An important notice:

Please read and understand any WARNING and Caution stickers/labels supplied with equipment before connecting equipment to any primary power supply - - as applicable the following sections each have specific safety, and other, information:

- **WARNINGS** and **CAUTIONS**
- **DESCRIPTION**
- **SPECIFICATIONS**
- **PRINCIPAL OF OPERATION**
- **PREPARATION FOR USE**
- **PREVENTIVE MAINTENANCE**
- **OPERATION AND TOOL HANDLING**

As applicable, the disassembly and assembly sections contain specific overhaul and safety procedures.

Only persons who have read and understood all applicable manuals or received training approved by Huck International, Inc. can use Huck equipment with personal safety and efficiency.

If you require additional information, contact your local Huck representative or the nearest office listed on the back cover. For a quick response call any time during business hours.

**WARNINGS**

When operating Huck installation equipment, always wear approved eye protection.

Disconnect primary power source before doing ANY maintenance on POWERIG® Hydraulic Unit. DO NOT connect any equipment to primary power supplies, that shows signs of damage or leakage - - and do not continue to use equipment that develops erratic symptoms. If there is damage, or other discrepancies, the tool may have parts that are violently expelled and strike the operator causing severe personal injury. Ensure that **ALL** air and/or hydraulic hose and/or electrical plugs/connectors are correctly connected before switching on power supply to equipment. If incorrectly connected, the tool may respond erratically and cause a severe hand, or other, injury.

**SAFETY GLOSSARY**

**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.

*Italic type and underlining strengthens a specific instruction.*
Contents

Description ................................................. 1
Specifications ............................................. 1
Principle of Operation .................................... 2
Preparation for Use ....................................... 2
Operating Instructions .................................... 4
Maintenance .................................................. 6
  Good Service Practices ................................ 6
  Preventive Maintenance .................................. 6
Troubleshooting ........................................... 8
Spare Parts and Service Parts Kit ....................... 9
Disassembly .................................................. 10
Assembly ..................................................... 11
Notes ......................................................... 19

Parts List
  Model 209 Tool .......................................... 15

Illustrations

Figure
  1. Outline Dimensions ................................... 1
  2. Sectional View ....................................... 14
  3. Hydraulic Coupling Assembly ......................... 16
  4. Electric Switch Kit .................................. 17
  5. Air Trigger Kit ....................................... 17
  6. Exploded View of Trigger ............................ 18

Tables
  1. Standard Tools ....................................... 5
  2. Parts List ............................................. 15
Description

Huck Model 209 and A209 Hydraulic Installation Tools are compactly designed with an offset front end for installing fasteners in limited clearance applications. The tool, with proper nose assembly, installs a wide range of Huck Blind Fasteners and HUCKBOLT® Fasteners - a separate nose assembly is ordered for each size and type fastener. Fasteners installed include aluminum, steel and titanium up to and including 1/4 inch.

Huck Hydraulic Installation Tools are designed to be powered by Huck POWERIG Hydraulic Units. This tool is designed to operate on 5400 psi (37230 kPa) PULL pressure and 2800 psi (19300 kPa) RETURN pressure. Hydraulic units must be reset per applicable instruction manuals to supply these pressures.

Model 209 has an electric switch for POWERIG Hydraulic Unit Models 917, 917-5, 940, 941 and 950.

Model A209 has an air trigger for POWERIG Hydraulic Unit Model 942 and Model 970-3.

The tool is a movable collet holder and stationary anvil holder. Collet holder and anvil holder are threaded for attaching nose assemblies to tool. Except for nose assembly, each tool is complete with 12 feet of hydraulic hoses and couplings, electric switch and cord (209) or air trigger and tubing (A209). The tool, excluding hoses weighs 6.5 lbs. (3kg).

Figure 1. Outline Dimensions
Principle of Operation

Tool hoses, and electrical cord or air tubing are connected to POWERIG® Hydraulic Unit. The auxiliary switch or the trigger controls PULL and RETURN strokes of tool. The tool -- basically a stationary anvil holder and movable collet holder -- is operated by depressing the switch or the trigger. Hydraulic pressure on PULL side of collet/piston pushes it rearward. Collet moves; anvil remains stationary -- fastener is installed.

At end of PULL stroke, collet/piston uncovers flats of unloading valve. Uncovered flats unload pressure by allowing fluid to flow back to hydraulic unit. Switch/trigger is released and collet/piston moves into the RETURN stroke.

Preparation for Use
(See Good Services Practices)

Rub SLIC-TITE TEFLON thread compound, or equivalent, on pipe threads to aid assembly and sealing. DO NOT USE TEFLON TAPE ON PIPE THREADS. Pipe threads may cause tape to shred resulting in tool malfunction. (SLIC-TITE is available in stick form as part number 503237, from Huck Manufacturing Co.)

