

MINIATURE RIBBONS

IDC SUPERIBBON™ & Metal Shell

Vertical Mount Compliant Pin

Solder Cup

Right-Angle Solder Tail

Wire Wrap

Vertical Mount Solder Tail

Accessories & Application Tooling



Cinch

**.085 in. (2.16mm)
Density
Miniature Ribbon**

Introduction



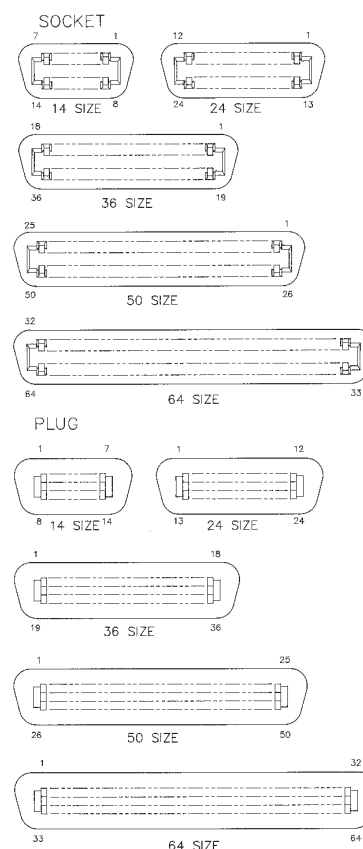
The Miniature Ribbon connector has been a mainstay in the electronics industry for decades. First widely used in telecommunications, it has proven itself to be a very reliable interconnection system, with generous wiping action, high contact pressure, large mating surface area in a relatively compact format, and polarized shells to ensure proper orientation in mating.

The Miniature Ribbon connector gets its name from the ribbon-like shape of the mating end of the contact. It is a derivative of the first connector design to incorporate this type of interconnection where mating members are equally flexible. Each contact is backed up by its respective insulator, resulting in high contact pressure without concern over relaxation that can occur with a beam or cantilever design. Industry standard sizes for this product are 14, 24, 36, 50, and 64 positions. Cinch adheres to industry-standard contact numbering and mating geometry.

Cinch has led the way in making the Miniature Ribbon connector one of the most cost-effective yet high-quality connector systems in the industry. From its roots in the telecommunications industry where it is traditionally known as the “Key Telephone” style connector (USOC Type RJ21), Cinch’s innovations in termination, latching, and accessories have helped make the Miniature Ribbon family the choice for applications in computers and instrumentation as well. It is called out as the standard connector for a parallel printer interface (IEEE 1284-B, also known as “Centronics”), multi-purpose peripheral interface (SCSI-1), and instrumentation interface (IEEE-488, also known as “GPIB”).

Cinch manufactures one of the most diverse lines of Miniature Ribbon products in the industry. From SUPERIBBON™ all-plastic products with solderless termination to full-metal shell products with solder terminations, and even filtered versions designed to solve EMI problems, Cinch can provide the Miniature Ribbon products you need.

Several options are available so you can find the right Cinch Miniature Ribbon product for your application. Cinch’s method of integrating features into the product often *reduces overall installed cost compared to other alternatives*. Select the termination type, the configuration, the latching and mounting methods to be used, and any accessories that would make the installation of the connector complete.



Connector Face Views

| All-Plastic | Metal Shell | |
|-------------|-------------|-------------------------------------|
| 6-6 | 6-14 | IDC |
| | 6-24 | Solder Cup |
| 6-30 | 6-30 | Wire Wrap |
| 6-38 | 6-34 | Vertical-Mount Solder Tail |
| 6-42 | 6-42 | Vertical-Mount Compliant Pin |
| | 6-46 | Right Angle Solder Tail |
| 6-48 | | Filtered Vertical-Mount Solder-Tail |
| 6-48 | | Male/Female Adapter |

Accessories information starts on page 6-51.

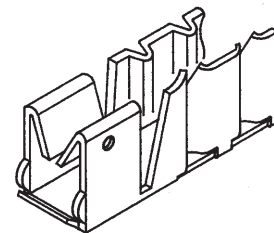
Tooling Information starts on page 6-54.

