

Snap-on[®]

AVIATION





SNAP-ON GIVES THE AVIATION TECHNICIAN EVERY ADVANTAGE:

ENGINEERING ADVANTAGE

Because techs place great value on quality, performance, reliability and durability, Snap-on builds those qualities into every hand tool we make. For tools that stay in service longer, generate greater productivity, and make income soar, reach for Snap-on hand tools.

POWER ADVANTAGE

Snap-on tools deliver not only power, but performance. The comfort, reliability and durability of Snap-on power tools sets us apart from the rest, and sets you up for successfully completed jobs. Every time. Looking for a powerful ally in the hangar? You've come to the right place.

SPECIALTY ADVANTAGE

The most extensive line of specialty tools in the business is designed to precise heat treatment specs, and built to perform beyond industry inspection standards. And if you don't find what you need, we'll create a custom tool solution to meet your specific needs. For the best airframe maintenance and repair tools, see the specialists: Snap-on.

PRECISION ADVANTAGE

When tightening fasteners means securing aircraft safety, you need the industry leader: the one who gives you more ways to turn fasteners than anyone else and the precision advantage found only in our tools. And when it comes to tool selection and torquing options, no one gives you more solutions than Snap-on.

SAFETY ADVANTAGE

In an industry that requires absolute attention to detail, you should demand a tool company that provides just that. Snap-on develops the tools and equipment for precise and accurate inspections, leaving no stone – or wing panel – unturned.

CONTROL ADVANTAGE

Snap-on's integrated tool control systems help keep track of your entire inventory. From tethered tools that reduce potentially catastrophic FOD, to our industry leading Total Asset Management System, our programs give you the control advantage that let you safeguard what matters.

MILITARY AVIATION TOOL SETS

Over 30 years of experience and tens of thousands of kits – all custom tailored to suit your needs. Snap-on continues to set the bar for maximum productivity and flight safety.

No one offers you more. More selection. More sets. More experts to assist you. More understanding of your needs. Whether you need one kit or one thousand kits, Snap-on can provide the kit you need for any application.

Contact your Snap-on representative who will be glad to help you select the right tools, tool sets and tool control to meet your specific needs.



Army Kits:

- Power Plant
- Technical Inspection
- General Mechanical
- Sheet Metal
- Electrical
- Hydraulic
- Powertrain
- Small Arms

USAF Kits:

- APG CTK
- APG Launch CTK
- Custom TDY CTK
- Engine CTK
- E7E CTK
- C130 Mobility

Army Aviation Kits:

- AH6, AH7 Crew Chief
- Airframe
- Blackhawk Phase
- Chinook Crew Chief
- Crew Chief
- Electronics
- Engine Shop
- Hydraulics Shop
- Prop and Rotor

Marine Kits:

- Marine Common 1

Navy Kits:

- LM2500 Contents



ACRONYM	FULL NOMENCLATURE
TAMS/APG	Technical Aircraft Maintenance Specialists / Air Power Generation
AVIONICS	Radar, Instruments, Communications, Navigation, Flight Controls and Electronic Counter Measurers
WEAPONS	Conventional Munitions and Maintenance
APG TDY KIT	Air Plane General Temporary Duty Maintenance
ARMAMENT	Gun, pylon, and launcher Maintenance
PHASE Dock Box	Chronological Inspection and Maintenance
ENGINE BOX	Power Plant, Start Systems and Gear Box Maintenance
DEMO TEAM	F-16/F-15/F-22 Demonstration Minor maintenance Launch and Recover Kit
CANN DOCK BOX	Cannibalization Dock Box
JEIM	Jet Engine Intermediate Maintenance
E & E Box	Electric and Environmental Control Systems
POD Box	Electronic Counter Measurer
Weapons Line Kit	Weapons

ACRONYM	FULL NOMENCLATURE
SPEC BOX	Radar, Instruments, Communications, Navigation, Flight Controls and Electronic Counter Measurers
AGE	Aerospace Ground Equipment
PMEL	Precision Measurement Equipment Laboratory
TRANS	Transportation Vehicle maintenance
E&E In Shop	Electric and Environmental Control Systems
R&R/ RECOVERY	Repair and Reclamation
EGRESS	Ejection Seat Maintenance
Sheet Metal	Structural Repair
LO BARN	LOW Observance Coating Maintenance
Fuel Shop	Fuel System maintenance
TM	Trailer Maintenance
PGM	Precision Guidance munitions
Conventional	Conventional Air to Ground munitions

Our OEM and commercial aviation customers agree: Snap-on is the world leader in custom kits. Whether you're managing a small operation or large fleet, Snap-on can deliver a kitting solution to increase productivity and flight safety; no one offers more. The following is a partial list of the many kits that have been developed with our customers for specific commercial aviation requirements.

For a complete listing of all available kits, or to develop a custom kit, contact your Snap-on representative.

Boeing:

- A-Check Mechanical – all aircraft
- A-Check Electrical – all aircraft
- B-C-D-Check General Mechanical – all
- B-C-D Check Electrical – all aircraft
- Boeing and Airbus General Mechanic
- Engine Change kits
- Sheet Metal kits
- Flight Line (FOD bag)
- B737 General Mechanic

Airbus:

- A-Check Mechanical – all aircraft
- A-Check Electrical – all aircraft
- B-C-D-Check General Mechanical – all
- A350 General Mechanic Kit
- A380 Torque Tool & Accessories kit
- A380 Bolter kit
- A380 Structure kit
- A380 Drillers kit
- A319, A340, & B737 A-Check General Mechanic
- A319, A340, & B737 to B767 A-B-Check General Mechanic kit
- A319, A340, & B737 to B767 Electrical
- Engine Change kit
- Flight Line (FOD bag)



OEM and airline-determined kits:

- BAE Systems
- Beechcraft
- Bombardier
- Cessna
- Embraer
- Falcon
- Fokker
- Gulfstream
- Lear

Helicopter:

- Agusta
- Bell
- Boeing
- Eurocopter
- Robinson

Propulsion:

- GE
- Pratt & Whitney
- Rolls Royce

From OEM assembly to flight line maintenance, Snap-on has your solution. **Contact your Snap-on sales representative who will be glad to help you select the right tools, tool sets and tool control to meet your specific needs.**

COMMITMENT TO QUALITY AND STANDARDS

Snap-on® is committed to meeting ANSI and global product standards, and often goes beyond them. Whether it's Snap-on products or partner products, every tool we sell goes through rigorous testing for performance, quality, ergonomics, durability and safety. Done at our own corporate test facility in Kenosha, we pledge to meet or exceed the highest standards in the industry. At Snap-on, we:

- Are active participants in the creation of ANSI and other industry standards
- Hold regular meetings with government and industry bodies to review and update current and developing technologies
- Offer unique and proprietary products designed to go beyond the scope of ANSI and other standards

The Snap-on® Flank Drive® Advantage



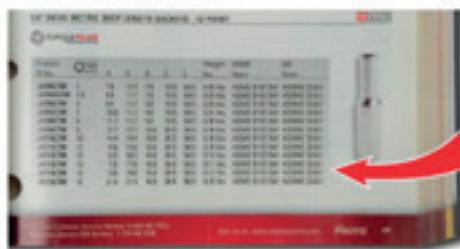
Conventional 12-point wrench and the contact it makes on the corner of a nut or bolt. The corner can round off under high loads causing the wrench to slip.



A Snap-on® Flank Drive® wrench moves the contact away from the corners with a radius, then provides flat-to-flat contact for up to 20% more turning power.

AS954 Specification References Explained

318 Snap-on 12 point sockets, universal sockets, wrenches, and torque adaptors noted in our catalog completely meet the AS954 standard.



Competition implies meeting AS954 (Aerospace Standard) specification in their catalog. But they only reference ONE subsection of the standard.

