HOWMET AEROSPACE

Instruction Manual

2480 and 2481 series

Hydraulic Installation Tools

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HUCK®

HUCK IS FOREVER.™

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

July 12, 2023
HK970

Declaration of Conformity

Manufacturer:

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

Description of Machinery:

Models 2400, 2480, 2500, 2580 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 11148-2:2011)

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:

Full Name: Nicholas Gougoutris
Position: Engineering Manager
Location: Huck International, LLC d/b/a Howmet Fastening Systems
Kingston, New York, USA
Date: 11/02/2021 (November 2, 2021)

Declared dual number noise emission values in accordance with ISO 4871
A weighted sound power level, LWA: **85** dB (reference 1 pW) Uncertainty, KWA: 3 dB
A weighted emission sound pressure level at the work station, LpA: **74** 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:	**.20** m/s²
Uncertainty, K:	**.17** m/s²
Values measured and determined according to ISO 28662-1, ISO 5349-2, and EN 1033	

Test data to support the above information is on file at:
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

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.

X. HYDRAULIC TOOL SAFETY INSTRUCTIONS:

WARNING: Do not exceed maximum pull or return settings on tool.

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.

Description

The 2480, A2480, and 2481 series, with appropriate nose assemblies, install a wide range of Huck blind fasteners and HUCKBOLT® fasteners. These lightweight and compact tools are particularly adapted to installing fasteners in limited clearance areas. Each tool is complete with hydraulic hoses and couplings; electric switch and cord. An unloading valve, designed to relieve hydraulic pressure at end of the PULL stroke, is positioned by the piston. The end of the piston rod is threaded, and a retaining nut and stop are included for attaching a nose assembly.

The 2480 series has hoses that pass through the handle, and 2481 has hoses attached to the top of the tool.

Huck Hydraulic Installation Tools are designed to be powered by Huck Powerig® Hydraulic Units, models 913F, 918, 918-5, 940, 968, or equivalent.

A specific nose assembly is required for each fastener type and size. Nose assemblies must be ordered separately by contacting your Huck representative.

Specifications

POWER SOURCE: Huck Powerig® Hydraulic Power Source

HOSE KITS: Use only genuine HUCK Hose Kits rated @ 10,000 psi working pressure.

HYDRAULIC FLUID:
Hydraulic fluid shall meet DEXRON® III, DEXRON VI, MERCON®, Allison C-4 or equivalent Automatic Transmission Fluid (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.

MAX OPERATING TEMP: 125°F (51.7°C)

MAX FLOW RATE: 2 gpm (7.5 l/m)

MAX PULL PRESSURE: 8400 psi (580 bar)

MAX RETURN PRESSURE: 3200 psi (220 bar)

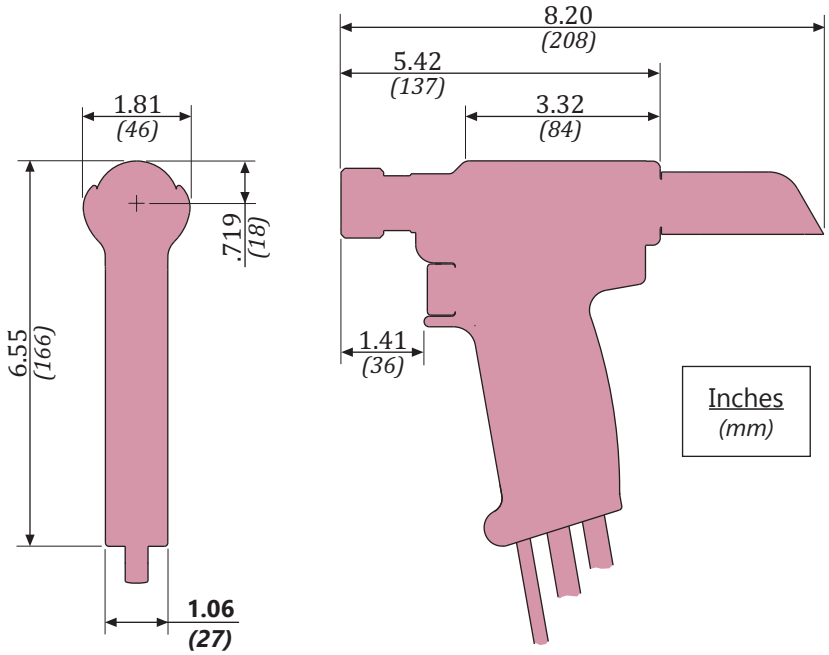
PULL CAPACITY: 5380 lbs (24 kN) @ 8400 psi

STROKE (STANDARD): .875 inches (22.2 mm)
STROKE (LS): 1.250 inches (31.7 mm)

WEIGHT: 2.2 lbs (1 kg)

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.*

Figure 1



Principle of Operation

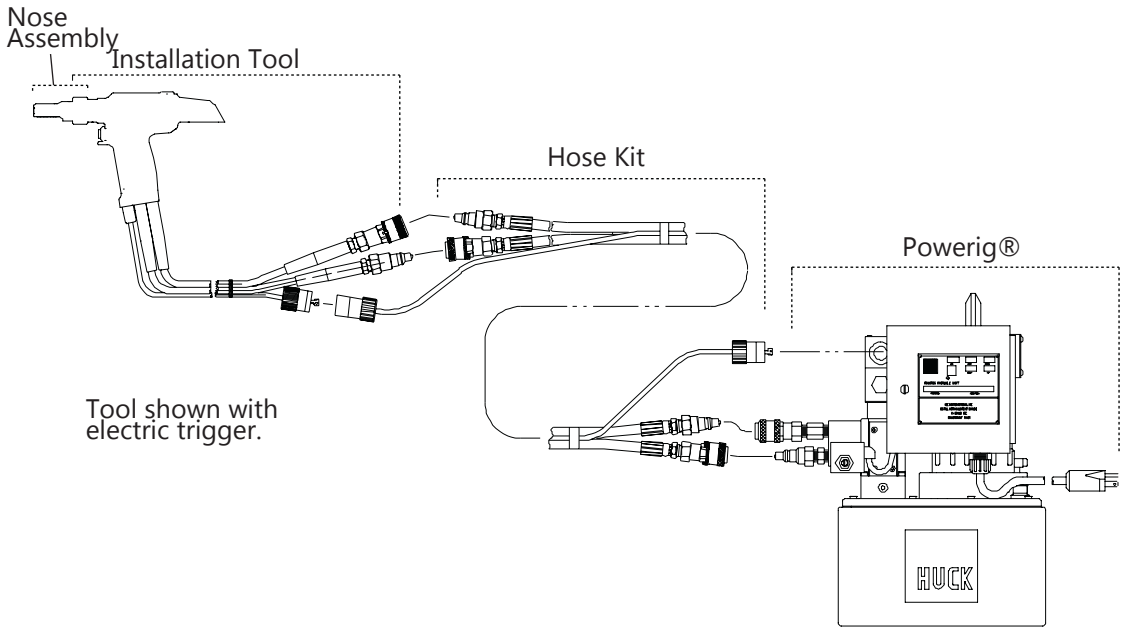
A trigger controls the PULL and RETURN strokes. When the trigger is pressed, hydraulic pressure is directed to PULL side of the piston, and fastener installation begins. At the end of PULL stroke, before the trigger is released, piston uncovers flats of unloading valve, thus unloading pressure by allowing fluid to flow back to Powerig® Hydraulic Unit.

