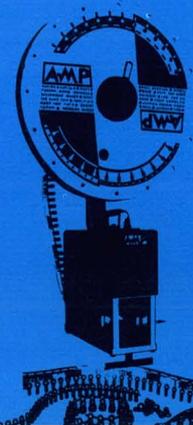
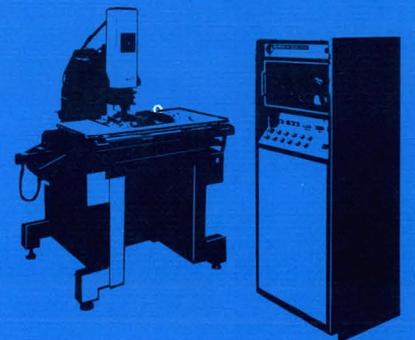
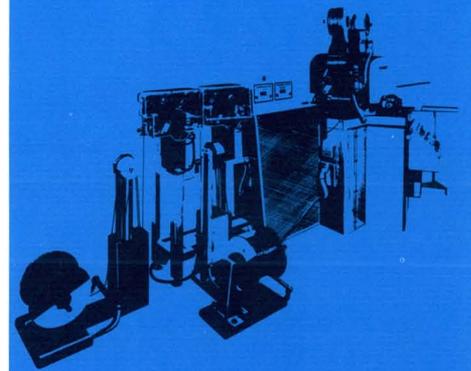
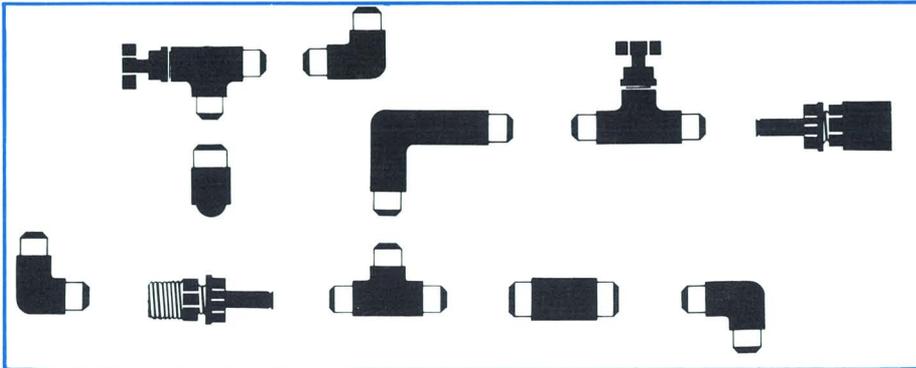


AMP-FIT Tube Fittings	28-3
Duplex Receptacles	28-7
Circuit Analyzer	28-15
Fas-N-Fast Plastic Panel Nut	28-16
Timer Connector	28-17
Tooling	28-20
Numerical Index	28-42

MISCELLANEOUS PRODUCTS, APPLICATION TOOLING, & NUMERICAL INDEX

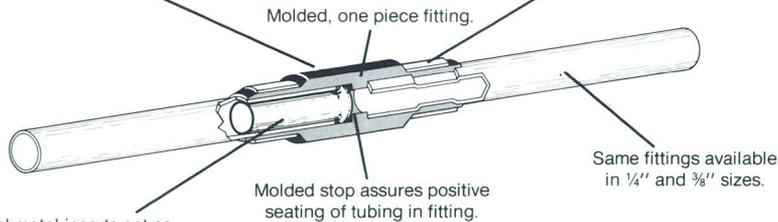




AMP-FIT Tube Fittings

AMP-FIT fitting of inert nylon resists wear, corrosion and temperature extremes.

Crimping on the compression band forms a leak-proof, torque resistant hexagonal joint.



Special metal inserts act as anvils in softer tubing materials.

Molded stop assures positive seating of tubing in fitting.

Same fittings available in 1/4" and 3/8" sizes.

Standard AMP-FIT crimp fittings include couplings, tees, elbows, threaded adapters in two basic sizes for 1/4" and 3/8" O.D. tubing. Applications that involve interconnecting tubing in sizes from 3/8" to 1/2" are readily accomplished with reducer bushings that crimp within the barrel of the standard fittings. These basic components can be combined with adapter and other connectors to interconnect with all standard tubing fittings and hardware.

AMP-FIT tube fittings are compatible with all standard tubing materials because they are molded of nylon. The nylon is inert so each fitting acts as an insulator permitting connection of dissimilar tubing materials and preventing galvanic action. Connections with soft metals or plastics are made as reliably as those on stainless steel or hard copper. When making connections with soft metal or plastic tubing inserts are used in the tubing end. The uniform pressure exerted by the crimping tool molds the inner wall of the

fitting and the outer wall of the tubing into a permanent seal of high tensile strength and pressure integrity.

The unique design of AMP-FIT products encourages use of tubing most suitable to the environment and application without regard for fitting adaptability. The standard AMP-FIT fittings can be provided in FDA approved nylon for applications involving food and beverage, such as vending machines, food processing systems, etc. Other typical applications include instrument, lubricant, air and hydrocarbon fuel lines; process lines for gasses, chemicals and solvents; low pressure hydraulic and vacuum lines.

Connections are precisely controlled by a patented ratchet device on the tool that prevents removal from the fitting until the crimping process is complete. The unique 360° crimp formed by the application tool results in a strong, torque resistant connection.

Features

- Rapid application
- Lower inventory requirements as fittings work on all tubing materials
- Easy and economical installation allow lowest applied cost for your system
- Uniform reliability on and capability with all tubing materials
- Square cut tubing ends are not required
- Adaptability to standard components
- Precision tooling for uniform and reliable connections
- Improved system density
Reduced weight

Note: All dimensions in inches.

Specifications subject to change. Consult AMP Incorporated for latest design specifications.

Performance

The AMP-FIT Fitting System has been designed specifically for use with plastic tubing and its interconnection with most standard metallic tubing. Specific performance data depends on the type of tubing used, however, the data shown below may be used as a guide for the selection of applications for the standard AMP-FIT fitting materials listed.

Temperature

Continuous service - 30°F to + 200°F
 Intermittent service - 60°F to + 250°F

Pressure

Burst 3000 psi
 Working 4 to 1 safety factor 750 psi
 Working 10 to 1 safety factor 300 psi

Tensile

1/4" Tube 200 lbs. (max.)
 3/8" Tube 340 lbs. (max.)

Chemical Resistance at 73°F*

Weak acids, weak base, strong base, hydrocarbon, chlorinated hydrocarbons, ketones, aromatic hydrocarbons, etc. Consult AMP Incorporated for complete listing.

* In plant testing may be required for specific conditions

Material

Fitting Bodies NYLON—ASTM D789 (Carbon Black)
 Crimping Ring Aluminum—ASTM B209
 Insert Cartridge Brass—ASTM B36

Note: Changes in materials can be made for particular applications. Provide specific environment and performance requirements.

Fitting Size	Tubing Size	L	Part Number
1/4"	3/8"	9/16"	332526
1/4"	3/16"	9/16"	332491
3/8"	1/4"	1 1/16"	332155
3/8"	5/16"	1 1/16"	332490

Reducer



Specifications

Insert



Connections with soft metal or plastic tubing are made as reliable as those on stainless steel or hard copper thru the use of a brass insert in the tubing end.

Coupling



Tee



Elbow



Dead End



Angle Valve



Globe Valve



Tubing Size		A	B	Part Number
Min. O.D.	I.D. Range	±.005	±.002	
1/8"	.063-.070	.120	.062	332542
1/8"	.081-.088	.120	.080	332539
1/8"	.089-.096	.120	.088	332540
3/16"	.121-.130	.172	.120	332500
1/4"	.122-.132	.250	.121	1-331672-1
1/4"	.143-.153	.250	.142	332529
1/4"	.165-.175	.250	.164	331672
1/4"	.181-.191	.245	.180	332279
1/4"	.193-.203	.245	.192	332531
5/16"	.215-.225	.310	.214	50772
5/16"	.221-.231	.305	.220	332528
5/16"	.246-.256	.305	.245	332530
3/8"	.251-.261	.370	.250	332280
3/8"	.301-.311	.370	.300	332282

Size	H	L	Part Number
1/4	29/64"	1 1/4"	331683
3/8	37/64"	1 1/4"	332154

Size	H	L	Part Number
1/4	3 1/32"	1 1/2"	331685
3/8	1 9/32"	2"	332153

Size	H	L	Part Number
1/4	3 1/32"	3 1/32"	331684
3/8	1 9/32"	1 9/32"	332152

Size	H	L	Part Number
1/4	29/64"	2 1/32"	331946
3/8	37/64"	53/64"	332151

Size	H	L	Part Number
1/4	3 1/32"	1 37/64"	331948
3/8	1 1/4"	2 5/16"	332483

Size	H	L	Part Number
1/4	1 1/16"	1 1/2"	331949
3/8	1 9/16"	1 9/16"	332484

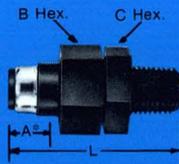
Male Adapter



Female Adapter



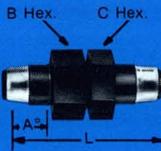
Male Connectors



Female Connectors



In-Line Connectors



Tooling

Description	Hex.	L	Part Number
1/4" fitting to 1/8" MPT	7/16"	1 1/32"	1-331887-0
1/4" fitting to 1/4" MPT	9/16"	1 2 1/32"	331887
3/8" fitting to 1/4" MPT	3/4"	1 7/32"	332487
3/8" fitting to 3/8" MPT	3/4"	1 1/4"	1-332487-0

Description	Hex.	H Dia.	L	Part Number
1/4" fitting to 1/8" FPT	9/16"	9/16"	1 1/32"	1-331888-0
1/4" fitting to 1/4" FPT	9/16"	1 1/16"	1 2 1/32"	331888
3/8" fitting to 1/4" FPT	3/4"	3/4"	1 1/32"	332488
3/8" fitting to 3/8" FPT	3/4"	7/8"	1 3/8"	1-332488-0

Size	A*	B Hex	C Hex	L	Part Number
1/4" x 1/8"	9/16"	1 1/16"	5/8"	1 1/2"	332618
1/4" x 1/4"	9/16"	1 1/16"	5/8"	1 1 1/16"	1-332618-0
3/8" x 1/4"	1 1/16"	7/8"	7/8"	1 1 3/16"	332647
3/8" x 3/8"	1 1/16"	7/8"	7/8"	1 7/8"	332648

* Tubing insertion depth

Size	A*	B Hex	C Hex	D Dia.	L	Part Number
1/4" x 1/8"	9/16"	1 1/16"	1 1/16"	9/16"	1 1/2"	332619
1/4" x 1/4"	9/16"	1 1/16"	1 1/16"	1 1/16"	1 1 1/16"	1-332619-0
3/8" x 1/4"	1 1/16"	7/8"	7/8"	3/4"	1 1 3/16"	332649
3/8" x 3/8"	1 1/16"	7/8"	7/8"	7/8"	2"	332650

* Tubing insertion depth

Size	A*	B Hex	C Hex	L	Part Number
1/4"	9/16"	1 1/16"	1 1/16"	1 1 1/16"	332645
3/8"	1 1/16"	7/8"	7/8"	1 1 3/16"	332646

* Tubing insertion depth



Hand Crimping Tool

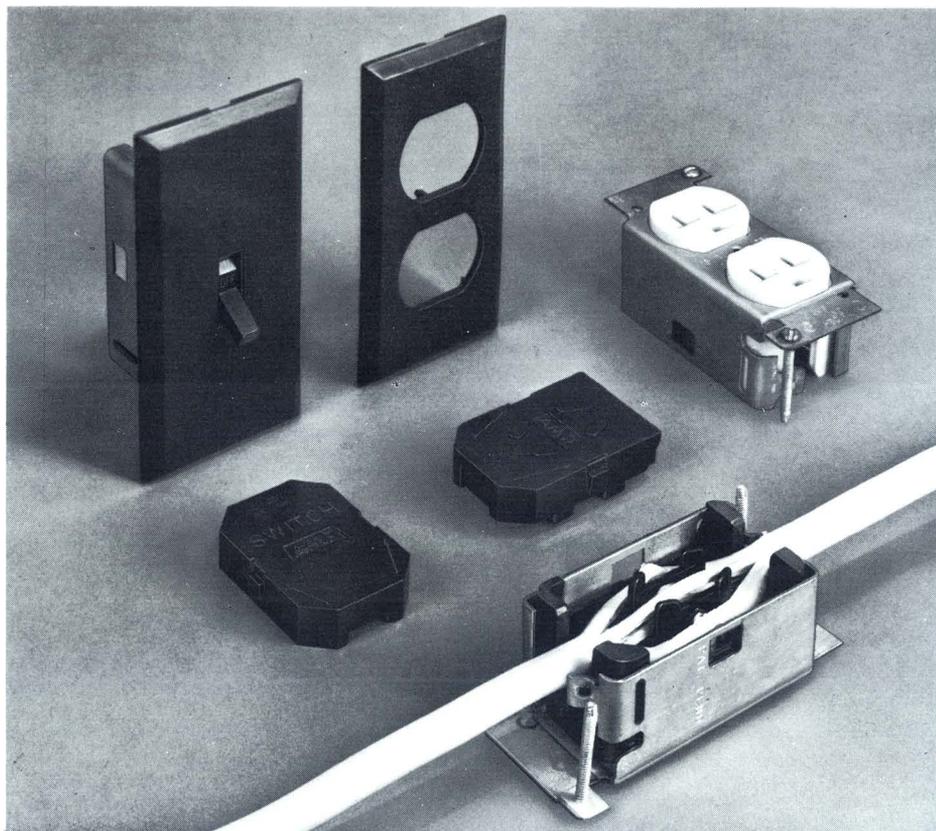
1/4" Tubing Size: Tool Part No. 69498

3/8" Tubing Size: Tool Part No. 69671

INCORPORATED

HARRISBURG, PENNSYLVANIA 17105
Phone: 717-564-0100 TWX: 510-657-4110

Miscellaneous Products



AMP duplex receptacles and switches are safe, highly reliable home wiring devices especially designed for 125 volt, 15 ampere electrical circuits using non-metallic sheathed wire with 14-2 or 12-2 copper conductors and ground. All live terminals and wires are completely enclosed in a 94V-1 rated thermoset plastic housing. Strain relief for the wires is also incorporated into the sides of each receptacle and switch. This design eliminates undue stress being placed on the connection interfaces and shorts due to loose screws and broken wires which can occur during installation of other similar devices.

Installation of AMP's duplex receptacles and switches is simple, fast and economical. They can be mounted in a wall as single or dual units with a variety of support plates available for on-stud and between-stud mounting. An AMP hand tool is used to form the wire for either an in-line or end-of-line configuration with a minimum wire preparation. The in-line and end-of-line configurations can be used individually or in combination to make electrical connections for continuous cable, thru-splicing and tap-splicing applications. The tool itself splits the wire to the proper length and separates the individual power and ground conductors.

An actual termination is made by means of an insulation displacement crimp. With the wire and back cover of a receptacle or switch in position, the same hand tool is used to install the cover into the housing. This action forces the conductors into their respective slotted-tongue contacts which automatically displace the insulation to make intimate contact between the conductors and the receptacle or switch contacts. The cover also locks in place, maintaining the electrical and mechanical integrity of the connections.

Accessories for the duplex receptacles and switches include snap-on face plates, available in matching ivory and brown colors, and sealing plugs to seal the unused end of a receptacle or switch. For added safety, the receptacles are adaptable to commercially available safety caps for either permanent or non-permanent applications.

In addition to these duplex receptacles and switches which are finding wide application throughout the home construction industry, AMP has available similar wiring devices designed specifically for mobile homes and recreational vehicles. Consult AMP Incorporated, Harrisburg, Pa. for details.

Duplex Receptacles and Ac Switches (125 V, 15 A)

Features

- UL listed



- CSA certified



File No. LR 16455-22

- 94V-1 rated thermoset plastic parts
- Completely safe—no exposed live terminals or wires
- Built-in strain relief
- Easy, fast installation and inspection
- Minimizes cable preparation
- Wall mount single or dual units, on-stud or between stud
- Snap-on face plates
- Choice of standard ivory or brown color
- Insulation displacement crimp terminations assure optimum electrical and mechanical integrity

Dimensioning: All dimensions in inches unless otherwise specified.

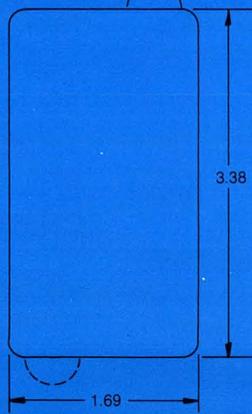
Specifications subject to change. Consult AMP Incorporated for latest design specifications.

