Ultra-Grip 2
Crimp Connector Hand Tool Kit
for
Crimp Coaxial Cable Connectors, Powerpole® Connectors, Insulated and Non-Insulated Crimp Terminals

DXE-UT-KIT-CRMP2

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Introduction

The DX Engineering Ultra-Grip 2 Crimp Connector Hand Tool Kit is ready for you to make professional quality crimped coaxial cable assemblies using crimp style connectors, Powerpole® connectors and other popular size wire terminations.

The DXE-UT-CRMP2 Ultra-Grip 2 Crimp Connector Hand Tool is a quality ratcheting steel crimper, ergonomically shaped for power, with soft non-slip dual color thermoplastic rubber grips for comfortable and positive connector crimping results. The Ultra-Grip 2 Crimp Connector Hand Tool is also made from high quality carbon steel with black oxide finish for corrosion resistance and durability. The DXE-UT-CRMP2 Ultra-Grip 2 Crimp Connector Hand Tool features high crimping quality that is repeatable with precision dies and their integral locking mechanism.

The DXE-UT-KIT-CRMP2 is supplied with the DXE-UT-DIE-8U Crimp Die for RG-8U/213/LMR-400 size cable. The included 2.5 mm Allen wrench is used to change to one of the other optional dies, to cover the most popular sizes of coaxial cables with ten different Amphenol Connex crimp connectors in UHF Male/PL-259, Type N, BNC, Powerpole® connector sizes 15, 30 and 45 Ampere connectors, Molex connector pins, insulated crimp type connectors for 22-18/16-14/12-10 AWG and un-insulated crimp type connectors for 20-18/16-14/12-10 and 8 AWG.

The DX Engineering Ultra-Grip 2 Crimp Connector Hand Tool Kit, model DXE-UT-KIT-CRMP2, provides a handsome, convenient carrying case furnished with the Ultra-Grip 2 Crimp Connector Hand Tool, cable cutting, braid snipping tool and all five crimp die sets with a precut foam insert providing a home for each tool and die set. The coaxial cable connector dies are designed to crimp the full ferrule and the center pin.

Not only is this DX Engineering Ultra-Grip 2 Crimp Connector Hand Tool Kit perfect for helping you keep track of your tools, but it also makes it easy for you to carry them from job to job.

DXE-UT-KIT-CRMP2 Complete Kit contains:

- DXE-UT-CRMP2 Ultra-Grip 2 Crimp Connector Hand Tool
- DXE-UT-DIE-8U Crimp Die for RG-8U/213/LMR-400 size cable
- DXE-UT-DIE-8X Crimp Die for RG-8X/LMR-240 size cable
- DXE-UT-DIE-PP Crimp Die for Powerpole® 15, 30, 45A contacts and Molex connector pins
- DXE-UT-DIE-INS for insulated crimp style terminals 22-18/15-14/12-10 AWG
- DXE-UT-DIE-UNIS for uninsulated crimp style terminals 20-28/26-24/12-10/8 AWG
- CNL-911 Coaxial cable shears
- DXE-170M Precision braid trimmers
- 2.5 mm Allen Wrench
- DXE-CRIMP-CASE Custom Tool Case
Available from DX Engineering as individual items:

- **DXE-UT-CRMP2** Ultra-Grip 2 Crimp Connector Hand Tool - Supplied with the
  **DXE-UT-DIE-8U** Crimp Die for RG-8U/213/LMR-400 size cable and one 2.5 mm
  Allen Wrench
- **DXE-UT-DIE-8U** Crimp Die for RG-8U/213/LMR-400 size cable
- **DXE-UT-DIE-8X** Crimp Die for RG-8X/LMR-240 size cable
- **DXE-UT-DIE-PP** Crimp Die for Powerpole® for 15A, 30A and 45A contacts
- **DXE-UT-DIE-INS** for insulated crimp style terminals 22-18/15-14/12-10 AWG
- **DXE-UT-DIE-UNIS** for uninsulated crimp style terminals 20-28/26-24/12-10/8 AWG
- **CNL-911** Coaxial cable shears
- **DXE-170M** Precision braid trimmers
- **DXE-CRIMP-CASE** Custom Tool Case

The DX Engineering crimp die sets work with most of the popular coaxial cables and crimp style connectors.

