

# Eaton® ET4020 & ET4040 Crimp Machines

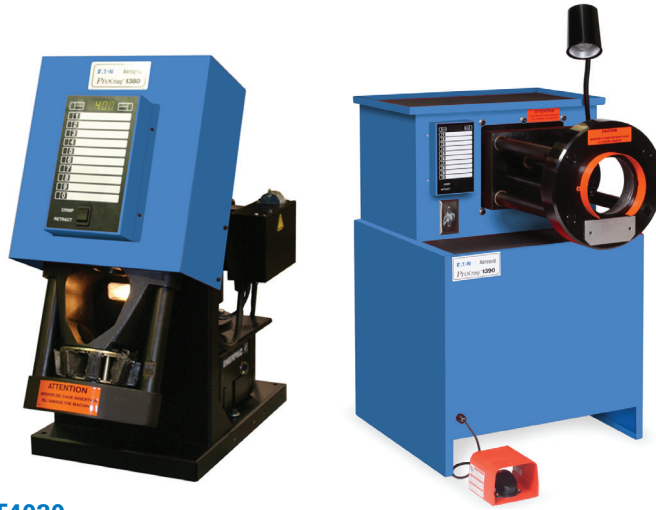


**EATON**

*Powering Business Worldwide*

# ET4020 & ET4040 Crimp Machines

The ET4020 is a benchtop crimp machine that crimps hydraulic hose assemblies up to 1 1/4" braided and H430 four spiral wire hose. The ET4040 crimp machine comes with a base so no benchtop is needed. The ET4040 will crimp up to 2" braided through six heavy-spiral hydraulic hose assemblies. Both machines have programmable electronic keypads with 10 presets. These keypads simplify the hose crimping operation by allowing the machine operator to enter a predetermined setting for a specific hose type and size. The 10 most often used crimp settings can be stored for one-touch retrieval. The machine will automatically crimp to the exact crimp diameter required for that hose type and size. The electronic crimp machine settings eliminate the need for spacers or shims in the crimping operation which some operators find confusing.



## ET4020

### Features

- Electronic Programmable Keypad
- 10 Crimp Diameter Presets
- Individual die cages for each hose size

### Benefits

- Easy to electronically enter crimp setting
- Can pre-program 10 most popular crimp settings
- Die cages easily slip in and out of machine

## ET4040

### Features

- Electronic Programmable Keypad
- 10 Crimp Diameter Presets
- 2-piece Master die cage
- Durable, lightweight and low cost die inserts for each size

### Benefits

- Easy to electronically enter crimp setting
- Can pre-program 10 most popular crimp settings
- Die cages easily slip in and out of machine.

|                                | ET4020                                 | ET4040                                |
|--------------------------------|--|---------------------------------------|
| <b>Hose End Series</b>         | <b>Sizes</b>                           | <b>Sizes</b>                          |
| <b>Z series</b>                | -4 thru -20                            | -4 thru -32                           |
| <b>430U series (4 spiral)</b>  | -6 thru -20                            |                                       |
| <b>4SP/6SP</b>                 | N/A                                    | -12 thru -32                          |
| <b>Specifications</b>          |  |                                       |
| <b>Dimensions</b>              | 12.75" Wide X 25.75" Deep X 28.5" High | 29" Wide X 28" Deep X 45" High        |
| <b>Weight</b>                  | 238 pounds                             | 825 pounds                            |
| <b>Electrical requirements</b> | 115 volt standard, 230 volt available  | 115 volt standard, 230 volt available |

