INSTRUCTION MANUAL

HS7
HYDRAULIC INSTALLATION TOOL
(WHEN USED WITH CONTROLLER ASSEMBLY 126291)
Approval Pending
SAFETY

This instruction manual must be read with particular attention to the following safety guidelines, by any person servicing or operating this tool.

1. Safety Glossary

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

Read manual prior to using equipment.

Eye protection required while using this equipment.

Hearing protection required while using this equipment.

**WARNING**s - 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.

2. Huck equipment must be maintained in a safe working condition at all times and inspected on a regular basis for damage or wear. Any repair should be done by a qualified repairman trained on Huck procedures.

3. Repairman and Operator must read manual prior to using equipment and understand any Warning and Caution stickers/labels supplied with equipment before connecting equipment to any primary power supply. As applicable, each of the sections in this manual have specific safety and other information.

4. See MSDS Specifications before servicing the tool. MSDS Specifications are available from you Huck representative or on-line at www.huck.com. Click on Installation Systems Division.

5. When repairing or operating Huck installation equipment, always wear approved eye protection. Where applicable, refer to ANSI Z87.1 - 1989

6. Disconnect primary power source before doing maintenance on Huck equipment.

7. If any equipment shows signs of damage, wear, or leakage, do not connect it to the primary power supply.

8. Make sure proper power source is used at all times.

9. Never remove any safety guards or pintail deflector.

10. Never install a fastener in free air. Personal injury from fastener ejecting may occur.

11. When using an offset nose always clear spent pintail out of nose assembly before installing the next fastener.

12. If there is a pinch point between trigger and work piece use remote trigger. (Remote triggers are available for all tooling).

13. Do not abuse tool by dropping or using it as a hammer. Never use hydraulic or air lines as a handle. Reasonable care of installation tools by operators is an important factor in maintaining tool efficiency, eliminating downtime, and in preventing an accident which may cause severe personal injury.

14. Never place hands between nose assembly and work piece.

15. Tools with ejector rods should never be cycled with out nose assembly installed.

16. When two piece lock bolts are being used always make sure the collar orientation is correct. See fastener data sheet of correct positioning.
## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>EU Declaration of Conformity</td>
<td>2</td>
</tr>
<tr>
<td>Safety</td>
<td>3</td>
</tr>
<tr>
<td>Contents</td>
<td>4</td>
</tr>
<tr>
<td>Description</td>
<td>5</td>
</tr>
<tr>
<td>Specifications</td>
<td>5</td>
</tr>
<tr>
<td>Principle of Operation</td>
<td>6</td>
</tr>
<tr>
<td>Preparation for Use</td>
<td>7</td>
</tr>
<tr>
<td>Instructions for Use</td>
<td>8</td>
</tr>
<tr>
<td>Servicing and Preventive Maintenance</td>
<td>9</td>
</tr>
<tr>
<td>Assembly Drawings/Parts List</td>
<td>10-13</td>
</tr>
<tr>
<td>Changing Nose Assemblies &amp; Adjusting Limit Switch</td>
<td>14-17</td>
</tr>
<tr>
<td>Controller Assembly Maintenance</td>
<td>18</td>
</tr>
<tr>
<td>Controller Assembly Drawings/Parts List</td>
<td>19-20</td>
</tr>
<tr>
<td>Controller Assembly Program Cycle</td>
<td>21</td>
</tr>
<tr>
<td>Dip Switch Settings</td>
<td>22-24</td>
</tr>
<tr>
<td>Troubleshooting</td>
<td>25</td>
</tr>
<tr>
<td>Kits &amp; Accessories</td>
<td>25</td>
</tr>
</tbody>
</table>
The Hydraulically and Pneumatically operated HS7 Installation Tool is a lightweight, high speed Installation Tool designed to install 6.4, 8 & 10 mm (1/4", 5/16" & 3/8") diameter HUCK-SPIN Fasteners. The Installation Tool & the Controller Assembly, Huck part number 126291, are normally supplied as a Tool and Controller Assembly, connected to each other with a 3.64 mtr. (12 ft.) Hose Set.

Rotary action of the Tool Air Motor & Nose Assembly Thimble is provided by 6.2 to 6.9 bar (90 to 100 psi) air supply. The pulling action of the Piston is provided by hydraulic pressure (max. 517 bar/7500 psi). The correct Nose Assembly must be fitted to the Installation Tool to suit the diameter of the HUCK-SPIN fastener being used.

The fastener installation sequence is fully automatic and controlled by the Controller Assembly, Huck part number 126291. This sequence starts when the Tool trigger is operated and held down. The installation sequence is complete when the Tool piston is returned to the fully forward position and the Tool is released from the fastener. The Trigger is then released and the Tool is ready to install the next fastener.

**SPECIFICATIONS**

- **Stroke:** 13/16" (20.6mm)
- **Pull Capacity:** 7,000lbs (31 KN)
- **Weight of Tool:** 5lbs 9oz. (4.3kg)

Overall length will vary based on Nose Assembly attached. Refer to your Nose Assembly Data Sheet for Nose length.
**PRINCIPLE OF OPERATION**

When the Trigger is depressed and held down, the automatic installation cycle starts. The Air Motor is activated and rotates the Thimble (clockwise), engaging onto the exposed thread of the bolt. When the Thimble has engaged a predetermined length of the thread (detected by the Limit Switch Rod), the Air Motor stops and the Powerig is activated, supplying hydraulic fluid (Pull Pressure) to the front of the Tool Piston which moves rearward to begin the Collar swaging process.

The Swaging Anvil then moves down over the Collar. When a predetermined hydraulic pressure (Pull Pressure) is reached, hydraulic fluid (Return Pressure) is directed to the rear of the Piston, moving it forward. The Swaging Anvil then disengages from the Collar. The Air Motor is then activated and rotates the Thimble (counterclockwise) to disengage the Tool from the bolt thread. The Air Motor then stops and the system is ready to install the next fastener.
PREPARATION FOR USE

1) Install correct Nose Assembly for fastener on tool.

2) Set controller pressure and timers to recommended settings for fastener being installed.

3) Adjust Powerig® pressure for fastener being installed. **Note: Powerig® pull pressure should be approximately 50psi (3.5 bar) above Controller pressure setting.**

4) Connect Electrical Cable between Controller and 24VDC Power Supply (Huck part no. 125727-2).

5) Connect hydraulic hoses between Controller Assembly and Powerig®.

6) Connect air supply to Controller.

7) Connect cable from Power Supply to Trigger Receptacle on Powerig®. Connect 110VAC plug to any properly wired outlet.

8) If all hydraulic lines and tool are filled with oil, the tool is ready to use. If not:
   a.) Temporarily Disconnect the Trigger wire from Power Supply to Powerig®.
   b.) Plug in a manual Trigger (available through Huck).
   c.) If necessary, turn on Powerig®.
   d.) Hold Trigger for 30-60 seconds to purge air from lines and tool.
   e.) Reconnect Trigger Wire from Power Supply to Powerig®.

