HOWMET AEROSPACE

Instruction Manual

DH15 - Series

Hydraulic Installation Tool

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HUCK

HUCK IS FOREVER.™

May 2, 2022

HK1224

HOWMET AEROSPACE

Declaration of Conformity

Manufacturer:

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

Description of Machinery:

Model DH## 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)
Supply of Machinery (Safety) Regulations 2008
British Standard related to hand held, non-electric power tools (ISO 11148-1:2011)

Representatives:

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

UK CA CE

Full Name: Nicholas Gougoutris
Position: Engineering Manager
Location: Huck International, LLC d/b/a Howmet Fastening Systems
Kingston, New York, USA
Date: 05/02/2022 (May 2, 2022)

HUCK®

Declared dual number noise emission values in accordance with ISO 4871
A weighted sound power level, LWA: **88** dB (reference 1 pW) Uncertainty, KWA: 3 dB
A weighted emission sound pressure level at the work station, LpA: **77** dB (reference 20 µPa) Uncertainty, KpA: 3 dB
C-weighted peak emission sound pressure level, LpC, peak: **119** 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:	**.28** m/s^2
Uncertainty, K:	**.25** 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.

DANGER - IMPORTANT

DO NOT EXCEED HOSE MINIMUM BEND RADIUS

Failure to heed the warnings below could lead to a damaged hose, damaged tool, damaged property, personal injury, or death.

- This high pressure hose is not to be used other than assembled in a genuine HUCK tool or hose assembly or used as a replacement for the hose of a genuine HUCK tool or hose assembly.
- Improper use of this product can cause ***property damage***, ***personal injury***, and ***death***, including but not limited to ***electrocution***, ***fluid injection*** or ***loss of limb*** caused by ***high pressure leak***, ***dangerously whipping hose*** or contact with suddenly moving or falling objects.
- Do not exceed rated working pressure ***(700 bar/10150 psi)*** or minimum bend radius (see chart below). Do not use in temperatures less than ***-40°C (-40°F)*** or greater than ***+100°C (+212°F)***. Do not exceed fluid working temperature of ***+70°C (+158°F)***.
- Do not use if the hose is kinked, abraded, cut, bulged, or leaking. Do not attempt to repair the hose.
- Do not carry tool by hoses.
- Refer to a HUCK hydraulic tool manual for hose inspection and maintenance intervals.
- Store hose assemblies in a clean dry area.

Hose Type	Minimum Bend Radius	
126107 Series	2.76 Inches	70 mm
118944 and 124881 Series	2.17 Inches	55 mm
HA and HPH Series	1.97 Inches	50 mm

Safety Instructions

GLOSSARY OF TERMS AND SYMBOLS:

-Product complies with requirements set forth by the relevant UK and 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.
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 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: 8700 psi (*600 bar*)

MAX INLET RETURN PRESSURE: 3500 psi (*242 bar*)

PULL CAPACITY: 17,860 lbf (*79 kN*)

RETURN CAPACITY: 8940 lbf (*40 kN*)

STROKE: 1.25 inches (*3.17 cm*)

WEIGHT: 8.2 lbs (*3.72 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.

