



## **ET1280 Crimp Machine**

Set Up and Operating Manual



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## Safety Instructions

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

**WARNING** Aeroquip hose, hose fittings and assembly equipment should be used only with other Aeroquip hose, hose fittings and assembly equipment and Weatherhead hose, hose fittings and assembly equipment should be used only with Weatherhead hose, hose fittings and assembly equipment. Do not combine or use Aeroquip or Weatherhead hose, hose fittings and assembly equipment with each other, i.e. Aeroquip hose with Weatherhead fittings, or with hose, hose fittings or assembly equipment supplied by another manufacturer.

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

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

Aeroquip and Weatherhead fitting tolerances are engineered to match Aeroquip and Weatherhead hose tolerances. The combination or use of Aeroquip or Weatherhead hose and hose fittings with each other, i.e. Aeroquip hose with Weatherhead fittings, or with hose or fittings supplied by another manufacturer may result in the production of unreliable and/or unsafe hose assemblies and is neither recommended nor authorized by Eaton.

### 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 POINTS. Do not rest your hand on the crimp ring. Keep your hands clear of all moving parts. Do not allow anyone, other than the operator, close to the equipment while it is in operation.

4. MAINTAIN DIES WITH CARE. Dies used in the ET1280 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/WEATHERHEAD PRODUCTS. Make hose assemblies using only Aeroquip and Weatherhead 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 Eaton crimp specifications.
7. Make sure all dies are completely in place and the cage is positioned properly on the pressure plate.
8. DO NOT OVER PRESSURIZE. Do not exceed the 10,000 psi hydraulic pressure supplied to the machine.  
  
NOTE: All components used to connect the pump and crimp cylinder must meet the criteria set forth in the Material Handling Institute Specification #IJ100 for hydraulic jacking applications.
9. DIE CHANGE. DO NOT INSERT/REMOVE DIES WHILE THE POWER IS ON OR MACHINE IS IN OPERATION.
10. SECURE THE EQUIPMENT TO A STABLE WORK SURFACE. Prior to operation, secure the crimp machine to a stable work surface to prevent the equipment from tipping. See pages 4-5 for mounting instructions.
11. UNPLUG THE POWER SUPPLY WHEN NOT IN USE.
12. KEEP WORK AREA CLEAN. Cluttered areas and benches invite accidents.

# Specifications and Equipment

## ET1280 Crimp Machine



### Machine Only:

**Crimper Dimensions:** 13"W x 25.75"D x 13"H

**Weight:** 141 lbs.

### Pump Requirements

**Reservoir Capacity:** 50 cubic inches or more (820 cc)

**Pressure Rating:** 10,000 psi (690 bar)

### Machine w/110V Power Unit:

**Crimper Dimensions:** 13"W x 25.75"D x 29"H

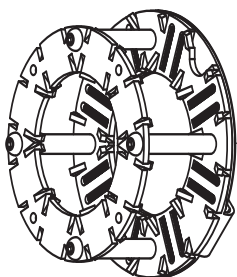
**Weight:** 253 lbs.

### Pump Requirements

**Reservoir Capacity:** 50 cubic inches or more (820 cc)

**Pressure Rating:** 10,000 psi (690 bar)

## Accessories



### Die Holder Kit FT1380P-2-4

A plate and mounting hardware that can hold two cages. This kit attaches to the back of the Eaton ET1280 crimp machine.

### Fitting Locators FT1330-XL

For easy positioning of fittings into FT1380 "M" series die cages.

## Die Cages

Note: Can order FT1380-275-size for tool steel dies vs. powdered metal dies.

FT1380-200-M070	FT1380-200-M180†	FT1380-200-M320*†
FT1380-200-M090	FT1380-200-M210*†	FT1380-200-M370*†
FT1380-200-M120	FT1380-200-M240*†	FT1380-200-M420
FT1380-200-M150*†	FT1380-200-M280†	FT1380-200-M465†

\* Included in the 5 die cage package.

