

Alcoa
Fastening
Systems



INSTRUCTION MANUAL

255

PNEUDRAULIC INSTALLATION TOOL



(Shown without silicone boot.)

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

04-01-2013
HK1014





EC Declaration of Conformity

Manufacturer:

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

Description of Machinery:

Models 24# and 25# pneudraulic installation tools and specials based on their designs (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 Alcoa Fastening Systems
Kingston, New York, USA

Date: 27/03/2013



Declared dual number noise emission values in accordance with ISO 4871

A weighted sound power level, LWA: **91** dB (reference 1 pW)
Uncertainty, KWA: 3 dB

A weighted emission sound pressure level at the work station, LpA: **80** dB
(reference 20 µPa)
Uncertainty, KpA: 3 dB

C-weighted peak emission sound pressure level, LpC, peak: **115** dB
(reference 20 µPa)
Uncertainty, KpC: 3 dB

Values determined according to noise test code ISO 15744, using as basic standards ISO 3744 and ISO 11203. 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:	.63 m/s ²
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Uncertainty, K:	.72 m/s ²
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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 Alcoa Fastening Systems, Industrial Products Group, Kingston Operations, Kingston, NY, USA.



CONTENTS

EU DECLARATION OF CONFORMITY	2
SAFETY	4
SPECIFICATIONS	5
PRINCIPLE OF OPERATION	6
PREPARATION FOR USE	7
MAINTENANCE	7
OPERATING INSTRUCTIONS	8
DISASSEMBLY	9-10
ASSEMBLY	11
FILL AND BLEED	12-13
ASSEMBLY DRAWING	14
PARTS LIST	15
TROUBLESHOOTING	16
ACCESSORIES	16



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.



WARNINGS: Must be understood to avoid severe personal injury.



CAUTIONS: show conditions that will damage equipment and or structure.

Notes: are reminders of required procedures.

Bold, Italic type and underlining: emphasizes a specific instruction.

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.

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.

IX. PNEUMATIC / PNEUDRAULIC TOOL SAFETY INSTRUCTIONS:

1. Air under pressure can cause severe injury.
2. Always shut off air supply, drain hose of air pressure and disconnect tool from air supply when not in use, before changing accessories or when making repairs.
3. Never direct air at yourself or anyone else.
4. Whipping hoses can cause severe injury, always check for damaged or loose hoses and fittings.
5. Cold air should be directed away from hands.
6. Whenever universal twist couplings (claw couplings) are used, lock pins shall be installed and whipcheck safety cables shall be used to safeguard against possible hose to hose or hose to tool connection failure.
7. Do not exceed maximum air pressure stated on tool.
8. Never carry an air tool by the hose.



SPECIFICATIONS

POWER SOURCE:

90-100psi shop air

HYDRAULIC FLUID:

ATF meeting DEXRON III, DEXRON IV, MERCON, Allison C-4 or equivalent specifications. Fire resistant hydraulic fluid may also be used, and is required to comply with OSHA regulation 1926.302 paragraph (d): "the fluid used in hydraulic power tools shall be fire resistant fluid approved under schedule 30 of the US Bureau of Mines, Department of Interior, and shall retain its operating characteristics at the most extreme temperatures to which it will be exposed."

MAX OPERATING TEMP:

125°F (51.7°C)

MAX FLOW RATE:

11.5 scfm (325.64 l/m)

MAX AIR PRESSURE:

100 psi (6.9 bar)

MIN PULL CAPACITY:

7500 lbs (34.47 kN) @ 90 psi

MIN STROKE:

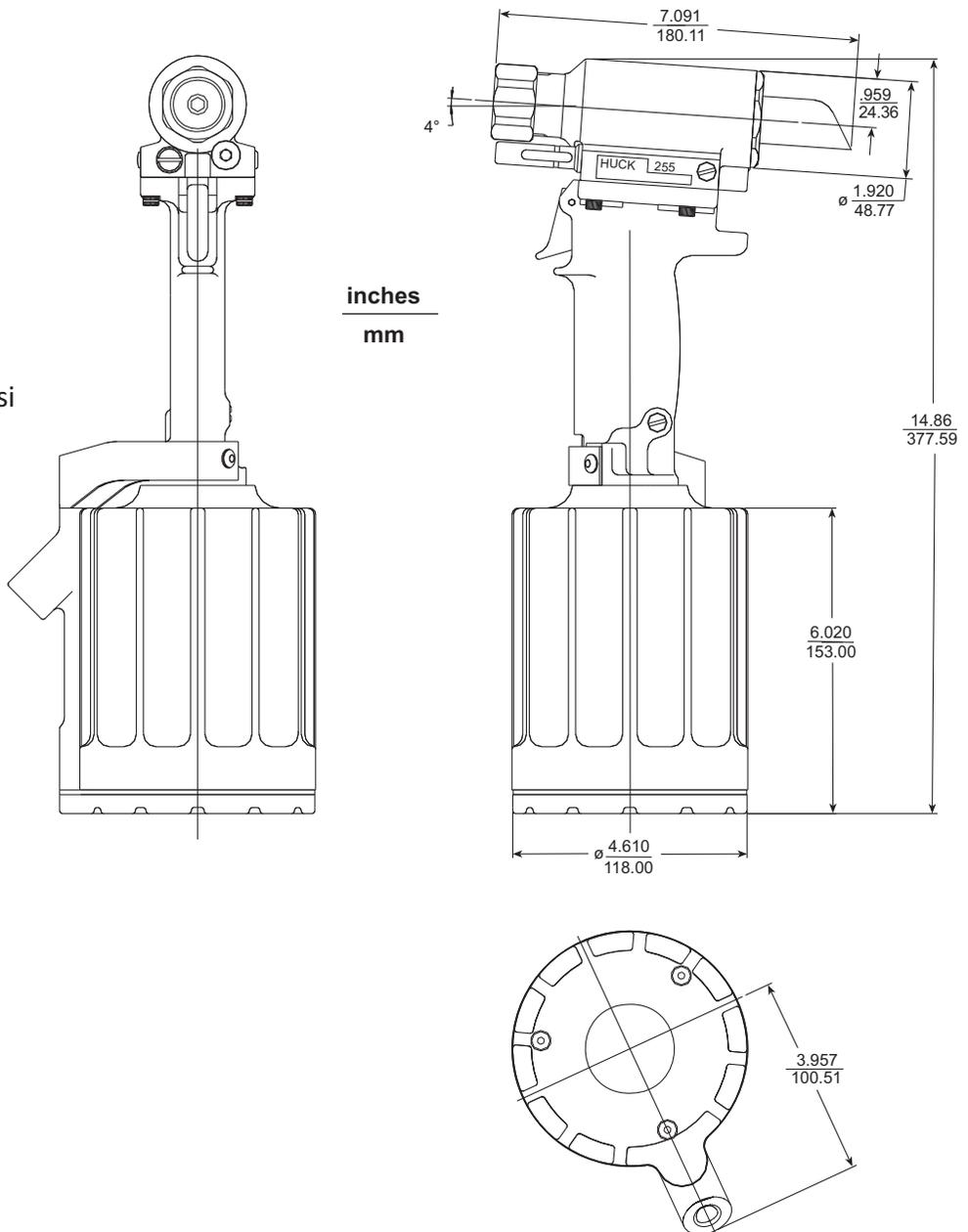
.625 inches (1.59 cm)

