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

1. Safety 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. Huck equipment must be maintained in a safe working condition at all times and inspected on a regular basis for damage or wear. Any repair should be done by a qualified repairman trained on Huck procedures.

3. Repairman and Operator must read manual prior to using equipment and understand any Warning and Caution stickers/labels supplied with equipment before connecting equipment to any primary power supply. As applicable, each of the sections in this manual have specific safety and other information.

4. See MSDS Specifications before servicing the tool. MSDS Specifications are available from you Huck representative or on-line at www.huck.com. Click on Installation Systems Division.

5. When repairing or operating Huck installation equipment, always wear approved eye protection. Where applicable, refer to ANSI Z87.1 - 1989.

6. Disconnect primary power source before doing maintenance on Huck equipment.

7. If any equipment shows signs of damage, wear, or leakage, do not connect it to the primary power supply.

8. Make sure proper power source is used at all times.

9. Never remove any safety guards or pintail deflector.

10. Never install a fastener in free air. Personal injury from fastener ejecting may occur.

11. When using an offset nose always clear spent pintail out of nose assembly before installing the next fastener.

12. If there is a pinch point between trigger and work piece use remote trigger. (Remote triggers are available for all tooling).

13. Do not abuse tool by dropping or using it as a hammer. Never use hydraulic or air lines as a handle. 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.

14. Never place hands between nose assembly and work piece.

15. Tools with ejector rods should never be cycled with out nose assembly installed.

16. When two piece lock bolts are being used always make sure the collar orientation is correct. See fastener data sheet of correct positioning.
Figure 1. Exploded View of Model 194 and Model 196 Installation Tools

<table>
<thead>
<tr>
<th>REF. NO.</th>
<th>PART NAME</th>
<th>MODEL 194</th>
<th>MODEL 196</th>
<th>NO. REQ'D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Crank Handle Assembly</td>
<td>103534</td>
<td>103534</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>Pin - Spring .078 dia. x 13/16</td>
<td>501403</td>
<td>501403</td>
<td>1</td>
</tr>
<tr>
<td>3</td>
<td>Ring - Retaining, Truarc 5100-43</td>
<td>500993</td>
<td>500993</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>Washer - Plain MS20002-7</td>
<td>502973</td>
<td>502973</td>
<td>1</td>
</tr>
<tr>
<td>5</td>
<td>Shaft - Cam</td>
<td>103533</td>
<td>103533</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Housing and Bearing Assembly</td>
<td>103525</td>
<td>103525</td>
<td>1</td>
</tr>
<tr>
<td>7</td>
<td>Bearing - Needle, Torrington #GB-78</td>
<td>503371</td>
<td>503371</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Bearing - Needle, Torrington #GB-66</td>
<td>503370</td>
<td>503370</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Cam</td>
<td>103531</td>
<td>103531</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>Washer - Plain MS20002-6</td>
<td>502972</td>
<td>502972</td>
<td>1</td>
</tr>
<tr>
<td>11</td>
<td>Pin - Spring .078 dia. x 11/16</td>
<td>501401</td>
<td>501401</td>
<td>1</td>
</tr>
<tr>
<td>12</td>
<td>Pin - Clevis MS20392-2C33</td>
<td>504137</td>
<td>504137</td>
<td>1</td>
</tr>
<tr>
<td>13</td>
<td>Pin - Cotter 1/16 dia. x 1/2</td>
<td>501308</td>
<td>501308</td>
<td>1</td>
</tr>
<tr>
<td>14</td>
<td>Drawbolt Adapter</td>
<td>103527</td>
<td>103527</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>Drawbolt</td>
<td>103526</td>
<td>103526</td>
<td>1</td>
</tr>
<tr>
<td>16</td>
<td>Roller - Cam (Torrington Bearing #4NBF614YJ)</td>
<td>503315</td>
<td>503315</td>
<td>1</td>
</tr>
<tr>
<td>17</td>
<td>Shaft - Roller (Torrington Needle Roller #A-2370-Q)</td>
<td>504103</td>
<td>504103</td>
<td>1</td>
</tr>
<tr>
<td>18</td>
<td>Spring - Return</td>
<td>103538</td>
<td>103538</td>
<td>1</td>
</tr>
<tr>
<td>19</td>
<td>Washer - Flat, SAE 3/8 I.D.</td>
<td>500171</td>
<td>500171</td>
<td>1</td>
</tr>
<tr>
<td>20</td>
<td>Handle</td>
<td>103539</td>
<td>--</td>
<td>1</td>
</tr>
<tr>
<td>21</td>
<td>Grip - Handle</td>
<td>101797</td>
<td>--</td>
<td>1</td>
</tr>
<tr>
<td>22</td>
<td>Breastplate</td>
<td>--</td>
<td>105098</td>
<td>1</td>
</tr>
</tbody>
</table>

