NOTICE

THIS MANUAL IS SPECIFICALLY FOR MODEL 25900 HYDRAULIC INSTALLATION TOOL, SERIAL NUMBER 0551 AND UP. IT IS ALSO APPLICABLE TO EARLIER MODELS FOR REPLACEMENT PARTS, MAINTENANCE, TROUBLE-SHOOTING, ETC.

PLEASE READ THIS MANUAL CAREFULLY. IF YOU NEED FURTHER ASSISTANCE, PLEASE CONTACT YOUR HUCK REPRESENTATIVE OR THE NEAREST HUCK OFFICE LISTED ON THE BACK COVER.
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DESCRIPTION

GENERAL

Huck Model 25900 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 PULL and 2200-2400 RETURN pressures as supplied by Huck Hydraulic POWERIGS® Models 906, 908, 910, 911, 914, 917 and 940 or equivalent.

The tool consists of two main sub-assemblies. See Figure 2.
2. Cylinder and Piston Assembly, P/N 5900.

The Model 25900 must be equipped with a NOSE ASSEMBLY designed for the installation of a specific fastener. See nose assemblies listed under 5900 in SELECTION CHART, Form 461, for specific fasteners.

Seals and hoses used in the 25900 H.I.T. are compatible with phosphate ester base hydraulic fluids.

Table 1 - SPECIFICATIONS

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</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>3.25 in.</td>
</tr>
<tr>
<td></td>
<td>83 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>
<tr>
<td>Fasteners Installed</td>
<td>See SELECTION CHART, Form 461</td>
</tr>
<tr>
<td>Power Source</td>
<td>Huck Hydraulic POWERIGS</td>
</tr>
</tbody>
</table>

(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.
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 2 is an exploded view of the Model 25900 H.I.T. showing the arrangement of the two main sub-assemblies; (1) The 20000 Handle Assembly (2) The basic 5900 Installation Tool.

Figure 1 is a sectional view, and Figure 4 is an exploded view of the 5900 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.

Figure 3 is an exploded view of the 20000 Handle Assembly. The handle assembly consists of a handle, shield, trigger, cord assembly, hose assembly with female coupler, and hose assembly with male coupler.
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 pressured 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.

CAUTION

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 handle port “P.” Screw RETURN pressure hose, with coupler body, into handle port “R.”

2. Use a Huck POWERIG 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.

CAUTION

DO NOT USE TOOL WITHOUT PINTAIL DEFLECTOR
OPERATING INSTRUCTIONS

CAUTION

REASONABLE CARE OF INSTALLATION TOOLS BY OPERATORS IS AN IMPORTANT FACTOR IN MAINTAINING TOOLS 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.

CAUTION

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

PREVENTIVE MAINTENANCE

NOTE
Refer to the applicable section of the 25900, 20000 or 5900 for assembly or disassembly. For supplementary information refer to Troubleshooting Chart and Parts Lists.

POWERIG Maintenance

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

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.

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 is located. Where possible, substitute known good parts for suspected bad parts. Use a Troubleshooting Chart as an aid in locating and correcting it.

<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 POWERING.</td>
<td>Check power source to POWERING. See applicable POWERING 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 POWERING 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 or handle screws.</td>
<td>Check and replace O-rings and back-up rings, or tighten threaded connectors of hydraulic hose and handle screws.</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>
<tr>
<td>TROUBLE</td>
<td>PROBABLE CAUSE</td>
<td>CORRECTIVE ACTION</td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------</td>
<td>-----------------------------------------------</td>
</tr>
<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 &quot;hangs-up&quot; on swaged collar HUCK-BOLT Fastener.</td>
<td>Improper tool operation.</td>
<td>See Trouble E.</td>
</tr>
<tr>
<td>I. Pintail of fastener fails to break.</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 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.

