Extron® Electronics
INTERFACING, SWITCHING AND DISTRIBUTION

User's Manual

BNC Mini-High Res, 75-Ohm Termination Kit Connector Installation Guide (60-073-01)

68-197-02
02 02 **Rev. C**
Printed in the USA

Precautions

Safety Instructions • English

This symbol is intended to alert the user of important operating and maintenance (servicing) instructions in the literature provided with the equipment.

This symbol is intended to alert the user of the presence of uninsulated dangerous voltage within the product's enclosure that may present a risk of electric shock.

Caution

Read Instructions • Read and understand all safety and operating instructions before using the equipment.

Retain Instructions • The safety instructions should be kept for future reference.

Follow Warnings • Follow all warnings and instructions marked on the equipment or in the user information.

Avoid Attachments • Do not use tools or attachments that are not recommended by the equipment manufacturer because they may be hazardous.

Warning

Power sources • This equipment should be operated only from the power source indicated on the product. This equipment is intended to be used with a main power system with a grounded (neutral) conductor. The third (grounding) pin is a safety feature, do not attempt to bypass or disable it.

Power disconnection • To remove power from the equipment safely, remove all power cords from the rear of the equipment, or the desktop power module (if detachable), or from the power source receptacle (wall plug).

Power cord protection • Power cords should be routed so that they are not likely to be stepped on or pinched by items placed upon or against them.

Servicing • Refer all servicing to qualified service personnel. There are no user-serviceable parts inside. To prevent the risk of shock, do not attempt to service this equipment yourself because opening or removing covers may expose you to dangerous voltage or other hazards.

Slots and openings • If the equipment has slots or holes in the enclosure, these are provided to prevent overheating of sensitive components inside. These openings must never be blocked by other objects.

Lithium battery • There is a danger of explosion if battery is incorrectly replaced. Replace it only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.

Consignes de Sécurité • Français

Ce symbole sert à avertir l'utilisateur que la documentation fournie avec le matériel contient des instructions importantes concernant l'exploitation et la maintenance (réparation).

Ce symbole sert à avertir l'utilisateur de la présence dans le boîtier de l'appareil de tensions dangereuses non isolées posant des risques d'électrocution.

Attention

Lire les instructions • Prendre connaissance de toutes les consignes de sécurité et d'exploitation avant d'utiliser le matériel.

Conserver les instructions • Ranger les consignes de sécurité afin de pouvoir les consulter à l'avenir.

Respecter les avertissements • Observer tous les avertissements et consignes marqués sur le matériel ou présentés dans la documentation utilisateur.

Eviter les pièces de fixation • Ne pas utiliser de pièces de fixation ni d'outils non recommandés par le fabricant du matériel car cela risquerait de poser certains dangers.

Avertissement

Alimentations • Ne faire fonctionner ce matériel qu'avec la source d'alimentation indiquée sur l'appareil. Ce matériel doit être utilisé avec une alimentation principale comportant un fil de terre (neutre). Le troisième contact (de mise à la terre) constitue un dispositif de sécurité : n'essayez pas de la contourner ni de la désactiver.

Déconnexion de l'alimentation • Pour mettre le matériel hors tension sans danger, déconnectez tous les cordons d'alimentation de l'arrière de l'appareil ou du module d'alimentation de bureau (s'il est amovible) ou encore de la prise secteur.

Protection du cordon d'alimentation • Acheminer les cordons d'alimentation de manière à ce que personne ne risque de marcher dessus et à ce qu'ils ne soient pas écrasés ou pincés par des objets.

Réparation-maintenance • Faire exécuter toutes les interventions de réparation-maintenance par un technicien qualifié. Aucun des éléments internes ne peut être réparé par l'utilisateur. Afin d'éviter tout danger d'électrocution, l'utilisateur ne doit pas essayer de procéder lui-même à ces opérations car l'ouverture ou le retrait des couvercles risquent de l'exposer à de hautes tensions et autres dangers.

Fentes et orifices • Si le boîtier de l'appareil comporte des fentes ou des orifices, ceux-ci servent à empêcher les composants internes sensibles de surchauffer. Ces ouvertures ne doivent jamais être bloquées par des objets.

Lithium Batterie • Il a danger d'explosion s'll y a remplacment incorrect de la batterie. Remplacer uniquement avec une batterie du meme type ou d'un ype equivalent recommande par le constructeur. Mettre au reut les batteries usagees conformement aux instructions du fabricant.

Sicherheitsanleitungen • Deutsch

Dieses Symbol soll dem Benutzer in der im Lieferumfang enthaltenen Dokumentation besonders wichtige Hinweise zur Bedienung und Wartung (Instandhaltung) geben.

Dieses Symbol soll den Benutzer darauf aufmerksam machen, daß im Inneren des Gehäuses dieses Produktes gefährliche Spannungen, die nicht isoliert sind und die einen elektrischen Schock verursachen können, herrschen.

Achtung

Lesen der Anleitungen • Bevor Sie das Gerät zum ersten Mal verwenden, sollten Sie alle Sicherheits- und Bedienungsanleitungen genau durchlesen und verstehen.

Aufbewahren der Anleitungen • Die Hinweise zur elektrischen Sicherheit des Produktes sollten Sie aufbewahren, damit Sie im Bedarfsfall darauf zurückgreifen können.

Befolgen der Warnhinweise • Befolgen Sie alle Warnhinweise und Anleitungen auf dem Gerät oder in der Benutzerdokumentation.

Keine Zusatzgeräte • Verwenden Sie keine Werkzeuge oder Zusatzgeräte, die nicht ausdrücklich vom Hersteller empfohlen wurden, da diese eine Gefahrenquelle darstellen können.

Vorsicht

Stromquellen • Dieses Gerät sollte nur über die auf dem Produkt angegebene Stromquelle betrieben werden. Dieses Gerät wurde für eine Verwendung mit einer Hauptstromleitung mit einem geerdeten (neutralen) Leiter konzipiert. Der dritte Kontakt ist für einen Erdanschluß, und stellt eine Sicherheitsfunktion dar. Diese sollte nicht umgangen oder außer Betrieb gesetzt werden.

Stromunterbrechung • Um das Gerät auf sichere Weise vom Netz zu trennen, sollten Sie alle Netzkabel aus der Rückseite des Gerätes, aus der externen Stomversorgung (falls dies möglich ist) oder aus der Wandsteckdose ziehen.

Schutz des Netzkabels • Netzkabel sollten stets so verlegt werden, daß sie nicht im Weg liegen und niemand darauf treten kann oder Objekte darauf- oder unmittelbar dagegengestellt werden können.

Wartung • Alle Wartungsmaßnahmen sollten nur von qualifiziertem Servicepersonal durchgeführt werden. Die internen Komponenten des Gerätes sind wartungsfrei. Zur Vermeidung eines elektrischen Schocks versuchen Sie in keinem Fall, dieses Gerät selbst öffnen, da beim Entfernen der Abdeckungen die Gefahr eines elektrischen Schlags und/oder andere Gefahren bestehen.

Schlitze und Öffnungen • Wenn das Gerät Schlitze oder Löcher im Gehäuse aufweist, dienen diese zur Vermeidung einer Überhitzung der empfindlichen Teile im Inneren. Diese Öffnungen dürfen niemals von anderen Objekten blockiert werden.

Litium-Batterie • Explosionsgefahr, falls die Batterie nicht richtig ersetzt wird. Ersetzen Sie verbrauchte Batterien nur durch den gleichen oder einen vergleichbaren Batterietyp, der auch vom Hersteller empfohlen wird. Entsorgen Sie verbrauchte Batterien bitte gemäß den Herstelleranweisungen.

Instrucciones de seguridad • Español

Este símbolo se utiliza para advertir al usuario sobre instrucciones importantes de operación y mantenimiento (o cambio de partes) que se desean destacar en el contenido de la documentación suministrada con los equipos.

Este símbolo se utiliza para advertir al usuario sobre la presencia de elementos con voltaje peligroso sin protección aislante, que puedan encontrarse dentro de la caja o alojamiento del producto, y que puedan representar riesgo de electrocución.

Precaucion

Leer las instrucciones • Leer y analizar todas las instrucciones de operación y seguridad, antes de usar el equipo.

Conservar las instrucciones • Conservar las instrucciones de seguridad para futura consulta.

Obedecer las advertencias • Todas las advertencias e instrucciones marcadas en el equipo o en la documentación del usuario, deben ser obedecidas.

Evitar el uso de accesorios • No usar herramientas o accesorios que no sean especificamente recomendados por el fabricante, ya que podrian implicar riesgos.

Advertencia

Alimentación eléctrica • Este equipo debe conectarse únicamente a la fuente/tipo de alimentación eléctrica indicada en el mismo. La alimentación eléctrica de este equipo debe provenir de un sistema de distribución general con conductor neutro a tierra. La tercera pata (puesta a tierra) es una medida de seguridad, no puentearia ni eliminaria.

Desconexión de alimentación eléctrica • Para desconectar con seguridad la acometida de alimentación eléctrica al equipo, desenchufar todos los cables de alimentación en el panel trasero del equipo, o desenchufar el módulo de alimentación (si fuera independiente), o desenchufar el cable del receptáculo de la pared.

Protección del cables de alimentación • Los cables de alimentación eléctrica se deben instalar en lugares donde no sean pisados ni apretados por objetos que se puedan apoyar sobre ellos.

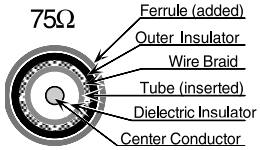
Reparaciones/mantenimiento • Solicitar siempre los servicios técnicos de personal calificado. En el interior no hay partes a las que el usuario deba acceder. Para evitar riesgo de electrocución, no intentar personalmente la reparación/mantenimiento de este equipo, ya que al abrir o extraer las tapas puede quedar expuesto a voltajes peligrosos u otros riesgos.