DH15-125-12-PT Shown

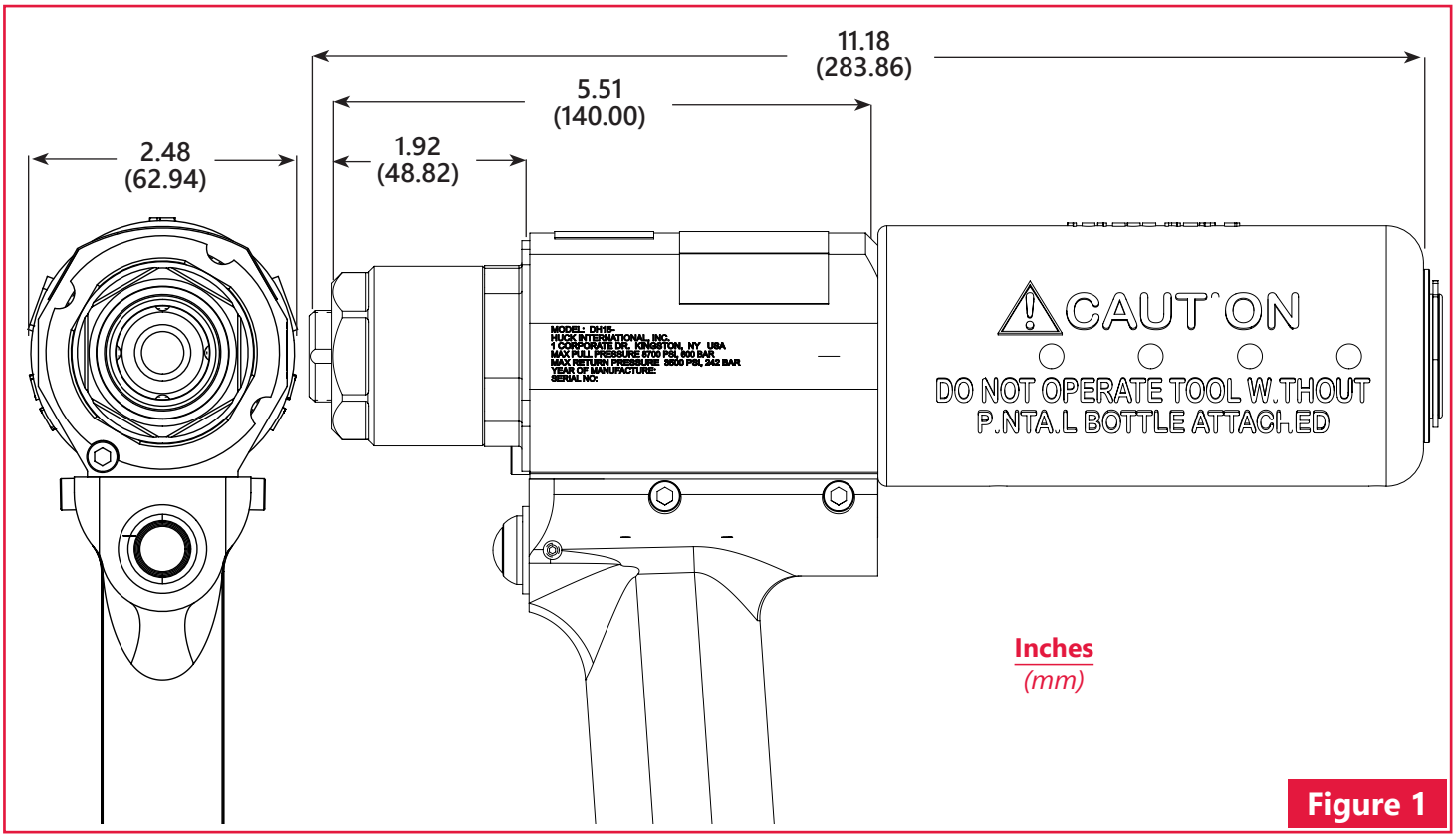


Figure 1

Principle of Operation

PULL CYCLE

When the Trigger Switch is pressed, pressurized hydraulic fluid moves through the PULL hose to the front side of the Piston. The piston and nose assembly collet move rearward, installing the fastener.

RETURN CYCLE

When fastener installation is completed, the trigger is released. Hydraulic pressure is directed to the RETURN side of the piston, moving it and the collet forward. The fluid on the PULL side flows back through the PULL side hose to the Powerig tank. The tool and nose assembly are pushed off the swaged (installed) fastener. When the piston reaches the end of the RETURN stroke, pressure builds up causing the Powerig to shut off, completing the cycle.

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.

Use only Huck Powerig® Hydraulic Units as a power source for Huck installation equipment. Hydraulic power units that deliver high PULL and RETURN pressures, but are not equipped with relief valves, are specifically *not recommended* and may be dangerous.

Connect tool hydraulic hoses to the Powerig *before* connecting tool switch control cord to the unit. If not connected in this order, severe personal Injury may occur.

Correct PULL and RETURN pressures are required for operator safety and 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.

Tool to Powerig Setup

POWER SOURCE CONNECTIONS

Use a Huck Powerig® Hydraulic Unit, or equivalent, that has been suitably prepared for operation.
NOTE: Review all Warnings on this page.

1. Turn OFF the Powerig and disconnect its power supply. Connect the tool hoses to the Powerig.
2. Connect tool's control switch electrical cord to the Powerig.
3. Connect the Powerig to the power supply. Turn ON the Powerig. Press and hold the tool trigger for 30 seconds; then press the trigger a few times to cycle the tool and circulate the hydraulic fluid. Observe the action of the tool and check for leaks. Turn OFF the Powerig.
4. Disconnect the tool's control switch electrical cord from the Powerig. Disconnect the Powerig from its power supply. Select the correct nose assembly for the fastener to be installed (see Nose Assembly Selection Chart). Attach the nose assembly.
5. Re-connect the Powerig to the power supply. Reconnect the tool's trigger control system to the Powerig. Check the operation of nose assembly; install fasteners in a test plate of correct thickness with proper size holes. Inspect installed fasteners.

If fasteners do not pass inspection, see TROUBLESHOOTING to investigate possible causes.