# ET4040 Tooling and Crimp Machine

## Part Numbers and Packages

| ET4020          |                      |            |            | ET4020 Tooling and Crimp Machine Packages |                            |
|-----------------|----------------------|------------|------------|---|----------------------------|
|                 |                      |            |            | ET4020TP-0003                             | ET4020-006                 |
| Part Number     | Description          | Fittings   | 430U Sizes | Z & 430U Tooling Only                     | Z & 430U Tooling & Crimper |
| ET4020-115      | Crimp Machine (115V) |            |            | 0   | 1                          |
| W-EQCR-TM020-E  | Operator's Manual    |            |            | 0   | 1                          |
| FT1380-200-M150 | Die Cage             | Z          |            | 1   | 1                          |
| FT1380-200-M180 | Die Cage             | Z          |            | 1   | 1                          |
| FT1380-200-M210 | Die Cage             | Z and 430U | -6         | 1   | 1                          |
| FT1380-200-M240 | Die Cage             | Z          |            | 1   | 1                          |
| FT1380-200-M280 | Die Cage             | Z and 430U | -8 and -10 | 1   | 1                          |
| FT1380-200-M320 | Die Cage             | Z and 430U | -12        | 1   | 1                          |
| FT1380-200-M370 | Die Cage             | Z          |            | 1   | 1                          |
| FT1380-200-M420 | Die Cage             | Z and 430U | -16        | 1   | 1                          |
| FT1381-200-M465 | Die Cage             | Z and 430U | -20        | 1   | 1                          |

**Note:** Also available: ET4020-230 (230V) machine.  
 ET1380-2-4 die holders. Consists of 4 plates that attach to the sides of the machine and can hold up to eight die cages.  
 Mounting hardware is included.

# ET4040 Tooling and Crimp Machine

## Part Numbers and Packages

| <b>ET4040</b>              |   |                 | <b>ET4040 Tooling And Crimp Machine Packages (Qty per package)</b> |                                |                             |                                      |                                     |  |
|----------------------------|---|-----------------|--|--------------------------------|-----------------------------|--------------------------------------|-------------------------------------|--|
| <b>Package Part Number</b> |   |                 | <b>ET4040TP-0004</b>   | <b>ET4040-007</b>              | <b>ET4040TP-0005</b>        | <b>ET4040-008</b>                    | <b>ET4040TP-0006</b>                | <b>ET4040-009</b>                            |
| <b>Part Number</b>         | <b>Description</b>                        | <b>Fittings</b> | <b>Z Tooling Only</b>  | <b>Z Tooling &amp; Crimper</b> | <b>4SP/6SP Tooling only</b> | <b>4SP/6SP Tooling &amp; Crimper</b> | <b>Z &amp; 4SP/6SP Tooling Only</b> | <b>Z &amp; 4SP/6SP Tooling &amp; Crimper</b> |
| ET4040-115                 | Crimp Machine (115V)                      |                 |  | 1                              |                             | 1                                    |                                     | 1  |
| W-EQCR-TM021-E             | Operator's Manual                         |                 |  | 1                              |                             | 1                                    |                                     | 1  |
| FT1307-200-M150S           | Die Cage                                  | Z               | 1  | 1                              |                             |                                      | 1                                   | 1  |
| FT1307-200-M180S           | Die Cage                                  | Z               | 1  | 1                              |                             |                                      | 1                                   | 1  |
| FT1307-200-M210S           | Die Cage                                  | Z               | 1  | 1                              |                             |                                      | 1                                   | 1  |
| FT1307-200-M240S           | Die Cage                                  | Z               | 1  | 1                              |                             |                                      | 1                                   | 1  |
| FT1307-200-M280S           | Die Cage                                  | Z               | 1  | 1                              |                             |                                      | 1                                   | 1  |
| FT1307-200-M320S           | Die Cage                                  | Z               | 1  | 1                              |                             |                                      | 1                                   | 1  |
| FT1307-200-M370S           | Die Cage                                  | Z               | 1  | 1                              |                             |                                      | 1                                   | 1  |
| FT1307-200-M420S           | Die Cage                                  | Z               | 1  | 1                              |                             |                                      | 1                                   | 1  |
| FT1307-200-M465S           | Die Cage                                  | Z               | 1  | 1                              |                             |                                      | 1                                   | 1  |
| FT1307-200-M520S           | Die Cage                                  | Z               | 1  | 1                              |                             |                                      | 1                                   | 1  |
| FT1307-200-M550S           | Die Cage                                  | Z               | 1  | 1                              |                             |                                      | 1                                   | 1  |
| FT1307-200-M570S           | Die Cage                                  | Z               | 1  | 1                              |                             |                                      | 1                                   | 1  |
| FT1307-200-M690S           | Die Cage                                  | Z               | 1  | 1                              |                             |                                      | 1                                   | 1  |
| FT1209-200-82S             | Die Cage                                  | 4SP12           |  |                                | 1                           | 1                                    | 1                                   | 1  |
| FT1209-200-46S             | Die Cage                                  | 4SP16           |  |                                | 1                           | 1                                    | 1                                   | 1  |
| FT1209-200-14S             | Die Cage                                  | 4SP20           |  |                                | 1                           | 1                                    | 1                                   | 1  |
| FT1209-200-20S             | Die Cage                                  | 4SP24           |  |                                | 1                           | 1                                    | 1                                   | 1  |
| FT1209-200-23S             | Die Cage                                  | 4SP32           |  |                                | 1                           | 1                                    | 1                                   | 1  |
| FT1209-200-15S             | Die Cage                                  | 6SP20           |  |                                | 1                           | 1                                    | 1                                   | 1  |
| FT1209-200-16S             | Die Cage                                  | 6SP24           |  |                                | 1                           | 1                                    | 1                                   | 1  |
| FT1209-200-21S             | Die Cage                                  | 6SP32           |  |                                | 1                           | 1                                    | 1                                   | 1  |
| MSDS Sheet                 | Hydraulic Fluid                           |                 |  | 1                              |                             | 1                                    |                                     | 1  |
| MSDS Sheet                 | Never Seez                                |                 |  | 1                              |                             | 1                                    |                                     | 1  |
| FT1289-3-30                | Shipping Crate                            |                 |  | 1                              |                             | 1                                    |                                     | 1  |
| ET4040-230                 | Crimp Machine(230V, 50/60H)<br>(optional) |                 |  |                                |                             |                                      |                                     |  |

