PROPER USE GUIDELINES

Cumulative Trauma Disorders can result from the prolonged use of manually powered hand tools. Hand tools are intended for occasional use and low volume applications. A wide selection of powered application equipment for extended–use, production operations is available.

Figure 1

1. INTRODUCTION

This instruction sheet covers the proper use and maintenance of Tool Kits 1725150–[ ] for AMP NETCONNECT* SL Series 110 and AMP–Twist–6S and 7_AS SL Jack Connectors.
See Figure 1.

This tool kit is designed to terminate 22–24 AWG solid and 24 AWG stranded conductors to SL Series 110 and AMP–Twist–6S SL Jack Connectors. The tool kit can be used to terminate 22–24 AWG solid and 24–26 AWG stranded conductors to AMP–Twist–6S SL Jack Connectors.

The tool kit is also used to terminate 22–24 AWG solid conductors to AMP–Twist 7_AS SL Jack Connectors

NOTE

Dimensions in this instruction sheet are in millimeters [with inches in brackets]. Figures and illustrations are for reference only, and are not drawn to scale.

To obtain information on NETCONNECT* products, call PRODUCT INFORMATION at the number at the bottom of this page, or visit the NETCONNECT website at **www.ampnetconnect.com**.

Reasons for revision are given in Section 9, REVISION SUMMARY.

2. DESCRIPTION

Tool kit part number 1725150–1 for SL 110 Series Jack Connectors consists of:

- Tool Assembly 1901551–1
- Lacing Fixture 1673956–1
- Hand Tool Pouch 1725504–1

Tool kit part number 1725150–3 for AMP–Twist–6S and 7_AS SL Jack Connectors consists of:

- Tool Assembly 1901551–1
- No lacing fixture
- Hand Tool Pouch 1725504–1

Read these instructions carefully before using this tool.

2.1. Description of SL Series Jack Tool Assembly 1901551–1

The tool assembly consists of a spring–loaded ram driven by a handle through a link.

The ram, which also acts as a handle lock (to keep the handle closed during transportation and storage), can move independently of the link for purposes of cable stripping and to unlock the handle.

A spring provides the force necessary for the cable stripping operation.

A blade to place a score mark on foil covered cable pair.

All the parts are located inside two housing shells.

The housing features a scale for determining strip length and an access hole for cable stripping.

The tool assembly also provides a means to store and retain Lacing Fixture 1673956–1 when the fixture is not in use.

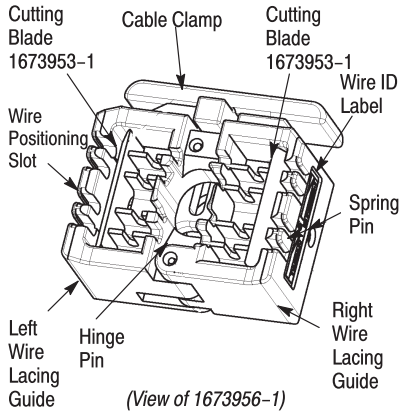


Figure 2

2.2. Description of Lacing Fixture Assembly

NOTE

The lacing fixture is only used on SL Series 110 Jack Connectors.

Each Lacing Fixture Assembly 1673956–1 consists of two wire lacing guides that pivot around a pin. Refer to Figure 2.

Each wire lacing guide has a cut–off blade, to cut off the excess wire during termination.

In addition, Lacing Fixture1673956–1 contains a ball detent to assist in keeping the lacing fixture closed while lacing the conductors. The fixture also contains a movable cable clamp, which is used to prevent cable movement during the wire lacing process.

3. TERMINATION PROCEDURE – SL SERIES 110 JACK CONNECTORS

3.1. Terminating Unshielded Cable

1. Prepare the tool by pulling the ram toward the lacing fixture, unlocking the handle. Lift the handle “up” and remove the lacing fixture. Pull the ram forward and return the handle to the “locked” position.

2. Place the strain relief on the cable with the circular boss facing away from the end of the cable to be terminated. Refer to Figure 13.

3. Place the cable next to the scale on the side of the tool. Stop the end of the cable at the mark below the desired strip length (indicated in mm). Refer to Figure 3.

NOTE

A 35mm [1.378 in.] strip length is a good starting point.

4. Grasp the cable at the end of the tool. That is considered the reference point for the scale.

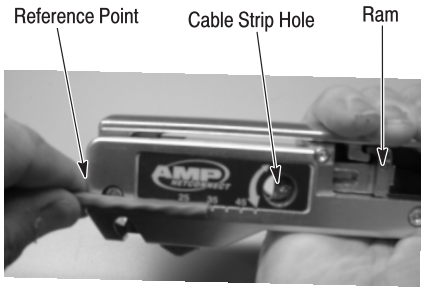


Figure 3

5. Pull the ram completely forward and insert the cable through the strip hole until the reference point meets the outside surface of the tool. See Figure 4.