Ranuras y aberturas • Si el equipo posee ranuras o orificios en su caja/alojamiento, es para evitar el sobrecalientamiento de componentes internos sensibles. Estas aberturas nunca se deben obstruir con otros objetos.

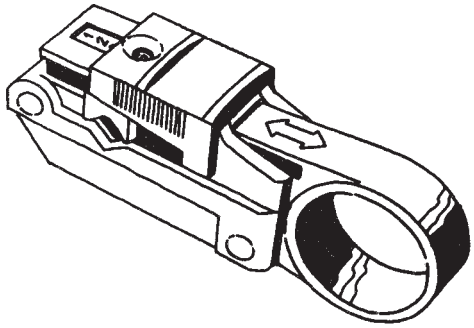
Batería de litio • Existe riesgo de explosión si esta batería se coloca en la posición incorrecta. Cambiar esta batería únicamente con el mismo tipo (o su equivalente) recomendado por el fabricante. Desachar las baterías usadas siguiendo las instrucciones del fabricante.

BNC Termination Kit Instructions

This document is a compilation of Extron's instructions, together with copies of AMP® Instruction booklets that are provided with each of the AMP tools included in this kit.

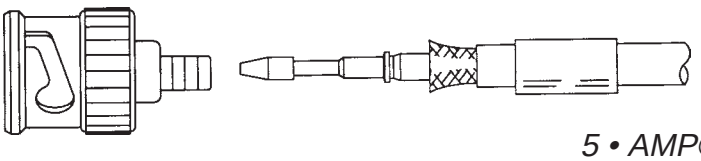


1 • Extron Mini-High-Res Cable-to-BNC Instructions



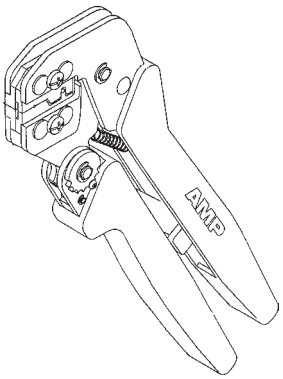
Parts included in Kit • Pre-cut Heat shrink insulation:
Red 3/8" diameter
Green 3/8" diameter
Blue 3/8" diameter
Yellow 3/8" diameter
Black 3/8" diameter

3 • AMP® Coaxial Cable Stripper Instructions (4100-0632)

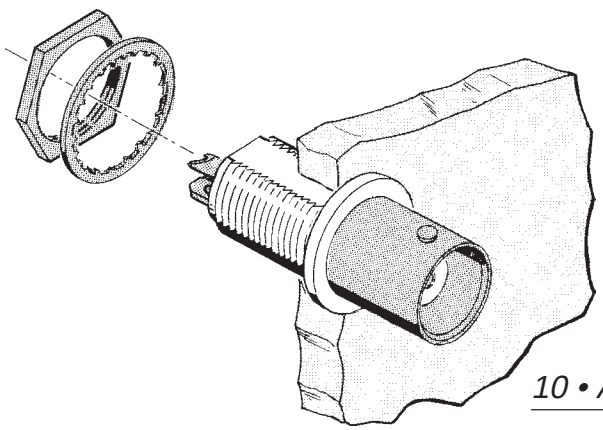


5 • AMP® 75-Ohm BNC Plug Instructions (408-9088)

Parts included in Kit • BNC connectors for cable ends:
Male plug bodies
Center contacts
Tube for insulation
Step-down Ferrule



7 • AMP® Pro-Crimper II Hand Tool & Die Assembly Instructions (408-4218)
8 • AMP® Pro-Crimper II Hand Tool Application & Maintenance (408-9930)



10 • AMP® Series BNC Solder Receptacle Jacks (IS 2858)

Introduction

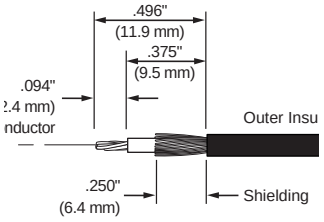
Use these instructions to install BNC connectors on Extron's 75 ohm Super High-Resolution coax cable. The kit includes the following required tools:

- *AMP® Coaxial Cable Stripper*
- *AMP® Pro-Crimper (with dies to crimp both center contacts and the ferrules)*
- *Wire Cutters/Strippers*

Before using each of the AMP tools, go to the appropriate section of this document for instructions.

Cable-Stripping Procedure

Use the AMP Coaxial Cable Stripper and the copy of the instruction sheet provided on pages 3 and 4 to make the three-step strip. One blade cuts the outer jacket, the next one cuts the jacket and wire braid and the third blade cuts the jacket, the wire braid and the insulation (dielectric). It may be necessary to try some sample cuts and adjust the tool to get the proper depth for each cut.



Stripped Cable
(do not scale from illustration)

Use the illustration to the right to identify the cable parts and dimensions of each cut.

Installation Procedure

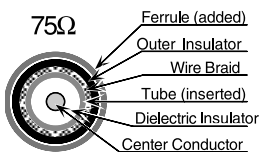
When the cable has been stripped and you are ready to install the BNC connector, use the illustration on the facing page and these steps as a guide for installing the connector. Additional instructions can be found on pages 5 and 6.

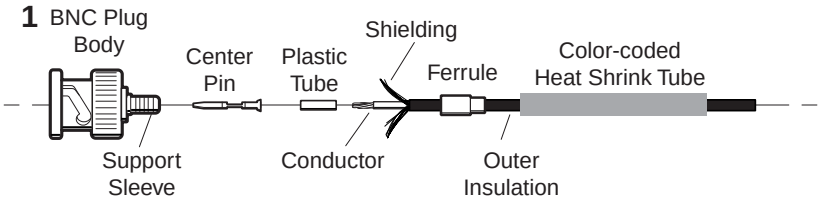
1. Identify the parts required. Cut 1.5 inches of the chosen colored heat shrink insulator and slip it over the cable far enough to be out of the way of other components.
2. Slide the small end of the ferrule over the cable, pushing it back from the end. (The large end will go toward the BNC connector.) Slide the plastic tube over the insulating dielectric, but under the wire braid. When finished, the wire braid will make contact with BNC body, but NOT with the center conductor. (The braid may appear to be bare wire strands.)
3. Push the center contact over the center conductor. When the center conductor slides all the way into the hole, it should no longer be exposed.
4. Use the AMP® Pro-Crimper tool to crimp the center contact onto the conductor. Check that the connection is secure. (Detailed instructions for using this tool are included on pages 5 and 6.)
5. Push the plug body over the center contact and over the dielectric insulator – with the plastic sleeve inside the wire braid.
6. Push the ferrule against the plug body. It should cover the exposed wire braid and part of the outside insulation.
7. Crimp the ferrule in place. Trim any exposed wire braid if necessary.
8. Slide the Color-Coded Heat Shrink sleeve toward the connector, covering the Ferrule. Use a heat source to shrink the sleeve tightly in place.

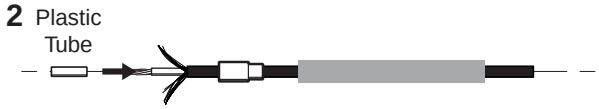
Repeat this procedure for each BNC cable connector.

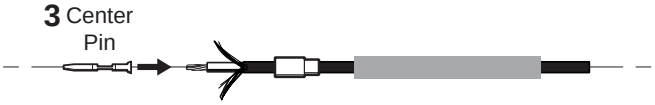
When fully inserted, the center contact should extend into the plug body, as shown at the bottom of the next page.

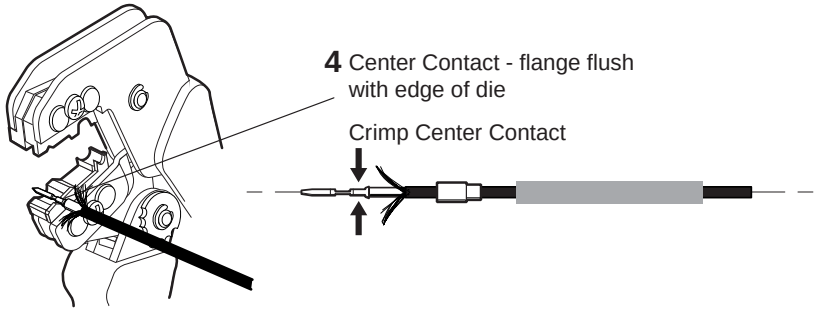
The illustration to the right shows the parts of the coaxial cable, with the ferrule and tube added.

