

# **FT1310 Mini-Crimp Machine**

## **Owner's Manual**

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## Safety Instructions

1. **PREVENT UNAUTHORIZED OPERATION.** Do not permit anyone to operate this equipment unless they have read and thoroughly understand this manual.
2. **WEAR SAFETY GLASSES.**
3. **AVOID PINCH POINT.** Do not rest your hand on the crimp ring. Keep your hands well away from all moving parts. Do not allow anyone close to the equipment while it is in operation.
4. **MAINTAIN DIES WITH CARE.** Dies used in the FT1310 crimp machine are hardened steel, offering the best combination of strength and wear resistance for long life. Hardened dies are generally brittle and care should be taken to avoid any sharp impact. Never strike a die with a hardened instrument.
5. **USE ONLY SPECIFIED AEROQUIP PRODUCTS.** Make hose assemblies using only Aeroquip hose and fittings specified for this assembly equipment.
6. **VERIFY CORRECT CRIMP DIAMETERS.** Check and verify correct crimp diameters of all fittings after crimping. Do not put any hose assemblies into service if the crimp diameters do not meet Aeroquip crimp specifications.
7. **MAKE SURE ALL DIES ARE COMPLETELY IN PLACE AND FLAT AGAINST THE CRIMP RING TO AVOID DAMAGE TO THE DIES OR MACHINE.**
8. **DO NOT OVER PRESSURIZE.** Do not exceed 10,000 psi hydraulic pressure supplied to machine. This setting is preset at the factory and should not require adjustment. **NOTE:** All components used to connect the pump and crimp cylinder must meet the criteria set forth in the Material Handling Institutes Specification #IJ100 for hydraulic jacking applications.
9. **DIE TOOLING CHANGE.** Do not insert/remove dies while the power is on.
10. **SECURE THE EQUIPMENT TO A STABLE WORK SURFACE.** Prior to operation, secure the crimp machine and hand pump to a stable work surface to prevent the equipment from tipping.
11. **UNPLUG THE POWER SUPPLY WHEN NOT IN USE.**
12. **KEEP WORK AREA CLEAN.** Cluttered areas and benches invite accidents.



### WARNING

Failure to follow Aeroquip process and product instructions and limitations could lead to premature hose assembly failures, resulting in property damage, serious injury or death.

Aeroquip fitting tolerances are engineered to match Aeroquip hose tolerances. The use of Aeroquip fittings on hose supplied by other manufacturers and/or the use of Aeroquip hose with fittings supplied by other manufacturers, may result in the production of unreliable and unsafe hose assemblies and is neither recommended nor authorized by Aeroquip.

Read and understand the owner's and operator's manual before attempting to operate any equipment.

*Aeroquip hereby disclaims any obligation or liability (including incidental and consequential damages) arising from breach of contract, warranty, or tort (under negligence or strict liability theories) should Aeroquip hose, fittings or assembly equipment be used with the hose, fittings or assembly equipment supplied by another manufacturer or in the event that product instructions for each specified hose assembly are not followed.*

## Specifications

**Crimp Machine Dimensions:**  
10" W x 12" D x 19" H

**Tool Kit Dimensions (approximate):**  
22" W x 10" D x 11" H

**Weight:**  
Machine = 33 lbs.  
Tool Kit (w/hand pump) = 35 lbs.

**Pumps:**  
FT1310-2-5 Hand Pump  
FT1310-2-6 Air/Hydraulic Pump  
FT1310-2-7 Electric Pump (115V AC)  
FT1310-2-9 Electric Pump (12V DC)

**Hose Assemblies:**  
1C01903GEG0300A  
30-inch (for hand or electric pump)  
1C01903GEG0720A  
72-inch (for air/hydraulic pump)

These hose assemblies use Aeroquip GH793-4 hose with 3/8-inch male pipe end fittings.

**Required Pump Reservoir Capacity Minimum:**  
12 cubic inches (200 cubic centimeters)

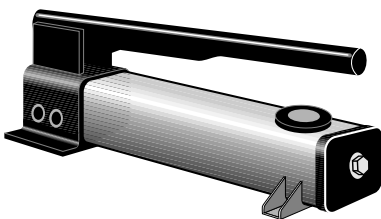
**Production Capacity:**  
-4 through -16 Global TTC fittings

## Assembly of the FT1310 Mini-Crimp

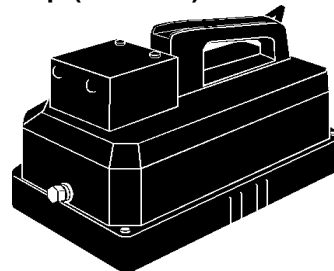
1. Secure the machine frame to a stable work surface using lag screws or other suitable fasteners.
2. Remove the pipe plug from the top cylinder port and install the 90° pipe adapter. Orient the adapter so that it points to the back of the crimp machine, away from the machine operator. **NOTE:** If using Quick-Disconnect couplings, install Aeroquip FD35-1000-06-06 and 2083-6-6S between the port and hose assembly.
3. If using the hand pump, install the straight pipe adapter into the pump outlet port. Fasten the pump to a stable work surface.
4. Install the hose assembly to the cylinder and the pump.