SPEED/CYCLES:

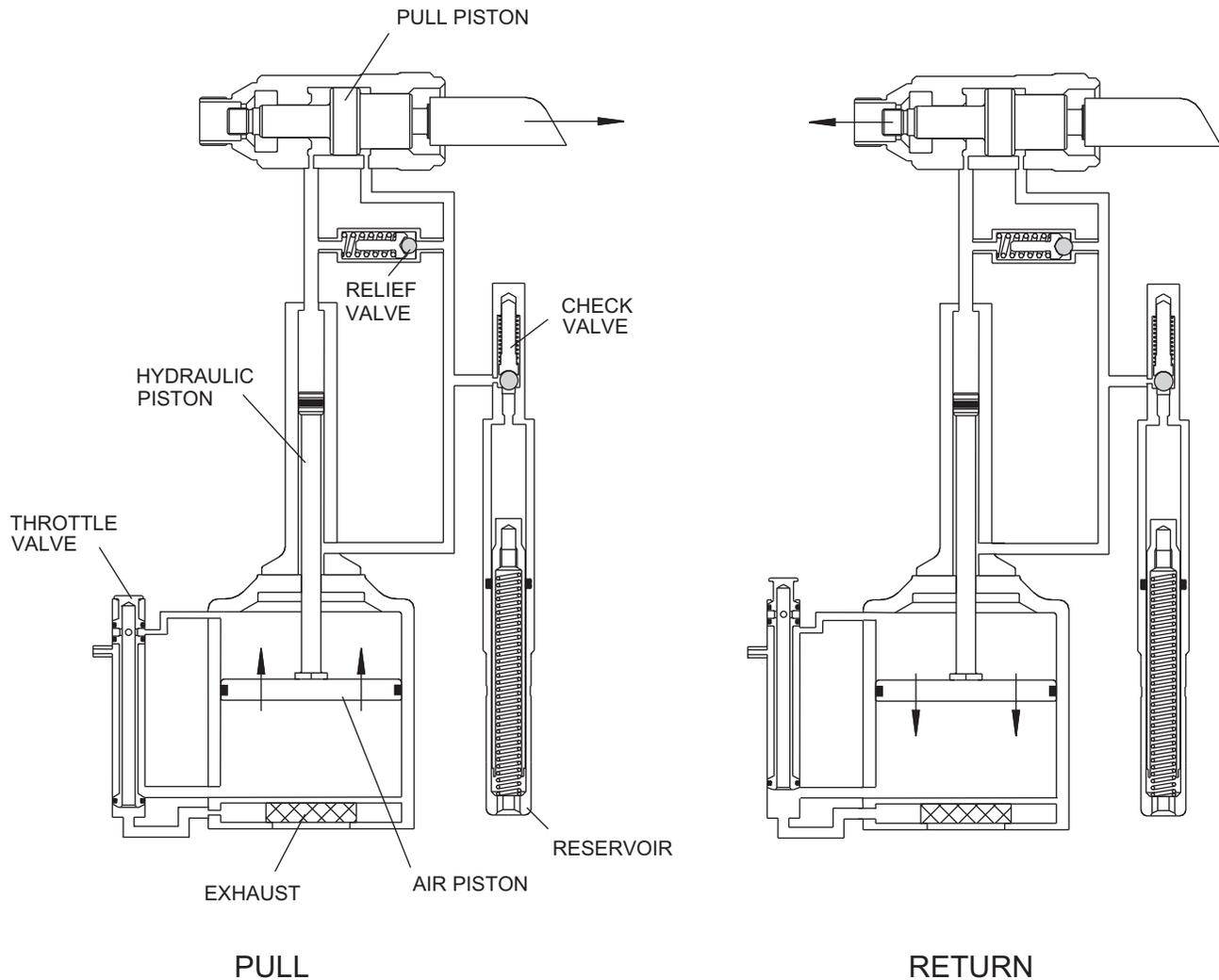
30 per minute

WEIGHT:

8.8 lbs (3.99 kg)



PRINCIPLE OF OPERATION



When the trigger is depressed, the throttle valve moves to down position, and pressurized air is directed to the bottom of the air piston, causing the piston to move upward. The air above the piston is exhausted and directed through the center of the throttle valve and out the bottom of the tool. The air piston has a rod and a hydraulic piston attached. When the air piston rod moves upward, a column of pressurized fluid is forced into the head, which moves the pull piston back. The attached nose assembly moves with the pull piston to start fastener installation.

When fastener installation is completed, the trigger is released. Air pressure, with the assistance of a spring, causes the throttle valve to return to its up position. Pressurized air is re-directed to the top of the air piston, causing the piston to move downward. The air from below the piston is exhausted through bottom of tool. The rod and hydraulic piston move downward, hydraulic pressure is reversed and the pull piston is returned forward. The return pressure relief valve protects the tool against pressure spikes. The reservoir replenishes the hydraulic system as needed.



PREPARATION FOR USE

The Model 255 Installation Tool is shipped with a plastic plug in the air inlet connector. The connector has 1/4-18 female pipe threads to accept the air hose fitting. Quick disconnect fittings and 1/4" inside diameter air hose are recommended. An air supply of 90-100 psi capable of 11.5 CFM must be available. Air supply should be equipped with a filter-regulator-lubricator unit.

1. Remove plastic shipping plug from Air Inlet Connector and put in a few drops of Automatic Transmission Fluid, DEXRON III, or equivalent.
2. Screw quick disconnect fitting into Air Inlet Connector.



CAUTION: Do not use TEFLON tape on threads. Use TEFLON in stick form only: Huck P/N 503237 TEFLON is a registered trademark of DuPont Corporation.

3. Set air pressure on regulator to 90-100 psi.
4. Attach optional Air Hose (38), supplied with tool, to air inlet connector.
5. Connect air hose to tool.
6. Cycle tool a few times by depressing and releasing trigger.

7. Disconnect air hose from tool.
8. Remove Retaining Nut and Stop.
9. Select proper Nose Assembly for fastener to be installed.
10. Screw Collet Assembly (including lock collar and shim if applicable) onto Spindle holding Pull Piston (11) with 3/8 hex key. (Wrench Tight)
11. Slide Anvil over Collet Assembly and into counterbore.
12. Slide Stop and Retaining Nut over Anvil and screw Nut onto Head.
13. Connect air hose to tool and install fastener(s) in test plate of proper thickness with proper size holes. Inspect fastener(s).