The following crimp style connectors are available from DX Engineering:

**UHF Type**

**DXE-PL259CS8U-6/12/24** DX Engineering Next Generation Crimp/Solder UHF Male Connector

**DXE-PL259CS8X-6/12/24** DX Engineering Next Generation Crimp/Solder UHF Male Connector
Silver plated PL-259 body, **solder center conductor**, 50 ohm, PTFE dielectric, crimp shield. For DXE-8X, RG-8X, LMR-240 type and equivalent coax cables with center conductors up to 10 AWG. Packages of 6, 12 or 24.

**N-Connector Type**

**AMP-172100** Amphenol Connex N-Type Male Crimp Connector 172100
White bronze finished brass with gold plated contact. PTFE dielectric. 50 ohm. For RG-58, LMR-195, and equivalents.

**AML-172102** Amphenol Connex N-Type Male Crimp Connector 172102
White bronze finished brass with gold plated contact. PTFE dielectric. 50 ohm. For RG-8 (with 12-13 AWG center conductors), RG-213, RG-393 and equivalents.

**AMP-172102H243** Amphenol Connex N-Type Male Crimp Connector 172102H243
White bronze finished brass with gold plated contact. PTFE dielectric. 50 ohm. For DXE-400MAX, DXE-8U, RG-8 (with 10-11 AWG center conductors), LMR-400 and equivalents.

**AMP-172135** Amphenol Connex N-Type Male Crimp Connector 172135
Coaxial Cable Connector, Solderless crimp, PTFE dielectric. N Type Male for RG-8X, LMR-240, 50 ohm.

**BNC Type**

**AMP-112116** Amphenol Connex BNC Male Crimp Connector 112116
Nickel finished brass with gold plated contact. Delrin dielectric. 50 ohm. For RG-58, LMR-195, and equivalents.

**AML-112533** Amphenol Connex BNC Male Crimp Connector 112533.
Nickel finished brass with gold plated contact. Delrin dielectric. 50 ohm. For RG-8X, LMR-240, and equivalents.
The DXE-UT-DIE-PP Crimp Die is made for Powerpole® for 15A, 30A and 45A contacts. The most popular sizes are available from DX Engineering:

**DXE-PP30 DX Engineering Anderson Powerpole® Connectors PP30**
Power Pole Connectors, Anderson, 12 - 16 AWG, 30 amps, 10 red and 10 black connectors.

**DXE-PP45 DX Engineering Anderson Powerpole® Connectors PP45**
Power Pole Connectors, Anderson, 10 - 14 AWG, 45 amps, Includes 10 red and 10 black connectors.

The DXE-UT-DIE-INS Crimp Die is made for insulated crimp style terminals 22-18/15-14/12-10 AWG

The DXE-UT-DIE-UNINS Crimp Die is made for uninsulated crimp style terminals 20-28/26-24/12-10/8 AWG

The following chart shows which coaxial cable crimp connectors work with different types of coaxial cable. *This list is dynamic and changes will be made on our web site as new coaxial cables are tested.*

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<th>Connector Type</th>
<th>PL-259</th>
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<th>PL-259</th>
<th>PL-259</th>
<th>Type N</th>
<th>Type N</th>
<th>Type N</th>
<th>Type N</th>
<th>BNC</th>
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<td>HEX Crimp Center Pin*</td>
<td>Solder Pin Solder Pin</td>
<td>0.068</td>
<td>0.100</td>
<td>0.068</td>
<td>0.118</td>
<td>0.100</td>
<td>0.100</td>
<td>0.118</td>
<td>0.100</td>
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<td>HEX Crimp Ferrule*</td>
<td>0.429</td>
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<td>0.213</td>
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<th>Type N</th>
<th>Type N</th>
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<td>DXE-400MAX</td>
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<td>LMR-195</td>
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<td>RG-8 with 12-13 AWG center conductor</td>
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<td>RG-8U with 10-11 AWG center conductor</td>
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<td>RG-8X</td>
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<td>Belden 8267/8237</td>
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</table>

(* dimensions are in inches)
The following chart shows the trim length required for the various coaxial cable crimp connectors.