**NOTE:** All components used to connect the pump and crimp cylinder must meet the criteria set forth in the Material Handling Institutes Specification #IJ100 for hydraulic jacking applications.

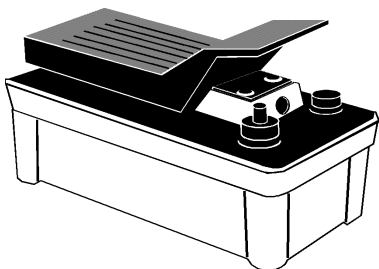
**FT1310-2-5  
Hand Pump**



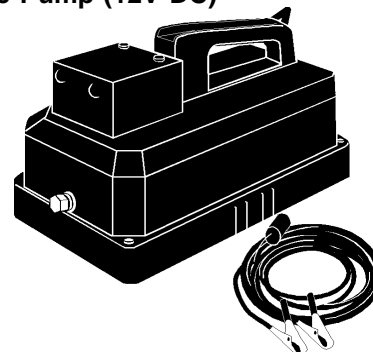
**FT1310-2-7  
Electric Pump (115V AC)**



**FT1310-2-6  
Air/Hydraulic Pump**



**FT1310-2-9  
Electric Pump (12V DC)**



## Operating Instructions

### Fitting and Hose Pre-assembly (for straight or elbow fittings)

1. Select the proper hose and fitting combination.
2. Cut the hose squarely to the proper length.
3. Place a mark on the hose at the end of the socket (see Illustration A). The insertion length is indicated on the Die/Shim Selection table (right) and can be measured from the TTC fitting socket scribe mark to the end of the socket.
4. Push the fitting all the way onto the hose until the end of the socket is aligned with the mark on the hose.