Duplex Receptacles

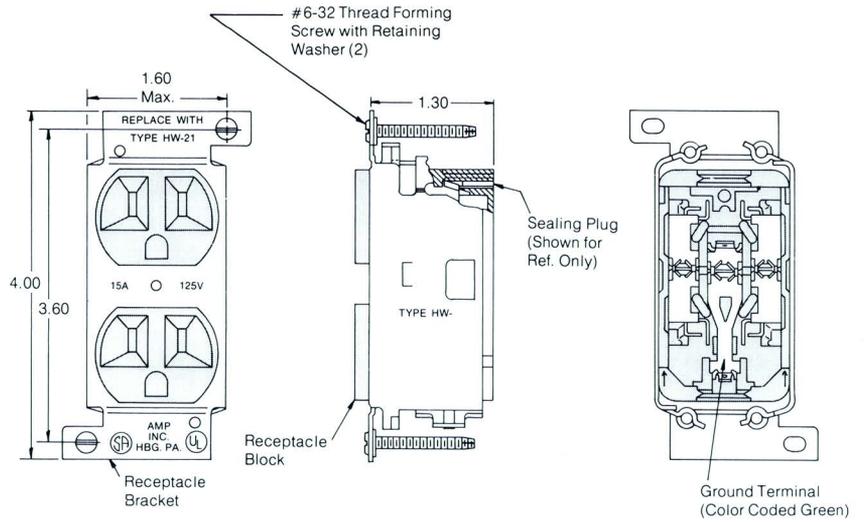
Types HW-11 and HW-21



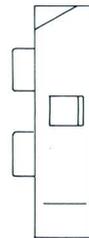
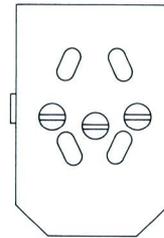
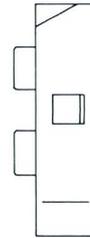
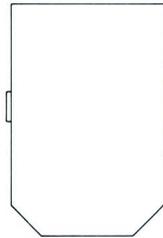
Notch in cutout may be necessary when using Support Plates



Recommended Panel Cutout



Receptacle Assembly



Rear Cover for Type HW-11

Rear Cover for Type HW-21 (Replacement Kit)

- Materials:** Receptacle Bracket—Steel per QQ-S-698, electrodeposited zinc precoat
 Receptacle Block—94V-1 rated thermoset plastic; Color, ivory or brown
 Rear Covers—94V-1 rated thermoset plastic; Color, brown
 Wire Terminating Screws (Type HW-21 only)—94V-0 rated thermoplastic; Color, black

Wire Size and Type: Non-metallic sheathed wire, 14-2 or 12-2 copper conductors with ground

Note: For splicing applications, do not join two different wire sizes. Only splice wires of same size—either a 14-2 w/Grd. to 14-2 w/Grd., or a 12-2 w/Grd. to 12-2 w/Grd.

Receptacle Type	Block Color	Sealing Plug Part No.*	Face Plate Part No.**	Receptacle Kit Part No.
HW-11	Ivory	205786-6	—	206560-1
				206560-3†
				206560-2
HW-21 (Replacement for HW-11)	Brown	205786-6	—	206560-4†
	Ivory	205786-6	206228-2	205787-1
	Brown	205786-6	206228-1	205787-2

*15 sealing plugs are supplied with each order of 50 receptacle kits. Sealing plugs also may be purchased separately. See page 7 for details.

**A face plate is supplied with each replacement kit (Type HW-21), but can be purchased separately. See page 7 for details.

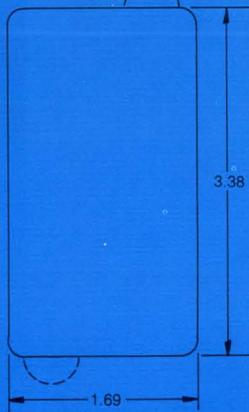
†These receptacle kits are supplied without #6-32 thread forming screws and nylon retaining washers.

Note: Duplex receptacles are packaged with rear covers unassembled.

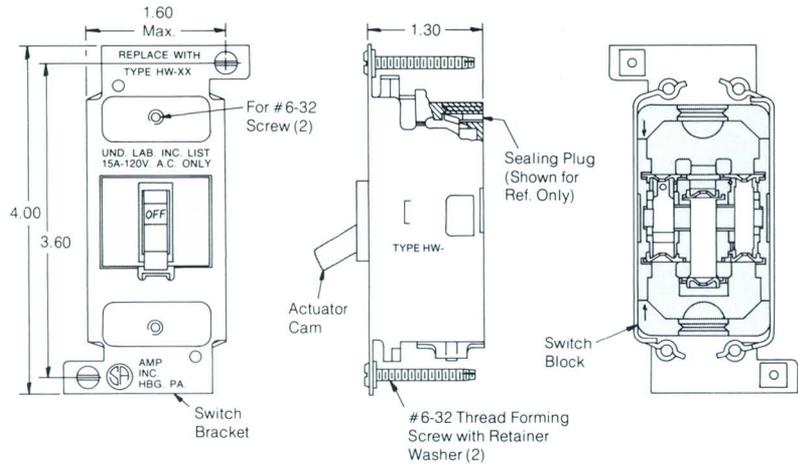
Types HW-12, HW-13, HW-14, HW-22, HW-23 and HW-24



Notch in cutout may be necessary when using Support Plates

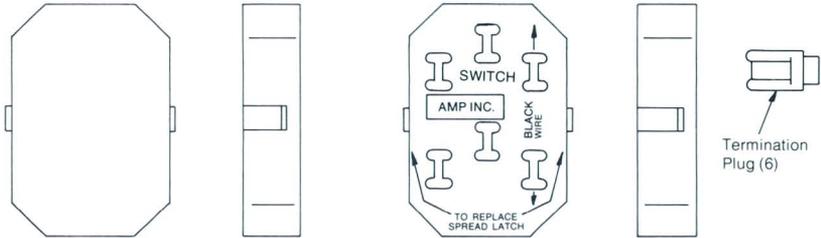


Recommended Panel Cutout



Switch Assembly

Note: Rear view of switch assembly depicts contact configuration of Type HW-12 (In-Line) switch. Contact configurations of all switch types are illustrated on back page.



Rear Cover for Types HW-12, HW-13 and HW-14

Rear Cover for Types HW-22, HW-23 and HW-24 (Replacement Kits)

Materials: Switch Bracket—Steel per QQ-S-698, electro-deposited zinc precoat
 Switch Block and Actuator Cam—94V-1 rated thermoset plastic;
 Color, ivory or brown
 Rear Covers—94V-1 rated thermoset plastic;
 Color, brown
 Termination Plugs (Types HW-22, HW-23, HW-24)—94V-0 rated thermoplastic;
 Color, white and blue

Wire Size and Type: Non-metallic sheathed wire, 14-2 or 12-2 copper conductors with ground

Note: For splicing applications, do not join two different wire sizes. Only splice wires of same size—either a 14-2 w/Grd. to 14-2 w/Grd., or a 12-2 w Grd. to 12-2 w/Grd.

Switch Type	Block Color	Sealing Plug Part No.*	Face Plate Part No.**	Switch Kit Part No.
HW-12 (In-Line)	Ivory	—	—	206562-1
	Brown	—	—	206562-2
HW-13 (Return-Line)	Ivory	205786-5	—	206625-1
	Brown	205786-5	—	206625-2
HW-14 (3-Way)	Ivory	—	—	206786-1
	Brown	—	—	206786-2
HW-22 (Replacement for HW-12)	Ivory	—	206229-2	206787-1
	Brown	—	206229-1	206787-2
HW-23 (Replacement for HW-13)	Ivory	205786-5	206229-2	206788-1
	Brown	205786-5	206229-1	206788-2
HW-24 (Replacement for HW-14)	Ivory	—	206229-2	206789-1
	Brown	—	206229-1	206789-2

*A sealing plug is supplied with each Type HW-13 and HW-23 switch kit. Sealing plugs also may be purchased separately. See page 7 for details.

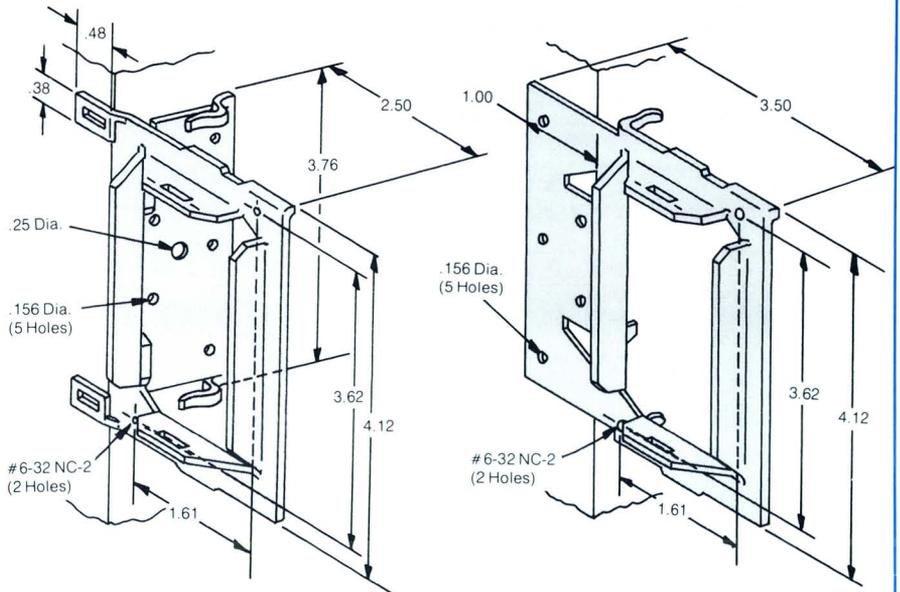
**A face plate is supplied with each replacement kit (Type HW-22, HW-23, HW-24), but can be purchased separately. See page 7 for details.

Note: Ac switches are packaged with rear covers unassembled.

**Support Plates
for On-Stud
Mounting**

**Single Side Mount
and Flush Mount
with Mounting Flanges,
Types BR-11 and BR-13**

Material: Steel per QQ-S-698, electro-deposited zinc precoat

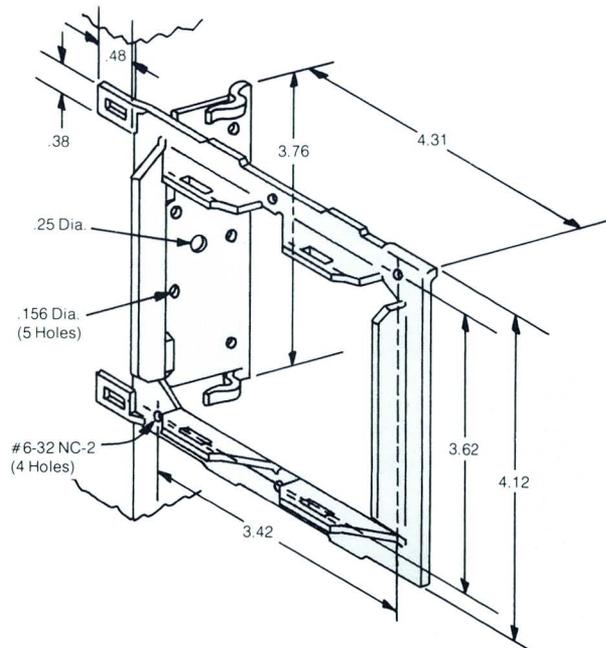


**Side Mount, Type BR-11
Part No. 206563-1**

**Flush Mount, Type BR-13
Part No. 206565-1**

**Dual Flush Mount
with Mounting Flanges,
Type BR-12**

Material: Steel per QQ-S-698, electro-deposited zinc precoat



Part No. 206564-1

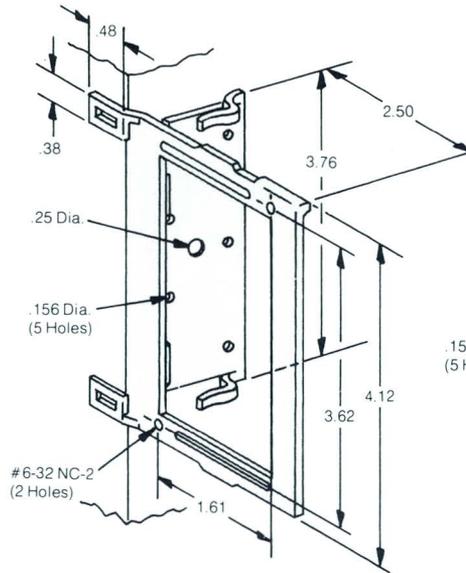
Notes: 1. These support plates can be used with all duplex receptacles (Types HW-11 and HW-21) and ac switches (Types HW-12, HW-13, HW-14, HW-22, HW-23 and HW-24).

2. Recommended wall thickness is 3/8" or greater. If mounting flanges protrude beyond wall material, they can be removed with flat blade screwdriver or pliers.

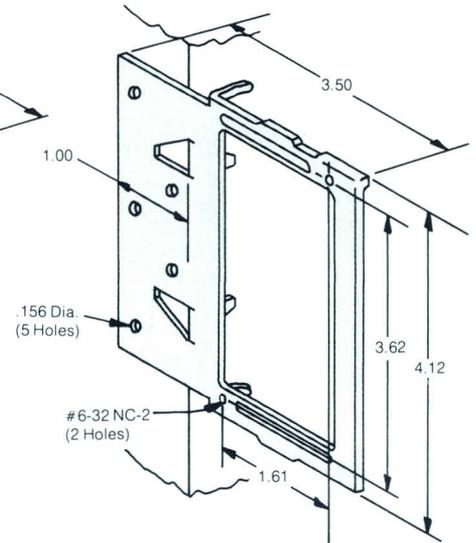
Support Plates
for On-Stud
Mounting (Cont'd)

Single Side Mount
and Flush Mount
without Mounting Flanges,
Types BR-14 and BR-15

Material: Steel per QQ-S-698, electro-deposited zinc precoat



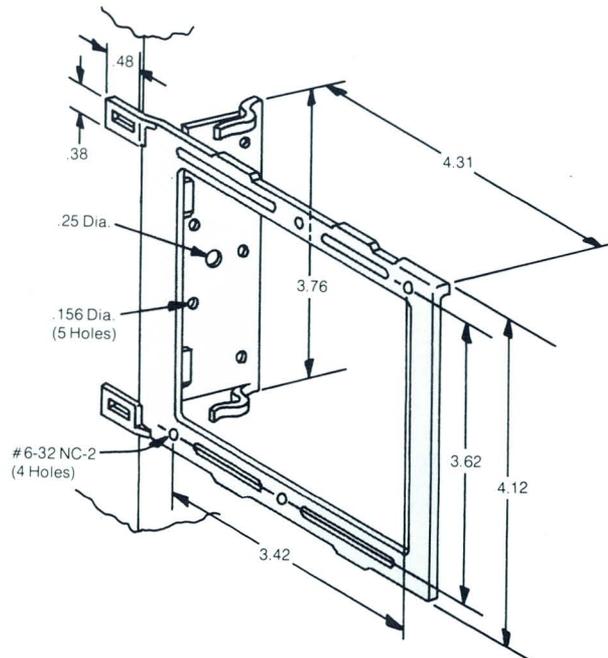
Side Mount, Type BR-14
Part No. 206841-1



Flush Mount, Type BR-15
Part No. 206842-1

Dual Flush Mount
without Mounting Flanges,
Type BR-16

Material: Steel per QQ-S-698, electro-deposited zinc precoat



Part No. 206843-1

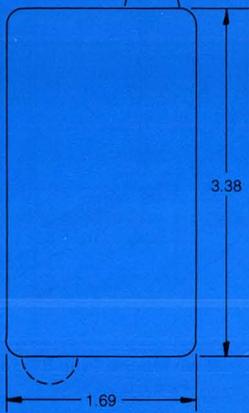
Notes: 1. These support plates can be used with all duplex receptacles (Types HW-11 and HW-21) and ac switches (Types HW-12, HW-13, HW-14, HW-22, HW-23 and HW-24).
2. Recommended wall thickness is less than 3/8".

Support Plates for Between-Stud Mounting

Single Flush Mount, Type BR-17

Material: Steel per QQ-S-698, electro-deposited zinc precoat

Notch in cutout
may be necessary
when using
Support Plates

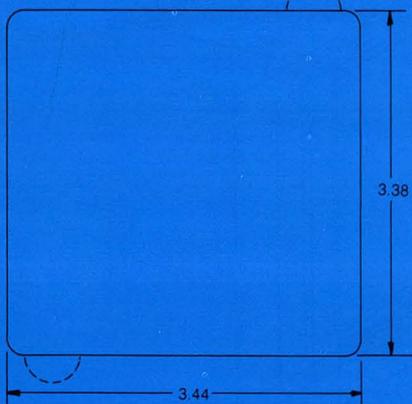


Recommended Panel Cutout

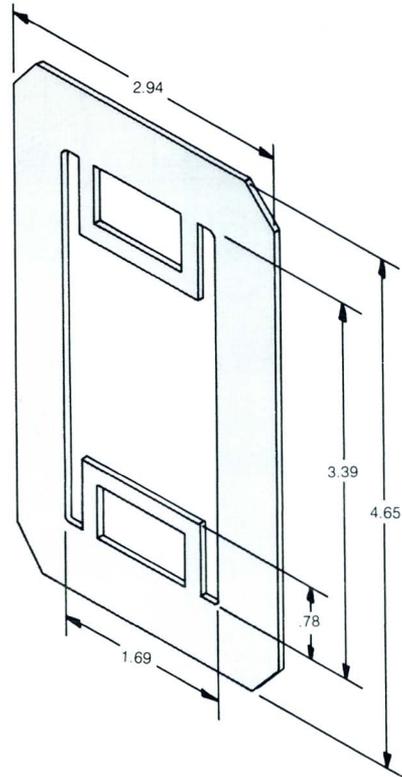
Dual Flush Mount, Type BR-18

Material: Steel per QQ-S-698, electro-deposited zinc precoat

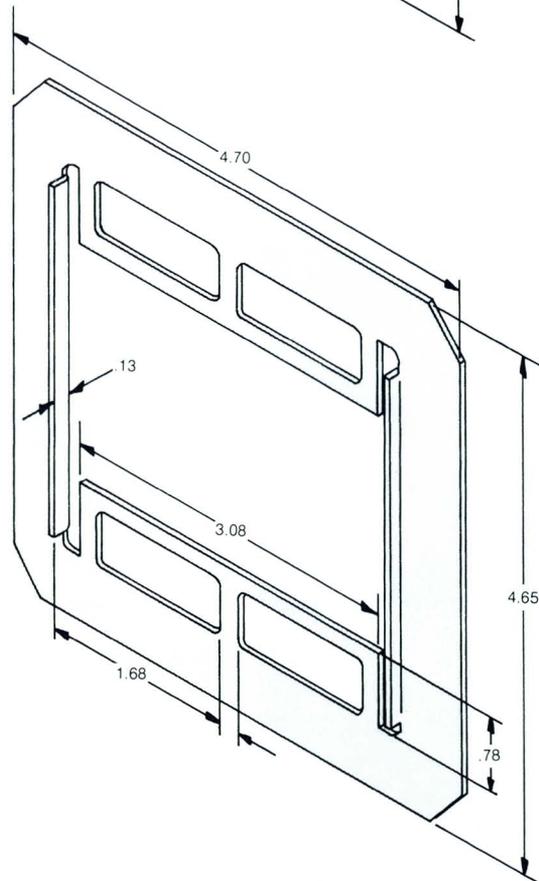
Notch in cutout
may be necessary
when using
Supporting Plates



