

Alcoa
Fastening
Systems



INSTRUCTION MANUAL

HK-150 SERIES

INSTALLATION TOOLS



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

05-06-2010
HK1058



EC Declaration of Conformity

Manufacturer:

Alcoa Fastening Systems, Industrial Products Group, 1 Corporate Drive, Kingston, NY, 12401, USA

Description of Machinery:

HK150 family fastener installation tools

Relevant provisions complied with:

Council Directive related to Machinery (2006/42/EC)

British Standard related to hand held, non-electric power tools (EN 792-1)


While this tool conforms to listed directives, it falls outside the scope of the directives and therefore does not carry the CE mark.

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: Larry M. Krieg
 Position: Product Engineer
 Installation Systems Division
 Place: Kingston, New York, USA
 Date: March, 2010

Declared dual number noise emission values in accordance with ISO 4871	
A weighted sound power level, LWA: 90 dB (reference 1 pW) Uncertainty, KWA: 3 dB	
A weighted emission sound pressure level at the work station, LpA: 79 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	
<i>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.</i>	

Declared vibration emission values in accordance with EN 12096	
Measured Vibrations emission value, a:	.66 m/s ²
Uncertainty, K:	.28 m/s ²
<i>Values measured and determined according to ISO 8662-1, ISO 5349-2, and EN 1033</i>	

Test data to support the above information is on file at Alcoa Fastening Systems, Industrial Products Group, Kingston Operations, Kingston, NY, USA.

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SAFETY

This instruction manual must be read, with particular attention to the following safety guidelines, by any person servicing or operating this tool.

1. Glossary



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



— Read manual prior to using equipment.



— Eye protection required while using this equipment.



— Hearing protection required while using this equipment.



WARNINGS - Must be understood to avoid severe personal injury.



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

Notes - are reminders of required procedures.

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

2. A half hour long hands-on training session with qualified personnel is recommended before using Huck equipment.
3. 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.
4. Repairman and Operator must read manual prior to using equipment. Warning and Caution stickers/labels supplied with equipment must be understood before connecting equipment to any primary power supply. As applicable, each of the sections in this manual have specific safety and other information.
5. Read MSDS Specifications before servicing the tool. MSDS Specifications are available from the product manufacturer or your Huck representative.
6. When repairing or operating Huck installation equipment, always wear approved eye protection. Where applicable, refer to ANSI Z87.1 - 2003
7. Disconnect primary power source before performing maintenance on Huck equipment or changing Nose Assembly.
8. Tools and hoses should be inspected for leaks at the beginning of each shift/day. If any equipment shows signs of damage, wear, or leakage, do not connect it to the primary power supply.
9. Mounting hardware should be checked at the beginning of each shift/day.
10. Make sure proper power source is used at all times.
11. Release tool trigger if power supply is interrupted.
12. Tools are not to be used in an explosive environment unless specifically designed to do so.
13. Never remove any safety guards or pintail deflectors.
14. Ensure deflector or pintail collector is installed and operating prior to use.
15. Never install a fastener in free air. Personal injury from fastener ejecting may occur.
16. Always clear spent pintail out of nose assembly before installing the next fastener.
17. There is possibility of forcible ejection of pintails or spent mandrels from front of tool.
18. If there is a pinch point between trigger and work piece, use remote trigger. (Remote triggers are available for all tooling).
19. Unsuitable postures may not allow counteracting of normal expected movement of tool.
20. 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 in preventing an accident which may cause severe personal injury.
21. Never place hands between nose assembly and work piece. Keep hands clear from front of tool.
22. There is a risk of crushing if tool is cycled without Nose Assembly installed.
23. Tools with ejector rods should never be cycled with out nose assembly installed.
24. When two piece lock bolts are being used always make sure the collar orientation is correct. See fastener data sheet of correct positioning.
25. There is a risk of whipping compressed air hose if tool is pneudraulic or pneumatic.
26. Tool is only to be used as stated in this manual. Any other use is prohibited.

PRINCIPLE OF OPERATION

READ INSTRUCTIONS THOROUGHLY PRIOR TO OPERATING THE RIVETER. THIS RIVETER IS DESIGNED FOR INTERMITTENT DUTY AND MAINTENANCE WORK ONLY.

The HK-150 is a hydraulic tool designed to set from 1/8 inch up to and including 1/4 inch diameter steel, stainless steel, aluminum and plastic rivets by changing only the nose piece. The HK-150 has a rated pull pressure of over 3,500 lbs and one handed operation gives access to tight areas.

