Instruction Manual
BTT35 series
BobTail® Hydraulic Installation Tools
EC Declaration of Conformity

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

Description of Machinery:
Models BTT25, 35, 57 families of hydraulic installation tools and specials based on their design (e.g. PR####).

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

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

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

Signature: __________________________

Full Name: Robert B. Wilcox
Position: Engineering Manager
Location: Huck International, LLC d/b/a Arconic Fastening Systems and Rings
          Kingston, New York, USA
Date: 01/11/2016 (November 1, 2016)

<table>
<thead>
<tr>
<th>Declared dual number noise emission values in accordance with ISO 4871</th>
</tr>
</thead>
</table>
| \begin{tabular}{|l|l|}
| A weighted sound power level, LWA: 79 dB (reference 1 pW) & Uncertainty, KWA: 3 dB \\
| A weighted emission sound pressure level at the work station, LpA: 68 dB (reference 20 μPa) & Uncertainty, KpA: 3 dB \\
| C-weighted peak emission sound pressure level, LpC, peak: 96 dB (reference 20 μPa) & Uncertainty, KpC: 3 dB \\
| \end{tabular} |
| 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. |

<table>
<thead>
<tr>
<th>Declared vibration emission values in accordance with EN 12096</th>
</tr>
</thead>
</table>
| \begin{tabular}{|l|}
| Measured Vibrations emission value, a: 0.32 m/s^2 \\
| Uncertainty, k: 0.06 m/s^2 \\
| \end{tabular} |
| Values measured and determined according to ISO 28662-1, ISO 5349-2, and EN 1033 |

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

GLOSSARY OF TERMS AND SYMBOLS:
- Product complies with requirements set forth by the relevant European directives.
- READ MANUAL prior to using this equipment.
- EYE PROTECTION IS REQUIRED while using this equipment.
- HEARING PROTECTION IS REQUIRED while using this equipment.

WARNINGS: Must be understood to avoid severe personal injury.

CAUTIONS: show conditions that will damage equipment and or structure.

Notes: are reminders of required procedures.

Bold, Italic type and underlining: emphasizes a specific instruction.

1. 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. Avoid unsuitable postures, as it is likely for these not to allow counteracting of normal or unexpected tool movement.
8. Do not use assembly power tool if it has been damaged.
9. 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.
10. Tool is only to be used as stated in this manual. Any other use is prohibited.
11. Read MSDS Specifications before servicing the tool. MSDS specifications are available from the product manufacturer or your Huck representative.
12. Only genuine Huck parts shall be used for replacements or spares. Use of any other parts can result in tooling damage or personal injury.
13. Never remove any safety guards or pintail deflectors.
14. Never install a fastener in free air. Personal injury from fastener ejecting may occur.
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 pneumatic 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:
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.

WARNING: Do not exceed maximum PULL or RETURN settings on tool.

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.

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

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.
**Principle of Operation**

The operator pushes the Tool’s Nose over the end of the fastener until the Tool’s Puller bottoms on the fastener. When the Tool’s Limit Switch Rod makes contact with the end of the fastener, the Limit Switch in the back of the Tool is activated. This sends an input signal to the tool control. When the operator presses the Trigger on the Tool, an input is sent to the tool control. When both conditions are met, the tool control will turn on the hydraulic pump, PULL pressure, for fastener installation. The Piston moves back to start the swaging process.

A Pressure Transmitter on the Relief Valve assembly sends a signal to the control to indicate the “pressure set point” has been reached and the “hold timer” can start. The “hold timer” will keep the hydraulic pump, PULL pressure, on until the timer times out. An external Relief Valve will control the amount of pull pressure that can be reached.

After the “hold timer” times out, the hydraulic pump shifts to RETURN pressure and the Tool’s Anvil is ejected off of the collar and the Tool is released from the fastener.

**Program Cycle**

**Notes:**
- Trigger is the go signal.
- If trigger is released, cycle backs out.
- Limit switch may be made before trigger is pulled and cycle will still start.
- Limit switch must be made for .1 seconds after cycle starts; then program no longer looks for limit switch during cycle.
- If hydraulic cycle is started/proceeding when trigger is released, the combination valve is de-energized (released output), then continue to back out of cycle. (The Pressure-Not-Reached light will turn on.)
- Exception: If hydraulic pressure set-point is reached and TD-2 is timed out, the operation may release trigger and the program will finish normally.