Figure 4

6. Release the ram. The spring will provide the force for the cable stripping operation.

7. Rotate the tool around the cable. Approximately one and 1/4 turns are normally sufficient to cut through the cable jacket.

NOTE

Harder cable jackets may require additional turns.

An arrow next to the cable strip hole indicates the direction of rotation for different depth cuts.

Rotating the tool in the direction of the smaller arrow will provide a minimal cut; rotating the tool in the direction of the larger arrow will provide a deeper cut.

NOTE

It is recommended that the minimum depth be cut first. *If a deeper cut is required, rotate the tool in the direction on the larger arrow.*

8. Pull the ram forward and remove the cable.

9. Remove the cut cable jacket, rip cord, binder, and cross web filler if they exist, leaving only the twisted pairs of wire. See Figure 5.

Figure 5

NOTE

If the cable is partially scored, bending the cable at the point of the cut and pulling it away from the cable will remove the cable jacket.

10. Open the lacing fixture and insert the cable until the cable jacket is aligned with the shelf. See Figure 6.

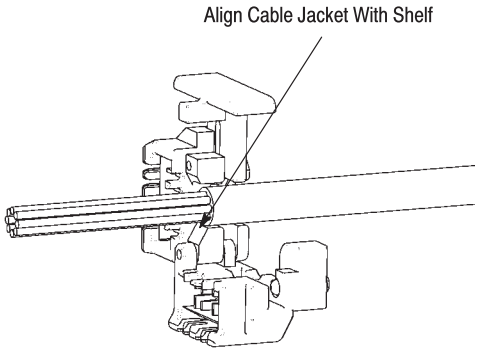


Figure 6

11. Rotate the cable so that the pairs of wires are oriented approximately with the wiring label on the outside of the lacing fixture.

NOTE

The blue and brown wires can be used as guides. When using color code standards T568A or T568B, these conductors are in the same location.

12. Close the lacing fixture around the cable. Lacing fixture 1673956–1 contains a ball detent to keep the fixture closed. This fixture should be held by the cable clamp and by the bottom to keep the the cable from moving during wire lacing. Refer to Figure 7.

13. Following the wire identification label, use the inside towers between the the wire positioning slots to begin to separate the wire pairs. Untwist just enough of the wire to lay straight across the lacing fixture to the outside wire position slot. See Figure 7.

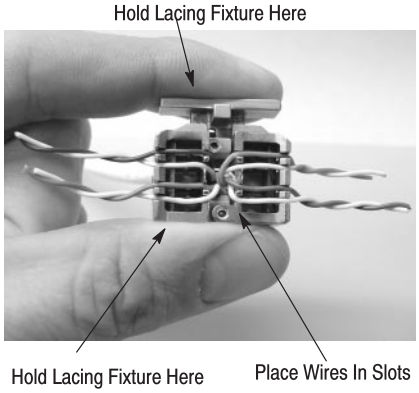


Figure 7

14. Orient the jack connector so that the color coding on the jack connector mates with proper conductor of lacing fixture. Insert a jack connector into the lacing fixture until it is engaged by approximately 4mm [.160 in.]. See Figure 8.

NOTE

The blue and brown wires can be used as guides. When using color code standards T568A or T568B, these conductors are in the same location.

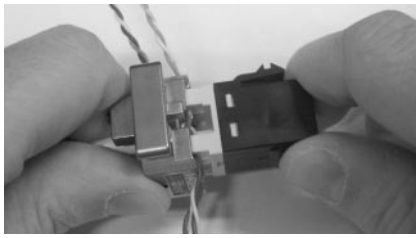


Figure 8

15. Insert the lacing fixture (with the jack connector) into the tool. See Figure 9.

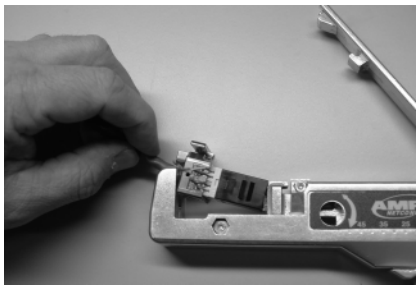


Figure 9

CAUTION

If the jack connector is equipped with a dust cover, the cover must be opened prior to insertion into the tool. See Figure 10. If the jack connector is terminated with the cover closed, the connector will be damaged and must be discarded.

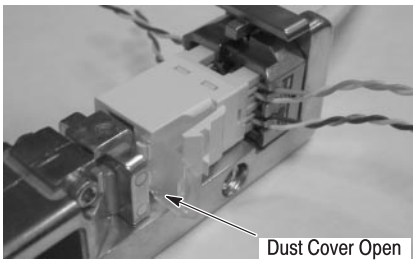


Figure 10

16. When using the lacing fixture and plastic SL Jack Connectors, squeeze the tool handle until the hook on the bottom of the handle meets the top of the ram. See Figure 11. Then release the handle and remove the lacing fixture and connector.