Checking and Adjusting Output Pressures

POWERIG Hydraulic Unit MUST BE CHECKED AND ADJUSTED at first time start-up, after overhauling the unit and when troubleshooting. Pressure Checking Gauge Set-up No. T-10280 is available for this purpose. HUCK RECOMMENDS THAT THIS GAUGE SET-UP BE AVAILABLE TO PERSONNEL SERVICING ANY HUCK POWERIG Hydraulic Unit. See T-10280 instructions for proper hydraulic pressure checking procedures for each model POWERIG Hydraulic Unit. Follow instructions in applicable POWERIG Hydraulic Unit instruction manual for adjusting PULL and RETURN pressures. Set PULL pressure at 5400 psi (37230 kPa) and RETURN pressure at 2800 psi (19300 kPa).

WARNING
When operating Huck installation equipment, always wear approved eye protection.
Prepartion for Use (con't.)

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. Gauge Set-up, P/N T-10280, is available for checking these pressures using instructions furnished with T-10280 and in applicable POWERIG Hydraulic Unit Instruction manuals. See Specifications.

WARNING
Huck recommends that only Huck POWERIG Hydraulic Units 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.

CAUTION
Keep dirt and other foreign matter out of hydraulic systems of tools, hoses, couplers and POWERIG Hydraulic Unit. Do not let hose fittings and couplers contact a dirty floor or unclean working surface. Foreign matter in hydraulic fluid may cause tool and hydraulic unit valves to malfunction.

Power Source Connections

See Checking and Adjusting Output Pressures. Check both PULL and RETURN pressures and adjust as necessary.

Disconnect power source from POWERIG® Hydraulic Unit. See applicable instructions in assembly for connecting hydraulic hoses to tool and hydraulic power unit, connecting electrical cord or air tubing to hydraulic power unit.

Connect hydraulic unit to power source. Turn hydraulic unit to ON. Hold tool switch or trigger depressed for 30 seconds. Depress and release a few times to observe action of tool. Check for fluid leaks. Turn hydraulic unit to OFF. Disconnect hydraulic unit from power source.
Prepartion for Use (con't.)

Attaching Nose Assembly to Tool

Remove deflector from tool -- see applicable disassembly instructions.

1. Push nose assembly collet through tool collet and housing from the rear.

2. Slide jaw assembly and sleeve into nose assembly collet.

3. Screw nose assembly retaining nut into tool collet -- only finger tight.

4. Screw anvil into housing and tighten.

5. Tighten collet retaining nut.

Install deflector on tool -- see applicable assembly instructions.

Connect tool to hydraulic power source. Install fastener in test plate of proper thickness with proper size holes. Inspect installed fastener -- see Operating Instructions.

Operating Instructions

WARNING
Do not pull on pin without collar, as pin will eject forcibly when pintail breaks off and severe personal injury may result.

If deflectors are removed or damaged, broken pintails may eject forcibly from rear of tool and severe personal injury may result.

Be sure there is adequate clearance for tool and operator's hands before proceeding as severe personal injury may result without clearance.

CAUTION
Do not abuse tool by dropping it, using it as a hammer, or otherwise causing unnecessary wear and tear. Reasonable care of installation tools by operators is an important factor in maintaining tool efficiency and in reducing downtime.
Blind Fastener Installation

Remove excessive gap between sheets to permit correct fastener installation. The fastener may be placed in work hole or in end of nose assembly. In either case, tool and nose assembly must be held against work and at right angles to it. Depress trigger. Hold trigger depressed until fastener is installed and pintail breaks. Release trigger and tool will go into its return stroke. The tool and nose assembly is ready for the next installation cycle.

HUCKBOLT® Fastener Installation

Remove excessive gap between sheets to allow enough pintail to protrude through collar for nose assembly jaws to grab onto. Place pin in work hole and place collar over pin. (If collar has only one tapered end, that end should be out towards tool.) Hold pin and push nose assembly onto pin protruding through collar until nose assembly anvil touches collar. Depress trigger. Hold trigger depressed until collar is swaged and pintail breaks. Release trigger and tool will go into its return stroke.

Table 1. Standard Tools Available from Huck

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Used On</th>
<th>Ref. No.</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>502444</td>
<td>Hex Key, 5/64 across flat</td>
<td>2</td>
<td>505430</td>
<td></td>
</tr>
<tr>
<td>502293</td>
<td>Hex Key, 3/32 across flat</td>
<td>4</td>
<td>505429</td>
<td></td>
</tr>
<tr>
<td>502296</td>
<td>Hex Key, 3/16 across flat</td>
<td>13</td>
<td>502373</td>
<td></td>
</tr>
<tr>
<td>502651</td>
<td>Hex Key, 3/8 across flat</td>
<td>21</td>
<td>115813</td>
<td></td>
</tr>
<tr>
<td>502294</td>
<td>Hex Key, 1/8 across flat</td>
<td>24</td>
<td>501279</td>
<td></td>
</tr>
<tr>
<td>502443</td>
<td>Hex Key, 1/16 across flat</td>
<td>32</td>
<td>501900</td>
<td></td>
</tr>
<tr>
<td>502865</td>
<td>Truarc Pliers, Waldes Kohinoor, Inc. # 0200</td>
<td>12</td>
<td>500997</td>
<td></td>
</tr>
</tbody>
</table>
Maintenance
(Good Services Practices)

The efficiency and life of any tool depends upon proper maintenance and good service practices. Tool should be serviced by personnel who are thoroughly familiar with it and how it operates.

