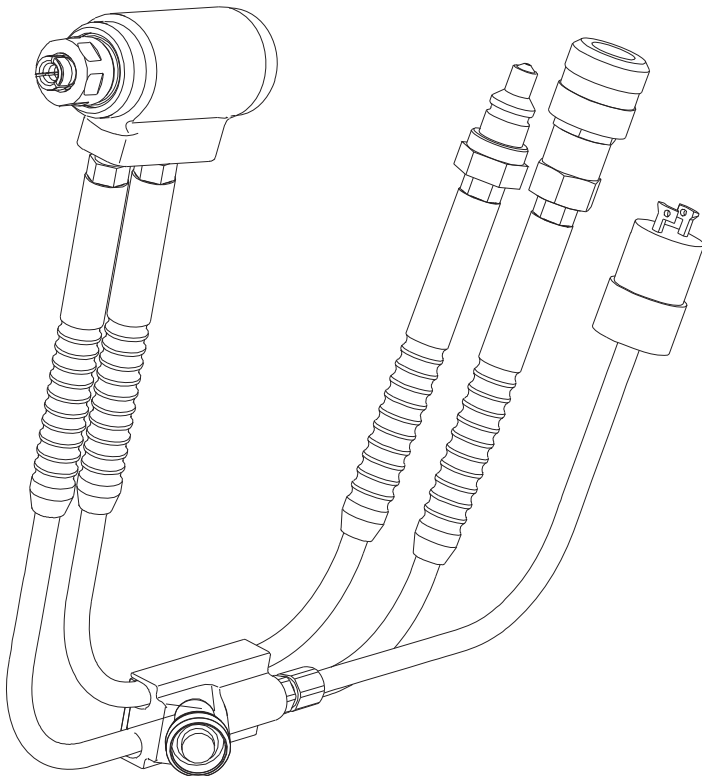


ARCONIC

Instruction Manual

SFBTT8 series

BobTail® Hydraulic Installation Tools



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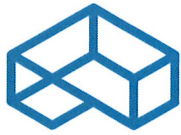
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September 15, 2017
HK1108

Makers of Huck®, Marson®, Recoil®
Brand Fasteners, Tools & Accessories



ARCONIC

EC Declaration of Conformity

Manufacturer:

Huck International, LLC, Industrial Products Group, 1 Corporate Drive, Kingston, NY, 12401, USA

Description of Machinery:

Models SFBTT 8, 15, 20, 32, 46 family of hydraulic installation tools and specials based on their design (e.g. PR#####).

Relevant provisions complied with:

Council Directive related to Machinery (2006/42/EC)

British Standard related to hand held, non-electric power tools (ISO 11148-1:2011)

European Representative:

Rob Pattenden, Huck International, Ltd. Unit C Stafford Park 7, Telford Shropshire TF3 3BQ, England, United Kingdom

Authorized Signature/date:

I, the undersigned, do hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).

Signature: 

Full Name: Robert B. Wilcox

Position: Engineering Manager

Location: Huck International, LLC d/b/a Arconic Fastening Systems and Rings
Kingston, New York, USA

Date: 01/11/2016 (November 1, 2016)



Declared dual number noise emission values in accordance with ISO 4871

A weighted sound power level, LWA: **71** dB (reference 1 pW) Uncertainty, KWA: 3 dB

A weighted emission sound pressure level at the work station, LpA: **60** dB (reference 20 µPa) Uncertainty, KpA: 3 dB

C-weighted peak emission sound pressure level, LpC, peak: **100** dB (reference 20 µPa) Uncertainty, KpC: 3 dB

Values determined according to noise test code ISO 3744. The sum of a measured noise emission value and its associated uncertainty represents an upper boundary of the range of values which is likely to occur in measurements.

Declared vibration emission values in accordance with EN 12096

Measured Vibrations emission value, a:	.52 m/s²
Uncertainty, K:	.08 m/s²


Values measured and determined according to ISO 28662-1, ISO 5349-2, and EN 1033


Test data to support the above information is on file at:
Arconic Fastening Systems and Rings, Kingston Operations, Kingston, NY, USA.





Safety Instructions

GLOSSARY OF TERMS AND SYMBOLS:

 Product complies with requirements set forth by the relevant European directives.

 Read manual prior to using this equipment.


 Eye protection is required while using this equipment.

 Hearing protection is required while using this equipment.

Notes: are reminders of required procedures.

and underline: emphasize a specific instruction.