SUPERIBBON is a trademark of Cinch Connectors, Inc. Systems, Inc.

Termination Options

Cinch offers products suitable for termination by various methods:

- IDC -- Cinch's patented Insulation Displacement Contact (IDC) provides reliable, low-cost termination to discrete wire, either loose or in jacketed cable. With the use of special tools designed for field and/or factory use, wires can be terminated to the connector without individual cutting, stripping, or soldering. Reliable performance is ensured by the exclusive 4-point contact termination, and the built-in wire strain relief prevents mechanical stress from reaching the termination points.



Termination section of IDC contact

Cinch IDC connectors are available in both Metal Shell and All-Plastic SUPERIBBON versions. They are available to terminate solid conductor (some 22 AWG, and 24-26 AWG) or stranded (24-28 AWG) wire. Likewise, a full range of termination tooling is available.

- Wire Wrap -- This termination style, which is also solderless, is often used when termination must be done in place, such as in wired backplanes, etc. Cinch wire-wrap terminated Miniature Ribbon connectors are available in both Metal Shell and All-Plastic versions, with either .025" or .045" sq. tails.
- Solder Cup -- For those applications where nothing but the lowest termination resistance will do, Cinch offers Metal Shell Miniature Ribbon connectors with solder-cup termination. Available with or without insulator barriers between contact terminal areas, these products will accept up to one 22 AWG solid wire or one 24 AWG stranded wire per contact.
- Solder Tail -- This style allows Cinch Miniature Ribbon connectors to be through-hole soldered directly to a printed circuit board. They are available in Vertical Mount and Right-Angle Mount versions.
- Compliant Pin -- This style allows termination to a printed circuit board without soldering. This eliminates the costly cleaning/rework associated with soldering, yet the Cinch modified-C type termination will not damage the board's plating as standard press-fit terminals can.



Piercing/compressing action as wire is pressed into contact

Configuration

Cinch Miniature Ribbon and SUPERIBBON products are available as connectors alone to be mounted to a system's panel or printed circuit board, or complete with hoods for use on various types of cable assemblies. Hooded products are available with cable exits straight back 180 degrees from the mating face (Top-Entry) or with cable exits on either end, 90, or 270 degrees from the mating face (Standard and Reverse Orientation End-Entry). Finally, overmold kits are available allowing you to efficiently and economically manufacture your own "custom" cable assemblies.

End-Entry SuperShield™ connectors and All-Plastic SUPERIBBON connectors feature an integral cable clamp that prevents stress on the termination area, even when the hood is removed during assembly or repair.

Top-Entry products have cable clamps built into the hoods. These clamps are adjustable to fit a range of cable sizes.

Latching Options

Miniature Ribbon and SUPERIBBON products exhibit a degree of self-locking inherent in the contact design; however, additional locking means are recommended to prevent connectors from being unmated inadvertently. Choices include:

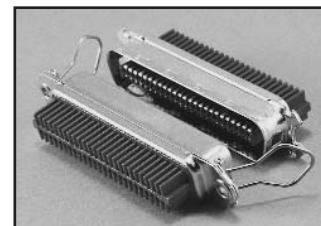
- Screwlock Hardware -- the simplest connectors require the use of separate threaded hardware to lock mating connectors together. Some Cinch Miniature Ribbon cable connectors include locking screws; hardware for other configurations may be found in the Accessories section of the Miniature Ribbon line.

Some panel-mount products are available with fixed female (internal thread) screwlocks that provide an integral threaded screwlock as part of the connector.

- Bail Latches -- as an alternative to screwlock hardware, Cinch offers many configurations with industry-standard bail latches. These connectors have wire clips on each end of the socket, and mating plugs have notched ends that these clips snap into.

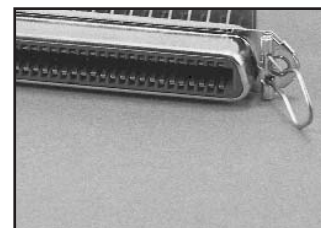
Bail latches offer the advantage of operating without any tools. Because of this, they have been standardized into several applications, including "Centronics" 36-position parallel printer interface and SCSI-1 peripheral interface bus.

