EU Declaration of Conformity

Manufacturer:
Huck International Inc., Installation Systems Division, 85 Grand Street, Kingston, NY, 12401, USA

Description of Machinery:
Model number 5901 series of fastener installation tools

 Relevant provisions complied with:

European Representative:
Rob Pattendon, 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: Renno Budziak
Position: Vice President of Engineering, Installation Systems Division
Place: Kingston, New York, USA
Date: November, 1996

Huck Model 5901 Sound Level
SEL --- 103 dB (A)
peak value = 131 dB (C)

For an eight hour work day, installing 400 typical Huck fasteners will result in an equivalent noise level (Leq) of 784.4 dB (A).

To calculate equivalent noise level for other quantities of fasteners in an eight hour period, use the formula:
Leq = SEL + 10 log (n/28,800)
where n = number of fasteners in eight hours.

Huck Model 5901 Vibration Level

For an eight hour work day, installing 400 typical Huck fasteners will result in an equivalent weighted RMS vibration level (Aeq) of 158 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 1.9
where n = number of fasteners in eight hours, and 1.9 (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.

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.

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.
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</tbody>
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DESCRIPTION

GENERAL

Huck Model 5901 Hydraulic Installation Tool (H.I.T.) is designed to install a variety of HUCKBOLT® Fasteners and Huck Blind Fasteners. The tool is designed to operate on 5400-5700 psi (37250-39300 kPa) PULL and 2200-2400 psi (15200-16500 kPa) RETURN pressures as supplied by Huck Hydraulic POWERIG® Models 906, 908, 910, 911, 914, 917 and 940, or equivalent.

The Model 5901 must be equipped with a NOSE ASSEMBLY designed for the installation of a specific fastener. See nose assemblies listed under 5901 in SELECTION CHART, Form 461, for specific fasteners.

Seals and hoses used in the 5901 H.I.T. are compatible with phosphate ester base hydraulic fluids.

Except for nose assembly, each tool is complete with handle, hoses, couplers and control cord ready to be attached to the POWERIG hoses and control cord.

Figure 1 is a sectional view, and Figure 2 is an exploded view of the 5901 Installation Tool.

Each tool is basically a cylinder and piston assembly. An unloading valve, designed to relieve the hydraulic pressure at both ends of the stroke, is positioned by the piston. The end of the piston rod is threaded, and a nose adapter, split ring, sleeve, and retaining ring are included for attaching nose assemblies to tool.

Table 1-SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length (overall)</td>
<td>9.00 in.</td>
</tr>
<tr>
<td></td>
<td>229 mm</td>
</tr>
<tr>
<td>Width (maximum)</td>
<td>3.19 in.</td>
</tr>
<tr>
<td></td>
<td>81 mm</td>
</tr>
<tr>
<td>Height (including handle)</td>
<td>9.86 in.</td>
</tr>
<tr>
<td></td>
<td>250 mm</td>
</tr>
<tr>
<td>Weight</td>
<td>13 lbs.</td>
</tr>
<tr>
<td></td>
<td>5.9 kg</td>
</tr>
<tr>
<td>Stroke</td>
<td>1.25 in.</td>
</tr>
<tr>
<td></td>
<td>32 mm</td>
</tr>
</tbody>
</table>

Fasteners Installed..........See SELECTION CHART, Form 461

Power Source. .............. ...Huck Hydraulic POWERIGS

(1) Lengths and weights do not include nose assemblies.

(2) See SELECTION CHARTS, Form 461, for a complete listing of Fasteners and Nose Assemblies for each tool.