 **WARNINGS: Must be understood to avoid severe personal injury.**

 **CAUTIONS: Show conditions that will damage equipment or structure.**

I. GENERAL SAFETY RULES:

1. A half hour long hands-on training session with qualified personnel is recommended before using Huck equipment.
2. Huck equipment must be maintained in a safe working condition at all times. Tools and hoses should be inspected at the beginning of each shift/day for damage or wear. Any repair should be done by a qualified repairman trained on Huck procedures.
3. For multiple hazards, read and understand the safety instructions before installing, operating, repairing, maintaining, changing accessories on, or working near the assembly power tool. Failure to do so can result in serious bodily injury.
4. Only qualified and trained operators should install, adjust or use the assembly power tool.
5. Do not modify this assembly power tool. This can reduce effectiveness of safety measures and increase operator risk.
6. Do not discard safety instructions; give them to the operator.
7. Do not use assembly power tool if it has been damaged.
8. Tools shall be inspected periodically to verify all ratings and markings required, and listed in the manual, are legibly marked on the tool. The employer/operator shall contact the manufacturer to obtain replacement marking labels when necessary. Refer to assembly drawing and parts list for replacement.
9. Tool is only to be used as stated in this manual. Any other use is prohibited.
10. Read MSDS Specifications before servicing the tool. MSDS specifications are available from the product manufacturer or your Huck representative.
11. Only genuine Huck parts shall be used for replacements or spares. Use of any other parts can result in tooling damage or personal injury.
12. Never remove any safety guards or pintail deflectors.
13. Never install a fastener in free air. Personal injury from fastener ejecting may occur.
14. Where applicable, always clear spent pintail out of nose

- assembly before installing the next fastener.
15. Check clearance between trigger and work piece to ensure there is no pinch point when tool is activated. Remote triggers are available for hydraulic tooling if pinch point is unavoidable.
16. Do not abuse tool by dropping or using it as a hammer. Never use hydraulic or air lines as a handle or to bend or pry the tool. Reasonable care of installation tools by operators is an important factor in maintaining tool efficiency, eliminating downtime, and preventing an accident which may cause severe personal injury.
17. Never place hands between nose assembly and work piece. Keep hands clear from front of tool.
18. Tools with ejector rods should never be cycled with out nose assembly installed.
19. When two piece lock bolts are being used always make sure the collar orientation is correct. See fastener data sheet for correct positioning.

II. PROJECTILE HAZARDS:

1. Risk of whipping compressed air hose if tool is pneudraulic or pneumatic.
2. Disconnect the assembly power tool from energy source when changing inserted tools or accessories.
3. Be aware that failure of the workpiece, accessories, or the inserted tool itself can generate high velocity projectiles.
4. Always wear impact resistant eye protection during tool operation. The grade of protection required should be assessed for each use.
5. The risk of others should also be assessed at this time.
6. Ensure that the workpiece is securely fixed.
7. Check that the means of protection from ejection of fastener or pintail is in place and operative.
8. There is possibility of forcible ejection of pintails or spent mandrels from front of tool.

III. OPERATING HAZARDS:

1. Use of tool can expose the operator's hands to hazards including: crushing, impacts, cuts, abrasions and heat. Wear suitable gloves to protect hands.
2. Operators and maintenance personnel shall be physically able to handle the bulk, weight and power of the tool.
3. Hold the tool correctly and be ready to counteract normal or sudden movements with both hands available.
4. Maintain a balanced body position and secure footing.
5. Release trigger or stop start device in case of interruption of energy supply.
6. Use only fluids and lubricants recommended by the manufacturer.
7. Avoid unsuitable postures, as it is likely for these not to allow counteracting of normal or unexpected tool movement.
8. If the assembly power tool is fixed to a suspension device, make sure that fixation is secure.
9. Beware of the risk of crushing or pinching if nose equipment is not fitted.

Continued on next page...



Safety Instructions (continued)

IV. REPETITIVE MOTION HAZARDS:

1. When using assembly power tool, the operator can experience discomfort in the hands, arms, shoulders, neck or other parts of the body.
2. When using tool, the operator should adopt a comfortable posture while maintaining a secure footing and avoid awkward or off balanced postures.
3. The operator should change posture during extended tasks to help avoid discomfort and fatigue.
4. If the operator experiences symptoms such as persistent or recurring discomfort, pain, throbbing, aching, tingling, numbness, burning sensations or stiffness, these warnings should not be ignored. The operator should tell the employer and consult a qualified health professional.

V. ACCESSORIES HAZARDS:

1. Disconnect tool from energy supply before changing inserted tool or accessory.
2. Use only sizes and types of accessories and consumables that are recommended. Do not use other types or sizes of accessories or consumables.

VI. WORKPLACE HAZARDS:

1. Be aware of slippery surfaces caused by use of the tool and of trip hazards caused by the air line or hydraulic hose.
2. Proceed with caution while in unfamiliar surroundings; there could be hidden hazards such as electricity or other utility lines.
3. The assembly power tool is not intended for use in potentially explosive environments.
4. Tool is not insulated against contact with electrical power.
5. Ensure there are no electrical cables, gas pipes, etc., which can cause a hazard if damaged by use of the tool.

VII. NOISE HAZARDS:

1. Exposure to high noise levels can cause permanent, disabling hearing loss and other problems such as tinnitus, therefore risk assessment and the implementation of proper controls is essential.
2. Appropriate controls to reduce the risk may include actions such as damping materials to prevent workpiece from 'ringing'.
3. Use hearing protection in accordance with employer's

instructions and as required by occupational health and safety regulations.