# ET4020 and ET4040 Target Settings

## Z-Series

### ET4020 Procedure for determining a target setting

Enter the number “300” into the DISPLAY and start the crimping process. If the dies crimp the fitting, measure the crimp diameter and decrease the DISPLAY setting by the same amount that you wish to decrease the crimp diameter. If the dies don’t touch the fitting, lower the DISPLAY setting by 050 to “250” and try to crimp the fitting again. If that still isn’t enough, continue to reduce the DISPLAY setting by 050 increments until the dies make contact with the fitting. Then measure the crimp diameter and decrease the DISPLAY setting by the same amount that you wish to decrease the crimp diameter.

#### \*Example:

If a display setting of “250” using H28008 hose with Z Series fittings produces a crimp diameter of 1.124 inches, subtract the crimp specification (0.990 inches) from the diameter that you need measured (1.124-0.990=0.134). Then, subtract “134” from the DISPLAY setting (250-134=116) and change the DISPLAY to “116”. Crimp the fitting again and measure the crimp diameter. If the crimp diameter is still too large, repeat this process.

### ET4040 Procedure for determining a target setting

Enter the number “500” into the DISPLAY, and start the crimping process. If the dies crimp the fitting, measure the crimp diameter and decrease the DISPLAY setting by the same amount that you wish to decrease the crimp diameter. If the dies don’t touch the fitting, lower the DISPLAY setting by 050 to “450” and crimp the fitting again. If that still isn’t enough, continue to reduce the DISPLAY setting by 050 increments until the dies make contact with the fitting. Then, measure the crimp diameter and decrease the DISPLAY setting by the same amount that you wish to decrease the crimp diameter.