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

Proper hand tools and soft materials to protect tool must be available. Only standard hand tools, brass drift and wood block are required. Vise with soft jaws should be available. See Table 1. for tools available from Huck Manufacturing Company.

ALWAYS REPLACE O-RINGS AND BACK-UP RINGS WHEN THE TOOL IS DISASSEMBLED FOR ANY REASON. All parts must be handled carefully and examined for damage and/or wear. Components should be disassembled and assembled in a straight line without bending, cocking or undue force. Disassembly and assembly procedures outlined in this manual should be followed.

Rub SLIC-TITE Teflon thread compound, or equivalent, on pipe threads to aid assembly and sealing. DO NOT USE Teflon Tape on Pipe Threads. Pipe threads may cause tape to shred resulting in tool and hydraulic unit valves to malfunction. (Slic-tite is available in stick form as P/N 503237, from Huck Manufacturing Co.)

Smear LUBRIPLATE 130AA, or equivalent lubricant, on O-rings and mating surfaces to aid assembly and to prevent damage to O-rings. (Lubriplate 130AA is available, in a tube, as P/N 502723, from Huck Manufacturing Company.)

Service Parts Kit, P/N 209KIT, includes perishable parts and should be available at all times. Other components, as experience dictates, should also be available.

Preventive Maintenance

Note
Refer to the applicable section for Assembly or Disassembly. For supplementary information refer to Troubleshooting Chart and Parts List.
Maintenance (con't.)

System Inspection

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

1. Inspect tool and nose assembly for external damage.

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

3. Inspect hydraulic hoses for signs of damage. Replace hoses if damaged.

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

POWERIG® Hydraulic Unit Maintenance

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

Tool Maintenance

At regular intervals, depending upon use, replace all O-rings and Back-up Rings in tool. Service parts kits and hoses should be kept on hand. (See Spare Parts and Service Parts Kit and Notes.) Inspect cylinder bore, piston and piston rod, and unloading valve for scored surfaces, excessive wear or damage, and replace as necessary. Always replace O-rings and Back-up Rings when the tool is disassembled for any reason.

Nose Assembly Maintenance

Frequent cleaning of the nose assembly is recommended. Nose Assemblies with UNITIZED jaws must be disassembled and cleaned in mineral spirits or isopropyl alcohol. Do not let UNITIZED jaws (urethane) soak in solvent. Do not use solvents that cause urethane to swell. Use a sharp pointed "pick" to remove particles packed in pull grooves of jaws. Dry components immediately after cleaning.

In nose assemblies without UNITIZED jaws, dip nose assembly in mineral spirits, isopropyl alcohol, or other suitable solvent, to clean jaws and wash away metal chips and dirt. If more thorough cleaning or maintenance is necessary, disassemble nose assembly. Use pick to remove particles in jaw grooves. Reassemble per instructions on applicable Nose Assembly Data Sheet.
Always check out the simplest possible cause of malfunction first. For example, switch turned off or 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 Troubleshooting chart as an aid in locating and correcting malfunction.

1. **209:**
   Tool fails to operate when trigger is depressed.
   a. Inoperative POWERIG Hydraulic Unit. See applicable Instruction Manual.
   b. Loose or disconnected control cord.
   c. Damaged trigger assembly.
   d. Loose or faulty hydraulic hose couplings.
   e. Unloading valve not installed in tool.

1a. **A209:**
   Tool fails to operate when trigger is depressed.
   a. Inoperative POWERIG Hydraulic Unit. See applicable Instruction Manual.
   b. Loose air tubing connections.
   c. Damaged trigger assembly.
   d. Loose or faulty hydraulic hose couplings.
   e. Unloading valve not installed in tool.

2. Tool operates in reverse.
   a. Reversed hydraulic hose connections between POWERIG Hydraulic Unit and tool.

3. Tool leaks hydraulic fluid.
   a. Depending on where leak occurs, defective or worn O-rings, or loose hydraulic hose connection at tool.

4. Hydraulic couplers leak fluid.
   a. Damaged or worn O-ring in coupler body. See Figure 3.

5. Hydraulic fluid overheats.
   a. POWERIG Hydraulic Unit not operating properly.
   b. Unloading valve in tool incorrectly installed.