4. Operate and maintain tool as recommended in the instruction handbook to prevent an unnecessary increase in the noise level.
5. Select, maintain and replace the consumable / inserted tool as recommended to prevent an unnecessary increase in noise.
6. If the power tool has a silencer, always ensure that it is in place and in good working order when the tool is being operated.

VIII. VIBRATION HAZARDS:

1. Exposure to vibration can cause disabling damage to the nerves and blood supply to the hands and arms.
2. Wear warm clothing when working in cold conditions and keep hands warm and dry.
3. If numbness, tingling, pain or whitening of the skin in the fingers or hands, stop using the tool, tell your employer and consult a physician.
4. Support the weight of the tool in a stand, tensioner or balancer in order to have a lighter grip on the tool.

X. HYDRAULIC TOOL SAFETY INSTRUCTIONS:



WARNINGS:

Do not exceed maximum pull or return settings on tool.

Be sure all hose connections are tight. All tool hoses must be connected.

1. Carry out a daily check for damaged or worn hoses or hydraulic connections and replace if necessary.
2. Wipe all couplers clean before connecting. Failure to do so can result in damage to the quick couplers and cause overheating.
3. Ensure that couplings are clean and correctly engaged before operation.
4. Use only clean oil and filling equipment.
5. Power units require a free flow of air for cooling purposes and should therefore be positioned in a well ventilated area free from hazardous fumes.
6. Do not inspect or clean the tool while the hydraulic power source is connected. Accidental engagement of the tool can cause serious injury.
7. Be sure all hose connections are tight.
8. Wipe all couplers clean before connecting. Failure to do so can result in damage to the quick couplers and cause overheating.



Specifications

MAX OPERATING TEMP: 125° F (51.7° C)
MAX FLOW RATE: 2 gpm (7.57 l/m)
MAX INLET PULL PRESSURE: 8400 psi (579 bar)
MAX INLET RETURN PRESSURE: 4800 psi (331 bar)
PULL CAPACITY: 8200 lbf (36.5 kN)
RETURN CAPACITY: 2730 lbf (12.1 kN)
STROKE: 1.2 inches (3.1 cm)
WEIGHT: 4.0 lbs (1.81 kg)
POWER SOURCE: Huck POWERIG® Hydraulic Unit
HOSE KITS: Use only genuine HUCK Hose Kits rated at 10,000 psi working pressure.

HYDRAULIC FLUID: Hydraulic fluid shall meet DEXRON® III, DEXRON VI, MERCON®, Allison C-4 or equivalent ATF specifications. Fire resistant fluid may be used if it is an ester based fluid such as Quintolubric® HFD or equivalent. Water based fluid shall NOT be used as serious damage to equipment will occur.

Where the following trade names are used in this manual, please note:

DEXRON is a registered trademark of General Motors Corporation.

Loctite is a registered trademark of Henkel Corporation, U.S.A.

LUBRIPLATE is a registered trademark of Fiske Brothers Refining Co.

MERCON is a registered trademark of Ford Motor Corp.

Never-Seez is a registered trademark of Bostik, Inc.

Quintolubric is a registered trademark of Quaker Chemical Corp.

Slic-tite is a registered trademark of LA-CO Industries, Inc.

Teflon is a registered trademark of E. I. du Pont de Nemours and Company.

Threadmate is a registered trademark of Parker Intangibles LLC.

TRUARC is a trademark of TRUARC Co. LLC.

Vibra-Tite is a registered trademark of ND Industries, Inc. USA.

Principle of Operation

The operator pushes the tool nose over the end of the fastener until the tool puller bottoms on the fastener. When the trigger is pressed, the Powerig receives a signal to swage the fastener. The Piston moves forward to start the swaging process.

After the fastener is fully swaged, the operator must release the trigger, at which point the Tool's Anvil is ejected off of the collar and the Tool is released from the fastener.

Preparation for Use



WARNINGS:

Read this entire manual before using tool.

A 30-minute training session with qualified personnel is recommended before using Huck equipment.

When operating Huck equipment, always wear approved eye and hearing protection.

Be sure there is adequate clearance for the operator's hands before proceeding.

Only Huck Powerig® Hydraulic Units should be used as a power source for Huck installation equipment. Hydraulic power units that deliver high PULL and RETURN pressures—but which are NOT equipped with RELIEF VALVES—are specifically NOT RECOMMENDED and may be dangerous.

Be sure to connect the tool's hydraulic hoses to the Powerig before connecting the tool's switch control cord to unit. If not connected in this order, severe personal injury may occur.

Correct PULL and RETURN pressures are required for operator safety and for installation tool function. Gauge T-124833CE is available for checking pressures. See [PRESSURE SETTINGS](#) and Gauge Instruction Manual. Failure to verify pressures may result in severe personal injury.



CAUTIONS:

Apply Parker Threadmate®, Loctite® 567, or Slic-Tite® to male pipe threads (per manufacturer's instructions) to prevent leaks and to ease assembly.