AS954 SUB SECTIONS	SUB SECTION DESCRIPTION	SNAP-ON	COMPETITION
3.2	Material	X	
3.4.1 (sockets only)	Drive end dimensions	X	
3.4.1.1 (sockets only)	Internal drive opening	X	
3.4.1.1.1 (sockets only)	Detent	X	
3.4.2 (sockets only)	Tang engagement	X	
3.5	Hardness	X	
3.6	Plating	X	
3.6.1	Surface Finish	X	
3.6.3	Surface Condition	X	
3.7	Proof Load Test	X	
3.7.3.1	Cyclic Load test	X	
3.7.3.2	Fragmentation Test	X	
3.8.1	Wrench Design	X	X*
3.8.3	Wrench Opening Tolerance	X	
3.8.4.1 (sockets only)	Through hole clearance	X	
3.8.4.2 (sockets only)	Bolt Clearance Hole	X	
3.11	Workmanship	X	
3.11.1	Foreign Object Damage	X	

* as shown in competitor's catalog

PORTABLE SERVICE SETS

KMC18AVTK

Aircraft Maintenance Kit with Portable Chest

- Use to work on nearly any aircraft system
- Easy to carry and stow
- Case is chemical resistant, dust proof, water tight, and has a pressure equalization valve
- Ideal for flightline maintenance



KMC18AVTK

KMC18GMTKG

General Maintenance Technician's Kit

- Mobile so that tools may be easily deployed to any jobsite – rain or shine
- Black over red tool control foam ensures an easy way to check for the presence or absence of tools
- Contains over 200 individual tools
- All Weather Mobile Tool Chest (AWMTC)

Features and Benefits:

- 22.1" wheel base on the wide corners for stability
- Innovative latch system for secure lid closure
- Telescoping trolley handle with higher reach
- Over-top hinged lid can be used as a seat when case is open
- Drawers fully extend on Snap-on's proprietary composite slides



Maximum Mobility Tool Sets

- Designed specifically for the mechanic on the go
- Rapid tool access and accountability helps protect valuable vehicles and equipment
- Snap-on tool control foam system measurably increases productivity
- Tools are furnished in custom foam and loaded into removable drawers
- Sets are offered in two configurations: tools only, or complete with tools, foam, and case

The extremely rugged and durable Pelican 0450 case features:

- Rugged trolley handle and wheels for easy and secure mobility
- Seven removable drawers plus foam tray in top of case
- Two automatic pressure equalization valves
- Water, temperature, drop, and impact resistant design and construction



9050VMTB

SPECIALIZED TOOL SETS

GENERAL MECHANIC'S TOOL KIT

Now available in choice of:

Metal tool chest KRA4059, tools & foam or soft-sided tool bag with tools & foam

GMTK Tool Set includes:

Sockets	55
Wrenches	26
Pliers	6
Screwdrivers	5
Miscellaneous / Specialty Tools	50
Total = 142 tools	

GMTKBOXWT Tool Set In Metal Tool Chest

Metal Tool Chest dimensions:
26"W x 17-3/16"H x 14-23/32"D

GMTKBAGWT Tool Set In Soft Sided Bag

Take your tool control programs all the way to the work area, flightline, deployment or anywhere! User-friendly, lightweight & rugged.

- Tool pallets designed for outdoor use
- Improves tool control, FOD & productivity
- Satisfies the Army GMTK Specification
- Tool kits contain individual tool compartments
- Tool compartments include tool stock number for positive tool identification

Features of Soft-sided Bag:

- Easy to carry & easy to stow
- Zips open at top or end to allow individual tool pallets to be removed
- No sharp edges
- Rugged, heavy-duty materials can outperform & outlast metal
- Made from 100% polyester-coated Cordura
- Contains five individual tools pallets inside see-through, zippered, protective vinyl pouches

Security / Convenience Features:

- Two clear vinyl I.D. pockets – on outer surface – top and end
- Additional I.D. pockets – to contain tool inventory lists, pallet bills of material, DA form 2404, etc.
- Zippers align – for easy padlocking

Standard Tool Sets

STOCK NO.	DESCRIPTION	STANDARD COLOR	BOX/BAG SIZE (W X H X D)	PALLET SIZE (WXH)	LOADED WITH TOOLS* – WEIGHT
A. GMTKBOXWT	General Mechanic's Tool Kit w/ tools & Foam in a 9 drawer KRA4059A Snap-on Metal Chest	Snap-on Red	26" x 14 ^{23/32} " x 17 ^{3/16} "	(See p. 74 for inner dim. on top chest)	107 lbs.
B. GMTKTLBAGWT	5 Pallet, General Mechanic's Tool Kit w/tools – Flightline Black	Flightline Black	24" x 18" x 11"	20" x 16"	67 lbs.

* Tool weight may vary.
Snap-on reserves the right to change tool content.

Standard Flightline Bags

STOCK NO.	DESCRIPTION
FLF8400	2 Pallet FOD Bag, Clamshell Open
FLF8200	4 Pallet FOD Bag, Clamshell Open
FLF8000	4 Pallet FOD Bag, Top Load
FLF8800	5 Pallet FOD Bag, Top/Side Load

STOCK NO.	DESCRIPTION
FLF8800W	5 Pallet FOD Bag, Top/Side Load w/ Wheels
FOMFLPLT	Foam FLF Bag Pallet
FLF16X20PLT	16" x 20" FLF FOD Bag Pallet
FLF8800	5 Pallet FOD Bag, Top/Side Load



GMTKBOXWT



GMTKTLBAGWT

◆
SOFT-SIDED BAG
AVAILABLE
"FLIGHTLINE BLACK"



PALLETS FROM
SOFT-SIDED BAG

Basic Flightline Kit with Tote Bag

Complete Set: **ATKBFL**

- A basic kit to do a wide variety of aircraft light maintenance.
- Ideal for a fly away/on board service kit



ATKBFL

Intermediate Flightline or Hanger

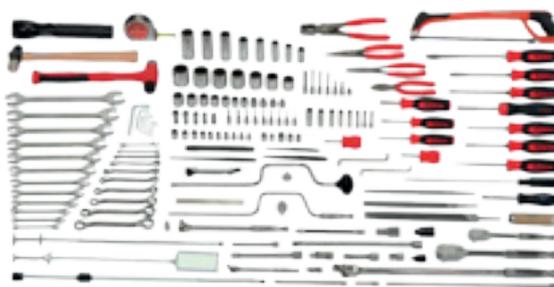
Complete Set includes tools, foam, and storage: **ATKIFLB**

Tools Only: **ATKIFL**

Black over Yellow Foam: **FOAMIFL**

Tool Storage: **KRA2007FPBO**

- Ideal for A & B checks



ATKIFL

Master Flightline or Hanger

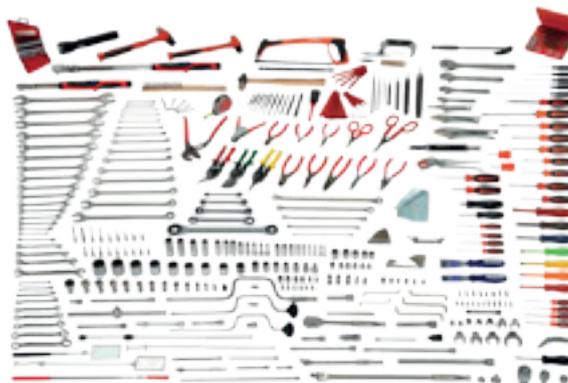
Complete Set includes tools, foam, and storage: **ATKMFLB**

Tools Only: **ATKMFL**

Black over Yellow Foam: **FOAMMFL**

Tool Storage: **KRL722BPBO**

- Covers a wide variety of maintenance activities with room for customization



ATKMFL

Master Mechanic Add On

Tools and Foam Set to be added to ATKAPMB: **ATKMMAOFOAM**

Tools Only: **ATKMMAO**

Black over Yellow Foam: **FOAMMMAO**

Tool Storage: Not applicable, designed to be added to

ATKAPMB above

- Expands your capabilities of the ATKAPMB above to cover a wider range of maintenance requirements.