When the trigger is released at end of PULL stroke when fastener is installed, the pressure is directed to RETURN side of the piston and moves piston forward. Nose assembly, with tool, is then pushed off fastener.

Tool Setup

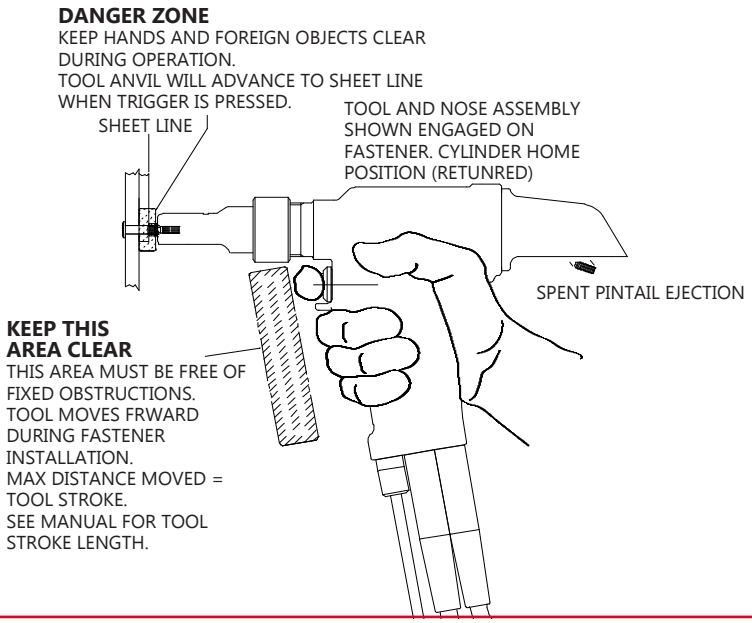
Figure 2

GENERAL ARRANGEMENT OF FASTENING SYSTEM COMPONENTS



WARNING: Note tool danger zones in Figure 3, and heed intstuctions.

HEED WARNING AND DANGER ZONE INSTRUCTIONS **Figure 3**



Preparation for Use

WARNINGS:
Correct PULL and RETURN pressures are required for operator safety and for installation tool function. Gauge p/n T-124883CE is available for checking pressures. See Tool specifications and gauge instruction manual. Failure to verify pressures may result in severe personal injury.

Be sure to connect Tool's hydraulic hoses to Powerig® Hydraulic Power Source before connecting Tool's switch control cord to unit. If not connected in this order, severe personal Injury may occur.

CAUTIONS:
Do not let disconnected hoses and couplers contact a dirty floor. Keep harmful material out of hydraulic fluid. Dirt in hydraulic fluid causes valve failure in tool and in Powerig Hydraulic Unit.

Do not use TEFLON® tape on pipe threads. Pipe threads may cause tape to shred resulting in tool malfunction. (Slic-Tite is available in stick form as Huck P/N 503237.)

1. Rub Slic-Tite® TEFLON® thread compound, or equivalent, on pipe threads to prevent leaks and for ease of assembly.

2. Use Huck Powerig® Hydraulic Power Source®, or equivalent, that has been prepared for operation per instruction manual. Check both PULL and RETURN pressures, and ensure they are adjusted to pressures given in SPECIFICATIONS of this manual. See both hydraulic unit instruction manual and T-124883CE instruction manual before and during checking procedure. Visually inspect for leaks and to verify that End Cap is installed correctly.

3. First, turn hydraulic unit to OFF; then disconnect power supply from hydraulic unit. Disconnect trigger control system from hydraulic unit.

4. Connect tool hoses to hydraulic unit. If required, adjust position of trigger assembly on return pressure hose. Connect trigger control system to hydraulic unit.

5. Connect hydraulic unit to power supply (air or electric). Turn hydraulic unit to ON. Hold Tool trigger depressed for 30 seconds; depress trigger a few times to cycle tool and to circulate hydraulic fluid. Observe action of Tool and check for leaks.

6. Select the appropriate nose assembly for the fastener to be installed. Disconnect hydraulic unit from power supply. Disconnect tool's trigger control system from hydraulic unit. Attach nose assembly to tool.

7. Reconnect tool's trigger control system to hydraulic unit; reconnect unit to power supply. Check operation of nose assembly. Install fasteners in test plate of correct thickness with proper size holes. Inspect installed fasteners. If fasteners do not pass inspection, see TROUBLESHOOTING section of this manual to locate and correct malfunction.

8. Operator should receive training on proper use of Huck equipment from qualified personnel.proceed logically, eliminating each possible cause until the defective part is located. Where possible, substitute known good parts for suspected defective parts. Use Trouble Shooting Chart as an aid for locating and correcting trouble.

Operating Instructions

This tool is shipped with an attached regulator and a 1/4" inside diameter air hose (Huck p/n 115436), with a plastic plug in the air inlet connector. An air supply capable of 6.3 CFM at a pressure greater than 10 psi greater than the installed regulator set point (Figure 16) must be available. Air supply should be equipped with a filter-regulator-lubricator unit.

WARNINGS:
Read full manual before using tool.

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.

When operating Huck installation equipment, always wear approved eye protection.

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

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. Be sure that pintail deflector is on tool and directed away from all personnel.

Do not pull on a pin without placing fastener/ collar in a workpiece, and also, collar chamfer MUST be out toward tool - - these conditions cause pin to eject with great velocity and force when the pintail breaks off or teeth/grooves strip. This may cause severe personal injury.

CAUTIONS:
Do not let disconnected hoses and couplers contact a dirty floor. Keep harmful material out of hydraulic fluid. Dirt in hydraulic fluid causes valve failure In Tool and In Powerig Hydraulic Unit.

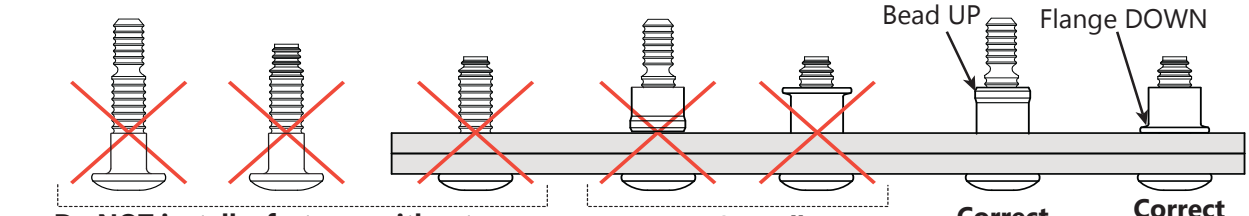
Do not use TEFLON® tape on pipe threads. Pipe threads may cause tape to shred resulting in tool malfunction. (Threadmate™ is available from Huck in a 4oz. tube as part number 508517.)

Remove excess gap from between the sheets to permit correct fastener installation and prevent jaw damage. ALL jaw teeth must engage pintail to avoid damaging teeth.

BOM blind fasteners jam in nose assembly if pulled when not in workpiece.

To avoid structural and tool damage, be sure enough clearance is allowed for nose assembly at full stroke.

Do not abuse tool by dropping it, using it as a hammer or otherwise causing unnecessary wear and tear.



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

Do NOT pull a fastener with the collar upside down.