**Timer Ranges**

<table>
<thead>
<tr>
<th>Timer</th>
<th>Ranges</th>
</tr>
</thead>
<tbody>
<tr>
<td>TD-1</td>
<td>10 sec</td>
</tr>
<tr>
<td>TD-2</td>
<td>Adjustable 0-3 sec</td>
</tr>
<tr>
<td>TD-3</td>
<td>Adjustable .25-3.75</td>
</tr>
<tr>
<td>TD-4</td>
<td>1 sec</td>
</tr>
<tr>
<td>TD-5</td>
<td>1/2 sec</td>
</tr>
</tbody>
</table>

**Timer Uses**

- **TD-1:** Stop hydraulics from staying on too long in case a hydraulic leak occurs
- **TD-2:** Time to hold hydraulics after pressure is met
- **TD-3:** Time to eject or release hydraulics
**OPERATING INSTRUCTIONS**

1. Push the tool’s nose over the end of the fastener until it bottoms out.

2. Press the and hold trigger until the collar is swaged and the tool’s Anvil is ejected off the collar and the tool is released from the fastener.

**WARNINGS:**
- To avoid pinch point, never place hand between nose assembly and work piece.
- Only use compatible equipment with this tool.

**SPECIFICATIONS**

**MODEL BTT35**

**OPERATING TEMPERATURE RANGE:** 32–125° F (0–51.7° C)

**STROKE:** 1.625 in. (4.1 cm)

**WEIGHT:** Approximately 13 lbs. (5.89 kg)

**MODEL BTT35R**

**OPERATING TEMPERATURE RANGE:** 32–125° F (0–51.7° C)

**STROKE:** 1.625 in. (4.1 cm)

**WEIGHT:** Approximately 13 lbs. (5.89 kg)
99-7851 NOSE ASSEMBLY

5/8 in., 16 mm

INCHES (cm)

128379 Anvil Assy
128376 Anvil Holder

Apply Anti-seize Lubricant P/N 508183 to Outside of Puller and inside of Anvil
Apply Loctite 242 P/N 505016 to these threaded joints
128389 Puller
500648 Setscrew (Qty. 3)
501736 Setscrew (Qty. 1)

CAUTIONS:
- Keep dirt and other material out of hydraulic system (tool, hoses, couplers, and Powerig).
- Keep separated parts away from dirty work surfaces. Dirt in hydraulic system causes valve failure in hydraulic unit.

Carefully handle individual parts; examine them for damage and wear. Replace parts when required. Always replace O-rings and Back-up Rings when the tool is disassembled.

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

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.

Consult TROUBLESHOOTING in this manual if a malfunction occurs, and then see the appropriate ASSEMBLY and Assembly Drawings.

SEALANTS, LUBRICANTS, HYDRAULIC FLUID, & SERVICE KITS

- Use Automatic Transmission Fluid DEXRON® III or equivalent. Fire resistant hydraulic fluid must be used to comply with OSHA regulation 1926.302 paragraph (d). An optional fire resistand fluid that may be used is Quintolubric® 822-220. Fluid viscosity 300 SUS @ 100°F (37.7° C) and 50 SUS at 210°F (98.8° C) is recommended for ambient temperatures 0° to 130° F (-17.7–54.4° C).

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

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

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

continued...
Maintenance (Continued)

- Each Service Kit contains perishable parts for your specific tool. As foreseeable use may indicate, keep extra kits (O-rings, Back-up Rings, other standard items) and tool parts in stock. When stock is depleted, you can get kit items from any regular retailer of these items. See kit parts list for: O-ring size (AS568-number); material; durometer. For kit parts lists and related information, see General Notes.

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 contamination level: NAS 1638 class 9, or ISO CODE 18/15, or SAE level 6.

Powerig Maintenance

Refer to the applicable POWERIG instruction manual.