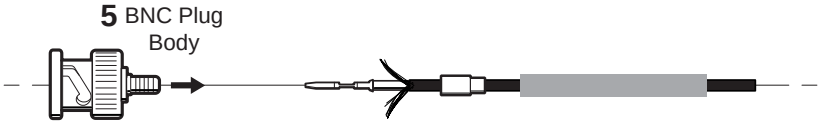


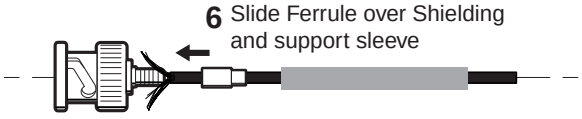

1 BNC Plug Body
Center Pin
Plastic Tube
Shielding
Ferrule
Color-coded Heat Shrink Tube
Support Sleeve
Conductor
Outer Insulation

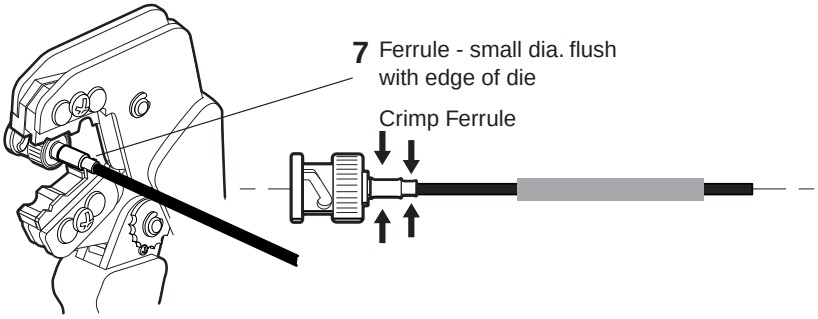

2 Plastic Tube

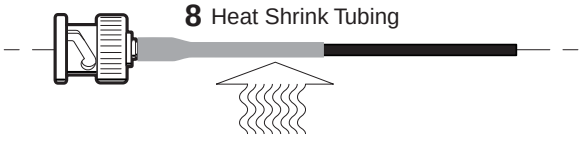

3 Center Pin


4 Center Contact - flange flush with edge of die
Crimp Center Contact

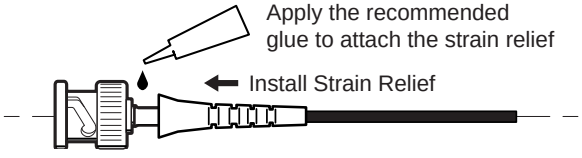

5 BNC Plug Body


6 Slide Ferrule over Shielding and support sleeve

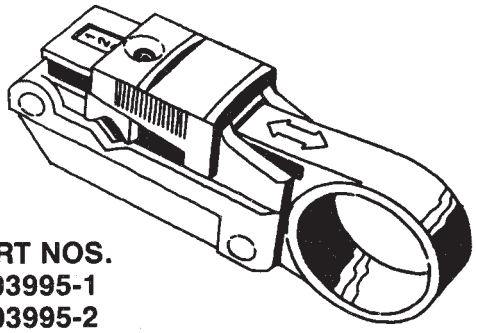

7 Ferrule - small dia. flush with edge of die
Crimp Ferrule


8 Heat Shrink Tubing

or


Apply the recommended glue to attach the strain relief
Install Strain Relief

AMP® COAXIAL CABLE STRIPPER

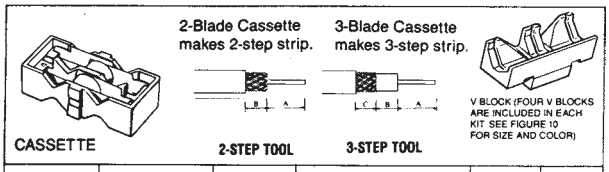


PART NOS.
603995-1
603995-2
603995-3
603995-5
603995-6

NEW INSTRUCTIONS PLEASE READ

AMP INCORPORATED, HARRISBURG, PA.

404145-2 4100-0632



	CABLE STRIPPER KIT NO.	CASSETTE PART NO. & COLOR	BRAID STRIP DIM. (B)	BRAID STRIP DIM (B)	BRAID STRIP DIM (C)	PRODUCT	CABLE DIA. RANGE
2 STEP	603995-1	603996-1 RED	.24" (6mm)	—	—	SINGLE CRIMP BNC	.10"-.30"
2 STEP	603995-2	603996-2 BLUE	.27" (6.8mm)	—	—	COMM. BNC	.10"-.30"
2 STEP	603995-3	603996-3 YELLOW	.48" (12mm)	—	—	UHF	.10"-.30"
3 STEP	603995-5	603996-4 BLACK	—	.22" (5.5mm)	.22" (5.5mm)	DUAL CRIMP BNC	.10"-.30"
Mini coax 3 STEP	603995-6	603996-5 WHITE	—	.10" (2.5mm)	.27" (6.8mm)	DUAL CRIMP COMM. BNC	

FIGURE 1

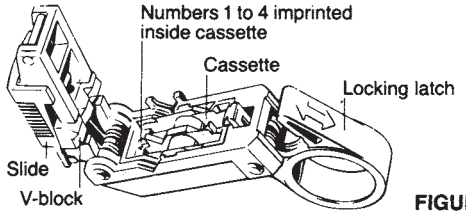


FIGURE 2

Figure 1 shows which stripper kit or cassette you should use with a given connector. Kits come in two styles: a 2-step kit for 2-step stripping, a 3-step kit for either 2-step *or* 3-step stripping (3-step kit will accommodate both 2-step and 3-step cassettes).

Cassettes have pre-set strip lengths. Refer to instruction material for connector in use to determine your strip requirements. Then refer to Figure 1 above to find which cassette meets your strip requirements.

Note the parts of the stripper in Figure 2.

Follow these steps when stripping with the AMP® COAXIAL CABLE STRIPPER:

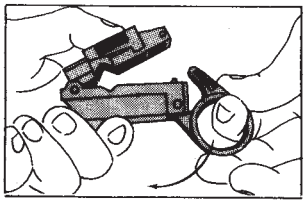


FIGURE 3

A. ADJUST SLIDE to position 4 or 5

B. OPEN TOOL by rotating locking latch downward. (Fig. 3)

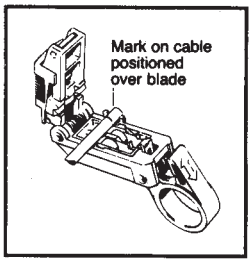


FIGURE 4

C. MARK JACKET of cable for center conductor length.

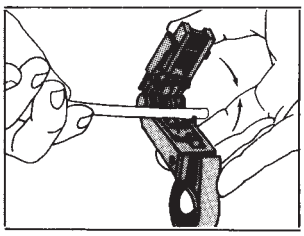


FIGURE 5

D. HOLD THE TOOL with the handle towards you and insert coax from left into the groove position. Locate mark on cable over the righthand blade, then close and latch tool. (Fig. 4 and 5)

E. PUSH SLIDE FORWARD to appropriate start position (see Fig. 6). Make sure proper V-Block is installed.

RECOMMENDED SETTINGS

Coax	V-Block	Slide Progression
RG 58	Blue	3, 2, 1
RG 59	Blue	5, 4, 3
RG 174,182	White	4, 3
RG 6	Yellow	5, 4, 3
Belden 8281	Yellow	5, 4
RG 195	Red	4, 3, 2

FIGURE 6

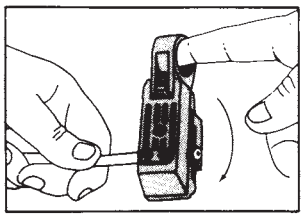


FIGURE 7

F. ROTATE TOOL around coax about 5 times (Fig. 7). Push slide forward to next position in sequence. Rotate tool again. Then push slide forward to final position and rotate tool final 5 times.

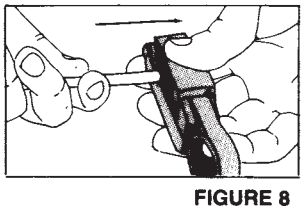


FIGURE 8

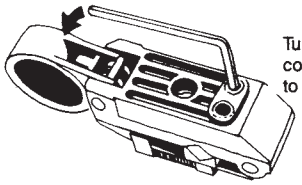
G. MOVE SLIDE BACK ONE POSITION. Then pull cable out carefully while squeezing tool (Fig. 8). If there is too much resistance or strip is imperfect, go to step "H".

ADJUSTING THE AMP® COAXIAL CABLE STRIPPER

H. INSPECT YOUR FIRST STRIP. Determine how deeply each blade has scored the cable.

I. ADJUST BLADE DEPTH to match your cable size by turning allen screws at base of tool (Fig. 9).

If setup is required, use RG174 side of the red gauge block.



Turn set screws counterclockwise to retract blades

Figure 9

TIPS:
If a blade is NEAR its proper position, turn its set screw app. ±90°.

If a blade is a LITTLE FAR off from its proper position, turn its set screw ±270° to 360°.

NOTE: Adjust tool so that the appropriate slide progression works (see Fig. 6). If your cable size does not appear in Fig. 6, develop your own 2- or 3- stage sliding sequence.

J. TRY STRIPPING AGAIN, following steps A through G. If strip is still not acceptable, adjust blades one more time, following instructions H and I.

SOLUTIONS TO TYPICAL PROBLEMS:

If braid is *twisting* too much, turn set screw for braid-cutting blade +90° *and* turn set screw for jacket-cutting blade -90°.

If, after repeated adjustment, most of braid will not cut properly, your blade set is probably worn out. Reverse cassette to try new blade set.

With RG 174 or other very thin cable, VERY FINE ADJUSTMENT is needed. Expect to make several adjustments (±30°), to reach proper blade depth. Use a FRESH BLADE SET. Use only HIGH QUALITY thin cable.

OTHER FEATURES:

V-BLOCKS
Select proper V-block by O.D. of wire (see Fig. 10).

V-BLOCK PART NO.	CABLE		COLOR
	DIA. RANGE	RG #	
603997-1	.12"-.20"	195	Red
603997-2	.20"-.25"	58,59	Blue
603997-3	.25"-.30"	Belden 8281	Yellow
603997-4	.10"-.12"	174,182	White

FIGURE 10

TO CHANGE V-BLOCK, pull block as far forward as possible with thumb and forefinger. Do not let spring snap back. Slip replacement block behind old block and allow springs to slip into grooves in replacement block. (With WHITE V-BLOCK, you must position springs in holes).