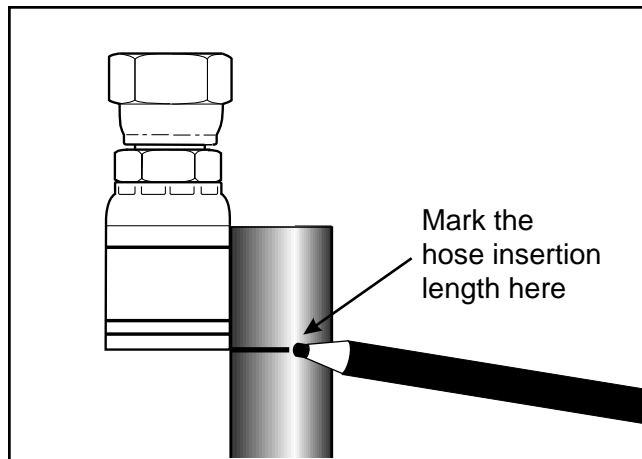


Illustration A

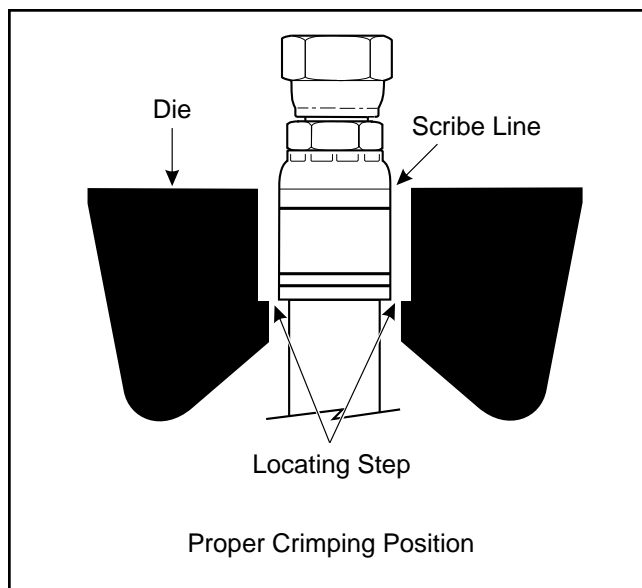







Illustration B

**JA400A**  
Supersedes JA400

## Die/Shim Selection

| Hose                                                                                                                                                                                | Dash Size | Die # | Shim #     | Crimp Dia.<br>± .25 mm<br>± .010 in. | Insertion Length |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------|------------|--------------------------------------|------------------|
| GH663<br>                                                                                        | -4        | -4    | GH663-4    | 15.75 mm<br>.620 in                  | 3/4"             |
|                                                                                                                                                                                     | -6        | -6    | GH663-6/-8 | 19.94 mm<br>.785 in                  | 13/16"           |
|                                                                                                                                                                                     | -8        | -8    | GH663-6/-8 | 23.88 mm<br>.940 in                  | 1"               |
|                                                                                                                                                                                     | -12       | -12   | GH663-12   | 31.75 mm<br>1.250 in                 | 1"               |
|                                                                                                                                                                                     | -16       | -16   | GH663-16   | 40.39 mm<br>1.590 in                 | 1-1/4"           |
| GH793<br><br> | -4        | -4    | -          | 17.27 mm<br>.680 in                  | 3/4"             |
|                                                                                                                                                                                     | -6        | -6    | -          | 21.21 mm<br>.835 in                  | 13/16"           |
|                                                                                                                                                                                     | -8        | -8    | -          | 25.15 mm<br>.990 in                  | 1"               |
|                                                                                                                                                                                     | -12       | -12   | -          | 32.51 mm<br>1.280 in                 | 1"               |
|                                                                                                                                                                                     | -16       | -16   | -          | 41.40 mm<br>1.630 in                 | 1-1/4"           |
| GH781<br><br> | -4        | -4    | GH781-4/-8 | 16.89 mm<br>.665 in                  | 3/4"             |
|                                                                                                                                                                                     | -6        | -6    | GH781-6    | 20.70 mm<br>.815 in                  | 13/16"           |
|                                                                                                                                                                                     | -8        | -8    | GH781-4/-8 | 24.77 mm<br>.975 in                  | 1"               |
|                                                                                                                                                                                     | -12       | -12   | GH781-12   | 31.62 mm<br>1.245 in                 | 1"               |
|                                                                                                                                                                                     | -16       | -16   | GH781-16   | 39.75 mm<br>1.565 in                 | 1-1/4"           |

**Crimp hose assemblies using only Aeroquip Hose and Fittings approved for this machine.**

Operating Instructions - cont'd

**Straight Fitting Insertion**

1. Lubricate the crimp ring sparingly with Never Seeze (Aeroquip part number FT1092).
2. Select the proper dies according to the Die/Shim Selection decal and install them into the slots of the die guide.
3. Push the die guide all the way up. Next, insert the hose assembly up through the dies until the fitting scribe mark is aligned at the top of the dies (see Illustrations B and C).
4. Lower the die guide and hose assembly together until the dies touch the fitting. The bottom edge of the fitting will rest on the locating steps of the dies.  
**IMPORTANT: Do not pull on the hose.**

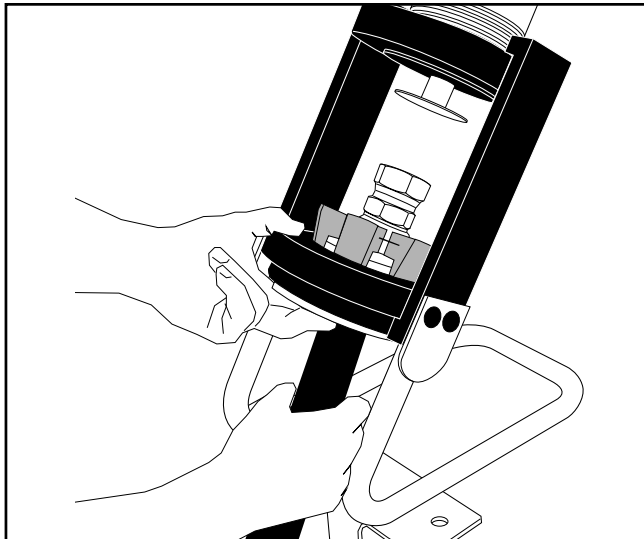


Illustration C

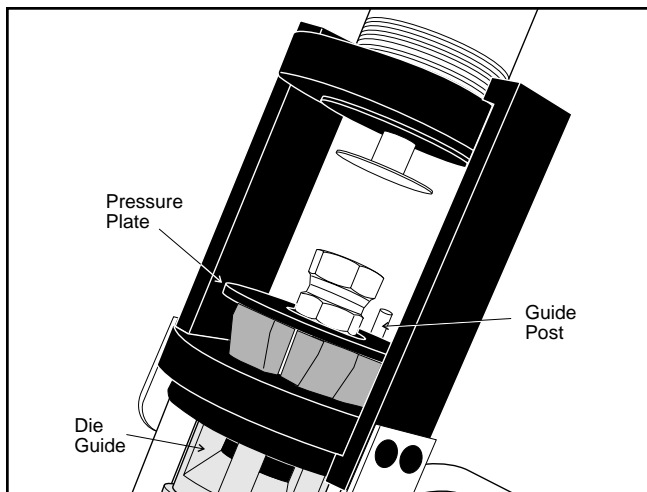


Illustration D

5. Place the pressure plate on top of the dies and rest it against the guide posts at the back of the crimp ring. (see Illustration D).