Keep disconnected hoses, couplers, and hydraulic fluid away from dirty surfaces and free of foreign matter. Contaminated fluid can cause tool and Powerig valve failures.

Hose couplers must be completely joined in order to ensure that ball checks in the nipple and the body are completely open. Improperly assembled couplers will cause overheating and malfunctions in tool and Powerig. Hand tighten couplers; do NOT use a pipe wrench.

1. Attach nose assembly to tool as applicable.
2. Use Huck Powerig Hydraulic Unit, that has been prepared for operation per instruction manual. Check the PULL and RETURN pressures and, if required, adjust to pressures given in [PRESSURE SETTINGS](#) section of this manual.
3. Turn OFF hydraulic unit. Then disconnect power supply from hydraulic unit. Disconnect trigger control system from hydraulic unit.
4. Connect PULL pressure hose, with coupler nipple, into port "P" of tool. Use only with Huck-supplied hoses rated at 10,000 psi or greater. Check trigger assembly for damage or wear. If required, adjust position of trigger assembly on hose. Connect trigger control system to hydraulic unit.
5. Connect hydraulic unit to power supply (air or electric). Turn ON hydraulic unit. Press trigger a few times to cycle tool and to circulate hydraulic fluid. Observe action of tool and check for leaks.

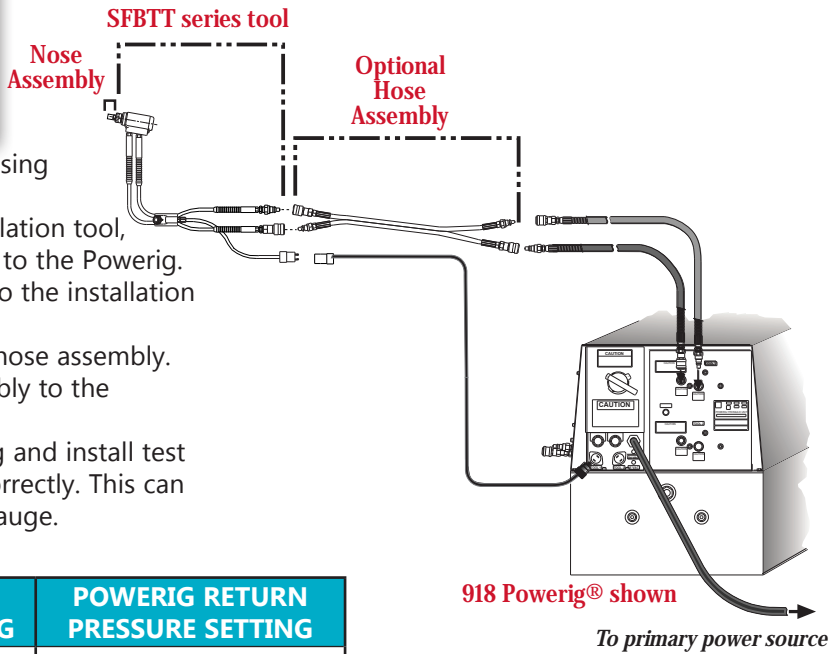


Tool to Powerig Setup



WARNINGS:
 To prevent tripping hazard, suspend tools and route hoses off floors.
 Only use compatible equipment with this tool.

1. Set PULL and RETURN pressures on Powerig using Huck Gauge P/N T-124833CE and TABLE 1.
2. With the Nose Assembly in place on the installation tool, begin setup. First connect the hydraulic hoses to the Powerig.
3. Connect the other end of the hose assembly to the installation tool.
4. Connect the power cord from the tool to the hose assembly.
5. Connect the power cord from the hose assembly to the Powerig.
6. After the system is set up, turn on the Powerig and install test fastener. Verify that the fastener is installed correctly. This can be checked by using the appropriate swage gauge.



Pressure Settings - TABLE 1

FASTENER SIZE	FASTENER GRADE	POWERIG PULL PRESSURE SETTING	POWERIG RETURN PRESSURE SETTING
3/8"	5	6000 psi (414 bar)	3400 psi (234 bar)
3/8"	8	7250 psi (500 bar)	4150 psi (286 bar)

Assembly of NPTF Threaded Components

AIR FITTINGS

- 1) Apply TEFLON® stick to male threads which do not have pre-applied sealant per manufacturer's recommendations. (Proceed to All Fittings step 2)

HYDRAULIC FITTINGS

- 1) Apply Threadmate™ to male and female threads which do not have pre-applied sealant per manufacturer's recommendations. (Proceed to All Fittings step 2)

ALL FITTINGS

- 2) Tighten to finger-tight condition.
- 3) Wrench tighten to 2-3 turns past finger-tight condition.
- 4) Final thread engagement can be checked (optional) by measuring the dimension from the flange of male fitting to the end of the thread before assembly and subtracting the distance under the flange after assembly.