Bail latch sockets include standard "straight" latches, suitable for top entry configurations. Special latches can be ordered to replace one standard latch to fit under the cable on end entry mating plug assemblies.

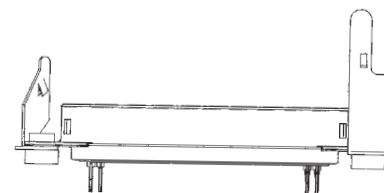


- InstaLatch™ -- all Cinch SUPERIBBON all-plastic sockets and some metal shell Miniature Ribbon sockets are available with a Cinch-patented latching system called InstaLatch. In this passive latching system, spring clips at each end of the socket automatically lock into windows in the shell of the mating plug securing the two connectors together. Audible feedback confirms that the connectors are indeed locked.

InstaLatches may be unlocked by depressing the latch at either end of the connector, using almost any small, pointed-end tool. A special tool is also available to unlatch InstaLatches when connectors are laid out in a tight arrangement.



- J-Hooks -- These devices, available on selected Miniature Ribbon products, automatically lock onto the nose and hood of mating end entry connectors. They are easily unlatched without special tools and are more accessible than other latches in certain applications.



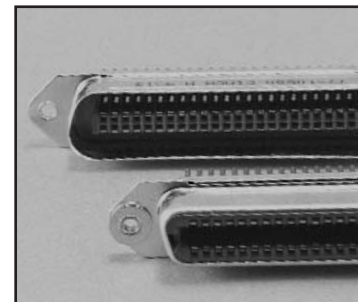
Mounting Options

Various mounting options are available with Cinch Miniature Ribbon and SUPERIBBON products:

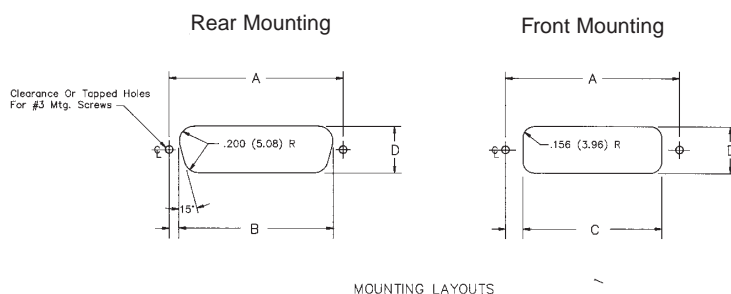
- Through-Hole/Threaded Hole -- These products require separate hardware to mount the connector to a panel or other component. Versions are available to accommodate #3, #4, and in some cases, through #8 hardware.

Standard size cutouts are adequate for mounting panel-mount connectors to system panels with this type of hardware. They may be front- or rear-mounted. (Sockets with bail latches, however, must be front-mounted unless a modified cutout is used to clear the latch retaining hardware.)

Metal Shell PC Mount products are available in some versions with standoffs to the printed circuit board. These may be conductive or insulated.



Standard Panel Cutout Recommendations



Dimensions

Plug or Fixed-Mount Socket

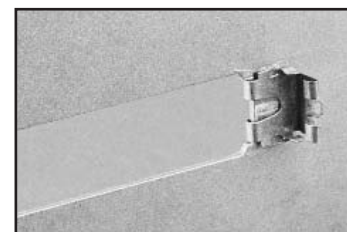
Float-Mount Socket

| Size | A | B | C | D | A | B | C | D |
|------|---------------|---------------|---------------|--------------|---------------|---------------|---------------|--------------|
| 14 | 1.417 (35.99) | 1.098 (27.89) | .940 (23.88) | .580 (14.73) | 1.417 (35.99) | 1.153 (29.29) | .995 (25.27) | .635 (16.13) |
| 24 | 1.842 (46.79) | 1.523 (38.68) | 1.365 (34.67) | .580 (14.73) | 1.842 (46.79) | 1.578 (40.08) | 1.420 (36.07) | .635 (16.13) |
| 36 | 2.352 (59.74) | 2.033 (51.64) | 1.875 (47.63) | .580 (14.73) | 2.352 (59.74) | 2.088 (53.04) | 1.930 (49.02) | .635 (16.13) |
| 50 | 2.947 (74.85) | 2.628 (66.75) | 2.472 (62.79) | .580 (14.73) | 2.947 (74.85) | 2.683 (68.15) | 2.525 (64.14) | .635 (16.13) |