NOTES:

1. Air quick disconnect fittings and air hoses are not available from Huck International, Inc.
2. **Vibra-Tite** (Huck P/N 505125) should be used on collet threads for nose assemblies without lock collars. All other noses should be staked.

Vibra-Tite is a registered trademark of ND Industries, Inc. USA

MAINTENANCE

GENERAL

1. The efficiency and life of any tool depends upon proper maintenance. Regular inspection and correction of minor problems will keep tool operating efficiently and prevent downtime. The tool should be serviced by personnel who are thoroughly familiar with how it operates.
2. 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.
3. Proper hand tools, both standard and special, must be available.
4. All parts must be handled carefully and examined for damage or wear. Always replace Seals, when tool is disassembled for any reason. 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.
5. **Service Parts Kit 255KIT** includes consumable parts and should be available at all times. Other components, as experience dictates, should also be available.



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

DAILY

1. If a Filter-Regulator-Lubricator unit is not being used, uncouple air disconnects and put a few drops of Automatic Transmission Fluid or light oil into the air inlet of the tool. If the tool is in continuous use, put a few drops of oil in every two to three hours.
2. Bleed the air line to clear it of accumulated dirt or water before connecting air hose to the tool.
3. Check all hoses and couplings for damage or air leaks, tighten or replace if necessary.
4. Check the tool for damage or air/hydraulic leaks, tighten or replace if necessary.
5. Check the nose assembly for tightness or damage, tighten or replace if necessary.
6. Check oil level in tool reservoir, replenish if necessary.

WEEKLY

1. Disassemble and clean nose assemblies and reassemble per applicable.
2. Check the tool and all connecting parts for damage or oil/air leaks, tighten or replace if necessary.



OPERATING INSTRUCTIONS

Read all WARNINGS and CAUTIONS prior to using your system.

LOCKBOLT® Fastener installation:

 **WARNING:** Do not pull on a pin without a collar. The pin will eject with velocity and force when the pintail breaks off. This may cause serious injury.

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

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:

 **WARNING:** Do not pull on a fastener's pin without first placing fastener in a work piece. The fastener will eject forcibly when the pintail breaks off. This may cause serious injury.

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.

 **CAUTION:** 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.

Please note

Failure to understand **WARNINGS** may cause serious personal injury.

Failure to understand **CAUTIONS** may cause damage to structure and Tool.

For additional safety information, see page 4.



DISASSEMBLY



WARNING: Be sure air hose is disconnected from tool before cleaning, or performing maintenance. Severe personal injury may occur if air hose is not disconnected.

For component identification and Parts list, refer to Figures 1 thru 4 and 9.

NOTE: The following procedure is for complete disassembly of tool. Disassemble **only** components necessary to replace damaged O-rings, Quad rings, Back-up rings, and worn or damaged components. Always use soft jaw vice to avoid damage to tool.

1. Disconnect air hose from tool.
2. Remove nose assembly. Follow instructions on Nose Assembly Data sheet.
3. Insert Fill Tool P/N 112465 through reservoir housing and screw into Reservoir Plunger (79) locking it in the out position. (Fig. 1)
4. Unscrew Cap Screws (69) with 5/32 hex key. Carefully lift Head (89) straight up from Handle (1), remove Pull Gland (90) and Return Gland (22) from separated assemblies. Remove seals from glands. (Fig. 1)
5. Unscrew Plug (83) of return Pressure Relief Valve from front of head. Remove Spring (84), Valve Guide (86), Sleeve (85) and Steel Ball (87). A small magnet is helpful. (Fig. 1)
6. Unscrew Bleed Plug (64). Hold over waste oil container and release fill tool slowly. (Fig. 1)
7. Unscrew Reservoir Housing (81) from head. Remove two Springs (82). Slide Reservoir Plunger (79) from head. Remove spacer and Quad Ring (80). A pick may be used to remove the quad ring. (Fig. 1)
8. Unscrew Plug (71) of reservoir check Valve from side of head. Remove Spring (75), check Valve Guide (76) and Stainless Steel Ball (77). (Fig. 1)
9. If check Valve Seat (78) is damaged contact your Huck representative. If Seat (88) is damaged it can be removed (*through the front of the tool head only*)

by using the following procedure.

NOTE: If seat is taken out it can not be reused, it must be replaced. (Fig. 9)

10. **(Seat 88 removal)** Note: all parts in the reservoir check valve must be removed before Plug (70) can be removed. Unscrew Plug (74), insert a #10 screw in the thread of Plug (70), and pull to remove. Using a small drift and hammer, from the rear side of the head, drive Seat (88) out towards the front of the head. (Fig. 9)
11. Pintail Deflector (21) can be pulled off barbed end at rear of Pull Piston (11).
12. Unscrew End Cap (20) from Head (89) with 1 9/16 open end wrench. (Fig. 9)
13. Place Spacer (123112-1) on Pull Piston (11), and screw Assembly/disassembly Bullet (123111-1) onto piston. Tap or press piston assembly out of head.
NOTE: This will push out front and rear gland assemblies and wiper and wiper housing. (Fig. 2)
14. Remove Screw (67) from Throttle Arm (66). Remove throttle arm. Pull Throttle Valve (36) out of cylinder. Remove Spring (40). (Fig. 9)

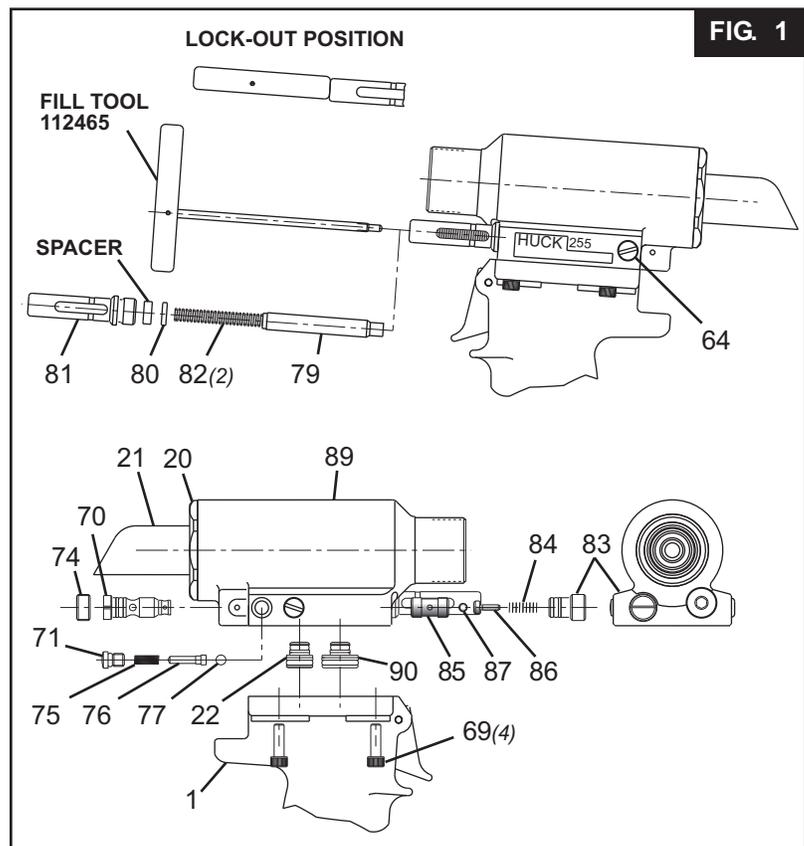


FIG. 1



DISASSEMBLY (CONTINUED)