(3) Proper PULL and RETURN pressures are Important for the proper function of the Installation Tool and Nose Assemblies, and for the safety of the operator. A GAUGE SET-UP, P/N T-10206, is available for checking these pressures. Instructions are furnished with T-10206 and in applicable POWERIG Instruction Manuals.
5901 Sectional View
PRINCIPLE OF OPERATION

Refer to Figure 1

When tool hoses and control cord are connected to POWERIG hoses and control cord, PULL and RETURN strokes of tool are controlled by a trigger in the handle. When the trigger is depressed, a solenoid operated valve in the POWERIG directs pressurized hydraulic fluid through the PULL hose to the front side of piston, and allows fluid on the RETURN side to flow back to tank. The piston and nose assembly collet moves rearward causing follower O-rings and/or spring to impart a forward motion to the follower. If tool and nose assembly is in position on a fastener pin and collar, this forward motion causes the jaws to clamp onto pintail of fastener and installation cycle commences. Clamping pressure is applied to the sheets. The anvil is forced forward, swaging the collar into locking grooves of the fastener. When the anvil hits the sheet, continued pull causes the pintail to break off. When the piston reaches the end of its PULL stroke, it uncovers flats on the rear end of the unloading valve. These flats were designed to provide a passage for hydraulic fluid from PULL side to RETURN side of piston, “unloading” or “dumping” the pressurized fluid back to tank. When the trigger is released, the solenoid is de-energized and the valve directs pressurized fluid to rear side of piston and allows fluid on PULL side to flow back to tank. This causes piston and collet to move forward and pushes nose assembly and tool off the swaged (installed) fastener. Nose assembly jaw release contacts jaws, causing them to open and release the broken-off pintail. The pintail drops out the back of the tool. When the piston reaches the end of its RETURN stroke, pressure is built up causing the POWERIG idler valve (except on Model 910, 911 & 940) to go to idling pressure. Idling pressure keeps the tool piston and nose assembly collet, jaws, etc. in the forward position ready for the next installation cycle.

A flat on the front end of the unloading valve was designed to provide a passage for hydraulic fluid from RETURN side of piston to PULL side of piston and back to tank.

WARNING

HUCK RECOMMENDS THAT ONLY HUCK HYDRAULIC POWERIGS BE USED AS THE POWER SOURCE FOR HUCK INSTALLATION EQUIPMENT. HYDRAULIC POWER UNITS THAT DELIVER HIGH PRESSURE FOR BOTH “PULL” AND “RETURN” AND ARE NOT EQUIPPED WITH RELIEF VALVES ARE SPECIFICALLY NOT RECOMMENDED AND MAY BE DANGEROUS.
PREPARATION FOR USE

CAUTION
KEEP DIRT AND OTHER FOREIGN MATTER OUT OF THE HYDRAULIC SYSTEMS OF THE TOOLS, HOSES, COUPLERS AND POWERIG. DO NOT LET HOSE FITTINGS AND COUPLERS CONTACT A DIRTY FLOOR OR UNCLEAN WORKING SURFACE. FOREIGN MATTER IN HYDRAULIC FLUID WILL CAUSE THE TOOL AND POWERIG VALVES TO MALFUNCTION.

POWER SOURCE CONNECTIONS

Coat hose fitting threads with a non-hardening Teflon thread compound such as Slic-tite. (Slic-tite is manufactured by the Markal Co., and is available from Huck in stick form as part number 503237.) DO NOT use Teflon tape on hose fitting threads.

1. Screw PULL pressure hose, with coupler nipple, into port ~ Screw RETURN pressure hose, with coupler body, into port “R”.

2. Use a Huck POWERIC or equivalent that has been prepared for operation per applicable instruction manual. Check both PULL and RETURN pressures and adjust as necessary.

3. Turn POWERIG to “OFF” and couple tool hoses to POWERIG hoses. Be sure that the hoses run from tool port “P” to POWERIG port “PULL PRESSURE” and from tool port “R” to POWERIG port “RETURN PRESSURE”.

4. Connect trigger cord to POWERIG cord.

5. Turn POWERIG to “ON” and depress and release trigger a few times to circulate hydraulic fluid. Observe action of tool. Check for fluid leaks.