† Included in the 8 die cage package.

# Set-Up and Operating Instructions

## Set-Up

### 110V Power Unit:

1. Mount the crimper onto a workbench that will support a minimum of 300 lbs.

2. Remove the plug from the hydraulic reservoir vent and replace it with the vent cap supplied with the unit.

**Caution:** Failure to do so will cause cavitation and damage to the pumping mechanism. Hand tighten the vent cap.

3. **Caution:** Provide electrical service with a dedicated circuit (per the crimp machine electrical requirements) to eliminate the possibility of a low voltage situation.

4. Never use an extension cord, always plug directly into the power outlet.

### Hand Pump, Air/Hydraulic Pump, 12V DC Pump:

1. Mount the crimper to a stable workbench using (4) 1/2" lag screws or other suitable fasteners.

2. Place the pump on the bench near the crimper, and install a 2021-6-4S adapter in the pressure port.

3. Install a 2021-6-4S adapter in the crimper cylinder port.

4. Connect the hose assembly provided to both adapters. (Hose length will vary with pump option.)

## Operating Instructions

### Loading and Unloading Die Cages

Select proper die cage for style and size of desired hose. Refer to the current Crimp Specifications Manual on the Eaton website for complete and detailed crimp specification information for each hose and fitting style. To load the die cage, extend the crimp ring to its fullest length by releasing the hydraulic pressure from the power source (Figure 1). The die cage may be inserted or removed in this position.



Figure 1

# Crimping Procedures



## WARNING:

Maintain clear distance from all moving parts.

### Establishing Crimp Settings

The adjustment knob at the top of the machine determines the crimp diameter for each combination of hose, fitting, and die cage. The numbers on the dial and barrel of the machine are for selecting target settings and not crimp diameters. Settings between 000 and 400 can be achieved with this crimp machine. Consult the target setting chart for the ET1280 crimp machine for the initial setting.

There are 25 marks on the dial (0-24), and 16 marks on the barrel (025-400 by 025 increments). The top of the barrel corresponds to a 000 setting. When the adjustment knob is rotated to the top most position on the crimper, and the "0" mark is located as shown in Figure 2, the machine setting is 000. Each complete downward rotation of the adjustment knob increases the target setting by 025; each mark around the dial corresponds to a 001 change in target setting. For example,

to achieve a target setting of 050, the adjustment knob is rotated until the top of it corresponds to the 050 mark on the barrel, and the 0 mark on the dial is lined up with the center, vertical mark on the barrel (see Figure 3). One more full

downward rotation of the dial would result in a target setting of 075. If the desired target setting is 065, the dial would instead be rotated downward 15 "marks" on the dial, or approximately 2/3 of a turn, past the 050 target setting.



Figure 2



Figure 3

### Crimping Procedures

Refer to the current Crimp Specifications Manual on the Eaton website for complete and detailed crimp specification information for each hose and fitting style.

1. Select and load the proper die cage according to the current Crimp Specifications Manual on the Eaton website.
2. Rotate the adjustment knob/barrel indicator to the proper setting (see Example).
3. Position the fitting to the proper crimping position within the die cage according to the Crimp Specifications Manual on the Eaton website.

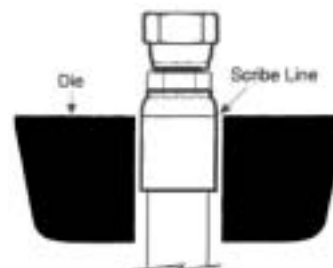
4. To crimp the fitting in an 110V Power Unit model, press and hold the crimp switch in the upward position.

5. The crimp switch may be toggled up and down as required to reposition the fitting. To crimp the fitting in a Hand Pump, Air/Hydraulic Pump or 12V DC Pump model, activate the hydraulic power source according to the respective pump manual.

**Note:** The use of a 10,000 psi hydraulic power source is required to operate the ET1280 crimp machine. If lower rated power units are utilized, improper crimping may result.