Recommended Panel Cutout



Part No. 205790-1



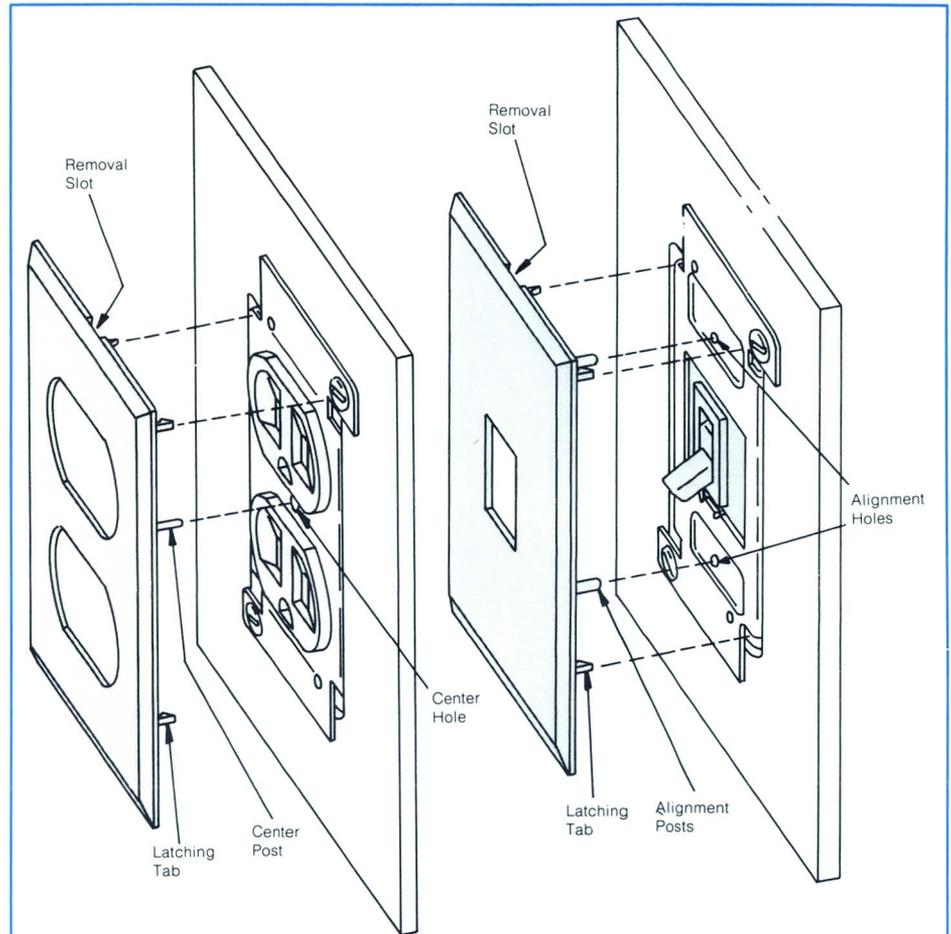
Part No. 206107-1

- Notes:** 1. These support plates can be used with all duplex receptacles (Types HW-11 and HW-21) and ac switches (Types HW-12, HW-13, HW-14, HW-22, HW-23 and HW-24).
2. It is recommended that these support plates be used with walls constructed of drywall, plasterboard or other soft materials.

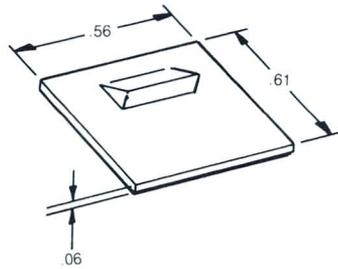
**Snap-On Face Plates,
Types FP-1 and FP-2**

Material: Thermoplastic; Color, ivory or brown

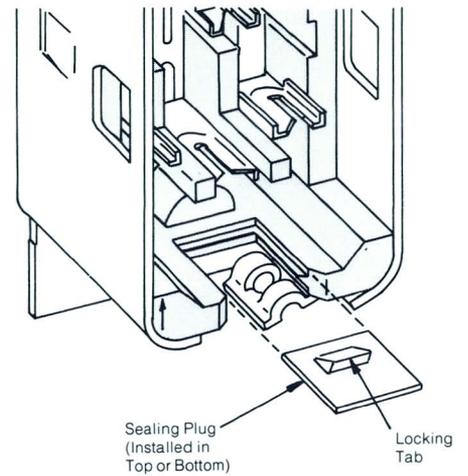
Type of Face Plate	Color	Part No.
Receptacle (FP-1)	Brown	206228-1
	Ivory	206228-2
Switch (FP-2)	Brown	206229-1
	Ivory	206229-2



Sealing Plug

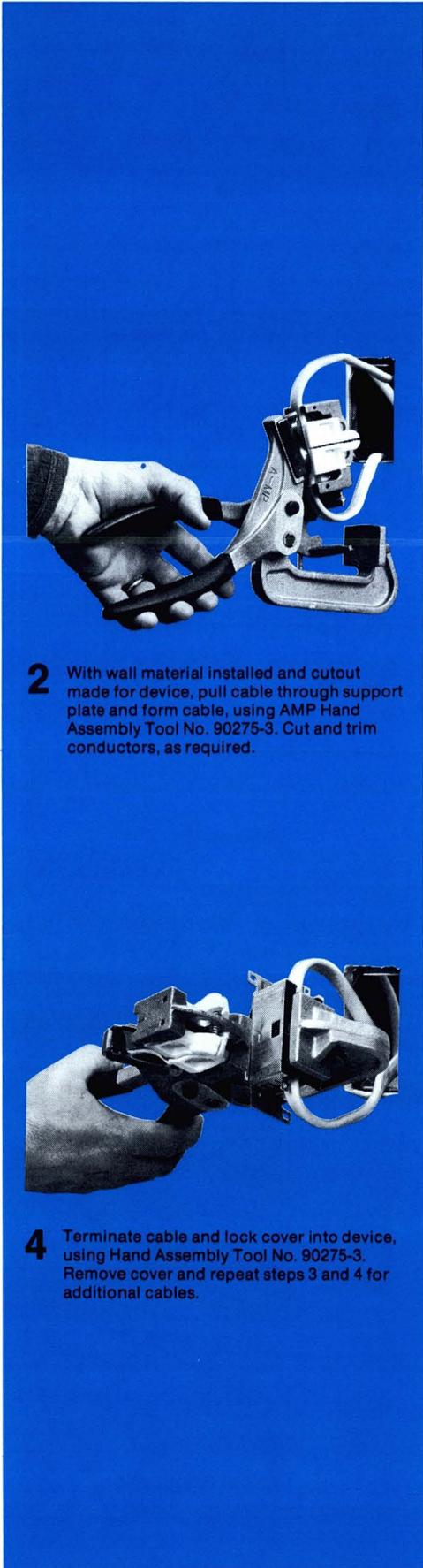


Material: Thermoplastic; Color, natural
Part Nos: 205786-5 (one individual plug)
 205786-6 (15 plugs per package)
 205786-7 (25 plugs per package)



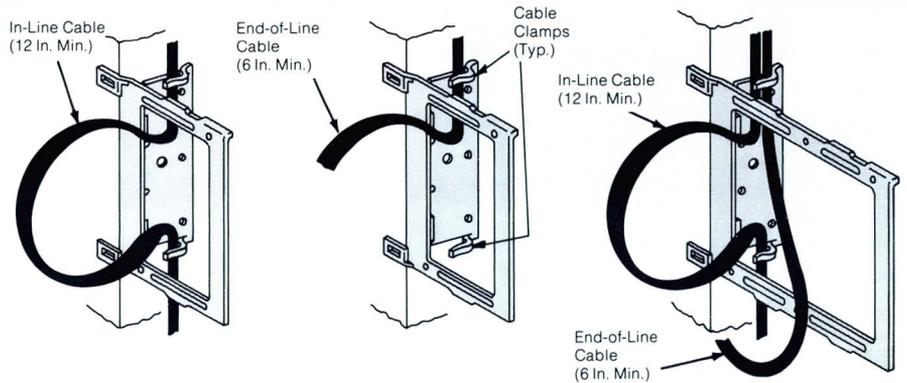
Typical Application

Installation and Tooling



2 With wall material installed and cutout made for device, pull cable through support plate and form cable, using AMP Hand Assembly Tool No. 90275-3. Cut and trim conductors, as required.

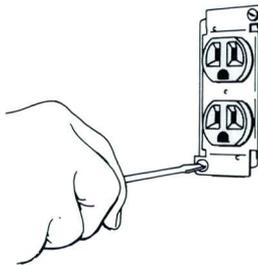
4 Terminate cable and lock cover into device, using Hand Assembly Tool No. 90275-3. Remove cover and repeat steps 3 and 4 for additional cables.



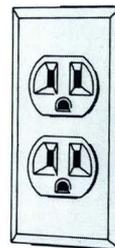
1 Mount support plate to stud, making sure a sufficient length of cable is accessible for desired application.

Receptacle		Switches		
In-Line	End-of-Line	In-Line	Return-Line	3-Way

3 Position cable in device—one cable at a time where two or more cables are being terminated.



5 Attach device to support plate.



6 Snap on face plate.



AMP Extraction Tool No. 91077-1

This simple, easy-to-use tool is designed to remove wires from a receptacle or switch, without damage to the wires or contacts.

Miscellaneous Products



AMP Circuit Analyzer

Checks all of these Electrical Circuit Conditions:

- Open Ground
- Open Hot
- Open Neutral
- Hot/Ground — Reversed
- Hot/Neutral — Reversed
- Correct

This revolutionary Circuit Analyzer has indicator lights and a chart on both sides to describe the condition for each lighting arrangement. Just plug it in and these illuminated signals indicate reverse polarity, faulty wiring or missing grounds and correct wiring conditions.

Features

- Reliable, low-cost
- Simple, easy-to-use
- No tools, meters, wires needed
- Impact resistant plastic
- Contoured to fit hand
- Label on both sides allows indication to be read from either side
- Designed for conventional 3 wire 125 Volt AC outlets
- Can be used to check 2 wire outlets with a polarized adaptor and ground wire (not supplied with analyzer)
- This product is listed by Underwriters' Laboratories, Inc. and bears the mark: 

Operating Instructions (Unplug appliances before testing.)

To determine the condition of your electrical circuit, plug the analyzer into any single phase 125 volt, 3 wire outlet. Two wire outlets may be tested using a polarized adapter with ground wire connected. Combination of lighted and unlighted bulbs indicate circuit condition. Refer faulty wiring indications to a qualified electrician for correction.

Ports "light-up" to indicate circuit condition.



Part Number: 350659-2
(Instruction Sheet included with each analyzer)

Performance Specifications

Contact retention in housing 20 lbs.
Power consumption 0.3 watts
Thermal Shock — -55°C to 65°C
5 cycles
Humidity — 10°C to 65°C at 95% RH
Vibration — 10-55-10 Hz
Physical Shock — 50G's
Termination Resistance — 10 milliohms max.

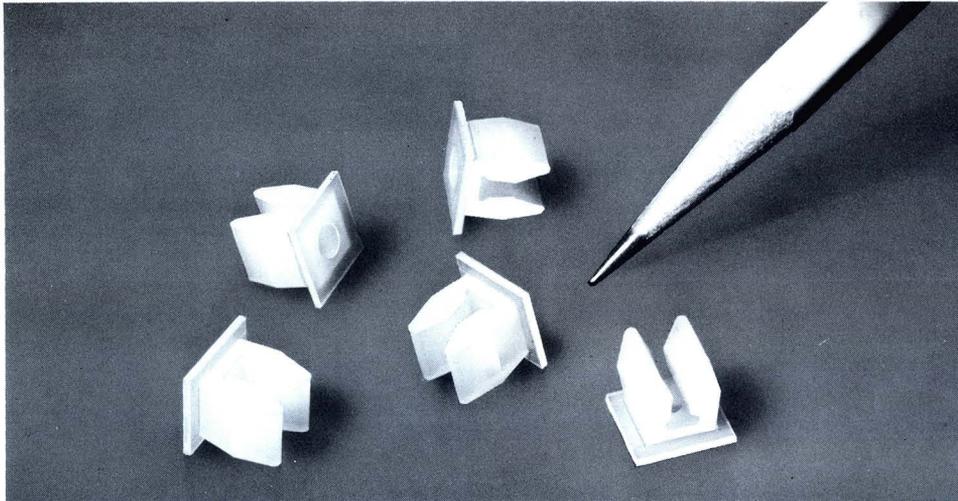
Crush Test — 75 lbs. for 1 minute
Operating Life — 1000 hrs.

NOTE: Consult AMP Incorporated Product Specification 108-1040 for performance and test parameter details.

Material Specifications

Contacts — Brass
Housing — PVC
Label — Mylar

Specifications subject to change.
Consult AMP Incorporated for latest design specifications.



AMP FAS-N-FAST★ Plastic Panel Nut

FEATURES

- Provides thermal and electrical insulation.
- Compensates for misalignment of up to .015" in any direction.
- No cross threading.
- Acts as a spacer.
- Won't chip paint, enamel, chrome, porcelain, etc.
- Easily hand-inserted—requires no tooling.
- Nylon material assures non-corrosive fastener.
- Provides capability of blind fastening.
- Accommodates .031" to .156" thick panels.
- Accepts #8 self-tapping screws.
- Self-locking—eliminates problems occurring from vibration.

The AMP FAS-N-FAST Plastic Panel Nut provides a reliable, low cost means of retaining a threaded fastener in a metal or plastic panel. This molded nylon panel nut is designed to be hand-inserted into an .031" to .156" thick panel containing a .280" square hole and to accept a #8 self-tapping screw. When the screw is driven into place, the sides of the nut are deflected outwardly, securely locking the nut in the panel. This self-locking feature is further enhanced by the strength and resiliency of the nylon material itself to virtually eliminate problems arising from vibration.

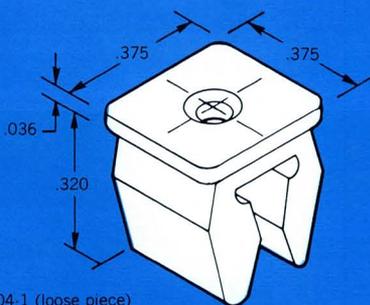
The use of AMP's nylon panel nut offers many additional advantages over conventional metallic nuts. The nylon material will not chip or mar

paint, enameled or porcelainized surfaces. In metal-to-metal applications the panel nut can be used as a spacer to provide mechanical as well as thermal and electrical insulation. Also, where corrosion is a factor it provides an excellent means of inhibiting the corrosive effect of metal to metal.

The unique design of the mechanical fastener, too, helps reduce fabrication and assembly costs by compensating for wide variations in mounting hole locations and being easily inserted into panels without the use of tools.

These economical attributes, combined with the high standards of AMP reliability, are reasons why the AMP FAS-N-FAST Plastic Panel Nut is finding wide acceptance in many applications in a variety of industries.

Physical Characteristics



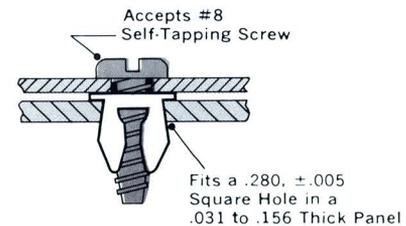
Part No.—360004-1 (loose piece)

Material—Nylon

Color—Natural*

*Other colors are available upon request.

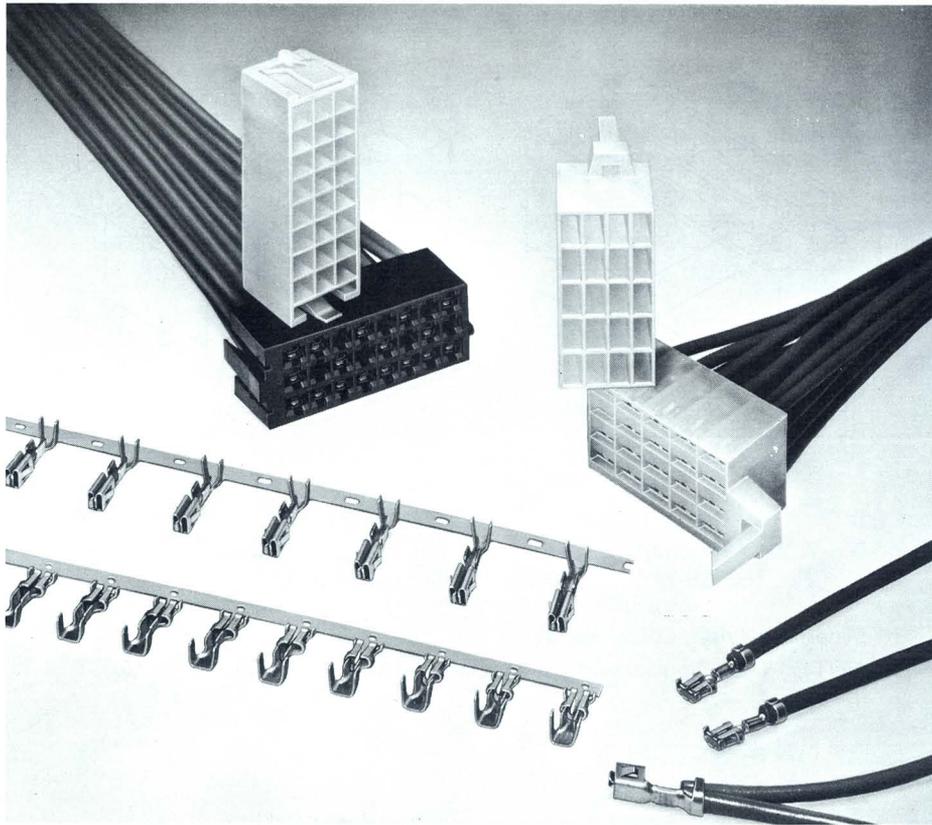
Typical Application



Test Data

Panel Thickness	Insertion Force	Holding Force	Driving Torque	Stripping Torque
.156 in.	21 lbs.	240 lbs.	6.5 in.-lbs.	16.0 in.-lbs.
.093 in.	19 lbs.	300 lbs.	4.0 in.-lbs.	8.5 in.-lbs.
.031 in.	18 lbs.	250 lbs.	2.5 in.-lbs.	6.0 in.-lbs.