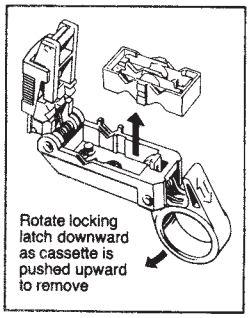


FIGURE 11

CASSETTES

Each cassette contains 4 sets of cutting edges. Cassette can be reversed each time a blade set wears out. Numbers 1 to 4 are printed inside cassette to determine usage. (see Fig. 2)

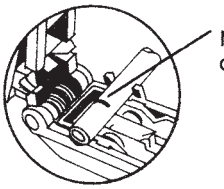
TO CHANGE OR REVERSE CASSETTE, move locking latch in direction of arrow, then push cassette out of tool by inserting wrench through hole in bottom of tool (Fig. 11).

NOTE: When placing a 3-blade cassette in tool, use blade sets 1 and 2 first (see imprinted numbers on cassette). When using blade sets 3 and 4 in a 3-blade cassette, the "B" and "C" dimensions of the strip (Fig. 1) will be reversed from their proper order.

3-STEP STRIP WITH 2-BLADED CASSETTE:

(This procedure is recommended only for those who own only the 2-step stripping tool. If you make 3-step strips often you should purchase the 3-step stripping tool.)

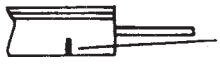
A. Mark jacket of cable for center conductor length.
B. Turn tool around or bring cable from opposite side of tool.



Mark on cable position over blade

C. Lay cable in tool with mark on cable over blade, then close tool.
D. Push slide to no. 1 position.
E. Rotate tool around cable and remove dielectric and braid. Open and clear tool of insulation.

Stripping result after Pos. E.

F. 

Mark on cable determines length of exposed dielectric

G. Push slide to no. 3 position.
H. Lay cable in tool as shown under B, then close tool.
I. Rotate tool around cable approix. 5 times.
J. Squeeze tool as cable is pulled from tool.

Stripping result after Pos. J.

Step 2 removes jacket and braid

K. Open and clear tool of insulation.

The "SLIDE" is the most unique and important part of the stripper. The slide allows you to ease the blades into the cable, reducing friction on the braid and dielectric as you strip.

ALWAYS USE YOUR SLIDE WHEN YOU STRIP!

RECOMMENDED SLIDE PROGRESSIONS

	Coax	V-Block	Slide Progression
	RG 58	Blue	3, 2, 1
	RG 59	Blue	5, 4, 3
Mini Hi-Res	RG 174,182	White	4, 3
	RG 6	Yellow	5, 4, 3
	Belden 8281	Yellow	5, 4
	RG 195	Red	4, 3, 2

Adjust your tool so that the appropriate slide progression works. If your cable size does not appear in this table, develop your own 2- or 3-stage sliding sequence.

ALWAYS STEP BACK 1 POSITION ON SLIDE BEFORE PULLING CABLE OUT OF TOOL.

3-step tool is not recommended for most styles of RG 62, nor for many cable styles with cellular polyethylene or other soft dielectrics. Use 2-step tool instead.

DO NOT USE STRIPPER ON COAX CABLES WITH *DRAIN* WIRES.

WARNING
Use Safety Glasses To Avoid Eye Injury

AMP

AMP* 75–Ohm BNC Plug Dual Crimp Connectors

Instruction Sheet
408–9088
(was IS 9088)
07 SEP 95 Rev B

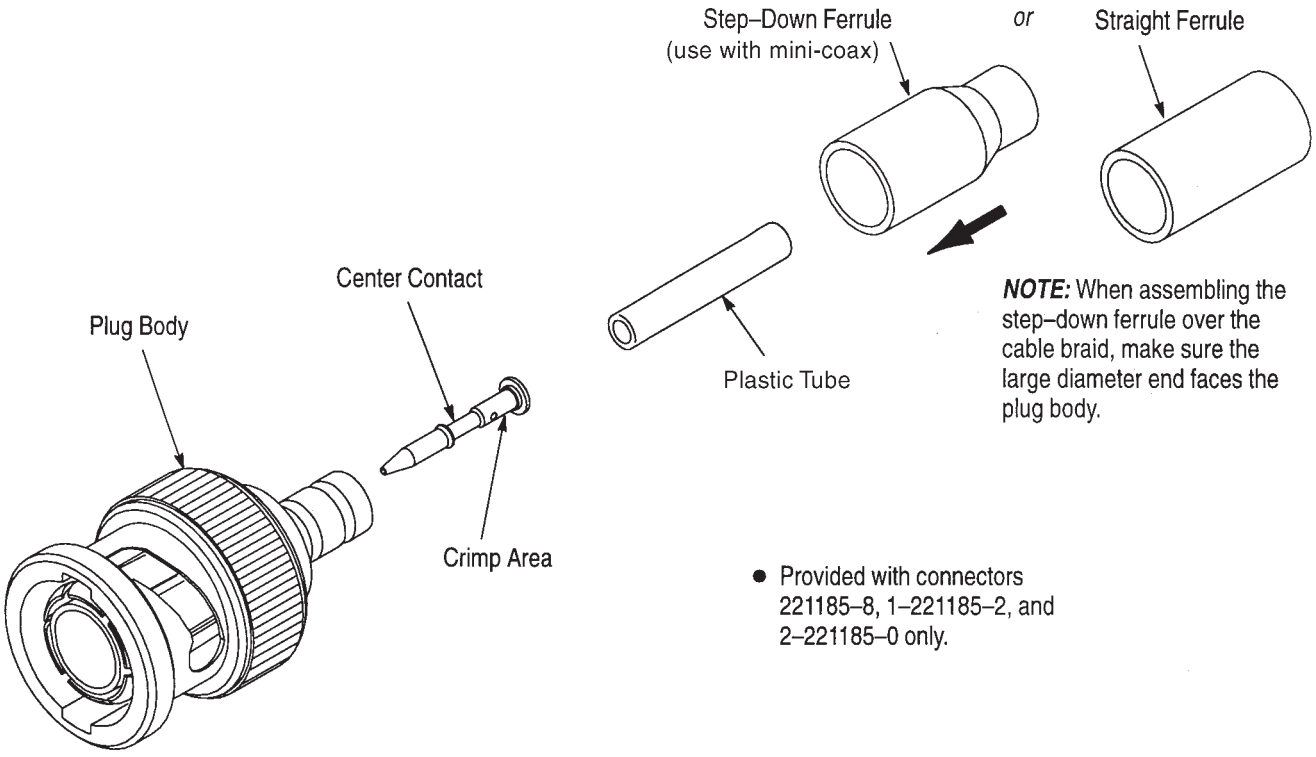


Figure 1

1. INTRODUCTION

This instruction sheet covers the assembly of AMP 75–Ohm BNC Plug Dual Crimp Connectors 221185–[ ]. The connectors are applied either with AMP Hand Tool 354940–1 or with AMP Pneumatic Tool 69365–3. Both tools accept interchangeable crimping dies, using different die sizes (and part numbers) according to the cable type being used with the connector. For information on die set part numbers, cable sizes, and connector part numbers, refer to AMP Catalog 82074.

NOTE *All dimensions on this sheet are in millimeters [with inch equivalents provided in brackets]. Figures and illustrations are for identification only and are not drawn to scale.*

Reasons for reissue are provided in Section 4, REVISION SUMMARY.

2. DESCRIPTION (Figure 1)

Each connector features a center contact, a plug body, and a ferrule. The center contact is crimped to the cable's center conductor, and the ferrule is crimped onto the back of the connector, over the cable braid, to secure the cable to the plug body.

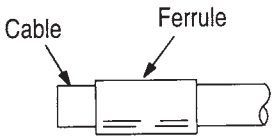
NOTE *The ferrules differ with connector selection. Some connectors come with straight ferrules, while others use step–down ferrules.*

Some connectors are supplied with a plastic bushing and a brass tube. The plastic bushing and brass tube are slipped over the cable dielectric before the center contact is crimped. In this use, the bushing and tube compensate for small diameter cable dielectrics.

3. ASSEMBLY PROCEDURE

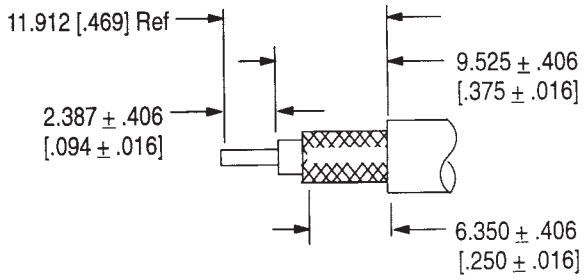
1. Determine the cable type for your application, then select an appropriate connector. Refer to AMP Catalog 82074.

2. Slide the ferrule over the cable end.



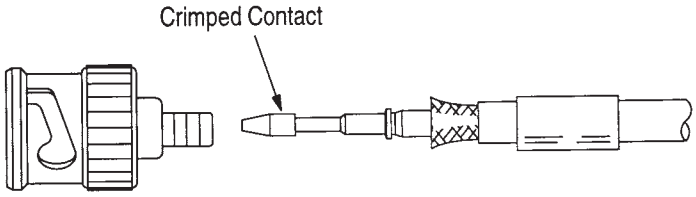
3. Strip the cable according to these dimensions:

NOTE: Do not scale from illustration.

