140K-062	HLB1616(-)	.356
1/4"		HLS30-250(-)-062	HLS69-250(-)	HLB1615-250(-)			.397
9/32"		HLS30-281(-)-062	HLS69-281(-)	HLB1615-281(-)			.438
5/16"		HLS30-312(-)-062	HLS69-312(-)	HLB1615-312(-)			.460
11/32"	5/64"	HLS30-218(-)-062	HLS69-218(-)	HLB1615-218(-)	HLT140K-078	HLB1616(-)	.500
1/4"		HLS30-250(-)-078	HLS69-250(-)	HLB1615-250(-)			.397
9/32"		HLS30-281(-)-078	HLS69-281(-)	HLB1615-281(-)			.438
5/16"		HLS30-312(-)-078	HLS69-312(-)	HLB1615-312(-)			.460
11/32"		HLS30-343(-)-078	HLS69-343(-)	HLB1615-343(-)			.500
3/8"		HLS30-375(-)-078	HLS69-375(-)	HLB1615-375(-)			.562
5/16"	3/32"	HLS30-312(-)-094	HLS69-312(-)	HLB1615-312(-)	HLT140K-094	HLB1616(-)	.460
11/32"		HLS30-343(-)-094	HLS69-343(-)	HLB1615-343(-)			.500
3/8"		HLS30-375(-)-094	HLS69-375(-)	HLB1615-375(-)			.562
7/16"		HLS30-437(-)-094	HLS69-437(-)	HLB1615-437(-)			.600

## Super HLS31

### Multi Length Socket Assembly with Super-Key™ (T-Series)

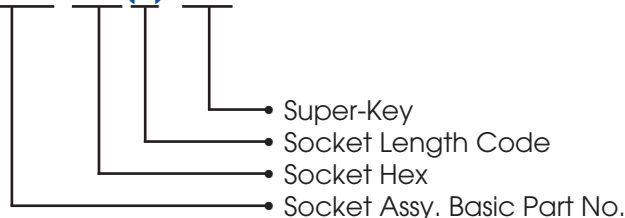


#### Ordering Information

- Match pin and collar hexes with Super-Key Hex & Socket Hex.
- See table for corresponding complete socket assembly part number.

#### Part No. Example:

**HLS31-312(B)-078**

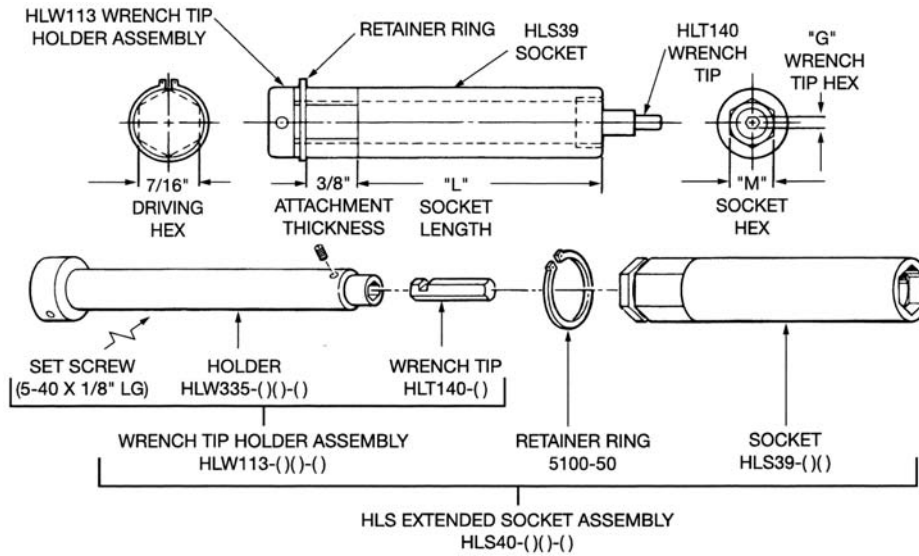


Socket Length
B=1.00
C=1.50
D=2.00

Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Socket Assy. Part No.	Socket Part No.	Super-Key Holder Part No.	Super-Key Part No.	Super-Key Spacer Part No.	B Diameter		
7/32"	1/16"	HLS31-218(-)062	HLS70-218()	HLB1634-218()	HLT140K-062	HLB1616(-)	.356		
1/4"		HLS31-250(-)062	HLS70-250()	HLB1634-250()			.397		
9/32"		HLS31-281(-)062	HLS70-281()	HLB1634-281()			.438		
5/16"		HLS31-312(-)062	HLS70-312()	HLB1634-312()			.460		
11/32"	5/64"	HLS31-218(-)062	HLS70-218()	HLB1634-218()	HLT140K-078		.500		
1/4"		HLS31-250(-)078	HLS70-250()	HLB1634-250()			.397		
9/32"		HLS31-281(-)078	HLS70-281()	HLB1634-281()			.438		
5/16"		HLS31-312(-)078	HLS70-312()	HLB1634-312()			.460		
11/32"		HLS31-343(-)078	HLS70-343()	HLB1634-343()			.500		
3/8"		HLS31-375(-)078	HLS70-375()	HLB1634-375()			.562		
5/16"		3/32"	HLS31-312(-)094	HLS70-312()			HLB1634-312()	HLT140K-094	.460
11/32"			HLS31-343(-)094	HLS70-343()			HLB1634-343()		.500
3/8"	HLS31-375(-)094		HLS70-375()	HLB1634-375()	.562				
7/16"	HLS31-437(-)094		HLS70-437()	HLB1634-437()	.600				

# HLS40

## Extended Socket Assembly



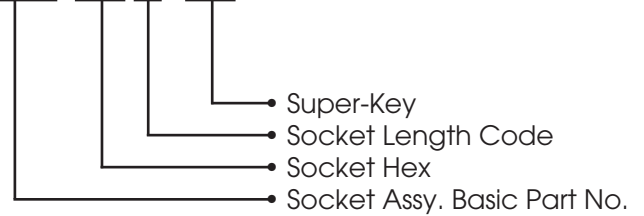
### Ordering Information

- Match pin and collar hexes with Super-Key Hex & Socket Hex. Match Diagram.
- See table for corresponding complete socket assembly part number.

Socket Length
E=0.75
D=2.00
X=4.00

### Part No. Example:

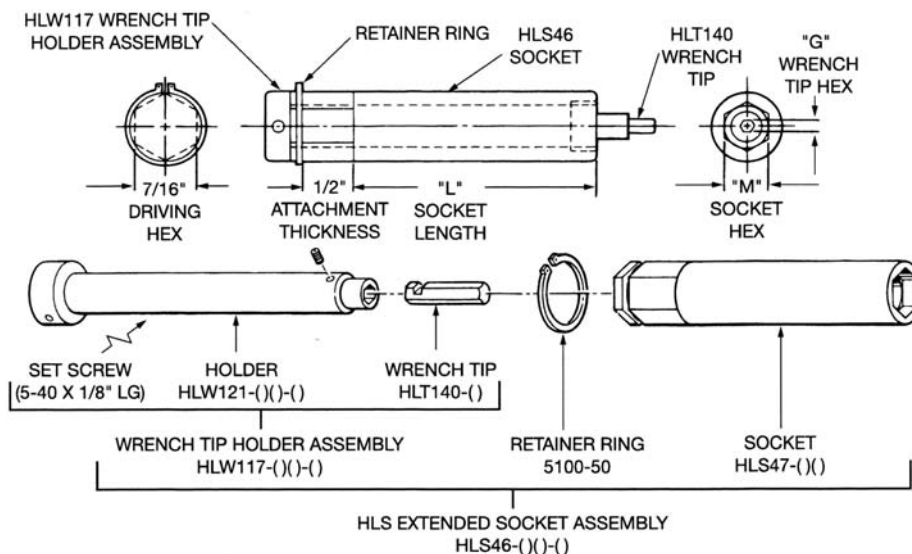
**HLS40-312(B)-078**



"M" Socket Hex (Matches Collar Driving Hex)	"G" Wrench Tip Hex (Matches Super-Key Hex)	Complete Extended Socket Assy. Part No.	Holder Assy. Part No.	Holder Part No.	Wrench Tip Part No.	Socket Part No.
3/16"		HLS40-187(-)-062	HLW113-187(-)-062	HLW335-187(-)-062	HLT140-062	HLS39-187(-)
7/32"		HLS40-218(-)-062	HLW113-218(-)-062	HLW335-218(-)-062	HLT140-062	HLS39-218(-)
1/4"		HLS40-250(-)-062	HLW113-250(-)-062	HLW335-250(-)-062	HLT140-062	HLS39-250(-)
9/32"	1/16"	HLS40-281(-)-062	HLW113-281(-)-062	HLW335-281(-)-062	HLT140-062	HLS39-281(-)
5/16"		HLS40-312(-)-062	HLW113-312(-)-062	HLW335-312(-)-062	HLT140-062	HLS39-312(-)
11/32"		HLS40-343(-)-062	HLW113-343(-)-062	HLW335-343(-)-062	HLT140-062	HLS39-343(-)
7/32"		HLS40-218(-)-078	HLW113-218(-)-078	HLW335-218(-)-078	HLT140-078	HLS39-218(-)
1/4"		HLS40-250(-)-078	HLW113-250(-)-078	HLW335-250(-)-078	HLT140-078	HLS39-250(-)
9/32"		HLS40-281(-)-078	HLW113-281(-)-078	HLW335-281(-)-078	HLT140-078	HLS39-281(-)
5/16"	5/64"	HLS40-312(-)-078	HLW113-312(-)-078	HLW335-312(-)-078	HLT140-078	HLS39-312(-)
11/32"		HLS40-343(-)-078	HLW113-343(-)-078	HLW335-343(-)-078	HLT140-078	HLS39-343(-)
3/8"		HLS40-375(-)-078	HLW113-375(-)-078	HLW335-375(-)-078	HLT140-078	HLS39-375(-)
5/16"		HLS40-312(-)-094	HLW113-312(-)-094	HLW335-312(-)-094	HLT140-094	HLS39-312(-)
11/32"		HLS40-343(-)-094	HLW113-343(-)-094	HLW335-343(-)-094	HLT140-094	HLS39-343(-)
3/8"	3/32"	HLS40-375(-)-094	HLW113-375(-)-094	HLW335-375(-)-094	HLT140-094	HLS39-375(-)
7/16"		HLS40-437(-)-094	HLW113-437(-)-094	HLW335-437(-)-094	HLT140-094	HLS39-437(-)
1/2"		HLS40-500(-)-094	HLW113-500(-)-094	HLW335-500(-)-094	HLT140-094	HLS39-500(-)
3/8"		HLS40-375(-)-125	HLW113-375(-)-125	HLW335-375(-)-125	HLT140-125	HLS39-375(-)
7/16"	1/8"	HLS40-437(-)-125	HLW113-437(-)-125	HLW335-437(-)-125	HLT140-125	HLS39-437(-)
1/2"		HLS40-500(-)-125	HLW113-500(-)-125	HLW335-500(-)-125	HLT140-125	HLS39-500(-)

# HLS46

## Multi-Length Extended Socket Assembly

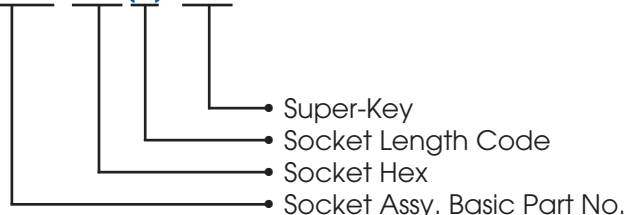


### Ordering Information

- Match pin and collar hexes with Super-Key Hex & Socket Hex. Match Diagram.
- See table for corresponding complete socket assembly part number.

### Part No. Example:

**HLS46-312(B)-078**



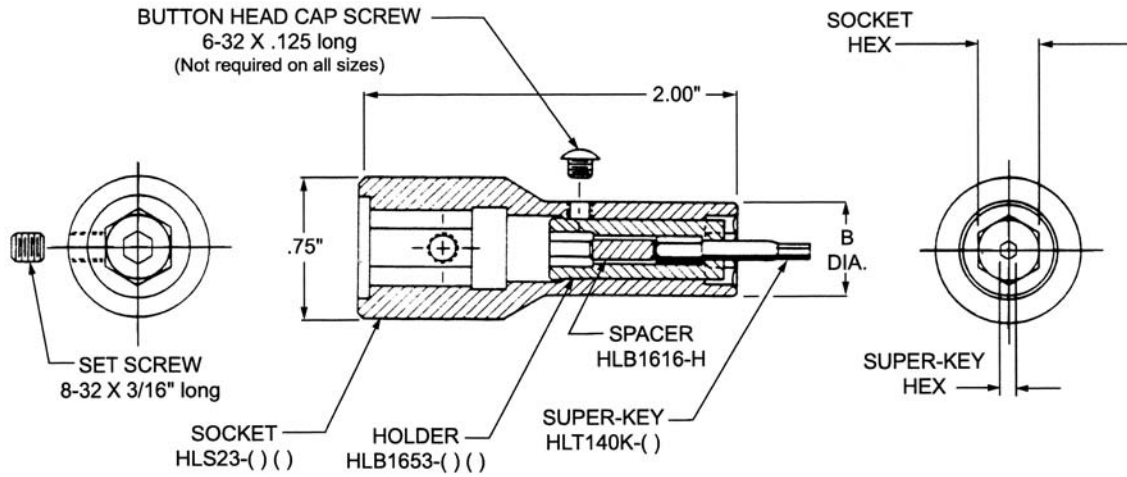
Socket Length	
E=0.75	B=1.00
D=2.00	A=0.50
X=4.00	F=1.75

"M" Socket Hex (Matches Collar Driving Hex)	"G" Wrench Tip Hex (Matches Super-Key Hex)	Complete Extended Socket Assy. Part No.	Holder Assy. Part No.	Holder Part No.	Wrench Tip Part No.	Socket Part No.
3/16"		HLS46-187(-)-062	HLW117-187(-)-062	HLW121-187(-)-062	HLT140-062	HLS47-187(-)
7/32"		HLS46-218(-)-062	HLW117-218(-)-062	HLW121-218(-)-062	HLT140-062	HLS47-218(-)
1/4"		HLS46-250(-)-062	HLW117-250(-)-062	HLW121-250(-)-062	HLT140-062	HLS47-250(-)
9/32"	1/16"	HLS46-281(-)-062	HLW117-281(-)-062	HLW121-281(-)-062	HLT140-062	HLS47-281(-)
5/16"		HLS46-312(-)-062	HLW117-312(-)-062	HLW121-312(-)-062	HLT140-062	HLS47-312(-)
11/32"		HLS46-343(-)-062	HLW117-343(-)-062	HLW121-343(-)-062	HLT140-062	HLS47-343(-)
7/32"		HLS46-218(-)-078	HLW117-218(-)-078	HLW121-218(-)-078	HLT140-078	HLS47-218(-)
1/4"		HLS46-250(-)-078	HLW117-250(-)-078	HLW121-250(-)-078	HLT140-078	HLS47-250(-)
9/32"		HLS46-281(-)-078	HLW117-281(-)-078	HLW121-281(-)-078	HLT140-078	HLS47-281(-)
5/16"	5/64"	HLS46-312(-)-078	HLW117-312(-)-078	HLW121-312(-)-078	HLT140-078	HLS47-312(-)
11/32"		HLS46-343(-)-078	HLW117-343(-)-078	HLW121-343(-)-078	HLT140-078	HLS47-343(-)
3/8"		HLS46-375(-)-078	HLW117-375(-)-078	HLW121-375(-)-078	HLT140-078	HLS47-375(-)
5/16"		HLS46-312(-)-094	HLW117-312(-)-094	HLW121-312(-)-094	HLT140-094	HLS47-312(-)
11/32"		HLS46-343(-)-094	HLW117-343(-)-094	HLW121-343(-)-094	HLT140-094	HLS47-343(-)
3/8"	3/32"	HLS46-375(-)-094	HLW117-375(-)-094	HLW121-375(-)-094	HLT140-094	HLS47-375(-)
7/16"		HLS46-437(-)-094	HLW117-437(-)-094	HLW121-437(-)-094	HLT140-094	HLS47-437(-)
1/2"		HLS46-500(-)-094	HLW117-500(-)-094	HLW121-500(-)-094	HLT140-094	HLS47-500(-)
3/8"		HLS46-375(-)-125	HLW117-375(-)-125	HLW121-375(-)-125	HLT140-125	HLS47-375(-)
7/16"	1/8"	HLS46-437(-)-125	HLW117-437(-)-125	HLW121-437(-)-125	HLT140-125	HLS47-437(-)
1/2"		HLS46-500(-)-125	HLW117-500(-)-125	HLW121-500(-)-125	HLT140-125	HLS47-500(-)



## Super HLS79

### 2" Extended Socket Assembly with Super-Key™ (T-Series)

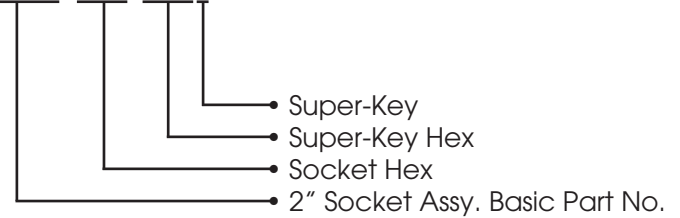


#### Ordering Information

- Match pin and collar hexes with Super-Key Hex & Socket Hex. Match Diagram.
- See table for corresponding complete socket assembly part number.

#### Part No. Example:

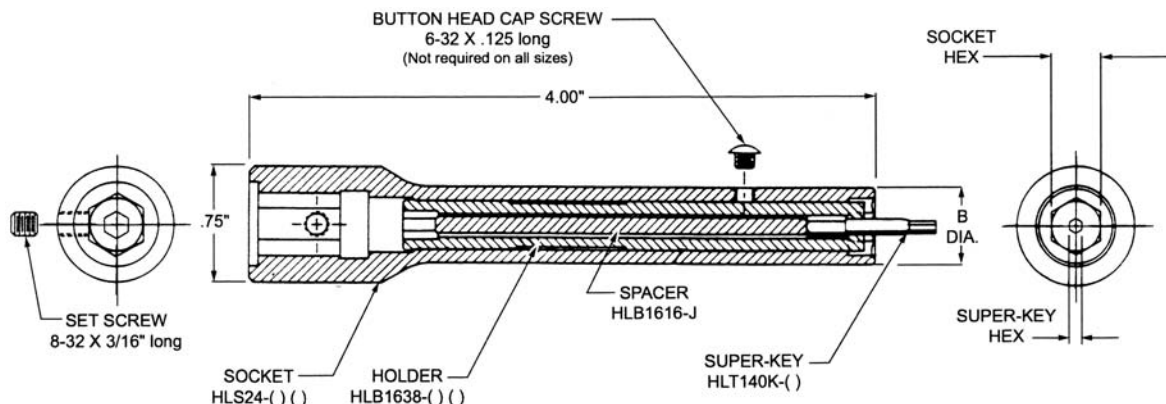
**HLS79-312-078T**



Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Socket Assy. Part No.	Socket Part No.	Super-Key Holder Part No.	Super-Key Part No.	Super-Key Spacer Part No.	B Diameter	
7/32"	1/16"	HLS79-218-062T	HLS23-218	HLB1653-218	HLT140K-062	HLB1616-H	.375	
1/4"		HLS79-250-062T	HLS23-250	HLB1653-250			.468	
9/32"		HLS79-281-062T	HLS23-281	HLB1653-281			.468	
5/16"		HLS79-312-062T	HLS23-312	HLB1653-312			.500	
11/32"	5/64"	HLS79-343-062T	HLS23-343	HLB1653-343	HLT140K-078		.500	
7/32"		HLS79-218-078T	HLS23-218	HLB1653-218			.375	
1/4"		HLS79-250-078T	HLS23-250	HLB1653-250			.468	
9/32"		HLS79-281-078T	HLS23-281	HLB1653-281			.468	
5/16"		HLS79-312-078T	HLS23-312	HLB1653-312			.500	
11/32"		HLS79-343-078T	HLS23-343	HLB1653-343			.500	
3/8"	3/32"	HLS79-375-078T	HLS23-375	HLB1653-375	HLT140K-094		.547	
5/16"		HLS79-312-094T	HLS23-312	HLB1653-312			.500	
11/32"		HLS79-343-094T	HLS23-343	HLB1653-343		.500		
3/8"		HLS79-375-094T	HLS23-375	HLB1653-375		.547		
7/16"		HLS79-437-094T	HLS23-437	HLB1653-437		.625		
3/8"		1/8"	N/A	N/A		N/A	HLT140K-125	.547
7/16"			N/A	N/A		N/A		.625
1/2"			N/A	N/A		N/A		.705
9/16"	N/A		N/A	N/A	.780			
7/16"	5/32"	N/A	N/A	N/A	HLT140K-156	.625		
1/2"		N/A	N/A	N/A		.705		

## Super HLS80

### 4" Extended Socket Assembly with Super-Key™ (T-Series)

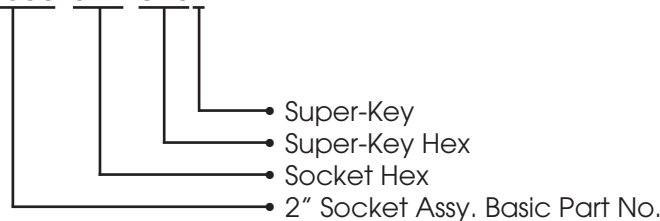


#### Ordering Information

- Match pin and collar hexes with Super-Key Hex & Socket Hex. Match Diagram.
- See table for corresponding complete socket assembly part number.

#### Part No. Example:

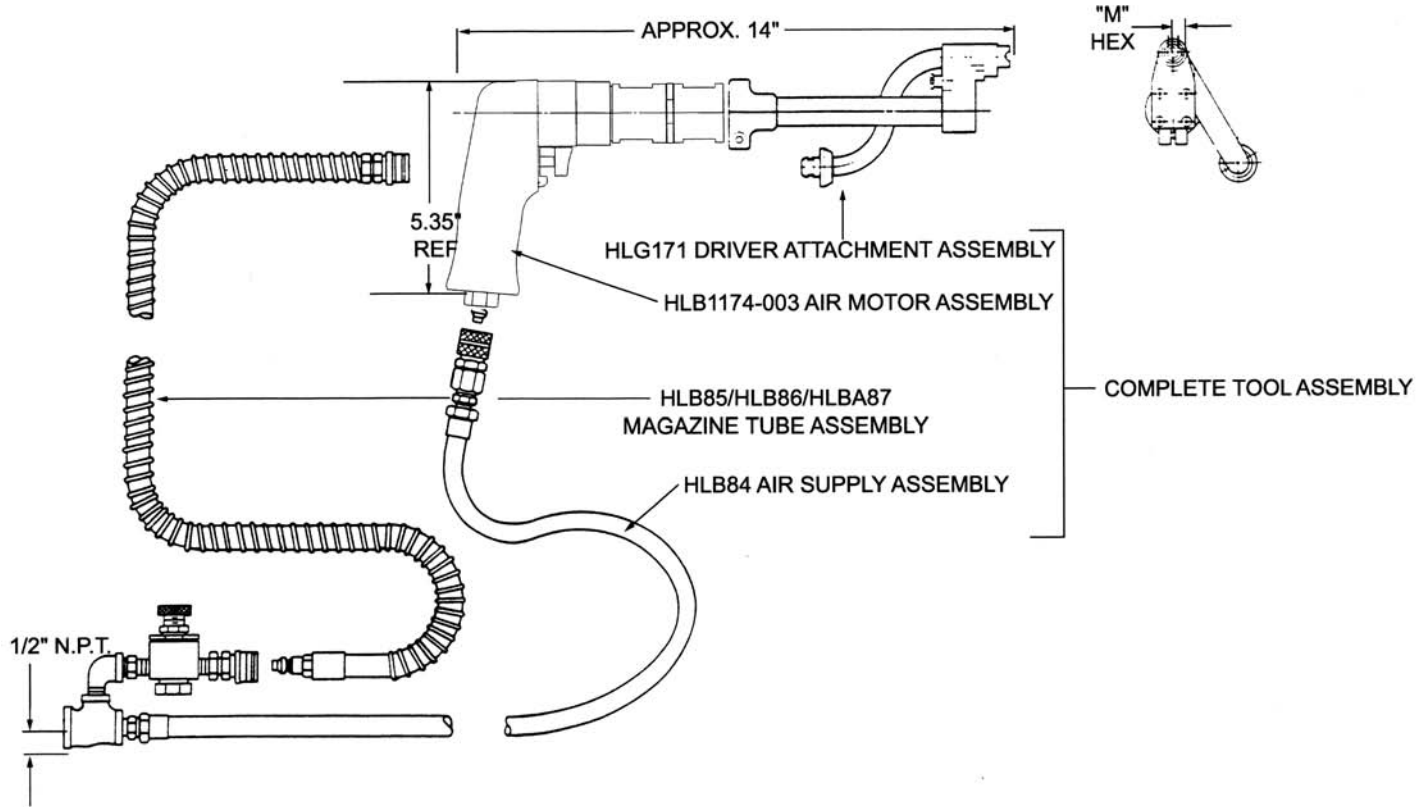
**HLS80-312-078T**



Collar Driving Hex (Matches Socket Hex)	Pin Recess Hex (Matches Super-Key Hex)	Complete Socket Assy. Part No.	Socket Part No.	Super-Key Holder Part No.	Super-Key Part No.	Super-Key Spacer Part No.	B Diameter
7/32"	1/16"	HLS80-218-062T	HLS24-218	HLB1638-218	HLT140K-062		.375
1/4"		HLS80-250-062T	HLS24-250	HLB1638-250			.468
9/32"		HLS80-281-062T	HLS24-281	HLB1638-281			.468
5/16"		HLS80-312-062T	HLS24-312	HLB1638-312			.500
11/32"		HLS80-343-062T	HLS24-343	HLB1638-343			.500
7/32"	5/64"	HLS80-218-078T	HLS24-218	HLB1638-218	HLT140K-078	HLB1616-J	.375
1/4"		HLS80-250-078T	HLS24-250	HLB1638-250			.468
9/32"		HLS80-281-078T	HLS24-281	HLB1638-281			.468
5/16"		HLS80-312-078T	HLS24-312	HLB1638-312			.500
11/32"		HLS80-343-078T	HLS24-343	HLB1638-343			.500
3/8"		HLS80-375-078T	HLS24-375	HLB1638-375			.547
5/16"	3/32"	HLS80-312-094T	HLS24-312	HLB1638-312	HLT140K-094		.500
11/32"		HLS80-343-094T	HLS24-343	HLB1638-343			.500
3/8"		HLS80-375-094T	HLS24-375	HLB1638-375			.547
7/16"		HLS80-437-094T	HLS24-437	HLB1638-437			.625
3/8"	1/8"				HLT140K-125		.547
7/16"		N/A	N/A	N/A			.625
1/2"							.705
9/16"							.780
7/16"	5/32"				HLT140K-156		.625
1/2"		N/A	N/A	N/A			.705

# HLA 1007

## Automatic Feed Driver Assembly 1 Inch Offset



**FASTENER INSTALLATION & REMOVAL - AUTO FEED**

### Ordering Information

- Determine collar driving hex of the fasteners to be installed.
- See table for "M" socket hex to match collar driving hex dimensions. Determine complete tool assembly part number.

Part No. Example:

**HLH1007-312**

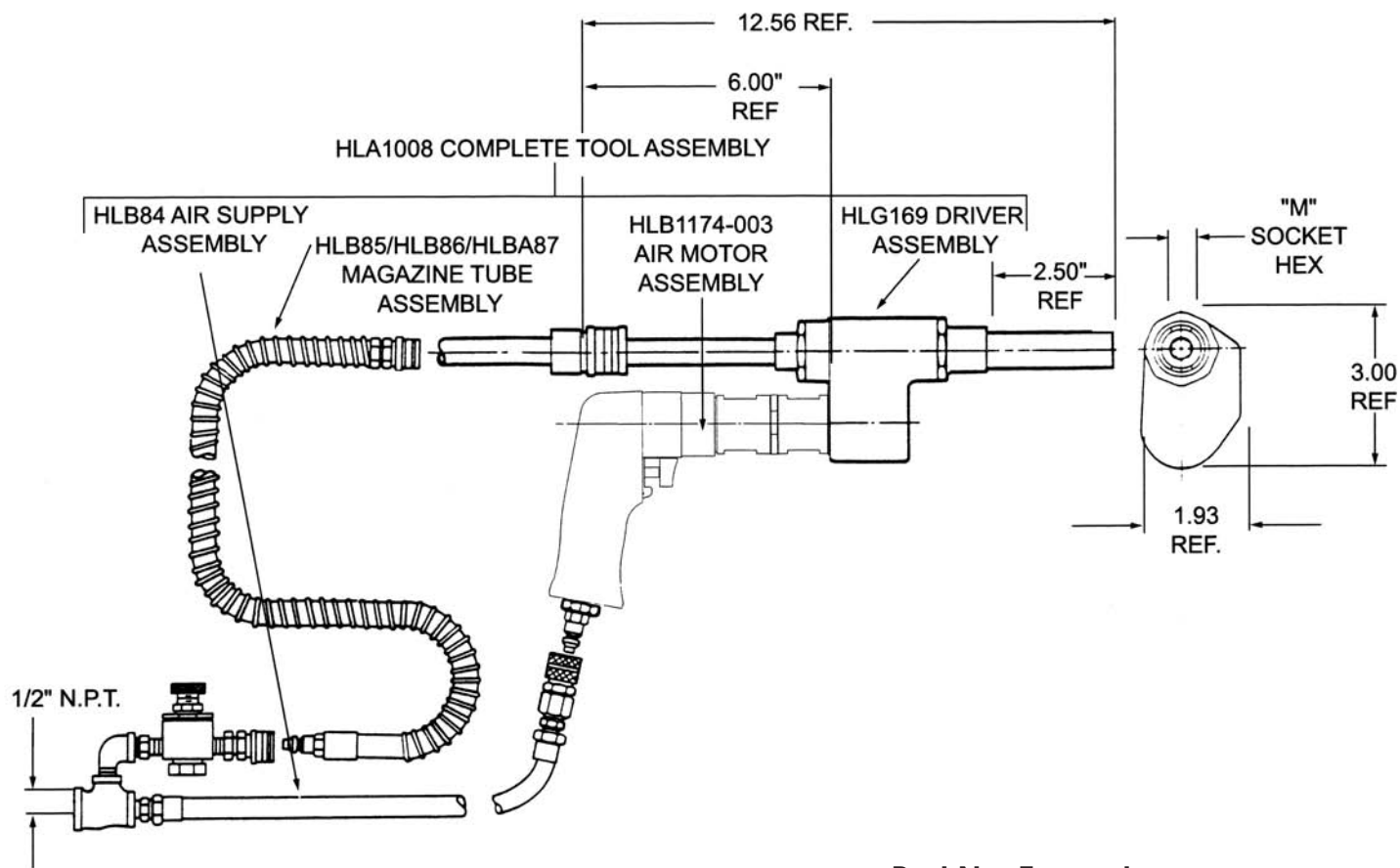


TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.75
Max Torque Rating (Motor)	270 in. lb. @ 90 PSIA	Air Consumption	25 CFM
Socket Speed	600 RPM	Weight	3 lb.

"M" Socket Hex (Matches Collar Driving Hex)	Complete Tool Assembly Part No.	Ratchet Wrench Attachment Assembly Part No.
5/16"	HLA1007-312	HLG171-312
11/32"	HLA1007-343	HLG171-343
7/16"	HLA1007-437	HLG171-437

# HLA 1008

## Automatic Feed Driver Assembly



### Ordering Information

- Determine collar driving hex of the fasteners to be installed.
- See table for "M" socket hex to match collar driving hex dimensions. Determine complete tool assembly part number.

Part No. Example:

**HLH1008-312**



### TECHNICAL DATA

Operating Pressure	90 PSIA	Horsepower Rating	0.75
Max Torque Rating (Motor)	270 in. lb. @ 90 PSIA	Air Consumption	25 CFM
Socket Speed	600 RPM	Weight	3 lb.

"M" Socket Hex (Matches Collar Driving Hex)	Complete Tool Assembly Part No.	Ratchet Wrench Attachment Assembly Part No.
5/16"	HLA1008-312	HLG171-312
11/32"	HLA1008-343	HLG171-343
7/16"	HLA1008-437	HLG171-437

## Driving Tools

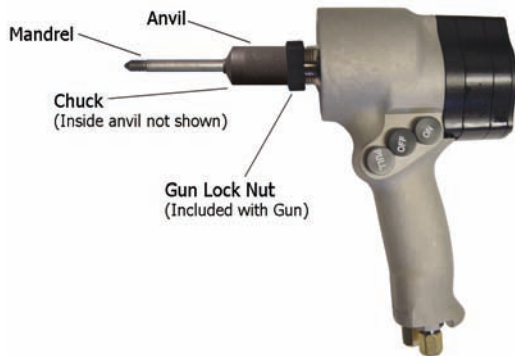
A set of Driving Tools made from hardened tool steels will adapt the Guns to individual diameter Blind Nut or Blind Bolt sleeve head configurations and required grip ranges. A set of Driving Tools includes an Anvil, Chuck and Mandrel to install a Sleeve and Expander.

Standard Length driving tools are available for normally accessible installations. Extended length driving tools provide for a longer reach up to 1-7/8" into channels or to overcome adjacent obstructions. Offset driving tools extend in a slight curve up to 10" or more to reach into tightly congested areas.

Blind Bolt Core Bolt Drivers fitted to both hand and power drivers accommodate the Phillips, Frearson, Torq-Set and Hi-Torque recesses used on various Core Bolts.

By utilizing specified Anvils, Chucks and Mandrels, BG Series Guns can drive Blind Nuts, Blind Bolts and other blind fasteners from Hi-Shear. These fasteners include Hi-Kor, Blind-Sert, Blind Press Nuts. Consult specific tooling standards pages for these products to determine range of sizes and tooling requirements for particular guns and fasteners.

### Standard Driving Tools

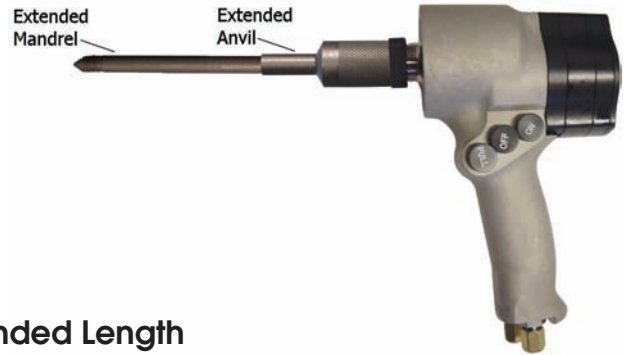


### Standard Length

Used for normal installation of Blind Nuts or Blind Bolts. Each Gun requires a matching size Anvil, Chuck and Mandrels for various grip lengths. It can be used with either Gun.

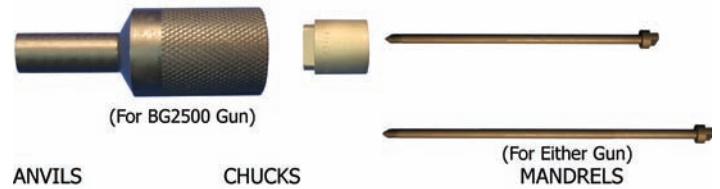


### Extended Driving Tools



### Extended Length

Used to install Blind Nuts or Blind Bolts in deep channel type areas up to 1-7/8". Each Gun requires a matching size Anvil, Chuck and Mandrels for various grip lengths. It can be used with either Gun.



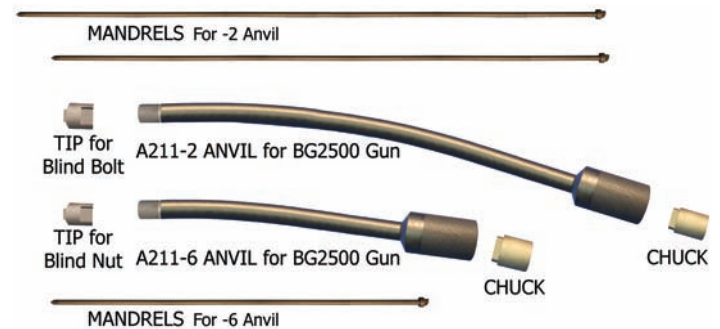
### Offset Driving Tools



Offset driving tools for BG2500 Gun can be fitted to BG1750 Gun as shown by means of AA1 Anvil Adaptor.

### Offset

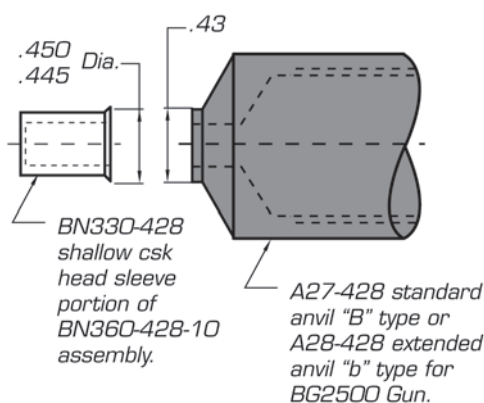
Used in hard-to-reach areas up to 10". Tools are designed for use with BG2500 Gun.



## Blind Nut Ordering Example:

To order Driving Tools (Anvil, Chuck and Mandrel) for a BG2500 Gun to install a BN-360-428-10 Blind Nut (for a 1/4-28 bolt, 10/16 or 5/8 grip length) into a material thickness of 5/8", the Selection Chart indicates "B" type tooling. Turn to the driving tool ordering pages and select one of each of the standard or extended tooling as follows:

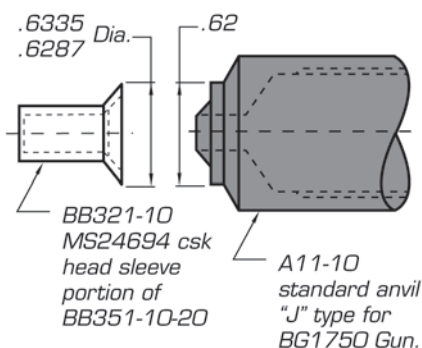
A27-428	Anvil (B Type, Standard)
C2-12	Chuck
M1-12	Mandrel (1/2" to 1" Grip)
OR	
A28-428	Anvil (B Type, Extended)
C2-12	Chuck
M3-12	Mandrel (1/2" to 1" Grip)



## Blind Bolt Ordering Example:

• To order Driving Tools (Anvil, Chuck, Mandrel) for a BG1750 Gun and the Core Bolt Driver to install a BB351-10-20 (10/32 or 5/16 sleeve diameter, 20/16 or 1-1/4 grip length) into a material thickness of 1-1/4", the Selection Chart indicates "J" type tooling. Turn to the tooling ordering page and select one each of the standard or extended length tooling as follows:

A11-10	Anvil (J Type, Standard)
C1-10	Chuck
M2-10	Mandrel (1/2" to 1" Grip)
HTS3	Core Bolt Driver (Hi-Torque)
OR	
A12-10	Anvil (J Type, Extended)
C1-10	Chuck
M4-10	Mandrel (1/2" to 1" Grip)
HTS3	Core Bolt Driver (Hi-Torque)



## Blind Bolt Core Bolt Drivers

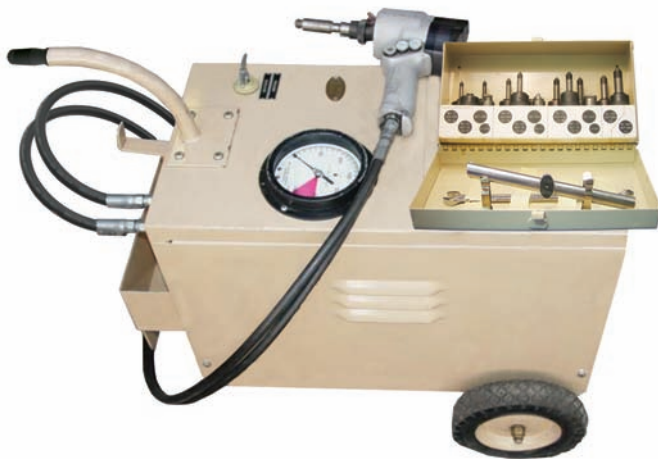
Blind Bolt First Dash No.	Core Bolt Recess Type	Insert Drivers 1/4 Hex Insert Bit Part Number	1 Piece Drivers		2 Piece Drivers			
			HTS Series		HTA Series		HT3000M Series	
			Square Drive Socket	Part No.	Square Drive Socket	Part No.	Square Drive Socket	Part No.
-5	Phillips #1	440-1P						
	Frearson	440-F1						
-6	Phillips #1	440-1P						
	Frearson	440-F1						
-8	Phillips #2	440-2P						
	Frearson	440-F1						
-10	Hi-Torque #3		1/4	HTS3	1/4	HTA3	1/4	HT3203M
-12	Hi-Torque #4		3/8	HTS4	3/8	HTA4	3/8	HT3204M
-14	Hi-Torque #5		3/8	HTS5	3/8	HTA5	3/8	HT3206M
-16	Hi-Torque #6		3/8	HTS6	3/8	HTA6	3/8	HT3306M
							1/2	HT3406M

### Blind Bolt Core Bolt Driver



These drivers are used with standard socket wrenches or torque wrenches to install core bolts into the installed portion (sleeve and expander) of Blind Bolts.

## BK Series Driving Tool Kits



To simplify ordering, use, and safe storage of driving tools used to install Blind Nuts and Blind Bolts, the BK series Driving Tool Kits are available. The tools are conveniently contained in metal boxes suitable for mounting on the BP7000 Power Units. They contain a selection of the necessary tools for either the BG2500 Gun to install small or large diameter Blind Bolts or Blind Nuts or combinations thereof. As required, the Tool Kits will contain Anvils, Chucks, Mandrels, Core Bolt Drivers, Open End Wrench and Screwdrivers plus spare Chucks, Mandrels and Core Bolt Drivers.

### BK3 Tool Kit - Blind Bolts

- For use with BG2500-2225 Gun. Kit does not include Gun.
- "J" type Driving Tools for Blind Bolts:  
-5 (5/32) through -10 (5/16), 100° csk MS24694. (AN509) head and protruding head styles.
- 0-1" grip length.

BK3 Tool Kit			
Size of Blind Nut to be Driven	Tool Part No.	Tool	Qty.
-5	A11-5	Anvil	1
-6	A11-6	Anvil	1
-8	A11-8	Anvil	1
-10	A11-10	Anvil	1
-5	C1-5	Chuck	2
-6	C1-6	Chuck	2
-8	C1-8	Chuck	1
-10	C1-10	Chuck	1
-5	M1-5	Mandrel	4
-6	M1-6	Mandrel	3
-8	M1-8	Mandrel	2
-10	M1-10	Mandrel	1
-5	440-1P	Core Bolt Driver Phillips # 1	4
-6	440-1F	Core Bolt Driver Frearson	4
-8	440-2P	Core Bolt Driver Phillips # 2	2
-10	HTS3	Core Bolt Driver Hi-Torque	2
	3/8-7/16	Open End Wrench	1
	1/4 Driver	T-Handle	1
		Screwdriver	1



### BK4 Tool Kit - Blind Bolts

- For use with BG2500 Gun. Kit does not include Gun.
- "J" type Driving Tools for Blind bolts:  
-5 through -12 sizes. 100 csk MS24694 (AN509) head and protruding head styles.
- 0-1" grip.

BK4 Tool Kit			
Size of Blind Nut to be Driven	Tool Part No.	Tool	Qty.
-5	A21-5	Anvil	1
-6	A21-6	Anvil	1
-8	A21-8	Anvil	1
-10	A21-10	Anvil	1
-12	A21-12	Anvil	1
-5	C2-5	Chuck	2
-6	C2-6	Chuck	2
-8	C2-8	Chuck	1
-10	C2-10	Chuck	1
-12	C2-12	Chuck	1
-5	M1-5	Mandrel	4
-6	M1-6	Mandrel	3
-8	M1-8	Mandrel	2
-10	M1-10	Mandrel	1
-12	M1-12	Mandrel	1
-5	440-1P	Core Bolt Driver Phillips # 1	4
-6	440-1F	Core Bolt Driver Frearson	1
-8	440-2P	Core Bolt Driver Phillips # 2	2
-10	HTS3	Core Bolt Driver Hi-Torque	2
-12	HTS4A	Core Bolt Driver Hi-Torque	2
	3/8-7/16	Open End Wrench	1
	1/4 Drive	T-Handle	1
	3/8 Drive	T-Handle	1
		Screwdriver	1

**BK6 Tool Kit - Blind Bolts**

- For use with BG2500-2225 Gun. Kit does not include Gun.
- "A" & "B" type Driving Tools for Blind Bolts: 440 through -1032, 100° csk shallow head style.
- 0-1" grip length.

BK6 Tool Kit			
Size of Blind Nut to be Driven	Tool Part No.	Tool	Qty.
-440	A17-440	Anvil	1
-632	A17-632	Anvil	1
-832 (BN359)	A15-832	Anvil	1
-832	A17-832	Anvil	1
-1032	A15-1032	Anvil	1
-1032 (BN359)	A17-1032	Anvil	1
-440	C1-5	Chuck	2
-632	C1-632	Chuck	2
-832	C1-8	Chuck	1
-1032	C1-1032	Chuck	1
-440	M1-5	Mandrel	4
-632	M1-632	Mandrel	3
-832	M1-8	Mandrel	2
-1032	M1-1032	Mandrel	1
	3/8-7/16	Open End Wrench	1

**BK7 Tool Kit - Blind Nuts**

- For use with BG2500 Gun. Kit does not include Gun.
- "A" & "B" type Driving Tools for Blind Nuts: -440 through -428, 100 csk shallow head style.
- 0-1" grip length.

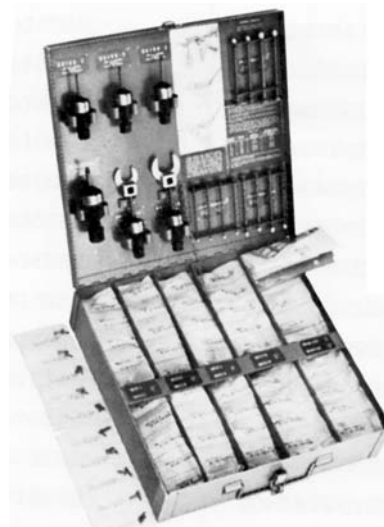


BK7 Tool Kit			
Size of Blind Nut to be Driven	Tool Part No.	Tool	Qty.
-440	A27-440	Anvil	1
-632	A27-632	Anvil	1
-832 (BN359)	A25-832	Anvil	1
-832	A27-832	Anvil	1
-1032 (BN359)	A25-1032	Anvil	1
-1032	A27-1032	Anvil	1
-428 (BN359)	A25-428	Anvil	1
-428	A27-428	Anvil	1
-440	C2-5	Chuck	2
-632	C2-632	Chuck	2
-832	C2-8	Chuck	1
-1032	C2-1032	Chuck	1
-428	C2-12	Chuck	1
-440	M1-5	Mandrel	4
-632	M1-632	Mandrel	3
-832	M1-8	Mandrel	2
-1032	M1-1032	Mandrel	1
-428	M1-12	Mandrel	1
	3/8-7/16	Open End Wrench	1

**BK8 Tool Kit - Blind Bolts & Nuts**

- For use with BG2500 Gun. Kit does not include Gun.
- For driving large size bolts: -12, -14 and -16.
- For driving large size "A" and "B" type Blind Nuts: -428 through -820, 0-1" grip length.

BK5 Tool Kit				
Size of Blind Bolt or Nut to be Driven	Tool Part No.	Tool	Qty.	
-12	A21-12	Anvil	1	
-14	A21-14	Anvil	1	
-16	A21-16	Anvil	1	
-428 (BN359)	A25-428	Anvil	1	
-428	A27-428	Anvil	1	
-524 (359)	A25-524	Anvil	1	
-524	A27-524	Anvil	1	
-624 (BN359)	A25-624	Anvil	1	
-624	A27-624	Anvil	1	
-720	A27-720	Anvil	1	
-820	A27-820	Anvil	1	
-12	-428	C2-12	Chuck	2
-14	-524	C2-14	Chuck	1
-16	-624	C2-16	Chuck	2
	720 & 820	C3	Chuck	2
-12	-428	M1-12	Mandrel	2
-14	-524	M1-14	Mandrel	1
-16	-624	M1-16	Mandrel	2
	-720	M1-720	Mandrel	1
	-820	M1-820	Mandrel	1
-12		HTS4A	Core Bolt Driver Hi-Torque	1
-14		HTS5	Core Bolt Driver Hi-Torque	1
-16		HTS6	Core Bolt Driver Hi-Torque	1
	3/8-7/16		Open End Wrench	1
	3/8 Drive		T-Handle	1

**FK110 Fix Kit (with Hand Tools)**

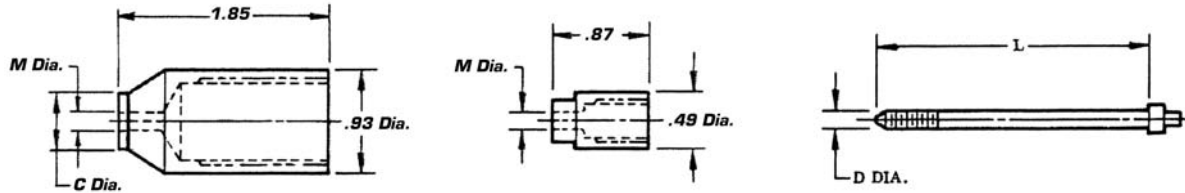
This kit is used in the field to repair or modify aerospace structures where power equipment is not available. The Kit contains packages of five each BB351 and BB352 Blind Bolts (-5 through -10) and BN360 Blind Nuts (-1032 and -428) in varying grip lengths from 1/8 through 1"; six different sized "BH" series Hand Tools and required mandrels plus spares; and one each of AN8506-6 and -10 Crow Foot Wrenches. The metal container size is 14-1/2" long, 14-1/2" wide and 3-3/8" deep. kit weight: 22 lbs.



## Blind Nut "A" Type Driving Tools

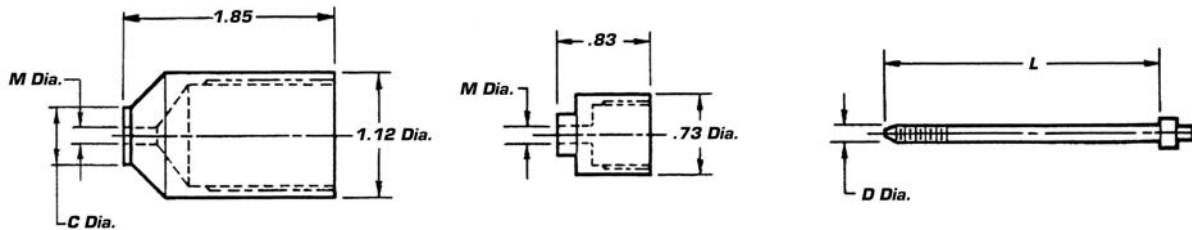
Install these Blind Nut Part Numbers in 100° Countersunk Shear Head  
 Part Numbers: BN359, BN514, BN520GA, BN545G, BN555G, BN359PB, BN520, BN538, BN555.

### "A" Standard Driving Tools (1.85 long Anvil) For Use with BG1750 Gun



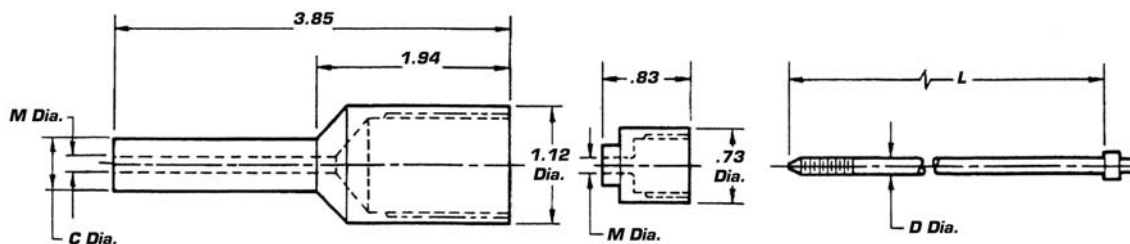
Blind Nut First Dash No.	Anvil ("A" Type)		Chuck		Mandrel												
					Min. Grip-1/2" Blind Nut Grip Range			1/2"-1" Blind Nut Grip Range			1"-2" Blind Nut Grip Range			2"-3" Blind Nut Grip Range			
	Tool No.	C Dia.	M Dia.	Tool No.	M Dia.	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L
-832	A15-832	.38	.166	C1-8	.166	M01-8	.164	2.00	M1-8	.164	2.50	M2-8	.164	3.50			
-1024	A15-1032	.46	.191	C1-1032	.191	M01-1024	.189	2.10	M1-1024	.189	2.60	M2-1024	.189	3.60	M3-1024	.189	4.60
-1032						M01-1032			M1-1032			M2-1032			M3-1032		

### "A" Standard Driving Tools (1.85 long Anvil) For Use with BG2500 Gun



Blind Nut First Dash No.	Anvil ("A" Type)		Chuck		Mandrel												
					Min. Grip-1/2" Blind Nut Grip Range			1/2"-1" Blind Nut Grip Range			1"-2" Blind Nut Grip Range			2"-3" Blind Nut Grip Range			
	Tool No.	C Dia.	M Dia.	Tool No.	M Dia.	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L
-832	A25-832	.38	.166	C2-8	.166	M01-8	.164	2.00	M1-8	.164	2.50	M2-8	.164	3.50			
-1024	A25-1032	.46	.191	C2-1032	.191	M01-1024	.189	2.10	M1-1024	.189	2.60	M2-1024	.189	3.60	M3-1024	.189	4.60
-1032						M01-1032			M1-1032			M2-1032			M3-1032		
-420	A25-428	.54	.250	C2-12	.250	M01-420	.248	2.40	M1-420	.248	2.85	M2-420	.148	3.85	M3-420	.248	4.85
-428						M01-12			M1-12			M2-12			M3-12		
-518	A25-524	.65	.313	C2-14	.313	M01-518	.310	2.50	M1-518	.310	3.00	M2-518	.310	4.00	M3-518	.310	5.00
-524						M01-14			M1-14			M2-14			M3-14		
-616	A25-624	.74	.375	C2-16	.375	M01-616	.373	2.58	M1-616	.373	3.05	M2-616	.373	4.05	M3-616	.373	5.05
-624						M01-16			M1-16			M2-16			M3-16		

**“A” Extended Driving Tools (3.85 long Anvil) For Use with BG1750 Gun**



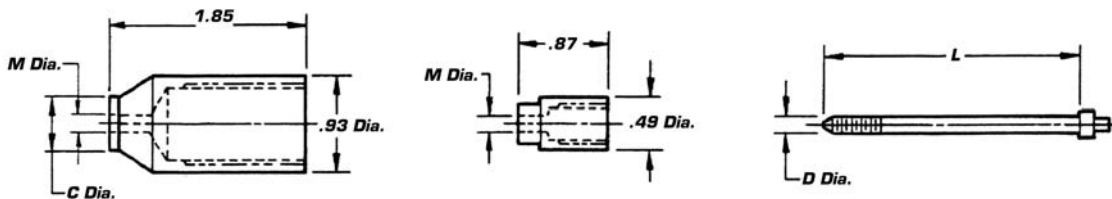
Blind Nut First Dash No.	Anvil ("A" Type)		Chuck		Mandrel												
					Min. Grip-1/2" Blind Nut Grip Range			1/2"-1" Blind Nut Grip Range			1"-2" Blind Nut Grip Range			2"-3" Blind Nut Grip Range			
	Tool No.	C Dia.	M Dia.	Tool No.	M Dia.	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L
-832	A26-832	.38	.166	C2-8	.166	M2.5-8	.164	4.00	M3-8	.164	4.50	M4-8	.164	5.50			
-1024	A26-1032	.46	.191	C2-1032	.191	M2.5-1024	.189	4.10	M3-1024	.189	4.60	M4-1024	.189	5.60	M5-1024	.189	6.60
-1032						M2.5-1032			M3-1032			M4-1032			M5-1032		
-420	A26-428	.54	.250	C2-12	.250	M2.5-420	.248	4.40	M3-420	.248	4.85	M4-420	.248	5.85	M5-420	.248	6.85
-428						M2.5-12			M3-12			M4-12			M5-12		
-518	A26-524	.65	.313	C2-14	.313	M2.5-518	.310	4.50	M3-518	.310	5.00	M4-518	.310	6.00	M5-518	.310	7.00
-524						M2.5-14			M3-14			M4-14			M5-14		
-616	A26-624	.74	.375	C2-16	.375	M2.5-616	.373	4.58	M3-616	.373	5.05	M4-616	.373	6.05	M5-616	.373	7.05
-624						M2.5-16			M3-16			M4-16			M5-16		

**Blind Nut “B” Type Driving Tools**

Install these Blind Nut Part Numbers in 100° Countersunk Shallow

Part Numbers: BN155, BN157, BN158, BN360, BN360PB, BN360.64, BN372, BN372P, BN377, BN388, BN388L, BN389, BN516, BN516PB, BN518, BN521, BN525, BN525GA, BN526, BN526NL, BN527, BN528, BN532, BN535, BN536, BN537, BN537LK, BN543, BN553, BN556, BN556G, BN557, BN561, BN562, BN563, BN564, BN565, BNB1100, BNB1101, BNB1102, BNB1103, BNB1104, BNB1105, BNB1105PB, BNB1106, BNB1107, BNB1108, BNB1109, BNB1110, BNB1111, BNB1112, BNB1113, BTN1, BTN1PB, BTN1G.

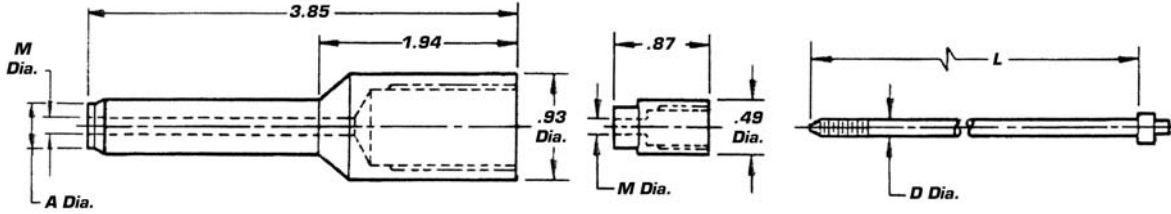
**“B” Standard Driving Tools (1.85 long Anvil) For Use with BG2500 Gun**



Blind Nut First Dash No.	Anvil ("B" Type)		Chuck		Mandrel												
					Min. Grip-1/2" Blind Nut Grip Range			1/2"-1" Blind Nut Grip Range			1"-2" Blind Nut Grip Range			2"-3" Blind Nut Grip Range			
	Tool No.	C Dia.	M Dia.	Tool No.	M Dia.	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L
-440	A17-440	.21	.113	C1-5	.113	M01-5	.111	1.80	M1-5	.111	2.30						
-632	A17-632	.26	.141	C-632	.141	M01-632	.138	1.90	M1-632	.138	2.40						
-832	A17-832	.30	.166	C1-8	.166	M01-8	.164	2.00	M1-8	.164	2.50	M2-8	.164	3.50			
-1024	A17-1032	.35	.191	C1-1032	.191	M01-1024	.189	2.10	M1-1024	.189	2.60	M2-1024	.189	3.60	M3-1024	.189	4.60
-1032						M01-1032			M1-1032			M2-1032			M3-1032		

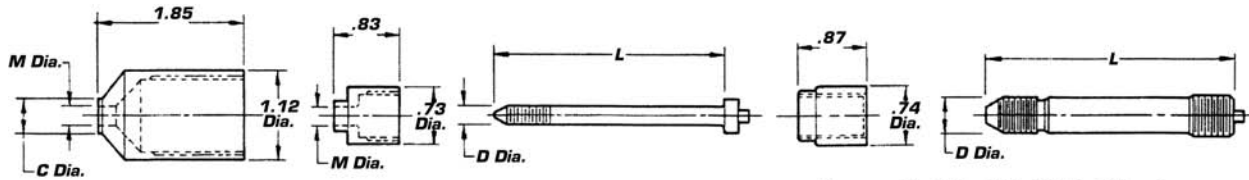
FASTENER INSTALLATION & REMOVAL - BLIND RIVET TOOLS

**“B” Extended Driving Tools (3.85 long Anvil) For Use with BG1750 Gun**



Blind Nut First Dash No.	Anvil (“B” Type)		Chuck		Mandrel												
					Min. Grip-1/2” Blind Nut Grip Range			1/2”-1” Blind Nut Grip Range			1”-2” Blind Nut Grip Range			2”-3” Blind Nut Grip Range			
	Tool No.	A Dia.	M Dia.	Tool No.	M Dia.	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L
-440	A18-440	.21	.113	C1-5	.113	M2.5-5	.111	3.80	M3-5	.111	4.30						
-632	A18-632	.26	.141	C1-632	.141	M2.5-632	.138	3.90	M3-632	.138	4.40						
-832	A18-832	.30	.166	C1-8	.166	M2.5-8	.164	4.00	M3-8	.164	4.50	M4-8	.164	5.50			
-1024	A18-1032	.35	.191	C1-1032	.191	M2.5-1024	.189	4.10	M3-1024	.189	4.60	M4-1024	.189	5.60	M5-1024	.189	6.60
-1032						M2.5-1032			M3-1032			M4-1032			M5-1032		

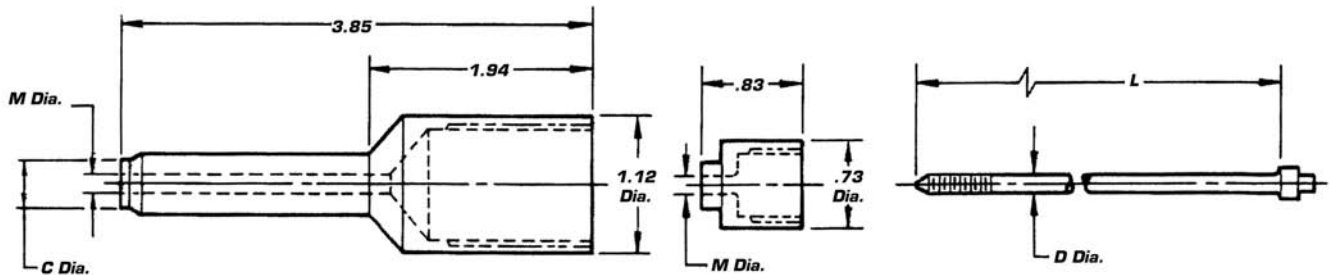
**“B” Standard Driving Tools (1.85 long Anvil) For Use with BG2500 Gun**



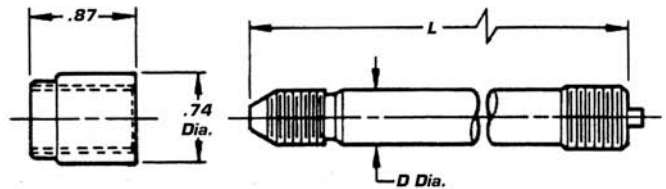
For use with -720, -714, -820 & -813 only.

Blind Nut First Dash No.	Anvil (“B” Type)		Chuck		Mandrel												
					Min. Grip-1/2” Blind Nut Grip Range			1/2”-1” Blind Nut Grip Range			1”-2” Blind Nut Grip Range			2”-3” Blind Nut Grip Range			
	Tool No.	C Dia.	M Dia.	Tool No.	M Dia.	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L
-440	A27-440	.21	.113	C2-5	.113	M01-5	.111	1.80	M1-5	.111	2.30						
-632	A27-632	.26	.141	C2-632	.141	M01-632	.139	1.90	M1-632	.139	2.40						
-832	A27-832	.30	.166	C2-8	.166	M01-8	.164	2.00	M1-8	.164	2.50	M2-8	.164	3.50			
-1024	A27-1032	.35	.191	C2-1032	.191	M01-1024	.189	2.10	M1-1024	.189	2.60	M2-1024	.189	3.60	M3-1024	.189	4.60
-1032						M01-1032			M1-1032			M2-1032			M3-1032		
-428	A27-428	.43	.250	C2-12	.250	M01-12	.248	2.40	M1-12	.248	2.85	M2-12	.248	3.85	M3-12	.248	4.85
-420						M01-420			M1-420			M2-420			M3-420		
-524	A27-524	.51	.313	C2-14	.313	M01-14	.310	2.50	M1-14	.310	3.00	M2-14	.310	4.00	M3-14	.310	5.00
-518						M01-518			M1-518			M2-518			M3-518		
-624	A27-624	.57	.375	C2-16	.375	M01-16	.373	2.58	M1-16	.373	3.05	M2-16	.373	4.05	M3-16	.373	5.05
-616						M01-616			M1-616			M2-616			M3-616		
-720	A27-720	.63	.438	C3		M01-720	.435	2.60	M1-720	.435	3.10	M2-720	.435	4.10	M3-720	.435	5.10
-714						M01-714			M1-714			M2-714			M3-714		
-820	A27-820	.69	.500	C3		M01-820	.498	2.70	M1-820	.498	3.20	M2-820	.498	4.20	M3-820	.498	5.20
-813						M01-813			M1-813			M2-813			M3-813		

**“B” Extended Driving Tools (3.85 long Anvil) For Use with BG2500 Gun**

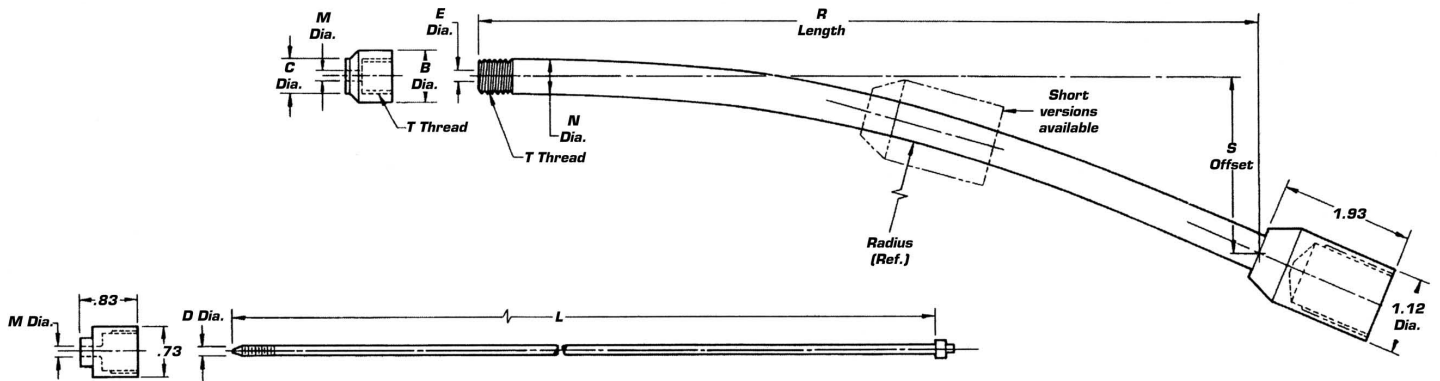


*For use with -720, -714, -820 & -813 only.*



Blind Nut First Dash No.	Anvil ("B" Type)		Chuck		Mandrel												
					Min. Grip-1/2" Blind Nut Grip Range			1/2"-1" Blind Nut Grip Range			1"-2" Blind Nut Grip Range			2"-3" Blind Nut Grip Range			
	Tool No.	C Dia.	M Dia.	Tool No.	M Dia.	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L
-440	A28-440	.21	.113	C2-5	.113	M2.5-5	.111	3.80	M3-5	.111	4.30						
-632	A28-632	.26	.141	C2-632	.141	M2.5-632	.138	3.90	M3-632	.138	4.40						
-832	A28-832	.30	.166	C2-8	.166	M2.5-8	.164	4.00	M3-8	.164	4.50	M4-8	.164	5.50			
-1024	A28-1032	.35	.193	C2-1032	.191	M2.5-1024	.189	4.10	M3-1024	.189	4.60	M4-1024	.189	5.60	M5-1024	.189	6.60
-1032						M2.5-1032			M3-1032			M4-1032			M5-1032		
-428	A28-428	.43	.261	C2-12	.250	M2.5-12	.248	4.40	M3-12	.248	4.85	M4-12	.248	5.85	M5-12	.248	6.85
-420						M2.5-420			M3-420			M4-420			M5-420		
-524	A28-524	.51	.313	C2-14	.313	M2.5-14	.310	4.50	M3-14	.310	5.00	M4-14	.310	6.00	M5-14	.310	7.00
-518						M2.5-518			M3-518			M4-518			M5-518		
-624	A28-624	.57	.385	C2-16	.375	M2.5-16	.373	4.58	M3-16	.373	5.05	M4-16	.373	6.05	M5-16	.373	7.05
-616						M2.5-616			M3-616			M4-616			M5-616		
-720	A28-720	.63	.448	C3		M2.5-720	.435	4.70	M3-720	.435	5.10	M4-720	.435	6.10	M5-720	.435	7.10
-714						M2.5-714			M3-714			M4-714			M5-714		
-820	A28-820	.69	.511	C3		M2.5-820	.498	4.80	M3-820	.498	5.20	M4-820	.498	6.20	M5-820	.498	7.20
-813						M2.5-813			M3-813			M4-813			M5-813		

## “B” Offset Driving Tools For Use with BG2500 Gun



FASTENER INSTALLATION & REMOVAL - BLIND RIVET TOOLS

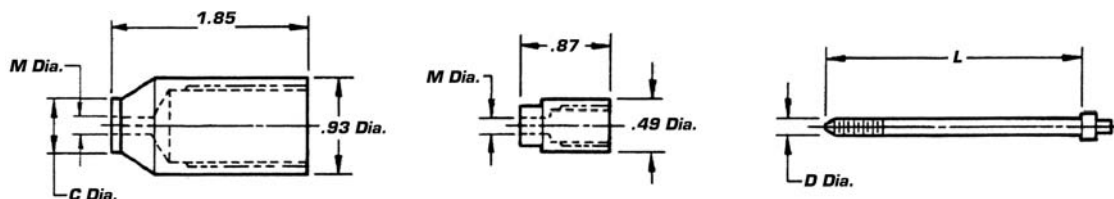
Blind Nut First Part No.	Anvil							Tip ("B" Type)				BG2500 Chuck		Mandrel						
	Part No.	E Dia.	N Dia.	R Length	S Offset	T Thread	Radius Ref.	Part No.	C Dia.	B Dia.	M Dia.	T Thread	Part No.	M Dia.	0-1" Grip Range			1"-2" Grip Range		
															Part No.	D Dia.	Length	Part No.	D Dia.	Length
-440	A211-1 A211-5	.19	.50	10.0 5.2	2.50 .75	1/2-20	18.0	T3-440	.21	.750	.113	1/2-20	C2-5	.113	M6-5 M8-5	.111	13.0 8.0	-	-	-
-632	A211-1 A211-5	.19	.50	10.0 5.2	2.50 .75	1/2-20	18.0	T3-632	.26	.750	.141	1/2-20	C2-632	.141	M6-632 M8-632	.138	13.0 8.0	-	-	-
-832	A211-2 A211-6	.23	.50	11.5 6.2	2.00 .72	1/2-20	29.0	T3-832	.30	.750	.166	1/2-20	C2-8	.166	M6-8 M8-8	.164	14.5 9.5	M7-8 -	.164	15.5 -
-1024	A211-2 A211-6	.23	.50	11.5 6.2	2.00 .72	1/2-20	29.0	T3-1032	.35	.750	.191	1/2-20	C2-1032	.191	M6-1024 M8-1024	.189	14.5 9.5	M7-1024 -	.189	15.5 -
-1032	A211-3 A211-7	.23	.50	11.5 6.2	2.00 .72	1/2-20	29.0	T3-1032	.35	.750	.191	1/2-20	C2-1032	.191	M6-1032 M8-1032	.189	14.5 9.5	M7-1032 -	.189	15.5 -
-420	A211-3 A211-7	.31	.62	11.2 6.0	1.80 .62	5/8-18	32.0	T3-428	.43	.837	.250	5/8-18	C2-12	.250	M6-420 M8-420	.248	14.5 9.5	M7-420 -	.248	15.5 -
-248	A211-3 A211-7	.31	.62	11.2 6.0	1.80 .62	5/8-18	32.0	T3-428	.43	.837	.250	5/8-18	C2-12	.250	M6-12 M8-12	.248	14.5 9.5	M7-12 -	.248	15.5 -

## Blind Nut "C" Type Driving Tools

Install these Blind Nut Part Numbers in protruding head style.