15. With a small punch and hammer, drive Roll Pin (5) that retains the trigger from Handle (1). Remove trigger pin (4). Remove ball end of Cable (2) from throttle arm (66), and pull cable out of handle. (Figure 9)
16. Remove Bleed Plug (64) from handle. (Fig. 1)
17. Hold tool inverted in vice. Unscrew three Button Head Screws (45) with 1/8 hex key. (Fig. 3)
18. Remove Muffler End Cap (42), Bottom Exhaust Gasket (46), Muffler (43) and O-ring (44). (Fig. 3)
19. Remove Retaining Ring (47) from Cylinder Assembly (53). (Fig. 3) **NOTE:** Tap cylinder head down into cylinder for easier removal of retaining ring.
20. Screw Button Head Screws (45) into Cylinder Head (49). Carefully pry under screws to remove cylinder head.
21. Push air piston all the way down in cylinder, and lay tool on its side. Hold Self-locking Nut (41) with a 9/16 socket and extension and with 7/64 hex key, remove piston Screw (32). (Fig. 4 & 9)
22. Turn cylinder and handle upside down and secure in a vise.
23. Grip Self-locking Nut (41) under Air Piston (51) with pliers and pull piston and rod assembly from handle and cylinder assembly. (Fig. 3 & 4)

CAUTION: Care must be given not to scratch piston rod or cylinder during removal.

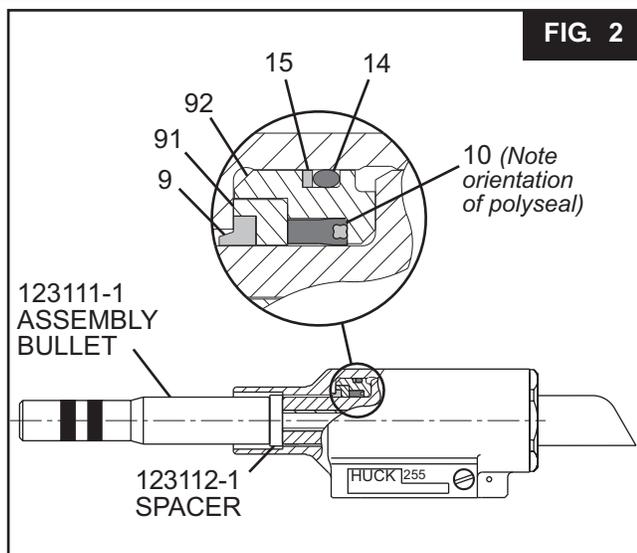


FIG. 2

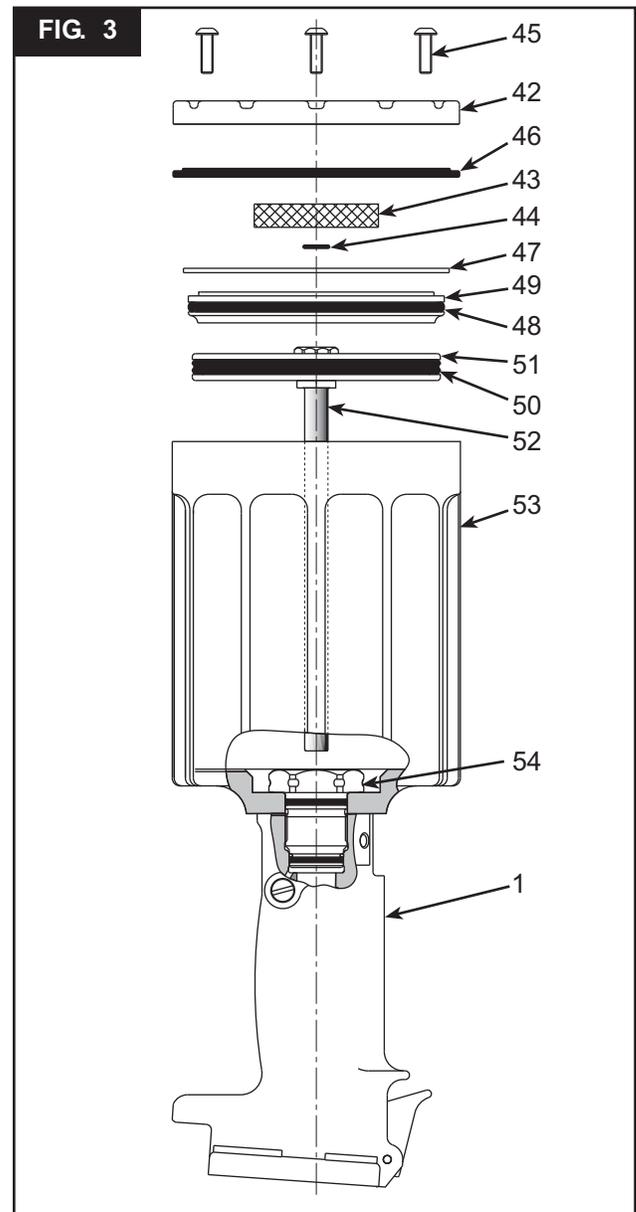


FIG. 3

24. With a 1 3/8 socket and extension, remove Gland Assembly (54). Handle and cylinder will now separate. (Fig. 3)

25. Push Hydraulic Piston (31) out of handle. Push out from top to bottom.

CAUTION: A plastic or wooden drift must be used to avoid damaging the handle bore.