The hydraulic system is sealed, oil cannot be added. If the HK-150 should become damaged and leaks oil from the tool, *it should be returned to an authorized service center.*

TOOL SPECIFICATIONS

Operating Temperature Range: 32 ° - 125 ° F (0 ° - 51.7 ° C)

Maximum Operating Temperature: 125 ° F (51.7 ° C)

<u>STROKE</u>	<u>RIVET DIAMETER</u>	<u>RIVET MATERIALS</u>	<u>PULL PRESSURE</u>	<u>WEIGHT</u>
5/8" (1.58 cm)	1/8"-1/4" (.32-.63 cm)	Stainless Steel, Aluminum, Plastic	3,500 lbs (15.6 kN)	28 oz (.79 kg)

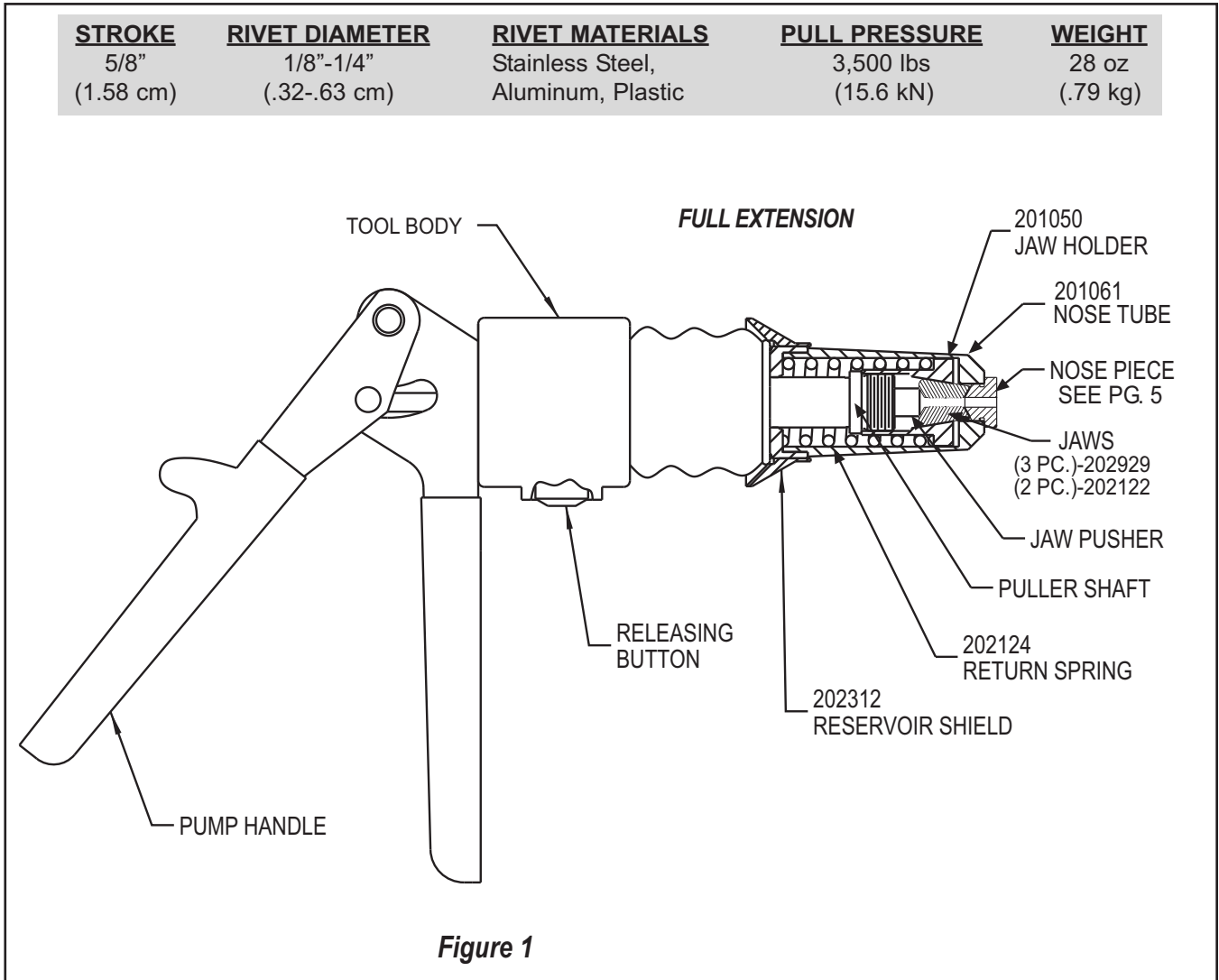


Figure 1



OPERATING INSTRUCTIONS

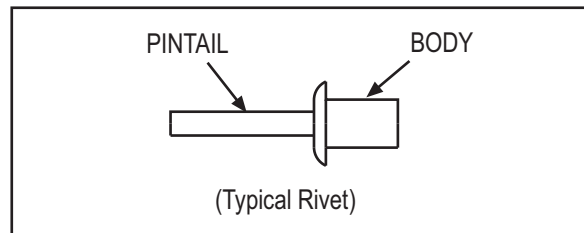


WARNINGS:

- Read full manual before using tool.
- A half-hour training session with qualified personnel is recommended before using Huck equipment.
- 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.
- Tool shall not be operated if directed toward the operator or any person.
- Beware of ejection of fastener; turn head in each operation to avoid exposure.