5. When the fitting is fully crimped, all movement in the machine will stop, and the black guard around the piston (pinch point hat) will move up and completely cover the red indicator ring located on the adjustment knob.

6. Release the hydraulic pressure and remove the crimped hose assembly.



For the 110V Power Unit model, this is accomplished by pressing and holding the crimp switch in the downward position until the machine is completely retracted. For the Hand Pump, Air/Hydraulic Pump or 12V DC Pump model, refer to the manual provided with the respected pump for pressure release.

7. Verify that the correct crimp diameter and crimp length is achieved.

Figure 4

For proper crimping procedure, refer to the Crimp Specification Manual on the Eaton website.

### Example:

Position the adjustment knob at a setting of 300. Activate the hydraulic pump and attempt a crimp. If the dies crimp the fitting, measure the crimp diameter and decrease the machine setting (rotate the adjustment knob upward) by the same amount in thousandths of an

inch that you wish to decrease the crimp diameter (a smaller target setting number means a smaller crimp diameter. If the dies do not crimp the fitting, decrease the machine setting by 050 increments until the dies do touch the fitting and the resultant crimp diameter can be measured.

For a target crimp diameter of 0.990 inches and a machine setting of 250 produces a crimp diameter of 1.124 inches, subtract the target crimp diameter (0.990 inches) from the diameter you measured (1.124 - 0.990 = 0.134). Subtract 134 from the machine setting (250 - 134 = 116)

and change the machine setting to 116. Crimp the fitting again and measure the crimp diameter. If the crimp diameter is too large, repeat this process. If the crimp diameter is too small, repeat the process but instead add the difference to the machine setting.

The ET1280 Crimp Machine is factory calibrated. ATTC-8 or WeatherGRIP –8 fitting crimped with an FT1380-200-M240 die cage and a machine setting of 100



Figure 5

should result in a socket diameter of 1.000 +/- 0.003 inches.

If excessive wear occurs in the crimp ring, or any of the functional components are replaced, a minor recalibration may be necessary. This can be accomplished by first loosening the two #8-32 set screws in the adjustment knob (see Figure 5) and then performing the crimp described above.

If the actual measured crimp diameter is, for example, 1.010 inches instead of 1.000 inches, the black dial piece can be rotated inside the adjustment knob (leaving the adjustment knob exactly where it is positioned) until the number “10” on the dial lines up with the center vertical line on the barrel.

Then rotate the adjustment knob and dial together until the “0” mark on the dial is once again lined up with the center vertical line on the barrel. Repeat the crimp procedure until the 1.000 inch crimp diameter is achieved.

Maintenance

Intervals

DIE CAGE LUBRICATION	
Every 50 crimps	Relube sliding surfaces of dies
Every 500 crimps	Remove old grease and relube
Every 1000 crimps	Die cage maintenance

CRIMP RING MAINTENANCE	
Every 500 crimps	Remove old grease and relube
Every 2000 crimps	Remove old grease;. Inspect for wear or damage and relube if okay.