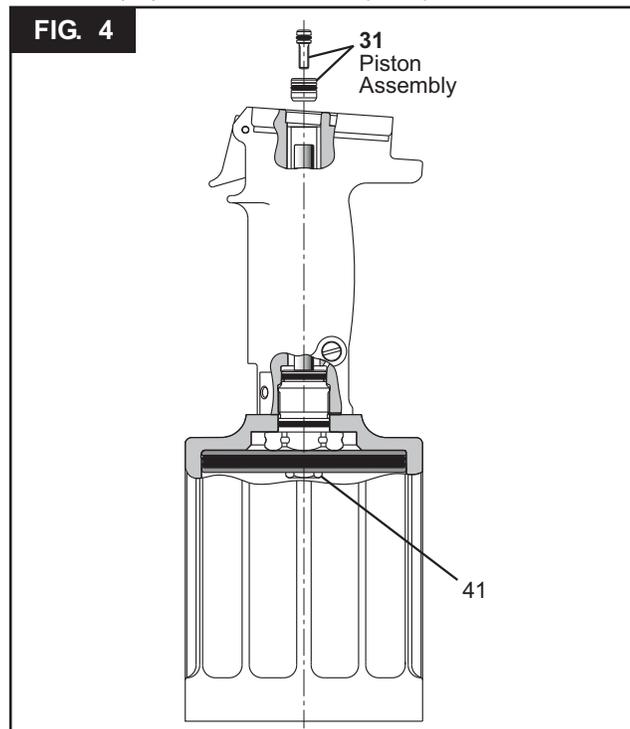
26. To remove Polyseal (61) from Gland Assembly (54), remove Retaining Ring (59) and Spacer (60). (Fig. 9)



ASSEMBLY

(Refer to Figures 1 thru 5 and 9.) Clean components with mineral spirits, or similar solvent. Inspect for wear or damage and replace as necessary. Replace all seals of disassembled components. Use O-rings, Quad rings and Back-up rings in **Service Parts Kit 255KIT** Smear LUBRIPLATE 130AA or PARKER-O-LUBE on O-rings, Quad rings, Back-up rings and mating parts to ease assembly. Assemble tool giving care not to damage O-rings, Quad rings, or Back-up rings.

1. Holding handle inverted in a vice, place Cylinder (53) on handle with Timing Pin positioned in matching hole. Assemble Gland Assembly (54), screw it into handle, and torque to 75-80 ft. lbs. using 1 3/8 socket wrench.
2. Push Air Piston/Rod assembly with Quad Ring (50) in place into Air Cylinder until it bottoms at top of Cylinder. (Fig. 3)
3. Turn tool upright. Install Hydraulic Piston Assembly (31) (with O-ring (33) and Back-up Rings (27) in place) in handle. Press in from top of handle **without damaging seals**. (Fig. 4)
4. Push Screw (32) with O-ring (35) in place through Hydraulic Piston (34) and screw into top of piston rod. Hold Self-

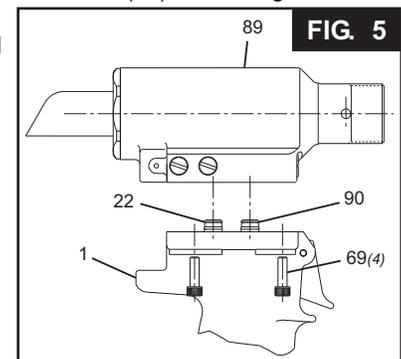


locking Nut (41) with 9/16 socket and extension and torque Screw (32) using 7/64 hex key to 55-60 in. lbs. Torque Nut (41) to 28-32 ft. lbs.

5. Hold handle in vise with bottom facing up. Push Cylinder Head (49) with O-ring (48) in place squarely into cylinder. Install Retaining Ring (47). (Figs. 3 & 9)
6. Position O-ring (44) and Muffler (43) on center of Cylinder Head (49). Place Gasket (46) on Cylinder Assembly (53). **NOTE: Lip must face Muffler End Cap (42).** Place Muffler End Cap (42) on top of Gasket (46), and secure with 3 Button Head Screws (45) using 1/8 hex key. (Fig. 3)
7. Turn tool upright. Drop Spring (40) into Throttle valve hole in cylinder. Push Throttle Valve (36) with O-rings (37 & 39) in

place into cylinder. (Fig. 9)

8. Assemble Trigger (3) Cable (2) and Trigger Pin (4), and slide cable into Handle (1). Align hole in trigger with hole in handle and install Roll Pin (5) with a hammer and punch. (Fig. 9)
9. Slide Throttle Arm (66) onto ball end of Throttle Cable. Swing arm until other end fits over throttle valve. Push Screw (67) through Throttle Arm. Tighten with 5/32 hex key.
10. Reinstall Air Hose Assembly (38) if it was removed.
11. **(If seat (88) is being replaced)** Push Plug (70) (with O-ring 72 & Back-up Ring 25 in place) into head. Install Screw (74). (Fig. 9)
12. Install O-ring (72) and Back-up rings (25) onto seat. Drive seat and seal assembly in using soft drift taking care not to damage ball seat surface. (Fig. 1 & 9)
13. Assemble Pull Piston (11) with new Seals (12 & 13). Lubricate with LUBRIPLATE or PARKER SUPER-O-LUBE.
14. Thread Assembly Bullet (123111-1) onto Pull Piston (11) and push entire assembly into head. (Fig. 2) **NOTE:** Spacer (123112-1) is **not** needed for this procedure.
15. Push Front Gland (92) with O-ring (14), Back-up Ring (15), Polyseal (10), Wiper Housing (91) and Wiper Seal (9) in place onto Pull Piston (11). (Fig. 2)
16. Install O-rings (16 & 18) and Back-up Rings (17 & 19) on Rear Gland (93). Push complete assembly into head, screw in End Cap (20) and torque Cap to 55-60 ft.lbs.
17. Install O-ring (72) & Back-up Ring (25) on Plug (83). Install Ball (87), Valve Guide (86), Sleeve (85), Spring (84) and Plug (83) into head. (Fig. 1 & 9)
18. Install O-ring (65) on Plug (71). Install Ball (77), Guide (76), Spring (75) and Plug into head.
19. Push Pintail Deflector (21) onto end of Pull Piston (11).
20. Place O-ring (65) on Bleed Plug (64) and screw assembly into Handle (1). (Fig. 9)
21. Install O-rings (24 & 30) & Back-up Rings (25 & 29) on Pull Gland (28), O-rings (24 & 26) and Back-up Rings (25 & 27) on Return Gland (23), and push Gland Assemblies (22 & 90) into handle. Push Head (89) down on glands. Place tool in a vise, head down, and install 4 Screws (69) and torque to 170 inch pounds. (Fig. 5)
22. Tool is now assembled and ready for Fill and Bleed.