ATKMMAO

SPECIALIZED TOOL SETS

Aircraft Overhaul

Complete Set includes tools, foam, and storage: **ATKAOB**

Tools Only: **ATKAO**

Black over Yellow Foam: **FOAMAO**

Tool Storage: **KRA4107FPBO**

- Designed to cover a wide range of heavy maintenance overhaul requirements



ATKAO

All Purpose Mechanic

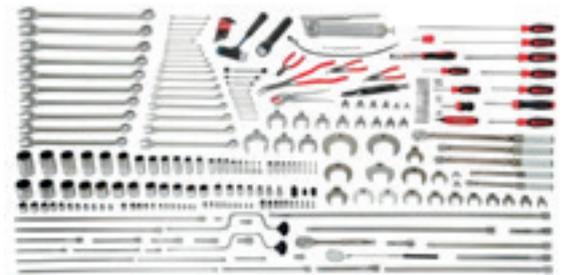
Complete Set includes tools, foam, and storage: **ATKAPMB**

Tools Only: **ATKAPM**

Black over Yellow Foam: **FOAMAPM**

Tool Storage: **KRA2411PBO**

- Supports a large range of maintenance requirements with additional space to support the addition of our Master Mechanic Add On set below or customize to your specific needs



ATKAPM

Engine Overhaul

Complete Set includes tools, foam, and storage: **ATKEOB**

Tools Only: **ATKEO**

Black over Yellow Foam: **FOAMEO**

Tool Storage: **KRA4107FPBO**

- Comprehensive selection to cover powerplant maintenance & overhaul



ATKEO

Avionics with Tote Bag

Complete Set: **ATKAV**

- Portable kit with a selection of tools to support a wide range of electrical or avionics maintenance and repairs



ATKAV

Sheet Metal

Tools Only: **ATKBSM**

Recommended Tool Storage: **KRSC33PBO**

- Selection supports drilling, sheet holding, riveting, cutting, and more. The optional cart is ideal to store and organize your sheet metal tools.



ATKBSM

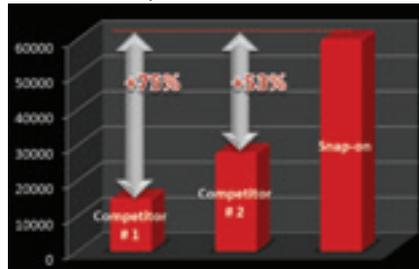
Snap-on Reversible Wire Twisters

- Simple operation with a one-handed locking function
- Jaw tips designed for precision work and hard to reach areas
- Designed to hold clipped wire, reducing the likelihood of FOD (Foreign Object Damage)

STOCK NO.	DESCRIPTION	LENGTH
WTG8	8" Reversible Wire Twister L/R with F.O.D. Wire: Ø 0,4 mm to Ø 0,8 mm - .015" to .031"	8" – 203 mm
WTG10	10" Reversible Wire Twister L/R with F.O.D. Wire: Ø 0,6 mm to Ø 1,2 mm - .024" to .047"	10" – 254 mm

Country of Origin: France

Number of Cycles



BUILT TO WITHSTAND REPEATED USE



WTG8, WTG10



0.032" Safety Cable Tool

- Safety cable can be used in place of traditional lock wire or stainless steel safety wire in nearly every application
- Automatically tensions the cable, crimps ferrules and cuts safety cable in a single, easy squeeze of the handle
- Made in the USA of aircraft grade, hard-coat anodized aluminum and high strength tool steel

DIMENSIONS	LENGTH
Wire Diameter	0.032"
Nose Length	3"

RELATED ITEM SC10-218PKG-Pack of 50 Daniels-brand cables and 50 ferrules



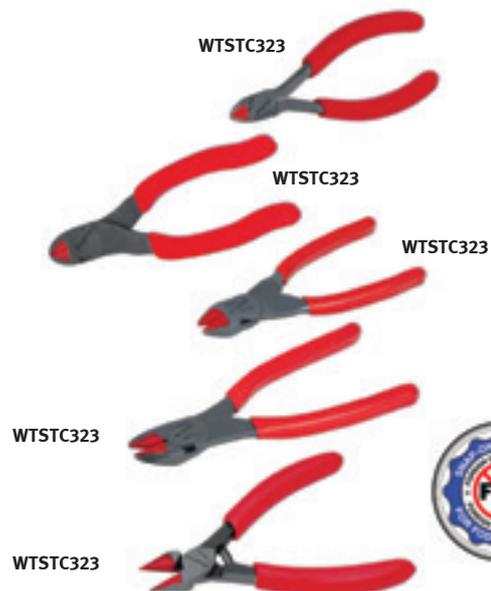
WTSTC323



Snap-on Cushion-Throat Diagonal Cutters

- Urethane insert in jaws captures clipped material, reducing the likelihood of FOD in critical industries
- Retention of wire clippings enhances worker safety by preventing projectile material from being scattered throughout the worksite

STOCK NO.	DESCRIPTION	JAW LENGTH	OVERALL LENGTH
184CCPCTA	Bowed handle cushion-throat diagonal cutter	13/32"	4-3/4"
86CFCT	Standard cushion-throat diagonal cutter	3/4"	6-5/16"
87CFCT	Standard cushion-throat diagonal cutter	13/16"	7-3/8"
388CFCT	Cushion-throat high leverage cutter	1-1/16"	8-5/16"
E710BCGCT	Cushion-throat true flush cutter	11/16"	5-3/16"



Country of Origin: USA

SPECIALTY PLIERS



ESD-Safe Holding Precision Pliers

- 126CNSERESD (Chain Nose Serrated)
- 126CNSMESD (Chain Nose Smooth)
- 114BNESD (Bent Nose)
- 79SNESD (Snipe Nose)
- 79RNESD (Round Nose)
- 79FNESD (Flat Nose)

ESD-Safe Cutting Precision Pliers

- 63THESD (Tapered - 5/8")
- 50TRES (Tapered & Relieved)
- 50THESD (Tapered - 1/2")
- 39OHFESD (Oval Feed Flush)
- 39OHESD (Oval Head)
- 39THESD (Tapered - 25/64")
- 31ECESD (End Cut)

Electro-Static Discharge-Safe Precision Pliers

Handles dissipate static to protect static-sensitive components

- Innovative technology produces exact, precision forgings - plier halves are hot forged and then ground (vs. milled) to achieve an accurate fit every time
- The lap joint with screw allows perfect control of the holding torque and assures the user of sufficient threads
- Special nut design provides greater accessibility than standard screw joints

ESD-Safe Holding Precision Pliers

Stock No.	Description	Image	Ideal Use
126CNSERESD	ESD Plier Chain Nose Serrated		Finely honed serrations allow extra "bite" for handling tricky materials. Top serrations cross bottom ones to prevent objects from rolling into a groove.
126CNSMESD	ESD Plier Chain Nose Smooth		Finely milled and polished just enough to retain grip on wire.
114BNESD	ESD Plier Bent Nose		Classic variation of the chain nose, with a 60 degree bend at the tips that is ideal for positioning components.
79SNESD	ESD Plier Snipe Nose		Shorter version of the chain nose, with the best gripping strength. Used where power and torsion are paramount for the application.
79RNESD	ESD Plier Round Nose		Jaws taper from 7mm to 1.0mm at the tips. Handy for closing loops and the finest wire work.
79FNESD	ESD Plier Flat Nose		For holding flat geometries.

ESD-Safe Cutting Precision Pliers

Stock No.	Description	Image	Ideal Use
63THESD	ESD Plier Tapered - 5/8"		Largest tapered cutting head in the series. Delivers a flush cut that leaves a narrow and short peak along the "pinch" line, decreasing the surface area at the cut.
50THESD	ESD Plier Tapered & Relieved		Smallest head style that tapers on both sides with a cutaway underside for maximum accessibility but a slightly smaller cutting capacity.
50THESD	ESD Plier Tapered - 1/2"		Utilizes a head shaped along diagonal lines, allowing easier access without reducing the cutting range.
39OHFESD	ESD Plier Oval Head Flush		Combining strength and flexibility, the oval head can withstand and distribute the impact of cutting and can be utilized in a myriad of applications where a flush cut is needed.
39OHESD	ESD Plier Oval Head		Combining strength and flexibility, the oval head can withstand and distribute the impact of cutting and can be utilized in a myriad of applications where a low profile cut for improved wire connectivity is needed.
39THESD	ESD Plier Tapered - 25/64"		Utilizes a head shaped along diagonal lines, allowing easier access without reducing the cutting range.
31ECESD	ESD Plier End Cut		Angle shape is ideal for use in confined spaces. Delivers a flush cut that leaves a narrow and short peak along the "pinch" line, decreasing the surface area at the cut.