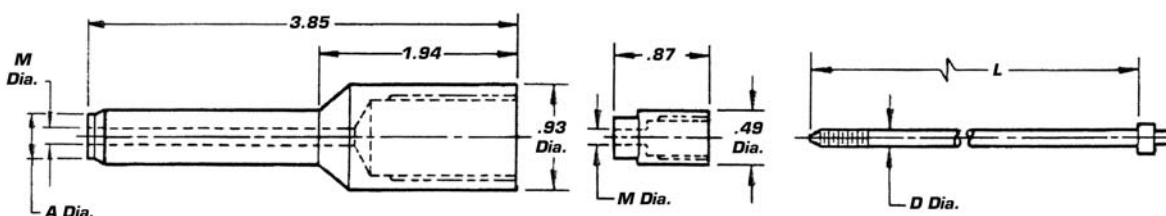
Part Numbers: BN356G, BN356PB, BN519LH, BN523, BN530, BN530G, BN533, BN533G, BN540, BN540PB, BN542, BN549.

### "C" Standard Driving Tools (1.85 long Anvil) For Use with BG2500 Gun



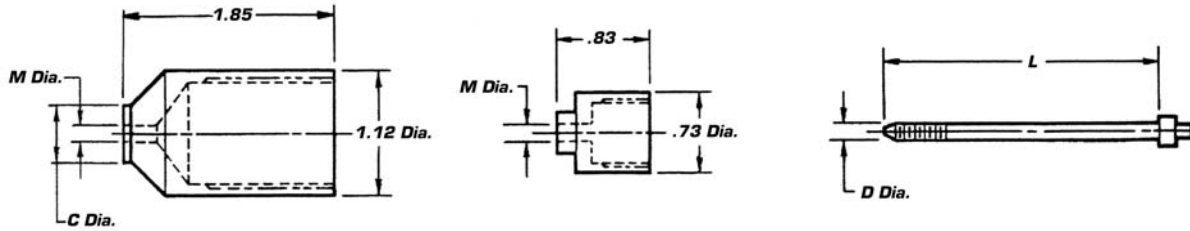
Blind Nut First Dash No.	Anvil ("C" Type)		Chuck		Mandrel												
					Min. Grip-1/2" Blind Nut Grip Range			1/2"-1" Blind Nut Grip Range			1"-2" Blind Nut Grip Range			2"-3" Blind Nut Grip Range			
	Tool No.	C Dia.	M Dia.	Tool No.	M Dia.	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L
-440	A33-440	.29	.113	C1-5	.113	M01-5	.111	1.80	M1-5	.111	2.30						
-632	A33-632	.31	.141	C-632	.141	M01-632	.138	1.90	M1-632	.138	2.40						
-832	A33-832	.41	.166	C1-8	.166	M01-8	.164	2.00	M1-8	.164	2.50	M2-8	.164	3.50			
-1024	A33-1032	.50	.191	C1-1032	.191	M01-1024	.189	2.10	M1-1024	.189	2.60	M2-1024	.164	3.60	M3-1024	.189	4.60
-1032						M01-1032			M1-1032			M2-1032			M3-1032		

### "C" Extended Driving Tools (3.85 long Anvil) For Use with BG1750 Gun



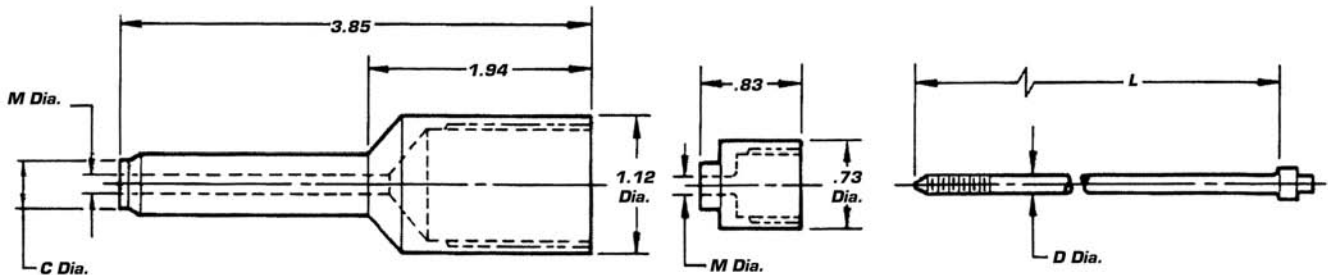
Blind Nut First Dash No.	Anvil ("C" Type)		Chuck		Mandrel												
					Min. Grip-1/2" Blind Nut Grip Range			1/2"-1" Blind Nut Grip Range			1"-2" Blind Nut Grip Range			2"-3" Blind Nut Grip Range			
	Tool No.	C Dia.	M Dia.	Tool No.	M Dia.	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L
-440	A35-440	.29	.113	C1-5	.113	M2.5-5	.111	3.80	M3-5	.111	4.30						
-632	A35-632	.31	.141	C1-632	.141	M2.5-632	.138	3.90	M3-632	.138	4.40						
-832	A35-832	.41	.166	C1-8	.166	M2.5-1032	.164	4.00	M3-8	.164	4.50	M4-8	.164	5.50			
-1024	A35-1032	.50	.191	C1-1032	.191	M2.5-1024	.189	4.10	M3-1024	.189	4.60	M4-1024	.189	5.60	M5-1024	.189	6.60
-1032						M2.5-1032			M3-1032			M4-1032			M5-1032		

**“C” Standard Driving Tools (1.85 long Anvil) For Use with BG2500 Gun**



Blind Nut First Dash No.	Anvil (“C” Type)		Chuck		Mandrel												
					Min. Grip-1/2” Blind Nut Grip Range			1/2”-1” Blind Nut Grip Range			1”-2” Blind Nut Grip Range			2”-3” Blind Nut Grip Range			
					Tool No.	C Dia.	M Dia.	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.
-440	A32-440	.29	.113	C2-5	.113	M01-5	.111	1.80	M1-5	.111	2.30						
-632	A32-632	.31	.141	C2-632	.141	M01-632	.139	1.90	M1-632	.139	2.40						
-832	A32-832	.41	.166	C2-8	.166	M01-8	.164	2.00	M1-8	.164	2.50	M2-8	.164	3.50			
-1024	A32-1032	.50	.191	C2-1032	.191	M01-1024	.189	2.10	M1-1024	.189	2.60	M2-1024	.189	3.60	M3-1024	.189	4.60
-1032						M01-1032			M1-1032			M2-1032			M3-1032		
-420	A32-428	.61	.250	C2-12	.250	M01-420	.248	2.40	M1-420	.248	2.85	M2-420	.248	3.85	M3-420	.248	4.85
-428						M01-12			M1-12			M2-12			M3-12		
-518	A32-524	.80	.313	C2-14	.313	M01-518	.310	2.50	M1-518	.310	3.00	M2-518	.310	4.00	M3-518	.310	5.00
-524						M01-14			M1-14			M2-14			M3-14		
-616	A32-624	.89	.375	C2-16	.375	M01-616	.373	2.58	M1-616	.373	3.05	M2-616	.373	4.05	M3-616	.373	5.05
-624						M01-16			M1-16			M2-16			M3-16		

**“C” Extended Driving Tools (3.85 long Anvil) For Use with BG2500 Gun**



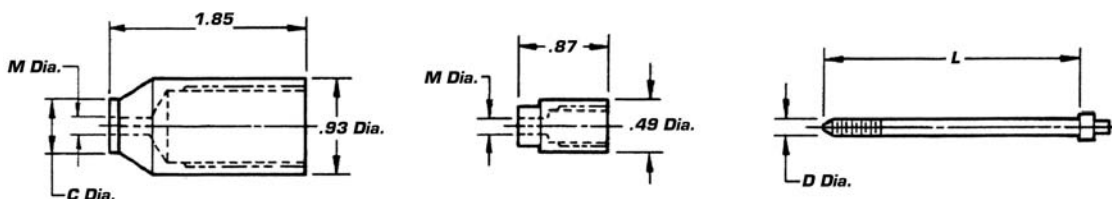
Blind Nut First Dash No.	Anvil (“C” Type)		Chuck		Mandrel												
					Min. Grip-1/2” Blind Nut Grip Range			1/2”-1” Blind Nut Grip Range			1”-2” Blind Nut Grip Range			2”-3” Blind Nut Grip Range			
					Tool No.	C Dia.	M Dia.	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.
-440	A34-440	.29	.113	C1-5	.113	M2.5-5	.111	3.80	M3-5	.111	4.30						
-632	A34-632	.31	.141	C1-632	.141	M2.5-632	.139	3.90	M3-632	.139	4.40						
-832	A34-832	.41	.166	C2-8	.166	M5.5-8	.164	4.00	M3-8	.164	4.50	M4-8	.164	5.50			
-1024	A34-1032	.49	.193	C2-1032	.191	M2.5-1024	.189	4.10	M3-1024	.189	4.60	M4-1024	.189	5.60	M5-1024	.189	6.60
-1032						M2.5-1032			M3-1032			M4-1032			M5-1032		
-420	A34-428	.60	.250	C2-12	.250	M2.5-420	.248	4.40	M3-420	.248	4.85	M4-420	.248	5.85	M5-420	.248	6.85
-428						M2.5-12			M3-12			M4-12			M5-12		
-518	A35-524	.79	.313	C2-14	.313	M2.5-518	.310	4.50	M3-518	.310	5.00	M4-518	.310	6.00	M5-518	.310	7.00
-524						M2.5-14			M3-14			M4-14			M5-14		
-616	A35-624	.89	.375	C2-16	.375	M2.5-616	.373	4.58	M3-616	.373	5.05	M4-616	.373	6.05	M5-616	.373	7.05
-624						M2.5-16			M3-16			M4-16			M5-16		

## Blind Bolt "J" Type Driving Tools

Install these Blind Bolt Part Numbers in head style 100° Countersunk, Protruding head, MS24694 or AN509 head styles.

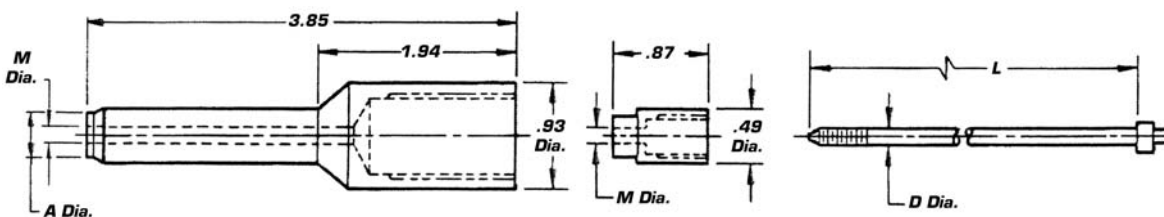
Part Numbers: BB351, BB351G, BB351P, BB351.32, BB351.32G, BB351.32P, BB351.32PB, BB352.32, BB352.32G, BB352.32P, BB352.32PB, BB352.64, BB352.64G, BB352.64P, BB352.64PB, BB354, BB362, BB363, BB365, BB366, BB370, BB379, BB380, BB386, BB391, BB399, BB402, BB428, BB428G, BB428P, BB428PB, BB430, BB430G, BB445, BB515G.

### "J" Standard Driving Tools (1.85 long Anvil) For Use with BG1750 Gun



Blind Bolt First Dash No.	Anvil ("J" Type)		Chuck		Mandrel												
					Min. Grip-1/2" Blind Bolt Grip Range			1/2"-1" Blind Bolt Grip Range			1"-2" Blind Bolt Grip Range			2"-3" Blind Bolt Grip Range			
	Tool No.	C Dia.	M Dia.	Tool No.	M Dia.	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L
-5	A11-5	.32	.113	C1-5	.113	M01-5	.111	1.80	M1-5	.111	2.30						
-6	A11-6	.37	.125	C1-6	.125	M01-6	.123	1.90	M1-6	.123	2.40						
-8	A11-8	.50	.166	C1-8	.166	M01-8	.164	2.00	M1-8	.164	2.50	M2-8	.164	3.50			
-10	A11-10	.62	.219	C1-10	.219	M01-10	.217	2.20	M1-10	.217	2.70	M2-10	.217	3.70	M3-10	.217	4.70

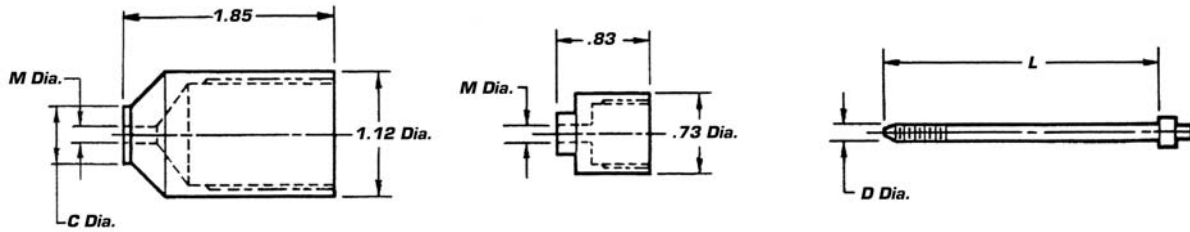
### "J" Standard Driving Tools (3.85 long Anvil) For Use with BG1750 Gun



Blind Bolt First Dash No.	Anvil ("J" Type)		Chuck		Mandrel												
					Min. Grip-1/2" Blind Bolt Grip Range			1/2"-1" Blind Bolt Grip Range			1"-2" Blind Bolt Grip Range			2"-3" Blind Bolt Grip Range			
	Tool No.	A Dia.	M Dia.	Tool No.	M Dia.	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L
-5	A12-5	.32	.113	C1-5	.113	M2.5-5	.111	3.80	M3-5	.111	4.30						
-6	A12-6	.37	.125	C1-6	.125	M2.5-6	.123	3.90	M3-6	.123	4.40						
-8	A12-8	.49	.166	C1-8	.166	M2.5-8	.164	4.00	M3-8	.164	4.50	M4-8	.164	5.50			
-10	A12-10	.62	.219	C1-10	.219	M2.5-10	.217	4.20	M3-10	.217	4.70	M4-10	.217	5.70	M5-10	.217	6.70

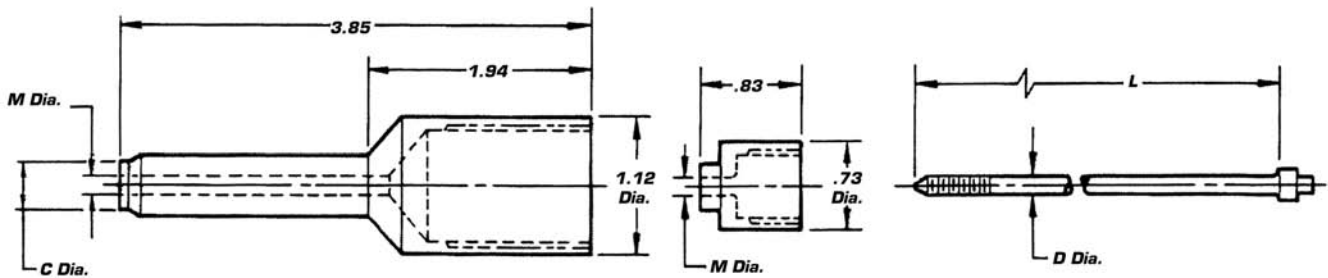


### “J” Standard Driving Tools (1.85 long Anvil) For Use with BG2500 Gun



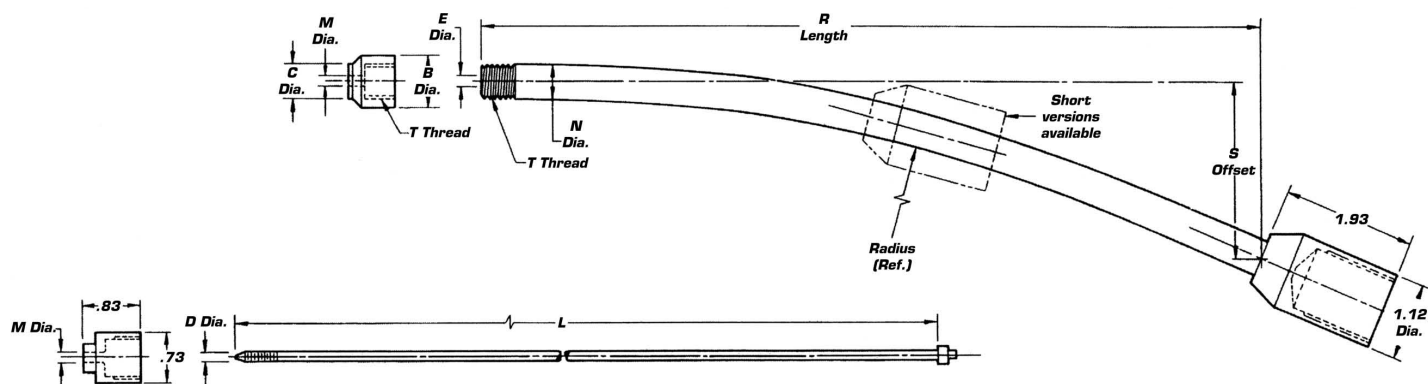
Blind Bolt First Dash No.	Anvil (“J” Type)		Chuck		Mandrel												
					Min. Grip-1/2” Blind Bolt Grip Range			1/2”-1” Blind Bolt Grip Range			1”-2” Blind Bolt Grip Range			2”-3” Blind Bolt Grip Range			
	Tool No.	C Dia.	M Dia.	Tool No.	M Dia.	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L
-5	A21-5	.32	.113	C2-5	.113	M01-5	.111	1.80	M1-5	.111	2.30						
-6	A21-6	.37	.125	C2-6	.125	M01-6	.123	1.90	M1-6	.123	2.40						
-8	A21-8	.50	.166	C2-8	.166	M01-8	.164	2.00	M1-8	.164	2.50	M2-8	.164	3.50			
-10	A21-10	.62	.219	C2-10	.219	M01-10	.217	2.20	M1-10	.217	2.70	M2-10	.217	3.70	M3-10	.217	4.70
-12	A21-12	.75	.250	C2-12	.250	M01-12	.248	2.40	M1-12	.248	2.85	M2-12	.248	3.85	M3-12	.248	4.85
-14	A21-14	.88	.313	C2-14	.313	M01-14	.310	2.50	M1-14	.310	3.00	M2-14	.310	4.00	M3-14	.310	5.00
-16	A21-16	1.00	.375	C2-16	.375	M01-16	.373	2.58	M1-16	.373	3.05	M2-16	.373	4.05	M3-16	.373	5.05

### “J” Extended Driving Tools (3.85 long Anvil) For Use with BG2500 Gun



Blind Bolt First Dash No.	Anvil (“J” Type)		Chuck		Mandrel												
					Min. Grip-1/2” Blind Bolt Grip Range			1/2”-1” Blind Bolt Grip Range			1”-2” Blind Bolt Grip Range			2”-3” Blind Bolt Grip Range			
	Tool No.	C Dia.	M Dia.	Tool No.	M Dia.	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L
-5	A22-5	.32	.113	C2-5	.113	M2.5-5	.111	3.80	M3-5	.111	4.30						
-6	A22-6	.37	.125	C2-6	.125	M2.5-6	.123	3.90	M3-6	.123	4.40						
-8	A22-8	.49	.166	C2-8	.166	M2.5-8	.164	4.00	M3-8	.164	4.50	M4-8	.164	5.50			
-10	A22-10	.62	.219	C2-10	.219	M2.5-10	.217	4.20	M3-10	.217	4.70	M4-10	.217	5.70	M5-10	.217	6.70
-12	A22-12	.75	.250	C2-12	.250	M2.5-12	.248	4.40	M3-12	.248	4.85	M4-12	.248	5.85	M5-12	.248	6.85
-14	A22-14	.88	.313	C2-14	.313	M2.5-14	.310	4.50	M3-14	.310	5.00	M4-14	.310	6.00	M5-14	.310	7.00
-16	A22-16	1.00	.375	C2-16	.375	M2.5-16	.373	4.55	M3-16	.373	5.05	M4-16	.373	6.05	M5-16	.373	7.05

### "J" Offset Driving Tools For Use with BG2500 Gun



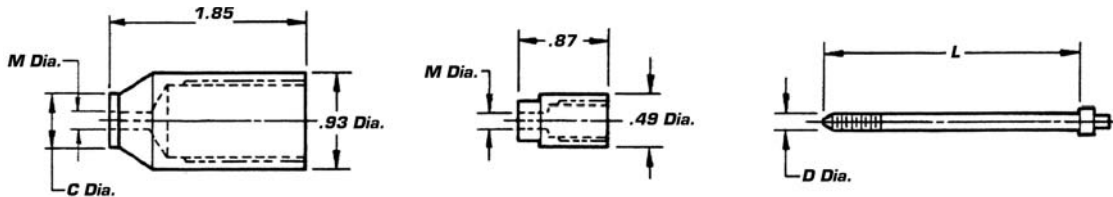
Blind Bolt First Part No.	Anvil						Tip ("J" Type)				Chuck		Mandrel						
	Part No.	E Dia.	N Dia.	R Length	S Offset	T Thread	Part No.	C Dia.	B Dia.	M Dia.	T Thread	Part No.	M Dia.	0-1" Grip		1"-2" Grip			
														Part No.	D Dia.	Length	Part No.	D Dia.	Length
-5	A211-1 A211-5	.19	.50	10.0 5.2	2.50 .75	1/2-20	T2-5 T2-5	.32	.750	.113	1/2-20	C2-5 C2-5	.113	M6-5 M8-5	.111	13.0 8.0	-	-	-
-6	A211-1 A211-5	.19	.50	10.0 5.2	2.50 .75	1/2-20	T2-6 T2-6	.37	.750	.125	1/2-20	C2-6 C2-6	.125	M6-6 M8-6	.123	13.0 8.0	-	-	-
-8	A211-2 A211-6	.23	.50	11.5 6.2	2.00 .72	1/2-20	T2-8 T2-8	.50	.750	.166	1/2-20	C2-8 C2-8	.166	M6-8 M8-8	.164	14.5 9.5	M7-8 -	.164	15.5 -
-10	A211-2 A211-6	.23	.50	11.5 6.2	2.00 .72	1/2-20	T2-10 T2-10	.62	.750	.219	1/2-20	C2-10 C2-10	.219	M6-10 M8-10	.217	14.5 9.5	M7-10 -	.217	15.5 -
-12	A211-3 A211-7	.31	.62	11.2 6.0	1.80 .62	5/8-20	T2-12 T2-12	.75	.837	.250	5/8-20	C2-12 C2-12	.250	M6-12 M8-12	.248	14.5 9.5	M7-12 -	.248	15.5 -

**NOTE:** The above offset driving tools (for Blind Bolt sizes -5 through -10) can be used with the BG1750 Gun when the latter is converted with the AA1 Anvil Adapter and C1 series Chuck.

## Blind Nut "K" Type Driving Tools

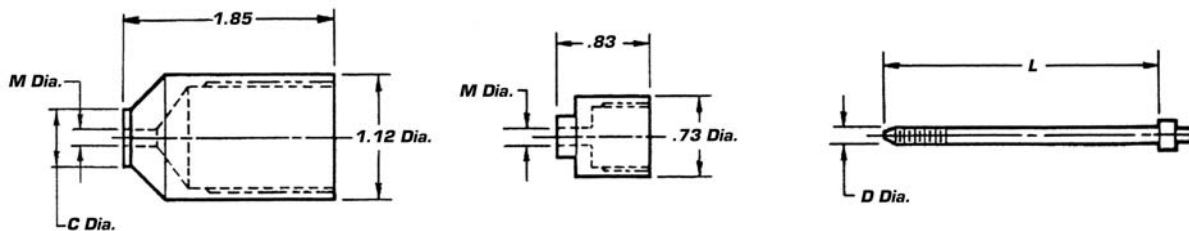
Install these Blind Bolt Part Numbers in 100° Countersunk. MS20426 or AN426 Head styles.  
 Part Numbers: BB368, BB369, BB371, BB381, BB382, BB432, BB436, BB517.

### "K" Standard Driving Tools (1.85 long Anvil) For Use with BG1750 Gun



Blind Bolt First Dash No.	Anvil ("K" Type)			Chuck		Mandrel								
						Min. Grip-1/2" Blind Bolt Grip Range			1/2"-1" Blind Bolt Grip Range			1"-2" Blind Bolt Grip Range		
	Tool No.	C Dia.	M Dia.	Tool No.	M Dia.	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L
-5	A19-5	.27	.113	C1-5	.113	M01-5	.111	1.80	M1-5	.111	2.30			
-6	A19-6	.34	.125	C1-6	.125	M01-6	.123	1.90	M1-6	.123	2.40			
-8	A19-8	.46	.166	C1-8	.166	M01-8	.164	2.00	M1-8	.164	2.50	M2-8	.164	3.50
-10	A19-10	.55	.219	C1-10	.215	M01-10	.217	2.20	M1-10	.217	2.70	M2-10	.217	3.70

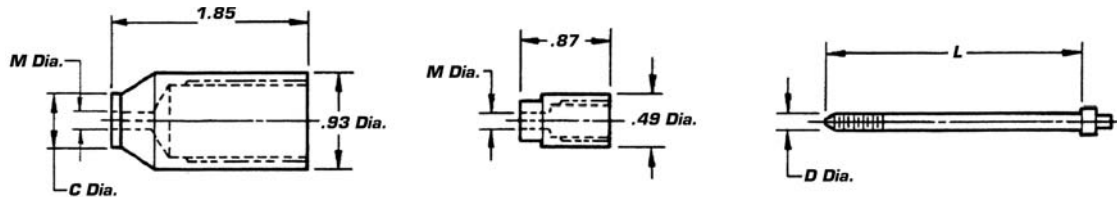
### "K" Standard Driving Tools (1.85 long Anvil) For Use with BG2500 Gun



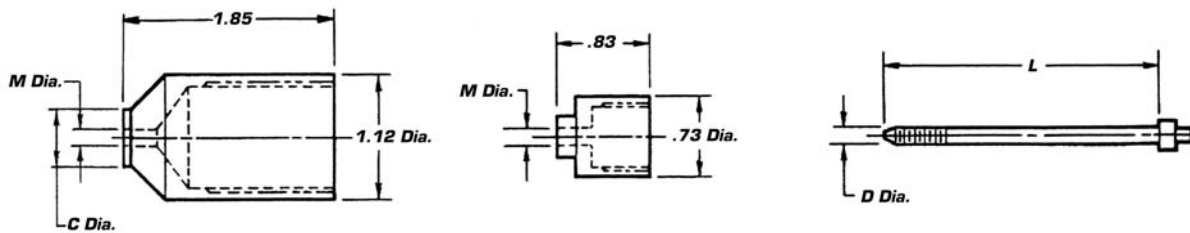
Blind Bolt First Dash No.	Anvil ("K" Type)			Chuck		Mandrel								
						Min. Grip-1/2" Blind Bolt Grip Range			1/2"-1" Blind Bolt Grip Range			1"-2" Blind Bolt Grip Range		
	Tool No.	C Dia.	M Dia.	Tool No.	M Dia.	Tool No.	D Dia.	L	Tool No.	D Dia.	L	Tool No.	D Dia.	L
-5	A21-5A	.27	.113	C2-5	.113	M01-5	.111	1.80	M1-5	.111	2.30			
-6	A21-6A	.34	.125	C2-6	.125	M01-6	.123	1.90	M1-6	.123	2.40			
-8	A21-8A	.46	.166	C2-8	.166	M01-8	.164	2.00	M1-8	.164	2.50	M2-8	.164	3.50
-10	A21-10A	.55	.219	C2-10	.215	M01-10	.217	2.20	M1-10	.217	2.70	M2-10	.217	3.70

**Blind Nut "L" Type Driving Tools**

Install these Blind Bolt Part Numbers in large bearing countersunk and 100° countersunk shear head.  
Part Numbers: BB437, BB441, BB449, BB450, BB518.

**"L" Standard Driving Tools (1.85 long Anvil) For Use with BG1750 Gun**

Blind Bolt First Dash No.	Anvil ("L" Type)			Chuck		Mandrel					
						Min. Grip-1/2" Blind Bolt Grip Range			1/2"-1" Blind Bolt Grip Range		
	Tool No.	C Dia.	M Dia.	Tool No.	M Dia.	Tool No.	D Dia.	L	Tool No.	D Dia.	L
-5	A45-5	.25	.113	C1-5	.113	M01-5	.111	1.80	M1-5	.111	2.30
-6	A45-6	.29	.125	C1-6	.125	M01-6	.123	1.90	M1-6	.123	2.40
-8	A45-8	.38	.166	C1-8	.166	M01-8	.164	2.00	M1-8	.164	2.50

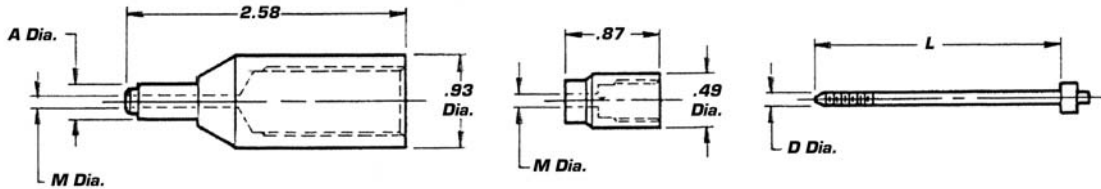
**"L" Standard Driving Tools (1.85 long Anvil) For Use with BG2500 Gun**

Blind Bolt First Dash No.	Anvil ("L" Type)			Chuck		Mandrel					
						Min. Grip-1/2" Blind Bolt Grip Range			1/2"-1" Blind Bolt Grip Range		
	Tool No.	C Dia.	M Dia.	Tool No.	M Dia.	Tool No.	D Dia.	L	Tool No.	D Dia.	L
-5	A46-5	.25	.113	C2-5	.113	M01-5	.111	1.80	M1-5	.111	2.30
-6	A46-6	.29	.125	C2-6	.125	M01-6	.123	1.90	M1-6	.123	2.40
-8	A45-8	.38	.166	C2-8	.166	M01-8	.164	2.00	M1-8	.164	2.50

## Blind Nut "M" Type Driving Tools

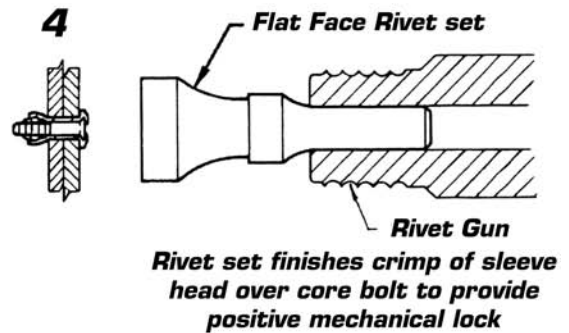
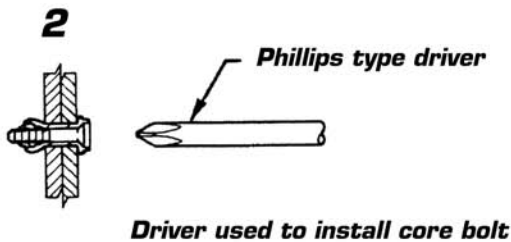
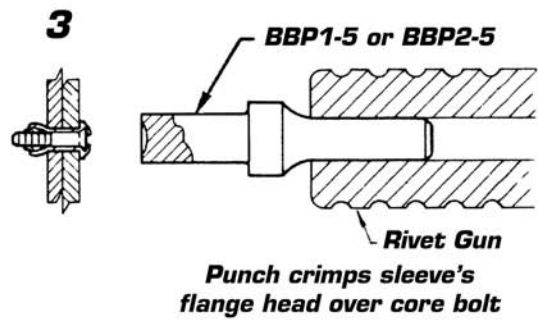
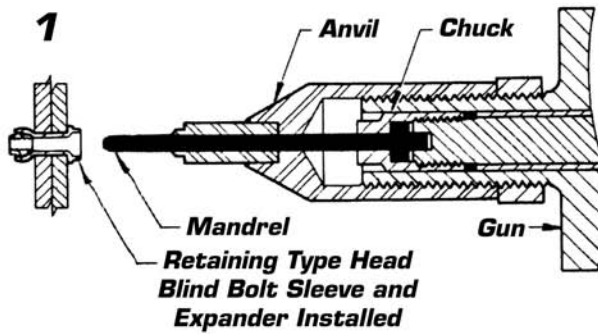
Install these Blind Bolt Part Numbers protruding head and retaining core bolt style.  
Part Numbers: BB420G, BB575.

### "M" Standard Driving Tools (1.85 long Anvil) For Use with BG1750 Gun



Blind Bolt First Dash No.	Anvil ("L" Type)			Chuck		Mandrel			Core Bolt Recess (Ref.) Tool No.	Punch	
	Tool No.	A Dia.	M Dia.	Tool No.	M Dia.	Tool No.	D Dia.	L		.498 Shank	.401 Shank
-5	A43-5	.32	.113	C1-5	.113	M1-5	.111	2.30	Phillips # 1	BBP1-5	BBP2-5

### Additional Installation Procedure - Required for Retaining Core Bolt-style Blind Bolts



## Power Units

Installation tooling for Blind Nuts and Blind Bolts requires a hand held hydraulic gun fitted with the proper size driving tools, and actuated by one of Hi-Shear's portable hydraulic Power Units. Operated by factory air pressure of 90 PSI, these Power Units can be adjusted by the user to provide sustained pressure to the Guns, suitable to the individual settings required by each size Blind Nut or Blind Bolt. The Power Units are design-rated to 3000 PSI, and being activated by air pressure are non-sparking in operation, and can be safely used in flight ramp areas. These Units are suitable for factory or field use, are compact in size, mobile, and are built to precision standards. They are simple to operate, easy to maintain, and are constructed for rugged usage. A maintenance manual is furnished with each unit. As portable hydraulic power sources, these units can be adapted to other uses in addition to fastener installation.

For factory or field convenience, Driving Tool Kits are available which contain individual tools necessary to drive a variety of sizes of Blind Nuts and Blind Bolts. These kits are packaged in metal boxes and ready to be attached to the caster equipped Power Units.

Hand installation tooling is also available for field service or limited use applications.

### Air-Hydraulic Power Unit

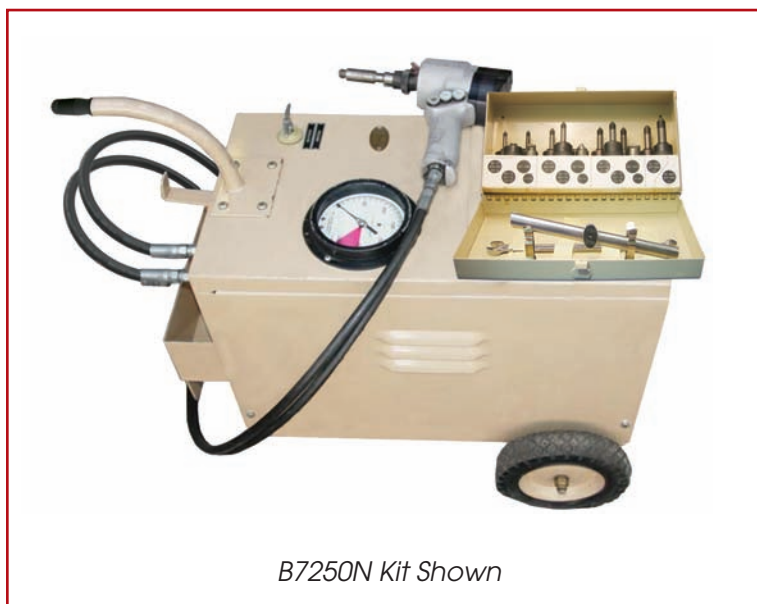
This Power Unit, wheel mounted, is designed for factory production work. It is non-sparking in design; hence, it can be used safely for the repair of fueled aircraft or launch-ready vehicles. It is actuated from a normal factory air pressure of 90 PSI. Weight (with furnished 12" hose but no gun) is approximately 78 lbs. Overall dimensions are 17-1/2" wide, 39-5/8" long and 25-1/2" high.

Ordering Part Number:

BP7000 Power Unit Assembly (Does not include Gun or any Driving Tool Kit).

**Note:** The BP7000 Power Unit replaces the earlier BP3000 Air-Hydraulic Power Unit, the latter no longer available for ordering. Spare parts for the BP3000 unit can still be obtained.

**PN: BP7000**



*B7250N Kit Shown*

## Complete Kits for Power Units, Guns and Tools

Power Units, Guns and installation tooling can be conveniently ordered in complete kits by a single part number as indicated below or by individual component part numbers as described on subsequent pages. For description of the BK Series Driving Tool Kits.

Complete Kit Order Number	Parts Included	Description
B7175	BP7000	Air-Hydraulic Power Unit
	BG2500-2225	Gun
	BK3	Driving Tool Kit: Blind Bolts (-5 through -10 sizes, "J" type tooling)
B7175N	BP7000	Air-Hydraulic Power Unit
	BG2500-2225	Gun
	BK6	Driving Tool Kit: Blind Nuts (-440 through 1032 sizes, "A" and "B" type tooling)
B750	BP7000	Air-Hydraulic Power Unit
	BG2500	Gun
	BK4	Driving Tool Kit: Blind Bolts (-5 through -12 sizes, "J" type tooling)
B750N	BP7000	Air-Hydraulic Power Unit
	BG2500	Gun
	BK7	Driving Tool Kit: Blind Nuts (-440 through -428 sizes, "A" and "B" type tooling)

**NOTE:** The BK8 Driving Tool Kit is for use with the BG2500 Gun to install -12, -14 and -16 diameter Blind Bolts and -428 through -820 Blind Nuts and is available on optional order.

### Air-Hydraulic Unit

The versatile and portable BH245 Power Unit is intended for work areas where mobility and easy of carrying are essential, particularly when scaffolds, workstands and ladders are involved to gain access to off-the-floor work locations. It operates from a normal factory air pressure of 90 PSI, and being air actuated, the unit is non-sparking and safe for use on fueled aircraft and launch-ready vehicles. The BH245 Power Unit will provide hydraulic pressure up to 2700 PSI to operate Blind Nut-Blind Bolt installation Guns, and can be adapted to a variety of uses requiring hydraulic pressure. The unit is compact, rugged, and lightweight (26 lbs.).



### Ordering Part Numbers:

Power Unit Assembly (Power Unit Only).

**PN: BH245**

Power Unit Assembly (Includes Unit, BG1750 Gun and Hose).

**PN: BH245-22251**

Power Unit Assembly (Includes Unit, BG2500 Gun and Hose).

**PN: BH245-25**

### Hand Pump Assembly

The BH25AC Hand Pump & Case Assembly is designed to facilitate the installation of BN & BB Series Blind Nuts and Blind Bolts. The complete BH25A Assembly consists of a Hand Pump Assembly (BH26A), and a Case Assembly (BH85). The Hand Pump Assembly includes a Hydraulic Hose (BH102), and any combination of four sets of driving tools (Anvils, Chuck and Mandrels) for use on the BH86 Hydraulic Gun. Any driving tool part number listed in the catalog for use on the BG2500 Hydraulic Gun will fit the BH86 Hydraulic Gun included in this unit.

**PN: BH25AC**



## Driving Pressure (PSI) - Power Unit Settings

Blind Nut Size	Blind Bolt Size	BG2500 Gun	
		2017 Aluminum BN518	Stainless Steel BN360, BB351, BB352
-440 (440)	-5 (5/32)		
	-6 (3/16)		
-632 (6-32)			
832 (8-32)	-8 (1/4)		650
-1032 (10-32)	-10 (5/16)	500	950
-1024 (10-24)			
-428 (1/4-28)	-12 (3/8)	1000	1450
-420 (1/4-20)			
-524 (5/16-24)	-14 (7/16)	1100	1900
-518 (5/16-18)			
-624 (3/8-24)	-16 (1/2)	1250	2250
-616 (3/8-16)			
-720 (7/16-20)		1400	2300
-714 (7/16-14)			
-820 (1/2-20)		1500	2350
-813 (1/2-3)			

### BG2500 Gun

These guns are used to install blind fasteners such as the Blind Bolt, Blind Nut, Hi-Kor Blind Fasteners, and Hi-Sert and Blind-Sert Inserts. The guns are operated by hydraulic pressure supplied from Power Units BP7000, BH245 and BH25A. The gun is designed for operation simplicity and for worker comfort. The worker presses three control buttons in a ON, PULL and OFF sequence with his thumb. This rotates the Gun's mandrel in a clockwise motion, engaging the expander; retracts the mandrel in a counterclockwise motion, releasing the mandrel from the expander. End-loading by the worker is not required, only nominal effort by one hand to properly position the Gun to the hole.

The all-purpose **BG2500** Gun installs all sizes (up through 1/2" diameter) of Blind Bolts and Blind Nuts. It is most efficient for Blind Bolts starting in -8 (1/4) and Blind Nuts in 8-32 and larger sizes. It can install smaller sizes but with a slower action. Weight: 5.5 lbs.



BG2500 Shown without Driving Tools Installed

### Gun Maintenance Tools & Kits

Service tools to simplify the maintenance of the Guns are available individually or in kit form.

The kits include:

BGT2: Complete kit for service of BG1750 and BG2500 Guns.

BGT3: Kit for service of BG1750 Gun.

BGT4: Kit for service of BG2500 Gun.



Kit Contents (One Each)	Kit BGT2 All Guns	Kit BGT3 BG-2500-222	Kit BGT4 BG2500
WRENCH Nose End	BGT14 BGT15	BGT14	BGT15
PUNCH Control Button Pin	BGT9	BGT9	BGT9
PULLER Control Button Valve Spoon	BGT10	BGT10	BGT10
EXPANDER PLIERS Swivel Fitting Snap Ring	BGT7	BGT7	BGT7
COMPRESSOR Control Button Removal	BGT13	BGT13	BGT13
COMPRESSOR Control Button Removal	BGT8	BGT8	BGT8
DRIVER Recess Bolts	HT3203M HT3304M	HT3303M	HT3304M
WASHER Nose End Removal	BGT16		BGT16



# HLK10

## Hi-Lok/Hi-Tigue Collar Removal Tool Kit

The HLK10 Kit provides compact hand tools to remove installed Hi-Lok or Hi-Lok.Hi-Tigue threaded collars from Hi-Lok pins without damage to the latter.

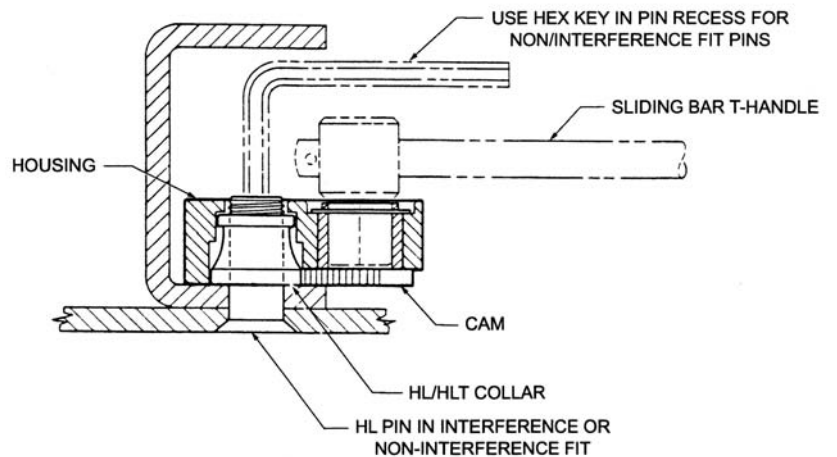
The tool housing has an internal opening which is placed over the collar to be removed. During removal the collar is clamped between a fixed gripping jaw and a cam-type gripping jaw. To unscrew the collars, the tool is rotated counterclockwise with a 1/4" or 3/8" drive extension or flex handle or ratchet wrench.

The HLH-128 series tools are particularly useful to remove collars in structural areas not readily accessible to normal hand tools. The clamping action provided by the tool is positive and shorter turning increments can be used than with a gear type ratchet. The kit provides removal tools for Hi-Lok and Hi-Tigue collars in sizes ranging from -5 (5/32") through -16 (1/2").

Part No.	Name	Qty.
HLH128-6	Tool, 5/32" & 3/16" collar removal	1
HLH128-8	Tool, 1/4" collar removal	1
HLH128-10	Tool, 5/16" collar removal	1
HLH128-12	Tool, 3/8" collar removal	1
HLH128-14	Tool, 7/16" collar removal	1
HLH128-16	Tool, 1/2" collar removal	1
HLH132	1/4" drive x 3" long extension for HLH128-6,-8 & -10 removal tools	1
HLH130	1/4" drive flex handle for HLH128-6,-8 & -10 removal tools	1
HLH133	3/8" drive x 3" long extension for HLH128-12,-14 & -16 removal tools	1
HLH131	3/8" drive flex handle for HLH128-12,-14 & -16 removal tools	1
HLH134	Box Assembly	1
2-159994	Brochure, HLK10 tool kit	1



HLH128-8 Tool with HLH130 1/4" Drive Flex Handle is shown removing 1/4" (-8) Hi-Lok collar without damage to pin.



Match the correct size HLH128 Removal Tool with the size of the HL or HLT collar to be removed. Place tool over collar until it bottoms on structure. Rotate the cam-jaw until the serrations grip the base of the collar. Insert extension or flex handle into tool. Rotate handle and tool counterclockwise until collar is loosened sufficiently to remove by hand.

## DK SERIES

### Collar Removal Tools

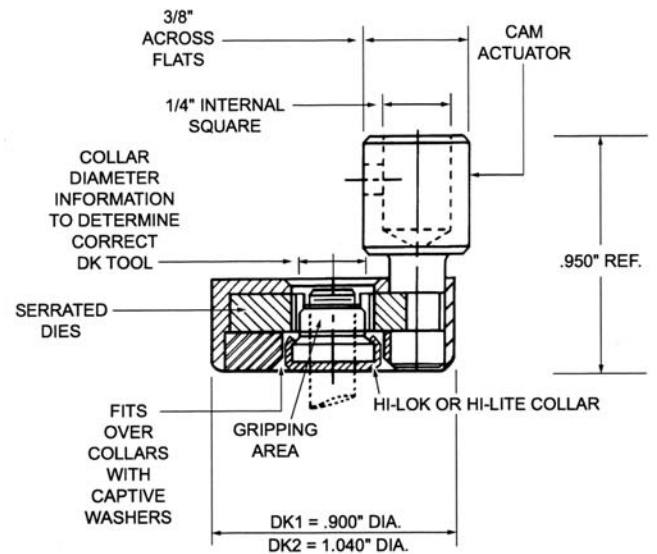
#### DK Series Removal Tool

The DK Series removal tools are designed to remove Hi-Lok or Hi-Lite collars with or without captive washers in limited access areas. The design of this unique tool features a pair of adjusting serrated dies, which when actuated, close and fully engage the upper diameter of the Hi-Lok or Hi-Lite collar. Due to the location of the serrated dies within the removal tool, Hi-Lok or Hi-Lite collars with captive washers can be effectively removed in composite and metallic structures. The cam operated dies fully engage the Hi-Lok or Hi-Lite collar which provides optimum die life. This design is superior to similar designs which rely on only a few teeth to engage and remove Hi-Lok or Hi-Lite collars. Collars manufactured from high strength stainless steel can now be easily removed. The unique cam is designed for actuation by either a 1/4" male square drive or a 3/8" open end wrench. The DK Series removal tools are designed with the smallest envelope to accommodate limited access areas. The DK Series tools can be used to remove more than one type of Hi-Lok or Hi-Lite collar. See Collar Usage Chart for further information.

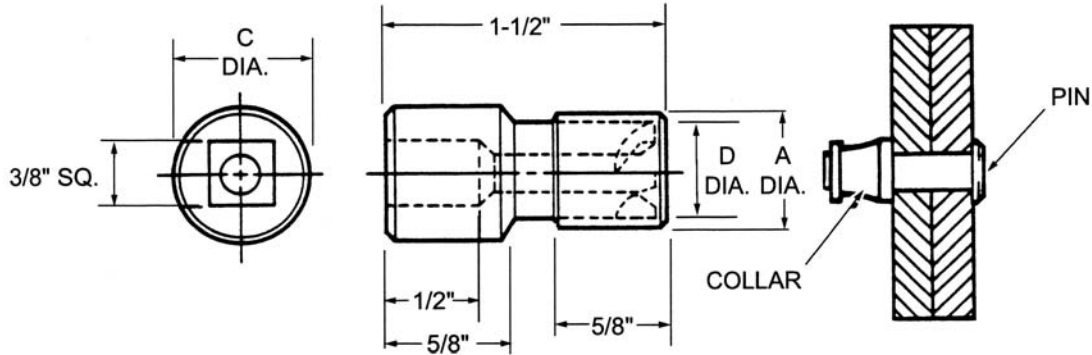


ACTIVATED BY EITHER 1/4"  
MALE SQUARE DRIVE OR  
3/8" OPEN END WRENCH.

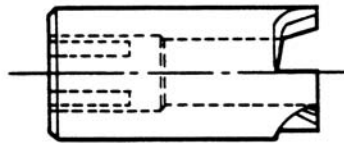
COLLAR USAGE CHART			
Collar Dia. Range .239 - .262	Collar Dia. Range .269 - .290	Collar Dia. Range .332 - .350	Collar Dia. Range .370
DK1-1	DK1-3	DK2-4	DK2-5
HL70-5	HL70-6	HL75-8	HL79-8
HL75-5	HL75-6	HL82-8	
HL87-2	HL79-6	HL87-8	
HL94-5	HL82-5	HL94-8	
HL97-5	HL82-6	HL97-8	
HL584-5	HL87-3	HL584-8	
HL1087-5	HL94-6	HL1187-8	
HL1087ATW-5	HL97-6	HST79-8	
HL1187-5	HL584-6	HST1094-8	
HL1094-5	HL1087-6		
HST79-6	HL1087ATW-6		
HST1094-5	HL1187-6		
	HL1094-6		
	HST1094-6		



**HLC1**  
Collar Removal Tool



FOR -5, -6, -8 COLLARS



FOR -10, -12 COLLARS

The one-piece Removal Tool works on the combined principles of a hollow mill cutter and a wrench. The Removal Tool fitted in a reversible screwdriver motor is firmly pressed over the Collar and rotated until the tool teeth bite into the collar material sufficiently to grip and unscrew the collar from the Pin threads. The Ingersoll-Rand air motor OAR2NP4 equipped with an SQ2012-5 Socket or equivalent is recommended.

**Note:** The HLC1 removal Tool is used to remove Collars from Pins that have been installed in an interference fit condition. This prevents the pin from rotating while the collar is being unscrewed.

**Note:** Due to higher residual preload, the -8 collar requires an initial loosening with pliers prior to using the Removal Tool.

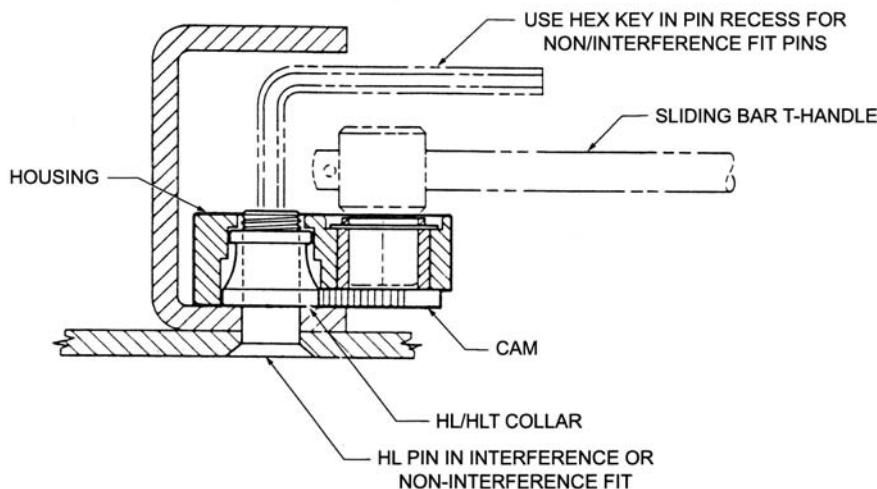
**Note:** The HLC1 Removal Tool is not used with collars that have a captive washer.

Part No.	Pin Nom. Diameter	A	C	D
HLC1-5	5/32"	5/8"	3/4"	1/2"
HLC1-6	3/16"	5/8"	3/4"	1/2"
HLC1-8	1/4"	13/16"	3/4"	11/16"
HLC1-10	5/16"	-	3/4"	3/4"
HLC1-12	3/8"	-	7/8"	7/8"

## HLH128

### Dimensional Data Hi-Lok® / Hi-Tigue® Removal Tool Assembly For removing HL or HLT collars that have been installed in interference and non-interference fit pins

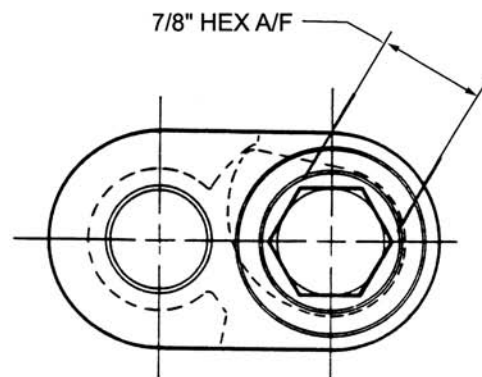
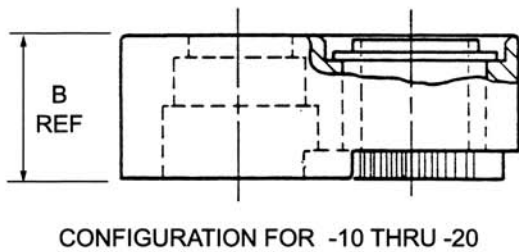
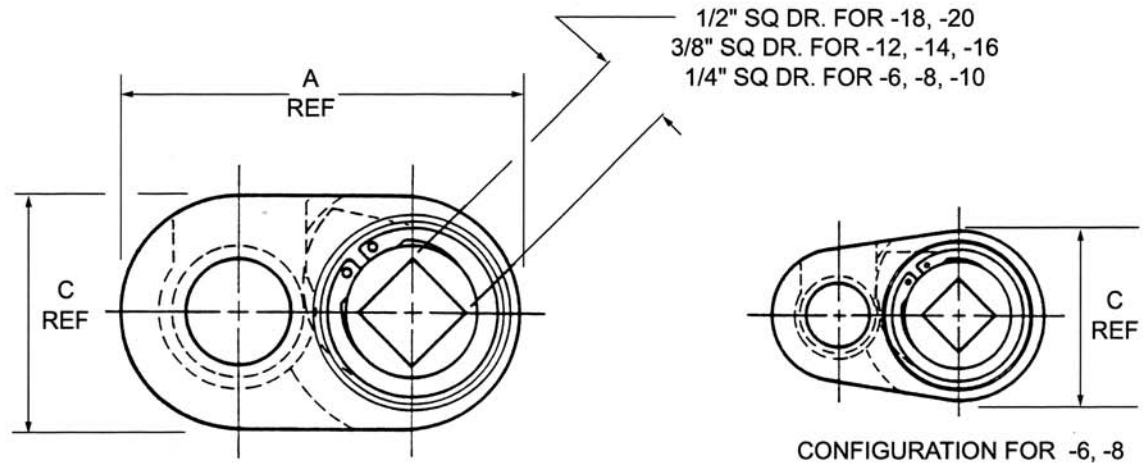
Match the correct size HLH128 Removal Tool Assembly with the HL or HLT collar to be removed. Place housing over collar until it bottoms on the structure. Rotate the cam until the serrations on the cam contact the base of the collar. Insert a square drive T-handle as shown in the diagram and rotate entire assembly counter-clockwise until collar is loosened sufficiently to permit removing by hand.



HLH128-6		HLH128-8		HLH128-10		HLH128-12		HLH128-14		HLH128-16		HLH128-18		HLH128-20		HLH128-24		HLH128-28		HLH128-32		
HL	HLT	HL	HLT	HL	HLT	HL	HLT	HL	HLT	HL	HLT	HL	HLT	HL	HLT	HL	HLT	HL	HLT	HL	HLT	
70-5	70-5	70-8	86-8	70-10	70-10	70-12	70-12	72-14	86-14	78-16	86-16	73-18	73-20	73-24	73-28	73-32						
72-5	73-5	77-8	94-8	77-10	70LP-10	72-12	70LP-12	78-14	94-14	78K-16	94-16	79-18	79-20	79-24	79-28	79-32						
77-5	77-6	78-8		78-10	86-10	77-12	77-12	78K-14	97-14	86-16	97-16	87-18	87-20	87-24	87-28	87-32						
78-5	86-5	78K-8		78K-10	94-10	78-12	86-12	79-14		87-16												
78K-5	94-5	80-8		80-10		78K-12	97-12	84-14		97-16												
86-5	97-5	81-8		87-10		80-12		87-14		198-16												
90-5	270-5	86-8		97-10		85-12		94-14		278-16												
94-5	686-5	87-8		177-10		86-12		97-14		379-16												
97-5		97-8		198-10		87-12		198-14		386-16												
192-5		177-8		277-10		97-12		272-14		486-16												
198-5		178-8		278-10		177-12		273-14														
272-5		198-8		379-10		198-12		278-14														
273-5		277-8		386-10		277-12		386-14														
277-5		278-8		486-10		278-12		486-14														
278-5		379-8		686-10		379-12		494-14														
379-5		386-8				386-12																
386-5		486-8				486-12																
486-5		588-8				686-12																
490-5		686-8																				
494-5																						
570-5																						
578-5																						
579-5																						
587-5																						
594-5																						
673-5																						
677-5																						
678-5																						
694-5																						
METRIC COLLARS HLM70-4, HLM70-5		HLM70-6		HLM70-8		HLM70-10																

# HLH 128

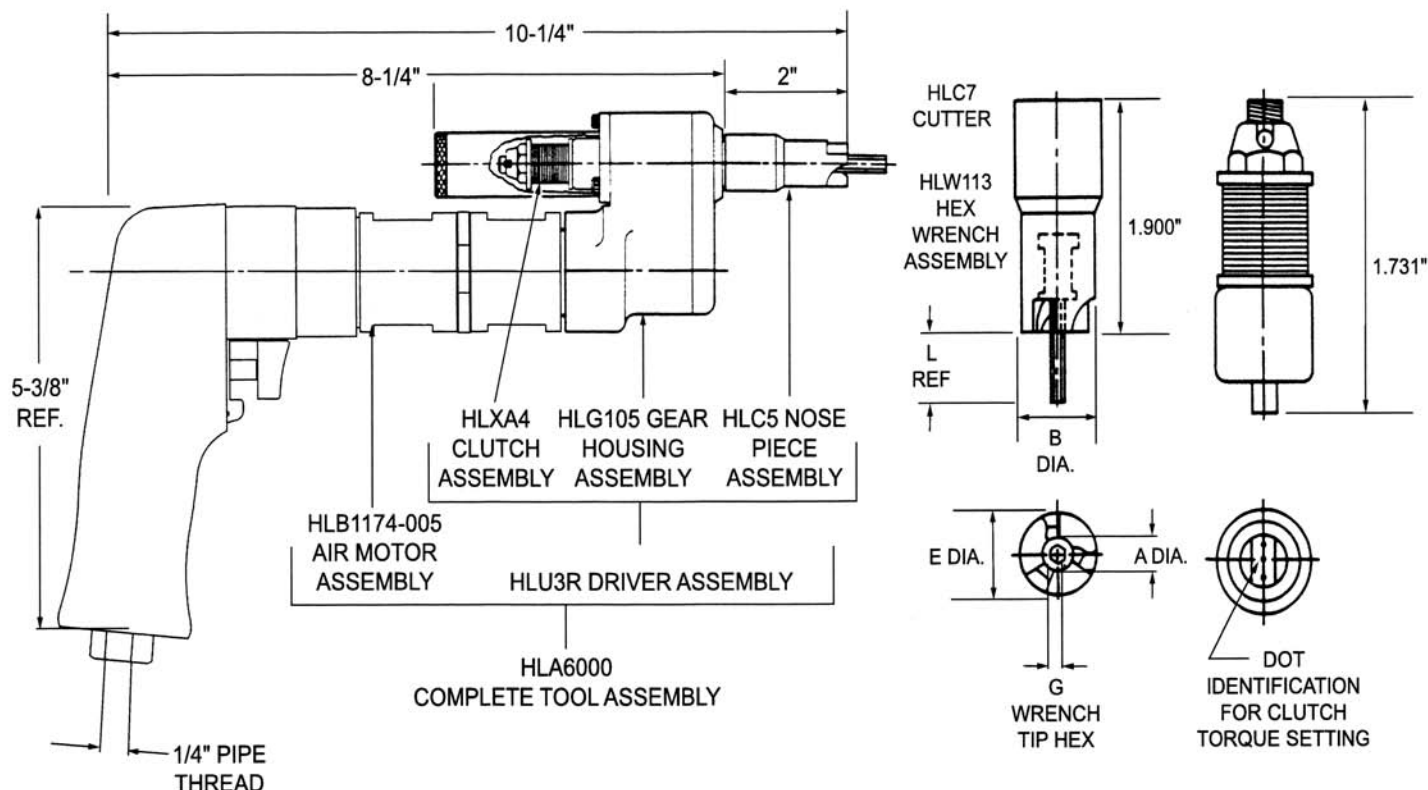
Dimension Data Hi-Lok / Hi-Tigue Removal Tool Assembly for removing HL or HTL collars that have been installed in interface and non interface fit pins



Part No.	Size	A	B	C	D
HLH128-6	3/16"	1.225	.400	.800	-
HLH128-8	1/4"	1.300	.400	.800	-
HLH128-10	5/16"	1.435	.500	.800	-
HLH128-12	3/8"	1.7	.562	1.070	-
HLH128-14	7/16"	1.915	.687	1.150	-
HLH128-16	1/2"	2.070	.687	1.200	-
HLH128-18	9/16"	2.480	1.060	1.400	-
HLH128-20	5/8"	2.785	1.090	1.600	-
HLH128-24	3/4"	3.245	1.200	1.800	2.00
HLH128-28	7/8"	3.750	1.500	2.000	2.25
HLH128-32	1"	4.20	1.750	2.200	2.50

## HLA 6000

### Non Interference Fit Collar Removal Tool Cutter Nose Piece



#### Ordering Information

- Determine pin recess hex dimensions (G wrench tip hex) of the fasteners to be removed.
- See table for clutch assembly dot identification and torque setting.
- Determine complete tool assembly part number.

#### Part No. Example:

**HLH6000-2**



TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.75
Max Torque Rating (Motor)	270 in. lb. @ 90 PSIA	Air Consumption	25 CFM
Socket Speed	600 RPM	Weight	3.5 lb.

"G" Wrench Tip Hex	Complete Tool Assy. Part No.	Nose Piece Assembly					HLX A4 Clutch Assemblies		
		Part No.	A Dia.	B Dia.	L (Ref.)	E Dia.	Part No.	Dot ID	Torque Setting
1/16"	HLA6000-2	HLC5-5	0.270	0.687	0.390	0.750	HLXA4-56	••	18 - 12 in. lb.
5/64"	HLA6000-6	HLC5-6	0.315	0.687	0.390	0.750	HLXA4-56	••	18 - 12 in. lb.
3/32"	HLA6000-8	HLC5-8	0.420	0.750	0.490	-	HLXA4-8	•••	30 - 32 in. lb.
1/8"	HLA6000-10	HLC5-10	0.505	0.875	0.576	0.875	HLXA4-1012	••••	55 - 60 in. lb.
5/32"	HLA6000-12	HLC5-12	0.600	1.000	0.689	1.000	HLXA4-1012	••••	55 - 60 in. lb.

## HLA6005

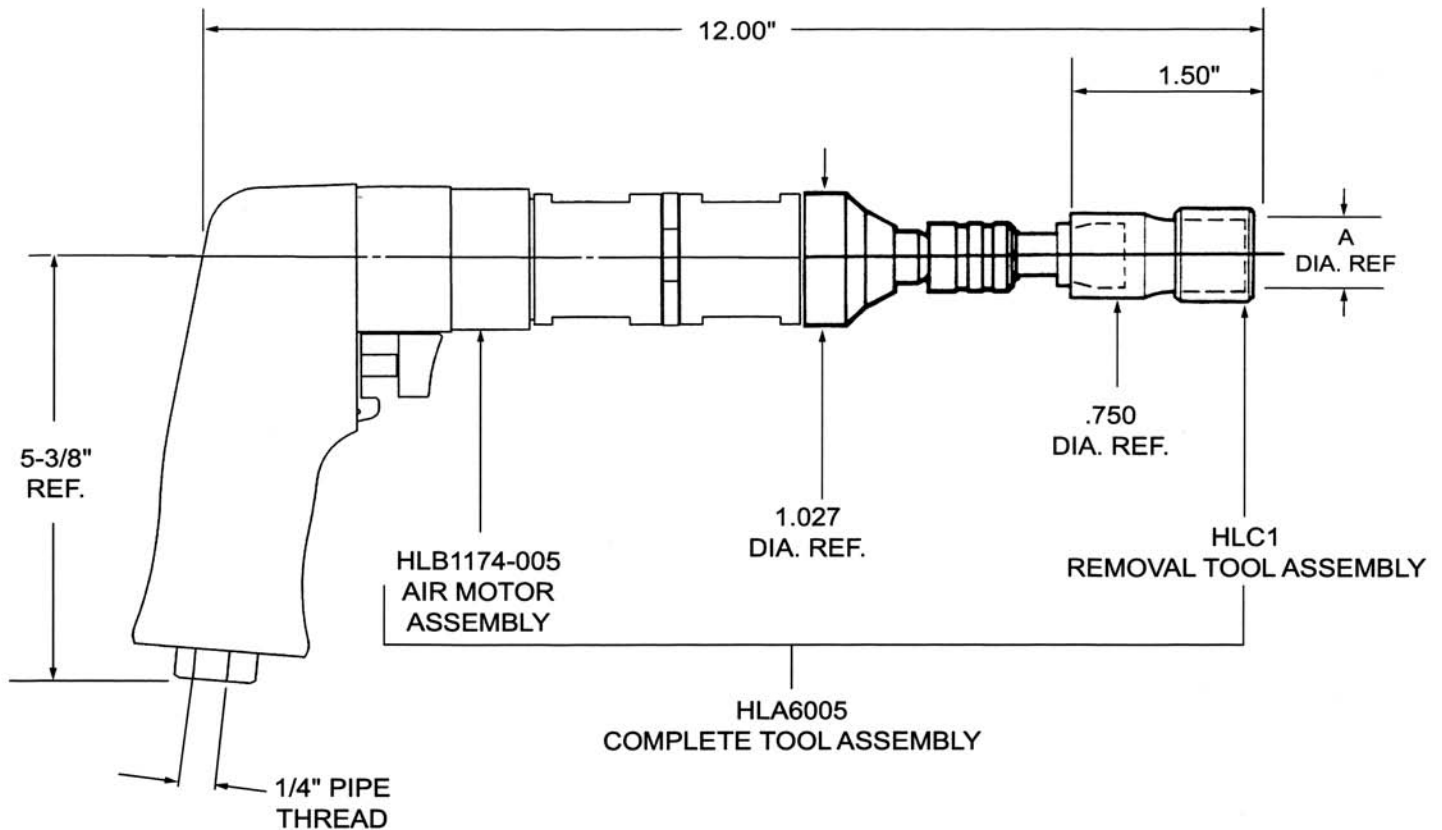
### Non Interference Fit Collar Removal Tool Cutter Nose Piece

The HLA6005 Removal Tool Assembly is used for rapid removal of HL or HLT pins that have been installed in an interference fit condition. To operate, press the tool sharply on the fastener to engage the clutch elements. The impact effect helps the cutter teeth to obtain a "bit" on the collar. While maintaining end pressure on the tool, pull the trigger until the collar is completely unthreaded from the pin.

In instances of high preload, such as may occur on some types of -8 size collars, initial loosening of the collar may have to be done manually by hand tools. The DK2 hand removal tool assembly is recommended for this purpose.

To order, match the dash number of the HLA6005 Removal Tool Assembly with dash number of the collar to be removed. Example: HLA6005-6 is the correct tool to remove HL70-6 collars.

PN: HLA6005

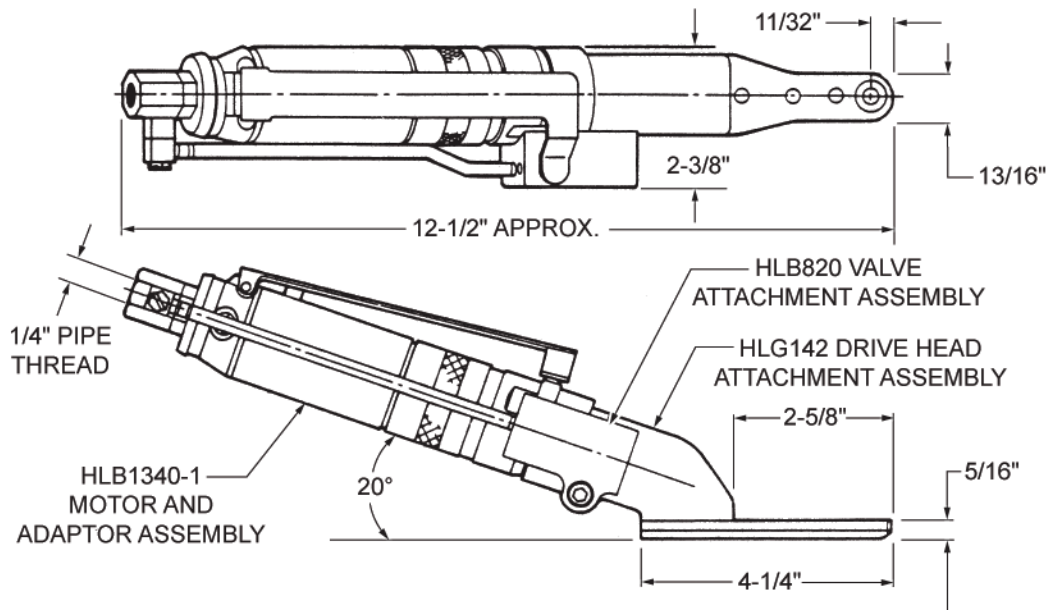


"A" Diameter	Complete Tool Assy. Part No.	Collar Usage Dash No.
0.625	HLA6005-5	-5
0.625	HLA6005-6	-6
0.812	HLA6005-8	-8

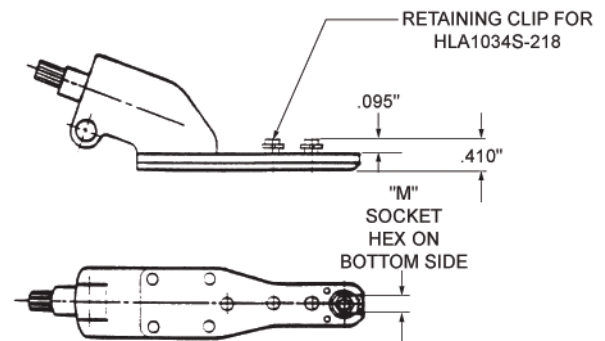
TECHNICAL DATA			
Operating Pressure	90 PSIA	Horsepower Rating	0.75
Max Torque Rating (Motor)	270 in. lb. @ 90 PSIA	Air Consumption	25 CFM
Socket Speed	600 RPM	Weight	3.5 lb.