READ INSTRUCTIONS THOROUGHLY PRIOR TO OPERATING THE RIVETER. THIS RIVETER IS DESIGNED FOR INTERMITTENT DUTY AND MAINTENANCE WORK ONLY.

The HK-150 hydraulic riveter installs fasteners by a pull and release system. Placing lever in "PULL" position, and pumping the handles (see figure 2 on the next page) will actuate the tool. After installing the fastener, the tool must be returned to its original position, which releases the pintail. To do this, point the tool downward, place lever in "RELEASE" position, and squeeze handles (see figure 3). The pintail should drop out.



Nose Piece Installation:

1. Select the proper Nose Piece for the correct installation of fastener and function of tool.
2. Remove the Nose Piece in the tool by unscrewing it in a counterclockwise direction.
3. Hand tighten the Nose Piece into the Nose Tube.

Fastener Installation:

Install correct nose piece on tool (see Nose Piece installation section).

1. Insert pintail of rivet in to the Nose Piece.
2. Position the Rivet Body in to Work Piece to be fastened.
3. Hold the tool steady against the work piece and pump Handles until rivet is set and pintail is broken*. See figure 2



CAUTIONS:

- Before operating tool, make sure that all Nose parts have been screwed in **HAND TIGHT**.
- Frequently check that nose components do not vibrate loose during operation.

*The HK-150 has a .625 inch work travel and will set most rivets in one cycle. If the tool reaches the end of its travel before the rivet breaks, DO NOT continue pumping the handles on the tool. Release the tool by pressing RELEASE Button and then squeezing the handles. Next, regrip the rivet, and pump the HANDLES and finish the installation.



OPERATING INSTRUCTIONS (continued)