6. Tool operates erratically and fails to install fastener properly.
   a. Low or erratic hydraulic pressure supply-air in system. See applicable POWERIG Instruction Manual.
   b. Damaged or excessively worn piston rod O-ring in tool.
   c. Unloading valve installed backwards.
   d. Excessive wear or scoring of sliding surfaces of tool parts.
   e. Excessive wear of unloading valve.
7. Pull grooves on fastener pintail stripped during pullstroke.
   a. Operator not sliding anvil completely onto fastener pintail.
   b. Incorrect fastener length.
   c. Worn or damaged jaw segments.
   d. Metal particles accumulated in pull grooves of jaw segments.
   e. Excessive sheet gap.
   f. Nose assembly not properly attached - see Attaching Nose Assembly to Tool.

8. Collar of HUCKBOLT Fastener not completely swaged.
   b. Scored anvil in nose assembly.

9. Shear collar on Huck blind fastener not properly installed.
   b. Worn or damaged driving anvil in nose assembly.

10. Tool "hang-up" on swaged collar of HUCKBOLT Fastener.
    b. RETURN pressure too low.
    c. Nose assembly not properly attached - see Nose Assembly Data Sheet.

11. Pintail of fastener fails to break.
    b. Pull grooves on fastener stripped. See 7.
    c. Worn piston and/or unloading valve.

12. Operator cannot slide nose assembly (completely) onto fastener pintail.
    a. Broken pintails jammed in tool. Install pintail tube if broken pintails will pass thru.

Spare Parts and Service Parts Kit

The quantity of spare parts that should be kept on hand varies with application and number of tools in service. Service Parts kit containing perishable parts such as O-rings, back-up rings, etc., should be kept on hand at all times. Parts are included in Service Parts 209KIT.
Disassembly
Refer to Figures 1, 2, 3, 4, 5 and 6.

For component identification, refer to Figures 2, 3, 4, 5 and 6, and Table 2. Parts List. Numbers in parenthesis ( ) are reference numbers shown in Figures 2, 3, 4, 5 and 6.

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

2. Unscrew Coupler Nipple (28), Coupler Body (29) and Reducing Bushings (27) and drain hoses into container. Remove nose assembly anvil and push rearward on nose assembly collet until hydraulic fluid is drained into container.

970-3:

Unscrew Hydraulic Hoses (26) from Adapter Unions (49). Unscrew nut of Male Connector (50) and remove nut, sleeve and Tubing (34). Drain fluid as above.

3. 209 Tool:

3a. Remove Screws (37), Lock Washers (38) and Square Nuts (39) from Clamp (36). Separate clamp from switch and control assembly, and Hydraulic Hoses (26).

3b. Loosen two screws on Cord Grip (33). Loosen Set Screw (32). Use 1/16 hex key. Pull Switch (30) from Housing (31).

3c. 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. Use 1/16 hex key.

3d. Disassemble plug section of Electrical Connector Assembly (35) to replace connector, or to rewire.

4. A209 Tool:

4a. Remove Screws (43), Lock Washers (44) and Square Nuts (45) from Clamp (42). Separate clamp from air trigger and hose assembly, and Hydraulic Hoses (26).

4b. Unscrew Trigger (41) from Housing (40). See Figure 6. Exploded View of Trigger to disassemble trigger. Hold Valve Stem Button tightly depressed in Valve Body - unscrew Valve Stem. Remove Button carefully and remove Spring (41a). Slide Stem O-ring (41c) Spacer and Seat Washer (41d) off stem. Remove Sealing O-ring (41b) from body

4c. Unscrew nut from body of Air Quick Disconnect (48) and pull Air Tubing (47) from sleeve. Remove sleeve from nut.
970-3:

Unscrew Connector Body (46) from Housing and Male Connector (50) from 970-3 Subplate. Unscrew nut from body of Connector (50) and pull Air Tubing (47) from sleeve. Remove sleeve from nut. Unscrew both Adapter Unions (49).

5. Unscrew Button Head Screw (4) and remove Deflector (3). Use 3/32 hex key. Use 5/8 socket supplied and remove nose assembly - see applicable nose assembly data sheet.


3. Remove four Socket Head Cap Screws (24) and lift off Housing (22) section. Pull Guard (15) off housing.

9. Slide Collet (25) straight back and remove from housing. Slide Dump Valve (7) out of collet.

10. Pull Piston Rod (21) out of housing. Remove Piston (18) from housing.

11. Unscrew four Button Head Screws (2) holding Shield (1) on housing -- use 5/64 hex key. Remove shield.

Assembly

Refer to Figures 1, 2, 3, 4, 5 and 6.