Tool Maintenance

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

Nose Assembly Maintenance

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

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)

Assembly of NPTF Threaded Components

<table>
<thead>
<tr>
<th>Thread Size</th>
<th>Final Thread Engagement at Full Make-Up</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8-27 NPTF</td>
<td>.235 inch (.59 cm)</td>
</tr>
<tr>
<td>1/4-18 NPTF</td>
<td>.339 inch (.86 cm)</td>
</tr>
<tr>
<td>3/8-18 NPTF</td>
<td>.351 inch (.89 cm)</td>
</tr>
</tbody>
</table>

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

DEXRON is a registered trademark of General Motors Corporation.
Quintolubric is a registered trademark of Quaker Chemical Corp.
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.
Teflon is a registered trademark of E. I. du Pont de Nemours and Company.
Lubriplate is a registered trademark of Fiske Brothers Refining Co.
Setup Using the 918 Powerig

1. With the Nose Assembly in place on the installation tool, begin setup. First connect the hydraulic hoses to the Powerig.
2. Connect the Relief Valve to the other end of the Powerig hydraulic hoses.
3. Connect 125926 Hose Assembly to the Transducer (PULL pressure) and Relief Valve (RETURN pressure).
4. Connect 118308 Cord Assembly from the Controller to the Powerig labeled TOOL 1.
5. Connect 128457 Cable Assembly from the Controller to the Transducer.
6. Connect the 125926 Hose Assembly to the installation tool.
7. Connect the 128418 Cord Assembly to the installation tool.
8. a. Connect the other end of 128418 Cord Assembly to the Controller at TOOL 1. 
b. Connect optional 128461-* Hose/Cable Assembly.
9. Connect the electrical plug from the Controller to a 120 VAC 15amp power.

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

* Two digit number after dash indicates hose length in feet. (Example: 118308-12 is 12 foot hose assembly.)
10. Set the PULL and RETURN pressures on the Powerig using Huck Gauge P/N T-124833CE and TABLE 1.

11. Using a load cell (Photo A) or a skidmore, and a test fastener in the tool, energize the Powerig using a trigger switch. Adjust the Relief Valve (Photo B) so the tool generates 20,500–21,000 lbs. force. This is a direct force reading, not pressure. It equals approximately 4,950 psi (341 bar) Powerig pressure.

**NOTE:** It is important to release the trigger while adjusting the pressure, then re-energizing to re-check pressure. Otherwise, the reading on the pressure display may be incorrect. When the desired pressure is achieved, reconnect the Controller Cord.

12. Tool #2 and Tool #3: Set up the same way as Tool 1.

13. After the system is set up, install a test fastener. Verify that the fastener is installed correctly. This can be checked by inspecting the dimples on the collar flange; at least one dimple should be marked by the anvil. If not, add time to Timer #2 (Hold Timer) in the Controller box, and test with fasteners until the proper installation is achieved. See “Set Point Adjustments” in the CONTROLLER section of this manual to adjust timer.
**SET POINT ADJUSTMENTS**

The active set points are displayed continuously while the Controller is in **RUN** mode. Stopping the Controller (which also stops Tool sequencing) allows the user to enter the Controller menu to make adjustments. **Do not begin this procedure if any of the tools are still in use.**

1. Move the 3-Position Mode Switch on the PLC to "STOP" (right-most position).
2. Press the **MENU** Command Button to enter the "Monitor" menu.

   ```
   M 3 : > D A T A M O N I T O R
   > B I T M O N I T O R
   ```

3. Press the **ENT** Command Button to select "Data Monitor". Press **ENT** again to select "V" data type.

   ```
   M 3 : D A T A T Y P E V
   A D D R E S S 0 0 0 0 0
   ```

4. Enter the address button of the value you need to alter. Use the left (◄) and right (►) buttons to position the cursor, and the up (▲) and down (▼) buttons to change individual digits. Press the **ENT** Command Button when finished.
5. Press the **ENT** Command Button to enter the "Change" menu.
6. Use the arrow buttons again to enter the new value. Press **ENT** when finished.