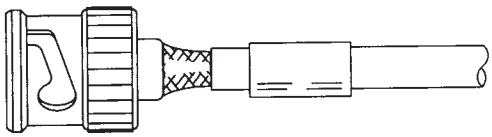


4. Crimp the center contact.

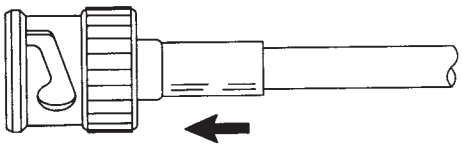
NOTE *Plugs 221185–8, 1–221185–2, and 2–221185–0 come with a plastic bushing and a brass tube. The bushing and tube must be slipped over the cable dielectric (flared end first) BEFORE the center contact is crimped.*



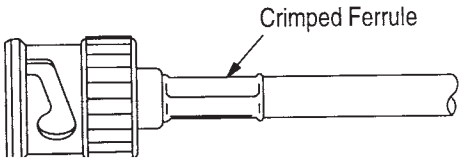
5. Insert the center contact into the plug body with the braid over the support sleeve of the plug body.



6. Slide the ferrule over the braid and support sleeve.



7. Crimp the ferrule using the appropriate tooling.



4. REVISION SUMMARY

Since the previous release of this sheet, the following changes were made:

Per EC 0220–0150–95:

- Added plastic bushing, brass tube, and step–down ferrule to Figure 1.

Per EC 0990–0734–95:

- AMP Hand Tool 220190–1 superseded by 354940–1 in Section 1, INTRODUCTION.
- Added statements clarifying plastic bushing, brass tube, and step–down ferrule to Section 2, DESCRIPTION.
- Deleted Plug 1–22184–4 in note on page 2 because it is an incorrect part number.
- Updated format.
- Changed revision level from A to B.

AMP

Application and Maintenance for
AMP* PRO-CRIMPER* II Hand Crimping
Tool Frame Assembly 354940-1

Instruction Sheet
408-9930
11 JAN 95 Rev A

PROPER USE GUIDELINES

Cumulative Trauma Disorders can result from the prolonged use of manually powered hand tools. AMP hand tools are intended for occasional use and low volume applications. AMP offers a wide selection of powered application equipment for extended-use, production operations.

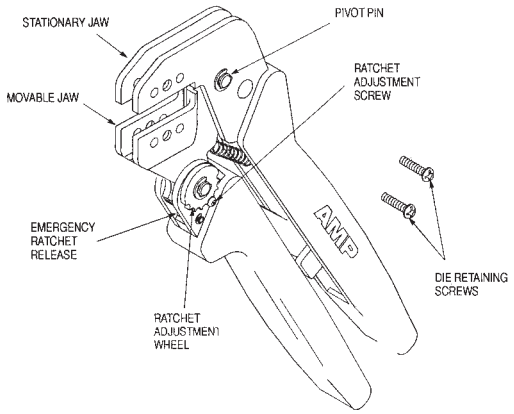


Figure 1

1. INTRODUCTION

This instruction sheet provides application and maintenance procedures for AMP PRO-CRIMPER II Hand Crimping Tool Frame Assembly 354940-1. The tool is designed to accept interchangeable crimping die assemblies for crimping various types of AMP connectors.

In most cases, the PRO-CRIMPER II tool frame assembly is provided with a specific set of dies and is considered a component part of a crimping assembly. Refer to the appropriate instruction sheet packaged with the hand tool/crimping die assembly, or with the separate die assembly, for information regarding crimping procedures, crimp height inspection, and crimping die gaging.

Read these instructions thoroughly before installing dies and using the tool.

NOTE *The PRO-CRIMPER II Frame Assembly is designed to accept dies to crimp a variety of AMP products. Contact your local AMP representative or the Technical Assistance Center for information regarding the availability of dies for specific applications.*

2. DESCRIPTION (Figure 1)

The PRO-CRIMPER II tool consists of two crimping jaws, an adjustable ratchet, spring-actuated handles, two die retaining screws, and an emergency ratchet release. The slotted design of the crimping jaws permits easy installation and removal of crimping dies. The adjustable ratchet allows handle pressure to be set for optimum crimping die performance.

3. DIE INSTALLATION AND REMOVAL

Select the desired die assembly, remove the die retention screws from the tool jaws, and proceed as follows:

3.1. Shouldered Dies (Figure 2)

1. Place the upper die in the stationary jaw of the tool frame.

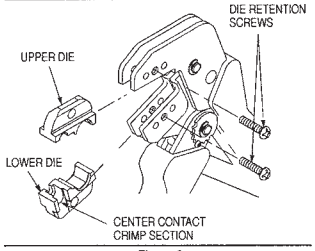


Figure 2

2. Insert a die retention screw through the jaw and die and tighten the screw so that the die is held in place, but do not tighten the screw completely at this point.

NOTE *Die assemblies with center contact crimp sections should be installed with the center contact crimp section toward the front of the tool jaws as shown in Figure 2. If indicated otherwise in other instructions, follow the specific die requirements demonstrated in that document.*

3. Place the lower die in the moving jaw of the tool frame. Install a die retention screw through the jaw and die and tighten the screw so that the die is held in place, but do not tighten the screw completely at this point.

NOTE *The PRO-CRIMPER II tool ratchet has detents that are audible as seven "clicks" as the handles are closed. The ratchet releases on the seventh "click."*

4. Slowly close the tool handles, allowing the dies to mate and/or align. Continue closing the tool handles until the ratchet makes the sixth "click," then tighten both die retention screws until snug.

5. To remove the die assembly, close the tool handles until the ratchet releases, and allow the handles to open fully. Loosen and remove the die retention screws and slide the dies out of the tool jaws.

3.2. Pinned Dies (Figure 3)

1. Install the wire and insulation anvil dies, with the chamfers facing the front of the tool, and with the die markings facing outward, into the movable jaw of the frame assembly.

2. Insert the die retaining pins and the short die retention screw. Do *not* tighten the screw completely.

3. Install the wire and insulation crimper dies, with the chamfers facing the front of the tool, and with the die markings facing outward, into the stationary jaw of the frame assembly.

4. Insert the die retaining pins the long die retention screw. Do *not* tighten the screw completely.

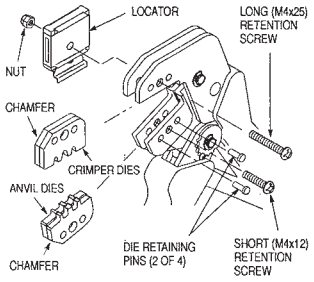


Figure 3

5. Slowly close the tool handles, allowing the dies to mate and/or align. Continue closing the tool handles until the ratchet makes the sixth "click," then tighten both die retention screws until snug.

6. Install the locator assembly and tighten the hex nut.

7. Reverse the procedure to remove the die assembly.

4. MAINTENANCE/INSPECTION

4.1. Daily Maintenance

AMP recommends that operators of the tool be made aware of, and responsible for, the following steps of daily maintenance:

1. Remove dust, moisture, and any other contaminants from the tool with a clean, soft brush, or a clean, soft, lint-free cloth. Do NOT use hard or abrasive objects that could damage the tool.

2. Make certain that the pivot pins are in place and that they are secured with retaining rings.

3. All pins, pivot points, and bearing surfaces should be protected with a thin coat of any good SAE No. 20 motor oil. Do not oil excessively.

4. When the tool is not in use, keep handles closed to prevent objects from becoming lodged in the crimping jaws. Store the tool in a clean, dry area.

4.2. Periodic Inspection

Regular inspections of the tool should be performed by quality control personnel. A record of scheduled inspections should remain with the tool or be supplied to supervisory personnel responsible for the tool. Inspection frequency should be based upon amount of use, working conditions, operator training and skill, and established company standards.

1. Remove all lubrication and accumulated film by immersing the tool (handles partially closed) in a suitable commercial degreaser that will not affect paint or plastic material.

2. Make certain that all pivot pins are in place and secured with retaining rings.

3. Close tool handles until ratchet releases and then allow them to open freely. If they do not open quickly and fully, the spring is defective and must be replaced. See Paragraph 6, PARTS REPLACEMENT.

4. Inspect the tool frame for wear or damage, paying particular attention to the tool jaws and pivot points. If damage is evident, refer to Paragraph 6, PARTS REPLACEMENT. If tool is acceptable, lubricate and return to service.

NOTE *This tool is recommended for R&D prototyping, networking applications, commercial/industrial maintenance, and field service repair. For other applications, please contact your AMP Sales Representative or the AMP Customer Tooling Assistance Center at 1-800-722-1111.*

5. CRIMP HEIGHT ADJUSTMENT

The tool frame assembly features a ratchet mechanism and adjustment wheel with a range of settings. The ratchet mechanism ensures that the tool has completed the cycle. The adjustment wheel controls the amount of handle pressure exerted on the tool jaws and crimping dies during the crimping procedure. Although the ratchet is preset prior to shipment, it is important that you verify the crimp height. Also, general use and subsequent wear may cause the tool to go out of adjustment. It is recommended that the crimp height be inspected — and adjusted, if necessary — on a regular basis by quality control personnel.

NOTE *This is a general explanation of the procedure. For specific information, refer to the instruction sheet packaged with the die assembly.*

1. Crimp a contact onto a properly-prepared wire of the correct size.

2. If the crimp height is greater than recommended, remove the ratchet wheel adjustment screw and rotate the adjustment wheel COUNTERCLOCKWISE to a higher setting. Repeat as required.

3. If the crimp height is less than recommended, remove the ratchet wheel adjustment screw and rotate the adjustment wheel CLOCKWISE to a lower setting. Repeat as required.

4. If the crimp cannot be made to conform to the dimensions provided in the appropriate product application specification, the tool and/or dies are defective and must be replaced.

6. PARTS REPLACEMENT

AMP PRO-CRIMPER II Hand Crimping Tool Frame Assembly 354940-1 is inspected prior to shipment. It is recommended that it be inspected upon arrival to ensure that it has not become damaged during shipping.