Thread size	Final thread engagement at full make-up
1/8-27 NPTF	.235 inch (.59 cm)
1/4-18 NPTF	.339 inch (.86 cm)
3/8-18 NPTF	.351 inch (.89 cm)

Optional Equipment

To maintain CE conformity, only CE compatible equipment should be used with these tools. Installation tools and nose assemblies are the only CE components, unless otherwise noted. Controls and other hardware shown in the manual are for domestic use only.

Service Kit	- SFBTT8KIT	Swage Gauge	- HG-S-BT12
Teflon Stick	- 503237	(3/8 inch Swage Gauge for Grades 5 & 8 BOBTAIL collars)	
Loctite® 242	- 505016	Pressure Gauge	- T-124833CE
Anti-seize Lubricant	- 508183		
Hose Cable			
Extension Assembly	- 128461-(length)		



Operating Instructions

For safe operation, please read completely.

GENERAL

- Operators should receive training from qualified personnel.
- Do not bend tool to free if stuck.
- Tool should only be used to install fasteners.
- NEVER use as a jack/spreader or hammer.



WARNINGS:

- To avoid severe personal injury: **Wear approved eye and hearing protection.** Be sure of adequate clearance for Operator's hands before proceeding with fastener installation.
- Do not pull on a pin without placing fastener/collar in a workpiece. This condition can cause pin to eject with great velocity and force if the pintail breaks off or teeth/grooves strip. This may cause severe personal injury.
- To avoid pinch point, never place hand between nose assembly and work piece.
- Only use compatible equipment with this tool.

HOW TO INSTALL A BOBTAIL FASTENER



CAUTION: Remove the excess gap from between the sheets to ensure that enough of the pintail emerges from the collar for ALL puller teeth to engage with the pintail. If ALL teeth do not engage properly, jaws will be stripped and/or damaged.

NOTE: ***"Gap" is the space between sheets. Gap is "excessive" if not enough pintail sticks through the collar for the nose assembly jaws to grip.***

1. Check work and remove excessive gap.
2. Put BOBTAIL pin in hole.
3. Slide the BOBTAIL collar over the pin. (The flanged end of the collar must be towards the pieces being fastened.)
4. Push the nose assembly onto the pin until the nose assembly puller stops against the pin. Tool and nose assembly must be held at right angles (90 degrees) to the work.
5. Press the tool trigger to start the installation cycle.
6. When the forward motion of the nose assembly anvil stops, release the trigger. The tool will go into its return stroke and push off the installed fastener.
7. The tool and nose assembly are ready for the next installation cycle.

Replacing the Puller and Anvil

For parts identification, see Figure 4.

NOTE: Apply an anti-seize lubricant to the outside of the Puller and the inside of the Anvil to improve Puller and Anvil life.

REMOVAL

1. Using an Allen wrench, remove Screw (P/N 504300) from the back of the Cover (P/N 129519).
2. Using an Allen wrench, unscrew Lock Nut (P/N 129518) from the back of the End Cap (P/N 129512).
3. Remove the Puller (P/N 129515) from the rear of the tool.
4. Unscrew the Anvil (P/N 129516) from the front of the tool.

INSTALLATION

1. Screw the Anvil (P/N 129516) onto the front of the Piston (P/N 129517).
2. Install the Puller (P/N 129515) through the rear of the tool.
3. Apply Loctite® 243 THREADLOCKER to the threads of Lock Nut (P/N 129518) and screw the Nut into the rear of the End Cap (P/N 129512).
4. Apply Loctite® 243 THREADLOCKER to the threads of Screw (P/N 504300) and screw into the rear of the Lock Nut.



Maintenance

WARNING: Inspect tool for damage and wear before each use. Do NOT operate if damaged or worn; severe personal injury may occur.

CAUTIONS:
 Consult MSDS before servicing tool.
 Keep dirt and other material out of hydraulic system.
 Keep separated parts away from dirty work surfaces.
CAUTION: Replace all seals, wipers, and rings when the tool is disassembled for any reason, and at regular intervals, depending on severity and duration of use.
 Do NOT use Teflon® tape on pipe threads. Tape can shred and break free into fluid lines, resulting in malfunctions.

The efficiency and life of your tool depends on proper maintenance. Read this section completely before proceeding with maintenance and repair. Use proper hand tools in a clean and well-lighted area. Only special hand tools are required in most cases. Where a special tool is required, the description and part number are given.

- While clamping tool or parts in a vise, and when parts require force, use suitable soft materials to cushion impact. For example, using a half-inch brass drift, wood block, and vise with soft jaws greatly reduces possibility of damaging tool. Remove components in a straight line without bending, cocking or undue force. Re-assemble tool with the same care.