SUPERIBBON, Plug or Socket

| Size | A | B | C | D |
|------|---------------|---------------|---------------|--------------|
| 14 | 1.417 (35.99) | 1.172 (29.77) | .787 (19.99) | .610 (15.49) |
| 24 | 1.842 (46.79) | 1.597 (40.56) | 1.212 (30.78) | .610 (15.49) |
| 36 | 2.352 (59.74) | 2.107 (53.52) | 1.722 (43.74) | .610 (15.49) |
| 50 | 2.947 (74.85) | 2.703 (68.66) | 2.317 (58.85) | .610 (15.49) |
| 64 | 3.592 (91.24) | 3.298 (83.77) | 2.912 (73.96) | .610 (15.49) |

- Panel Clips -- These devices are add-on accessories for All-Plastic products and are available as optional configurations on certain Metal Shell products. They allow you to mount the connector to the system panel without screws, nuts, or spacers, and leave the connector's mounting holes free for use in latching, if so desired.
- Boardlocks -- These devices, found on certain solder-tail PC mount products, fasten the connector to the printed circuit board with solder as part of the wave soldering process. Thus, there is no additional labor required to complete the assembly, and a cost savings can often be realized.



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IDC, SUPERIBBON™
All-Plastic



FEATURES

- *Patented contact terminates Discrete Wire (loose or jacketed cable) without stripping or soldering solid- and stranded-wire versions available.*
- *All-plastic design reduces cost.*
- *Available in plug and socket styles in 14, 24, 36, 50, and 64 position sizes.*
- *Includes InstaLatch passive latch feature for automatic latching. Sockets are also available without latches.*
- *Available with .125" or #4-40 mounting holes. 50-position size plug also available to lock with industry-standard Bail Latches.*
- *Designed for panel mount, 180° (Top-Entry), or 90° (Standard) / 270° (Reverse) End-Entry cable application.*
- *Integral Cable Clamp on End-Entry versions provides superior strain relief, even with hood removed.*
- *Full range of application tooling is available for termination, unlatching, etc. See page 6-54 for details.*
- *UL Recognized - Files E170218 (UL1977), E130965 (UL1863).*
- *CSA Approved - File LR31996-7.*

MATERIALS

Insulator: Gray UL94V-0 rated glass-filled polyester, except where noted
Contact: Copper alloy
Contact Plating: select gold over 50µin. select nickel standard;
 30µin. select gold over 50µin. select nickel available
 where indicated

ENVIRONMENTAL

Operating Temperature: -40°C to +105°C
Shock: 50G Peak, per EIA Std. RS364, TP27, Condition A
Vibration: 3 cycles @ 10-55Hz in each of 3 axes per EIA Std. 364, TP28,
 Condition A
Moisture Resistance: Per EIA Std. RS364, TP31, Condition B, with Step
 7B excluded

ELECTRICAL

Voltage Rating: 500 VAC @ sea level; 125 VAC @ 70,000 ft.
Withstanding Voltage: 1200 VAC RMS @ sea level, per EIA Std. RS364, TP20
Contact Rating: 5 Amps (4 Amps per CSA)
Contact Resistance: 6 milliohms maximum, per EIA Std. RS364, TP6
Contact Resistance Change During Life Conditioning:

| Wire Size | Resistance Change (milliohms, max.) |
|-----------------|--|
| 24 AWG Solid | 0.5 |
| 26 AWG Solid | 0.5 |
| 26 AWG Stranded | 2.0 |
| 28 AWG Stranded | 5.0 |

Insulation Resistance: 5000 Megohms minimum initial;
 1000 Megohms minimum after moisture

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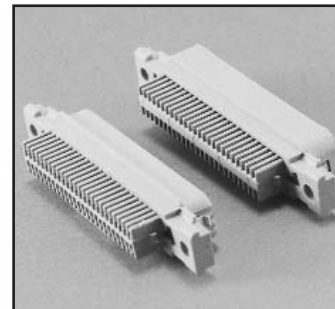


