INSTRUCTION MANUAL

HUCK® SwageForward™

Hydraulic Installation Tools

HSSFT-M10
HSSFT-M12
HSSFT-M16

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

07-09-2013
HK1071
EC Declaration of Conformity

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

Description of Machinery:
Models HSS2 and HSSFT-M## installation tool families and specials based on their designs (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 Alcoa Fastening Systems
          Kingston, New York, USA
Date: 07/06/2013 (June 7, 2013)

<table>
<thead>
<tr>
<th>Declared dual number noise emission values in accordance with ISO 4871</th>
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<td>A weighted sound power level, LWA: 80 dB (reference 1 pW)</td>
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<tr>
<td>Uncertainty, KWA: 3 dB</td>
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<tr>
<td>A weighted emission sound pressure level at the work station, LpA: 69 dB</td>
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<td>(reference 20 μPa)</td>
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<td>Uncertainty, KpA: 3 dB</td>
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<td>C-weighted peak emission sound pressure level, LpC, peak: 97 dB (reference 20 μPa)</td>
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<td>Values determined according to noise test code ISO 15744, using as basic standards ISO 3744 and ISO 11203. The sum of a measured noise emission value and its associated uncertainty represents an upper boundary of the range of values which is likely to occur in measurements.</td>
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<table>
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<th>Declared vibration emission values in accordance with EN 12096</th>
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<td>Measured Vibrations emission value, a:</td>
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<tr>
<td>.21 m/s²</td>
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<td>Uncertainty, K:</td>
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<td>Values measured and determined according to ISO 28662-1, ISO 5349-2, and EN 1033</td>
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</table>

Test data to support the above information is on file at Alcoa Fastening Systems, Industrial Products Group, Kingston Operations, Kingston, NY, USA.

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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.

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 pinial deflectors.
13. Never install a fastener in free air. Personal injury from fastener ejecting may occur.
14. Where applicable, always clear spent pinail 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 pneumatic or pneumactic. Pneumatic 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 to not 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.

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 to not allow counteracting of normal or unexpected tool movement.
8. If the assembly power tool is fixed to a suspension device, make sure that fixation is secure.
9. Beware of the risk of crushing or pinching if nose equipment is not fitted.

IV. REPETITIVE MOTION HAZARDS:
1. When using assembly power tool, the operator can experience discomfort in the hands, arms, shoulders, neck or other parts of the body.
2. When using tool, the operator should adopt a comfortable posture while maintaining a secure footing and avoid awkward or off balanced postures.
3. The operator should change posture during extended tasks to help avoid discomfort and fatigue.
4. If the operator experiences symptoms such as persistent or recurring discomfort, pain, throbbing, aching, tingling, numbness, burning sensations or stiffness, these warnings should not be ignored. The operator should tell the employer and consult a qualified health professional.

V. ACCESSORIES HAZARDS:
1. Disconnect tool from energy supply before changing inserted tool or accessory.
2. Use only sizes and types of accessories and consumables that are recommended. Do not use other types or sizes of accessories or consumables.

VI. WORKPLACE HAZARDS:
1. Be aware of slippery surfaces caused by use of the tool and of trip hazards caused by the air line or hydraulic hose.
2. Proceed with caution while in unfamiliar surroundings; there could be hidden hazards such as electricity or other utility lines.
3. The assembly power tool is not intended for use in potentially explosive environments.
4. Tool is not insulated against contact with electrical power.
5. Ensure there are no electrical cables, gas pipes, etc., which can cause a hazard if damaged by use of the tool.

VII. NOISE HAZARDS:
1. Exposure to high noise levels can cause permanent, disabling hearing loss and other problems such as tinnitus, therefore risk assessment and the implementation of proper controls is essential.
2. Appropriate controls to reduce the risk may include actions such as damping materials to prevent workpiece from ‘ringing’.
3. Use hearing protection in accordance with employer’s instructions and as required by occupational health and safety regulations.
4. Operate and maintain tool as recommended in the instruction handbook to prevent an unnecessary increase in the noise level.
5. Select, maintain and replace the consumable / inserted tool as recommended to prevent an unnecessary increase in noise.
6. If the power tool has a silencer, always ensure that it is in place and in good working order when the tool is being operated.