SEALANTS, LUBRICANTS, SERVICE KITS

- See SPECIFICATIONS for fluid type. Dispose of fluid in accordance with local environmental regulations. Recycle steel, aluminum, and plastic parts in accordance with local lawful and safe practices.
- Apply Parker Threadmate®, Loctite® 567, or Slic-Tite® (per manufacturer’s instructions) to pipe plug threads and quick connect fittings.
- Smear LUBRIPLATE® 130-AA (P/N 502723) or equivalent on O-rings and mating surfaces to aid assembly and prevent damage to O-rings.
- Each Service Kit contains perishable parts for your specific tool. As foreseeable use may indicate, keep extra kits (O-rings, Back-up Rings, other standard items) and tool parts in stock. When stock is depleted, you can get kit items

from any regular retailer of these items. See kit parts list for: O-ring size (AS568- number); material; durometer.

Preventive Maintenance SYSTEM INSPECTION

Operating efficiency of the tool is directly related to the performance of the complete system, including the tool with nose assembly, hydraulic hoses, trigger and control cord, and Powerig. Therefore, an effective preventive maintenance program includes scheduled inspections of the system to detect and correct minor troubles. At the beginning of each shift/day:

- Inspect tool and nose assembly for external damage.
- Verify that hydraulic hose fittings, couplings, and electrical connections are secure.
- Inspect hydraulic hoses for damage and deterioration. Do not use hoses to carry tool. Replace hoses if damaged.
- Observe tool, hoses, and hydraulic unit during operation to detect abnormal heating, leaks, or vibration.
- Max hydraulic fluid contamination level: NAS 1638 class 9, or ISO CODE 18/15, or SAE level 6.

POWERIG MAINTENANCE

Maintenance instructions and repair procedures are in the appropriate Powerig Instruction Manual.

TOOL MAINTENANCE

Whenever disassembled and at regular intervals (depending on severity and length of use), replace all seals, wipers, and back-up rings in tool. Service Kits, hoses, and extra parts should be kept in stock. Inspect cylinder bore, pistons, and piston rods for scored surfaces and excessive wear or damage. Replace as necessary.

NOSE ASSEMBLY MAINTENANCE

Clean nose assembly often. Dip in mineral spirits or similar solvent to clean puller and wash away metal chips and debris. At regular intervals, as experience shows, disassemble nose and use a sharp “pick” to remove embedded particles from grooves of puller.

STICKER LOCATIONS

This tool comes labeled with important stickers that contain safety and pressure settings information. It is necessary that these stickers remain on the tools and are easily read. If stickers become damaged or worn, or if they have been removed from the tool, they must be replaced. The part numbers and locations are shown in the tool assembly drawing of this manual.

Hydraulic Couplings

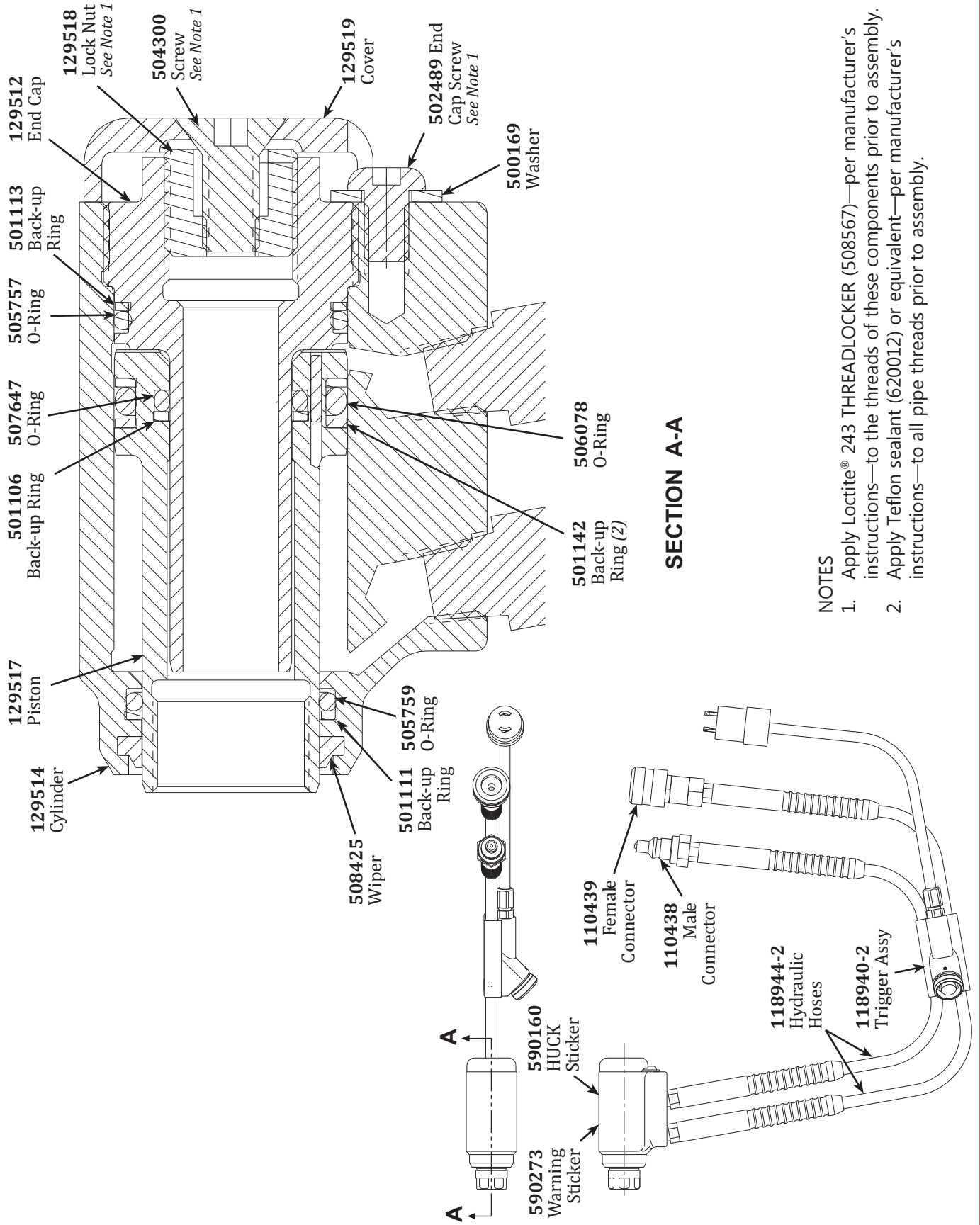
O-ring (P/N 504438)
Back-up ring (P/N 501102)

