HOWMET AEROSPACE

256BT

Pneudraulic Installation Tool

Instruction Manual

Patent Pending

Actual model may vary.

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HUCK IS FOREVER™

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

December 18, 2024
HK1109

HOWMET AEROSPACE

EC Declaration of Conformity

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

Description of Machinery:
Models 24#, 25#, and 2047 family of pneudraulic 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)

Representatives:
EU: Lutz Baumann
Hildesheim Operations
Fairchild Fasteners Europe - VSD GmbH
Steven 3
31135 Hildesheim, Germany

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: Nicholas Gougoutris

Position: Engineering Manager

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

Date: 1/3/24 January 3, 2024

CE

HUCK

UKCA Declaration of Conformity

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- Supply of Machinery (Safety) Regulations 2008

Representatives:
UK: Paul Carson
Huck International, Ltd.
Unit C
Stafford Park 7
Telford, Shropshire
England TF3 3BQ, United Kingdom

Authorized Signature/date:
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UKCA

HUCK

Declared dual number noise emission values in accordance with ISO 4871			
A weighted sound power level, LWA: **91** dB (reference 1 pW) Uncertainty, KWA: 3 dB			
A weighted emission sound pressure level at the work station, LpA: **80** dB (reference 20 µPa) Uncertainty, KpA: 3 dB			
C-weighted peak emission sound pressure level, LpC, peak: **115** dB (reference 20 µPa) Uncertainty, KpC: 3 dB			
Values determined according to noise test code ISO 15744, using as basic standards ISO 3744 and ISO 11203. 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:	**.63** m/s^2	Uncertainty, K:	**.72** m/s^2
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:
Howmet Fastening Systems, Kingston Operations, Kingston, NY, USA.

Safety Instructions

GLOSSARY OF TERMS AND SYMBOLS:

- Product complies with requirements set forth by the relevant UK and European directives.
- Read manual before using equipment.
- Eye protection is required while using this equipment.
- Hearing protection is required while using this equipment.

Notes: are reminders of required procedures. ***Bold, Italic type, 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 Howmet equipment.
2. Howmet 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 Howmet 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 Howmet representative.
11. Only genuine Howmet 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 without 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.

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.

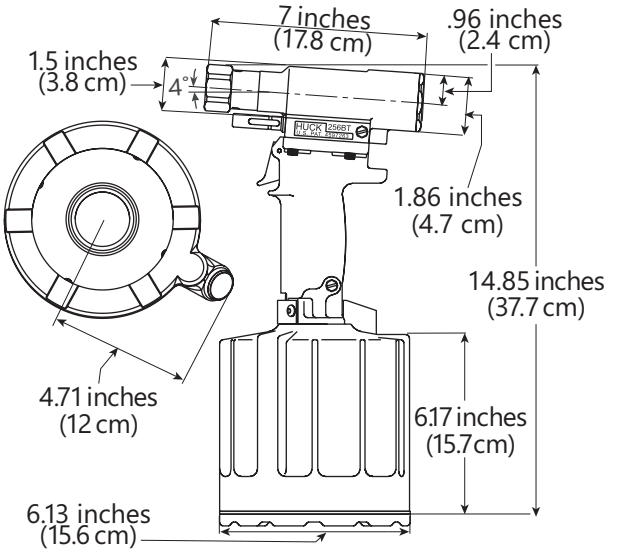
IX. PNEUMATIC / PNEUDRAULIC TOOL SAFETY INSTRUCTIONS:

1. Air under pressure can cause severe injury.
2. Always shut off air supply, drain hose of air pressure and disconnect tool from air supply when not in use, before changing accessories or when making repairs.
3. Never direct air at yourself or anyone else.
4. Whipping hoses can cause severe injury, always check for damaged or loose hoses and fittings.
5. Cold air should be directed away from hands.
6. Whenever universal twist couplings (claw couplings) are used, lock pins shall be installed and whip-check safety cables shall be used to safeguard against possible hose to hose or hose to tool connection failure.
7. Do not exceed maximum air pressure stated on tool.
8. Never carry an air tool by the hose.

Tool Specifications

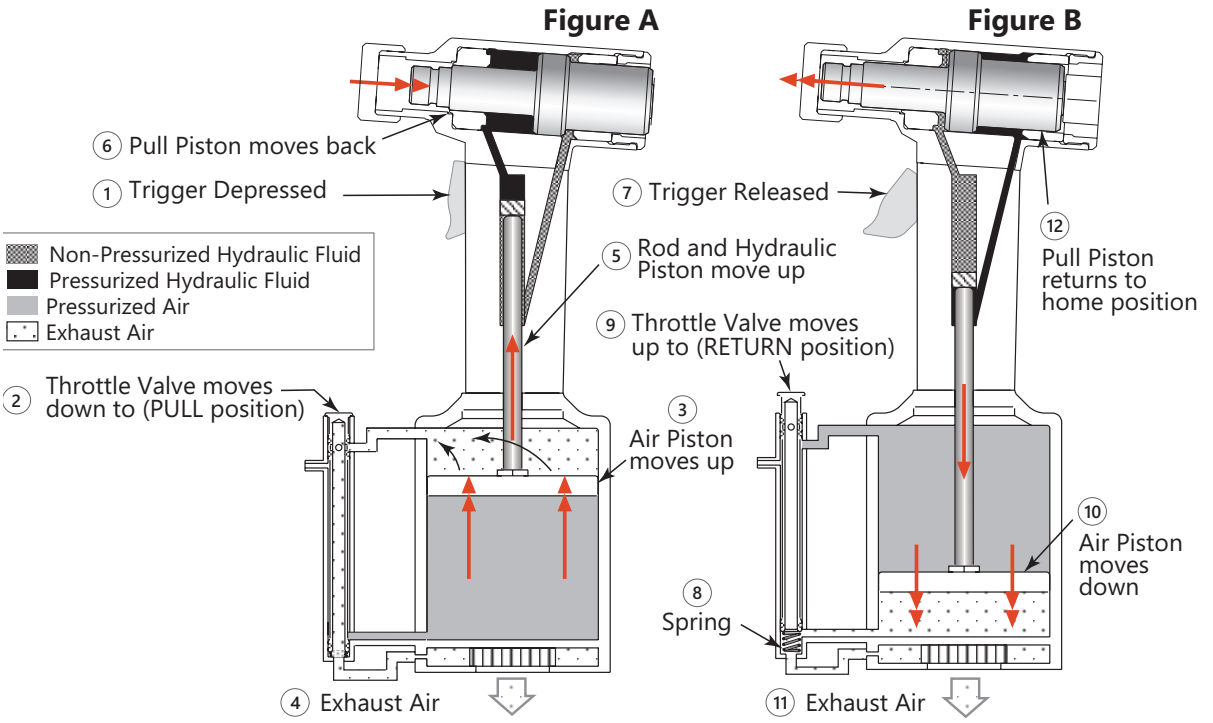
Hydraulic fluid: Hydraulic fluid shall meet DEXRON III, DEXRON VI, MERCON, Allison C-4 or equivalent ATF specifications. Fire resistant fluid may be used if it's an ester based fluid such as Quintolubric HFD or equivalent. Water based fluid shall NOT be used as serious damage to equipment will occur.

DESCRIPTION	DETAIL
POWER SOURCE	110 psi (7.58 bar) Max. Shop Air
MAX AIR PRESSURE	100 psi 6.9 bar
MAX OPERATING TEMPERATURE	125 ° F 52 ° C
SPEED/CYCLES	30 per minute
MAX FLOW RATE	22.4 scfm 634.4 l/min
WEIGHT *(approximate)*	11 lbs 5 kg
PULL CAPACITY	6,670 lbf (29.67 kN) @ 100 psi (6.9 bar)
STROKE	1.130 inches 2.87 cm



Actual tool model may vary from figures shown. Component part numbers may change without notice.

Principle of Operation



PULL: When Trigger is depressed (1), throttle Valve moves to down position (2), and pressurized air is directed to bottom of Air Piston, causing it to move upward (3). Air above the Air Piston is exhausted and directed through the center of the throttle Valve and out the bottom of the Tool (4). As the Air Piston moves upward, the attached Rod and hydraulic Piston are forced up (5), and a column of pressurized fluid is forced into the Head, which moves the Hydraulic Pull Piston back (6). The attached Nose Assembly moves with the Hydraulic Pull Piston to begin Fastener installation.

RETURN: When Fastener installation is completed, Trigger is released (7). Air pressure, with the assistance of a Spring (8), causes the throttle Valve to return to its up position (9). Pressurized air is redirected to the top of the Air Piston, causing it to move downward (10). The air from below the Piston is exhausted through bottom of Tool (11). As the Rod and Air Piston move downward, hydraulic pressure is reversed and the Hydraulic Pull Piston is returned forward (12). The Return Pressure Relief Valve protects the Tool against pressure spikes. The Reservoir replenishes the hydraulic system as needed.

