ARCONIC

Innovation, engineered.

Instruction Manual

700 series

(small diameter: 705-714 sizes)

Hydraulic Installation Tools



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January 29, 2019

HK1063

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

ARCONIC

EC Declaration of Conformity

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

Description of Machinery:
Models 7## families of hydraulic installation tools and specials based on their design (e.g. PR####).

Relevant provisions complied with:
Council Directive related to Machinery (2006/42/EC)
British Standard related to hand held, non-electric power tools (ISO 11148-1:2011)

European Representative:
Rob Pattenden, Huck International, Ltd. Unit C Stafford Park 7, Telford Shropshire TF3 3BQ, England, United Kingdom

Authorized Signature/date:
I, the undersigned, do hereby declare that the equipment specified above conforms to the above Directive(s) and Standard(s).

Signature: 

Full Name: Robert B. Wilcox
Position: Engineering Manager
Location: Huck International, LLC d/b/a Arconic Fastening Systems and Rings
Kingston, New York, USA
Date: 01/11/2016 (November 1, 2016)

HUCK

Declared dual number noise emission values in accordance with ISO 4871
A weighted sound power level, LWA: **93** dB (reference 1 pW) Uncertainty, KWA: 3 dB
A weighted emission sound pressure level at the work station, LpA: **82** dB (reference 20 µPa) Uncertainty, KpA: 3 dB
C-weighted peak emission sound pressure level, LpC, peak: **96** dB (reference 20 µPa) Uncertainty, KpC: 3 dB
Values determined according to noise test code ISO 3744. The sum of a measured noise emission value and its associated uncertainty represents an upper boundary of the range of values which is likely to occur in measurements.

Declared vibration emission values in accordance with EN 12096	
Measured Vibrations emission value, a:	**.05** m/s^2
Uncertainty, K:	**.008** m/s^2
Values measured and determined according to ISO 28662-1, ISO 5349-2, and EN 1033	

Test data to support the above information is on file at:
Arconic Fastening Systems and Rings, Kingston Operations, Kingston, NY, USA.

Safety Instructions

GLOSSARY OF TERMS AND SYMBOLS:

Product complies with requirements set forth by the relevant European directives.

Read manual prior to using this equipment.

Eye protection is required while using this equipment.

Hearing protection is required while using this equipment.

Notes: are reminders of required procedures.
Bold, Italic type, and underline: emphasize a specific instruction.

WARNINGS: Must be understood to avoid severe personal injury.

CAUTIONS: Show conditions that will damage equipment or structure.

I. GENERAL SAFETY RULES:

1. A half hour long hands-on training session with qualified personnel is recommended before using Huck equipment.
2. Huck equipment must be maintained in a safe working condition at all times. Tools and hoses should be inspected at the beginning of each shift/day for damage or wear. Any repair should be done by a qualified repairman trained on Huck procedures.
3. For multiple hazards, read and understand the safety instructions before installing, operating, repairing, maintaining, changing accessories on, or working near the assembly power tool. Failure to do so can result in serious bodily injury.
4. Only qualified and trained operators should install, adjust or use the assembly power tool.
5. Do not modify this assembly power tool. This can reduce effectiveness of safety measures and increase operator risk.
6. Do not discard safety instructions; give them to the operator.
7. Do not use assembly power tool if it has been damaged.
8. Tools shall be inspected periodically to verify all ratings and markings required, and listed in the manual, are legibly marked on the tool. The employer/operator shall contact the manufacturer to obtain replacement marking labels when necessary. Refer to assembly drawing and parts list for replacement.
9. Tool is only to be used as stated in this manual. Any other use is prohibited.
10. Read MSDS Specifications before servicing the tool. MSDS specifications are available from the product manufacturer or your Huck representative.
11. Only genuine Huck parts shall be used for replacements or spares. Use of any other parts can result in tooling damage or personal injury.
12. Never remove any safety guards or pintail deflectors.
13. Never install a fastener in free air. Personal injury from fastener ejecting may occur.
14. Where applicable, always clear spent pintail out of nose assembly before installing the next fastener.
15. Check clearance between trigger and work piece to ensure there is no pinch point when tool is activated. Remote triggers are available for hydraulic tooling if pinch point is unavoidable.
16. Do not abuse tool by dropping or using it as a hammer. Never use hydraulic or air lines as a handle or to bend or pry the tool. Reasonable care of installation tools by operators is an important factor in maintaining tool efficiency, eliminating downtime, and preventing an accident which may cause severe personal injury.
17. Never place hands between nose assembly and work piece. Keep hands clear from front of tool.
18. Tools with ejector rods should never be cycled with out nose assembly installed.
19. When two piece lock bolts are being used always make sure the collar orientation is correct. See fastener data sheet for correct positioning.

II. PROJECTILE HAZARDS:

1. Risk of whipping compressed air hose if tool is pneudraulic or pneumatic.
2. Disconnect the assembly power tool from energy source when changing inserted tools or accessories.
3. Be aware that failure of the workpiece, accessories, or the inserted tool itself can generate high velocity projectiles.
4. Always wear impact resistant eye protection during tool operation. The grade of protection required should be assessed for each use.
5. The risk of others should also be assessed at this time.
6. Ensure that the workpiece is securely fixed.
7. Check that the means of protection from ejection of fastener or pintail is in place and operative.
8. There is possibility of forcible ejection of pintails or spent mandrels from front of tool.

III. OPERATING HAZARDS:

1. Use of tool can expose the operator's hands to hazards including: crushing, impacts, cuts, abrasions and heat. Wear suitable gloves to protect hands.
2. Operators and maintenance personnel shall be physically able to handle the bulk, weight and power of the tool.
3. Hold the tool correctly and be ready to counteract normal or sudden movements with both hands available.
4. Maintain a balanced body position and secure footing.
5. Release trigger or stop start device in case of interruption of energy supply.
6. Use only fluids and lubricants recommended by the manufacturer.
7. Avoid unsuitable postures, as it is likely for these not to allow counteracting of normal or unexpected tool movement.
8. If the assembly power tool is fixed to a suspension device, make sure that fixation is secure.
9. Beware of the risk of crushing or pinching if nose equipment is not fitted.

Continued on next page...

Safety Instructions (continued)

IV. REPETITIVE MOTION HAZARDS:

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

V. ACCESSORIES HAZARDS:

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

VI. WORKPLACE HAZARDS:

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

VII. NOISE HAZARDS:

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

VIII. VIBRATION HAZARDS:

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

X. HYDRAULIC TOOL SAFETY INSTRUCTIONS:

WARNINGS:
Do not exceed maximum pull or return settings on tool.
Be sure all hose connections are tight. All tool hoses must be connected.

1. Carry out a daily check for damaged or worn hoses or hydraulic connections and replace if necessary.
2. Wipe all couplers clean before connecting. Failure to do so can result in damage to the quick couplers and cause overheating.
3. Ensure that couplings are clean and correctly engaged before operation.
4. Use only clean oil and filling equipment.
5. Power units require a free flow of air for cooling purposes and should therefore be positioned in a well ventilated area free from hazardous fumes.
6. Do not inspect or clean the tool while the hydraulic power source is connected. Accidental engagement of the tool can cause serious injury.
7. Be sure all hose connections are tight.
8. Wipe all couplers clean before connecting. Failure to do so can result in damage to the quick couplers and cause overheating.

Description

The 700 and M700 Series Hydraulic Installation Tools install Huck Blind Fasteners and HUCKBOLT® Fasteners. These light-weight and compact mini-tools, with their built-in nose assemblies, are a general purpose Tool/ nose assembly. They adapt well to limited clearance areas as well as the usual applications.

A700 versions are air-triggered tools to be used with Huck Models 942, 946, 968, and 970 Powerig® Hydraulic Units, or equivalent. 700 versions are electric triggered tools designed for use with Huck Models 913, 918, 940 and 943, or equivalent. Each Tool is complete with hydraulic hoses, couplings, and trigger control assembly (air or electric).

The tool consists of a cylinder, anvil assembly, and a piston collet. The piston collet holds an unloading valve to relieve hydraulic pressure at end of PULL stroke. Piston rod is off-center to the centerline of piston; cylinder cap supports rear of an off-center piston extension -- tool clearance is increased by having an off-center piston collet. A built-in nose assembly is the tool's distinguishing feature.

Specifications

POWER SOURCE:
Huck Powerig® Hydraulic Unit

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

HYDRAULIC FLUID:
Hydraulic fluid shall meet DEXRON III, DEXRON VI, MERCON, Allison C-4 or equivalent ATF specifications. Fire resistant fluid may be used if it is an ester based fluid such as Quintolubric HFD or equivalent. Water based fluid shall NOT be used as serious damage to equipment will occur.