9) Install fasteners in a test plate.

10) To test the correct function of the system, press and hold the Tool Trigger. The Thimble should rotate clockwise (viewed from the rear of the tool), for approximately 5 seconds, and then rotate counterclockwise for a few seconds. When the Thimble stops rotating, an Alarm signal (one long beep) will sound. Release the Tool Trigger. (Figure 2)
INSTRUCTIONS FOR USE

1) Read and ensure that you understand the Safety Guidelines at the front of this manual. Also, read and ensure that you understand the Specification, Noise, Vibration and Principal of Operation information shown on pages 6 & 7.

2) Ensure that the hole in the material to be joined is prepared in accordance with the information shown on the Engineering Standards for the fastener being installed.

3) Ensure that the grip length of the fastener to be installed is correct for the material thickness to be joined, (Refer to the appropriate Engineering Standards for the fastener being used).

4) Ensure that the equipment has been prepared for use, (Refer to the "Preparation for Use" section in this manual).

5) Insert the fastener into the prepared hole.

6) Hold the Installation Tool firmly by the handle with the hand in a position that enables finger operation of the Trigger. DO NOT place the hand around the Nose Assembly.

7) Place the Nose Assembly over the fastener to engage the Thimble with the exposed thread of the bolt. Operate the Trigger and hold down.

8) The Automatic Installation cycle will start. When the tool is disengaged from the installed fastener, release the Trigger. The Tool Piston and inner components of the Nose Assembly will now be in the fully forward position ready to install the next fastener. The Installation Cycle normally takes approximately 1 to 4 seconds depending upon the Powerig output and air supply.

Notes:

a) If the Trigger is released before the automatic cycle is complete, (or the Powerig Pull Pressure is too low), the programmed hydraulic pressure may not have been reached and Collar may not have been fully swaged. In this case, a 3-second delay will occur before the Anvil starts to eject from the Collar and an alarm will sound, (3 beeps).

b) If the Tool fails to disengage from the exposed thread of the Bolt, try and release the Tool by using the Trigger on the Tool to rotate the Thimble counterclockwise.

---

WARNING: Eye protection, such as safety glasses, should be worn.

WARNING: Place hands underneath the front of the tool, as there is a risk of personal injury from exposed moving/rotating parts and also from trapping hands between the tool and adjacent structure into which the fasteners are being installed. The tool will move forward toward the fastener during the installation sequence.
SERVICING AND PREVENTIVE MAINTENANCE

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 switch and control cord, and POWERIG Hydraulic Unit. Therefore, an effective preventive maintenance program includes scheduled inspections of the system to detect and correct minor troubles.

- Inspect tool and nose assembly for external damage.
- Verify that hydraulic hose fittings and 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.

POWERIG Hydraulic Unit Maintenance
Refer to the applicable POWERIG instruction manual.

Tool Maintenance
Whenever disassembled and also 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 often. At regular intervals, as experience shows, disassemble nose and use a sharp "pick" to remove imbedded particles from grooves of Thimble. See appropriate NOSE ASSEMBLY DATA SHEET.

SERVICING & PREVENTIVE MAINTENANCE

General
1) The efficiency and life of any tool depends upon proper maintenance. Regular inspection and correction of minor problems will keep tool operating efficiently and prevent downtime. The tool should be serviced by personnel who are thoroughly familiar with how it operates.

2) A clean, well lit area should be available for servicing the tool. Special care must be taken to prevent contamination of pneumatic and hydraulic systems.

3) Proper hand tools must be available.

4) All parts must be handled carefully and examined for damage or wear. Components should be disassembled and assembled in a straight line without bending, mis-alignment, or undue force. Any disassembly and assembly procedures outlined in this manual should be followed.

5) Consumable parts should be available at all times. Other components, as usage dictates, should also be available.

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

Daily
1) If a Filter-Regulator-Lubricator unit is not being used, disconnect air supply at the tool and put a few drops of Automatic Transmission Fluid (ATF) or light oil into the air inlet of the Hose. If the tool is in continuous use, put a few drops of oil in every two to three hours.

2) Bleed the air line to clear it of accumulated dirt or water before connecting air hose to the Hose Set.

3) Check all hoses and couplings for damage or hydraulic fluid and air leaks, tighten or replace if necessary.

4) Check the tool for damage or air/hydraulic leaks, tighten or replace if necessary.

Weekly
1) Disassemble and clean nose assemblies and reassemble. (Refer to section “Changing Nose Assemblies” in this manual.

2) Check the tool and all connecting parts for damage or oil/air leaks, tighten or replace if necessary.
HS7C & HS7CK Tool Assembly

See Parts List on the following pages.
HS7E & HS7EK
TOOL ASSEMBLY

See Parts List on the following pages.