Note: Tabulated values are for #8 self-tapping screw.



These multi-position connectors are a part of a complete family of AMP harness connectors that provide reliable, low cost connections for the appliance industry. They are designed to mate directly with specific timing mechanisms in automatic dish washers and offer substantial labor savings since they form an integral part of the machine-applied wiring harnesses. Although primarily intended for use in dish washers, the timer connectors can be readily adapted for use in any major appliance requiring timed operation cycles.

The connector housings are molded from durable nylon material and are self-mounting. Both left- and right-hand plug halves employ locking latches which assure positive mounting to the timer enclosure without a need for hardware. The contacts are stamped and formed from quality brass stock and are pre-tinned for optimum conductivity. These crimp snap-in contacts are simply hand loaded into the housings and can be readily re-

moved with an inexpensive extraction tool. They are designed to accept the timer's .020" thick x .125" or .187" wide male spades and provide lead connections for a wide range of wire sizes — #22 to 14 AWG — as well as insulation diameters to .230".

All contacts are furnished in reel-stored strips for their high speed attachment to leads using one of several AMP machines, including the AMP-O-LECTRIC terminating machine and the AMPOMATOR lead making machine. The semi-automatic AMP-O-LECTRIC machine installs contacts at speeds up to 4,000 per hour, while the fully automatic AMPOMATOR machine can produce as many as 11,400 finished terminations an hour. Both machines feature AMP's versatile miniature applicator with precision dies for identically reliable terminations and quick adjustments for fast job changeovers without major interruptions in production.

AMP Timer Connectors

FEATURES

- Direct pluggability of timing mechanisms in major appliances.
- Multi-position connectors permit simultaneous interconnections.
- Quick connect/disconnect contacts mate with .020" thick x .125" or .187" wide male spades.
- Crimp snap-in contacts accept #22 to 14 AWG wire size range and insulation diameters to .230"
- Substantial labor savings — connectors form integral part of machine-applied wiring harnesses.
- Self-mounting nylon housings — no mounting hardware required.
- Wide choice of application tooling for high speed, low cost lead attachment.

20-Position
Housings

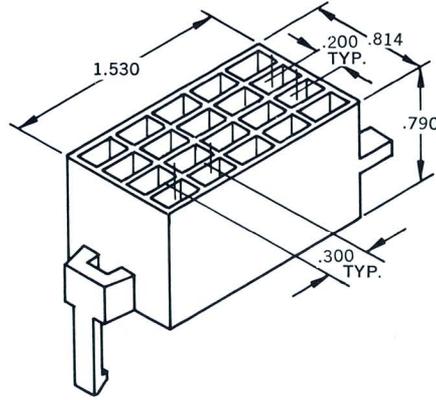


Fig. A, Left Housing
Part No. 360016-1

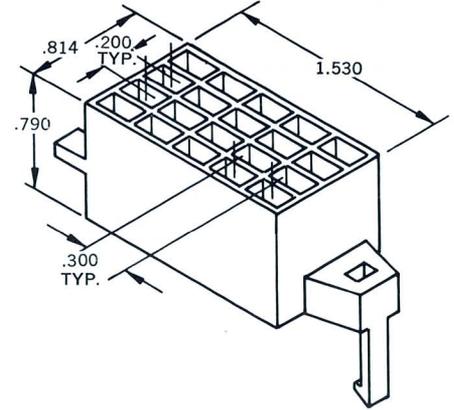
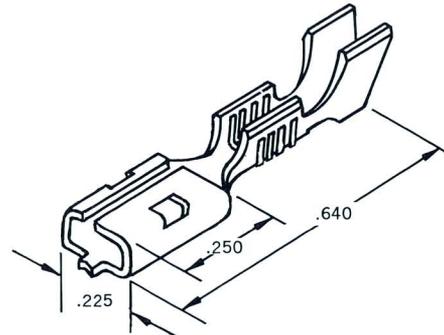


Fig. B, Right Housing
Part No. 360015-1

Material: Nylon; Color, Natural

NOTE: These housings accept contact nos. 61992-1, 62058-1 and 62063-1.

Contacts



Material: Pre-Tinned .014" Thk. Brass

Mating Tab: .020" Thk. x .187 Wide

Wire Size Range (AWG)	Insulation Diameter	Contact Number
18-14 or (2) 16	.108-.230 or (2) .125 Max.	61992-1
20-16	.105-.130	62063-1
22-18	.060-.105	62058-1

EXTRACTION TOOL No. 453430-1

24-Position
Housings

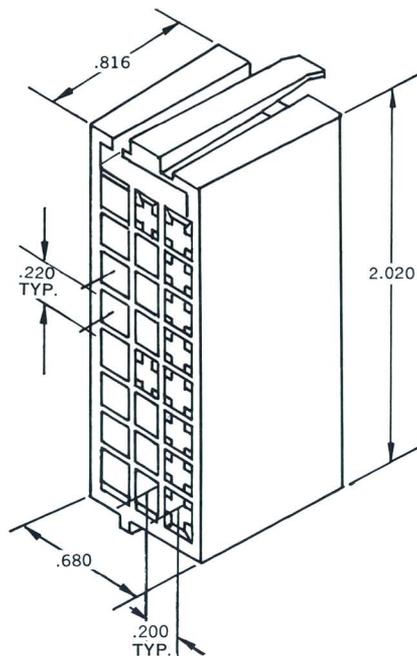


Fig. A, Left Housing
Part No. 1-480556-0

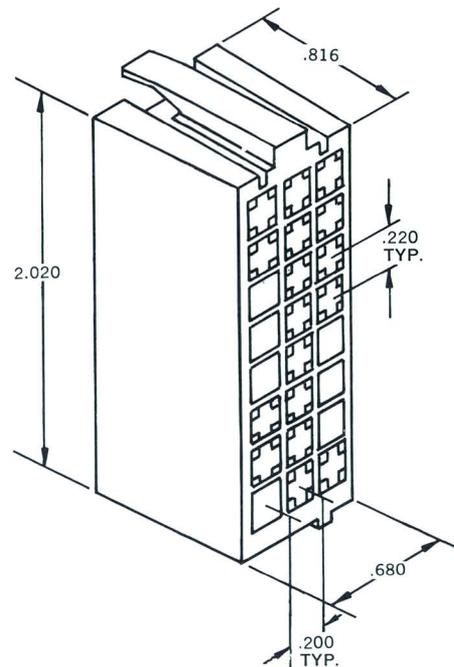
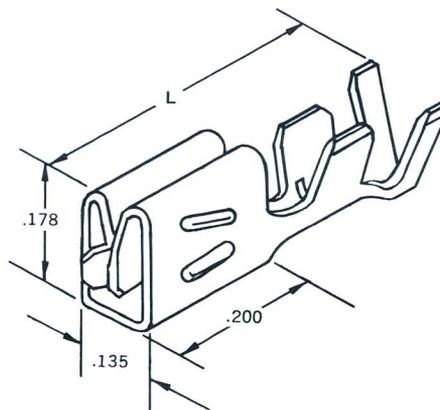


Fig. B, Right Housing
Part No. 1-480553-1

Material: Nylon; Color, Natural (Left Housing), Black (Right Housing)

NOTE: These housings accept contact nos. 61603-1 and 61604-1.

Contacts



Material: Pre-Tinned .014" Thk. Brass

Mating Tab: .020" Thk. x .125" Wide

Wire Size Range (AWG)	Insulation Diameter	L	Contact Number
(2) 18 or (2) 16	(2) .125 Max.	.580	61604-1
20-14	.085-.125	.505	61603-1

EXTRACTION TOOL No. 454983-1

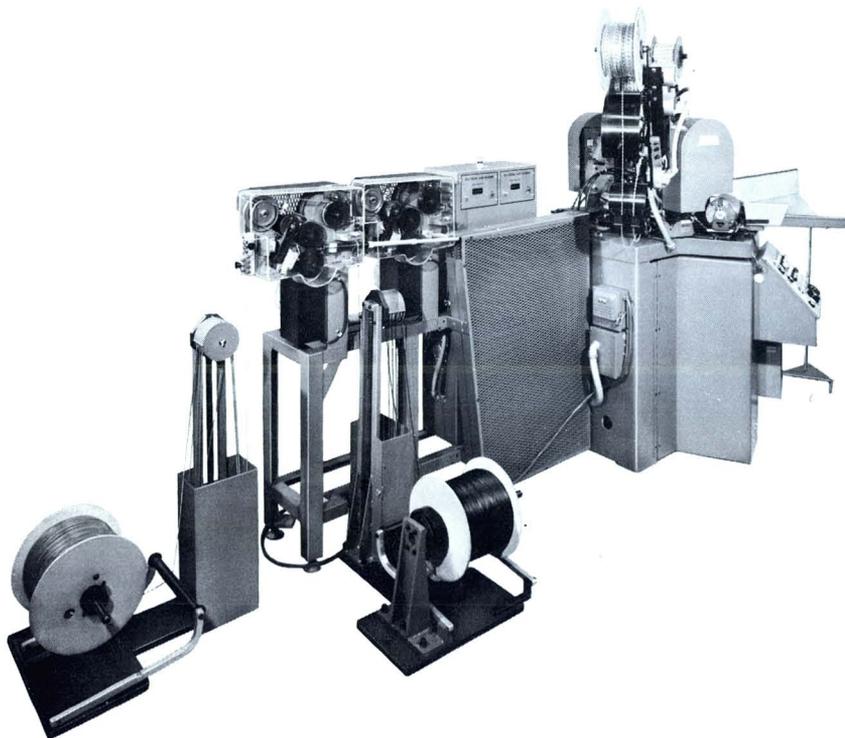
AMPOMATOR AUTOMATIC LEAD MAKING MACHINE

Completely automates wire lead production. Accepts 300 OHM and ripcord cable.

From AMP's specialized efforts to increase efficiency and lower costs in wire termination has come a remarkable machine. The AMPOMATOR Automatic Lead Making Machine not only crimps terminals to wire at high production speeds, but handles the wire every step of the way—from reel to finished lead. The object of many years of modification and improvement, this machine has demonstrated its superior speed, versatility and economy as the first truly automated tool for lead production.

With the AMPOMATOR machine you can produce up to 5700 doubly terminated wire leads per hour—11,400 terminations in all—depending on lead length and wire size. Lead and strip length are completely adjustable, as is operating speed. Quick-change applicators with dial type settings facilitate wire and terminal changovers with no significant production downtime. In addition, the machine is fully protected against malfunction damage by fail-safe control circuitry.

All adjustments are made rapidly, with no major interruptions in production. Unique control circuits protect every machine part and visual indicators aid in adjustment and operation.



Quick change Miniature Applicator for flexible operation

Applicators can be change in minutes, affording maximum flexibility and minimum downtime. Crimping height on both terminal barrel and insulation support for a given wire size are simply "dialed in."

AMPOMATOR AUTOMATIC LEAD MAKING MACHINE

Like adding another building to your present plant facilities

Each machine is built to meet specific customer requirements; each is backed by AMP's vast experience in wiring technology. Moreover, the exceptional operational features such as the electronic wire measuring device can add the production capacity of new plant space to your current facilities. You are spared the normal overhead costs of such expansion, while greatly increasing production efficiency.

By installing a single AMPOMATOR machine in your plant, you will accomplish the work of many wire processing and terminating machines in a fraction of the space. Because it handles wire from reel to finished lead, it offers a splendid opportunity to automate this multi-step manufacturing process . . . to do it quickly and easily, without the expense of additional personnel or floor space.

Typical AMPOMATOR Machine Specifications

Dimensions:

length, 198"; height 88" (approx.);
width, 74" (including side feed
reels)

Weight; approximately 4000 lbs.

Power requirements to machine;

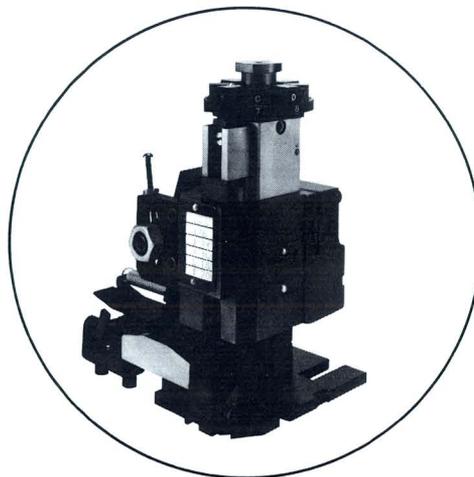
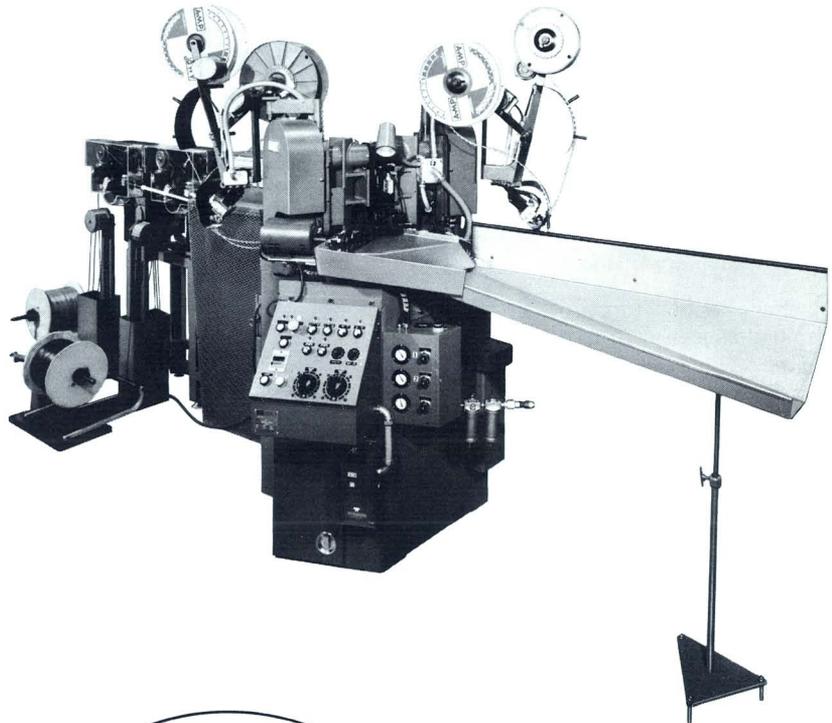
3-phase, 60 cycle, 230V, 20 amps
(standard)

Air supply to machine: 100 psi min.
at 10 cfm

Cycle speeds: 17-96 RPM

Note: Specifications subject to change.
Consult AMP Incorporated for latest
design specifications.

MEASURES, CUTS, STRIPS, TERMINATES, STACKS LEADS ... AUTOMATICALLY



Quick-change miniature applicator provides change over from one type of terminal to another. Dial setting adjusts crimp height for various wire sizes and insulation thickness.

Here, briefly, is how the AMPOMATOR machine produces completely terminated leads of predetermined length from reeled wire:

Terminals of almost any open barrel type and insulated wire are simultaneously fed to the machine from conventional supply reels.

Wire is cut to predetermined length and stripped by the stripping blades on its way to the applicator section. Here, the leading end of the wire is terminated by one applicator, then drawn forward so that the trailing end can be terminated by a second applicator.

AMPOMATOR AUTOMATIC LEAD MAKING MACHINE

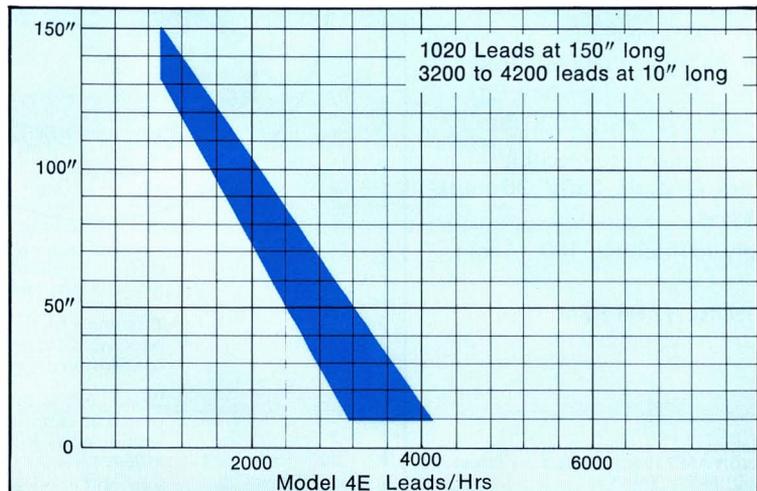
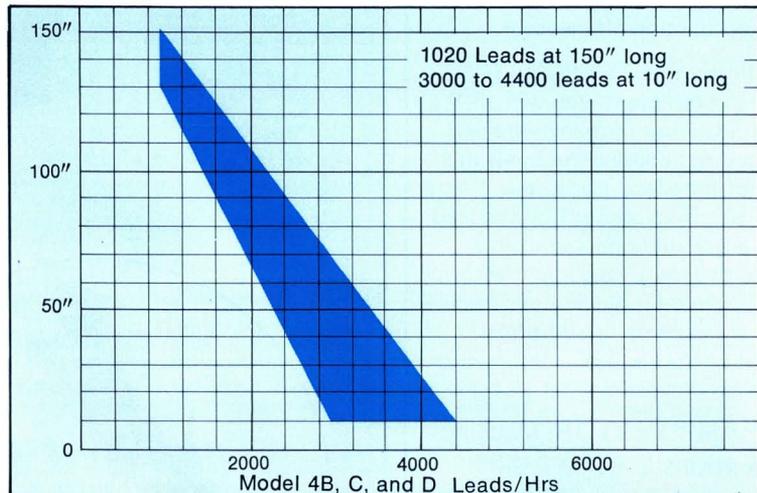
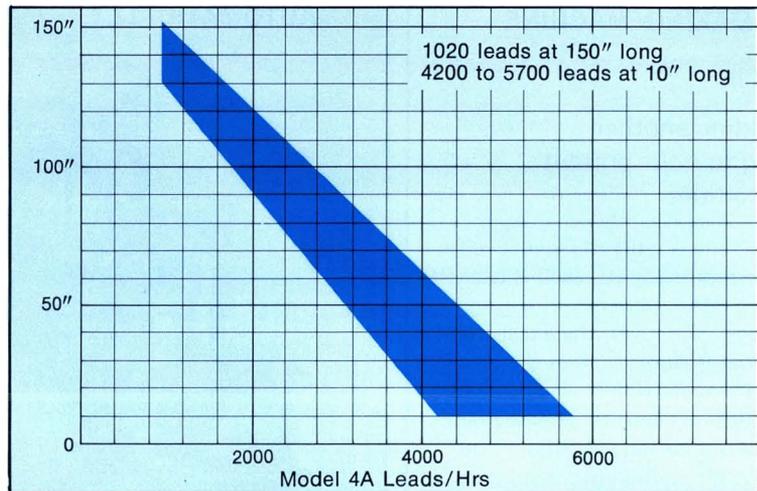
Performance features

- electronic Wire Measuring Device permits dialing in new lengths with little or no down time operating with a minimum loss of wire.
- accuracy in length of $\pm 1/10''$ throughout range capability of the equipment.
- quick-change applicators provide for rapid change-over of terminal types.
- provides leads terminated on one or both ends—not limited to same termination on each end.
- up to 5700 finished leads/hr. depending on lead length and wire size.
- 1.62'' to 190.0'' lead length, depending on wire size and insulation type.
- handles #26- 8 AWG stranded, or #26-14 AWG solid wire with various insulations.
- strip length adjustable from 1/8'' to 3/8'' and from 7/32'' to 1/2''.
- accommodates 25,000-ft. wire reels—wire can also be handled from barrels.
- easy maintenance, long life tooling.
- fail-safe control circuitry.