TIP: Use a fine India stone to remove nicks and burrs from diameter A and leading edge to prevent damage to O-ring.



Tool Components SBTT8

Figure 3



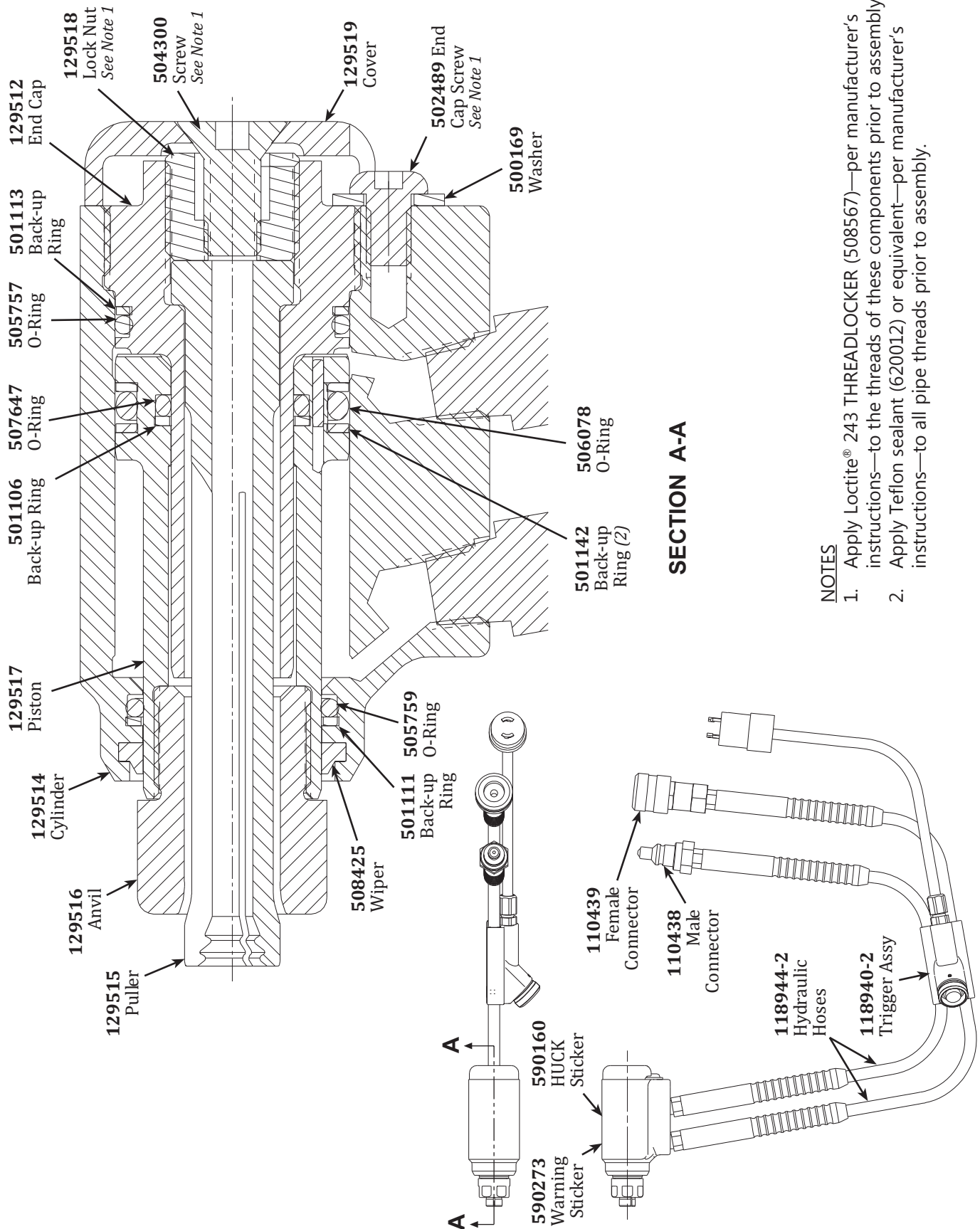
NOTES

1. Apply Loctite® 243 THREADLOCKER (508567)—per manufacturer's instructions—to the threads of these components prior to assembly.
2. Apply Teflon sealant (620012) or equivalent—per manufacturer's instructions—to all pipe threads prior to assembly.



