EU Declaration of Conformity

Manufacturer:
Huck International, Inc., Installation Systems Division, 1 Corporate Drive, Kingston, NY, 12401, USA

Description of Machinery:
Model numbers HS24LH fastener installation tools

Relevant provisions complied with:

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: Henk Rosier
Position: Engineering Manager
Installation Systems Division
Place: Kingston, New York, USA
Date: August, 2001

Sound Levels
Model: HS24LH

The sound level of the tool cycling without fastener is
Sound Exposure Level (SEL) = 87.2 dB(A)
Background (SEL) = 81.8 dB(A)
Peak Value = 92.9 dB(C)

The noise of the fastener being installed in structure is considered process noise, not tool noise. Process noise varies greatly from application to application. Sound measurements of simulated process noise are available upon written request from Huck International in Kingston, NY 12401, USA.

Vibration Levels
Model: HS24LH

For an eight hour work day, installing 1000 typical Huck fasteners will result in an equivalent weighted RMS vibration level (Aeq) of .83 m/s².

To calculate the equivalent vibration level for other quantities of fasteners in an eight hour period, use the formula:
Equivalent Vibration Level, Aeq (m/s2) = (n/480) x .4
where n = number of fasteners in eight hours, and .4 (m/s2) = Aeq for 60 seconds.

Test data to support the above information is on file at Huck International, Inc., Kingston, NY, USA. Vibration measurements are frequency weighted in accordance with ISO 8041 (1990).
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](image)

**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.

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 without 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.
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SPECIFICATIONS (HS24LH)

- Stroke: 1.36 in
- Capacity: 22400 lbs @ 7000 psi
- Weight: 20 lbs
- Pull Pressure: 7000 psi
- Return Pressure: 6000 psi
**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 rear of the Tool Piston which moves forward 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 front of the Piston, moving it rearward. The Swaging Anvil then disengages from the Collar. The Air Motor is then activated and rotates the Thimble (counter-clockwise) 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 (FOR 5/8” - 16MM)**

1. Set the Huck POWERIG PULL pressure to 7,000 psi. and RETURN pressure to 6,000 psi.. (Refer to POWERIG instruction manual for setting pressures.)

   **WARNING - Proper PULL and RETURN pressures are important for proper function of Installation Tools. Severe personal injury or damage to equipment may occur without correct pressures. Huck Pressure Gauge P/N T-10280 (old style) or the new T124833 is now available for checking these pressures using instructions furnished with the gauge and in applicable POWERIG® Hydraulic Unit instruction manuals. See Specifications.**

2. Connect the Controller/Manifold to the POWERIG per Controller/Manifold instruction manual.

   **WARNING - Be sure to connect tool hoses to hydraulic unit BEFORE connecting tool electrical switch cord to unit. Hoses and switch must be connected in this order and disconnected in the reverse order to prevent possible severe personal injury.**

3. Connect the tool's electrical, air and hydraulic lines to the Controller/Manifold.

4. Select any tool and fastener in the controller as the HS24 will not appear in the controller’s menu.

5. Change the controller to the following baseline settings and adjust as necessary.

   - **Controller Swage Pressure:** 6,800 psi.
   - **Controller Snub Pressure:** 2,000 psi.

6. Turn on the POWERIG and run the warm-up cycle on the Controller one or two times to remove all air from the tool and hoses.

7. The HS24LH tool comes with a 5/8” - 16mm anvil and thimble installed on tool. *(If these have been removed from the tool re-install at this time)*

8. Test the tool by installing a fastener in washers at the proper grip. Adjust POWERIG and Controller settings as necessary to obtain a properly swaged fastener.
Switches:
The HS24 tool uses two limit switches. Limit switch one (LS-1) senses when the tool's actuator rod first touches the fastener with approximately .275in/7mm of the fastener engaged in the thimble. This will allow the tool to start a "snub" cycle. Limit switch two (LS-2) senses that there is enough of the fastener engaged by the thimble, approximately .500in/12.7mm to completely swage the collar.