6. Attach the proper Nose Assembly to the tool per instructions on the Nose Assembly Data Sheet.

WARNING
DO NOT USE TOOL WITHOUT PINTAIL DEFLECTOR
OPERATING INSTRUCTIONS

CAUTION
REASONABLE CARE OF INSTALLATION TOOLS BY OPERATORS IS AN IMPORTANT FACTOR IN MAINTAINING TOOL EFFICIENCY AND IN REDUCING REPAIR DOWN-TIME. DO NOT ABUSE THE TOOL BY DROPPING IT, USING IT AS A HAMMER OR OTHERWISE CAUSING UNNECESSARY WEAR AND TEAR. BE SURE THERE IS ADEQUATE CLEARANCE FOR THE TOOL AND OPERATOR’S HANDS BEFORE PROCEEDING. DO NOT CONNECT TOOL HOSES TO EACH OTHER AND USE AS A HANDLE FOR CARRYING.

To install HUCKBOLT® Fastener:

1. Check work and remove excessive gap. (Gap is the space between sheets. Gap is excessive if not enough pintail sticks through the collar for the nose assembly jaws to grab onto).

2. Put HUCKBOLT pin in hole.

3. Slide HUCKBOLT collar over pin. (The beveled end of the collar must be towards the nose assembly and tool.)

4. Push nose assembly onto the pin until the nose assembly anvil stops against the collar. Tool and nose assembly must be held at right angles (90°) to the work.

5. Depress tool trigger to start installation cycle.

6. When forward motion of nose assembly anvil stops and pintail breaks off, release trigger. Tool will go into its return stroke, push off installed fastener and release the pintail.

7. The tool and nose assembly is ready for the next installation cycle.

WARNING
BE SURE THERE IS ADEQUATE CLEARANCE FOR THE TOOL AND OPERATOR’S HANDS BEFORE STARTING THE INSTALLATION.

DO NOT PULL ON A PIN WITHOUT A COLLAR. IF A PIN IS PULLED WITHOUT A COLLAR, THE PIN WILL EJECT FORCEFULLY WHEN THE PINTAIL BREAKS OFF.
MAINTENANCE AND REPAIR

PREVENTIVE MAINTENANCE

NOTE
Refer to the applicable section for assembly or disassembly. For supplementary information refer to Troubleshooting Chart and Parts List.

System Inspection

Operating efficiency of the installation tool is directly related to performance of the complete system, including the tool with nose assembly, hydraulic hoses, trigger and control cord, and POWERIG. Therefore, an effective preventive maintenance program includes scheduled inspections of the system to detect and correct minor troubles.

1. Inspect tool and nose for external damage.

2. Verify that hydraulic hose fittings and couplings and electrical connections are secure.

3. Inspect hydraulic hose for signs of damage or aging. Replace hose at six-month to one-year intervals, depending on use.

4. Inspect tool, hose, and POWERIG during operation to detect abnormal heating, leaks, or vibration.

POWERIG Maintenance

Maintenance instructions and repair procedures are in the applicable POWERIG Instruction Manual.

Tool Maintenance

At regular intervals, depending upon use, replace all O-rings and back-up rings in the tool. Spare Parts Kits should be kept on hand. (see Table 4 and SPARE PARTS AND SPARE PARTS KITS). Inspect cylinder bore, piston and piston rod, and unloading valve for scored surfaces, excessive wear or damage, and replace as necessary.

Nose Assembly Maintenance

Daily cleaning of the nose assembly is recommended. This can usually be accomplished by dipping nose assembly in mineral spirits, or other suitable solvent, to clean jaws and wash away metal chips and dirt. If more thorough cleaning or maintenance is necessary, disassemble the nose assembly. Use a sharp pointed “pick” to remove imbedded particles from the pull grooves of the jaws. Reassemble per instructions on the applicable Nose Assembly Data Sheet.
# Troubleshooting

Always check out the simplest possible cause of a malfunction first. For example, a switch turned off or a power cord not connected. Then proceed logically, eliminating each possible cause until the defective circuit or part R located. Where possible, substitute known good parts for suspected bad parts. Use a Troubleshooting Chart as an aid in locating and correcting it.