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

MAX FLOW RATE:
2 gpm (*7.57 l/m*)

MAX INLET PULL PRESSURE:
8000 psi, (*550 bar*)

MAX INLET RETURN PRESSURE:
7000 psi, (*483 bar*)

PULL CAPACITY

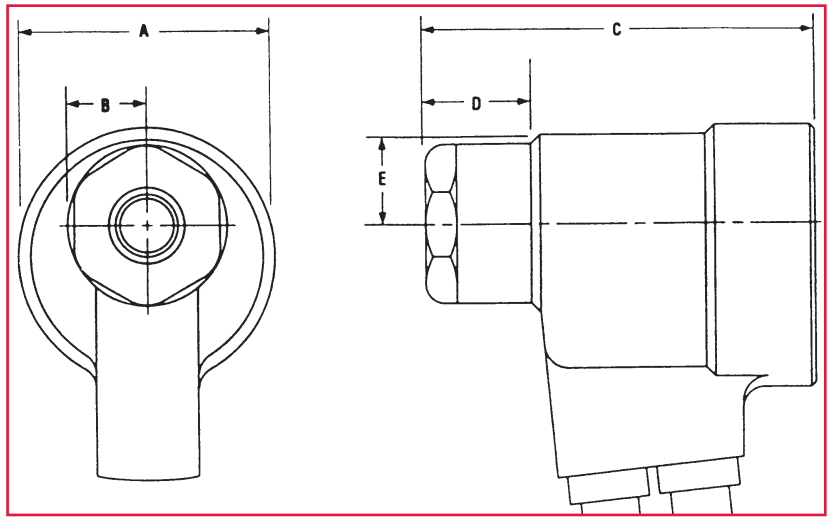
	lbf	*(kN)*
@5700 psi:		
705/706 LGP	4,200	*(18.9)*
707/708 LGP	5,900	*(26.2)*
@5400 psi:		
A706LGP/706MG	4,170	*(18.6)*
A708LGP/708BOM	5,870	*(26.1)*
All 710 series	7,800	*(34.7)*
All 712 series	11,040	*(49.1)*
All 714 series	13,014	*(57.9)*

STROKE:	inches	*(cm)*
705/706	.375	*(.95)*
707/708	.500	*(1.27)*
710	.625	*(1.59)*
712MGNSR-1	.812	*(2.06)*
All other 712	.750	*(1.91)*
714	.875	*(2.22)*

WEIGHT:	lbs.	*(kg)*
705/706	3	*(1.4)*
706/708	3.5	*(1.6)*
708/710	4	*(1.8)*
710/712	4.5	*(2.0)*
714	7	*(3.2)*

Where the following trade names are used in this manual, please note:
DEXRON *is a registered trademark of General Motors Corporation.*
GLYD Ring *is a registered trademark of Trelleborg Sealing Solutions Germany GmbH*
Loctite *is a registered trademark of Henkel Corporation, U.S.A.*
LUBRIPLATE *is a registered trademark of Fiske Brothers Refining Co.*
MERCON *is a registered trademark of Ford Motor Corp.*
MOLYKOTE *is a registered trademark of Dow Corning Corporation*
Never-Seez *is a registered trademark of Bostik, Inc.*
Quintolubric *is a registered trademark of Quaker Chemical Corp.*
Slic-tite *is a registered trademark of LA-CO Industries, Inc.*
Spirolox *is a registered trademark of Smalley Steel Ring Company*
Teflon *is a registered trademark of Chemours Company FC.*
Threadmate *is a registered trademark of Parker Intangibles LLC.*
TRUARC *is a trademark of TRUARC Co. LLC.*
Vibra-Tite *is a registered trademark of ND Industries, Inc. USA.*

DIMENSION Inches *(cm)*	**A**	**B**	**C**	**D**	**E**
706	1.6 *(4.1)*	.47 *(1.2)*	2.66 *(6.8)*	.66 *(1.7)*	.54 *(1.4)*
708	1.79 *(4.5)*	.53 *(1.3)*	2.92 *(7.4)*	.76 *(1.9)*	.59 *(1.5)*
710	2.04 *(5.2)*	.63 *(1.6)*	3.31 *(8.4)*	.97 *(2.5)*	.69 *(1.8)*
712	2.38 *(6.0)*	.69 *(1.8)*	3.65 *(9.3)*	.90 *(2.3)*	.79 *(2.0)*
714	2.7 *(6.9)*	.85 *(2.2)*	4.03 *(10.2)*	1.26 *(3.2)*	.94 *(2.4)*



Principle of Operation

First, hydraulic hoses, and then trigger control cord/hose are connected to Powerig® Hydraulic Unit. The trigger controls PULL and RETURN strokes of the tool. When the trigger is depressed, hydraulic pressure is directed to the PULL side of the piston/collet, moving it rearward, and thus beginning fastener installation.

When fastener installation is completed, the trigger is released. Hydraulic pressure is directed to the RETURN side of the piston/collet, and it moves forward, pushing the tool/nose assembly off of the installed fastener. At end of the piston/collet PULL stroke, the flat of the unloading valve provides a passage for fluid from PULL side to RETURN side of the piston. When this occurs, pressurized fluid is unloaded or "dumped". The fluid circulates back to the reservoir in the POWERIG Hydraulic Unit.

Preparation for Use

WARNINGS:

Read full manual before using tool.

A half-hour training session with qualified personnel is recommended before using Huck equipment.

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

Be sure there is adequate clearance for the operator's hands before proceeding.

Where close tool clearance Is not required, Huck recommends that the optional deflector kit be Installed on tool. Without the deflector or suitably interfering structure, broken fastener pintail can eject with speed and force and severe personal Injury may result.

Correct PULL and RETURN pressures are required for operator's safety and for Installation Tool's function. Gauge T-124833CE is available for checking pressures. See Pressure Settings and Gauge Instruction Manual. Failure to verify pressures may result in severe personal injury.

Be sure to connect Tool's hydraulic hoses to POWERIG Hydraulic Unit before connecting Tool's switch control cord to unit. If not connected in this order, severe personal Injury may occur.

Huck recommends that only Huck Powerig Hydraulic Units be used as a 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.

CAUTIONS:

Do not use TEFLON® tape on pipe threads. Pipe threads may cause tape to shred resulting in tool malfunction. (Threadmate™ is available from Huck in a 4oz. tube as part number 508517.)

Do not let disconnected hoses and couplers contact a dirty floor. Keep harmful material out of hydraulic fluid. Dirt in hydraulic fluid causes valve failure In Tool and In Powerig Hydraulic Unit.

Hose couplers must be completely joined together to insure that ball checks in both nipple and body are completely open. Improperly assembled couplers will cause overheating and malfunctions in both tool and Powerig. Hand tighten couplers. Do NOT use a pipe wrench.

1. Attach nose assembly to tool as applicable.
2. Use Huck POWERIG Hydraulic Unit, or equivalent, that has been prepared for operation per instruction manual. Check both PULL and RETURN pressures and, if required, adjust to pressures given in Pressure Settings section of this manual.
3. First, turn hydraulic unit to OFF. Then disconnect power supply from hydraulic unit. Disconnect trigger control system from hydraulic unit.
4. Connect tool hoses to hydraulic unit. If required, adjust position of trigger assembly on return pressure hose. Connect trigger control system to hydraulic unit.
5. Connect hydraulic unit to power supply (air or electric). Turn hydraulic unit to ON. Hold trigger depressed for 30 seconds; depress trigger a few times to cycle tool and to circulate hydraulic fluid. Observe action of tool and check for leaks.
6. Install fasteners in test plate of correct thickness with proper size holes. Inspect installed fasteners. If fasteners do not pass inspection, see Troubleshooting to locate and correct malfunction.

Assembly of NPTF Threaded Components

AIR FITTINGS

1) Apply TEFLON® stick to male threads which do not have pre-applied sealant per manufacturer's recommendations. (Proceed to All Fittings step 2)

HYDRAULIC FITTINGS

1) Apply Threadmate™ to male and female threads which do not have pre-applied sealant per manufacturer's recommendations. (Proceed to All Fittings step 2)

ALL FITTINGS:

2) Tighten to finger-tight condition.
3) Wrench tighten to 2-3 turns past finger-tight condition.
4) Final thread engagement can be checked (optional) by measuring the dimension from the flange of male fitting to the end of the thread before assembly and subtracting the distance under the flange after assembly.