NOTE: Check the fitting scribe mark. If the scribe mark is not still aligned with the top of the dies, wiggle the fitting to correct the alignment.

6. Install the pusher onto the cylinder from the front of the machine (see Illustration E).

NOTE: When crimping -04 through -08 size straight fittings, it is possible to insert or remove fittings without removing the pusher, pressure plate or dies. Simply lift the die guide to insert or release the fitting.

7. If applicable, insert the appropriate shim between the pusher and indicator plate (see Illustration F). Shims are not required for GH793 hose.

Proceed to the Crimping Instructions on page 7.

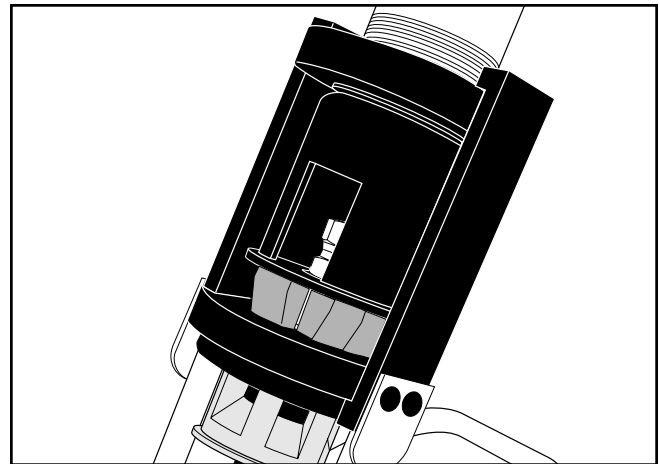


Illustration E

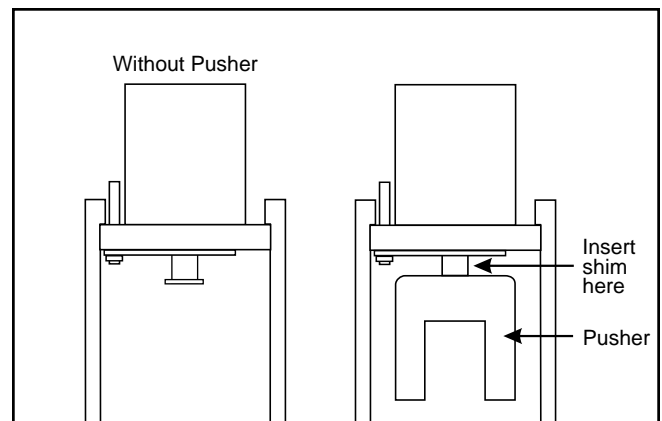


Illustration F

*Operating Instructions - cont'd*

**Elbow Fitting Insertion**

1. Lubricate the crimp ring sparingly with Never Seize (Aeroquip part number FT1092).
2. Select the proper dies according to the Die/Shim Selection decal and install **one die set half** into the rear three slots of the die guide.
3. Push the die guide all the way up. Next, insert the elbow fitting into crimping position, with the end of the socket resting on the locating step of the dies (see Illustration G). While holding up the fitting and die guide, insert the remaining die set half into the die guide.

Check the fitting scribe mark. If the scribe mark is not still aligned with the top of the dies, as in Illustration B, wiggle the fitting to correct the alignment.

NOTE: On some larger elbow fittings, it will be necessary to install the pressure plate over the fitting as it is being raised into crimping position and before installing the second die set half.

4. Place the pressure plate on top of the dies and rest it against the guide posts at the back of the crimp ring (see Illustration H).

5. Install the pusher onto the cylinder from the front of the machine (see Illustration I).
6. If applicable, insert the appropriate shim between the pusher and indicator plate (see Illustration F). Shims are not required for GH793 hose.

Proceed to the Crimping Instructions on page 7.