**NOTE:** Use NEVER-SEEZ lubricant (Eaton part number FT1092).

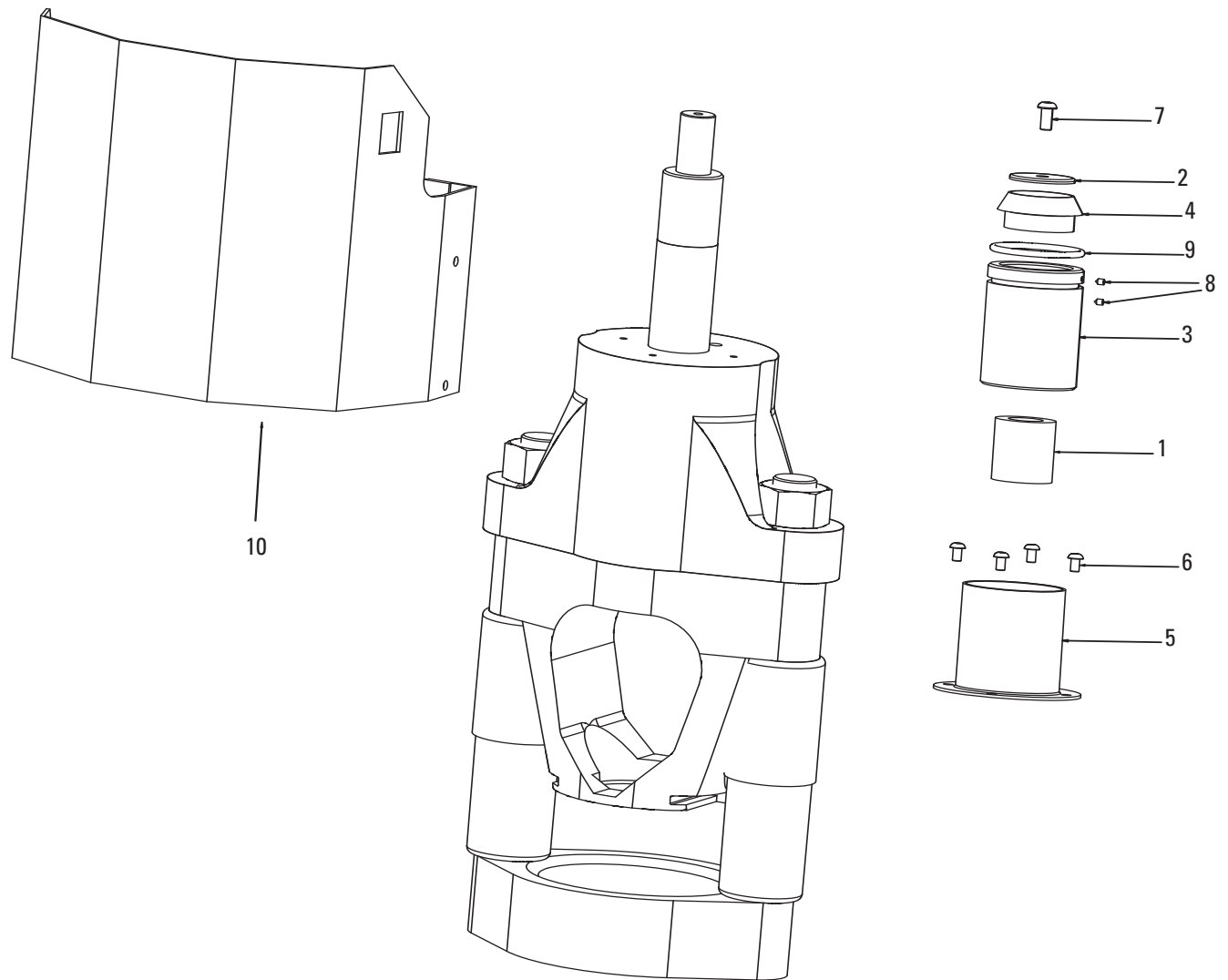
Procedures

MACHINE MAINTENANCE PROCURES
1. Sliding surfaces must be kept free of dirt and other abrasive materials
2. All exposed black metal surfaces should be coated occasionally with a light film of oil to prevent corrosion.
3. Periodically check the oil level in the fluid reservoir of the hydraulic power unit. Maintain the oil level of pump manufacturer's hydraulic oil as needed.