Description

The 256BT series Pneudraulic Installation Tool is a lightweight, high-speed production tool that installs a variety of Huck BobTail® Fasteners. Pull and return action of the pull piston is provided by a pneumatic-hydraulic (pneudraulic) intensifier system powered by 100 psi Air Pressure.

A design feature of this tool is a Reservoir for hydraulic fluid that automatically keeps the hydraulic system replenished. The importance of this feature is that full stroke, both pull and return, is maintained for proper Fastener installation.

Different Fastener types and sizes require different Nose Assemblies. Nose Assemblies are available separately.

Spare Parts and Accessories

For 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.

A spare Service Parts Kit should be kept on hand at all times. Huck also recommends having the following Accessories available when preparing, using, and performing maintenance on this tool.

DESCRIPTION	PART #
256BT Service Parts Kit	256BTKIT
Service Parts Kits include all perishable Seals, O-Rings, and Back-up Rings. These components are available independently. Please reference Fig. 9-31. Items marked with an asterisk (*) are included in this service kit.	
Piston Assembly Tool	123111-1
Spacer	123112-1
Assembly Tool Kit	126104
The Assembly Tool Kit contains Piston Assembly Tool 123111-1, & Spacer 123112-1. Both are also available separately.	

DESCRIPTION	PART #
Anti-Seize Lubricating Stick	508183
Loctite® 243	508567
Stall Nut	120824
Fill and Bleed Bottle	120337
Fill Tool Assembly (for reservoir)	129633
Pintail Collection Bag Assembly	125655
Pintail Deflector Kit	131243

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.*
MOLYKOTE *is a registered trademark of Dow Corning Corporation*
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.*
Spirolox *is a registered trademark of Smalley Steel Ring Company*
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.*

Preparation for Use

CAUTION: Do not use Teflon® tape on pipe threads. Tape can shred, resulting in malfunctions. Parker Threadmate® is recommended.
Don't let disconnected hoses & couplers contact a dirty floor. Keep harmful material out of hydraulic fluid. Dirt in hydraulic fluid causes valve failure in Tool and in Powerig®.

The Model **256BT** Installation Tool is shipped with a plastic Plug in the Air Inlet Connector. The connector has ¼"-18 female pipe threads to accept the Air Hose fitting. Huck recommends quick-disconnect fittings and a ¼" inside diameter Air Hose (P/N 115436). An Air Supply capable of 6.3 CFM to supply a pressure of 10 psi greater than the tool pressure to swage the fastener must be available. Air supply should be equipped with a Filter-Regulator-Lubricator unit.

1. Remove Plastic Shipping Plug from Air Inlet Connector and put in a few drops of Automatic Transmission Fluid, Dexron III, or equivalent.
2. Apply Parker Threadmate® to threads of Air Hose, and screw Hose into the Tool.
3. Screw Quick disconnect fitting into Air Inlet Connector.
4. If using a 127308 series Preset regulator, set air pressure on regulator to 10 psi above the attached regulator set point.
5. Attach air hose to air power source.
6. Cycle tool a few times by depressing and releasing trigger.
7. Disconnect air hose from tool.
8. Remove Retaining Nut and Stop.
9. Select proper Nose Assembly for fastener to be installed.
10. Attach Nose Assembly.
11. Connect air hose to tool and install fastener(s) in test plate of proper thickness with proper size holes. Inspect fastener(s).
12. If fasteners do not pass inspection, see **Troubleshooting** to investigate possible causes.

WARNINGS: Inspect tool for damage or wear before each use. Do not operate if damaged or worn, as severe personal injury may occur.

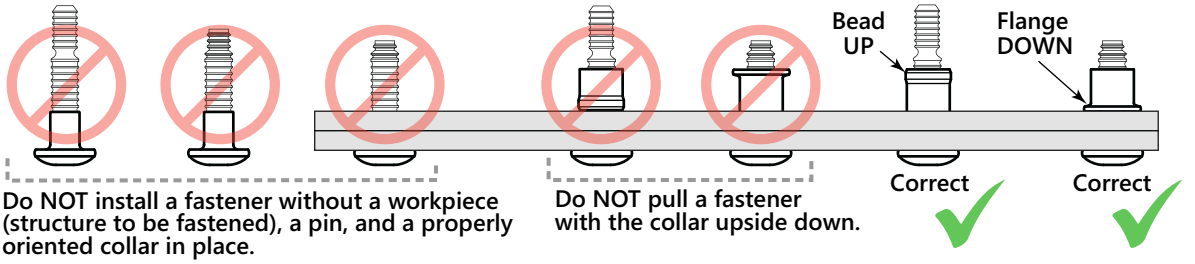
A half-hour training session with qualified personnel is recommended before using Huck equipment.

Read full manual before using tool.

Operating Instructions

FOR SAFE OPERATION, THIS SECTION MUST BE READ AND UNDERSTOOD.

Failure to understand WARNINGS may cause serious personal injury. Failure to understand CAUTIONS may cause damage to structure and Tool. For additional Safety Information, see page 3.



Do NOT install a fastener without a workpiece (structure to be fastened), a pin, and a properly oriented collar in place.

Do NOT pull a fastener with the collar upside down.

WARNINGS: To avoid severe personal injury, wear approved eye and ear protection.

To avoid structural and tool damage, be sure enough Clearance is allowed for operator's hands and for Nose Assembly at full stroke before proceeding with Fastener installation. Do not abuse the Tool by dropping it, using it as a hammer or otherwise causing unnecessary wear and tear. Reasonable care of installation tools by operators is an important factor in maintaining tool efficiency and reducing downtime.

Do NOT attempt to install a Pin without:

- **placing the Fastener and Collar in the Work piece (structure to be fastened).**
- **a properly oriented Collar in place. The Collar flange must be against Work piece.**

To avoid Pinch point, never place hand between Nose Assembly and Work piece.

If these safety measures are not followed, the Fastener could eject with great velocity and force if the Pintail breaks off or teeth/ grooves strip. This may cause severe personal injury.

Only use compatible equipment with this tool.

CAUTIONS: Remove excess gap from between the sheets. This permits enough Pintail to emerge from Collar for ALL jaw teeth to engage with Pintail. If ALL teeth do not engage properly, Jaws will be damaged.

NOTE: In certain situations, it may be permissible to use a BobTail tool and fastener without a collar to remove sheet gap prior to full installation with a collar. Consult qualified Huck engineering personnel before attempting this operation.

General Precautions

If a tool malfunctions, consult **Troubleshooting** in this manual before attempting any repairs. Operators should receive training from qualified personnel. Do not bend Tool to free if stuck. A Tool should only be used to install fasteners; never as a jack/spreader or hammer.

NOTE: Reasonable care of tools by operators is an important factor of tool efficiency and reducing downtime.

CAUTIONS: Tool must be properly reassembled prior to use.
To avoid structural and tool damage, be sure there is sufficient clearance for the nose assembly at full stroke.

To install a BobTail® Fastener:

Check pin for correct grip. Place a Fastener in the Work piece and place the Collar over the Fastener.

Hold the Fastener in the hole and push the Nose Assembly onto the portion of the Fastener protruding through the Collar, until the Puller Assembly bottoms on the Fastener.

Move hands away from Fastener and structure. Keep hands away from front of Tool during operation.

NOTE: The Tool or Nose Assembly must be held against, and at a right angle (90°) to, the Work piece.

Press and hold the Trigger until the Collar is swaged.

Release the Trigger; the Tool will perform its RETURN stroke. The pressure is re-directed; the Piston moves forward; and the Tool is pushed off the Fastener and ready for the next installation cycle.

Maintenance

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

GENERAL

The operating efficiency of a tool is directly related to the performance of the entire system. Regular inspection and immediate correction of minor problems will keep a tool operating efficiently and prevent downtime. A schedule of preventive maintenance of the tool, nose assembly, hoses, trigger and control cord and Powerig® Hydraulic Power Source will ensure proper tool operation and extend its life.

NOTE: 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.

CAUTIONS: Keep foreign matter out of the hydraulic system. Keep separated parts away from dirty work surfaces.

Replace all seals, wipers and rings when the tool is disassembled for any reason and at regular intervals, depending on severity and length of use.

Do not use TEFLON® tape on pipe threads. Tape can shred and break free into fluid lines, resulting in malfunctions.

NOTE: This Huck tool should be serviced only by personnel who are thoroughly familiar with its operation.