Production capacity

Charts at right show average speeds that can be expected for various lead lengths and wire sizes used with the AMPOMATOR machine.

AMPOMATOR MACHINE LEAD PRODUCTION CURVE
AVERAGE OPERATING SPEED

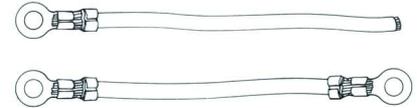


**AMPOMATOR
AUTOMATIC
LEAD MAKING MACHINE**

**A model of the AMPOMATOR machine
to fit your particular need:**

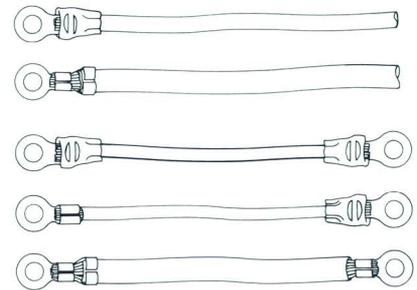
Model IV-A— “Standard”

Single wire with electronic wire measuring device utilizing single mini-applicators for open barrel terminal applications.



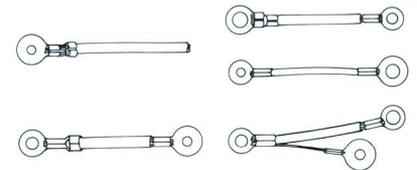
Model IV-B – “Open-Closed Barrel”

Single wire with electronic wire measuring device utilizing single mini-applicators and split cycle presses for open and/or closed barrel terminal configurations.



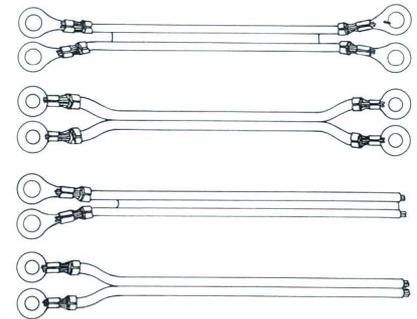
Model IV-C “Dual Wire Combination”

Two wire with (2) individual electronic wire measuring devices utilizing dual mini-applicators or single mini-applicators for “doubling”. Applies only open barrel terminals.



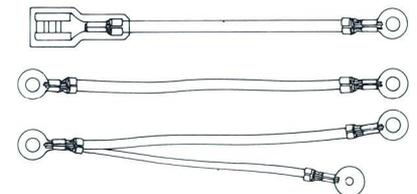
Model IV-D “Ripcord and 300 OHM”

Ripcord and 300 OHM wire with electronic wire measuring device utilizing dual mini-applicators for open barrel terminal configurations.



**Model IV-E AMPOMATOR—
S.E.L.M.**

Two wires with two individual electronic wire measuring devices using one dual mini-applicator and two single mini-applicators. Capable of applying welded pods on one end only. Applies open barrel terminals on both ends. One end of two wires can be doubled.



Note; Ring tonque terminals shown for illustration purpose only. Other types of terminals can be applied depending on your requirements.

AMP-O-MATIC Dual Wire, Single End Lead Machine

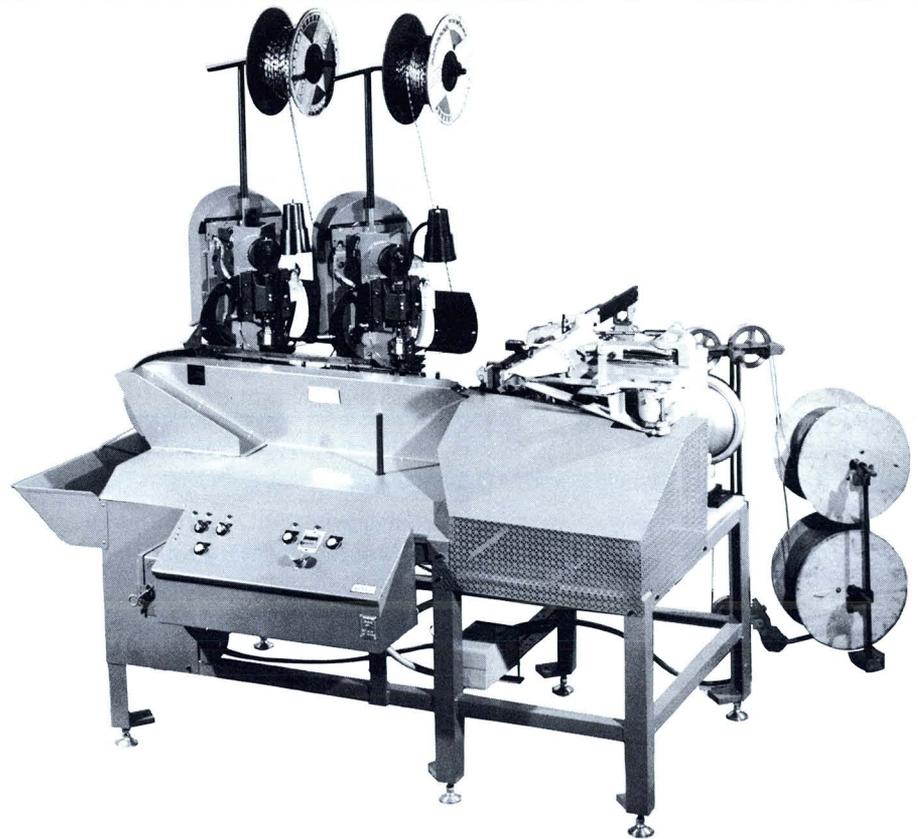
Features:

- Wire stripping equipment supplied, or use existing wire stripping equipment for low installed costs.
- Uses existing quick-change applicators to accept wide range of terminals and to provide for rapid changeover of terminal types.
- Handles #22-10 AWG stranded or #22-12 AWG solid wire with various insulations (insulation diameters up to .185")
- Wide range of lead lengths — 3" to 194".
- Lead length changeover is accomplished in a matter of seconds.
- Produces up to 6000 single end terminated leads "per hour" with consistent, high-quality terminations.
- Easy maintenance, long-life tooling.
- Entire lead making process is fully automated.

Industries and Applications

Having broad application, the Dual Wire, Single End Lead Machine is ideally suited for virtually anyone needing to terminate one end of a lead. This machine is particularly useful to harness makers and to small motor, radio, television and appliance manufacturers.

For the production of leads terminated on both ends, The Dual Wire Single End Lead Machine can also be used as an intermediate lead making process between the AMP-O-MATOR Machine and an AMP-O-ELECTRIC Machine. Even though the second termination must be applied by the AMP-O-ELECTRIC Machine, there are circumstances in which this proves to be highly practical.



A rewarding example of AMP's continuing efforts to reduce costs by increasing speed and efficiency in wire lead production is the AMP-O-MATIC Dual Wire, Single End Lead Machine. Specifically designed for adaptation to an Artos CS-6 Wire Stripper that will measure, cut and strip two wires simultaneously, this terminating machine offers a fully automated, conveyORIZED dual-wire processing technique that will not only add the production capacity of several wire processing and terminating machines to your current facilities, but will do it in a fraction of the floor space and without the expense of additional personnel.

With the Artos CS-6 Stripper handling two wires at a time, the Dual Wire, Single End Lead Machine will terminate one end of each wire during each operating cycle, producing finished, single end terminated leads at rates up to 6000 per hour — a production rate equal to three operator hours on conventional, hand-fed bench machines. The entire lead making process, from unreeling wire to conveniently stacking finished leads for easy

handling is performed completely automatically. Machine operation may be preset to automatically stop after the desired number of finished leads are produced.

In addition to speed, this high-volume production machine offers maximum production flexibility and efficiency. It will accommodate most standard wire with a maximum insulation diameter of .185 inch and can produce finished leads in a wide choice of lengths . . . from 3 inches to 194 inches. Also, through the use of existing AMP quick-change miniature applicators, it will accept a variety of styles and sizes of strip-fed terminals. The fact that lead length and wire size changeovers are accomplished with a minimum of production "downtime" further increases its speed and efficiency.

The exceptional design and operating features of the AMP-O-MATIC Dual Wire, Single End Lead Machine are all built-in factors which make it another outstanding example of the AMP ECONOMATION Program — Your Automated Savings Plan.

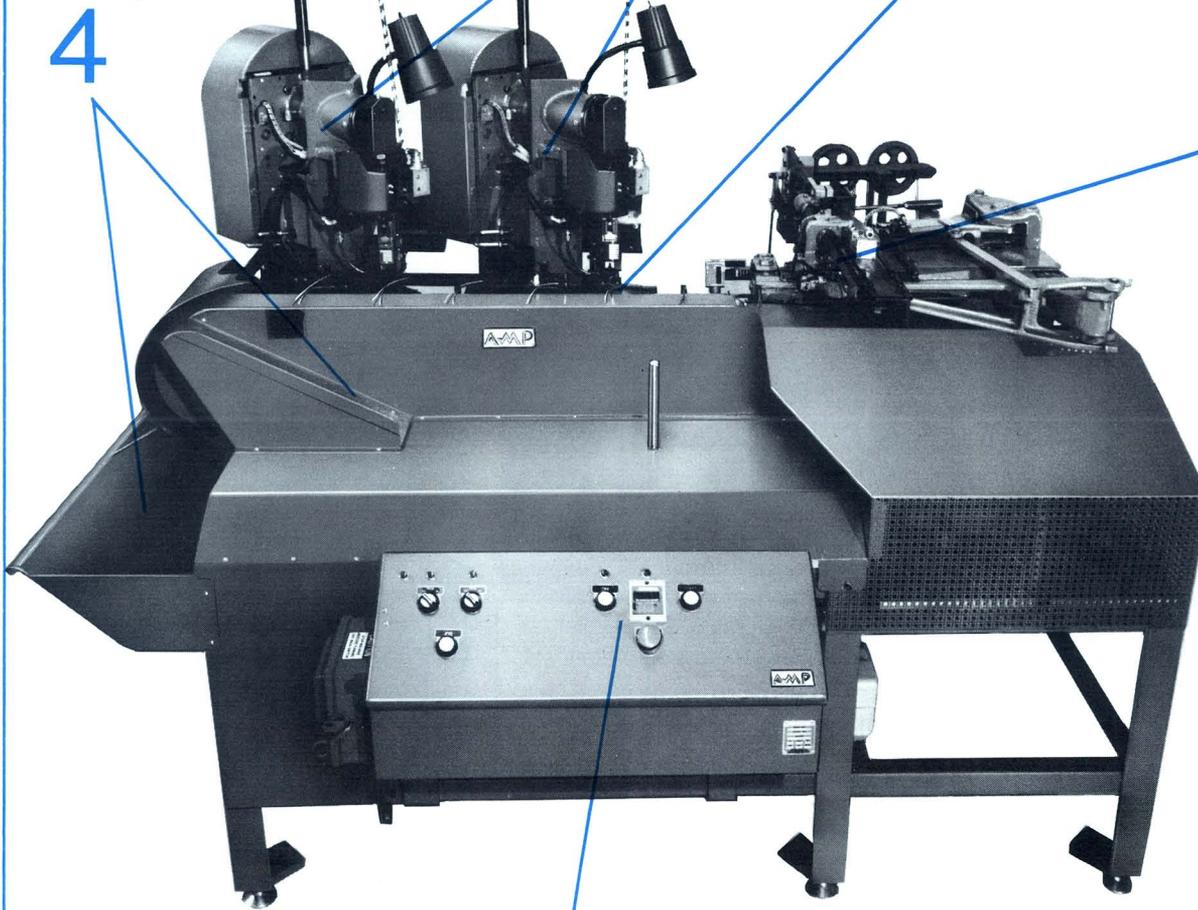
Operating Sequence for Dual-Wire Processing

The single end terminated leads are ejected into one of two integral stacking trays for convenience in handling. Leads 15" or less are stacked in the side tray and leads over 15" are stacked in the front tray.

3 Here, terminals in strip form and stored on conventional supply reels are continuously fed to two side-feed or end-feed miniature applicators. These quick change applicators, each driven by an AMP "T" press that receives operating signals from the wire stripping unit, apply terminals of almost any open-barrel type to one end of the leads.

2 The two leads are then automatically carried by a multi-station conveyor to the machine's terminating section.

1 Two wires are simultaneously dereeled, measured, cut and stripped by the Artos CS-6 Wire Stripper. Predetermined lead lengths may range from 3" to 194". Strip lengths are adjustable from 1/8" to 1 1/2".



The controls for operating the Dual-Wire, Single End Lead Machine are conveniently located on the Operator's Control Panel. Included is an electrical counter which can be preset to automatically stop machine operation after a desired quantity of finished leads are produced.

SPECIFICATIONS

PRODUCTION CAPACITY:

lead lengths	leads/hr.
3 - 15"	6000
15 - 31"	3000
31 - 48"	2000
48 - 64"	1500
64 - 97"	1000
97 - 194"	500

DIMENSIONS: Length, 78"; width, 48" (plus dereeler)

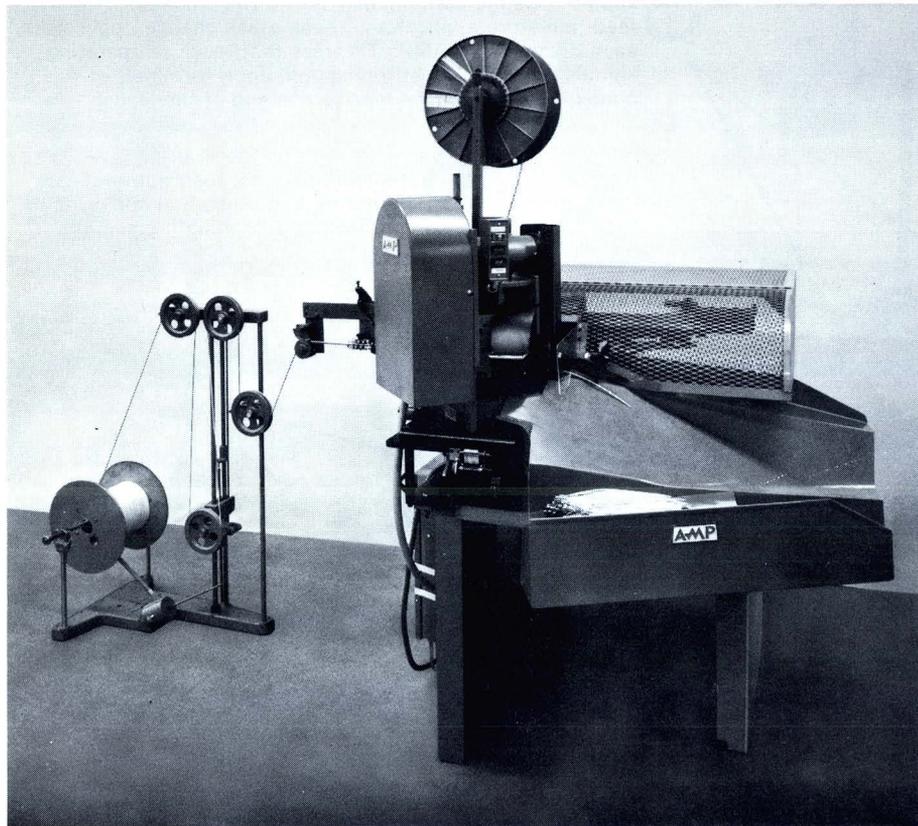
WEIGHT: Approximately 1500 lbs.

POWER REQUIREMENTS: 240 volts ac, 60 hz, 3-phase 12 amps

AIR SUPPLY: 80-110 psi

CYCLE SPEED: 50-53 cycles per minute

NOTE: Wire having an insulation material other than PVC should be submitted for an evaluation of its dual-wire processing capability.