HUCKBOLT® FASTENER INSTALLATION:

Place pin in workpiece and place collar over pin. See WARNING. (If Collar has only one tapered end, that end MUST be out toward tool - not next to workpiece.) Hold pin and push nose assembly onto pin protruding through collar until nose anvil touches collar. Depress trigger and hold until collar is swaged and pintail breaks. Release trigger. Tool will go into RETURN stroke. Tool and nose are ready for next installation cycle.

BLIND FASTENER INSTALLATION:

Fastener may be placed in workpiece or in end of nose assembly . See WARNING. In either case, tool/nose must be held against work and at right angles to it. Depress and hold trigger until fastener is installed and pintail breaks. Release trigger. Tool will go into its return stroke. Tool/nose are ready for next installation cycle.

Maintenance

CAUTION: Do not use TEFLON® tape on pipe threads. Pipe threads may cause tape to shred resulting in tool malfunction.

GOOD SERVICE PRACTICES

The efficiency and life of an installation tool depends upon proper maintenance and good service practices. Read this entire page before proceeding with maintenance/repair.

Individual parts must be handled carefully and examined for damage or wear. Replace parts where required. Always replace O-rings and back-up rings when the tool is disassembled for any reason.

Use proper hand tools in a clean well lit area for maintenance and/or repair. Always be careful to keep dirt and debris out of pneumatic and hydraulic systems. Only standard hand tools are required in most cases. Where a special tool is required, the description and part number are given.

While clamping installation tool and/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/or vise with soft jaws greatly diminishes the possibility of a damaged tool. Remove components in a straight line without bending, cocking or undue force, and reassemble tool with the same care.

Consult Troubleshooting section of this manual if a malfunction occurs. Where a part number (P/N) is given, HUCK sells that part.

FLUID MAINTENANCE

For fluid maintenance please refer to NAS 1638 class 9 or ISO CODE 18/15 or SAE level 6

STANDARD SEALANTS AND LUBRICANTS

Coat hose fitting threads with a non-hardening TEFLON® thread compound such as Threadmate™, which is available from HUCK in a 4oz. tube as part number 508517.

Smear LUBRIPLATE® 130AA, or equivalent lubricant, on O-rings and mating surfaces this prevents nicking/pinching O-rings on any rough/tight spot and increases ease of assembly. (LUBRIPLATE 130AA is available from HUCK in a tube as part number 502723.)

SERVICE PARTS KIT

Service parts kit 2480KIT contains perishable parts for both the 2480 and 2481 family of tools. For convenience, and as experience indicates, keep extra kits (O-rings, back-up rings, and other standard items) and tool parts on hand. Inspect tool daily. Check hoses, fittings and disconnects for leaks or damage.

Preventive Maintenance

SYSTEM INSPECTION

Operating efficiency of the tool is directly related to performance of the complete system, including tool and nose assembly, hydraulic hoses, control trigger assembly and the Powerig® Hydraulic Unit. An effective preventive maintenance program includes scheduled inspections of the system to detect and correct minor troubles.

1. Inspect tool for external damage.
2. Verify that hoses and fittings, and trigger connections are secure.
3. Inspect hydraulic hoses for signs of damage. Replace if required.
4. Inspect tool, hoses, and Powerig Hydraulic Unit during operation to detect abnormal heating, leaks or vibration.

POWERIG® HYDRAULIC POWER SOURCE

Maintenance and repair instructions are in applicable Powerig Hydraulic Unit Instruction Manual.

Tool and Nose Assembly Maintenance and Precautions
Whenever disassembled, and also at regular intervals (depending on severity and length of use), replace all O-rings and back-up rings. Spare Parts Kits should be kept on hand. Inspect cylinder bore, piston and rod/extension, and unloading valve for scored surfaces, excessive wear or damage, and replace parts as necessary. On any assembly with UNITIZED™ Jaws, clean all parts in mineral spirits or isopropyl alcohol only. Under no circumstances should jaws come in contact with other solvents. Also, do not let jaws soak; dry the jaws immediately after cleaning. Dry other parts before assembling. Urethane soaks up other solvents, then swells up and becomes unusable. Use a sharp pointed pick to remove embedded particles from the pull grooves of the jaws.

Figure 5

Use a fine India stone to remove any nicks or burrs from these areas to prevent damage to O-Ring of Female Connector.

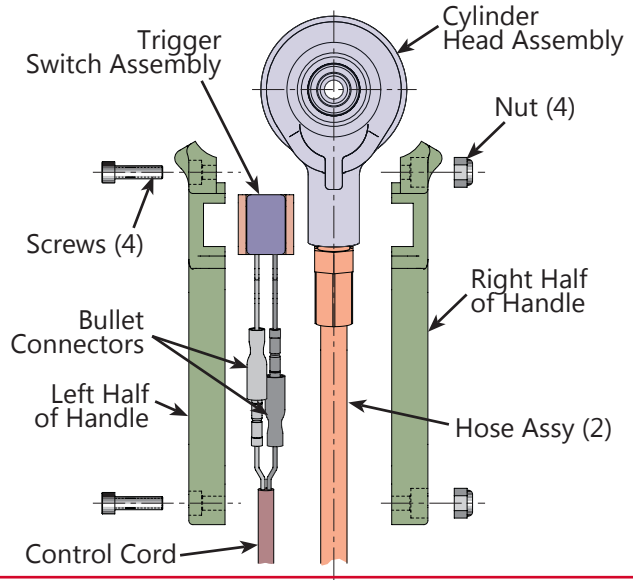
Disassembly Procedure

The following procedure is for complete disassembly. Disassemble only subassemblies necessary to check and replace damaged seals, wipers, back-up rings and components. Always replace seals, wiper, O-rings and back-up rings of disassembled subassemblies.

WARNING: Disconnect tool control trigger system from Powerig® Hydraulic Unit before disconnecting tool hydraulic hoses from unit. If not disconnected in this order, severe personal injury may occur.

1. Read WARNING. Disconnect tool's electrical connector from the hydraulic unit; then uncouple tool's hydraulic hoses and drain into a container.
2. Remove tool retaining nut using 1-1/16 open-end wrench. Slide nose assembly anvil away from tool. Unscrew collet from tool piston.
3. Unscrew four screws from handle assembly. Remove the screws and nuts, and separate handle halves. (Figure 6)

Figure 6 TOOL FRONT - HANDLE HALVES SEPARATED

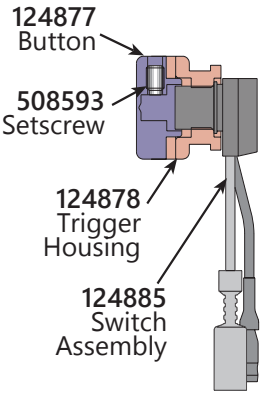


4. (Optional) Unscrew hydraulic hoses from tool. **NOTE: Do not remove hydraulic hoses from tool unless replacing them.**
5. Remove quick disconnects from hoses, and push rearward on piston until remaining hydraulic fluid is drained into container, and discard fluid.
6. **Electric Trigger Models**: Lift trigger switch assembly from handle half. Pull control cord out of built-in handle strain relief. Pull both bullet connectors apart. (Figure X)

   Air Trigger Models: Lift air trigger assembly from handle half. Pull air hose out of handle's built-in strain relief. (Figure 10)
7. **Electric Trigger Models**: Disassemble switch and cord assembly as instructed in Figure 7.