Service the tool in a clean, well-lighted area. Take special care to prevent contamination of pneumatic and hydraulic systems.

Keep all necessary hand tools on-hand and available.

Carefully handle all parts. Before reassembly, examine them for damage and wear.

Disassemble and assemble tool components in a straight line. Do NOT bend, cock, twist, or apply undue force.

Keep Spare Parts Service Kit, **256BTKIT**, available when servicing the tool; it includes important perishable parts. Other components, as experience dictates, should also be available. See **Spare Parts & Accessories.**

Apply Loctite® 243 Threadlocker (Huck P/N **508567**) to gland threads. Apply Loctite® 271-05 (Huck P/N **503657**) to nuts.

Smear Lubriplate® 130-AA (Huck P/N **502723**) or Super O-Lube® on O-rings, Quad-rings, Back-up rings and mating parts to ease assembly.

Apply Parker Threadmate®, Loctite® 567 or Slic-Tite® (per manufacturer's instructions) to male pipe threads and quick-disconnect fittings.

DAILY

If a Filter-Regulator-Lubricator unit is not being used, uncouple the air disconnects and add a few drops of hydraulic fluid or a light-weight oil to the air inlet of the tool. **NOTE: If the tool is in continuous use, add a few drops of oil in every 2–3 hours.**

Before connecting an air hose to the tool, clear the air lines of dirt and water.

Check all hoses and couplings for damage and air leaks; tighten or replace if necessary.

Check the tool and nose assembly for damage and air or hydraulic leaks; tighten, repair, or replace if necessary.

Inspect the tool and hoses during operation to detect abnormal heating, leaks, or vibration.

CAUTIONS: Damaged jaw teeth, or debris packed between teeth, will result in fasteners not being installed or being improperly installed.

Clean nose assemblies in mineral spirits to clear jaws and rinse metal chips and dirt. For a more thorough cleaning, disassemble the nose assembly. Use a pointed "pick" to remove embedded particles from the jaws grooves.

Clean all parts of any assembly with Unitized™ Jaws in mineral spirits or isopropyl alcohol only; do not let jaws come in contact with other solvents. Do not let jaws soak; dry them *immediately* after cleaning. Huck recommends drying other parts before re-assembling.

Periodically, check the tool stroke. If the stroke is short, add fluid. See **Measuring Tool Stroke.**

WEEKLY

Disassemble, clean and re-assemble nose assembly in accordance with applicable instructions.

Check the tool and all connecting parts for damage and fluid/air leaks; tighten or replace if necessary.

Tool Disassembly Procedure

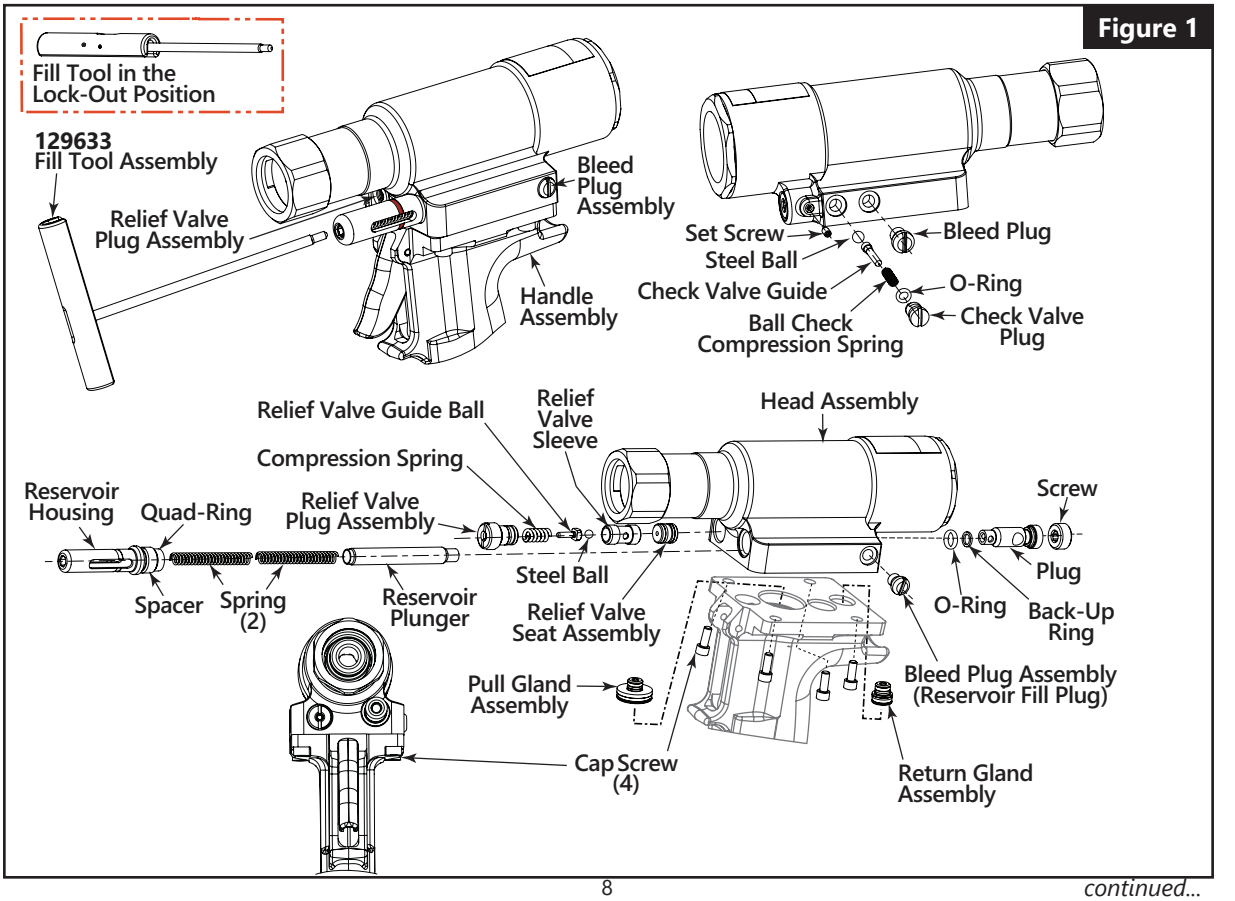
This procedure is for complete Disassembly of the Tool. Disassemble **only** those components necessary to replace damaged O-Rings, Quad-Rings, Back-up Rings, and worn and damaged components. For component identification, see Figures 1–31. Always use soft-jaw vice to avoid damage to Tool.

WARNING: Disconnect the Air Hose from the Tool before performing any maintenance. Serious personal injury could result if the Air Hose is connected.

CAUTION: Do not scratch Piston Rod or Cylinder during removal. Use a plastic or wooden drift to avoid damaging Handle bore.

1. Disconnect Air Hose from Tool and remove Nose Assembly.
2. (Figure 1) Insert Fill Tool through Reservoir Housing and screw into Reservoir Plunger, locking it in the out position.
3. Unscrew 4 Cap Screws with $^{5}/_{32}$" hex driver. Carefully lift Tool Head straight up from Handle, and remove Pull and Return Gland Assemblies. Remove Seals from Glands.
4. Unscrew Relief Valve Plug from front of Head. Remove Relief Valve Spring, Guide, Sleeve, and Ball. Using a small magnet is helpful.
5. Unscrew Reservoir Fill Plug. Hold over Waste Oil container and release Fill Tool slowly.
6. Unscrew Reservoir Housing from Head. Remove 2 Springs. Slide Reservoir Plunger from Head. Remove Spacer and Quad Ring. A pick may be used to remove the Quad Ring.
7. Unscrew Check Valve Plug from side of Head. Remove Check Valve Spring, Guide, and Ball. A small magnet is helpful.
8. If Check Valve Seat (Figure 26) is damaged, contact your Howmet representative. If Relief Valve Seat is damaged, it can be removed as described in Step 9. **NOTE**: If Seats are removed, they may not be reused; they must be replaced.
9. <u>Relief Valve Seat Assembly Removal</u>
   NOTE: All parts in Check Valve hole must be removed before Plug 120204 can be removed. (Figs. 1 & 26) Unscrew Screw 120129. Insert a #10 Screw in the thread of Plug 120204, and pull to remove. Using a small drift and hammer, from rear side of Head, drive Relief Valve Seat Assembly (Fig. 26) out toward the front of the Head.
10. Pintail Deflector can be pulled off barbed end at rear of Hydraulic Pull Piston.
11. Unscrew Cylinder Cap from Cylinder/Head using a 1-¾" socket wrench.
12. (Fig. 2) Place Spacer on Hydraulic Pull Piston, and screw Assembly/Disassembly Bullet onto Piston. Tap or press Piston Assembly out of Head. **This will push out Front and Rear Gland Assemblies and Wiper and Wiper Housing.**

Figure 1



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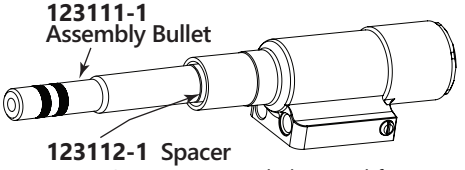
Tool Disassembly Procedure continued...