Figure 11

17. If necessary, remove the cut wires from the lacing fixture and discard them.

18. Remove the jack connector from the lacing fixture as follows:

a. Hold the lacing fixture firmly with one hand and the jack connector with the other hand.

b. Slightly move (wiggle) the connector back and forth while pulling in opposite directions. See Figure 12.

NOTE

Be sure **not** *to hold the lacing fixture by the cable clamp. Holding the cable clamp will provide additional force on the cable and make it difficult to release the jack connector.*

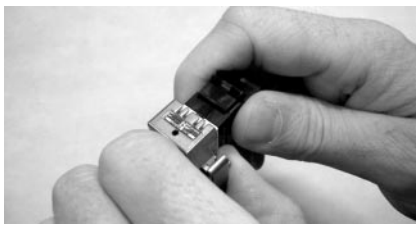


Figure 12

19. Open the lacing fixture and remove it from the cable and properly terminated jack connector. Inspect the connector to ensure the wires are bottomed in the housing slots and the wires were cut properly.

20. For *unshielded* jack connectors, position the strain relief over the connector and snap into place. Refer to Figure 13.

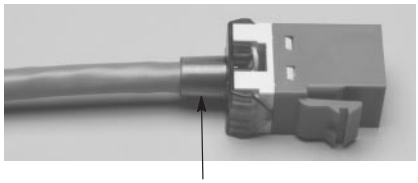


Figure 13

21. If no further terminations are required, place the lacing fixture in the tool and lock the handle in the closed position. The lacing fixture will be retained by the tool.

CAUTION

Damaged product should not be used. If a damaged product is evident, it should be cut from the cable and replaced with a new one.

3.2. Terminating Shielded Cable

1. Strip back the cable jacket approximately 76.2mm [3.00 in.].

NOTE

It is recommended that the minimum depth be cut first. If a deeper cut is required, rotate the tool in the direction of the larger arrow (Figure 14).

If the cable is partially scored, bending the cable at the point of the cut and pulling it away from the cable will remove the cable jacket.

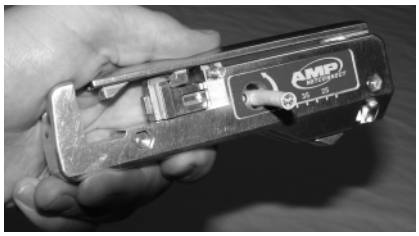


Figure 14

2. Remove ripcord if present. Do not cut the foil. See Figure 15.

3. Fold the metal foil and drain wire back over cable jacket.

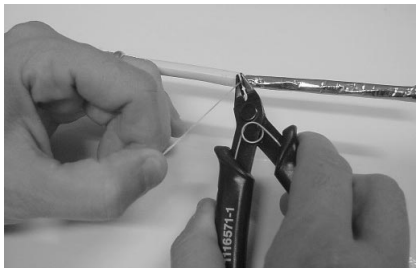


Figure 15

NOTE

Do NOT cut the drain wire. Fold back the foil toward cable jacket as shown in Figure 16.

4. Remove the clear wrapping from the twisted–pair wires. Refer to Figure 17.

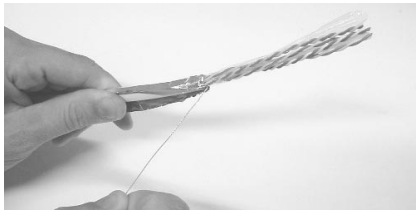


Figure 16

Figure 17

5. Cut the center spline filler 12.7 mm [.500 in.] minimum from the end of the cable jacket. See Figure 18.

6. Open the lacing fixture and insert the cable until the top of the center spline filler is aligned with the shelf of the fixture as shown in Figure 19.

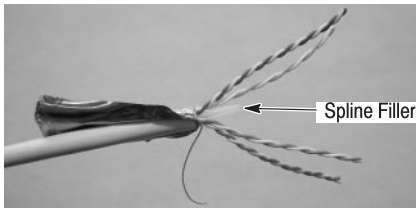


Figure 18

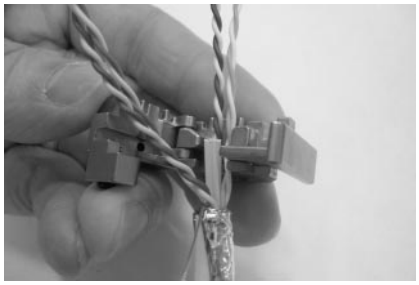


Figure 19

7. Continue as described in the instructions for terminating unshielded cable (Paragraph 3.1, Steps 10 through 18).

8. After removing the connector from the cable and inspecting it, place the foil so that the conductive side is facing outward and the foil is over the twisted pair conductors for 360°. Pull the foil toward the jack, form foil around twisted conductors then fold back toward the cable jacket. See Figure 20 and Figure 21. Inspect the jack to ensure the wires are bottomed in the housing slots and the wires were cut properly.