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:

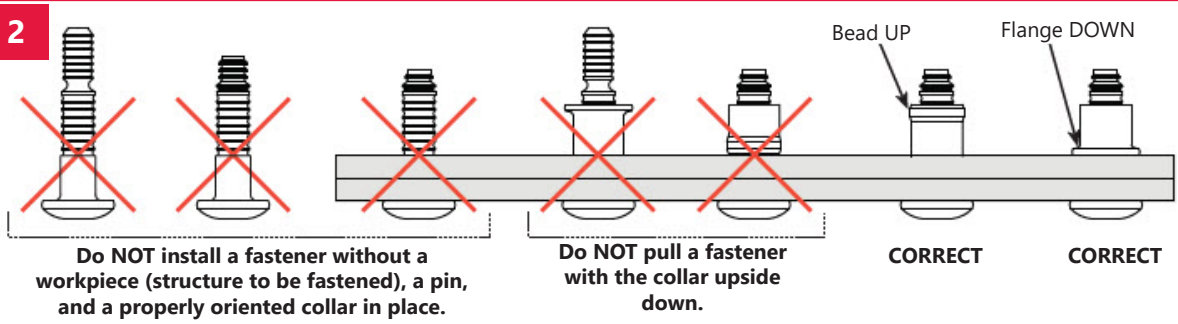
2) Tighten to finger-tight condition.
3) Wrench tighten to 2-3 turns past finger-tight condition.
4) Final thread engagement can be checked (optional) by measuring the dimension from the flange of male fitting to the end of the thread before assembly and subtracting the distance under the flange after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

Operating Instructions

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

Figure 2



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

Be sure of adequate clearance for operator's hands before proceeding with fastener installation.

Do NOT attempt to install a pin without placing the fastener and collar in the work piece (structure to be fastened).

Do NOT attempt to install a pin without a properly oriented collar in place.

The collar flange must be against work piece.

If these safety measures are not followed, the fastener could eject with great velocity and cause severe personal injury.

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

- **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.**

TO INSTALL A BOBTAIL FASTENER:

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.

Hydraulic Couplings

Figure 3

Maintenance

WARNINGS:
Inspect your tool for damage and/or wear before every use.

Do NOT operate the tool if it is damaged or worn; severe personal injury may occur.

CAUTIONS:
Replace all seals, wipers, and rings when 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.

Consult MSDS before servicing tool.

Keep dirt and other material out of hydraulic system, and keep separated parts away from dirty work surfaces.

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 standard 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.

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, disassemble nose and use a sharp "pick" to remove embedded particles from grooves of puller.

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 - **DH15KIT**

Pressure Gauge - **T-124833CE**

Hose Assembly	**Hose Length**	**Part No.**
(contains 2 hoses with quick connect fittings and trigger control cord)	6 ft	**HPHX06-AA10**
	12 ft	**HPHX12-AA10**
	25 ft	**HPHX25-AA10**
	38 ft	**HPHX38-AA10**
	50 ft	**HPHX50-AA10**

Never-Seez® NS-160 - **505565**
(*anti-seize and lubricating compound*)

Loctite® 243 - **508567**

LUBRIPLATE® 130-AA - **502723**

Threadmate® (*4oz. tube*) - **508517**

Disassembly and Assembly Preparation

WARNING: Be sure to disconnect the tool's electrical control trigger system from the Powerig® Hydraulic Unit before disconnecting the tool's hydraulic hoses from it. If not disconnected in this order, severe personal injury could occur.

CAUTION: Do NOT use Teflon® tape on pipe threads. Tape can shred and break free into fluid lines, resulting in malfunctions.

GENERAL PRECAUTIONS

During disassembly and assembly, take the following precautions to avoid damaging tool or components:

(0769) Always work on a clean surface.

(b) Use relatively soft materials, such as brass, aluminum or wood, to protect tool when applying pressure.

(c) Apply a continuous strong pressure, rather than sharp blows, to disassemble or assemble a component. An arbor press provides steady pressure to press a component in or out.

(d) Never continue to force a component if it "hangs up" due to misalignment. Reverse the procedure to correct misalignment and start over.

(e) Smear LUBRIPLATE® 130-AA (P/N **502723**) or equivalent on O-rings and mating surfaces to aid assembly and prevent damage to O-rings.

(f) Apply Parker Threadmate®, Loctite® 567, or Slic-Tite® (per manufacturer's instructions) to pipe plug threads, hose fitting threads, and quick connect fittings.

DISASSEMBLY AND ASSEMBLY TOOLS

Standard hand tools such as wrenches, drifts, copper or lead hammers, screwdrivers, socket screw hexagon keys, long forceps (tweezers), etc. which can be purchased at most local supply firms are required. If possible, an arbor press and vise with soft jaws should be available.

SPARE PARTS AND SPARE PARTS KITS

The quantity of spare parts that should be kept on hand varies with the application and number of tools in service. However, spare parts kits containing perishable parts such as O-rings, back-up rings, etc., should be kept on hand at all times.

POWERIG MAINTENANCE

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

TOOL MAINTENANCE

At regular intervals, depending on use, replace all O-rings and back-up rings in the tool. Spare Parts Kit **DH15KIT** should be kept on hand. Inspect cylinder bore, piston and end cap for scored surfaces, excessive wear or damage, and replace as necessary.