Thread Size	Final thread engagement at full make-up
1/8-27 NPTF	**.235 inch** *(.59 cm)*
1/4-18 NPTF	**.339 inch** *(.86 cm)*
3/8-18 NPTF	**.351 inch** *(.89 cm)*

Operating Instructions

For safe operation. Please read completely

Read all WARNINGS and CAUTIONS prior to using your system. Failure to understand WARNINGS may cause serious personal injury. Failure to understand CAUTIONS may cause damage to structure and Tool. For additional safety instructions, see pages 4 and 5.

WARNINGS:
To avoid severe personal injury: Wear approved eye and ear protection. Be sure of adequate clearance for Operator's hands before proceeding with fastener installation.

Do not pull on a pin without placing fastener/collar in a workpiece. This condition can cause pin to eject with great velocity and force if the pintail breaks off or teeth/grooves strip. This may cause severe personal injury.

To avoid pinch point, never place hand between nose assembly and work piece.

Only use compatible equipment with this tool.

Inspect tool for damage or wear before each use. Do not operate if damaged or worn, as severe personal injury may occur.

CAUTIONS:
To avoid structural and Tool damage, be sure enough clearance is allowed for nose assembly at full stroke. Do not abuse the 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 reducing downtime.

Remove excess gap from between the sheets. This permits enough pintail to emerge from collar for ALL puller teeth to engage with pintail. If ALL teeth do not engage properly, jaws will be damaged.

- Operators should receive training from qualified personnel.
- Do not bend tool to free if stuck.
- Tool should only be used to install fasteners.
- Never use as a jack/spreader or hammer.

HUCKBOLT® Fastener installation:

Place pin in work hole and place collar over pin. See WARNING. (If Collar has only one tapered end, that end must be out toward tool, not next to sheet.) Hold pin and push nose assembly onto pin protruding through collar until nose assembly anvil touches collar. Depress trigger and hold depressed until collar is swaged and pintail breaks. Release trigger and tool will go into return stroke. The tool and nose assembly are ready for the next fastener installation cycle.

Blind Fastener Installation:

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

Optional Equipment

To maintain CE conformity, only CE compatible equipment should be used with these tools. Installation tools and nose assemblies are the only CE components unless otherwise noted. Controls and other hardware shown in the manual are for domestic use only.

TEFLON® Stick	**- 503237**
TEFLON® Sealant	**- 620012**
Loctite® 243	**- 508567**
Never-Seez® NS-160 *(anti-seize and lubricating compound)*	**- 505565**
LUBRIPLATE® 130-AA	**- 502723**
Threadmate™ *(4oz. tube)*	**- 508517**
Pressure Gage	**- T-124833CE**

Service Parts Kits

(Includes all perishable seals, O-rings, and Back-up rings. A spare Service Parts Kit should be kept on hand at all times.)

Tools	Kit No.
-705 & 706 series	**706KIT**
-708 series	**708KIT**
-710 series	**710KIT**
-712 series	**712KIT**
-714 series	**714KIT**

Air Trigger Cord & Housing Assembly

(Contains air trigger, hose, and fitting assembled into housing assembly with trigger guard)

	Air Hose Length	Part No.
-	13 ft	**118935**
-	26 ft	**118935-1**

Hose Assembly

(Contains 1 high pressure, lightweight hydraulic hose with 1/8 NPTF and hose guard at each end)

	Hose Length	Part No.
-	12 ft	**118944-1**
-	25 ft	**118944-3**
-	30 ft	**118944-10**
-	50 ft	**118944-6**

Electric Trigger Cord & Housing Assembly

(Contains electric trigger and power cord with plug, and housing assembly with trigger guard)

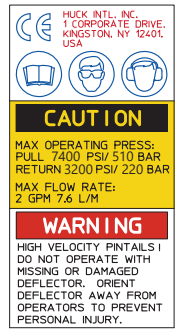
	Cord Length	Part No.
-	13 ft	**118940**
-	30 ft	**118940-9**
-	50 ft	**118940-10**

Sticker Locations

The 700 series tools come labeled with 2 stickers which contain important safety and pressure settings information:
590517: HUCK/Year of Manufacture Sticker
590424-7400: CE and WARNING Sticker
It is necessary that stickers remain on the tool and are easily read. ***If a sticker becomes damaged or worn, or if it has been removed from the tool, or when replacing Cylinder, this sticker must be ordered and placed in the location shown on the components drawings in this manual.***

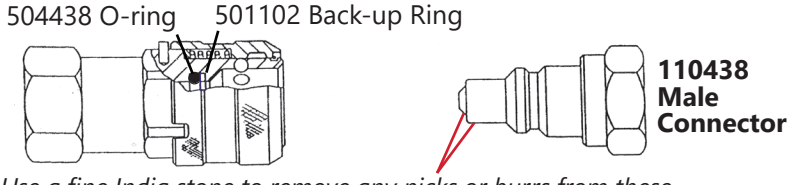


590517



590424-7400_revB

Hydraulic Couplings



Use a fine India stone to remove any nicks or burrs from these areas to prevent damage to O-ring of Female Connector.

Maintenance

CAUTIONS:

Consult MSDS before servicing tool.

Keep dirt and other material out of hydraulic system.

Separated parts most be kept away from dirty work surfaces.

Dirt/debris in hydraulic fluid causes failure in Powerig® Hydraulic Unit's valves.

Always replace seals, wipers, and back-up rings when tool is disassembled for any reason.

Do not use TEFLON® tape on pipe threads. Pipe threads may cause tape to shred resulting in tool malfunction.

The efficiency and life of your tool depends on proper maintenance. Please read this section completely before proceeding with maintenance and repair. Use proper hand tools in a clean and well-lighted area. Only standard hand tools are required in most cases. Where a special tool is required, the description and part number are given.

While clamping tool or parts in a vise, and when parts require force, use suitable soft materials to cushion impact. For example, using a half-inch brass drift, wood block and vise with soft jaws greatly reduces possibility of damaging tool. Remove components in a straight line without bending, cocking or undue force. Individual parts must be handled carefully and examined for damage or wear. Replace parts where required. Reassemble tool with the same care.

Sealants, Lubricants, Service Kits

- See **SPECIFICATIONS** for fluid type. Dispose of fluid in accordance with local environmental regulations. Recycle steel, aluminum, and plastic parts in accordance with local lawful and safe practices.
- Rub pipe plug threads and quick connect fittings with PTFE thread compound. Threadmate™ is available from Huck in a 4oz. tube as part number 508517.
- Smear LUBRIPLATE® 13OAA, or equivalent lubricant, on O-Rings and mating surfaces to aid assembly and to prevent damage to O-Rings. LUBRIPLATE 13O-AA is available in a tube as Huck part number 502723.
- Each Service Kit contains perishable parts for your specific tool. As foreseeable use may indicate, keep extra kits (O-rings, Back-up Rings, other standard items) and tool parts in stock. When stock is depleted, you can get kit items from any regular retailer of these items. See kit parts list for: O-ring size (AS568- number); material; durometer.

System Inspection

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

- Inspect tool and nose assembly for external damage.
- Verify that hydraulic hose fittings, couplings, and electrical connections are secure.
- Inspect hydraulic hoses for damage and deterioration. Do not use hoses to carry tool. Replace hoses if damaged.
- Observe tool, hoses, and hydraulic unit during operation to detect abnormal heating, leaks, or vibration.
- Max hydraulic fluid contamination level: NAS 1638 class 9, or ISO CODE 18/15, or SAE level 6.

POWERIG® Maintenance

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

Tool Maintenance

Whenever disassembled and also at regular intervals (depending on severity and length of use), replace all seals, wipers, and back-up rings in tool. Service Kits, hoses, and extra parts should be kept in stock. Inspect cylinder bore, pistons, and piston rods for scored surfaces and excessive wear or damage. Replace as necessary.

On any assembly with UNITIZED™ Jaws, clean parts, and jaws in particular, with mineral spirits or isopropyl alcohol only. Use a sharp pointed "pick" to remove embedded particles from the pull grooves of the jaws.
Under no circumstances let jaws come in contact with other solvents. Also, do not let recommended cleaner soak into urethane; dry the jaws immediately after cleaning. Dry other parts before assembling. Urethane soaks up all cleaners, (it is harmed less by those recommended) swells up, and then becomes unusable.

Disassembly

The following procedures are for complete disassembly of tool. Remove ONLY those parts necessary. Check and replace damaged or worn components. **Replace O-rings and back-up rings.**

WARNING: Disconnect Tool's control trigger system from Powerig® Hydraulic Unit before disconnecting Tool's hydraulic hoses from unit. If not disconnected in this order before any maintenance or cleaning is done, severe personal injury may occur.

1. First, disconnect tool's electric trigger control cord or air trigger control hose from hydraulic unit, then uncouple Hydraulic Hoses.