   Air Trigger Models: Disassemble air trigger and hose assembly as instructed in Figure 8.

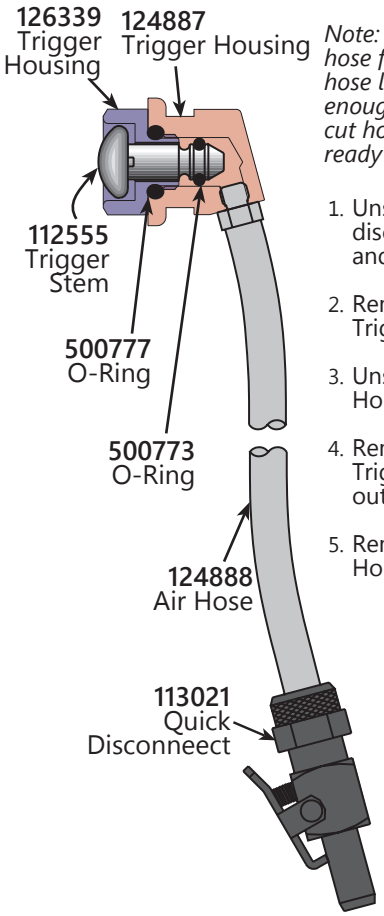
Figure 7 ELECTRIC TRIGGER ASSEMBLY



Diassembly Procedure

1. Loosen Setscrew using 5/64 hex key.
2. Remove Button.
3. Unscrew Switch from Housing.

Figure 8 AIR TRIGGER AND HOSE ASSEMBLY



Diassembly Procedure

Note: When removing air hose from either fitting, slice hose lengthwise, at fitting, just enough to remove easily. Then cut hose squarely across to be ready for assembly.

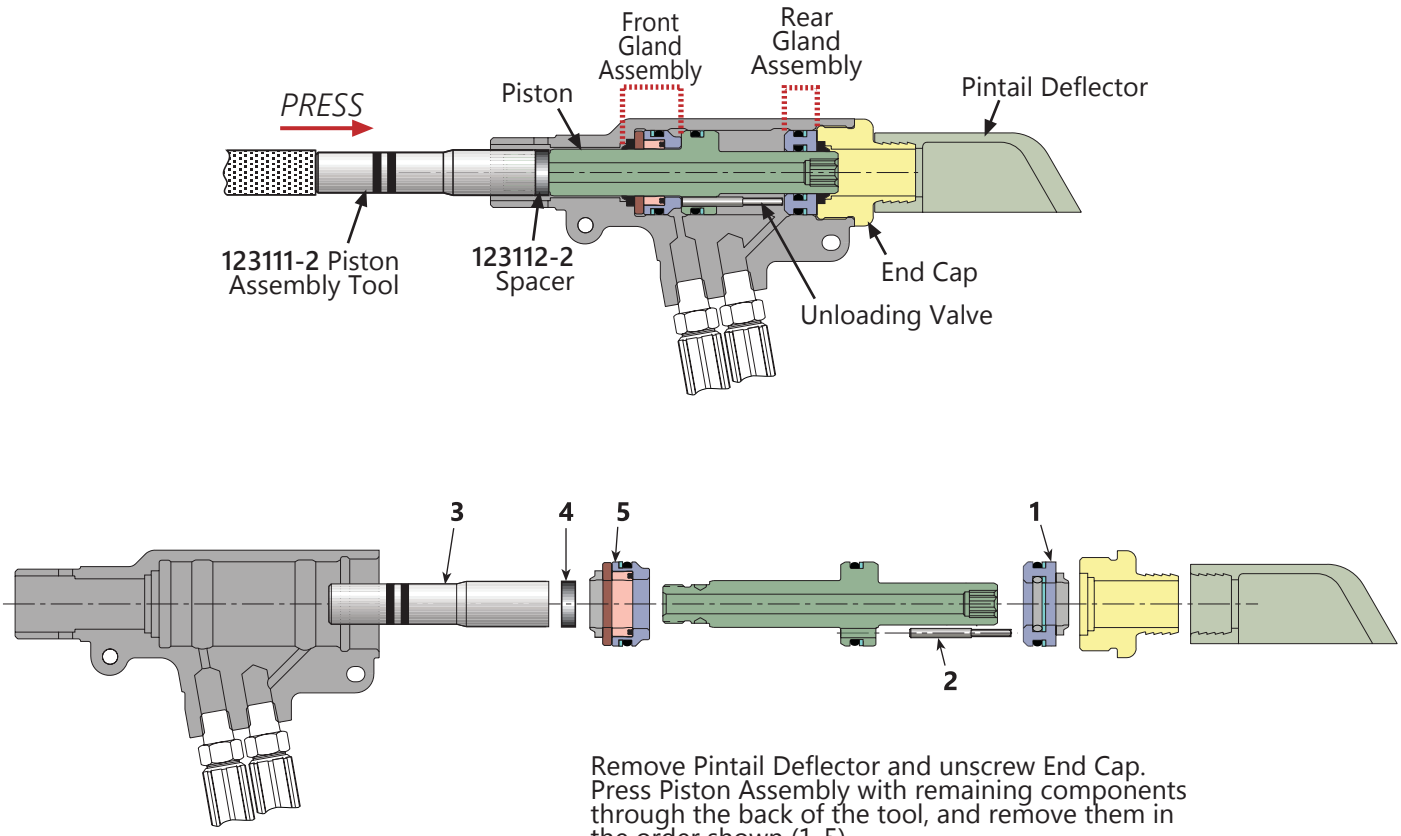
1. Unscrewing nut from quick disconnect body; then cut and remove Air Hose.
2. Remove Air Hose from Air Trigger Housing.
3. Unscrew Trigger Body from Housing.
4. Remove O-Ring from Trigger Stem, and pull Stem out.
5. Remove O-Ring from Housing.

Disassembly Procedure

DISASSEMBLE CYLINDER ASSEMBLY

1. Place spacer over threaded end of piston; then thread piston assembly tool onto the piston. If the cylinder contains fluid, push the piston rearward and drain the fluid into a container. Discard the fluid.
2. Remove pintail deflector from end cap by twisting and pulling in one motion.
3. With a 1-5/16 open-end wrench, unscrew end cap.
4. Using optional Piston Assembly Tool, press piston, with unloading valve, and end cap/rear gland out through the rear of the tool. (Figure 9)
5. Slide end cap and unloading valve from piston; then remove piston insertion tool and spacer.
6. Use a small diameter pointed rod to remove all seals, wipers, O-rings and back-up rings from components and discard them. ***Do not re-use any seals.*** Clean parts, including O-ring grooves. Examine all components for wear or defects, and replace as required.

Figure 9 **TOOL SHOWN WITH HANDLE HALVES REMOVED AND PISTON ASSEMBLY TOOL INSTALLED**



Remove Pintail Deflector and unscrew End Cap.
Press Piston Assembly with remaining components through the back of the tool, and remove them in the order shown (1-5).
Remove and discard all seals from subassemblies.

Assembly Procedure

Clean out O-ring grooves and reinstall perishable parts (seals, etc.) using service kit **2480KIT**. **NOTE: The small inner ring insert of polyseals must remain positioned as shown. If it is forced out of seal body, it may be pinched against gland inner edge. A damaged seal will permit leakage.**

CAUTION: Do not use TEFLON® tape on pipe threads. Pipe threads may cause tape to shred resulting in tool malfunction.