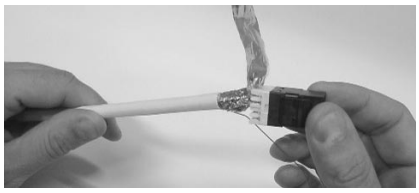


Figure 20

9. Wrap the drain wire 360° around the foil.

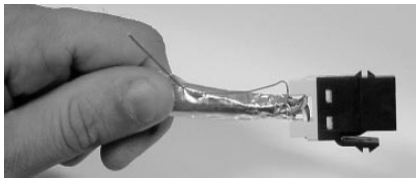


Figure 21

10. Insert the SL Jack into the shield. See Figure 22.

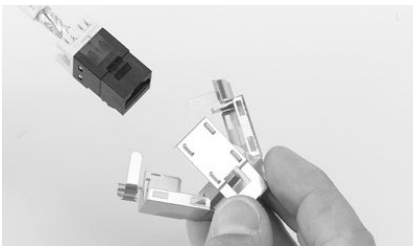


Figure 22

11. Pinch the top and bottom of the shield while simultaneously pinching the sides of the shield. See Figure 23.

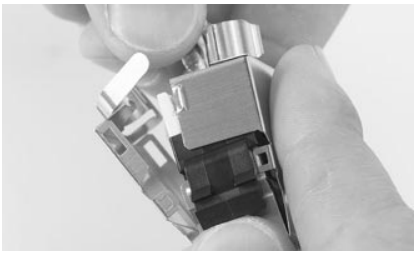


Figure 23

12. The top and bottom of the shield should be on the inside of the tabs on the left and right sides of the shield. Lead shield strain relief belts into slots and continue closing until the holes in the tabs snap over the latches. See Figure 24.

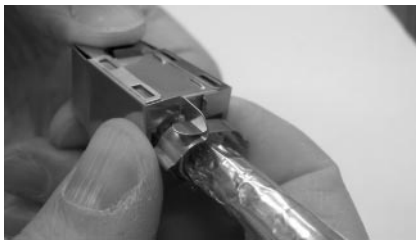


Figure 24

13. Firmly squeeze shield belts tightly around the foil. Fold the belt ends up and over the shield as shown in Figure 25.

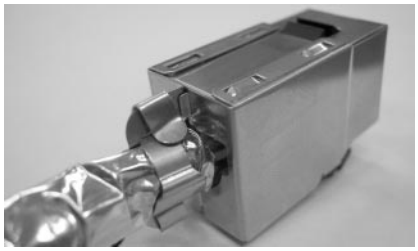


Figure 25

14. Using long–nosed pliers, tighten the shield by squeezing the crimp ribs provided. See Figure 26 and Figure 28.

Figure 26

15. Use long–nosed pliers to crimp the shield belts over the shield strain relief. Refer to Figure 27 and Figure 28.

16. Be sure that the shield strain relief is making 360° of contact with the foil and drain wire.

Figure 27

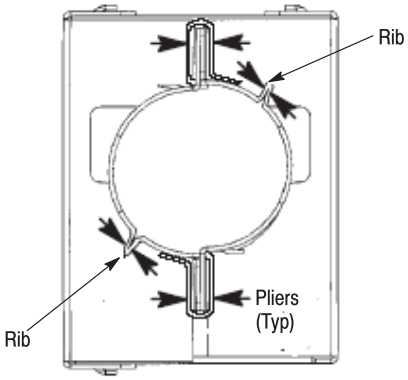


Figure 28

The completed assembly should appear as shown in Figure 29.

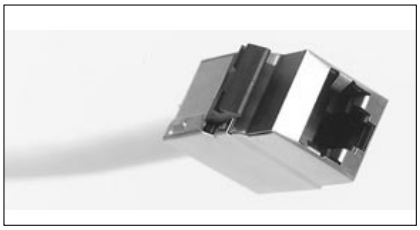


Figure 29

4. TERMINATION PROCEDURE – AMP–TWIST–6S SL JACK CONNECTORS

1. If the tool has a lacing fixture, prepare the tool by pulling the ram toward the lacing fixture, unlocking the handle. Lift the handle “up” and remove the lacing fixture. Pull the ram forward and return the handle to the “locked position”.

2. Set the lacing fixture to the side. It will not be used to terminate AMP–Twist–6S SL Jack Connectors.

3. Place the cable next to the scale on the side of the tool. Stop the end of the cable at the mark below the desired strip length (indicated in mm). See Figures 30 and 31. Grasp the cable at the end of the tool. That is considered the reference point for the scale.