Note: Disassemble control trigger systems only when necessary to rewire or replace switch/trigger.

2. Separate hoses by cutting the tape around them. Be careful not to cut into hoses.
3. Remove Trigger Housing from hoses (for more detailed information, refer to illustrations of applicable trigger assemblies in this manual).
4. Remove both Couplers (nipple & body) from hoses, and drain hoses into container.
5. Unscrew both hoses from tool cylinder.
6. Unscrew Cap using hex key. Turn Tool and let chuck jaws slide out.
7. Unscrew Anvil using socket wrench.
8. ***If applicable:*** Remove Ejector from piston collet.
9. Thread anvil in squarely to prevent cracking.
10. Unscrew socket head cap screw; then remove retaining ring from rear of cylinder using a spanner wrench.

Note: Drain fluid from cylinder into container before, or while pushing on piston/collet. Discard fluid.

11. See Figure 15. With a suitable brass rod, push on piston collet until piston collet and Gland are out of cylinder.
12. Slide gland from piston collet's rear extension.
13. Remove Unloading Valve from piston/collet.
14. Use small, dull pointed rod to remove O-rings and back-up rings.
15. See Figures 13 or 14 - (Air or Electric) Trigger Assembly for parts.

Figure 5

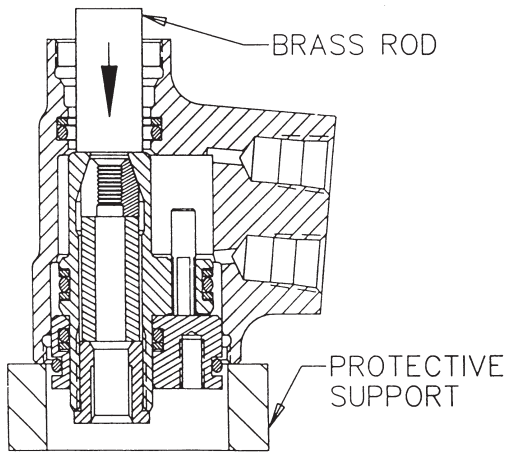


Figure 5 - Removing Piston and Cap

Assembly

CAUTION: Do not use TEFLON® tape on pipe threads. Pipe threads may cause tape to shred resulting in tool malfunction.

Clean tool parts with mineral spirits, or equivalent, (see **Preventive Maintenance**). Inspect for wear or damage, and replace as required. **Always replace all seals of disassembled components.** Use O-rings and back-up rings supplied in service parts kit. Smear LUBRIPLATE 130AA, or equivalent, on O-rings, back-up rings and mating components for ease of assembly. Assemble Tool taking care not to damage either O-rings or back-up rings.

1. Use protective support or brass rod:

   A. Position piston collet in cylinder aligned with front opening of cylinder. Push down on piston face, and continue to push until piston stops at bottom of cylinder.

   B. Push Unloading Valve into hole in piston face. Flats on valve MUST be toward rear of Tool.

   C. Place Gland in cylinder. Move opening into alignment with piston extension. Press gland until it stops against shoulder.

2. Screw Retaining Ring into cylinder until it stops. Back ring out 1/4 turn, or less, until Cap Screw can be screwed into gland at nearest retaining ring scallop, then tighten with hex key.

3. Drop Jaws into piston collet. Screw Cap into piston collet, then use hex key to tighten.

4. ***If applicable:*** Slide Ejector over end of piston collet.

5. Screw anvil into cylinder and tighten with socket wrench.

In step 6, use Threadmate™, available in a 4 oz. tube as p/n 508517 on pipe threads.

6. Screw Hydraulic Hose with Coupler into cylinder's "R" port (RETURN). Screw other hose into "P" (PRESSURE) port.

7. See FIGURE 13 for assembly details of Air Trigger Assembly.

8. See FIGURE 14 for assembly details of Electric Trigger Assembly.

Note: Air Trigger Assembly can be modified for use on 970 Powerig® Hydraulic Unit. Remove Quick Disconnect 113021, and replace with Male Air Fitting 503902. Install 503902 in sub-plate of 970.

9. Clamp Trigger/switch Assembly onto RETURN Hose and close to Tool.

10. Install new cable ties. Six (6) ties are spaced approximately 18 inches apart.

11. See **WARNING** in **Disassembly**.

    A. Connect Hydraulic Hoses to Powerig Hydraulic Unit.

    B. Connect Control Trigger connector/disconnect to Powerig Hydraulic Unit.

Note: See Preparation for Use for WARNINGS, CAUTIONS, procedure for tool setup, and checking installed fasteners.

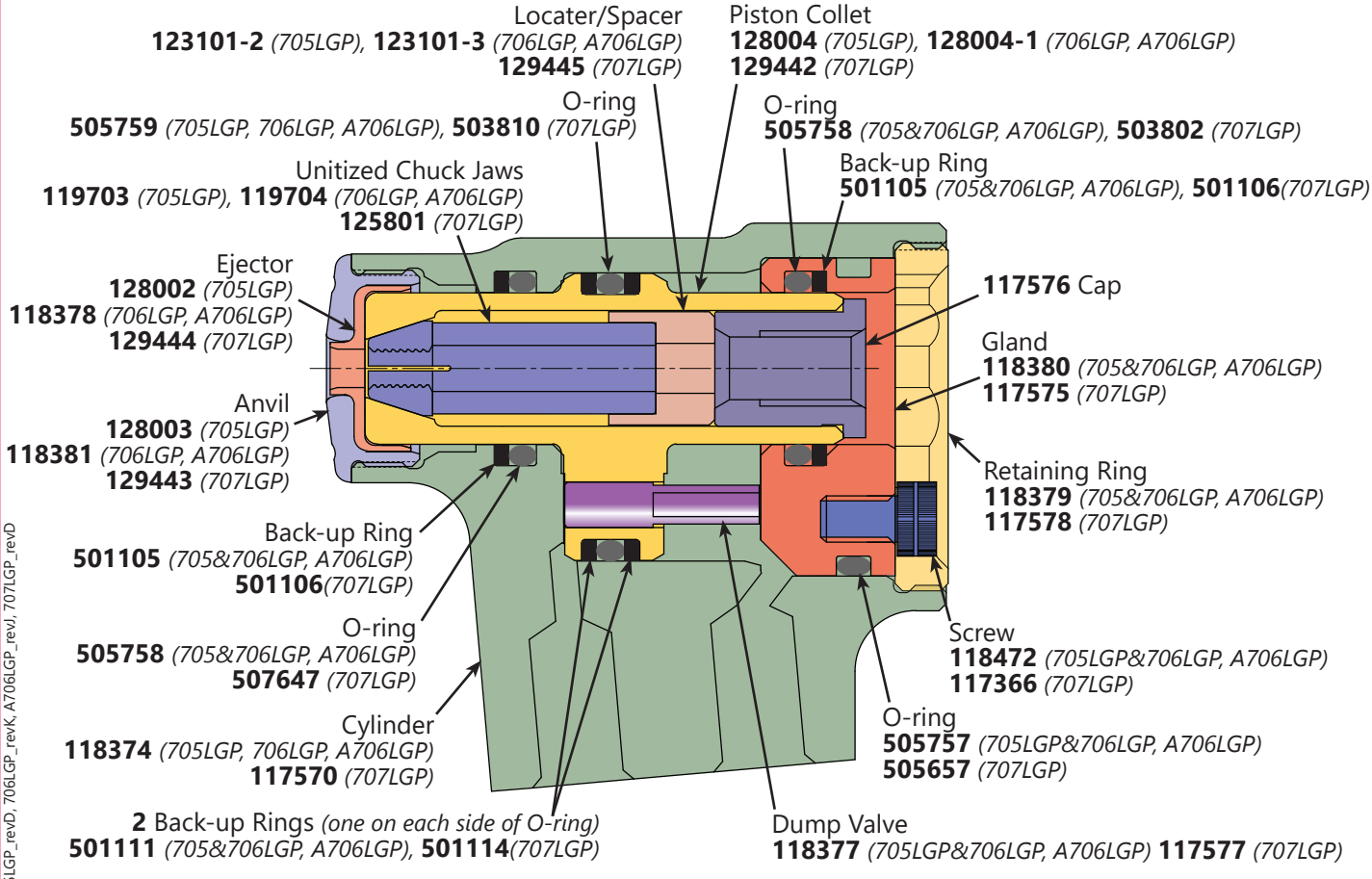
12. Operate Tool until sure there are no leaks. Install some fasteners in a test plate of correct grip range with proper size holes. Check installation cycle and installed fasteners.