1. Thinly coat Parker SUPER O-LUBE, or equivalent, on seals and mating surfaces. ***Note the orientation of all O-rings, back-up rings, wipers, and polyseals of piston, front gland, and rear gland, and install them accordingly.*** (Figure 10)
2. Thread piston assembly tool onto piston. Lubricate all mating surfaces. Press evenly against gland cap to slide front gland assembly over piston assembly tool and into piston. Slide wiper onto piston as shown. Install unloading valve into piston. **NOTE: The long flats of the unloading valve must be oriented toward the rear of the tool.**
3. Thread piston insertion tool into cylinder. Lightly coat internal surfaces of tool and cylinder with lubricant.
4. Lightly coat cylinder, piston O-rings, and front gland O-rings with lubricant. While supporting tool in a soft vise, press assembled piston and components into cylinder. Remove piston assembly tool.
5. Lightly coat cylinder and rear gland O-rings with lubricant. Hold cylinder upright on a bench or in a vice fitted with soft jaws. Install rear gland assembly using suitable spacer, plate, and soft mallet.
6. Press wiper into groove of end cap. Thread end cap into cylinder and tighten. Install deflector.
7. Assemble hoses to cylinder head assembly. Use Slictite® TEFLON® thread compound, or equivalent, on pipe threads. See Caution above. Hose with male connector must be on PULL (front) side of cylinder.
8. Assemble switch assembly for Electric or Air Trigger.
9. Assemble handle assembly to tool.

ASSEMBLING HANDLE TO TOOL

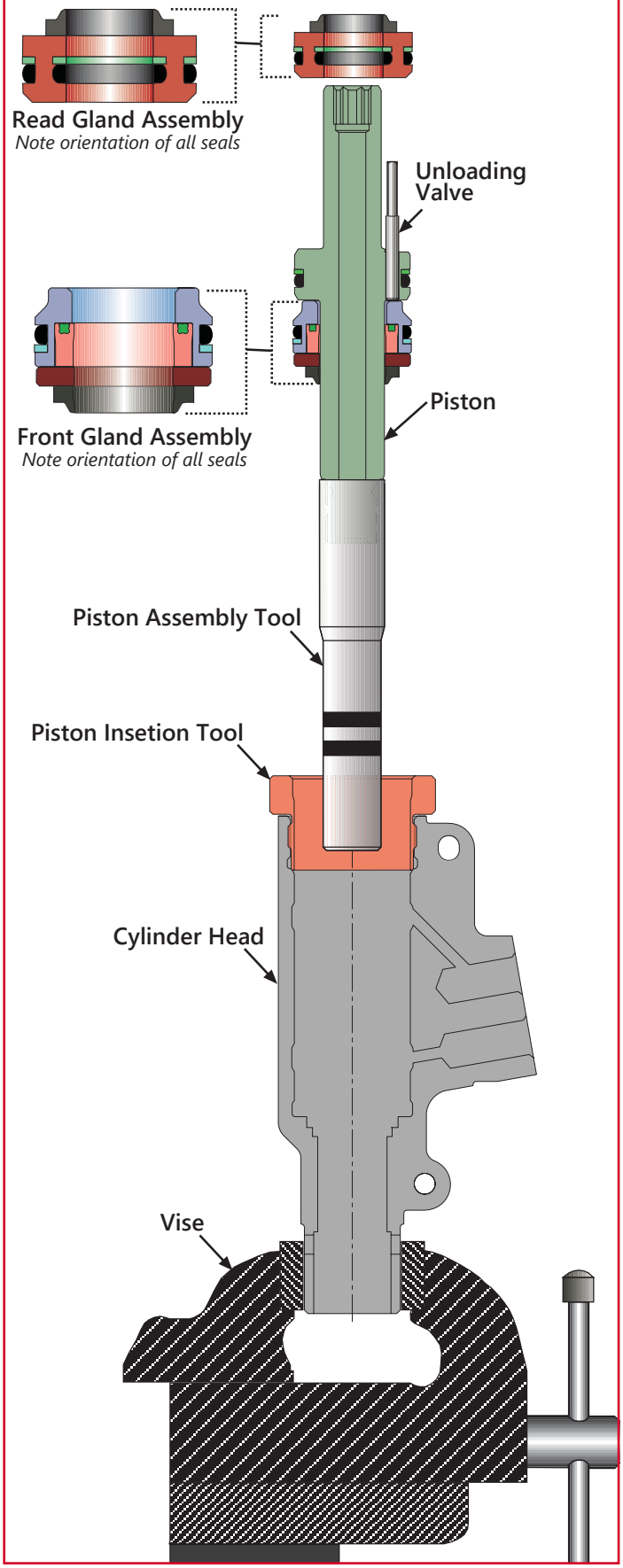
1. **Electric Trigger Models**:
   a. Screw switch into housing.
   b. Slide button onto switch.
   c. Tighten setscrew using 5/64 hex key.

   Air Trigger Models:
   NOTE: To ease assembly, heat ends of hose before pushing onto fittings. When using a new disconnect, remove and discard plastic ferrule from nut before attaching air hose.
   a. Push O-ring over threads of air trigger body.
   b. Push stem through body. Stretch O-ring over stem and into groove.
   c. Screw trigger into housing.
   d. Screw hose fitting into housing. Push hose onto fitting.
   e. Slide nut over hose. Push hose onto quick disconnect. Tighten nut.

2. Position assembled cylinder and hoses in left handle half. Align right handle half with left (locators help align halves).