Figure 2



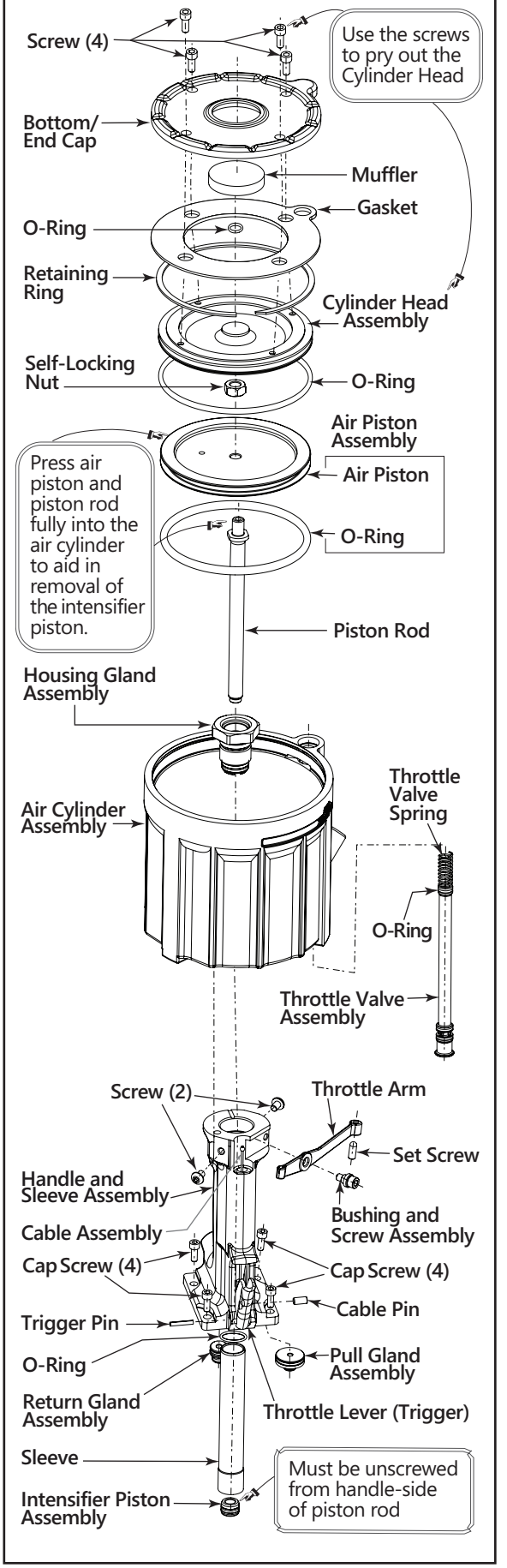
Note: Spacer must only be used for disassembly procedure as it assists in pushing out Front Gland Assembly.

13. (Fig. 31) Remove Throttle Arm Screw; then remove Throttle Arm. Pull Throttle Valve out of Cylinder, and remove Spring.
14. (Fig. 26) With a small punch and hammer, drive Trigger Pin from the Handle. Remove Cable Pin. Remove ball end of Cable from Throttle Arm (Fig. 31), and pull Cable out of Handle.
15. Remove Reservoir Fill Plug from Handle. (Fig. 26)
16. (Fig. 3) Hold Tool inverted in vice. Unscrew 3 Cap Screws with $^{5}/_{32}$" hex driver.
17. Remove Muffler End Cap, Bottom Exhaust Gasket, Muffler and O-Ring.
18. Remove Retaining Ring from Cylinder Assembly. **Tap Cylinder Head down into Cylinder Assembly for easier removal of Retaining Ring.**

WARNING: Do NOT re-use Seals, Wipers, or Rings; irreparable tool damage could occur.
Discard these parts and use replacements.

19. Screw Cap Screws into Cylinder Head, and carefully pry under Screws to remove Cylinder Head. (Figure 3)
20. Push Air Piston all the way into Cylinder and lay Tool on its side. Hold Self-locking Nut with a $^{9}/_{16}$" socket and Extension and, with $^{7}/_{64}$" hex driver, unscrew Intensifier Piston Screw.
21. Turn Cylinder and Handle upside down and secure in a Vise.
22. Grip Self-locking Nut under Air Piston with pliers and pull Piston and Rod Assembly from Handle and Cylinder Assembly.
23. With a 1-$^{3}/_{8}$" socket and Extension, remove Main Gland Assembly. Handle and Cylinder will now separate.
24. To remove Polyseal from Gland Assembly, remove the Gland Assembly Retaining Ring and Spacer first.
25. Using a soft drift, push Intensifier Piston out of Handle.
26. To service Handle sleeve and Handle, use a blunt-tipped punch to gently tap sleeve from top of Handle through the bottom. Inspect sleeve for damage or wear, and replace if necessary. Service O-Ring inside Handle bore.

Figure 3

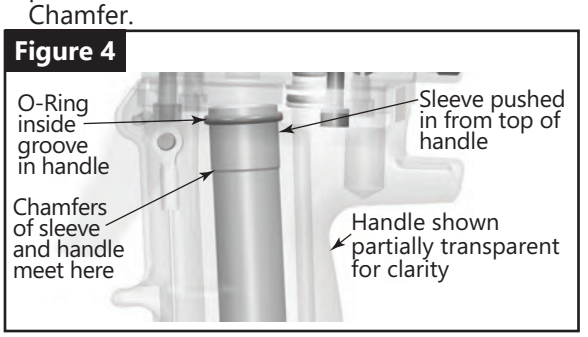


Tool Assembly Procedure

Clean components with mineral spirits or similar solvent. Inspect for wear/damage and replace as necessary. Replace all Seals of disassembled components using Service Parts Kit, P/N 256BTKIT. Smear Lubriplate 130AA or Parker O-Lube on Rings and mating parts to ease Assembly. Carefully assemble Tool without damaging O-Rings, Quad Rings, or Back-up Rings.

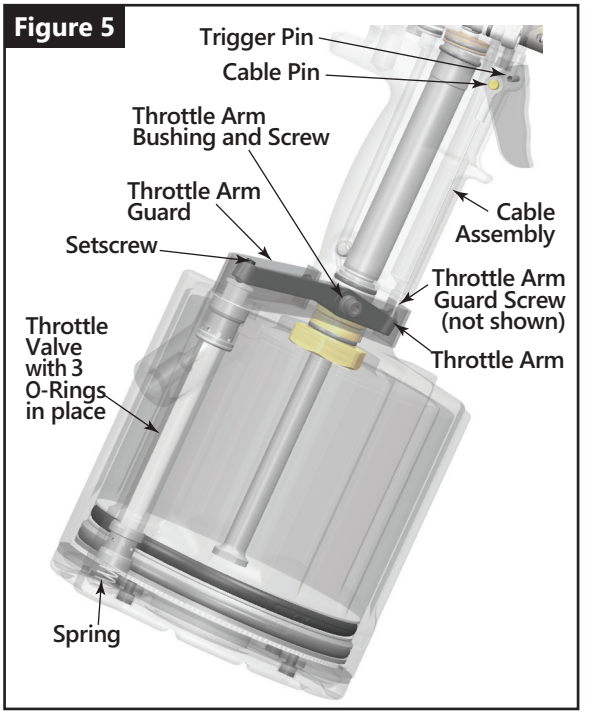
1. (Figure 4) Install O-Ring inside Handle; then push sleeve in Handle until it bottoms on the Chamfer.