Mechanical Characteristics

Durability: 200 mating/unmating cycles

Mating / Unmating Forces:

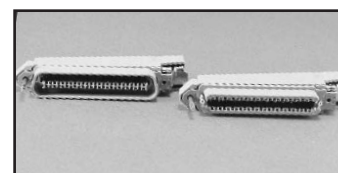
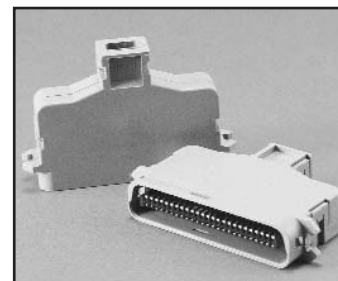
| Size | Mating Force (max.) with InstaLatches | | Unmating Force (min.) without InstaLatches | |
|------|--|-------|---|------|
| | Lb. | Kg | Lb. | Kg |
| 14 | 12 | 5.44 | 2 | 0.91 |
| 24 | 17 | 7.71 | 4 | 1.81 |
| 36 | 23 | 10.43 | 6 | 2.72 |
| 50 | 32 | 14.52 | 7 | 3.18 |
| 64 | 37 | 16.78 | 8 | 3.63 |



Termination: Solid IDC versions terminate 22 AWG - 26 AWG solid wire;
Stranded IDC versions terminate 24 AWG - 28 AWG stranded wire;
Recommended Wire Insulation: soft PVC, .040" (1.02mm) max. OD

Wire Grip Strength (using recommended wire type):

| Wire Size | Minimum Force | |
|-----------------|---------------|------|
| | Lb. | Kg |
| 24 AWG Solid | 7 | 3.42 |
| 26 AWG Solid | 5 | 2.44 |
| 26 AWG Stranded | 5 | 2.44 |



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Panel Mount

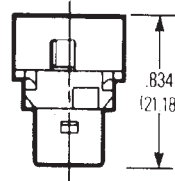
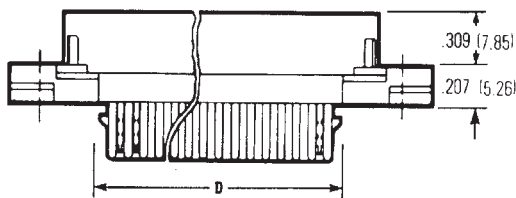
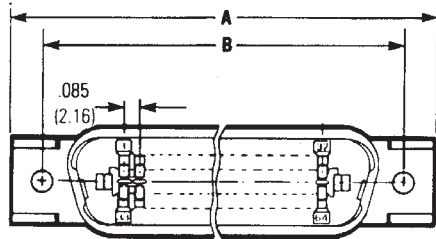
Panel mount connectors provide signal I/O from a panel or system cabinet.

See pages 6-51 thru 6-53 for accessories such as wire restraints, panel clips, mounting screws, and dust covers that make the use of Cinch SUPERIBBON connectors even more cost-effective in panel-mount applications.

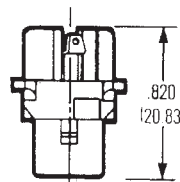
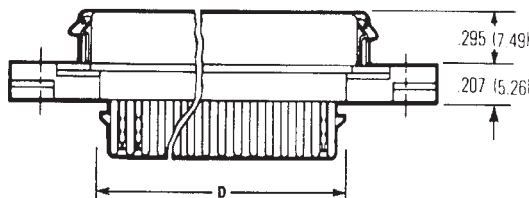
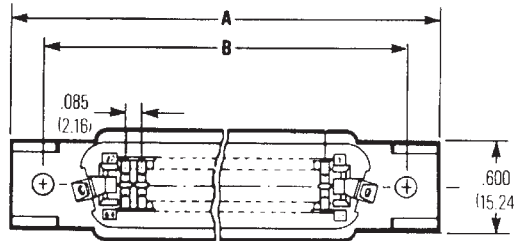
Dimensions

| Size | A | | B | | D | |
|------|-------|-------|-------|-------|-------|-------|
| | in | mm | in | mm | in | mm |
| 14 | 1.745 | 44.32 | 1.417 | 35.99 | 0.738 | 18.75 |
| 24 | 2.170 | 55.12 | 1.842 | 46.79 | 1.163 | 29.54 |
| 36 | 2.680 | 68.07 | 2.352 | 59.74 | 1.673 | 42.49 |
| 50 | 3.275 | 83.19 | 2.947 | 74.85 | 2.268 | 57.61 |
| 64 | 3.875 | 98.43 | 3.542 | 89.97 | 2.863 | 72.72 |