## Table 2 - Troubleshooting Chart

<table>
<thead>
<tr>
<th>Trouble</th>
<th>Probable Cause</th>
<th>Corrective Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Tool fails to operate.</td>
<td>Inoperative POWERIG.</td>
<td>Check power source to POWERIG. See applicable POWERIG instruction manual.</td>
</tr>
<tr>
<td></td>
<td>Loose or disconnected control cord.</td>
<td>Check and tighten securely.</td>
</tr>
<tr>
<td></td>
<td>Defective trigger assembly.</td>
<td>Replace trigger assembly.</td>
</tr>
<tr>
<td></td>
<td>Loose or faulty hydraulic hose couplings.</td>
<td>Check and tighten securely or replace faulty couplings.</td>
</tr>
<tr>
<td>B. Tool operates in reverse; stops in back position.</td>
<td>Reversed hydraulic hose connections between POWERIG and Tool.</td>
<td>Check and correct hoses connections.</td>
</tr>
<tr>
<td>C. Tool leaks hydraulic oil.</td>
<td>Depending on where leak occurs, defective or worn O-rings, loose hydraulic hose connection at tool.</td>
<td>Check and replace o-rings and back-up rings, or tighten threaded connectors of hydraulic hose.</td>
</tr>
<tr>
<td></td>
<td>Restriction on hydraulic line.</td>
<td>Check and tighten securely, or replace faulty couplings.</td>
</tr>
<tr>
<td></td>
<td>Hydraulic couplers not completely tightened.</td>
<td>Tighten hydraulic couplers.</td>
</tr>
</tbody>
</table>
# TROUBLESHOOTING (CONT.)

<table>
<thead>
<tr>
<th>TROUBLE</th>
<th>PROBABLE CAUSE</th>
<th>CORRECTIVE ACTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>E. Tool operates erratically and fails to install fastener properly.</td>
<td>Low or erratic hydraulic pressure supply.</td>
<td>See POWERIG instruction manual.</td>
</tr>
<tr>
<td></td>
<td>Defective or excessively worn piston O-ring in Tool.</td>
<td>Replace O-ring and back-up ring.</td>
</tr>
<tr>
<td></td>
<td>Excessive wear or scoring of sliding surfaces of Tool parts.</td>
<td>Check and replace defective part.</td>
</tr>
<tr>
<td></td>
<td>Solenoid pin too short—worn or peened over.</td>
<td>Replace solenoid pin.</td>
</tr>
<tr>
<td>F. Pull grooves on fastener pintail stripped during pull stroke.</td>
<td>Operator not sliding nose completely onto fastener pintail.</td>
<td>Instruct operator in proper installation methods.</td>
</tr>
<tr>
<td></td>
<td>Incorrect fastener length.</td>
<td>Use correct length fastener.</td>
</tr>
<tr>
<td></td>
<td>Worn or damaged jaw segments.</td>
<td>Check and replace jaw set.</td>
</tr>
<tr>
<td></td>
<td>Metal chips accumulated in pull grooves of jaw segments.</td>
<td>Clean jaw segments.</td>
</tr>
<tr>
<td></td>
<td>Excessive sheet gap.</td>
<td>Eliminate excessive gap.</td>
</tr>
<tr>
<td>G. Collar of HUCKBOLT Fastener not completely swaged.</td>
<td>Improper Tool operation.</td>
<td>See Trouble E.</td>
</tr>
<tr>
<td></td>
<td>Scored anvil in nose.</td>
<td>Check and replace anvil.</td>
</tr>
<tr>
<td>TROUBLE</td>
<td>PROBABLE CAUSE</td>
<td>CORRECTIVE ACTION</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>----------------------------------------</td>
<td>--------------------------------------------------------</td>
</tr>
<tr>
<td>H. Tool “hangs-up” on swaged collar HUCKBOLT Fastener.</td>
<td>Improper tool operation.</td>
<td>See Trouble E.</td>
</tr>
<tr>
<td>I. Pintail of fastener fails to break. Improper tool operation</td>
<td>Improper tool operation.</td>
<td>See Trouble E.</td>
</tr>
<tr>
<td></td>
<td>Pull grooves on fastener stripped.</td>
<td>See Trouble F.</td>
</tr>
<tr>
<td>J. Jaw segments do not maintain proper position in collet.</td>
<td>Improper operation of jaw follower.</td>
<td>Check spring and install correct number of follower O-rings. Clean before reassembling.</td>
</tr>
<tr>
<td>K. Operator cannot slide nose assembly completely onto fastener pintail.</td>
<td>Broken pintails jammed in tool.</td>
<td>Install pintail tube if broken pintail will pass thru tube.</td>
</tr>
</tbody>
</table>
**DISASSEMBLY AND ASSEMBLY**