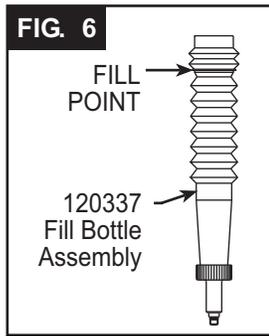
FILL AND BLEED

Equipment Required:

- Shop airline with 90 - 100 psi max.
- Air regulator
- Fill bottle, 120337, (supplied with tool).
- Large flat blade screwdriver
- Optional Stall Nut 120824
- Nose assembly
- Fasteners (Optional)

Preparation:

1. Install air regulator in airline and set pressure to 20-40 psi.
2. Fill bleed bottle almost full of DEXRON III - ATF or equivalent. (Fig.6)

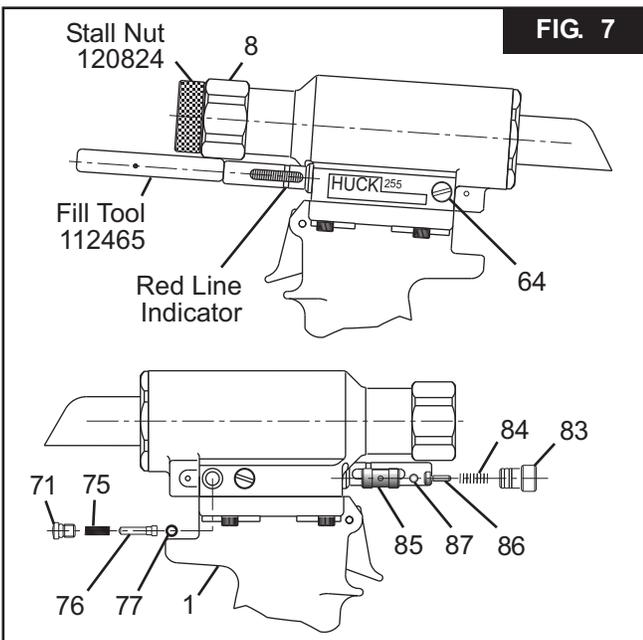


WARNING: Avoid contact with hydraulic fluid. Hydraulic fluid must be disposed of in accordance with Federal, State and Local Regulations. Please see MSDS for Hydraulic fluid shipped with tool.

Refill tool only when red line on plunger drops below the red line on the reservoir housing or when tool is rebuilt. **USE: AUTOMATIC TRANSMISSION FLUID DEXRON III, OR EQUIVALENT.**

Step 1

Screw Fill Tool P/N 112465 into Reservoir Plunger, pull Plunger into Housing and lock Fill Tool in full forward position by tilting handle (long side touching tool) and locking in place. (Fig. 7)



Step 2

Remove Plugs (83) and (71) and all guides, springs and balls from ports in head. Reinstall Plug (83) in head in Relief Valve port (front of tool). (Fig. 7 & 8).

Step 3

Screw retaining nut onto head assembly. Screw Stall Nut (optional see note:) onto Piston and tighten to ensure full thread engagement. Back off retaining nut until it engages stall nut. Check Piston location. Piston must be all the way forward and locked with stall nut and retaining nut. **Note: If Stall Nut is not used, piston must be pushed to the full forward position before installing valves.**

Step 4

Attach the tool air source momentarily to seat air piston at bottom of cylinder. Disconnect tool. With fill port facing up, (check valve on side) lay tool on its side.

Step 5

Install fill bottle in head fill port (check valve hole). (Fig. 7 & 8)

Step 6

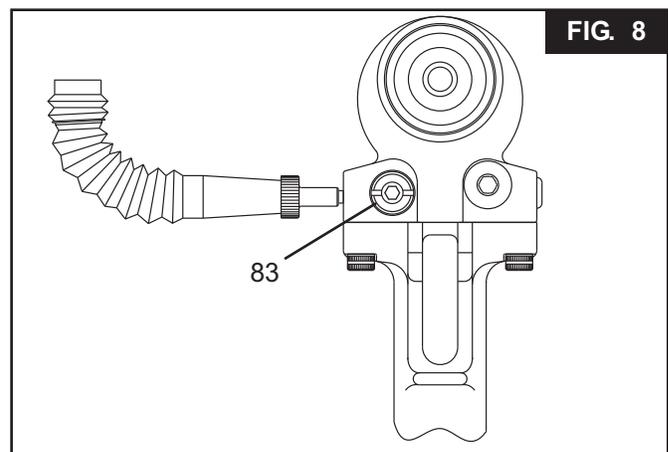
Connect tool to shop air regulated to 20 to 40 psi. Cycle tool 20-30 times. Watch for air bubbles escaping from the tool into bottle. (You may rock the tool to free trapped air in the tool.) Do not allow the air to re-enter the tool.



WARNING: Air pressure MUST be set to 20 to 40 psi to prevent possible injury from high pressure spray. If plug (71) is removed, fill bottle must be in place before cycling tool.

Step 7

When air bubbles no longer appear in bottle, remove fill bottle while tool is lying on its side.





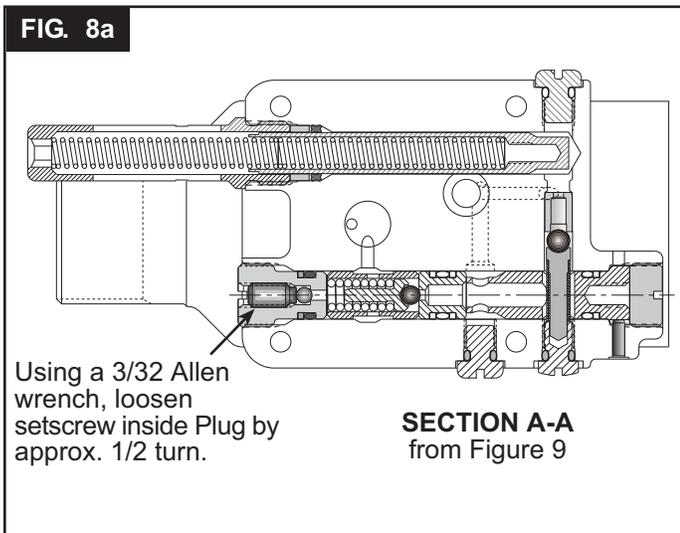
FILL AND BLEED (CONTINUED)

Step 8

Install the check valve Ball (77), Guide (76) and Spring (75). Replace the Plug (71). (Fig. 7) **Note:** When cycling tool, always hold bottle up as shown in Figure 8 to prevent drawing in air from empty part of bottle.

Step 9

Turn tool so front of head faces you and remove the relief valve Plug (83). Prior to removing Plug (83), it is advisable to back out setscrew inside of plug by approximately 1/2 turn counterclockwise. (See Figure 8a). This ensures that the Piston will remain in full-forward position. Install relief valve Ball (87), Guide (86), Sleeve (85) and Spring (84). Replace the Plug (83).



Step 10

Unlock Fill Tool and check Reservoir red line. At this point cycle tool with Stall Nut attached (Optional. See note) and retaining nut locked in the full forward position ("Dead Stall"). Reservoir should not drop below the red line on the reservoir housing. **NOTE:** Dead Stalling is not necessary if Optional Stall nut was not used; just cycle tool.

Step 11

Re-lock the fill tool in out position. Lay tool on its left side and remove Bleed Plug (64). Top off reservoir by placing a few drops of oil in hole and wait for air bubbles to escape. Push a pin or a scribe into hole to check for trapped air bubbles. Replace plug. (Fig. 7)



WARNING: Failure to re-lock the fill tool will result in oil being ejected from the head under pressure during the topping off of the reservoir. Severe personal injury may result.