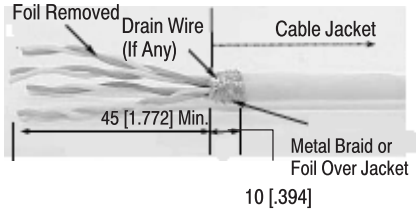


Figure 30

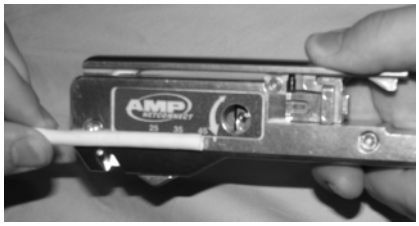


Figure 31

4. Pull the ram completely forward and insert the cable through the strip hole until the reference point meets the outside surface of the tool. See Figure 32.

Figure 32

5. Release the ram. The spring will provide the force for the cable stripping operation.

6. Rotate the tool around the cable. Approximately one and 1/4 turns are normally sufficient to cut through the cable jacket. An arrow next to the cable strip hole indicates the direction of rotation for different depth cuts. Rotating the tool in the direction of the smaller arrow will provide a minimal cut; rotating the tool in the direction of the larger arrow will provide a deeper cut.

7. Pull the ram forward and remove the cable.

8. Remove the cut cable jacket.

9. Trim and fold back the metal braid or foil, and drain wire, if any, until it covers the cable jacket for a distance of 10mm [.394 in.]. See Figure 30.

NOTE

If the individual pairs are covered with foil, follow steps 10 through 15. If the individual pairs are not covered with foil, proceed to step 16.

10. Pull back the score blade assembly.

11. Lay the cable into the cable slot on the tool. The end of the braid or foil should be against the cable stop of the tool See Figure 33.

12. Release the score blade assembly.

13. Rotate the tool (one time) while holding the cable to score the foil on the individual pairs.

14. Retract the score blade assembly and remove the cable from the tool.

15. Remove the foil from the individual pairs. See Figure 30.

Figure 33

16. Push on the cable clamp in the rear housing of the jack to open it. See Figure 34.

Figure 34

17. Insert the cable through the hole in the rear housing until the foil or metal braid is visible on the opposite side.

18. Release the cable clamp. The cable clamp should contact the foil or metal braid and drain wire, if any. See Figure 35.

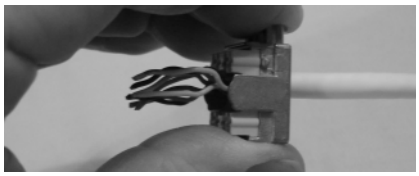


Figure 35

19. Sort the wires and place them into the slots on the rear housing according to the relevant T568 A or T568 B color code labels on the rear housing. See Figures 36 and Figure 37.

Figure 36

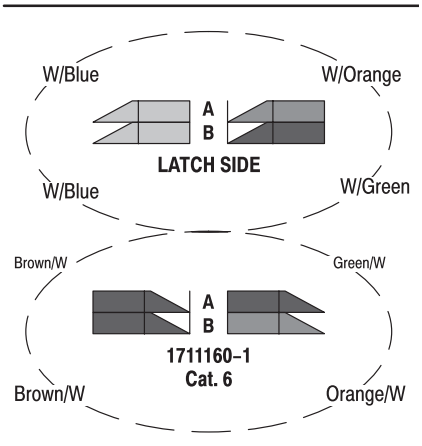


Figure 37

20. Slide the rear housing onto the front housing so the jack is pre–assembled. See Figure 38.

Figure 38

CAUTION

The dust cover on the jack must be opened prior to placing the jack in the hand tool. If the jack is terminated with the dust cover closed, the cover and or the jack will be damaged.

21. Place the jack into the hand tool. See Figure 39.

22. Squeeze down on the handle of the tool until the rearing housing latches in the front housing of the jack. The wires will automatically be cut. See Figure 40.

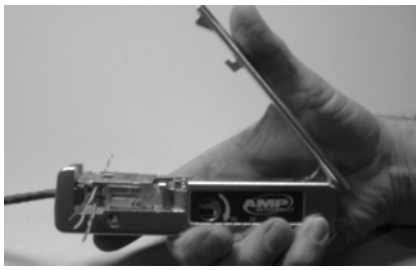


Figure 39

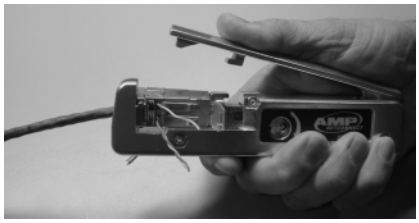


Figure 40

CAUTION

When terminating the metal AMP-Twist-6S SL Jack Connector, squeeze the tool handle until the wires are sheared and the two halves of the connector are completely latched together. Do NOT bottom the handle on the ram as damage can occur to the tool.

23. Remove the cut wires from the assembled jack. See Figure 40.

24. Release the tool handle and remove the jack from the tool.

25. If no further terminations are required, place the lacing fixture in the tool and lock the handle in the closed position. The lacing fixture will be retained by the tool.