**GENERAL**

During disassembly and assembly, take the following precautions to avoid damaging tool or components:

(a) Always work on a clean surface.

(b) Use relatively soft materials, such as brass, aluminum or wood, to protect tool when applying pressure.

(c) Apply a continuous strong pressure, rather than sharp blows, to disassemble or assemble a component. An arbor press provides steady pressure to press a component in or out.

(d) Never continue to force a component if it “hangs-up” due to misalignment. Reverse the procedure to correct misalignment and start over.

(e) Smear Lubriplate™ 130AA, or equivalent, on O-rings and mating surfaces to aid assembly and prevent damage to O-rings. (Lubriplate is manufactured by Fiske Brothers Refining Co. and is available in most localities. A handy tube of Lubriplate 130AA is available from Huck as part number 502723).

(f) Coat hose fitting threads with a nonhardening Teflon™ thread compound such as Slic-tite.™ (Slic-tite is manufactured by the Markal Co., and is available from Huck in stick form as part number 503237.) DO NOT USE TEFLON TAPE ON HOSE FITTING THREDS.

**DISASSEMBLY AND ASSEMBLY TOOLS**

Standard hand tools such as wrenches, drifts, copper or lead hammers, screwdrivers, socket screw hexagon keys, long forceps (tweezers), etc. which can be purchased at most local supply firms are required. If possible, an arbor press and vise with soft jaws should be available. Standard tools available from Huck are shown in Table 3.

For component identification, refer to Figure 2, Exploded View and Table 4, Parts List. Numbers in parenthesis ( ) are reference numbers shown in Figure 2.

The following procedure is for complete disassembly. Disassemble only components necessary to check and replace damaged O-ring, back-up ring, or other component.

---

**Table 3-STANDARD TOOLS AVAILABLE FROM HUCK AND THEIR USE**

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Used on</th>
</tr>
</thead>
<tbody>
<tr>
<td>502294</td>
<td>Hex Key, 1/8 across flats</td>
<td>2-3</td>
</tr>
<tr>
<td>502295</td>
<td>Hex Kay, 5/32 across flats</td>
<td>2-32</td>
</tr>
<tr>
<td>502867</td>
<td>Truarc Pliers, Waldes Kohinoor, Inc. #0600</td>
<td>2-4</td>
</tr>
<tr>
<td>502443</td>
<td>Hex Kay, 1/16 across flats</td>
<td>2-30</td>
</tr>
<tr>
<td>502653</td>
<td>Hex Key, 7/64 across flats</td>
<td>2-21</td>
</tr>
</tbody>
</table>

---

**WARNING**

Be sure POWERIG is turned OFF before removing tool or nose assembly for cleaning, or for replacing worn or damaged components.
DISASSEMBLY AND ASSEMBLY (CONT.)

DISASSEMBLY

1. Uncouple tool hydraulic hoses, and disconnect electrical control cord.

2. Unscrew Coupler Nipple (37) and Coupler Body (38), and drain hoses into a clean container.

3. Push rearward on Piston (10) until hydraulic fluid is drained from tool into container, loading Valve (18) from piston.

4. Remove Clamp (22) and Deflector (23) from piston extension. Push piston to front of cylinder.

5. Remove Sleeve (25) and Split Ring (26); or Retaining Ring (27), Sleeve (28) and Split Ring (29). Remove Retaining Ring (4).