NOSE ASSEMBLY MAINTENANCE

Daily cleaning of the nose assembly is recommended. This can usually he accomplished by dipping nose assembly in mineral spirits, or other suitable solvent, to clean jaws and wash away metal chips and dirt. If more thorough cleaning or maintenance is necessary, disassemble the nose assembly. Use a sharp pointed "pick" to remove embedded particles from the pull grooves of the jaws. Apply Never-Seez® anti-seize lubricant (P/N **505565**) to outside of puller and inside of anvil.

LUBRIPLATE *is a registered trademark of Fiske Brothers Refining Co.*
Threadmate *is a registered trademark of Parker Intangibles LLC.*
Loctite *is a registered trademark of Henkel Corporation, U.S.A.*
Slic-tite *is a registered trademark of LA-CO Industries, Inc.*
Never-Seez *is a registered trademark of Bostik, Inc.*
Teflon *is a registered trademark of E. I. du Pont de Nemours and Company.*

Nose Assembly/Disassembly Procedure

NOSE ASSEMBLY

1. Thread collet/spindle extension onto piston until bottoms. Back out until ball-lock falls into the nearest timing slot.
2. Slide sleeve over collet/spindle until bottoms.
3. Slide anvil over collet/spindle extension and thread onto a tool. Tighten anvil with a wrench.

NOSE DISASSEMBLY

1. Loosen anvil with a wrench. Back off from thread and remove anvil from tool.
2. Remove sleeve from collet/spindle.
3. Back off collet/spindle extension from piston.

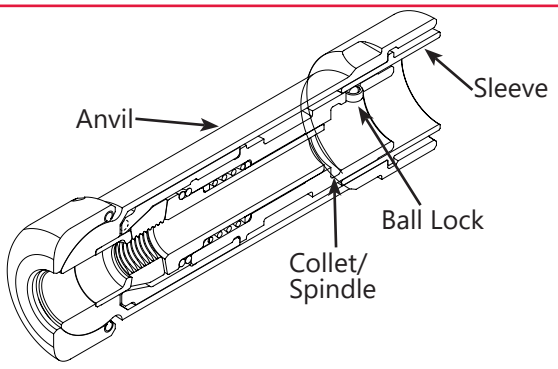


Figure 4

Tool Disassembly Procedure

WARNING: Be sure to disconnect tool electrical control trigger system from Powerig® Hydraulic Unit BEFORE disconnecting tool's hydraulic hoses from unit. If not disconnected in this order, severe personal injury may occur.

Disassemble only the components necessary to check damaged O-ring, wiper, back-up ring, piston seal, or other components.

1. Disconnect electrical control cord from Powerig.
2. Uncouple tool's hydraulic hoses from Powerig.
3. Remove nose assembly from tool (refer to Nose Assembly Removal section on previous page).
4. Remove piston guard and barbed adapter
5. While holding tool in a soft jaw vice, remove anti rotation screw from tool cylinder face.
6. Remove nose adapter assembly by using a 1 13/16" wrench or equivalent.
7. Remove piston assembly by using a drift and mallet.
8. Using a dull pick, and taking care not to score or gouge grooves, bores, or rods, remove seals and replace with new parts.
9. Loosen bellmouth nut and remove rubber grommet and plastic ferrule.
10. Remove electrical plug, remove trigger set screw and pull trigger assembly out.
11. If removing hydraulic hoses, note which hose is pull and which is return, and loosen reducing bushing from hose using a 3/4" wrench. Remove handle screws. Slide handle down hoses, and remove hoses with a 13mm wrench.

Tool Assembly Procedure

WARNINGS:
Do not omit any seals during servicing, leaks will result and personal injury may occur.

Tool must be fully assembled with all components included.

CAUTION: Do not use TEFLON tape.

ASSEMBLY PREPARATION:

(a) Clean components In mineral spirits or other solvent compatible With O-ring seals.

(b) Clean out O-ring grooves.

(c) Inspect components for scoring, excessive wear or damage.

(d) Replace O-rings and back-up rings. Be sure that relative positions of the O-rings and back-up rings are as shown in assembly drawing.

(e) Service Kit part number DH15KIT contains O-Rings, Back-up Rings and other seals necessary for servicing this tool.

(f) Smear Lubriplate 130AA on O-rings and mating surfaces to prevent damage to O-rings and to aid assembly.