VIII. VIBRATION HAZARDS:
1. Exposure to vibration can cause disabling damage to the nerves and blood supply to the hands and arms.
2. Wear warm clothing when working in cold conditions and keep hands warm and dry.
3. If numbness, tingling, pain or whitening of the skin in the fingers or hands, stop using the tool, tell your employer and consult a physician.
4. Support the weight of the tool in a stand, tensioner or balancer in order to have a lighter grip on the tool.

X. HYDRAULIC TOOL SAFETY INSTRUCTIONS:
1. Do not exceed maximum pressure setting stated on tool.
2. Carry out a daily check for damaged or worn hoses or hydraulic connections and replace if necessary.
3. Use only clean oil and filling equipment.
4. 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.
5. Ensure that couplings are clean and correctly engaged before operation.
6. Do not inspect or clean the tool while the hydraulic power source is connected.
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.
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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 to not 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.
**PRINCIPLE OF OPERATION**

**HUCK® SWAGEFORWARD™ shown connected to Single Tool Controller 125725**

**Installation Sequence**

1. Operator positions Huck-Spin collar onto mating Huck-Spin pin threads by hand.

2. Huck-Spin tool thimble threads onto fastener. The air motor turns on and, if only Limit Switch 1 is reached, a snub routine begins in which the collar is partly swaged, then the thimble spins on further until Limit Switch 2 is closed.

3. At full pressure, tool swages collar.

4. After the swage, the anvil is ejected off the collar, and the thimble spins off the fastener. This results in all tool components returning to their home positions.

5. Tool is ready to install the next Huck-Spin fastener.

For installation set-up procedures and pressure settings, see **SET-UP PROCEDURE FOR OPTIMAL TOOL LIFE** on page 10.
HSSFT-M10, 12, & 16 HUCK® SWAGE FORWARD™ Tooling (HK1071) Alcoa Fastening Systems

**SPECIFICATIONS**

**POWER SOURCE:**
Huck POWERIG Hydraulic Unit

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

**MAX OPERATING TEMP:**
125° F (51.7° C)

**MAX FLOW RATE:**
2 gpm (7.6 l/m)

**MAX INLET PRESSURE:**
7,400 psi (510 BAR)

**MAX RETURN PRESSURE:**
3,200 psi (221 BAR)

**PULL CAPACITY:**
- **HSSFT-M10:** 7,110 lbs (31.6 kN) @ 6,000 psi (414 BAR)
- **HSSFT-M12:** 14,160 lbs (63 kN) @ 6,000 psi (414 BAR)
- **HSSFT-M16:** 22,266 lbs (99 kN) @ 6,000 psi (414 BAR)

**RETURN CAPACITY:**
- **HSSFT-M10:** 2,544 lbs (11.3 kN) @ 4,000 psi (276 BAR)
- **HSSFT-M12:** 4,880 lbs (21.7 kN) @ 4,000 psi (276 BAR)
- **HSSFT-M16:** 8,220 lbs (36.6 kN) @ 4,000 psi (276 BAR)

**HYDRAULIC FLUID:**
ATF meeting DEXRON III, DEXRON IV, MERCON, Allison C-4 or equivalent specifications.

- Fire resistant hydraulic fluid may also be used, and is required to comply with OSHA regulation 1926.302 paragraph (d): “the fluid used in hydraulic power tools shall be fire resistant fluid approved under schedule 30 of the US Bureau of Mines, Department of Interior, and shall retain its operating characteristics at the most extreme temperatures to which it will be exposed.”

**STROKE:**
- **HSSFT-M10:** 1.38 in. (3.5 cm)
- **HSSFT-M12:** 1.49 in. (3.8 cm)
- **HSSFT-M16:** 1.49 in. (3.8 cm)

**WEIGHT:**
- **HSSFT-M10:** 18 lbs (8.16 kg)
- **HSSFT-M12:** 18 lbs (8.16 kg)
- **HSSFT-M16:** 23 lbs (10.43 kg)

---

**Table:**

<table>
<thead>
<tr>
<th>TOOL</th>
<th>A INCHES (cm)</th>
<th>B INCHES (cm)</th>
<th>C INCHES (cm)</th>
<th>D INCHES (cm)</th>
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<tr>
<td>HSSFT-M10</td>
<td>1.88 (4.77)</td>
<td>12.74 (32.36)</td>
<td>5.22 (13.26)</td>
<td>7.07 (17.96)</td>
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<tr>
<td>HSSFT-M12</td>
<td>2.75 (6.98)</td>
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<td>6.16 (15.65)</td>
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<tr>
<td>HSSFT-M16</td>
<td>3.51 (8.91)</td>
<td>13.56 (34.44)</td>
<td>6.17 (15.67)</td>
<td>10.01 (25.42)</td>
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**PREPARATION FOR USE**