Clean all components with mineral spirits, and inspect for wear or damage. Replace as necessary. REPLACE ALL SEALS ON/IN DISASSEMBLED COMPONENTS. Use O-rings, Back-up Rings, etc. supplied in Service Parts Kit, P/N 209KIT, for models 209 and A209 -- see Notes. Smear LUBRIPLATE 130AA or PARKER-O-LUBE on O-rings, Back-up Rings and mating components to facilitate assembly. Assemble tool taking care not to damage O-rings or Back-up Rings.

1. Attach Shield (1) to Housing Assembly (22) with four Button Head Screws (2). Use 5/64 hex key.

2. Clamp 3/8 hex key upright in vise. Position hex key in hex of Piston Rod (21) -- piston rod points up.

3. Carefully push Housing (22) over piston rod. Slide Piston (18) over piston rod.

4. Push Collet (18) straight forward into Housing Assembly (22). Slide Dump Valve (7) into collet.
5. Slip Guard (15) over Housing (22).

6. Place housing section in position on housing with four screw holes aligned. Screw in four Socket Head Cap Screws (24) -- tighten finger tight.

7. Push Adapter (14) onto piston rod and into housing. Adjust guard if required.

8. Install Retaining Nut (10) and tighten. Install Retaining Ring (12) with TRUARC Pliers No. 0200. Tighten four Socket Cap Screws (24). Use 1/8 hex key.


10. Screw hoses into tool -- apply SLIC-TITE TEFOLON thread compound to all pipe threads.

209 TOOL

Screw Reducing Bushings (27) into Coupler Nipple (28) and Coupler Body (29). Screw assembled bushing and nipple on hose in port P of tool. Screw body with bushing on other hose.

A209 Tool

Model 942: Screw Reducing Bushings (27) into Coupling Nipple (28) and Coupling Body (29). Screw assembled nipple and bushing onto hose assembled in port P of tool. Screw assembled body and bushing onto other hose.

Model 970-3: Use Adapter Unions (49) -- see note 6 -- to assemble hoses to subplate of 970-3. Hose from port P of tool must be assembled to port P of 970-3.

Models 942 and 970-3: Screw body of Male Connector (50) into Air Trigger Housing (40). Assemble Air Tubing (47) to body using nut and sleeve of Connector (50).

Model 942: Assemble Air Quick Disconnect (48) to other end of tubing.

Model 970-3: Screw body of Male Connector (50) into subplate of 970-3. Assemble Air Tubing (47) using nut and sleeve of connector.

11. To find replacement part numbers and to assemble trigger, see Figure 6 and Parts List. Slide Seat Washer (41d), Spacer, Stem O-ring (41c), and Body over Valve Stem. Place Spring (41a), over stem. Hold stem, with components, firmly and compress spring with Valve Stem Button while screwing button on stem. Tighten stem into button with screwdriver. Push O-ring (41b) over threads of body. Screw trigger into Housing (40).

12
12. **209 Tool**

12a. Assemble Electrical Control Cord (34) to disassembled plug of electrical Connector Assembly (35). Assemble electrical connector plug.

12b. Replace and tighten Cord Grip (33) in Housing (31).

12c. Assemble Switch (30). Push cord thru cord grip and housing. Attach cord to rear of switch with two screws.

12d. Slide switch with cord attached into housing. Tighten Screw (32) against switch. Tighten two screws in cord grip to hold cord in housing.

12e. Place two halves of Clamp (36) over R hose. Align clamp holes, and loosely attach Screw (37) Lock Washer (38) and Square Nut (39). Push assembled switch and housing into clamp and hold it centered as screws are tightened.

13. **209 Tool**

Connect tool hoses and control cord to POWERIG Hydraulic Unit hoses and control cord. Cycle tool a few times. Observe action of tool and check for leaks.

14. **Model 942:** Connect hose couplings and air quick disconnect.

15. Connect POWERIG Hydraulic Unit 942 or 970-3 to air supply. Depress and release trigger a few times to cycle tool and to circulate hydraulic fluid. Observe action of tool. Check for leaks. Disconnect air supply.
## Parts List
### Table 2. Models 209 and A209 Installation Tools