5. TERMINATION PROCEDURE: AMP-TWIST 7$_A$S JACK CONNECTORS

1. If the tool has a lacing fixture, prepare the tool by pulling the ram toward the lacing fixture and unlocking the handle. Then lift the handle "up" and remove the lacing fixture.

2. Pull the ram forward and return the handle to the "locked" position.

NOTE

Set the lacing fixture to the side. It will not be used to terminate AMP-TWIST 7$_A$S SL Jack Connectors.

3. Cut the cable jacket 80mm from the end of the cable. Remove the cut cable jacket. See Figure 41.

Figure 41

4. Fold back the metal braid and optional drain wire until it covers the cable jacket. See Figure 42.

Figure 42

5. Pull back the score blade assembly on the tool.

6. Lay the cable into the cable slot on the tool as shown. The end of the braid should be against the cable stop of the tool. See Figure 43.

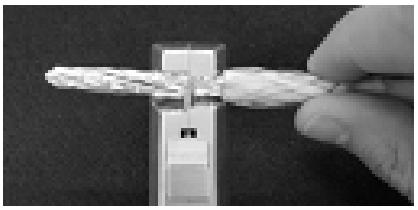


Figure 43

7. Release the score blade assembly.

8. Rotate the tool one time, while holding the cable to score the foil on the individual pairs.

9. Retract the score blade assembly and remove the cable from the tool.

10. According to the color code label on the rear housing of the jack, cross the appropriate pairs as close to the cable jacket as possible. See Figure 44.

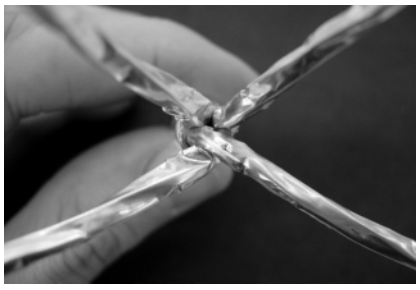


Figure 44

11. Cut each cable pair at the correct distance from the end of the cable jacket as shown below. See Figure 45.

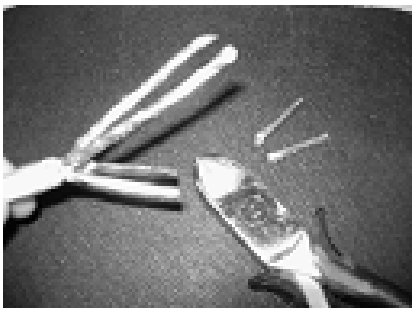


Figure 45

Cut:

- Blue pairs: 65mm
- Green pairs: 65mm
- Orange pairs: 45mm
- Brown pairs: 45mm

12. Apply pressure to the cable clamp on the rear housing to open it. Push the green and blue pairs through the cable clamp first. Then push the orange and brown pairs through the cable clamp. See Figure 46.

Figure 46

13. Release the cable clamp. The cable clamp should contact the cable jacket and braid. Check the position of each cable pair. See Figure 47.

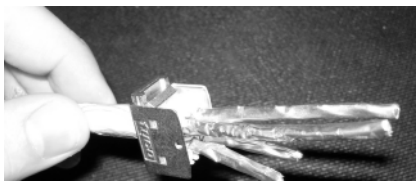
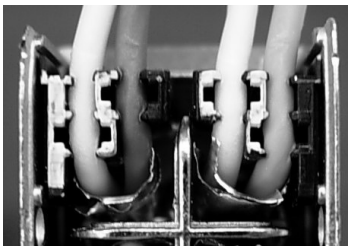


Figure 47

14. Remove the slit foil from each pair.

15. Check to make sure that the remaining foil is no higher than the

surface inside the rear housing. See Figure 48.



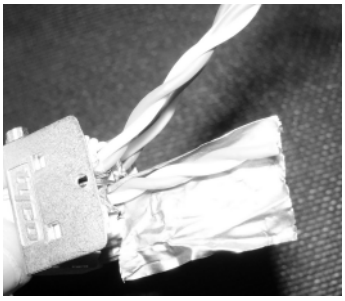
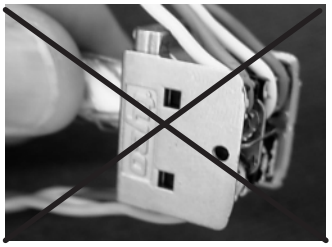


Figure 48

16. Sort the wires and place them into the slots on the rear housing according to the color code labels.

17. Refer to Figure 49.



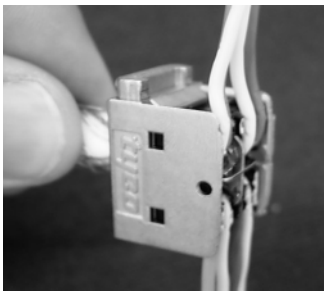


Figure 49

18. Slide the rear housing onto the front housing so the jack is preassembled.

NOTE

The latch and the cable clamp should be on the same side of the jack. See Figure 50.