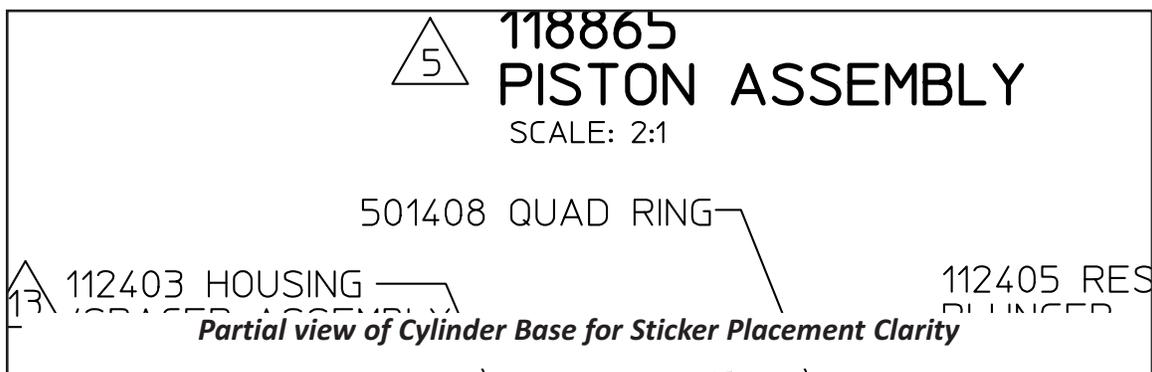
Step 12

Unlock the fill tool and cycle tool as in step 10. Reservoir may drop slightly. If so, repeat step 11 until, when you touch the fill tool handle, it has no pressure against it and it drops out of the lock position, and the plunger does not drop when tool is cycled. **NOTE:** This usually requires 3 to 4 times topping off.

Step 13

Remove fill tool and stall nut (if used). Install a nose assembly and pull several fasteners to test function.

