DX ENGINEERING ®

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

DXE-UT-KIT-CRMP2-INS   Revision 1a

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 20-18/16-14/12-10 and 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 20-18/16-14/12-10/8 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
Silver plated PL-259 body, **solder center conductor**, 50 ohm, PTFE dielectric, crimp shield. For DXE-400 MAX, DXE-8U, DXE-RG-11/U, DXE-213U, RG-8/U, LMR-400 type, most RG-213/U and equivalent coax cables with center conductors up to 10 AWG. Packages of 6,12 or 24.

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.

AML-172102H 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-PP30-10PK DX Engineering Anderson Powerpole® Connectors PP30
Power Pole Connectors, Anderson, 12 - 16 AWG, 30 amps, 10 red and 10 black connectors.

DXE-PP45-10PK 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-UNIS** Crimp Die is made for un-insulated crimp style terminals 20-18/16-14/12-10 and 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.

Connector Type	PL-259	PL-259	PL-259	PL-259	PL-259	PL-259	Type N	Type N	Type N	Type N	BNC	BNC
Connector P/N	DXE-PL259CS8U	DXE-PL259CS8X	AMP-182100	AMP-182102	AMP-182115-10	AMP-182130-10	AMP-172100	AMP-172102	AML-172102H243	AMP-172135	AMP-112116	AMP-112533
Use Die DXE-UT-	DIE-8U	DIE-8X	DIE-8X	DIE-8U	DIE-8X	DIE-8U	DIE-8X	DIE-8U	DIE-8U	DIE-8X	DIE-8X	DIE-8X
Hex Crimp Center Pin*	Solder Pin	Solder Pin	0.068	0.100	0.068	0.118	0.100	0.100	0.118	0.100	0.068	0.068
Hex Crimp Ferrule*	0.429	0.255	0.213	0.429	0.255	0.429	0.213	0.429	0.429	0.255	0.213	0.255

Coax Part Type												
DXE-400MAX	XX					XX			XX			
DXE-11U	XX			XX								
DXE-213U	XX			XX				XX				
DXE-58AU	XX		XX				XX				XX	
DXE-8U	XX					XX			XX			
DXE-8X		XX			XX					XX		XX
LMR-195								XX			XX	
LMR-200			XX									
LMR-240		XX			XX					XX		XX
LMR-400	XX					XX			XX			
RG-213	XX			XX				XX				
RG-393	XX			XX				XX				
RG-58			XX				XX				XX	
RG-8 with 12-13 AWG center conductor	XX			XX				XX				
RG-8U with 10-11 AWG center conductor	XX					XX			XX			
RG-8X		XX			XX					XX		XX
Belden 8214	XX					XX			XX			
Belden 9913	XX					XX			XX			
Belden 8267/8237	XX			XX				XX				

(* dimensions are in inches)

The following chart shows the trim length required for the various coaxial cable crimp connectors.

| Connector Type	Connector P/N	A	B	C
PL-259	DXE-PL259CS8U-6/12/24	1.218"	0.891"	0.544"
	DXE-PL259CS8X-6/12/24	1.218"	0.891"	0.544"
Type N	AMP-172100	0.630"	0.303"	0.157"
	AMP-172102	0.631"	0.304"	0.158"
	AML-172102H243	0.631"	0.304"	0.158"
	AMP-172135	0.630"	0.303"	0.157"
BNC	AMP-112116	0.631"	0.304"	0.158"
	AMP-112533	0.634"	0.307"	0.157"

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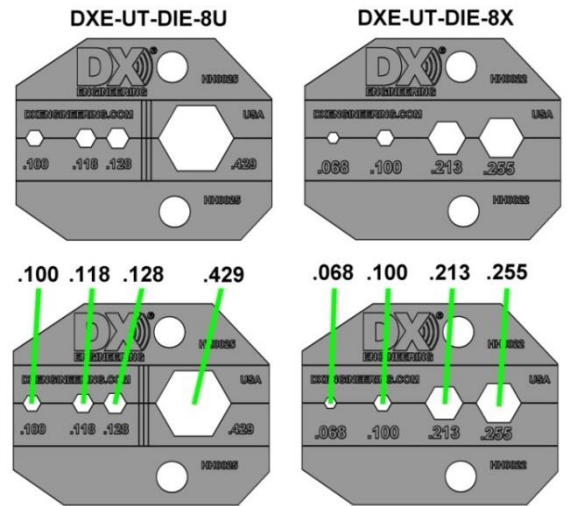
Changing Dies
There are five die sets available for the DX Engineering Ultra-Grip Crimp Connector Hand Tool.