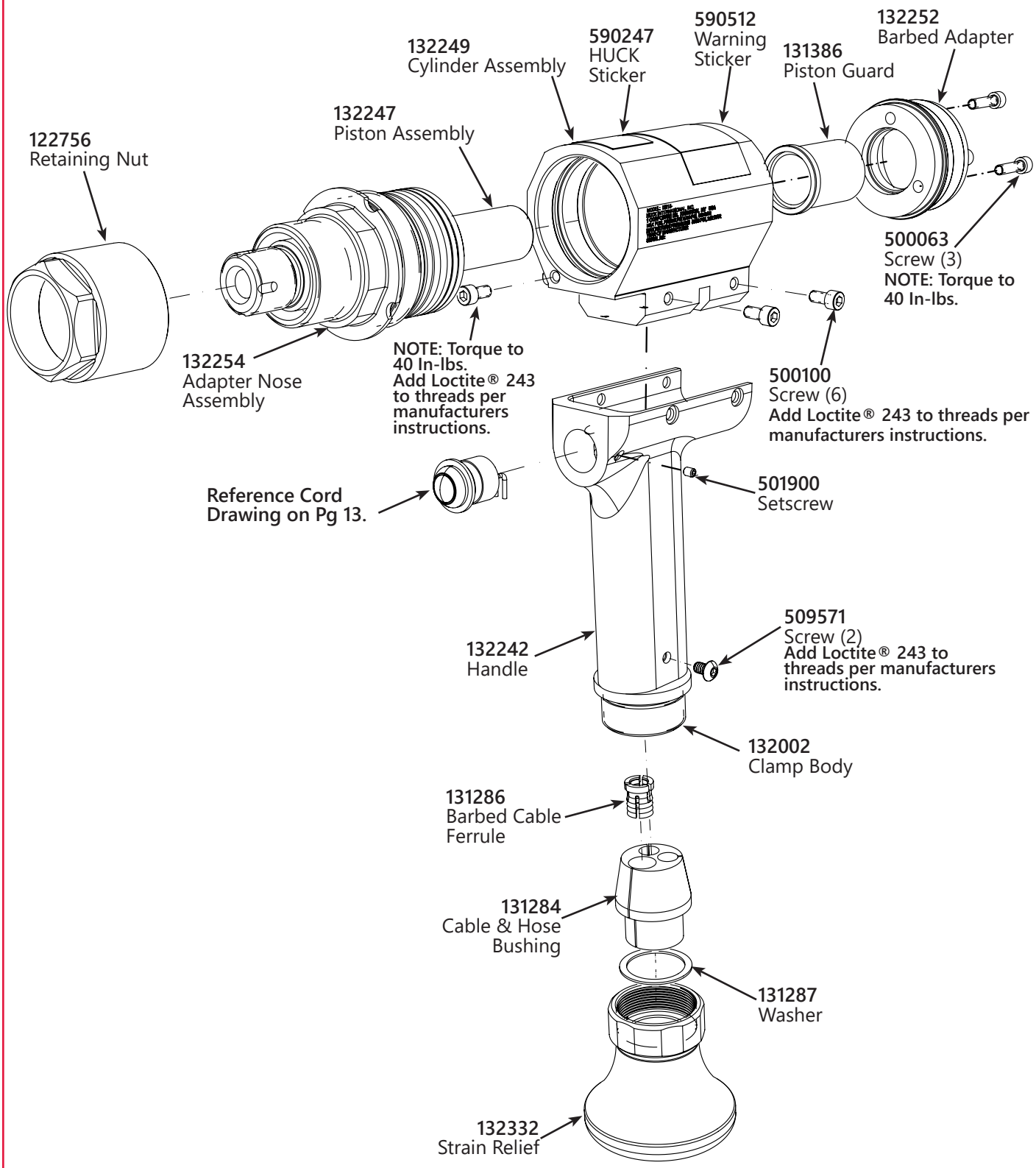
(g) Apply Loctite® per manufacturer's instructions according to design.

ASSEMBLY PROCEDURE:

1. Install hoses with 13mm wrench. Slide handle over hoses and tighten reducing bushing using a 13mm wrench and a 3/4" wrench.
   NOTE: Take note to which is pull and return hose lines.
2. Insert trigger assembly and install trigger set screw.
3. Insert plastic ferrule and rubber grommet, followed by tightening bellmouth nut.
4. While holding tool in a soft jaw vice, insert Piston Assembly.
5. Install nose adapter assembly using a 1 13/16" wrench.
6. Insert anti-rotation screw to cylinder face and torque to 40 in-lbs.
7. Install piston guard and barbed adapter.
8. Install nose assembly to tool.
9. Couple tool's hydraulic hoses to Powerig.
10. Connect electrical control cord to Powerig.