18V Monster-Lithium™ Impact Wrenches

CTEU8810A (3/8" Drive)

CTEU8815A (1/2" Drive)

- 325 ft. lbs. bolt breakaway torque
- 230 ft. lbs. tightening torque
- 3,480 BPM and 2,400 free speed RPM
- Built-in LED and battery fuel gauge
- Includes two batteries, charger and tote



14.4V Micro-Lithium Reciprocating Saw CTRSEU761

- 3,000 strokes per minute with a 1/2" stroke length
- Includes battery, charger and tote



18V Monster-Lithium™ Impact Wrench

CTEU8850 (1/2" Drive)

- 700 ft. lbs. bolt breakaway torque
- 600 ft. lbs. tightening torque
- 2,280 BPM and 1,900 free speed RPM
- Built-in LED and battery fuel gauge
- Includes two batteries, charger and tote



18V Monster-Lithium™ Grinder CTGREU8850

- 8,000 free speed RPM
- 4.5" or 5" wheel size with 7/8" arbor
- Includes one battery, charger and tote



14.4V Micro-Lithium Ratchets

- Enjoy the freedom of working without an air source
- Features a built-in LED light, battery fuel gauge, variable speed trigger
- Includes battery, charger and case
- **CTREU761B** (3/8" Drive)
- 40 ft. lbs. torque output at 275 RPM (10 ft. lbs. more than previous model)
- **CTREU725A** (1/4" Drive)
- 30 ft. lbs. torque output at 350 RPM

Now With
MORE
TORQUE
OUTPUT!

CTR761B

CTR725A



3/8" Drive 14.4V Micro-Lithium Impact Wrench CTEU761

- Features 2,000 free speed RPM, 120 ft. lbs. torque output
- Variable speed trigger
- Built-in brake and LED light
- Includes two batteries, charge and tote

14.4V Micro-Lithium Screwdrivers

- 1/4" hex capacity
- Features 9-position clutch and built-in LED light
- Includes two batteries, charger and tote
- **CTSEU761** (2-Speed)
- 150 in. lbs. torque output
- 1,400 RPM
- **CTSEU725** (Single Speed)
- 100 in. lbs. torque output
- 400 RPM



1/4" Drive 14.4V Micro-Lithium Impact Wrench CTEU725

- Features 3,000 BPM and 70 ft. lbs torque output
- Includes two batteries, charger and tote

14.4V Micro-Lithium Drill CDREU761A

- 150 in. lb. torque output
- 2-Speeds, 9-position clutch
- 3/8" keyless chuck
- 400/1400 RPM variable speed
- Includes two batteries, charger and tote



GAUGES & INFLATORS

When it comes to aircraft tires and struts, proper measurement and inflation are key for safe takeoffs and landings and to ensure brake predictability and effectiveness. Snap-on Industrial is proud to offer a complete line of Snap-on pressure assemblies specifically designed for professional technicians and mechanics.

ALL MODELS FEATURE:

- Pressure relief valve
- Swivel fittings
- Protective rubber boot
- Foam fitted carrying case

300 PSI TIRE GAUGES

- AVI300ATG (Analog)
- AVI300ATGSL (Analog)
- AVI300DTG (Digital)
- AVI300DTGK (Digital Master)

300 PSI TIRE INFLATORS

- AVI300ATI (Analog)
- AVI300DTI (Digital)

300 PSI STRUT GAUGE

- AVI300ASG (Analog)



DIGITAL FEATURES:

- Safe Zone Reflective Glow Dial
- PSI / Bar
- +/-1% full scale



DIGITAL FEATURES:

- Intrinsically safe
- Backlit display
- PSI / Bar / Kpa and 5 more
- +/-0.25% full scale
- FM and CE approved
- Auto shut-off
- Peak/valley hold
- Tracking mode



AVI300ATI

300 PSI TIRE GAUGES

	STOCK #	AVI300ATG	AVI300ATGSL	AVI300DTG	AVI300DTGK
	DESCRIPTION	Analog Aircraft Tire Gauge	Analog Aircraft Tire Gauge	Digital Aircraft Tire Gauge	Digital Master Kit Aircraft Tire Gauge Kit
GAUGES	STANDARD ANALOG GAUGE				
	INVERTED ANALOG GAUGE	•	•		
	DIGITAL GAUGE, QUICK CONNECT			•	•
FDGG	SMALL BORE STRAIGHT CHUCK	•	•	•	•
	LARGE BORE STRAIGHT CHUCK		•	•	•
	SMALL BORE STRAIGHT CHUCK W/ HOSE EXTENSION				•
	LARGE BORE THREADED CHUCK W/ HOSE EXTENSION				•
	SMALL BORE ANGLE CHUCK W/ HOSE EXTENSION				•
	LARGE BORE ANGLE CHUCK W/ HOSE EXTENSION				•
	GOOSE NECK FITTING (FOR STRUT)				
	BLEEDER VALVE	•	•		
QUICK CONNECT FITTINGS		•			
SAFETY & ACCESSORIES	TREAD DEPTH GAUGE				•
	VALVE STEM TOOL				•
	8 FT. EXTENSION HOSE				
	SAFETY BLOW-OUT VALVE				
	300 PSI RATED HOSE	•	•		
3000 PSI RATED HOSE					

300 PSI TIRE INFLATOR

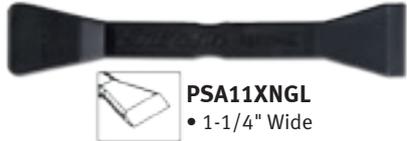
	AVI300ATI	AVI300DTI
	Analog Aircraft Tire Inflator	Digital Aircraft Tire Inflator
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300 PSI STRUT GAUGE

	AVI3000ASG
	Analog Aircraft Strut Gauge
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XNGL HEAVY DUTY MRO SCRAPERS

- Stiff plastic scrapers set for MRO maintenance to remove caked on materials in repair and overhaul
- Manufactured from super-tough glass nylon composite for durability and precision



5-Piece Set PSASET5XNGL

- 5-Piece set includes three flat scrapers (1/4", 1/2" & 1"), one 1/4" curved scraper and one 1-3/16" hook edge scraper



PKN90 (Non-marring)

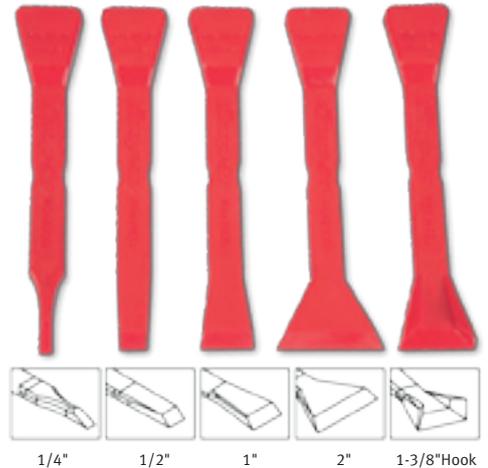
- Will not scratch soft metals, paint or composites
- Ideal for removal of corrosion on flat metals or without etch cleaners and rust removal solutions

PKNG90 (Glass/Acrylic)

- Ideal for removing dirt/debris and adhesives on glass and acrylic surfaces

CELCON® OEM SCRAPERS

- Plastic scrapers for OEM – new builds
- Manufactured from Celcon® acetal copolymer for outstanding durability and resistance to long-term fatigue, moisture, solvents and strong alkalis
- Ideal for removing new, not hard sealant
- Safe on glass, Plexiglas, and polished surfaces



5-Piece Set PSASET5XNGL

- 5-Piece set includes four flat scrapers (1/4", 1/2", 1" & 2"), and one 1-3/8" double wedge scraper.