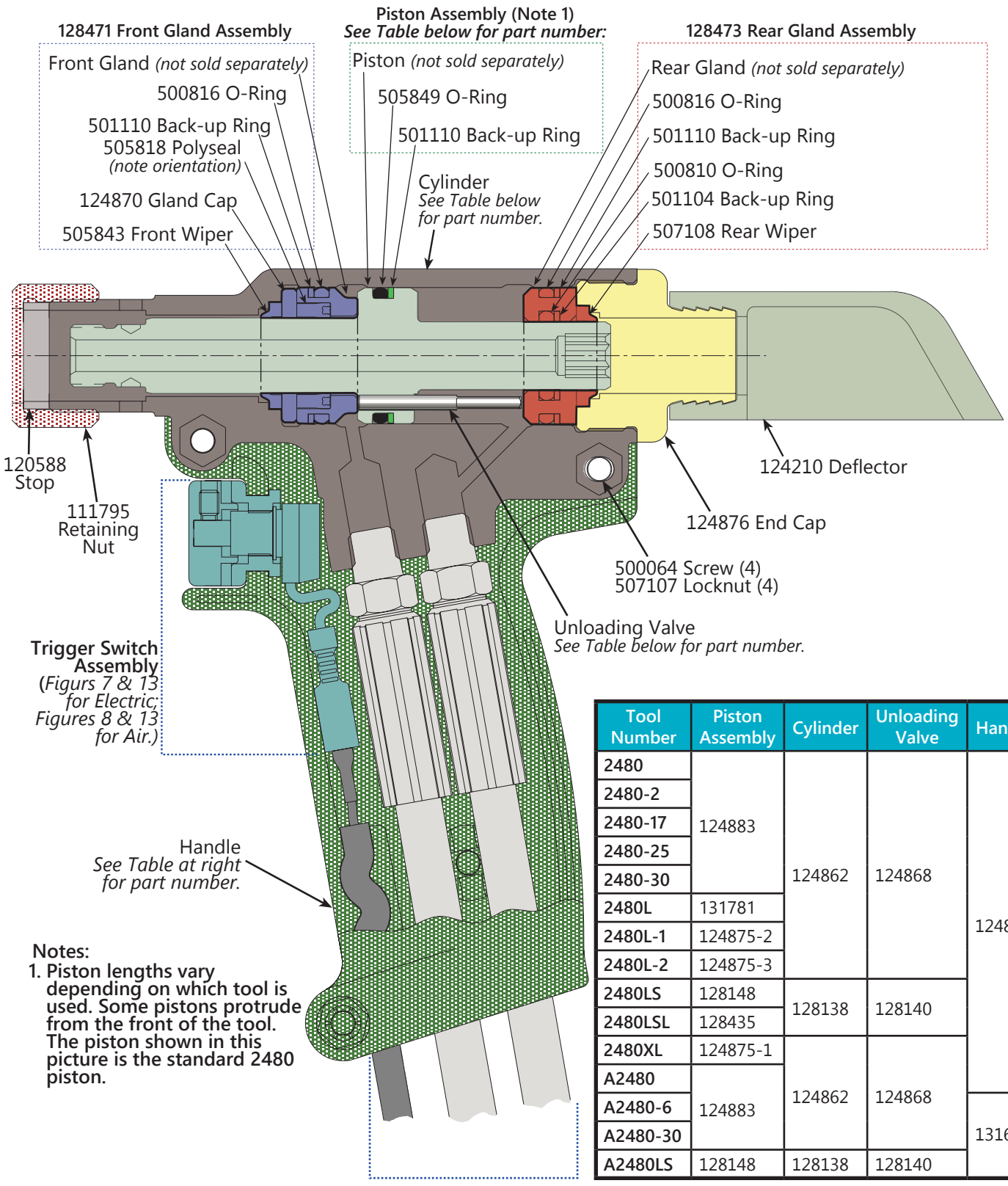
3. Insert locknuts and screws into handle. Tighten screws.

GLANDS, PISTON, AND VALVE ASSEMBLY **Figure 10**



2480 series Components

Figure 11



Tool Number	Piston Assembly	Cylinder	Unloading Valve	Handle
2480	124883	124862	124868	124867
2480-2				
2480-17				
2480-25				
2480-30				
2480L	131781			
2480L-1	124875-2			
2480L-2	124875-3			
2480LS	128148	128138	128140	
2480LSL	128435			
2480XL	124875-1	124862	124868	
A2480	124883			131625
A2480-6				
A2480-30				
A2480LS	128148	128138	128140	

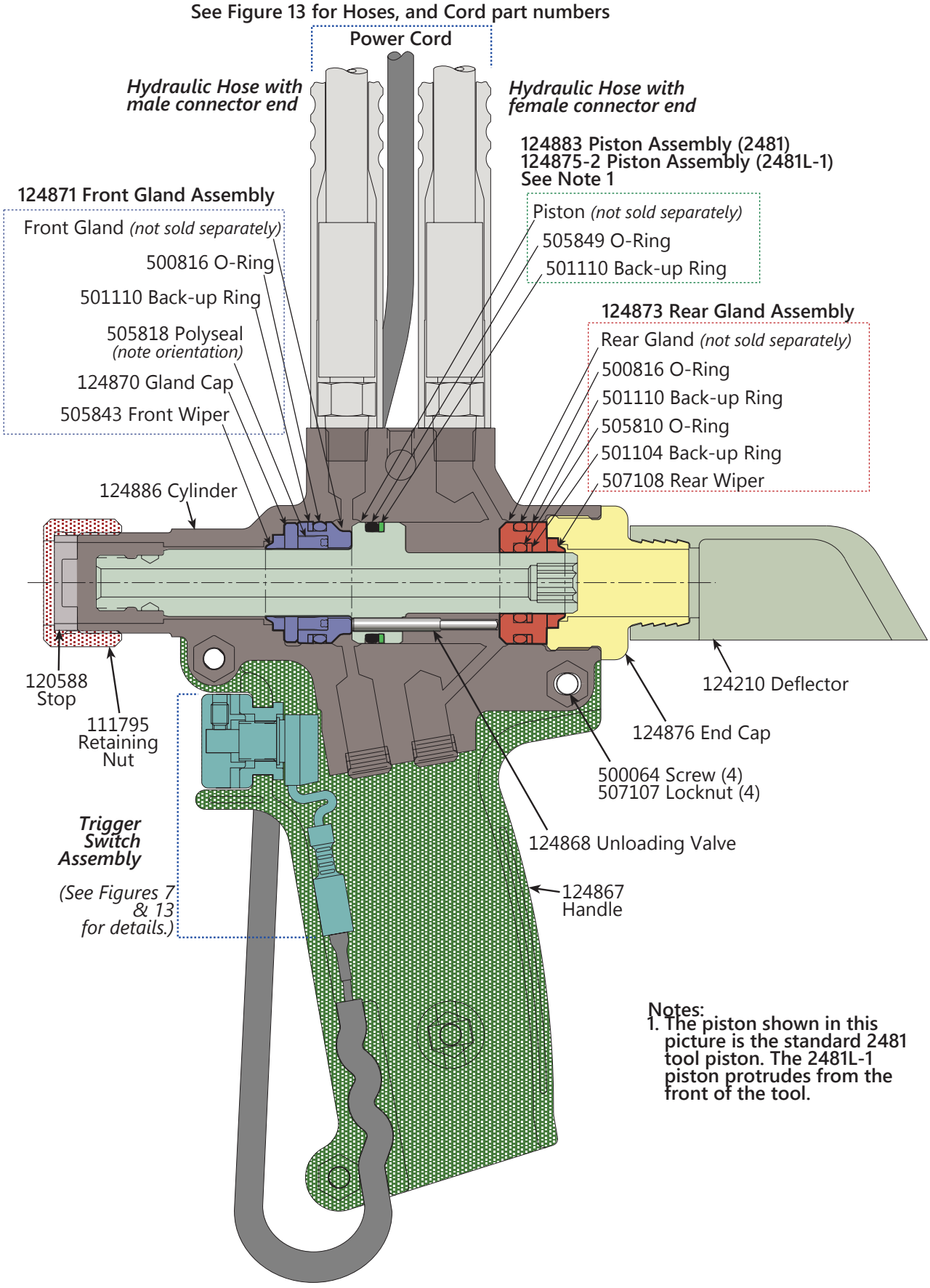
Notes:

1. **Piston lengths vary depending on which tool is used. Some pistons protrude from the front of the tool. The piston shown in this picture is the standard 2480 piston.**

See Figure 13 for Electric Trigger, Hoses, and Cord Part numbers.
See Figure 14 for Air Trigger and Hoses part numbers.