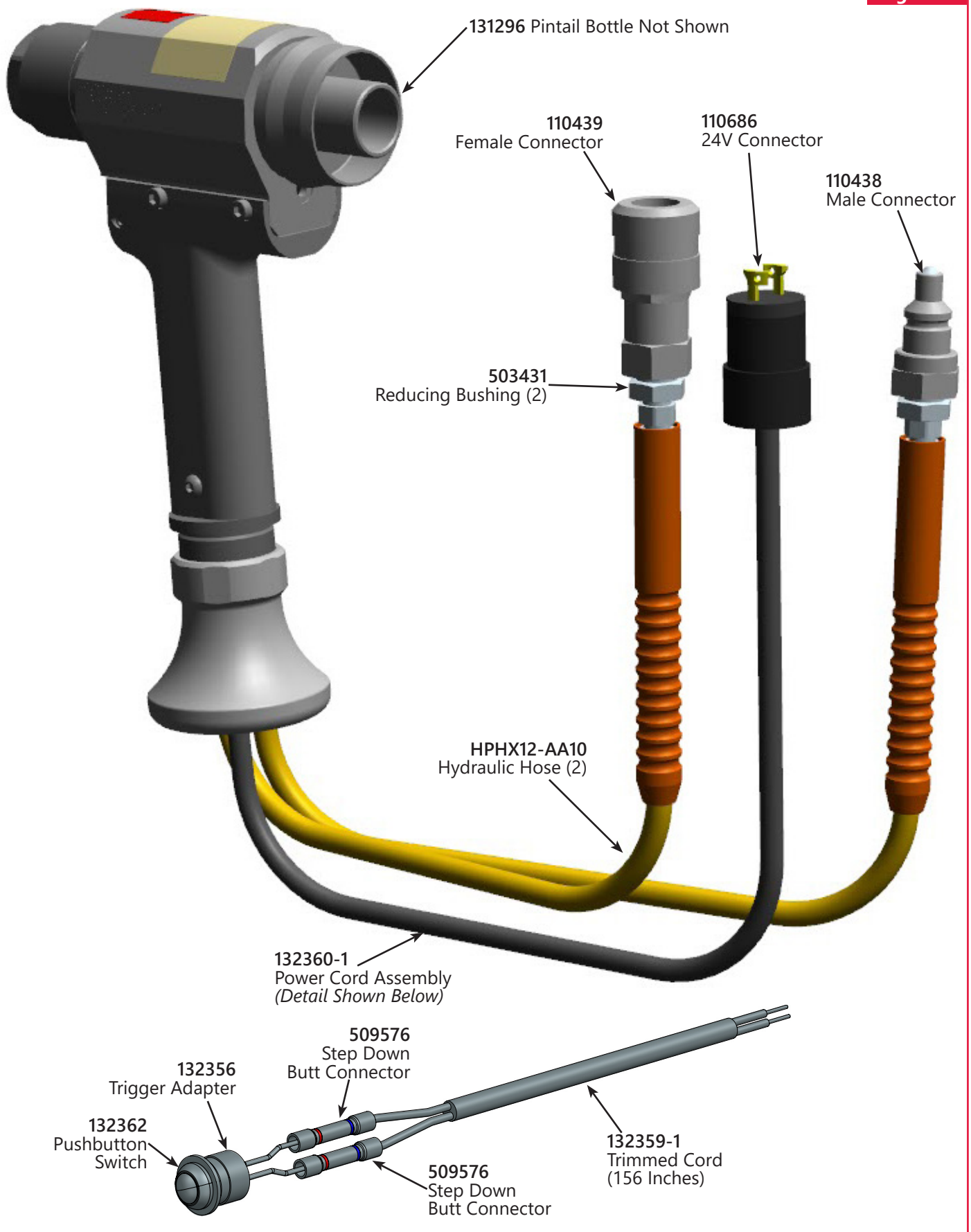
Components Drawing - Head and Handle

Figure 5



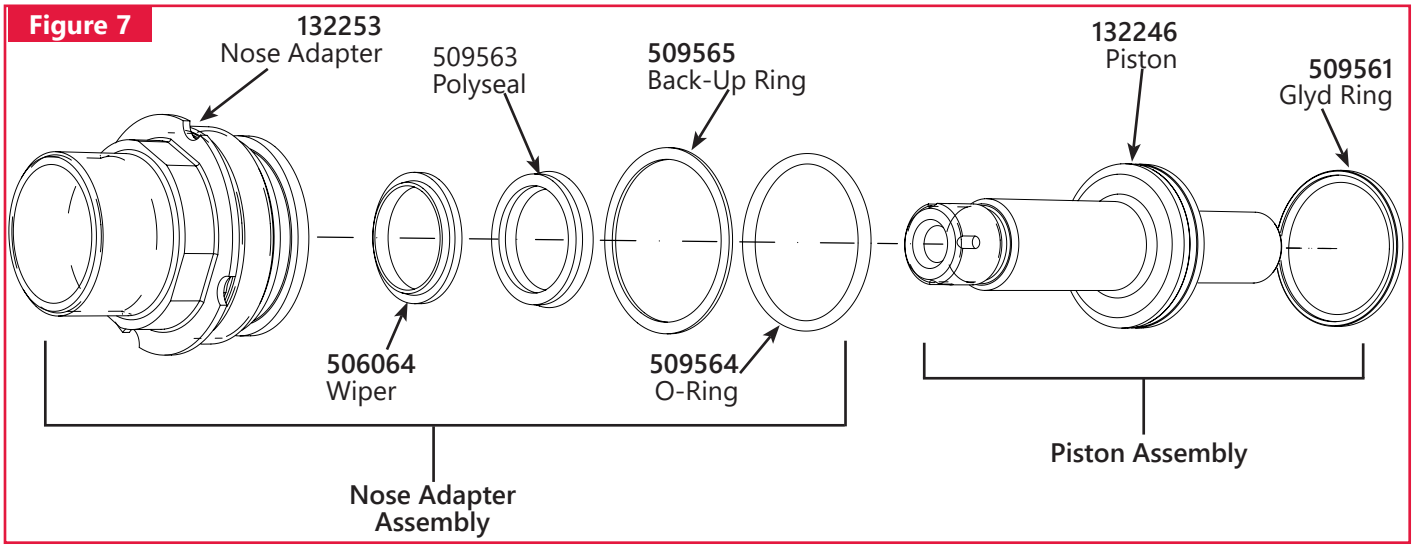
Components Drawing - Tool Hoses and Cord