**HLA1034**

**Small 20° Offset Ratchet Wrench  
with open End Self-Indexing Socket on Bottom Side**



**DRIVE HEAD ATTACHMENT ASSEMBLY  
WITH OPEN END SOCKET**

**ORDERING INFORMATION**

1. Determine collar driving hex of the fasteners to be installed.
2. See Table 1 for "M" socket hex to match collar driving hex dimension.
3. See example of Complete Socket Assembly Part No.
4. This tool is for installing interference fit fasteners only.

**Part No. Example:**

**HLA1034-312**

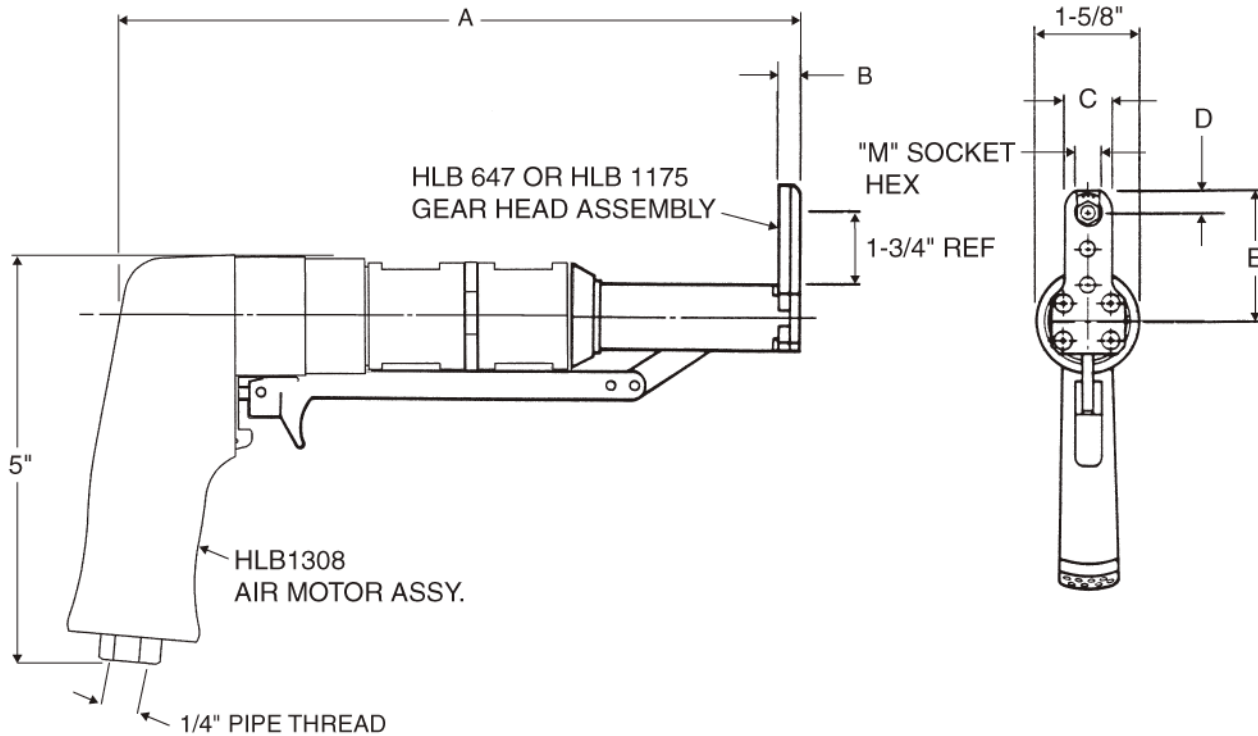
Technical Data			
Operating pressure	90 PSIA	Horsepower Rating	0.33
Max Torque Rating	114 in.	Air Consumption	18 CFM
Socket Speed	550 RPM	Weight	4 lb

"M" Socket Hex	Complete Tools Assembly Part No.	Drive Head Attachment Assembly Part No.	Socket Part No.
7/32"	HLA1034s-218	HLG142-218	HLB774-218
1/4"	HLA1034-281	HLG142-281	HLB856-250
9/32"	HLA1034-281	HLG142-281	HLB856-281
5/16"	HLA1034-312	HLG142-312	HLB644-312
11/32"	HLA1034-343	HLG142-343	HLB774-343



# HLA1041

## 90° Offset Driver Assembly with open End Self-Indexing Socket



### ORDERING INFORMATION

1. Determine collar driving hex of the fasteners to be installed.
2. See Table 1 for "M" socket hex to match collar driving hex dimension.
3. See example of Complete Socket Assembly Part No.
4. This tool is for installing interference fit fasteners only.

### Part No. Example:

**HLA1041-312**



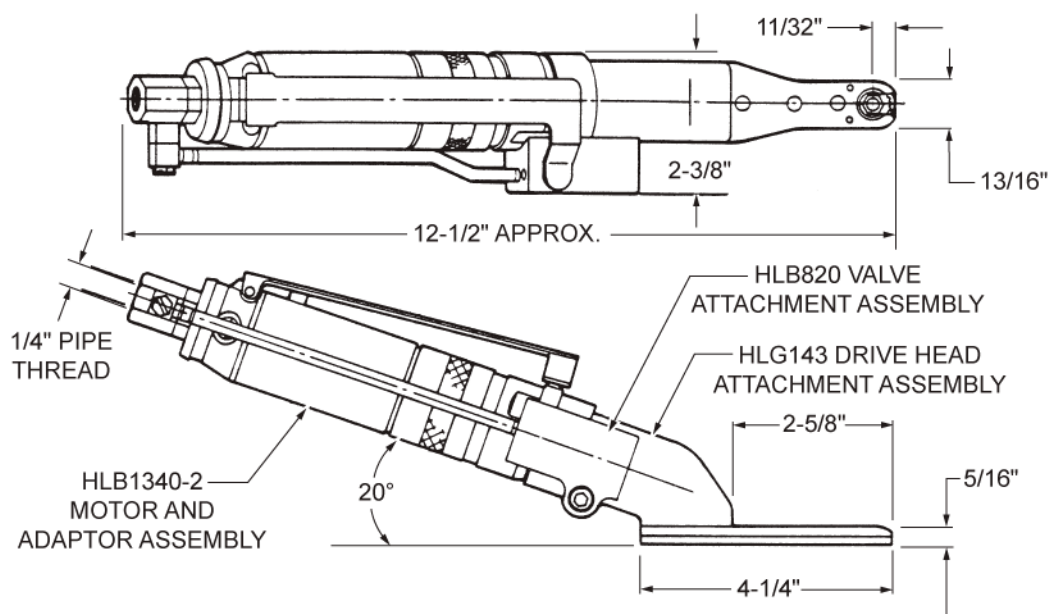
Technical Data			
Operating pressure	90 PSIA	Horsepower Rating	0.75
Max Torque Rating	270 in.	Air Consumption	25 CFM
Socket Speed	600 RPM	Weight	3.5 lb

"M" Socket Hex	Complete Tools Assembly Part No.	Drive Head Attachment Assembly Part No.	Dimensions					Socket Part No.
			A	B	C	D	E	
1/4"	HLA1041-250	HLG647-250	9.75	0.312	0.875	0.340	2.117	HLB856.250
5/16"	HLA1041-312	HLG647-312	9.75	0.312	0.875	0.340	2.117	HLB644-312
11/32"	HLA1041-343	HLG647-343	9.75	0.312	0.875	0.340	2.117	HLB774-343
7/16"	HLA1041-437	HLB1175-437	9.90	0.462	1.062	0.428	2.483	HLB1178-437

FASTENER INSTALLATION & REMOVAL - SELF-INDEX DRIVER

## HLA1111

Small 20° Offset Ratchet Wrench  
with open End Self-Indexing Socket on Bottom Side



### ORDERING INFORMATION

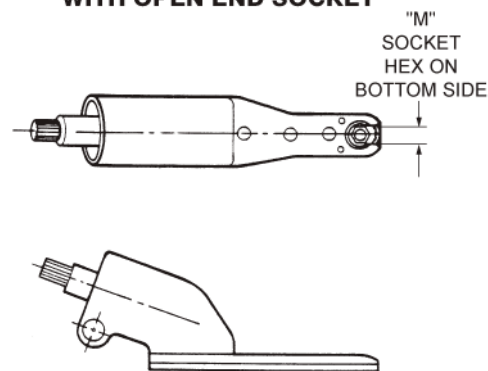
1. Determine collar driving hex of the fasteners to be installed.
2. See Table 1 for "M" socket hex to match collar driving hex dimension.
3. See example of Complete Socket Assembly Part No.
4. This tool is for installing interference fit fasteners only.

Part No. Example:

**HLA1111-312**

- "M" Socket Hex - Ref Table 1
- Basic Part No.

### DRIVE HEAD ATTACHMENT ASSEMBLY WITH OPEN END SOCKET

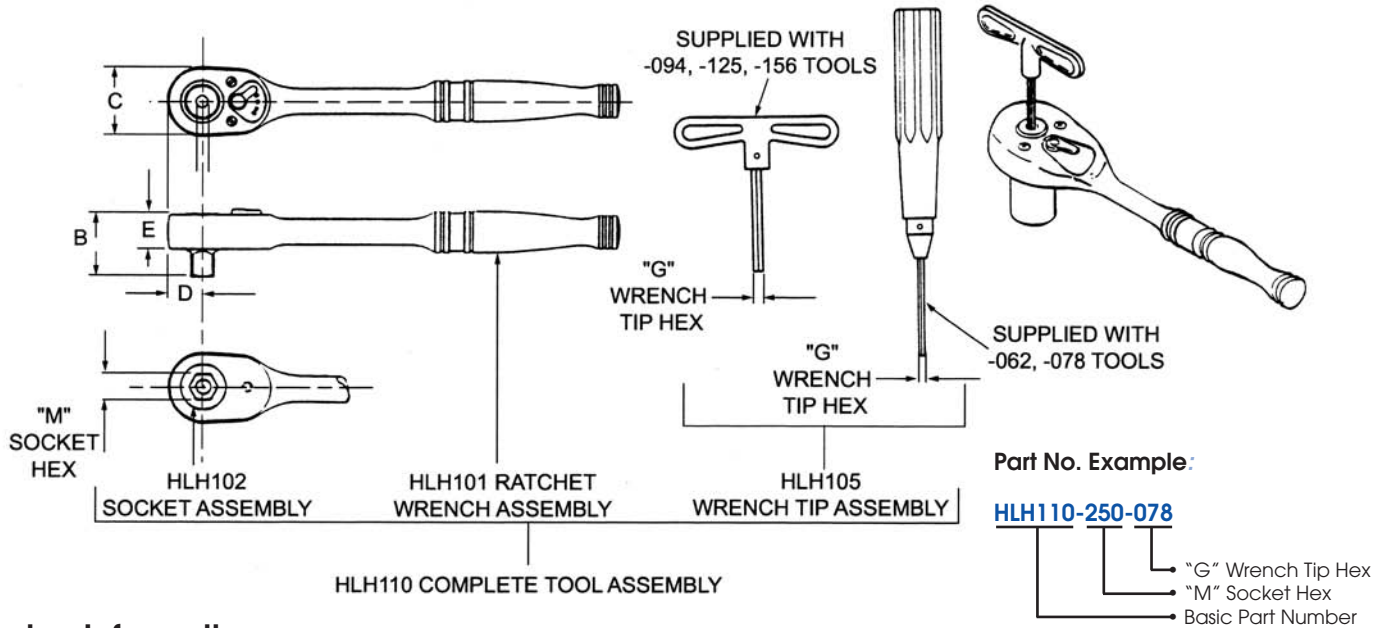


Technical Data			
Operating pressure	90 PSIA	Horsepower Rating	0.33
Max Torque Rating	114 in.	Air Consumption	18 CFM
Socket Speed	550 RPM	Weight	4 lb

"M" Socket Hex	Complete Tools Assembly Part No.	Drive Head Attachment Assembly Part No.	Socket Part No.
1/4"	HLA1111-250	HLG143-250	HLB856-250
9/32"	HLA1111-281	HLG143-281	HLB856-281
5/16"	HLA1111-312	HLG143-312	HLB644-312
11/32"	HLA1111-343	HLG143-343	HLB774-343

# HLH 110

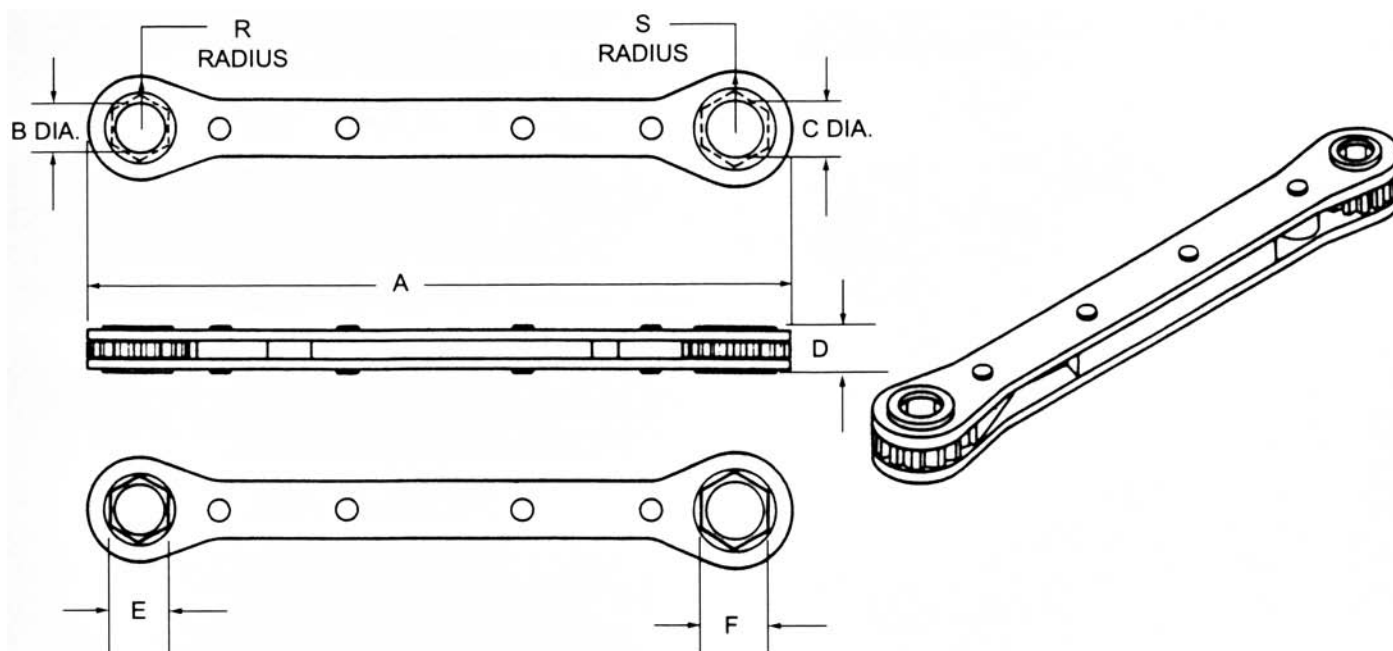
## Hand Installation Tool for Small Collars



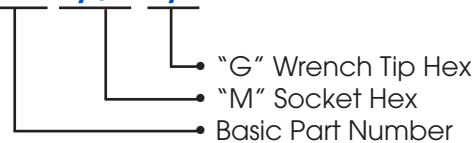
### Ordering Information

- Determine collar driving hex and pin recess hex dimensions of the fasteners to be installed.
- See the table for "M" socket hex and "G" wrench tip hex combination to match collar driving hex and pin recess hex dimensions.

"M" Socket Hex (Matches Collar Driving Hex)	"G" Wrench Tip Hex (Matches Pin Recess Hex)	Complete Tool Assy. Part No.	Dimensions						Socket Square Drive	Ratchet Wrench Assy. Part No.	Socket Assy. Part No.	Wrench Tip Assy. Part No.		
			A	B	C	D	E	F						
3/16"	1/16"	HLH110-187-062								HLH102-187	HLH105-062			
7/32"		HLH110-218-062										HLH102-218	HLH105-062	
1/4"		HLH110-250-062										HLH102-250	HLH105-062	
9/32"		HLH110-281-062										HLH102-281	HLH105-062	
5/16"		HLH110-312-062										HLH102-312	HLH105-062	
11/32"	5/64"	HLH110-343-062	5.0	0.8	1.0	0.5	0.45	0.156	1/4"	HLH101/250	HLH102-343	HLH105-062		
7/32"		HLH110-218-078											HLH102-218	HLH105-078
1/4"		HLH110-250-078											HLH102-250	HLH105-078
9/32"		HLH110-281-078											HLH102-281	HLH105-078
5/16"		HLH110-312-078											HLH102-312	HLH105-078
11/32"	3/32"	HLH110-343-078									HLH102-343	HLH105-078		
3/8"		HLH110-375-078											HLH102-375	HLH105-078
5/16"		HLH110-312-094											HLH102-312	HLH105-078
11/32"		HLH110-343-094											HLH102-343	HLH105-078
3/8"		HLH110-375-094											HLH102-375	HLH105-078
7/16"	1/8"	HLH110-437-094									HLH102-437	HLH105-094		
1/2"		HLH110-500-094											HLH102-500	HLH105-094
3/8"		HLH110-375-125											HLH102-375-A	HLH105-094
7/16"		HLH110-437-125											HLH102-437	HLH105-125
1/2"		HLH110-500-125											HLH102-500	HLH105-125
7/16"	5/32"	HLH110-437-125									HLH102-437	HLH105-156		
1/2"		HLH110-500-125											HLH102-500	HLH105-156

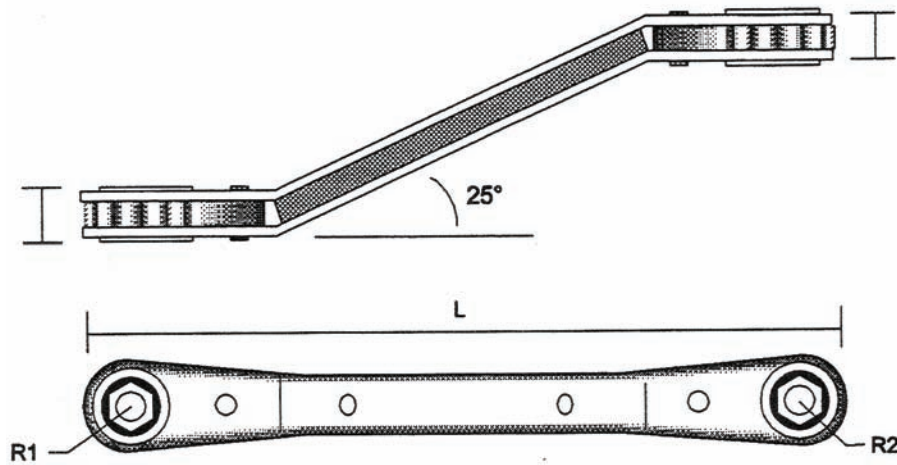
**HLH149****Hand Installation Tool  
Double Box Ratchet Wrench****Ordering Information**

- Determine collar driving hex dimensions of the fasteners to be installed.
- See the table for "E" and "F" socket hexes to match collar driving hex. Determine Complete Tool Assembly Part Number.

**Part Number Example:****CAR-EXA-7/32X1/4**

Socket Hex Part No.		Complete Tool Assy. Part No.	Delta Part Number	Dimensions				Radius	
E	F			A	B	C	D	R	S
7/32"	1/4"	HLH149-218-250	CAR-EXA-7/32X1/4	4.25	0.171	0.171	0.38	0.280	.0312
1/4"	9/32"	HLH149-250-281	CAR-EXA-1/4X9/32						
1/4"	5/16"	HLH149-250-312	CAR-EXA-1/4X5/16						
9/32"	5/16"	HLH149-281-312	CAR-EXA-9/32X5/16						
5/16"	11/32"	HLH149-312-343	CAR-EXA-5/16X11/32	5.50	0.265	0.328	0.375	0.440	
5/16"	3/8"	HLH149-312-375	CAR-EXA-5/16X3/8						
7/16"	1/2"	HLH149-437-500	CAR-EXA-7/16X1/2						

**Hand Installation Tool**  
**Offset Ratchet Wrench**



Part No. Example:

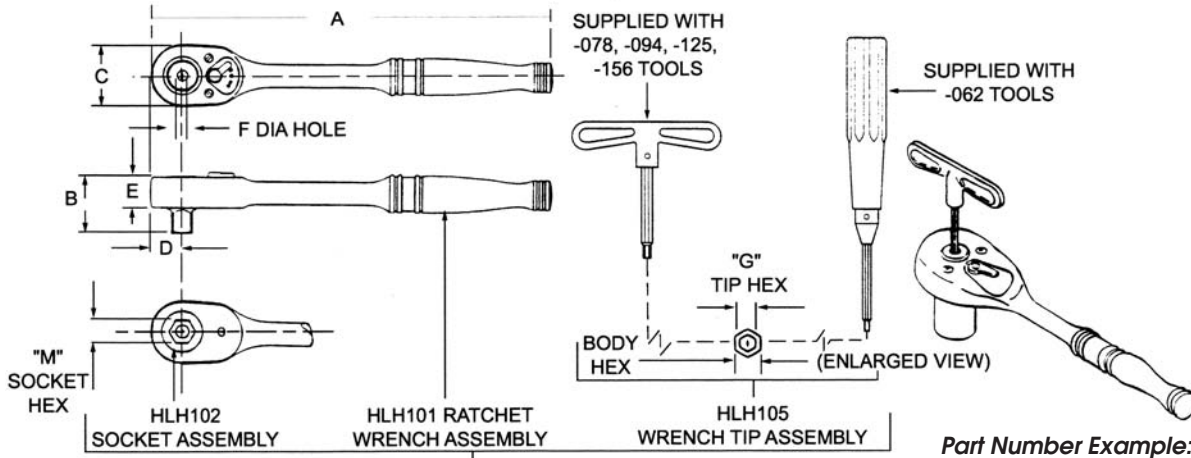
**ACO-EXA-7/32X1/4**



Part No. 25 Offset	Hex #1	Hex#2	Tool Thickness	Overall Length
ACO-EXA-7/32X1/4	7/32"	1/4"	3/8"	4-3/32" (104 mm)
ACO-EXA-1/4X9/32	1/4"	9/32"		
ACO-EXA-5/16X11/32	5/16"	11/32"		
ACO-EXA-5/16X3/8	5/16"	3/8"		5-7/32" (133mm)
ACO-EXA-7/16X1/2	7/16"	1/2"		

# HLH150

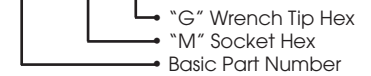
## Hand Installation Tool High Strength Wrench Tip for Small Collars



HLH150 COMPLETE TOOL ASSEMBLY

Part Number Example:

**HLH150-250-078**



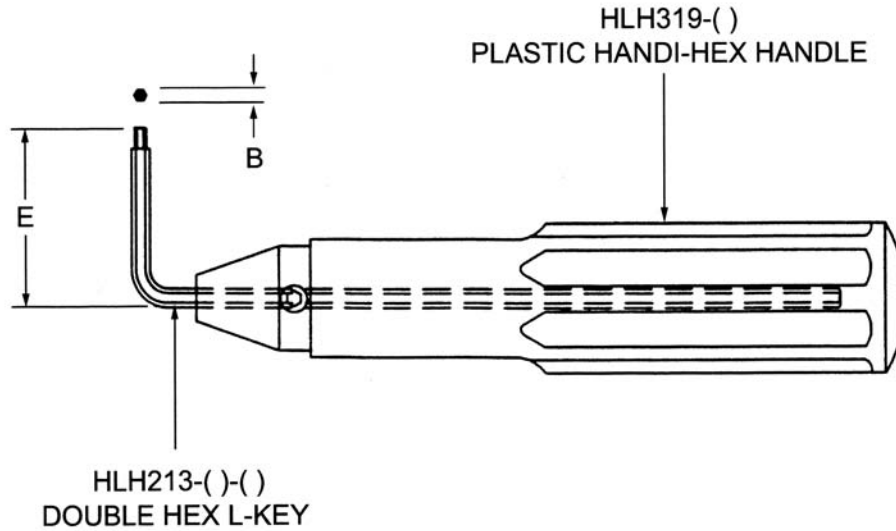
### Ordering Information

- Determine collar driving hex and pin recess hex dimensions of the fasteners to be installed.
- See the table for "M" socket hex and "G" wrench tip hex combination to match collar driving hex and pin recess hex dimensions.

"M" Socket Hex (Matches Collar Driving Hex)	"G" Wrench Tip Hex (Matches Pin Recess Hex)	Complete Tool Assy. Part No.	Dimensions						Socket Square Drive	Ratchet Wrench Assy. Part No.	Socket Assy. Part No.	Wrench Tip Assy. Part No.	Key-Hex Body Hex	Key Part No.																
			A	B	C	D	E	F																						
3/16"	1/16"	HLH110-187-062	5.0	0.8	1.0	0.5	0.45	0.156	1/4"	HLH101/250	HLH102-187	HLH105-062T Straight Handle	.062 .078	HLH202-078																
7/32"		HLH110-218-062									HLH102-218																			
1/4"		HLH110-250-062									HLH102-250																			
9/32"		HLH110-281-062									HLH102-281																			
5/16"		HLH110-312-062									HLH102-312																			
11/32"	5/64"	HLH110-343-062									5.0	0.8	1.0	0.5	0.45	0.156	1/4"	HLH101/250	HLH102-343	HLB1616-H T-HANDLE	.078 .094	HLH202-094								
7/32"		HLH110-218-078																	HLH102-218											
1/4"		HLH110-250-078																	HLH102-250											
9/32"		HLH110-281-078																	HLH102-281											
5/16"		HLH110-312-078																	HLH102-312											
11/32"	3/32"	HLH110-343-078																	5.0	0.8	1.0	0.5	0.45	0.156	1/4"	HLH101/250	HLH102-343	HLH105-078T T-HANDLE	.078 .094	HLH202.125
3/8"		HLH110-375-078																									HLH102-375			
5/16"		HLH110-312-094																									HLH102-312			
11/32"		HLH110-343-094																									HLH102-343			
3/8"		HLH110-375-094																									HLH102-375			
7/16"	1/8"	HLH110-437-094	7.0	1.18	1.5	0.687	0.5	0.218	3/8"	HLH101-375																	HLH102-437	HLH105-125T T-HANDLE	.125 .156	HLH202-156
1/2"		HLH110-500-094																									HLH102-500			
3/8"		HLH110-375-125																									HLH102-375-A			
7/16"		HLH110-437-125																									HLH102-437			
1/2"		HLH110-500-125																									HLH102-500			
7/16"	5/32"	HLH110-437-125									7.0	1.18	1.5	0.687	0.5	0.218	3/8"	HLH101-375									HLH102-437	HLH105-156T T-HANDLE	.156 .187	HLH202-187
1/2"		HLH110-500-125																									HLH102-500			

# HLH213

## Assembly, Hand Installation Tool Double Hex Key

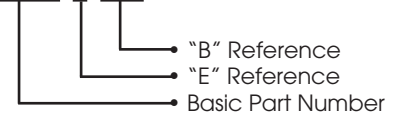


### Ordering Information

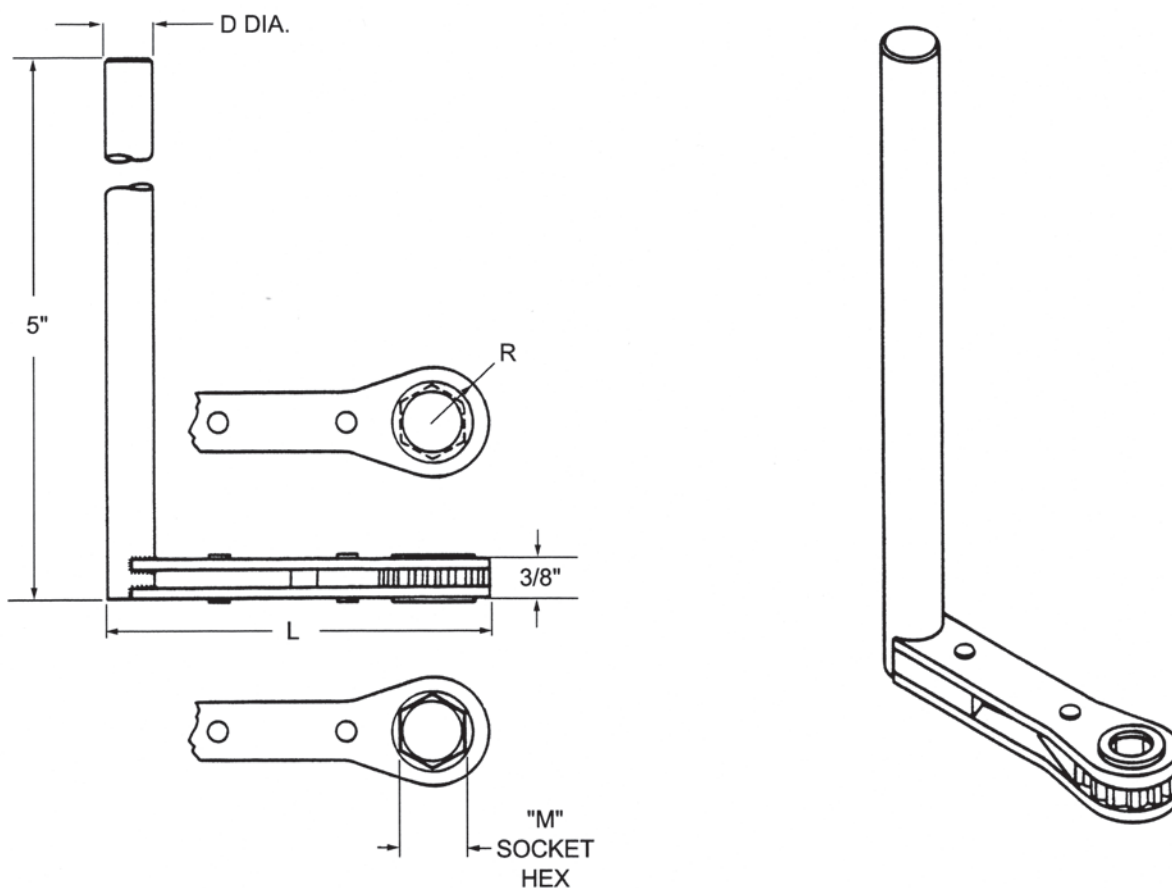
- Determine broach hex dimensions of the pins to be installed.
- See table for ("B" and "E") dimensions to match broached hex and required reach.
- Determine Complete Tool Assembly Part Number.

### Part No. Example:

**HLH213-1-062**



Complete Tool Assembly Part No.	B	E	Plastic Handi-Hex Handle	High-Strength Hex Key Part No.
HLH213-1-062	1/16"	5/8"	HLH319-078	HLH212-1-062
HLH213-1-078	5/64"		HLH319-094	HLH212-1-078
HLH213-1-094	3/32"		HLH319-125	HLH212-1-094
HLH213-1-125	1/8"		NOT AVAILABLE	HLH212-1-125
HLH213-1-156	5/32"		NOT AVAILABLE	HLH212-1-156
HLH213-2-062	1/16"		1-5/8"	HLH319-078
HLH213-2-078	5/64"	HLH319-094		HLH212-2-078
HLH213-2-094	3/32"	HLH319-125		HLH212-2-094
HLH213-2-125	1/8"	NOT AVAILABLE		HLH212-2-125
HLH213-2-156	1/16"	NOT AVAILABLE		HLH212-2-156

**HLH216****Hand Installation Tool  
Offset Ratchet Wrench****Ordering Information**

- Determine broach hex dimensions of the pins to be installed.
- See table for ("B" and "E") dimensions to match broached hex and required reach.
- Determine Complete Tool Assembly Part Number.

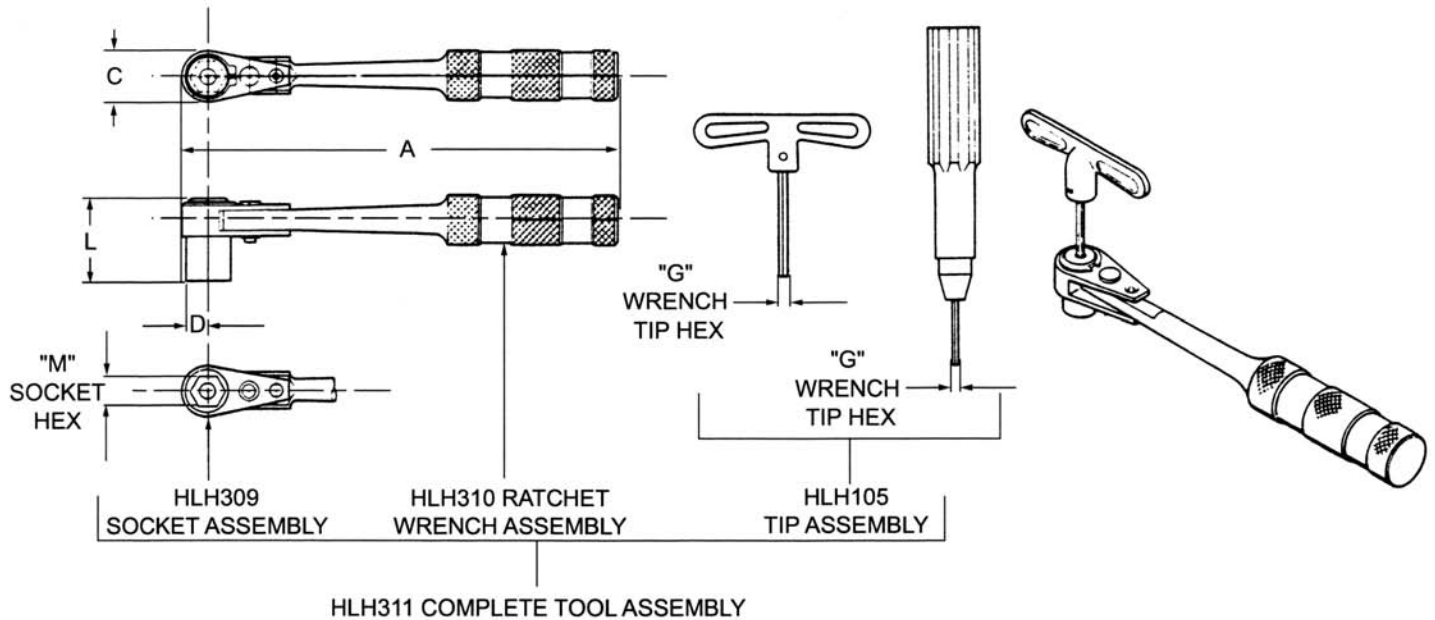
**Part No. Example:****HLH216-312**

"M" Socket Hex (Matches Collar Driving Hex)	Complete Tool Assy. Part No.	Dimensions		
		A	B	C
7/32"	HLA216-218	0.312	2.37	0.280
1/4"	HLA216-250			
9/32"	HLA216-281			
5/16"	HLA216-312			0.312
11/32"	HLA216-343			
3/8"	HLA216-375	0.375	2.95	0.440
7/16"	HLA216-437			
1/2"	HLA216-500			0.375



# HLH311

## Hand Installation Tool with Minimum Edge Distance



Code	L Extended Socket
E	0.750
G	0.875
H	1.375
C	1.500
F	1.750

### Ordering Information

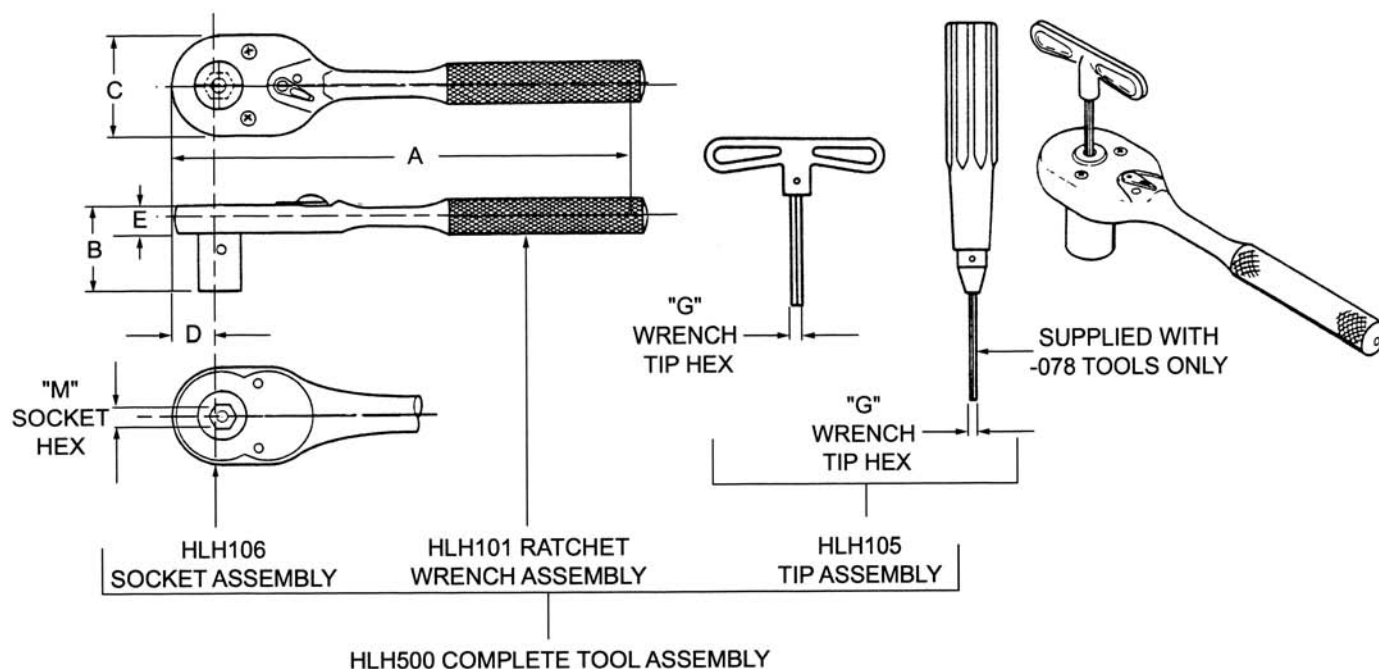
- Determine collar driving hex and pin recess hex dimensions of the fasteners to be installed.
- See table for "M" socket hex and "G" wrench tip recess hex dimensions.
- See other table for "L" extended socket length.

### Part No. Example:

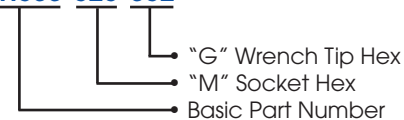
**HLH311-250E-078**



"M" Socket Hex (Matches Collar Driving Hex)	"G" Wrench Tip Hex (Matches Pin Recess hex)	Complete Tool Assy. Part No.	Dimensions				Ratchet Wrench Assy. Part No.	Socket Assembly Part No.	Wrench Key Assembly part No.
			A	L	C	D			
1/4"	5/64"	HLH311-250E-078	6.40	0.750	0.562	0.281	HLH310-1	HLH309-250E	HLH105-078
		HLH311-250F-078		1.75			HLH310-1	HLH309-250F	HLH105-078
HLH311-312E-078		0.750		HLH310-1			HLH309-312E	HLH105-078	
HLH311-312H-078		1.375		HLH310-1			HLH309-312H	HLH105-078	
HLH311-343E-078		0.750		HLH310-1			HLH309-343E	HLH105-078	
HLH311-343E-094		0.750		HLH310-1			HLH309-343E	HLH105-094	
11/32"	3/32"	HLH311-343H-094	6.40	1.375	0.750	0.375	HLH310-1	HLH309-343H	HLH105-094
		HLH311-437E-094		0.750			HLH310-1	HLH309-437E	HLH105-094
		HLH311-437G-094		0.875			HLH310-2		HLH105-094
HLH311-437C-094		1.500	HLH310-2				HLH105-094		
HLH311-437C-094		1.750	HLH310-2				HLH105-094		
HLH311-437E-125		0.750	HLH310-2				HLH105-125		
1/2"	5/32"	HLH311-500G-156	6.40	0.875	0.750	0.375	HLH310-2		HLH105-156

**HLH500****Hand Installation Tool  
For Large Size Collars****Ordering Information**

- Determine collar driving hex and pin recess hex dimensions of the fasteners to be installed.
- See table for "M" socket hex and "G" wrench tip hex combination to match collar driving hex and pin recess hex dimensions.
- Determine Complete Tool Assembly Part Number.

**Part No. Example:****HLH500-625-062**

"M" Socket Hex (Matches Collar Driving Hex)	"G" Wrench Tip Hex (Matches Pin recess Hex)	Complete Tool Assy. Part No.	Dimensions					Socket Square Drive	Ratchet Wrench Assy. Part No.	Socket Assembly Part No.	Wrench Tip Assembly Part No.
			A	B	C	D	E				
3/8"	5/64"	HLH500-375-078	7.0	1.437	1.375	0.687	0.500	3/8"	HLH101-375	HLH106-375	HLH105-078
1/2"	3/32"	HLH500-500-094		1.500						HLH106-500	HLH105-094
1/2"	1/8"	HLH500-500-125								HLH106-500	HLH105-125
9/16"	1/8"	HLH500-500-125	10.0	2.187	1.750	0.875	0.687	1/2"	HLH101-500	HLH106-562	HLH105-125
6/16"	5/32"	HLH500-562-125								HLH106-562	HLH105-156
6/16"	3/16"	HLH500-562-156								HLH106-562	HLH105-187
5/8"	5/32"	HLH500-562-187								HLH106-625	HLH105-156
11/16"	5/32"	HLH500-625-156								HLH106-687	HLH105-156
11/16"	7/32"	HLH500-687-156								HLH106-687	HLH105-156
3/4"	3/16"	HLH500-750-187								HLH106-750	HLH105-218
7/8"	7/32"	HLH500-875-218	2.437	HLH106-875	HLH105-187						
15/16"	1/4"	HLH500-937-250	20.0	3.125	2.625	1.250	1.125	3/4"	HLH101-750	HLH106-937	HLH105-250
1"	1/4"	HLH500-1000-250								HLH106-1000	HLH105-250
1-1/8"	5/16"	HLH500-1125-312								3.437	HLH106-1125

### Hi-Lok® Removal Plier



Quick and inexpensive alternative for removing larger size frangible hex collars such as Hi-Lok, Hi-Lite, Hi-Tigue, Veri-Lite and C-Lok fasteners.

PN: ZHP-200  
PN: ZHP-100

### HI-LOK® Collar Removal Sockets

These Patented 1/4" Square Drive Collar Removal Sockets provide an efficient, convenient way to remove Hi-Lok® and Eddie-Bolt® Collars.



Part Number	Collar Size
OMSK3581-5/32	-5 (5/32")
OMSK3581-3/16	-6 (3/16")
OMSK3581-1/4	-8 (1/4")
OMSK3581-5/16	-10 (5/16")
OMSK3581-3/8	-12 (3/8")
OMSK3581-7/16	-14 (7/16")
OM3581-4PC	-5, -6, -8, -10 set of 4

### Liberator Toothless Bearing Ratchet for Hi-Lok Installation

The "Liberator" Modular Ratchet System was designed by an aircraft mechanic to enable the easy installation of frangible collar (Hi-Lok) type fasteners in the most unusual and awkward situations. This kit is one of the most flexible and useful tools you can have in your toolbox.

The 13 piece kit contains two toothless "roller clutch" ratchet heads which are torque rated up to 80 in lbs, two 1/4" drive studs which can be used with any brand of 1/4" drive socket, as well as a variety of straight and 90 degree handles. The entire system is interchangeable and can easily be assembled into an UNLIMITED range of straight and offset configurations! The ratchet heads feature the unique ability to be "indexed" in any position a full 360 degrees. All components are manufactured from 4140 tool steel with a maintenance free black oxide finish. Kit is packaged in a custom fitted case for easy storage.

PN: DIP-LIB



### Hi-Lok Collar Hand Removal Tools

- Slips down over Hi-Lok or similar collar and gently unscrews.
- Clean removal in limited access areas with no cutting or prying.
- Add "s" for straight handle.



Part No.	Part No. Crow Foot	Pin Dash No.	Nominal Pin Diameter	Width
REM100-56	REM100-56CF	-5	5/32"	.42"
		-6	3/16"	.42"
REM100-8	REM100-8CF	-8	1/4"	.55"
REM100-10	REM100-10CF	-10	5/16"	.67"
REM100-12	REM100-12CF	-12	3/8"	.75"
REM100-14	REM100-14CF	-14	7/16"	.95"

### Six-Wing Collar Removal Tools



Standard Socket Models

Part No. Complete Tool	Part No. Socket Only	Pin Dash No.	Pin Size	'B' Dimension	'C' Dimension	'D' Dimension	Overall Length
CAT19-15	CAT18-15	-5	5/32"	1/2"	.35"	.38"	4-1/4"
CAT19-18	CAT18-18	-6	3/16"	1/2"	.35"	.38"	4-1/4"
CAT19-25	CAT18-25	-8	1/4"	1/2"	.47"	.38"	4-1/4"
CAT19-31	CAT18-31	-10	5/16"	.65"	.59"	.38"	5-1/2"
CAT19-37	CAT18-37	-12	3/8"	.65"	.66"	.38"	5-1/2"

Extended Socket Models

Part No. Complete Tool	Part No. Socket Only	Pin Dash No.	Pin Size	'B' Dimension	'C' Dimension	'D' Dimension	Overall Length
CAT19-15-1	CAT18-15-1	-5	5/32"	1"	.35"	.38"	4-1/4"
CAT19-18-1	CAT18-18-1	-6	3/16"	1"	.35"	.38"	4-1/4"
CAT19-25-1	CAT18-25-1	-8	1/4"	1"	.47"	.38"	4-1/4"
CAT19-31-1	CAT18-31-1	-10	5/16"	1-1/4"	.59"	.38"	5-1/2"
CAT19-37-1	CAT18-37-1	-12	3/8"	1-1/4"	.66"	.38"	5-1/2"

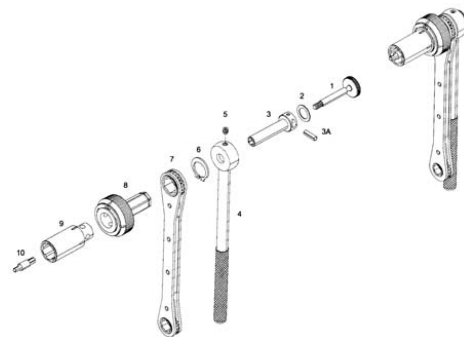
### Roller Ratchet Wrenches



Part No.	Torque Rating (lb. in.)	Overall Length	Replaces
RR80SP	200	6-1/4"	Fairchild RW100-80 rated at 80 lb. in.
RR130SP	250	7"	Fairchild RWB100-130 rated at 130 lb. in.
RR250	400	7-3/4"	Fairchild RWB100-250 rated at 250 lb. in.
RR400	600	8-1/2"	Fairchild RWB100-400 rated at 400 lb. in.
RR40SP	150	6-1/2"	Fairchild RWB100-40 rated at 40 lb. in.
RR40S-SP		3-1/2"	-

## Quick Change Socket Removal Tool

1. Determine the fastener hex and pin recess size.
  2. Determine the socket length required.
- Example: **QCHRA255 - 10 - 8**  
 - 1" long socket with grip range of 0.255 - 0.275  
 - 3/32" hex tip.

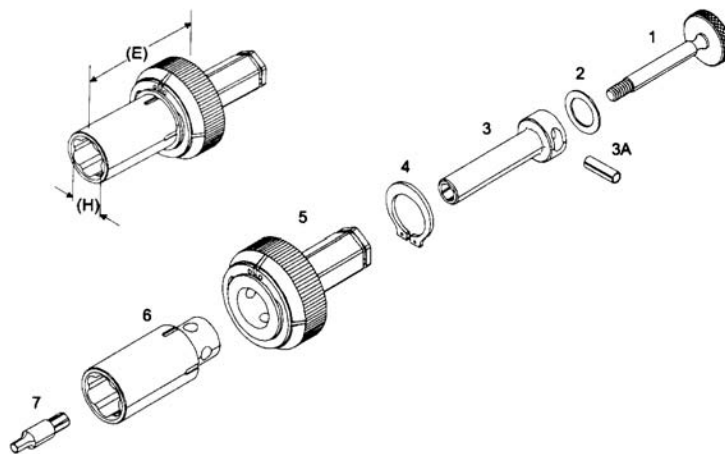


Complete Tool Assembly	Grip Range of Socket (R)	Socket Outside Dia.	Socket Only	Holder Only	Retention Shaft	Hex Key
			6	3	1	7
QCRA235-10-(H)	.235"-.255"	.593"	QCHR235-10	QRH-10	QRS-10	QRK-(H)
QCRA255-10-(H)	.255"-.275"	.703"	QCHR255-10			
QCRA275-10-(H)	.275"-.295"		QCHR275-10			
QCRA295-10-(H)	.295"-.315"	.718"	QCHR295-10			
QCRA315-10-(H)	.315"-.335"	.781"	QCHR315-10			
QCRA335-10-(H)	.335"-.355"		QCHR335-10			
QCRA355-10-(H)	.355"-.375"	.843"	QCHR355-10			
QCRA375-10-(H)	.375"-.395"	.875"	QCHR375-10			
QCRA395-10-(H)	.395"-.415"	.937"	QCHR395-10			
QCRA415-10-(H)	.415"-.435"	.968"	QCHR415-10			
QCRA435-10-(H)	.435"-.455"	1.008"	QCHR435-10			

(H) Hex Key		
5		1/16"
6		5/64"
8		3/32"
10		1/8"
1	QRS-(E)	Retention Shaft
2	HNW100	Nylon Washer
3	QRH-(E)	Holder
3A	093-250	Keeper Pin
4	HLH350	Handle
5	HW103	Set Screw
6	HRC100	Retaining Clip
7	HLR-7	Ratchet Wrench

## Quick Change Installation Socket

- To Order:
1. Determine the fastener hex and pin recess size.
  2. Determine the socket length required.
- Example: **QCA250 - 10 - 6**  
 - 1" long socket with 1/4" socket.  
 - 5/64" hex tip.



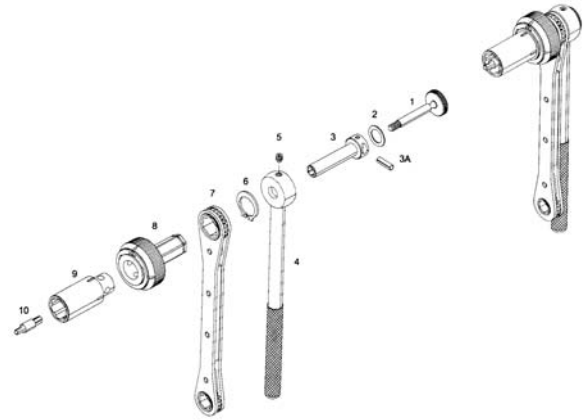
Socket Length (E)	Hex Tip (H)
10 = 1"	5 = 5/16"
15 = 1.5"	6 = 5/64"
20 = 2"	8 = 3/32"
25 = 2.5"	10 = 1/8"
30 = 3"	

Socket Assembly	Socket Hex (X)	Socket Outside Dia.	Socket Only	Holder Only	Retention Shaft	Hex Key
			6	3	1	7
QCA218-(E)-(H)	7/32"	0.34"	QCHS218-(E)	QRH-(E)	QRS-(E)	QRK-(H)
QCA250-(E)-(H)	1/4"	0.375"	QCHS250-(E)			
QCA281-(E)-(H)	9/32"	0.42"	QCHS281-(E)			
QCA312-(E)-(H)	5/16"	0.468"	QCHS313-(E)			
QCA343-(E)-(H)	11/32"	0.48"	QCHS343-(E)			
QCA375-(E)-(H)	3/8"	0.531"	QCHS375-(E)			
QCA437-(E)-(H)	7/16"	0.607"	QCHS437-(E)			

1	QRS-(E)	Retention Shaft
2	HNW100	Nylon Washer
3	QRH-(E)	Holder
3A		Keeper Pin
4	HRC-100	Retaining Clip
5	QCR-281	Quick Change Recepticle
6	QCHS(X)-(E)	Quick Change Installation Socket
7	QRK-(H)	Hex Key

## Quick Change Hand Installation Tool

1. Determine the fastener hex and pin recess size.
  2. Determine the socket length required.
- Example: **QCHA218 - 10 - 6**  
 - 1" long socket with 7/32" hex.  
 - 5/64" hex tip.



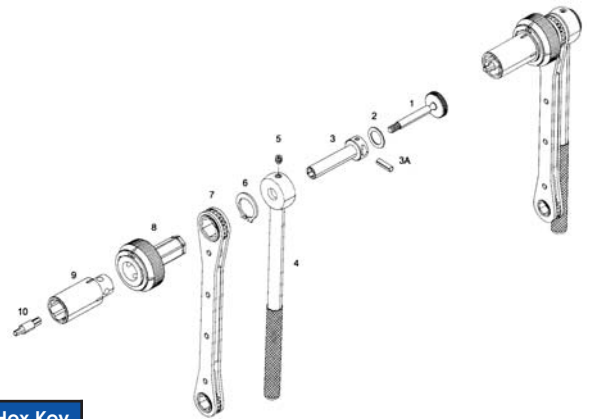
(E) Socket Length	(H) Hex Tip
10 = 1"	5 = 1/16"
15 = 1.5"	6 = 5/64"
20 = 2"	8 = 3/32"
25 = 2.5"	10 = 1/8"
30 = 3"	

Complete Tool Assembly	Socket Hex	Socket Outside Dia.	Socket Only 9	Holder Only 3	Retention Shaft 1	Hex Key 10
	(X)					
QCHA218-(E)-(H)	7/32"	.34"	QCHS218-(E)	QRH-(E)	QRS-(E)	QRK-(H)
QCHA250-(E)-(H)	1/4"	.375"	QCHS250-(E)			
QCHA281-(E)-(H)	9/32"	.42"	QCHS281-(E)			
QCHA312-(E)-(H)	5/16"	.468"	QCHS312-(E)			
QCHA343-(E)-(H)	11/32"	.48"	QCHS343-(E)			
QCHA375-(E)-(H)	3/8"	.531"	QCHS375-(E)			
QCHA437-(E)-(H)	7/16"	.607"	QCHS437-(E)			

1	QRS-(E)	Retention Shaft
2	HNW100	Nylon Washer
3	QRH-(E)	Holder
3A	093-250	Keeper Pin
4	HLH350	Handle
5	HW103	Set Screw
6	HRC100	Retaining Clip
7	HLR-7	Ratchet Wrench
8	QCR-281	Quick Change Receptacle
9	QCHS-(X)	Quick Change Installation Socket
10	QRK-(H)	Hex Tip

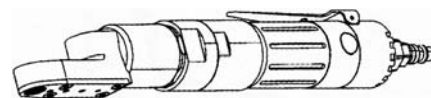
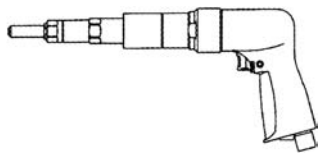
## Quick Change Hand Removal Tool

(H) Hex Key	
5	1/16"
6	5/64"
8	3/32"
10	1/8"



Complete Removal Socket Assembly	Grip Range of Socket (R)	Socket Outside Dia.	Socket Only 6	Holder Only 3	Retention Shaft 1	Hex Key 7
QCHRA255-10-(H)	.255" - .275"	0.703"	QCHR255-10			
QCHRA275-10-(H)	.275" - .295"		QCHR275-10			
QCHRA295-10-(H)	.295" - .315"	0.718"	QCHR295-10			
QCHRA315-10-(H)	.315" - .335"		QCHR315-10			
QCHRA335-10-(H)	.335" - .355"	0.781"	QCHR335-10			
QCHRA355-10-(H)	.355" - .375"		QCHR355-10			
QCHRA375-10-(H)	.375" - .395"	0.875"	QCHR375-10			
QCHRA395-10-(H)	.395" - .415"		QCHR395-10			
QCHRA415-10-(H)	.415" - .435"	0.968"	QCHR415-10			
QCHRA435-10-(H)	.435" - .455"		QCHR435-10			

1	QRS-(E)	Retention Shaft
2	HNW100	Nylon Washer
3	QRH-(E)	Holder
3A	093-250	Keeper Pin
4	HLH350	Handle
5	HW103	Set Screw
6	HRC100	Retaining Clip
7	HLR-7	Ratchet Wrench
8	QCR-281	Quick Change Receptacle
9	QCHS-(X)	Quick Change Installation Socket
10	QRK-(H)	Hex Tip

**Composi-Lok / Jo-Bolt / Visu-Lok**

Pneumatic Master Torque Drivers		
Part No.	Visu-Lok Series	Diameter
S540MTD-5	Flush - 5	5/32"
S540MTD-6	Flush - 6	3/16"
S540MTD-8	Flush - 8	1/4"
S540MTD-10	Flush - 10	5/16"
S540MTD-12	Flush - 12	3/8"
S540MTD-5P	Protruding - 5	5/32"
S540MTD-6P	Protruding - 6	3/16"
S540MTD-8P	Protruding - 8	1/4"
S540MTD-10P	Protruding - 10	5/16"
S540MTD-12P	Protruding - 12	3/8"
S540MTD-5A	Millable - 5	5/32"
S540MTD-6A	Millable - 6	3/16"
S540MTD-8A	Millable - 8	1/4"
S540MTD-10A	Millable - 10	5/16"
S540MTD-12A	Millable - 12	3/8"
S540MTDA-5T	Reduced Flush - 5	5/32"
S540MTDA-6T	Reduced Flush - 6	3/16"
S540MTDA-8T	Reduced Flush - 8	1/4"
S540MTDA-10T	Reduced Flush - 10	5/16"
S540MTDA-12T	Reduced Flush - 12	3/8"

Pneumatic Close Quarter Tools		
Part No.	Visu-Lok Series	Diameter
7440C-5	Flush - 5	5/32"
7440C-6	Flush - 6	3/16"
7440C-8	Flush - 8	1/4"
7440C-5P	Protruding - 5	5/32"
7440C-6P	Protruding - 6	3/16"
7440C-8P	Protruding - 8	1/4"
7440C-5A	Millable - 5	5/32"
7440C-6A	Millable - 6	3/16"
7440C-8A	Millable - 8	1/4"
7440C-5T	Reduced Flush - 5	5/32"
7440C-6T	Reduced Flush - 6	3/16"
7440C-8T	Reduced Flush - 8	1/4"

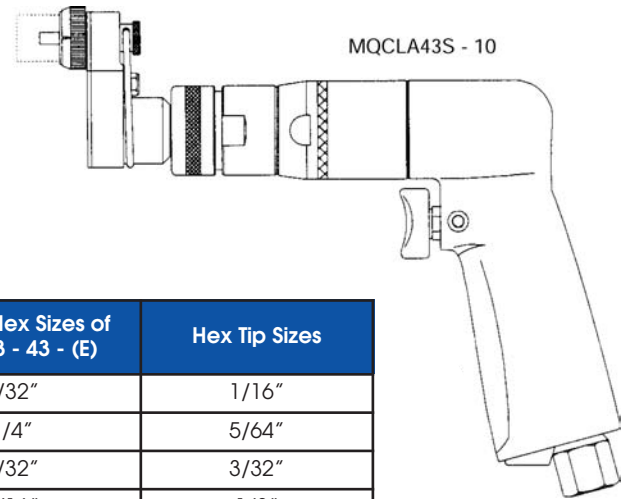
Pneumatic Torque Responsive Adapters		
Part No.	Visu-Lok Series	Diameter
7440M-5	Flush - 5	5/32"
7440M-6	Flush - 6	3/16"
7440M-8	Flush - 8	1/4"
7440M-5P	Protruding - 5	5/32"
7440M-6P	Protruding - 6	3/16"
7440M-8P	Protruding - 8	1/4"
7440M-5A	Millable - 5	5/32"
7440M-6A	Millable - 6	3/16"
7440M-8A	Millable - 8	1/4"
7440M-5T	Reduced Flush - 5	5/32"
7440M-6T	Reduced Flush - 6	3/16"
7440M-8T	Reduced Flush - 8	1/4"



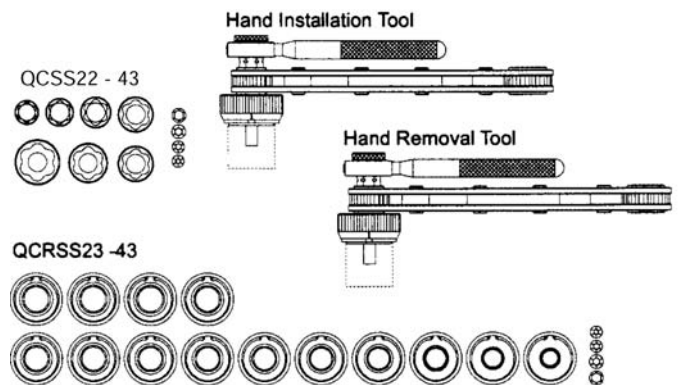
Ratchet Hand Tools		
Part No.	Visu-Lok Series	Diameter
HWF165	Flush - 5	5/32"
HWF200	Flush - 6	3/16"
HWF260	Flush - 8	1/4"
HWF312	Flush - 10	5/16"
HWF375	Flush - 12	3/8"
HWP165	Protruding - 5	5/32"
HWP200	Protruding - 6	3/16"
HWP260	Protruding - 8	1/4"
HWP312	Protruding - 10	5/16"
HWP375	Protruding - 12	3/8"
HWA165	Millable - 5	5/32"
HWA200	Millable - 6	3/16"
HWA260	Millable - 8	1/4"
HWF165T	Reduced Flush - 5	5/32"
HWF200T	Reduced Flush - 6	3/16"
HWF260T	Reduced Flush - 8	1/4"
HWF312T	Reduced Flush - 10	5/16"
HWF375T	Reduced Flush - 12	3/8"

Close Quarter Hand Tools		
Part No.	Visu-Lok Series	Diameter
HWF5	Flush - 5	5/32"
HWF6	Flush - 6	3/16"
HWF8	Flush - 8	1/4"
HWF10	Flush - 10	5/16"
HWF12	Flush - 12	3/8"
HWP5	Protruding - 5	5/32"
HWP6	Protruding - 6	3/16"
HWP8	Protruding - 8	1/4"
HWP10	Protruding - 10	5/16"
HWP12	Protruding - 12	3/8"
HWA5	Millable - 5	5/32"
HWA6	Millable - 6	3/16"
HWA8	Millable - 8	1/4"
HWF5T	Reduced Flush - 5	5/32"
HWF6T	Reduced Flush - 6	3/16"
HWF8T	Reduced Flush - 8	1/4"
HWF10T	Reduced Flush - 10	5/16"
HWF12T	Reduced Flush - 12	3/8"

**Pneumatic and Hand Tool Installation and Removal Kit**



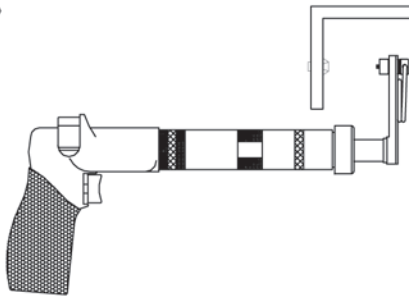
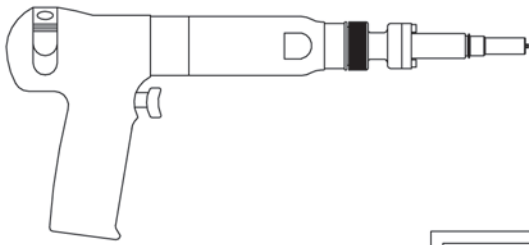
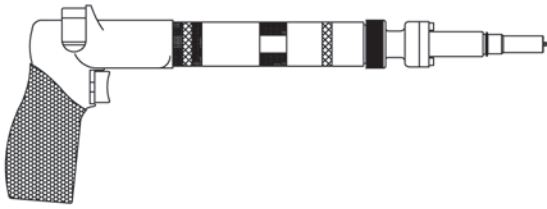
<b>QCK-4000</b> Pneumatic and Hand Tool Installation & Removal Kit  <b>QCK-4010</b> Pneumatic Installation & Removal Kit  <b>QCK-4040</b> Hand Installation & Removal Kit	Grip Range of QCRSS23 - 43	Socket Hex Sizes of QCSS23 - 43 - (E)	Hex Tip Sizes
	0.235 - 0.255	7/32"	1/16"
	0.245 - 0.265	1/4"	5/64"
	0.255 - 0.275	9/32"	3/32"
	0.265 - 0.285	5/16"	1/8"
	0.275 - 0.295	11/32"	
	0.285 - 0.305	3/8"	
	0.295 - 0.315	7/16"	
	0.305 - 0.325		
	0.315 - 0.335		
	0.325 - 0.345		
	0.335 - 0.355		
	0.355 - 0.375		
	0.375 - 0.395		
0.395 - 0.415			



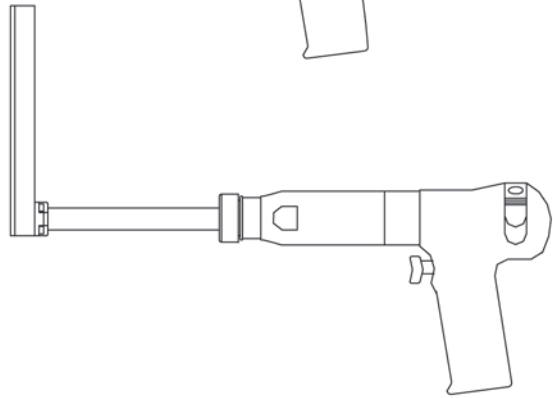
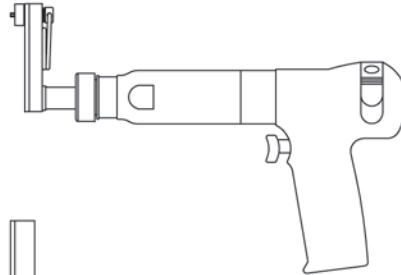
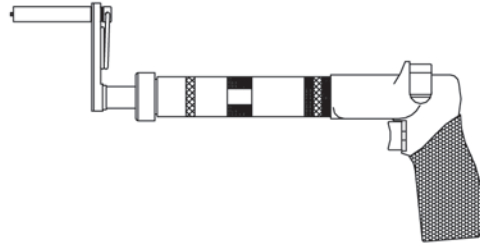
<b>QCK-4050</b> Hand Installation Kit	Socket Hex Sizes of QCSS23 - 43	Hex Tip Sizes
	7/32"	1/16"
	1/4"	5/64"
	9/32"	3/32"
	5/16"	1/8"
	11/32"	
	3/8"	
	7/16"	

**Torque Control Installation Tools**

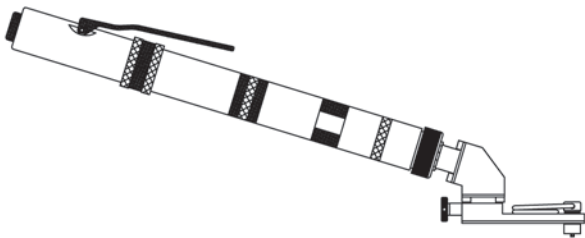
**STRAIGHT INSTALLATION  
WITH AIR SHUT OFF  
TORQUE CONTROL**



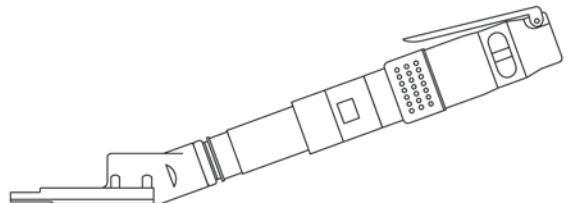
**L TYPE INSTALLATION TOOLS  
WITH AIR SHUT OFF  
TORQUE CONTROL**



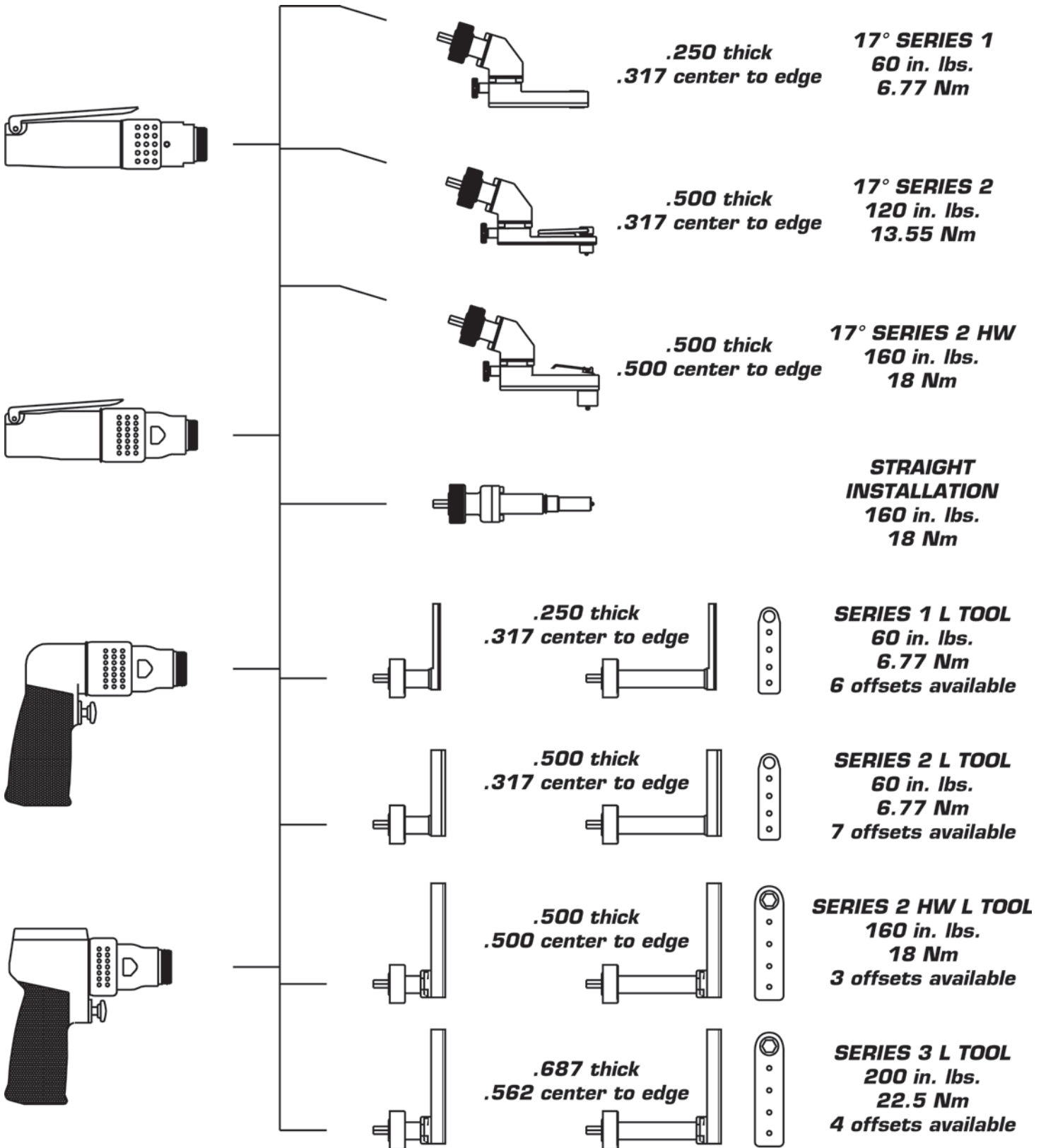
**17° INDEXABLE ANGLE HEADS  
WITH SHUT OFF  
TORQUE CONTROL**



**20° FLAT ANGLE HEADS  
WITH BALL CLUTCH**







**Grip Scale**

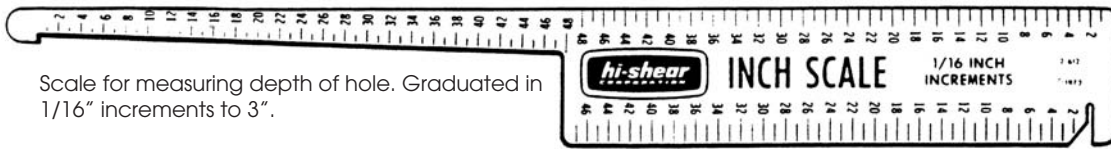
**1/6" Increments to 3"**

**1mm Increment to 75mm**

To save shop time for riveters and inspectors, Grip Scales measure the grip length of countersunk and flathead Hi-Shear pins and work thickness or rivet hole depths in increments corresponding to the Hi-Shear dash number system of pin grip lengths.