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.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Used on</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Fig. and Ref. No.</td>
</tr>
<tr>
<td>502296</td>
<td>Hex Key, 3/16 across flats</td>
<td>3-1</td>
</tr>
<tr>
<td>502293</td>
<td>Hex Key, 3/32 across flats</td>
<td>3-5</td>
</tr>
<tr>
<td>502867</td>
<td>Triarc Pliers, Waldes Kohinoor, Inc. #0600</td>
<td>4-4</td>
</tr>
<tr>
<td>502443</td>
<td>Hex Key, 1/16 across flats</td>
<td>3-2</td>
</tr>
<tr>
<td>502653</td>
<td>Hex Key, 7/64 across flats</td>
<td>4-20</td>
</tr>
</tbody>
</table>
MODEL 25900 INSTALLATION TOOL

For component identification, refer to Figure 2, Exploded View of Handle Assembly and Tool Assembly.

The following procedure is for the 5900 Tool and 20000 Handle disassembly. Disassemble the tool and handle sub-assemblies if O-rings require replacement. O-rings are available separately and in Spare Parts Kit.

NOTE
Be sure POWERIG is turned OFF before removing tool or nose assembly for cleaning, or for replacing worn or damaged components.

DISASSEMBLY

1. Uncouple tool hoses and disconnect control cord.

2. Remove four Socket Head Cap Screws and separate Handle Assembly from Cylinder Assembly. Drain hydraulic fluid.

3. Remove two O-rings used between Handle and Cylinder.

ASSEMBLY

Before assembling, clean out O-ring grooves and mating surfaces with mineral spirits or other solvent compatible with O-ring seals. Inspect for damage and wear.

1. Place two O-rings in pockets of cylinder.

2. Place handle assembly holes in alignment with cylinder holes and fasten together using four Socket Head Cap Screws. Tighten screws to 135 inch pounds torque if screws are plated, and 180 inch pounds if unplated. THESE SCREWS MUST BE KEPT TIGHT.

3. Connect tool hoses and control cord to POWERIG hoses and control cord. Cycle tool a few times while observing action and checking for leaks.
MODEL 20000 HANDLE ASSEMBLY

For component identification, refer to Figure 3, Exploded View and Table 4, Parts List. Numbers in parenthesis ( ) are reference numbers shown in Figure 3.

The following procedure is for a complete disassembly. Disassemble only the components necessary to check and replace a damaged switch, hose assembly or other component.

NOTE

Be sure POWERIG is turned OFF before removing tool or nose assembly for cleaning, or for replacing worn or damaged components.

DISASSEMBLY

1. Uncouple tool hoses and disconnect control cord.

2. Remove both Hydraulic Hose Assemblies (6) from Handle (4). Remove Coupler Body (9) and Coupler Nipple (10) from hoses.

3. To remove Trigger (2) or Control Cord (7), loosen knurled nut on Cord Grip (8) and slide Grommet (14) down cord. Remove Set Screw (5) and pull trigger out of Handle (4). Loosen two set screws at rear of trigger to remove from cord. Remove two #6-32 socket set screws to disassemble the trigger for cleaning. Pull cord from handle.

4. Loosen two screws in electrical Connector (13) to disassemble for replacing or wiring.

5. Loosen four Screw (11) in Shield (12) and pull away from handle.

ASSEMBLY

Before assembling, clean out O-ring grooves and mating surfaces with mineral spirits or other solvent compatible with O-ring seals. Inspect all components for excessive wear or damage.

1. Place Shield (12) over Handle (4) and hold in place while tightening four Screws (11).

2. Assemble Control Cord (7) with plug of electrical Connector (13) and Trigger (2) as follows:
   a. Unscrew knurled nut on Cord Grip (8), and slide Grommet (14) over cord.
   b. Feed end of cord into handle, and pull ends of each conductor out of trigger pocket.
   c. Attach cord to trigger.
   d. Push trigger into handle and tighten Set Screw (5).
   e. Slide grommet into cord grip and tighten knurled nut.
   f. Assemble electrical plug to other end of control cord.