Fig. 4
# PARTS LIST

<table>
<thead>
<tr>
<th>ITEM</th>
<th>HS7C</th>
<th>HS7CK</th>
<th>HS7E</th>
<th>HS7EK</th>
<th>DESCRIPTION</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>123724-4</td>
<td>N/A</td>
<td>123724-4</td>
<td>N/A</td>
<td>Hose Sleeving (not shown)</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>507579</td>
<td>507579</td>
<td>507579</td>
<td>507579</td>
<td>Strain Relief</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>507435</td>
<td>507435*</td>
<td>507435</td>
<td>507435*</td>
<td>Contact</td>
<td>6*</td>
</tr>
<tr>
<td>4</td>
<td>507577</td>
<td>507577</td>
<td>507577</td>
<td>507577</td>
<td>Plug</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>505792</td>
<td>N/A</td>
<td>505792</td>
<td>N/A</td>
<td>2-Conduit Cable</td>
<td>11</td>
</tr>
<tr>
<td>6</td>
<td>505761</td>
<td>N/A</td>
<td>505761</td>
<td>N/A</td>
<td>Ring Terminal</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>506685</td>
<td>N/A</td>
<td>506685</td>
<td>N/A</td>
<td>Alarm</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>505671</td>
<td>505671</td>
<td>505671</td>
<td>505671</td>
<td>Shrink Tubing</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>507564</td>
<td>507564</td>
<td>507564</td>
<td>507564</td>
<td>Butt Splice</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>507438</td>
<td>507438*</td>
<td>507438</td>
<td>507438*</td>
<td>4-Conduit Cable</td>
<td>14 ft.*</td>
</tr>
<tr>
<td>11</td>
<td>505344</td>
<td>505344</td>
<td>505344</td>
<td>505344</td>
<td>Strain Relief</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>507803</td>
<td>507803</td>
<td>507803</td>
<td>507803</td>
<td>Muffler</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>507572</td>
<td>507572</td>
<td>507572</td>
<td>507572</td>
<td>Button Head Screw 6-32X.19</td>
<td>6</td>
</tr>
<tr>
<td>14</td>
<td>126289</td>
<td>126289</td>
<td>126289</td>
<td>126289</td>
<td>Handle Cover</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>126245</td>
<td>126245</td>
<td>126245</td>
<td>126245</td>
<td>Air Motor</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>500048</td>
<td>500048</td>
<td>500048</td>
<td>500048</td>
<td>Socket Hd Cap Screw 6-32X.38</td>
<td>10</td>
</tr>
<tr>
<td>17</td>
<td>507569</td>
<td>507569</td>
<td>507569</td>
<td>507569</td>
<td>Radial Ball Bearing</td>
<td>1</td>
</tr>
<tr>
<td>18</td>
<td>501731</td>
<td>501731</td>
<td>501731</td>
<td>501731</td>
<td>Cone Pt Socket Set Scr 6-32X.12</td>
<td>1</td>
</tr>
<tr>
<td>19</td>
<td>500779</td>
<td>500779</td>
<td>500779</td>
<td>500779</td>
<td>O-Ring</td>
<td>1</td>
</tr>
<tr>
<td>20</td>
<td>120360</td>
<td>120360</td>
<td>120360</td>
<td>120360</td>
<td>Trigger Switch</td>
<td>1</td>
</tr>
<tr>
<td>21</td>
<td>126290</td>
<td>126290</td>
<td>126290</td>
<td>126290</td>
<td>Gear Housing</td>
<td>1</td>
</tr>
<tr>
<td>22</td>
<td>507573</td>
<td>507573</td>
<td>507573</td>
<td>507573</td>
<td>Button Hd Screw 4-40X.19</td>
<td>2</td>
</tr>
<tr>
<td>23</td>
<td>126249</td>
<td>126249</td>
<td>126249</td>
<td>126249</td>
<td>Gear Housing Cover</td>
<td>1</td>
</tr>
<tr>
<td>24</td>
<td>126250</td>
<td>126250</td>
<td>126250</td>
<td>126250</td>
<td>Bushing</td>
<td>1</td>
</tr>
<tr>
<td>25</td>
<td>126244</td>
<td>126244</td>
<td>126244</td>
<td>126244</td>
<td>Spur Gear Assembly</td>
<td>1</td>
</tr>
<tr>
<td>26</td>
<td>507562</td>
<td>507562</td>
<td>507562</td>
<td>507562</td>
<td>Flat Pt Socket Set Scr 10-32X.12</td>
<td>1</td>
</tr>
<tr>
<td>27</td>
<td>126254</td>
<td>126254</td>
<td>126254</td>
<td>126254</td>
<td>Key</td>
<td>1</td>
</tr>
<tr>
<td>28</td>
<td>126252</td>
<td>126252</td>
<td>126252</td>
<td>126252</td>
<td>Gear Shaft</td>
<td>1</td>
</tr>
<tr>
<td>29</td>
<td>126234</td>
<td>126234</td>
<td>126234</td>
<td>126234</td>
<td>Limit Switch Rod Assy</td>
<td>1</td>
</tr>
<tr>
<td>30</td>
<td>126240</td>
<td>126240</td>
<td>126240</td>
<td>126240</td>
<td>Spindle Shaft / Gear Assy</td>
<td>1</td>
</tr>
<tr>
<td>31</td>
<td>126264</td>
<td>126264</td>
<td>126264</td>
<td>126264</td>
<td>Anvil Holder</td>
<td>1</td>
</tr>
<tr>
<td>32</td>
<td>507568</td>
<td>507568</td>
<td>507568</td>
<td>507568</td>
<td>Radial Ball Bearing</td>
<td>1</td>
</tr>
<tr>
<td>33</td>
<td>126257</td>
<td>126257</td>
<td>126257</td>
<td>126257</td>
<td>Spacer</td>
<td>1</td>
</tr>
<tr>
<td>34</td>
<td>507563</td>
<td>507563</td>
<td>507563</td>
<td>507563</td>
<td>Spring</td>
<td>1</td>
</tr>
<tr>
<td>35</td>
<td>126256</td>
<td>126256</td>
<td>126256</td>
<td>126256</td>
<td>Thrust Washer</td>
<td>1</td>
</tr>
<tr>
<td>36</td>
<td>126251</td>
<td>126251</td>
<td>126251</td>
<td>126251</td>
<td>Piston Rod Nut</td>
<td>1</td>
</tr>
<tr>
<td>37</td>
<td>126259</td>
<td>126259</td>
<td>126259</td>
<td>126259</td>
<td>Split Rings</td>
<td>1</td>
</tr>
<tr>
<td>38</td>
<td>507108</td>
<td>507108</td>
<td>507108</td>
<td>507108</td>
<td>Wiper</td>
<td>1</td>
</tr>
<tr>
<td>39</td>
<td>126236</td>
<td>126236</td>
<td>126236</td>
<td>126236</td>
<td>Timing Screw</td>
<td>5</td>
</tr>
<tr>
<td>40</td>
<td>126364</td>
<td>126364</td>
<td>126294</td>
<td>126294</td>
<td>Piston</td>
<td>1</td>
</tr>
</tbody>
</table>

*Item 3 quantity is 4 for HS7CK and HS7EK. Item 10 quantity is 15 ft. for HS7CK and HS7EK.
## Parts List (Cont.)