   ```
   M 3 : D A T A V 0
   C H G = 0 0 0 0 0
   ```

7. Press the **ESC** Command Button 5 times to exit.
8. Move the Mode Switch back to "RUN" (left-most position).
9. Check the continuously scrolling display for your new value before using the Tool again.

<table>
<thead>
<tr>
<th>ADDRESS</th>
<th>DESCRIPTION</th>
<th>RANGE</th>
<th>DEFAULT</th>
<th>UNITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>07411</td>
<td>T1 Press. SetPt</td>
<td>1000-9999</td>
<td>4200 psi</td>
<td></td>
</tr>
<tr>
<td>07412</td>
<td>T2 Press. SetPt</td>
<td>1000-9999</td>
<td>4200 psi</td>
<td></td>
</tr>
<tr>
<td>07413</td>
<td>T3 Press. SetPt</td>
<td>1000-9999</td>
<td>4200 psi</td>
<td></td>
</tr>
<tr>
<td>07421</td>
<td>T1 Hold Timer</td>
<td>0-3000</td>
<td>500 msec</td>
<td></td>
</tr>
<tr>
<td>07422</td>
<td>T2 Hold Timer</td>
<td>0-3000</td>
<td>500 msec</td>
<td></td>
</tr>
<tr>
<td>07423</td>
<td>T3 Hold Timer</td>
<td>0-3000</td>
<td>500 msec</td>
<td></td>
</tr>
<tr>
<td>07431</td>
<td>T1 Eject Timer</td>
<td>250-3750</td>
<td>600 msec</td>
<td></td>
</tr>
<tr>
<td>07432</td>
<td>T2 Eject Timer</td>
<td>250-3750</td>
<td>600 msec</td>
<td></td>
</tr>
<tr>
<td>07433</td>
<td>T3 Eject Timer</td>
<td>250-3750</td>
<td>600 msec</td>
<td></td>
</tr>
</tbody>
</table>
128283 SUBASSEMBLY

**Figure 7**

- 128440 Locking Screw
- 128430 Suspension Sleeve
- 128281 Rear Piston Assembly (see Figure 7A)
- 128280 Forward Gland Assembly (see Figure 7A)
- 125902 Locater Button (2)
- 507474 Retaining Ring (2)
- 505829 Cable Tie
- 110438 Male Coupler
- 110439 Female Coupler
- 121890 Forward Gland Assembly (see Figure 7A)
- 121981 Main Housing Assembly (see Figure 7A)
- 125903 Rear Piston Shield
- 118944-2 Hydraulic Hose (2)
- 110431 Reducing Bushing (2)
- 128440 Locking Screw
- 503431 Reducing Bushing (2)
- 507474 Retaining Ring (2)
- 125902 Locater Button (2)
- 128280 Forward Gland Assembly (see Figure 7A)
- 128281 Rear Piston Assembly (see Figure 7A)
**128283 & 128412 Subassemblies**

**121981 Main Housing Assembly**
- 121343-35 Lockscrew
- 506078 O-Ring
- 119018 Main Housing
- 501142 Back-up Ring (2)

**128282 Piston Assembly**
- 128014 Piston
- 506089 O-Ring
- 501151 Back-up Ring (2)
- 503703 Pipe Plug (2)

**Rear Piston Assemblies**
- 128281 BTT35 Tool
- 128413 BTT35R Tool
- 501112 Back-up Ring (2)
- 501142 Back-up Ring (2)
- 128590: BTT35
- 128591: BTT35R

**121890 Forward Gland Assembly**
- 121878 Forward Gland
- 506089 O-Ring
- 501151 Back-up Ring
- 506065 Wiper Seal
- 506079 O-Ring
- 501144 Back-up Ring
### 128401 & 128398 Assemblies

#### 128401 Trigger & Terminal Box Assembly

![Diagram of 128401 Trigger & Terminal Box Assembly]

- **128652** Trigger & Terminal Box
- **502468** Screw (4)
- **502472** Screw (2)

**Section A-A**

#### 128398 Limit Switch Housing Assembly

![Diagram of 128398 Limit Switch Housing Assembly]

**NOTE:** This Assembly also includes:
- 505231 4’ Black Wire
- 506660 Wire Marker Cartridge

These parts are not shown below.