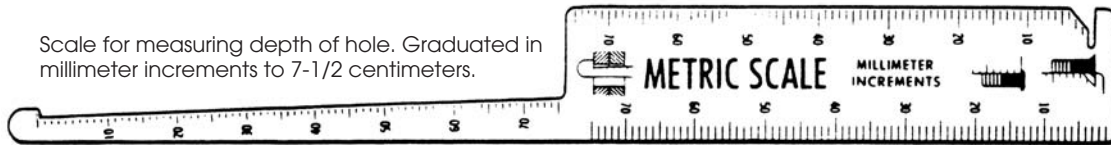
The Scale is 0.020 spring temper stainless steel and 3/4" x 6-1/4" in size. The finish is satin with red and black lettering.

PN: 2-612



Scale for measuring depth of hole. Graduated in 1/16" increments to 3".

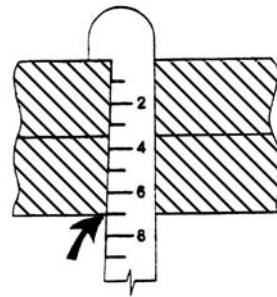
Scale for measuring grip length of fasteners. Graduated in 1/16" increments to 3".



Scale for measuring depth of hole. Graduated in millimeter increments to 7-1/2 centimeters.

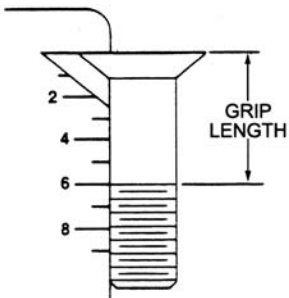
Scale for measuring grip length of fasteners. Graduated in millimeter increments to 7-1/2 centimeters.

To measure hole depth, hook on bottom of hole. Read highest number even with structure on other end.

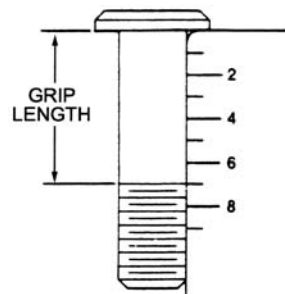


Reading a -7 straight hole (7/16")

To measure fastener grip length, place fastener against gage as shown. Read highest number opposite last point of full shank diameter.



Measuring a -6 grip length countersunk head pin.



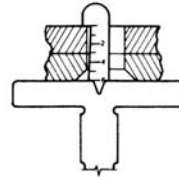
Measuring a -7 grip length protruding head pin.

**Grip Gauge Slide**

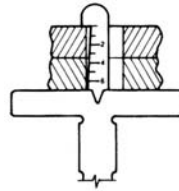
The "Grip Gauge Slide" is designed for use with Hi-Shear's 2-612 Grip Scale. Simply slide on and start measuring!

The procedure for accurate measurement of both countersunk and straight holes is as follows: Hook the Grip Scale on back side of hole. Push the Grip Gauge Slide to contact structure on both sides of the hole. Read the number even with the structure. If the structure is between increments, use the next higher increment.

PN: 2-612



Reading a -6 countersunk hole (6/16")



Reading a -7 straight hole (7/16")

**Grip Gauge Slide**

Will fit all existing Hi-Shear 2-612 Grip Scales as shown below.

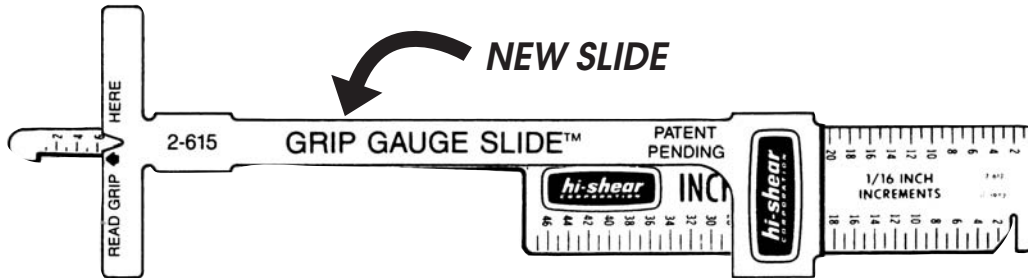
PN: 2-615



**Grip Scale & Slide Assembly**

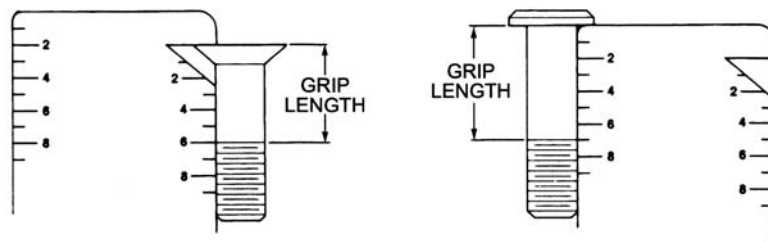
Includes 2-612 Grip Scale & 2-615 Grip Gauge Slide.

PN: 2-651



**Fasteners**

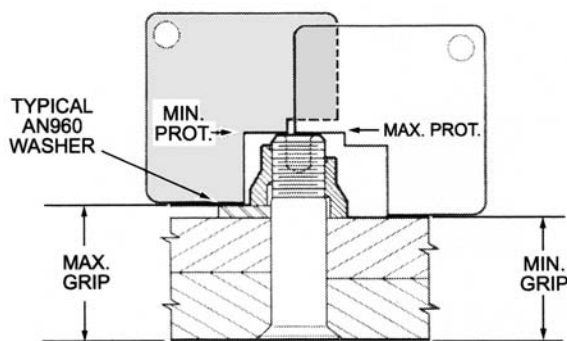
To measure fastener grip length, place fastener against grip scales as shown. Read highest number opposite last point of full shank diameter.



## Pin Protrusion Gages

### Inspection of Pins for Correct Grip Length

To determine if the pin is the correct grip length, the amount of pin thread protrusion must fall between prescribed maximum and minimum limits. Checking pin protrusion can be done with the appropriate Pin Protrusion Gage Set. There are separate gage sets for both the Hi-Lok and Hi-Lite fastening systems, and for both the inch and metric measurement systems. The principle of the protrusion gage checking is shown in the diagram below. Checking pin protrusion limits can be done before or after collar installation. Checking must be done with the bottom part of the gage resting flat on the work surface, or on top of a washer surface if a washer is used. Any protrusion between the minimum and maximum limits is satisfactory.



PIN PROTRUSION GAGING



GAGES IN USE

### Recommended Pin Protrusion Limits for Hi-Lite Fasteners (Inches)

First Dash No.	Nominal Diameter	Pin Protrusion	
		Minimum	Maximum
.05	5/32"	0.270	0.352
.06	3/16"	0.280	0.362
.08	1/4"	0.310	0.392
.10	5/16"	0.370	0.452
.12	3/8"	0.410	0.492
.14	7/16"	0.475	0.557
.16	1/2"	0.515	0.597
.18	9/16"	0.590	0.672
.20	5/8"	0.650	0.732

### Recommended Pin Protrusion Limits for Hi-Lok Fasteners (Inches)

First Dash No.	Nominal Diameter	Pin Protrusion	
		Minimum	Maximum
.05	5/32"	0.270	0.352
.06	3/16"	0.280	0.362
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.10	5/16"	0.370	0.452
.12	3/8"	0.410	0.492
.14	7/16"	0.475	0.557
.16	1/2"	0.515	0.597
.18	9/16"	0.590	0.672
.20	5/8"	0.650	0.732
.24	3/4"	1.040	1.122
.28	7/8"	1.200	1.282
.32	1"	1.380	1.462

### Recommended Pin Protrusion Limits for Hi-Lite Fasteners (Metric)

First Dash No.	Nominal Diameter	Pin Protrusion	
		Minimum	Maximum
-04	4 mm	6.86 mm	8.36 mm
-05	5 mm	7.40 mm	8.90 mm
-06	6 mm	8.40 mm	9.90 mm
-08	8 mm	9.40 mm	10.90 mm
-10	10 mm	11.57 mm	13.07 mm
-12	12 mm	13.08 mm	14.58 mm

### Recommended Pin Protrusion Limits for Hi-Lok Fasteners (Metric)

First Dash No.	Nominal Diameter	Pin Protrusion	
		Minimum	Maximum
-04	4 mm	8.10 mm	9.60 mm
-05	5 mm	8.40 mm	9.90 mm
-06	6 mm	10.45 mm	11.95 mm
-08	8 mm	12.70 mm	14.20 mm
-10	10 mm	14.95 mm	16.45 mm
-12	12 mm	17.90 mm	19.40 mm

## Pin Protrusion Gages

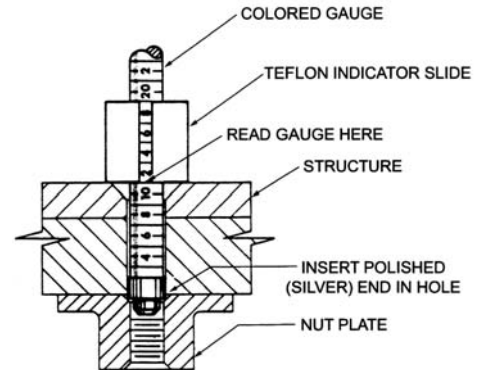
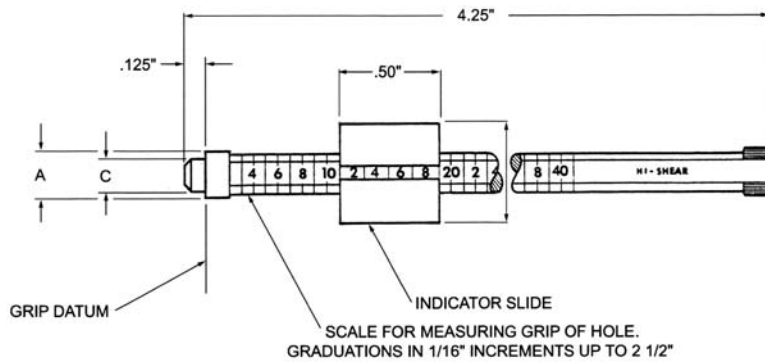
### Inspection of Pins for Correct Grip Length



A typical Pin Protrusion Gage Set. Individual gages are made of .012 stainless steel and are assembled as a set on a chain.

### G11

### Hole Depth Gauge For use with nut plates



### Instruction For Using The G11 Hole Depth Gauge

1. Obtain the correct diameter gage for the hole being measured.

<b>G11-08</b>	(5/32")	Gold
<b>G11-3</b>	(3/16")	Red
<b>G11-4</b>	(1/4")	Blue
<b>G11-6</b>	(5/16")	Green
<b>G11-6</b>	(3/8")	Violet

2. Insert polished (silver) end of gage into hole until bottoms on the nutplate.
3. Push Teflon Indicator Slide down to the structure.
4. Read the number that is even with the structure.
5. This number will indicate the correct bolt grip length in 1/16" increments.
6. Example: the diagram indicates a -11 (11/16) grip length.

**NOTE:** If indicator stops between lines, use the lower number.

### Inspection of Pins for Correct Grip Length

Gage Set Description	Part No.
Hi-Lite (Inches) Includes gages for: 5/32", 3/16", 1/4", 5/16" & 3/8" pin diameters	<b>2-1522HST</b> (Stainless Steel with red copy)
Hi-Lite (Inches) Includes gages for: 7/16", 1/2", 9/16" & 5/8" pin diameters	<b>2-1522HST-2</b> (Stainless Steel with red copy)
Hi-Lite (Metric) Includes gages for: 4, 5, 6, 8, 10 & 12 mm pin diameters	<b>2-1522HSTM</b> (Stainless Steel with green copy)
Hi-Lok/Hi-Tigue (Inches) Includes gages for: 5/32", 3/16", 1/4", 5/16" & 3/8" pin diameters	<b>2-1522</b> (Stainless Steel with black copy)
Hi-Lok/Hi-Tigue (Inches) Includes gages for: 7/16", 1/2", 9/16" & 5/8" pin diameters	<b>2-1522-2</b> (Stainless Steel with black copy)
Hi-Lok/Hi-Tigue (Metric) Includes gages for: 4, 5, 6, 8, 10 & 12 mm pin diameters	<b>2-1522HLM</b> (Stainless Steel with purple copy)

<b>General Notes:</b>	1-A pocket pouch with usage instructions, containing -08, -3 & -4 size gages, may be obtained by ordering part Number G11-20.
<b>Material:</b>	Gage: Aluminum alloy per QQ-A-225/T6. Indicator Slide: Teflon Bar stock per MIL-P-19468.
<b>Heat Treat:</b>	None.
<b>Code:</b>	Dash number indicates the nominal diameter in 1/16" increments of the hole to be measured. Exception: -08 size indicates 5/32" nominal diameter hole.
<b>Example:</b>	G11-3 (G11) Basic gage part number. (-3) 3/16" hole to be measured (red gage).

Dash No.	A	B	C	Color
08	.163 .153	.375	.120	Gold
3	.189 .184	.400	.145	Red
4	.249 .244	.525	.200	Blue
5	.310 .305	.562	.255	Green
6	.373 .368	.625	.318	Violet

### Zephyr Pneumatic Shaver

For use with titanium, stainless steel, monel and similar high strength fasteners.

PN: Model ZT507C



#### Features

- Rotates cutter at approximately 12000 rpm.
- Weighs only 5-1/2 lbs.
- Uses Carbide Cutters that are precision ground for high speed usage.
- Flush finish the toughest and hardest fasteners in seconds.

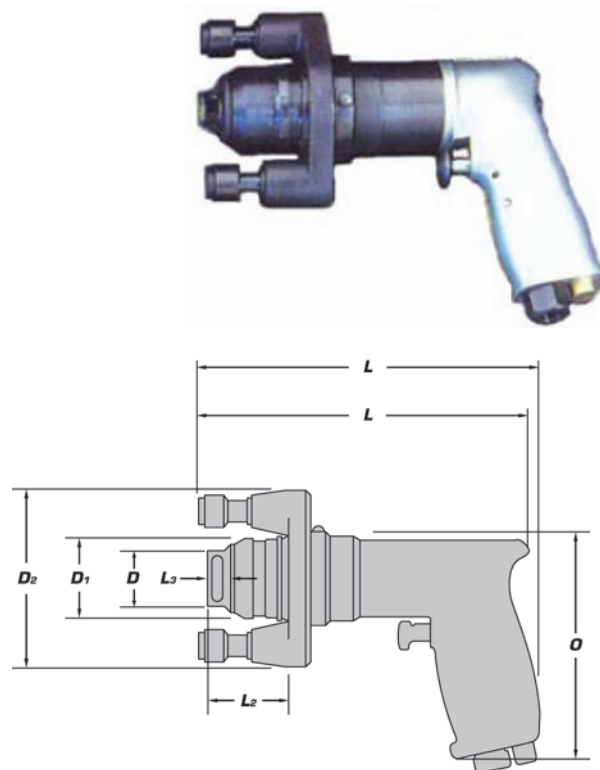
Cutters For ZT507 - Super Shaver						
Cutter No.	Material	Diameter	Width	No. of Teeth	Chip Breaker	Application
ZT507-20B	Carbide	1-1/8"	1/2"	49	No	Monel Steel, Titanium
ZT507-21B			3/4"	49		
ZT507-22B			1/2"	25		
ZT507-23B			3/8"	49		
ZT507-24B			1/2"	37	Yes	Naca, Straylar Rivet, Aluminum, Jo Bolt
ZT507-25B			3/4"	37		
ZT507-26B			3/8"	37		
ZT507-27B			1/2"	25	No	A-286 Stainless Steel
ZT507-28B			3/4"	25		
ZT507-29B			7/16"	49		
						Monel, Steel, Titanium

Footpieces			
Cutter Width	Steel Footpiece	Nylon Footpiece	Close Quarter Nosepiece
3/8"	ZT507084	-	ZT507094
7/16"			ZT507092
1/2"	ZT507029	ZT507041	ZT507092
3/4"	ZT507035	ZT507055	-

### Zephyr Pneumatic Shaver

Heavy duty tool. Handles cutters up to 1-1/4" in diameter.

PN: Model ZT405IR Pneumatic



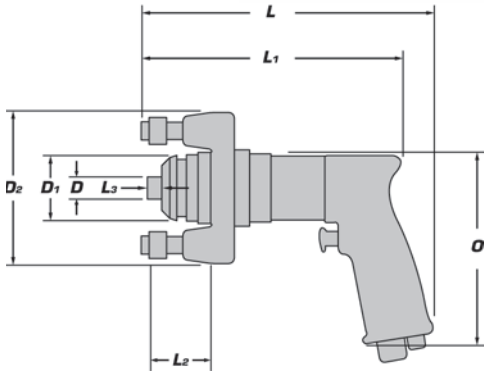
#### Features

- Fingertip Adjustment in .0005" increments.
- Rotates cutter at approximately 12000 rpm.
- Weighs only 5-1/2 lbs.
- Uses Carbide Cutters that are precision ground for high speed usage.
- Flush finish the toughest and hardest fasteners in seconds.

Model	Cutter Capacity	Weight Less Cutter	Cutter RPM	D (Max.)	D <sub>1</sub>	D <sub>2</sub>	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	O
ZT405IR	1-1/4"	3-1/2 lbs.	20000	1-3/8"	1-3/4"	4"	7-3/4"	6-7/8"	1-3/4"	3/8"	5-1/8"
ZT405EIR							8-1/8"	7-1/4"	2-1/4"	7/8"	

**NOTE:** ZT405EIR extended footpieces and special stabilizer feet available for "hard-to-reach" spots. When ordering specify ZT405EIR.

## Zephyr Pneumatic Shaver



### Features

- Fingertip Adjustment in .0005" increments.
- For standard duty shaving up to 5/8" diameter.
- Light, small easy to handle.
- Most popular tool for virtually every shaving need.

PN: Model ZT706 Pneumatic

Model	Cutter Capacity	Weight Less Cutter	Cutter RPM	D (Max.)	D <sub>1</sub>	D <sub>2</sub>	L	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	O
ZT706	5/8"	3 lbs.	15000	1-1/8"	1-1/2"	4"	7-1/2"	6-3/8"	1-7/8"	3/8"	4-7/8"
ZT706E							7-13/16"	6-13/16"	2-1/4"	7/8"	

**NOTE:** ZT706E extended footpieces and special stabilizer feet available for "hard-to-reach" spots. When ordering specify ZT706E.

## Dotco Rivet Shavers



Model No.		Cutter Adjustment	Free Speed rpm	Weight		Length	
Small Handle	Large handle			lbs.	kg	in.	mm
<b>14CF Series - Pistol Grip - 0.4 hp (0.30 kW) - with Stabilizer</b>							
14CFS60-95	-	0.0005	29000	2.3	1.0	8.2	210
<b>14CF Series - Pistol Grip - 0.4 hp (0.30 kW) - without Stabilizer</b>							
14CFS60-98	-	0.00025	29,000	2.3	1.0	8.2	210
<b>14CN Series - Pistol Grip - 0.9 hp (0.67 kW) - with Stabilizer</b>							
-	14CNL60-95	0.0005	20,000	4.5*	2.0*	8.9*	226*
-	-	0.00025	20,000	4.5*	2.0*	8.9*	226*

\*For weight and length of large handle models, add 0.20 lb.(0.1 kg) General:

Air Inlet: 1/4" NPT - Use 5/16" (7.9mm) I.D. Hose.

All tools performance rated @ 90psi (620 kPa) air pressure.

**Standard Equipment:** Stabilizer and choice of skirt.

**Extra Equipment:** Carbide Cutters & Extended Skirts: See table.

PN: 14CF

PN: 14CN

Cutter Diameter inches	Carbide cutter	Part No.										
		Skirts		1" Extended Skirt			4" Extended skirt			6" Extended skirt		
		Std.	Wide	Adapter	Skirt	Assembly	Adapter	Skirt	Assembly	Adapter	Skirt	Assembly
5/16	-	14-4391	14-4401	-	-	-	-	-	-	-	-	-
3/8	14-4382	14-4392	14-4402	-	-	14-4532	14-4302	14-4312	14-4512	-	14-4372	14-4572
7/16	14-4383	14-4393	14-4403	14-4323	-	14-4533	14-4303	-	14-4513	14-4663	14-4373	14-4573
1/2	14-4384	14-4394	14-4404	14-4324	14-4334	14-4534	-	-	14-4514	14-4664	14-4374	14-4574
9/16	14-4385	14-4395	14-4405	-	-	-	-	-	-	-	-	-
5/8	14-4386	14-4396	14-4406	-	-	-	14-4306	14-4316	14-4516	-	-	-
3/4	14-4387	14-4397	-	-	-	-	-	-	-	-	-	-
1	14-4422	14-4410	-	-	-	-	-	-	-	-	-	-
1-1/4	-	14-4412	-	-	-	-	-	-	-	-	-	-

## Accessories

### Positive Microstop Depth Control

Adjustment for depth of cut increments of .0005".

To adjust grasp locking with thumb and index finger and retract.

Turn nosepiece to right to increase depth of cut, left to decrease. Retraction of footpiece constant over entire range of adjustment.



### Stabilizer Assembly

Removable Stabilizer Assembly is easily installed on shaver to prevent "walking" across the sheet. It is especially recommended for use with the ZT507 Dual Rotation Model.



### Cutter Footpieces & Footplates

These sizes are available with the correct combinations of cutters, footpieces and footplates as described.



	Cutter Diameter	Cutter Standard	Footpiece Standard Pneumatic	Footpiece Extended Pneumatic	Footpiece Threaded Extended Pneumatic	Footplate Nylon Type		
Model ZT706	1/4"	ZT108-0	ZT306020	ZT306040	Not Made			
	5/16"	ZT108-1	ZT3060221	ZT306041				
	3/8"	ZT108-2	ZT306022	ZT306042				
	7/16"	ZT108-3	ZT306023	ZT306043			ZT306050	ZT205053
	1/2"	ZT108-4	ZT306024	ZT306044			ZT306051	ZT205054
	9/16"	ZT108-5	ZT306025	ZT306045			ZT306052	ZT205055
Model ZT405IR	5/8"	ZT108-6	ZT306026	ZT306046	ZT306053	ZT205056		
	3/8"	ZT108-2	ZT405052	ZT405052	Not Made			
	7/16"	ZT108-3	ZT405053	ZT405053	ZT405032	ZT205053		
	1/2"	ZT108-4	ZT405054	ZT405054	ZT405033	ZT205054		
	9/16"	ZT108-5	ZT405055	ZT405055	ZT405034	ZT205055		
	5/8"	ZT108-6	ZT405056	ZT405056	ZT405035	ZT205056		
	3/4"	ZT108-7	ZT405057	ZT405057	ZT405036	ZT205057		
	7/8"	ZT108-8	ZT405058	ZT405058	ZT405038	ZT205058		
	1"	ZT108-9	ZT405059	ZT405059				
	1-1/8"	ZT108-10	ZT405060	ZT405060	ZT405039	ZT205059		
	1-1/4"	ZT108-11						

### Composi-Lok & Visu-Lok Fastener Shaver

- Uses long Lasting Abrasive Cutting Discs for smooth, uninterrupted cuts.
- Spindle lock plunger for quick change of discs.

PN: MAPS-01  
PN: MAPSD-01



PN.	PN. Crow Foot	Pin Dash No.	Nominal Pin Dia.
MAPS-01	Shaver	0.001"	1.25 lbs.
MAPSD-01	Shaving Disc	NA	NA

## Grinders

12,000 – 40,000 RPM

0.2 – 0.9 hp (0.15 – 0.67 kW)

- Great for die and mold work, deburring.
- Aluminum, composite or rugged steel housings.
- Complete selection of rpm speeds available.
- Front, side, and rear exhaust models available.



Model No.		Free speed rpm	Abrasive Capacity	Type Housing	Weight		Length		Collet Size	Air Inlet Size
Front Exhaust	Rear Exhaust				lbs.	kg	in.	mm		
12-10 Series – 0.3 hp (0.22 kW) – 300 Series Collet										
12L1000-36+	12L108036+	30,000	1/2" Carbide Burr, 1" Mtd Wheel	C	0.8	0.4	6.0	152	1/4"	1/4"
12L1003-36+	12L1082-36++	25,000	1/2" Carbide Burr, 1" Mtd Wheel	C	0.8	0.4	6.0	152	1/4"	1/4"

C= Composite.

▲ Button throttle available.

• Oilless blades.

+ Overhose model available but not necessarily as Rapid Select.

### Master Power Grinder

- Rugged all steel housing is ideal for rapid metal removal.
- Trim ergonomic design enables excellent control.
- Front exhaust.
- 1/4" capacity collet – 200 Series.



PN: MP4458

Model No.	Hp	Free speed	Mounted wheels	Carbide Bur	Length		Weight		Hose (I.D.)		Inlet CFM	Collet Size	
		rpm			in.	mm	lbs.	kg	in.	mm			
MP4458	.5	25,000	1 1/2"	1"	6 1/16	154	1.3	.60	3/8	10	23	1/4"	1/4"

### Wheel Grinders

- Nominal Motor Power: .7 Hp. .5 kw.
- Type 1 Cut-off and Type 27.
- Depressed Center Wheels.
- Spiral beveled gears, cut and hardened, delivers maximum power.
- Compact all steel housing assures outstanding durability.
- Floating, self centering rotor for smooth operation.
- Safety lock-off throttle.
- Full feathering throttle.



PN: MP4450

Model No.	Exhaust	Free speed rpm	Hp	Wheel Capacity	Spindle Length		Head Height		Length		Net Wt. w/Guard	Spindle Thread	
					in.	mm	in.	mm	in.	mm	lbs.	kg	
MP4542	Rear	13,500	.7	4"	.65	17	2.3	58	10.8	274	3.8	1.7	3/8"-24

### Random Orbital Sanders

- Air shield shaft balancer for longer bearing life.
- Sanding control and greater comfort.
- Consumes less air than comparable tools.
- Light weight & low vibration.

PN: MP4400



Model No.		Backup/Sanding Pad Size	Free Speed RPM	Weight		Height		Length	
3/16"	3/32"			lbs.	kg	in.	mm	in.	mm
MP4400-05+	MP4403-05+	5.0	12,000	1.62	0.73	3.33	84.58	5.48	139.19

+ Hook and Loop model available.



## Angle Sanders And Grinders



LSV 18



LSV 18 S170



LSV 28



LSV 38

Model	Max free speed rpm	Pad size dia in	Max output hp	Weight lb	Length in	Height in	Air Consumption		Spindle thread UNC	Air hose in	Air inlet thread NPT	Sound level at free speed dB(A) <sup>o</sup>	Ordering No.	
							at max output cfm	at free speed cfm						
<b>With Collet</b>														
LSV18 S200-2	20000	1/2	0.6	1.3	7.3	3.0		23	15	-b	3/8	1/4	76	8423 0703 14*
LSV18 S120-2	12000	1/2	0.6	1.3	7.3	3.0		23	15	-b	3/8	1/4	76	8423 0703 16*
LSV18 S080-2	8000	1/2	0.5	1.3	7.3	3.0		23	13	-b	3/8	1/4	76	8423 0703 17*
<b>With threaded spindle</b>														
LSV18 S120-2	12000	3	0.6	1.3	7.3	2.3		23	15	UNF 3/8	3/8	1/4	76	8423 0705 21*
<b>Dry sanding</b>														
LSV28 S085	8500	7	1.0	3.2	10.4	3.4		46.4	28.6	5/8"-11	3/8	3/8	79	8423 0706 12*
LSV28 S060	6000	7	1.0	3.2	10.4	3.4		33.9	15.5	5/8"-11	3/8	3/8	73	8423 0706 11*
LSV28 S040	4000	7	0.8	3.2	10.4	3.4		31.8	8.5	5/8"-11	3/8	3/8	72	8423 0706 13*
LSV28 ST034	3400	7	1.0	3.7	12.0	3.4		38.2	16.3	5/8"-11	3/8	3/8	77	8423 0706 15*
LSV28 S021	2100	7	0.6	4.1	11.2	3.4		33.9	11.9	5/8"-11	3/8	3/8	71	8423 0706 14*
LSV35 S085	8500	7	1.7	3.5	8.5	3.8		58	31	5/8	1/2	3/8	89	8423 0706 24*
LSV38 S066	6600	7	1.6	3.5	8.5	3.8		50	27	5/8	1/2	3/8	89	8423 0706 25*
LSV38 S066 D	6600	7	1.6	3.5	8.5	3.8		50	27	5/8	1/2	3/8	89	8423 0706 26*
LSV38 S085 D	8500	7	1.7	3.5	8.5	3.8		58	31	5/8	1/2	3/8	89	8423 0706 27*

Model	Max free speed rpm	Max wheel dia in	Max output hp	Weight lb	Height over spindle end in	Air Consumption		Spindle thread UNC	Air inlet thread NPT	Sound level at free speed dB(A)a	Ordering No.
						at max output cfm	at free speed cfm				
<b>Angle grinders</b>											
LSV18 S170-327	17000	3	0.6	1.55	2.8	23	14	3/8b	1/4	76	8423 0705 51
LSV38 ST12-427	12000	4	1.7	3.5	3.3	58	31	3/8	3/8	89	8423 0700 20*

## Orbital and Random Orbital Sanders

Model	Max free speed rpm	Pad size in	Orbit dia in	Max output		Weight		Height in	Length in	Air consumption at Free Speed		Rec. hose size in	Air inlet thread NPT	Sound level at free speed dB(A)a	Ordering No.
				kW	hp	kg	lb			l/s	cfm				
<b>Standard model</b>															
LST20 R350	12000	3.5	3/16	0.2	0.27	0.85	1.85	3.7	5	8	17	5/16	1/4	76	8423 0361 65
LST20 R550	12000	5	3/16	0.2	0.27	0.85	1.85	3.2	5	8	17	5/16	1/4	76	8426 0361 69
LST20 R650	12000	6	3/16	0.2	0.27	0.85	1.85	3.2	5	8	17	5/16	1/4	76	8426 0361 73
LST20 R325	12000	3.5	3/32	0.2	0.27	0.85	1.85	3.7	5	8	17	5/16	1/4	76	8423 0361 76
LST20 R525	12000	5	3/32	0.2	0.27	0.85	1.85	3.2	5	8	17	5/16	1/4	76	8423 0361 81
LST20 R625	12000	6	3/32	0.2	0.27	0.85	1.85	3.2	5	8	17	5/16	1/4	76	8423 0361 84
<b>Extraction model-self suction</b>															
LST21 R350	12000	3.5	3/16	0.2	0.27	0.85	1.85	3.7	5.2d	8	17	5/16	1/4	85	8423 0361 66
LST21 R550	12000	5	3/16	0.2	0.27	0.85	1.85	3.2	5.2d	8	17	5/16	1/4	85	8423 0361 70
LST21 R650	12000	6	3/16	0.2	0.27	0.85	1.85	3.2	5.2d	8	17	5/16	1/4	85	8423 0361 74
LST21 R325	12000	3.5	3/32	0.2	0.27	0.85	1.85	3.7	5.2d	8	17	5/16	1/4	85	8423 0361 77
LST21 R525	12000	5	3/32	0.2	0.27	0.85	1.85	3.2	5.2d	8	17	5/16	1/4	85	8423 0361 82
LST21 R625	12000	6	3/32	0.2	0.27	0.85	1.85	3.2	5.2d	8	17	5/16	1/4	85	8423 0361 85
<b>Extraction model - central suction</b>															
LST22 R350	12000	3.5	3/16	0.2	0.27	0.85	1.85	3.7	5.2d	8	17	5/16	1/4	78	8423 0361 67
LST22 T550	12000	5	3/16	0.2	0.27	0.85	1.85	3.2	5.2d	8	17	5/16	1/4	78	8423 0361 71
LST22 R650	12000	6	3/16	0.2	0.27	0.85	1.85	3.2	5.2d	8	17	5/16	1/4	78	8423 0361 75
LST22 R325	12000	3.5	3/32	0.2	0.27	0.85	1.85	3.7	5.2d	8	17	5/16	1/4	78	5423 0361 78
LST22 R525	12000	5	3/32	0.2	0.27	0.85	1.85	3.2	5.2d	8	17	5/16	1/4	78	8423 0361 83
LST22 R625	12000	6	3/32	0.2	0.27	0.85	1.85	3.2	5.2d	8	17	5/16	1/4	78	8423 0361 86

LST 20



LST 21



LST 22



## Trim Shears

All Trim Shears are designed to cut steel, stainless steel, titanium, inconel, and similar metals, individual capacity depending on the size of the tool.



Model No.	Mild Steel Cap.-Ga	Feed At Ft./Min.	Throat Cap 3 / In.	Weight lbs	Length	Height	Width	Min. Hose Size	Order Cutters	
									Feed	Roll
7LR	13	Aprx. 8	1-1/4	4-1/3	10-1/4"	3-13/16"	3-1/4"	5/16"	02-9097	02-9098
7PR	13	Aprx. 8	1-1/4	5	8-1/4"	3-13/16"	3-1/4"	5/16"	02-9097	02-9098
8LR	14	Aprx. 8	2-1/4	1-1/2	10-1/4"	3-13/16"	4-1/4"	5/16"	02-9097	0-9101
8PR	14	Aprx. 8	2-1/4	5-1/2	8-1/4"	3-13/16"	4-1/4"	5/16"	02-9097	02-9101
9LR	10	3-1/2 to 4	2-1/2	12-1/2	11-5/8"	5-5/8"	5"	3/8"	02-9280	02-9279
9PR	10	3-1/2 to 4	2-1/2	12-1/2	11-5/8"	5-5/8"	5"	3/8"	02-9280	02-9279
10LR	up to .080	Aprx 3-1/2	2	19	12-1/8"	7-3/8"	5"	3/8"	02-9915	02-9914

L= Straight Motor P= Pisto Grip Motor R= Reversible Motor

## Microstop Countersinks

The Micrometer Countersinks are made in several models and styles. All incorporate the same basic adjustment features and positive lock design, plus a secondary lock protection. Foot pieces for all conditions are readily interchangeable, thus making all models truly universal in their application. Enclosed ball thrust bearings plus bronze radial bearing permit sustained high speed heavy duty operation without overheating.

### Features

- Knurled locking ring provides secondary locking, completely eliminating all possibility of inadvertant resetting of primary adjustment.
- Knurled adjusting sleeve with micrometer-type dial, calibrated in increments of 0.001", provides instant and positive setting to any cutter depth desired plus automatic locking.
- Positive non-slip locking, adjusts without tools.
- Specific types and sizes for every purpose.
- Micrometer dial type adjustment sleeve.
- Spring loaded retractable type shaft.
- Polished steel footpieces or optional screw-on nylon or steel footplate.
- Heavy duty enclosed ball thrust bearing.
- Oversize radial bronze bearing.

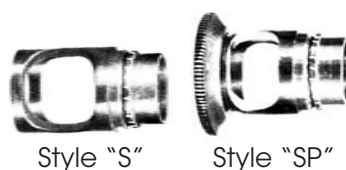


### Standard Models

These footpieces will fill all needs. Footpiece styles "SP" and "WP" are available with either a hardened and polished steel footplate or a nylon screw-on type protective footplate.

Footpiece "R" only available with ZT330 model.

Model No.	D	L	Max. Cut Diameter	Shaft Thread
ZT330-S	.87	3-9/16	5/8"	1/4-28
ZT330-W	1.00		3/4"	
ZT330-X	.87		5/8"	
ZT330-Y	.87		5/8"	
ZT330-Z	.87		5/8"	
ZT330-R	.45		5/16"	
ZT330-SP	1.25		5/8"	
ZT330-WP	1.25	3/4"		
ZT331-S	1.11	5-15/16	7/8"	3/8-24
ZT331-W	1.62		1-3/8"	
ZT331-X	1.11		7/8"	
ZT331-Y	1.11		7/8"	
ZT331-Z	1.11		7/8"	
ZT331-SP	1.13		7/8"	
ZT331-WP	1.87		1-3/8"	
ZT334-S	1.11	5-15/16	7/8"	7/16-20
ZT334-W	1.75		1-1/2"	
ZT334-X	1.11		7/8"	
ZT334-Y	1.11		7/8"	
ZT334-Z	1.11		7/8"	
ZT334-SP	1.37		7/8"	
ZT334-WP	2.00		1-1/2"	



Style "S"



Style "SP"



Style "W"



Style "WP"



Style "Y"



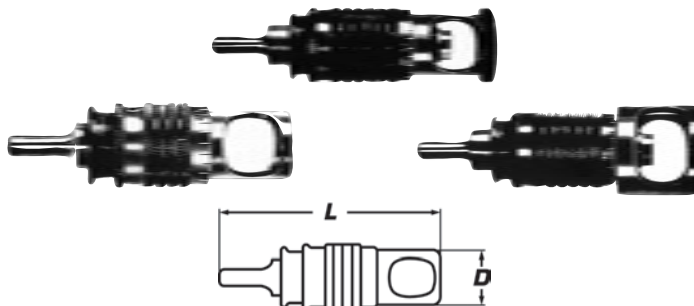
Style "X"



Style "R"



Style "Z"

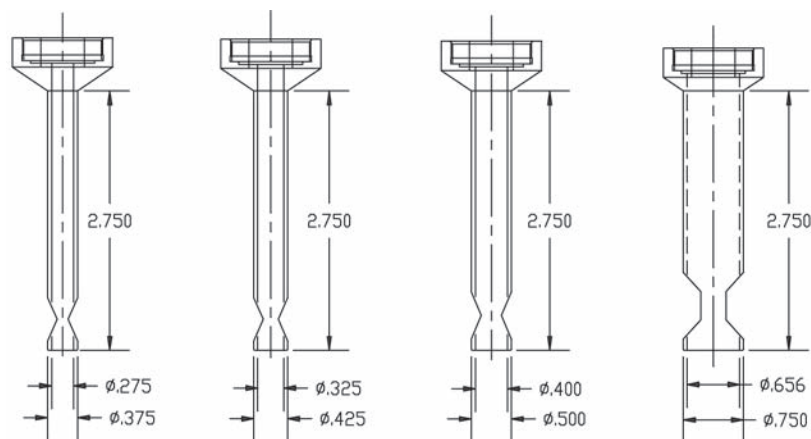
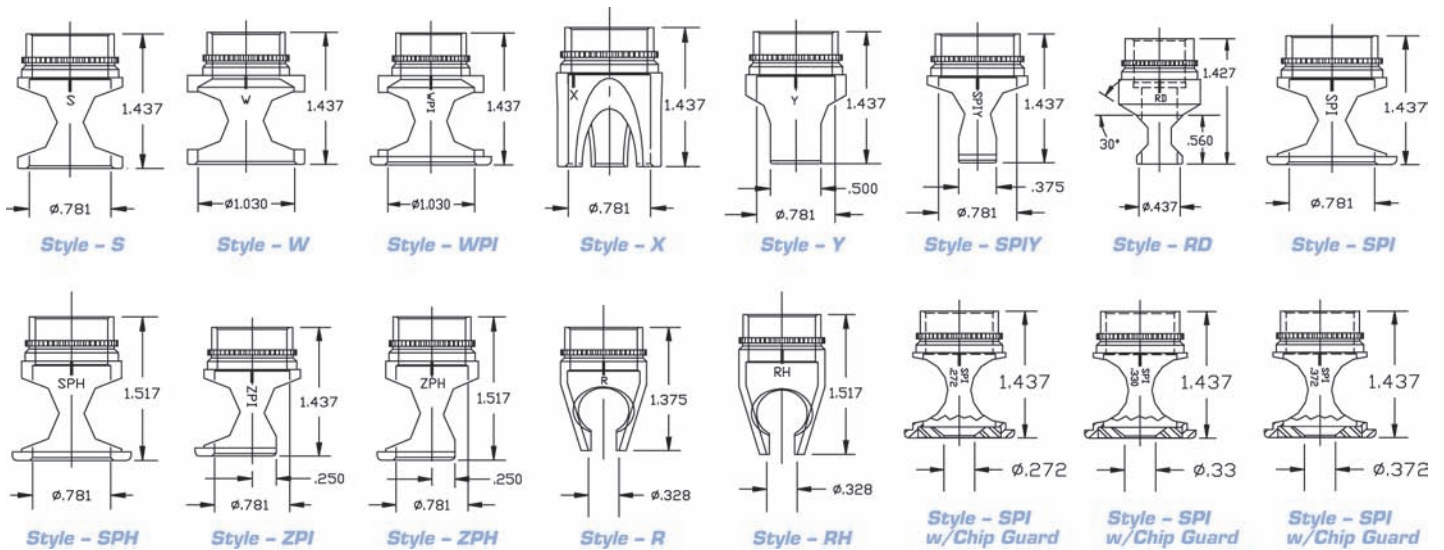
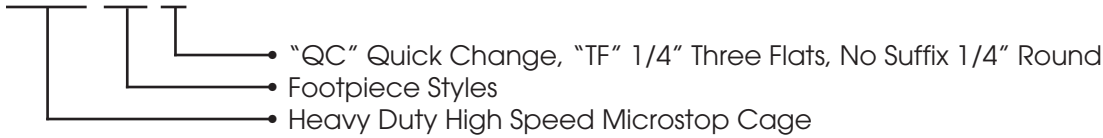


## Microstop Countersink Cage

- To the ZT680 part number, add the footpiece style and shaft style.

### Part No. Example:

#### ZT680-SPI-TF



**NOTE:** The ZT680060 adapter and the appropriate extended shaft are included on all extended nose cage assemblies. Should you wish to convert a standard ZT680 cage to a extended nose model, you will need to order the required nosepiece, the adapter and the appropriate extended shaft separately.

## High Speed Precision Microstop Cage

The ZT691/ZT692 series microstop cages have been designed for continuous operation at any speed up to 6000 rpm in the most demanding applications. This makes them well suited for metallic, graphite and composite materials used in the airframe industry today.

The ZT691/ZT692 series cages offer 0.0005" depth adjustment and are available with a full range of footpieces. Quality standards have been held to insure the highest levels of accuracy and performance.



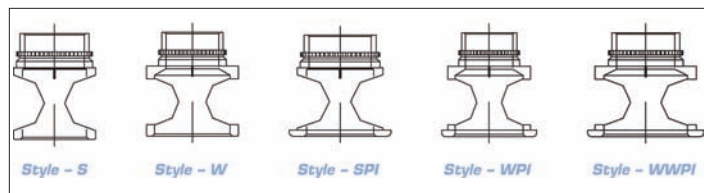
### Features

- Heavy duty construction.
- Full ball bearing design supports all radial and thrust loads at speeds up to 6000 rpm.
- Improved thrust system significantly increase the run time between adjustments and product life.
- 0.0005" incremental depth adjustment.
- Fail safe positive stop design insures accurate repeatability and eliminates any possibility of work piece damage.
- 1" to 2" cutter capacity.
- Drive shafts are available with 3/8" round (no suffix), 3/8" round with three flats (-TF) recommended.
- 7/16" shaft travel.
- The internal thread for the ZT691 series is 3/8-24 and for the ZT692 series is 7/16-20.

PN: ZT691

PN: ZT692

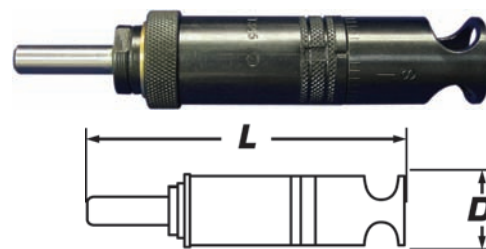
Part No.	Shaft Thread	Footpiece OD	Footpiece ID	Overall Length	Cutter Capacity
ZT691-S-TF	3/8-24	1.62	1.28	5.0	1.250
ZT691-SPI-TF					
ZT691-W-TF		1.75	1.531		1.500
ZT691-WPI-TF					
ZT692-S-TF	7/16-20	1.62	1.28		1.250
ZT692-SPI-TF					
ZT692-W-TF		1.75	1.531		1.500
ZT692-WPI-TF					
ZT692-WWPI-TF		2.50	2.010	2.000	



## For Close Quarters Operations

Also available as Model 345-SP with threaded footpiece and a hardened and polished, screw-on type footplate.

PN: ZT345-S



Model	D	L	Cutter Thread	Max. Cutter Diameter	Cutter Part Number
ZT345-S	.687	3-3/16"	1/4-28	7/16"	ZT150
					ZT154
					ZT164
ZT345-SP				3/8"	ZT170
					ZT172
					ZT184... etc.

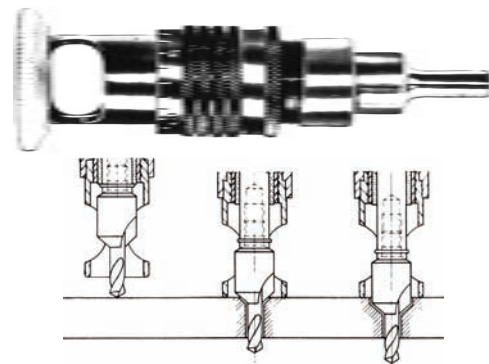
## Special 9/16" Long Stroke Unit

Permits full retraction and full extension of Drill-countersink cutter.

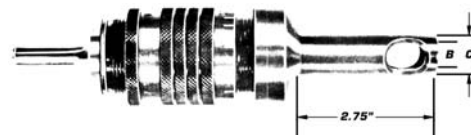
For use with ZT184, ZT185 cutters.

Other styles of footpieces available for the ZT338 unit.

PN: ZT338



## Extended Footpiece Type



Model	Cutter Thread	Max. Cutter Diameter	B	C
ZT284-A	10-32	.250	.275	.375
ZT284-B	1/4-28	.300	.325	.425
ZT284-C	1/4-28	.375	.400	.500
ZT284-D	1/4-28	.562	.656	.750

Model	Integral Pilot Cutters				
	78°	82°	100°	110°	115°
ZT284-A	ZT285-15	ZT285-16	ZT285-17	ZT285-18	ZT285-19
ZT284-B	ZT286-15	ZT286-16	ZT286-17	ZT286-18	ZT286-19
ZT284-C	ZT1154-20	ZT1154-21	ZT1154-22	ZT1154-23	ZT1154-24
ZT284-D	ZT1154-25	ZT1154-26	ZT1154-58	ZT1154-28	ZT1154-29

When ordering cutters, please specify dash number and pilot diameter. Ex: ZT285-17-1/8

## Precision Deburring or Spottfacing

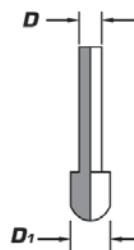
Solves the problems of sheet cracking when dimpling titaniums and other exotic materials. Accurately controls the depth of cut and radius with positive non-slip lock.

<p>Using ZT339 with ZT400</p>	<p>Using ZT339 with ZT403</p>	<p>Rosette Method</p>

DEBURRING TOOLS						SPOTFACING TOOLS							
Cutter			Footpiece			Cutter			Pilot		Footpiece		
Part No.	D <sub>1</sub>	D	Part No.	D <sub>1</sub>	D	Part No.	D <sub>1</sub>	D	Part No.	D <sub>1</sub>	Part No.	D <sub>1</sub>	D
ZT400-00	.054	.167	ZT339010	.173	.296	ZT403-3	.078	.160	ZT309-3/32	.092	ZT339031	.219	.335
ZT400-0	.069	.167				ZT403-4			ZT309-1/8	.123	ZT339032	.266	.390
ZT400-1	.097	.167				ZT403-5	.125	.315	ZT309-5/32	.154	ZT339033	.375	.500
ZT400-3	.127	.198	ZT339011	.204	.327	ZT309 # 8	.164	ZT339034	.422	.550			
ZT400-5	.158	.230	ZT339012	.236	.359	ZT403-6	.125	.360	ZT309-3/16	.187	ZT339035	.547	.672
ZT400-7	.172	.240	ZT339013	.246	.369				ZT309-1/4	.248			
ZT400-9	.190	.260	ZT339014	.266	.389				ZT309-5/16	.310			
ZT400-11	.227	.295	ZT339015	.301	.424								
ZT400-13	.249	.319	ZT339016	.325	.448								
ZT400-15	.280	.348	ZT339017	.354	.477								
ZT400-17	.311	.382	ZT339018	.388	.512								
ZT400-21	.135	.205	ZT339021	.211	.336								
ZT400-23	.151	.221	ZT339023	.227	.352								
ZT400-25	.204	.274	ZT339025	.280	.405								

**Stop Countersink Cutters and Pilots For Aluminum And Dural**

Pilot No.	Shank Diameter D	Head Diameter D <sub>1</sub> +.000 -.001	Cutter in Which Used
ZT300	5/64"	When ordering, specify head diameter desired. Ex: ZT300-1/8	ZT150 with 5/64" Pilot hole
ZT301	1/8"		ZT150 with 1/8" Pilot hole
ZT302	3/16"		ZT150 with 3/16" Pilot hole



**Countersink Cutters  
Pilots (Hardened)**

Used on Countersink Model	Cutter Dia. D	Pilot Hole Diameter P	Cutter Thread C	Cutter Number				
				100° A	78° A	82° A	110° A	115° A
ZT330	1/4"	5/64"	1/4-28	ZT150-17	ZT150-15	ZT150-16	ZT150-18	ZT150-19
	3/8"			ZT150-22	ZT150-20	ZT150-21	ZT150-23	ZT150-44
	5/16"			ZT150-12	ZT150-10	ZT150-11	ZT150-13	ZT150-14
	7/16"			ZT150-26	ZT150-24	ZT150-25	ZT150-27	ZT150-45
	1/2"	ZT150-30		ZT150-28	ZT150-29	ZT150-31	ZT150-46	
	1/2"	ZT150-42		ZT150-40	ZT150-41	ZT150-43	ZT150-49	
	9/16"	1/8"		ZT150-58	ZT150-56	ZT150-57	ZT150-59	ZT150-60
	5/8"			ZT150-52	ZT150-50	ZT150-51	ZT150-53	ZT150-54
ZT331	3/4"	3/16"	3/8-24	ZT152-21	ZT152-19	ZT152-20	ZT152-22	ZT152-23
	7/8"			ZT152-26	ZT152-24	ZT152-25	ZT152-27	ZT152-33
	1"			ZT152-36	ZT152-34	ZT152-35	ZT152-37	ZT152-38
	1-1/8"			ZT152-41	ZT152-39	ZT152-40	ZT152-42	ZT152-43
	1-1/4"			ZT152-46	ZT152-44	ZT152-45	ZT152-47	ZT152-48
	1-3/8"			ZT152-51	ZT152-49	ZT152-50	ZT152-52	ZT152-53
ZT334	7/8"	3/16"	7/16-20	ZT151-26	ZT151-24	ZT151-25	ZT151-27	ZT151-33
	1"			ZT151-36	ZT151-34	ZT151-35	ZT151-37	ZT151-38
	1-1/8"			ZT151-41	ZT151-39	ZT151-40	ZT151-42	ZT151-43
	1-1/4"			ZT151-46	ZT151-44	ZT151-45	ZT151-47	ZT151-48
	1-3/8"			ZT151-51	ZT151-49	ZT151-50	ZT151-52	ZT151-53
	1-1/2"			ZT151-56	ZT151-54	ZT151-55	ZT151-57	ZT151-58
ZT330	1/4"	When ordering these integral pilot cutters, specify dash number and pilot diameter D <sub>1</sub> required. Ex: ZT154-20-1/8"	1/4-28	ZT154-17	ZT154-15	ZT154-16	ZT154-18	ZT154-19
	3/8"			ZT154-22	ZT154-20	ZT154-21	ZT154-23	ZT154-44
	5/16"			ZT154-12	ZT154-10	ZT154-11	ZT154-13	ZT154-14
	7/16"			ZT154-26	ZT154-24	ZT154-25	ZT154-27	ZT154-45
	1/2"			ZT154-30	ZT154-28	ZT154-29	ZT154-31	ZT154-46
	9/16"			ZT154-56	ZT154-56	ZT154-57	ZT154-59	ZT154-60
	5/8"			ZT154-49	ZT154-47	ZT154-48	ZT154-50	ZT154-51
	3/4"			ZT156-21	ZT156-19	ZT156-20	ZT156-22	ZT156-23
ZT331	7/8"	3/8-24	ZT156-26	ZT156-24	ZT156-25	ZT156-27	ZT156-33	
	1"		ZT156-36	ZT156-34	ZT156-35	ZT156-37	ZT156-38	
	1-1/8"		ZT156-41	ZT156-39	ZT156-40	ZT156-42	ZT156-43	
	1-1/4"		ZT156-46	ZT156-44	ZT156-45	ZT156-47	ZT156-48	
	1-3/8"		ZT156-51	ZT156-49	ZT156-50	ZT156-52	ZT156-53	
ZT334	7/8"	7/16-20	ZT153-26	ZT153-24	ZT153-25	ZT153-27	ZT153-33	
	1"		ZT153-36	ZT153-34	ZT153-35	ZT153-37	ZT153-38	
	1-1/8"		ZT153-41	ZT153-39	ZT153-40	ZT153-42	ZT153-43	
	1-1/4"		ZT153-46	ZT153-44	ZT153-45	ZT153-47	ZT153-48	
	1-3/8"		ZT153-51	ZT153-49	ZT153-50	ZT153-52	ZT153-53	
	1-1/2"		ZT153-56	ZT153-54	ZT153-55	ZT153-57	ZT153-58	
ZT330	3/8"	When ordering these combination drill and countersink cutters, specify dash number D <sub>1</sub> required.	1/4-28	ZT155-22	ZT155-20	ZT155-21	ZT155-23	ZT155-44
	7/16"			ZT155-26	ZT155-24	ZT155-25	ZT155-27	ZT155-45
	1/2"			ZT155-30	ZT155-28	ZT155-29	ZT155-31	ZT155-46
	5/8"			ZT155-49	ZT155-47	ZT155-48	ZT155-50	ZT155-51
ZT331	7/8"	Ex: ZT155-20-1/8"	3/8-24	ZT176-26	ZT176-24	ZT176-25	ZT176-27	ZT176-33
	1"			ZT176-36	ZT176-34	ZT176-35	ZT176-37	ZT176-38
	1-1/8"			ZT176-41	ZT176-39	ZT176-40	ZT176-42	ZT176-43



**Removable Pilot  
Countersink Cutters**



**Integral Pilot  
Countersink Cutters**

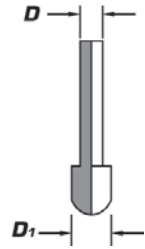


**Combination Drill &  
Countersink Cutters**

## Stop Countersink Cutters and Pilots For Stainless Steel & Titanium

Three-flute cutters for efficient cutting of stainless steel and titanium.

Pilot No.	Shank Diameter D	Head Diameter D <sub>1</sub> +.000 -.001	Cutter in Which Used
ZT300	5/64"	When ordering, specify head diameter desired. Ex: ZT300-1/8	ZT150 with 5/64" Pilot hole
ZT301	1/8"		ZT150 with 1/8" Pilot hole
ZT302	3/16"		ZT150 with 3/16" Pilot hole

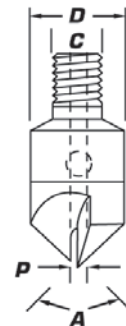


Countersink Cutters  
Pilots (Hardened)

Used on Countersink Model	Cutter Dia. D	Pilot Hole Diameter P	Cutter Thread C	Cutter Number				
				100° A	78° A	82° A	110° A	115° A
ZT330	1/4"	5/64"	1/4-28	ZT164-17	ZT164-15	ZT164-16	ZT164-18	ZT164-19
	3/8"			ZT164-22	ZT164-20	ZT164-21	ZT164-23	ZT164-44
	5/16"			ZT164-12	ZT164-10	ZT164-11	ZT164-13	ZT164-14
	7/16"			ZT164-26	ZT164-24	ZT164-25	ZT164-27	ZT164-45
	1/2"			ZT164-30	ZT164-28	ZT164-29	ZT164-31	ZT164-46
	9/16"			ZT164-42	ZT164-40	ZT164-41	ZT164-43	ZT164-49
	5/8"	ZT164-58		ZT164-56	ZT164-57	ZT164-59	ZT164-60	
	ZT331	3/4"		3/16"	3/8-24	ZT165-21	ZT165-19	ZT165-20
7/8"	ZT165-26	ZT165-24	ZT165-25			ZT165-27	ZT165-33	
1"	ZT165-36	ZT165-34	ZT165-35			ZT165-37	ZT165-38	
1-1/8"	ZT165-41	ZT165-39	ZT165-40			ZT165-42	ZT165-43	
1-1/4"	ZT165-46	ZT165-44	ZT165-45			ZT165-47	ZT165-48	
1-3/8"	ZT165-51	ZT165-49	ZT165-50			ZT165-52	ZT165-53	
ZT334	7/8"	7/16-20	7/16-20	ZT163-26	ZT163-24	ZT163-25	ZT163-27	ZT163-33
	1"			ZT163-36	ZT163-34	ZT163-35	ZT163-37	ZT163-38
	1-1/8"			ZT163-41	ZT163-39	ZT163-40	ZT163-42	ZT163-43
	1-1/4"			ZT163-46	ZT163-44	ZT163-45	ZT163-47	ZT163-48
	1-3/8"			ZT163-51	ZT163-49	ZT163-50	ZT163-52	ZT163-53
	1-1/2"			ZT163-56	ZT163-54	ZT163-55	ZT163-57	ZT163-58
ZT330	1/4"	When ordering these integral pilot cutters, specify dash number and pilot diameter D <sub>1</sub> required. Ex: ZT170-20-1/8"	1/4-28	ZT170-17	ZT170-15	ZT170-16	ZT170-18	ZT170-19
	3/8"			ZT170-22	ZT170-20	ZT170-21	ZT170-23	ZT170-44
	5/16"			ZT170-12	ZT170-10	ZT170-11	ZT170-13	ZT170-14
	7/16"			ZT170-26	ZT170-24	ZT170-25	ZT170-27	ZT170-45
	1/2"			ZT170-30	ZT170-28	ZT170-29	ZT170-31	ZT170-46
	9/16"			ZT170-58	ZT170-56	ZT170-57	ZT170-59	ZT170-60
	5/8"			ZT170-49	ZT170-47	ZT170-48	ZT170-50	ZT170-51
	ZT331			3/4"	3/8-24	ZT171-21	ZT171-19	ZT171-20
7/8"	ZT171-26		ZT171-24	ZT171-25		ZT171-27	ZT171-33	
1"	ZT171-36		ZT171-34	ZT171-35		ZT171-37	ZT171-38	
1-1/8"	ZT171-41		ZT171-39	ZT171-40		ZT171-42	ZT171-43	
1-1/4"	ZT171-46		ZT171-44	ZT171-45		ZT171-47	ZT171-48	
1-3/8"	ZT171-51		ZT171-49	ZT171-50		ZT171-52	ZT171-53	
ZT334	7/8"		7/16-20	7/16-20	ZT174-26	ZT174-24	ZT174-25	ZT174-27
	1"	ZT174-36			ZT174-34	ZT174-35	ZT174-37	ZT174-38
	1-1/8"	ZT174-41			ZT174-39	ZT174-40	ZT174-42	ZT174-43
	1-1/4"	ZT174-46			ZT174-44	ZT174-45	ZT174-47	ZT174-48
	1-3/8"	ZT174-51			ZT174-49	ZT174-50	ZT174-52	ZT174-53
	1-1/2"	ZT174-56			ZT174-54	ZT174-55	ZT174-57	ZT174-58



Integral Pilot Type  
for Stainless Steel &  
Titanium

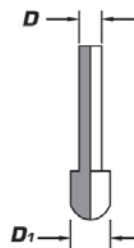


Removable Pilot Type  
for Stainless Steel &  
Titanium

## Carbide Tipped Countersink Cutters

Cutters with solid carbide heads designed for use in countersinking of stainless steel, inconel and titanium alloys.

Pilot No.	Shank Diameter D	Head Diameter D <sub>1</sub> +.000 -.001	Cutter in Which Used
ZT300	5/64"	When ordering, specify head diameter desired. Ex: ZT300-1/8	ZT350 with 5/64" Pilot hole
ZT301	1/8"		ZT350 with 1/8" Pilot hole
ZT302	3/16"		ZT350 with 3/16" Pilot hole



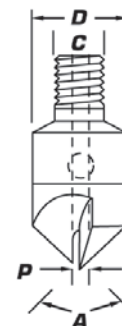
Countersink Cutters  
Pilots (Hardened)

Used on Countersink Model	Cutter Dia. D	Pilot Hole Diameter P	Cutter Thread C	Cutter Number				
				100° A	78° A	82° A	110° A	115° A
ZT330	3/8"	When ordering these integral pilot cutters, specify dash number and pilot diameter D <sub>1</sub> required.	1/4-28	ZT354-22	ZT354-20	ZT354-21	ZT354-23	ZT354-44
	7/16"			ZT354-26	ZT354-24	ZT354-25	ZT354-27	ZT354-45
	1/2"			ZT354-30	ZT354-28	ZT354-29	ZT354-31	ZT354-46
	5/8"			ZT354-49	ZT354-47	ZT354-48	ZT354-50	ZT354-51
ZT331	7/8"	Ex: ZT353-30-1/8" Min. Pilot Dia. 1/8"	3/8-24	ZT356-26	ZT356-24	ZT356-25	ZT356-27	ZT356-33
	1"			ZT356-36	ZT356-34	ZT356-35	ZT356-37	ZT356-38
	1-1/8"			ZT356-41	ZT356-39	ZT356-40	ZT356-42	ZT356-43
	1-1/4"			ZT356-46	ZT356-44	ZT356-45	ZT356-47	ZT356-48
	1-3/8"			ZT356-51	ZT356-49	ZT356-50	ZT356-52	ZT356-53



Carbide Tipped  
Integral Pilot  
Countersink Cutter

Used on Countersink Model	Cutter Dia. D	Pilot Hole Diameter P	Cutter Thread C	Cutter Number				
				100° A	78° A	82° A	110° A	115° A
ZT330	3/8"	5/64"	1/4-28	ZT350-22	ZT350-20	ZT350-21	ZT350-23	ZT350-44
	7/16"			ZT350-26	ZT350-24	ZT350-25	ZT350-27	ZT350-45
	1/2"	1/8"		ZT350-30	ZT350-28	ZT350-29	ZT350-31	ZT350-46
	5/8"			ZT350-42	ZT350-40	ZT350-41	ZT350-43	ZT350-49
ZT331	7/8"	3/16"	3/8-24	ZT352-26	ZT352-24	ZT352-25	ZT352-27	ZT352-33
	1"			ZT352-36	ZT352-34	ZT352-35	ZT352-37	ZT352-38
	1-1/8"			ZT352-41	ZT352-39	ZT352-40	ZT352-42	ZT352-43
	1-1/4"			ZT352-46	ZT352-44	ZT352-45	ZT352-47	ZT352-48
	1-3/8"			ZT352-51	ZT352-49	ZT352-50	ZT352-52	ZT352-53



Carbide Tipped  
Removable Pilot  
Countersink Cutter

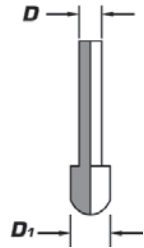
**Note:** Maximum non-cutting (dead center) diameter is 1/32"; larger than pilot hole. Use cutters with pilot hole a minimum of 1/32" smaller than desired pilot diameter.



## Carbide Insert Countersink Cutters

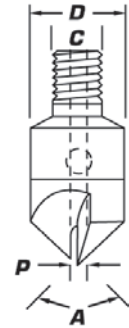
Carbide cutters designed for use in microstop countersink units. Designed for countersinking stainless steel, inconel, and titanium alloys.

Pilot No.	Shank Diameter D	Head Diameter D <sub>1</sub> +.000 -.001	Cutter in Which Used
ZT300	5/64"	When ordering, specify head diameter desired. Ex: ZT300-1/8	ZT350 with 5/64" Pilot hole
ZT301	1/8"		ZT350 with 1/8" Pilot hole
ZT302	3/16"		ZT350 with 3/16" Pilot hole



Countersink Cutters  
Pilots (Hardened)

Used on Countersink Model	Cutter Dia. D	Pilot Hole Diameter P	Cutter Thread C	Cutter Number					
				100° A	78° A	82° A	110° A	115° A	
ZT330	7/16"	5/64"	1/4-28	ZT450-26	ZT450-24	ZT450-25	ZT450-27	ZT450-45	
	1/2"			ZT450-30	ZT450-28	ZT450-29	ZT450-31	ZT450-46	
	5/8"	1/8"		ZT450-42	ZT450-40	ZT450-41	ZT450-43	ZT450-49	
ZT331	3/16"			3/8-24	ZT450-52	ZT450-50	ZT450-51	ZT450-53	ZT450-54
					3/4"	ZT452-21	ZT452-19	ZT452-20	ZT452-22
		7/8"			ZT452-26	ZT452-24	ZT452-25	ZT452-27	ZT452-33
		1"	ZT452-36		ZT452-34	ZT452-35	ZT452-37	ZT452-38	
		1-1/8"	ZT452-41		ZT452-39	ZT452-40	ZT452-42	ZT452-43	
		1-1/4"	ZT452-46		ZT452-44	ZT452-45	ZT452-47	ZT452-48	
1-3/8"	ZT452-51	ZT452-49	ZT452-50	ZT452-52	ZT452-53				



Carbide Insert  
Removable Pilot  
Countersink Cutter

**Note:** Maximum non-cutting (dead center) diameter is 1/32"; larger than pilot hole. Use cutters with pilot hole a minimum of 1/32" smaller than desired pilot diameter.

Used on Countersink Model	Cutter Dia. D	Pilot Hole Diameter P	Cutter Thread C	Cutter Number				
				100° A	78° A	82° A	110° A	115° A
ZT330	7/16"	When ordering these integral pilot cutters, specify dash number and pilot diameter D <sub>1</sub> required.  Ex: ZT454-30-1/8" Min. Pilot Dia. 1/8"	1/4-28	ZT454-26	ZT454-24	ZT454-25	ZT454-27	ZT454-45
	1/2"			ZT454-30	ZT454-28	ZT454-29	ZT454-31	ZT454-46
	5/8"			ZT454-49	ZT454-47	ZT454-48	ZT454-50	ZT454-51
ZT331	3/16"		3/8-24	ZT456-21	ZT456-19	ZT456-20	ZT456-22	ZT456-23
				ZT456-26	ZT456-24	ZT456-25	ZT456-27	ZT456-33
				ZT456-36	ZT456-34	ZT456-35	ZT456-37	ZT456-38
		ZT456-41		ZT456-39	ZT456-40	ZT456-42	ZT456-43	
		ZT456-46		ZT456-44	ZT456-45	ZT456-47	ZT456-48	
		ZT456-51		ZT456-49	ZT456-50	ZT456-52	ZT456-53	



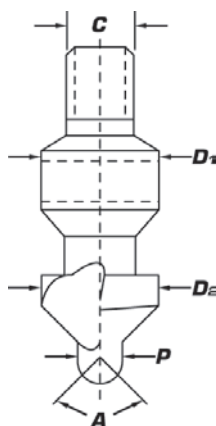
Carbide Insert  
Integral Pilot  
Countersink Cutter

## Countersink Cutters

Two-flute cutters for perfect cutting edges and chatterless countersinking. Provides faster chip ejection. These are designed to produce close tolerance countersinking and eliminate sheet damage. For Aluminum and dural.



Three-Flute



Two-Flute

Used on Countersink Model	Cutter Dia. $D_1$	Pilot Hole Diameter $P$	Cutter Thread $C$	Cutter Number					Type of Grind
				100° $A$	78° $A$	82° $A$	110° $A$	115° $A$	
ZT330	3/8"	When ordering these integral pilot cutters, specify dash number and pilot diameter $D_1$ required.	1/4-28	ZT385-22	ZT385-20	ZT385-21	ZT385-23	ZT385-44	Primary
	7/16"			ZT385-26	ZT385-24	ZT385-25	ZT385-27	ZT385-45	
	1/2"	Ex: ZT385-30-1/8"		ZT385-30	ZT385-28	ZT385-29	ZT385-31	ZT385-46	

Used on Countersink Model	Cutter Dia. $D_1$	Cutter Dia. $D_2$	Pilot $P$	Cutter Thread $C$	Cutter Number					Type of Grind
					100° $A$	78° $A$	82° $A$	110° $A$	115° $A$	
ZT330-M	3/8"	.256	.098	1/4-28	ZT389-20	ZT389-21	ZT389-22	ZT389-23	ZT389-24	Primary
			.127		ZT389-25	ZT389-26	ZT389-27	ZT389-28	ZT389-29	
		.317	.1575		ZT389-30	ZT389-31	ZT389-32	ZT389-33	ZT389-34	
			.186		ZT389-35	ZT389-36	ZT389-37	ZT389-38	ZT389-39	
		.375	.1895		ZT389-40	ZT389-41	ZT389-42	ZT389-43	ZT389-44	
			.1562		ZT389-45	ZT389-46	ZT389-47	ZT389-48	ZT389-49	

Three-flute cutters made from special steel for efficient cutting of stainless steel and titanium.