2481 series Components

Figure 12

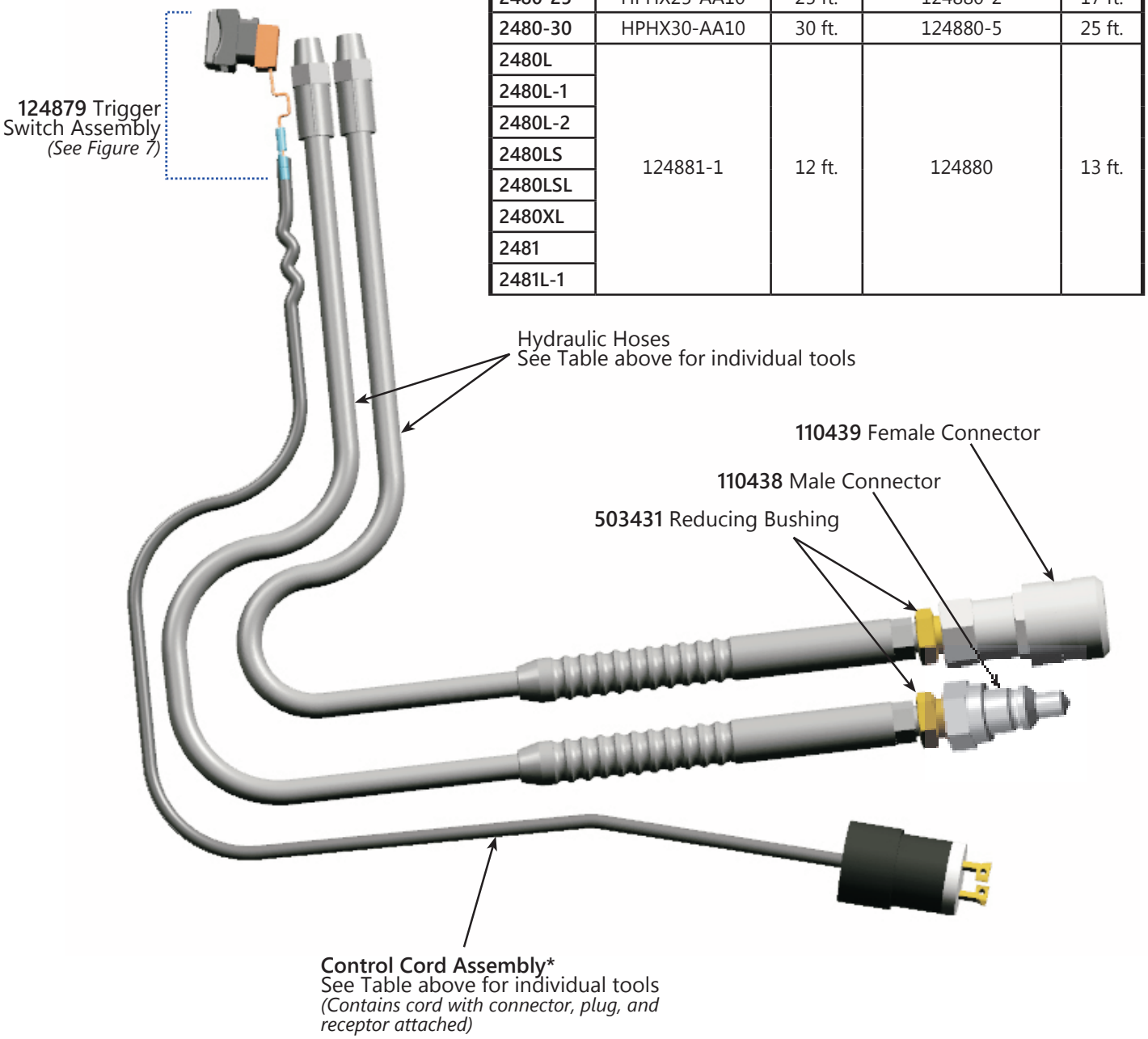


Notes:
1. The piston shown in this picture is the standard 2481 tool piston. The 2481L-1 piston protrudes from the front of the tool.

Hydraulic Hoses and Electric Trigger and Cord

Figure 13

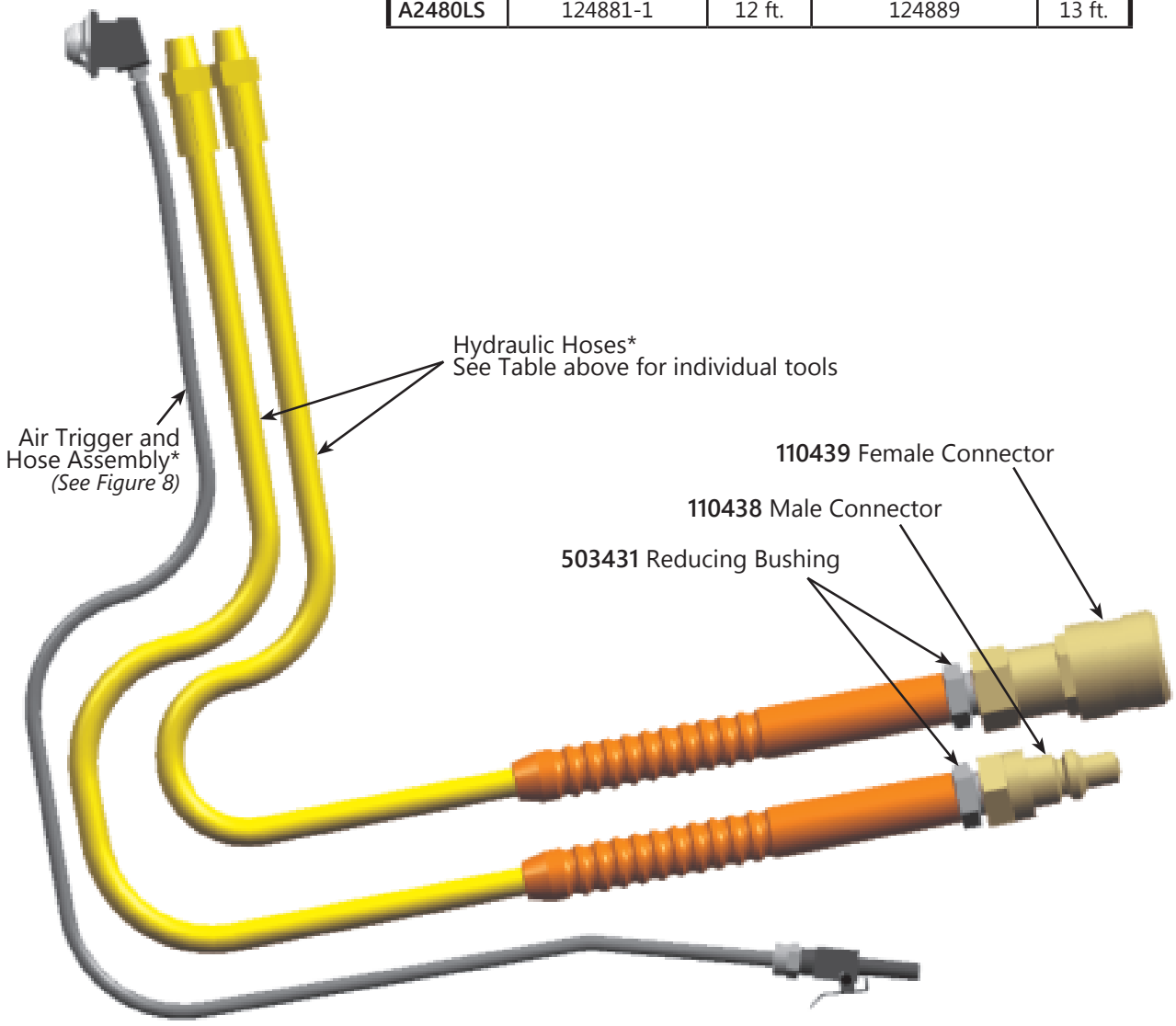
Tool Number	Hose Number	Hose Length	Control Cord Assembly Number	Handle
2480	HPHX12-AA10	12 ft.	124880	13 ft.
2480-2	HPHX02-AA10	2 ft.	124880-3	3 ft.
2480-17	HPHX17-AA10	17 ft.	124880-4	2 ft.
2480-25	HPHX25-AA10	25 ft.	124880-2	17 ft.
2480-30	HPHX30-AA10	30 ft.	124880-5	25 ft.
2480L	124881-1	12 ft.	124880	13 ft.
2480L-1				
2480L-2				
2480LS				
2480LSL				
2480XL				
2481				
2481L-1				