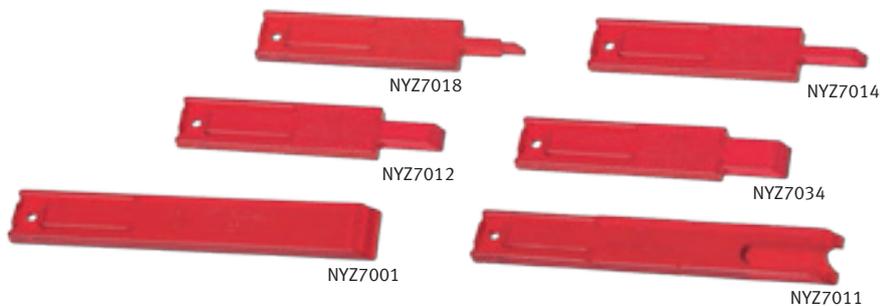
MASTIC REMOVAL

MASTIC REMOVAL SCRAPERS & ACCESSORIES

MASTIC REMOVAL NYROC® BLADES

The perfect choice for the aviation industry

- Proprietary engineered plastic specifically formulated for removing difficult-to-remove materials from delicate, fragile and scratch prone surfaces
- Can be used to remove stubborn mastics in aircraft fuel tanks and fuselages, anti-skid patches and appliqué, without damage to aluminum or painted surfaces
- Approved for use on U.S. Air Force, Canadian Air Force and NATO military aircraft



10-PACK OF BLADES

- NYZ701810 (1/8" General Use)
- NYZ701410 (1/4" General Use)
- NYZ701210 (1/2" General Use)
- NYZ70341 (3/4" General Use)
- NYZ700110 (1" General Use)
- NYZ701110 (1" Button Head Rivet)

200-PACK OF BLADES

- NYZ7018200 (1/8" General Use)
- NYZ7014200 (1/4" General Use)
- NYZ7012200 (1/2" General Use)
- NYZ7034200 (3/4" General Use)
- NYZ7001200 (1" General Use)
- NYZ7011200 (1" Button Head Rivet)

MASTIC REMOVAL NYROC® BLADE KIT

- Hand kit is ideal for aviation use, especially for delicate jobs and projects with awkward or limited access
- NYROC® blades are sharpened with sandpaper, small stone or optional pneumatic sharpener
- Kit includes six 1" NYROC® blades, six 1/2" NYROC® blades, three 1/4" NYROC® blades and ergonomic rubber handle

NYZ7007HD



ABRASIVE NYROC® BLADE SHARPENING DISCS

- Pack of 10 sharpening discs for use with NYZ7000S blade sharpener

NYZ7000AD



NYROC® BLADE PNEUMATIC SHARPENER

- Pneumatic powered sharpener quickly sharpens all NYROC® blades up to 1" width
- Consistently sharpens blades to the optimal 51° angle
- Operates with single push button
- Connects directly to shop air
- Removed material is collected in disposable antistatic vacuum bag attached directly to the discharge chute

NYZ7000S

ABRASIVE NYROC® BLADE SHARPENING DISCS

- Pack of 10 sharpening discs for use with NYZ7000S blade sharpener

NYZ7000AD



ANTISTATIC VACUUM BAGS

- Pack of 10 bags for use with NYZ7000S blade sharpener

NYZ7004VB



NONSTAT® ANTISTATIC AIR HOSES

- 1/4" hose is fully grounded to prevent static discharge

- Ideal for environments where static control is essential

NYZ-HOSE (15' HOSE)

NYZ7025H50 (50' HOSE)

NYZ7024H100 (100' HOSE)



MASTIC REMOVAL NYROC® BLADE VIBRATION GUN KIT

- Adds pneumatic power to nyroc® blades
- Vibro gun uses standard NYROC® blades for medium duty scraping jobs
- Kit includes Vibro gun, 1", 1/2" and 1/4" NYROC® blades (1 each) plus blade locks in black kit bag

NYZ7006MG

Snap-on Industrial drills are used in aviation applications ranging from light assembly to metalworking. Their powerful five vane motors makes these drills great for drilling applications that contain ferrous and non-ferrous metals, plastics, and composite materials.

Built for durability, their 3 planet gear system delivers superior life and load capacity. The Snap-on Industrial drills offer maximum comfort with reduced operator fatigue by offering a low sound level

Drop in motor with no alignment required on non-reversing models

Alignment pin on reversing models is on front end plate



and low vibration solution. Operator comfort is achieved through the implementation of a light weight aluminum housing and a comfort grip. Drills are available in both reversing and non-reversing pistol grip and lever handle configurations.

Performance

Powerful 1.0 HP motors easily handle a wide range of drilling applications

- With excellent run-out characteristics, (+/- 0.0025" @ 2.5" from the end of the chuck) drills provide precision required for critical applications
- Teasing trigger provides excellent speed control

Ergonomics

- Comfortable, compact drill bodies includes finger rests on the side of tool do not protrude which allows trigger actuation with stronger middle finger
- Anatomic design keeps wrist and arm straight, allows high feed forces
- Low noise and vibration levels for comfort in extended use operations

Serviceability

- Drop in motors with no alignment required (applies to nonreversing drills only)
- High part interchangeability = lower service part inventories

Reversible Pistol Grip Air Drills

CE

STYLE	STOCK NO. (KEYED CHUCK)	STOCK NO. (KEYLESS CHUCK)	CHUCK CAPACITY IN (mm)	FREE SPEED RPM	WEIGHT lb (kg)	LENGTH in (mm)	SPINDLE THREAD
1.0 hp (0.75 kw) Reversible	PDXF1K1	PDXF1L1	3/8 (10)	550	3.1 (1.4)	8.6 (220)	3/8"-24
	PDXF1K5	PDXF1L5	3/8 (10)	1500	2.6 (1.15)	7.6 (195)	3/8"-24
	PDXF1K6	PDXF1L6	3/8 (10)	2050	2.6 (1.15)	7.6 (195)	3/8"-24
	PDXS1K1	PDXS1L1	1/2 (13)	550	3.6 (1.6)	9.1 (230)	1/2"-20

Non-Reversible Pistol Grip Air Drills

CE

STYLE	STOCK NO. (KEYED CHUCK)	STOCK NO. (KEYLESS CHUCK)	CHUCK CAPACIT IN (mm)	Y FREE SPEED RPM	WEIGHT lb (kg)	LENGTH in (mm)	SPINDLE THREAD
1.0 hp (0.75 kw) Reversible	PDXT2K7	-	1/4 (6)	2600	2.3 (1.05)	6.5 (165)	3/8"-24
	PDXT2K8	-	1/4 (6)	3500	2.3 (1.05)	6.5 (165)	3/8"-24
	PDXT2K9	-	1/4 (6)	5500	2.3 (1.05)	6.5 (165)	3/8"-24
	PDXF2K0	-	3/8 (10)	450	2.9 (1.3)	8 (205)	3/8"-24
	PDXF2K2	-	3/8 (10)	600	2.9 (1.3)	8 (205)	3/8"-24
	PDXF2K3	PDXF2L3	3/8 (10)	900	2.9 (1.3)	8 (205)	3/8"-24
	PDXF2K4	PDXF2L4	3/8 (10)	1350	2.9 (1.3)	8 (205)	3/8"-24
	PDXF2K7	PDXF2L7	3/8 (10)	2600	2.5 (1.1)	7 (180)	3/8"-24
	PDXF2K8	PDXF2L8	3/8 (10)	3500	2.5 (1.1)	7 (180)	3/8"-24
	PDXF2K9	PDXF2L9	3/8 (10)	5500	2.5 (1.1)	7 (180)	3/8"-24
	PDXS2K0	PDXS2L0	1/2 (13)	450	3.3 (1.5)	8.5 (215)	1/2"-20
	PDXS2K2	PDXS2L2	1/2 (13)	600	3.3 (1.5)	8.5 (215)	1/2"-20
	PDXS2K3	PDXS2L3	1/2 (13)	900	3.3 (1.5)	8.5 (215)	1/2"-20
	PDXS2K4	PDXS2L4	1/2 (13)	1350	3.3 (1.5)	8.5 (215)	1/2"-20
	PDXS2K7	PDXS2L7	1/2 (13)	2600	2.9 (1.3)	7.5 (190)	1/2"-20



SDR10P26N3

Snap-on Pistol Grip Rivet Shavers

- Powerful 21,000 RPM, 1HP (0.75 kw), 5 vane motor
- Micro adjustable shaving depth with spring loaded removable stabilizer
- Shaves rivets from 3/16" - 5/8"

Uses industry standard 1/4" - 28 threaded rivet shaver cutters

STOCK NO.	CUTTER DIAMETER in (mm)	FREE SPEED RPM	WEIGHT lb (kg)	LENGTH in (mm)
PVX1	3/16 (8)	21,000	2.7 (1.2)	8.0 (205)
PVX2	3/8 (10)	21,000	2.7 (1.2)	8.0 (205)
PVX3	7/16 (11)	21,000	2.7 (1.2)	8.0 (205)
PVX4	1/2 (13)	21,000	2.7 (1.2)	8.0 (205)
PVX5	5/16 (14)	21,000	2.7 (1.2)	8.0 (205)
PVX6	3/8 (16)	21,000	2.7 (1.2)	8.0 (205)



PVX1

TORQUE WRENCHES

ControlTech™

Convenient Data Download

USB plug and play technology allows data download without additional software. Simply connect the included USB cord to the electronic torque wrench and a PC to drag and drop data for an audit proof trail and process control

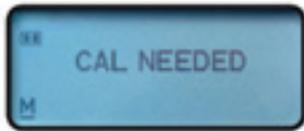


Fully Programmable

50 memory presets with a batch count up to 99. Presets can be locked to prevent inadvertent changes or tampering.