NOTE: All part numbers shown are available from Huck for replacement. Part numbers in the 500,00 series are standard items purchasable at most local supply firms.
DESCRIPTION

Model 194 and Model 196 Installation Tools are lightweight, hand-operated, crank-type tools designed to install Huck Blind Fasteners and HUCKBOLTS® through 1⁄4 inch diameter (Table 3). Both tools are identical in construction and configuration except that Model 194 Tool uses a handle and Model 196 Tool uses a breastplate (Figure 1).

Figure 1 details the simple construction of both Tool models. Cam (9) is mounted on crank handle shaft (5), and bears against cam roller (16), which is attached to spring-loaded drawbolt (15). The nose assembly is threaded onto the drawbolt. When the crank handle is turned, rotation of the cam pushes the cam roller and drawbolt rearward. This action installs the fastener. Continued turning of the crank handle returns the cam roller and drawbolt to the original "start" position through spring action.

<table>
<thead>
<tr>
<th>Table 1. Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MODEL 194</strong></td>
</tr>
<tr>
<td>Length</td>
</tr>
<tr>
<td>Weight</td>
</tr>
<tr>
<td>Stroke</td>
</tr>
<tr>
<td>Pull Capacity</td>
</tr>
</tbody>
</table>

OPERATION

Model 194 and Model 196 Tools are shipped completely assembled. The handle (20) of the Model 194 Tool is designed with slots to receive the clevis pin (12). For storage, push handle in, then rotate counterclockwise. For proper Tool operation, the handle should be in the position shown in Figure 1.

Nose Assemblies

Nose assemblies used with the Model 194 and Model 196 Tools are listed in Table 3. Drawbolt adapter 103527 is used with nose assemblies 99-A1, 99-A2, 99-A3, and 99-4 only. Other nose assemblies are installed directly on drawbolt 103526.

Fastener Installation

To properly install a Huck fastener with the Model 194 or Model 196 Tool proceed as follows:

1. With crank handle in position shown in Figure 1, push nose assembly completely onto pintail of fastener and at right angles to work.
2. Turn crank handle until fastener is installed.

NOTE

In limited clearance applications, use several short strokes to install fastener.

DISASSEMBLY

Referring to Figure 1, disassemble Model 194 or Model 196 Tool as follows:

1. Remove drawbolt adapter (14).
2. Remove cotter pin (13) and clevis pin (12).
3. For Model 194 Tool, remove handle (20).
4. For Model 196 Tool, remove breastplate (22).
5. Remove washer (19) and return spring (18) from housing (6).
6. Drive out spring pin (11) and remove washer (10) from cam shaft (5).
7. With cam shaft (5) still attached to crank handle (1), pull out as a unit from housing (6). Cam (9) should fall free from housing (6).
8. Slide drawbolt (15) out of housing (6). Using a punch, drive roller shaft (17) out of cam roller (16). Cam roller (16) should fall free of drawbolt (15).
9. Using bar stock of proper diameter, press out needle bearing (7) and then needle bearing (8) from housing (6).
ASSEMBLY

Before assembly, lubricate bearings and drawbolt with Lubriplate 130-AA, or equivalent. Assemble the Model 194 or Model 196 Tool in the reverse order of disassembly.