13. If all test results are good, Tool is ready to return to service.

Tool Head Components

705LGP, 706LGP, A706LGP, 707LGP

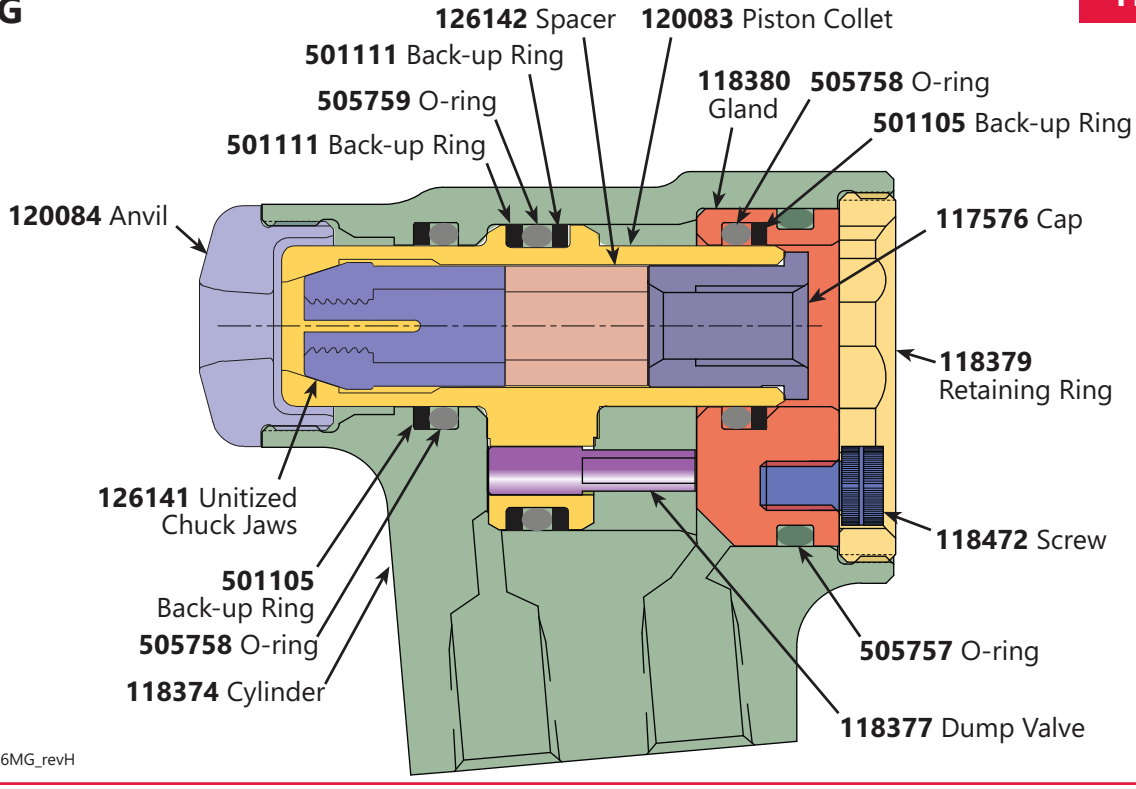
Figure 6



705LGP_revD, 706LGP_revK, A706LGP_revJ, 707LGP_revD

706MG

Figure 7

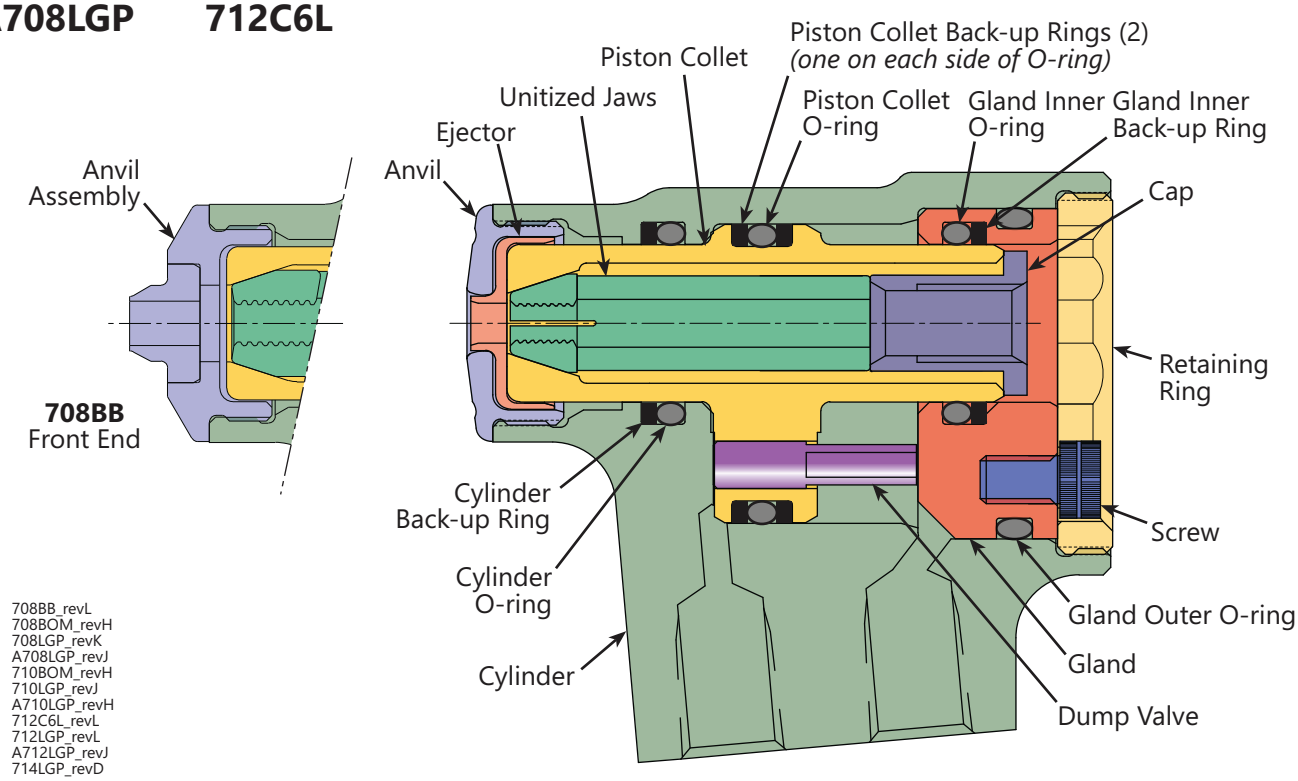


706MG_revH

Tool Head Components

708BB 710BOM 712LGP
708BOM 710LGP A712LGP
708LGP A710LGP 714LGP
A708LGP 712C6L

Figure 8



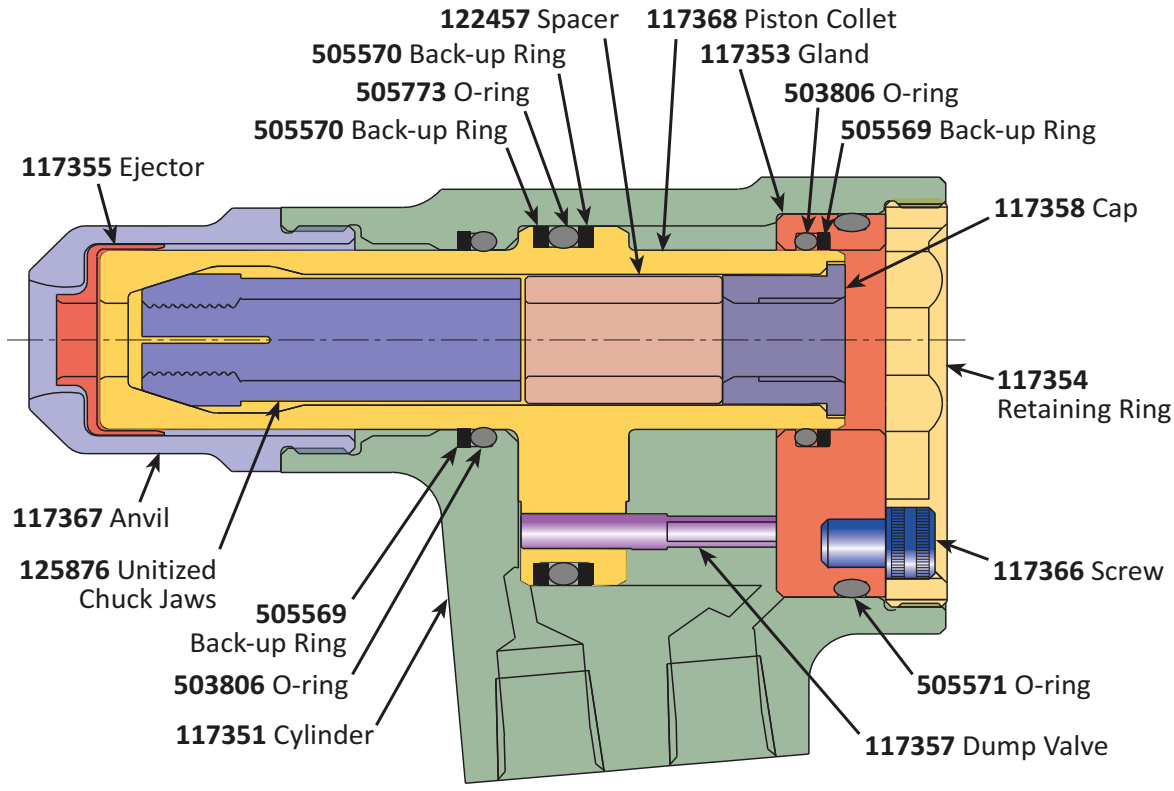
708BB_revL
708BOM_revH
708LGP_revK
A708LGP_revJ
710BOM_revH
710LGP_revJ
A710LGP_revH
712C6L_revL
712LGP_revL
A712LGP_revJ
714LGP_revD