<table>
<thead>
<tr>
<th>Item</th>
<th>HS7C</th>
<th>HS7CK</th>
<th>HS7E</th>
<th>HS7EK</th>
<th>Description</th>
<th>Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>124868</td>
<td>124868</td>
<td>124868</td>
<td>124868</td>
<td>Dump Valve</td>
<td>1</td>
</tr>
<tr>
<td>42</td>
<td>505758</td>
<td>505758</td>
<td>505758</td>
<td>505758</td>
<td>O-Ring</td>
<td>1</td>
</tr>
<tr>
<td>43</td>
<td>501105</td>
<td>501105</td>
<td>501105</td>
<td>501105</td>
<td>Back-up Ring</td>
<td>1</td>
</tr>
<tr>
<td>44</td>
<td>126343</td>
<td></td>
<td>126343</td>
<td>N/A</td>
<td>End Cap</td>
<td>1</td>
</tr>
<tr>
<td>45</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
<td></td>
<td>Retaining Ring</td>
<td>1</td>
</tr>
<tr>
<td>46</td>
<td>N/A</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>47</td>
<td>126363</td>
<td>126363</td>
<td>126314</td>
<td>126314</td>
<td>Cylinder Assembly</td>
<td>1</td>
</tr>
<tr>
<td>48</td>
<td>500054</td>
<td>500054</td>
<td>500054</td>
<td>500054</td>
<td>Socket Hd Cap Screws 8-32X.38</td>
<td>2</td>
</tr>
<tr>
<td>49</td>
<td>500789</td>
<td>500789</td>
<td>500789</td>
<td>500789</td>
<td>O-Ring</td>
<td>1</td>
</tr>
<tr>
<td>50</td>
<td>501095</td>
<td>501095</td>
<td>501095</td>
<td>501095</td>
<td>Back-up Ring</td>
<td>1</td>
</tr>
<tr>
<td>51</td>
<td>505759</td>
<td>505759</td>
<td>505759</td>
<td>505759</td>
<td>O-Ring</td>
<td>1</td>
</tr>
<tr>
<td>52</td>
<td>501111</td>
<td>501111</td>
<td>501111</td>
<td>501111</td>
<td>Back-up Ring</td>
<td>1</td>
</tr>
<tr>
<td>53</td>
<td>126263</td>
<td>126263</td>
<td>126263</td>
<td>126263</td>
<td>Gland</td>
<td>2</td>
</tr>
<tr>
<td>54</td>
<td>500775</td>
<td>500775</td>
<td>500775</td>
<td>500775</td>
<td>O-Ring</td>
<td>4</td>
</tr>
<tr>
<td>55</td>
<td>126253</td>
<td>126253</td>
<td>126253</td>
<td>126253</td>
<td>Bevel Gear</td>
<td>2</td>
</tr>
<tr>
<td>56</td>
<td>126255</td>
<td>126255</td>
<td>126255</td>
<td>126255</td>
<td>Key</td>
<td>2</td>
</tr>
<tr>
<td>57</td>
<td>507562</td>
<td>507562</td>
<td>507562</td>
<td>507562</td>
<td>Flat Pt Socket Set Scr 10-32X.12</td>
<td>2</td>
</tr>
<tr>
<td>58</td>
<td>126284</td>
<td>126284</td>
<td>126284</td>
<td>126284</td>
<td>Motor Mount &amp; Pin Assembly</td>
<td>1</td>
</tr>
<tr>
<td>59</td>
<td>126285</td>
<td>126285</td>
<td>126285</td>
<td>126285</td>
<td>Handle</td>
<td>1</td>
</tr>
<tr>
<td>60</td>
<td>507575</td>
<td>507575</td>
<td>507575</td>
<td>507575</td>
<td>Straight Connector</td>
<td>2</td>
</tr>
<tr>
<td>61</td>
<td>124881</td>
<td>124881</td>
<td>124881</td>
<td>124881</td>
<td>Hydraulic Hose 12 ft.</td>
<td>2</td>
</tr>
<tr>
<td>62</td>
<td>504173</td>
<td>504173</td>
<td>504173</td>
<td>504173</td>
<td>Black Vinyl Hose 25 ft.</td>
<td></td>
</tr>
<tr>
<td>63</td>
<td>126258</td>
<td>126258</td>
<td>126258</td>
<td>126258</td>
<td>Split Collar Fastener</td>
<td>1</td>
</tr>
<tr>
<td>64</td>
<td>506033</td>
<td>506033</td>
<td>506033</td>
<td>506033</td>
<td>Socket Hd Cap Screws 10-32X.25</td>
<td>6</td>
</tr>
<tr>
<td>65</td>
<td>500100</td>
<td>500100</td>
<td>500100</td>
<td>500100</td>
<td>Socket Hd Cap Screws 10-32X.38</td>
<td>4</td>
</tr>
<tr>
<td>66</td>
<td>126248</td>
<td>126248</td>
<td>126248</td>
<td>126248</td>
<td>Switch Cover</td>
<td>1</td>
</tr>
<tr>
<td>67</td>
<td>507574</td>
<td>507574</td>
<td>507574</td>
<td>507574</td>
<td>Button Hd Screw 4-40X.12</td>
<td>1</td>
</tr>
<tr>
<td>68</td>
<td>126297</td>
<td>126297</td>
<td>126297</td>
<td>126297</td>
<td>Micro Switch Assembly</td>
<td>1</td>
</tr>
<tr>
<td>69</td>
<td>507570</td>
<td>507570</td>
<td>507570</td>
<td>507570</td>
<td>Button Hd Screw 2-56X.25</td>
<td>2</td>
</tr>
<tr>
<td>70</td>
<td>126247</td>
<td>126247</td>
<td>126247</td>
<td>126247</td>
<td>Switch Plate</td>
<td>1</td>
</tr>
<tr>
<td>71</td>
<td>507571</td>
<td>507571</td>
<td>507571</td>
<td>507571</td>
<td>Button Hd Screw 2-56X.12</td>
<td>2</td>
</tr>
<tr>
<td>72</td>
<td>N/A</td>
<td>N/A</td>
<td>126293</td>
<td>126293</td>
<td>Rear Gland</td>
<td>1</td>
</tr>
</tbody>
</table>
CHANGING NOSE ASSEMBLIES AND ADJUSTING THE LIMIT SWITCH

DISASSEMBLY:

1) Ensure that the Tool Piston is in the fully forward position. Normally, the Tool Piston will be in the fully forward position after completing a fastener installation cycle. To check this, if the Nose Assembly has already been removed from the Tool, then the Tool Piston should protrude from the Tool Head approximately .21 inches (5,5mm). (Figure 5) If the Nose Assembly is still fitted to the Tool, then the Thimble should be flush with the front of the Swaging Anvil or approximately .04 inches (1mm) below. If the Piston is not fully forward, a separate Auxiliary Trigger may be connected to the Powerig to cycle the Tool and ensure the Piston is fully forward.

WARNING: Failure to ensure that the tool Piston is in the fully forward position prior to changing or fitting Nose Assemblies to the tool may result in permanent damage to components and may create a risk of personal injury.

2) Disconnect or isolate all primary power supplies, (Electrical and Air), from the equipment.

3) Hold the Tool firmly and use a suitable “C” Spanner to unscrew the Anvil counterclockwise (Figure 6). (Locate the Pin of the Spanner into one of the holes in the Anvil).

4) Use a Hammer & Pin Punch to remove the Dowel Pin from the Thimble/Piston (Figure 7). Rotate the Thimble by hand counterclockwise to remove it from the Piston.
CHANGING NOSE ASSEMBLIES AND ADJUSTING THE LIMIT SWITCH (CONTINUED)

ASSEMBLY:

1) Clean any dirt or metal particles from Anvil & Thimble (Figure 8); Do not apply any lubricant. Note the position of the flat on the Piston. Screw Thimble onto Piston by hand clockwise as far as possible; then rotate Thimble counterclockwise 1.5 rotations (Figure 9). This will set the Thimble into the approximate position for the correct insertion depth of the Bolt.