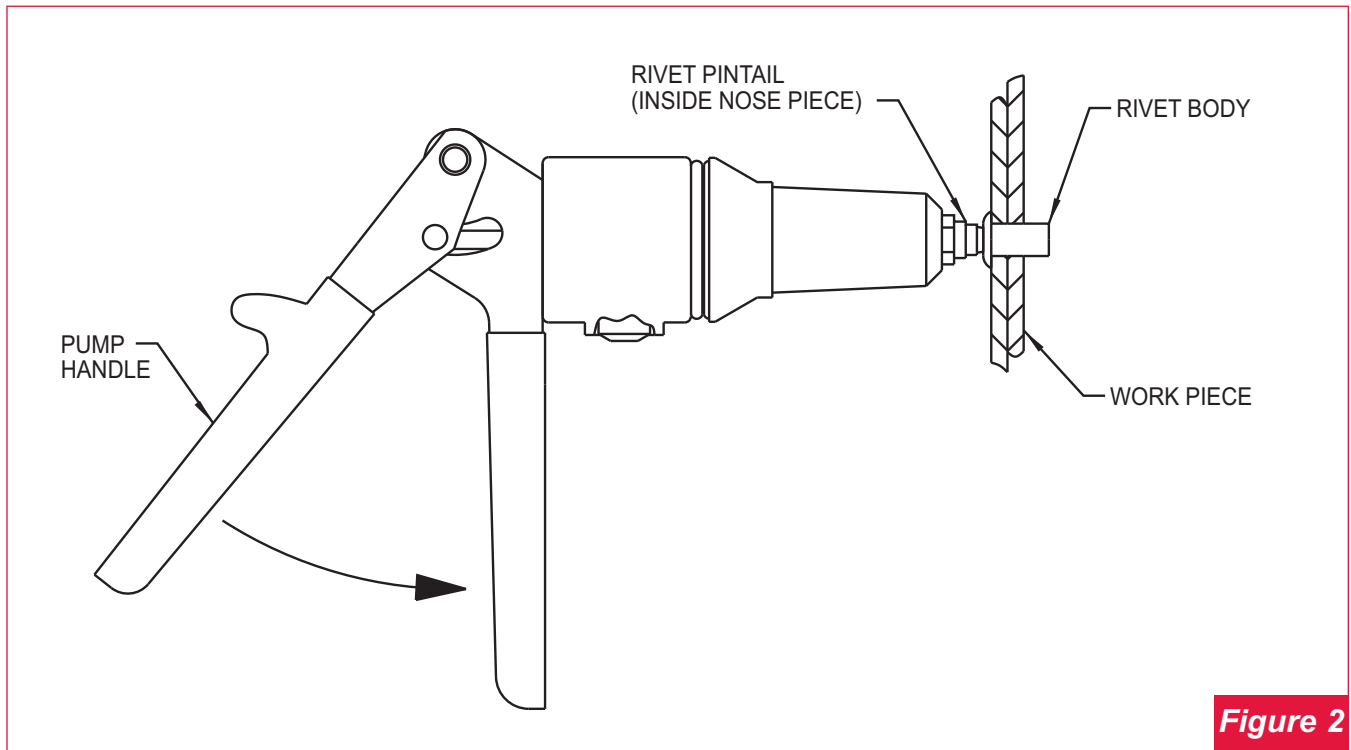


Figure 2



RIVET PINTAIL REMOVAL

Rivet Pintail Removal

Once Rivet is installed, Pintail must be removed.

1. Point tool downward.
2. Squeeze the Handle while pressing the Releasing Button.

CAUTION: It is necessary to remove Pintail before attempting to install another Rivet.

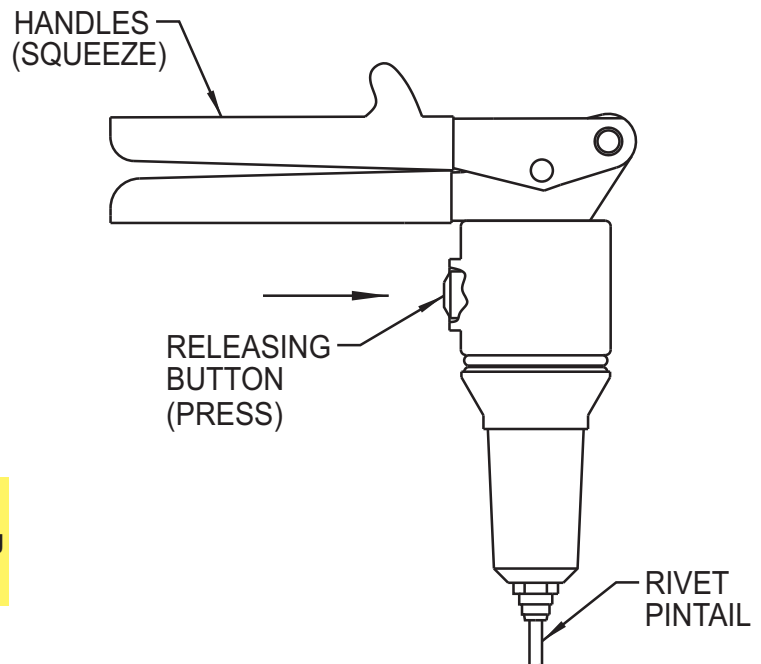
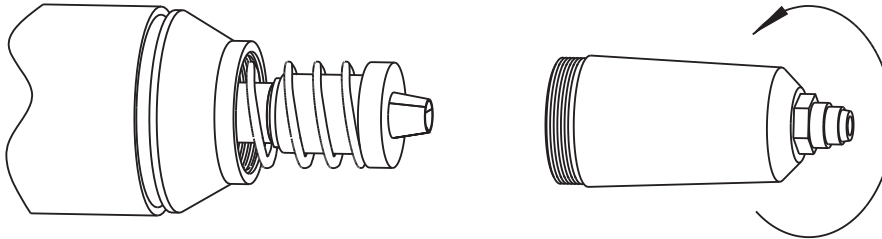


Figure 3



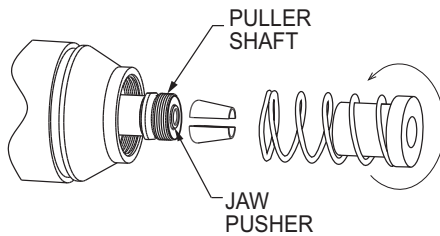
JAW INSTALLATION AND REMOVAL:

- 1** The jaws are installed at the factory and should only need to be removed for periodic inspection and cleaning. To remove the jaws unscrew the NOSE TUBE from the tool in a counterclockwise direction



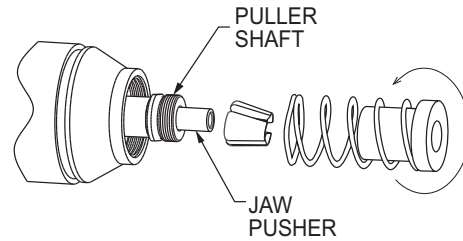
2. TWO PIECE JAW SYSTEM

Remove the JAW HOLDER by unscrewing it in a counterclockwise direction. Drop JAWS out from SPRING side. Push JAW PUSHER flush with PULLER SHAFT while squeezing the RELEASING TRIGGER (See Figure 3 above).