- **500049** Cap Screw
- **500109** Cap Screw (4)
- **50050** Cap Screw
- **508310** LED Lamp
- **128391** Limit Switch Upper Housing
- **128392** Limit Switch Lower Housing
- **128748** Actuator Lever
- **500051** Cap Screw
- **507570** Button-head Cap Screw (2)
- **507570** Button-head Cap Screw (2)
- **508307** Spring
- **506268** 1/8 NPT - 1/4 Tube Fitting
- **508309** Spring
- **508309** Spring
- **128394** Switch Plate

**Apply Loctite 242 or equivalent, per manufacturer’s instructions.**

* Loctite is a trademark of Henkel Corporation, U.S.A.
128423, 128428, & 128429 ASSEMBLIES
1. Using Dial Calipers or an interchangeable Anvil Micrometer, measure the Puller to determine if it is worn out or new. (The Puller does not have to be removed from the tool to be measured.) A new Puller will measure .261–.262 inches. A worn Puller will measure approximately .250 inches or will begin to strip fasteners.

2. Remove the setscrews from the anvil holder, and unscrew the anvil holder from the tool.

3. Unscrew the setscrews from the Puller, then unscrew the Puller from the piston.

4. After the Puller has been unscrewed from the Piston, remove and clean all its components. **NOTE: To add life to the Puller, always clean components upon changing or checking Puller.**
   a) Insert the spring into the piston.
   b) Insert the actuator rod into the piston.
   c) Insert the rod guide into the piston.
   d) Screw the puller onto the piston.

5. Reinstall the components before screwing a NEW Puller onto the Piston.

6. Apply Loctite Anti-Seize or an equivalent lubricant to the Puller to keep it from wearing against the Anvil during the first several drives.

7. a) Bottom the Anvil Holder on the piston.
    b) Back off the Anvil Holder until a groove is visible through the setscrew hole.
    c) Install the setscrew.

8. Check the Limit Switch setting using the Controller or a Light Box and the depth micrometers. Adjust within the specification of .430”–.435”. See **Limit Switch Adjustment** on the next page.

**TOOLS NEEDED**
1. Interchangeable Anvil Micrometers or Dial Calipers
2. Depth Micrometers
3. Allen Wrenches
LIMIT SWITCH ADJUSTMENT

TOOLS NEEDED
1. Controller or Light Box
   NOTE: Where a Light Box is mentioned in these instructions, the Controller may be used instead when convenient.
2. Depth Micrometers
3. Allen Wrench

NOTE: It is important to ensure that the face of the micrometer is firmly against the Puller Head, and the micrometer depth pin is in contact with the Actuator Rod when measuring.
1. Check to see where the Limit Switch is set using the Light Box and the Depth Micrometer.
2. Use an Allen wrench to loosen the Lockdown Screw.
3. To increase the switch setting, turn the Limit Switch Adjustment Screw counterclockwise; to decrease it, turn it clockwise.
4. Adjust the switch to the specification of .430”–.435”. You will notice the Light Box light will come on after the switch has been made.
5. Tighten the Lockdown Screw.
   NOTE: After tightening the Lockdown Screw, verify the adjustment again by measuring with the depth micrometer. In some cases, because of the tight tolerance, it is possible for the adjustment to be jarred when the Lockdown Screw is tightened.
6. After it has been adjusted to the specification of .430”–.435”, disconnect the Light Box and reconnect the system.

The tool is now ready to drive fasteners.
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.

<table>
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<tr>
<th>Item</th>
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<tr>
<td>Service Kit</td>
<td>BTT3SKIT</td>
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<tr>
<td>Teflon® Stick</td>
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<td>Loctite® 242</td>
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<td>Anti-seize Lubricant</td>
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<td>Hose Cable</td>
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<td>Extension Assembly</td>
<td>128461- (length)</td>
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<td>Test Plates:</td>
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<td>128433</td>
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<td>(shown below)</td>
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</table>

Load Cell Assembly - 128433

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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.

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Huck Installation Equipment:

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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).

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