Figure 6



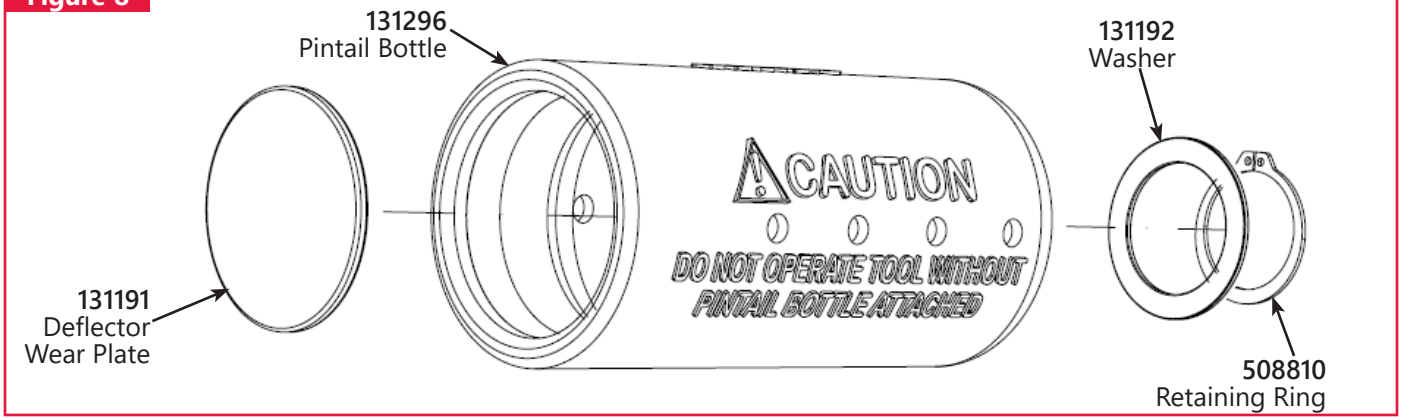
Components Drawing - Nose Adapter P/N 132254 and Piston Assembly P/N 132247

Figure 7



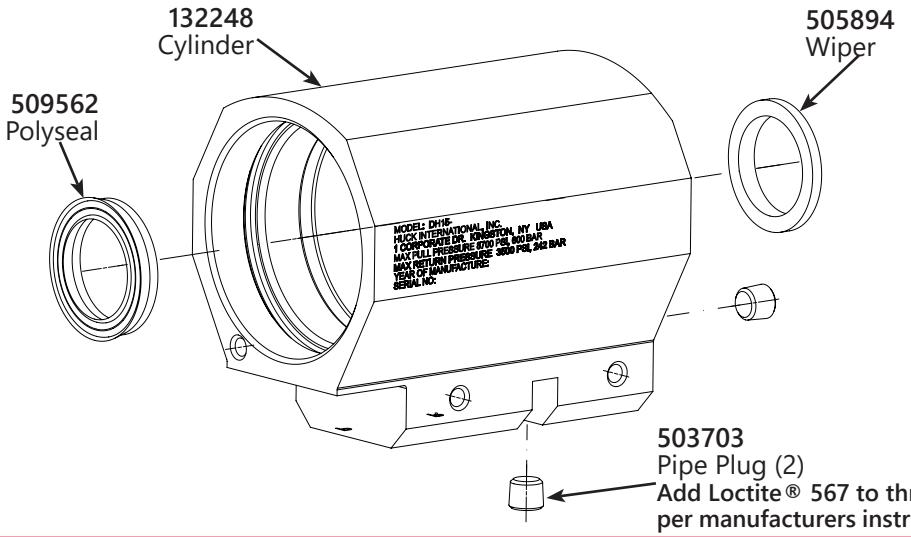
Components Drawing - Pintail Bottle P/N 131296

Figure 8



Components Drawing - Cylinder Assembly P/N 132249

Figure 9



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.