NOTE

The dust cover on the jack must be opened prior to placing the jack in the hand tool. If the jack is terminated with the dust cover closed, the cover and or the jack will be damaged.

19. Place the jack into the hand tool. See Figure 51.

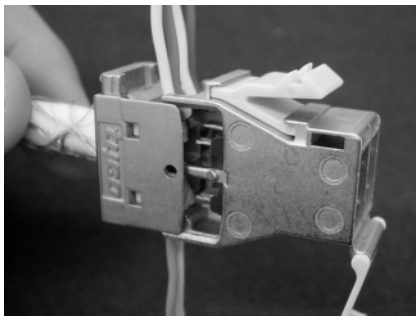


Figure 50

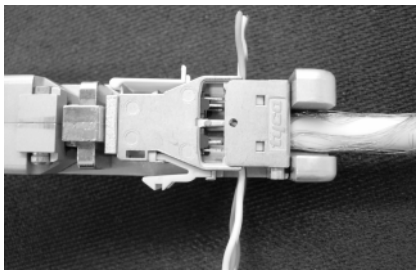


Figure 51

20. Squeeze down on the handle of the tool until the rear housing latches in the front housing of the jack. The wires will automatically be cut.

CAUTION

Do not squeeze the handle of the tool beyond the point where the rear housing latches into the front housing of the jack. Damage to the tool may result.

21. Remove the cut wires from the assembled jack.

22. Release the tool handle and remove the jack from the tool.

23. Twist the metal braid around the jacket of the cable. See Figure 52.

24. If no further terminations are required, place the lacing fixture in the tool and lock the handle in the closed position. The lacing fixture will be retained by the tool.

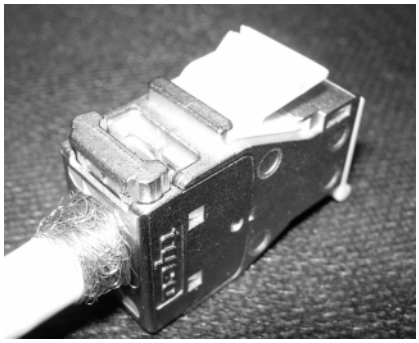


Figure 52

6. MAINTENANCE

Periodically clean the tool. The tool is lubricated at the factory and should not require additional lubrication except during blade replacement.

7. PARTS REPLACEMENT

7.1. Jack Connector Tool Strip Blade Replacement

To replace the strip blade on Tool Assembly 1901551–1, refer to Figure 53 and proceed as follows:

1. First open the handle. This relieves the spring pressure. Then remove the lacing fixture.

2. Remove the three screws holding the tool housings together.

3. Carefully remove one of the housings.

CAUTION

Exercise caution so that the spring does not fly out of the housings when the housings are removed. DO NOT LOSE THE SPRING.

4. Remove the ram.

5. Remove the blade from the ram by removing the cap screw securing the blade.

6. Install a new strip blade. Be sure the back of the blade is up against the wall of the ram.

7. Tighten the cap screw that holds the strip blade.

8. Lubricate the bottom of the ram surfaces with Chevron Ultra–Duty EP2 grease or equivalent.

9. Install the spring and place the previously removed housing over top of the assembly.

10. Using a small, thin object, compress the spring until the housings can be pressed together.

11. Very lightly, tighten the three cap screws.

12. Place the tool on a flat surface to align the bottoms of the housing.

13. Align the inside of the legs of the housing that push against the lacing fixture.

14. Fully tighten the three cap screws.

CAUTION

Do not strip the top cap screw.

15. Slide the ram back and forth.

16. Remove any extra grease that may have entered the cable strip hole.

7.2. Lacing Fixture Cutting Blade Replacement

The lacing fixture contains two cutting blades that may require replacement. (Refer to Figure 2.) To replace the blades, proceed as follows:

1. Remove the lacing fixture from the tool.

2. Pull the cable clamp away from the guides.

3. Using an appropriately sized punch (or similar object), tap the spring pin of one blade toward the center of the lacing fixture until the blade can be removed.

NOTE

Avoid COMPLETE removal of the pin.

4. Remove the cut–off blade and replace with a new blade. Be sure the orientation is the same as the old blade.

5. Tap the spring pin back in until it is flush to approximately 0.5mm [.020 in.] below the outer surface of the cable manager.

6. Repeat the procedure for the other cut off blade if necessary.

Other tool components are unavailable as replacement parts.

8. JACK CONNECTOR TOOL SCORE BLADE REPLACEMENT

To replace the score blade on tool assembly 1901551–1, refer to Figure 53 and proceed as follows:

1. Open the handle. This relieves the spring pressure. Then remove the lacing fixture.

2. Remove the three screws holding the tool housings together.

3. Carefully remove one of the housings.

CAUTION

Exercise caution so that the spring does not fly out of the housings when the housings are removed. DO NOT LOSE THE SPRING.