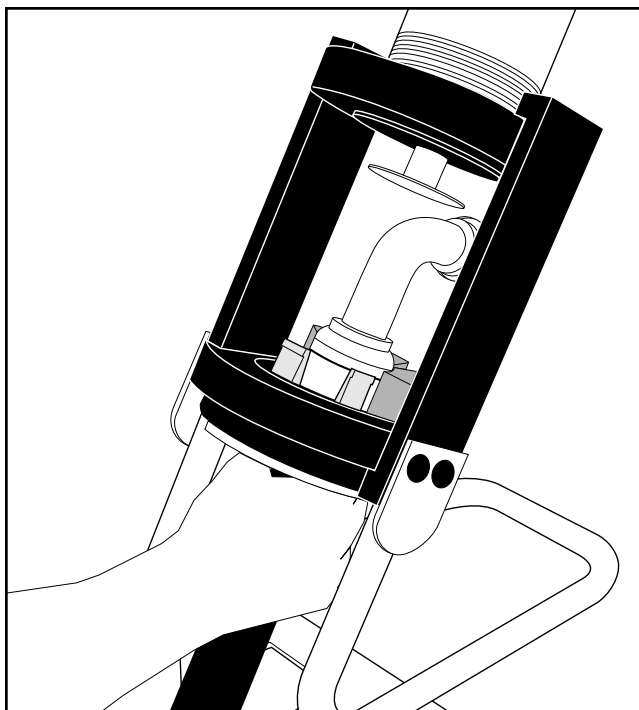


Illustration G

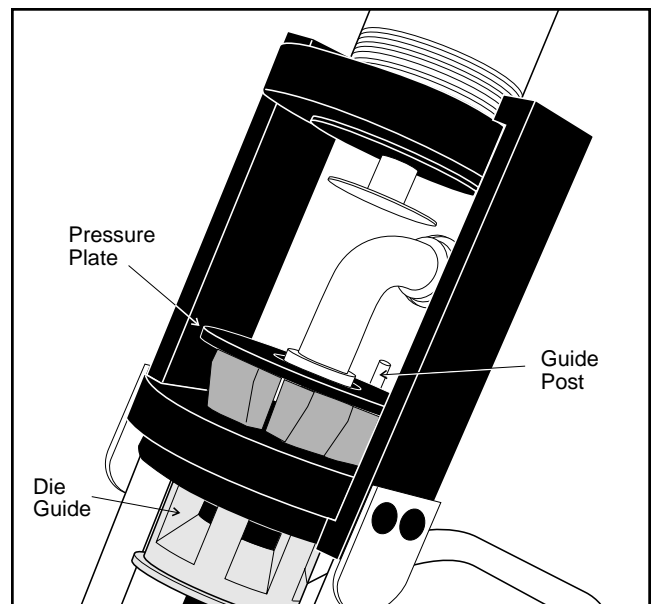


Illustration H

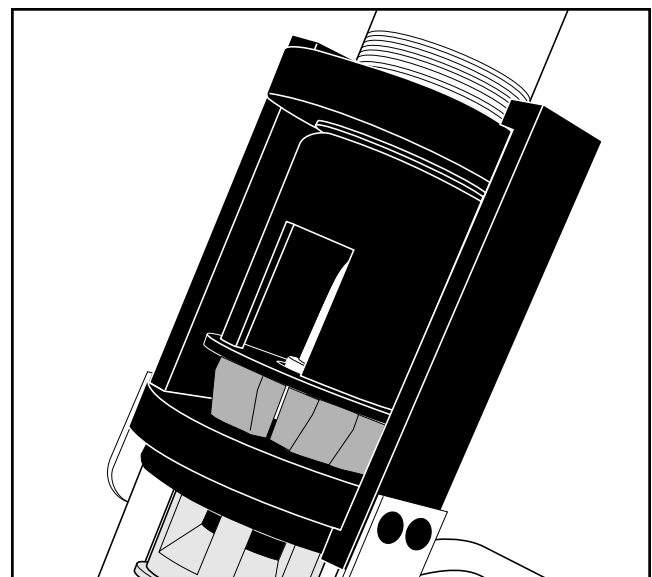


Illustration I

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 Operating Instructions - cont'd

**Crimping Instructions  
(straight or elbow fittings)**


**WARNING: Maintain clear distance from all moving parts.**

1. Activate the pump to extend the cylinder. When the cylinder is fully extended, the crimp is completed and the top of the indicator pin will be flush with the top of the top plate (see Illustration J).
2. Relieve the pump pressure to allow the cylinder to fully retract.
3. If necessary, remove the pusher, pressure plate and dies prior to removing the crimped hose assembly.
4. Verify that the mark on the hose is still next to the end of the socket.
5. Check the crimp diameter (see Illustration K).