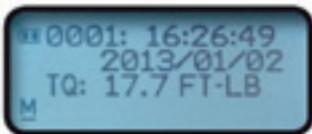
Sequence Programming

Allows you to program different torque applications in sequence and lock in job mode to ensure the operator follows sequence without error.



Calibration Due Indicator

Using a patent-pending* time based calibration technology, the Snap-on ControlTech™ Industrial Torque Wrench alerts you when calibration is needed.



Reliable Data Trail

Time stamped data trail for quality control, job auditing, and torque verification.

DATE/TIME	MIN TARGET TORQUE	MAX TARGET	PEAK TORQUE	MIN TARGET	MAX TARGET	PEAK ANGLE	TORQUE UNITS	TORQUE STATUS	ANGLE STATUS	MODE COUNT
1/1/2013 16:38	20	30	20.3	0	0	0	FT-LB	OK	OK	3
1/1/2013 16:38	20	30	20.55	0	0	0	FT-LB	OK	OK	2
1/1/2013 16:38	20	30	20.55	0	0	0	FT-LB	OK	OK	1
1/1/2013 6:39	0	0	25.09	45	60	46	FT-LB	OK	OK	1
1/1/2013 16:39	0	0	26.62	45	60	46	FT-LB	OK	OK	2
1/1/2013 16:39	0	0	26.57	45	60	46	FT-LB	OK	OK	3
1/1/2013 16:41	0	0	23.32	50	65	52	FT-LB	OK	OK	3
1/1/2013 16:41	0	0	19.98	50	65	51	FT-LB	OK	OK	2
1/1/2013 16:41	0	0	22.18	50	65	52	FT-LB	OK	OK	1
1/1/2013 16:50	25	35	28.29	50	65	57	FT-LB	OK	OK	3
1/1/2013 16:51	25	35	27.76	50	65	52	FT-LB	OK	OK	2
1/1/2013 16:51	25	35	28.15	50	65	54	FT-LB	OK	OK	1
1/1/2013 16:52	19	22	23.69	0	0	0	FT-LB	HIGH	OK	1
1/1/2013 16:54	0	0	26.73	43	49	53	FT-LB	OK	HIGH	1



STOCK NO.	CTAL1240	CTAL1R240	CTAL1J240
DESCRIPTION	Industrial Electronic Torque, Angle & Memory Wrench; ¼" Square Drive	Industrial Electronic Torque, Angle & Memory Wrench; ¼" Fixed Head Ratchet	Industrial Electronic Torque, Angle & Memory Wrench; Interchangeable Head; J-Shank
Square Drive	¼"	¼"	—
Head Type	Fixed Head & Fixed Drive	Sealed Ratchet Fixed Head	Interchangeable; J-Shank
Geer Teeth	—	72	—
Geer Action	—	5.0 Degrees	—
Shank Diameter	—	—	J (0.425")
Torque Range, in lb	12-240	12-240	12-240
Torque Range, ft lb	1-20	1-20	1-20
Torque Range, Nm	1.4-27.2	1.4-27.2	1.4-27.2
Torque Accuracy	+/- 2% Clockwise; +/- 3% Counterclockwise		
Angle Range	0-360 degrees	0-360 degrees	0-360 degrees
Angle Accuracy	+/-1% of Reading +/-1 Degree @ Angular Velocity > 10 Degrees/Sec < 180 Degrees/Sec	+/-1% of Reading +/-1 Degree @ Angular Velocity > 10 Degrees/Sec < 180 Degrees/Sec	+/-1% of Reading +/-1 Degree @ Angular Velocity > 10 Degrees/Sec < 180 Degrees/Sec
Dual 80°	—	Yes	—
Storage Capacity	1,500 Readings	1,500 Readings	1,500 Readings
Number of Presets	50	50	50
Languages	English, Spanish, French, German	English, Spanish, French, German	English, Spanish, French, German
Operating/Storage Temperature	0 to 130°F (-18 to 54°C)	0 to 130°F (-18 to 54°C)	0 to 130°F (-18 to 54°C)
Rugged and Lightweight 6061-T6 Aerospace Aluminum Body	Yes	Yes	Yes
Housing Color	Black Anodized	Black Anodized	Black Anodized
Batteries Included	3 x AAA Lithium	3 x AAA Lithium	3 x AAA Lithium
Weight	1.1 lbs	1.2 lbs	1.0 lbs
Head Depth (A) / Width (B)	¾" (A) / ¾" (B)	¾" (A) / ⅞" (B)	—
Length	12.4	14.1	12.5**
Storage Case Included	Yes	Yes	Yes
Warranty	2-Year	2-Year	2-Year

Complies with ISO®-6789-2003 and ASME® B107.300-2010 (B107.28) Standards for Electronic Torque Instruments
* Wrench length specification does not include the length of interchangeable heads.

(For more information, please refer to page 22, Appendix A)



ATI444 (CUTAWAY PICTURE SHOWN)

ATI443 (CUTAWAY PICTURE SHOWN)

ATI444 Microstops

For high volume, accurate countersinking in a production environment.

- Full ball bearing shaft support for increased life
- Heavy duty ball thrust bearing ensures depth repeatability
- Fail-safe design accomplished with integrated shoulder on shaft
- Debris filter prevents chips and dust from contaminating bearings
- .0005" depth adjustment, 5/16" shaft travel
- Right-hand threaded lock nut prevents jamming of adjustment mechanism
- Multiple skirt & shaft configurations options

ATI443 Microstops

For lower volume countersinking in maintenance and home-build environments.

- Bronze bushing shaft support and heavy duty ball thrust bearing ensures depth repeatability
- Fail-safe design accomplished with integrated shoulder on shaft
- .0005" depth adjustment, 5/16" shaft travel
- Right-hand threaded lock nut prevents jamming of adjustment mechanism
- Multiple skirt & shaft configuration options

**More Microstop configurations available:*

- Contact your Snap-on Rep for pricing and use the charts below to configure your order:
Choose Microstop model + Skirt + Shaft for corresponding Stock Number

Jumbo Size Microstops

- For production environment countersinking of larger sized holes.
- Fail-safe design accomplished with integrated shoulder on shaft.
- All shafts feature wrenching flats to aid in removal of cutter after use.
- 3/4" shaft travel.
- Ball thrust bearing ensures depth repeatability.



ATI432A



ATI462H3-1.3

ATI® Cylindrical Body Skin Clamp Runner ATI800FG

- For installing / removing temporary cylindrical body fasteners
- Drives all diameters and grip accommodations
- Lightweight and compact
- Push button rapid reverse and ergonomic rubber grip



Hi-Lok® Tools

(For more information, please refer to page 23, Appendix B)



ATISK3539A8

ATISK3539A8 Hi-Lok Roller Clutch Wrench Kit

- Included ATI2979U HI-LOK® removal pliers
- Used for installation and removal in confined areas
- Smooth, instantaneous engagement
- Six 3" long roller installation roller wrenches with dedicated sockets ($\frac{7}{32}$ ", $\frac{1}{4}$ ", $\frac{5}{16}$ ", $\frac{11}{32}$ ", $\frac{3}{8}$ " and $\frac{7}{16}$ ")
- One 3" long installation roller wrench with $\frac{1}{4}$ " square
- One 3" long removal roller wrench with $\frac{1}{4}$ " square