#### \*Example:

If a display setting of “250” – using H28008 with Z Series – produces a crimp diameter of 1.004 inches, subtract the crimp specification (0.990 inches) from the diameter that you measured (1.004-0.990=0.014). Then, subtract “014” from the DISPLAY setting (250-014=236), and change the DISPLAY to “236.” Crimp the fitting again, and measure the crimp diameter. If the crimp diameter is still too large, repeat this process.

**Note:** Record the setting for future reference.

### Charted Target Settings

The charts below and on the next page provide target settings for common Weatherhead hoses. To

determine target settings for hoses not included in these charts refer to procedures above.

| Hose Dash Size                      | Die Cage | ET4020 | ET4040 | Target Dia.           |
|-------------------------------------|----------|--------|--------|-----------------------|
|                                     |          |        |        | ± .15 mm<br>± .006 in |
| <b>H190 with Z-series Hose Ends</b> |          |        |        |                       |
| -4                                  | -M150    | 068    | 304    | 15.75 mm<br>.620 in   |
| -6                                  | -M180    | 104    | 351    | 19.94 mm<br>.785 in   |
| -8                                  | -M240    | 034    | 270    | 23.88 mm<br>.940 in   |
| -10                                 | -M240    | 147    | 385    | 26.80 mm<br>1.055 in  |
| -12                                 | -M320    | 035    | 265    | 31.75 mm<br>1.250 in  |
| -16                                 | -M370    | 166    | 408    | 40.39 mm<br>1.590 in  |
| -20                                 | -M420    | 176    | 432    | 45.72 mm<br>1.800 in  |
| -24                                 | -M550    | -      | 291    | 2.181 in              |
| -32                                 | -M690    | -      | 259    | 2.701 in              |

| Hose Dash Size                      | Die Cage | ET4020 | ET4040 | Target Dia.           |
|-------------------------------------|----------|--------|--------|-----------------------|
|                                     |          |        |        | ± .15 mm<br>± .006 in |
| <b>H190 with Z-series Hose Ends</b> |          |        |        |                       |
| -4                                  | -M150    | 067    | 304    | 15.75 mm<br>.620 in   |
| -6                                  | -M180    | 095    | 336    | 19.56 mm<br>.770 in   |
| -8                                  | -M240    | 036    | 270    | 23.88 mm<br>.940 in   |
| -10                                 | -M240    | 147    | 385    | 26.80 mm<br>1.055 in  |
| -12                                 | -M320    | 035    | 265    | 31.75 mm<br>1.250 in  |
| -16                                 | -M370    | 166    | 408    | 40.39 mm<br>1.590 in  |
| -20                                 | -M420    | 176    | 421    | 45.72 mm<br>1.800 in  |

# ET4020 and ET4040 Target Settings

## Z-Series

| Hose Dash Size                      | Die Cage | ET4020 | ET4040 | Target Dia.           |
|-------------------------------------|----------|--------|--------|-----------------------|
|                                     |          |        |        | ± .15 mm<br>± .006 in |
| <b>H290 with Z-series Hose Ends</b> |          |        |        |                       |
| -4                                  | -M150    | 125    | 364    | 17.27 mm<br>.680 in   |
| -6                                  | -M210    | 046    | 283    | 21.21 mm<br>.835 in   |
| -8                                  | -M240    | 086    | 320    | 25.15 mm<br>.990 in   |
| -10                                 | -M280    | 061    | 303    | 28.70 mm<br>1.130 in  |
| -12                                 | -M320    | 048    | 295    | 32.51 mm<br>1.280 in  |
| -16                                 | -M370    | 204    | 448    | 41.40 mm<br>1.630 in  |
| -20                                 | -M465    | 149    | 404    | 49.78 mm<br>1.960 in  |
| -24                                 | -M550    | -      | 380    | 57.66 mm<br>2.270 in  |
| -32                                 | -M690    | -      | 348    | 70.87 mm<br>2.79 in   |