6. Remove Socket Head Cap Screw (21) and Lock Washer (20) from Locking Ring (24). Remove locking ring with a spanner wrench.

7. Push rearward on Piston (10) until Cylinder Cap (13) with Locator (19) slides out of Cylinder (2).

8. Push rearward on Adapter (5), and piston and adapter will slide from cylinder.

9. Push piston out of adapter, and remove Unloading Valve (18) from piston.

10. Remove Pintail Tube (1), if used, from piston.

11. Use a small diameter, dull-pointed rod to remove O-rings and back-up rings from all components.

12. Remove Socket Head Cap Screw (32) from Handle Assembly (31).

13. Remove two Button Head Cap Screws (3) from one-half of handle and cylinder.

14. Separate handle halves, and lift out assembled Switch (30), electrical cord, Grommet (33) and Connector (35).

15. Remove remaining button head cap screws and handle half. Remove both Hydraulic Hoses (36) from cylinder.

16. Loosen two screws at rear of switch to remove switch from Electrical Cord (34). Remove two #6-32 socket set screws to disassemble switch for cleaning. Loosen strain relief grommet, and pull from cord.

17. Disassemble electrical connector to replace connector, or to rewire.

ASSEMBLY

Before assembling tool:

(a) Clean components in mineral spirits, or other solvent compatible with O-ring seals.

(b) Clean out O-ring grooves.

(c) Inspect components for scoring, excessive wear or damage.

(d) Replace O-rings and back-up rings. Be sure that relative positions of the O-rings and back-up rings are as shown in Figure 1 and Figure 2. Specifications for O-rings, back-up rings and other standard components are given in Table 4 and Table 4 NOTES.

(e) Smear Lubriplate 130AA on O-rings and mating surfaces to prevent damage to O-rings and to aid assembly.

1. Assemble Electrical Control Cord (34) to plug of electrical Connector (35).

2. Push cord thru Grommet (33), and attach to Switch (30).

3. Screw both Hoses (36) into Cylinder (1).

4. Loosely attach handle half by turning two Button Head Cap Screws (3) into cylinder.
DISASSEMBLY AND ASSEMBLY (CONT.)

5. Place assembled switch, electrical cord, strain relief bushing and electrical connector into handle recesses. Loosely attach other handle half. Partially turn Socket Head Cap Screw (32) into handle halves. Evenly tighten five cap screws to 50 in. lbs. torque if plated, and 70 in. lbs. if unplated, while holding assembled components in position.

6. Push Adapter (5) and O-ring assembly into cylinder.

7. Install Retaining Ring (4) into groove in adapter.

8. Push Piston (10) and O-ring assembly into assembled cylinder and adapter.

9. Slide Unloading Valve (18) into hole thru piston. BE SURE UNLOADING VALVE IS ASSEMBLED WITH FOUR FLATS TO THE REAR AS SHOWN.

10. Align locator groove in Cylinder Cap (13) with groove in cylinder. Push cylinder cap and O-ring assembly over piston extension and into cylinder.

11. Place Locator (19) in matching grooves of cylinder and cap.

12. Install and tighten Locking Ring (24). Back ring out 1/4 turn or less until Socket Head Cap Screw (21) with Lock Washer (2) can be installed in one of the four locking ring slots. Push piston to rear of cylinder.

13. Place Clamp (22) over Deflector (23). Push assembled deflector and damp over piston extension. Attach deflector to piston damp.

14. Screw Coupler Nipple (37) onto hose in port P and Coupler Body (38) onto hose in port R.

15. Slide Pintail Tube (1) into piston if required per applicable Nose Assembly Data Sheet.

16. Attach nose assembly to tool following applicable Nose Assembly Data Sheet. Use Split Ring Group called for on data sheet to hold nose assembly on tool.