**NOTE:** Completely retract the crimp ring when checking the oil level.

DIE CAGE MAINTENANCE PROCEDURES
1. Lubricate the die cage. For maximum service, FT1380 die cages require lubrication at 50-crimp intervals with NEVER-SEEZ (Eaton part number FT1092). FT1092 is an 8-ounce container that will provide sufficient lubricant for approximately 5,000 crimps. <i>Periodically remove NEVER-SEEZ residue that has built-up on the sides of the dies and the crimp ring during the crimping process. NEVER-SEEZ residue becomes contaminated with metal and plating chips and airborne contaminants, which can cause premature wear of the dies and crimp ring. It should carefully be removed without mixing it with newly applied NEVER-SEEZ.</i>
2. Die cage maintenance should be performed at 1000-crimp intervals or every six months, whichever occurs first. Die cages should be clean of grease and debris and inspected for worn or damaged components. a. The sliding surface of the dies should appear smooth with no apparent galling. Galled dies must be replaced. Individual dies in a cage can be replaced without replacing all eight dies. b. Replace springs that show any sign of damage or collapse (are shorter than other springs). c. The spring plate should appear smooth with no apparent galling. Galled spring plates must be replaced. d. Inspect remaining components and replace those that are badly worn.
3. Reassemble components and liberally apply NEVER-SEEZ to the die surface which slides along the spring plate. Torque the die cage bolts to 50in.-lbs.
4. Ensure that all dies slide in and out freely.

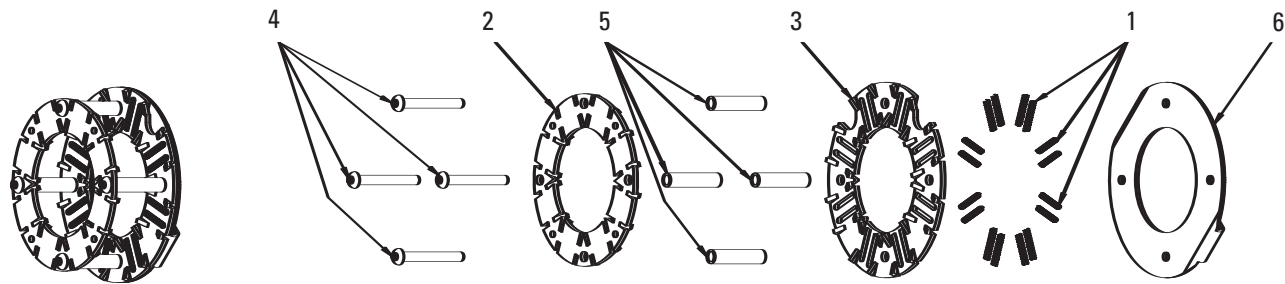
# Crimp Machine Components



ITEM	PART NUMBER	DESCRIPTION	MATERIAL	QUANTITY
1	ET1280C-0002	Barrel	Aluminum	1
2	ET1280C-0012	Washer	Steel	1
3	ET1280C-0003	Adjustable Knob	Steel	1
4	ET1280C-0001	Dial Indicator	Aluminum	1
5	ET1280C-0007	Pinch Point Hat	Plastic	1
6	FF90625	1/4-20 x 3/8" Button Head Cap Screw	Steel	4
7	ET1280C-0014	5/16-18 Button Head Cap Screw	Steel	1
8	FF90626	Set Screw	Steel	2
9	FF90627	229 O-Ring	Neoprene	1
10	ET1280C-0015/ET1280C-0017	Red Shroud/Yellow Shroud	Steel	1



# Die Cage Components



DETAIL NUMBER	FT1380-2-9 BILL OF MATERIAL	FT1380-2-9A BILL OF MATERIAL	DESCRIPTION	QUANTITY REQUIRED
1	FT1330-2-9-21	FT1330-2-9-2	Die spring	8 or 16*
2	FT1380-2-9-3	FT1380-2-9-2	Front plate	1
3	FT1330-2-9-13	FT1330-2-9-3	Spring Plate	1
4	FT1330-2-9-55	FT1330-2-9-5	Button head Cap Screw	4
5	FT1330-2-9-66	FT1330-2-9-6	Spacers	4
6	FT1380-2-9-1	FT1380-2-9-1	Back Plate	1

\*The FT1380-200-NO. (FT1380-2-9) requires 16 springs and the FT1380-201-NO. (FT-1380-2-9A) requires 8 springs.







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