Tool	708BB	708BOM	708LGP A708LGP	710BOM	710LGP A710LGP	712C6L	712LGP A712LGP	714LGP
Cylinder	117570	117570		118410		117351		128177
Cylinder O-Ring	507647	503802		505763		503806		504040
Cylinder Back-up Ring	501106	501106		501109		505569		501114
Anvil / Anvil Assembly	119864	120398	117571	120403	118411	117360	117361	128184
Ejector	n/a	120390	117572	120401	118418	117355		128180
Unitized Jaws	119865	120397	117573	120402	122892	125876	125876-1	122929
Piston Collet	117574	120399	117574	118413		117352	117375	128185
Piston Collet O-Ring	505657	503810		505764		505773		504004
Piston Collet Back-up Ring (2)	501114	501114		501118		505570		501152
Cap	117576	117576		117358		117358		128226
Dump Valve	117577	117577		118417		117357		128181
Gland	117575	117575		118415		117353		128183
Gland Outer O-Ring	503810	505657		505765		505571		500834
Gland Inner O-Ring	507647	507647		505763		503806		504040
Gland Inner Back-up Ring	501106	501106		501109		505569		501114
Retaining Ring	117578	117578		118414		117354		128182
Screw	117366	117366						

Tool Head Components

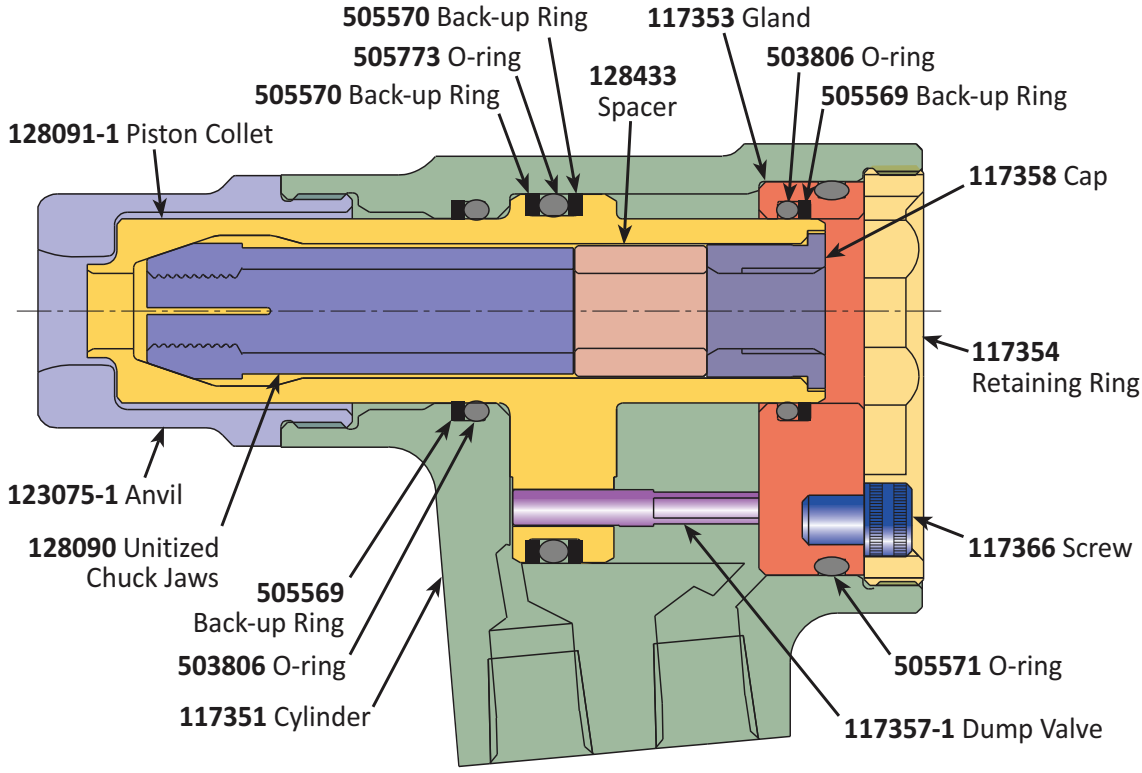
712C6L-1

Figure 9



712MGNSR-1

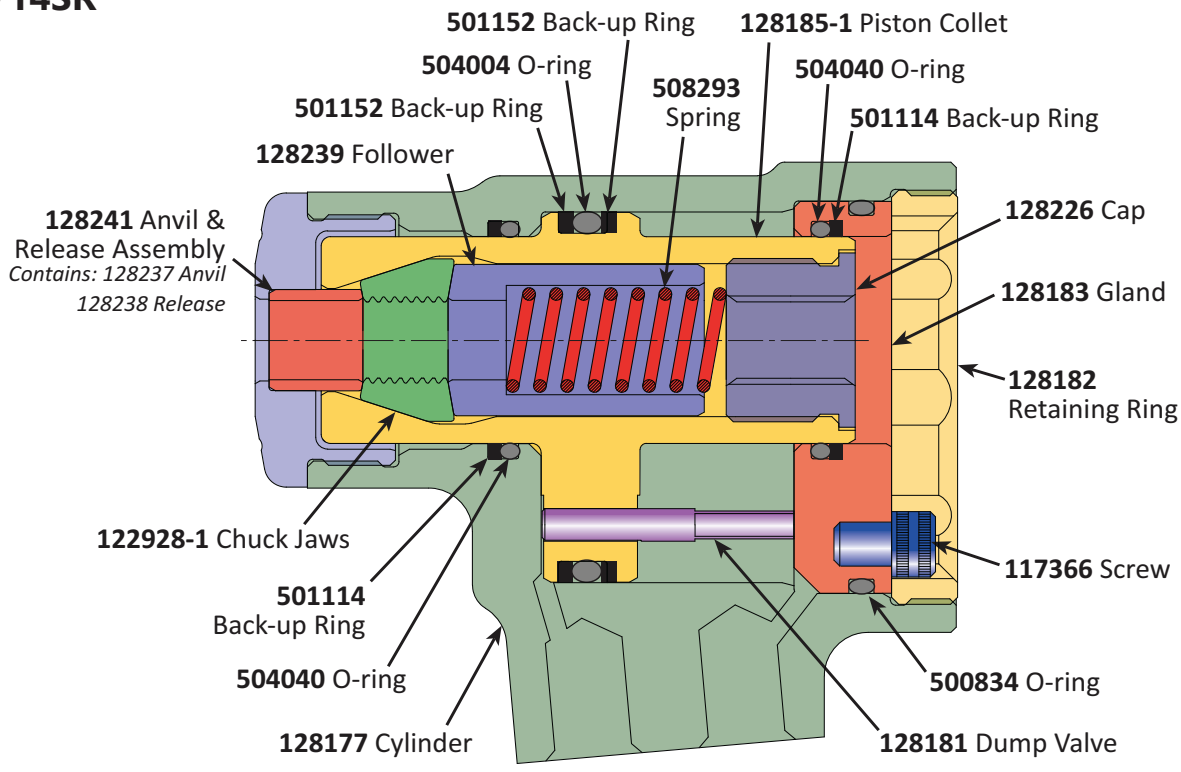
Figure 10



Tool Head Components

Figure 11

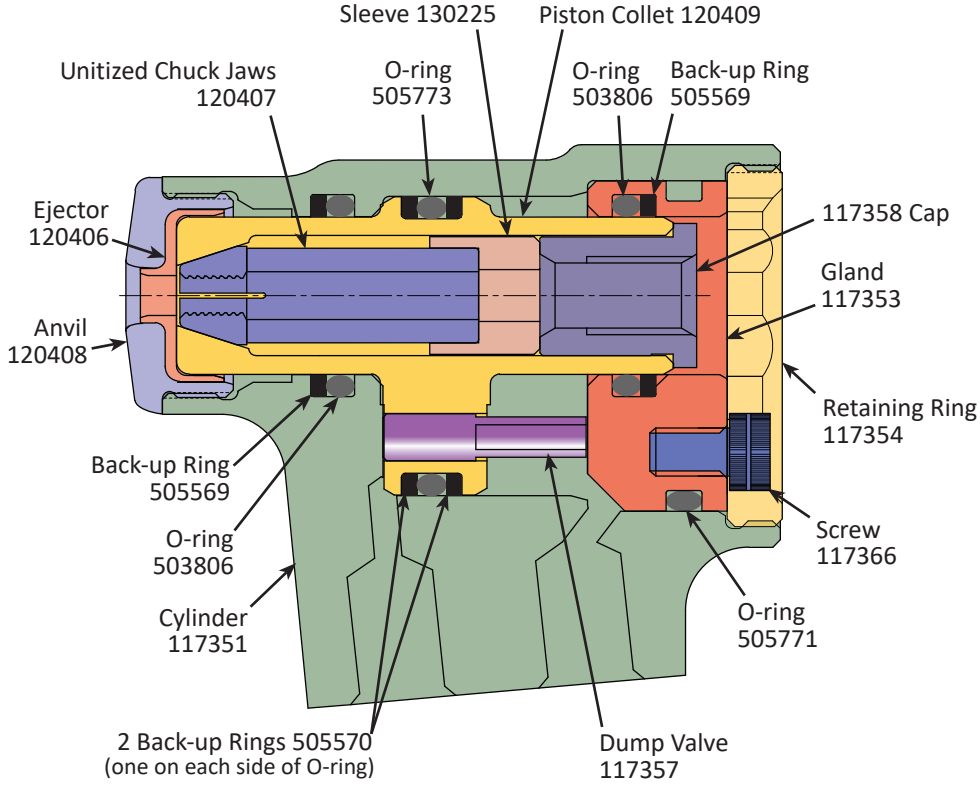
714SR



NOTE: Reducing bushing, part number 505134, is shipped with this tool and required for use with hose/cord assemblies.

Figure 12

712BOM



Air and Electric Trigger Hose/Cord Assemblies

Figure 13

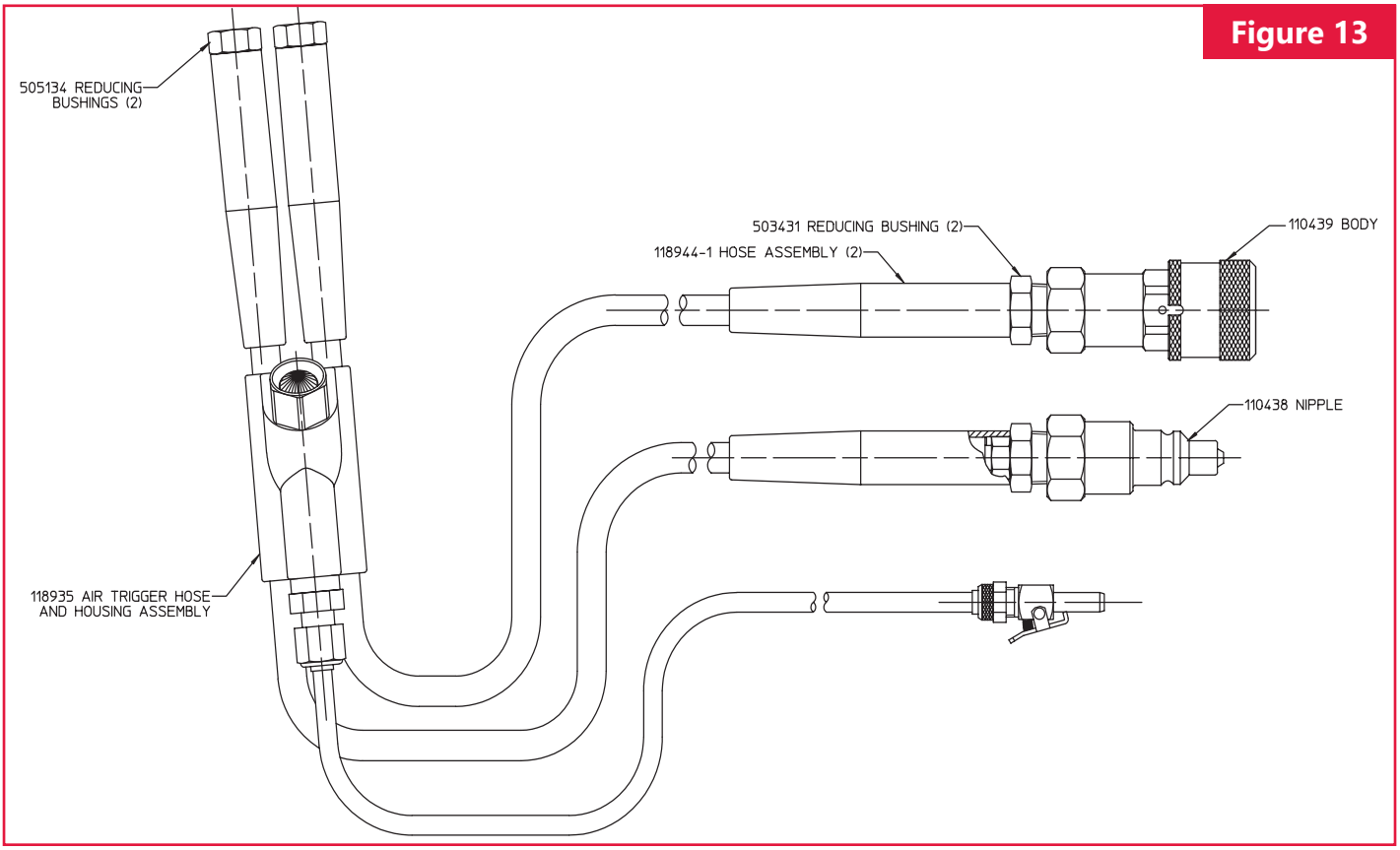
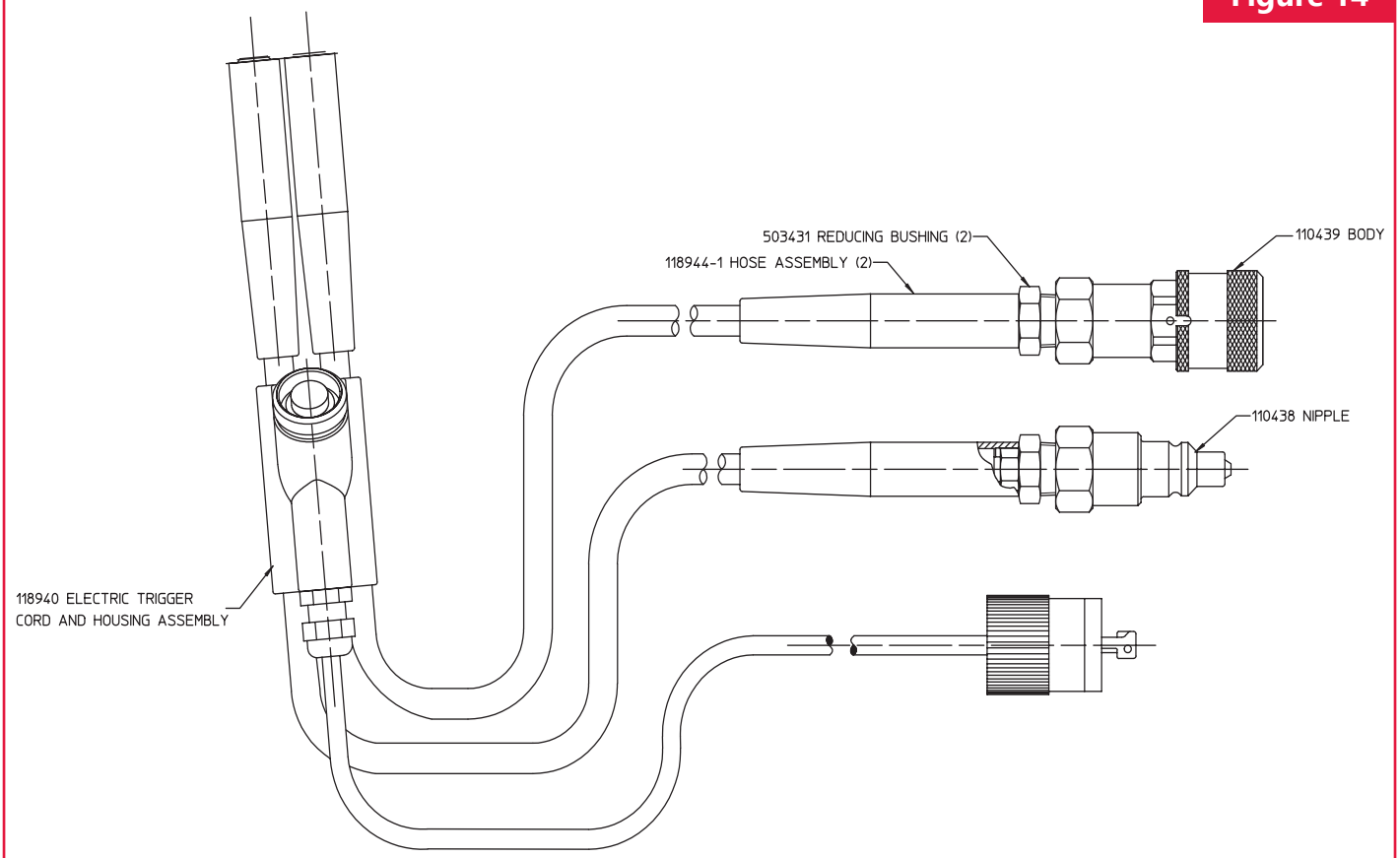
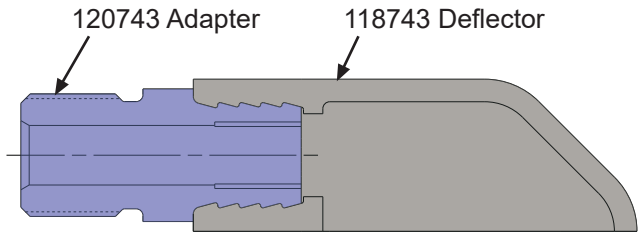