1. Use Huck POWERIG® Hydraulic Unit, or equivalent, which has been prepared for operation per applicable instruction manual. Check both PULL and RETURN pressures and, if required, adjust to pressures given in Specifications section of this manual.

   **WARNING:** Correct PULL and RETURN pressures are required for operator’s safety and for Installation Tool’s function. Huck Pressure Gage T-124883CE is available for checking pressures. See Tool’s specifications and Gage Instruction Manual. Failure to verify pressures may result in severe personal injury.

2. First, turn hydraulic unit to OFF, and then disconnect power supply from Single Tool Controller. Connect tool’s hoses to Single Tool Controller.

   **WARNING:** Be sure to connect Tool’s hydraulic hoses to Single Tool Controller before connecting electrical cable assembly to unit. If not connected in this order, and disconnected in the reverse order, severe personal injury may occur.

3. Connect tool’s Electric Cable Assembly to hydraulic unit.

4. Connect hydraulic unit to Single Tool Controller. Turn unit to ON. Depress trigger a few times to cycle tool and to circulate hydraulic fluid. Turn unit to OFF.

5. Select nose assembly for fastener to be installed. Disconnect tool’s Electric Cable Assembly from hydraulic unit; disconnect unit from power supply. Attach nose assembly to tool.

6. Reconnect hydraulic unit to Single Tool Controller. Reconnect tool’s Electric Cable Assembly to unit. 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 tool malfunction.

**MAINTENANCE**

**CAUTIONS:**

- Keep dirt and other material out of hydraulic system.
- Separated parts must be kept away from dirty work surfaces.
- Dirt/debris in hydraulic fluid causes Dump Valve failure in Tool and in POWERIG® Hydraulic Unit’s valves.

**GOOD SERVICE PRACTICES**

- 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 tool is disassembled for any reason. See applicable Service Kit.
- The efficiency and life of your tool depends on proper maintenance. Using the manual will help give a clear understanding of the tool and basic maintenance procedures. Please 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. Reassemble tool with the same care.
  - Consult Troubleshooting section of this manual if a malfunction occurs and then see appropriate Disassembly: Assembly and/or component illustration sections.

(continued)
GOOD SERVICE PRACTICES (continued)

Sealants, Lubricants, Hydraulic Fluid & Service Kits
• Rub SLIC-TITE TEFiON thread compound, or equivalent, on pipe threads to prevent leaks and for ease of assembly. CAUTION: Do not use TEFiON tape on pipe threads. Particles of shred-ded tape cause hydraulic unit valve failure. (SLIC-TITE in stick form, 503237).
• Smear LUBRIPLATE 130AA, or equivalent, on O-rings and mating surfaces to prevent damaging O-rings on rough or sharp surfaces. Also, increases ease of assembly. (LUBRIPLATE in a tube, 502723).
• Each Service Kit contains perishable parts for your specific tool. As foreseeable use may indi-cate, 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 infor-mation, 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 switch and control cord, and POWERIG Hydraulic Unit. Therefore, an effective preventive maintenance program includes scheduled inspections of the sys-tem to detect and correct minor troubles.

• Inspect tool and nose assembly for external dam-age.
• Verify that hydraulic hose fittings, couplings, and electrical connections are secure.
• Inspect hydraulic hoses for damage and deterio-ration. 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 manu-al.

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. Always replace seals, wipers, and back-up rings, and always grease gears whenever the tool is disassembled for any reason.

Nose Assembly Maintenance
Clean nose assembly often. Dip in mineral spirits or similar solvent to clean jaws 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 jaws.

TOOl STICKERS

All HSSFT Tools are shipped with a sticker identifying important SAFETY and WARNING information.

If the sticker becomes worn, damaged, or is missing, a new sticker must be ordered and placed in a conspicuous location on the tool.