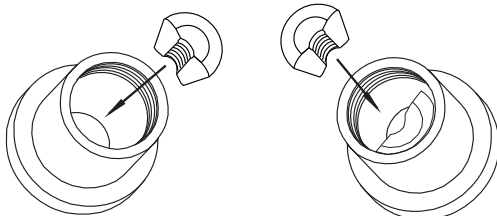
2. THREE PIECE JAW SYSTEM

Remove the JAW HOLDER by unscrewing it in a counterclockwise direction. Drop JAWS out from SPRING side. Actuate tool by squeezing the ACTUATING TRIGGER (see fig 3 above) until the jaw pusher is fully extended. Stop as soon as the JAW PUSHER is in the extended position.



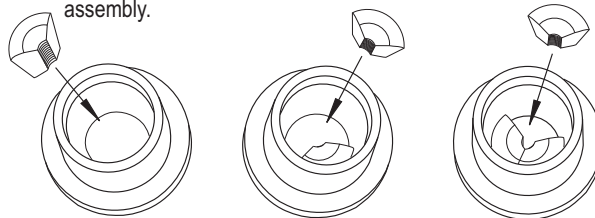
3. TWO PIECE JAW SYSTEM

To replace JAWS, hold JAW HOLDER large end down and at a slight angle. Place jaws in one at a time. Add a small amount of jaw lubricant to jaws and jaw holder prior to assembly.



3. THREE PIECE JAW SYSTEM

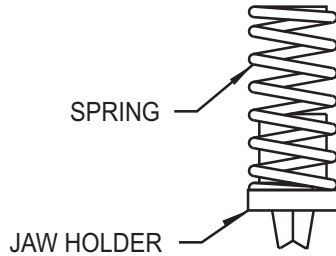
To replace JAWS, hold JAW HOLDER large end down and at a slight angle. Hold finger over small opening and place jaws in one at a time. Add a small amount of jaw lubricant to jaws and jaw holder prior to assembly.





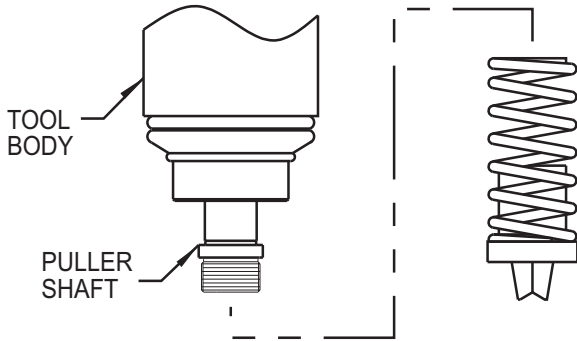
JAW INSTALLATION AND REMOVAL (CONT.):

4. When jaws are in place, insert jaw holder into spring, being sure to keep large end of jaw holder pointing downward.



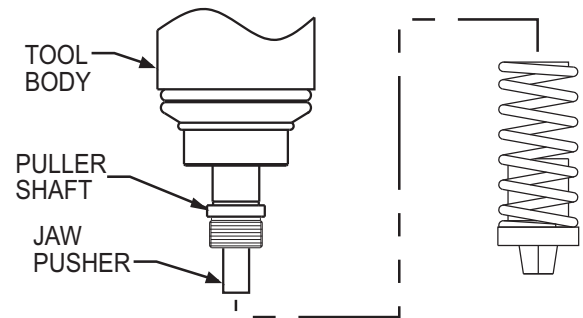
5. TWO JAW SYSTEM

Hold tool with the PULLER SHAFT pointing down and screw the jaw holder on to the PULLER SHAFT. HAND TIGHTEN ONLY.

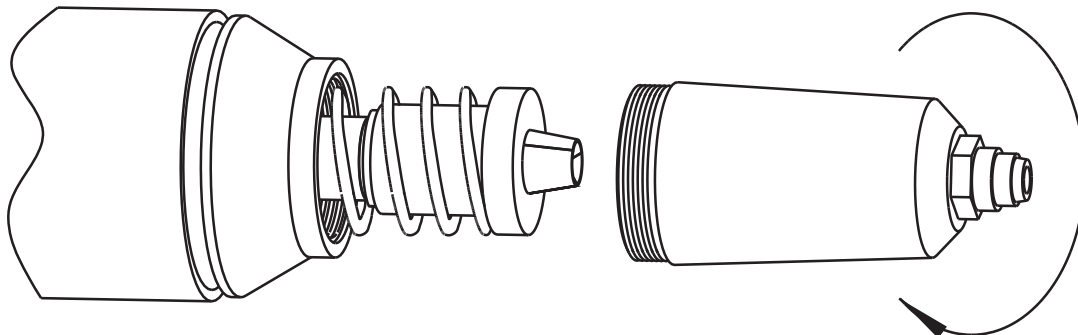


5. THREE JAW SYSTEM

Hold tool with the PULLER SHAFT pointing down and the JAW PUSHER fully extended. Screw the jaw holder on to the PULLER SHAFT. HAND TIGHTEN ONLY.