Used on Countersink Model	Cutter Dia. $D_1$	Pilot Hole Diameter $P$	Cutter Thread $C$	Cutter Number					Type of Grind
				100° $A$	78° $A$	82° $A$	110° $A$	115° $A$	
ZT330	3/8"	When ordering these integral pilot cutters, specify dash number and pilot diameter $D_1$ required.	1/4-28	ZT386-20	ZT386-21	ZT386-22	ZT386-23	ZT386-44	Primary
	7/16"			ZT386-24	ZT386-25	ZT386-26	ZT386-27	ZT386-45	
	1/2"	Ex: ZT386-30-1/8"		ZT386-28	ZT386-28	ZT386-30	ZT386-31	ZT386-46	

## Pilot Drill Countersink Cutters

Used on Countersink Model	Cutter Diameter D	Drill Hole P	Cutter Thread C	Cutter Number				
				100° A	78° A	82° A	110° A	115° A
ZT330	3/8"	Customer specified. Ex: ZT184-30-3/16"	1/4-28  NF2	ZT184-22	ZT184-20	ZT184-21	ZT184-23	ZT184-44
	7/16"			ZT184-26	ZT184-24	ZT184-25	ZT184-27	ZT184-45
	1/2"			ZT184-30	ZT184-28	ZT184-29	ZT184-31	ZT184-46
	5/8"			ZT184-49	ZT184-47	ZT184-48	ZT184-50	ZT184-51



Pilot Drill Countersink Cutter

## ZT185 Drills For Use with 184 Cutters

Recommended Drill Size		
Cutter Diameter	Minimum D <sub>1</sub>	Maximum D <sub>1</sub>
3/8"	3/32"	# 20 (.161)
7/16"		# 10 (.193)
1/2"		F (.254)
5/8"		F (.257)

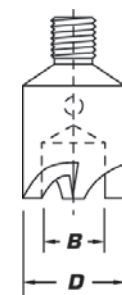
When ordering specify ZT185-"DRILL SIZE". Ex: ZT185-3/16



Pilot Drill

## Huck & Hi-Shear Collar Remover

Part No.	D	B	Shank	Fastener & Size
ZT186-1	.365	.129	1/4-28	HS47 1/8" Hi-Shear
ZT186-2	.365	.162		HS47 5/32" Hi-Shear
ZT186-3	.438	.192		HS47 3/16" Hi-Shear
ZT186-4	.500	.252		HS47 1/4" Hi-Shear
ZT186-5	.562	.315		HS47 5/16" Hi-Shear
ZT186-6	.625	.378		HS47 3/8" Hi-Shear
ZT186-7	.750	.439	3/8-24	HS47 7/16" Hi-Shear
ZT186-8	.875	.502		HS47 1/2" Hi-Shear
ZT186-9	.937	.563		HS47 9/16" Hi-Shear
ZT186-10	1.00	.625		HS47 5/8" Hi-Shear
ZT187-1	.323	.192	1/4-28	3/16" Huck Lock Bolt
ZT187-2	.413	.255		1/4" Huck Lock Bolt
ZT187-3	.372	.270		1/4" Blind Rivet
ZT187-4	.528	.317		5/16" Huck Lock Bolt
ZT187-5	.465	.344		5/16" Blind Rivet
ZT187-6	.622	.380		3/8" Huck Lock Bolt
ZT187-7	.550	.402		3/8" Blind Rivet



Collar Remover

## Straight Shank

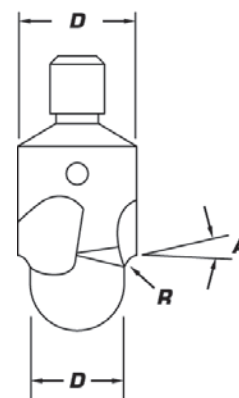
Cutter Diameter D	Straight Shank Diameter B	Cutter No.			
		78° A	82° A	100° A	115° A
1/4"	3/16"	ZT395-21	ZT395-34	ZT395-47	ZT395-60
3/8"	1/4"	ZT395-23	ZT395-36	ZT395-49	ZT395-62
1/2"		ZT395-25	ZT395-38	ZT395-51	ZT395-64
3/4"	3/8"	ZT395-27	ZT395-40	ZT395-53	ZT395-66
1"	1/2"	ZT395-29	ZT395-42	ZT395-55	ZT395-68



Straight Shank

## Hole Radius Cutters

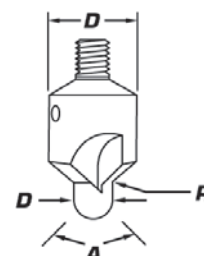
Cutter No.	Cutter Diameter D	Pilot Diameter P	Radius R	Angle A	Cutter Thread
ZT362-.186	.375	.1865	.25	160°	1/4-28
ZT362-.187			.30		
ZT362-.246	.319	.2465	.25		
ZT362-.250			.30		
ZT362-.248			.35		
ZT362-.307	.382	.3075	.25		
ZT362-.312			.30		
ZT362-.370	.484	.3700	.35		
ZT362-.372			.30		
ZT362-.435			.35		
ZT362-.495	.609	.4950	.30		
ZT362-.497			.35		



Hole Radius Cutters

## Countersink Radius Cutters

Used on Countersink Model	Cutter Diameter D	Cutter Thread	Angle A	Pilot Diameter P	Radius R	Cutter No.
ZT330	1/4"	1/4-28	100°	Specify Example: ZT437-5/32.030R		ZT437-17
	3/8"					ZT437-22
	5/16"					ZT437-12
	7/16"					ZT437-26
	1/2"					ZT437-30
	9/16"					ZT437-58
5/8"	ZT437-49					
ZT331	3/4"	3/8-24				ZT438-21
	7/8"					ZT438-26
	1"					ZT438-36
	1-1/8"					ZT438-41
	1-1/4"					ZT438-46
	1-3/8"					ZT438-51
ZT334	7/8"	7/16-20				ZT439-26
	1"					ZT439-36
	1-1/8"					ZT439-41
	1-1/4"					ZT439-46
	1-3/8"					ZT439-51
	1-1/2"		ZT439-56			

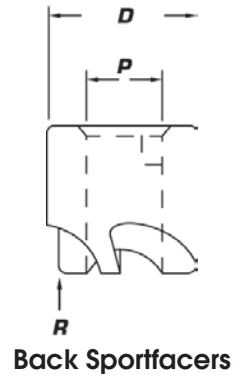


Countersink Radius Cutters

## Back Spoffacers

For stainless steel and titanium.

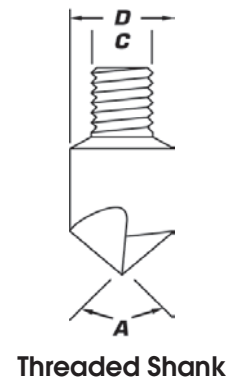
Part No.	D	P	R	Number of Flutes
ZT73-20	1/4"	3/32"	1/32"	3
ZT73-21		1/8"		
ZT73-22		5/16"		
ZT73-23				
ZT73-24				
ZT73-25	3/8"	3/16"		
ZT73-26	7/16"	5/32"		
ZT73-27		3/16"		
ZT73-40		1/2"		1/4"
ZT73-28	5/16"			
ZT73-29	3/16"			
ZT73-41	9/16"	1/4"		
ZT73-30		5/16"		
ZT73-31		1/4"		
ZT73-32	5/8"	5/16"		
ZT73-33		1/4"		
ZT73-42		5/16"		
ZT73-43	11/16"	1/4"		
ZT73-44		5/16"		
ZT73-45		1/4"		
ZT73-34	3/4"	5/16"		
ZT73-35		3/8"		
ZT73-46		5/16"		
ZT73-47	13/16"	3/8"		
ZT73-48		5/16"		
ZT73-49		3/8"		
ZT73-36	7/8"	1/2"		
ZT73-37		5/16"		
ZT73-38		3/8"		
ZT73-40	1"	1/2"		
ZT73-41		3/8"		
ZT73-42		1/2"		
ZT73-43	1-1/8"	3/8"		
ZT73-44		1/2"		
ZT73-45		3/8"		
ZT73-46	1-1/4"	1/2"		
ZT73-47		3/8"		
ZT73-48		1/2"		



**NOTE:** Other radius sizes available by special order.

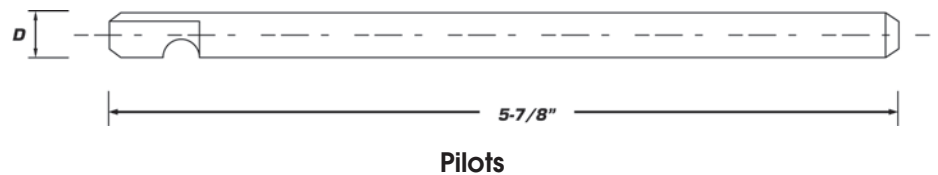
## Threaded Shank

Used on Countersink Model	Cutter Diameter D	Cutter Thread C	Cutter No.			
			78° A	82° A	100° A	115° A
ZT330	3/8"	1/4-28	ZT394-23	ZT394-36	ZT394-49	ZT394-62
	7/16"		ZT394-24	ZT394-37	ZT394-50	ZT394-63
	1/2"		ZT394-25	ZT394-38	ZT394-51	ZT394-64



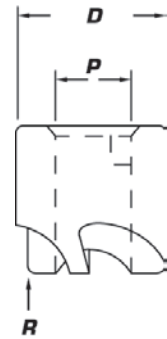
## Pilots

Part No.	D
ZT82A-1	3/32"
ZT82A-2	1/8"
ZT82A-3	5/32"
ZT82A-4	3/16"
ZT82A-5	1/4"
ZT82A-6	5/16"
ZT82A-7	3/8"
ZT82A-8	1/2"



**Back Countersinks**

Cutter Angle							
D	P	100°	78°	82°	110°	115°	No. of Flutes
1/4"	3/32"	ZI75-60	ZI75-20	ZI75-40	ZI75-80	ZI75-100	3
	1/8"	ZI75-61	ZI75-21	ZI75-41	ZI75-81	ZI75-101	
5/16"		ZI75-62	ZI75-22	ZI75-42	ZI75-82	ZI75-102	
	3/8"	5/32"	ZI75-63	ZI75-23	ZI75-43	ZI75-83	
7/16"		3/16"	ZI75-64	ZI75-24	ZI75-44	ZI75-84	
	1/2"	5/32"	ZI75-65	ZI75-25	ZI75-45	ZI75-85	
9/16"		3/16"	ZI75-66	ZI75-26	ZI75-46	ZI75-86	ZI75-106
	5/8"	3/16"	ZI75-67	ZI75-27	ZI75-47	ZI75-87	ZI75-107
11/16"		1/4"	ZI75-146	ZI75-120	ZI75-133	ZI75-159	ZI75-172
	13/16"	1/4"	ZI75-68	ZI75-28	ZI75-48	ZI75-88	ZI75-108
3/4"		5/16"	ZI75-69	ZI75-29	ZI75-49	ZI75-89	ZI75-109
	7/8"	3/16"	ZI75-147	ZI75-121	ZI75-134	ZI75-160	ZI75-173
15/16"		1/4"	ZI75-70	ZI75-30	ZI75-50	ZI75-90	ZI75-110
	1"	5/16"	ZI75-71	ZI75-31	ZI75-51	ZI75-91	ZI75-111
1-1/8"		1/4"	ZI75-72	ZI75-32	ZI75-52	ZI75-92	ZI75-112
	1-1/4"	5/16"	ZI75-73	ZI75-33	ZI75-53	ZI75-93	ZI75-112
1-3/8"		1/4"	ZI75-148	ZI75-122	ZI75-135	ZI75-161	ZI75-174
	1-1/2"	5/16"	ZI75-149	ZI75-123	ZI75-136	ZI75-162	ZI75-175
1-5/8"		1/4"	ZI75-150	ZI75-124	ZI75-137	ZI75-163	ZI75-176
	1-3/4"	5/16"	ZI75-74	ZI75-34	ZI75-54	ZI75-94	ZI75-114
1-7/8"		3/8"	ZI75-75	ZI75-35	ZI75-55	ZI75-95	ZI75-115
	1-15/8"	5/16"	ZI75-151	ZI75-125	ZI75-138	ZI75-164	ZI75-177
1-11/8"		3/8"	ZI75-152	ZI75-126	ZI75-139	ZI75-165	ZI75-178
	1-13/8"	5/16"	ZI75-153	ZI75-127	ZI75-140	ZI75-166	ZI75-179
1-15/8"		3/8"	ZI75-76	ZI75-36	ZI75-56	ZI75-96	ZI75-116
	1-17/8"	1/2"	ZI75-77	ZI75-37	ZI75-57	ZI75-97	ZI75-117
1-19/8"		5/16"	ZI75-154	ZI75-128	ZI75-141	ZI75-167	ZI75-180
	1-21/8"	3/8"	ZI75-78	ZI75-38	ZI75-58	ZI75-98	ZI75-118
1-23/8"		1/2"	ZI75-79	ZI75-39	ZI75-59	ZI75-99	ZI75-119
	1-25/8"	3/8"	ZI75-155	ZI75-129	ZI75-142	ZI75-168	ZI75-181
1-27/8"		1/2"	ZI75-156	ZI75-130	ZI75-143	ZI75-169	ZI75-182
	1-29/8"	3/8"	ZI75-157	ZI75-131	ZI75-144	ZI75-170	ZI75-183
1-31/8"		1/2"	ZI75-158	ZI75-132	ZI75-145	ZI75-171	ZI75-184

**Back Sportfacers**

**Drivematic Drill / Countersink**

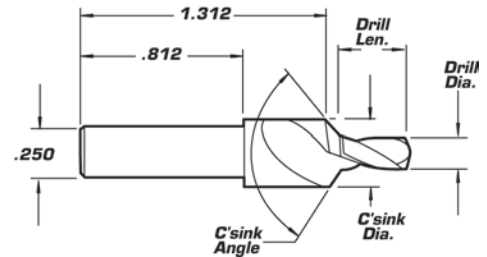
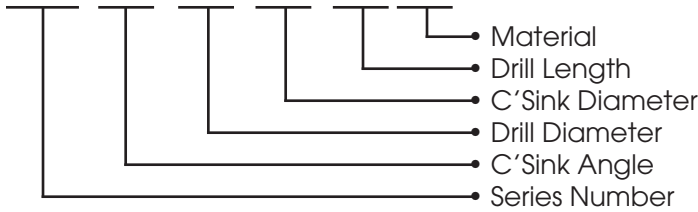
High speed steel, cobalt, or solid carbide HP77 series. Drill countersinks for use on Drivematic riveters 1/4" shank.

**Ordering Information**

- To determine your part number:  
Determine all necessary information from the graph and specify all as in the example.

**Part No. Example:**

**HP77-100°-.161-.317-.375 HSS**



**Nutplate Drill / Countersink**

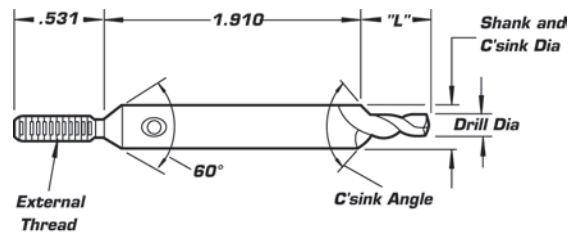
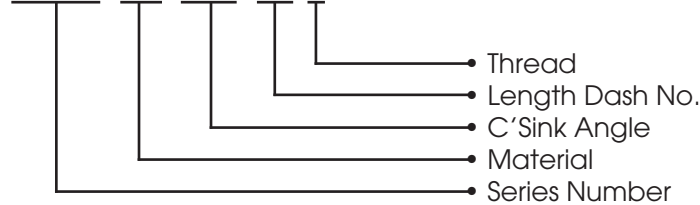
High speed steel, cobalt, or solid carbide HP77 series drill countersinks for use on nutplate.

**Ordering Information**

- To determine your part number:  
Determine all necessary information from the graph and specify all as in the example.

**Part No. Example:**

**HPD40-M7-100°-35-8**

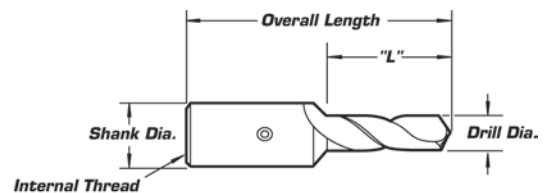


Series No.	Body & C'Sink Diameter	Drill Diameter	Length Dash No.	"L" Dimension
HPD40	.187	.0980	-25	.295
HPDS40	.250		-35	.420
HPD30		.312	.1285	-50
HPDS30	.315		-	-
HPD21		.1590	-	-
HPDS21	-		-	-

**NOTE:** The standard HPD nutplate drill c'sink is made of M7 HSS and is used for drilling aluminum and mild steel. Substitute M7 with M42 for cobalt if drills are used for drilling hard steel, or substitute M7 with C for carbide if required.

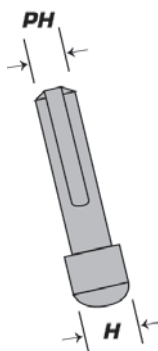
**Drivematic Drill / Countersink**

Available on request.



## Step Pilots for Reverse Countersinks & Spoffacers

Step pilots are designed for use with HP-470 through HP-481 high speed steel and carbide reverse countersinks and HP-491 through HP-503 high speed steel & carbide reverse spoffacers. Step pilots have a step (larger than the pilot in the reverse cutter being used) to pilot the workpiece.



Step Pilot No.	"P1" Minor Diameter	"P2" Major Diameter
HP511P-3/32	3/32"	1/8"
HP511R-1/8	1/8"	5/32"
HP511S-5/32	5/32"	3/16"
HP511T-3/16	3/16"	1/4"
HP511W-1/4	1/4"	5/16"
HP512X-5/32	5/32"	3/16"
HP512T-3/16	3/16"	1/4"
HP512W-14	1/4"	5/16"
HP512X-5/16	5/16"	3/8"
HP513Z-3/8	3/8"	1/2"
HP516V-1/4	1/4"	5/16"
HP516X-5/16	5/16"	3/8"
HP517X-5/16		
HP514Z-3/8	3/8"	1/2"
HP515V-1/2	1/2"	9/16"
HP517Z-3/8	3/8"	1/2"

## Pilots for Counterbores

Pilots will fit almost all standard aircraft counterbores. Made out of quality tool steel. Heat treated and ground to insure concentricity.

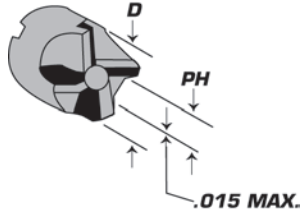


Part No.	"H" Pilot Head Diameter	"PH" Standard Shank Diameter
HP516-1	3/32" (.093)	3/32"
HP516-2	1/8" (.125)	
HP516-3	5/32" (.156)	
HP516-4	#20 (.161)	
HP516-5	3/16" (.187)	
HP516-6	#10 (.193)	
HP516-7	7/32" (.218)	
HP516-7A		1/8"
HP516-8	1/4" (.250)	3/32"
HP516-8A		1/8"
HP516-9	"F" (.257)	3/32"
HP516-9A		1/8"
HP516-10	9/32" (.281)	3/16"
HP516-10A		1/8"
HP516-11	5/16" (.312)	3/16"
HP516-11A		
HP516-12		11/32" (.343)
HP516-13		3/8" (.375)
HP516-14		13/32" (.406)
HP516-15		7/16" (.437)
HP516-16		15/32" (.468)
HP516-17		1/2" (.500)



### Reverse Spoffacer Kit

Thirteen piece kit including the most commonly used back spoffacers and pilots.

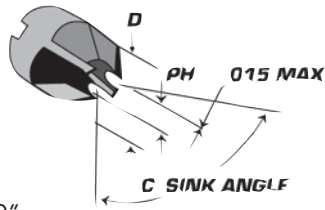


- 1 each:  
1/4", 5/16", 3/8", 7/16", 1/2",  
9/16", 5/8" cutters.
- 1 each:  
3/32", 1/8", 3/16", 1/4", 5/16" pilots.
- Convenient storage case.

Carbide				
Part No.	"D" Cutter Diameter	"PH" Pilot Hole	Pilot Reference	
			Plain Pilot	Step Pilot
HP491C-1/4R	1/4"	1/8"	HP510R	HP511R-1/8
HP493C-5/16P	5/16"	3/32"	HP510P	HP511P-3/32
HP494C-3/8T	3/8"	3/16"	HP510T	HP511T-3/16
HP495C-7/16T	7/16"			
HP496C-1/2T	1/2"			
HP497C-9/16W	9/16"	1/4"	HP510W	HP512W-1/4
HP498C-5/8X	5/8"	5/16"	HP510X	HP512X-5/16
HP499C-11/16W	11/16"	1/4"	HP510W	HP512W-1/4
HP500C-3/4X	3/4"	5/16"	HP510X	HP512X-5/16
HP501C-7/8Z	7/8"	3/8"	HP510Z	HP513Z-3/8
HP502C-1Z	1"			

### Reverse Countersink Kit

A popular thirteen piece assortment of high speed steel reverse countersinks.



- 1 each:  
1/4", 5/16", 3/8", 7/16", 1/2",  
9/16", 5/8" cutters.
- 1 each:  
3/32", 1/8", 3/16", 1/4", 5/16" pilots.
- Convenient storage case.

Carbide				
Part No.	"D" Cutter Diameter	"PH" Pilot Hole	Pilot Reference	
			Plain Pilot	Step Pilot
HP470C-1/4R	1/4"	1/8"	HP510R	HP511R-1/8
HP471C-5/16R	5/16"			
HP472C-3/8T	3/8"	3/16"	HP510T	HP511T-3/16
HP473C-9/16T	9/16"			HP512T-3/16
HP474C-1/2T	1/2"			HP511T-3/16
HP475C-9/16W	9/16"	1/4"	HP510W	HP512W-1/4
HP476C-5/8X	5/8"	5/16"	HP510X	HP512X-5/16
HP477C-11/16W	11/16"	1/4"	HP510W	HP512W-1/4
HP478C-3/4X	3/4"	5/16"	HP510X	HP516X-5/16
HP479C-7/8X	7/8"			
HP480C-1X	1"			HP517X-5/16

### Burraway

#### Type A

Type A tools (inch program; for hole sizes from .093 through .203 in.) and Type MA tools (metric program; sizes from 2 to 5mm) are a two-piece construction (arbor assembly and adapter). All Type A and MA arbor assemblies are interchangeable with their respective shank adapters.



#### PN: MYA-Series

Hole Size	Dec. Equiv	Dim. A	Dim. B	Dim. C	Blade Size
3/32	.093	3.37	.45	.28	3/32
7/64	.109	3.37	.45	.28	3/32
1/8	1.25	3.37	.45	.25	1/8
9/64	.146	3.37	.45	.25	1/8
5/32	.156	3.37	.45	.25	5/32
11/64	.171	3.37	.45	.25	5/32
3/16	.187	4.12	.72	.44	3/16
13/64	.203	4.12	.72	.44	3/16

#### Type B

Type B tools (inch program; for hole sizes from .218 through .750 in.) and Type MB tools (metric program; sizes from 5.5 through 19mm) are a single-piece construction.



#### PN: MYB-Series

Hole Size	Dec. Equiv	Dim. A	Dim. B	Dim. C	Blade Size
7/32	.218	4.50	.87	.56	#1
15/64	.234	4.50	.87	.56	#1
1/4	.250	4.50	.87	.56	#1
17/64	.265	4.50	.87	.56	#1
9/32	.281	4.50	.87	.56	#1
19/64	.296	4.50	.96	.68	#2
5/16	.312	4.50	.96	.68	#2
21/64	.328	4.50	.96	.68	#2
11/32	.343	4.50	.96	.68	#2
23/64	.359	5	1.00	.68	#3
3/8	.375	5	1.00	.68	#3
25/64	.390	5	1.00	.68	#3
13/32	.406	5	1.00	.68	#3
27/64	.421	5.50	1.09	.72	#3-1/2
7/16	.437	5.50	1.09	.72	#3-1/2
26/64	.453	5.50	1.09	.72	#3-1/2
15/32	.468	5.50	1.09	.72	#3-1/2
31/64	.484	5.50	1.09	.72	#3-1/2
1/2	.500	5.50	1.09	.72	#3-1/2
33/64	.515	5.50	1.09	.72	#3-1/2
17/32	.531	5.50	1.09	.72	#3-1/2
35/64	.546	6.44	1.31	.90	#4
9/16	.562	6.44	1.31	.90	#4
37/64	.578	6.44	1.31	.90	#4
19/32	.593	6.44	1.31	.90	#4
39/64	.609	6.44	1.31	.90	#4
5/8	.625	6.44	1.31	.90	#4
41/64	.640	6.44	1.31	.90	#4
21/32	.656	6.44	1.31	.90	#4
43/64	.671	6.44	1.31	.90	#4
11/16	.687	6.44	1.31	.90	#4
3/4	.750	6.44	1.31	.90	#4

### Deburring Tool

- Curved blade swivels freely and automatically.
- Blades install quickly.
- Seven blades included.

PN: TP266



### Disposable Burr

Able to tackle almost every deburring job.

PN: TP557



### Double Edge Scraper

- Tool simultaneously removes burrs from both sides of workpiece.
- Capacity 1/32" to 1/2".
- Unique round cutting blades that can be rotated around and reverse for long life.
- Blades are made of M-2 steel and hardened to 64 RC.
- Includes two blades.

PN: TP370



### Rivet Hole Speed

- Designed with 1/4" x 28 female threaded shank.
- Curved shank swivels freely in handle.
- Allows for faster deburring with less effort.

PN: TP120



### Countersink Versa Burr

Replacement 3/4" Countersink cutter.

PN: TP490



### P.B.S Diamond Plated Integral Shank Hole Saws

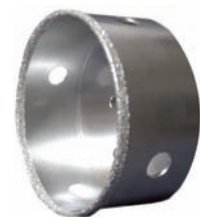
- Piloted Integral Shank.
- Furnished with windows and slots 1/8 return.
- 2" drilling depth (inside depth).
- .050" smaller than 1" diameter.
- .090" 1" diameter and larger.
- When ordering, specify shank and pilot diameter.



Part No.	OD Diameter	Part No.	OD Diameter	Part No.	OD Diameter
HS-1/2	1/2"	HS-1-1/2	1-1/2"	HS-2-3/4	2-3/4"
HS-3/4	3/4"	HS-1-3/4	1-3/4"	HS-3	3"
HS-7/8	7/8"	HS-2	2"	HS-4	4"
HS-1	1"	HS-2-1/4	2-1/4"	HS-5	5"
HS-1-1/4	1-1/4"	HS-2-1/2	2-1/2"		

### P.B.S Diamond Plated Hole Saws

- MHS Series, arboless.
- Furnished with windows and slots 1/8 return.
- 1-1/2" drilling depth (inside depth).



Part No.	OD Diameter	Part No.	OD Diameter	Part No.	OD Diameter
MHS - 9/16	9/16"	MHS1-1/4	1-1/4"	MHS-2-1/4	2-1/4"
MHS- 5/8	5/8"	MHS1-3/8	1-3/8"	MHS-3	3"
MHS-3/4	3/4"	MHS-1-1/2	1-1/2"	MHS-3-1/4	3-1/4"
MHS 7/8	7/8"	MHS1-3/4	1-3/4"	MHS-3-1/2	3-1/2"
MHS-1	1"	MHS1-7/8	1-7/8"	MHS-4	4"
MHS1-1/16	1-1/16"	MHS-2	2"	MHS-4-1/4	4-1/4"
MHS1-1/8	1-1/8"	MHS-2-1/4	2-1/4"	MHS-4 1/2	4-1/2"
MHS-3/16	1-3/16"	MHS-2-1/2	2-1/2"	MHS-5	5"

### Hole Saw Arbors

- For MHS series hole saws above, standard lenox type.
- Quick release for change of hole saws without removing arbor from chuck.
- Set screw body for pilot drill adjustment.
- Also available with pilots, please inquire.



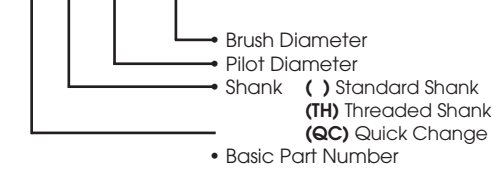
Part No.	Fits Hole Saw Dia.	Screw Thread	Shank Size
NA-01	9/16" To 1-3/16"	1/2"-20	3/8"
NA-06	1-1/4" To 5"	5/8"-18	7/16"

## Pilot Bonding End Brushes

Stainless steel brushes designed to remove corrosion, paint and other contaminants from rivet hole area. Assures positive electrical contact it eliminate static electricity. Made with special ring to provide a more rigid surface area. These brushes are used primarily for aircraft assembly and in the aerospace industry. Made in USA.

Part No. Example:

**DIPB 3/32X3/8**



\* We supply .005 Wire Diameter if you don't specified it



Brush Diameter	Pilot Diameter						
	3/32"	1/8"	5/32"	3/16"	1/4"	5/16"	3/8"
(Inch/MM)	(0.0937/2.38)	(0.125/3.175)	(0.1562/3.969)	(0.1875/4.763)	(0.25/6.35)	(0.3125/7.938)	(0.375/9.525)
1/4" (0.25/6.35)	DIPB 3/32X1/4	DIPB 1/8X1/4	DIPB 5/32X1/4	DIPB 3/16X1/4	-	-	-
3/8" (0.375/9.525)	DIPB 3/32X3/8	DIPB 1/8X3/8	DIPB 5/32X3/8	DIPB 3/16X3/8	DIPB 1/4X3/8	-	-
1/2" (0.50/12.700)	DIPB 3/32X1/2	DIPB 1/8X1/2	DIPB 5/32X1/2	DIPB 3/16X1/2	DIPB 1/4X1/2	-	-
	DIPB 3/32X1/2 S	DIPB 1/8X1/2 S	DIPB 5/32X1/2 S	DIPB 3/16X1/2 S			
5/8" (0.625/15.875)	DIPB 3/32X5/8	DIPB 1/8X5/8	DIPB 5/32X5/8	DIPB 3/16X5/8	DIPB 1/4X5/8	-	-
3/4" (0.75/19.050)	DIPB 3/32X3/4	DIPB 1/8X3/4	DIPB 5/32X3/4	DIPB 3/16X3/4	DIPB 1/4X3/4	DIPB 5/16X3/4	DIPB 3/8X3/4
1" (1/25.4)	DIPB 3/32X1	DIPB 1/8X1	DIPB 5/32X1	DIPB 3/16X1	DIPB 1/4X1	DIPB 5/16X1	DIPB 3/8X1

\* Part numbers ending in S have Steel inner wire fill.

**Solid Fill End Brushes**

1/4" Standard Shank.  
Stainless Steel.

*Ask for measurements*



**Crimped Wire End Brushes**

Crimped Wire End Brush.  
Carbon Steel.  
Stainless Steel.

*Ask for measurements*



**Special Brushes**

Samples of Brushes Manufactured To Customers Print Specifications

*Ask for measurements*

**Extended Pilot, Piloted Bonding Brush**

Extended Pilot Further Limits Movement in Material Removal Applications.



**Reverse Pilot, Piloted Bonding Brush**

Used in a "Pull Through" Application on Back Side of Plate/Material.



**Controlled, Inverte Piloted Bonding Brush**

For Cleaning Around and Extruding pin.



**Side Action Brush**

For Cleaning the Inner Walls of Cylinders and Internal Threads.



**Twisted in Wire Brush With Shank**

Shank Mounted for Rotary Applications.



**Special Fountain Brushes**

For Fluid Application Jobs.



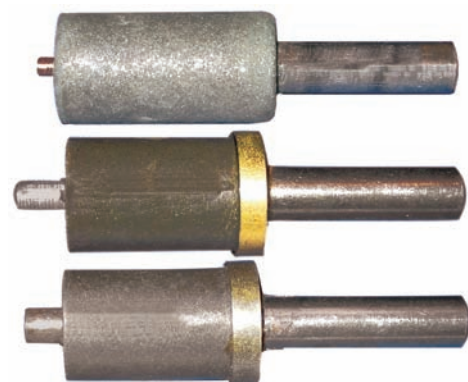
**Solid Shank, Acid Brush**

For acid cleaning Applications where Grater Reach is Required.



**Abrasive Bonding Brushes**

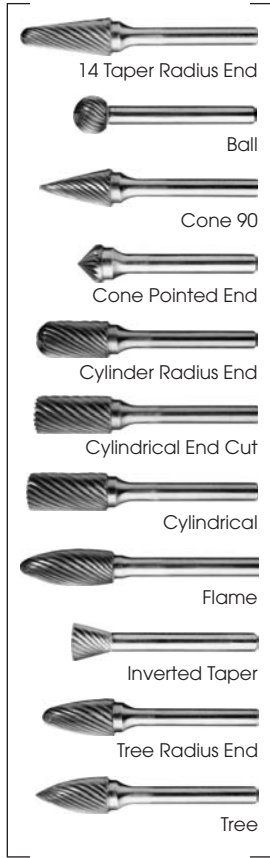
Piloted brushes with abrasive material for long life.



Part No.	Pilot Size
14701	3/32"
14702	1/8"
14703	5/32"
14704	Set of 3

# Carbide Burrs

More sizes, materials and shapes available upon request.



Description	Part No.	Cutter Diameter	Flute Length		
Cylinder Radius End 1/4" Shank Size	SC-11	1/8"	1/2"		
	SC-14	3/16"	5/8"		
	SC-1	1/4"		1"	
	SC1L				
	SC-2	5/16"	3/4"		
	SC-3	3/8"			
	SC-3L				
	SC-4	7/16"	1"		
	SC-5	1/2"			
	SC-6	5/8"			
	SC-7	3/4"			
	SC-9	1"			
	Ball 1/4" Shank Size	SD-11		1/8"	1"
		SD-14		3/16"	
SD-1		1/4"			
SD-2		5/16"			
SD-3		3/8"			
SD-4		7/16"			
SD-5		1/2"			
SD-6		5/8"			
SD-7		3/4"			
Cylindrical 1/4" Shank Size	SA-11	1/8"	1/2"		
	SA-14	3/16"	5/8"		
	SA-1	1/4"	1"		
	SA-1L				
	SA-2	5/16"	3/4"		
	SA-3	3/8"			
	SA-3L				
	SA-4	7/16"	1"		
	SA-5	1/2"			
	SA-6	5/8"			
	SA-7	3/4"			
SA-9	1"				
Oval 1/4" Shank Size	SE-11	3/16"		5/16"	
	SE-1	1/4"	3/8"		
	SE-3	3/8"	5/8"		
	SE-5	1/2"	7/8"		
	SE-6	5/8"	1"		
	SE-7	3/4"			
Tree Radius End 1/4" Shank Size	SF-11	1/8"	1/2"		
	SF-1	1/4"	5/8"		
	SF-3	3/8"	3/4"		
	SF-4	7/16"	1"		
	SF-13	1/2"	3/4"		
	SF-5		1"		
	SF-6	5/8"	1-1/2"		
	SF-7	3/4"			
	SF-15				

Description	Part No.	Cutter Diameter	Flute Length
Flame 1/4" Shank Size	SH-1	1/4"	5/8"
	SH-2	5/16"	3/4"
	SH-5	1/2"	1-1/4"
	SH-6	5/8"	1-7/16"
	SH-7	3/4"	1-5/8"
	Cylindrical End Cut 1/4" Shank Size	SB-11	1/8"
SB-14		3/16"	5/8"
SB-1		1/4"	
SB-1L			
SB-2		5/16"	3/4"
SB-3		3/8"	
SB-3L			
SB-4		7/16"	1"
SB-5		1/2"	
SB-6		5/8"	
SB-7		3/4"	
SB-9	1"		
Cone 90° 1/4" Shank Size	SK-1	1/4"	1/8"
	SK-3	3/8"	3/16"
	SK-5	1/2"	1/4"
	SK-6	5/8"	5/16"
	SK-7	3/4"	3/8"
	SK-9	1"	1/2"
Tree 1/4" Shank Size	SG-1	1/4"	5/8"
	SG-2	5/16"	3/4"
	SG-3	3/8"	
	SG-13	1/2"	1"
	SG-5		
	SG-6	5/8"	1-1/2"
	SG-7	3/4"	
	Cone Pointed End 1/4" Shank Size	SM-1	1/4"
SM-2		3/4"	
SM-3		1"	
SM-4		3/8"	5/8"
SM-5		1/2"	7/8"
SM-6		5/8"	1"
14° Taper Radius End 1/4" Shank Size	SL-1	1/4"	5/8"
	SL-2	5/16"	7/8"
	SL-3	3/8"	1-1/16"
	SL-4	1/2"	1-1/8"
	SL-6	5/8"	1-5/16"
	SL-7	3/4"	1-1/2"
	Inverted Taper 1/4" Shank Size	SN-1	1/4"
SN-2		3/8"	3/8"
SN-4		1/2"	1/2"
SN-6		5/8"	3/4"
SN-7		3/4"	5/8"

### Fractional Standard

Hole Dia.	Grip Range	Standard		Color Code		Drill Size
		Part No.	Body Length	Nut		
1/16"	0" - 1/4"	M-1/16	1-29/64"	Black		#50
	0" - 1/4"	M-3/32	1-29/64"			
	1/4" - 1/2"	ML-3/32	1-29/64"	Zinc		
3/32"	1/4" - 1/2"	MEL-3/32	1-29/64"			#40
	1/2" - 3/4"	MEL-3/32	1-29/64"			
	0" - 1/4"	M-1/8	1-29/64"	Cooper		
1/8"	1/4" - 1/2"	ML-1/8	1-29/64"			#30
	1/2" - 3/4"	MEL-1/8	1-29/64"			
	0" - 1/4"	M-5/32	1-29/64"	Black		
5/32"	1/4" - 1/2"	ML-5/32	1-29/64"			#20
	1/2" - 3/4"	MEL-5/32	1-29/64"			
	0" - 1/4"	M-3/16	1-29/64"	Brass		
3/16"	1/4" - 1/2"	ML-3/16	1-29/64"			#10
	1/2" - 3/4"	MEL-3/16	1-29/64"			
	0" - 1/4"	M-7/32	1-31/64"	Zinc		
7/32"	0" - 1/4"	M-1/4	1-31/64"	Copper		#2
1/4"	0" - 1/4"	M-1/4	1-31/64"	Copper		1/4"

### Metric Standard

Hole Dia.	Grip Range	Standard		Color Code		Drill Size
		Part No.	Body Length	Nut	Body	
2.0	0 - 6.5	M-2.0	36.9	Brass	Black	2.0
2.5	0 - 6.5	M-2.5	36.9	Silver	Silver	2.5
3.0	0 - 6.5	M-3.0	36.9	Copper	Copper	3.0
3.5	0 - 6.5	M-3.5	36.9	Brass	Copper	3.5
4.0	0 - 6.5	M-4.0	36.9	Black	Black	4.0
4.5	0 - 6.5	M-4.5	36.9	Silver	Brass	4.5
5.0	0 - 6.5	M-5.0	36.9	Copper	Copper	5.0



### Fractional Miniature

Hole Dia.	Grip Range	Standard		Color Code		Drill Size
		Part No.	Body Length	Nut		
1/16"	0" - 1/4"	MM-1/16	53/64"	Black		#50
	0" - 1/4"	MM-3/32	53/64"			
	1/4" - 1/2"	MML-3/32	53/64"	Zinc		
3/32"	1/2" - 3/4"	MMEL-3/32	53/64"			#40
	0" - 1/4"	MM-1/8	53/64"	Cooper		
	1/4" - 1/2"	MML-1/8	53/64"			
1/8"	1/2" - 3/4"	MMEL-1/8	53/64"			#30
	0" - 1/4"	MM-5/32	53/64"	Black		
	1/4" - 1/2"	MML-5/32	53/64"			
5/32"	1/2" - 3/4"	MMEL-5/32	53/64"			#20
	0" - 1/4"	MM-3/16	53/64"	Brass		
	1/4" - 1/2"	MML-3/16	53/64"			
3/16"	1/2" - 3/4"	MMEL-3/16	53/64"			#10

### Metric Miniature

Hole Dia.	Grip Range	Miniature		Color Code		Drill Size
		Part No.	Body Length	Nut	Body	
2.0	0 - 6.5	MM-2.0	21	Brass	Black	2.0
2.5	0 - 6.5	MM-2.5	21	Silver	Silver	2.5
3.0	0 - 6.5	MM-3.0	21	Copper	Copper	3.0
3.5	0 - 6.5	MM-3.5	21	Brass	Copper	3.5
4.0	0 - 6.5	MM-4.0	21	Black	Black	4.0
4.5	0 - 6.5	MM-4.5	21	Silver	Brass	4.5
5.0	0 - 6.5	MM-5.0	21	Copper	Copper	5.0



### Fractional Heavy Duty

Hole Dia.	Grip Range	Standard		Color Code		Drill Size
		Part No.	Body Length	Nut		
1/16"	0" - 1/4"	MHD-1/16	1-7/64"	Black		#50
	1/2" - 1"	MHDL-1/16	1-7/64"			
3/32"	0" - 1/2"	MHD-3/32	1-7/64"	Zinc		#40
	1/2" - 1"	MHDL-3/32	1-7/64"			
1/8"	0" - 1/2"	MHD-1/8	1-7/64"	Cooper		#30
	1/2" - 1"	MHDL-1/8	1-7/64"			
5/32"	0" - 1/2"	MHD-5/32	1-7/64"	Black		#20
	1/2" - 1"	MHDL-5/32	1-7/64"			
3/16"	0" - 1/2"	MHD-3/16	1-7/64"	Brass		#10
	1/2" - 1"	MHDL-3/16	1-7/64"			
7/32"	0" - 1/2"	MHD-7/32	1-7/64"	Zinc		#2
1/4"	0" - 1/2"	MHD-1/4	1-7/64"	Copper		1/4"

### Metric Heavy Duty

Hole Dia.	Grip Range	Heavy Duty		Color Code		Drill Size
		Part No.	Body Length	Nut	Body	
2.0	0 - 13	MHD-2.0	28.1	Brass	Black	2.0
2.5	0 - 13	MHD-2.5	28.1	Silver	Silver	2.5
3.0	0 - 13	MHD-3.0	28.1	Copper	Copper	3.0
3.5	0 - 13	MHD-3.5	28.1	Brass	Copper	3.5
4.0	0 - 13	MHD-4.0	28.1	Black	Black	4.0
4.5	0 - 13	MHD-4.5	28.1	Silver	Brass	4.5
5.0	0 - 13	MHD-5.0	28.1	Copper	Copper	5.0



### Spring Clecos Instalation Tools



See page 173

### Wing Nuts Fasteners - WNX, BNX Series

Hand operated fasteners for structures requiring limited fastening or limited access.

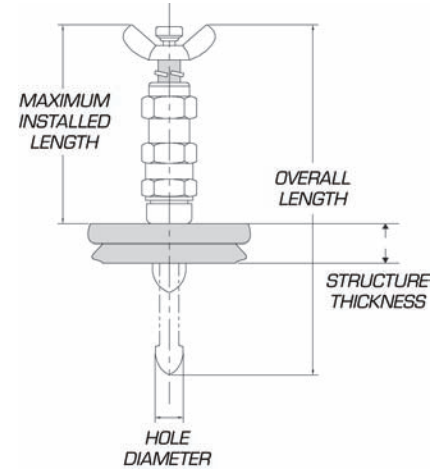
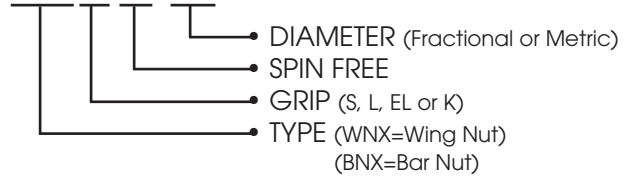


### FRACTIONAL SIZES

Hole Dia.	Grip Range	Wing Nut	Bar Nut	Body Length		Body Color	Drill Size
		Part No.	Part No.	Installed	Overall		
3/32"	0" - 5/16"	WNXS-SF-3/32	BNXS-SF-3/32	2-7/32"	2-3/8"	Zinc	#40
	0" - 1/2"	WNX-SF-3/32	BNX-SF-3/32	2-11/16"	2-7/8"		
	0" - 1"	WNXL-SF-3/32	BNXL-SF-3/32	3-11/16"	3-7/8"		
	1/2" - 1-1/2"	WNXEL-SF-3/32	BNXEL-SF-3/32	3-47/64"	4-3/8"		
1/8"	0" - 5/16"	WNXS-SF-1/8	BNXS-SF-1/8	2-7/32"	2-3/8"	Copper	#30
	0" - 1/2"	WNX-SF-1/8	BNX-SF-1/8	2-11/16"	2-7/8"		
	0" - 1"	WNXL-SF-1/8	BNXL-SF-1/8	3-11/16"	3-7/8"		
	1/2" - 1-1/2"	WNXEL-SF-1/8	BNXEL-SF-1/8	3-47/64"	4-3/8"		
	1-1/2" - 2-1/2"	WNXK-SF-1/8	BNXK-SF-1/8	3-47/64"	5-3/8"		
5/32"	0" - 5/16"	WNXS-SF-5/32	BNXS-SF-5/32	2-7/32"	2-3/8"	Black	#20
	0" - 1/2"	WNX-SF-5/32	BNX-SF-5/32	2-11/16"	2-7/8"		
	0" - 1"	WNXL-SF-5/32	BNXL-SF-5/32	3-11/16"	3-7/8"		
	1/2" - 1-1/2"	WNXEL-SF-5/32	BNXEL-SF-5/32	3-47/64"	4-3/8"		
	1-1/2" - 2-1/2"	WNXK-SF-5/32	BNXK-SF-5/32	3-47/64"	5-3/8"		
3/16"	0" - 5/16"	WNXS-SF-3/16	BNXS-SF-3/16	2-7/32"	2-3/8"	Brass	#10
	0" - 1/2"	WNX-SF-3/16	BNX-SF-3/16	2-11/16"	2-7/8"		
	0" - 1"	WNXL-SF-3/16	BNXL-SF-3/16	3-11/16"	3-7/8"		
	1/2" - 1-1/2"	WNXEL-SF-3/16	BNXEL-SF-3/16	3-47/64"	4-3/8"		
	1-1/2" - 2-1/2"	WNXK-SF-3/16	BNXK-SF-3/16	3-47/64"	5-3/8"		
7/32"	0" - 5/16"	WNXS-SF-7/32	BNXS-SF-7/32	2-7/32"	2-3/8"	Zinc	#2
	0" - 1/2"	WNX-SF-7/32	BNX-SF-7/32	2-11/16"	2-7/8"		
	0" - 1"	WNXL-SF-7/32	BNXL-SF-7/32	3-11/16"	3-7/8"		
	1/2" - 1-1/2"	WNXEL-SF-7/32	BNXEL-SF-7/32	3-47/64"	4-3/8"		
1/4"	0" - 5/16"	WNXS-SF-1/4	BNXS-SF-1/4	2-7/32"	2-3/8"	Copper	1/4"
	0" - 1/2"	WNX-SF-1/4	BNX-SF-1/4	2-11/16"	2-7/8"		
	0" - 1"	WNXL-SF-1/4	BNXL-SF-1/4	3-11/16"	3-7/8"		
	1/2" - 1-1/2"	WNXEL-SF-1/4	BNXEL-SF-1/4	3-47/64"	4-3/8"		
	1-1/2" - 2-1/2"	WNXK-SF-1/4	BNXK-SF-1/4	3-47/64"	5-3/8"		
5/16"	0" - 5/16"	WNXS-SF-5/16	BNXS-SF-5/16	2-7/32"	2-3/8"	Black	5/16"
	0" - 1/2"	WNX-SF-5/16	BNX-SF-5/16	2-11/16"	2-7/8"		
	0" - 1"	WNXL-SF-5/16	BNXL-SF-5/16	3-11/16"	3-7/8"		
	1/2" - 1-1/2"	WNXEL-SF-5/16	BNXEL-SF-5/16	3-47/64"	4-3/8"		
	1-1/2" - 2-1/2"	WNXK-SF-5/16	BNXK-SF-5/16	3-47/64"	5-3/8"		
3/8"	0" - 5/16"	WNXS-SF-3/8	BNXS-SF-3/8	2-7/32"	2-3/8"	Black With Brass Cap	3/8"
	0" - 1/2"	WNX-SF-3/8	BNX-SF-3/8	2-11/16"	2-7/8"		
	0" - 1"	WNXL-SF-3/8	BNXL-SF-3/8	3-11/16"	3-7/8"		
	1/2" - 1-1/2"	WNXEL-SF-3/8	BNXEL-SF-3/8	3-47/64"	4-3/8"		
	1-1/2" - 2-1/2"	WNXK-SF-3/8	BNXK-SF-3/8	3-47/64"	5-3/8"		

### Part No. Example:

**WNXEL-SF-1/8**



### METRIC SIZES

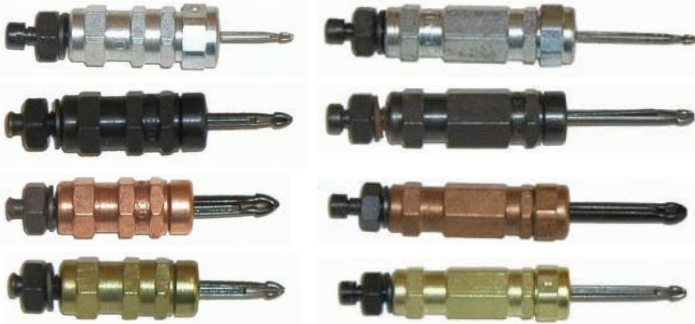
Hole Dia.	Grip Range	Wing Nut	Bar Nut	Body Length		Drill Size	Color Code	
		Part No.	Part No.	Installed	Overall		Body	Rivet
2.5	0 - 13	WNX-SF-2.5	BNX-SF-2.5	68.6	73.7	2.5	Silver	Silver
	0 - 25	WNXL-SF-2.5	BNXL-SF-2.5	94.5	99.3			
3.0	0 - 13	WNX-SF-3.0	BNX-SF-3.0	68.6	73.7	3.0	Copper	Copper
	0 - 25	WNXL-SF-3.0	BNXL-SF-3.0	94.5	99.3			
3.5	0 - 13	WNX-SF-3.5	BNX-SF-3.5	68.6	73.7	3.5	Copper	Brass
	0 - 25	WNXL-SF-3.5	BNXL-SF-3.5	94.5	99.3			
4.0	0 - 13	WNX-SF-4.0	BNX-SF-4.0	68.6	73.7	4.0	Black	Black
	0 - 25	WNXL-SF-4.0	BNXL-SF-4.0	94.5	99.3			
4.5	0 - 13	WNX-SF-4.5	BNX-SF-4.5	68.6	73.7	4.5	Brass	Silver
	0 - 25	WNXL-SF-4.5	BNXL-SF-4.5	94.5	99.3			
5.0	0 - 13	WNX-SF-5.0	BNX-SF-5.0	68.6	73.7	5.0	Brass	Copper
	0 - 25	WNXL-SF-5.0	BNXL-SF-5.0	94.5	99.3			
5.5	0 - 13	WNX-SF-5.5	BNX-SF-5.5	68.6	73.7	5.5	Silver	Black
	0 - 25	WNXL-SF-5.5	BNXL-SF-5.5	94.5	99.3			
6.0	0 - 13	WNX-SF-6.0	BNX-SF-6.0	68.6	73.7	6.0	Copper	Copper
	0 - 25	WNXL-SF-6.0	BNXL-SF-6.0	94.5	99.3			
6.5	0 - 13	WNX-SF-6.5	BNX-SF-6.5	68.6	73.7	6.5	Copper	Black
	0 - 25	WNXL-SF-6.5	BNXL-SF-6.5	94.5	99.3			
7.0	0 - 13	WNX-SF-7.0	BNX-SF-7.0	68.6	73.7	7.0	Copper	Silver
	0 - 25	WNXL-SF-7.0	BNXL-SF-7.0	94.5	99.3			
7.5	0 - 13	WNX-SF-7.5	BNX-SF-7.5	68.6	73.7	7.5	Black	Brass
	0 - 25	WNXL-SF-7.5	BNXL-SF-7.5	94.5	99.3			
8.0	0 - 13	WNX-SF-8.0	BNX-SF-8.0	68.6	73.7	8.0	Black	Black
	0 - 25	WNXL-SF-8.0	BNXL-SF-8.0	94.5	99.3			

### Wing Nut Installation Driver



See page 173

## HNX Series



Used for clamping two or more pieces of structure at desired clamp load forces utilizing industry standard "cleco" type pneumatic tooling.

### Fractional Sizes - HNX Series

Hole Dia.	Grip Range	Part No.	Body Length		Color Code	Drill Size
			Installed	Overall		
3/32"	0" - 5/16"	HNXS-SF-3/32	2-7/32"	2-3/8"	Zinc	#40
	0" - 1/2"	HNX-SF-3/32	2-11/16"	2-7/8"		
	0" - 1"	HNXL-SF-3/32	3-11/16"	3-7/8"		
	1/2" - 1-1/2"	HNXEL-SF-3/32	3-47/64"	4-3/8"		
1/8"	0" - 5/16"	HNXS-SF-1/8	2-7/32"	2-3/8"	Copper	#30
	0" - 1/2"	HNX-SF-1/8	2-11/16"	2-7/8"		
	0" - 1"	HNXL-SF-1/8	3-11/16"	3-7/8"		
	1/2" - 1-1/2"	HNXEL-SF-1/8	3-47/64"	4-3/8"		
5/32"	0" - 5/16"	HNXS-SF-5/32	2-7/32"	2-3/8"	Black	#20
	0" - 1/2"	HNX-SF-5/32	2-11/16"	2-7/8"		
	0" - 1"	HNXL-SF-5/32	3-11/16"	3-7/8"		
	1/2" - 1-1/2"	HNXEL-SF-5/32	3-47/64"	4-3/8"		
3/16"	0" - 5/16"	HNXS-SF-3/16	2-7/32"	2-3/8"	Brass	#10
	0" - 1/2"	HNX-SF-3/16	2-11/16"	2-7/8"		
	0" - 1"	HNXL-SF-3/16	3-11/16"	3-7/8"		
	1/2" - 1-1/2"	HNXEL-SF-3/16	3-47/64"	4-3/8"		
7/32"	0" - 5/16"	HNXS-SF-7/32	2-11/16"	2-7/8"	Zinc	#2
	0" - 1/2"	HNX-SF-7/32	3-11/16"	3-7/8"		
	0" - 1"	HNXL-SF-7/32	3-11/16"	3-7/8"		
	1/2" - 1-1/2"	HNXEL-SF-7/32	3-47/64"	4-3/8"		
1/4"	0" - 5/16"	HNXS-SF-1/4	2-7/32"	2-3/8"	Copper	1/4"
	0" - 1/2"	HNX-SF-1/4	2-11/16"	2-7/8"		
	0" - 1"	HNXL-SF-1/4	3-11/16"	3-7/8"		
	1/2" - 1-1/2"	HNXEL-SF-1/4	3-47/64"	4-3/8"		
9/32"	1-1/2" - 2-1/2"	HNXK-SF-9/32	3-47/64"	5-3/8"	Brass	9/32"
	0" - 1/2"	HNX-SF-5/16	2-11/16"	2-7/8"		
	0" - 1"	HNXL-SF-5/16	3-11/16"	3-7/8"		
	1/2" - 1-1/2"	HNXEL-SF-5/16	3-47/64"	4-3/8"		
5/16"	1-1/2" - 2-1/2"	HNXK-SF-5/16	3-47/64"	5-3/8"	Black	5/16"
	0" - 1/2"	HNX-SF-3/8	3-11/16"	3-7/8"		
	0" - 1"	HNXL-SF-3/8	3-11/16"	3-7/8"		
	1/2" - 1-1/2"	HNXEL-SF-3/8	3-47/64"	4-3/8"		
3/8"	1-1/2" - 2-1/2"	HNXK-SF-3/8	3-47/64"	5-7/8"	Black with Brass cap	3/8"
	0" - 1/2"	HNX-SF-3/8	3-11/16"	3-7/8"		
	0" - 1"	HNXL-SF-3/8	3-11/16"	3-7/8"		

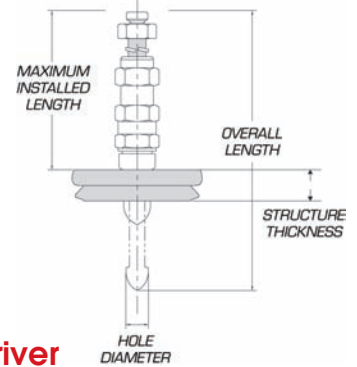
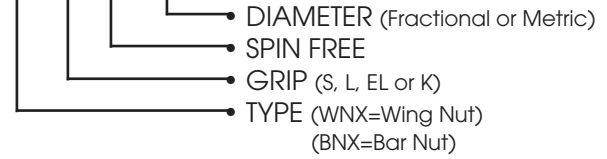
### Hex Fastener Installation Tool



See page 173

### Part No. Example:

#### HNXEL-SF-1/8



### Hex Nut Installation Driver

Hole Dia. mm	Grip Range	Part No.	Body Length		Color Code		Drill Size
			Installed	Overall	Nut	Body	
2.5	0 - 13	HNX-SF-2.5	68.8	73.7	Silver	Silver	2.5
	0 - 25	HNXL-SF-2.5	94.5	99.3			
3.0	0 - 13	HNX-SF-3.0	68.8	73.7	Copper	Copper	3.0
	0 - 25	HNXL-SF-3.0	94.5	99.3			
3.5	0 - 13	HNX-SF-3.5	68.8	73.7	Brass	Copper	3.5
	0 - 25	HNXL-SF-3.5	94.5	99.3			
	13 - 38	HNXEL-SF-3.5	65.6	112.2			
	13 - 38	HNXEL-SF-3.5	65.6	112.2			
4.0	0 - 13	HNX-SF-4.0	68.8	73.7	Black	Black	4.0
	0 - 25	HNXL-SF-4.0	94.5	99.3			
	13 - 38	HNXEL-SF-4.0	95.6	112.2			
4.5	0 - 13	HNX-SF-4.5	68.8	73.7	Silver	Brass	4.5
	0 - 25	HNXL-SF-4.5	94.5	99.3			
	13 - 38	HNXEL-SF-4.5	95.6	112.2			
5.0	0 - 13	HNX-SF-5.0	68.8	73.7	Copper	Brass	5.0
	0 - 25	HNXL-SF-5.0	94.5	99.3			
	13 - 38	HNXEL-SF-5.0	95.6	112.2			
5.5	0 - 13	HNX-SF-5.5	68.8	73.7	Black	Silver	5.5
	0 - 25	HNXL-SF-5.5	94.5	99.3			
	13 - 38	HNXEL-SF-5.5	95.6	112.2			
6.0	0 - 13	HNX-SF-6.0	68.8	73.7	Copper	Copper	6.0
	0 - 25	HNXL-SF-6.0	94.5	99.3			
	13 - 38	HNXEL-SF-6.0	95.6	112.2			
6.5	0 - 13	HNX-SF-6.5	68.8	73.7	Black	Copper	6.5
	0 - 25	HNXL-SF-6.5	94.5	99.3			
	13 - 38	HNXEL-SF-6.5	95.6	112.2			
7.0	0 - 13	HNX-SF-7.0	68.8	73.7	Silver	Copper	7.0
	0 - 25	HNXL-SF-7.0	94.5	99.3			
	13 - 28	HNXEL-SF-7.0	95.6	112.2			
7.5	0 - 13	HNX-SF-7.5	68.8	73.7	Brass	Black	7.5
	0 - 25	HNXL-SF-7.5	94.5	99.3			
	13 - 38	HNXEL-SF-7.5	95.6	112.2			
	38 - 63	HNXK-SF-7.5	95.6	137.8			
8.0	0 - 13	HNX-SF-8.0	68.8	73.7	Black	Black	8.0
	0 - 25	HNXL-SF-8.0	94.5	99.3			
	13 - 38	HNXEL-SF-8.0	95.6	112.2			
	38 - 63	HNXK-SF-8.0	95.6	137.8			

NOTE: A spring loaded version of this Hex Body Fastener is available in fractional and metric sizes upon request.



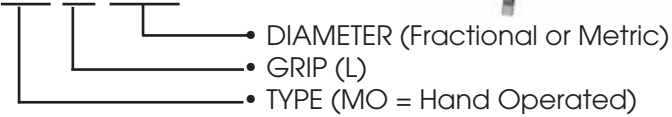
**MO Series**

Hand operated fasteners for minimal clamping loads (max. 12 lbs.) and limited access applications.

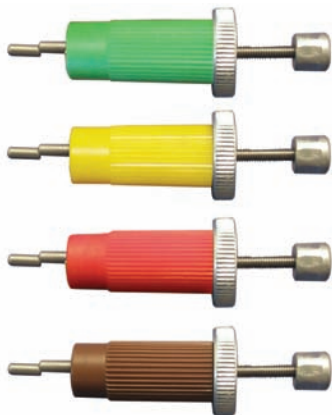
**Part No. Example:**



**MO ( )-3/32**



**Fasteners with Knurled Nut & Safety Cap**



Part No.	Diameter		Grip		Color
	in.	mm	in.	mm	
DLKU-20	5/64"	2.0	0" - 1/4"	0 - 6	Black
DLKU-24	3/32"	2.4	0" - 1/4"	0 - 6	Brown
DLKU-26	#38	2.6	0" - 1/4"	0 - 6	Blue
DLKU-32	1/8"	3.2	0" - 1/4"	0 - 6	Red
DLKU-35	9/64"	3.5	0" - 1/4"	0 - 6	Grey
DLKU-40	5/32"	4.0	0" - 1/4"	0 - 6	Yellow
DLKU-45	#16	4.5	0" - 1/4"	0 - 6	Transparent
DLKU-48	3/16"	4.8	0" - 1/4"	0 - 6	Green
DLKU-50	#9	5.0	0" - 1/4"	0 - 6	Yellow
DLKU-56	7/32"	5.6	0" - 3/8"	0 - 10	White
DLKU-60	15/64"	6.0	0" - 3/8"	0 - 10	Silver

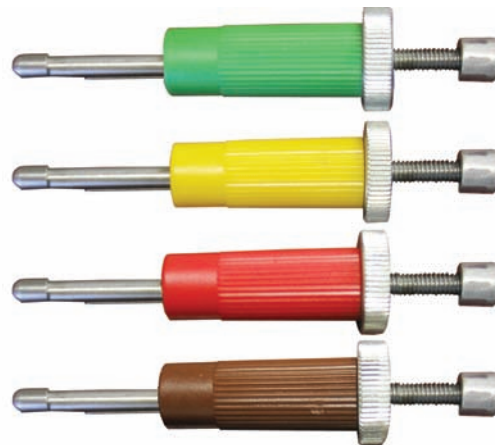
**FRACTIONAL SIZES - MO Series**

Hole Dia.	Grip Range	Hand Operated	Body Color	Drill Size
		Part No.		
3/32"	0" - 1/4"	MO-3/32	Zinc	#40
	1/4" - 1/2"	MOL-3/32		
1/8"	0" - 1/4"	MO-1/8	Copper	#30
	1/4" - 1/2"	MOL-1/8		
5/32"	0" - 1/4"	MO-5/32	Black	#20
	1/4" - 1/2"	MOL-5/32		
3/16"	0" - 1/4"	MO-3/16	Brass	#10
	1/4" - 1/2"	MOL-3/16		

**METRIC SIZES - MO Series**

Hole Dia.	Grip Range	Hand Operated	Color Code		Drill Size
		Part No.	Body	Rivet	
2.0	0 - 6.5	MO-2.0	Black	Brass	2.0
2.5	0 - 6.5	MO-2.5	Silver	Silver	2.5
3.0	0 - 6.5	MO-3.0	Copper	Copper	3.0
3.5	0 - 6.5	MO-3.5	Copper	Brass	3.5
4.0	0 - 6.5	MO-4.0	Black	Black	4.0
4.5	0 - 6.5	MO-4.5	Silver	Brass	4.5

**Long Fasteners with Knurled Nut & Safety Cap**



Part No.	Diameter		Grip		Color
	in.	mm	in.	mm	
DLKU-24 x 15	3/32"	2.4	3/16" - 19/32"	5 - 15	Brown
DLKU-26 x 15	#38	2.6	3/16" - 19/32"	5 - 15	Blue
DLKU-32 x 15	1/8"	3.2	3/16" - 19/32"	5 - 15	Red
DLKU-35 x 15	9/64"	3.5	3/16" - 19/32"	5 - 15	Grey
DLKU-40 x 15	5/32"	4.0	3/16" - 19/32"	5 - 15	Yellow
DLKU-45 x 15	#16	4.5	3/16" - 19/32"	5 - 15	Transparent
DLKU-48 x 15	3/16"	4.8	3/16" - 19/32"	5 - 15	Green
DLKU-50 x 15	#9	5.0	3/16" - 19/32"	5 - 15	Black
DLKU-56 x 15	7/32"	5.6	3/16" - 19/32"	5 - 15	White
DLKU-60 x 15	15/64"	6.0	0" - 19/32"	0 - 15	Silver
DLKU-64 x 15	1/4"	6.4	0" - 19/32"	0 - 15	Silver

## Cylindrical Body Fasteners

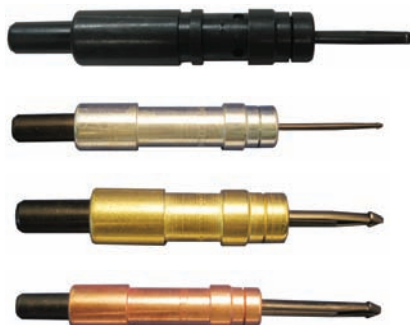
For composite and metallic applications.

### Features

- Cylindrical design eliminates fastener-to-tool orientation problems.
- Improves installation and removal efficiency by over 50%.
- Installation tooling is compact and light weight.
- One tool drives all diameters and grip accommodations.
- Reusable fastener life significantly increased.
- Larger blind side bearing area reduces potential material damage.
- Ideal for manual, automatic, and robotic operation.