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Part No.</th>
<th>Qty.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>115816</td>
<td>1</td>
<td>Shield</td>
</tr>
<tr>
<td>2</td>
<td>505430</td>
<td>4</td>
<td>Screw-But. Hd. #6-32 X 3/16 long</td>
</tr>
<tr>
<td>3</td>
<td>115814</td>
<td>1</td>
<td>Deflector</td>
</tr>
<tr>
<td>4</td>
<td>505429</td>
<td>1</td>
<td>Screw-But Hd. #8-32 X 7/8 long</td>
</tr>
<tr>
<td>5*</td>
<td>501144</td>
<td>1</td>
<td>Back-up Ring -- S-11248-217</td>
</tr>
<tr>
<td>6*</td>
<td>500850</td>
<td>1</td>
<td>O-ring -- AS 568-217</td>
</tr>
<tr>
<td>7</td>
<td>115811</td>
<td>1</td>
<td>Dump Valve</td>
</tr>
<tr>
<td>8*</td>
<td>501103</td>
<td>5</td>
<td>Back-up Ring -- S-11248-112</td>
</tr>
<tr>
<td>9*</td>
<td>500809</td>
<td>3</td>
<td>O-ring -- AS 568-112</td>
</tr>
<tr>
<td>10</td>
<td>115810</td>
<td>1</td>
<td>Retaining Nut</td>
</tr>
<tr>
<td>11</td>
<td>503703</td>
<td>1</td>
<td>Pipe Plug - Flush -- 1/16 - 27</td>
</tr>
<tr>
<td>12</td>
<td>500997</td>
<td>1</td>
<td>Retaining Ring - TRUARC 5100-59</td>
</tr>
<tr>
<td>13</td>
<td>502373</td>
<td>2</td>
<td>Plug - Pipe -- 1/8 - 27</td>
</tr>
<tr>
<td>14</td>
<td>115802</td>
<td>1</td>
<td>Adapter</td>
</tr>
<tr>
<td>15</td>
<td>115812</td>
<td>1</td>
<td>Guard</td>
</tr>
<tr>
<td>16*</td>
<td>500599</td>
<td>1</td>
<td>O-ring -- AS 568-218</td>
</tr>
<tr>
<td>17*</td>
<td>501145</td>
<td>1</td>
<td>Back-up Ring -- S-11248-218</td>
</tr>
<tr>
<td>18</td>
<td>115809</td>
<td>1</td>
<td>Piston</td>
</tr>
<tr>
<td>19*</td>
<td>500843</td>
<td>1</td>
<td>O-ring -- AS 568-210</td>
</tr>
<tr>
<td>20*</td>
<td>501137</td>
<td>1</td>
<td>Back-up Ring -- S-11248-210</td>
</tr>
<tr>
<td>21</td>
<td>115813</td>
<td>1</td>
<td>Piston Rod &amp; Plug (incl.ref. 11)</td>
</tr>
<tr>
<td>22</td>
<td>115806</td>
<td>1</td>
<td>Housing &amp; Guide Pin Assem. (incl. Ref. 23 &amp; 24)</td>
</tr>
<tr>
<td>23</td>
<td>501356</td>
<td>1</td>
<td>Dowell Pin - 3/16 X 1</td>
</tr>
<tr>
<td>24</td>
<td>501279</td>
<td>4</td>
<td>Screw-Soc.Cap--1/4-28 X 7/8 (not shown)</td>
</tr>
</tbody>
</table>
### Parts List

**Table 2. - Continued**

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Part No.</th>
<th>Qty. Req.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>25</td>
<td>115808</td>
<td>1</td>
<td>Collet</td>
</tr>
<tr>
<td>26</td>
<td>110978</td>
<td>2</td>
<td>Hyd. Hose -- 1/4 X 1/4 X 120°</td>
</tr>
<tr>
<td>27</td>
<td>502298</td>
<td>2</td>
<td>Reducing Bushing -- 3/8M X 1/4F</td>
</tr>
<tr>
<td>28</td>
<td>116621</td>
<td>2</td>
<td>Swivel Assem. -- 1/8 NPTF</td>
</tr>
</tbody>
</table>

![Figure 3 -- Hydraulic Coupling Assembly, P/N 110440](image)

O-ring, P/N 504438, and Back-up Ring, P/N 501102, must be replaced if leakage occurs when hydraulic couplers are connected. Use a pick with a long point, approximately .060 diameter to lift out O-ring and Back-up Ring. O-ring and Back-up Ring are in Spare Parts Kits.

Use a fine India stone to remove any nicks or burrs from diameter A and leading edge, to prevent damage to O-ring.

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Part No.</th>
<th>Qty. Req.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>--</td>
<td>110440</td>
<td></td>
<td>Coupler (incl. 28 &amp; 29 - see note 5)</td>
</tr>
<tr>
<td>28</td>
<td>--------</td>
<td>1</td>
<td>Nipple (Male)</td>
</tr>
<tr>
<td>29</td>
<td>--------</td>
<td>1</td>
<td>Body (Female - See Fig. 3)</td>
</tr>
<tr>
<td>29a</td>
<td>504438</td>
<td>1</td>
<td>O-ring -- AS 568-111</td>
</tr>
<tr>
<td>29b</td>
<td>501102</td>
<td>1</td>
<td>Back-up Ring -- S-11248-111</td>
</tr>
</tbody>
</table>