Set Up:
To set limit switches, connect the tool to appropriate manifold and controller. Turn on all power except for the hydraulic powering. The "tool connected" light should be the only light illuminated on the controller/manifold.

Setting Limit Switch One:
Screw a fastener approximately .300in/7.5mm into the thimble. Loosen the two screws that lock limit switch one (LS-1) in place. Slide the screws forward or rearward until Limit Switch One (LS-1) just illuminates. If necessary or helpful, move the adjusting screw at the back of the switch housing in or out until the to the appropriate setting is obtained. Tighten the two screws that lock the limit switch.

Setting Limit Switch Two:
Screw a fastener approximately .525in/13.3mm into the thimble. Loosen the two screws that lock limit switch two (LS-2) in place. Slide the screws forward or rearward until the Limit Switch Two (LS-2) just illuminates. If necessary or helpful, move the adjusting screw at the back of the switch housing in or out until the to the appropriate setting is obtained. Tighten the two screws that lock the limit switch.
System Inspection

Operating efficiency of the tool is directly related to the performance of the complete system, including the tool, controller, 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 components for external damage.
- Verify that hydraulic hose fittings 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, controller, 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, replace all seals, wipers and back-up rings in tool and also at regular intervals (depending on severity and length of use). 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 Components Maintenance

This Tool has a integral nose assembly, at regular intervals, as experience shows, inspect thimble and anvil for signs of wear. Replace as necessary.

Controller

The Controller is basically maintenance free. Periodically check all fittings and electrical connections.

Removing Anvil:

Extend the hydraulic piston/anvil approximately, 3/8". Place wrench Huck P/N: 126645 on the piston flats and a 1-11/16" wrench on anvil. Holding the piston, turn anvil to remove.

Removing Thimble:

Remove anvil as previously described. Remove the pipe plug at the back of the switch housing (see figure A). Turn the thimble until the threaded hole for the locking pin is visible through the pipe plug hole. Insert a 3/32" hex key into the threaded hole and remove the thimble locking pin. Remove thimble.

Installing Thimble:

With anvil removed, thread thimble into piston until it bottoms. Thread locking pin in until it bottoms, then back off 1/4 turn. Slowly thread thimble out while simultaneously threading the locking pin in and out until it moves into slot in end of thimble and tighten the locking pin. The thimble should not be threaded out more than 1/4 turn from its bottom position.

Installing Anvil:

With the piston extended 3/8", place wrench (126645) on piston flats, thread anvil into piston and tighten with a 1-11/16" wrench. If necessary loctite #242 may be applied to the anvil threads before installations.
FIGURE 1.
HS24LH TOOL ASSEMBLY DRAWING
FIGURE 2.

126601 SWITCH ASSEMBLY DRAWING
FIGURE 3.
126570 CYLINDER ASSEMBLY DRAWING
FIGURE 4.
126571 PISTON ASSEMBLY DRAWING
FIGURE 5.
126572 END CAP ASSEMBLY DRAWING
FIGURE 6.
126602 HYDRAULIC ASSEMBLY DRAWING
FIGURE 7.
126603 HANDLE/WIRING ASSEMBLY DRAWING
FIGURE 8.
126604 DRIVE ASSEMBLY DRAWING
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.
   e. Controller not turned on.

2. Tool operates in reverse. (Hydraulic Piston)
   a. Reversed hose connections between hydraulic unit and tool.

3. Tool operates in reverse (Air Motor)
   a. Reverse air lines at controller.

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

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

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

7. Collar of fastener not completely swaged.
   a. Improper tool operation - - see No. 6.
   b. Scored anvil.
   c. Rig/controller settings not correct.
   d. Trigger released early.

9. Tool "hangs up" on swaged collar of fastener.
   a. Improper tool operation - - see No. 6.
   b. RETURN pressure too low.

SERVICE AND TOOL KITS

Service Kit - HS24KIT

Piston Wrench - 126645

SERVICE NOTES:
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.

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.
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