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 20-18/16-14/12-10 and 8 AWG

DXE-UT-DIE-8U   **DXE-UT-DIE-8X**   **DXE-UT-DIE-PP**   **DXE-UT-DIE-INS**   **DXE-UT-DIE-UNIS**

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 the Allen head screws to loosely hold the die set in place as shown below. Squeeze the jaws closed, then tighten the two Allen head screws to hold the die set firmly in place.

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.

Front View
Support, Hex Screw
Washer Nut

Rear View
Support
Installed

Front View
with jaws open
Support Installed
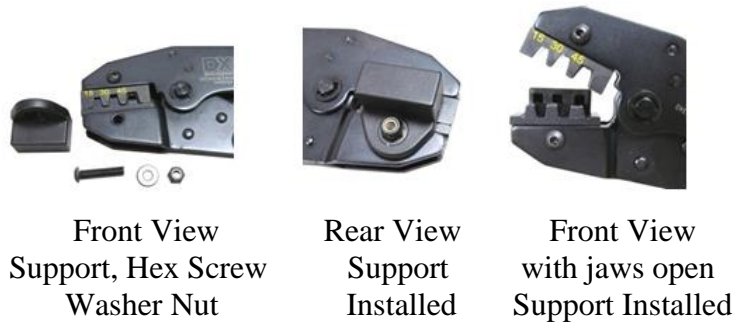
Adjustment

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.**

Crimp Compression Adjustment

Quick Release

Die Hex Socket Head Screws

Allen Wrench
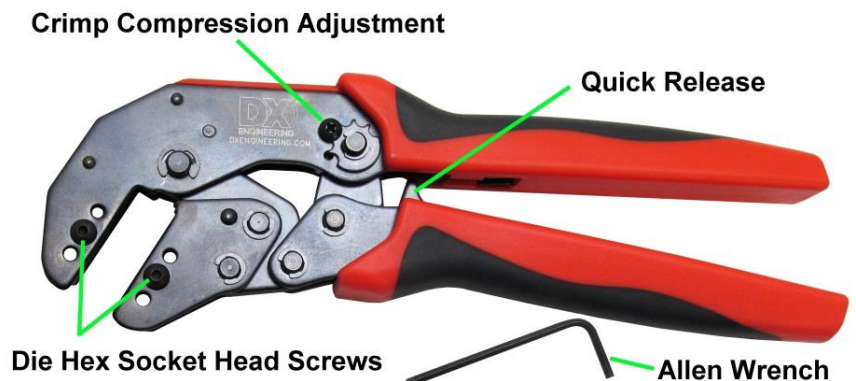
Crimping Coaxial Cable Connectors

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"

Trim "B"

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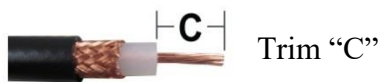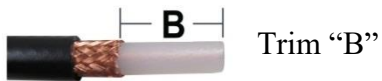
Late News ! A new Coax Prep Tool Kit is now available for trimming coaxial cable used with crimp style connectors! Please see the **DXE-UT-KIT-CC1** on the DX Engineering web site.

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.

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.
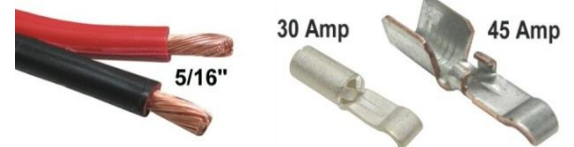
For both sizes of connectors, strip the wire 5/16". Insert the connector being used in the appropriate spot on the Powerpole die. Squeeze the crimp tool slightly so the connector is held snug in place. Insert the wire and squeeze the crimp tool until it ratchets and releases. The crimp is complete. The 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 20-18/16-14/12-10/8 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 un-insulated terminals according to 20-28/26-24/12-10/8 AWG (from smallest to largest opening on the **DXE-UT-DIE-UNIS** 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