### Part No. Example:

**CBXEL-BF-1/8**



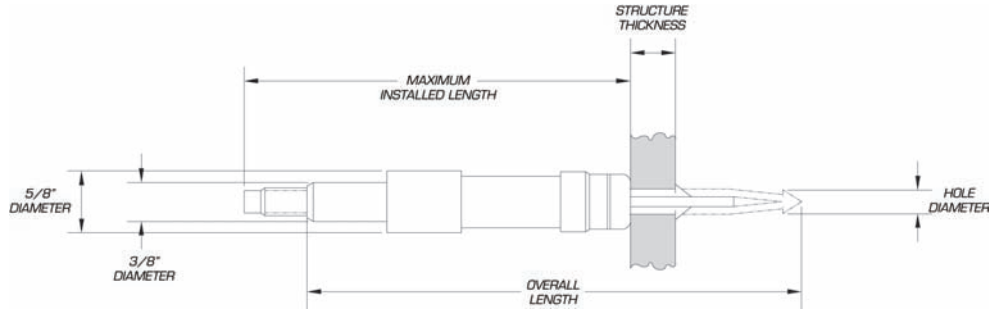
### Installation Tool



See page 173

## FRACTIONAL SIZES - Cylindrical Body Series

Hole Dia.	Standard				Spring Loaded				Color Code	Drill Size
	Grip Range	Part No.	Body Length		Grip Range	Part No.	Body Length			
			Overall	Installed			Overall	Installed		
3/32"	0" - 1/2"	CBX-BF-3/32	4-1/32"	3-23/64"	0" - 1/2"	CSX-BF-3/32	4-17/32"	3-27/32"	Zinc	#40
	0" - 1"	CBXL-BF-3/32	5-1/32"	4-23/64"	1/2" - 1"	CSXL-BF-3/32	5-1/32"	3-27/32"		
	1/2" - 1-1/2"	CBXEL-BF-3/32	5-17/32"	4-23/64"	1" - 1-1/2"	CSXEL-BF-3/32	5-17/32"	3-27/32"		
1/8"	0" - 1/2"	CBX-BF-1/8	4-1/16"	3-23/64"	0" - 1/2"	CSX-BF-1/8	4-9/16"	3-27/32"	Copper	#30
	0" - 1"	CBXL-BF-1/8	5-1/16"	4-23/64"	1/2" - 1"	CSXL-BF-1/8	5-1/16"	3-27/32"		
	1/2" - 1-1/2"	CBXEL-BF-1/8	5-9/16"	4-23/64"	1" - 1-1/2"	CSXEL-BF-1/8	5-9/16"	3-27/32"		
	1-1/2" - 2-1/2"	CBXK-BF-1/8	6-9/16"	4-23/64"	2" - 2-1/2"	CSXK-BF-1/8	6-9/16"	3-27/32"		
5/32"	0" - 1/2"	CBX-BF-5/32	4-3/32"	3-23/64"	0" - 1/2"	CSX-BF-5/32	4-19/32"	3-27/32"	Black	#20
	0" - 1"	CBXL-BF-5/32	5-3/32"	4-23/64"	1/2" - 1"	CSXL-BF-5/32	5-19/32"	3-27/32"		
	1/2" - 1-1/2"	CBXEL-BF-5/32	5-9/16"	4-23/64"	1" - 1-1/2"	CSXEL-BF-5/32	5-9/16"	3-27/32"		
3/16"	0" - 1/2"	CBX-BF-3/16	4-1/8"	3-23/64"	0" - 1/2"	CSX-BF-3/16	4-5/8"	3-27/32"	Brass	#10
	0" - 1"	CBXL-BF-3/16	5-1/8"	4-23/64"	1/2" - 1"	CSXL-BF-3/16	5-1/8"	3-27/32"		
	1/2" - 1-1/2"	CBXEL-BF-3/16	5-5/8"	4-23/64"	1" - 1-1/2"	CSXEL-BF-3/16	5-5/8"	3-27/32"		
	1-1/2" - 2-1/2"	CBXK-BF-3/16	6-5/8"	4-23/64"	2" - 2-1/2"	CSXK-BF-3/16	6-5/8"	3-27/32"		
7/32"	0" - 1/2"	CBX-BF-7/32	4-9/64"	3-23/64"	0" - 1/2"	CSX-BF-7/32	4-39/64"	3-27/32"	Zinc	#2
	0" - 1"	CBXL-BF-7/32	5-9/64"	4-23/64"	1/2" - 1"	CSXL-BF-7/32	5-7/64"	3-27/32"		
	1/2" - 1-1/2"	CBXEL-BF-7/32	5-41/64"	4-23/64"	1" - 1-1/2"	CSXEL-BF-7/32	5-39/64"	3-27/32"		
	1-1/2" - 2-1/2"	CBXK-BF-7/32	6-41/64"	4-23/64"	2" - 2-1/2"	CSXK-BF-7/32	6-41/64"	3-27/32"		
1/4"	0" - 1/2"	CBX-BF-1/4	4-5/32"	3-23/64"	0" - 1/2"	CSX-BF-1/4	4-21/32"	3-27/32"	Copper	1/4"
	0" - 1"	CBXL-BF-1/4	5-5/32"	4-23/64"	1/2" - 1"	CSXL-BF-1/4	5-5/32"	3-27/32"		
	1/2" - 1-1/2"	CBXEL-BF-1/4	5-21/32"	4-23/64"	1" - 1-1/2"	CSXEL-BF-1/4	5-21/32"	3-27/32"		
	1-1/2" - 2-1/2"	CBXK-BF-1/4	6-21/32"	4-23/64"	2" - 2-1/2"	CSXK-BF-1/4	6-21/32"	3-27/32"		
9/32"	0" - 1/2"	CBX-BF-9/32	4-5/32"	3-23/64"	0" - 1/2"	CSX-BF-9/32	4-21/32"	3-27/32"	Brass	9/32"
	0" - 1"	CBXL-BF-9/32	5-5/32"	4-23/64"	1/2" - 1"	CSXL-BF-9/32	5-5/32"	3-27/32"		
	1/2" - 1-1/2"	CBXEL-BF-9/32	5-21/32"	4-23/64"	1" - 1-1/2"	CSXEL-BF-9/32	5-21/32"	3-27/32"		
	1-1/2" - 2-1/2"	CBXK-BF-9/32	6-21/32"	4-23/64"	2" - 2-1/2"	CSXK-BF-9/32	6-21/32"	3-27/32"		
5/16"	0" - 1/2"	CBX-BF-5/16	4-5/32"	3-23/64"	0" - 1/2"	CSX-BF-5/16	4-21/32"	3-27/32"	Black	5/16"
	0" - 1"	CBXL-BF-5/16	5-5/32"	4-23/64"	1/2" - 1"	CSXL-BF-5/16	5-5/32"	3-27/32"		
	1/2" - 1-1/2"	CBXEL-BF-5/16	5-21/32"	4-23/64"	1" - 1-1/2"	CSXEL-BF-5/16	5-21/32"	3-27/32"		
	1-1/2" - 2-1/2"	CBXK-BF-5/16	6-21/32"	4-23/64"	2" - 2-1/2"	CSXK-BF-5/16	6-21/32"	3-27/32"		
3/8"	0" - 1/2"	CBX-BF-3/8	4-1/4"	3-23/64"	0" - 1/2"	CSX-BF-3/8	4-3/4"	3-7/8"	Black with Brass cap	3/8"
	0" - 1"	CBXL-BF-3/8	5-1/4"	4-23/64"	1/2" - 1"	CSXL-BF-3/8	5-1/4"	3-7/8"		
	1/2" - 1-1/2"	CBXEL-BF-3/8	5-3/4"	4-23/64"	1" - 1-1/2"	CSXEL-BF-3/8	5-3/4"	3-7/8"		
	1-1/2" - 2-1/2"	CBXK-BF-3/8	6-3/4"	4-23/64"	2" - 2-1/2"	CSXK-BF-3/8	6-3/4"	3-7/8"		



**METRIC SIZES - Cylindrical Body Series**

Hole Dia. mm	Standard				Spring Loaded				Color Code		Drill Size
	Grip Range	Part No.	Body Length		Grip Range	Part No.	Body Length		Body	Nut	
			Overall	Installed			Overall	Installed			
2.5	0 - 13	CBX-BF-2.5	102.4	85.3	0 - 13	CSX-BF-2.5	115.1	97.7	Black	Zinc	2.5
	0 - 25	CBXL-BF-2.5	127.8	110.7	13 - 25	CSXL-BF-2.5	128.8	97.7			
3.0	0 - 13	CBX-BF-3.0	103.2	85.3	0 - 13	CSX-BF-3.0	115.9	97.7	Copper	Copper	3.0
	0 - 25	CBXL-BF-3.0	128.6	110.7	13 - 25	CSXL-BF-3.0	128.6	97.7			
3.5	0 - 13	CBX-BF-3.5	103.6	85.3	0 - 13	CSX-BF-3.5	116.3	97.7	Copper	Brass	3.5
	0 - 25	CBXL-BF-3.5	129.0	110.7	13 - 25	CSXL-BF-3.5	129.0	97.7			
	13 - 38	CBXEL-BF-3.5	141.7	110.7	25 - 38	CSXEL-BF-3.5	147.7	97.7			
4.0	0 - 13	CBX-BF-4.0	104.0	85.3	0 - 13	CSX-BF-4.0	116.7	97.7	Black	Black	4.0
	0 - 25	CBXL-BF-4.0	128.8	110.7	13 - 25	CSXL-BF-4.0	129.4	97.7			
	13 - 38	CBXEL-BF-4.0	143.3	110.7	25 - 38	CSXEL-BF-4.0	142.1	97.7			
	38 - 64	CBXK-BF-4.0	164.4	110.7	51 - 64	CSXK-BF-4.0	155.1	97.7			
4.5	0 - 13	CBX-BF-4.5	104.4	85.3	0 - 13	CSX-BF-4.5	117.1	97.7	Brass	Zinc	4.5
	0 - 25	CBXL-BF-4.5	129.8	110.7	13 - 25	CSXL-BF-4.5	129.8	97.7			
	13 - 38	CBXEL-BF-4.5	142.5	110.7	25 - 38	CSXEL-BF-4.5	142.5	97.7			
	38 - 64	CBXK-BF-4.5	167.4	110.7	51 - 64	CSXK-BF-4.5	155.5	97.7			
5.0	0 - 13	CBX-BF-5.0	104.8	85.3	0 - 13	CSX-BF-5.0	117.5	97.7	Brass	Copper	5.0
	0 - 25	CBXL-BF-5.0	130.2	110.7	13 - 25	CSXL-BF-5.0	130.2	97.7			
	13 - 38	CBXEL-BF-5.0	142.9	110.7	25 - 38	CSXEL-BF-5.0	142.9	97.7			
	38 - 64	CBXK-BF-5.0	168.4	110.7	51 - 64	CSXK-BF-5.0	155.9	97.7			
5.5	0 - 13	CBX-BF-5.5	105.2	85.3	0 - 13	CSX-BF-5.5	117.9	97.7	Zinc	Black	5.5
	0 - 25	CBXL-BF-5.5	130.6	110.7	13 - 25	CSXL-BF-5.5	130.6	97.7			
	13 - 38	CBXEL-BF-5.5	143.3	110.7	25 - 38	CSXEL-BF-5.5	143.3	97.7			
	38 - 64	CBXK-BF-5.5	156.3	110.7	51 - 64	CSXK-BF-5.5	156.0	97.7			
6.0	0 - 13	CBX-BF-6.0	105.6	85.3	0 - 13	CSX-BF-6.0	118.3	97.7	Copper	Copper	6.0
	0 - 25	CBXL-BF-6.0	131.0	110.7	13 - 25	CSXL-BF-6.0	131.0	97.7			
	13 - 38	CBXEL-BF-6.0	143.7	110.7	25 - 38	CSXEL-BF-6.0	143.7	97.7			
	38 - 64	CBXK-BF-6.0	156.7	110.7	51 - 64	CSXK-BF-6.0	156.4	97.7			
6.5	0 - 13	CBX-BF-6.5	105.6	85.3	0 - 13	CSX-BF-6.5	118.3	97.7	Copper	Black	6.5
	0 - 25	CBXL-BF-6.5	131.0	110.7	13 - 25	CSXL-BF-6.5	131.0	97.7			
	13 - 38	CBXEL-BF-6.5	143.7	110.7	25 - 38	CSXEL-BF-6.5	143.7	97.7			
	38 - 64	CBXK-BF-6.5	155.7	110.7	51 - 64	CSXK-BF-6.5	156.4	97.7			
7.0	0 - 13	CBX-BF-7.0	105.6	85.3	0 - 13	CSX-BF-7.0	118.3	97.7	Copper	Zinc	7.0
	0 - 25	CBXL-BF-7.0	131.0	110.7	13 - 25	CSXL-BF-7.0	131.0	97.7			
	13 - 38	CBXEL-BF-7.0	143.7	110.7	25 - 38	CSXEL-BF-7.0	143.7	97.7			
	38 - 64	CBXK-BF-7.0	146.7	110.7	51 - 64	CSXK-BF-7.0	156.4	97.7			
7.5	0 - 13	CBX-BF-7.5	105.6	85.3	0 - 13	CSX-BF-7.5	118.3	97.7	Black	Brass	7.5
	0 - 25	CBXL-BF-7.5	131.0	110.7	13 - 25	CSXL-BF-7.5	131.0	97.7			
	13 - 38	CBXEL-BF-7.5	144.0	110.7	25 - 38	CSXEL-BF-7.5	143.7	97.7			
	38 - 64	CBXK-BF-7.5	157.0	110.7	51 - 64	CSXK-BF-7.5	156.4	97.7			
8.0	0 - 13	CBX-BF-8.0	105.6	85.3	0 - 13	CSX-BF-8.0	118.3	97.7	Black	Black	8.0
	0 - 25	CBXL-BF-8.0	131.0	110.7	13 - 25	CSXL-BF-8.0	131.0	97.7			
	13 - 38	CBXEL-BF-8.0	144.0	110.7	25 - 38	CSXEL-BF-8.0	143.7	97.7			
	38 - 64	CBXK-BF-8.0	157.0	110.7	51 - 64	CSXK-BF-8.0	156.4	97.7			

## Side-Grip Clamps

Designed to clamp at edge of the work area. Ideal for holding together workpieces of all types, including during bonding, sealing or gluing operations.



### Features

- Plier operated.
- Spring loaded.
- Minimized surface marring.
- No overtightening possible.
- wide range of clamping capacities, jaw depth and body lengths.

### Part No. Example:

#### SG-1/2X1/2

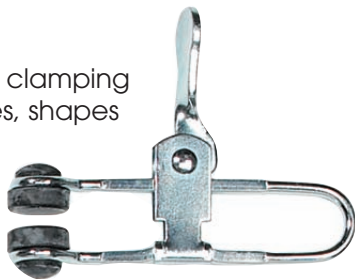


Clamping Capacity	Effective Jaw Depth	Part No.	Body Length	Clamping Force	Color Code
0" - 1/2"	1/2"	SG 1/2" x 1/2"	2-3/16"	60 lbs.	Copper
0" - 1/2"	1"	SG 1/2" x 1"	2-3/16"	60 lbs.	Copper
0" - 3/4"	1/2"	SG 3/4" x 1/2"	2-7/16"	60 lbs.	Brass
0" - 3/4"	1"	SG 3/4" x 1"	2-7/16"	60 lbs.	Brass

**NOTE:** The Side Grip Series "SG" is also available in metric measurements upon request.

## Handi Clamp

Specially designe tool for clamping various types of surfaces, shapes and thicknesses. Ideal for holding light plastics, wood, sheet metal and other materials temporarily.



Part No.	Clamping Cap.	Jaw Depth
TP640HC	0-5/16"	1"
TP641HC	0-5/16"	1-1/2"

## Tension Clamps

Spring tension clamps come with increased gap and reach . All-steel construction allows use in elevated temperatures. Constant 70 lbs. clamp force provided.

- Plier-operated
- Spring-loaded
- Use K200 Installation Tool



Part No.	Body Length	Clamping Force
TP537STC	1/4"-1"	2"
TP538STC	0-3/4"	3"
TP539STC	1/2"-1 1/4"	3"
TP540STC	0-3/4"	3 1/2"

## Protective Caps



Protective caps are offered for any hex body, or M-type fasteners.

Their purpose is to protect the surface of a structure from galvanic corrosion and scratches.

### Types of Caps Available

- **VINYL** - Vinyl caps may be easily installed onto the fastener by the customer. Therefore, they may be purchased as a separate item or ordered as an assembly on a particular fastener.
- **HARD PLASTIC & ALUMINUM** - These caps are supplied only as an assembly on a fastener. They provide additional durability over vinyl caps and are permanently affixed to the body of the fastener.

Cap Material	Suffix	For use with fastener type	Cap		Complete Assembly Ordering Information
			Hole Diameter	Part No.	
Vinyl	VC	CBX CSX HNX HSX	3/32" - 3/16"	<b>NX-CAP-1</b>	When ordering a fastener with a vinyl cap, simply specify <b>VC</b> at the end of the part number.  <b>Examples:</b> CBX-BF-3/16-VC MHD-1/4-VC
			3/16" - 1/4"	<b>NX-CAP-2</b>	
			3/8 Only	<b>NX-CAP-3</b>	
	M	3/32" - 3/16"	<b>M-CAP-1</b>		
		7/32" - 1/4"	<b>M-CAP-2</b>		
		MHD	3/32" - 3/16"	<b>MHD-CAP-1</b>	
7/32" - 1/4"	<b>MHD-CAP-2</b>				
Hard Plastic	PC				When a Hard Plastic cap (PC) of Aluminum cap (ALC) is desired, simply add the appropriate suffix to the end of the part number. <b>Examples:</b> HNX-SF-1/4-PC
Aluminum	ALC	CBX CSX HNX HSX	Available as assembly only		

**Cleco Pliers**



PN: K200  
PN: K200C

**Pneumatic Cleco Fastener Installation Tool**



Part No.	Description
PSC200	Basic Tool (Less Tip Assembly)
PSC201	Tool with Standard Tip Assembly
PSC202	Tool with Long Tip Attached

**Wing Nut Installation Driver**



Developed to install all types of Wing Nut Reusable Fasteners. Can be used with any power tool that has a 1/4" capacity chuck or a 1/4" hex female spindle.  
PN: TP835

**Cilindrical Body Installation Tool**



**Features**

- Patented roller bearing drive system allows for faster installation and removal of the fastener.
- No "fastener to tool" orientation problems.
- Drives all diameters and grip accomodations.
- Adaptable to most "speed runners" currently used for hex body installation.
- Adjustable clamping loads from 100 to 600 pounds.
- Lightweight and compact.

PN: W500-30-931



20-112



US902



US902E

Part No.	Weight	length	Air Inlet
US902	0.75 Lb.	5-1/2"	1/4"
US902E	1 Lb.	9-1/2"	1/4"
20-112	1 Lb.	5-1/2"	1/4"

**Hex Fastener Installation Tool  
Sioux Hex Nut Driver**







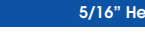

















- Pneumatic
- Reversible
- Pre-set torque control
- Designed to be used on all brands and styles of hex nut fasteners
- Made in the USA












PN: DL9A-25

## Bits

### Phillips Insert Bits

	Point Size	Overall Length	Part No. Aircraft (Machine Screws)	Part No. Industrial (Self Tapping Screws)
				
<b>1/4" Hex Shank</b>	0	1"	D1220AA	D1220XX
	1	1"	D1221AA	D1221XX
	1	1-1/2"	D1221AA15	D1221XX15
	1	2"	D1221AA2	D1221XX2
	2	1"	D1222AA	D1222XX
	2	1-1/2"	D1222AA15	D1222XX15
	2	2"	D1222AA2	D1222XX2
	2	2-1/2"	D1222AA25	D1222XX25
	3	1"	D1223AA	D1223XX
	4	1-1/4"	D1224AA	D1224XX
	2	1"	D1227AA	D1227XX
	2	1-1/2"	D1227AA15	D1227XX15
	2	2"	D1227AA2	D1227XX2
	1	1"	D1228AA	D1228XX
	2	1"		P2R
	2	1"	D1327AA	D1327XX
<b>5/16" Hex Shank</b>	1	1-1/4"	D1231AA	D1231XX
	2	1-1/4"	D1232AA	D1232XX
	3	1-1/4"	D1233AA	D1233XX
	4	1-1/4"	D1234AA	D1234XX
	4	1-1/2"	D1234AA15	D1234XX15
<b>1/4" Square Shank</b>	1	1"	D1241AA	D1241XX
	2	1"	D1242AA	D1242XX
	3	1"	D1243AA	D1243XX
<b>5/16" Square Shank</b>	1	1-1/4"	D1251AA	D1251XX
	2	1-1/4"	D1252AA	D1252XX
	3	1-1/4"	D1253AA	D1253XX
	4	1-1/4"	D1254AA	D1254XX

### Phillips Power Bits

	Body Dia.	Point Size	Overall Length	Part No. Aircraft (Machine Screws)	Part No. Industrial (Self Tapping Screws)
					
<b>1/4" Hex Shank</b>	3/16"	0	1-15/16"	E1100AA	E1100XX
	3/16"	1	1-15/16"	E1101AA	E1101XX
	1/4"	2	1-15/16"	E1102AA	E1102XX
	1/4"	3	1-15/16"	E1103AA	E1103XX
	3/16"	1	2-3/4"	E1101AA275	E1101XX275
	1/4"	2	2-3/4"	E1102AA275	E1102XX275
	1/4"	3	2-3/4"	E1103AA275	E1103XX275
	3/16"	1	3-1/2"	E1101AA35	E1101XX35
	1/4"	2	3-1/2"	E1102AA35	E1102XX35
	1/4"	3	3-1/2"	E1103AA35	E1103XX35
	3/16"	1	6"	E1101AA6	E1101XX6
	1/4"	2	6"	E1102AA6	E1102XX6
	1/4"	3	6"	E1103AA6	E1103XX6
	1/4"	1	1-15/16"	-	E1541XX
	1/4"	2	1-15/16"	-	E1542XX
	1/4"	3	1-15/16"	-	E1543XX
	3/16"	1	3"	E1201AA	E1201XX
	1/4"	2	3"	E1202AA	E1202XX
	5/16"	3	3"	E1203AA	E1203XX
	5/16"	2	3-1/2"	E1092AA35	-
	5/16"	3	3-1/2"	E1093AA35	-
	5/16"	4	3-1/2"	E1094AA35	-

**ACR®-Phillips Insert Bits**



	Point Size	Overall Length	Part No. Aircraft (Machine Screws)	Part No. Industrial (Self Tapping Screws)
	1	1"	D1221AAACR-B	D1221XXACR-B
	2	1"	D1222AAACR-B	D1222XXACR-B
	3	1"	D1223AAACR-B	D1223XXACR-B
 Milled Point	2	1"	-	D1327XXACR-B
	1	1"	D1221AMACR-B	-
	2	1"	D1222AMACR-B	-
 Reduced Nose Diameter	1	1"	D1221AARI	D1221XXRI
	2	1"	D1222AARI	D1222XXRI
	3	1"	D1223AARI	D1223XXRI
 Reduced Nose Diameter	2	1-1/2"	D1227AARI	D1227XXRI
	2	1-1/2"	D1227AA15RI	D1227XX15RI
	2	2"	D1227AA2RI	D1227XX2RI
 Reduced Nose Diameter	2	1"	D1327AARI	D1327XXRI
	1	1"	D1221AAR	D1221XXR
	2	1"	D1222AAR	D1222XXR
 Reduced Nose Diameter	3	1"	D1223AAR	D1223XXR
	2	1"	D1227AAR	D1227XXR
	2	1-1/2"	D1227AA15R	D1227XX15R
 Reduced Nose Diameter	2	2"	D1227AA2R	D1227XX2R
	2	1"	D1327AAR	D1327XXR
	2	1-1/4"	D1232AAACR-B	-
 Reduced Nose Diameter	3	1-1/4"	D1233AAACR-B	-
	4	1-1/4"	D1234AAACR-B	-
	1	1-1/4"	D1231AARI	D1231XXRI
 Reduced Nose Diameter	2	1-1/4"	D1232AARI	D1232XXRI
	3	1-1/4"	D1233AARI	D1233XXRI
	1	1-1/4"	D1231AAR	D1231XXR
 Reduced Nose Diameter	2	1-1/4"	D1232AAR	D1232XXR
	3	1-1/4"	D1233AAR	D1233XXR

Note: When ordering one way ACR® Phillips bits specify "R" for removal and "RI" for installation.



**ACR®-Phillips Power Bits**

	Body Dia.	Point Size	Overall Length	Part No. Aircraft (Machine Screws)	Part No. Industrial (Self Tapping Screws)
 Full Body Hex	3/16"	1	1-15/16"	-	E1101XXACR-B
	1/4"	2	1-15/16"	-	E1102XXACR-B
	1/4"	3	1-15/16"	-	E1103XXACR-B
 Full Body Hex	3/16"	1	1-15/16"	-	E1541XXACR-B
	1/4"	2	1-15/16"	-	E1542XXACR-B
	1/4"	3	1-15/16"	-	E1543XXACR-B
 Full Body Hex	3/16"	1	1-15/16"	E1101AARI	E1101XXRI
	1/4"	2	1-15/16"	E1102AARI	E1102XXRI
	1/4"	3	1-15/16"	E1103AARI	E1103XXRI
 Full Body Hex	3/16"	1	2-3/4"	E1101AA275RI	E1101XX275RI
	1/4"	2	2-3/4"	E1102AA275RI	E1102XX275RI
	1/4"	3	2-3/4"	E1103AA275RI	E1103XX275RI
 Full Body Hex	3/16"	1	3-1/2"	E1101AA35RI	E1101XX35RI
	1/4"	2	3-1/2"	E1102AA35RI	E1102XX35RI
	1/4"	3	3-1/2"	E1103AA35RI	E1103XX35RI
 Full Body Hex	3/16"	1	6"	E1101AA6RI	E1101XX6RI
	1/4"	2	6"	E1102AA6RI	E1102XX6RI
	1/4"	3	6"	E1103AA6RI	E1103XX6RI
 Full Body Hex	3/16"	1	1-15/16"	E1101AAR	E1101XXR
	1/4"	2	1-15/16"	E1102AAR	E1102XXR
	1/4"	3	1-15/16"	E1103AAR	E1103XXR
 Full Body Hex	3/16"	1	2-3/4"	E1101AA275R	E1101XX275R
	1/4"	2	2-3/4"	E1102AA275RI	E1102XX275RI
	1/4"	3	2-3/4"	E1103AA275RI	E1103XX275RI
 Full Body Hex	3/16"	1	3-1/2"	E1101AA35RI	E1101XX35RI
	1/4"	2	3-1/2"	E1102AA35RI	E1102XX35RI
	1/4"	3	3-1/2"	E1103AA35RI	E1103XX35RI
 Full Body Hex	3/16"	1	6"	E1101AA6RI	E1101XX6RI
	1/4"	2	6"	E1102AA6RI	E1102XX6RI
	1/4"	3	6"	E1103AA6RI	E1103XX6RI

## Slotted Insert Bits


	Screw Size	Blade Thickness (Approx.)	Blade Width (Approx.)	Overall Length	Part No. Aircraft (Machine Screws)	Part No. Industrial (Self Tap Screws)
 1/4" Hex Shank	2F-3R	.026"	.138"	1"	H3139A	H3139X
	3F-4R	.030"	.154"	1"	H3201A	H3201X
	5F-6R	.036"	.219"	1"	H3205A	H3205X
	4F5R	.034"	.170"	1"	H3211A	H3211X
	6F-8R	.040"	.219"	1"	H3212A	H3212X
	8F-10R	.042"	.250"	1"	H3213A	H3213X
	10F-12R	.046"	.281"	1"	H3214A	H3214X
	12F-14R	.050"	.297"	1"	H3215A	H3215X
	2F-3R	.026"	.138"	1-1/2"	H3219A	H3219X
	3F-4R	.030"	.154"	1-1/2"	H3220A	H3220X
	4F-5R	.034"	.188"	1-1/2"	H3221A	H3221X
	6F-8R	.040"	.218"	1-1/2"	H3222A	H3222X
	8F-10R	.042"	.250"	1-1/2"	H3223A	H3223X
	10F-12R	.046"	.281"	1-1/2"	H3224A	H3224X
12F-14R	.050"	.297"	1-1/2"	H3225A	H3225X	
14F-16R	.055"	.344"	1-1/2"	H3226A	H3226X	
 5/16" Hex Shank	4F-5R	.034"	.188"	1-1/2"	H3231A	H3231X
	6F-8R	.040"	.218"	1-1/2"	H3232A	H3232X
	8F-10R	.042"	.250"	1-1/2"	H3233A	H3233X
	10F-12R	.046"	.281"	1-1/2"	H3234A	H3234X
	12F-14R	.050"	.297"	1-1/2"	H3235A	H3235X
	14F-16R	.055"	.344"	1-1/2"	H3236A	H3236X

## Slotted Power Bits


	Screw Size	Blade Thickness (Approx.)	Blade Width (Approx.)	Overall Length	Part No. Aircraft (Machine Screws)	Part No. Industrial (Self Tap Screws)
 1/4" Hex Shank Full Body Hex	4F-5R	.034"	.188"	1-15/16"	-	E3541X
	5F-6R	.036"	.250"	1-15/16"	-	E3542X
	8F-10R	.042"	.275"	1-15/16"	E3104A	E3104X
	10F-12R	.046"	.312"	1-15/16"	E3105A	E3105X
	12F-14R	.050"	.360"	1-15/16"	E3106A	E3106X
	8F-10R	.042"	.275"	2-3/4"	E3104A275	E3104X275
	10F-12R	.046"	.312"	2-3/4"	E3105A275	E3105X275
	12F-14R	.050"	.360"	2-3/4"	E3106A275	E3106X275
	8F-10R	.042"	.275"	3"	E3104A3	E3104X3
	10F-12R	.046"	.312"	3"	E3105A3	E3105X3
	12F-14R	.050"	.360"	3"	E3106A3	E3106X3
	1F-2R	.022"	.122"	1-15/16"	E3098A	E3098X
	3F-4R	.030"	.154"	1-15/16"	E3100A	E3100X
	1F-2R	.022"	.122"	3"	E3098A3	E3098X3
	3F-4R	.030"	.154"	3"	E3100A3	E3100X3
	4F-5R	.034"	.188"	1-15/16"	E3101A	E3101X
	5F-6R	.036"	.250"	1-15/16"	E3102A	E3102X
	6F-7R	.038"	.250"	1-15/16"	E3103A	E3103X
	4F-5R	.034"	.188"	2-3/4"	E3101A275	E3101X275
	5F-6R	.036"	.250"	2-3/4"	E3102A275	E3102X275
6F-7R	.038"	.250"	2-3/4"	E3103A275	E3103X275	
4F-5R	.034"	.188"	3"	E3101A3	E3101X3	
5F-6R	.036"	.250"	3"	E3102A3	E3102X3	
6F-7R	.038"	.250"	3"	E3103A3	E3103X3	
6F-7R	.038"	.250"	4"	-	E3103X4	
6F-7R	.038"	.250"	2-1/4"	E3203A	E3203X	
 5/16" Hex Shank	7F-8R	.040"	.275"	2-1/4"	E3204A	E3204X
	8F-10R	.042"	.312"	2-1/4"	E3205A	E3205X
	10F-12R	.046"	.360"	2-1/4"	E3206A	E3206X
	12F-14R	.050"	.395"	2-1/4"	E3207A	E3207X
	14F-16R	.055"	.475"	2-1/4"	E3208A	E3208X
	16F-18R	.060"	.503"	2-1/4"	E3209A	E3209X
	18F-20R	.062"	.545"	2-1/4"	E3200A	E3200X



**ACR®-Pozidriv® Insert Bits ACR-B 4X4™**



	Point Size	Overall Length	Part No. (Self Tapping Screws)
 1/4" Hex Shank	1	1"	PZ1221XACR-B
	2	1"	PZ1222XACR-B
	3	1"	PZ1223XACR-B

**ACR®-Pozidriv® Power Bits ACR-B 4X4™**



	Body Diameter	Point Size	Overall Length	Part No. (Self Tapping Screws)
 1/4" Hex Shank	1/4"	2	1-15/16"	PZ1102XACR-B

ACR®-Pozidriv® Power bits available in 2-3/4", 3-1/2" and 6" lengths on request.



**Pozidriv® Insert Bits**

	Point Size	Overall Length	Part No. Aircraft (Self Tapping Screws)	Part No. Industrial (Self Tapping Screws)	
 1/4" Hex Shank	1	1"	PZ1221A	PZ1221X	
	2	1"	PZ1222A	PZ1222X	
	2	1-1/2"	PZ1222A15	PZ1222X15	
	2	2"	PZ1222A2	PZ1222X2	
	2	2-1/2"	PZ1222A25	PZ1222X25	
	3	1"	PZ1233A	PZ1233X	
	2	1"	PZ1227A	PZ1227X	
	1	1"	PZ1228A	PZ1228X	
	 5/16" Hex Shank	1	1-1/4"	PZ1231A	PZ1231X
		2	1-1/4"	PZ1232A	PZ1232X
3		1-1/4"	PZ1233A	PZ1233X	
4		1-1/4"	PZ1234A	PZ1234X	



**Pozidriv® Power Bits**



	Body Dia.	Point Size	Overall Length	Part No. Aircraft (Machine Screws)	Part No. Industrial (Self Tapping Screws)
 1/4" Hex Shank	3/16"	1	1-15/16"	PZ1101A	PZ1101X
	1/4"	2	1-15/16"	PZ1102A	PZ1102X
	1/4"	3	1-15/16"	PZ1103A	PZ1103X
	3/16"	1	2-3/4"	PZ1101A275	PZ1101X275
	1/4"	2	2-3/4"	PZ1102A275	PZ1102X275
	1/4"	3	2-3/4"	PZ1103A275	PZ1103X275
	3/16"	1	3-1/2"	PZ1101A35	PZ1101X35
	1/4"	2	3-1/2"	PZ1102A35	PZ1102X35
	1/4"	3	3-1/2"	PZ1103A35	PZ1103X35
	1/4"	2	6"	PZ1102A6	PZ1102X6
 5/16" Hex Shank	3/16"	1	3"	PZ1201A	PZ1201X
	1/4"	2	3"	PZ1202A	PZ1202X
	5/16"	3	3"	PZ1203A	PZ1203X

**French Recess Insert Bits**


	Point Size	Overall Length	Part No. Aircraft (Self Tapping Screws)	Part No. Industrial (Self Tapping Screws)
 1/4" Hex Shank	4	1"	H7224AA	H7224XX
	5	1"	H7225AA	H7225XX
	6	1"	H7226AA	H7226XX
	8	1"	H7228AA	H7228XX
 5/16" Hex Shank	6	1-1/4"	H7326AA	H7326XX
	8	1-1/4"	H7328AA	H7328XX

## Socket (Allen) Head Insert Bits




	Hex Size	Overall Length	Part No. Aircraft (Self Tapping Screws)	Part No. Industrial (Self Tapping Screws)
 1/4" Hex Shank	5/32"	1"	-	H5207X
	3/16"	1"	-	H5208X
	7/32"	1"	-	H5209X
	1/4"	1"	-	H5210X
	5/16"	1"	-	H5211X
	3/8"	1"	-	H5212X
	1/16"	1"	H5221A	H5221X
	5/64"	1"	H5222A	H5222X
	3/32"	1"	H5223A	H5223X
	7/64"	1"	H5224A	H5224X
	1/8"	1"	H5225A	H5225X
	9/64"	1"	H5226A	H5226X
	5/32"	1-5/16"	H5227A	H5227X
3/16"	1-5/16"	H5228A	H5228X	
7/32"	1-5/16"	H5229A	H5229X	
1/4"	1-5/16"	H5220A	H5220X	
 5/16" Hex Shank	5/32"	1-5/16"	H5234A	H5234X
	3/16"	1-5/16"	H5235A	H5235X
	7/32"	1-5/16"	H5236A	H5236X
	1/4"	1-5/16"	H5237A	H5237X
	5/16"	1-5/16"	H5238A	H5238X
	3/8"	1-5/16"	H5239A	H5239X

	Hex Size (mm)	Overall Length (mm)	Overall Length (in.)	Part No.
 1/4" Hex Shank Metric	1.5	25.4	1"	H52215XM
	2	25.4	1"	H5222XM
	2.5	25.4	1"	H52225XM
	3	25.4	1"	H5223XM
	4	25.4	1"	H5204XM
	5	25.4	1"	H5205XM
	6	25.4	1"	H5206XM
	7	25.4	1"	H5207XM
	8	25.4	1"	H5208XM
	4	33.3	1-5/16"	H5224XM
	5	33.3	1-5/16"	H5225XM
	6	33.3	1-5/16"	H5226XM
	7	33.3	1-5/16"	H5227XM
 5/16" Hex Shank Metric	8	31.7	1-1/4"	H5228XM
	5	33.3	1-5/16"	H5235XM
	6	33.3	1-5/16"	H5236XM
	8	33.3	1-5/16"	H5238XM
	10	33.3	1-5/16"	H5230XM


## Socket (Allen) Head Tamper Resistant Insert Bits

	Hex Size	Overall Length	Part No.
 1/4" Hex Shank	5/64"	1"	H5222TX
	3/32"	1"	H5223TX
	7/64"	1"	H5224TX
	1/8"	1"	H5225TX
	9/64"	1"	H5226TX
	7/32"	1"	H5209TX
	3/16"	1"	H5208TX

## Socket (Allen) Head Power Bits

	Hex Size	Overall Length	Part No.	
 1/4" Hex Shank	1/16"	1-15/16"	E5101X	
	5/64"	1-15/16"	E5102X	
	3/32"	1-15/16"	E5103X	
	7/64"	1-15/16"	E5104X	
	1/8"	1-15/16"	E5105X	
	9/64"	1-15/16"	E5106X	
	5/32"	1-15/16"	E5107X	
	3/16"	1-15/16"	E5108X	
	7/32"	1-15/16"	E5109X	
	1/4"	1-15/16"	E5110X	
	5/16"	1-15/16"	E5111X	
	Hex Size (mm)	Overall Length (mm)	Overall Length (in.)	Part No.
 1/4" Hex Shank Metric	2	49.2	1-15/16"	E5102XM
	2.5	49.2	1-15/16"	E51025XM
	3	49.2	1-15/16"	E5103XM
	4	49.2	1-15/16"	E5104XM
	5	49.2	1-15/16"	E5105XM
	6	49.2	1-15/16"	E5106XM
	8	49.2	1-15/16"	E5108XM
	10	49.2	1-15/16"	E5110XM
 7/16" Hex Shank Metric	5	88.9	3-1/2"	E5095XM35
	6	88.9	3-1/2"	E5096XM35
	8	88.9	3-1/2"	E5098XM35
	10	88.9	3-1/2"	E5090XM35

## Square Recess Insert Bits



	Point Size	Screw Size	Overall Length	Part No.
 1/4" Hex Shank	0	3 & 4	1"	H8100XX
	1	5, 6, 7	1"	H8101XX
	2	8, 9, 10	1"	H8102XX
	3	12, 14, 1/4	1"	H8103XX

## Square Recess Power Bits

	Point Size	Screw Size	Overall Length	Body Diameter	Part No.	
 1/4" Hex Shank	0	3 & 4	1-15/16"	-	E8540XX	
	Full Body Hex	1	5, 6, 7	1-15/16"	-	E8541XX
		2	8, 9, 10	1-15/16"	-	E8542XX
		3	12, 14, 1/4	1-15/16"	-	E8543XX
	 Reduced Shank Diameter	0	3 & 4	2-3/4"	-	E8540XX275
		1	5, 6, 7	2-3/4"	-	E8541XX275
		2	8, 9, 10	2-3/4"	-	E8542XX275
		3	12, 14, 1/4	2-3/4"	-	E8543XX275
		0	3 & 4	1-15/16"	3/16"	E8100XX
		1	5, 6, 7	1-15/16"	3/16"	E8101XX
2		8, 9, 10	1-15/16"	1/4"	E8102XX	
3		12, 14, 1/4	1-15/16"	1/4"	E8103XX	
0		3 & 4	2-3/4"	3/16"	E8100XX275	
1		5, 6, 7	2-3/4"	3/16"	E8101XX275	
2	8, 9, 10	2-3/4"	1/4"	E8102XX275		
3	12, 14, 1/4	2-3/4"	1/4"	E8103XX275		
0	3 & 4	3-1/2"	3/16"	E8100XX35		
1	5, 6, 7	3-1/2"	3/16"	E8101XX35		
2	8, 9, 10	3-1/2"	1/4"	E8102XX35		
3	12, 14, 1/4	3-1/2"	1/4"	E8103XX35		



Note: Lengths up to 6" available on request.

**Torx® Insert Bits**


	Point Size	Point Size (Reference)	Overall Length	Part No.
 1/4" Hex Shank	T5	.055"	1"	Z0T5X
	T6	.065"	1"	Z0T6X
	T7	.077"	1"	Z0T7X
	T8	.090"	1"	Z0T8X
	T9	.097"	1"	Z0T9X
	T10	.107"	1"	Z0T10X
	T15	.128"	1"	Z0T15X
	T20	.151"	1"	Z0T20X
	T25	.173"	1"	Z0T25X
	T27	.195"	1"	Z0T27X
	T30	.216"	1"	Z0T30X
	T40	.260"	1"	Z0T40X
 5/16" Hex Shank	T30	.216"	1-1/4"	Z5T30X
	T40	.260"	1-1/4"	Z5T40X
	T45	.306"	1-1/4"	Z5T45X
	T50	.346"	1-1/4"	Z5T50X
	T55	.440"	1-1/4"	Z5T55X

Note: Other Torx® Sizes available on request.





**Torx® Insert Bits Tamper Resistant**

	Point Size	Point Size (Reference)	Overall Length	Part No.
 1/4" Hex Shank	T7	.077"	1"	Z0T7TX
	T8	.090"	1"	Z0T8TX
	T9	.097"	1"	Z0T9TX
	T10	.107"	1"	Z0T10TX
	T15	.128"	1"	Z0T15TX
	T20	.151"	1"	Z0T20TX
	T25	.173"	1"	Z0T25TX
	T27	.195"	1"	Z0T27TX
	T30	.216"	1"	Z0T30TX
	T40	.260"	1"	Z0T40TX
 5/16" Hex Shank	T45	.306"	1-1/4"	Z5T45TX
	T50	.346"	1-1/4"	Z5T50TX
	T55	.440"	1-1/4"	Z5T55TX

**Torx® Power Bits Tamper Resistant**

	Body Diameter (Reference)	Point Size	Point Size (Reference)	Overall Length	Part No.
 1/4" Hex Shank	5/32"	T10	.107"	1-15/16"	ZPT10TX
	5/32"	T15	.128"	1-15/16"	ZPT15TX
	3/16"	T20	.151"	1-15/16"	ZPT20TX
	3/16"	T25	.173"	1-15/16"	ZPT25TX

**Torx® Plus Insert Bits**

	Point Size	Point Size (Reference)	Overall Length	Part No.
 1/4" Hex Shank	10IP	.107"	1"	Z0T10IP
	15IP	.128"	1"	Z0T15IP
	20IP	.151"	1"	Z0T20IP
	25IP	.173"	1"	Z0T25IP
	30IP	.195"	1"	Z0T30IP
 5/16" Hex Shank	40IP	.260"	1-1/4"	Z0T40IP
	45IP	.306"	1-1/4"	Z0T45IP
 7/16" Hex Shank	50IP	.346"	1-1/4"	Z0T50IP
	55IP	.440"	1-1/2"	Z0T55IP
 1/2" Hex Shank	60IP	.520"	1-1/2"	Z0T60IP

**Torx® Power Bits**

1/4" Hex Shank



Body Diameter (Reference)	Point Size	Point Size (Reference)	Overall Length	Part No.
1/8"	T6	.065"	1-15/16"	ZPT6X
1/8"	T7	.077"	1-15/16"	ZPT7X
1/8"	T8	.090"	1-15/16"	ZPT8X
1/8"	T9	.097"	1-15/16"	ZPT9X
5/32"	T10	.107"	1-15/16"	ZPT10X
5/32"	T15	.128"	1-15/16"	ZPT15X
3/16"	T20	.151"	1-15/16"	ZPT20X
3/16"	T25	.173"	1-15/16"	ZPT25X
1/4"	T27	.195"	1-15/16"	ZPT27X
1/4"	T30	.216"	1-15/16"	ZPT30X
5/16"	T40	.260"	1-15/16"	ZPT40X
1/8"	T7	.077"	2-3/4"	ZPT7X275
1/8"	T8	.090"	2-3/4"	ZPT8X275
1/8"	T9	.097"	2-3/4"	ZPT9X275
5/32"	T10	.107"	2-3/4"	ZPT10X275
5/32"	T15	.128"	2-3/4"	ZPT15X275
3/16"	T20	.151"	2-3/4"	ZPT20X275
3/16"	T25	.173"	2-3/4"	ZPT25X275
1/4"	T27	.195"	2-3/4"	ZPT27X275
1/4"	T30	.216"	2-3/4"	ZPT30X275
5/16"	T40	.260"	2-3/4"	ZPT40X275
1/8"	T7	.077"	3-1/2"	ZPT7X35
1/8"	T8	.090"	3-1/2"	ZPT8X35
1/8"	T9	.097"	3-1/2"	ZPT9X35
5/32"	T10	.107"	3-1/2"	ZPT10X35
5/32"	T15	.128"	3-1/2"	ZPT15X35
3/16"	T20	.151"	3-1/2"	ZPT20X35
3/16"	T25	.173"	3-1/2"	ZPT25X35
1/4"	T27	.195"	3-1/2"	ZPT27X35
1/4"	T30	.216"	3-1/2"	ZPT30X35
5/16"	T40	.260"	3-1/2"	ZPT40X35
1/8"	T7	.077"	6"	ZPT7X6
1/8"	T8	.090"	6"	ZPT8X6
1/8"	T9	.097"	6"	ZPT9X6
5/32"	T10	.107"	6"	ZPT10X6
5/32"	T15	.128"	6"	ZPT15X6
3/16"	T20	.151"	6"	ZPT20X6
3/16"	T25	.173"	6"	ZPT25X6
1/4"	T27	.195"	6"	ZPT27X6
1/4"	T30	.216"	6"	ZPT30X6
1/4"	T40	.260"	6"	ZPT40X6

**Spanner Tamper Resistant**

1/4" Hex Shank





1/4" Hex Shank







Point Size	Point Size (Reference)	Overall Length	Part No.
#4	.130"	1"	J9221
#6	.174"	1"	J9222
#8	.211"	1"	J9223
#10	.249"	1"	J9224
#1/4	.323"		
#4	.130"	1-1/2"	J9231A
#6	.174"	1-1/2"	J9232A
#8	.211"	1-1/2"	J9233A



**Torq-Set® -ACR® Insert Bits**

	Overall Length	Screw Size	Part No.
 1/4" Hex Shank	1"	6	TS212-6R
	1"	8	TS212-8R
	1"	10	TS212-10R
	1"	1/4	TS212-1/4R
 5/16" Hex Shank	1-1/2"	8	TS212-8AR
	1-1/2"	10	TS212-10AR
	1-1/2"	1/4	TS212-1/4AR
	1-1/2"	5/16	TS212-5/16AR




**Torq-Set® Power Bits**

	Body Diameter	Overall Length	Screw Size	Part No.	
 1/4" Hex Shank	-	1-1/4"	0	TS170-0	
	-	1-1/4"	1	TS170-1	
	-	1-1/4"	2	TS170-2	
	-	1-1/4"	3	TS170-3	
	-	1-1/4"	4	TS170-4	
	-	1-1/4"	5	TS170-5	
	-	1-1/4"	6	TS170-6	
	-	1-1/4"	8	TS170-8	
	-	1-1/4"	10	TS170-10	
	 Bullnose	-	1-1/4"	1/4	TS170-1/4B
-		1-1/4"	5/16	TS170-5/16B	
-		1-1/4"	3/8	TS170-3/8B	
1/8"		1-15/16"	0	TS273-0	
1/8"		1-15/16"	1	TS273-1	
1/8"		1-15/16"	2	TS273-2	
5/32"		1-15/16"	3	TS273-3	
5/32"		1-15/16"	4	TS273-4	
3/16"		1-15/16"	5	TS273-5	
32/6"		1-15/16"	6	TS273-6	
 1/4" Hex Shank	1/4"	1-15/16"	8	TS273-8	
	1/4"	1-15/16"	10	TS273-10	
	1/8"	3-1/2"	0	TS265-0-35	
	1/8"	3-1/2"	1	TS265-1-35	
	1/8"	3-1/2"	2	TS265-2-35	
	5/32"	3-1/2"	3	TS265-3-35	
	5/32"	3-1/2"	4	TS265-4-35	
	3/16"	3-1/2"	5	TS265-5-35	
	3/16"	3-1/2"	6	TS265-6-35	
	1/4"	3-1/2"	8	TS265-8-35	
 1/4" Hex Shank	1/4"	3-1/2"	10	TS265-10-35	
	1/8"	6"	0	TS265-0-6	
	1/8"	6"	1	TS265-1-6	
	1/8"	6"	2	TS265-2-6	
	5/32"	6"	3	TS265-3-6	
	5/32"	6"	4	TS265-4-6	
	3/16"	6"	5	TS265-5-6	
	3/16"	6"	6	TS265-6-6	
	1/4"	6"	8	TS265-8-6	
	1/4"	6"	10	TS265-10-6	
 5/16" Hex Shank	-	1-1/4"	8	TS170-8A	
	-	1-1/4"	10	TS170-10A	
	-	1-1/4"	1/4	TS170-1/4A	
	-	1-1/4"	5/16	TS170-5/16A	
	-	1-1/4"	3/8	TS170-3/8A	
	-	1-1/4"	7/16	TS170-7/16A	
	-	1-1/4"	1/2	TS170-1/2A	
	 Bullnose	-	1-1/4"	1/4	TS170-1/4A
		-	1-1/4"	5/16	TS170-5/16A
		-	1-1/4"	3/8	TS170-3/8A
-		1-1/4"	7/16	TS170-7/16A	




**Torq-Set® Power Bits (Continued)**

	Body Diameter	Overall Length	Screw Size	Part No.
	-	1-1/4"	1/4	TS170-1/4
	-	1-1/4"	5/16	TS170-5/16
	-	1-1/4"	3/8	TS170-3/8
	-	1-1/4"	7/16	TS170-7/16
	11/32"	1-15/16"	1/4	TS273-1/4
	3/8"	1-15/16"	5/16	TS273-5/16
	7/16"	1-15/16"	3/8	TS273-3/8
	7/16"	1-15/16"	7/16	TS273-7/16
	11/32"	3-1/2"	1/4	TS265-1/4-35
	3/8"	3-1/2"	5/16	TS265-5/16-35
	7/16"	3-1/2"	3/8	TS265-3/8-35
	7/16"	3-1/2"	7/16	TS265-7/16-35
	11/32"	6"	1/4	TS265-1/4-6
	3/8"	6"	5/16	TS265-5/16-6
	7/16"	6"	3/8	TS265-3/8-6
	7/16"	6"	7/16	TS265-7/16-6
	-	1-1/4"	1/2	TS170-1/2
	-	1-1/4"	9/16	TS170-9/16
	-	1-1/4"	5/8	TS170-5/8




**Torq-Set®-ACR® Power Bits**

	Body Diameter	Overall Length	Screw Size	Part No.
	-	1-1/4"	6	TS170-6R
	-	1-1/4"	8	TS170-8R
	-	1-1/4"	10	TS170-10R
	3/16"	1-15/16"	6	TS273-6R
	1/4"	1-15/16"	8	TS273-8R
	1/4"	1-15/16"	10	TS273-10R
	3/16"	3-1/2"	6	TS265-6-35R
	1/4"	3-1/2"	8	TS265-8-35R
	1/4"	3-1/2"	10	TS265-10-35R
		-	1-1/4"	1/4
-		1-1/4"	5/16	TS170-5/16AR
	-	1-1/4"	1/4	TS170-1/4R
	-	1-1/4"	5/16	TS170-5/16R
	11/32"	3-1/2"	1/4	TS265-1/4-35R
	3/8"	3-1/2"	5/16	TS265-5/16-35R




**Torq-Set® Insert Bits**

	Overall Length	Screw Size	Part No.
	1"	0	TS212-0
	1"	1	TS212-1
	1"	2	TS212-2
	1"	3	TS212-3
	1"	4	TS212-4
	1"	5	TS212-5
	1"	6	TS212-6
	1"	8	TS212-8
	1"	10	TS212-10
	1"	1/4	TS212-1/4
	1"	1/4	TS212-1/4B
		1"	5/16
1-1/4"		8	TS212-8A
	1-1/4"	10	TS212-10A
	1-1/4"1"	1/4	TS212-1/4A
	1-1/4"	5/16	TS212-5/16A
	1-1/4"	3/8	TS212-3/8A





**Tri-Wing®-ACR® Insert Bits**

	Overall Length	Recess No.	Screw Size		Part No.
			Tension Head	Shear Head	
 1/4" Hex Shank	1"	3	6-32	8-32	TW-3DR
	1"	4	8-32	10-32	TW-4DR
	1"	5	10-32	1/4-28	TW-5DR
 1/4" Hex Shank Bullnose	1-1/4"	6	1/4-28	5/16-24	TW-6B4DR
 5/16" Hex Shank	1-1/4"	4	8-32	10-32	TW-4ADR
	1-1/4"	5	10-32	1/4-28	TW-5ADR
	1-1/4"	6	1/4-28	5/16-24	TW-6ADR

**Tri-Wing®-ACR® Power Bits**










	Overall Length	Recess No.	Screw Size		Part No.
			Tension Head	Shear Head	
 1/4" Hex Shank	1-1/4"	3	6-32	8-32	TW-3R
	1-1/4"	4	8-32	10-32	TW-4R
	1-1/4"	5	10-32	1/4-28	TW-5R
 1/4" Hex Bullnose	1-1/4"	6	1/4-28	5/16-24	TW-6B4R
 7-16" Hex Shank	1-1/4"	6	1/4-28	5/16-24	TW-6R
	1-1/4"	7	5/16-24	3/8-24	TW-7R

**Tri-Wing® Insert Bits**

	Overall Length	Recess No.	Screw Size		Part No.
			Tension Head	Shear Head	
 1/4" Hex Shank	1"	0	0-80	-	TW-0D
	1"	1	2-56	4-40	TW-1D
	1"	2	4-40	6-32	TW-2D
	1"	3	6-32	8-32	TW-3D
	1"	4	8-32	10-32	TW-4D
 5/16" Hex Shank	1"	5	10-32	1/4-28	TW-5D
	1-1/4"	4	8-32	10-32	TW-4AD
	1-1/4"	5	10-32	1/4-28	TW-5AD
 1/4" Hex Shank Bullnose	1-1/4"	6	1/4-28	5/16-24	TW-6AD
	1-1/4"	6	1/4-28	5/16-24	TW-6B4D
	1-1/4"	7	5/16-24	3/8-24	TW-7B4D
	1-1/4"	8	3/8-24	7/16-20	TW-8B4D
 5/16" Hex Shank Bullnose	1-1/4"	6	1/4-28	5/16-24	TW-6B5D
	1-1/4"	7	5/16-24	3/8-24	TW-7B5D
	1-1/4"	8	3/8-24	7/16-20	TW-8B5D



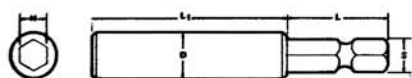
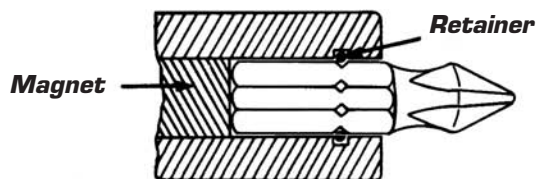
**Tri-Wing® Power Bits**

	Overall Length	Recess No.	Screw Size		Part No.
			Tension Head	Shear Head	
 1/4" Hex Shank	1-1/4"	0	0-80	-	TW-0
	1-1/4"	1	2-56	4-40	TW-1
	1-1/4"	2	4-40	6-32	TW-2
	1-1/4"	3	6-32	8-32	TW-3
	1-1/4"	4	8-32	10-32	TW-4
	1-1/4"	5	10-32	1/4-28	TW-5
 5/16" Hex Shank	1-1/4"	4	8-32	10-32	TW-4A
	1-1/4"	5	10-32	1/4-28	TW-5A
 7/16" Hex Shank	1-1/4"	6	1/4-28	5/16-24	TW-6
	1-1/4"	7	5/16-24	3/8-24	TW-7
	1-1/4"	8	3/8-24	7/16-20	TW-8
 5/8" Hex Shank	1-1/4"	9	7/16-20	1/2-20	TW-9
	1-1/4"	10	1/2-20	9/16-18	TW-10
	1-1/4"	11	9/16-18	5/8-18	TW-11
 1/4" Hex Shank Bullnose	1-1/4"	6	1/4-28	5/16-24	TW-6-B4
	1-1/4"	7	5/16-24	3/8-24	TW-7-B4
	1-1/4"	8	3/8-24	7/16-20	TW-8-B4
 5/16" Hex Shank Bullnose	1-1/4"	6	1/4-28	5/16-24	TW-6B5
	1-1/4"	7	5/16-24	3/8-24	TW-7B5
	1-1/4"	8	3/8-24	7/16-20	TW-8B5
 7/16" Hex Shank Bullnose	1-1/4"	9	7/16-20	1/2-20	TW-9B
 5/8" Hex Shank Bullnose	1-1/4"	12	5/8-18	3/4-16	TW-12B
	2-1/2"	13	3/4-16	7/8-14	TW-13B
 3/4" Hex Shank Bullnose	3"	14	7/8-14	1-12	TW-14B
	3"	15	1/2	-	TW-15B

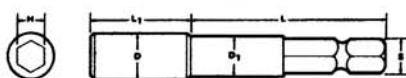
**NOTE:** All pictures are for representation only. Actual product appearance may vary. More sizes available upon request.

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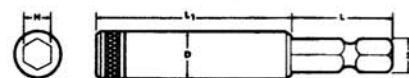
## Magnetic Holder Retaining Ring Detail



Type 1









Type 2




Type 3

## Hex Shank to Female Hex

	Part No.	S Hex	H	D	D <sub>1</sub>	L	L <sub>1</sub>
 Magnetic Type 1	ZM10	1/4"	1/4"	7/16"	-	1"	1-7/8"
	ZM18	7/16"	1/4"	1/2"	-	1-1/4"	1-7/8"
	ZM19	5/16"	1/4"	7/16"	-	1-1/8"	1-7/8"
	ZM20	5/16"	5/16"	1/2"	-	1-1/8"	1-31/32"
	ZM39	1/4"	1/4"	7/16"	-	1"	1-1/4"
	ZM47	1/4"	5/16"	1/2"	-	1-1/16"	2-1/8"
	ZM59	1/4"	1/4"	3/8"	-	1"	1-7/8"
 Magnetic Type 2	ZM10-L-4	1/4"	1/4"	7/16"	5/16"	2-1/8"	1-7/8"
	ZM10-L-6	1/4"	1/4"	7/16"	5/16"	4-1/8"	1-7/8"
	ZM10-L-8	1/4"	1/4"	7/16"	5/16"	6-1/8"	1-7/8"
	ZM10-L-10	1/4"	1/4"	7/16"	5/16"	8-1/8"	1-7/8"
	ZM35	1/4"	1/4"	7/16"	3/8"	1"	1-7/8"
	ZM38	1/4"	1/4"	7/16"	3/8"	1-1/8"	1-7/8"
 Magnetic Type 3	ZM60	1/4"	1/4"	7/16"	-	1"	2-3/32"
	ZM62	1/4"	1/4"	7/16"	-	1"	1-1/4"
 2-pc Magnetic Type 1	ZM80	1/4"	1/4"	3/8"	-	1"	1-3/8"
	ZM81	1/4"	1/4"	7/16"	-	1-1/8"	1-7/8"
 Non-Magnetic Type 1	ZNM19	5/16"	1/4"	7/16"	-	1-1/8"	3/4"
	ZNM20	5/16"	5/16"	1/2"	-	1-1/8"	1-3/8"
	ZNM28	7/16"	5/16"	9/16"	-	1-1/4"	1-1/2"
 Non-Magnetic Type 2	ZNM10	1/4"	1/4"	7/16"	9/32"	1-1/8"	5/8"
	ZNM10-L 4	1/4"	1/4"	7/16"	5/16"	3"	1"
	ZNM10-L 6	1/4"	1/4"	7/16"	5/16"	5"	1"
	ZNM10-L 8	1/4"	1/4"	7/16"	5/16"	7"	1"
	ZNM10-L 10	1/4"	1/4"	7/16"	5/16"	9"	1"

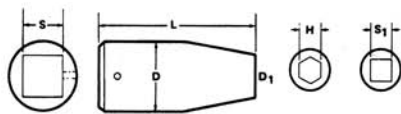
## Threaded Drive to Female Hex

	Part No.	T	H	D	Overall Length	Type
 Magnetic	ZM45	3/8-24 R.H.	1/4"	3/8"	1-7/8"	Replaceable Cap
	ZM41	3/8-24 R.H.	1/4"	3/8"	1-7/8"	Solid Body

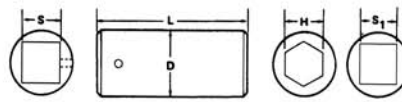
**Type 1**

**Type 2**

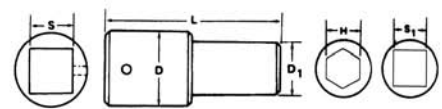
**Type 3**



**Tapered**




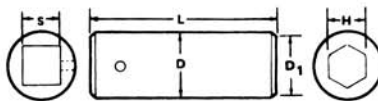
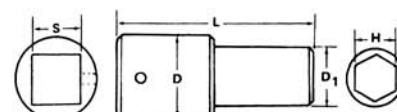
**Straight**



**Shoulder**

**Female Square Drive to Female Hex or Square**

	Part No.	Drive S	Square S <sub>1</sub>	Hex H	D	D <sub>1</sub>	L
 <p>Non-Magnetic Type A</p>	ZNM25	3/8" Sq.	-	1/4"	11/16"	-	1-1/4"
	ZNM26	3/8" Sq.	-	5/16"	11/16"	-	1-1/2"
	ZNM27	1/2" Sq.	-	5/16"	15/16"	-	1-1/2"
	ZNM33	3/8" Sq.	5/16"	-	11/16"	5/8"	1-1/2"
	ZNM34	1/2" Sq.	5/16"	-	1"	5/8"	1-3/4"
	ZNM37	1/2" Sq.	-	1/4"	15/16"	-	1-1/2"
 <p>Non-Magnetic Type B</p>	ZNM23	1/4" Sq.	-	1/4"	7/16"	-	7/8"
 <p>Magnetic Type C</p>	ZM23	1/4" Sq.	-	1/4"	9/16"	7/16"	2-1/16"
	ZM25	3/8" Sq.	-	1/4"	11/16"	7/16"	2-1/16"
	ZM26	3/8" Sq.	-	5/16"	11/16"	1/2"	2-3/4"
	ZM37	1/2" Sq.	-	1/4"	15/16"	7/16"	2-3/4"

**Tapered****Straight****Shoulder****1/4" Square Drive Sockets**

	Part No.	H	D	D <sub>1</sub>	L	S	Type
Magnetic	Z48MST-1/4	1/4"	1/2"	3/8"	7/8"	1/4"	Z
	Z48MS-1/4	1/4"	1/2"	7/16"	7/8"	1/4"	C
	Z48MS-5/16	5/16"	1/2"	1/2"	7/8"	1/4"	B
	Z48MST-5/16	5/16"	1/2"	7/16"	7/8"	1/4"	Z
	Z48MS-3/8	3/8"	9/16"	9/16"	1"	1/4"	B
	Z48MS-7/16	7/16"	3/4"	3/4"	1"	1/4"	B
Non-Magnetic	Z48S-1/4	1/4"	1/2"	7/16"	7/8"	1/4"	C
	Z48ST-1/4	1/4"	1/2"	3/8"	7/8"	1/4"	A
	Z48S-5/16	5/16"	1/2"	1/2"	7/8"	1/4"	B
	Z48S-3/8	3/8"	9/16"	9/16"	1"	1/4"	B
	Z48S-7/16	7/16"	3/4"	3/4"	1"	1/4"	B

**3/8" Square Drive Sockets**

	Part No.	H	D	D <sub>1</sub>	L	S	Type
Magnetic	Z50MST-1/4	1/4"	3/4"	3/8"	1-1/4"	3/8"	A
	Z50MST-5/16	5/16"	3/4"	1/2"	1-1/4"	3/8"	A
	Z50MST-3/8	3/8"	3/4"	5/8"	1-1/4"	3/8"	A
	Z50MS-7/16	7/16"	3/4"	3/4"	1-1/4"	3/8"	B
	Z50MS-1/2	1/2"	3/4"	3/4"	1-1/4"	3/8"	B
Non-Magnetic	Z50ST-1/4	1/4"	3/4"	7/16"	1-1/4"	3/8"	A
	Z50ST-5/16	5/16"	3/4"	1/2"	1-1/4"	3/8"	A
	Z50ST-3/8	3/8"	3/4"	5/8"	1-1/4"	3/8"	A
	Z50S-1/2	1/2"	3/4"	3/4"	1-1/4"	3/8"	B
	Z50S-9/16	9/16"	15/16"	15/16"	1-1/4"	3/8"	B

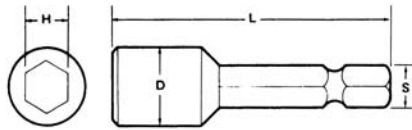
**1/2" Square Drive Sockets**

	Part No.	H	D	D <sub>1</sub>	L	S	Type
Magnetic	Z51MST-1/4	1/4"	15/16"	7/16"	1-1/2"	1/2"	A
	Z51MST-5/16	5/16"	15/16"	1/2"	1-1/2"	1/2"	A
	Z51MST-3/8	3/8"	15/16"	5/8"	1-1/2"	1/2"	A
	Z51MST-7/16	7/16"	15/16"	11/16"	1-1/2"	1/2"	A
	Z51MST-1/2	1/2"	15/16"	3/4"	1-1/2"	1/2"	A
	Z51MS-1/2	1/2"	15/16"	15/16"	1-1/2"	1/2"	B
	Z51MS-9/16	9/16"	15/16"	15/16"	1-1/2"	1/2"	B
Non-Magnetic	Z51ST-1/2	1/2"	15/16"	3/4"	1-1/2"	1/2"	A
	Z51ST-9/16	9/16"	15/16"	13/16"	1-1/2"	1/2"	A
	Z51S-1/2	1/2"	15/16"	15/16"	1-1/2"	1/2"	B
	Z51S-9/16	9/16"	15/16"	15/16"	1-1/2"	1/2"	B

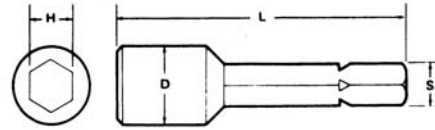
**1/4" Reversible Sockets (For Hex Head Sheet Metal Fasteners)**

	Part No.	H	D	L	Type
Magnetic	Z10RSR-1\4	1/4"	3/8"	1"	B
	Z10RS-1\4	1/4"	7/16"	1"	B




**Type 1**





**Type 2**








**Hex Shank Drive to Female Hex**

	Part No.	S Hex	H	D	L
	Z10MSH-1/4	1/4"	1/4"	7/16"	1-3/4"
	Z10MSH-5/16	1/4"	5/16"	1/2"	1-3/4"
	Z10MSH-3/8	1/4"	3/8"	9/16"	1-3/4"
	Z10MSH-7/16	1/4"	7/16"	5/8"	1-3/4"
	Z10MSHL-1/4	1/4"	1/4"	7/16"	2-9/16"
	Z10MSHL-5/16	1/4"	5/16"	1/2"	2-9/16"
	Z10MSHL-3/8	1/4"	3/8"	9/16"	2-9/16"
	Z10MSHS-1/4	1/4"	1/4"	7/16"	1-1/8"
	Z10MSHS-5/16	1/4"	5/16"	1/2"	1-1/8"
	Z10MSHS-3/8	1/4"	3/8"	1/2"	1-1/8"
	Z10SH-1/4	1/4"	1/4"	7/16"	1-3/4"
	Z10SH-5/16	1/4"	5/16"	1/2"	1-3/4"
	Z10SH-3/8	1/4"	3/8"	9/16"	1-3/4"
	Z10SHL-1/4	1/4"	1/4"	7/16"	2-9/16"
	Z10SHL-5/16	1/4"	5/16"	1/2"	2-9/16"
	Z10SHL-3/8	1/4"	3/8"	9/16"	2-9/16"

**Hex Shank Drive to Female Hex (Metric)**


	Part No.	S Hex	H (mm)	D (mm)	D in. (Reference)	L (mm)	L in. (Reference)
	Z10MSHL-5.5 MM	1/4"	5.5	10	3/8"	65	2-9/16"
	Z10MSHL-6 MM	1/4"	6	11	13/32"	65	2-9/16"
	Z10MSHL-7 MM	1/4"	7	11	13/32"	65	2-9/16"
	Z10MSHL-8 MM	1/4"	8	13	1/2"	65	2-9/16"
	Z10MSHL-9 MM	1/4"	9	14	17/32"	65	2-9/16"
	Z10MSHL-10 MM	1/4"	10	14	17/32"	65	2-9/16"
	Z10SHL-5.5 MM	1/4"	5.5	10	3/8"	65	2-9/16"
	Z10SHL-6 MM	1/4"	6	11	13/32"	65	2-9/16"
	Z10SHL-7 MM	1/4"	7	11	13/32"	65	2-9/16"
	Z10SHL-8 MM	1/4"	8	13	1/2"	65	2-9/16"
	Z10SHL-9 MM	1/4"	9	14	17/32"	65	2-9/16"
	Z10SHL-10 MM	1/4"	10	14	17/32"	65	2-9/16"
	Z10SHL-13 MM	1/4"	13	17	43/64"	65	2-9/16"

## Hex Shank Drive to Male Square

	Part No.	S	H	L	P	
 1/4" Hex to 1/4" Square	Z10SH-1B	1/4"	1/4"	1"	Ball	
 1/4" Hex to 1/4" Square	Z10SH- 1-3/8	1/4"	1/4"	1-3/8"	Pin	
	Z10SH- 2	1/4"	1/4"	2"	Pin	
	Z10SH- 3	1/4"	1/4"	3"	Pin	
	Z10SH- 4	1/4"	1/4"	4"	Pin	
	Z10SH- 5	1/4"	1/4"	5"	Pin	
	Z10SH- 6	1/4"	1/4"	6"	Pin	
	Z10SH- 8	1/4"	1/4"	8"	Pin	
	Z10SH- 10	1/4"	1/4"	10"	Pin	
	Z10SH- 12	1/4"	1/4"	12"	Pin	
	 1/4" Hex to 3/8" Square	Z10SH-3/8-2	3/8"	1/4"	2"	Pin
		Z10SH-3/8-3	3/8"	1/4"	3"	Pin
		Z10SH-3/8-4	3/8"	1/4"	4"	Pin
Z10SH-3/8-6		3/8"	1/4"	6"	Pin	
Z10SH-3/8-8		3/8"	1/4"	8"	Pin	
 7/16" Hex to 3/8" Square	Z09SH-3/8	3/8"	7/16"	1-3/4"	Pin	
	Z09SH-3/8-2	3/8"	7/16"	2"	Pin	
	Z09SH-3/8-3	3/8"	7/16"	3"	Pin	
	Z09SH-3/8-4	3/8"	7/16"	4"	Pin	
	Z09SH-3/8-5	3/8"	7/16"	5"	Pin	
	Z09SH-3/8-6	3/8"	7/16"	6"	Pin	
	Z09SH-3/8-8	3/8"	7/16"	8"	Pin	
	Z09SH-3/8-10	3/8"	7/16"	10"	Pin	
	Z09SH-3/8-12	3/8"	7/16"	12"	Pin	
	 7/16" Hex to 1/2" Square	Z09SH-1/2	1/2"	7/16"	2-1/8"	Pin
Z09SH-1/2-3		1/2"	7/16"	3"	Pin	
Z09SH-1/2-4		1/2"	7/16"	4"	Pin	
Z09SH-1/2-5		1/2"	7/16"	6"	Pin	
Z09SH-1/2-6		1/2"	7/16"	6"	Pin	
Z09SH-1/2-8		1/2"	7/16"	8"	Pin	

Note: Extensions available with ball retainer on special request.





## Hex Shank Drive to Male Hex ( Reversible Sockets)

	Part No.	H	H <sub>1</sub>	L	P
 1/4" Hex to 1/4" Hex	Z10SHR-2	1/4"	1/4"	2"	Pin
	Z10SHR-3	1/4"	1/4"	3"	Pin
	Z10SHR-4	1/4"	1/4"	4"	Pin

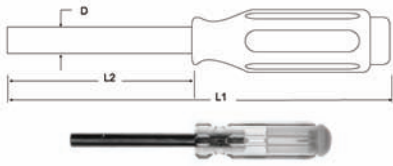
## Choosing The Right Screwdriver

Some things to bear in mind while choosing a screwdriver:

- Type of fastener / component
- Joint integrity
- Torque required
- Tool orientation and ergonomics
- Productivity

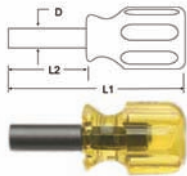
Screw Type	Possible Tool
 Machine Screw/Nut	RP2036, RP2037, RP2041, RP2042, RP2003, RP2007, RP2010, RP2008, RP2012, RP2005, RP2009, RP2011, RP2006, RP2014
 Self Tapping Self Drilling	RP2754, RP2755, RP2764, RP2765, RP2009, RP2011, RP2006, RP2014
 Self Tapping in Plastic Thin Materials	RP2003, RP2007, RP2010, RP2008, RP2012, RP2005, RP2015
 Self Lock	RP2009, RP2011, RP2006, RP2014
Wood Screws	RP2754, RP2755, RP2764, RP2765, RP2780

### Combination Holder with Bit Storage



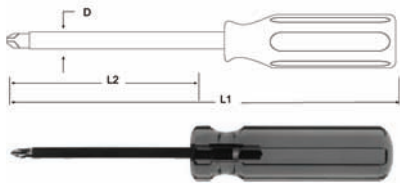
Bit Size Hex	D	L <sub>1</sub>	L <sub>2</sub>	Shank Material	Part No.
1/4"	3/8"	7-13/16"	3-3/4"	Aluminum	H104MA
1/4"	3/8"	7-13/16"	3-3/4"	S. Steel	H104MS
5/16"	7/16"	7-13/16"	3-3/4"	Aluminum	H105MA
5/16"	7/16"	7-13/16"	3-3/4"	S. Steel	H105MS
1/4"	7/16"	7-13/16"	3-3/4"	Steel	H104NM
5/16"	1/2"	7-13/16"	3-3/4"	Steel	H105NM

### Stubby Holder with Solid Handle



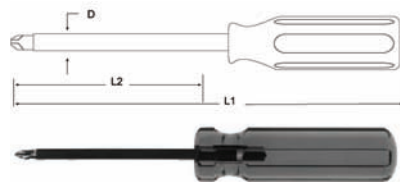
Bit Size Hex	D	L <sub>1</sub>	L <sub>2</sub>	Shank Material	Part No.
1/4"	3/8"	3-5/8"	1-5/8"	S. Steel	SH104M
1/4"	7/16"	3-5/8"	1-5/8"	Steel	SH104NM

### ACR®-Phillips



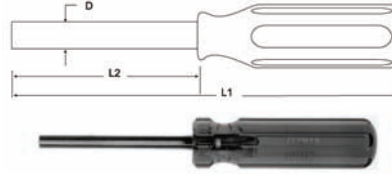
Point Size	D Hex	L <sub>1</sub>	L <sub>2</sub>	Part No.
1	1/4"	7-1/16"	3-1/8"	PL101ACR-B
2	1/4"	8-1/2"	4"	PL102ACR-B
3	5/16"	10-1/2"	6"	PL103ACR-B

### Pozidriv®



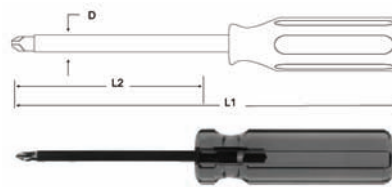
Point Size	D Hex	L <sub>1</sub>	L <sub>2</sub>	Part No.
0	1/4"	7-1/16"	3-1/8"	PZ101P-0
1	1/4"	7-1/16"	3-1/8"	PZ101P-1
2	1/4"	8-1/2"	4"	PZ101P-2
3	5/16"	10-1/2"	6"	PZ101P-3
4	5/16"	12-5/8"	8-1/8"	PZ101P-4

### Solid Handle



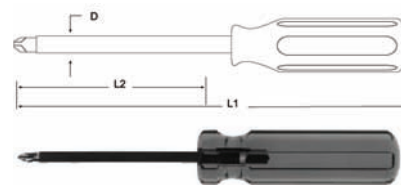
Bit Size Hex	D	L <sub>1</sub>	L <sub>2</sub>	Shank Material	Part No.
1/4"	3/8"	8-1/4"	3-3/4"	Aluminum	H106MA
1/4"	3/8"	8-1/4"	3-3/4"	S. Steel	H106MS
5/16"	7/16"	8-1/4"	3-3/4"	Aluminum	H107MA
5/16"	7/16"	8-1/4"	3-3/4"	S. Steel	H107MS
1/4"	7/16"	8-1/4"	3-3/4"	Steel	H106NM
5/16"	1/2"	8-1/4"	3-3/4"	Steel	H107NM

### Torq-Set®



Point Size	D Hex	L <sub>1</sub>	L <sub>2</sub>	Part No.
0	1/4"	3"	1-1/4"	TS201P-0
1	1/4"	3"	1-1/4"	TS201P-1
2	1/4"	7-1/16"	3-1/8"	TS201P-2
3	1/4"	7-1/16"	3-1/8"	TS201P-3
4	1/4"	7-1/16"	3-1/8"	TS201P-4
5	1/4"	7-1/16"	3-1/8"	TS201P-5
6	1/4"	7-15/16"	4"	TS201P-6
8	1/4"	7-15/16"	4"	TS201P-8
10	1/4"	7-15/16"	4"	TS201P-10
1/4	5/16"	10-1/2"	6"	TS201P-1/4
5/16	3/8"	12-1/2"	8"	TS201P-5/16
3/8	3/8"	12-1/2"	8"	TS201P-3/8

### Tri-Wing®



Point Size	D Hex	L <sub>1</sub>	L <sub>2</sub>	Part No.
0	1/4"	3"	1-1/4"	TW301P-0
1	1/4"	3"	1-1/4"	TW301P-1
2	1/4"	7-1/16"	3-1/8"	TW301P-2
3	1/4"	7-15/16"	4"	TW301P-3
4	1/4"	7-15/16"	4"	TW301P-4
5	1/4"	7-15/16"	4"	TW301P-5
6	3/8"	10-1/2"	6"	TW301P-6
7	3/8"	12-1/2"	8"	TW301P-7

## Pneumatic Screwdrivers

### Dotco

- 2.2 lbs.  
 • 92 inch lbs. positive clutch.  
 • 1/4" hex female drive.  
 • Small pistol grip handle.