| Hose Dash Size                      | Die Cage | ET4020 | ET4040 | Target Dia.          |
|-------------------------------------|----------|--------|--------|----------------------|
| <b>H280 with Z-series Hose Ends</b> |          |        |        |                      |
| -4                                  | -M150    | 111    | 349    | 16.89 mm<br>.665 in  |
| -6                                  | -M210    | 026    | 263    | 20.70 mm<br>.815 in  |
| -8                                  | -M240    | 071    | 305    | 24.77 mm<br>.975 in  |
| -10                                 | -M280    | 045    | 288    | 28.32 mm<br>1.115 in |
| -12                                 | -M320    | 013    | 260    | 31.62 mm<br>1.245 in |
| -16                                 | -M370    | 137    | 383    | 39.75 mm<br>1.565 in |
| -20                                 | -M465    | 091    | 344    | 48.26 mm<br>1.900 in |
| -24                                 | -M550    | -      | 265    | 54.65 mm<br>2.151 in |
| -32                                 | -M690    | -      | 258    | 68.58 mm<br>2.700 in |

| Hose Dash Size                       | Die Cage | ET4020 | ET4040 | Target Dia.           |
|--------------------------------------|----------|--------|--------|-----------------------|
|                                      |          |        |        | ± .15 mm<br>± .006 in |
| <b>H290H with Z-series Hose Ends</b> |          |        |        |                       |
| -4                                   | -M150    | 112    | 349    | 17.25 mm<br>.680 in   |
| -6                                   | -M210    | 047    | 283    | 21.21 mm<br>.835 in   |
| -8                                   | -M240    | 087    | 320    | 25.15 mm<br>.990 in   |
| -10                                  | -M280    | 063    | 299    | 28.71 mm<br>1.130 in  |
| -12                                  | -M320    | 049    | 295    | 32.51 mm<br>1.280 in  |
| -16                                  | -M370    | 216    | 458    | 41.66 mm<br>1.640 in  |
| -20                                  | -M465    | 194    | 444    | 50.80 mm<br>2.000 in  |
| -24                                  | -M550    | -      | 380    | 57.66 mm<br>2.270 in  |
| -32                                  | -M690    | -      | 328    | 70.36 mm<br>2.770 in  |

| Hose Dash Size                         | Die Cage | ET4020 | ET4040 | Target Dia.          |
|--|----------|--------|--------|----------------------|
| <b>H430 with 430U series Hose Ends</b> |          |        |        |                      |
| -6                                     | -M210    | 105    |        | 22.76 mm<br>.896 in  |
| -8                                     | -M280    | 72     |        | 29.20 mm<br>1.150 in |
| -10                                    | -M280    | 130    |        | 30.48 mm<br>1.200 in |
| -12                                    | -M320    | 191    |        | 35.70 mm<br>1.406 in |
| -16                                    | -M420    | 96     |        | 43.30 mm<br>1.705 in |
| -20                                    | -M465*   | 249    |        | 51.70 mm<br>2.035 in |
| -20                                    | -M520    | -      |        | 51.70 mm<br>2.035 in |
| -24                                    | -M570    | -      |        | 58.05 mm<br>2.285 in |
| -32                                    | -M690    | -      |        | 73.55 mm<br>2.895 in |

**Caution:** These target settings for Weatherhead crimp machines are provided to aid in establishing actual settings. While the settings on this chart will give crimp diameters close to, or at, the specified value, the machine operator must check to verify the actual diameter. Before using these target settings, the crimp machine must be properly calibrated. Consult your Weatherhead operator's manual for calibration procedures.

\*ET4020 requires the FT1381-200-M465 die cage to crimp 430U-series hose ends in the -20 size.

# ET4040 Target Settings and Assembly Instructions

## 4SP and 6SP Hose Ends

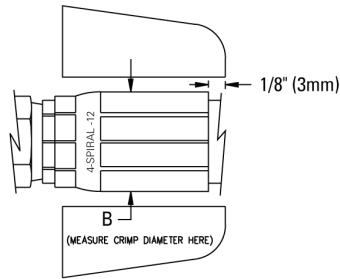


Figure 1

**Caution:** These target settings for the ET4040 crimp machine are provided to aid in establishing actual settings. While the settings on this chart will give crimp diameters close to, or at the specified value, the machine operator must check to verify the actual diameter. Before using these target settings, the crimp machine must be properly calibrated. Consult your ET4040 operator's manual for calibration procedures.