If the diameter is not within  $\pm 0.010$  inches of the specified crimp diameter, be sure that:

- A) the correct spacer and dies are being used
- B) the cylinder completes a full stroke
- C) there is no wear or damage that may effect the performance of the crimp machine

If the proper crimp specification still cannot be attained, contact your Aeroquip representative.

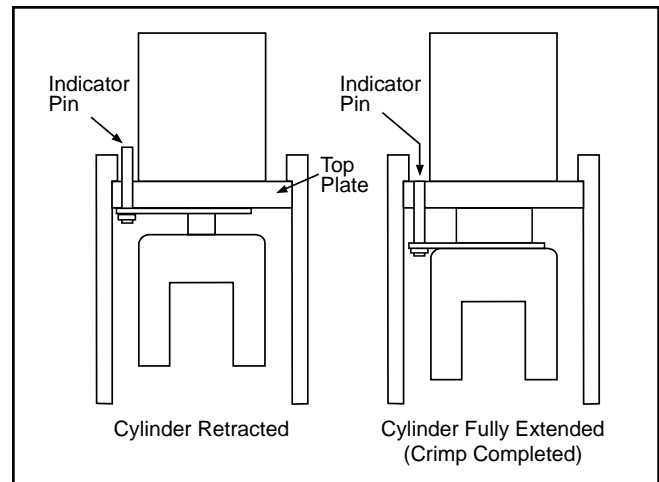


Illustration J

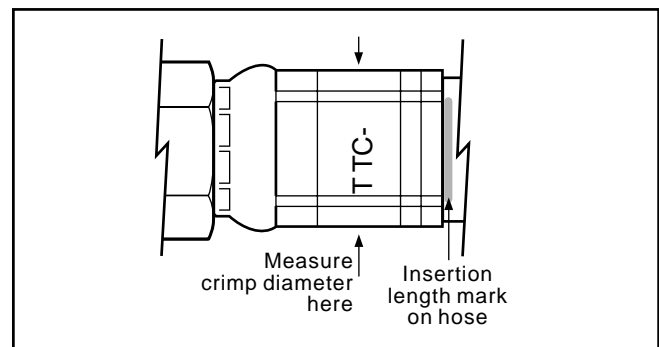


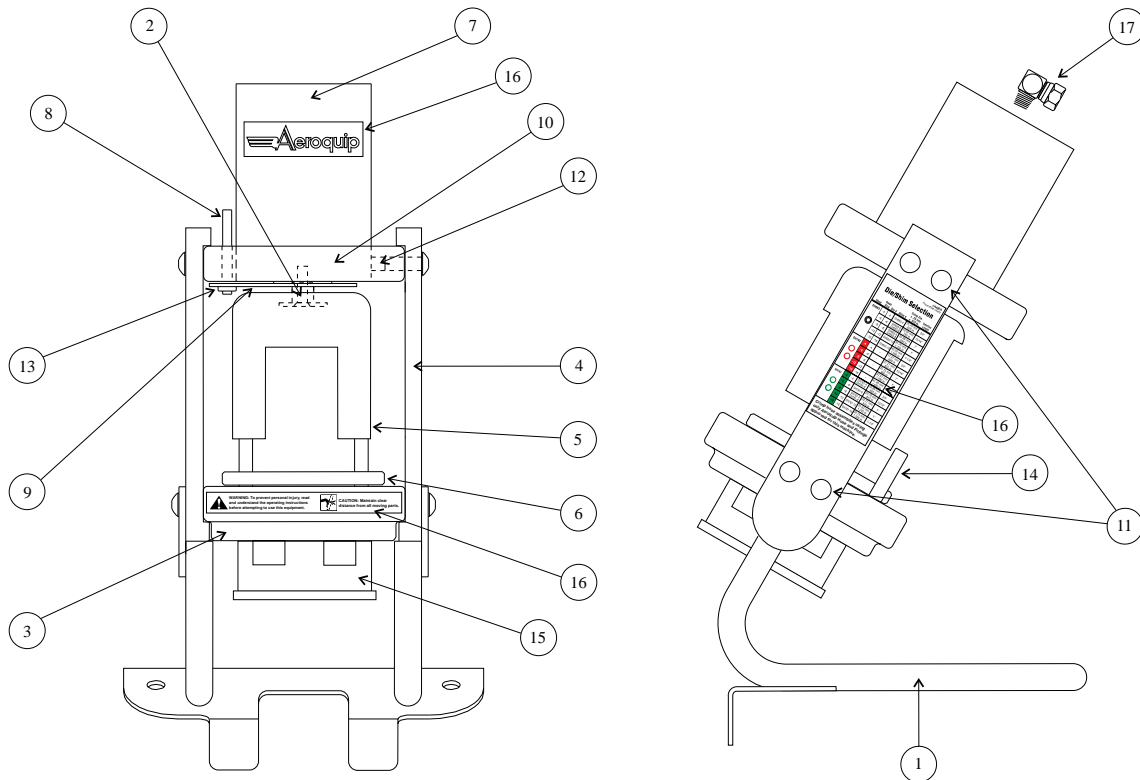
Illustration K

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**Maintenance**

1. Sliding surfaces MUST be kept free of dirt and other abrasive materials.