Air Hoses and Trigger and Cord

Figure 14

Tool Number	Hose Number	Hose Length	Control Cord Assembly Number	Handle
A2480	124881-1	12 ft.	124889	13 ft.
A2480-6	124881-2	6 ft.	124889-1	6.5 ft.
A2480-30	HPHX30-AA10	30 ft.	124889-2	31 ft.
A2480LS	124881-1	12 ft.	124889	13 ft.



* Tools are shipping standard with 12 ft. hoses and cords. For other lengths available, see **Optional Equipment.**

Optional Equipment

Pressure Gauge	**T-124833CE**
Service Parts Kit (Includes all perishable seals, O-rings, and Back-up rings. A spare Service Parts Kit should be kept on hand at all times.)	**2480KIT**
Pintail Bottle Assembly (To convert tool to 2480B)	**128017**

Piston Assembly Tool Kit **123110-2 (Standard)**

Includes:

Piston Assembly Tool	- 123111-2
Spacer	- 123112-2
Polyseal Insertion Tool	- 121694-202

Piston Assembly Tool Kit **123110-4 (L / XL)**

Includes:

Piston Assembly Tool	- 123111-4
Spacer	- 123112-3
Polyseal Insertion Tool	- 121694-202

Control Cord Assembly (Contains cord with connector, plug, and receptor attached)	**Cord Length**	**Part No.**
	- 2.5 ft	124880-6
	- 3.5 ft	124880-1
	- 4.5 ft	124880-9
	- 13.3 ft	124880-8
	- 17.75 ft	124880-4
	- 26 ft	124880-2
	- 30.75 ft	124880-5
	- 39 ft	124880-10

Hose and Cord Kits (Contains control cord assembly and both hydraulic hoses with male and female quick connect fittings at each end)	**Hose Length**	**Part No.**
	- 6 ft	118309-6
	- 12 ft	118309-12
	- 26 ft	118309-26
	- 38 ft	118309-38
	- 52 ft	118309-52

Individual Hoses	**Hose Length**	**Part No.**
	- 2 ft	HPHX02-AA10
	- 6 ft	HPHX06-AA10
	- 12 ft	HPHX12-AA10
	- 17 ft	HPHX17-AA10
	- 25 ft	HPHX25-AA10
	- 30 ft	HPHX30-AA10
	- 38 ft	HPHX38-AA10
	- 40 ft	HPHX40-AA10
	- 50 ft	HPHX50-AA10

NOTES:
1. These hoses do not have reducing bushings or quick connect fittings at each end.
2. These hoses are directly interchangeable with the 124881 series hoses.

TEFLON® Stick **- 503237**

TEFLON® Sealant **- 620012**

Loctite® 243 **- 508567**

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

LUBRIPLATE® 130-AA **- 502723**

Threadmate™ (4oz. tube) **- 508517**

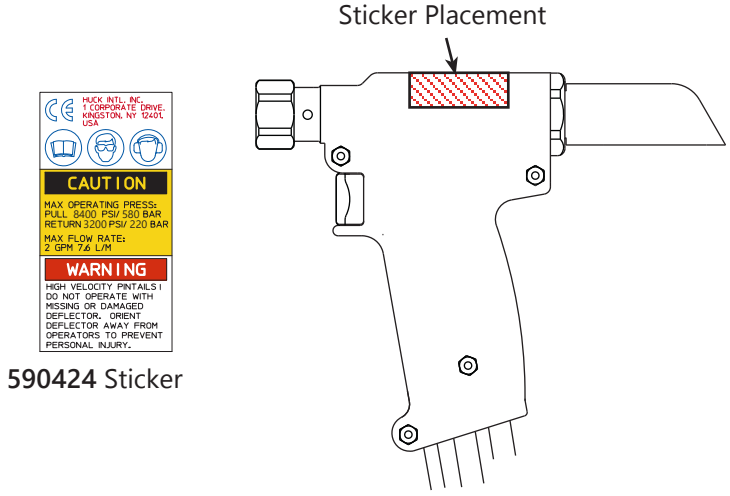
Sticker Locations

The 2480 and 2481 series tools come labeled with:

Safety and pressure sticker, part number 590424

This sticker contains safety and pressure settings information. It is necessary that this sticker remain on the tool and is easily read. If sticker becomes damaged or worn, or if it have been removed from the tool, or **when replacing Cylinder, this sticker must be ordered and placed in the location shown.**

Figure 4 **PLACEMENT OF CE, CAUTION, AND WARNING STICKER**



590424 Sticker

Troubleshooting

Always check the simplest possible cause of a malfunction first. For example, a loose or disconnected trigger line. Then proceed logically, eliminating each possible cause until the defective part is located. Where possible, substitute known good parts for suspected defective parts. Use Trouble Shooting Chart as an aid for locating and correcting trouble.

1. **Tool fails to operate when trigger is depressed:**
   a. Inoperative Powerig® Hydraulic Unit - see applicable instruction manual
   b. Loose air or electric connections
   c. Damaged trigger assembly
   d. Loose or faulty hydraulic hose coupling
   e. Unloading valve not installed in tool

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

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

4. **Hydraulic couplers leak fluid:**
   a. Damaged or worn O-rings in coupler body — see Coupler, 110440

5. **Hydraulic fluid overheats:**
   a. Hydraulic unit not operating properly — see manual
   b. Unloading valve installed incorrectly
   c. Powerig Hydraulic Unit running in reverse (918; 918-5 only) — see Powerig instruction manual

6. **Tool operates erratically; fastener not installed properly:**
   a. Low or erratic hydraulic pressure — air in system
   b. Damaged or worn piston O-ring in tool
   c. Unloading valve installed incorrectly
   d. Excessive wear on sliding surfaces of tool parts
   e. Excessive wear of unloading valve in tool

7. **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 in pull grooves of jaw segments
   e. Excessive sheet gap

8. **Collar of HUCKBOLT® fastener not completely swaged:**
   a. Improper tool operation — see Trouble 6
   b. Scored anvil

9. **Shear collar on Huck blind fastener not driven:**
   a. Improper tool operation
   b. Worn or damaged driving anvil in nose assembly

10. **Tool "hangs-up" on swaged collar of HUCKBOLT fastener:**
    a. Improper Tool operation — see Trouble 6
    b. RETURN pressure too low
    c. Nose assembly not installed correctly

11. **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
    d. Worn unloading valve

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 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.

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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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