STICKER PART NUMBER

590512-2
Operating Instructions

The following procedure is intended to improve tool life by using the minimum required pressure to obtain proper fastener installations. This procedure starts the pressures and timers low and works up to the level where proper installations are obtained. To determine if the fasteners are properly installed, either use the appropriate Huck HG gage, or refer to the Huck website for inspection criteria.


2. Install Nose Assembly on tool.

3. Turn on Controller.

4. Turn on Powerig.

5. Warm up the Powerig and tool system using the Hydraulic Warmup feature on the STC.

6. Enter the menu system on the STC and add the appropriate size tool and fastener.

7. Determine Pull and Return pressures for Powerig from Table 1. These values are for Low Swage Anvils. Use only Low Swage Anvils for optimal tool life.

8. Set Pull and Return pressures on Powerig using Huck Gage T-124833CE.

9. Thread a fastener and collar into thimble until Limit Switch 2 light comes on. Put enough washers on the fastener to ensure it is in proper grip.

10. Enter the menu system on the STC, go to Measure Rig Pressure. Press and hold F1 to activate Powerig. Record pressure reading on STC.

11. Enter the menu system on the STC, go to Pressure Settings, then Swage Pressure. Adjust the Swage Pressure to be 200-300 psi below the Powerig pressure measured in step 10.

12. Install several fasteners in washers, in proper grip.

13. a) If the fasteners are properly installed and the flanges of the collar are not heavily “ringed” the system is ready for use.

b) If the fasteners are heavily “ringed”, start at step 8 lowering the pressure by 100 psi on both the controller and rig.

c) If the Collar is not swaged completely, continue at step 14.

14. Enter the menu system on the STC, go to Timer Change, go to Change Timer 7. This is the timer that holds the Powerig on after the swage pressure setting is reached. The default is 00.0 seconds. Change the timer to 00.1 seconds.

15. Install several more fasteners and inspect the swage.

16. a) If the fastener is properly installed, set-up is complete.

b) If the fastener is still not completely swaged add an additional 0.1 second to Timer 7.

17. Install several more fasteners and inspect the swage.

18. a) If the fastener is properly installed, set-up is complete.

b) If the fastener is still not completely swaged, repeat step 14 up to 0.9 seconds.

c) If after adding 0.9 seconds of hold time the fasteners are not properly swaged, follow step 19.

19. If the fasteners are not completely swaged, start at step 8 raising the pressure by 100 psi on both the controller and rig.

20. a) If the fastener is properly installed, set-up is complete.

b) If the fastener is still not completely swaged, start procedure at step 14.

These pressures are for Low Swage Anvils, which can be identified by a step on the inside bore. Previous designs of anvils have a straight bore without any steps and will require higher pressures.

1. **Fastener Size** | **Tool** | **Powerig PULL Pressure Setting, psi (BAR)** | **Powerig RETURN Pressure Setting, psi (BAR)** | **Controller Pressure Setting psi (BAR)**
---|---|---|---|---
10mm | HSSFT-M10 | 6000 (275.9) | 4000 (275.8) | 5800 (399.9)
12mm | HSSFT-M12, S | 4800 (330.9) | 4000 (275.8) | 4600 (317.2)
1/2” | HSSFT-M12, S | 6800 (468.8) | 6000 (275.9) | 6600 (455.1)
14mm | HSSFT-M16, S | 4600 (317.2) | 4000 (275.8) | 4400 (303.4)
5/8” & 16mm | HSSFT-M16, S | 6800 (468.8) | 4800 (330.9) | 6600 (455.1)

These pressure values are a starting point for setting the Powerig. Many factors will cause pressures to be higher or lower, including tool condition, hose length, oil temperature and fasteners being installed.
**Adjustment Instructions**

**Backlash Adjustment:** *(see Figure 1 below)*

1. Turn Drive Shaft Assembly to the full IN position, and back out until Gears mesh freely with Gears on Bearing Housing Assembly.
2. Turn Drive Shaft Assembly in until nearest timing mark aligns with Screw hole.
3. Install screw. A minimal amount of play with freely turning gears indicates correct adjustment.