Tool Components SFBTT8-12

Figure 4



NOTES

1. Apply Loctite® 243 THREADLOCKER (508567)—per manufacturer's instructions—to the threads of these components prior to assembly.
2. Apply Teflon sealant (620012) or equivalent—per manufacturer's instructions—to all pipe threads prior to assembly.



Limited Warranties

Limited Lifetime Warranty on BobTail® Tools:

Huck International, Inc. warrants to the original purchaser that its BobTail® installation tools manufactured after 12/1/2016 shall be free from defects in materials and workmanship for its **useful lifetime**. This warranty does not cover special order / non-standard products, or part failure due to normal wear, tool abuse or misapplication, or user non-compliance with the service requirements and conditions detailed in the product literature.

Two Year Limited Warranty on Installation Tools:

Huck International, Inc. warrants that its installation tools and Powerigs® manufactured after 12/1/2016 shall be free from defects in materials and workmanship for a period of two years from date of purchase by the end user. This warranty does not cover special order / non-standard products, or part failure due to normal wear, tool abuse or misapplication, or user non-compliance with the service requirements and conditions detailed in the product literature.

90 Day Limited Warranty on Nose Assemblies and Accessories:

Huck International, Inc. warrants that its nose assemblies and accessories shall be free from defects in materials and workmanship for a period of 90 days from date of purchase by the end user. This warranty does not cover special clearance noses, or special order / non-standard product, or part failure due to normal wear, abuse or misapplication, or user non-compliance with the service requirements and conditions detailed in the product literature.

Useful lifetime is defined as the period over which the product is expected to last physically, up to the point when replacement is required due to either normal in-service wear, or as part of a complete overhaul. Determination is made on a case-by case basis upon return of parts to Huck International, Inc. for evaluation.

Tooling, Part(s) and Other Items not manufactured by Huck:

HUCK makes no warranty with respect to the tooling, part(s), or other items manufactured by third parties. HUCK expressly disclaims any warranty expressed or implied, as to the condition, design, operation, merchantability, or fitness for use of any tool, part(s), or other items thereof not manufactured by HUCK. HUCK shall not be liable for any loss or damage, directly or indirectly, arising from the use of such tooling, part(s), or other items or breach of warranty or for any claim for incidental or consequential damages.

Huck shall not be liable for any loss or damage resulting from delays or non-fulfillment of orders owing to strikes, fires, accidents, transportation companies or for any reason or reasons beyond the control of the Huck or its suppliers.

Huck Installation Equipment:

Huck International, Inc. reserves the right to make changes in specifications and design and to discontinue models without notice.

Huck Installation Equipment should be serviced by trained service technicians only.

Always give the serial number of the equipment when corresponding or ordering service parts.

Complete repair facilities are maintained by Huck International, Inc. Please contact one of the offices listed below.

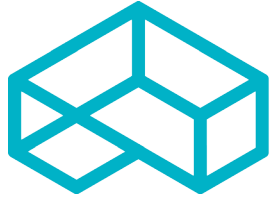
Eastern

One Corporate Drive Kingston, New York 12401-0250
Telephone (845) 331-7300 FAX (845) 334-7333

Outside USA and Canada

Contact your nearest Huck International location (see reverse).

In addition to the above repair facilities, there are Authorized Tool Service Centers (ATSC's) located throughout the United States. These service centers offer repair services, spare parts, Service Parts Kits, Service Tool Kits and Nose Assemblies. Please contact your Huck Representative or the nearest Huck International location (see reverse) for the ATSC in your area.



ARCONIC

Innovation, engineered.

Arconic Inc. (NYSE: ARNC) creates breakthrough products that shape industries. Working in close partnership with our customers, we solve complex engineering challenges to transform the way we fly, drive, build and power.

Through the ingenuity of our people and cutting-edge advanced manufacturing, we deliver these products at a quality and efficiency that ensures customer success and shareholder value.

Arconic Fastening Systems and Rings world-wide locations:

AMERICAS

Kingston Operations

1 Corporate Drive
Kingston, NY 12401
800-278-4825
845-331-7300
FAX: 845-334-7333

Tucson Operations

3724 East Columbia
Tucson, AZ 85714
800-234-4825
520-747-9898
FAX: 520-748-2142

Carson Operations

900 Watson Center Rd.
Carson, CA 90745
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