Figure 14

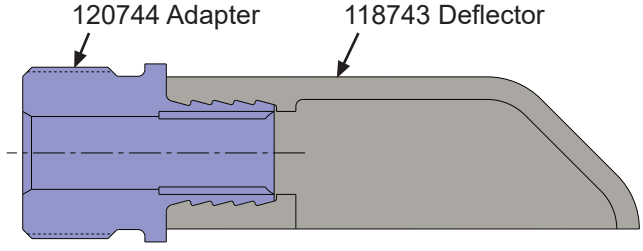


Deflector Kits



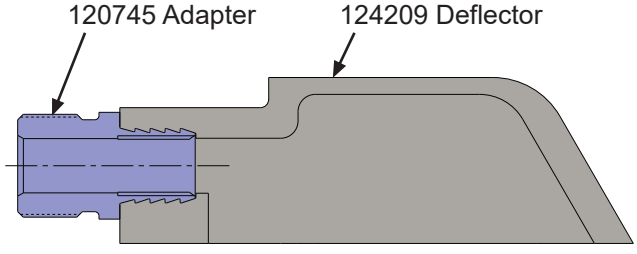
Deflector Kit 120746

Shipped with 705LGP, 706LGP, A706LGP, 706MG, 707LGP, 708BOM, 708LGP, A708LGP



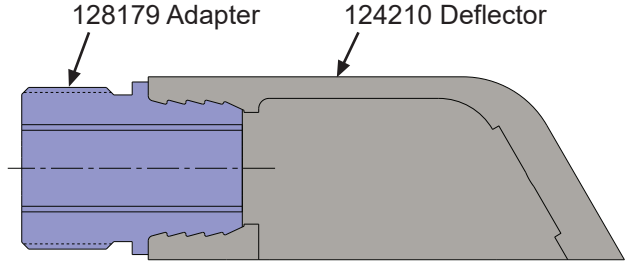
Deflector Kit 120747

Shipped with 710BOM, 710LGP, A710LGP



Deflector Kit 120748

Shipped with 712BOM, 712C6L, 712LGP, A712LGP, 712C6L-1, 712MGNSR-1



Deflector Kit 128227

Shipped with 714LGP, 714SR

Troubleshooting

Always check the simplest possible cause of a malfunction first. For example, a loose or disconnected trigger line. Then proceed logically, eliminating each possible cause until the defective part is located. Where possible, substitute known good parts for suspected defective parts. Use Trouble Shooting Chart as an aid for locating and correcting trouble.

1. Tool fails to operate when trigger is depressed.
   a. Inoperative POWERIG® Hydraulic Unit. See applicable instruction manual.
   b. Loose air or electric 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 hydraulic unit and Tool.

3. Tool leaks hydraulic fluid.
   a. Defective Tool O-rings or loose hose connections at Tool.

4. Hydraulic couplers leak fluid.
   a. Damaged or worn O-rings in coupler body. See Coupler 110440.

5. Hydraulic fluid overheats.
   a. Hydraulic unit not operating properly.
   b. Unloading valve installed incorrectly.
   c. POWERIG Hydraulic Unit running in reverse (918: 918-5) See unit's manual.

6. Tool operates erratically and fails to install fastener properly.
   a. Low or erratic hydraulic pressure -- air in system
   b. Damaged or worn piston O-ring in Tool.
   c. Unloading valve installed incorrectly.
   d. Excessive wear on sliding surfaces of Tool parts.
   e. Excessive wear of unloading valve in Tool.

7. Pull grooves on fastener pintail stripped during PULL stroke.
   a. Operator not sliding anvil completely onto fastener pintail.
   b. Incorrect fastener grip.
   c. Worn or damaged jaw segments.
   d. Metal particles in pull grooves of jaw segments.
   e. Excessive sheet gap.

8. Collar of HUCKBOLT® fastener not completely swaged.
   a. Improper Tool operation. See Trouble 6.
   b. Scored anvil.

9. Tool "hangs-up" on swaged collar of HUCKBOLT Fastener.
   a. Improper Tool operation. See Trouble 6.
   b. RETURN pressure too low.
   c. Nose assembly not installed correctly.

10. Pintail of fastener fails to break.
    a. Improper Tool operation. See Trouble 6.
    b. Pull grooves on fastener stripped. See Trouble 7.
    c. PULL pressure too low.
    d. Worn unloading valve.

Limited Warranties

Limited Lifetime Warranty on BobTail® Tools:

Huck International, Inc. warrants to the original purchaser that its BobTail® installation tools manufactured after 12/1/2016 shall be free from defects in materials and workmanship for its ***useful lifetime***. This warranty does not cover special order / non-standard products, or part failure due to normal wear, tool abuse or misapplication, or user non-compliance with the service requirements and conditions detailed in the product literature.

Two Year Limited Warranty on Installation Tools:

Huck International, Inc. warrants that its installation tools and Powerig® hydraulic power sources manufactured after December 1, 2016 shall be free from defects in materials and workmanship for a period of two years from date of purchase by the end user. This warranty does not cover special order / non-standard products, or part failure due to normal wear, tool abuse or misapplication, or user non-compliance with the service requirements and conditions detailed in the product literature.

90 Day Limited Warranty on Nose Assemblies and Accessories:

Huck International, Inc. warrants that its nose assemblies and accessories shall be free from defects in materials and workmanship for a period of 90 days from date of purchase by the end user. This warranty does not cover special clearance noses, or special order / non-standard product, or part failure due to normal wear, abuse or misapplication, or user non-compliance with the service requirements and conditions detailed in the product literature.

Useful lifetime is defined as the period over which the product is expected to last physically, up to the point when replacement is required due to either normal in-service wear, or as part of a complete overhaul. Determination is made on a case-by case basis upon return of parts to Huck International, Inc. for evaluation.

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.

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

Huck Installation Equipment:

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

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

Always give the serial number of the equipment when corresponding or ordering service parts.

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

Eastern
One Corporate Drive Kingston, New York 12401-0250
Telephone (845) 331-7300 FAX (845) 334-7333

Outside USA and Canada
Contact your nearest Huck International location (see reverse).

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 Tool Kits and Nose Assemblies. Please contact your Huck Representative or the nearest Huck International location (see reverse) for the ATSC in your area.

ARCONIC

Arconic Inc. (NYSE: ARNC) creates breakthrough products that shape industries. Working in close partnership with our customers, we solve complex engineering challenges to transform the way we fly, drive, build and power.
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