Note: With the system operating, the insertion depth is the amount of bolt thread screwed into the Thimble when the Limit Switch is activated. The Insertion depth is normally approximately 80% of the fastener diameter but final adjustment maybe needed if the Thimble strips the thread of the bolt during fastener installation.

2) Locate the Dowel Pin into the holes in the Thimble. Rotate the Thimble, (maximum 1/2 rotation), so that the Dowel Pin also locates onto the flat on the Piston. Gently tap the Dowel Pin fully into the Thimble.

a) Wrap tape around the Bolt, leaving 80% of the diameter of the threads exposed.

b) Connect Tool electrically to Controller and Air Supply.

c) Press the trigger, and let the Thimble thread onto the Bolt. At the point where the Thimble reaches the tape on the Bolt, the Paddle on the Limit Switch Rod should just be breaking contact with the Limit Switch. (Figures 11b & 11c)

d) If the Limit Switch Rod Paddle moves too far off of the Limit Switch, thread the Thimble counterclockwise out 1/2-1 turn and retest.

e) If the Limit Switch Rod Paddle does not move off of the Limit Switch, thread the Thimble clockwise in 1/2-1 turn and retest.

3) Apply a small amount of blue (medium strength) Loctite® 242® threadlocker (or other thread locking compound), to the threads of the Anvil (Figure 10). Screw the Anvil clockwise onto the Tool and tighten using a suitable “C” Spanner.

4) If a different diameter Nose Assembly or different grade of Bolt is being used, then it will be necessary to adjust:

a) The Powerig hydraulic Pull Pressure and

b) The Programmed Swage Pressure in the Controller Assembly.

Also, if a longer or shorter Nose Assembly is used, the tool’s Limit Switch Rod will need to be changed and adjusted accordingly. Refer to “Controller Assembly Maintenance” and “Replacing Limit Switch Rod” sections of this manual. If this has already been done, continue to step 9.

5) Reconnect primary power supplies and install fasteners into a test plate to check for correct function. If the Thimble strips the Thread of the bolt, then the insertion depth may need increasing so that more of the bolt thread is located into the
CHANGING NOSE ASSEMBLIES AND ADJUSTING THE LIMIT SWITCH (CONTINUED)

Thimble when the Limit Switch is activated. To increase the insertion depth, repeat this procedure from step 1, but at step 5, rotate the Thimble counterclockwise 2 rotations instead of 1.5 rotations. Then continue to repeat this procedure from step 6. Repeat this procedure if further adjustment is required.

Note: There are two sets of holes in the Thimble for the Dowel Pin and one flat on the Tool Piston for radial location of the Dowel Pin/Thimble assembly. Therefore, the adjustment of the Thimble on the thread of the Tool Piston is in 180° steps, (1/2 rotation).

REPLACING THE LIMIT SWITCH ROD

A Limit Switch Rod must be changed when a longer or shorter nose Assembly will be installed on the tool. In order to change the Limit Switch Rod, the following steps must be taken:

1) Unscrew the Button Head Screw (67) and remove the Limit Switch Plate (68) to reveal the Limit Switch (Figures 11a & 11b).

2) Unscrew six Socket Head Cap Screws (64). (Figure 11c)
3) Unscrew the eight Socket Head Cap Screws (48 & 16) and five Timing Screws (39), then slide the Anvil Holder (31) off the Gear Housing. Take care not to lose the Spring (34) (Figure 11c).

4) Remove the Split Ring (37) and Replace the Limit Switch Rod (29) with the Rod needed for the application.

5) Reassemble the Tool head except for the Limit Switch Plate (68), and proceed to Adjusting the Limit Switch (step 6).

6) After correct adjustment, install Switch Plate (68) using Screw (67).

**Service Notes:**
CONTROLLER ASSEMBLY MAINTENANCE

Checking and Adjusting Hydraulic Pressure

To ensure correct function of this Huckspin System, it is most important that the correct Programmed Swage Pressure is entered into the Controller Assembly and that the Powerig Hydraulic Pull and Return Pressures are set at the correct values. The following procedure explains how this is done.

1) Disconnect or isolate all primary power supplies, (Electrical and Air), from the equipment.

2) To change the programmed Swage Pressure, access must available to the DIP Switches inside the Controller by removing the Controller Cover as follows:
   a) Remove the Allen Screw which locates the Cover onto the Controller. (Figure 12)
   b) Remove any Cable Ties which secure the Hose Sleeve to the Hose.
   c) Remove the tapered end of the Cover by rotating it counterclockwise by hand until it is free from the thread. (Figure 12)
   c) Slide the tapered part complete with the Hose Sleeve along the hoses by approximately 16 inches (40cm).
   d) Hold the the main cylindrical part of the Controller Cover with one hand and pull on the Hydraulic Hoses with the other hand (Figure 13) to slide the inner section from the Cover. This will expose the working components of the Controller.

WARNING: Never remove the controller cover with air or electrical supplies connected, as permanent damage to components and personal injury may result.

3) Access to the DIP Switches is now available (Figure 14). Changes to the Programmed Swage Pressure is possible and is dependent on the position of the DIP Switches. See “DIP Switch Settings” section of this manual.

CAUTION: TO AVOID PERMANENT DAMAGE TO ELECTRICAL COMPONENTS, USE ONLY A NON METALLIC TOOL TO MOVE DIP SWITCH POSITIONS. DO NOT TOUCH THE MICROCHIP WITH THE HAND OR ANY METALLIC TOOL.
126291 CONTROLLER ASSEMBLY