A rewarding example of AMP's continuing efforts to reduce costs by increasing speed and efficiency in wire lead production is the AMP-O-MATIC Mini-SELM. Specifically designed for adaptation to an Artos CS-6 Wire Stripper that will measure, cut and strip wire, this terminating machine offers a fully automated, conveyORIZED wire processing technique that will not only add the production capacity of several wire processing and terminating machines to your current facilities, but will do it in a fraction of the floor space and without the expense of additional personnel.

During each operating cycle of the Artos CS-6 Wire Stripper, the Mini-SELM makes a termination, producing single end terminated leads at rates up to 3000 per hour—a production rate equal to 2 operator hours on conventional hand-fed bench machines. The entire lead making process, from unreeling wire to conveniently

stacking finished leads for easy handling is performed completely automatically.

In addition to speed, this volume production machine offers maximum production flexibility and efficiency. It will accommodate most standard wire and can produce finished leads in a wide choice of lengths . . . from 6 inches to 194 inches. Also, through the use of existing AMP quick-change miniature applicators, it will accept a variety of styles and sizes of strip-fed terminals. The fact that lead length and wire size changeovers are accomplished with a minimum of production "down-time" further increases its speed and efficiency.

The exceptional design and operating features of the AMP-O-MATIC Mini-SELM are all built-in factors which make it another outstanding example of the AMPECONOMATION Program—Your Automated Savings Plan.

AMP-O-MATIC Mini-Single End Lead Machine (Mini-SELM)

Features

- Wire stripping equipment supplied or uses existing wire stripping equipment for low installed costs. (Attached to your CS-6 at your facility within 8 hours)
- Uses existing quick-change applicators to accept wide range of terminals and to provide for rapid changeover of terminal types
- Handles # 22-10 AWG stranded or solid wire with various insulations
- Wide range of lead lengths—6" to 194"
- Lead length changeover is accomplished in a matter of seconds
- Produces up to 3000 single end terminated leads "per hour" with consistent, high-quality terminations
- Easy maintenance, long-life tooling
- Entire lead making process is fully automated

Note: All dimensions in inches

Specifications subject to change. Consult AMP Incorporated for latest design specifications.

Specifications

Production Capacity

Wire Handling Capability

Installation

Lead Lengths	Leads/Hr.
6-15"	3000
15-31"	1500
31-48"	1000
48-64"	750
64-97"	500
97-194"	250

Dimensions:
36" high x 12½" wide x 18" deep
(plus Artos CS-6 and dereeler)

Weight:
278 lb. (less applicator)

Conductor Size:
10 through 22 AWG stranded
12 through 22 AWG solid or
fuse stranded
24 or 26 AWG with AMP
Engineering approval

Power Requirements:
230 volts, single phase, 60 Hz
(With the addition of accessory
equipment the power require-
ments can be changed to 460
volts, single phase, 60Hz.)

Insulation Type*:
Any insulation that can be
stripped successfully by the
Artos CS-6 machine.

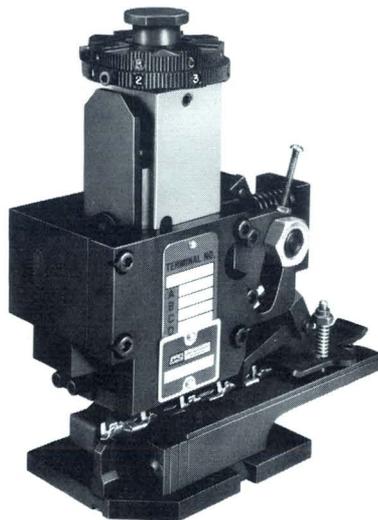
Insulation Size: Minimum O.D. limited by commercial wire practice only.

Maximum O.D. limited by terminal type as:

- with insulation support
- (a) End feed type - max. O.D. .275"
- (b) Side feed type - max. O.D. .200"
- without insulation support
- (a) All terminal types - max. O.D. .325"

*Note: Wire having an insulation material other than PVC should be submitted for an evaluation of its processing capability.

Quick-change miniature applicators for efficient, flexible operation



These applicators can be changed in minutes and have dial-type settings to facilitate wire and terminal changeovers with no major interruptions in production. All adjustments are made quickly and accurately. Crimping heights on both terminal barrel and insulation support for any given wire size are simply "dialed in."

Installation

The Wire Transfer Mechanism is installed by an AMP Service Engineer. A requirement, prior to delivery of the Mini-SELM, is that the Artos CS-6 machine is inspected by the Service Engineer to ascertain the suitability of the machine and its mounting plate. Only minor modifications are required to the CS-6, and it is a simple matter to reconvert the machine to its original state.

Synchronization of the CS-6 and Mini-SELM is achieved through a 2:1 belt drive and a 5:1 gearbox, together with interlocking striker on the Artos stripper slide. Compactness of design offers substantial economy in floor space—only 2½ sq. ft. more than that taken by the Artos CS-6. The Artos CS-6 must be mounted on Artos machine stand AF36073, Artos wire straightner AF51 is required.

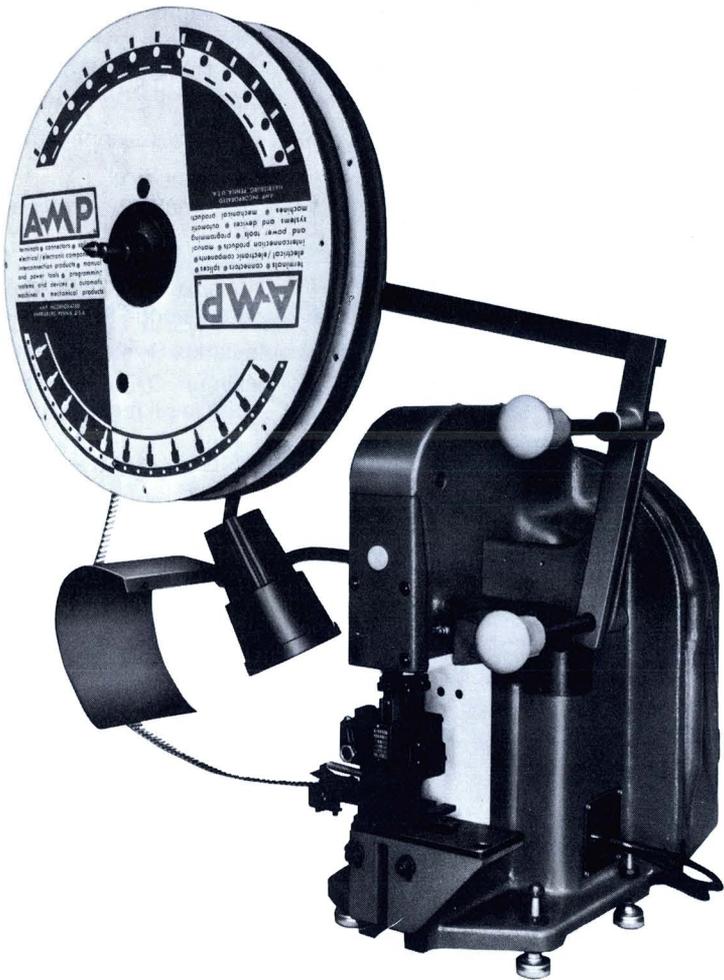
AMP-O-LECTRIC Automatic Machine with Miniature Applicator

Features:

- Can be foot pedal actuated or, if required, by electronic sensing device.
- Fast cycling time-machine operates as fast as operator can insert wire.
- Up to 4000 uniform, top quality terminations per hour.
- Easy maintenance, minimum servicing.
- Installs a variety of reel-stored, open- and closed-barrel A-MP products on a wide range of wire sizes.
- Quick-change tooling permits rapid changeover of terminal types.
- Bench-mounted, operates on standard 110-volt ac, 60 hz factory power.
- Simplicity of design—minimum moving parts plus wholly automatic crimping cycle assure ease of operation and virtually eliminate human error.

Industries and Applications

Because of its ability to economically and efficiently handle a variety of AMP products and wire sizes, this machine meets the production requirements of a wide range of industrial categories, including Computer, Business Machine, Automotive, Appliance, Radio/Television and Harness Makers.



The AMP-O-LECTRIC Automatic Machine is an electrically powered machine especially designed to be used with an AMP Miniature Applicator. This easily moved bench-mounted machine is operated on standard 110-volt ac, single-phase, 60 hz factory power and can be cycled by use of a foot pedal or — if required — by an electronic sensing device. This device is automatically actuated when the operator inserts a stripped wire into the machine. This machine operates as fast as the operator can insert the wire.

Through the use of "quick change" tooling, this versatile, easy-to-operate machine is capable of installing a variety of reel-stored, open or closed-barrel AMP products on a wide range of wire sizes. This feature combined with a fast cycling time plus matching dies that fully bottom during each cycle afford the customer maximum reliability and efficiency. Uniform, top quality connections are produced by this reliable AMP machine at rates up to 4000 per hour.

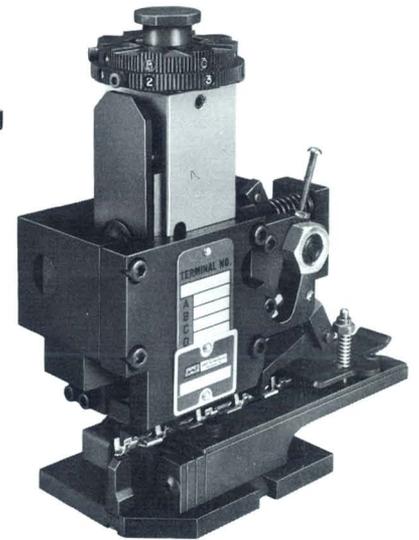
AMP Miniature Applicator

Features:

- Used in a complete family of AMP machines, including standard AMP-O-LECTRIC machine, Dual Wire Single End Lead machine, Hermetic Lead machine and AMP-OMATOR machine.
- Small, compact unit — weighs only 10 lbs.
- “Quick-change” design affords maximum flexibility and minimum production downtime.
- Adjustment for both terminal barrel and insulation support crimping height is simply “dialed in”.
- All adjustments made while applicator remains in the machine.
- Can be designed to terminate one wire or two wires simultaneously.



SIDE



END



TABLOK FLAG

Weighing a mere 10 pounds, the Miniature Applicator is a compact, versatile applicator designed for use in a complete family of AMP machines. It can be installed in the standard AMP-O-LECTRIC Terminating Machine, the Dual Wire Single End Lead Machine, the Hermetic Lead Machine and the AMPOMATOR Automatic Lead Making Machine. It can also be used with a “T” Press that is installed on Artos CS-9AT equipment. This versatile applicator can be designed as a single applicator or as a dual applicator for terminating two wires simultaneously.

Featuring “quick change” design, the Miniature Applicator can be changed in a matter of minutes to afford maximum flexibility and minimum production downtime. Crimping height on both terminal barrel and insulation support barrel for a given wire size is simply “dialed in”. Since all adjustments are made with the applicator in the machine, there is no major interruption in production.

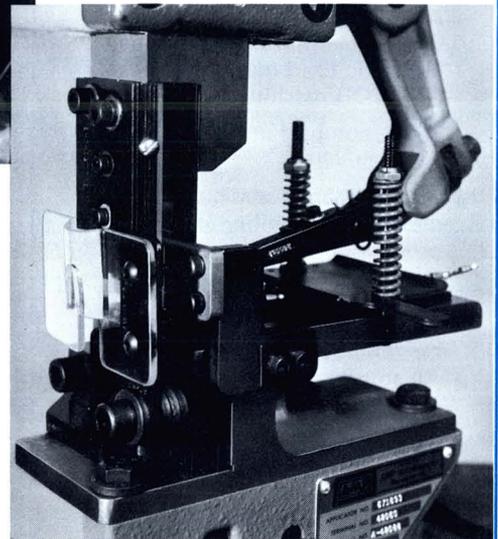
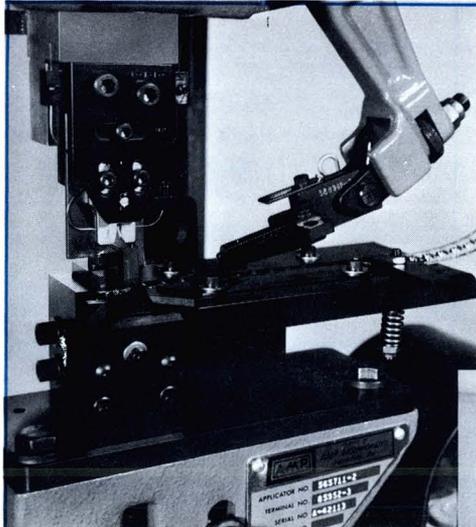
Standard Applicators for AMP-O-LECTRIC Terminating Machines

Features

- Applicator designs available for a large variety of terminals.
- Versatility in design readily adaptable to special application requirements.
- Provides large target area for open barrel terminals. Side feed applicator facilitates wire placement in closed barrel products.
- Ease of operation plus mechanical crimp terminations eliminate human error and heat damage inherent with thermal methods.
- Production rates of up to 4000 finished terminations per hour.
- Sturdy design and construction minimizes maintenance.
- Variety of applicators can be set up in a single machine by trained personnel.

Industries And Applications

Standard applicators are ideally suited for use by OEM's of long run, moderate volume applications in all areas of industry that use electrical terminations.



These standard applicators are used only in bench mounted AMP-O-LECTRIC terminating machines. Each applicator is specifically designed to apply a group of related strip form terminals. Due to their versatility, many special applications are readily adaptable to these applicators. They are capable of applying a variety of rings, spades, FASTON receptacles and tabs, contacts, splices, I.D. bands, pins, sockets and other special terminals on either end feed or side feed strips. Open barrel terminals provide a larger target area to place the wire in for crimping than closed barrel terminals. Nevertheless, the standard side feed applicator facilitates wire placement in PIDG and PLASTI-GRIP products and similar closed barrel products. During each machine cycle, the operator simply positions the pre-cut and stripped wires and actuates a foot pedal.

Matching dies fully bottom to produce uniform, reliable terminations. These easily movable, bench mounted machines offer up to 4000 terminations per hour.

Applicator maintenance is minimized through sturdy design and construction of component parts. Set-up procedures are quickly learned by customer personnel. The applicator can be readily removed from its machine and replaced by a variety of others to meet necessary changes in application requirements.

AMP-O-MATIC Stripper/Crimper Machine (for Open Barrel, Side-Feed Strip Terminals)

Features:

- Automatically strips wire and applies an open-barrel, side-feed strip terminal in a single operation.
- Strips wire range of non-metallic insulated wire sizes-#16-26 AWG.
- Strips and crimps jacketed cable assemblies and harness assemblies.
- Bench-mounted, electro-pneumatically operated.
- Produces up to 1500 terminations per hour.

Industries and Applications

Potential users of the AMP-O-MATIC Stripper/Crimper are in the Computer, Data Processing, Industrial Controls and Ground Military industries. Its two major areas of application involve the stripping and crimping of jacketed cable assemblies and harness assemblies, neither of which can be pre-stripped.



The AMP-O-MATIC Stripper/Crimper Machine is an electro-pneumatic machine consisting of a slightly modified AMP-O-ELECTRIC Press and an almost "standard" side-fed Miniature Applicator. Designed to accommodate wire employing non-metallic insulations, this machine strips wire in the #16 - 26 AWG ranges and terminates the wire with strip-fed, open-barrel terminals. In a single operation, the wire is located then automatically gripped, stripped and terminated.

A unique feature of this machine is its ability to strip and crimp jacketed cable assemblies and harness assemblies. It also provides maximum flexibility by crimping all open-barrel, side-feed terminals as well as stripping a wide range of non-metallic insulated wire sizes - #16 - 26 AWG. Wire lead breakout, too, can be as short as one inch. This machine is capable of producing up to 1500 terminations an hour.

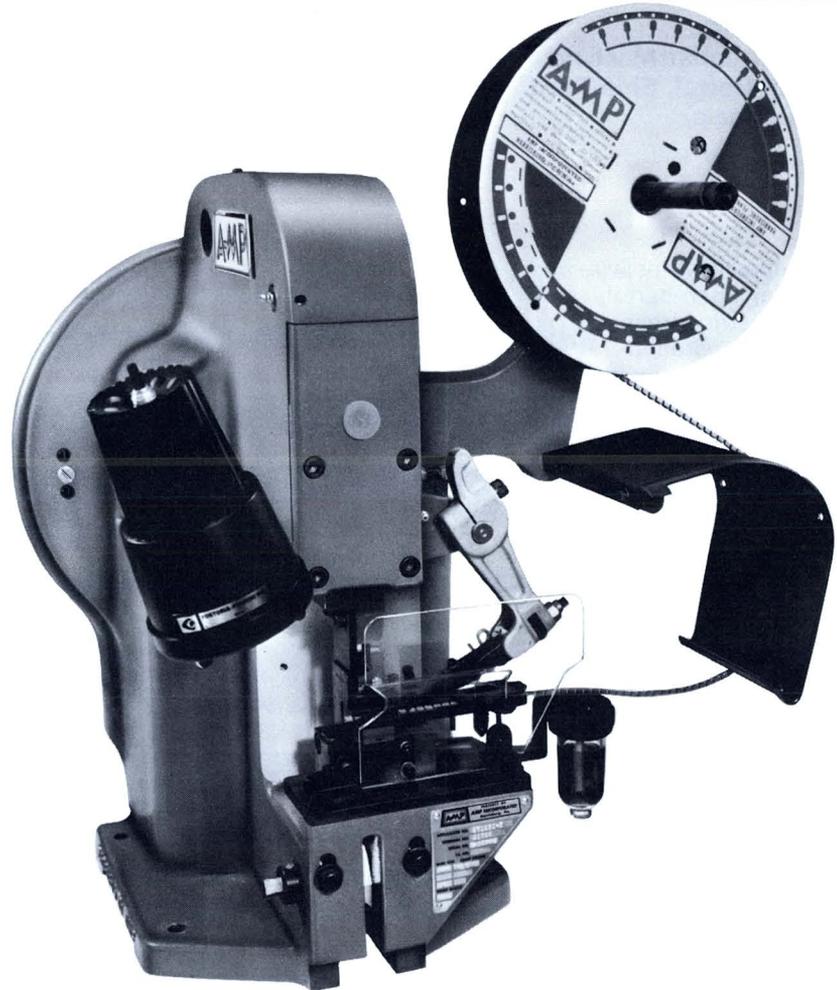
The AMP-O-LECTRIC Terminating Machine (For AMPLIVAR Terminals and Splices)

Features:

- Terminates copper or aluminum magnet wire combinations and magnet and stranded wire combinations.
- Multiple-ring stripping process eliminates the need for pre-stripping magnet wires.
- Makes "Thru" and "Pigtail" type splices. Automatically trims excess wire of the Pigtail type.
- Ease of operation plus mechanical crimp terminations eliminate human error and heat damage inherent with thermal methods.
- Production rates of up to 2500 finished splices per hour.