PN: 56CNS93-71



### Dotco

- 2.4 lbs.  
 • 92 inch lbs. positive clutch.  
 • 1/4" hex female drive.  
 • Small pistol grip handle.

PN: 56CNS93-73



### Sioux

- 700RPM / 1.8 lbs.  
 • 240 inch lbs. stall torque.  
 • 1/4" hex female drive.  
 • Pistol grip handle.

PN: 2P2107



### Sioux

- 1200RPM / 1.8 lbs.  
 • 115 inch lbs. stall torque.  
 • 1/4" hex female drive.  
 • Pistol grip handle.

PN: 2P2207



### Sioux

- 1200RPM. / 2.3 lbs.  
 • 65 inch lbs. stall torque.  
 • 1/4" hex female drive.  
 • Pistol grip handle.

PN: 2P2307



### Ingersoll Rand

- 900RPM / 2.8 lbs.  
 • 13 - 70 lbs. torque.  
 • Adjustable cushion clutch.  
 • 1/4" hex female drive.  
 • Pistol grip handle.

PN: 5RANC1



### Ingersoll Rand

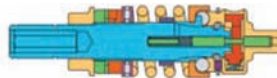
- 1000RPM / 3.3 lbs.  
 • 20 - 110 lbs. torque.  
 • Adjustable cushion clutch.  
 • 1/4" hex female drive.  
 • Pistol grip handle.

*Other models featuring different RPM's and clutch types available.*

PN: 7RAMC1



### CLECO



### Clecomatic® Clutch

When tightening a fastener, torque is transmitted through the Clecomatic clutch to the fastener until the clutch can no longer transmit the increasing torque. The clutch then "slips", which allows an internal mechanism to seal off air to the air motor, shutting off the tool at the user-adjusted preset torque level. This type of torque control allows maximum RPM from the tool for increased productivity. Since the tool doesn't dwell on the fastener as with a stall tool, tool wear and fatigue to the operator is reduced. The life of a Clecomatic tool is up to five times longer than that of a lever-operated, ratcheting clutch screwdriver.

PN: 14TCA04Q

### Master Power Versa Clutch™

- Torque Range.  
5 - 140 In. Lbs.  
.6 - 15 Nm.
- Reversible.
- 1/4" Hex Quick Change.
- Balanced design offers easy handling and control to reduce operator fatigue.
- High parts interchangeability.
- Side to center 13/16" (20.64 mm).

PN: MP2436



### Screw Extractor

- BRUT-5 #8 thru 1/4" Screw Capacity.
- BRUT-7 1/4 Thru 3/8" Screw Capacity.

PN: BRUT-5

PN: BRUT-7





## Pneumatic Screwdrivers

Model	Torque range soft joint		Free speed r/min	Weight		Length mm	CS distance mm	Air Consumption at free speed		Rec. hose size mm	Air inlet thread in	Sound level dB(A)	Ordering No.
	Nm	in lb		kg	lb			l/s	cfm				
<b>Pistol grip models with trigger start</b>													
LUM22 HR3	0.6 - 3	5.3 - 26.5	2200	0.85	1.9	186	18	7.5	16	8	1/4	73	8431 0269 00
LUM22 HR4	0.6 - 4	5.3 - 35.4	1650	0.85	1.9	186	18	7.5	16	8	1/4	73	8431 0269 02
LUM22 HR6	1.5 - 6.5	13.3 - 57.5	1150	0.85	1.9	186	18	7.5	16	8	1/4	73	8431 0269 01
LUM22 HR10	3.5 - 10	31 - 88.5	750	1	2.2	218	18	7.5	16	10	1/4	74	8431 0269 03
LUM22 HR12	3.5 - 12.5	31 - 110.6	500	1	2.2	210	18	7.5	16	10	1/4	73	8431 0269 04
LUM22 HR12-370	3.5 - 12.5	31 - 110.6	370	1	2.2	210	18	7.5	16	10	1/4	73	8431 0269 05
LUM32 HR 10	3.5 - 10	31 - 88.5	750	0.72	1.6	183	18.5	7.5	16	10	1/4	74	8431 0269 90
LUM32 HR15	7.5 - 15.5	61.9 - 137.2	450	0.72	1.6	183	18.5	7.5	16	10	1/4	74	8431 0269 31
<b>Pistol grip models with trigger and push start</b>													
LUM22 HR3-P	0.6 - 3	5.3 - 26.5	2200	0.85	1.9	186	21	7.5	16	8	1/4	74	8431 0269 06
LUM22 HR4-P	0.6 - 4	5.3 - 35.4	1650	0.85	1.9	186	21	7.5	16	8	1/4	74	8431 0269 08
LUM22 HR6-P	1.5 - 6.5	13.3 - 57.5	1150	0.85	1.9	186	21	7.5	16	8	1/4	74	8431 0269 07
LUM22 HR10-P	3.5 - 10	31 - 88.5	750	1	2.2	218	21	7.5	16	10	1/4	74	8431 0269 09
LUM22 HR12-P	3.5 - 12.5	31 - 110.6	500	1	2.2	210	21	7.5	16	10	1/4	74	8431 0269 10
LUM22 HR12-370-P	3.5 - 12.5	31 - 110.6	370	1	2.2	210	21	7.5	16	10	1/4	74	8431 0269 11
<b>Balanced grip models with trigger start</b>													
LUM12 HRX1	0.6 - 1.8	5.3 - 15.9	2300	0.65	1.4	176	15	6	13	6	1/8	73	8431 0278 58
LUM12 HRX2	0.6 - 2.5	5.3 - 22.1	1650	0.65	1.4	176	16	6	13	6	1/8	73	8431 0278 56
LUM12 HRX3	0.4 - 3.5	3.5 - 31	1150	0.7	1.5	186	16	6	13	6	1/8	73	8431 0278 54
LUM12 HRX5	0.4 - 5	3.5 - 44.2	850	0.7	1.5	186	16	6	13	6	1/8	73	8431 0278 51
LUM12 HRX5-170	0.4 - 5	3.5 - 44.2	170	0.7	1.5	196	16	6	13	6	1/8	73	8431 0278 47
LUM12 HRX5-350	0.4 - 5	3.5 - 44.2	350	0.7	1.5	186	16	6	13	6	1/8	73	8431 0278 48
LUM12 HRX8	1.5 - 8	13.3 - 70.8	500	0.7	1.5	186	16	6	13	6	1/8	73	8431 0278 60
LUM12 HRX8-50	1.5 - 8	13.3 - 70.8	50	0.7	1.5	196	16	6	13	6	1/8	73	8431 0280 25
LUM12 HRX8-110	1.5 - 8	13.3 - 70.8	110	0.7	1.5	196	16	6	13	6	1/8	73	8431 0280 27
LUM12 HRX2	1.2 - 2	10.6 - 17.7	4500	0.9	2	187	18	9	19	8	1/4	74	8431 0269 29
LUM22 HRX2-3200	1.1 - 2.6	9.7 - 23	3200	0.9	2	187	18	9	19	8	1/4	74	8431 0278 85
LUM22 HRX3	0.3 - 3	5.3 - 26.5	2250	0.9	2	187	18	9	19	8	1/4	74	8431 0278 22
LUM22 HRX3.5	0.6 - 3.5	5.3 - 29.2	2250	0.9	2	187	18	9	19	8	1/4	74	8431 0263 99
LUM22 HRX4	0.6 - 4	5.3 - 35.4	1650	0.9	2	187	18	9	19	8	1/4	74	8431 0269 20
LUM22 HRX6	1.5 - 6.5	13.3 - 57.5	1100	0.95	2.1	197	18	9	19	8	1/4	74	8431 0269 21
LUM22 HRX10	3.5 - 10	31 - 88.5	800	1.1	2.4	219	18	9	19	10	1/4	74	8431 0269 23
LUM22 HRX11-220	3.5 - 12.5	31 - 110.6	220	1.15	2.5	229	18	9	19	10	1/4	74	8431 0282 20
LUM22 HRX12	3.5 - 12.5	31 - 110.6	500	1.1	2.4	211	18	9	19	10	1/4	74	8431 0269 24
LUM22 HRX12-50	3.5 - 12.5	31 - 110.6	50	1.15	2.5	229	18	9	19	10	1/4	74	8431 0280 26
LUM22 HRX12-120	3.5 - 12.5	31 - 110.6	120	1.15	2.5	229	18	9	19	10	1/4	74	8431 0280 28
LUM22 HRX12-370	3.5 - 12.5	31 - 110.6	370	1.1	2.4	211	18	9	19	10	1/4	74	8431 0269 25
<b>Pistol grip models with slip clutch</b>													
TWIST12 HRX4	0.5 - 4.4	4.4 - 38.9	800	0.65	1.4	186	15	6.5	14	6	1/8	73	8431 0278 38
TWIST22 HRX10	1.5 - 10	13.3 - 88.5	750	1.1	2.4	205	15	9	19	8	1/4	74	8431 0569 27
TWIST22 HRX12	5 - 12	44.2 - 106.2	500	1.05	2.3	205	15	9	19	8	1/4	74	8431 0269 28
TWIST22 HR10	1.5 - 10.0	13.3 - 88.5	750	1	2.2	205	15	8	17	8	1/4	74	8431 0269 15
TWIST22 HR12	5.0 - 12.0	44.2 - 106.2	500	1	2.2	195	15	8	17	8	1/4	73	8431 0269 16
LUF34 HR04	3.0 - 17.0	27.0 - 150.0	440	1.4	3.1	265	21	9.5	19	8	1/4	79	8431 0311 05
LUF34 HR08	2.0 - 15.0	18.0 - 133.0	750	1.4	3.1	265	21	9.5	19	8	1/4	79	8431 0311 09
<b>Pistol grip models with direct drive</b>													
LUD12 HRX8	3.5 - 8	31.0 - 70.8	500	0.5	1.1	125	16	6.5	3.1	8	1/8	73	8431 0278 79
LUD22 HR12	5 - 12	44.2 - 106.2	750	0.75	1.7	143	18	8	3.8	8	1/4	74	8431 0269 19
LUF34 HRD04	8.0 - 18.0	71 - 160	440	1.2	2.6	212	20	9	19	10	1/4	79	8431 0311 22
LUF34 HRD08	8.0 - 11.0	71 - 97	750	1.2	2.6	212	20	9	19	10	1/4	79	8431 0311 24
<b>Straight models with direct drive</b>													
TWIST SR04-A	7-12.0	62 - 106	340	0.65	1.4	170	18	8	17	10	1/4	72	8431 0252 14



LUM 22



LUM 32



LUF 34



LUD 12

## Pneumatic Screwdrivers

Model	Torque range soft joint		Free speed s/min	Weight		Length mm	Angle head height mm	Angle head centre to side mm	Air Consumption at free speed		Rec. hose size mm	Air inlet thread in	Sound level dB(A)	Ordering No.
	Nm	in lb		kg	lb				l/s	cfm				
<b>Angle screwdrivers air shut-off control models</b>														
LTV009 R025-Q	0.6 - 2.5	5.3 - 22.1	1650	0.7	1.5	266	25	9	6	13	6	1/8	76	8431 0278 00
LTV009 R025-42	0.6 - 2.5	5.3 - 22.1	1650	0.7	1.5	266	25	9	6	13	6	1/8	76	8431 0278 01
LTV009 R025-6	0.6 - 2.5	5.3 - 22.1	1650	0.7	1.5	266	25	9	6	13	6	1/8	76	8431 0278 02
LTV009 R03-10	0.7 - 3	6.2 - 26.5	1400	0.7	1.5	266	25	9	6	13	6	1/8	76	8431 0278 23
LTV009 R035-Q	0.4 - 3.5	3.5 - 31	1100	0.7	1.5	266	25	9	6	13	6	1/8	76	8431 0278 03
LTV009 R035-42	0.4 - 3.5	3.5 - 31	1100	0.7	1.5	266	25	9	6	13	6	1/8	76	8431 0278 04
LTV009 R035-6	0.4 - 3.5	3.5 - 31	1100	0.7	1.5	266	25	9	6	13	6	1/8	76	8431 0278 05
LTV009 R05-Q	0.4 - 5	3.5 - 44.2	850	0.7	1.5	266	25	9	6	13	6	1/8	76	8431 0278 06
LTV009 R05-42	0.4 - 5	3.5 - 44.2	850	0.7	1.5	266	25	9	6	13	6	1/8	76	8431 0275 07
LTV009 R05-6	0.4 - 5	3.5 - 44.2	850	0.7	1.5	266	25	9	6	13	6	1/8	76	8431 0278 08
LTV009 R07-Q	1.1 - 7	9.7 - 61.9	500	0.7	1.5	266	25	9	6	13	6	1/8	76	8131 0278 09
LTV009 R07-42	1.1 - 7	9.7 - 61.9	500	0.7	1.5	266	25	9	6	13	6	1/8	76	8431 0278 10
LTV009 R07-6	1.1 - 7	9.7 - 61.9	500	0.7	1.5	266	28.5	11	6	13	6	1/8	76	8431 0278 11
LTV009 R08-6-200	1.3 - 9	11.5 - 79.6	200	0.7	1.5	266	28.5	11	6	13	6	1/8	76	8431 0278 24
LTV009 R09-Q	1.3 - 9	11.5 - 79.6	430	0.7	1.5	266	28.5	11	6	13	6	1/8	76	8431 0278 12
LTV009 R09-10	1.3 - 9	11.5 - 79.6	430	0.7	1.5	266	28.5	11	6	13	6	1/8	76	8431 0278 13
LTV009 R09-42	1.3 - 9	11.5 - 79.6	430	0.7	1.5	266	28.5	11	6	13	6	1/8	76	8431 0278 15
LTV009 R09-42M	1.3 - 9	11.5 - 79.6	430	0.7	1.5	266	28.5	11	6	13	6	1/8	76	8431 0278 16
LTV009 R09-6	1.3 - 9	11.5 - 79.6	430	0.7	1.5	266	28.5	11	6	13	6	1/8	76	8431 0278 17
LTV009 R11-Q	1.3 - 11	11.5 - 97.3	320	0.8	1.8	266	28.5	11	6	13	6	1/8	76	8431 0278 19
LTV009 R11-10	1.3 - 11	11.5 - 97.3	320	0.8	1.8	266	28.5	11	6	13	6	1/8	76	8431 0278 20
LTV009 R11-42	1.3 - 11	11.5 - 97.3	320	0.8	1.8	266	28.5	11	6	13	6	1/8	76	8431 0278 21
LTV009 R11-6	1.3 - 11	11.5 - 91.3	320	0.8	1.8	266	28.5	11	6	13	6	1/8	76	8431 0278 22
LTV008 R09-10-220	1.3 - 9	11.5 - 79.6	220	0.8	1.8	285	28.5	11	6	13	6	1/8	76	8431 0281 39
LTV008 R09-6-70	1.3 - 9	11.5 - 79.6	40	0.8	1.8	285	28.5	11	6	13	6	1/8	76	8431 0281 46
LTV008 R11-6-100	1.3 - 11	11.5 - 97.3	100	0.8	1.8	285	28.5	11	6	13	6	1/8	76	8431 0280 29
LTV008 R11-6-50	1.3 - 11	4.4 - 26	50	0.8	1.8	285	28.5	11	6	13	6	1/8	76	8431 0280 30
LTV08 R03-6	0.5 - 3.2	4.4 - 26	1000	0.8	1.7	275	28.5	10	4	8	6	1/8	69	8431 0325 88
LTV08 R03-42	0.5 - 3.2	4.4 - 26	1000	0.8	1.7	275	28.5	10	4	8	6	1/8	69	8431 0325 84
LTV08 R03-Q	0.5 - 3.2	4.4 - 39	100	0.8	1.7	275	28.5	10	4	8	6	1/8	69	8431 0325 92
LTV08 R05-6	0.5 - 4.5	4.4 - 39	700	0.8	1.7	275	28.5	10	4	8	6	1/8	69	8431 0325 75
LTV08 R05-42	0.5 - 4.5	4.4 - 39	700	0.8	1.7	275	28.5	10	4	8	6	1/8	69	8431 0325 74
LTV08 R05-Q	0.5 - 4.5	4.4 - 39	700	0.8	1.7	275	28.5	10	4	8	6	1/8	69	8431 0325 81
LTV18 R07-6	3.5 - 7	31 - 61	700	1.2	2.6	290	28.5	10	6	13	6	1/4	71	8431 0326 72
LTV18 R07-42	3.5 - 7	31 - 61	700	1.2	2.6	290	28.5	10	6	13	6	1/4	71	8431 0326 61
LTV18 R07-Q	3.5 - 7	31 - 61	700	1.2	2.6	290	28.5	10	6	13	6	1/4	71	8431 0326 76
LTV18 R15-6	6 - 15	53 - 132	360	1.2	2.6	308	28	11	7	15	8	1/4	71	8431 0326 55
LTV18 R15-10	6 - 15	53 - 132	360	1.2	2.6	308	28	11	7	15	8	1/4	71	8431 0326 56
LTV18 R15-42	6 - 15	53 - 132	360	1.2	2.6	308	28	11	7	15	8	1/4	71	8431 0326 54
LTV18 R15-Q	6 - 15	53 - 132	360	1.2	2.6	308	28	11	7	15	8	1/4	71	8431 0326 58
<b>Angle screwdrivers slip clutch models with 1/4" square drive</b>														
TWIST VR07-6	1.3 - 7	12 - 61	700	1	2.2	280	29	10	4	8	8	1/4	72	8431 0256 11
TWIST VR13-6	2 - 6	18 - 53	1300	1	2.2	280	29	10	4	8	8	1/4	72	8431 0256 37
<b>Angle screwdrivers slip clutch models with 1/4" female hexagon drive</b>														
TWIST VR07-16	1.3 - 7	12 - 61	700	1	2.2	280	29	10	4	8	8	1/4	72	8431 0256 03
TWIST VR13-16	2 - 6	18 - 53	1300	1	2.2	280	29	10	4	8	8	1/4	72	8431 0256 29
<b>Angle screwdrivers with adapter prepared for attachment</b>														
LTV009 R07-6-LA	1.1 - 7	9.7 - 62	500	0.7	1.5	249	-	-	6	13	6	1/8	76	8431 0283 11
LTV009 R11-6-LA	1.1 - 9.3	937 - 82	375	0.7	1.5	249	-	-	6	13	6	1/8	76	8431 0283 22
LTV18 R15-10-LA	5.1 - 12.7	44.9 - 112	425	1.1	2.4	264	-	-	7	15	8	1/4	71	8431 0327 51



LTV 08



LTV 009

## Battery Clutch Screwdriver

Model	Screw size mm	Recommended torque range		Free speed			Weight excl. battery		Tool only Ordering No.	PROT version tool only Ordering No.
		Nm	in lb	9.6 V r/min	12 Vr/min	14.4 V r/min	kg	lb		
<b>BTV/BTD - shut-off</b>										
BTV7i-6	M3-M5	2 - 7	18 - 62	350	450	-	1.4	3.0	8431 0261 40	8431 0261 52
BTV7i-42	M3-M5	2 - 7	18 - 62	350	450	-	1.4	3.0	8431 0261 44	8431 0261 53
BTV7i-Q	M3-M5	2 - 7	18 - 62	350	450	-	1.4	3.0	8431 0261 49	8431 0261 54
BTV11i-6	M4-M6	4 - 11	36 - 97	300	380	-	1.4	3.0	8431 0261 55	8431 0261 59
BTV11i-42	M4-M6	4 - 11	36 - 97	300	380	-	1.4	3.0	8431 0261 56	8431 0261 60
BTV11i-Q	M4-M6	4 - 11	36 - 97	300	380	-	1.4	3.0	8431 0261 57	8431 0261 61
BTV11i-10	M4-M6	4 - 11	36 - 97	300	340	-	1.4	3.0	8431 0261 58	8431 0261 64
BTV15i-6	M6	8 - 15	70 - 132	-	340	410	1.7	3.7	8431 0261 65	8431 0261 69
BTV15i-42	M6	8 - 15	70 - 132	-	340	410	1.7	3.7	8431 0261 72	8431 0261 76
BTV15i-Q	M6	8 - 15	70 - 132	-	340	410	1.7	3.7	8431 0261 73	8431 0261 77
BTV15i-10	M6	8 - 15	70 - 132	-	210	410	1.7	3.7	8431 0261 68	8431 0261 78
BTV28i-42	M8	15 - 28	132 - 248	-	210	260	1.8	4.0	8431 0261 79	8431 0262 10
BTV28i-10	M8	15 - 28	132 - 248	-	210	260	1.8	4.0	8431 0261 80	8431 0262 11
BTV28i-B10	M8	15 - 28	132 - 248	-	210	260	1.8	4.0	8431 0261 83	8431 0262 12
BTV28i-Q	M8	15 - 28	132 - 248	-	210	260	1.8	4.0	8431 0261 86	8431 0262 14
BTV28i-FS10	M8	15 - 28	132 - 248	-	210	260	1.8	4.0	8431 0261 89	-
BTV28i-FS13	M8	15 - 28	132 - 248	-	210	260	1.8	4.0	8431 0261 92	-
BTV28i-FS15/16	M8	15 - 28	132 - 248	-	210	260	1.8	4.0	8431 0261 95	-
BTV28i-HAD	M8	15 - 28	132 - 248	-	210	260	1.8	4.0	8431 0261 98	-
BTD16-10	M8	10 - 16	88 - 142	-	330	400	1.7	3.7	8431 0262 09	-
<b>ETB - screwdrivers with shut-off. Pistol grip models</b>										
ETB41i	M3-M5	0.9 - 4.5	8 - 40	800	970	-	1.2	2.6	8431 0272 46	8431 0272 47
ETB6i	M3-M5	1.9 - 7	16 - 62	520	620	-	1.2	2.6	8431 0272 41	8431 0272 44
ETB6Li	M3-M5	1.9 - 7	16 - 62	290	360	-	1.2	2.6	8431 0272 48	-
ETB10i	M4-M6	3 - 10	26 - 90	360	480	-	1.2	2.6	8431 0272 42	8431 0272 43



ETB



BTV

## Electric Screwdriver

Model	Torque		Speed r/min	Weight		Length mm	CS distance mm	Stroke mm	Ordering No.	
	Nm	in lb		kg	lb					
<b>Right angle tools (lever start)</b>										
ETV SL21-04-I06	0.8 - 4	7 - 35	1600	0.75	1.7	279	9	-	8433 2004 47	
ETV SL21-04-I06-QC	0.8 - 4	8 - 35	1600	0.75	1.7	279	9	-	8433 2004 73	
ETV SL21-04-06	0.8 - 4	9 - 35	1600	0.75	1.7	279	9	-	8433 2004 91	
ETV SL21-07-I06	1.5 - 7.5	13 - 66	970	0.75	1.7	279	9	-	8433 2007 66	
ETV SL21-07-I06-QC	1.5 - 7.5	14 - 66	970	0.75	1.7	279	9	-	8433 2007 79	
ETV SL21-07-06	1.5 - 7.5	15 - 66	970	0.75	1.7	279	9	-	8433 2007 94	
ETV SL21-12-I06	2.5 - 12	22 - 106	610	0.8	1.8	282	11	-	8433 2009 34	
ETV SL21-12-I06-QC	2.5 - 12	23 - 106	610	0.8	1.8	282	11	-	8433 2008 61	
ETV SL21-12-06	2.5 - 12	24 - 106	610	0.8	1.8	282	11	-	8433 2008 77	
ETV SL21-20-10	4 - 20	36 - 180	465	0.95	2.1	285	14	-	8433 2009 55	
ETV SL21-20-B10	4 - 20	36 - 180	465	0.95	2.1	285	14	-	8433 2009 60	
<b>Pistol grip (push-to-start)</b>										
ETP SL21-01-I06-PS	0.3 - 1.2	2.7 - 10	3000	0.85	1.9	246	20.5	-	8433 2201 16	
ETP SL21-04PS	0.8 - 4	7 - 35	1600	0.85	1.9	246	20.5	-	8433 2204 66	
ETP SL21-07-PS	1.5 - 7.5	13 - 66	970	0.85	1.9	246	20.5	-	8433 2207 53	
ETP SL21-10PS	2 - 10	18 - 89	720	0.85	1.9	246	20.5	-	8433 2208 28	



Tensor SL ETV



Tensor SL ETP

## Pneumatic Nutrunners



LTV 29



LTV 39

Model	Bolt size mm	Square drive in	Socket drive mm	Torque range soft joint		Free speed r/min	Weight		Length mm	Angle head height mm	Angle head centre to side mm	Air consumption at free speed		Rec. hose size mm	Air inlet thread in	Sound level dB(A)	Ordering No.
				Nm	ft lb		kg	lb				l/s	cfm				
<b>Angle nutrunners reversible models</b>																	
LTV29-2 R12-Q	M6	1/4 <sup>a</sup>	-	6 - 12	4.5 - 9	850	1.3	2.9	351	44	11	10	21	10	1/4	77	8431 0631 17
LTV29-2 R12-42	M6	1/4 <sup>b</sup>	-	6 - 12	4.5 - 9	850	1.3	2.9	351	34	11	10	21	10	1/4	77	8431 0631 18
LTV29-2 R12-6	M6	1/4	-	6 - 12	4.5 - 9	850	1.3	2.9	351	27	11	10	21	10	1/4	77	8431 0631 15
LTV29-2 R12-10	M6	3/8	-	6 - 12	4.5 - 9	850	1.3	2.9	351	27	11	10	21	10	1/4	77	8431 0631 16
LTV29-2 R16-Q	M6	1/4 <sup>a</sup>	-	9 - 16	7 - 12	850	1.3	2.9	351	44	11	10	21	10	1/4	77	8431 0631 24
LTV29-2 R16-42	M6	1/4 <sup>b</sup>	-	9 - 16	7 - 12	850	1.3	2.9	351	31	11	10	21	10	1/4	77	8431 0631 23
LTV29-2 R16-6	M6	1/4	-	9 - 16	7 - 12	850	1.3	2.9	351	27	11	10	21	10	1/4	77	8431 0631 22
LTV29-2 R16-10	M6	3/8	-	9 - 16	7 - 12	850	1.3	2.9	351	27	11	10	21	10	1/4	77	8431 0631 21
LTV29-2 R24-10	M8	3/8	-	12 - 24	9 - 18	640	1.4	3.1	374	30	14	10	21	10	1/4	77	8431 0631 29
LTV29-2 R30-10	M8	3/8	-	15 - 30	11 - 22	500	1.4	3.1	374	30	14	10	21	10	1/4	77	8431 0631 37
LTV39-2 R16-10	M6	3/8	-	8 - 16	6 - 12	1300	1.6	3.5	385	35	14	16	34	10	1/4	78	8431 0633 09
LTV39-2 R24-10	M8	3/8	-	12 - 24	9 - 18	870	1.6	3.5	385	30	14	16	34	10	1/4	78	8431 0633 14
LTV39-2 R30-10	M8	3/8	-	15 - 30	11 - 22	870	1.6	3.5	385	35	14	16	34	10	1/4	78	8431 0633 19
LTV39-2 R48-10	M8	3/8	-	24 - 48	18 - 35	560	1.7	3.7	405	35	18	16	34	10	1/4	78	8431 0633 27
LTV39-2 R48-13	M8	1/2	-	24 - 48	18 - 35	560	2.0	4.4	425	41	20	16	34	10	1/4	78	8431 0633 43
LTV39-2 R56-10	M10	3/8	-	28 - 56	21 - 41	460	1.7	3.7	405	35	18	16	34	10	1/4	78	8431 0633 35
LTV39-2 R56-13	M10	1/2	-	28 - 56	21 - 41	460	2.0	4.4	425	41	20	16	34	10	1/4	78	8431 0633 51
LTV39-2 R70-13	M10	1/2	-	35 - 70	26 - 51	350	2.1	4.6	425	41	20	16	34	10	1/4	78	8431 0633 59
LTV39-2 R85-13	M10-12	1/2	-	43 - 85	32 - 63	305	2.5	5.5	500	52	25	16	34	10	1/4	78	8431 0633 67
<b>Angle nutrunners flush socket reversible models</b>																	
LTV29-2 R30 FS	M8	-	13	15 - 30	11 - 22	500	1.3	3.1	374	34	14	10	21	10	1/4	77	8431 0632 38
LTV39-2 R48 FS	M8	-	16	24 - 48	18 - 35	560	2.0	4.4	425	53	20	16	34	10	1/4	78	8431 0632 42
LTV39-2 R56 FS	M10	-	16	28 - 56	21 - 41	460	2.0	4.4	425	53	20	16	34	10	1/4	78	8431 0632 46
LTV39-2 R70 FS	M10	-	16	35 - 70	26 - 51	350	2.1	4.6	425	53	20	16	34	10	1/4	78	8431 0632 51
LTV39-2 R85 FS	M10-12	-	19	43 - 85	32 - 63	305	2.5	5.5	500	70	25	16	34	10	1/4	78	8431 0632 58

<sup>a</sup> Quick change chuck.

<sup>b</sup> Female hex driver.

## Electric Nutrunners



Model	Square drive in	Torque		Speed r/min	Weight		Length mm	CS distance mm	Height mm	Ordering No.
		Nm	ft lb		kg	lb				
<b>ETV ST31</b>										
ST31-05-10	3/8	1 - 5	0.7 - 3.6	2390	1.0	2.2	381.5	11	39.3	8433 2011 21
ST31-10-10	3/8	3 - 12	2.2 - 8.8	1020	1.0	2.2	381.5	11	39.3	8433 2013 66
ST31-15-10	3/8	5 - 15	3.6 - 10	755	1.0	2.2	381.5	11	39.3	8433 2018 98
ST31-20-10	3/8	5 - 22	3.7 - 16.1	545	1.2	2.6	415	14	42	8433 2017 10
<b>ETV ST61</b>										
ST61-28-10	3/8	6 - 29	4 - 21	1450	1.3	2.9	440	14	42	8433 2021 76
ST61-30-10	3/8	7 - 35	5 - 25	1090	1.3	2.9	440	15.5	42	8433 2023 92
ST61-40-10	3/8	8 - 40	6 - 29	1090	1.5	3.3	454	18	47	8433 2027 85
ST61-50-10	3/8	10 - 55	7 - 40	655	1.5	3.3	454	18	47	8433 2031 58
ST61-70-10	1/2	15 - 80	10 - 58	485	2.0	4.5	466	20	58	8433 2035 30
ST61-100-13	1/2	20 - 100	15 - 80	350	2.5	5.5	502	22.5	60	8433 2039 02
ST61-150-13	1/2	30 - 160	22 - 117	227	3.0	6.6	536	25.5	65	8433 2042 70
ST61-180-13	1/2	35 - 180	26 - 133	190	3.0	6.6	536	25.5	65	8433 2045 53
ST61-200-20	1/2	40 - 200	30 - 154	185	3.0	6.6	537.5	27	69.5	8433 2046 39
<b>ETV ST81</b>										
ST81-50-10	3/8	16 - 55	12 - 40	1090	1.8	3.9	473	18	48	8433 2051 55
ST81-70-13	1/2	20 - 80	15 58	790	2.3	5.0	485	20	58	8433 2053 48
ST81-100-13	1/2	20 - 100	15 80	540	2.7	5.6	522	22.5	60	8433 2056 82
ST81-150-13	1/2	30 - 160	22 117	380	3.2	7.0	555	25.5	65	8433 2060 12
ST81-180-13	1/2	35 - 180	26 - 133	310	3.2	7.0	555	25.5	65	8433 2062 31
ST81-200-20	1/2	40 - 200	30 - 154	300	3.2	7.0	556.5	27	69.5	8433 2063 42

## Eckold HF80CH Handformer

Manually operated machine which is suitable for shrinking, stretching, punching, notching and edging in metal sheets and profile up to 16 gauge. It is supplied with a set of FWA495SSP shrinker and FWR407SSP stretcher jaws. Many other optional jaws are available.

PN: HF80CH



Capacity						
Reach x Gap	Steel	Alum.	Stainless Steel	Adj. Working Height	Weight	Shipping Weight
3"R x 2-1/4" G	16 ga	14 ga	19ga	32-1/2" to 44-1/2"	53 lbs.	69 lbs
Optional Jaw Assembly						
<b>Shrinking Jaws</b> FWA405SSP (STD) HS40ASSP Beaked HLFA70SSP Nomar HLA60SSP Nomar Beaked HLR60SSP Normar Beaked		<b>Stretching Jaws</b> FWR407SSP (STD) HSR60SSP Beaked HFLR702SSP Normar 14 ga		<b>Specialty Jaws</b> LSW1SSP Punching Jaws AK250 Edging Jaws ASW442SSP Notching Jaws		

## Eckold PA80 Pneumatic Drive Kit

The PA80 drive unit is a power assist for the HF80CH Handformer. By adding this unit to the handformer you will have both hands free to hold and guide your work piece. Every application of the air foot pedal results in a single working stroke. The amount of pressure applied to the project depends on how much you step on the pedal.

PN: HF80CH-702.



## Eckold HZ51 Hand Plier

Manually operated, plier type tool which can be used for 3 different ranges of applications. By simply changing the jaws, shrinking, stretching, or clinching operations can be achieved. Clinching is the joining of 2 sheet of metal without using rivets, bolts, staples, welds, etc. Jaws are not included and must be ordered separately. Call for more information regarding clinching tooling.

PN: HZ51



Available Jaws			
FWA405SSP	Shrinker Jaw		
FWR407SSP	Stretcher Jaw		
Specifications			
Part No.	Steel	Alum.	Weight
HZ51	0.039"	0.059"	10 lbs

## 180° Triple Head Tube Bender

Enables you to make smooth, tight-radius 180° bends with ease. Lightweight die-cast aluminum with cushion grips for comfort and ease of use. Calibrated markings for making accurate left-hand, right-hand, and offset bends with 3/16", 1/4", 3/8", & 1/2" tubing.

PN: 370-FH

PN: 470-FH (Heavy Duty)



## Tube Bender

Multiple tube size design does the work of three conventional type tube benders. Calibrated markings for making accurate left-hand, right-hand and offset bends. 90 degree start requires less effort; making bending fast and easy. Wide fixed hook simplifies operation, holds tubing securely. Black and chrome finish.

PN: 367-FH / 368-FH



## Heavy Duty Bench Break

Designed and built for long service and accurate bending. Welded steel plate construction, heavy truss rods and braces provide strength and durability. These brakes have numerous adjustment features including: leveling screws and lock nuts on the pedestals; jack screws, shims, and tensioner bolts on the apron; truss rods on the apron, base, and upper leaf. Removable apron angle and insert permit 1/4" reverse bends in lighter material. The aprons on these brakes are supported by large pins in free-floating bearings. The upper leaf adjustment screws feature TENNSMITH exclusive roller-type thrust bearings to prevent upper leaf creep. Cast steel clamp handles, heavy counterweights and an apron stop rod complement the many other fine features of these heavy-duty brakes.

PN: TPHB121-18



Specifications	Model HB97-18 (mm)	Model HB121-18 (mm)	Model HB97-16 (mm)	Model HB121-16 (mm)
Capacity, Mild steel	18 gauge (1.2)	18 gauge (1.2)	16 gauge (1.6)	16 gauge (1.6)
Bending Length	97" (2464)	121" (3073)	97" (2464)	121" (3073)
Max. Lift of Beam	1-7/8" (47)	1-7/8" (47)	1-7/8" (47)	2-1/4" (57)
Front to rear beam adjustment	1/2" (13)	1/2" (13)	1/2" (13)	1/2" (13)
Min. reverse bend	1/4" (6)	1/4" (6)	1/4" (6)	1/4" (6)
Minimum flange in capacity material	1" (25)	1" (25)	1" (25)	1" (25)
Dimensions	138/48/59-1/2" (3506/1220/1512)	159/52/60" (4039/1321/1524)	140/52/60" (3556/1321/1524)	161/53/59-1/2" (4090/1347/1512)
Shipping weight	1385lbs (628kg)	2300lbs (1043kg)	1675lbs (759.8kg)	2875lbs (1304kg)
Export crate	125 cu. Ft. (3.54 cu. M.)	169 cu. Ft. (4.78 cu. M.)	141 cu. Ft. (3.99 cu. M.)	187 cu. Ft. (5.30 cu. M.)

## Tennsmith Slip Rolls



SR slip rolls combine precision turned, ground and polished rolls with heavy duty cast iron end frames latch and base to make an accurate and durable forming tool. Convenient operating features include large roll adjusting screws, scales for speeding repeat set up and front-mounted handle to lift the upper roll for material removal. Wire grooves are standard.

PN: TPSR24

Specifications	SR24	SR36	SR42	SR48
Capacity, mild steel	20 Gauge	22 Gauge	24 Gauge	48 Gauge
Max. forming length	24"	36"	42"	48"
Diameter of rolls	2"	2"	2"	3"
Min. forming radius	1"	1"	1"	2"
wire grooves	3/16", 1/4", 5/16"	3/16", 1/4", 5/16"	3/16", 1/4", 5/16"	3/8", 1/2", 5/8"
Shipping Weight	190 lbs	250 lbs	270 lbs	775 lbs.
Export Crate	13.3 Cu. Ft.	17.8 Cu. Ft.	20 Cu. Ft.	37.9 Cu. Ft.
Available stands	37-SR24	37-SR36	37-SR42	37-SR48
Shipping Weight	94lbs	120 lbs	130 lbs	270 lbs

## Jet Slip Rolls



- Suitable for many industrial, educational, and vocational shop uses.
- Precision tuned carbon steel rolls that are ground and polished.
- Large roll adjustable screws and front mounted handle facilitate lifting upper roll for easy material removal.
- Wire grooves are standard.

PN: SR2024

Specifications	SR2024	SR2236	SR1650
Capacity, mild steel	20 Gauge	22 Gauge	16 Gauge
Max. forming length	24"	36"	50"
Diameter of rolls	2"	2"	3"
Min. forming radius	1"	1"	2"
Wire grooves	3/16", 1/4", 5/16"	3/16", 1/4", 5/16"	1/4", 5/16", 3/8"
Shipping Weight	182 lbs.	240 lbs	600 lbs
Export Crate	P.O.A.	P.O.A.	P.O.A.
Available stands	SRS24	SRS36	SRS50
Shipping Weight	60 lbs	70 lbs	75 lbs

## Wheeling & Raising Machines



- Massive Cast Steel (not flame cut) Frame.
- Time proven design, easy top adjustable feature.
- Quick release lever.

PN: 373

Capacity:	Mild Steel	0.063" (1.62mm)
	Aluminum	0.125" (3.2mm)
Reach:		42" (1066mm)
Shipping Weight:		1250lbs (569kg)

## Heavy Duty Bending Break



This design permits simple or more complicated formings. Will open to 4" facilitating insertion and removal of normally awkward shapes that other brakes cannot handle. Form boxes, covers, trays etc. a much needed tools for body shops or restoration work. Form your own rocker panels, trunk edges and door jams. The tools for small jobs as well as production runs.

PN: 1824

Specifications	Model 1824	Model 1840
Capacity, Mild steel	#18ga. 1.22 mm	#18ga. 1.22 mm
Maximum Bend Length	24" (Unlimited Throat) 610mm	37" (Unlimited Throat) 940mm
	24"(2-1/2" Throat) 686mm	40"(2-1/2" Throat) 106mm
Maximum Clearance	4" (102mm)	4" (102mm)
Minimum Reverse Bend	5/8" (16mm)	5/8" (16mm)
Hand Brake Shipping Wt.	50lbs (23kg)	90lbs (41kg)
Floor Stands	1824S	1840S
Floor stand Shipping Wt.	40lbs (18kg)	50lbs (23kg)

### Trulok Countersink Gages



These gages measure the top countersink diameter or the depth of the countersink. Different design configurations of the measuring probe ensure that the measurements are more accurate or they cover a larger dimensional range, depending of the customer's process control specifications. Below are the most commonly used types of gages that can measure the diameter or the depth of a countersink.

### Trulok Flushness Gages



These gages measure the height of the installed fastener relative to the reference surface. Different design configurations of the measuring probe ensure that the measurements are accurate and they cover different fastener head diameters, depending of the customer's process control specifications. Below are the most commonly used types of flushness gages. These gages can also be used to measure any other height difference between two surfaces (example: welds, steps, rivets heads, dimples, etc.).

### Trulok Hole Diameter Gages



These gages are designed to measure a hole diameter at the entrance or at any desired depth from top surface. Different design configurations allow the gages to measure through drilling templates (jigs). Below are the most commonly used types of hole diameter gages. These gages can be used to determine the hole geometry (example: round, elliptical, irregular, etc.).

### Trulok Hole Diameter Gages

TRULOK® Set Blocks are designed specifically to insure a precise and consistent calibration of TRULOK® gages. TRULOK® set blocks are available in a wide range of diameters and depths to fit virtually any TRULOK® gage.



For Trulok Tools, send us your requirements. We will give you the correct Part Number.

More Info <http://www.deltaintl.com/testing/trulok%20gages.html>

### Digimatic Calipers



Part No	Range	LCD Res.	Accuracy	Remarks
500-170	0-4" 0-100mm	.0005" 0.01mm	+/- .001"	.075 round depth bar without SPC output. With thumb roller
500-171	0-4" 0-150mm	.0005" 0.01mm	+/- .001"	Without SPC output. With thumb roller
500-172	0-4" 0-150mm	.0005" 0.01mm	+/- .001"	Without SPC output. With thumb roller
500-173	0-4" 0-150mm	.0005" 0.01mm	+/- .001"	Without SPC output. With thumb roller

### Cable Tensiometer



Part No	For use on Cable	Ranges in Lb	Reading Interval	Riser Used
TP222	1/16, 3/32, 1/8	10-100	5 (5-50)	#1
	5/32, 3/16	15-150	10 (50-150)	#2C
	7/32, 1/4	20-150	10 (50-150)	#3
TP222A	1/16, 3/32, 1/8	30-200	10 (30-200)	#1
	5/32, 3/16	30-300	10 (30-200)	#2C
	7/32, 1/4	30-300	20 (30-300)	#3
TP222B	1/16	0-60	2 (6-22)	#1 (Fixed)
			5 (25-40)	
TP222C	1/8, 5/32, 10, 15 Cwt	40-600	20 (40-600)	#2
		40-600	20 (40-600)	#2C
		40-600	20 (40-600)	#3
TP222D	3/16, 7/32, 1/4	100-800	50 (100-800)	#2
		100-800	50 (100-800)	#3A
TP222E	3/16, 7/32, 1/4	500-2000	50 (300-2000)	#2
		500-2000		#2C
		500-2000		#3A
TP222F	1/16, 3/32, 1/8	10-100	5 (10-50)	#1
		3, 5, 10 Cwt	5 (50-150)	
	5/32, 3/16	10-150	5 (10-50)	#2C
		15, 25 Cwt	5 (50-150)	
	7/32, 1/4	10-150	5 (10-50)	#3
		35, 45 Cwt	5 (50-150)	
TP222G	1/16, 3/32, 1/8	10-300	5 (5-50)	#1
		10-300	10 (60-100)	#2
		10-300	20 (120-300)	#2C
		10-300	20 (120-300)	#3A
TP222H	1/8, 5/32, 3/16, 1/4	40-600	20 (40-600)	#2
		40-600		#2C
		40-600		#3
TP222I	3/16, 7/32, 1/4	40-600	20 (40-600)	#2C
		40-600	50 (30-600)	#3A
TP222J	3/16, 7/32, 1/4	300-1600	50 (300-1600)	#2
		300-1600		#2C
		300-1600		#3A

## Steinel Industrial Heat Guns

### Intellitemp Heat Gun with LED Temperature Display

**Temperature:** Selectable 80°F - 1100°F  
**Airflow:** Up to 28 cfm, 3000 Pa Air Pressure

**LED Display:** Actual and target temperature in 10°F increments

**Power Cord:** Rubber, European plug, double insulated tool

**Output:** 3400 Watts

**Nozzle Dia:** 50 mm

**PN:** HG5000E



### Intellitemp Heat Gun with LED Temperature Display

**Temperature:** Selectable 80°F - 1100°F

**Airflow:** Up to 21 cfm, 3000 Pa Air Pressure

**LED Display:** Actual and target temperature in 10°F increments

**Power Cord:** Rubber, double insulated tool

**Output:** 1750 Watts

**Nozzle Dia:** 40 mm

**PN:** HG4000E



### Ergonomic Heat Gun with Electronic Thermocouple Control

**Temperature:** 80°F - 1100°F

**Airflow:** Up to 15.4 cfm

**LED Display:** 2940 Pa

**Power Cord:** Rubber, double insulated tool

**Output:** 1750 Watts

**Nozzle Dia:** 40 mm

**PN:** HG2300EM



### Ergonomic Heat Gun with Electronic Thermocouple Control

**Temperature:** 120°F - 1100°F

**Airflow:** Up to 14.8 cfm

**Power Cord:** Rubber, double insulated tool

**Output:** 2000 Watts

**PN:** HG2000E



## Steinel Heat Blowers

### Professional Heat Blower

**Temperature:** 200 - 1200 °F (all five keys)

**Airflow:** Up to 23 CFM, adjustable with baffle

**Output:** 1750 watts

**PN:** HB1750

200-300 °F	300-500 °F	500-750 °F	750-1000 °F	1000-1200 °F



### Ultra Heat Blower

**Temperature:** Level 1: 80°F

Level 2: 750°F - 1000°F

**Airflow:** up to 23 CFM, adjustable with baffle

**Output:** 1750 watts

**PN:** SV750



## Steinel Electronic Heat Guns

### ESD Safe Programmable Intellitemp Heat Gun

**Temperature:** 120°F - 1200°F

**Airflow:** Continuously variable 3.6 - 17.6 cfm

**LCD Display**

**Power Cord:** Rubber, European plug, double insulated tool

**Output:** 1600 Watts

**PN:** HG2510 ESD



### Programmable Intellitemp Heat Gun

**Temperature:** 120°F - 1200°F

**Airflow:** Continuously variable 3.6 - 17.6 cfm

**LCD Display**

**Power Cord:** Rubber, European plug, double insulated tool

**Output:** 1600 Watts

**PN:** HG2310 LCD



### Intellitemp Heat Gun With LCD Temp. Display

**Temperature:** 120°F - 1150°F

**Airflow:** 3.6 / 10.6 / 17.6 cfm

**LCD Display**

**Power Cord:** Rubber, European plug, double insulated tool

**Output:** 1500 Watts

**PN:** HL 2010 E



### Variable Temperature Electronic Heat Gun

**Temperature:** 120°F - 1100°F

**Airflow:** 3.6 / 10.6 / 17.6 cfm

**Power Cord:** Rubber, European plug, double insulated tool

**Output:** 1500 Watts

**PN:** HL 1910 E



## Steinel Professional Heat Guns

### Three-Stage Professional Heat Gun

**Temperature:**

A. Cool Air

B. 750°F, 10.0 cfm

C. 1100°F, 15.9 cfm

**Output:** 1400 Watts

**PN:** HL 1810S



### Two-Stage Professional Heat Gun

**Temperature:**

Low 575°F, 8.5 cfm

High 1050°F, 14.8 cfm

**Output:** 1300 Watts

**PN:** HL 1610S





**Steinel Precision Hot Air Tool**

**STEINEL Lite™ Precision Hot Air Tool**

**Temperature:** 750°F increases to 930°F with reducer (included)  
**Airflow:** Up to 28 cfm, 3000 Pa Air Pressure  
**Output:** 300 Watts  
**PN: HG350ESD**



**Steinel Ultra Heat Hot Air Tool**

**Ultra Heat, Dual Temperature Heat Gun**

**Temperature:** Low: 600°F High: 950°F  
**Output:** 1300 watts  
**Power Cord:** Rubber construction, double insulated for safety  
**PN: SV800**



**Ultra Heat, Variable Temperature Heat Gun**

**Temperature:** Up to 1050°F  
**3 Stage Airflow:** Cool air, 140°F  
 Low air  
 High air  
**Output:** 1300 watts  
**Power Cord:** Rubber construction, double insulated for safety  
**PN: SV803**



**Accessories**

**Spreader Nozzles**

Spread hot air over a wide area for drying, stripping paint, shaping plastic, welding bitumen, removing decals, etc.  
**PN: 07011** 50 mm Spreader Nozzle  
**PN: 07021** 75 mm Spreader Nozzle



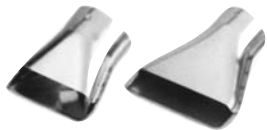
**Reflector Nozzles**

Reflector nozzles direct hot air around pipes and tubing for even heating. Use 9 mm and 14 mm on electronic heat guns only.  
**PN: 07061** 9 mm Reflector Nozzle  
**PN: 07461** 14 mm Reflector Nozzle  
**PN: 07051** 39 mm Reflector Nozzle  
**PN: 07301** 75 mm Reflector Nozzle



**Deflector Nozzles**

Deflector nozzles protect adjoining surfaces from overheating, such as panes of glass and corners.  
**PN: 07031** 50 mm Deflector Nozzle  
**PN: 07041** 75 mm Deflector Nozzle



**Reduction Nozzles**

Provide a concentrated stream of hot air for precision welding or soldering. May be used as a base for specialized attachments. Use on electronic heat guns only.  
**PN: 07062** 9 mm Reduction Nozzle  
**PN: 07071** 14 mm Reduction Nozzle  
**PN: 07081** 20 mm Reduction Nozzle  
**PN: 07511** 40 mm Reduction Nozzle



**Welding Attachments**

Fit onto 9 mm reduction nozzle.  
**PN: 07091** Plastic Welding Tip  
**PN: 07101** 20 mm Lap Welding Slit Tip  
**PN: 07201** 20 mm Rod Welding Slit Tip  
 Fit onto 9 mm reduction nozzle.  
**PN: 07211** 75 mm Teflon Coated butt Welding Heat Disc  
**PN: 07471** 40 mm Lap Welding Slit Nozzle



**Wire Protection Tube**

Wire protection tube offers added safety by preventing accidental contact with hot nozzles.  
**PN: 07401** Fits HG3002, HL2002, HL1802, HL1502  
**PN: 07471** Fits HL 1800



**Wire Protection Tube**

Two varieties of heat gun stands offer the flexibility of hands free operation  
**PN: 01400** Flexible Stand  
**PN: 01410** Metal Stand  
**PN: 01481** Overhead Security Hanger



**Seam Roller**

Designed for lap welding, edging tape and roofing applications.  
**PN: 01250** 50 mm Silicone Seam Roller with Ball Bearings



**Heavy Duty Carrying Case**

Heavy duty case fits HG3002LCD, HL2002LE, HL1802E and HL1502S. This case provides a safe, convenient way to store and transport heat guns and accessories.  
**PN: 40100**

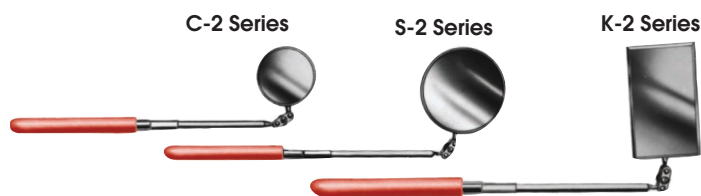


**Plastic Welding Rods**

Five types of top quality plastic welding rods each in 16 piece packages.  
**PN: 07121** HDPE  
**PN: 07311** Rigid PVC  
**PN: 07331** LDPE  
**PN: 07341** PP  
**PN: 07421** ABS



## Inspection Mirrors



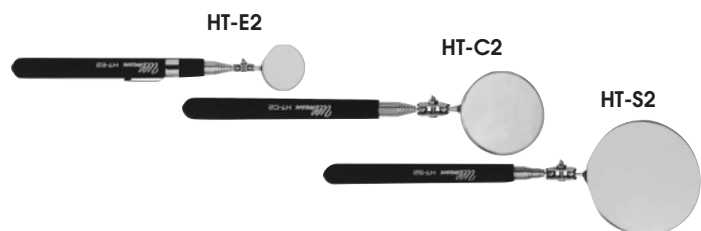
Part No.	Description	Mirror Dia.	Overall length	Extends to
K-2	Rectangular Telescoping Mirror	2-1/8" x 3-1/2"	11-1/4"	15-1/4"
K-2L	Rectangular Telescoping Mirror, extra long handle	2-1/8" x 3-1/2"	17-1/4"	27-1/2"
K-2M	Rectangular Magnifying Telescoping Mirror	2-1/8" x 3-1/2"	11-1/4"	15-1/4"
K-2ML	Rectangular Magnifying Telescoping Mirror	2-1/8" x 3-1/2"	17-1/4"	27-1/2"
C-2	Circular Telescoping Mirror	2-1/4"	10"	14"
C-2L	Circular Telescoping Mirror, extra long handle	2-1/4"	16"	26"
C-2M	Circular Magnifying Telescoping Mirror	2-1/4"	10"	14"
C-2ML	Circular Magnifying Telescoping Mirror	2-1/4"	16"	26"
S-2	Circular Telescoping Mirror	3-1/4"	11"	15"
S-2L	Circular Telescoping Mirror, extra long handle	3-1/4"	17"	27-1/4"

### FEATURES

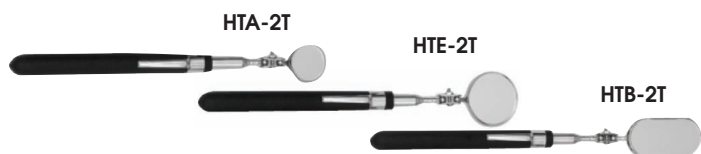
- Replaceable clear glass mirrors for perfect reflection.
- Telescoping and pocket models.
- Non-rotating inner hex rods on telescopic models prevent mirrors from swinging out of alignment when in use.
- Insulating vinyl grip on all models.



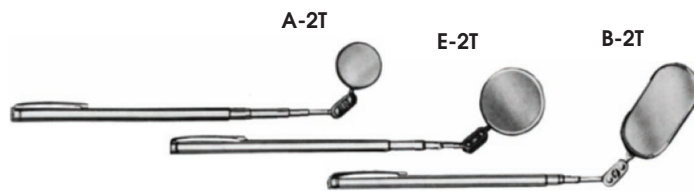
Part No.	Description	Mirror Dia.	Overall length
A-2	Circular Pocket Mirror	7/8"	7-1/2"
A-2M	Circular Magnifying Pocket Mirror	7/8"	7-1/2"
E-2	Circular Pocket Mirror	1-1/4"	8"
E-2M	Circular Magnifying Pocket Mirror	1-1/4"	8"
B-2	Oval Pocket Mirror	1" X 2"	8-1/2"



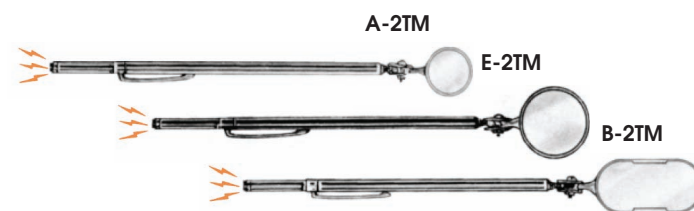
Part No.	Description	Mirror Dia.	Telescopes
HT-E2	Circular Telescoping Inspection Mirror	1-1/4"	6-1/2" to 35"
HT-C2	Circular Telescoping Inspection Mirror	2-1/4"	6-1/2" to 36-3/8"
HT-S2	Circular Telescoping Inspection Mirror	3-1/4"	6-1/2" to 29-1/2"



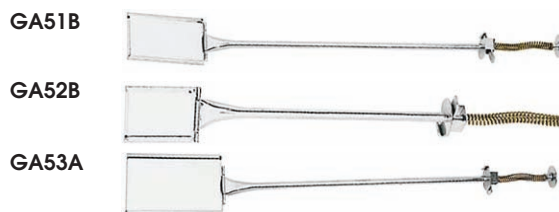
Part No.	Description	Mirror Dia.	Telescopes
HTA-2T	Circular Telescoping Inspection Mirror	7/8"	5-5/16" to 27-1/8"
HTE-2T	Circular Telescoping Inspection Mirror	1-1/4"	5-5/16" to 27-1/2"
HTB-2T	Oval Telescoping Inspection Mirror	1"X2"	5-5/16" to 28-1/4"



Part No.	Description	Mirror Dia.	Extends to	Closes Down to
A-2T	Circular Telescoping Inspection Mirror	7/8"	18"	4-1/2"
E-2T	Circular Telescoping Inspection Mirror	1-1/4"	18-1/2"	4-1/2"
B-2T	Oval Telescoping Inspection Mirror	1"X2"	19-1/2"	4-1/2"



Part No.	Description	Mirror Dia.	Telescopes
A-2TM	Circular Telescoping Inspection Mirror / Magnetic Pick Up Tool	7/8"	5-5/8" to 19-1/2"
E-2TM	Circular Telescoping Inspection Mirror / Magnetic Pick Up Tool	1-1/4"	5-5/8" to 19-7/8"
B-2TM	Oval Telescoping Inspection Mirror / Magnetic Pick Up Tool	1"X2"	5-5/8" to 20-3/4"



Description	Part No.	Overall Length	Mirror Size
Inspection Mirror	GA51B	16-1/2"	1-11/16" X 2-9/16"
	GA52B	11"	1-3/16" X 1-1/2"
	GA53A	16-1/2"	2-5/16" X 3-3/8"



Description	Part No.	Extended Length	Mirror Size
Hinged Mirrors	GA294	15-1/4"	2-1/8" X 3-1/2"
	GA295	14"	2-1/4" Diameter



Description	Part No.	Overall Length	Mirror Size
Telescoping Mirror	UIM125	6-1/2" extends to 35"	1-1/4" Diameter
	UIM225	6-1/2" extends to 35"	2-1/4" Diameter
	UIM325	6-1/2" extends to 29-1/2"	3-1/4" Diameter
	UIM2LM	11-1/2" extends to 51-1/2"	2 1/4" Diameter

**Inspection Mirrors**

PTM143



PTM157



Description	Part No.	Overall Length	Mirror Size
Pocket, Hinged Mirror	PTM143	4-1/2" extends to 17"	1-1/4" Diameter
	PTM147		3/4" Diameter
	PTM157		1" X 2" Oval

**Hinged Mirrors**

TKSS01MIR



Description	Part No.	Overall Length	Mirror Size
Steel, Hinged Mirror	TKSS01MIR	7" extends to 28-1/2"	3-1/8" X 2" Shatterproof

**Lighted Mirrors**

YA5160A



Description	Part No.	Light at base	Mirror Size
Lighted Mirrors	YA5160A	8"	1-1/8" X 2-1/8"

**Flexible Mirrors**

UIM2FL



Description	Part No.	Aluminum Shaft	Mirror Size
Flexible Inspection Mirror	UIM2FL	32"	2-1/4"

**Led Lighted Mirrors**

UIM1LT



UIM2LT



UIM2LTUV



UIM3LT



Part No.	Description	Mirror Dia.	Telescopes
UIM1LT	Led Telescoping Mirrors	1-3/8"	6-3/4" to 35-1/2"
UIM2LT	Led Telescoping Mirrors	2-3/8"	6-3/4" to 37"
UIM2LTUV	Led Telescoping Mirrors	2-3/8"	6-3/4" to 37"
UIM3LT	Led Telescoping Mirrors	3-3/8"	6-3/4" to 30-1/4"

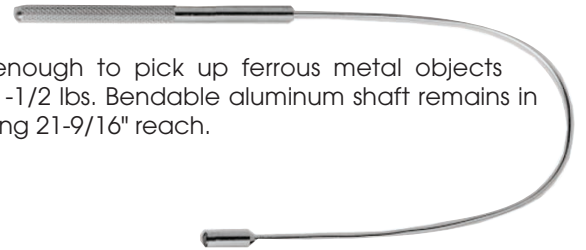
**Magnetic Pick Up Tools**

**Telescoping with Rotating Aluminum Head**



Powerful enough to pick up ferrous metal objects weighing 5 lbs. Ball joint holds aluminum head firmly at any angle. Insulating vinyl grip. Telescopes from 16-3/4" to 26-1/2".  
**PN: 21X**

**Flex Magnet Retrieving Tool**



Powerful enough to pick up ferrous metal objects weighing 1-1/2 lbs. Bendable aluminum shaft remains in position Long 21-9/16" reach.  
**PN: 14X**

**Pocket Magnetic Pick-up Tool**



Powerful enough to pick up ferrous metal objects weighing 1-1/2 lbs. Pencil shaped 6" aluminum handle with handy pocket clip.  
**PN: 8X**

**Magnetic Pick-up Tool**



Telescopes from 16-3/4" to 26-3/4".  
**PN: 1**  
**PN: UIM225**  
 Telescopes from 10-5/8" to 14-5/8".  
**PN: 2**  
**PN: UIM2LM**

**Magnetic Pick-up Tool**



With pocket clip. Overall length 8-1/2".  
 Folds to compact 6" for pocket storage.  
**PN: 3**

**Pocket Telescopic Magnetic Pick-up Tool**



Extends to a full 19-1/2", yet closes down to 4-1/2".  
**No. 4**

**Magnetic Pick-up Tool**

17-1/2" Spring-Flex.

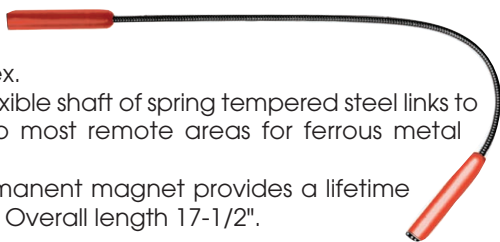
Tightly wound flexible shaft of spring tempered steel links to probe easily into most remote areas for ferrous metal objects.

High power permanent magnet provides a lifetime of pulling power. Overall length 17-1/2".

**PN: 6F**

25" Spring-Flex Magnetic Pick-up Tool Same as 6F but with overall length 25".

**PN: 6FL**

**Magnetic Pick-up Tool Insulated Pocket Magnet**

Made of insulating polypropylene unaffected by oil or gasoline virtually unbreakable. Powerful life-long magnet. Pencil shaped, 6" long. Supplied with pocket clip.

**PN: 9**

**Pocket Telescopic Magnetic Pick-up Tool**

Extends out to 18-1/4".

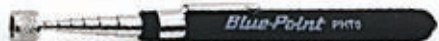
Closes down to convenient 5-3/4" pocket size.

**PN: 10-T**

**Pick Up Tool, Magnetic, Telescopic**

Lifts 2.5 lbs. Chrome plated shaft extends from 5-1/2" to 25-1/2". Black cushion grip will not slip in oily or wet hands. Includes pocket clip.

**PN: PHT5**

**Pick Up Tool, 8-5/8"**

Lifts 1 lb., 8-5/8" long.

**PN: PT10C**

**Pick Up Tool**

Lifts 2 lbs., 16-3/4" long, and extends to 26-3/4". Aluminum head. Probe O.D. is .50".

**PN: PT28E**

**Pick Up Tool, 17" Long, 27" Extended**

Lifts 6-1/2 lbs., 17" long, and extends to 27-1/8".

**PN: PT30C**

**Pick Up Tool, Magnetic, Telescopic, Chrome**

Lifts 6-1/2 lbs., 17" long, and extends to 27-1/8".

**PN: PT5C**

**Pick Up Tool, Magnetic, Telescopic, Blue**

This 5-7/8" tool extends to 25-9/16". Magnet lifts up to 2 lbs. Includes pocket clip. Blue. Lifetime warranty.

**PN: PT5CBL**

**Pick Up Tool, Magnetic.**

Lifts 1 lb. and is 6" long.

**PN: PT7B**

**Pick Up Tool/Scribe, Magnetic**

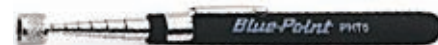
Magnet in one end and a replaceable carbide steel scribe tip at the other. Includes pocket clip. 5" long. Do not use as a prybar or punch.

**PN: 5" PTS5**

**Pick Up Tool, Magnetic, Telescoping.**

Lifts 2 lbs., 6-5/8" long, and extends to 33-1/4".

**PN: UPT15**

**Tool, Flexible Magnetic Pick Up, Power Cap**

29" aluminum shaft can be easily bent at any angle to retrieve dropped metal objects in hard to reach areas. Power cap slides over the magnet and shield its sides from attaching to unwanted metal surfaces. Will pick up 5 lbs. with the power cap. Textured cushion pistol grip will not slip in wet or oily hands.

**PN: UPT2FL**



**Pick Up Tool, Magnetic, Telescoping.**

Lifts 4-1/2 lbs., 6-5/8" long, and extends to 33-1/4".

PN: UPT35



**Pick Up Tool, Magnetic, Telescoping.**

Lifts 10 lbs., 6-5/8" long, and extends to 33-1/4".

PN: UPT50A



**Pick Up Tool, Magnetic, Telescoping.**

Goblet shaped magnetic head pushes the flux to the front of the magnet enabling the user to lift 16 lbs. Head shields the sides of the magnet from attaching to unwanted ferrous surfaces. Telescopes from 9" to 34-1/4" (229 to 870mm). Stainless steel handle is strong, lightweight and inhibits corrosion. Cushion textured pistol grip will not slip in wet or oily hands.

PN: UPT65



**Inspection Lights**

**13 Watt Saf-T-lite Stubby Light**

- 25" 16/3 SJTOW oil resistant, all weather cord.
- 10 AMP rated tool tap in handle.
- Popular model - heavy duty cord.

PN: 2113-2506



**K & H Industrial Quality Portable Work Light**

- Rugged safe & simple to maintain.
- FM approved.
- Replacement parts can be ordered directly from us.
- Tubes & starters are standart.



Part No.	Cord	Diameter	Overall Length
8CC-MIG	13" ( COILED)	1.25"	16"
825-MIG	25" (STRAIGHT)	1.25"	16"
1525T8	25"	2.38"	26.5"
1550T8	50"	2.38"	26.5"

**K & H Hazardous Location**

**Work Lights**

- FM approved cord, ballast & lamp unit\*.
- All aluminum body with specially compoundend bumper guards.
- NEMA 4 watertight.



Part No. Front Exhaust	Part No. Rear Exhaust	HP	RPM (no load)	Shank Diameter Capacity
EP313-16S25	13 Watts	25'	10 lbs.	14-3/4"
EP313-16S60	13 Watts	50'	13 lbs	14-3/4"
EP326-16S25	26 Watts	25'	10 lbs	14-3/4"
EP326-16S50	26 Watts	50'	13 lbs	14-3/4"
EP215-161-25	15 Watts	25'	12.25 lbs.	27"
EP215-161-50	15 Watts	50'	14.5 lbs.	27"

**Metal Halide Lamp 1000W**

- Generate high light levels a compact light source
- Unaffected by ambient temperature - lamps are equally suited for indoor and outdoor use
- Generate 65 - 115 lumens per watt
- Deliver more light with lower electrical power generating requirements resulting in less air pollution



PN: HIE1000W/U/4K 46109

**Video Inspection Scope**

- High resolution remote color camera.
- Autofocus.
- Resolution 320 x 240 pixels.
- 2.5" full color viewing monitor.
- 10mm shaft diameter.
- Waterproof, Flexible Staylok shaft.
- 36" standard shaft length ( 72" also available).
- High output LED illumination.
- 5 hrs operation on 4 AA batteries .
- Mirror and magnet accessories included.
- Video out for optional recording.
- Poly pro storage case.



PN: VS36-10WW

**Video Inspection Scope**

- 320 X 240 Resolution.
- Thumb control for LED intensity.
- 720 x 480 imager resolution.
- 2.4" colour LCD – greater viewing image than eyepiece borescopes.
- Close focus - 0.5" to 12"
- Waterproof video out jack
- Hook, stand and magnets for hands-free use.
- 8mm dia. imager probe, with LED light, fits most spark plug holes.
- 36" flexible waterproof shaft standard.
- Tough storage case protects unit.



PN: BK5500A

## Locking Pliers

- Straight jaw provides maximum contact on flat, square or hex work.
- Curved jaw puts tremendous pressure on four points of any style nut or bolt head.
- Long, straight nose provides easy access in narrow, hard-to-reach places.



Tool	Part No.	Size	Jaw Adjustment
Straight Jaw	10R•	10"	0" - 1-3/4"
	7R•	7"	0" - 1-5/16"
Curved Jaw with Wire Cutter	10WR•	10"	0" - 1-7/8"
	7WR•	7"	0 - 1-1/2"
	5WR•	5"	0" - 1-1/8"
	4WR	4"	0" - 15/16"
Long Nose	9LN•	9"	0" - 2-3/4"
	6LN•	6"	0" - 2"
	4LN	4"	0" - 1-1/2"

• Available with ProTouch handle.

## C-Clamps

- Wide-opening jaw provides greater versatility in clamping a variety of shapes.
- Swivel pads hold tapered work, awkward fabricating jobs and delicate projects without damaging the work surface.



Tool	Part No.	Size	Jaw Adjustment	Throat Depth
Regular Tips	24R	24"	0" - 10"	15-1/2"
	18DR	18"	0" - 7-1/2"	9-1/2"
	18R		0" - 8"	
	11R•	11"	0" - 3-3/8"	2-5/8"
	9DR	9"	0" - 4-1/2"	4-3/4"
	6R•	6"	0" - 2-1/8"	1-1/2"
Swivel Pads	24SP	24"	0" - 10"	15-1/2"
	18SP	18"	0" - 8"	9-1/2"
	11SP	11"	0" - 3-3/8"	2-5/8"
	9SP	9"	0" - 4-1/2"	4-3/4"
	6SP	6"	0" - 2-1/8"	1-1/2"
	4SP	4"	0" - 1-5/8"	1-1/4"

• Available with Fast-Release handle.