<table>
<thead>
<tr>
<th>Connector Type</th>
<th>Connector P/N</th>
<th>A</th>
<th>B</th>
<th>C</th>
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</thead>
<tbody>
<tr>
<td>PL-259</td>
<td>DXE-PL259CS8U-6/12/24</td>
<td>1.218&quot;</td>
<td>0.891&quot;</td>
<td>0.544&quot;</td>
</tr>
<tr>
<td></td>
<td>DXE-PL259CS8X-6/12/24</td>
<td>1.218&quot;</td>
<td>0.891&quot;</td>
<td>0.544&quot;</td>
</tr>
<tr>
<td>Type N</td>
<td>AMP-172100</td>
<td>0.630&quot;</td>
<td>0.303&quot;</td>
<td>0.157&quot;</td>
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<td>AMP-172102</td>
<td>0.631&quot;</td>
<td>0.304&quot;</td>
<td>0.158&quot;</td>
</tr>
<tr>
<td></td>
<td>AMP-172102H243</td>
<td>0.631&quot;</td>
<td>0.304&quot;</td>
<td>0.158&quot;</td>
</tr>
<tr>
<td></td>
<td>AMP-172135</td>
<td>0.630&quot;</td>
<td>0.303&quot;</td>
<td>0.157&quot;</td>
</tr>
<tr>
<td>BNC</td>
<td>AMP-112116</td>
<td>0.631&quot;</td>
<td>0.304&quot;</td>
<td>0.158&quot;</td>
</tr>
<tr>
<td></td>
<td>AMP-112533</td>
<td>0.634&quot;</td>
<td>0.307&quot;</td>
<td>0.157&quot;</td>
</tr>
</tbody>
</table>

(Dimensions in inches. Information obtained from engineering drawings)

Close up showing the various sized openings.

Refer to the chart on page 3 for the die openings used for the various coaxial connectors.

Changing Dies
There are five die sets available for the DX Engineering Ultra-Grip Crimp Connector Hand Tool.

- **DXE-UT-DIE-8U** Crimp Die for RG-8U/213/LMR-400 size cable
- **DXE-UT-DIE-8X** Crimp Die for RG-8X/LMR-240 size cable
- **DXE-UT-DIE-PP** Crimp Die for Powerpole® 15A, 30A and 45A contacts and Molex crimp connectors
- **DXE-UT-DIE-INS** for insulated crimp style terminals 22-18/15-14/12-10 AWG
- **DXE-UT-DIE-UNIS** for uninsulated crimp style terminals 20-28/26-24/12-10/8 AWG

To install a die set. Close the Ultra-Grip Crimp Connector Hand Tool far enough to comfortably insert the die set as shown.
Align the holes and using the supplied 2.5 mm Allen Wrench, insert and tighten the Allen head screws to hold the die set in place as shown below.

Reverse the process to remove the die set.

When using the die set for the Powerpole® connector contacts, there are added parts that are mounted on the opposite side from the die printed numbers (15, 30 45 which correspond to the applicable Powerpole® crimp connector contact pins). These added parts provide support for the Powerpole® crimp connector contact pin.

When installing the Powerpole® die, use the longer (supplied) screw, with the supplied washer and Nyloc nut to hold the support part in place as shown below.

Adjustment

The Ultra-Grip 2 Crimp Connector Hand Tool has one adjustment. This adjustment will determine the amount of ‘squeeze’ needed to fully ratchet the crimper closed then allow it to release. If you encounter difficulties, try adjusting the screw by loosening the Phillips head screw, moving the adjustment to another setting, then re-tighten the Phillips screw and test. Adjust as needed. Do not over tighten the setting or you may cause damage not covered by warranty to the die if they are squeezed to hard together. **If the tool jams while ratcheting for any reason, push the small black tab seen between the handles toward the jaws. This will release the ratchet mechanism and allow you to open the tool.**
Crimping Coaxial Cable Connectors

Select your coaxial cable and crimp connector per the information presented in this manual. Practice makes perfect. As with any tool, the more you use it, the better it will perform.