Industries and Applications

The capabilities of this machine in terminating and splicing magnet wire make it ideally suited for use by the manufacturers of small motors, transformers and coils.



This AMP-O-LECTRIC Terminating Machine is an electrically powered machine specifically designed to apply strip form AMPLIVAR terminals and splices to magnet wire or to magnet and stranded wire combinations without a need for pre-stripping the magnet wires. During each machine cycle, the operator positions the wires and actuates a foot pedal. (Magnet wires must be placed in the bottom of the barrel, then stranded wire on top to obtain proper multiple-ring stripping action on magnet wires.) Matching dies fully bottom to produce uniform, reliable connections. This easily movable, bench mounted machine offers up to 2500 terminations per hour.

Maximum versatility is achieved through the machine's ability to handle copper or aluminum magnet wire combinations and magnet and stranded wire combinations. Additional capabilities include the making of "Thru" and "Pigtail" type splices as well as the trimming of excess wire of the "Pigtail" splices. Also, since the machine automatically multiple-ring strips magnet wire of its coating during the crimping process, pre-stripping enamel, polyvinyl acetal or similar magnet wire insulations is not required. The reduction of human error through minimum operator involvement and the elimination of heat damage caused by welding or soldering techniques also contribute to the efficient and economical production of magnet wire terminations.

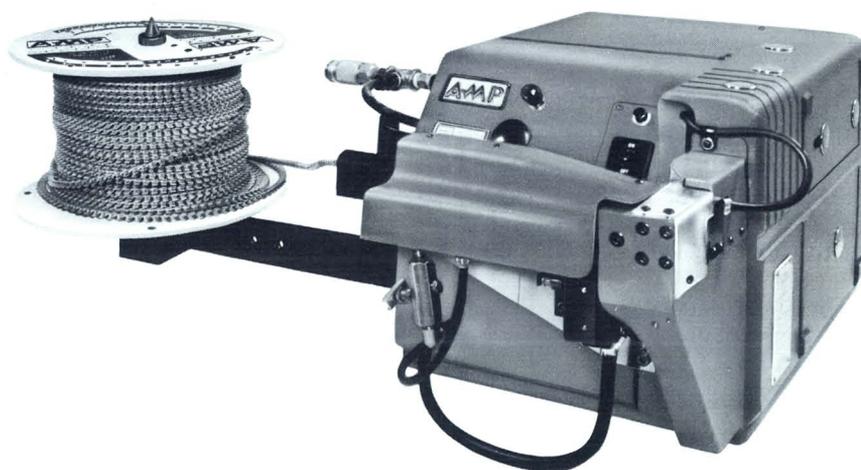
The Horizontal Automatic Splicing Machine (For AMPLIVAR Splices)

Features:

- Automatically applies "Pigtail" type splices to magnet wires and magnet and stranded wire combinations.
- Multiple-ring stripping process eliminates the need for pre-stripping magnet wires.
- Excess wire is automatically trimmed.
- Unique design permits splicing of very short leads.
- Adapts to wire stuffing device for splicing varied wire CMAs.
- Minimum operator involvement plus mechanical crimp terminations eliminate human error and heat damage inherent with thermal methods.
- High production rates limited only by operator dexterity.

Industries and Applications

Manufacturers of fractional horsepower motors, transformers, coils, rectifiers, and similar electrical components employing magnet wire find this machine ideally suited for their production needs.



The Horizontal Automatic Splicing Machine is designed to apply strip form AMPLIVAR "Pigtail" type splices to magnet wire or to magnet and stranded wire combinations without a need for pre-stripping the magnet wire. This compact, bench mounted machine is foot operated, air and electrically powered, and is specifically designed so that electrical components can be held close to the crimping area during the splicing operation. This facilitates the splicing of very short leads. The splicing machine can also be used with a Wire Stuffer Assembly. The purpose of this mechanism is to eliminate the need for changing the crimp height when the combined CMA of the wires to be crimped varies from one operation to another. To increase the CMA, a stuffer wire is automatically inserted into the AMPLIVAR splice by actuating of a foot switch prior to the crimping operation.

The high production rates of the machine — limited only by operator dexterity — and its ability to handle unstripped magnet wire assure the lowest possible applied cost. During a crimping operation, the machine also automatically trims excess wire. The operator merely positions the wires in the machine and actuates a foot pedal. Minimum operator involvement plus the elimination of cold solder joints, weld burns and wire embrittlement which frequently occur with thermal methods provide assurance for consistently high quality splices.

AMP-TAPETRONIC
All Electric
Machine
(Bench Mounted)
Model 69875

Features:

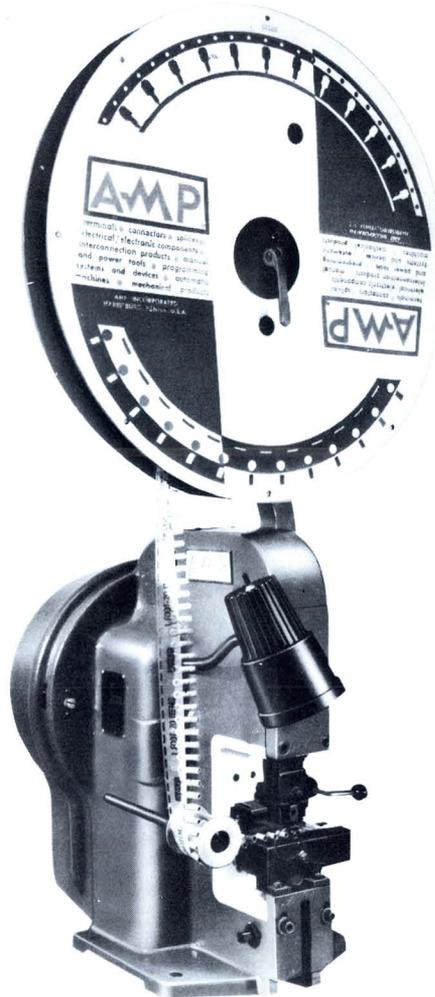
- Automatically applies a tape mounted terminal or splice during each operating cycle.
- Terminates broad range of AMP tape mounted products, including PIDG, PLASTI-GRIP, DIAMOND GRIP, STRATO-THERM, and SOLISTRAND terminals and splices as well as Type I and II pins and sockets.
- Handles #28 - 10 AWG wire and all insulation types, including Poly X and Kapton insulations.
- Production rates can be up to 1000 terminations per hour.

SPECIFICATIONS

Wire Size	#26-8 AWG (Solid or Stranded).
Application Dies . . .	Quick change dies for multi-product application.
Application Rates . .	1,800-2,000 per hour.
Weight	240 lbs.
Reel Capacity	5,000 terminals (snap-on reel for quick change over).*
Power Requirements	110 volts.

Industries and Applications

Because of its versatile stripping and terminating capabilities, this machine finds wide application in such diversified industries as Airframe and Avionics, Communications, Computer and Peripheral Equipment, Automotive, Appliance, and Missile and Space.



The AMP-TAPETRONIC All Electric Terminating Machine is the industry's most advanced applicator for terminating prestripped leads and harnesses. Actuated by a MICRO-SWITCH** foot pedal or an automatic electronic switch located in the crimping area, this machine offers fool-proof terminations of tape mounted products at rates up to 2,000 terminations per hour.

This all-electric machine is designed to terminate a wide range of AMP terminals and connector contacts. In operation it is quiet, has an open throat for easy loading, provides excellent visibility for operator to properly locate the lead for termination, feeds from left to right, automatically ejects the terminals from the tape and "kicks" the terminated lead away from the applicator . . . all this adds to the increased production rates and minimizes operator fatigue.

**Trademark of Honeywell Incorporated

*Reels containing 10,000 terminals are available (26-22 AWG)

AMP-TAPEMATIC Pneumatic Tooling

SPECIFICATIONS

Wire Size	#26-10 AWG (solid or stranded).
Application Dies . . .	Interchangeable dies for fast terminal change- over.
Application Rates	Up to 1,800 per hour.
Dimensions	5" wide x 14" high x 12" deep.
Weight	35 lbs.
Reel Capacity	2,500 terminals (#26-14 wire range) 1,500 terminals (#12-10 or #16-14 HD wire range)
Box Capacity*	1,000 terminals (#22-16 wire range) 500 terminals (#12-10 or #16-14 HD wire range)

Power Requirement 115 VAC, 60 Hz.
Air Source 80-90 psi.

*For box packaging, a box holder, no. 305671, is required and must be purchased separately.



The AMP-TAPEMATIC machine, no. 68075, is designed to terminate a variety of tape-mounted pre-insulated and uninsulated products to pre-stripped solid or stranded wire. It offers a day-in and day-out production of top quality terminations at rates up to 1,800 an hour. The unit itself is extremely compact, completely portable . . . and takes up very little bench space. Only 5" wide x 14" high x 12" deep and weighing a mere 35 lbs., it can be easily transported from one location to another.

This versatile AMP machine also has many built-in features to assure optimum production efficiency and reliability. Included are: simplicity of design for easy operation and

long trouble-free service; interchangeable crimping dies for fast terminal changeovers with minimum downtime; a choice of using either reel-stored or boxed terminals; an elevated front-end for excellent visibility of the crimping area; and a single-lever tape release which facilitates tape loading and unloading and serves as a safety interlock. Also, during each crimping cycle the machine automatically breaks the tape bonds and frees the crimped product for easy extraction.

These machine features, coupled with the wide selection of available tape-mounted products, assure tailored production with the highest degree of reliability at the lowest possible installed cost.

The AMP-TAPETRONIC Stripper/Crimper Machine (for Screw Machined Contacts)

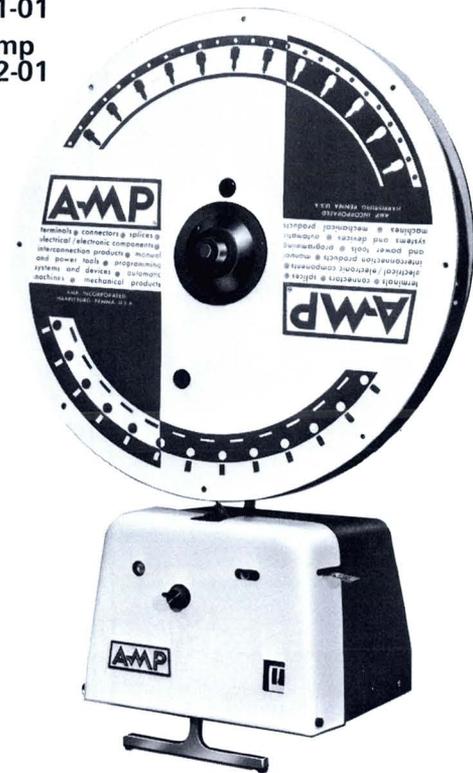
Features:

- Automatically strips wire and crimps a contact to the wire in one simple, two-step operation.
- Terminates screw machined contacts to solid or stranded wire with either an eight-indent crimp configuration per MIL-C-22520/1-01 or MIL-C-22520/2-01.
- Handles wire size range of #28-16 AWG for contact sizes #22, 20, 16.
- Uses only one stripping head and one crimping head for the full range of wire and insulation diameters and contact sizes.
- Easy to operate, portable. Operates on standard 110-volt ac factory power.
- Up to 1200 finished terminations per hour.

Industries and Applications

This machine finds wide application in most any industry using the 4/8 indent type crimp on products such as Terminal Junction Systems and ARINC type and circular connectors. These industries include Aircraft, Avionics, Power Supply Transformer and many others.

Machine # 599406-5 with crimp
per MIL-C-22520/1-01
#599406-6 with crimp
per MIL-C-22520/2-01



The ability of the AMP-TAPETRONIC Stripper/Crimper Machine to automatically strip wire and crimp a contact to the wire in a simple, two-step operation — at the same station — virtually makes it a production line in itself. This machine is designed to substantially increase production rates for terminating screw machined contacts to unstripped solid or stranded wire with an eight indent crimp configuration conforming to MIL-C-22520/1-01 or MIL-C-22520/2-01. These tape-mounted and reel-stored contacts are automatically fed into the electrically powered machine during the crimping operation.

High among the many features of this lightweight, compact machine is its simplicity of design. This feature not only assures long, trouble-free service, but also offers an easy-to-operate machine that spares the added expense of extensive operator training.

Consequently, the machine's full production capability of stripping and terminating up to 1200 wires per hour can be realized almost immediately after initial installation.

Also, only one stripping head and one crimping head are used to handle the full range of wire and insulation diameters and contact sizes. Access to the crimping head is easily achieved through the flip-open front cover. Adjustments for contact feed position, wire strip length and depth, along with crimp position and height, are all made rapidly with no major interruptions in production.

No extra tools are required to adjust the wire stripper for the various wire sizes and types. A simple knob rotation for the insulation and a dial adjustment for the crimp settings are all that is required.

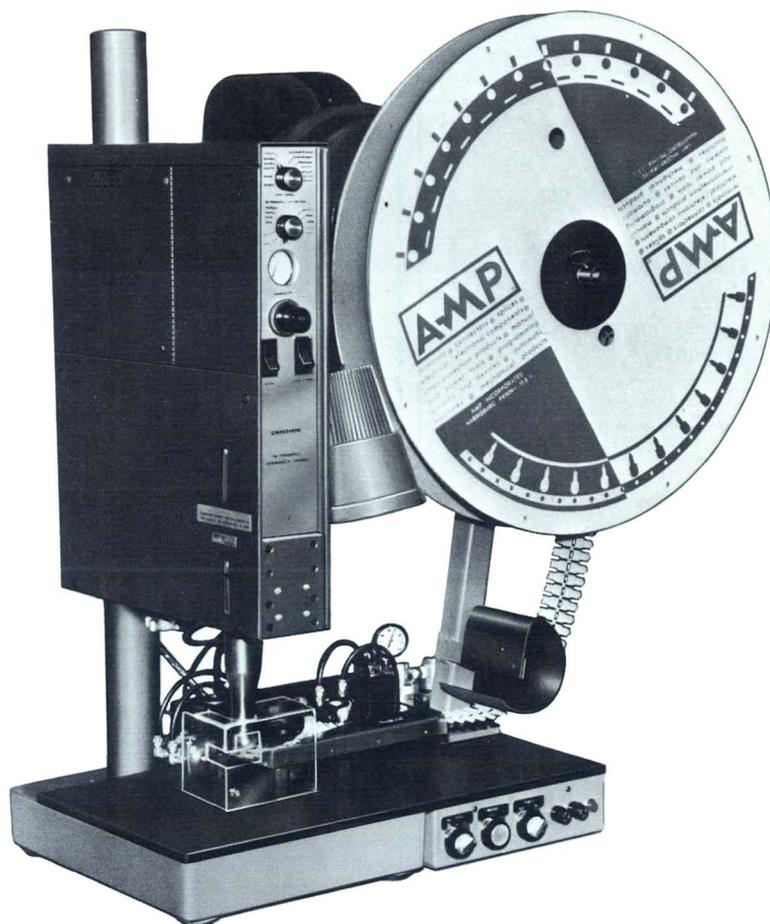
AMP Post Insulation POD Welding Machine

Features

- High speed. Produces up to 2000 insulated leads per hour.
- Low applied cost.
- Safe.
- No special operator skill required.
- Instant start-up and shut-down.
- Easy maintenance, long tool life.

Industries and Applications

Having broad application, the Post Insulation POD Welding Machine is ideally suited for harness makers, appliance manufacturers, business machine manufacturers and the radio — T.V. industry.



The Post Insulation POD Welding Machine is a bench type semi-automatic machine specially designed to apply an insulator pod to an already terminated lead. During operation, the insulator pod in continuous strip form is automatically fed to a welding station where an operator inserts a terminated lead. The two halves of the insulator pod are then folded over the terminated lead and sealed by an ultrasonic welding process. Production rates of this machine can be as high as 2000 per hr.

The machine is compact, portable and capable of high speed finished insulated lead production at the lowest possible applied cost. No special operator skill or technique is required. For maximum flexibility, the machine can be converted to apply a variety of different size pods. Due to the absence of hot parts normally associated with insulation molding equipment, this machine is very safe. It operates on standard 115 volt power supply and is designed for easy maintenance. Pre-production warm-up of the equipment or a cool-down period at the end of the day is not required. The machine is ready for production as soon as the switch is turned on.

MULTI-HEAD PRINTED CIRCUIT BOARD INSERTION MACHINE

Features:

- Up to 4000 cycles per hr.
- Handles 13"x16" pc boards from .062" to .125" thick.
- Pneumatically operated. Desk-top working height.



The Multi-Head Insertion Machine is a stand-mounted unit equipped with a movable work table with an adjustable position stylus and a conveniently located control panel and has the ability to accept 1, 2 or 3 presses and miniature inserter applicators. The stylus is template controlled and requires two-hand operation for operator safety. The machine will accept a variety of strip-fed reel-stored AMP pc board posts,

receptacles, pins, tabs, etc. When the machine is operated as a dual-head it will accept pc boards up to 13" x 16", and as a triple head, will accept boards up to 13" x 8". The template designed for each application prevents the operator from inserting into an incorrect hole or attempting to insert where there is no hole, thus eliminating damaged pc boards.