2. Surfaces of the crimp dies and the crimp ring, where metal-to-metal contact is made, should be lubricated with Never Seeze (Aeroquip part number FT1092) at the beginning of each use and after every sixth crimp.
3. After use, wipe the Never Seeze off the crimp machine and components to prevent accumulation of dirt and other abrasive materials.
4. All unpainted surfaces should be coated occasionally with a light film of oil to prevent corrosion.
5. In the event that the die guide becomes pushed out of the crimp ring, reinsert the die guide into the bottom of the crimp ring and tap it into place with a plastic mallet.

## Crimp Machine

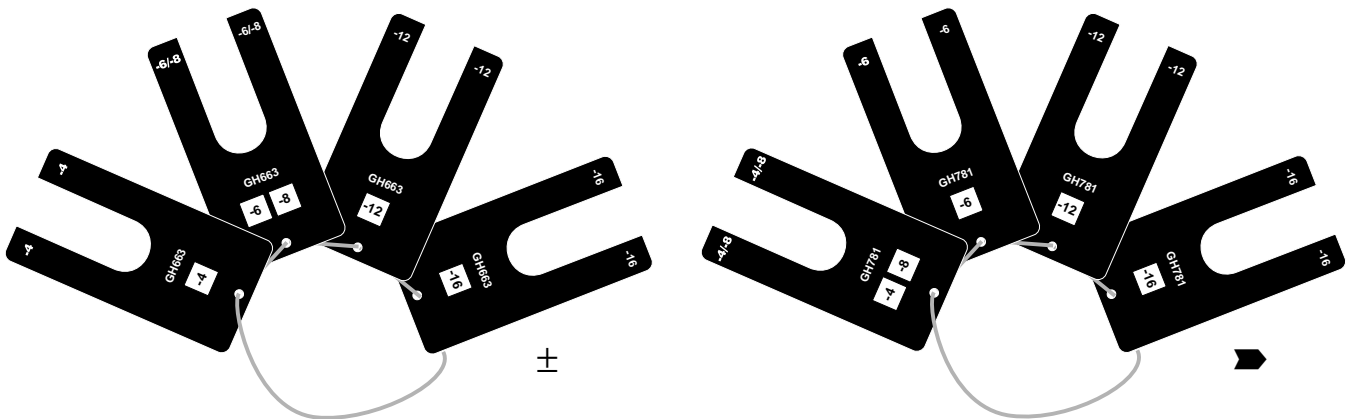
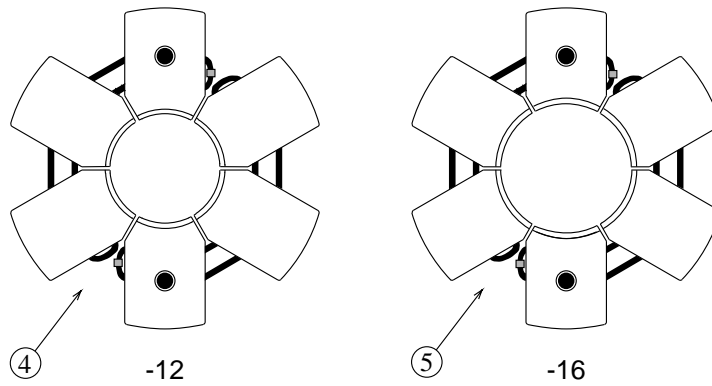
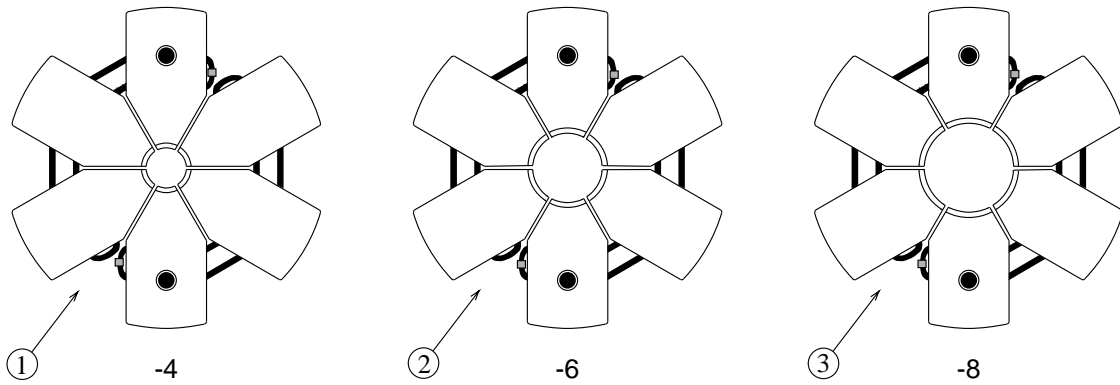