Make certain that cam (9) is positioned relative to cam shaft (5) and crank handle (1) as shown in Figure 1.

ACCESSORIES

Nose Assembly and Fasteners

Table 3 lists Huck nose assemblies and related fasteners used with Model 194 or Model 196 Tools.

Table 3. Huck Nose Assemblies and Fasteners for Model 194 and Model 196 Tools.

<table>
<thead>
<tr>
<th>HUCK NOSE</th>
<th>HUCK FASTENER</th>
</tr>
</thead>
<tbody>
<tr>
<td>99A-1</td>
<td>1/8 in. PT, 9SP, MS</td>
</tr>
<tr>
<td>99A-2</td>
<td>5/32 in. PT, 9SP, MS</td>
</tr>
<tr>
<td>99A-3</td>
<td>3/16 in. PT, 9SP, MS</td>
</tr>
<tr>
<td>99-4</td>
<td>¼ in. PT, 9SP, MS</td>
</tr>
<tr>
<td>99-259</td>
<td>6/32 in. HUCKBOLT*</td>
</tr>
<tr>
<td>99-260</td>
<td>3/16 in. HUCKBOLT or ¼ in. Daisy Blind Rivet*</td>
</tr>
<tr>
<td>99-279</td>
<td>¼ in. C6L-C8 with LC-18 or 3LC-18 collars</td>
</tr>
<tr>
<td>99-772 (Crimp)</td>
<td>3/16 in. C8ST-F6 and CST-F6 with 3LC-16 or 16LCW-B6 collars</td>
</tr>
</tbody>
</table>

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

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

HUCK MAKES NO WARRANTY WITH RESPECT TO THE TOOLING, PART(S) OR OTHER ITEMS MANUFACTURED BY THIRD PARTIES. HUCK EXPRESSLY DISCLAIMS ANY WARRANTY EXPRESSED OR IMPLIED, AS TO THE CONDITION, DESIGN, OPERATION, MERCHANTABILITY OR FITNESS FOR USE OF ANY TOOL, PART(S), OR OTHER ITEMS THEREOF NOT MANUFACTURED BY HUCK. HUCK SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE, DIRECTLY OR INDIRECTLY, ARISING FROM THE USE OF SUCH TOOLING, PART(S) OR OTHER ITEMS OR BREACH OF WARRANTY OR FOR ANY CLAIM FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

The only warranties made with respect to such tool, part(s) or other items thereof are those made by the manufacturer thereof and Huck agrees to cooperate with Buyer in enforcing such warranties when such action is necessary. Huck shall not be liable for any loss or damage resulting from delays or nonfulfillment of orders owing to strikes, fires, accidents, transportation companies or for any reason or reasons beyond the control of the Huck or its suppliers.

Huck Installation Equipment

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

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

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

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

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

Canada
6150 Kennedy Road Unit 10, Mississauga, Ontario, L5T2J4, Canada.
Telephone (905) 564-4825 FAX (905) 564-1963

Outside USA and Canada
Contact your nearest Huck International Office, see back cover.

In addition to the above repair facilities, there are Authorized Tool Service Centers (ATSC's) located throughout the United States. These service centers offer repair services, spare parts, Service Parts Kits, Service Tools Kits and Nose Assemblies. Please contact your Huck Representative or the nearest Huck office listed on the back cover for the ATSC in your area.
A Global Organization
Alcoa Fastening Systems (AFS) maintains company offices throughout the United States and Canada, with subsidiary offices in many other countries. Authorized AFS distributors are also located in many of the world’s industrial and aerospace centers, where they provide a ready source of AFS fasteners, installation tools, tool parts, and application assistance.

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Aerospace Products
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310-830-8200
FAX: 310-830-1436

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FAX: 254-751-5259

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Kingston, NY 12401
800-431-3091
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www.hucktools.com

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FAX: 905-564-1963

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

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Toll Free: 008-335-030
FAX: 03-764-5510

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FAX: 0952-290459

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France
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FAX: 33-1-34-66-0600


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