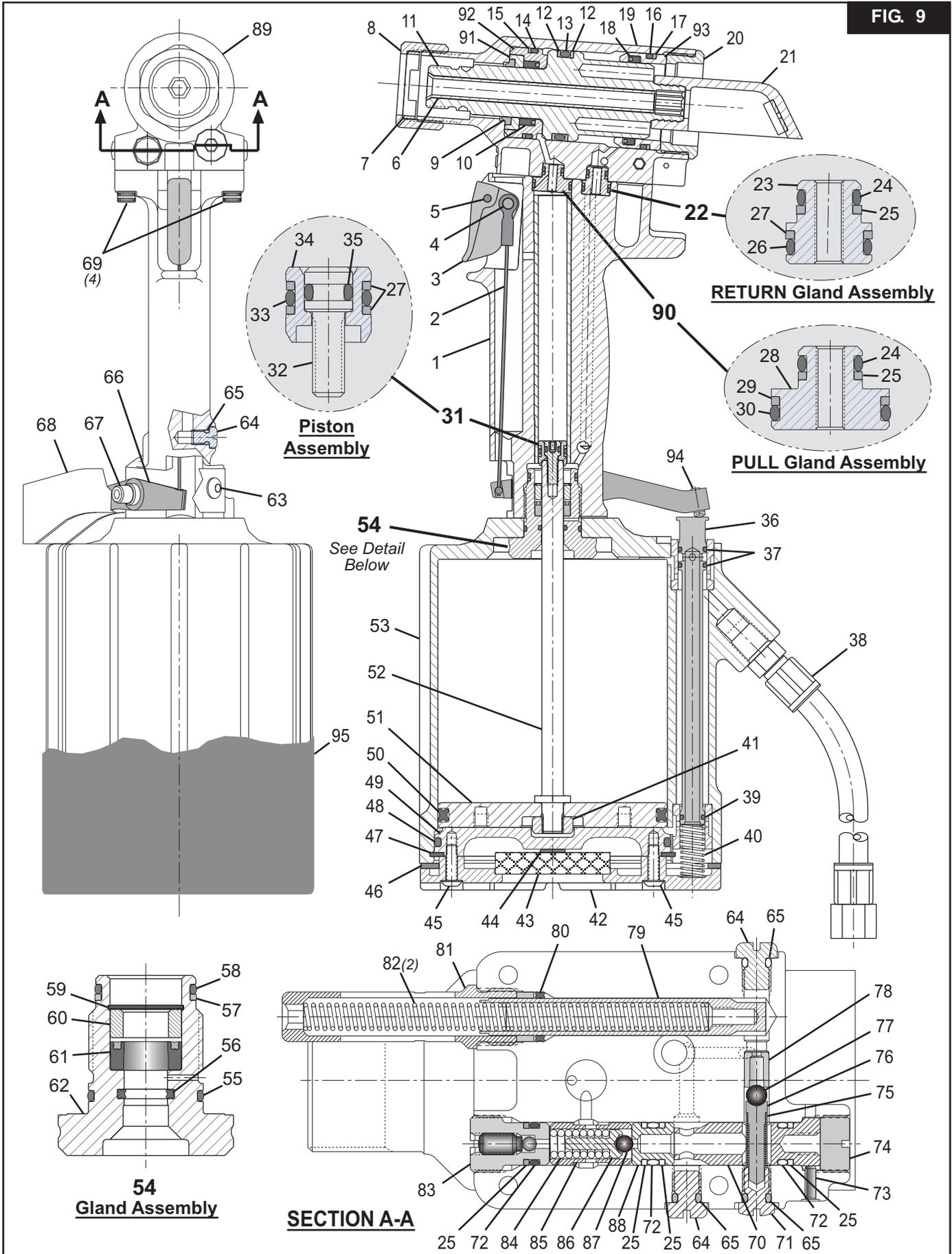
STICKER LOCATIONS





ASSEMBLY DRAWING

FIG. 9





PARTS LIST

ITEM	DESCRIPTION	Part No.	QTY
1	Handle & Sleeve Assembly	125641	1
2	Cable	125643	1
3	Throttle Lever	124333-2	1
4	Trigger Pin	505496	1
5	Roll Pin	500621	1
6	Pintail Tube	126087	1
7	Stop	110670	1
8	Retaining Nut	117824	1
9	Wiper Seal	505894	1
10	Polyseal	506160	1
11	Piston	126083	1
12	Back-up Ring	113251	2
13	O-ring	500851	1
14	O-ring	500823	1
15	Back-up Ring	126088	1
16	O-ring	505887	1
17	Back-up Ring	113253	1
18	Polyseal	129944	1
19	HUCK and Yr of Mfr Sticker	590517	1
20	End Cap	112491	1
21	Pintail Deflector	124211	1
22	Return Gland Assembly	112502	1
23	Return Gland	112427	1
24	O-Ring	500776	2
25	Back-up Ring	501082	6
26	O-Ring	500778	1
27	Back-up Ring	501084	3
28	Gland	112426	1
29	Back-up Ring	501087	1
30	O-Ring	500781	1
31	Hydraulic Piston Assembly	118865	1
32	Screw	117773	1
33	O-Ring	503768	1
34	Piston	117774	1
35	O-Ring	500773	1
36	Throttle Valve Assy (contains Throttle Valve - not sold separately, and Items 37, 39, and 40)	115558	1
37	O-Ring	504408	2
38	Air Hose Assembly	115436	1
39	O-Ring	504407	1
40	Spring	116272	1
41	Self-Locking Nut	121241	1
42	Muffler End Cap	116585	1
43	Muffler	115554	1
44	O-Ring	500777	1
45	Screw, Button Head	504127	3
46	Gasket	126941-2	1
47	Retaining Ring	505025	1
48	O-Ring	500873	1
49	Cylinder Head	111959	1
50	QUAD Ring	501460	1
51	Air Piston	100315	1
52	Piston Rod	112414	1

ITEM	DESCRIPTION	Part No.	QTY
53**	Cylinder Assembly	115556	1
54	Gland Assembly	116173	1
55	O-Ring	500786	1
56	QUAD Ring	501074	1
57	Back-up Ring	501090	1
58	O-Ring	500784	1
59	Retaining Ring	505939	1
60	Spacer	123904	1
61	Polyseal	506611	1
62	Gland	123903	1
63	Screw	502482	2
64	Bleed Plug	100309	3
65	O-ring	505438	4
66	Throttle Arm	127690	1
67	Screw & Bushing Assembly	127029	1
68	Guard	125656	1
69	Cap Screw	500102	4
70	Plug	120204	1
71	Plug	111068	1
72	O-ring	505446	3
73	Pin	120203	1
74	Screw	120129	1
75	Spring	100874	1
76	Guide	111067	1
77	Ball	502929	1
78	Seat	111139	1
79	Reservoir Plunger	112405	1
80	QUAD Ring	501408	1
81	Housing/Spacer Assembly	112403	1
82	Spring	505864	2
83	Plug	114530	1
84	Spring	505863	1
85	Sleeve	120127	1
86	Valve Guide	120128	1
87	Ball	502506	1
88	Seat	114528	1
89	Head Assembly	126079	1
90	Pull Gland Assembly	112501	1
91	Wiper Housing	123138	1
92	Front Gland	126081	1
93	Rear Gland	126085	1
94	Set Screw	502053	1
95	Silicone Cover	129710	1
96**	Max Pressure & Flow Sticker	590350	1
97**	CE Sticker	590351	1
98**	HUCK Address Sticker	590347	1

**** The 255 series tools come labeled with important stickers which contain safety information. It is necessary that these stickers remain on the tool and are easily read. If any sticker becomes damaged or worn, or when replacing a cylinder, the stickers must be ordered and placed in the locations shown on page 13 of this manual.**



TROUBLESHOOTING

Always check out the simplest possible cause of a malfunction first. For example, an air hose not connected. Then proceed logically, eliminating each possible cause until the cause is located. Where possible, substitute known good parts for suspected bad parts. Use TROUBLESHOOTING CHART as an aid in locating and correcting malfunction.

NOTE:

“Piston drift” is when the air piston is in the down position, but the hydraulic pull piston is not in the full forward position. This causes an out of sequence condition.

- 1 *Tool fails to operate when trigger is depressed.*
 - a) Air line not connected
 - b) Throttle Valve O-rings (37 & 39), worn or damaged.
 - c) Throttle Valve Cable (2) is broken.
- 2 *Tool does not complete fastener installation and break pintail.*
 - a) Air pressure too low
 - b) Air Piston Quad-ring (50) worn or damaged.
 - c) Reservoir empty or low, refer to Fill and Bleed section.
 - d) Air in hydraulic system, refer to Fill and Bleed section.
 - e) Reservoir Springs (82) worn or damaged
 - f) Check for piston drift
- 3 *Pintail stripped and/or swaged collar not ejected.*
 - a) Check for broken or worn jaws in nose assembly, refer to nose assembly data sheet.
 - b) Check for loose Retaining Nut (8)
 - c) Check for piston drift.
- 4 *Tool has piston drift.*
 - a) Loose collet crashing into the front of the anvil, this causes the relief valve to open allowing the piston to drift. Tighten the collet and refer to Fill and Bleed section.
 - b) Worn or damaged Return Pressure Relief Valve in tool, inspect Seat (88), O-ring (72), Back-up Rings (25), Steel Ball (87) and Valve Spring (84). Replace if necessary.
 - c) Worn or damaged Piston Assembly (31); inspect O-ring (33), O-ring (35) and Back-up rings (27). Replace if necessary.
- 5 *Hydraulic fluid exhausts with air or leaks at base of handle.*
 - a) Worn or damaged Gland Assembly (54) inspect Polyseal (61), O-rings (58 and 55), Quad-ring (56) and Back-up ring (57) replace if necessary.
6. *Hydraulic fluid leaks at rear of Pull Piston (11)*
 - a) Worn or damaged Rear Gland (93): Inspect O-rings (16 and 18) and Back-up Rings (17 and 19). Replace if necessary.
7. *Hydraulic fluid leaks at front of Pull Piston (11).*
 - a) Worn or damaged Front Gland (92): Inspect Polyseal (10), O-ring (14) and Back-up Ring (15). Replace if necessary.
8. *Pull Piston (11) will not return.*
 - a) Throttle Valve (36) stuck: Lubricate O-rings (37 & 39).
 - b) Throttle Arm (66), Cable (2) or Trigger (3) binding.
9. *Air leaks at air Cylinder Head (49).*
 - a). Worn or damaged O-ring (48). Replace if necessary.

ACCESSORIES

Service Kit	-	255KIT
<i>(includes most consumable parts such as seals, deflector, springs, etc.)</i>		
Stall Nut (Fig. 7)	-	120824
Service Tool Kit	-	126104
<i>Includes:</i>		
Assembly Bullet (Fig.2)	-	123111-1
Spacer (Fig. 2)	-	123112-1



LIMITED WARRANTIES

TOOLING WARRANTY:

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

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Huck 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 Office, see back cover.

In addition to the above repair facilities, there are Authorized Tool Service Centers (ATSC's) located throughout the United States. These service centers offer repair services, spare parts, Service Parts Kits, Service Tools Kits and Nose Assemblies. Please contact your Huck Representative or the nearest Huck office listed on the back cover for the ATSC in your area.



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1 Corporate Drive
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Australia Operations
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03-764-5500
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Alcoa Fastening Systems
Industrial Products
United Kingdom Operations
Unit C, Stafford Park 7
Telford, Shropshire
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