**Limit Switch Adjustment:** *(see Figure 1 below)*

1. Install Nose Assembly with correct Actuator Rod, and connect Tool to Controller.
2. Thread a Fastener in the Thimble until it bottoms. The LS2 light should be on both the Controller and the Tool Sensor. If not, hold Cap of Sensor Pin Assy and insert allen wrench in the other end. (See Figure 1 Detail.) Turn the wrench counterclockwise to lengthen the Sensor Pin Assembly the required distance to reach LS2.

![Figure 1](image-url)

**Optional Equipment**

<table>
<thead>
<tr>
<th>Tool Kit</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSSFT-M10</td>
<td>128340-M10</td>
</tr>
<tr>
<td>HSSFT-M12 &amp; 12S</td>
<td>128340-M12</td>
</tr>
<tr>
<td>HSSFT-M16 &amp; 16S</td>
<td>128340</td>
</tr>
</tbody>
</table>

- Contains: 127955-M10 Spanner (End Cap/Drive Shaft)
- 128334-M10 Piston Insertion Tool
- 128335-M10 Piston Assembly Tool
- 127660-M10 Seal Kit (includes O-rings, B-u rings, etc.)
- 127660-M12 Grease for Bearings and Gears
- 127660 Loctite 242

- Holds Cap with standard wrench while adjusting
- Turn allen wrench counterclockwise to lengthen
- Adjust to 875-885

- Figure 1

---

**Tool Kit**

<table>
<thead>
<tr>
<th>Tool Kit</th>
<th>Part Number</th>
</tr>
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<tbody>
<tr>
<td>HSSFT-M10</td>
<td>128340-M10</td>
</tr>
<tr>
<td>HSSFT-M12 &amp; 12S</td>
<td>128340-M12</td>
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- Contains: 127955-M10 Spanner (End Cap/Drive Shaft)
- 128334-M10 Piston Insertion Tool
- 128335-M10 Piston Assembly Tool
- 127660-M10 Seal Kit (includes O-rings, B-u rings, etc.)
- 127660-M12 Grease for Bearings and Gears
- 127660 Loctite 242

- Holds Cap with standard wrench while adjusting
- Turn allen wrench counterclockwise to lengthen
- Adjust to 875-885

- Figure 1
HSSFT-M10 Components (Figures 2 & 3)

**Figure 2**

- **128470** Hydraulic Assembly
- **500048** Cap Screw (4)
- **508177** Shoulder Screw (2)
- **500048** Cap Screw (6)
- **503450** Shoulder Screw (6)
- **127604** Handle Assy
- **127649** Hanger Assy
- **127653** Air Inlet Hose (2)
- **508176** Reducing Connector (2)
- **120770-10** Hose Sleeving
- **506606** Twin Tubing

*Apply Loctite® per Mfr. Instructions*
HSSFT-M10 COMPONENTS (FIGURES 2 & 3)

128662 Drive Shaft
503803 O-Ring
501113 Back-up Ring
507407 Wiper
128473 End Cap
128474 Piston
501763 Setscrew
128471 Cylinder
127618 Gland Assy (2)
127614 Plug Assy
120361 Trigger
505879 Screw
128302 Gear Pin Assy
127602 Spacer
127601 Drive Gear
505231 Trigger Wire
127605 Handle
127611 Wiring Cover
121466 Terminal Strip
505344-3 Strain Relief
508151 Miter Gear
(Includes Setscrew)
127590-1 Key
128660 Rod End
508153 Spring
508249 Screw (Apply Loctite 242)
128665 Gear Cover
127753 Housing Assy
508178 Sensor
127590-1 Key
501778 Setscrew
128245 Miter Gear
501787 Setscrew
502101 Cap Screw (2)
127607 Sensor Cover
127585 Bearing Housing Assy
127589 Spur Gear
128246 Easy-out Shaft
127591 Key
128303 Idler Gear
506493 Washer
128276 Cap
501786 Pin
128278 Sensor Pin Assy