Rev. 8-95 (26) (28)
Figure 4. Electric Switch Kit
P/N 113242

Figure 5. Air Trigger Kit
P/N 113659

<table>
<thead>
<tr>
<th>Ref. No.</th>
<th>Part No.</th>
<th>Qty. Req.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>---</td>
<td>113242</td>
<td>1</td>
<td>Electric Switch Kit (209 - incl. 30 thru 48)</td>
</tr>
<tr>
<td>30</td>
<td>103944</td>
<td>1</td>
<td>Switch</td>
</tr>
<tr>
<td>31</td>
<td>108597</td>
<td>1</td>
<td>Housing Assem. (Incl. 32 &amp; 33)</td>
</tr>
<tr>
<td>32</td>
<td>501900</td>
<td>1</td>
<td>Screw-Cup Pt. Set -- #6-32 X 3/16 (not shown)</td>
</tr>
<tr>
<td>33</td>
<td>504083</td>
<td>1</td>
<td>Cord Grip</td>
</tr>
<tr>
<td>34</td>
<td>113057</td>
<td>1</td>
<td>Control Cord Assem. (incl. 35)</td>
</tr>
<tr>
<td>35</td>
<td>110686</td>
<td>1</td>
<td>Connector Assem. (male &amp; female)</td>
</tr>
<tr>
<td>36</td>
<td>104200</td>
<td>2</td>
<td>Clamp</td>
</tr>
<tr>
<td>37</td>
<td>500428</td>
<td>2</td>
<td>Screw Rd. Hd. Mach. -- #10-32 X 1/2</td>
</tr>
<tr>
<td>38</td>
<td>500180</td>
<td>2</td>
<td>Lock Washer for #10 Screw</td>
</tr>
<tr>
<td>39</td>
<td>503141</td>
<td>2</td>
<td>Nut-Square -- #10-32</td>
</tr>
<tr>
<td>No.</td>
<td>No.</td>
<td>Req.</td>
<td>Description</td>
</tr>
<tr>
<td>-----</td>
<td>---------</td>
<td>------</td>
<td>-----------------------------------------------------------------------------</td>
</tr>
<tr>
<td>40</td>
<td>107590</td>
<td>1</td>
<td>Housing – Air Trigger</td>
</tr>
<tr>
<td>41</td>
<td>503644</td>
<td>1</td>
<td>Trigger -- Air-Mite Devices, MV-3</td>
</tr>
<tr>
<td>41a</td>
<td>503644</td>
<td>1</td>
<td>Spring</td>
</tr>
<tr>
<td>41b</td>
<td>500780</td>
<td>1</td>
<td>O-ring</td>
</tr>
<tr>
<td>41c</td>
<td>500774</td>
<td>1</td>
<td>O-ring</td>
</tr>
<tr>
<td>41d</td>
<td>503663</td>
<td>1</td>
<td>Seat</td>
</tr>
<tr>
<td>42</td>
<td>108294</td>
<td>2</td>
<td>Clamp</td>
</tr>
<tr>
<td>43</td>
<td>500428</td>
<td>2</td>
<td>Screw Rd.Hd. Mach -- #10-32 X 1/2</td>
</tr>
<tr>
<td>44</td>
<td>500180</td>
<td>2</td>
<td>Lockwasher for #10 Screw</td>
</tr>
<tr>
<td>45</td>
<td>503141</td>
<td>2</td>
<td>Nut-Square -- #10-32</td>
</tr>
<tr>
<td>46</td>
<td>503902</td>
<td>1</td>
<td>Fitting -- I-E #268N (1/4 X 1/8)</td>
</tr>
<tr>
<td>47</td>
<td>112143</td>
<td>1</td>
<td>Air Tubing – 13’ -- I-C #4212-43503N2</td>
</tr>
<tr>
<td>48</td>
<td>113021</td>
<td>1</td>
<td>Disconnect – Male</td>
</tr>
<tr>
<td>49</td>
<td>502947(6)</td>
<td>2</td>
<td>Adapter Union -- 1/4 X 1/4 (not shown)</td>
</tr>
<tr>
<td>50</td>
<td>503903(6)</td>
<td>1</td>
<td>Connector-Male</td>
</tr>
<tr>
<td>--</td>
<td>505432(1)</td>
<td>1</td>
<td>5/8 Socket (not shown)</td>
</tr>
</tbody>
</table>

(1) Attach nose assembly to tool with socket.

![Diagram](image)

**Figure 6. Exploded View of Trigger**
Specifications for Tables

1. All part numbers shown are available from Huck Manufacturing Co. The 50000 series part numbers are standard parts which can generally be purchased locally.

2. Asterisks (*) indicate parts in Service Parts Kit, P/N KIT209.

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


5. Use coupler nipple (male) or "Pull Pressure" hose assembled in port "P". Use coupler body (female) on "Return Pressure" hose assembled in port "R".

6. P/N 502947 and P/N 503902 are used with Model 970-3 POWERIG Hydraulic Unit and must be purchased separately.

   P/N 508902 - Tube Fitting Imperial Eastman #268-M (1/4 X 1/8).