Figure 4



2. Holding Handle inverted in a vice, install Timing Pin; then place Air Cylinder on Handle with Timing Pin positioned in matching hole. Assemble Main Gland Assembly. Apply anti-seize compound (p/n 508183) to Gland threads. With a 1-⅜" inch socket wrench, torque it into the Handle to 75-85 foot lbs.
3. Push Air Piston Assembly and Piston Rod into Air Cylinder until it is seated inside of Air Cylinder (Figure 3).
4. Turn Tool upright. Assemble Intensifier Piston with O-Ring and Back-up Rings; then apply Loctite 243 to Intensifier Piston Screw threads, and carefully press in from top of Handle.
5. Holding Self-locking Nut with $^{9}/_{16}$" socket & Extension, screw Intensifier Piston onto Piston Rod using $^{7}/_{64}$" hex driver, & torque to 180-190 in. lbs.
6. Hold Handle in Vise with bottom up. Push Cylinder Head Assembly squarely into Air Cylinder. Install Retaining Ring.
7. Position O-Ring and Muffler on center of Air Cylinder. Place Bottom Exhaust Gasket on Air Cylinder. Place Muffler End Cap on top of Gasket, & secure with 3 Cap Screws using $^{5}/_{32}$" hex driver.
8. Turn Tool upright. (Figure 5) Drop Throttle Valve Spring into Throttle Valve hole in Cylinder. Push Throttle Valve, with O-Rings in place, into Cylinder.
9. Assemble Trigger, Cable, and Cable Pin, and slide Cable into Handle. Align hole in Trigger with hole in Handle and install Trigger Pin with a hammer and punch.
10. Slide Throttle Arm onto ball end of throttle Cable. Swing Arm until end fits over throttle Valve. Attach throttle Arm Bushing and Screw to Throttle Arm. Tighten with $^{5}/_{32}$" hex driver.
11. If Air Hose Assembly was removed, reinstall it.
12. If Relief Valve Seat Assembly is being replaced, push Plug 120204, with Seals in place, into Head. Install Screw 120129. (Figure 26)

Figure 5



13. Carefully drive Relief Valve Seat Assembly in using a soft drift, without damaging Relief Valve Ball surface.
14. Assemble Pull Piston with new Seals. Lubricate with Lubriplate or Parker Super O-Lube.
15. Thread Assembly Bullet onto Pull Piston Assembly. (Figure 2) **NOTE:** Spacer not needed during Assembly. Its purpose is to push out the Front Gland during Disassembly.
16. Push Front Gland Assembly, with all Seals, Housing, and Wiper in place, over Assembly Bullet and onto Pull Piston. Push entire Gland/ Piston Assembly into Head.
17. (Figure 26) Install O-Rings and Back-up Rings on Rear Gland and push complete Assembly into Head. Screw in Cylinder Cap. Tighten and torque to 36-66 ft.-lbs. Apply Loctite 243.
18. (Figure 26) Install O-Ring & Back-up Ring on Relief Valve Plug; then install Ball, Guide, Sleeve, Spring, and assembled Relief Valve Plug into Head.
19. Install O-Ring on Check Valve Plug 111068 (Figure 30), then install Ball, Guide, Spring, and assembled Check Valve Plug into Head.
20. Push Pintail Deflector onto barbed end of Pull Piston.
21. (Figure 26) Place O-Rings on Bleed Plugs 104293 and Screw Assemblies into Handle and Cylinder Head.
22. (Figure 26) Install all O-Rings and Back-up Rings on Pull and Return Glands. Push Gland Assemblies into Handle. Push Head down on Glands.
23. Place Tool in a Vise, Head down, and install 4 Cap Screws, and proceed to Fill & Bleed section of this manual.

Fill and Bleed

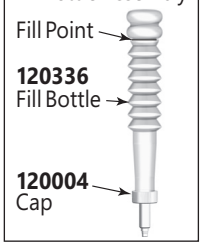
WARNING: Avoid contact with hydraulic fluid. Hydraulic fluid must be disposed of in accordance with local regulations. See MSDS for hydraulic fluid shipped with Tool.

This section documents the "bleed-&-fill" procedure. For component identification, see Figures 26 and 28.

FILL & BLEED EQUIPMENT REQUIRED:

- Dexron® III or equivalent ATF
- Shop air-line with 90 psi (6.2 bar) - 100 psi (6.9 bar) max.
- Air regulator
- Fill Bottle Assembly (P/N **120337**, included with Tool)
- Fill Tool (P/N **112465**)
- Large flat-blade screwdriver
- Nose Assembly or optional Stall Nut (P/N **120824**)
- Fasteners *(optional)*

Figure 6



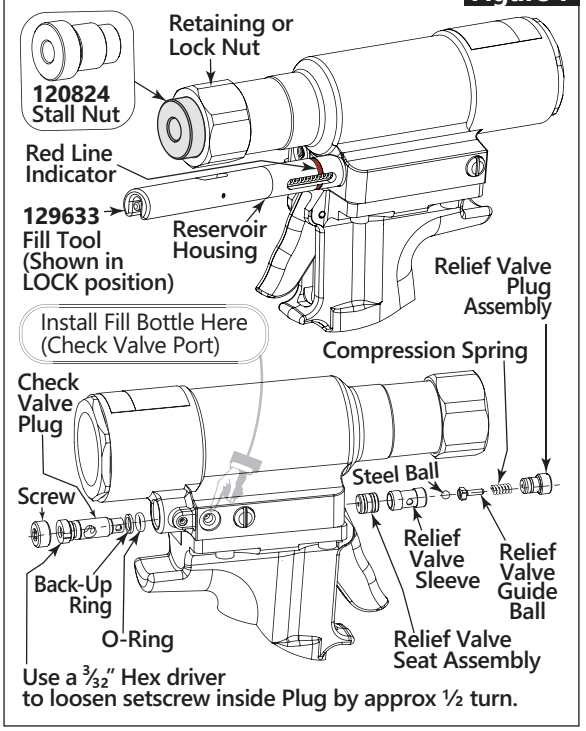
PREPARATION:

Install air regulator in the air-line and set the pressure to 20–40 psi *(1.4–2.8 bar)*.
Add an approved hydraulic fluid to the fill point of the Fill Bottle. **NOTE:** Refill the Tool only when the fluid level drops below the red line on the Reservoir Housing; or when the Tool is rebuilt.

TO BLEED AND FILL THE TOOL:

1. Screw Fill Tool into Reservoir Plunger, pull Plunger into Reservoir Housing and lock Fill Tool in full forward position by tilting Handle (long side touching Tool) and locking in place. (Figure 7)
2. Remove Relief and Check Valve Plugs, Guides, Springs and Balls from ports in Head. Reinstall Plug and Sleeve in Head in Relief Valve port (front of Tool).

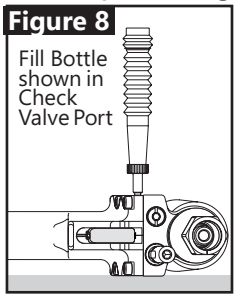
Figure 7



CAUTION: All fluid must be purged from the Tool before refilling. The Tool stroke will be diminished if the fluid is aerated. For optimal performance, refill with the fluid recommended in Specifications.

3. Screw Retaining Nut onto Head Assembly. Screw Stall Nut onto Hydraulic Piston and tighten to ensure full thread engagement. Back off Retaining Nut until it engages Stall Nut. **Check that Hydraulic Piston is all the way forward and locked with Retaining Nut and with (or without) Stall Nut.**
4. Attach the Tool air source momentarily to Seat Air Piston at bottom of Air Cylinder, then disconnect Tool. **With Reservoir Fill port facing up, lay Tool on its side.**

Figure 8



5. Install Fill Bottle in Reservoir Fill port. (Figure 8)
6. Connect Tool to shop air 20 to 40 psi. Cycle Tool 20-30 times, watch for air bubbles escaping from the Tool into bottle. (You may rock the Tool to free trapped air in the Tool.) Do not allow the air to re-enter the Tool. When cycling Tool, always hold bottle up as shown in Figure 26 to prevent drawing in air from empty part of bottle.

WARNING: Air pressure must be set at 20–40 psi (*1.4–2.8 bar*) to prevent possible injury from high-pressure spray. If Check Valve Plug is removed, the Fill Bottle must be in place before cycling the Tool.

7. When air bubbles no longer appear in bottle, remove Fill Bottle and replace the Reservoir Fill Plug **while Tool is lying on its side.**
8. Install the Check Valve Ball, Guide and Spring. Replace the Check Valve Plug.
9. Turn Tool so front of Head faces you. Prior to removing Relief Valve Plug, using a 3/32" Hex driver back out Set screw inside of the Plug approximately ½ turn counterclockwise. This ensures that the Piston will remain in full-forward position. Remove the Relief Valve Plug and install Ball, Guide, Sleeve and Spring. Replace the Plug and re-tighten Set screw.

WARNING: Failure to re-lock Fill Tool will result in oil being ejected from the Head under pressure during the topping off of the Reservoir. Severe personal injury may result.

10. Unlock Fill Tool and check Reservoir red line. Cycle the Tool the with Stall Nut attached and Retaining Nut locked in the full-forward position ("Dead Stall"). Reservoir should not drop below the red line on the Reservoir Housing. **NOTE:** If the stall nut was not used, Dead Stalling is not necessary; just cycle tool.

continued...

Fill and Bleed continued...