(See Parts List on next page.)
CONTROLLER ASSEMBLY PARTS LIST

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PART NO.</th>
<th>DESCRIPTION</th>
<th>QTY</th>
<th>ITEM</th>
<th>PART NO.</th>
<th>DESCRIPTION</th>
<th>QTY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>126272</td>
<td>Housing Cone</td>
<td>1</td>
<td>20</td>
<td>507584</td>
<td>Elbow SAE04 male x 1/4FNPT</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>126276</td>
<td>Modified Set Screw</td>
<td>1</td>
<td>21</td>
<td>110438</td>
<td>Male Coupling</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>126274</td>
<td>Cylinder Housing</td>
<td>1</td>
<td>22</td>
<td>505435</td>
<td>Hex Nipple 1/4NPT x 3/8NPT</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>505013</td>
<td>O-Ring, Cylinder Housing</td>
<td>3</td>
<td>23</td>
<td>110439</td>
<td>Female Coupling</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>126281</td>
<td>Manifold</td>
<td>1</td>
<td>24</td>
<td>126275</td>
<td>Air Valve Bracket</td>
<td>2</td>
</tr>
<tr>
<td>6</td>
<td>115436</td>
<td>Air Inlet Hose</td>
<td>1</td>
<td>25</td>
<td>500047</td>
<td>Socket Hd Cap Screw 6-32 x 1/4</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>507434</td>
<td>4-Pin Receptacle</td>
<td>1</td>
<td>26</td>
<td>506358</td>
<td>Strain Relief</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>507435</td>
<td>Pin Contact</td>
<td>3</td>
<td>27</td>
<td>507087</td>
<td>Wire Nut</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>505321</td>
<td>Socket Hd Cap Screw 4-40 x .38</td>
<td>8</td>
<td>28</td>
<td>N/A</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>507576</td>
<td>7-Pin Receptacle</td>
<td>1</td>
<td>29</td>
<td>506322</td>
<td>Elbow, 1/8NPT x 1/4 Tube</td>
<td>2</td>
</tr>
<tr>
<td>11</td>
<td>507453</td>
<td>Socket Contact</td>
<td>6</td>
<td>30</td>
<td>507565</td>
<td>Air Valve</td>
<td>2</td>
</tr>
<tr>
<td>12</td>
<td>507583</td>
<td>Straight Connector 1/4 x 1/4 Tube</td>
<td>2</td>
<td>31</td>
<td>126276</td>
<td>Air Valve Fitting</td>
<td>2</td>
</tr>
<tr>
<td>13</td>
<td>505166</td>
<td>Tubing, 1/4 O.D.</td>
<td>4ft</td>
<td>32</td>
<td>500779</td>
<td>O-Ring, Air Valve Fitting</td>
<td>2</td>
</tr>
<tr>
<td>14</td>
<td>507578</td>
<td>Straight Swivel 1/8NPT x 1/8NPT</td>
<td>2</td>
<td>33</td>
<td>507594</td>
<td>8-Pin MOLEX Connector</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>126277</td>
<td>PCB Bracket</td>
<td>2</td>
<td>34</td>
<td>507593</td>
<td>6-Pin MOLEX Connector</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>126278</td>
<td>PCB Controller</td>
<td>1</td>
<td>35</td>
<td>507592</td>
<td>2-Pin MOLEX Connector</td>
<td>3</td>
</tr>
<tr>
<td>17</td>
<td>500048</td>
<td>Socket Hd Cap Screw 6-32 x 3/8</td>
<td>8</td>
<td>36</td>
<td>507582</td>
<td>Cable, 10-4#22AWG</td>
<td>4ft</td>
</tr>
<tr>
<td>18</td>
<td>501049</td>
<td>6-32 Locknut</td>
<td>4</td>
<td>37</td>
<td>506476</td>
<td>Muffler, 1/4 NPT</td>
<td>1</td>
</tr>
<tr>
<td>19</td>
<td>506599</td>
<td>Pressure Transmitter</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CONNECTOR-PIN-COLOR-FUNCTION**

- **J1C-1** ORN GROUND
- **J1C-2** not used
- **J1C-3** YEL +24VDC
- **J1C-4** not used
- **J1C-5** PUR RIG (RELAYED)
- **J1C-6** not used
- **J1C-7** not used
- **J1C-8** GRY RIG (RELAYED)

**CONNECTOR-PIN-COLOR-FUNCTION**

- **J2C-1** RED +24VDC (SPIN-ON)
- **J2C-2** WHT GND (SPIN-ON)
- **J3C-1** BLU +24VDC (SPIN-OFF)
- **J3C-2** BLK GND (SPIN-OFF)
- **J4C-1** GRN GND (Pressure Transmitter)
- **J4C-2** BRN +24VDC (Pressure Transmitter)

**CONNECTOR-PIN-COLOR-FUNCTION**

- **J5C-1** BLK GND SWITCHED (ALARM)
- **J5C-2** GRY SIGNAL (TRIGGER)
- **J5C-3** WHT SIGNAL (LSI) NC
- **J5C-4** YEL +24VDC (ALARM)
- **J5C-5** ORN +24VDC (LSI)
- **J5C-6** RED +24VDC (TRIGGER)

**126278 CONTROLLER PCB**

Fig. 16

Notes:
1. 126278 PCB pin numbers and connector pin numbers are reversed. (Example: J1-1 connects to J1C-9, and J1-8 connects to J1C-1.)
2. Schematic is for reference only. Refer to connector markings for correct pin locations.
CONTROLLER ASSEMBLY PROGRAM CYCLE

**Notes:**
- Trigger starts the Tool cycle.
- If trigger is released, the Tool backs off the Bolt.
- If hydraulic cycle is started/proceeding when Trigger is released, the Combination Valve on the Powerig is de-energized (released output), then the Tool backs off the Bolt.
- Exception: If hydraulic pressure set-point is reached, the operator may release trigger and the program will finish normally.

<table>
<thead>
<tr>
<th><strong>RECOMMENDED CONTROLLER TIMER RANGES</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>TD-1</td>
</tr>
<tr>
<td>TD-2</td>
</tr>
<tr>
<td>TD-3</td>
</tr>
<tr>
<td>TD-4</td>
</tr>
<tr>
<td>TD-5</td>
</tr>
<tr>
<td>TD-6</td>
</tr>
<tr>
<td>TD-7</td>
</tr>
<tr>
<td>TD-8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>RECOMMENDED CONTROLLER HYDRAULIC PRESSURE RANGES</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4&quot; Grade 2</td>
</tr>
<tr>
<td>5/16&quot; Grade 5</td>
</tr>
<tr>
<td>3/8&quot; Grade 5</td>
</tr>
<tr>
<td>3/8&quot; Grade 8</td>
</tr>
</tbody>
</table>

**Fig. 17**
DIP SWITCH SETTINGS

The DIP Switches are numbered 1 to 6 (Pressure Settings) and 1 to 8 (Timer Settings). Various Switch positions and which element of the program they control or change are shown on the following two pages (Figures 19 & 20). The Switches only have two possible positions: up or down.

The Programmed Swage Pressure, is the maximum Hydraulic Pull Pressure, (detected by the Pressure Transducer), applied to the Tool to swage the Collar. When this pressure is reached, the Controller will send a signal to the Powerig Hydraulic Valves to reverse their positions and the Tool Piston will move forward to begin ejection of the Nose Assembly from the installed Fastener.

When adjustment of the DIP Switches is complete, the Controller should be assembled in reverse order by sliding the Cover back into its original position, (apply a light coating of grease to the O-Ring Seals before assembly).

At this stage, it is not necessary to assemble the tapered section of the Cover into position since further adjustment of the Switches may be necessary.

The Powerig Pull Pressure should be adjusted to approximately 3.5 bar/50psi above the Programmed Swage Pressure. The Powerig Return Pressure should be adjusted to a maximum of 165 bar/2400 psi.

CAUTION: POWERIG HYDRAULIC PRESSURES SHOULD BE ADJUSTED IN ACCORDANCE WITH THE PROCEDURES SHOWN IN THE INSTRUCTION MANUAL FOR THE POWERIG.