| Item | Part No.     | Description                                                                                                                             | Qty   |
|------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------|-------|
| 1    | FT1310-2-4   | Base assembly                                                                                                                           | 1     |
| 2    | FT1310-2-2   | Pusher guide assembly (plate, flat head screw & spacer)                                                                                 | 1     |
| 3    | FT1310-2-3   | Crimp ring assembly                                                                                                                     | 1     |
| 4    | FT1310-3-1   | Tie bar                                                                                                                                 | 2     |
| 5    | FT1310-3-2   | Pusher                                                                                                                                  | 1     |
| 6    | FT1310-3-3   | Pressure plate                                                                                                                          | 1     |
| 7    | FT1310-3-4   | Cylinder                                                                                                                                | 1     |
| 8    | FT1310-3-5   | Indicator pin                                                                                                                           | 1     |
| 9    | FT1310-3-6   | Indicator plate                                                                                                                         | 1     |
| 10   | FT1310-3-7   | Top plate                                                                                                                               | 1     |
| 11   | FT1310-2-10* | 3/8-16 x 1.12 button head socket cap screw                                                                                              | 8     |
| 12   | FT1310-2-10* | 3/8-16 x .38 brass tip socket head set screw                                                                                            | 1     |
| 13   | FT1310-2-10* | 1/4-20 hex nut                                                                                                                          | 1     |
| 14   | FT1310-2-3-3 | Guide post                                                                                                                              | 2     |
| 15   | FT1310-3-10  | Die guide                                                                                                                               | 1     |
| 16   | JA400A       | Decals - Includes one each of the following:<br>Die/Shim Selection, CAUTION, Aeroquip logo, and<br>Hose Assembly Insertion Instructions | 1 set |
| 17   | 2047-6-6S    | 90° pipe adapter (user installed)                                                                                                       | 1     |

\*Component available only in the FT1310-2-10 Fastener Kit.



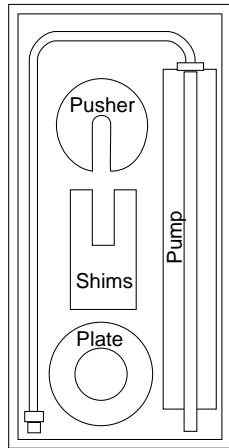
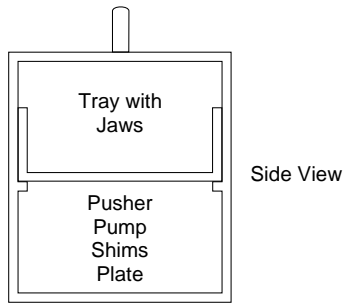
## Crimp Dies and Shims



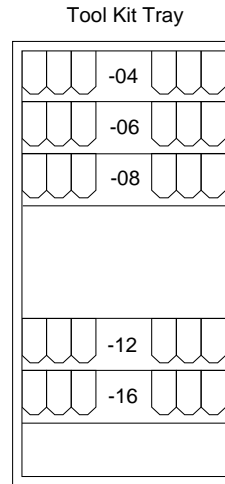
| Item | Part No.      | Description                      | Qty |
|------|---------------|----------------------------------|-----|
| 1    | FT1310-200-04 | -4 die set                       | *   |
| 2    | FT1310-200-06 | -6 die set                       | *   |
| 3    | FT1310-200-08 | -8 die set                       | *   |
| 4    | FT1310-200-12 | -12 die set                      | *   |
| 5    | FT1310-200-16 | -16 die set                      | *   |
| 6    | FT1310-2-8    | Shim set for use with GH663 hose | 4   |
| 7    | FT1310-2-11   | Shim set for use with GH781 hose | 4   |

\*Each die set consists of six dies, cabled together in two halves.

## Tool Box - Accessories



Bottom of Tool Kit



| Item | Part No.   | Description  | Qty |
|------|------------|--------------|-----|
| 1    | FT1310-TBX | Tool Kit Box | 1   |

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