1. ***Tool fails to operate when trigger is pressed.***
   a. Inoperative Powerig® Hydraulic Power Source. See applicable instruction manual.
   b. Loose electrical connections.
   c. Damaged trigger assembly.
   d. Loose or faulty hydraulic hose coupling.

2. ***Tool operates in reverse.***
   a. Reversed hydraulic hose connections between Powerig and tool.

3. ***Tool leaks hydraulic fluid.***
   a. Defective or worn O-rings or loose hose connections at tool.

4. ***Hydraulic couplers leak fluid.***
   a. Damaged or worn O-rings in coupler body.

5. ***Hydraulic fluid overheats.***
   a. Hydraulic unit not operating properly; see unit's manual.
   b. Unit running in reverse (918 & 918-5 only). See unit's manual.

6. ***Tool operates erratically and fails to properly install fastener.***
   a. Low or erratic hydraulic pressure supply; air in system. See applicable instruction manual.
   b. Damaged or excessively worn piston O-ring in tool.
   c. Excessive wear on or scoring of sliding surfaces of tool parts.

7. ***Pull grooves on fastener pintail stripped during PULL stroke.***
   a. Operator not sliding anvil completely onto fastener pintail.
   b. Incorrect fastener grip.
   c. Worn or damaged jaw segments.
   d. Metal particles accumulated in pull grooves of jaw segments.
   e. Excessive sheet gap.

8. ***Collar of fastener not completely swaged.***
   a. Improper tool operation. See Trouble 6.
   b. Scored anvil in nose assembly.

9. ***Tool "hangs-up" on swaged collar of fastener.***
   a. Improper tool operation. See Trouble 6.
   b. RETURN pressure too low.
   c. Not enough collar lubricant.
   d. Nose assembly not properly attached.

10. ***Pintail of fastener fails to break.***
    a. Improper tool operation. See Trouble 6.
    b. Pull grooves on fastener stripped. See Trouble 7.
    c. PULL pressure too low.

11. ***Nose will not release broken pintail.***
    a. Nose assembly incorrectly installed.

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 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.

HOWMET AEROSPACE

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.

Howmet Fastening Systems Tooling Support Locations

INDUSTRIAL NORTH AMERICA

Kingston Operations
1 Corporate Drive
Kingston, NY 12401
Tel: +1-800-278-4825
Fax: +1-845-334-7333
hfs.sales.kingston@Howmet.com

Tracy Operations
1925 North MacArthur Drive
Tracy, CA 95376
Tel: +1-800-826-2884
Fax: +1-800-573-2645
hfs.sales.idg@Howmet.com

Waco Operations
PO Box 8117
8001 Imperial Drive
Waco, TX 76714-8117
Tel: +1-800-388-4825
Fax: +1-800-798-4825
huck.waco@Howmet.com

INDUSTRIAL GLOBAL

Tokyo Operations (Japan and Korea)
1013 Hibiya U-1 Bldg.
Uchisaiwai-cho 1-1-7
Chiyoda-ku, Tokyo
100-0011 Japan
Tel: +81-3-3539-6594
Fax: +81-3-3539-6585

Melbourne Operations
1508 Centre Road
Clayton, Victoria
Australia 3168
Tel: +613-8545-3333
Fax: +613-8545-3390
hfsmel.sales@Howmet.com

Suzhou Operations
58 Yinsheng Road,
SIP Suzhou, Jiangsu
215126 China
Tel: +86-512-62863800-8888

Telford Operations
Unit C, Stafford Park 7
Telford, Shropshire
England TF3 3BQ
Tel: +44-(0)-1952-290011
Fax: +44-(0)-1952-207701
THIsales@howmet.com

AEROSPACE NORTH AMERICA

Kingston Operations
1 Corporate Drive
Kingston, NY 12401
Tel: +1-800-278-4825
Fax: +1-845-334-7333
hfs.sales.kingston@Howmet.com

Simi Valley Operations
3990A Heritage Oak Court
Simi Valley, CA 93063
Tel: +1-805-527-3600
Fax: +1-805-527-0900
www.hfs-simivalley.com
SMV.HFSSales@Howmet.com

AEROSPACE GLOBAL

Aichach Operations
Robert-Bosch Str. 4
Aichach 86551
Germany
Tel: +49-8251-8757-0
AICSalesDL@Howmet.com

Cergy Operations
15 Rue du Petit Albi
F-95611 Cergy Pontoise
France
Tel: +33-1-34-33-98-00
Fax: +33-1-34-33-97-77

Hong Kong Operations
88 Hing Fat Street, 27th Floor
Causeway Bay
Hong Kong, China
Tel: +852-2864-2012
HKSSalesDL@howmet.com

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Howmet Fastening Systems
Kingston Operations
1 Corporate Drive, Kingston, NY 12401
Tel: 800-431-3091 • Fax: 845-334-7333
www.hfsindustrial.com/us

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