When all primary power supplies have been re-connected, test the system by installing a Fastener into a test plate or washers. If necessary, readjust the Programmed Swage Pressure and Powerig Pull Pressure to obtain a complete Collar swage. If stripping of the bolt occurs during Fastener installation, then check the insertion depth, (adjust if necessary), and/or pressure settings, (adjust if necessary).

When all adjustments have been completed, disconnect all primary power supplies from the system and complete reassembly of the Controller assembly.

Note: If the Tool Piston does not return to the fully forward position after the installation cycle is complete, it may be necessary to increase the Programmed Eject Delay using DIP Switches 3 & 4. The Programmed Eject Delay is the amount of time the Powerig operate the Tool when the Nose Assembly is being ejected form the installed Fastener and the Tool Piston is travelling forward.

If the Thimble does not completely disengage from bolt threads after swaging, adjust the timer TD5 to a higher value.

CAUTION: TO AVOID DAMAGE AND REDUCE STRESS ON THE TOOL COMPONENTS, THE PROGRAMMED EJECT DELAY MUST ALWAYS BE SET TO THE MINIMUM TIME WHICH ACHIEVES SATISFACTORY PERFORMANCE.
SW1
8-Position DIP Switch

The first four positions of the switch, labeled “1”, “2”, “3” and “4” are the initial Timer Eject Delay selections.

The following four positions, labeled “5”, “6”, “7”, and “8”, are the settings used as a formula to reverse the air motor after the Limit Switch is released.

An example, showing the switch positions as the Controller Assembly is shipped, follows:

<table>
<thead>
<tr>
<th>Timer TD3 Eject Delay</th>
<th>Timer TD5 Reverse Air Motor After Releasing Limit Switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>MIN + (.25 SEC.) (.50 SEC.)</td>
<td>MIN + (.25 SEC.) (.50 SEC.)</td>
</tr>
<tr>
<td>MIN + (1 X .25 SEC.)(.75 SEC.)</td>
<td>MIN + (1 X .25 SEC.)(.75 SEC.)</td>
</tr>
<tr>
<td>MIN + (2 X .25 SEC.) (1.00 SEC.)</td>
<td>MIN + (2 X .25 SEC.) (1.00 SEC.)</td>
</tr>
<tr>
<td>MIN + (3 X .25 SEC.) (1.25 SEC.)</td>
<td>MIN + (3 X .25 SEC.) (1.25 SEC.)</td>
</tr>
<tr>
<td>MIN + (4 X .25 SEC.) (1.50 SEC.)</td>
<td>MIN + (4 X .25 SEC.) (1.50 SEC.)</td>
</tr>
<tr>
<td>MIN + (5 X .25 SEC.) (1.75 SEC.)</td>
<td>MIN + (5 X .25 SEC.) (1.75 SEC.)</td>
</tr>
<tr>
<td>MIN + (6 X .25 SEC.) (2.00 SEC.)</td>
<td>MIN + (6 X .25 SEC.) (2.00 SEC.)</td>
</tr>
<tr>
<td>MIN + (7 X .25 SEC.) (2.25 SEC.)</td>
<td>MIN + (7 X .25 SEC.) (2.25 SEC.)</td>
</tr>
<tr>
<td>MIN + (8 X .25 SEC.) (2.50 SEC.)</td>
<td>MIN + (8 X .25 SEC.) (2.50 SEC.)</td>
</tr>
<tr>
<td>MIN + (9 X .25 SEC.) (2.75 SEC.)</td>
<td>MIN + (9 X .25 SEC.) (2.75 SEC.)</td>
</tr>
<tr>
<td>MIN + (10 X .25 SEC.) (3.00 SEC.)</td>
<td>MIN + (10 X .25 SEC.) (3.00 SEC.)</td>
</tr>
<tr>
<td>MIN + (11 X .25 SEC.) (3.25 SEC.)</td>
<td>MIN + (11 X .25 SEC.) (3.25 SEC.)</td>
</tr>
<tr>
<td>MIN + (12 X .25 SEC.) (3.50 SEC.)</td>
<td>MIN + (12 X .25 SEC.) (3.50 SEC.)</td>
</tr>
<tr>
<td>MIN + (13 X .25 SEC.) (3.75 SEC.)</td>
<td>MIN + (13 X .25 SEC.) (3.75 SEC.)</td>
</tr>
<tr>
<td>MIN + (14 X .25 SEC.) (4.00 SEC.)</td>
<td>MIN + (14 X .25 SEC.) (4.00 SEC.)</td>
</tr>
</tbody>
</table>

TD3 Timer Eject Delay
TD5 Air Motor Reverse

.25 sec.+(1X.25 sec) .25 sec.+(1X.25 sec)
.25 + (1 X .25) .25 + (1 X .25)
.25 + .25 .25 + .25

TD3 = .50 sec. TD5 = .50 sec.

Fig. 19
SW2
6-Position DIP Switch

The first two positions of the switch, labeled “1” and “2” are the initial Pressure selections.

The following four positions, labeled “3”, “4”, “5”, and “6”, are the settings used as a formula to increase the initial Pressure selections.

An example follows:

<table>
<thead>
<tr>
<th>Pressure Selection</th>
<th>Pressure Increase Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>(3200 psi + (13 X “C” 150 psi offset))</td>
</tr>
<tr>
<td>2</td>
<td>(3200 psi + (13 X 150))</td>
</tr>
<tr>
<td>3</td>
<td>(3200 psi + 1900 psi)</td>
</tr>
<tr>
<td>4</td>
<td>5100 psi</td>
</tr>
<tr>
<td>5</td>
<td>5100 psi</td>
</tr>
<tr>
<td>6</td>
<td>5100 psi</td>
</tr>
</tbody>
</table>

Fig. 20
TROUBLESHOOTING

Always check the simplest possible cause of a malfunction first. For example, a loose or disconnected trigger line. Then proceed logically and eliminate each possible cause until the defect is found. Where possible, substitute known good parts for suspected defective parts. Use the following steps as an aid in troubleshooting.

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

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

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

4. Hydraulic couplers leak fluid.
   a. Damaged or worn O-rings in Coupler Body Coupler P/N 110440.

5. Hydraulic fluid overheats.
   a. Unit not operating properly; see units manual.
   b. Unit running in reverse (918; 918-5 only); see units manual.

6. Tool operates erratically and fails to install fastener properly.
   a. Low or erratic hydraulic pressure; air in system.
   b. Damaged or worn Piston O-ring in tool.
   c. Excessive wear on sliding surfaces of tool parts.