SPARE PARTS AND SPARE PARTS KITS

The quantity of spare parts that should be kept on hand varies with application and number of tools in service. However, spare parts kits containing perishable parts such as O-rings, back-up rings, etc., should be kept on hand at all times. Parts included in Spare Parts Kit 111038 are indicated by asterisks (*) in PARTS LIST - Table 4.
Revised Assembly Drawing
<table>
<thead>
<tr>
<th>PART NO.</th>
<th>REF. NO.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>5901</td>
<td>Hydraulic Installation Tool</td>
</tr>
<tr>
<td>2</td>
<td>110745</td>
<td>Tube-Plug</td>
</tr>
<tr>
<td>3</td>
<td>111417</td>
<td>Cylinder (includes 3)</td>
</tr>
<tr>
<td>4</td>
<td>505224</td>
<td>Screw-But-Hd. Cap—#10-32 X 7/8 long</td>
</tr>
<tr>
<td>5</td>
<td>105106</td>
<td>Retaining Ring—Trucam 5100-225</td>
</tr>
<tr>
<td>6</td>
<td>501153</td>
<td>Adapter-Nose (includes 6, 7, 8, 9)</td>
</tr>
<tr>
<td>7</td>
<td>504489</td>
<td>Back-up Ring—S-1124-226</td>
</tr>
<tr>
<td>8</td>
<td>501143</td>
<td>Back-up Ring—S-1124-216</td>
</tr>
<tr>
<td>9</td>
<td>504479</td>
<td>Back-up Ring—S-1124-330</td>
</tr>
<tr>
<td>10</td>
<td>110752</td>
<td>Piston (includes 11 &amp; 12)</td>
</tr>
<tr>
<td>11</td>
<td>504526</td>
<td>O-Ring—AS 568-228</td>
</tr>
<tr>
<td>12</td>
<td>502855</td>
<td>O-Ring—AS 568-216</td>
</tr>
<tr>
<td>13</td>
<td>110753</td>
<td>O-Ring—AS 568-228</td>
</tr>
<tr>
<td>14</td>
<td>504491</td>
<td>Back-up Ring—S-1124-330</td>
</tr>
<tr>
<td>15</td>
<td>501153</td>
<td>Back-up Ring—S-1124-216</td>
</tr>
<tr>
<td>16</td>
<td>504433</td>
<td>Back-up Ring—S-1124-116</td>
</tr>
<tr>
<td>17</td>
<td>105107</td>
<td>Valve-Unloading</td>
</tr>
<tr>
<td>18</td>
<td>105110</td>
<td>Locator</td>
</tr>
<tr>
<td>19</td>
<td>502845</td>
<td>Lock Washer</td>
</tr>
<tr>
<td>20</td>
<td>501199</td>
<td>Screw-Hd. Cap #6-32 X 3/8 long</td>
</tr>
</tbody>
</table>
1. All part numbers shown are available from Huck for replacements.

2. Part numbers in the 500000 series are standard parts which generally can be purchased locally.

3. Asterisks (*) Indicate parts in Spare Parts Kit, Part Number 111038.

4. O-ring sizes are specified as AS 568 dash numbers. (AS 568 is an AERO SPACE SIZE STANDARD FOR O-RINGS and formerly was known as ARP.)

5. Material for O-rings is VITON (Parker Seal Co. compound V747-75 or equivalent) 75 durometer.

6. Back-up rings are W.S. Shamban & Co. series 5-11248, single turn TEFLON (MS-28774) or equivalent. The dash numbers correspond to the O-ring AS 568 dash numbers.
Subject: Pintail Deflector Modification Model 5901 and A5901 Hydraulic Installation tools

Huck Model 5901 and A5901 Installation Tools have been redesigned to incorporate a new method for attaching the pintail deflector to the tool. This change eliminates the use of a clamp to retain the deflector on the piston. The Deflector is now held in place by a retainer located at the rear of the tool (refer to drawing for details). Assembly group part number 119324, is available—new group has a new deflector and retainer to update the older tools.
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.

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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.

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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.

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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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Tucson, AZ 85714
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520-747-9898
FAX: 520-748-2142

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

Far East

Alcoa Fastening Systems
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Australia Operations
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Rowville, Victoria
Australia 3178
03-764-5500
Toll Free: 008-335-030
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FAX: 01952-290459

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France
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