**4SP Hose Ends** for use on 4-wire construction

**6SP Hose Ends** for use on 6-wire construction

| Hose Dash Size | Hose End Part Number Prefix | Crimp Diameter "B" ± 0.15MM (± .006 In) | Crimp Die Inserts | Crimp Die Inserts | Fig. | ET4040 Target Setting |
|----------------|-----------------------------|---|-------------------|-------------------|------|-----------------------|
| <b>H464</b>    |                             |   |                   |                   |      |                       |
| -12            | 4SP12                       | 36.15 (1.425)                           | FT1390-200-82S    | FT1209-200-82S    | 1    | 272                   |
| -16            | 4SP16                       | 44.95 (1.768)                           | FT1390-200-46S    | FT1209-200-46S    | 1    | 235                   |
| -20            | 4SP20                       | 53.45 (2.106)                           | FT1390-200-14S    | FT1209-200-14S    | 1    | 353                   |
| -24            | 4SP24                       | 60.40 (2.378)                           | FT1390-200-20S    | FT1209-200-20S    | 1    | 299                   |
| -32            | 4SP32                       | 73.65 (2.898)                           | FT1390-200-23S    | FT1209-200-23S    | 1    | 300                   |
| <b>H470</b>    |                             |   |                   |                   |      |                       |
| -12            | 4SP12                       | 36.7 (1.445)                            | FT1390-200-82S    | FT1209-200-82S    | 1    | 292                   |
| -16            | 4SP16                       | 45.4 (1.787)                            | FT1390-200-46S    | FT1209-200-46S    | 1    | 254                   |
| -20            | 6SP20                       | 57.1 (2.248)                            | FT1390-200-15S    | FT1209-200-15S    | 1    | 315                   |
| -24            | 6SP24                       | 64.1 (2.524)                            | FT1390-200-16S    | FT1209-200-16S    | 1    | 321                   |
| -32            | 6SP32                       | 79.1 (3.114)                            | FT1390-200-21S    | FT1209-200-21S    | 1    | 311                   |
| <b>H485</b>    |                             |   |                   |                   |      |                       |
| -16            | 4SP16                       | 45.4 (1.768)                            | FT1390-200-46S    | FT1209-200-46S    | 1    | 235                   |
| -20            | 6SP20                       | 56.2 (2.213)                            | FT1390-200-15S    | FT1209-200-15S    | 1    | 280                   |
| -24            | 6SP24                       | 64.1 (2.525)                            | FT1390-200-16S    | FT1209-200-16S    | 1    | 322                   |

### Assembly Instructions

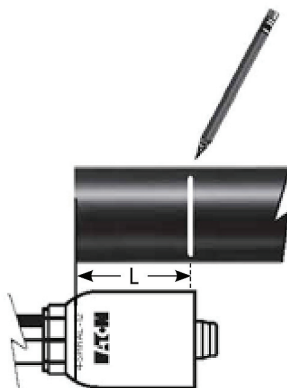


Figure 2

- Cut hose to proper length by subtracting appropriate fitting hose cutoff factors from overall assembly length. Hose cutoff factors are listed for each hose end fitting in the master Weatherhead catalog.
  - To determine hose insertion length (L), align end of hose to top of stenciled dash size or scribe line (located on the socket taper) and mark hose where the socket ends as shown in Figure 2.
- Install hose end onto hose until socket edge aligns with mark.
- Select proper crimp tooling and machine settings, then crimp to specified diameter.
- To achieve full flat crimp locate back edge of socket approximately 1/8" (3mm) from back edge of crimp jaws as shown in Figure 1.



ET4040 Crimp Machine

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