11. Re-lock the Fill Tool. Lay Tool on its side and remove Reservoir Fill Plug. Top off Reservoir by placing a few drops of oil in hole and waiting for air bubbles to escape. Push a Pin or a scribe into hole to check for trapped air bubbles. Replace Plug.
12. Unlock the Fill Tool and cycle Tool as in Step 10, and check the fluid level in the Reservoir Housing. The Reservoir fluid may drop slightly. If so, repeat these Steps until, when the Fill Tool Handle is touched, it has no pressure against it and it drops out of the lock position, and the Reservoir Plunger does not drop when Tool is cycled. **NOTE:** This usually requires 3 to 4 times topping off.
13. When the fluid level is sufficient, remove the Fill Tool and Stall Nut. Install a Nose Assembly and pull several Fasteners to test function.

Sticker Locations

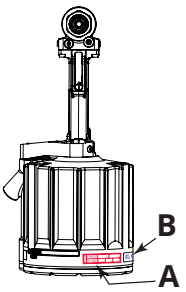
HUCK pneudraulic tools come labeled with stickers which contain safety and pressure settings information. Stickers must remain on the Tool and readable. If a sticker becomes damaged or worn, or if it has been removed from the Tool, it must be ordered and placed in the location shown.

A.

590351 Max Pressure and Flow Sticker

B.

590350 UKCA/CE Sticker

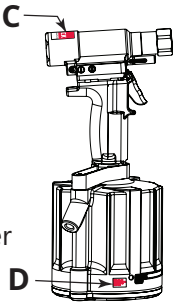


C.

590517 HUCK Trademark & Year of Manufacture Sticker

D.

590347 Huck Address Sticker



Component Drawings

Figure 9

129552 Head-Seat-Pin Assembly contains:

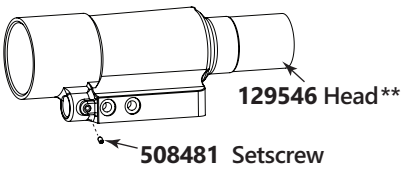


Figure 10

129557 Rear Gland Assembly contains:

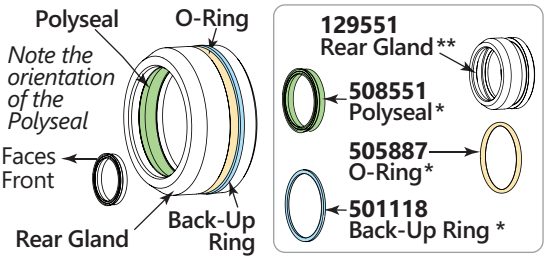


Figure 11

114530 Relief Valve Plug Assembly contains:

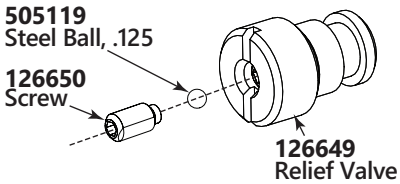


Figure 12

131055 Pull Gland Assembly contains:

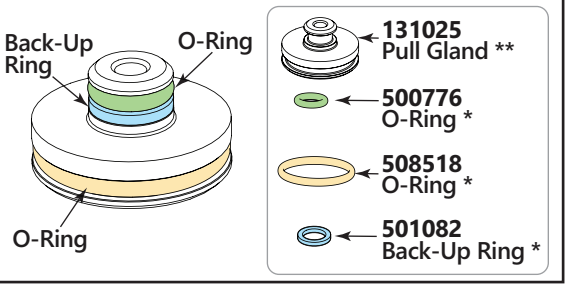


Figure 13

114537 Seat Assembly contains:

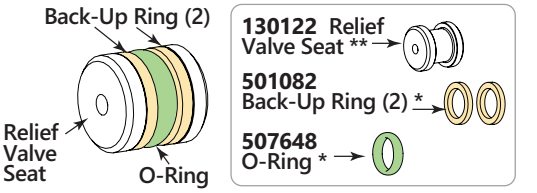
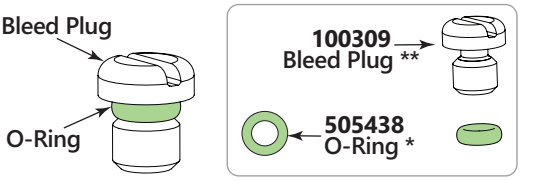


Figure 14

104293 Bleed Plug Assembly contains:



Notes: Colors are only used to show the different parts contained in the Assembly and do not represent the actual colors of the items.

* Part contained in Service Kit: **256BTKIT.** ** Part not sold separately. Only sold as part of Upper Assembly.

continued...

Component Drawings continued...

Figure 15

130938 Handle and Sleeve Assembly contains:

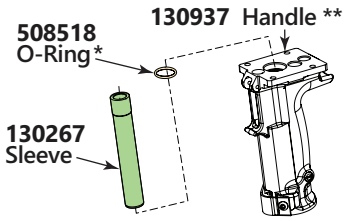


Figure 16

125643 Cable Assembly

Figure 17

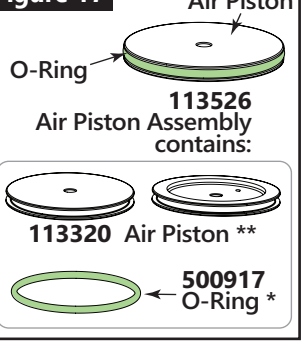


Figure 18

129556 Front Gland Assembly contains:

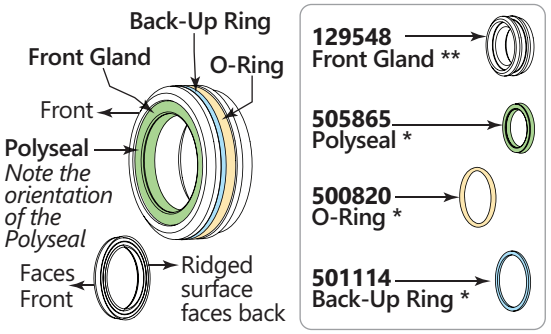


Figure 19

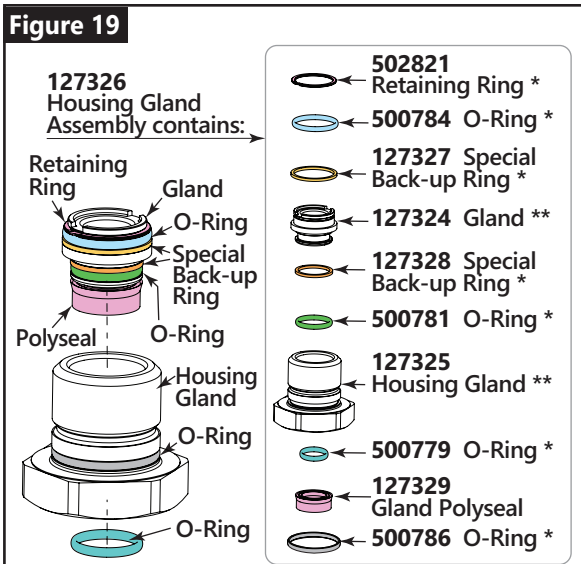


Figure 20

130939 256 Handle Assembly contains 1 of each (unless otherwise specified):