Refer to the parts list in Figure 4 to determine the part number for the item to be replaced and to identify the proper location and orientation of the part in the tool frame.

Additional tools and parts may be ordered from:

CUSTOMER SERVICE (38-35)
AMP INCORPORATED
P.O. BOX 3608
HARRISBURG, PA 17105-3608

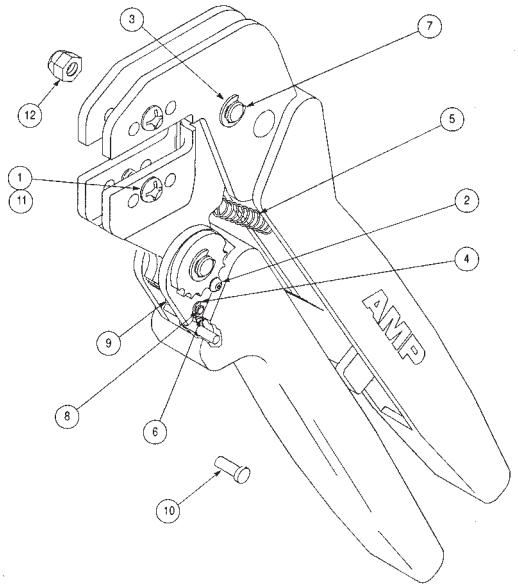
7. REVISION SUMMARY

Per EC 0150-3294-94:

- Changed illustrations to reflect 8-position ratchet assembly.

Per EC 0990-0252-93:

- Incremented revision indicator to Rev A.



AMP PRO-CRIMPER REPAIR KIT 679221-1•

ITEM	DESCRIPTION	QTY	ITEM	DESCRIPTION	QTY
1	SCREW, Die Retaining, M4 x 12	2	7	PIN, Pivot	3
2	SCREW, M3 x 5	1	8	PIN, Pawl	1
3	RING, Retaining	7	9	PAWL, Ratchet	1
4	RING, Retaining	2	10	PIN, Die Retaining	4
5	SPRING, Extension	1	11	SCREW, Die Retaining, M4 x 25	1
6	SPRING, Extension	1	12	NUT, M4	1

• Parts are not available individually

Figure 4

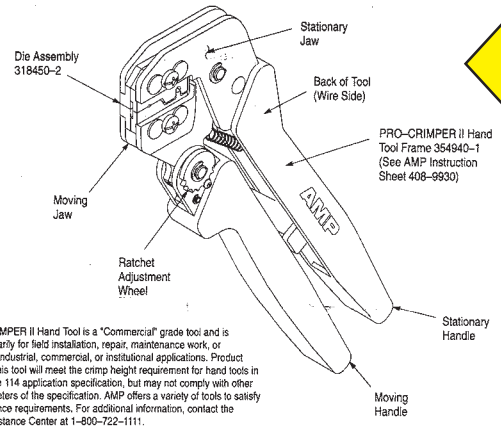
AMP

PRO–CRIMPER* II Hand Tool Assembly 318450–1 with Die Assembly 318450–2

Instruction Sheet
408–4218
18 DEC 95 Rev O

PROPER USE GUIDELINES

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



The PRO–CRIMPER II Hand Tool is a "Commercial" grade tool and is designed primarily for field installation, repair, maintenance work, or prototyping in industrial, commercial, or institutional applications. Product crimped with this tool will meet the crimp height requirement for hand tools in the appropriate 114 application specification, but may not comply with other feature parameters of the specification. AMP offers a variety of tools to satisfy your performance requirements. For additional information, contact the Technical Assistance Center at 1–800–722–1111.

Figure 1

Warning:
The die retaining pins must be in place or the connector may skew and jam.

1. INTRODUCTION

AMP* PRO–CRIMPER II Hand Tool Assembly 318450–1 consists of Die Assembly 318450–2 and PRO–CRIMPER II Hand Tool Frame 354940–1. The hand tool assembly is used to crimp COAXICON* 50–Ohm RF Series BNC and TNC Commercial Connectors 227079–[ ], 414168–[ ], 414171–3, and 414173–[ ] onto various sizes of RG/U cable.

For connector assembly and cable stripping procedures, refer to the instructions packaged with the connector. For additional information on the hand tool frame, refer to 408–9930. Read these instructions thoroughly before using the hand tool assembly.

NOTE *Dimensions on this sheet are in millimeters [with inches in brackets]. Figures are not drawn to scale.*

2. DESCRIPTION (Figures 1 and 2)

The hand tool assembly features a tool frame with a stationary jaw and handle, a moving jaw, a moving handle, and an adjustable ratchet that ensures full connector crimping.

The tool frame holds a die assembly with two crimping chambers. The die assembly features a wire anvil, an insulation anvil, a wire indenter, and an insulation indenter. Die retaining pins and die retaining screws are used to position and secure the dies in the tool frame.

3. INSTALLATION AND REMOVAL OF DIE ASSEMBLY (Figure 2)

1. Open the tool handles and remove the two die retaining screws from the tool jaws.

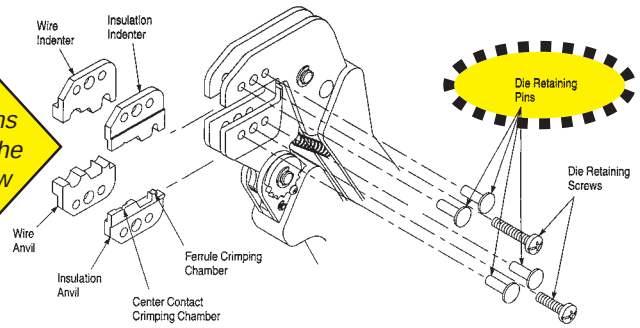


Figure 2

2. Place the wire anvil and insulation anvil so that their chamfered sides and their marked surfaces face outward, when mounted in the moving jaw of the tool frame.

3. Insert the two die retaining pins.

4. Insert the short die retaining screw through the jaw and through both anvil dies, and tighten the screw just enough to hold the dies in place. Do *not* tighten the screw completely at this time.

5. Place the wire indenter and insulation indenter so that their chamfered sides and their marked surfaces face outward, when mounted in the stationary jaw of the tool frame.

6. Insert the two die retaining pins.

7. Insert the long die retaining screw through the jaw and through both indenter dies, and tighten the screw just enough to hold the dies in place. Do *not* tighten the screw completely at this time.

8. Carefully close the tool handles, making sure that the anvils and indenters align properly. Continue closing the tool handles until the ratchet in the tool frame has engaged sufficiently to hold the anvils and indenters in place, then tighten both die retaining screws.

9. To disassemble, close the tool handles until the ratchet releases, remove the two die retaining screws and the four die retaining pins, and slide the anvils and indenters out of the tool jaws.

4. CRIMPING PROCEDURE

NOTE *This tool is provided with a crimp adjustment feature. Initially, the crimp height should be verified as specified in Figure 5. Refer to Section 5, INSPECTION, and Section 6, CRIMP HEIGHT ADJUSTMENT, to verify crimp height before using the tool to crimp desired connectors and wire sizes.*

Slide the ferrule onto the cable and strip the cable according to the dimensions provided in the instructions packaged with the connector. Take care not to nick or cut wire strands. Proceed as follows:

4.1. Center Contact (Figure 3)

1. Slide center contact onto stripped conductor. Insert center contact assembly into the partially closed center contact crimping chamber on the anvil die. Make sure the center contact flange is against the edge of the die as shown in Figure 3.

2. While holding the cable in place, crimp the center contact by closing the tool handles until the ratchet releases.

3. Allow the handles to open fully, and remove the crimped center contact from the die assembly.

4.2. Ferrule (Figure 4)

1. Flare the cable braid and insert the crimped center contact into the connector body until the cable dielectric is against the dielectric inside the connector body. The flared braid will then fit over the support sleeve of the connector body.

Center Contact Crimp

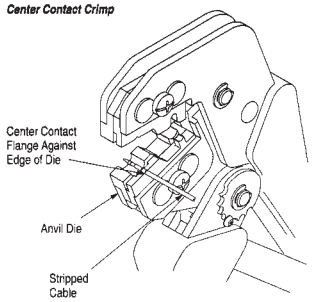


Figure 3

2. Slide the ferrule forward over the braid until the ferrule is against the connector body.

3. Place the ferrule in the ferrule crimping chamber on the anvil die so that the shoulder of the connector body is against the edge of the die.

4. Holding the assembly in place, close the tool handles until the ratchet releases.

5. Allow the handles to open fully, and remove the crimped assembly from the die assembly.

5. INSPECTION

5.1. Visual Inspection

The crimping dies should be inspected on a regular basis to ensure that they have not become worn or damaged. Inspect the crimping chambers for flattened, chipped, worn, or broken areas. If damage or abnormal wear is evident, the tool must be replaced. See Section 8, DIE REPLACEMENT.

5.2. Gaging the Crimping Chamber

This inspection requires the use of a plug gage conforming to the diameters in Figure 5. AMP does not manufacture or market these gages. To gage the crimping chamber, proceed as follows:

1. Close the jaws until the dies have bottomed, then HOLD the frame handles in this position. Do NOT force the dies beyond initial contact.

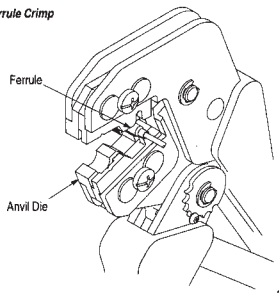
2. Align the GO element with the crimping chamber. Push the element straight into the crimping chamber without using force. The GO element must pass completely through the crimping chamber.

3. Align the NO–GO element and try to insert it straight into the same crimping chamber. The NO–GO element may start entry, but must not pass completely through.