Prepare the coaxial cable per the dimensions in the chart on page 4. The example shown uses **DXE-213U** Coaxial Cable and the DX Engineering (**DXE- PL259CS8U**) PL-259 Connector.

**Trim “A”**

**Late News**! A new Coax Prep Tool Kit is now available for trimming coaxial cable used with crimp style connectors! Please see the **DXE-UT-KIT-CC1** on the DX Engineering web site.

**Trim “B”**

Place the ferrule collar and the PL-259 collar over the coaxial cable. Install the main body of the PL-259 on the coaxial cable taking care to slide under the coaxial cable shield, and have the center conductor go into the center pin on the connector. Push the main body until you see the center conductor just reach the end of the center pin.

**Trim “C”**

Slide the ferrule over the shield until it comes to a stop at the back of the main body. Using the Crimp tool (use the large hexagonal opening) crimp the ferrule in place. Squeeze the tool (it will ratchet) until the ferrule is completely crimped, the tool will automatically release when done.

Solder the Center Pin. Slide the PL-259 collar in place and screw it onto the main body. The process is complete.
Crimping Powerpole® Connectors

Install the **DXE-UT-DIE-PP** into the crimp tool as described earlier in this manual.

For both sizes of connectors, strip the wire 5/16”. Insert the connector being used in the appropriate spot on the Powerpole die. Squeeze the crimp tool slightly so the connector is held snug in place. Insert the wire and squeeze the crimp tool until it ratchets and releases. The crimp is complete. The pictures below show the 45 amp connector. This die set has also been used on Molex crimp pins.

The **DXE-UT-DIE-INS** for insulated crimp style terminals 22-18/15-14/12-10 AWG and the **DXE-UT-DIE-UNIS** for uninsulated crimp style terminals 20-28/26-24/12-10/8 AWG. Most insulated terminals have color coded insulation: Yellow, Red and Blue. These colors correspond to the die being used (note the Yellow, Blue and Red dots on the **DXE-UT-DIE-INS**). Size the uninsulated terminals according to 20-28/26-24/12-10/8 AWG (from smallest to largest opening on the die).

Technical Support
If you have questions about this product, or if you experience difficulties during the installation, contact DX Engineering at (330) 572-3200. You can also e-mail us at: DXEngineering@DXEngineering.com

For best service, please take a few minutes to review this manual before you call.

Warranty
All products manufactured by DX Engineering are warranted to be free from defects in material and workmanship for a period of one (1) year from date of shipment. DX Engineering’s sole obligation under these warranties shall be to issue credit, repair or replace any item or part thereof which is proved to be other than as warranted; no allowance shall be made for any labor charges of Buyer for replacement of parts, adjustment or repairs, or any other work, unless such charges are authorized in advance by DX Engineering. If DX Engineering’s products are claimed to be defective in material or workmanship, DX Engineering shall, upon prompt notice thereof, issue shipping instructions for return to DX Engineering (transportation-charges prepaid by Buyer). Every such claim for breach of these warranties shall be deemed to be waived by Buyer unless made in writing. The above warranties shall not extend to any products or parts thereof which have been subjected to any misuse or neglect, damaged by accident, rendered defective by reason of improper installation, damaged from severe weather including floods, or abnormal environmental conditions such as prolonged exposure to corrosives or power surges, or by the performance of repairs or alterations outside of our plant, and shall not apply to any goods or parts thereof furnished by Buyer or acquired from others at Buyer’s specifications. In addition, DX Engineering’s warranties do not extend to other equipment and parts manufactured by others except to the extent of the original manufacturer’s warranty to DX Engineering. The obligations under the foregoing warranties are limited to the precise terms thereof. These warranties provide exclusive remedies, expressly in lieu of all other remedies including claims for special or consequential damages. SELLER NEITHER MAKES NOR ASSUMES ANY OTHER WARRANTY WHATSOEVER, WHETHER EXPRESS, STATUTORY, OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS, AND NO PERSON IS AUTHORIZED TO ASSUME FOR DX ENGINEERING ANY OBLIGATION OR LIABILITY NOT STRICTLY IN ACCORDANCE WITH THE FOREGOING.

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