3. Attach Coupler Body (9) and Coupler Nipple (10) to hoses. Attach both Hydraulic Hose Assemblies (6) to Handle (4).

4. Connect tool hoses and control cord to POWERIG hoses and control cord. Cycle tool a few times while observing action and checking for leaks.
## Table 4—PARTS LIST

<table>
<thead>
<tr>
<th>REF. NO.</th>
<th>PART NO.</th>
<th>NO. REQ.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>--</td>
<td>20000</td>
<td>1</td>
<td>Hydraulic Handle Assembly</td>
</tr>
<tr>
<td>1</td>
<td>501278</td>
<td>4</td>
<td>Screw-Soc. Hd. Cap—1/4-28 X 3/4 long</td>
</tr>
<tr>
<td>2</td>
<td>103944</td>
<td>1</td>
<td>Trigger</td>
</tr>
<tr>
<td>3*</td>
<td>504407</td>
<td>2</td>
<td>O-ring—AS 568-011</td>
</tr>
<tr>
<td>4</td>
<td>110420</td>
<td>1</td>
<td>Handle (includes 11 and 12)</td>
</tr>
<tr>
<td>5</td>
<td>501625</td>
<td>1</td>
<td>Screw-Cup Pt. Set—#10-24 X 1/4</td>
</tr>
<tr>
<td>6</td>
<td>110939</td>
<td>2</td>
<td>Hose-Hydraulic</td>
</tr>
<tr>
<td>7</td>
<td>110940</td>
<td>1</td>
<td>Control Cord Assembly (includes 13)</td>
</tr>
<tr>
<td>8</td>
<td>104721</td>
<td>1</td>
<td>Cord Grip (includes 14)</td>
</tr>
<tr>
<td>--</td>
<td>110440</td>
<td>1</td>
<td>Coupler Set (includes 9 and 10)</td>
</tr>
<tr>
<td>9</td>
<td>-------</td>
<td>1</td>
<td>Body (Female)</td>
</tr>
<tr>
<td>--</td>
<td>50438</td>
<td>1</td>
<td>O-ring—AS 568-111 (included in 9)</td>
</tr>
<tr>
<td>--</td>
<td>501102</td>
<td>1</td>
<td>Back-up Ring—S-11248-111 (included in 9)</td>
</tr>
<tr>
<td>10</td>
<td>-------</td>
<td>1</td>
<td>Nipple (Male)</td>
</tr>
<tr>
<td>11</td>
<td>500269</td>
<td>4</td>
<td>Screw-Pan Hd. S.T.—#10-32 X 1/2</td>
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<tr>
<td>12</td>
<td>110277</td>
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<td>Shield (includes 11)</td>
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<td>13</td>
<td>110835</td>
<td>1</td>
<td>Connector Assembly</td>
</tr>
<tr>
<td>14</td>
<td>104619</td>
<td>1</td>
<td>Grommet</td>
</tr>
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</table>

### NOTES

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.

4. O-ring sizes are specified as AS 568 dash numbers. (AS 568 is an AEROSPACE 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 S-11248, single turn TEFOLON (MS-28774) or equivalent. The dash numbers correspond to the O-ring AS 568 dash numbers.
MODEL 5900 INSTALLATION TOOL

For component identification, refer to Figure 4, Exploded View and Table 5, Parts List. Numbers in parenthesis ( ) are reference numbers shown in Figure 4.

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

NOTE
Be sure POWERIG is turned OFF before removing tool or nose assembly for cleaning, or for replacing worn or damaged components.

DISASSEMBLY

1. Uncouple tool hoses and disconnect control cord.

2. Remove Sleeve (24) and Split Ring (25); or Retaining Ring (26), Sleeve (27) and Split Ring (28). Remove Retaining Ring (4).

NOTE
If handle assembly is not removed, unscrew hydraulic couplers and drain hydraulic fluid.

3. Remove Socket Cap Screw (21) and Lock Washer (20) from Locking Ring (2). Remove locking ring with a spanner wrench.

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

5. Remove Clamp (22) and Deflector (23) from piston.

6. Slide cylinder cap from piston extension.

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

8. Push piston out of adapter and remove Relief Valve (18) from piston.

9. Remove Pintail Tube (29), if used, from piston.

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

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 Figures 1 and 4. Specifications for O-rings, back-up rings and other standard components are given in Table 5 and NOTES.