6. Replace the NOSE TUBE and NOSE PIECE, HAND TIGHTEN ONLY. The tool is now ready to use.

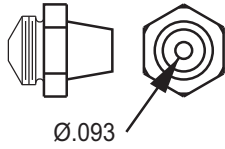
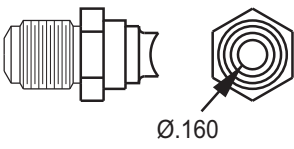
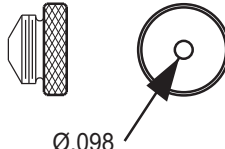
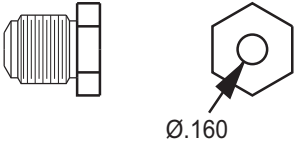
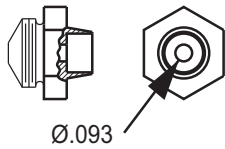
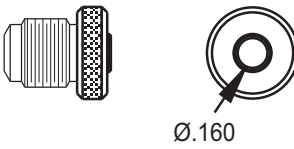
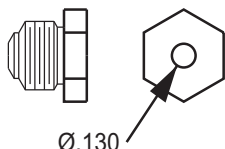
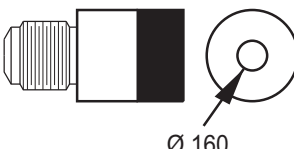
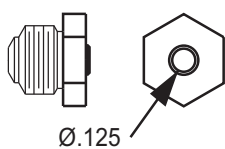
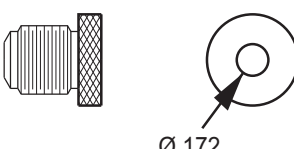




TOOL MAINTENANCE

Steps for Proper Tool Maintenance and Operation

1. Disassemble and clean Nose components periodically or if the pintails do not drop out freely. Use a pick to clean the jaw grooves. Wash components in mineral spirits or isopropyl alcohol. Apply a small amount of lubricant to the Jaws and inside of Jaw Holder prior to assembly.
2. To ease Nose Tube and Nose Piece installation, extend tool by pumping Handles.
3. **Do not use tool as a lever** if rivet pintail is jammed while regripping. Instead, squeeze Handles and press the Releasing Button while pushing tool nose against work piece for the jaws to get a deeper grip.
4. If rivet pintail is stuck in tool after breaking, lightly tap nose against a hard surface while squeezing Handles and pressing the Releasing Button with tool pointing downward. Pintail should then fall out.
5. Before operating tool, make sure that all Nose Parts have been screwed in hand tight.
6. The tool has a 5/8" work travel, the completion of which is indicated by a solid stop after approximately 12 pumps (one cycle). **Do not force beyond this point** to insure long life of tool.
7. The HK-150 should not be used at temperatures below 35°F unless it is first brought to room temperature and cycled several times. Normal use of the tool after warming should keep it warm enough for proper operation.
8. If tool will not reverse, remove Nose Tube and inspect for any foreign matter that might have caused jamming between Jaw Holder and inside of Nose Tube.
9. Frequently check that nose components do not vibrate loose during operation.
10. **Do not rock tool** when pumping it. This may cause rivets to prematurely break.
11. Large fasteners can be set one handed in tight areas by using short pump strokes.

Nose Pieces			
Part No.	Description	Part No.	Description
	202156 1/8" for Trim Molding Pop Rivets		202155 1/4" Auto Split "T" Rivets
	202159 3/32" & 1/8" Pop Rivets		202157 1/4" Pop & Plastic Rivets
	202190 1/8" Stand Off Pop Rivets		202169 1/4" Monobolts
	202158 5/32" & 3/16" Pop & Plastic Rivets		202193 Spec. GM Glass Stop Travel, Pop Rivets
	202168 3/16" Monobolts		202142 1/4" Magna Lok