ATI2979U



ATISK3539L

Hi-Lok Roller Clutch Wrench

- Smooth, instantaneous engagement
- Good for limited access areas

STOCK NO.	DIRECTION	DRIVE	LENGTH (in)	FINISH
ATI3539IT14	Installation	$\frac{1}{4}$ " Hex Socket	3	Black Oxide
ATISK3539	Installation	$\frac{1}{4}$ " Square	3	Black Oxide
ATISK3539L	Installation	$\frac{1}{4}$ " Square	6	Black Oxide
ATI3539I1132	Installation	$\frac{11}{32}$ " Socket	3	Black Oxide
ATI3539IT38	Installation	$\frac{3}{8}$ " Hex Socket	3	Black Oxide
ATI3539IT516	Installation	$\frac{5}{16}$ " Hex Socket	3	Black Oxide
ATI3539IT716	Installation	$\frac{7}{16}$ " Hex Socket	3	Black Oxide
ATI3539IT732	Installation	$\frac{7}{32}$ " Hex Socket	3	Black Oxide
ATISK3539B	Installation	$\frac{1}{4}$ " Square	3	Zinc
ATISK3539BL	Installation	$\frac{1}{4}$ " Square	6	Zinc
ATISK3539LR	Removal	$\frac{1}{4}$ " Square	6	Black Oxide
ATISK3539R	Removal	$\frac{1}{4}$ " Square	3	Black Oxide

SHEET-METAL TOOL KITS

Rivet Gun Kit

- Durable soft sided case
- Air tool regulator and air tool oil
- Four common steel bucking bars
- Two rivet set retainer springs (standard and quick change)
- Pistol grip rivet hammer
- Three flush rivet sets
- Eight AN470 universal rivet sets (straight and offset)

RIVET TOOL KIT STOCK NO.	RIVET HAMMER
ATI590RGK3X	ATIATC3X
ATI590RGK-4X	ATIATC4X



ATI590SMKSP1

Sheet Metal Mechanics Set

- Four straight AN470 universal rivet sets ($\frac{3}{32}$ ", $\frac{1}{8}$ ", $\frac{5}{32}$ ", $\frac{3}{16}$ ")
- One flush rivet set
- Four integral pilot countersinks (#10, #21, #30, #40) pilot sizes
- Microstop-Ball Bearing
- Hand rivet cutter
- Rivet hammer (see chart)
- Four spring tension u-clamps
- 12 Each ($\frac{3}{32}$ ", $\frac{1}{8}$ ", $\frac{5}{32}$ ", $\frac{3}{16}$ ") temporary fasteners
- Eight HSS drill bits; jobber length
- Sioux 1410 drill

SHEET METAL MECHANICS KIT STOCK NO.	RIVET HAMMER
ATI590SMKSP1	SIoux 270A
ATI590SMKSP6	ATI ATIATC4X

ATI® Frangible Collar Removal Kit

ATI3588K

- Kit includes:
 - Six 1/4" drive removal sockets for the most common Hi-Lok® and Hi-Lite® collars
 - One 1/4" drive reversing ratchet
 - Collar removal pliers
 - Two 1/4" drive ratchet extensions in 2" and 4" lengths
 - Four T-hex keys in sizes 5/64", 3/32", 1/8", and 5/32"
 - One standard 1/16" hex key
 - Compact case with foam cutouts



Frangible Collar Removal Sockets

- Patent-Pending design immediately engages collars with minimal downward force
- Design allows for easy removal of collars from socket after extraction
- Sockets feature 1/4" drive and a set screw that holds the socket in place on ratchet



ATI3585

STOCK NO.	DESCRIPTION
ATI3585-5B	Removes most-5 size collars
ATI3585-6A	Removes most-6 collars
ATI3585-6B	Removes most-6 size aluminum collars
ATI3585-8A	Removes most-8 size collars
ATI3585-8B	Removes most-8 size stainless collars
ATI3585-8C	Removes most-5 size aluminum collars
ATI3585-6PB	Includes all six removal sockets above and socket rail



ATI® Frangible Collar Installation Kit

Comprehensive Kit for installing frangible collar fasteners including Hi-Lok® and Hi-Lite®

ATI3600K

- Kit includes:
 - Ten 1/4" and 3/8" drive hex sockets in sizes 3/16" thru 1/2"
 - 1/4" drive and 3/8" drive compact reversing ratchets
 - Two ratchet extensions in sizes 1/4" X 2" and 3/8" X 3"
 - Four T-hex keys in sizes 5/64", 3/32", 1/8", and 5/32"
 - One standard 1/16" hex key
 - Compact case with foam cutouts



ATI3585-6PC

APPENDIX A - MICROSTOPS



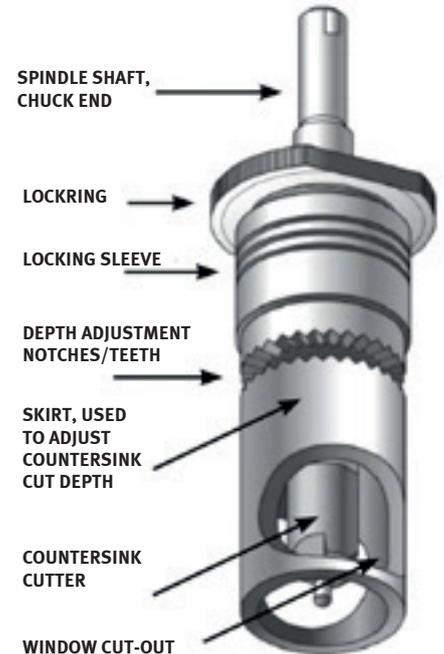
WHAT IS A MICROSTOP AND WHAT DOES IT DO?

A “microstop” is a cylindrical tool that holds a cutting tool known as a “countersink.” The microstop allows the countersink to move perpendicular to the cutting surface at precise depths. When countersinking, the microstop can make “micro” adjustments up and down, and “stop” the countersink at the exact depth to match the profile of the fastener to be installed. The countersink depth is controlled by rotating the microstop skirt. The adjustments are extremely precise. Rotating the countersink skirt adjusts the countersink depth by only 0.0005 in.

Extreme precision is important when countersinking a hole because it enables the ultimate objective: to ensure that the fastener – typically a flush rivet – fills the countersunk hole completely. Usually a rivet gun is used for installing and deforming the flush rivet into the hole’s geometry.

When each countersunk hole is precisely drilled and fasteners are properly installed, every part of the plane’s skin has consistent strength and load distribution. The use of a microstop allows for uniformity and helps achieve this goal.

A versatile tool, a microstop works with any type of threaded shank cutter in applications where the depth of cut requires extreme precision. This would include countersinks, counterbores, and hollow cutters, just to name a few.



NOTE: Skirt remains stationary when in contact with the cutting surface, enabling the operator to view the cutter.



"Microstop & Countersink Cutter" in advanced position

"Microstop & Countersink Cutter" in retracted position

ANATOMY OF A COUNTERSINK

A countersink is a tool used to cut and form a hole so that a flush fastener can be installed. The main features of a countersink are the threaded shank, body, cutting angle, and pilot.

Threaded Shank

The threaded shank is inserted into the microstop shaft and its thread size is specified by the user. Industry standard thread sizes are 10-32, 1/4"-28, 3/8"-24, and 7/16"-20. The most common countersink shanks are 1/4"-28.

Body

The body of a countersink is typically cylindrical in shape and its diameter is determined by the fastener to be installed.

Cutting Angle

The cutting angle is determined by the fastener to be installed and is specified by the user. The cutting angle also indicates what the angle of the conically shaped hole will be when the hole is formed. The most common cutting angle is 100 degrees.