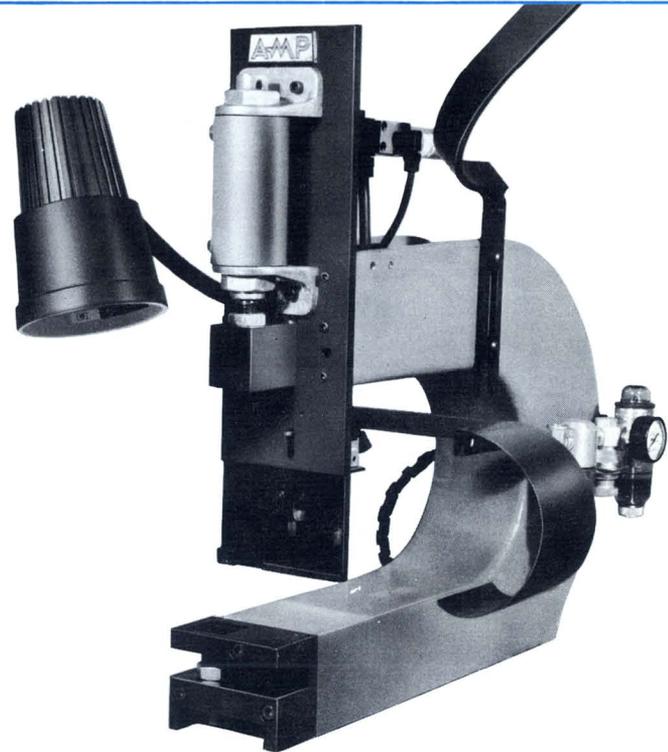
Printed Circuit Board Insertion Machine

Features:

- Simplicity of design. Automatic one-stroke action shears and inserts posts and receptacles into module card.
- Accommodates a wide variety of AMPMODU Mod. I and Mod. II posts and receptacles.
- Stakes up to 2000 posts or receptacles per hour.
- Designed for ease of operation and long, trouble-free service.
- 12" deep throat press accepts large size boards.

Industries and Applications

The Printed Circuit Board Insertion Machine finds wide application throughout many industries — from military "black boxes," computers and data processing systems to radio, television and high-fidelity equipment.

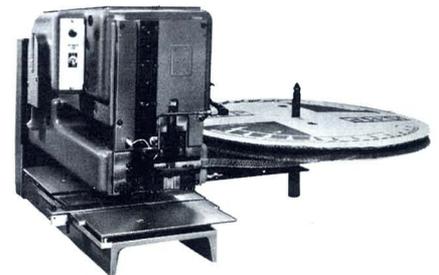


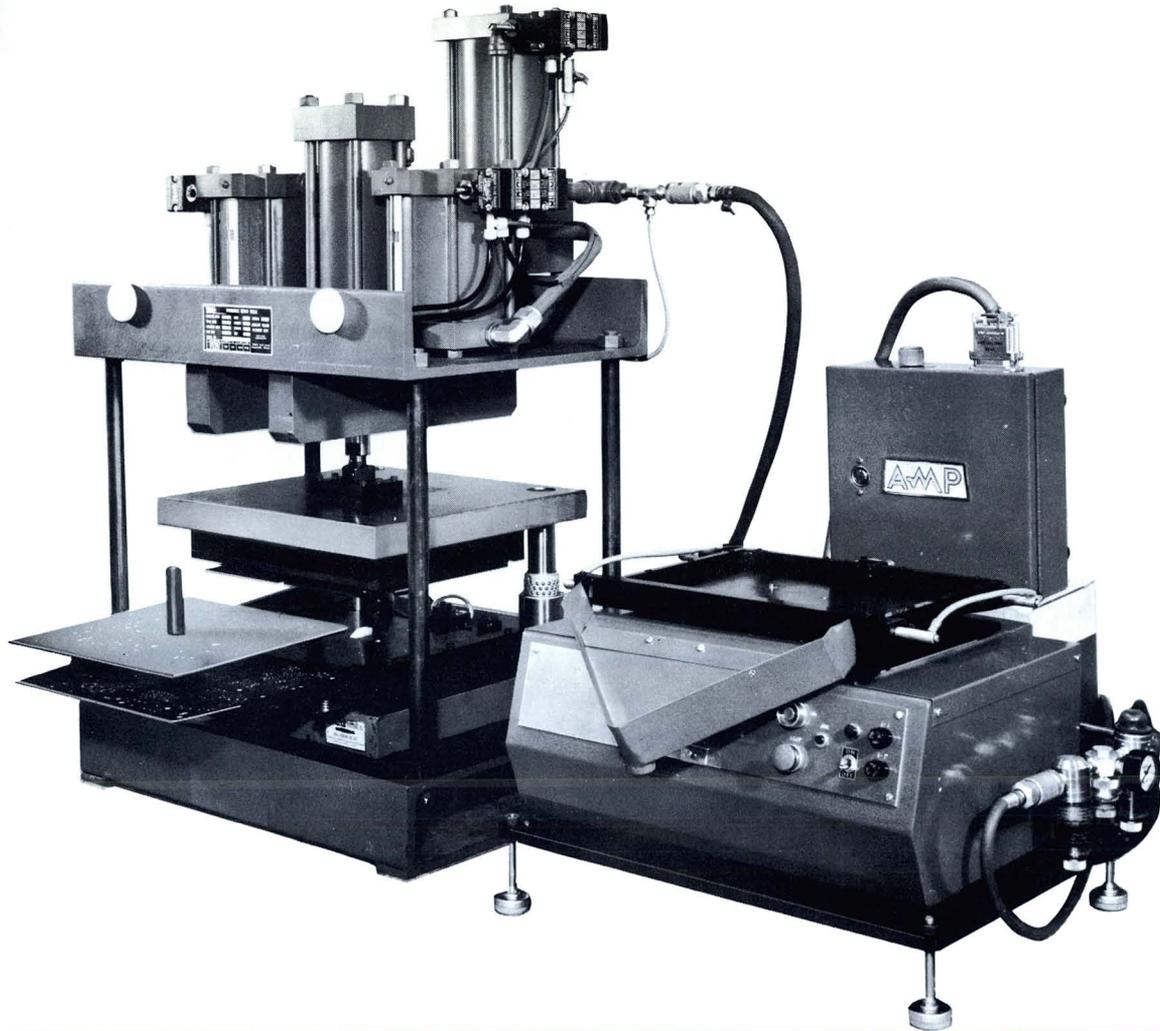
An outstanding feature of this light-weight, quiet machine is its simplicity of design. A simple one-stroke action of the machine shears and inserts each post, receptacle, etc. This feature not only assures long, trouble-free service, but also offers a machine that is easy

to operate as well as maintain. The 12" deep throat 'U' press allows the machine to accommodate large pc boards. Its ability to accept a variety of quick-change inserter applicators allows fast production requirement changes.

MINIATURE INSERTER APPLICATOR

Miniature inserter applicators, when combined with Model 'U' air press, provide a reliable, low cost method of inserting a variety of AMP pc board posts, receptacles, pins, tabs, etc. into pc boards. This air driven machine consists of a deep throat model 'U' press with fixed lower tooling and relatively simple upper tooling. During a machine cycle, one stroke of the upper tooling shears the part to be inserted from the carrier strip, inserts it into the pc board and clinches the part on the back side of the board, when required. This is a bench type machine that requires the operator to position the pc board over the lower tooling and depress a foot pedal to complete one cycle of the machine.





AMP-O-MATIC Fillet Insertion Machine

Features:

- "Mass loads" up to 800 loose piece A-MP fillets in less than 60 seconds.
- Production rates completely unaffected by board size or hole pattern.
- Accepts board sizes up to 12" x 14".
- Simple two-step vibration and multiple-punch method requires minimum operator involvement.
- Job changeovers accomplished quickly and easily.
- Adapts to board layout standardization-varied circuit arrangements accommodated with minimum tooling preparation costs.

Industries and Applications

This machine has application in virtually any industry which requires the assembling of electronic components to pc boards.

This bench-mounted machine is designed to "mass load" AMP's conical-shaped fillets into pc boards and is comprised of three major functional units; a template, vibrator and press. The template, containing holes patterned identically to those of the pc board to be loaded, is placed in the vibrator. With a designated amount of fillets spread over the template, the vibrator is actuated causing each template hole to be loaded with a fillet. After completion of the vibration cycle requiring 15 seconds, the vibrator automatically tilts the template and removes all excess fillets. The operator then places the template and the pc board into the hydraulically operated press which contains punch pins that are also arranged in the same pattern as the template and board holes. Actuation of the press causes these pins to drive the loosely retained fillets through the template and into the board holes. This phase of the operation takes about 20 seconds.

A unique feature of the Fillet Insertion Machine is that its production capacity of loading up to 800 fillets in a board in less than 60 seconds is unaffected by board size or the specific hole pattern. This is a direct result of simultaneously loading fillets using the vibration and multiple-punch method. Also, the use of this machine with its "mass loading" technique is particularly advantageous where a standard board layout can be used for varied circuit arrangements. By simply removing or adding punch pins, job changeovers are readily achieved to accommodate such variations in the pc board circuitry. Too, a standard template and punch plate could be used allowing tooling preparation costs to be held to a minimum.

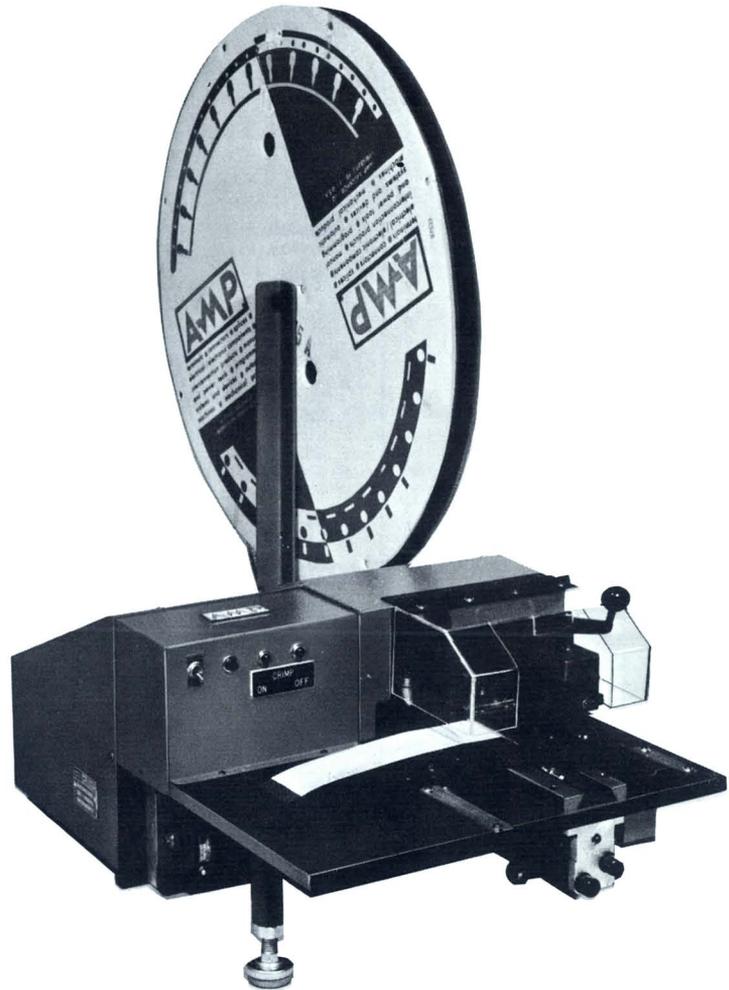
AMP-O-MATIC Flexible Flat Cable Terminating Machine

Features:

- Automatically terminates flexible flat cable using insulation displacement technique.
- Insulation displacement technique eliminates special cable preparation and assures excellent electrical and mechanical connections.
- Accommodates pins, receptacles and solder tines.
- Minor adjustment permits rapid changeover of contact styles.
- Terminates reel-fed contacts at a rate of two terminations per second.

Industries and Applications

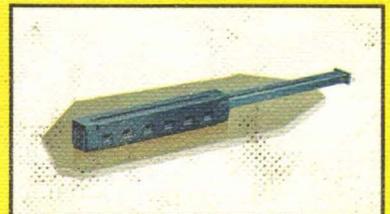
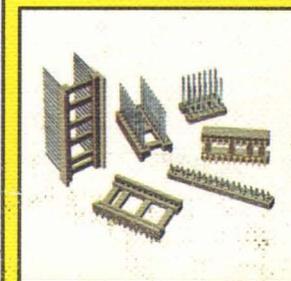
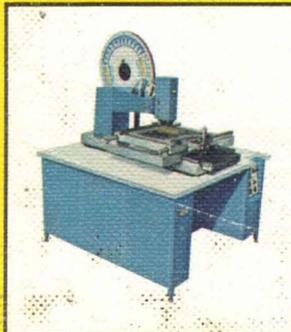
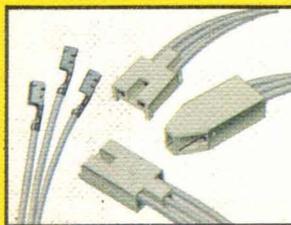
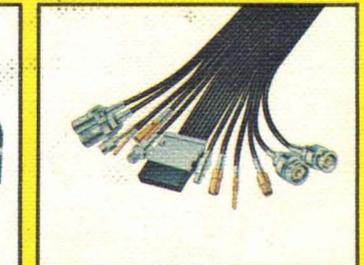
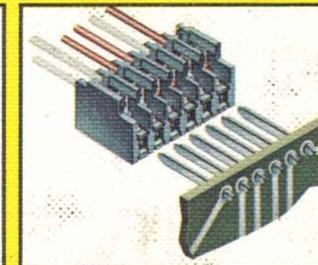
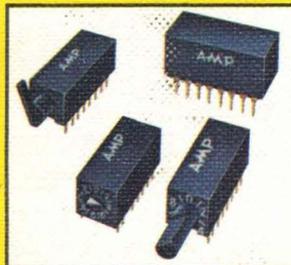
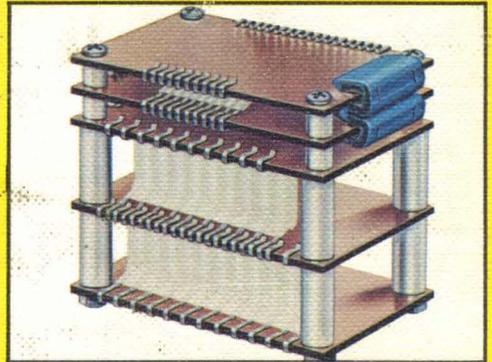
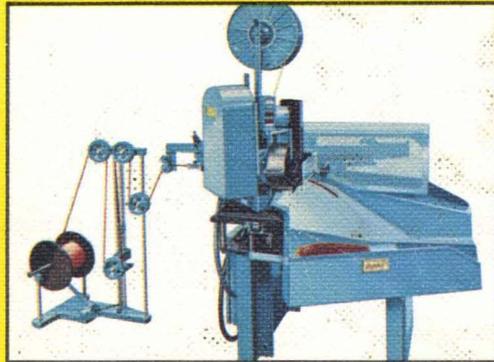
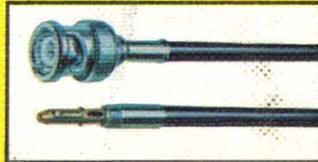
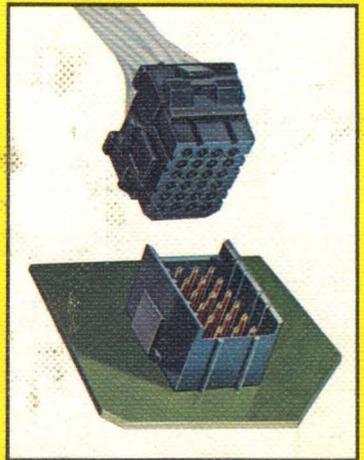
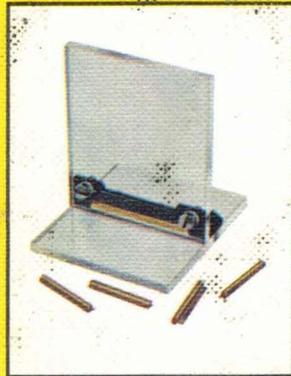
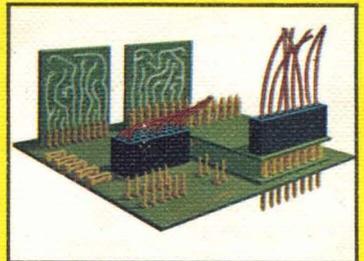
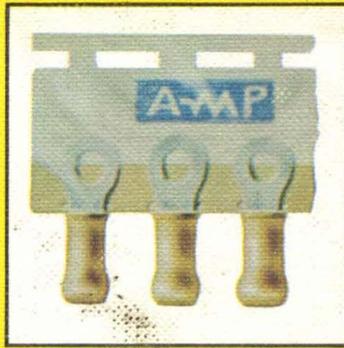
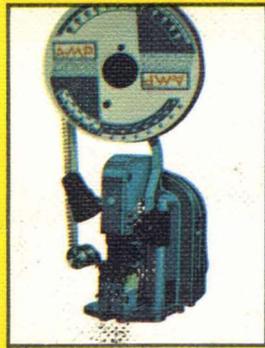
The Flexible Flat Cable Terminating Machine is ideally suited for use in such industries as Airframe, Military Electronics, Communications, Data Processing and Industrial Controls.



The AMP-O-MATIC Flexible Flat Cable Terminating Machine is an electrically powered machine specifically designed to automatically terminate flexible flat cable using an insulation displacement technique. This technique completely eliminates the need for special cable preparation and, at the same time, assures positive electrical and mechanical connections between the contacts and cable conductors. The cable to be terminated is simply installed in the machine, then accurately aligned with the aid of a built-in light. During the terminating operation, reel-fed stamped and formed contacts are automatically applied to the cable at a rate of two termi-

nations per second. The machine automatically stops after the last termination is made.

In addition to being small in size and lightweight, this machine can accommodate pins and receptacles as well as solder tines. A minor resetting of the strip guides is the only adjustment required for a change in contact styles. Its ability to displace the insulation and crimp the conductor, rather than just pierce the insulation, assures highly reliable connections without a need for stripping.



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