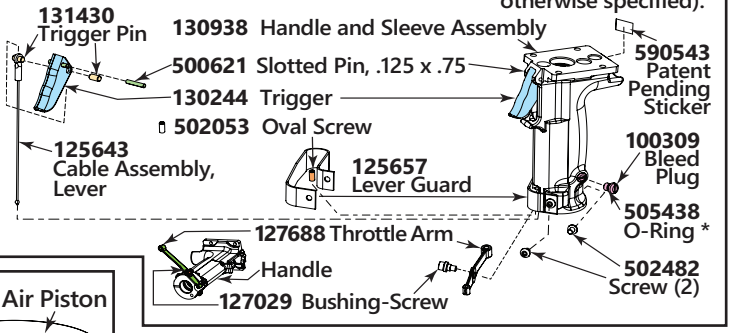


Figure 21

113528 Cylinder Head Assembly contains 1 of each:

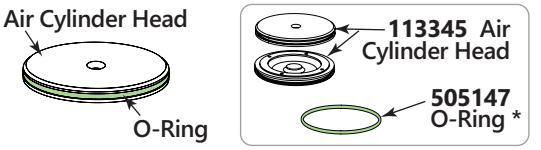


Figure 22

120372 Air Cylinder Assembly contains:

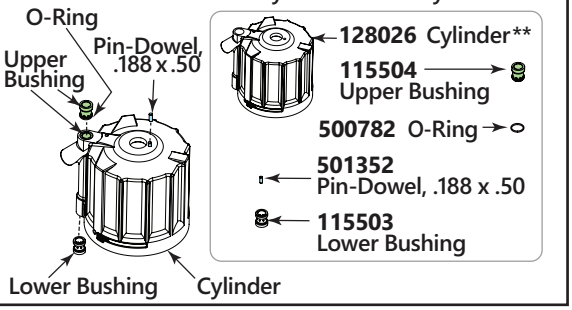


Figure 23

130936 Intensifier Piston Assembly contains:

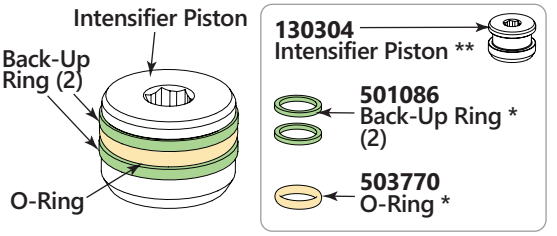


Figure 24

115558 Throttle Valve Assembly contains:

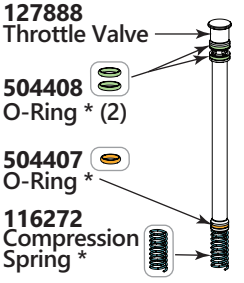
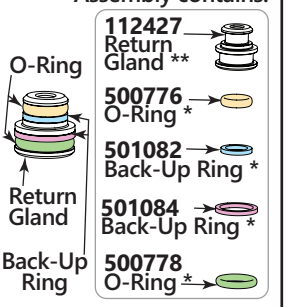


Figure 25

112502 Return Gland Assembly contains:



Notes: Colors are only used to show the different parts contained in the Assembly and do not represent the actual colors of the items.

* Part contained in Service Kit: **256BTKIT.** ** Part not sold separately. Only sold as part of Upper Assembly.

continued...

Component Drawings continued...

Tool Head

Figure 26

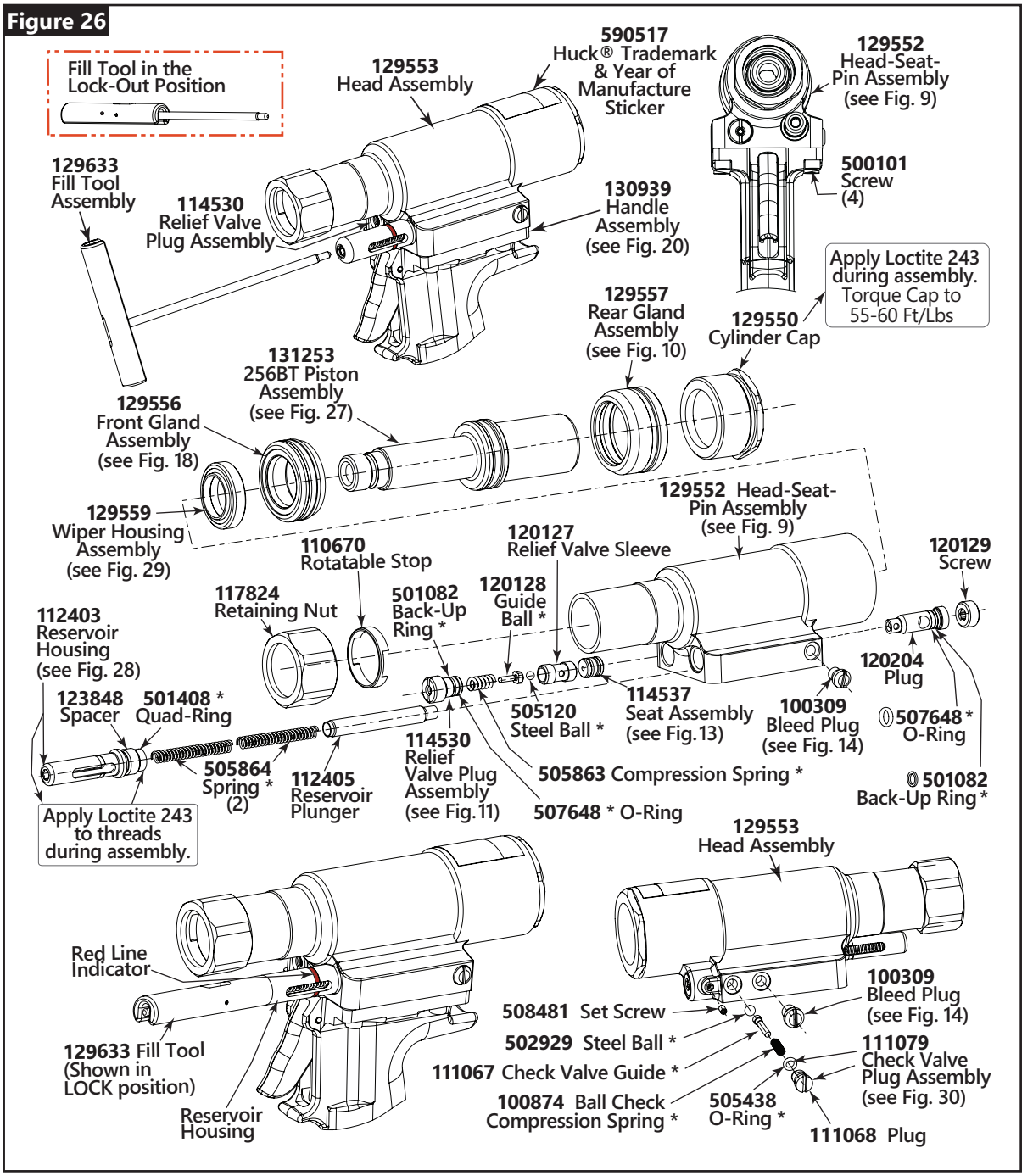


Figure 27 131253 Piston Assembly contains:

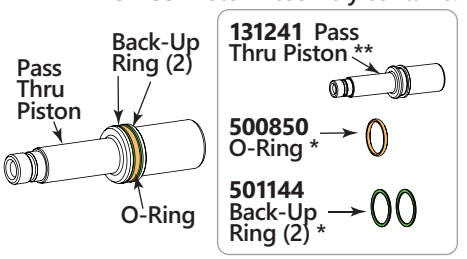


Figure 28 112403 Reservoir Housing Assembly contains:

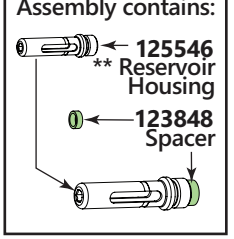


Figure 29 129559 Wiper Housing Assembly contains:

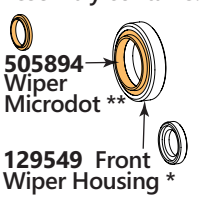
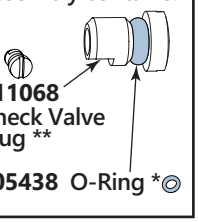


Figure 30 111079 Check Valve Plug Assembly contains:



Notes: Colors are only used to show the different parts contained in the Assembly and do not represent the actual colors of the items.