## Locking Sheet Metal Tool

- Makes bending, forming and crimping sheet metal jobs easier.



Tool	Part No.	Size	Jaw Adjustment	Jaw Depth	Jaw Width
Sheet Metal Tool	8R	8"	0 - 1/2"	1-3/4"	3-1/8"

## Quick-Grip C-Clamps

- Double rolled thread provides greater clamping pressure.
- Large swivel pad reduces marring on work surface and increases stability.
- Large handle for greater clamping pressure with less effort.



Part number	Clamping Capacity	Throat Depth
DI5101	1"	1-3/16"
DI5102	2"	1-5/16"
DI5103	3"	2-1/4"
DI5104	4"	3"
DI5106	6"	3-1/2"
DI5108	8"	4"

## Spark-Duty™ L-Clamps

Pressure Rating 1000-4800 lbs  
6"-48" Capacity  
Throat Depth 3" - 7"  
Forged Sliding Arm  
Cooper Plated  
Replaceable Parts



## Brute-Force™ C-Clamps

Pressure Rating 5600-40000 lbs  
Throat Depth 0"-16"  
Drop Forged Coating



## Clasic 400 Series™ C-Clamps

Pressure Rating 2000 - 9300lbs  
Throat Depth 0" - 6"  
Drop Forged Coating  
Black Oxide Coating  
Wilton Grip



## Spark-Duty 400 Series™ C-Clamps

Pressure Rating 3500 - 9500lbs  
Throat Depth 0" - 6"  
Drop Forged Coating  
Cooper Plated Spindles



### Carriage C-Clamps

Pressure Rating 350 - 2850lbs  
 Throat Depth 0" - 6"  
 Black Oxide Coating  
 Oscillation Head  
 Sliding Cross Pin Handle



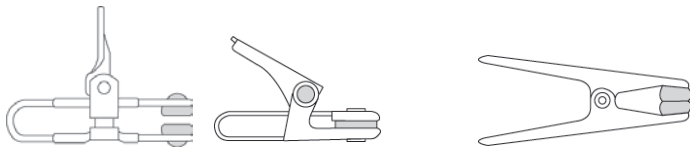
### Super Junior® C-Clamps

Pressure Rating 450 - 1200lbs  
 Throat Depth 0" - 2-1/2"  
 Ductile Iron Frames  
 Compact Design  
 Zinc Plated screw



### Handy Clamps

- Rugged construction.
- Controlled powerful grip.
- Maximum clamping action for edge, flange, bench or wall space.
- Designed for a wide range of materials, thicknesses and shapes.

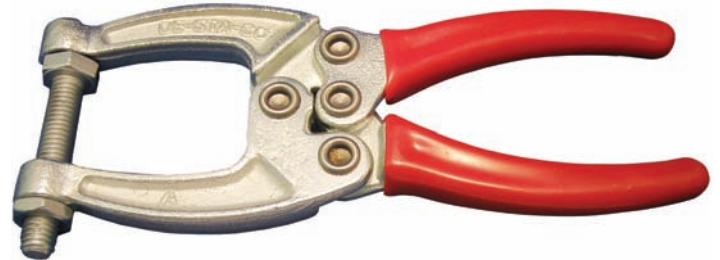


**W-Series** Spring-Wire with Cam Lever Lock  
**S-Series** Flat Spring Steel with Cam Lever Lock  
**T-Series** Spring Grip

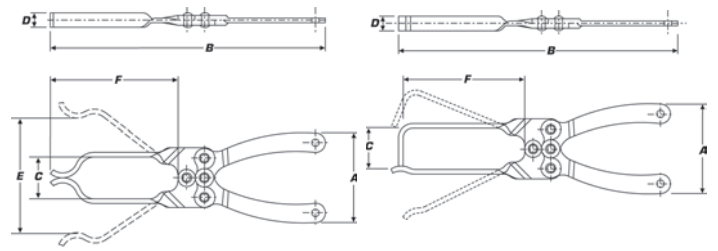
Type	Part No.	Application	Clamping Capacity	Effective Jaw Depth	Body Length
W Series	W-1	Sheet metal, light plastics, etc. Removable rubber pads.	0" - 5/32"	1"	3-1/4"
	W-2	Template clamping, pattern layout, etc. Removable rubber pads.	0" - 5/32"	1-3/8"	3-3/4"
	W-2A	Bonding, cementing fabrics, etc. Removable rubber pads.	1/8" - 3/8"	1-3/8"	3-3/4"
	W-2B	Merchandising display, window dressing, etc. Removable rubber pads.	3/16" - 1/2"	1-3/8"	3-3/4"
	W-2C	Light wood glueing, work clamping, etc. Removable rubber pads.	1/2" - 3/4"	1"	3-3/8"
	W-2D	Clamping cloth to cutting tables, etc. Removable rubber pads.	3/4" - 1"	7/8"	3-1/2"
	W-3	Clamping bags & thin materials to conveyor. Removable rubber pads.	0" - 3/16"	2"	4-3/4"
T Series	T-1	Hand, wall or bench use. handle has attaching holes. Rubber grip pads.	0" - 5/16"	1/2"	2-5/8"
S Series	S-1	Standard 2 jaws. Rubber pads.	0" - 5/32"	1/2"	2-1/8"
	S-2E	Upper jaw only. Slot and holes for attaching to bench or wall.	3/16" - 5/16"	1/2"	2-1/8"
	S-4	Same as S-1 except has double flange holes for attaching. Clamping of wire ends on electrical harness jigs.	0" - 5/32"	1/2"	2-1/8"

### Squeeze Action Plier Clamps

These high strength squeeze action clamps are ideal for all rugged clamping applications. Made from high strength steel. Most medium and heavy-duty squeeze action plier clamps feature a trigger release for easy one-hand opening. All forged models are heat-treated alloy steel, machined to exacting tolerances.

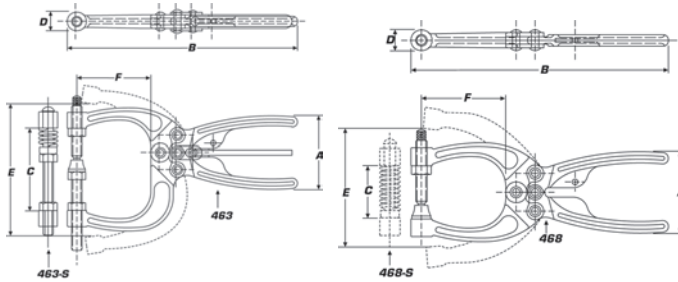


Part No.	Holding Capacity (lbs)	Weight (lbs)	Jaw Opens	Dimensions						
				A	B	C	D	E	F	
420	35 per 1/8" deflection	0.27		2.31	7	1.06	0.38	2.05	3.25	
421					7.19			-		
431	100	0.3		2.41	6.88	0.75	0.46	3.06	2.94	
431-2										
424	200	0.31		1.94	4.5	1	0.5	2.06	1.08	
424-2										
424-AL	100	0.16								
441	350	0.63		1.84	6	1.25		2.86	1.75	
441-2										
441-AL	150	0.22								
443	500	0.75	64°	2.34	6.62	1.25	0.56	-	1.88	
443-2										
453	1000	1.87	88°	2.69	8.5	3		-	2.5	
461	700	1.18		2.63	8.06	0.5		2.69	2.28	
464										0.88
468										1
468-S	75 per spring compression									
462	700	1.13				1.75	0.69	4.1		
462-S	75 per 1/8" spring compression	1.13		2.66	8.47				2.75	
462-2	700									
463										
463-S	90 per 1/8" spring compression	1.19				3		4.75		
474	700			2.66	8.47	3	0.69	4.75	2.75	
474-S	90 per 1/8" spring compression	1								
480	1200 with 2.56" jaw extension	1.31		2.61	6.19	3.75	.63	.23	-	
480-FB					3.13			-		
482	1200	1.75						4.06	2.56	
482-AL	500	0.75								
484	1200	2		2.69	9.06					
484-AL	500	0.88				3.83	0.69	6	2.69	
486	1000	2.31								
486-AL	400	1		2.75	9.06	6		8	2.56	



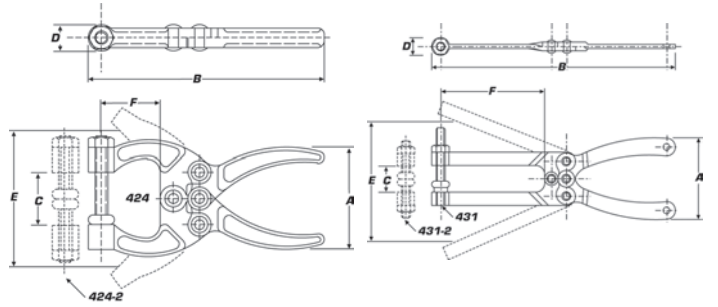
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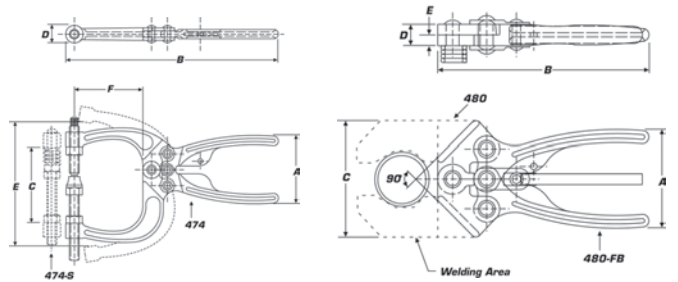
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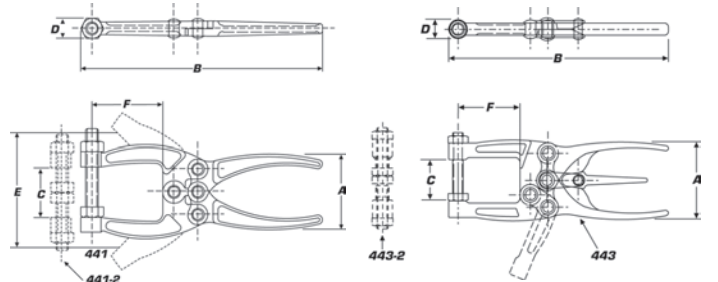
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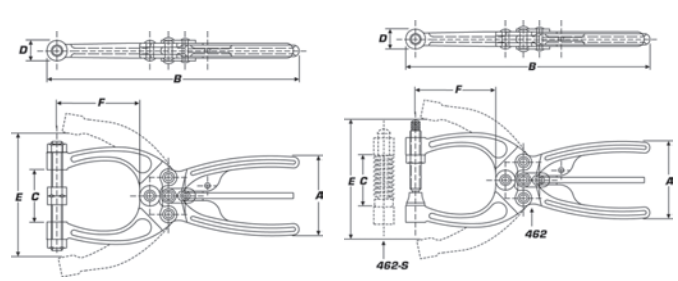
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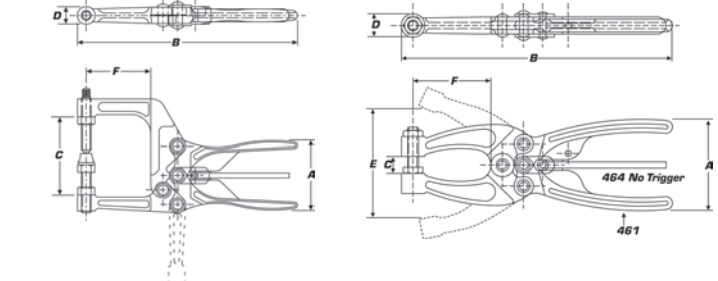
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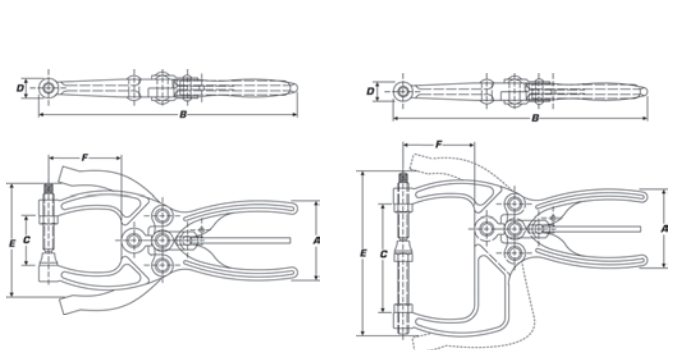
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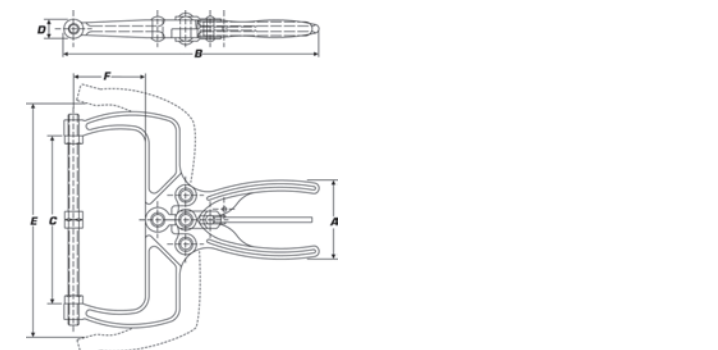
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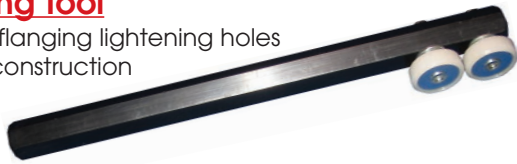
**Divider Tray**

Divide each compartment in half with a simple slide insert.  
**PN: TP840**



**Hole Flanging Tool**

• Ideal tool for flanging lightening holes  
 • Ball bearing construction  
 • Easy to use  
**PN: TP326**



**Noxon Spring Center Punch**

No hammer required. This double ended punch is actually two punches in one, a prick punch on one end and a center punch on the other. Tremendous energy is stored as the lifetime spring is stretched and when the plunger is released, all the energy goes directly to the point. Due to the unique design of the tool, a light blow is directed to the prick punch, and a heavy blow to the center punch.  
**PN: TP294S**



**Wiss Aluminum Snips**

• Reverse clamping pad to use as a spreader.  
 • Soft but durable pads protect work surfaces.  
 • Heat treated steel bar.



Part No. Snip	Part No. Replacement Blad	Cut Length	Overall Length	Weight
W12LMP	W12LRK	3"	12"	1.0 lbs

**Wiss Standard Tinner Snips**

• For cuttin straight cuts, wide curve & notching.  
 • Flat inside edge guides straight line cutting.  
 • Hot forged, molybdenum steel.



Part No.	Cut Length	Overall Length	Weight
A13N	1-3/4"	7"	0.5 lbs
A10N	2- 1/2"	11"	0.9 lbs

**Wiss Duckbill Tinner Snips**

• For Cutting patterns & smooth, tight curves in either direction.  
 • Hot forged, molybdenum.



Part No.	Cut length	Overall Length	Weight
V10N	2- 1/4"	10 - 1/4"	0.6 lbs.
V19N	3"	13"	1.6 lbs

**Wiss Bulldog Pattern Tinner Snips**

• Heavy Duty, high leverage.  
 • For heavy gauge notching, etc.  
 • Hot forged molybdenum alloy steel.



Part No.	Cut Length	Overall Length	Weight
W5N	2-1/2"	16-1/2"	3.8 lbs

**Wiss Light Metal Cutting Snips**

• Polished straight blades.  
 • Superior Hardened edges for cutting light metal.



Part No.	Cut Length	Description	Weight
J7S	Straight	1-1/4"	7"

**Wiss Hand Seamers**

• Makes permanet, tight fitting seams.  
 • Scaled depth marks on jaws are in 1/7" increments.



Part No. Snip	Part No Replacement Blad	Cut Length	Overall Length	Weight
Standart model				
HS1v	3-1/4"	1/4" to 1-1/4"	8-3/4"	1.5 lbs.
Offset Model				
HS2	3-1/4"	1/4" TO 1-1/4"	8-3/4"	1.5 lbs

**Economy Hand Seamer**

• Makes permanent, tight fitting seams.  
 • Strong, lasting construction.



Part No.	Jaw Width	Jaw Depth	Overall Length	Weight
TP44	3-1/4"	1/4" TO 1"	8"	1.5 lbs.

### Wiss Blade Crimper

- Main components are drop forged.
- Spring return handle.



Part No.	Cut length	Overall Length	Weight	Blades
HC3V	1-1/4"	9"	1.0 lbs	3
HC5V	1-1/4"	9"	1.0 lbs	5

### Fluting Pliers

- Designed for work on aircraft components.
- No-mar fluting plier jaws have a special coating that does not scratch surfaces.
- An inexpensive, quality tool.



Part No.	Cut Length	Overall Length	Weight
TP162	.39 lbs	8"	No-Mar Larger Flute
TP722	.40 lbs	9-1/2"	Narrow type fluting Plier

### Wiss Hand Notcher

- Makes clean 30° v-shaped chuts in sheet metal.



Part No.	Blades & Jaw Width
HN1V	1-3/16"

### Line Clamp Pliers

- Simultaneously hold the clamp bolt, compress line clamp(s) & retain them.
- Up to three clamps on one assembly are held in position by retaining pawl.
- More than three clamps or clamps with spacers can also be handled manually.



Part No.	For Use with
AIT82	Clamps or studs anchored on flat surfaces. #10 hHex Head.
AIT83	Tubes or wires clamped together w/point of screw on back of clamp.
AIT84	

### Milbar Connector Plug Plier

Manufactured of high carbon steel and heat treated for long life. Four position pivot allows full range capacity from 3/4" to 2-1/2". Soft padded jaws will not mar connector plugs.

PN: DL 346



### A-N Electrical Connector Plug Plier

Four position pivot for full range of use from 1/2" to 2-1/2". Padded handles for comfort. 10" overall length. Soft grip jaws are slightly serrated and are easily replaced.

PN: DL 345



### Camloc Pliers

- For Camloc fasteners.
- With black-ox coating.



Part No.	For Use With
4P3	2600, 2700 & 4002 Stud Series.

### Retaining Ring Pliers Quick Switch

- Convert between internal and external with a quick flip of a switch.
- A once relatively time consuming and complicating process is made easy by eliminating the jaw aligning pushpin process.
- Double-dipped custom grip made of low-temp high-impact material for comfort and durability.
- Spring return handles.
- Each pliers include a tip kit containing five pairs and allen wrench, all stored in a handy pouch.
- Also included are a set of thumbscrews that can be screwed in quickly for light-duty applications.
- Most user-friendly convertible pliers on the market.
- Will replace 10 or more for any single competitor's pliers.



Mode 1421  
with Adjustable Stop

INTERNAL	EXTERNAL
3/4" 1"	1/8" 2"
7mm 26mm	3mm 26mm



Mode 1434

INTERNAL	EXTERNAL
3/8" 2"	1/4" 2"
10mm 51mm	7mm 51mm

1421 Tips	SAE	Metric
Straight	.023", .036", .047"	.6mm, .9mm, 1.2mm
Bent	.036", .047"	.9mm, 1.2mm

1434 Tips	SAE	Metric
Straight	.036", .047", .070"	.9mm, 1.2mm, 1.8mm
Bent 90	.036", .047"	.9mm, 1.2mm

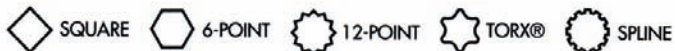
PN: HIT1421  
PN: HIT1434

### 5- Pc. Multi-Fastener Box Wrench Sets

- Capable of working on 7 different fastener configurations and 61 fastener sizes in a set of five wrenches.
- Heat-treated and chrome-plated for durability and appearance.



Spline	SAE 6-PT	Metric 6-pt	SAE 12-pt	Metric 12-pt	TORX®	Square
8	1/4		1/4		E8	
10	5/16	8	5/16	8	E10	
12	3/8		3/8		E12	5/16
14	7/16	11	7/16	11	E14	3/8
16	1/2	13	1/2	13	E16	
18	9/16	14	9/16	14	E18	
20	5/8	16	5/8	16	E20	1/2
22	11/16	17	11/16	17	E22	9/16
24	3/4	19	3/4	19	E24	5/8
28	7/8	22	7/8	22	E28	



PN: 5433 (flat)  
PN: 5434 (offset)

### Metal Forming Shot Bag

Stretch metal without nicks or gouges with this pliable 3/4 oz. top grain cowhide bag. This double-stitched bag fills through a 1" opening sealed with velcro. The filled bags give you a surface to pound sheet metal into, absorbs the hammer blows and give smooth results. The bag is 12" round or 8" x 1-1/2" thick and is easy to use with minimum practice. Shot is not supplied with bag.



Part No.	Description
TPA5526	12" Diameter
TPA5526-8	8" Diameter

### Bossing Mallets

- Use with a shot bag to shape aluminum or AK steel without the handle striking the edge of your workpiece.
- Non-marring plastic for long life and sturdy hickory handles.
- Made in the USA.



Part No.	Small Radius	Large Radius	Diameter	Hed Legth	Weight
TPA5522	3/4"	1-3/4"	2-3/4"	8"	23 oz.
TPA5522-1	1/2"	2-1/4"	2-1/4"	7"	11.7 oz.
TPA5522-2	1"	3"	3"	7"	26 oz.

### No-Mar Hammers

- Replaceable vinyl screw-on tips, one through & one medium.
- Hickory wood handle with an aluminum head.
- Meets all relevant government specs.
- Hammers supplied-1 (green) and -2(red).



Part No.	Head Size	Overall Length	Weight
770A	1"D x 3-1/2"	11"	6 oz
772A	1-1/2" D x 4" 1/2" L	12"	14 oz
774A	2" D x 5"L	13"	25 oz.

Replaceable Screw-On Tips				
Type & Color	Material	Part No. 1" Dia.	Part No. 1-1/2" Dia.	Part No. 2" Dia.
Tough (green)	Vinyl	771-1	773-1	775-1
Medium (red)	Vinyl	771-2	773-2	775-2
Soft (brown)	Vinyl	771-3	773-4	775-3
Med. Hard (cream)	Nylon	771-4	773-4	775-4
Hard (black)	Nylon	771-5	773-5	775-5

### Knives And Blades

#### Round Aluminum Handle



5/16" x 4 3/4" L with 4 jaw machined aluminum chuck for secure blade positioning.

PN: K1

#### Medium Duty Round Aluminum Handle



7/16" x 4 3/4" L with 4 jaw machines aluminum chuck for secure blade positioning.

PN: K2

#### Super Sharp Straight Edge Blade

Size: 1 3/4" x 3/8" x 1 1/8" Edge.

PN: 22602



#### Deburring Blade

Size: 1 1/2 x 3/8" x 3/4" Edge.

PN: 10024



#### Large Chisel Blade

Size: 1 3/16" x 3/8" x 5/8" Edge.

PN: 22618



## Metal Working Hammers &amp; Dolly

	Part No.	Type	Description
	<b>150G</b>	Dinging Hammer	For dender & high- crowned panel dinging or bumping. Both high & low-crown faces for "on or off" dolly work. Faces, 1-1/4" and 1-3/16". Round head, 6" overall. Weight 1.04 lbs.
	<b>153G</b>	Cross Chisel Hammer	Excellent for finishing. Cross peen used for working in sharp corners around mouldings and for caulking. Round face 1-3/16". Chisel - 3" long. Weight .87 lbs.
	<b>153GB</b>	Curved Cross Chisel hammer	Excellent for finishing. Cross peen used for working in sharp corners around mouldings and for caulking. Round face 1-9/16". Chisel - 3" long. Weight .87 lbs.
	<b>153S</b>	Cross Chisel Shrinking Hammer	Cross grooved. Extra wide faces are cross grooved & used for shrinkage on large surface - chisel and used on sharp corners. Flat round face - 1-9/16". Chisel - 3" long. Weight .87 lbs.
	<b>158G</b>	General Purpose Pick Hammer	Medium size point and reach for general work. Low crown strawberry point for perfect balance. Face - 1-9/16" round point, 3/32" radius. Length of pick end - 3/4". Weight .91 lbs.
	<b>161G</b>	Dinging Hammer	Short-reach, lightweight. One low-crown, square face. Lightest dinging hammer in line. Faces - 1-9/16" round point, 3/32" radius. Length of pick end -3-3/4". Weight .83 lbs.
	<b>162G</b>	Shrinking Hammer	For work in close quarters. Expertly machined serrations on the round face. Plain squared face - 1-9/16" round point, 3/32" radius. Length of pick end -3-3/4". Weight .83 lbs.
	<b>169G</b>	Large Face Pick Finishing Hammer	For finishing & caulking. Round face - 1-7/8" diameter 4-1/2" overall head length 13" handle. Weight 1.0 lbs.
	<b>1058</b>	Toe Dolly	Thinness & length provide easy accessibility to narrow pockets. Large, flat face is frequently used in shrinking & dinging flat panels. Then flat sides furnish a convenient anvil for repairing flanges. Sizes 4-3/4" x 2-3/8" x 1-1/8" Weight 3.0 lbs.
	<b>1058S</b>	Shrinking Dolly (Serrated)	Shaped like toe dolly but has one face covered with raised serrations for shrinking metal stretched by dents. Weight 3.4 lbs.
	<b>1059</b>	Hell Dolly	Design makes it possible to reach easily, non-sharp corners & wide radius. These features are exclusive to the Hell Dolly & continue its high demand. Sizes 3-1/4" x 2-1/2" x 1-7/16" Weight 2.7 lbs.
	<b>1060</b>	General Purpose Dolly	Provides convenient & comfortable hand hold during heaviest blows. Weight, balance & several differently crowned working faces, together with two beading & flange lips, give this dolly broad general use. Sizes, 2-7/8" x2-3/8" x2-1/4". Weight 3 lbs.
	<b>1067</b>	Wedge Dolly	Long, slender general purpose dolly. Widely favored by many body repair men for all-around use. The long, thin lip is very useful in working behind reinforcements. Sizes 5-3/4" 2-3/8" x 2-3/16" Weight 4 lbs.

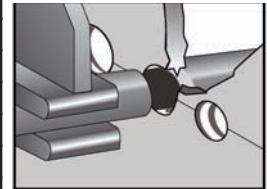
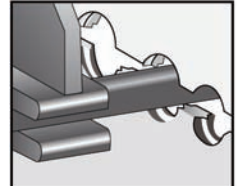
## Custom Stripmaster Wire Strippers

- Strips 30 through 10 AWG solid or stranded wire.
- Die-Type blades allow precision stripping.
- Counter-bored holes sized to insulation and inner stripping hole sized to conductor.
- Counter-bored holes precisely center conductor to prevent unwanted conductor contact.
- Replaceable Grippers.
- Optional short stop latch and transparent wire stop.
- Cushioned, comfort grip handles.
- Custom Stripmaster Life is 3/4's the size of Custom Stripmaster Wire Stripper and strips 16 through 30 AWG solid or stranded wire.
- Requires one-third less hand pressure for each strip actuation.
- MIL-spec blades assure accuracy and precision.
- Engineering Service and made-to-order blades available.



ELECTRICAL / ELECTRONICS, HAND TOOLS

Specifications - Cutting Hole Diameter / Counterbore Diameter (Inches)													
Stripper Cat. No.	Blade Only Cat. No.	Wire Size AWG											
		30	28	26	24	22	20	18	16	14	12	10	
For Type E Teflon (660V)													
45-176	L-5559									.076/.0935	.096/.113	.119/.136	
45-177	L-5560			.023/.039	.028/.043	.034/.052	.042/.0595	.052/.070	.061/.081				
45-178	L-5561	.016/.032	.019/.035	.023/.039									
For Type EE Teflon (1000V)													
45-173	L-5562									.076/.104	.096/.125	.119/.144	
45-174	L-5563			.023/.0465	.028/.055	.034/.0595	.042/.067	.052/.0785	.061/.089				
45-175	L-5564	.016/.042	.019/.043	.023/.0465									
For other Misc. insulation													
45-170	L-5210									.076/.113	.0937/.138	.116/.154	
45-171	L-5211			.022/.052	.0292/.0595	.035/.0635	.042/.073	.052/.086	.062/.096				
45-172	L-5436	.016/.037	.020/.040	.024/.043									
For Wire Wrap and Other Thin Insulated Wire													
45-179	L-7625	.012/.020	Three identical holes										
45-169	L-9300	.012/.019	.14/.023	.018/.025	.024/.033	Solid Wires							



Tolerances: Cutter Dia.: .001; Counter-bore Dia.: .002.  
The 45-170 Series is a Custom Stripmaster Wire Stripper frame without the short stop latch and wires stop.

45-169 through 45-188 include grit-type pads (standard).  
45-369 through 45-388 include file-type pads.  
45-469 through 45-488 include parallel-type pads.

**Coaxial Cables: Two-step strip for termination, jacket and dielectric.**

Specifications - Cutting Hole Diameter / Counterbore Diameter (Inches)												
Stripper Cat. No.	Blade Only Cat. No.	mm Nom.										
		0.05	0.08	0.13	0.2	0.22	0.5	1.0	1.5	2.5	4.0	6.0
For Type E Teflon (660V)												
45-176	L-5559									1.93/2.37	2.44/2.87	3.02/3.45
45-177	L-5560			.584/.98	.711/1.09	.863/1.32	1.07/1.5	1.33/1.78	1.55/2.06			
45-178	L-5561	.406/.813	.482/889	.584/.99								
For Type EE Teflon (1000V)												
45-173	L-5562									1.93/2.64	2.44/3.17	3.02/3.6
45-174	L-5563			.584/1.17	.711/1.39	.863/1.5	1.07/1.70	1.33/1.99	1.55/2.49			
45-175	L-5564	.406/1.07	.482/1.09	.584/1.17								
For other Misc. insulation												
45-170	L-5210									1.93/2.87	2.38/3.45	2.94/3.91
45-171	L-5211			.560/1.33	.736/1.5	.889/1.61	1.07/1.85	1.33/2.18	1.57/2.44			
45-172	L-5436	.406/940	.508/1.01	.609/1.09								
For Wire Wrap and Other Thin Insulated Wire												
45-179	L-7625	.305/.508	Three identical holes									
45-169	L-9300	.305/.482	.356/.584	.457/635	.609/.838							

## Custom Stripmaster Lite Wire Strippers

Especifications - Cutting Hole Diameter / Counterbore Diameter (Inches)											
StripperWire Size AWG											
Cat. No.	Blade Only Cat. No.	30	28	26	14	22	20	18	16		
		MIL-W-16878 Type E 600V Teflon Wire									
45-638	LB-916					.034/.052	.042/.0595	.052/.070	.061/.081		
45-639	LB-919			.023/.039	.028/.043	.034/.052	.042/.0595				
45-640	LB-920	.016/.032	.019/.035	.023/.039	.028/.043						
MIL-W-16878 Type EE1000V Teflon Wire											
45-635	LB-915					.034/.0595	.042/.067	.052/.0785	.061/.089		
45-636	LB-916			.023/.0465	.028/.055	.034/.0595	.042/.067				
45-637	LB-917	.016/.042	.019/.043	.023/.0465	.028/.055						
General Puposue											
45-632	LB-912					.035/0635	.042/.073	.052/086	.062/.096		
45-633	LB-913			.022/.052	.0292/.0595	.035/.0635	.42/.073				
45-634	LB+914	.016/.037	.020/.040	.024/.043	.0292/.0595						
Wire Wrapping (Thin Insulation Solid Wire)											
45-641	LB-921	.012/.020	Four holes, same size								
45-631	LB-911	.012/.019	.014/.023	.018/.025	.024/.033	Solid Wires					



## Stripmaster and Stripmaster Lite Wire Strippers

- One-step stripping enhances productivity.
- Spring-action motion increases leverage and reduces operator fatigue.
- Precision-ground, knife-type blades provide clean, accurate stripping.
- Sturdy die cast frame provides long-term durability.
- Wire gripper holds wire securely in position.
- Stripmaster Lite designed for smaller hands - 3/4 the size of the standard Stripmaster.

### Stripmaster Wire Strippers and Knife-Type Blades

		Specifications - Stripping Hole Diameter (Inches)												
Cat. No.	Blade Only Cat. No.	Wire Size AWG												
		30	28	26	24	22	20	18	16	14	12	10	8	
45-090 OR 45-290	L-4419											.106	.141	.159
45-091	L-4420								.073	.073	.085	.105	.144	
45-092 OR 45-292	L-4421					.048	.048	.061	.072	.090	.113	.144		
45-093	L-4422					.039	.039	.061	.072	.090				
45-097	L-4994			.025	.032	.039	.048	.061	.072					
45-098	L-5361	.016	.021	.026	.032	.039	.048						.167	.198
45-099	L-8763							.055	.062					

### Stripmaster Lite Wire Strippers and Knife-Type Blades

		Specifications - Stripping Hole Diameter (Inches)												
Cat. No.	Blade Only Cat. No.	Cutting Edge	Wire Size AWG											
			20/22	16/18	30	28	26	24	22	20	18	16	14	12
45-671	LB-1001									.039	.048	.061	.072	
45-672	LB-1002			.016	.021	.026	.032							
45-673	LB-1003									(All stranded wire)	.061	.072	.090	.113
45-674	LB-1004					(12 & 14 Solid wire, 16 & 18 Stranded wire)				.061	.073	.085	.096	
45-675	LB-1005	.250 Wide	.048	.072										

### Coax Stripmaster Wire Strippers and Blades

Repl. Blade Cat. No.	Cat. No.	Description	Coax Cable Type (RGU)
LB-740	45-262	Coax Stripmaster for RG-6	RG-6
LB-742	45-264	Coax Stripmaster for RG-58	RG-58
LB-743	45-265	Coax Stripmaster for RG-59	RG-59
LB-744	45-266	Coax Stripmaster for RG-62	RG-62
LA-3953	45-282	Coax Stripmaster for RG-6 QuadShield	RG-6 QuadShield

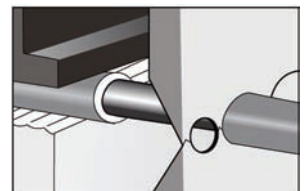
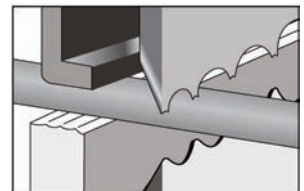
Coaxial Cables: Two-step strip for termination, jacket and dielectric.

### Stripmaster Wire Strippers with Rectangular Holes

Replacement Blades (Pair) Cat. No.	Cat. No.	Description
LB-1155	45-270	For Flat Telephone Cable
L-8762	45-089	For European Flat Lamp Cord
L-4452	45-095*	For SP-SPT Lamp Cord

\* Also strips 2- and 3- conductor low-voltage wire used in G.E. and Touchplate remote control wiring system

Cat. No.	Optional Accessories
L-5270	Transparent adjustable wire Stop (for stripmaster wire stripper)
LB-1195	Transparent adjustable wire stop (for stripmaster lite wire strippers)



## Daniels Standard Adjustable Crimp Tool

The Daniels AF8 qualified to MIL-DTL-22520/1, has virtual limitless application within the specified wire range of 12 through 26 AWG. Over a thousand turret heads are available to adapt the tool frame to your specific military or proprietary contact/wire combination. The 8 impression crimp, which is standard in the AFB, assures absolute maximum tensile strength with almost every closed barrel contact. In addition, special indent configurations are available upon request.



Military P/N	DMC P/N	Description	NSN
M22520/2-01	AFM8	TOOL FRAME	5120-01-335-8572
M22520/2-02	K1S	POSITIONER	5120-01-335-8592
M22520/2-03	K60S	POSITIONER	5120-01-335-8593
M22520/2-04	K151	POSITIONER	5120-01-335-8594
M22520/2-05	K3	POSITIONER	5120-01-335-8595
M22520/2-06	K41	POSITIONER	5120-01-335-8624
M22520/2-07	K40	POSITIONER	5120-01-335-8625
M22520/2-08	K13-1	POSITIONER	5120-01-335-8626
M22520/2-09	K42	POSITIONER	5120-01-335-8627
M22520/2-10	K43	POSITIONER	5120-01-335-8628
M22520/2-11	K287	POSITIONER	5120-01-335-8629
M22520/2-12	K286	POSITIONER	5120-01-335-8630
M22520/2-13	K338	POSITIONER	5120-01-335-8631
M22520/2-14	K340	POSITIONER	5120-01-335-8632
M22520/2-15	K341	POSITIONER	5120-01-335-8633
M22520/2-16	K339	POSITIONER	5120-01-335-8634
M22520/2-17	K342	POSITIONER	5120-01-335-8635
M22520/2-18	K343	POSITIONER	5120-01-335-8636
M22520/2-19	K330-2	POSITIONER	5120-01-335-8637
M22520/2-20	K331-2	POSITIONER	5120-01-335-8638
M22520/2-21	K332-2	POSITIONER	5120-01-335-8609
M22520/2-22	K212	POSITIONER	5120-01-335-8610
M22520/2-23	K267	POSITIONER	5120-01-335-8611
M22520/2-24	K75S-1	POSITIONER	5120-01-335-8612
M22520/2-25	K261-1	POSITIONER	5120-01-335-8613
M22520/2-26	K262-1	POSITIONER	5120-01-335-8614
M22520/2-27	K269-1	POSITIONER	5120-01-335-8615
M22520/2-28	K373-1	POSITIONER	5120-01-335-8616
M22520/2-29	K372-1	POSITIONER	5120-01-335-8617
M22520/2-30	K404	POSITIONER	5120-01-335-8618
M22520/2-31	K406	POSITIONER	5120-01-335-8619
M22520/2-32	K496	POSITIONER	5120-01-335-8620
M22520/2-33	K74S	POSITIONER	5120-01-335-8621
M22520/2-34	K323	POSITIONER	5120-01-335-8622
M22520/2-35	K532-1	POSITIONER	5120-01-335-8623
M22520/2-36	K473	POSITIONER	5120-01-335-8596
M22520/3-1	G125	GAGE	5220-00-165-7604
M22520/1-01	AF8	TOOL FRAME	5120-01-335-8571
M22520/1-02	TH1A	TURRET	5120-01-335-8834
M22520/1-03	TH4	TURRET	5120-01-335-8835
M22520/1-04	TH163	TURRET	5120-01-335-8836
M22520/1-05	UH2-5	UNIVERSAL POSITIONER	5120-01-335-8583
M22520/1-06	TP45	POSITIONER	5120-01-335-8584
M22520/1-07	TP85	POSITIONER	5120-01-335-8585
M22520/1-08	TH199S	TURRET	5120-01-335-8837
M22520/1-09	TP360	POSITIONER	5120-01-335-8586
M22520/1-10	TP365	POSITIONER	5120-01-335-8587
M22520/1-11	TP465	POSITIONER	5120-01-335-8588
M22520/1-12	TH270	TURRET	5120-01-335-8838
M22520/1-13	TH285	TURRET	5120-01-335-8839
M22520/1-14	TH286	TURRET	5120-01-335-8840
M22520/1-15	TP485	POSITIONER	5120-01-335-8589
M22520/1-16	TP513	POSITIONER	5120-01-335-8590
M22520/1-17	TP651	POSITIONER	5120-01-335-8591

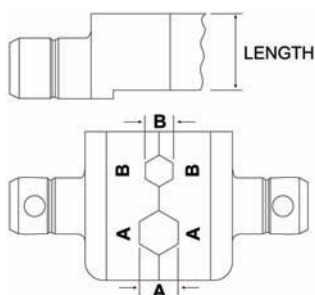
## Open Frame Crimp Tools

The Daniels HX4 and HX3 series crimp tools feature a system of interchangeable dies which eliminate the need of separate fixed die crimp tools for each and every different application. Many maintenance and manufacturing concerns have standardized on one of these models, thus eliminating the cost associated with maintaining and calibrating bulky inventories of single purpose tools.

PN: M22520/5-01 (HX4)

PN: M22520/10-01 (HX3)

TYPICAL DIE SET



DIE P/N			DIE CLOSURE DIMENSIONS			
DMC P/N	MILITARY P/N	NATIONAL STOCK NO.N.S.N.	A HEX.	LENGTH	B HEX.	LENGTH
HX4	M22520/5-01	5120-01-335-8575	Crimp Tool Frame			
Y200P	M22520/5-02	5120-01-335-8244	.091	.090	.068	.270
Y196	M22520/5-03	5120-01-335-8245	.128	.325	.105	.325
Y152	M22520/5-04	5120-01-335-8246	.138	.090	.118	.270
Y197	M22520/5-05	5120-01-335-8247	.213	.325	.178	.325
Y203	M22520/5-06	5120-01-335-8248	.128	.094		
Y195	M22520/5-07	5120-01-335-8249	.255	.325		
Y215	M22520/5-08	5120-01-335-8250	.128	.375		
Y204P	M22520/5-09	5120-01-335-8251	.178	.400	.068	.093
Y189	M22520/5-10	5120-01-335-8252	.160	.400		
Y205P	M22520/5-11	5120-01-335-8253	.213	.400	.068	.093
Y206P	M22520/5-13	5120-01-335-8254	.255	.400	.068	.093
Y207P	M22520/5-15	5120-01-335-8255	.263	.400	.068	.093
Y193	M22520/5-17	5120-01-335-8256	.118	.375		
Y142	M22520/5-19	5120-01-335-8257	.255	.400	.213	.400
Y149	M22520/5-21	5120-01-335-8258	.475	.400		
Y145	M22520/5-23	5120-01-335-8259	.384	.400		
Y110P	M22520/5-25	5120-01-335-8260	.429	.400	.100	.120
Y151	M22520/5-27	5120-01-335-8261	.532	.400		
Y109P	M22520/5-29	5120-01-335-8262	.324	.400	.100	.120
Y150	M22520/5-31	5120-01-335-8263	.501	.400		
Y136	M22520/5-33	5120-01-335-8264	.343	.400	.105	.400
Y137	M22520/5-35	5120-01-335-8265	.324	.400	.128	.400
Y138	M22520/5-37	5120-01-335-8266	.314	.400	.151	.400
Y139	M22520/5-39	5120-01-335-8267	.309	.400	.160	.400
Y140	M22520/5-41	5120-01-335-8268	.290	.400	.178	.400
Y141	M22520/5-43	5120-01-335-8269	.268	.400	.197	.400
Y143	M22520/5-45	5120-01-335-8270	.231	.400	.218	.400
Y144	M22520/5-47	5120-01-335-8271	.359	.400		
Y146	M22520/5-49	5120-01-335-8292	.401	.400		
Y147	M22520/5-51	5120-01-335-8293	.431	.400		
Y148	M22520/5-53	5120-01-335-8294	.454	.400		
Y102	M22520/5-55	5120-01-335-8295	.324	.400		
Y209P	M22520/5-57	5120-01-335-8296	.213	.400	.100	.120

DIE P/N			DIE CLOSURE DIMENSIONS			
DMC P/N	MILITARY P/N	NATIONAL STOCK NO.N.S.N.	A HEX.	LENGTH	B HEX.	LENGTH
Y208P	M22520/5-59	5120-01-335-8297	.255	.400	.100	.120
Y178	M22520/5-61	5120-01-335-8298	.429	.400		
Y314P	M22520/5-63	5120-01-335-8299	.263	.400	.091	.090
Y501	M22520/5-100	5120-01-335-8300	Pre-Insulated Terminal Crimp 26-10AWG			
Y527	M22520/5-101	5120-01-335-8301	Pre-Insulated Splice Crimp 26-20AWG			
Y539	M22520/5-102	5120-01-335-8302	Splice Crimp 12-16AWG			
Y540	M22520/5-103	5120-01-335-8303	Splice Crimp 16-26AWG			

DIE P/N			DIE CLOSURE DIMENSIONS			
DMC P/N	MILITARY P/N	NATIONAL STOCK NO .N.S.N.	A HEX.	LENGTH	B HEX.	LENGTH
HX3	M22520/10-01	5120-01-335-8582	Crimp Tool Frame			
X115S	M22520/10-02	5120-01-335-8304	.091	.090	.068	.270
X103	M22520/10-03	5120-01-335-8305	.255	.325		
X123	M22520/10-04	5120-01-335-8277	.138	.090	.118	.270
X101	M22520/10-05	5120-01-335-8278	.128	.325	.105	.325
X125	M22520/10-06	5120-01-335-8279	.160	.400		
X102	M22520/10-07	5120-01-335-8280	.213	.325	.178	.325
X140	M22520/10-08	5120-01-335-8281	.128	.093		
X129	M22520/10-09	5120-01-335-8282	.118	.327		
X136	M22520/10-10	5120-01-335-8283	.128	.375		
X225	M22520/10-11	5120-01-335-8284	.105	.400		
X118	M22520/10-13	5120-01-335-8285	.128	.400		
X226	M22520/10-15	5120-01-335-8286	.151	.400		
X149	M22520/10-17	5120-01-335-8287	.178	.400		
X147	M22520/10-19	5120-01-335-8288	.197	.400		
X144	M22520/10-21	5120-01-335-8289	.213	.400		
X155	M22520/10-23	5120-01-335-8290	.218	.400		
X156	M22520/10-25		.231	.400		
X187	M22520/10-27	5120-01-335-8291	.255	.400		
X515	M22520/10-100	5120-01-335-8272	Terminal/Splice Crimp 12-10 AWG			
X511	M22520/10-101	5120-01-335-8273	Terminal/Splice Crimp 26-14 AWG			
X525	M22520/10-102	5120-01-335-8274	Terminal/Splice Crimp 26-20 AWG			
X527	M22520/10-103	5120-01-335-8275	Splice Crimp 16-12 AWG			
X528	M22520/10-104	5120-01-335-8276	Splice Crimp 26-16 AWG			



**Safe T Cable®**

**Adjustable Tension Hand Tool Series**



**Pre-Set Tension Hand Tool Series**



**Pneumatic Application Tool Series**



**Battery Powered Tool Series**



Description	DMC Part Number	Cable Diameter	Nose Length	
ADJUSTABLE TENSION HAND TOOL SERIES	SCTR203	0.022	3 Inches	
	SCTR207	0.022	7 Inches	
	SCTR323	0.032	3 Inches	
	SCTR327	0.032	7 Inches	
	SCTR403	0.04	3 Inches	
	SCTR407	0.04	7 Inches	
PRE-SET TENSION HAND TOOL SERIES	SCT203	0.022	3 Inches	
	SCT207	0.022	7 Inches	
	SCT323	0.032	3 Inches	
	SCT327	0.032	7 Inches	
	SCT403	0.04	3 Inches	
	SCT407	0.04	7 Inches	
PNEUMATIC APPLICATION TOOL SERIES	Adjustable	Pre-Set		
	SCTRP203	SCTP203	0.022	3 Inches
	SCTPR207	SCTP207	0.022	7 Inches
	SCTRP323	SCTP323	0.032	3 Inches
	SCTPR327	SCTP327	0.032	7 Inches
	SCTPR403	SCTP403	0.04	3 Inches
	SCTPR407	SCTP407	0.04	7 Inches
BATTERY POWERED APPLICATION TOOL SERIES	SCTE625	0.062	5 Inches	
	SCTE629	0.062	9 Inches	

**Safe-T-Cable®**



The pre-assembled cables have a square formed end cap securely attached to one end. This provides a positive stop when threaded through a fastener. The other end is electrically fused such that it will easily thread through the series of fasteners that are to be secured. The flexible cable material is lightweight and easy to handle. The stainless steel materials will not corrode or deteriorate while in use. All Safe-T-Cable® kits and assemblies are supplied 50 pieces per package.

**Safety-Wire Pliers**



Size	Part No.
6"	13999
9"	13997

**Aircraft Safety-Wire**



Size	Length	Part No.
.020	840 ft.	17202
.032	362 ft.	17200
.041	221 ft.	17201

## Installing and Removal Tools

DMC installing and removal tools are of proven high quality and reliability. In addition to the tools listed in the reference table, we have many more for other connectors applications. Contact us for details.



MIL-I-81969/#	Superceded Military #	MIL-I-81969/#	Superceded Military #	MIL-I-81969/#	Superceded Military #
1-01	MS3156-22	11-01	M28731/22-01	19-09	MS24256R12
1-02	MS3156-20	13-01	M28731/21-01	19-10	MS24256RH20
	M24308/18-2	14-01	MS27534-22D	19-11	MS24256RH16
1-03	MS3156-16	14-02	MS27534-20	20-01	MS17806
	M24308/18-3		MS3447-20	27-01	MS90562-1
1-04	M24308/18-1		M83723/31-20	27-02	MS90562-2
2-01	MS3323-22	14-03	MS27534-16	27-03	MS90562-3
2-02	MS3323-20		MS3447-16	27-04	MS90562-4
2-03	MS3323-16		M83723/31-16	27-05	MS90562-5
2-04	MS3323-12	14-04	MS27534-12	27-06	MS90562-6
3-01	MS3344-23		MS3447-12	28-01	MS3178-001
3-02	MS3344-20		M83723/31-12	28-02	MS3178-002
3-03	MS3344-16	15-01	MS3483-1	29-01	MS3165-16
3-04	MS3344-12	15-02	MS3483-2	29-02	MS3165-8
3-05	MS3342-23	15-03	MS3483-3		M83723/32-08
3-06	MS3342-20	16-01	MS3160-20	29-03	MS3165-4
3-07	MS3342-16	16-02	MS3160-16		M83723/32-04
3-08	MS3342-12	16-03	MS3160-12	29-04	MS3165-0
4-01	M55301/106-01	16-04	MS3160-22		M83723/32-00
5-01	M55302/105-01	17-01	MS90455-16	30-01	MS3159-22
6-01	M21097/18-01	17-02	MS90455-12	30-02	MS3159-20
7-01	M21097/12-01	17-03	MS24256A20	30-03	MS3159-16
8-01	M55302/79-01	17-04	MS24256A16	30-04	MS159-12
	MS27495A22M	17-05	MS24256A12	30-05	MS3448-001A
8-02	M55302/79-02	17-06	MS90455-8	30-06	MS3448-001B
	MS27495R22M	17-07	MS90455-4	30-07	MS3448-001C
8-03	MS27495A22	17-08	MS90455-0	31-01	MS18137-20-1
8-04	MS27495R22	18-01	MS17805	31-02	MS18137-20-2
8-05	MS27495A20	19-01	MS90456-16	31-03	MS18137-20-3
8-06	MS27495R20	19-02	MS90456-12	31-04	MS18137-20-4
8-07	MS27495A16	19-03	MS90456-6	31-05	MS14035-02
8-08	MS27495R16	19-04	MS90456-4	31-06	MS14035-03
8-09	MS27495A12	19-05	MS90456-0	31-07	MS14035-01
8-10	MS27495R12	19-06	MS24256R20	31-08	MS14036-01
9-01	M55302/18-01	19-07	MS24256R20	31-09	MS14036-02
10-01	M55302/86-01	19-08	MS24256R16	31-10	MS14036-03

**Cartridges****Cartridges with Plungers Inserted**

Description	Part No.
CP 2.5 oz. LD	220323
CP 2.5 oz. HD	220324
CP 6 oz. LD	220325
CP 6 oz. HD	220326
CP 8 oz. LD	220327
CP 8 oz. HD	220328
CP 12 oz. LD	220329
CP 12 oz. HD	220330
CWP 1 oz. LD	220375
CWP 2.5 oz. LD	220331
CWP 2.5 oz. HD	220332
CWP 6 oz. LD	220333
CWP 6 oz. HD	220334
CWP 8 oz. LD	220335
CWP 8 oz. HD	220336
CWP 12 oz. LD	220337
CWP 12 oz. HD	220338
CWP 20 oz. HD	230231
CWP 32 oz. SHD White	233710
CWP 1/10 gallon HD	230268

**Cartridges Only**

Description	Part No.
1 oz. LD	220307
1 oz. HD	233222
2.5 oz. LD	220315
2.5 oz. HD	220316
6 oz. LD	220317
6 oz. HD	220318
8 oz. LD	220319
8 oz. HD	220320
12 oz. LD	220321
12 oz. HD	220322
20 oz. HD	229734
32 oz. LD	232921
32 oz. HD	232917
32 oz. SHD White	233656
1/10 gallon LD	230285
1/10 gallon HD	229689

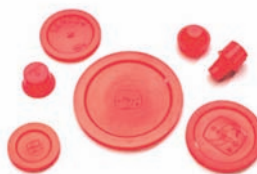
**Barrier Style**

Description	Part No.
1 oz. cartridge taped	676
1 oz. cartridge untaped	676
2.5 oz. cartridge taped	653
2.5 oz. cartridge untaped	653
6 oz. cartridge taped	651
6 oz. cartridge untaped	651
8 oz. cartridge taped	668
8 oz. cartridge untaped	668
1/10 gallon cartridge taped	691
1/10 gallon cartridge untaped	691
20 oz. cartridge taped	688
20 oz. cartridge untaped	688

**Complete Kits, Injection Style**

Description	Part No.
1 oz. cartridge with 6" rod	678
2.5 oz. cartridge with 6" rod	655
6 oz. cartridge with 6" rod	654
1 oz. cartridge with 8" rod	678
2.5 oz. cartridge with 8" rod	655
6 oz. cartridge with 8" rod	654
8 oz. cartridge with 8" rod	669
1/10 gallon cartridge with 8" rod	690
20 oz. cartridge with 8" rod	689

Due to the range of our product line, the part numbers shown are base numbers only. Please call for further assistance.

**Seals & Caps**

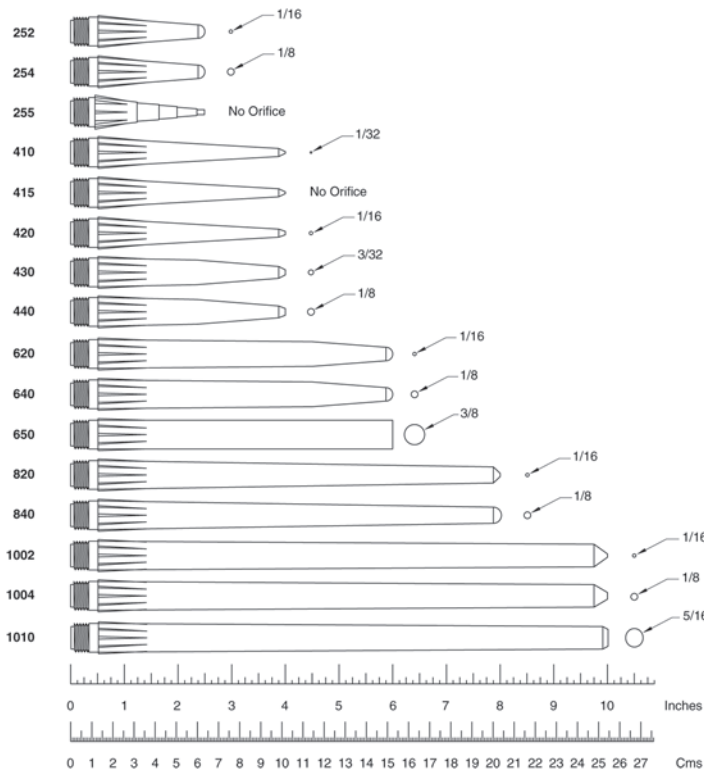
Description	Part No.
1 oz. F-Cap (red)	232452
F-Cap (red)	220238
1/10 gallon F-Cap (red)	230502
20 & 32 oz. F-Cap (red)	230586
S Seal (red)	220257
TS Seal (red)	220245
Threaded Cap (red)	234411

**Plungers Only**

Description	Part No.
1 oz. WP-Plunger LD	232364
P-Plunger LD (black)	220252
WP-Plunger LD	220259
WP-Plunger HD	220260
PRS-Plunger LD	234414
20/32 oz. WP-Plunger LD	229221
20/32 oz. WP-Plunger HD	232374
1/10 gallon WP-Plunger LD	229756

**Nozzles**

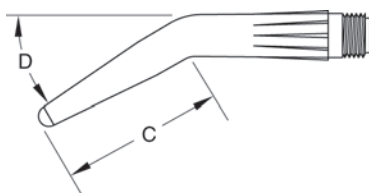
Description	Part No.
252 Nozzle	220538
254 Nozzle	220540
255 Nozzle	233495
410 Nozzle	220542
415 Nozzle	227613
420 Nozzle	220544
430 Nozzle	220548
440 Nozzle	220550
620 Nozzle	220553
640 Nozzle	220555
650 Nozzle	224494
820 Nozzle	220557
840 Nozzle	220559
1002 Nozzle	220561
1004 Nozzle	220563
1010 Nozzle	220565



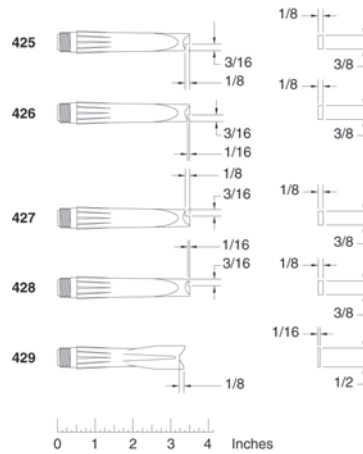
**Bent Nozzles**

When ordering bent nozzles, first give the standard number, then the angle of bend (D), then the length of bend from the tip (C).

Example: # 254, 45°, 1".

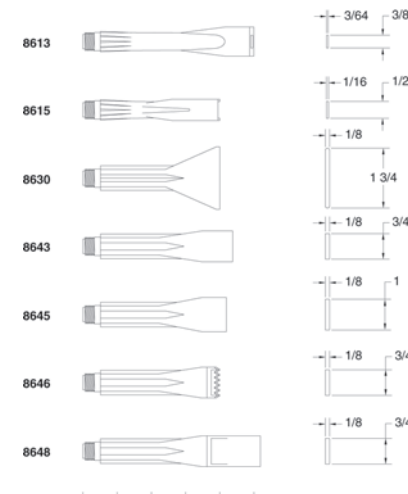


**Semco® Fillet Nozzles**



Description	Part No.
425 Nozzles	232499
426 Nozzle	232500
427 Nozzle	232501
428 Nozzle	232502
429 Nozzle	232590

**Semco® Ribbon Nozzles**



Description	Part No.
8613 Nozzle	220572
8615 Nozzle	220574
8630 Nozzle	220581
8643 Nozzle	220586
8645 Nozzle	220587
8646 Nozzle	220588
8648 Nozzle	220589

**Semco® Roller Nozzles**

Description	Part No.
1" Roller nozzle assembly	232693
2" Roller nozzle assembly	232692
1" Replacement Roller	232701
2" Replacement Roller	232702

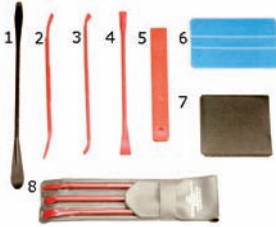


**Semco® Adapters**

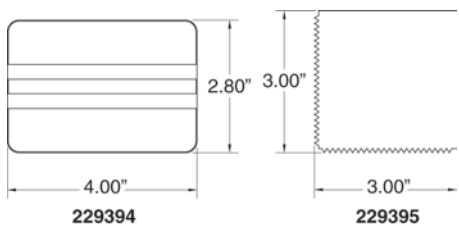
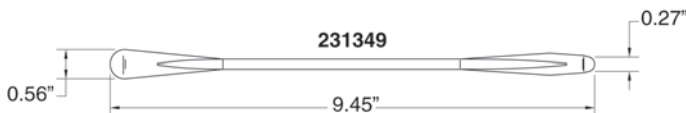
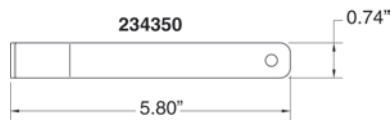
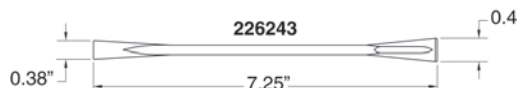
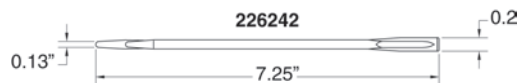
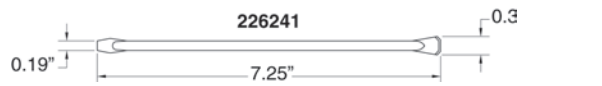


Description. 147	Part No.
Syringe filler adapter	310025
Sem-Luer adapter	231871

**Sealant Smoothing Tools**



Description	Part No.
(1) Spatula	231349
(2) Spatula	226241
(3) Spatula	226242
(4) Spatula	226243
(5) Scraper	234350
(6) Sealant Spreader	229394
(7) Comb Spreader	229395
(8) Spatula Kit (226241, 226242, 226243)	226244



**Semco® Model 250-A Gun (with handle)**



Description	Part No.
1 oz.	250015
2.5 oz.	250255
6 oz.	250065
8 oz.	250085
12 oz.	250125
Gun without retainer	250000

**Semco® Model 550 Sealant Gun**



Description	Part No.
1/10 Gallon	231551
20 oz.	231218
32 oz.	233688

**Semco® Model 850 Manual Gun**



Description	Part No.
1 oz. Plastic	231556
2.5 oz. Plastic	221825
2.5 oz. Metal	221824
6 oz. Plastic	221828
6 oz. Metal	221830
8 oz. Metal	221832
12 oz. Metal	221836
1/10 gallon Plastic	230273
20 oz. Metal	230274
32 oz. Metal	234054

**250 Retainers**



Description	Part No.
1 oz.	231611
2.5 oz.	220256
6 oz.	220928
8 oz.	220926
12 oz.	220923

**550 Retainers**



Description	Part No.
20 oz. assembly Includes bezel and retainer.	229752
32 oz. assembly Includes bezel and retainer.	233695
1/10th gallon.	231903

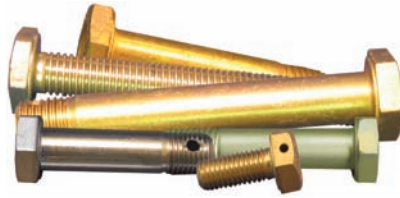
**850 Retainers**



Description	Part No.
2.5 oz.	226819
6 oz.	226820
8 oz.	226821
12 oz.	226822
20 oz.	229740
32 oz.	233620
Bezel for 20 oz.	230209
Bezel for 32 oz.	234053
1/10th gallon.	229777

**AN, MS, NAS Bolts**

- Hex Head.
- Close Tolerance.
- Clevis Bolt.
- 12-Point Bolts.
- Eye Bolt.
- Internal/External Wrenching.

**AN, MS, NAS Screws**

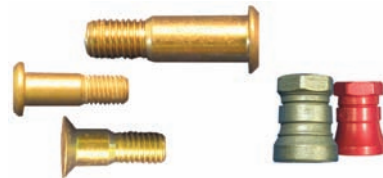
- Flat, Pan & Truss.
- Structural.
- Non Structural.
- Fillister Head.
- Socket Head.
- Instrumental Screws.

**AN, MS, NAS Washers**

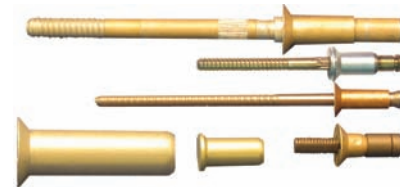
- Structural.
- High Strength.
- Internal Tooth.
- External Tooth.
- Spring.
- Dimpled.
- Keyed.

**Hi-loks & Collars**

- Nominal.
- Oversized.
- Self-Aligning.
- Alloy Steel.
- Stainless Steel.
- Titanium.

**Cherrymax, Solid & Pop Rivets**

- Cherry Rivets.
- Pop Rivets.
- Huck Rivets.
- Solid Rivets.
- Monel Rivets.
- Rivnuts.

**Nuts & Nutplates**

- Selflocking.
- Castle Nuts.
- Plain & Hex.
- 12-Point Nuts.
- Double Hexagon.
- Nutplates.
- Clip Nuts.

**O'Rings & Gaskets**

- O' Rings.
- Grommets.
- Gaskets.
- Lycoming.
- Continental.
- Exhaust Gaskets.

**Bearing**

- Antifriction.
- Self-Aligning.
- Light & Heavy Duty.
- Rod-End Bearings.

**Clamps**

- Cable Clamps.
- Hose Clamps.
- Tube Clamps.
- Electrical Brackets.

**Cotter Pins, Spacers, Bushings, Rings**

- Cotter Pins.
- Locking Pins.
- Clevis Pins.
- Dowel Pins.
- Retaining Rings.
- Bushings.
- Spacers.

**Milspec & Aeroquips Fittings**

- AN, MS, NAS.
- Fittings.
- Aeroquip.
- Stratoflex.
- Conical Seals.

**Caps & Plugs**

- Protective Caps & Plugs.
- Plastic & Aluminum.
- Electro-Static Free.
- Valve Caps.

**Electrical Products**

- Ring Terminals.
- Tie Wraps.
- Knife & Butt Splices.
- Shrink Wrap.
- Crimp Splices.
- Bonding Jumpers.

**Switches & Circuit Breakers**

- Circuit Breakers.
- Switches.
- Indicator Lighting.
- Switch Guards.

**Connectors**

- Mil-Spec.
- Aerospace.
- Coaxial/RF
- Any Application



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Fract. (in)	Decimal	Wire No. /Letter	Metric (mm)	Fract. (in)	Decimal	Wire No. /Letter	Metric (mm)	Fract. (in)	Decimal	Wire No. /Letter	Metric (mm)
	0.0098		0.25		0.1065	36	-	-	0.3480	S	
	0.0118		0.30	7/64	0.1094	-	-	-	0.3543		9.00
	0.0135	80			0.1100	35	-	-	0.3580	T	
	0.0138		0.35		0.1102	-	2.80	23/64	0.3594		
	0.0145	79			0.1110	34	-	-	0.3680	U	
1/64	0.0156				0.1130	33	-	-	0.3740		9.50
	0.0157		0.40		0.1142	-	2.90	3/8	0.3750		
	0.0160	78			0.1160	32	-	-	0.3770	V	
	0.0177		0.45		0.1181	-	3.00	-	0.3860	W	
	0.0180	77			0.1200	31	-	25/64	0.3906		
	0.0197		0.50	1/8	0.1250	-	-	-	0.3937		10.00
	0.0200	76			0.1285	30	-	-	0.3970	X	
	0.0210	75			0.1360	29	-	-	0.4040	Y	
	0.0217		0.55		0.1378	-	3.50	13/32	0.4063		
	0.0225	74			0.1405	28	-	-	0.4130	Z	
	0.0236		0.60	9/64	0.1406	-	-	-	0.4134		10.50
	0.0240	73			0.1440	27	-	27/64	0.4219		
	0.0250	72			0.1470	26	-	-	0.4331		11.00
	0.0256		0.65		0.1495	25	-	7/16	0.4375		
	0.0260	71			0.1520	24	-	-	0.4528		11.50
	0.0276		0.70		0.1540	23	-	29/64	0.4531		
	0.0280	70		5/32	0.1563	-	-	15/32	0.4688		
	0.0292	69			0.1570	22	-	-	0.4724		12.00
	0.0295		0.75		0.1575	-	4.00	31/64	0.4844		
	0.0310	68			0.1590	21	-	-	0.4921		12.50
1/32	0.0313				0.1610	20	-	1/2	0.5000		
	0.0315		0.80		0.1660	19	-	-	0.5118		13.00
	0.0320	67			0.1695	18	-	33/64	0.5156		
	0.0330	66		11/64	0.1719	-	-	17/32	0.5313		
	0.0335		0.85		0.1730	17	-	-	0.5315		13.50
	0.0350	65			0.1770	16	-	35/64	0.5469		
	0.0354		0.90		0.1772	-	4.50	-	0.5512		14.00
	0.0360	64			0.1800	15	-	9/16	0.5625		
	0.0370	63			0.1820	14	-	-	0.5709		14.50
	0.0374		0.95		0.1850	13	-	37/64	0.5781		
	0.0380	62		3/16	0.1875	-	-	-	0.5905		15.00
	0.0390	61			0.1890	12	-	19/32	0.5938		
	0.0394		1.00		0.1910	11	-	39/64	0.6094		
	0.0400	60			0.1935	10	-	-	0.6102		15.50
	0.0410	59			0.1960	9	-	5/8	0.6250		
	0.0420	58			0.1968	-	5.00	-	0.6299		16.00
	0.0430	57			0.1990	8	-	41/64	0.6406		
	0.0433		1.10		0.2010	7	-	-	0.6496		16.50
	0.0465	56		13/64	0.2031	-	-	21/32	0.6563		
3/64	0.0469				0.2040	6	-	-	0.6693		17.00
	0.0472		1.20		0.2055	5	-	43/64	0.6719		
	0.0512		1.30		0.2090	4	-	11/16	0.6875		
	0.0520	55			0.2130	3	-	-	0.6890		17.50
	0.0550	54			0.2165	-	5.50	45/64	0.7031		
	0.0551		1.40	7/32	0.2188	-	-	-	0.7087		18.00
	0.0591		1.50		0.2210	2	-	23/32	0.7188		
	0.0595	53			0.2280	1	-	-	0.7283		18.50
1/16	0.0625				0.2340	A	-	47/64	0.7344		
	0.0630		1.60	15/64	0.2344	-	-	-	0.7480		19.00
	0.0635	52			0.2362	-	6.00	3/4	0.7500		
	0.0669		1.70		0.2380	B	-	49/64	0.7656		
	0.0670	51			0.2420	C	-	-	0.7677		19.50
	0.0700	50			0.2460	D	-	25/32	0.7813		
	0.0709		1.80	1/4	0.2500	E	-	-	0.7874		20.00
	0.0730	49			0.2559	-	6.50	51/64	0.7969		
	0.0748		1.90		0.2570	F	-	-	0.8071		20.50
	0.0760	48			0.2610	G	-	13/16	0.8125		
5/64	0.0781			17/64	0.2656	-	-	-	0.8268		21.00
	0.0785	47			0.2660	H	-	53/64	0.8281		
	0.0787		2.00		0.2720	I	-	27/32	0.8438		
	0.0810	46			0.2756	-	7.00	-	0.8465		21.50
	0.0820	45			0.2770	J	-	55/64	0.8594		
	0.0827		2.10		0.2810	K	-	-	0.8661		22.00
	0.0860	44		9/32	0.2813	-	-	7/8	0.8750		
	0.0866		2.20		0.2900	L	-	-	0.8858		22.50
	0.0890	43			0.2950	M	-	57/64	0.8906		
	0.0906		2.30		0.2953	-	7.50	-	0.9055		23.00
	0.0935	42		19/64	0.2969	-	-	29/32	0.9063		
3/32	0.0938				0.3020	N	-	59/64	0.9219		
	0.0945		2.40	5/16	0.3125	-	-	-	0.9252		23.50
	0.0960	41			0.3150	-	8.00	15/16	0.9375		
	0.0980	40			0.3160	O	-	-	0.9449		24.00
	0.0984		2.50		0.3230	P	-	61/64	0.9531		
	0.0995	39		21/64	0.3281	-	-	-	0.9646		24.50
	0.1015	38			0.3320	Q	-	31/32	0.9688		
	0.1024		2.60		0.3346	-	8.50	-	0.9842		25.00
	0.1040	37			0.3390	R	-	63/64	0.9844		
	0.1063		2.70	11/32	0.3438	-	-	1	1.0000		



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A large graphic celebrating the 35th anniversary. It features a stylized "35" in white and yellow, with a yellow swoosh underline. To the right of the "35" is the word "Th" in white, and below that is the word "Anniversary" in a large, white, serif font. The background is a dark blue wavy shape with yellow borders.

# 35<sup>Th</sup> Anniversary

Ph: 305.665.6573 / Fx: 305.665.4323

Email: [mail@deltaintl.com](mailto:mail@deltaintl.com)

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