4. Repeat Steps 2 and 3 for each crimping chamber listed in Figure 5.

NOTE *Insert the gage element for the insulation ferrule section into the back of the crimping chamber. The GO element for this section will not pass completely through the crimping chamber.*

Ferrule Crimp



Cross–Sectional View

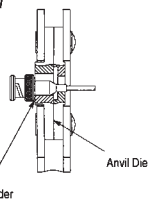
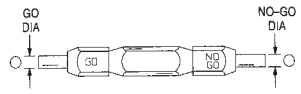


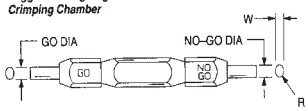
Figure 4

Suggested Plug Gage for Center Contact Crimping Chamber



GAGE ELEMENT DIAMETERS	
GO	NO–GO
1.029–1.036 [.0405–.0408]	1.181–1.189 [.0465–.0468]

Suggested Plug Gage for Ferrule Crimping Chamber



CRIMP SECTION	GAGE ELEMENT DIAMETERS		RADIUS (Max) "R"	WIDTH (Max) "W"
	GO	NO–GO		
Ferrule	4.191–4.199 [.1650–.1653]	4.442–4.445 [.1749–.1750]	2.03 [.080]	4.06 [.160]
Insulation Ferrule	2.413–2.421 [.0950–.0953]	2.868–2.870 [.1129–.1130]	1.14 [.045]	2.29 [.090]

Figure 5

If the crimping chambers conform to the gage inspection, the dies are considered dimensionally correct, and should be lubricated with a THIN coat of any good SAE 20 motor oil. If not, the dies must be replaced before returning the hand tool and die assembly to service (see Section 8, DIE REPLACEMENT).

For additional information regarding the use of a plug gage, refer to 408–7424.

6. CRIMP HEIGHT ADJUSTMENT (Figure 6)

The frame assembly ratchet mechanism features an adjustment wheel with numbered settings. If the crimp height is not acceptable, adjust the ratchet as follows:

1. Remove the lockscrew from the ratchet adjustment wheel.

2. With a screwdriver, adjust the ratchet wheel from the opposite side of the frame.

3. Observe the ratchet adjustment wheel. If a tighter crimp is required, rotate the adjustment wheel COUNTERCLOCKWISE to a higher–numbered setting. If a looser crimp is required, rotate the adjustment wheel CLOCKWISE to a lower–numbered setting.

4. Replace the lockscrew.

5. Make a sample crimp and measure the crimp height. If the crimp height is acceptable, secure the lockscrew. If the dimension is unacceptable, remove lockscrew and continue to adjust the ratchet, and again measure a sample crimp.

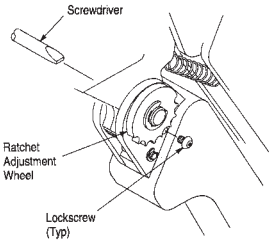


Figure 6

7. MAINTENANCE

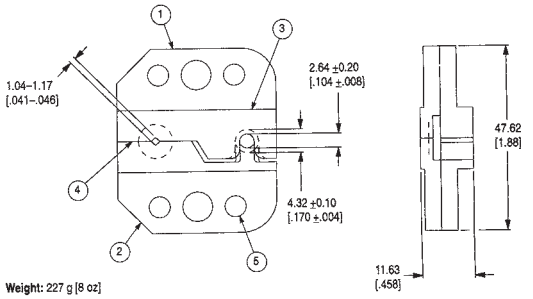
Ensure that the tool and dies are clean by wiping them with a clean, soft cloth. Remove any debris with a clean, soft brush. Do not use objects that could damage the tool. When not in use, keep handles closed to prevent objects from becoming lodged in the crimping dies, and store in a clean, dry area.

8. DIE REPLACEMENT

Customer–replaceable parts are shown in Figure 7. Spare parts or the die assembly should be stocked and controlled to prevent lost time when die replacement is necessary. Order replaceable parts through your AMP 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)
AMP INCORPORATED
PO BOX 3608
HARRISBURG PA 17105–3608

AMP PRO–CRIMPER II Hand Tool Assembly with Die Assembly 408–4218



Weight: 227 g [8 oz]

CUSTOMER–REPLACEABLE PARTS

ITEM	PART NUMBER	DESCRIPTION	QTY PER ASSEMBLY
1	318432–1	INDENTER, Wire	1
2	318430–1	ANVIL, Wire	1
3	318431–1	INDENTER, Insulation	1
4	318429–1	ANVIL, Insulation	1
5	679231–1	PIN, Die Retaining	4

Figure 7

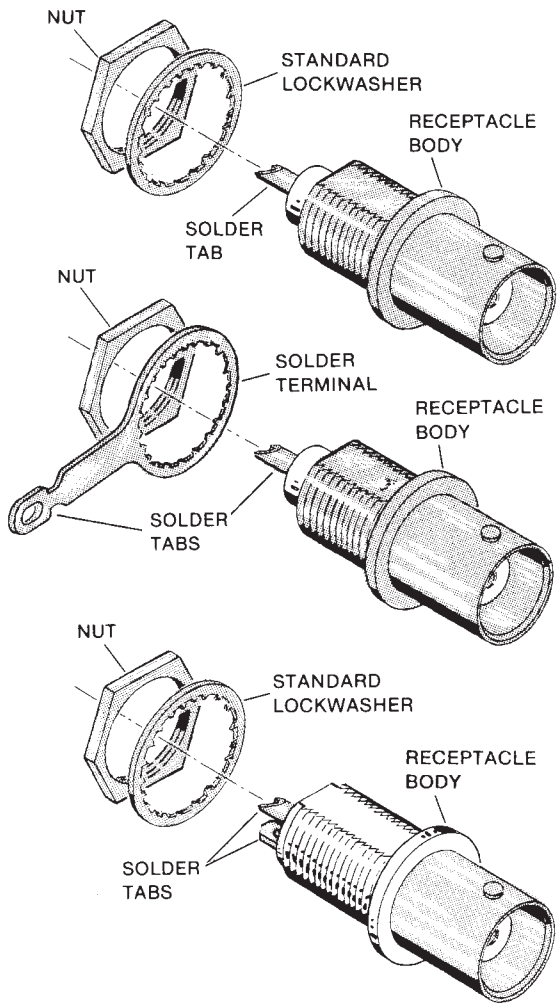
Rev O 5 of 5

AMP INCORPORATED
Harrisburg, Pa. 17105

SERIES BNC SOLDER RECEPTACLE JACKS

IS 2858

RELEASED	5—21—
REVISED	6—5—



ASSEMBLIES	PART NO.	CENTER CONTACT PL.	DIELECTRIC
STANDARD RECEPTACLE WITH STANDARD LOCKWASHER AND NUT	227169-1	TIN	POLYESTER
	227169-2	TIN	TEFLON†
	227169-3	GOLD	POLYESTER
	227169-4	GOLD	TEFLON
	227169-9	SILVER	POLYESTER
	1-227169-0	SILVER	TEFLON
STANDARD RECEPTACLE WITH LOCKWASHER TERMINAL AND NUT	227169-5	TIN	POLYESTER
	227169-6	TIN	TEFLON
	227169-7	GOLD	POLYESTER
	227169-8	GOLD	TEFLON
	1-227169-1	SILVER	TEFLON
	1-227169-2	SILVER	POLYESTER
INSULATED RECEPTACLE WITH STANDARD LOCKWASHER AND NUT	227726-1	TIN	POLYESTER
	227726-2	SILVER	
	227726-3	GOLD	
SEALED RECEPTACLE	227426-1	GOLD	POLYPROPYLEI EPOXY

Figure 1

AMP★ Standard and Insulated Series BNC solder receptacle jacks are used in panel mount applications. They are available with the combinations of dielectric material and center contact platings shown in Figure 1.

The assemblies containing a solder tab on the lockwasher are used with coaxial cables. For installations requiring ground isolation, the use of the Insulated Receptacle is recommended. Ground isolation can also be obtained with the Standard Receptacles by use of the insulating bushings, shown in Figure 3.

Sealed BNC solder receptacle jacks are installed as described in paragraph 2 and Figure 4.

1. SOLDER RECEPTACLE JACKS LISTED IN FIGURE 1.

1.1 INSTALLATION PROCEDURE

(a) First determine mounting requirements; panel cut out dimensions are shown in Figure 2.
(b) Insert threaded portion of jack through cut-out.
(c) Slip on lockwasher; thread on and tighten nut.
(d) Solder wire to tab as required.
(e) Terminate tab:
  1. On solder terminal (lockwasher) where this s assembly is used.
  2. On insulated receptacle when this style assen is used.

1.2 INSTALLATION PROCEDURE USING PANEL INSULATING BUSHINGS

(a) For installation requiring insulating bushings, panel cut-out shown in Figure 3.
(b) Assemble one bushing on each side of panel.
(c) Insert threaded portion of jack through bushings.
(d) Slip on solder terminal (lockwasher); thread on tighten nut.
(e) Solder wire to tab.
(f) Terminate tab on solder terminal as required.