Pilot

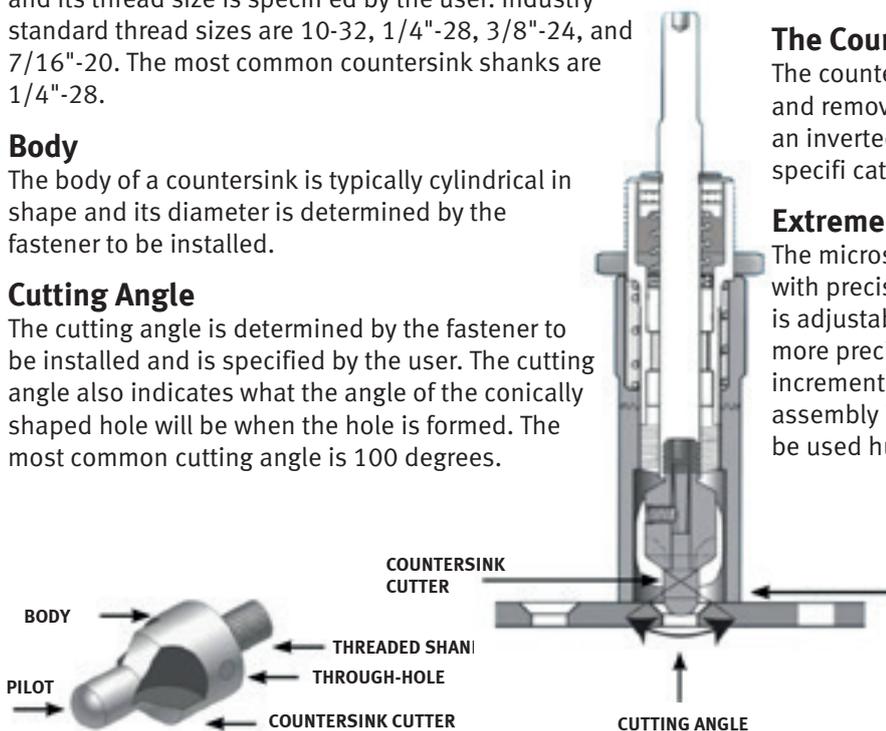
The pilot diameter on a countersink is specified by the user and typically is the same diameter of the pre-drilled hole. It's important for the pilot end to be smooth and to have a hemispherical tip in order to prevent scratching. The pilot acts like a guide when it is inserted into the pre-drilled hole (called the “pilot hole”). The pilot facilitates countersinking by properly aligning the countersink to the target hole.

The Countersink Cutter

The countersink cutter rotates at a very high speed and removes material to form a hole shaped like an inverted cone. This hole is cut to form the exact specifications of the fastener to be installed.

Extreme Precision and Accuracy

The microstop controls the countersink’s depth with precise accuracy. Typically, the depth of cut is adjustable in increments of .001 inch, with more precise microstops available in .0005-inch increments. Once the microstop and countersink assembly is configured for the job, the assembly can be used hundreds of times with repeatable results.



NOTE: Microstop allows the countersink to move perpendicular to the cutting surface at precise depths.

NOTE: Integral countersink cutter shown. Countersinks are offered with interchangeable or integral pilot configurations.

APPENDIX B - HI-LOK® FASTENER

INSTALLING A HI-LOK® FASTENER

The Hi-Lok® Roller Clutch Wrench is excellent for use in tight spaces. It works like a ratchet, but has a roller clutch mechanism that provides immediate engagement throughout its range. It also has a thru-hole that provides access for a hex wrench that may be needed to stop the pin from rotating during installation.

Installation Procedure – A Hi-Lok® Roller Clutch Wrench or Hi-Lok® ratchet and Hi-Lok® socket are used along with a hex wrench to install Hi-Loks®.

With these tools, the operator tightens the collar until the collar's hex nut shears (or "franges") off. During tightening, the hex wrench is used to secure the pin. It fits into the pin via the thru-hole in the wrench.

To complete installation, the operator collects the hex nut and removes it to minimize the risk of FOD.



ATI Square Drive Hi-Lok® "Roller Clutch" Wrenches



REMOVING A HI-LOK® FASTENER

Removing a frangible collar can be a challenge. The pin and collar are mechanically connected and tamperproof, so standard tools won't work. Also, the removal process must avoid scratching the skin of the aircraft. ATI offers specialized sockets and pliers for removing frangible collars. Let's take a look:

Removal Procedure – The Hi-Lok® collar must be clamped and unscrewed and the pin tapped out to completely remove the assembly. A variety of tools can be used, but repeatability and scratching can be a problem.



Recently, ATI developed a Hi-Lok® removal socket that has internal teeth that bite into the collar material. Using a Hi-Lok® ratchet or Hi-Lok® Roller Clutch Wrench, the operator places the socket over the collar and turns the ratchet. The socket's teeth dig into the collar material with sufficient force to gain a hold of the collar so that it can be unscrewed. Again, a hex wrench may be used to stop the pin from rotating as needed.

Pliers – Another way to remove Hi-Lok® fasteners is by using pliers that are designed for the purpose. The jaws of the Hi-Lok® Removal Pliers are knurled to enable a good grip on the collar. Then the user applies "elbow grease" to remove the collar.

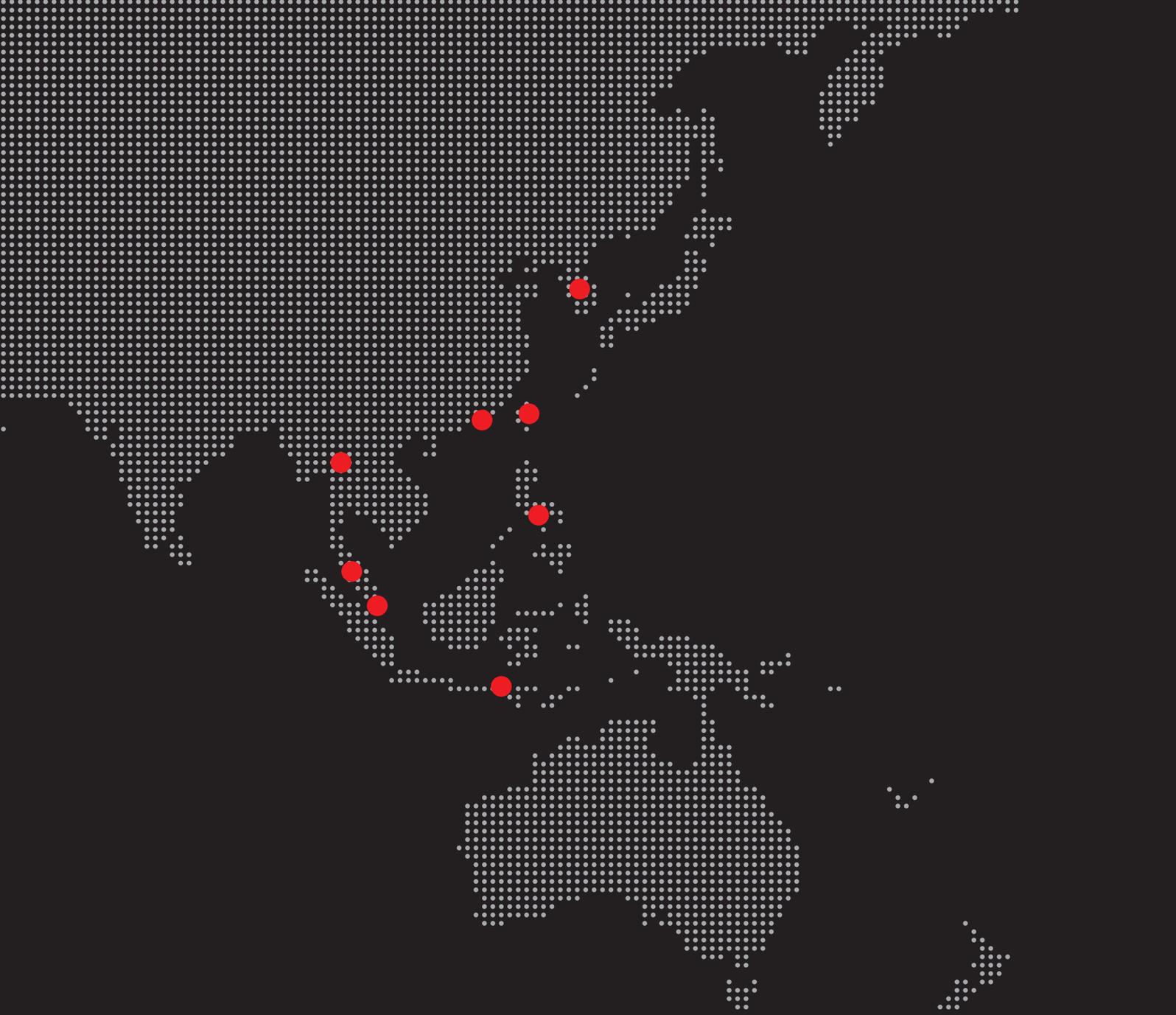
Kits – ATI offers Frangible Collar Removal Kits that work on a variety of commonly used sizes of threaded, tamperproof fasteners.



ATI Hi-Lok® Frangible Collar Removal Kit (shown)

Other kits available.





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