TROUBLESHOOTING

<i>Problem</i>	<i>Solution</i>
1.) Rivet pintail is stuck in tool	<p>First Step: Lightly tap nose against a hard surface while after breaking squeezing HANDLES and pressing down the RELEASING BUTTON with tool pointing downward Pintail should then fall out, see fig. 4. <i>If that does not work try Second Step.</i></p> <p>Second Step: <i>(Use this <u>only</u> if first step does not work)</i> Remove NOSE TUBE and JAW HOLDER (for help see figure 5) take out pintail and reassemble.</p>
2.) Tool will not reverse	Push on the handles until you feel a slight give, then press the RELEASING BUTTON and continue pushing on the handles, the tool should then reverse. If this does not work Remove NOSE TUBE and inspect for any foreign matter that may have cause the jamming between JAW HOLDER and the inside of NOSE TUBE.
3.) Fastener does not pull rivet	The JAW HOLDER is loose. Remove the NOSE TUBE and tighten the JAW HOLDER by turning it counterclockwise (see (See Three Piece Jaw Installation and Removal)).
4.) The rivet does not fit into the tool	The rivet is to large, or the wrong NOSE PIECE is on the tool. To find the correct NOSE PIECE (see chart on page 11). If you do not have the needed NOSE PIECE, See next page for how to order the correct one.
5.) Premature breaking	See solution for problem 4. Also verify the grip of the fastener and make sure you are not rocking the tool during installation.
6.) Jamming of tool	See solution for problem 4. Also verify that you have the proper jaw engagement and that all parts are hand tight and that the jaws are cleaned and properly assembled in jaw pusher (See Three Piece Jaw Installation and Removal)
7.) Rivet not installed properly	See solution for problem 4. Also verify jaw grip and that the appropriate fastener is being used.
8.) Jaws breaking	See solution for problem 4. Check to see all parts are properly assembled and hand tight.
9.) Damaged jaw pusher	See solution for problem 4. Check to see if all parts are properly assembled.

OPTIONAL ACCESSORIES

NOSE PIECES

202156	1/8" for Trim Molding Pop Rivets
202159	3/32" & 1/8" Pop Rivets
202190	1/8" Stand Off Pop Rivets
202158	5/32" & 3/16" Pop and Plastic Rivets
202168	3/16" Monobolts
202155	1/4" Auto Split "T" Rivets
202157	1/4" Pop and Plastic Rivets
202169	1/4" Monobolts
202193	Spec. GM Glass Stop Travel, Pop Rivets
202142	1/4" Magna Lok

JAWS

202122	Two Piece Jaws
202929	Three Piece Jaws

KITS

205490	Nose Extension Kit
205400	Nut Setter Kit
205401	Metric Nut Setter Kit
205403	Rivnut Nut Setter Kit
126016	Rivet Stem Removal Tool "Punch Assy"

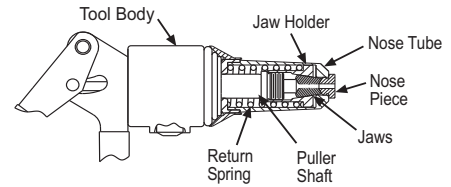
Service Notes:



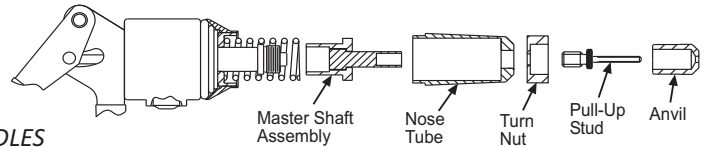
CONVERTING A RIVETER TO A NUTSETTER

The HK-150 can be converted from a riveter to a nutsetter by changing several of the nose components. No tools required as parts require hand tightening only.

RIVETER



NUTSETTER



1. Completely retract the tool by squeezing **HANDLES** and pressing the **RELEASING BUTTON**. (Figure 3)

2. Remove **NOSE PIECE** from **NOSE TUBE**. Remove **NOSE TUBE**, **JAWS** and **JAW HOLDER**.

The parts that were removed should be stored for future use as a riveter. The tool is ready to start adding NUTSETTER accessories as follows:

3. Screw **MASTER SHAFT** assembly on **PULLER SHAFT** and replace **NOSE TUBE** as shown.

4. Slide **TURN NUT** over the extended section of the **MASTER PULLER SHAFT**. Screw the appropriate **PULL-UP STUD** into **MASTER SHAFT ASSEMBLY**. (NOTE: this is a left hand thread and must be screwed in counterclockwise.)

5. Push appropriate **ANVIL** over **PULL-UP STUD** into **TURN-NUT**.

The HK-150 NUTSETTER sets 3mm through 3/8-24 threaded aluminum inserts and up to 1/4-20 steel inserts. Size changes are accomplished by changing the **PULL-UP STUD** and **ANVIL**. No tools required.

Installing threaded Inserts:

1. Make sure proper Pull-up Stud and are Anvil in place.
2. Thread the insert on the Pull-up Stud until all threads on the insert are engaged.
3. Position the Insert into workpiece with the appropriate size hole and pump the Handles until the Insert is set.