† TRADEMARK OF E.I. DUPONT

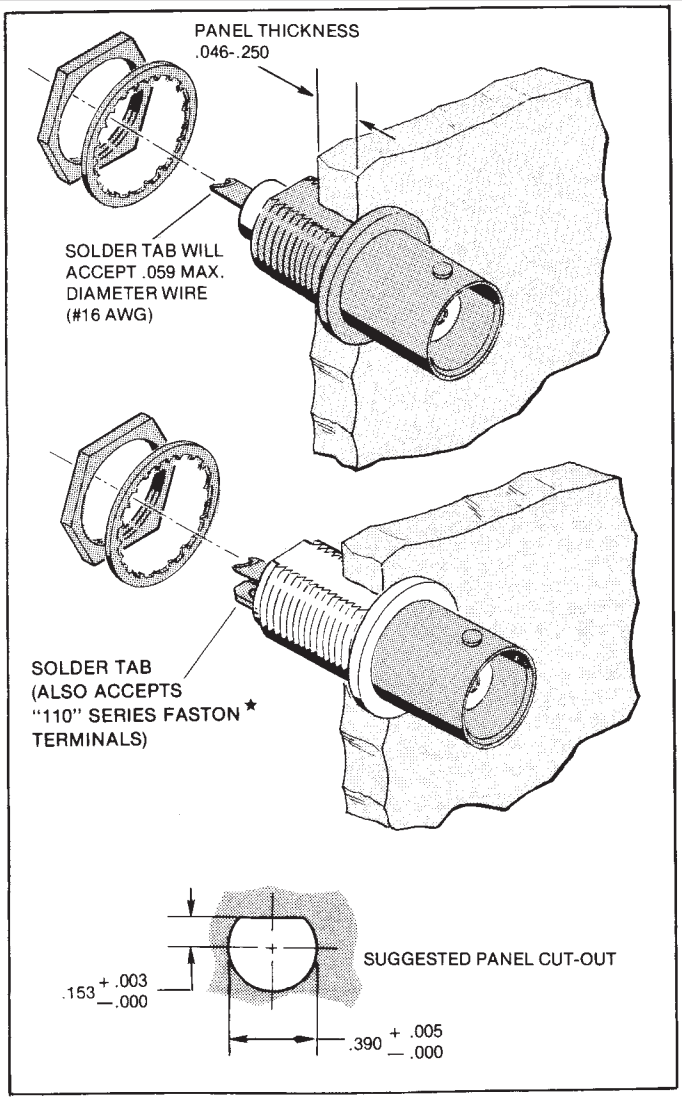


Figure 2

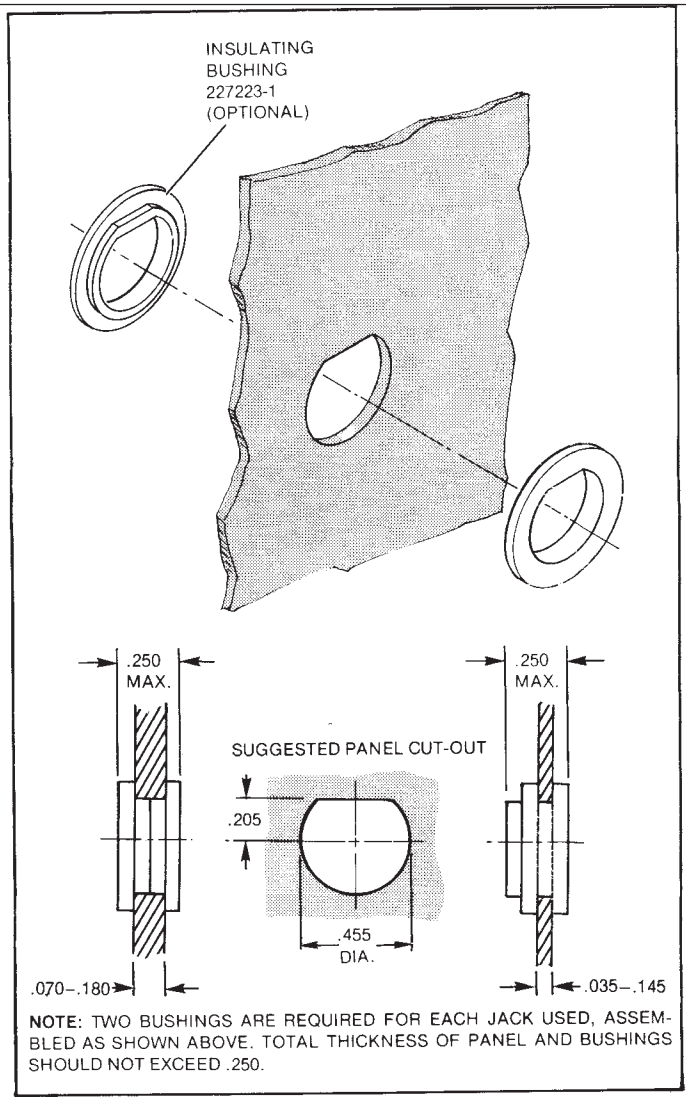


Figure 3

2. INSTALLATION PROCEDURE — SEALED BNC SOLDER RECEPTACLE JACKS

(a) First determine mounting requirements; panel cutout dimensions are shown in Figure 4.

(b) Assemble gasket to receptacle flange.
(c) Insert threaded portion of jack through cut-out.
(d) Slip on lockwasher; thread on and tighten nut.
(e) Solder wire to center contact solder cup as required.
(f) Terminate solder tab as required.

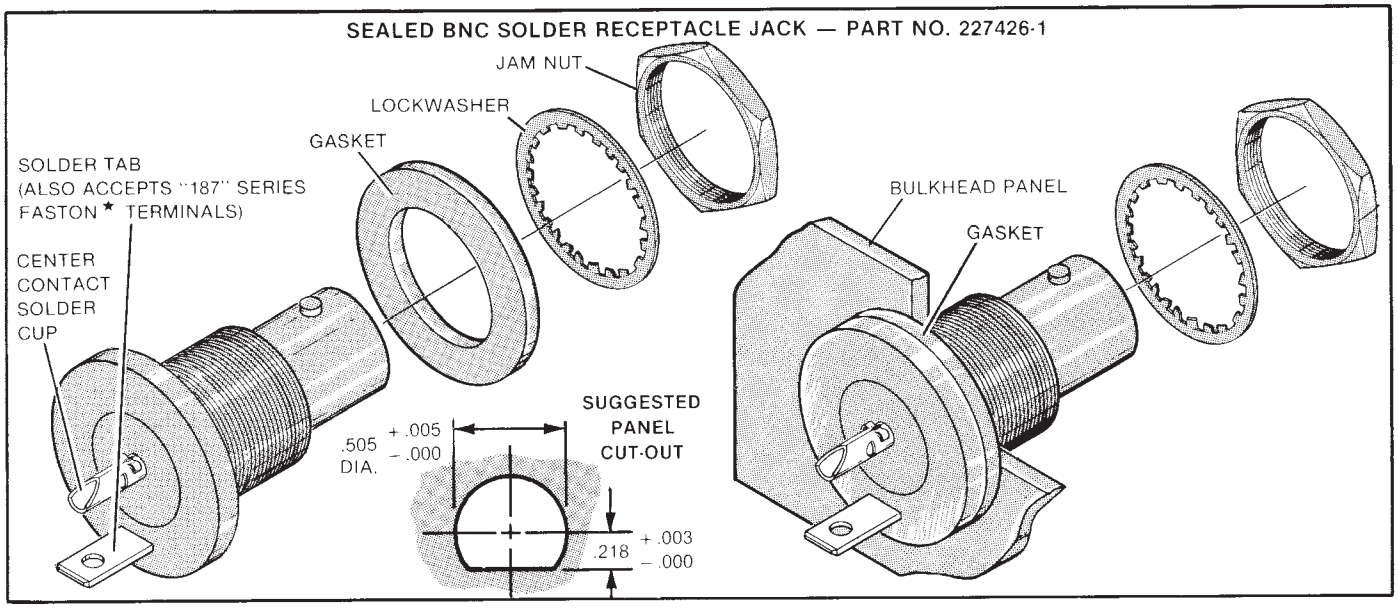


Figure 4

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Extron's Warranty

Extron Electronics warrants this product against defects in materials and workmanship for a period of three years from the date of purchase. In the event of malfunction during the warranty period attributable directly to faulty workmanship and/or materials, Extron Electronics will, at its option, repair or replace said products or components, to whatever extent it shall deem necessary to restore said product to proper operating condition, provided that it is returned within the warranty period, with proof of purchase and description of malfunction to:

USA, Canada, South America, and Central America:

Extron Electronics
1230 South Lewis Street
Anaheim, CA 92805, USA

Europe, Africa, and the Middle East:

Extron Electronics, Europe
Beeldschermweg 6C
3821 AH Amersfoort
The Netherlands

Asia:

Extron Electronics, Asia
135 Joo Seng Road, #04-01
PM Industrial Bldg.
Singapore 368363

Japan:

Extron Electronics, Japan
Daisan DMJ Bldg. 6F,
3-9-1 Kudan Minami
Chiyoda-ku, Tokyo 102-0074
Japan

This Limited Warranty does not apply if the fault has been caused by misuse, improper handling care, electrical or mechanical abuse, abnormal operating conditions or non-Extron authorized modification to the product.

If it has been determined that the product is defective, please call Extron and ask for an Applications Engineer at (714) 491-1500 (USA), 31.33.453.4040 (Europe), 65.6383.4400 (Asia), or 81.3.3511.7655 (Japan) to receive an RA# (Return Authorization number). This will begin the repair process as quickly as possible.

Units must be returned insured, with shipping charges prepaid. If not insured, you assume the risk of loss or damage during shipment. Returned units must include the serial number and a description of the problem, as well as the name of the person to contact in case there are any questions.

Extron Electronics makes no further warranties either expressed or implied with respect to the product and its quality, performance, merchantability, or fitness for any particular use. In no event will Extron Electronics be liable for direct, indirect, or consequential damages resulting from any defect in this product even if Extron Electronics has been advised of such damage.

Please note that laws vary from state to state and country to country, and that some provisions of this warranty may not apply to you.

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