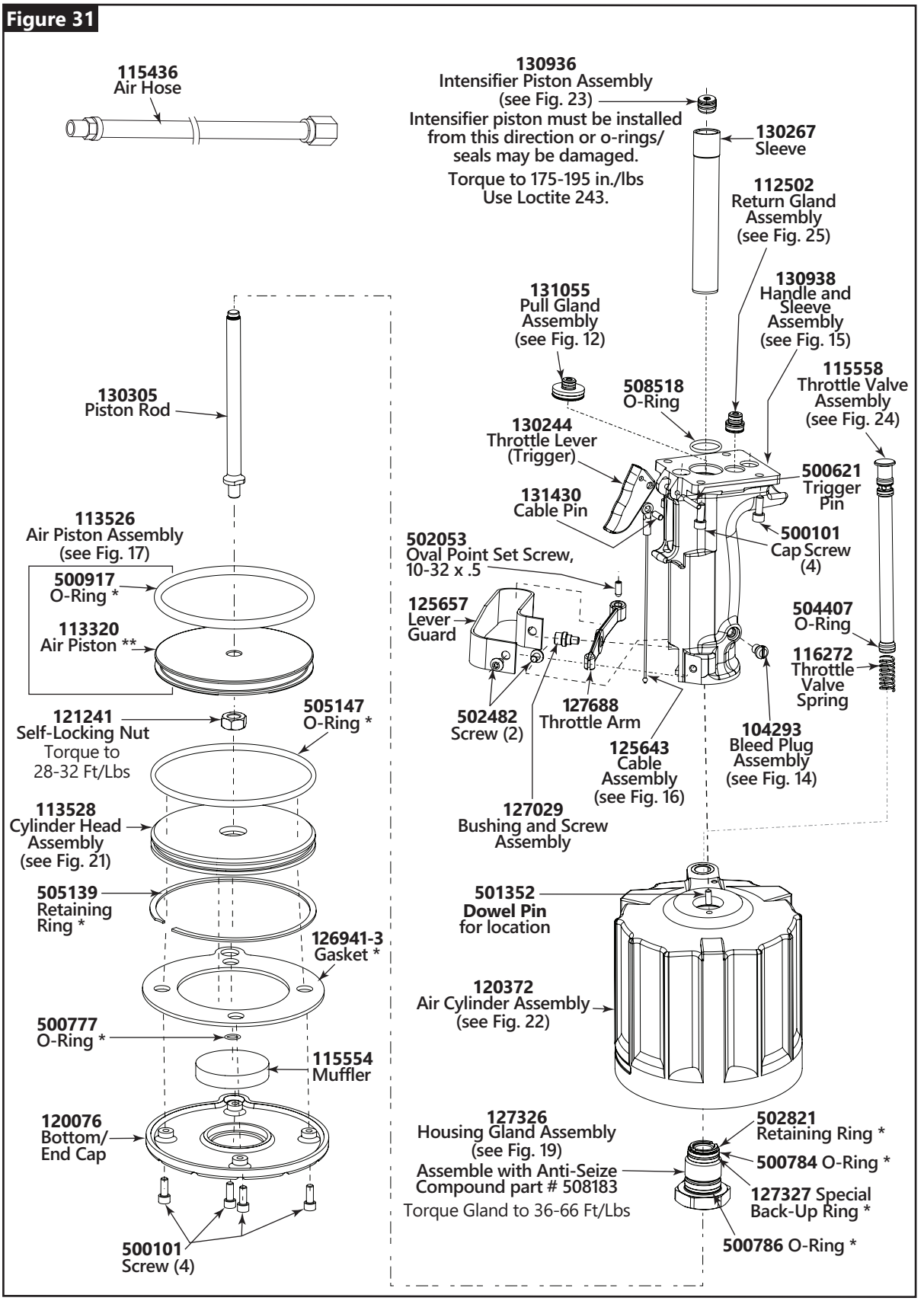
* Part contained in Service Kit: **256KIT.** ** Part not sold separately. Only sold as part of Upper Assembly.

continued...

Component Drawings continued...

Tool Base

Figure 31



Notes: Colors are only used to show the different parts contained in the Assembly and do not represent the actual colors of the items.

* Part contained in Service Kit: **256BTKIT.** ** Part not sold separately. Only sold as part of Upper Assembly.

Nose Assembly/Disassembly

Nose Type Style: Simple Inline BobTail

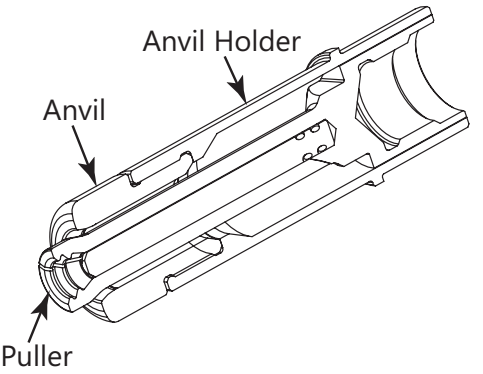
Assembly Instructions

1. Thread puller onto piston and tighten with a wrench.
2. Slide Anvil over puller until it bottoms.
3. Slide retaining nut over anvil and thread onto tool. Tighten retaining nut with a wrench.

Disassembly Instructions

1. Loosen retaining nut with a wrench. Unthread retaining nut and slide it off the anvil.
2. Remove the anvil from puller.
3. Unthread puller and remove from piston.

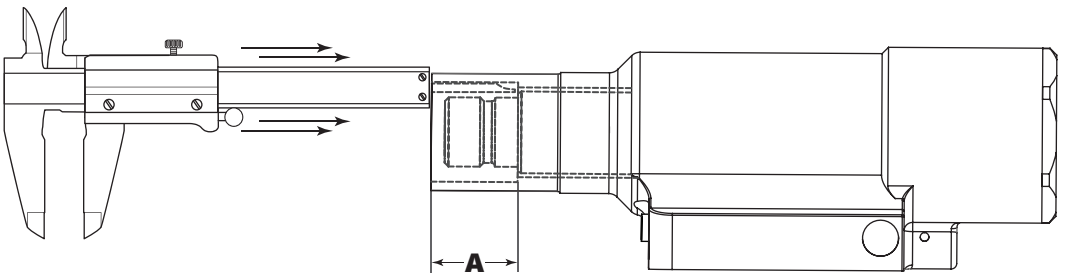
Cross-Section of Nose Assembly shown



Measuring for Tool Drift

Please use the instructions below to self-diagnose tool drift for the 256BT. You will need Vernier calipers with depth measuring capability to measure the distance.

Vernier Calipers



See Figure in this section.

1. Remove the Retaining Nut and Rotatable Stop.
2. Use a Vernier caliper to measure Distance "**A**".
3. The Distance of "**A**" for the **256BT** tool at rest must be between .905 and .935 inches.
4. If Distance "**A**" doesn't meet the proper distance shown in Step 3, please follow instructions in the **Fill and Bleed section** and then remeasure this distance.

Troubleshooting

Always check the simplest possible cause (such as a loose or disconnected Trigger line) of a malfunction first. Then proceed logically, eliminating other possible causes until the cause is discovered. Where possible, substitute known good parts for suspected defective parts. Use this Troubleshooting information to aid in locating and correcting trouble.

NOTE: ***"Piston drift" is when the Air Piston is in the down position, but the Hydraulic Pull Piston is not in the full-forward position. This causes an out-of-sequence condition.***

1. Tool fails to operate when Trigger is pressed.
   a. Air line not connected.
   b. Worn or damaged throttle Valve O-Rings.
   c. Broken throttle Valve Cable Assembly.
2. Tool does not complete Fastener installation and break Pintail.
   a. Air pressure too low.
   b. Worn or damaged Air Piston Quad-Ring or O-Ring.
   c. Tool is low on hydraulic fluid, or empty. See the Fill and Bleed section.
   d. Air in hydraulic system. See the Fill and Bleed section.
   e. Worn or damaged Reservoir Springs.
   f. Check for Piston drift. See section Measuring for Tool Drift and Troubleshooting item number 5.
3. Pintail stripped and/or swaged Collar not ejected.
   a. Check for broken or worn Puller/Jaws in Nose Assembly. See Nose Assembly Data Sheet.
   b. Check for loose retaining or lock nut.
   c. Check for Piston drift. See section Measuring for Tool Drift and Troubleshooting item number 5.
4. Hydraulic fluid exhausts with air or leaks at base of Handle.
   a. Worn or damaged Gland Assembly. Inspect Polyseal, O-Rings, Quad-Ring, and Back-up Ring. Replace if necessary.
5. Tool has Piston drift.
   a. Loose Collet crashing into the front of the Anvil causing the Relief Valve to open, allowing the piston to drift. Tighten the Collet. See the Fill and Bleed section.
   b. Worn or damaged Return Pressure Relief Valve. Inspect Seat Assembly, O-Ring, Back-up Rings, Steel Ball and Valve Spring. Replace if necessary.
   c. Worn or damaged Intensifier Piston Assembly. Inspect O-Rings and Back-up Rings. Replace if necessary.
6. Hydraulic fluid leaks at rear of pull Piston.
   a. Worn or damaged Rear Gland. Inspect Polyseal, O-Rings and Back-up Rings. Replace if necessary.
7. Hydraulic fluid leaks at front of pull Piston.
   a. Worn or damaged Front Gland. Inspect Polyseal, O-Ring, and Back-up Ring. Replace if necessary.
8. Pull Piston will not return.
   a. Throttle Valve stuck; lubricate O-Rings.
   b. Throttle Arm, Cable, or Trigger binding.
9. Air leaks at Air Cylinder Head.
   a. Worn or damaged O-Ring. Replace if necessary.

Notes

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 Battery Powered Installation Tools:
Huck International, Inc. warrants that its Battery Powered installation tools sold after September 1, 2018 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.

Two Year Limited Warranty on Installation Tools:
Huck International, Inc. warrants that its installation tools and Powerig® hydraulic power sources manufactured after December 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.

Howmet Inc. (NYSE: HWM) 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.

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Fax: +1-845-334-7333
hfs.sales.kingston@Howmet.com

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Hong Kong Operations
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ISO 9001-2015 CERTIFIED MANAGEMENT SYSTEM ISO 14001-2015

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