7. Tool hangs up" on swaged collar of fastener.
   a. Improper Tool operation; see No. 6.
   b. RETURN pressure too low.
   c. Not enough collar lubricant.
   d. Nose Assembly not installed per NOSE ASSEMBLY DATA SHEET

CHECKING LED’S AFTER INSTALLING THE LIMIT SWITCH ROD
(Figure 21)

When Pressing Trigger:

\[
\begin{align*}
D2 &= \text{ON} \\
\end{align*}
\]

Breaking Limit Switch

\[
\begin{align*}
D2 &= \text{ON} \\
\end{align*}
\]

When Pressing Trigger & Breaking Limit Switch:

\[
\begin{align*}
D2 &\text{ & } D3 = \text{ON} \\
\end{align*}
\]

When Piston is Fully Forward:

\[
\begin{align*}
D4 &= \text{Flashing} \\
D1, D2, D3 &= \text{OFF} \\
\end{align*}
\]

During Pull only:

\[
\begin{align*}
D3 &= \text{ON} \\
\end{align*}
\]

During Pull at Full Pressure:

\[
\begin{align*}
D2 &\text{ & } D3 = \text{ON} \\
\end{align*}
\]

KITS AND ACCESSORIES

Service Kit - HS24LHKIT
SERVICE NOTES:
**LIMITED WARRANTIES**

**Tooling Warranty:** Huck warrants that tooling and other items (excluding fasteners, and hereinafter referred as "other items") manufactured by Huck shall be free from defects in workmanship and materials for a period of ninety (90) days from the date of original purchase.

**Warranty on "non standard or custom manufactured products":** With regard to non-standard products or custom manufactured products to customer's specifications, Huck warrants for a period of ninety (90) days from the date of purchase that such products shall meet Buyer's specifications, be free of defects in workmanship and materials. Such warranty shall not be effective with respect to non-standard or custom products manufactured using buyer-supplied molds, material, tooling and fixtures that are not in good condition or repair and suitable for their intended purpose.

**THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THE DESCRIPTION ON THE FACE HEREOF. HUCK MAKES NO OTHER WARRANTIES AND EXPRESSLY DISCLAIMS ANY OTHER WARRANTIES, INCLUDING IMPLIED WARRANTIES AS TO MERCHANTABILITY OR AS TO THE FITNESS OF THE TOOLING, OTHER ITEMS, NONSTANDARD OR CUSTOM MANUFACTURED PRODUCTS FOR ANY PARTICULAR PURPOSE AND HUCK SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, DIRECTLY OR INDIRECTLY, ARISING FROM THE USE OF SUCH TOOLING, OTHER ITEMS, NONSTANDARD OR CUSTOM MANUFACTURED PRODUCTS OR BREACH OF WARRANTY OR FOR ANY CLAIM FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.**

Huck's sole liability and Buyer's exclusive remedy for any breach of warranty shall be limited, at Huck's option, to replacement or repair, at FOB Huck's plant, of Huck manufactured tooling, other items, nonstandard or custom products found to be defective in specifications, workmanship and materials not otherwise the direct or indirect cause of Buyer supplied molds, material, tooling or fixtures. Buyer shall give Huck written notice of claims for defects within the ninety (90) day warranty period for tooling, other items, nonstandard or custom products described above and Huck shall inspect products for which such claim is made.

**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.

The only warranties made with respect to such tool, part(s) or other items thereof are those made by the manufacturer thereof and Huck agrees to cooperate with Buyer in enforcing such warranties when such action is necessary.

Huck shall not be liable for any loss or damage resulting from delays or nonfulfillment 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

**Canada**

6150 Kennedy Road Unit 10, Mississauga, Ontario, L5T2J4, Canada.
Telephone (905) 564-4825 FAX (905) 564-1963

**Outside USA and Canada**

Contact your nearest Huck International Office, see back cover.

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 Tools Kits and Nose Assemblies. Please contact your Huck Representative or the nearest Huck office listed on the back cover for the ATSC in your area.
A Global Organization

Alcoa Fastening Systems (AFS) maintains company offices throughout the United States and Canada, with subsidiary offices in many other countries. Authorized AFS distributors are also located in many of the world’s industrial and Aerospace centers, where they provide a ready source of AFS fasteners, installation tools, tool parts, and application assistance.

Alcoa Fastening Systems world-wide locations:

**Americas**

**Alcoa Fastening Systems**
**Aerospace Products**
**Tucson Operations**
3724 East Columbia
Tucson, AZ 85714
800-234-4825
520-747-9898
FAX: 520-748-2142

**Alcoa Fastening Systems**
**Aerospace Products**
**Carson Operations**
PO Box 5268
900 Watson Center Rd.
Carson, CA 90749
800-421-1459
310-830-8200
FAX: 310-830-1436

**Alcoa Fastening Systems**
**Commercial Products**
**Waco Operations**
PO Box 8117
8001 Imperial Drive
Waco, TX 76714-8117
800-388-4825
254-776-2000
FAX: 254-751-5259

**Alcoa Fastening Systems**
**Commercial Products**
**Kingston Operations**
1 Corporate Drive
Kingston, NY 12401
800-431-3091
845-331-7300
FAX: 845-334-7333
www.hucktools.com

**Alcoa Fastening Systems**
**Commercial Products**
**Canada Operations**
6150 Kennedy Road, Unit 10
Mississauga, Ontario L5T2J4
Canada
905-564-4825
FAX: 905-564-1963

**Alcoa Fastening Systems**
**Commercial Products**
**Latin America Operations**
Avenida Parque Lira, 79-402
Tacubaya Mexico, D.F.
C.P. 11850
FAX: 525-515-1776
TELEX: 1173530 LUKSME

**Far East**

**Alcoa Fastening Systems**
**Commercial Products**
**Australia Operations**
14 Viewtech Place
Rowville, Victoria
Australia 3178
03-764-5500
Toll Free: 008-335-030
FAX: 03-764-5510

**Europe**

**Alcoa Fastening Systems**
**Commercial Products**
**United Kingdom Operations**
Unit C, Stafford Park 7
Telford, Shropshire
England TF3 3BQ
01952-290011
FAX: 0952-290459

**Alcoa Fastening Systems**
**Aerospace Products**
**France Operations**
Clos D’Asseville
BP4
95450 Us Par Vigny
France
33-1-30-27-9500
FAX: 33-1-34-66-0600


NOTICE: The information contained in this publication is only for general guidance with regard to properties of the products shown and/or the means for selecting such products, and is not intended to create any warranty, express, implied, or statutory; all warranties are contained only in Huck’s written quotations, acknowledgements, and/or purchase orders. It is recommended that the user secure specific, up-to-date data and information regarding each application and/or use of such products.

© 2003 Alcoa Fastening Systems

© 2003 Alcoa Fastening Systems
1 Corporate Drive, Kingston, NY 12401 • Tel: 800-431-3091 • Fax: 845-334-7333 • E-mail: hkitoolinfo@alcoa.com • www.alcoafasteningsystems.com