Notes:
[1] These items are contained in 128664 Drive Shaft Assembly.
[2] These items are contained in 127625 Air Motor Assembly.
[3] These items are contained in 128658 Limit Switch Rod Assembly.
[4] Adjust backlash by turning Drive Shaft Assembly to the full IN position. Back out until gears mesh freely with gears on Bearing Housing Assembly. Turn Drive Shaft Assembly in until nearest timing mark aligns with screw hole. Install Screw 502010. A minimal amount of play with free-turning gears indicates correct adjustment.
[5] To adjust Limit Switch, install nose with correct Actuator Rod and connect tool to controller. Thread a fastener in thimble until it bottoms. The LS2 light should be on both controller and tool sensor. If not, hold cap of the Sensor Pin Assy 128278 and insert Allen wrench in end of Sensor Pin Assy. Turn Allen wrench counterclockwise to lengthen Sensor Pin Assy the required distance to reach LS2.
**Wiring Diagram & Schematic for HSSFT-M10**

**Wiring Diagram**
AS SHIPPED FROM FACTORY
USE WITH ALL CONTROLLERS
EXCEPT 940-HS & 940-220HS

**Wiring Schematic**
AS SHIPPED FROM FACTORY
USE WITH ALL CONTROLLERS
EXCEPT 940-HS & 940-220HS
### HSSFT-M12 & HSSFT-M12S Parts Lists

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### Item note

- 1
- Limit Switch Assembly part no. 127872 is available for purchase. It contains Item numbers 2, 4, 9, 17, 18, 27, & 65.

- 2
- Bearing Housing Assembly part no. 127585 is available for purchase. It contains Item numbers 13, 17, 19, 21-23, 25, 27, 28, 32, & 33.

- 3
- Apply a small amount of Grease part no. 620030 to all Gears and Bearings.

### Notes:

1. **Drive Shaft Assembly** part no. 127872 is available for purchase. It contains Item numbers 2, 4, 9, 17, 18, 27, & 65.

2. **Bearing Housing Assembly** part no. 127585 is available for purchase. It contains Item numbers 13, 17, 19, 21-23, 25, 27, 28, 32, & 33.

3. Apply a small amount of Grease part no. 620030 to all Gears and Bearings.
HSSFT-M16 & HSSFT-M16S COMPONENTS
### HSSFT-M16 & HSSFT-M16S Parts Lists

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### Notes:

1. **Drive Shaft Assembly** part no. 127592 is available for purchase. It contains Item numbers 2, 4, 9, 17, 18, 27, 64, & 65.

2. **Bearing Housing Assembly** part no. 127585 is available for purchase. It contains Item numbers 13, 17, 19, 21-23, 25, 27, 28, 32, & 33.

3. Apply a small amount of **Grease** part no. 620030 to all Gears and Bearings.
Below are the wiring diagram and wiring schematic of the HUCK® SWAGE FORWARD™ tool as it is shipped from the factory. On the following pages, please note the specific instructions for wiring requirements when using the new HUCK® SWAGE FORWARD™ tool with other AFS equipment.

**Note:** When the HUCK® SWAGE FORWARD™ tool is used with the 940HS or 940-220HS Powerig, it is imperative that the wiring diagram and schematic be changed as specified on the following page.

---

**Wiring Diagram and Schematic as Shipped**

As shipped from factory. **Use with all except 940HS and 940-220HS**

---

**Wiring Schematic**

As shipped from factory. **Use with all controllers except 940HS and 940-220HS**

---

**Figure 7**
**Special Wiring Instructions**

When using the HUCK® SWAGEFORWARD™ tool with a 940HS or 940-220HS Powerig, please be sure the wiring diagram and schematic are set up according to the drawings below.

**Wiring Diagram**

*When used with 940HS and 940-220HS*

**Wiring Schematic**

*When used with 940HS and 940-220HS*
Pictured here is the wiring diagram of Simple Controller 127165 or 127165-2.

When using the HUCK® SWAGEFORWARD™ tool with 127165 or 127165-2 Simple Controller, THIS GROUND WIRE (REPRESENTED BY THE BOLD LINE) MUST BE ADDED.
When using a Single Tool Controller 127165 or 127165–2 with the HUCK® SwageForward™, Adapter Cable 127164–1 must be used in addition to adding Ground Wire as shown in Figure 6.
Special Wiring Instructions (continued)

Shown below is the wiring diagram for Single Tool Controller 125725. If using a Controller with Serial Number 381 thru 444, the Wire Must Be Moved from J2-2 and Pin 2 on the LEMO connector to J2-6 and Pin 6 on the LEMO, as shown.
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Contact your nearest Huck International Office, see back cover.

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