(You will feel the tool come to a definite stop when the insert is properly set. STOP PUMPING HANDLES)

Releasing the Tool: *(After Insert has been set in the workpiece)*

1. Press the Releasing Button while squeezing Handles.
2. Rotate the Turn Nut in a counterclockwise direction until the Pull-up Stud is released from the Threaded Insert.

HK-150 Nutsetter

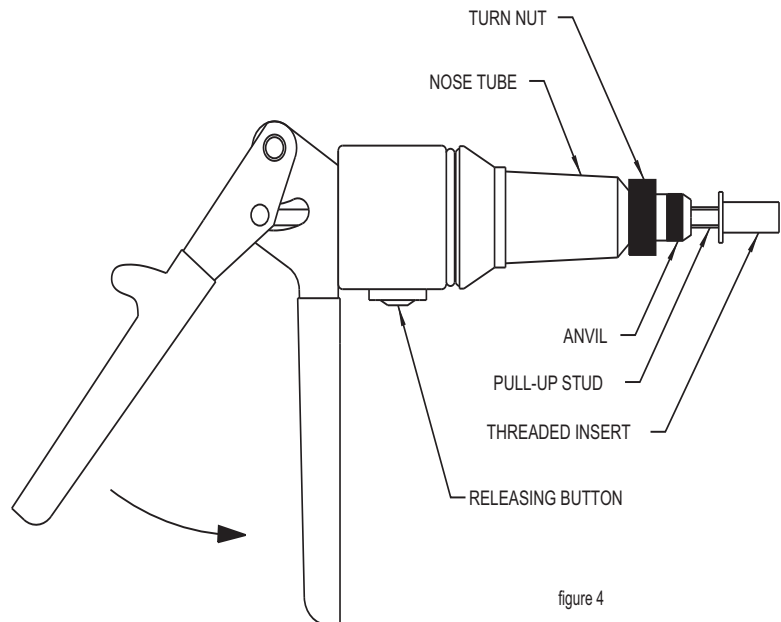


figure 4

90 DAY WARRANTY ON HK-150 RIVETER

Patent Pending

All Alcoa Fastening Systems tools and parts have been carefully tested and checked at the factory and are guaranteed to be free from defects in material and workmanship, subject to the following conditions.

- A.) The tools manufactured by Alcoa Fastening Systems will be repaired free of charge or replaced at our discretion within 90 days of sale to the first user if, upon examination at our service center, we find a defect in material or workmanship in the hydraulic system.
- B.) The tool must be returned intact and prepaid to one of our service centers. Proof of date of sale must accompany any tool returned. This warranty will be void if repairs have been made or attempted by others, or if the tool has been subject to abuse, neglect, accident or improper application.
- C.) The foregoing obligation is Alcoa Fastening Systems' sole liability under this or any implied warranty, and no one is authorized to vary its terms or conditions.
- D.) If you have any problems please contact Customer Service at the factory: (800) 278-4825.

Before returning tools to the service center, please use the operation and maintenance tips on page 9 of this manual. If the tool continues to malfunction call the Customer Technical Support at Alcoa Fastening Systems (888) 482-5435 for additional assistance.

AUTHORIZED TOOL SERVICE CENTER:

Central Fastening Systems

801 McCann Road
Rogers, AR 72758
479 936 7577
888 370 1894 (Toll Free)
479 636 2119 (Fax)

Professional Tool Center

2236 S.116th Street
West Allis, WI 53227
414 321 1234
414 321 2524 (Fax)

FSI

1206 East Mac Arthur St
Sonoma, CA 95476
707 935 1170
800 344 2394 (Toll Free)
707 935 1828 (Fax)

Universal Repair Shop

1611 Boylston Avenue
Seattle, WA 98122
206 322 2726
206 322 2126 (Fax)

J.O. King

1265 Alpharetta Road
Alpharetta, GA 30201
770 751 1875
800 241 2681 (Toll Free)
770 442 0950 (Fax)

Alcoa Fastening Systems

5436 W 78th Street
Indianapolis, IN 46268
800 343 3633 (Toll Free)

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.

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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.

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Tacubaya Mexico, D.F.
C.P. 11850
FAX: 525-515-1776
TELEX: 1173530 LUKSME

Far East

Alcoa Fastening Systems
Industrial Products
Australia Operations
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Rowville, Victoria
Australia 3178
03-764-5500
Toll Free: 008-335-030
FAX: 03-764-5510

Europe

Alcoa Fastening Systems
Industrial Products
United Kingdom Operations
Unit C, Stafford Park 7
Telford, Shropshire
England TF3 3BQ
01952-290011
FAX: 0952-290459

Alcoa Fastening Systems
Aerospace Products
France Operations
Clos D'Asseville
BP4
95450 Us Par Vigny
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