4. Remove the score blade assembly from the tool.

5. Using a hammer and punch, drive the slotted spring pin from the score blade assembly.

6. Remove the score blade from the assembly.

7. Install a new score blade.

8. Drive the slotted spring pin into the score blade assembly.

9. Install the score blade assembly into the tool.

10. Install the spring and place the previously removed housing over top of the assembly.

11. Using a small, thin object. compress the spring until the housings can be pressed together.

12. Very lightly, tighten the three cap screws.

13. Place the tool on a flat surface to align the bottoms of the housing.

14. Align the inside of the legs of the housing that push against the lacing fixture.

15. Fully tighten the three cap screws.

CAUTION

Do not strip the top cap screw.

Replacement parts are listed in Figure 41, and can be ordered through a Tyco Electronics Representative, or call 1.800.526.5142, or send a facsimile of your purchase order to 1.717.986.7605, or write to:

CUSTOMER SERVICE (38–35)
TYCO ELECTRONICS CORPORATION
P.O. BOX 3608
HARRISBURG, PA 17105–3608

9. REVISION SUMMARY

- Added information concerning the termination of AMP–Twist 7_AS SL Jack Connetors
- Updated format

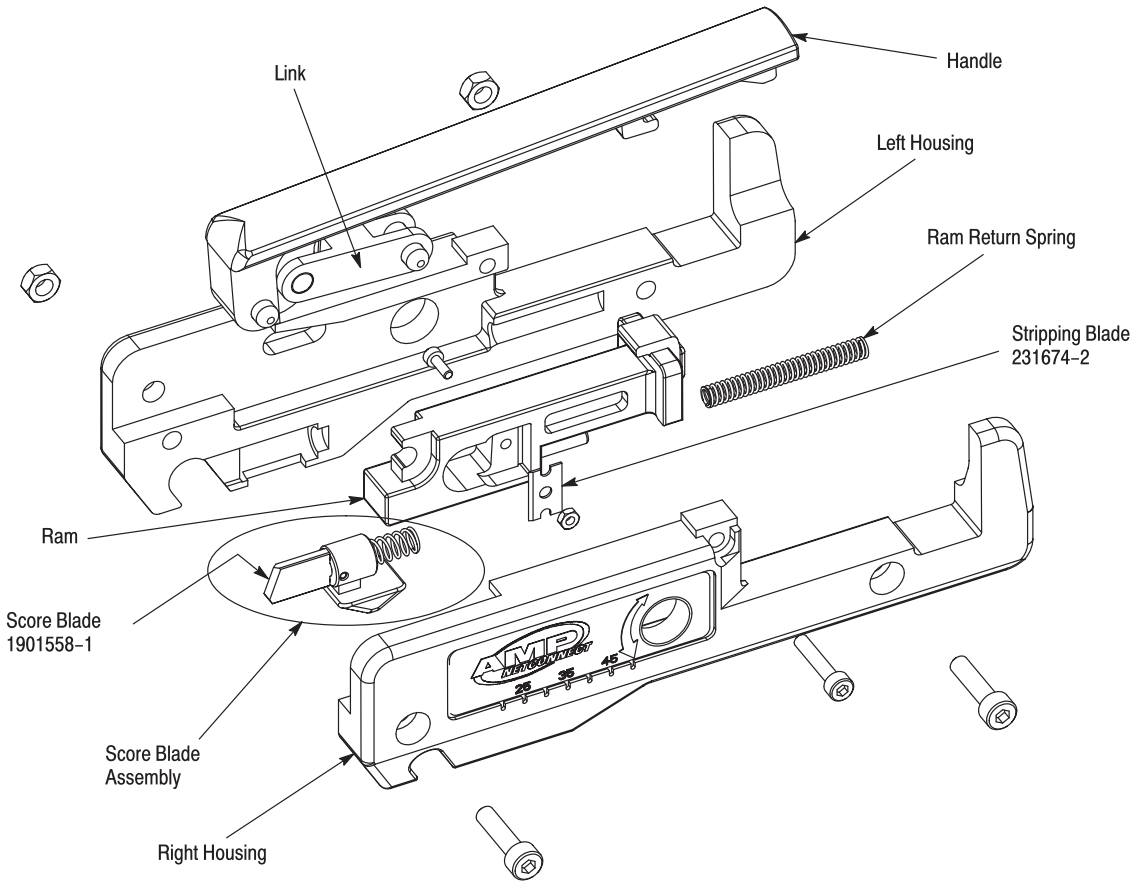

Link
Handle
Left Housing
Ram Return Spring
Stripping Blade
231674–2
Ram
Score Blade
1901558–1
Score Blade
Assembly
Right Housing
25
35
45

Figure 53