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

1. Push Adapter (5) and O-ring assembly into Cylinder (1).

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

3. Push piston and O-ring assembly into assembled cylinder and adapter.

4. Slide Unloading Valve (18) into hole thru Piston (10). BE SURE UNLOADING VALVE IS ASSEMBLED WITH FOUR FLATS TO THE REAR AS SHOWN.
5. Align cylinder Locator (19) groove with Cylinder Cap (13) groove. Push cylinder cap and O-ring assembly over piston extension and into cylinder.

6. Place locator in matching grooves of cylinder and cap.

7. Install Locking Ring (2). Back ring out 1/4 turn or less until Washer (20) and Screw (21) can be installed in one of the four locking ring holes. Push piston to rear of cylinder.

8. Place Clamp (22) over Deflector (23). Push assembled deflector and clamp over extended piston. Attach deflector to piston with clamp.

9. Slide Pintail Tube (29) into piston if required per applicable Nose Assembly Data Sheet.

10. 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.

PARTS AND SPARE PARTS KITS

The quantity of spare parts that should be kept on hand varies with the 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 include in Spare Parts Kit 111038 are indicated by asterisks (*) in PARTS LIST - Table 5.

NOTES

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 AEROSPACE 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 S-11248, single turn TEFLOK (MS-28774) or equivalent. The dash numbers correspond to the O-ring AS 568 dash numbers.

7. Components of the earlier design, except for the pistons, are available for replacement. If a replacement piston is needed, order Retrofit Kit 110751 (includes ref. nos. 10, 13, 22, 23 and 29).
<table>
<thead>
<tr>
<th>REF. NO.</th>
<th>PART NO.</th>
<th>NO. REQ.</th>
<th>DESCRIPTION</th>
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</thead>
<tbody>
<tr>
<td>17*</td>
<td>501107</td>
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<td>Back-up Ring—S-11248-116</td>
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<td>18</td>
<td>105110</td>
<td>1</td>
<td>Valve-Unloading</td>
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<tr>
<td>19</td>
<td>110196</td>
<td>1</td>
<td>Locator</td>
</tr>
<tr>
<td>20</td>
<td>502845</td>
<td>1</td>
<td>Lock Washer</td>
</tr>
<tr>
<td>21</td>
<td>501199</td>
<td>1</td>
<td>Screw - Soc. Hd. Cap #6-32 X 3/8 long</td>
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<tr>
<td>22</td>
<td>504701</td>
<td>1</td>
<td>Clamp - Hose</td>
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<tr>
<td>23</td>
<td>110691</td>
<td>1</td>
<td>Deflector - Pintail</td>
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<tr>
<td>24</td>
<td>100456</td>
<td>1</td>
<td>Split Ring Group (includes 24 &amp; 25)</td>
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<td>25</td>
<td>100455</td>
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<td>Split Ring Set</td>
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<tr>
<td>26</td>
<td>501514</td>
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<td>Retaining Ring—RST 200</td>
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<td>27</td>
<td>102148</td>
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<td>Sleeve-Retaining</td>
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<td>28</td>
<td>102147</td>
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<td>29</td>
<td>110745</td>
<td>1</td>
<td>Tube-Pintail</td>
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<td>5000</td>
<td>1</td>
<td>Cylinder (includes 1, 2 &amp; 3)</td>
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<td>2</td>
<td>105104</td>
<td>1</td>
<td>Locking Ring</td>
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<td>504407</td>
<td>2</td>
<td>O-ring—AS 568-011</td>
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<td>4</td>
<td>501027</td>
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<td>Retaining Ring—Truarc 5100-225</td>
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<td>5</td>
<td>105106</td>
<td>1</td>
<td>Adapter-Nose (includes 6, 7, 8 &amp; 9)</td>
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<td>6*</td>
<td>501153</td>
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<td>Back-up Ring—S-11248-226</td>
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<td>7*</td>
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<td>10</td>
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<td>Piston (includes 11 &amp; 12)</td>
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<td>504524</td>
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<td>Cap-Cylinder (includes 14, 15, 16 &amp; 17)</td>
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<td>16*</td>
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<td>O-ring—AS 568-116</td>
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