   P/N 502947 - Adapter Union, Anchor #4M-4UFS.
LIMITED WARRANTIES

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

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

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

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

Tooling, Part(s) and Other Items not manufactured by Huck.

HUCK MAKES NO WARRANTY WITH RESPECT TO THE TOOLING, PART(S) OR OTHER ITEMS MANUFACTURED BY THIRD PARTIES. HUCK EXPRESSLY DISCLAIMS ANY WARRANTY EXPRESSED OR IMPLIED, AS TO THE CONDITION,

DESIGN, OPERATION, MERCHANTABILITY OR FITNESS FOR USE OF ANY TOOL, PART(S), OR OTHER ITEMS THEREOF NOT MANUFACTURED BY HUCK. HUCK SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, DIRECTLY OR INDIRECTLY, ARISING FROM THE USE OF SUCH TOOLING, PART(S) OR OTHER ITEMS OR BREACH OF WARRANTY OR FOR ANY CLAIM FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

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

Huck shall not be liable for any loss or damage resulting from delays or nonfulfillment of orders owing to strikes, fires, accidents, transportation companies or for any reason or reasons beyond the control of the Huck or its suppliers.

Huck Installation Equipment

Huck International, Inc. reserves the right to make changes in specifications and design and to discontinue models without notice.

Huck Installation Equipment should be serviced by trained service technicians only.

Always give the Serial Number of the equipment when corresponding or ordering service parts.

Complete repair facilities are maintained by Huck International, Inc. Please contact one of the offices listed below.

Eastern
One Corporate Drive Kingston, New York 12401-0250 Telephone (914) 331-7300 FAX (914) 334-7333

Canada
8150 Kennedy Road Unit 10, Mississauga, Ontario, L5T 2J4, 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.
# Huck Acceptance is World-wide

Huck Fastener maintains company offices throughout the United States and Canada with subsidiary offices in many other countries. Sales engineers and systems specialists located in your area can help in solving your fastener problems.

## Huck Fasteners world-wide locations:

### Americas

<table>
<thead>
<tr>
<th>Company</th>
<th>Address</th>
<th>Phone</th>
<th>Fax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Huck International, Inc.</td>
<td>World Headquarters</td>
<td>800-234-4825</td>
<td>602-748-2142</td>
</tr>
<tr>
<td></td>
<td>3724 East Columbia</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tucson, AZ 85714</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Huck International, Inc.</td>
<td>Installation Systems Division</td>
<td>800-431-3091</td>
<td>914-331-7300</td>
</tr>
<tr>
<td></td>
<td>1 Corporate Drive</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kingston, NY 12401</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Huck International, Inc.</td>
<td>Aerospace Fastener Division</td>
<td>800-234-4825</td>
<td>602-748-2142</td>
</tr>
<tr>
<td></td>
<td>724 East Columbia</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tucson, AZ 85714</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Huck International, Inc.</td>
<td>Aerospace Fastener Division</td>
<td>800-421-1459</td>
<td>310-830-8200</td>
</tr>
<tr>
<td></td>
<td>PO Box 5268</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Carson, CA 90749</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PO Box 8117</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8001 Imperial Drive</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Waco, TX 76714-8117</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Far East

<table>
<thead>
<tr>
<th>Company</th>
<th>Address</th>
<th>Phone</th>
<th>Fax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Huck Australia, Pty. Ltd.</td>
<td>Private Bag 6</td>
<td>03-764-5500</td>
<td>0952-290459</td>
</tr>
<tr>
<td></td>
<td>Rowville, Victoria</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Australia 3178</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Huck Limited</td>
<td>Yodogawa-Gobankei 11F</td>
<td>80-372-1193</td>
<td>34-66-07-00</td>
</tr>
<tr>
<td></td>
<td>No. 2-1, 3 Chome Toyosaki</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Kita-Ku, Osaka 531 Japan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Huck International, Inc.</td>
<td>Avenida Parque Lira, 79-402</td>
<td>525-515-1776</td>
<td>1173530 LUKSME</td>
</tr>
<tr>
<td></td>
<td>Tacubaya Mexico, D.F.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>C.P. 11850</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Europe

<table>
<thead>
<tr>
<th>Company</th>
<th>Address</th>
<th>Phone</th>
<th>Fax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Huck International Ltd.</td>
<td>Unit C, Stafford Park 7</td>
<td>0952-290011</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Telford, Shropshire</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>England TF3 3BQ</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Huck S.A.</td>
<td>Cloe D'Asseville</td>
<td>95450 Us Par Vigny</td>
<td></td>
</tr>
<tr>
<td></td>
<td>BP4</td>
<td>34-66-07-00</td>
<td></td>
</tr>
<tr>
<td></td>
<td>France</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

---