Plug



Socket



**.085 in. (2.16mm)
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All-Plastic



Ordering Information, Panel Mount

Plug, InstaLatching

| Mount | Size | Solid Wire | |
|------------|------|-------------|--------------|
| | | Commercial | 30Au/Ni |
| .125 Hole | 14 | 97-12140-11 | 97-12140-11A |
| | 24 | 97-12240-11 | 97-12240-11A |
| | 36 | 97-12360-11 | 97-12360-11A |
| | 50 | 97-12500-11 | 97-12500-11A |
| | 64 | 97-12640-11 | 97-12640-11A |
| #4-40 Hole | 14 | 97-12140-01 | 97-12140-01A |
| | 24 | 97-12240-01 | 97-12240-01A |
| | 36 | 97-12360-01 | 97-12360-01A |
| | 50 | 97-12500-01 | 97-12500-01A |
| | 64 | 97-12640-01 | 97-12640-01A |

Socket

| Latch | Mount | Size | Solid Wire | |
|--------------|------------|------|-------------|--------------|
| | | | Commercial | 30Au/Ni |
| InstaLatches | .125 Hole | 14 | 97-22140-11 | 97-22140-11A |
| | | 24 | 97-22240-11 | 97-22240-11A |
| | | 36 | 97-22360-11 | 97-22360-11A |
| | | 50 | 97-22500-11 | 97-22500-11A |
| | | 64 | 97-22640-11 | 97-22640-11A |
| | #4-40 Hole | 14 | 97-22140-01 | 97-22140-01A |
| | | 24 | 97-22240-01 | 97-22240-01A |
| | | 36 | 97-22360-01 | 97-22360-01A |
| | | 50 | 97-22500-01 | 97-22500-01A |
| | | 64 | 97-22640-01 | 97-22640-01A |
| No Latches | .125 Hole | 14 | 97-22140-12 | 97-22140-12A |
| | | 24 | 97-22240-12 | 97-22240-12A |
| | | 36 | 97-22360-12 | 97-22360-12A |
| | | 50 | 97-22500-12 | 97-22500-12A |
| | | 64 | 97-22640-12 | 97-22640-12A |
| | #4-40 Hole | 14 | 97-22140-02 | 97-22140-02A |
| | | 24 | 97-22240-02 | 97-22240-02A |
| | | 36 | 97-22360-02 | 97-22360-02A |
| | | 50 | 97-22500-02 | 97-22500-02A |
| | | 64 | 97-22640-02 | 97-22640-02A |

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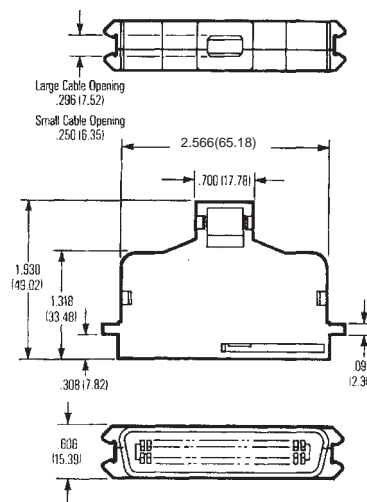


180° (Top-Entry) Cable

Snap-on plastic top-entry hoods are available separately to provide strain relief to a cable when one of the mounting/latching options from page 6-9 fits your requirements. See page 6-53 for details and ordering information for top-entry all-plastic hoods.

For bail latching applications, a 50-position size top-entry plug is available. It locks with industry-standard bail latches for positive locking/unlocking without tools. It also locks with InstaLatch latches for passive automatic latching.

For these products, insulator material is blue UL94V-0 rated glass-filled polyester, and hood material is gray UL94V-0 rated glass-filled polyester.



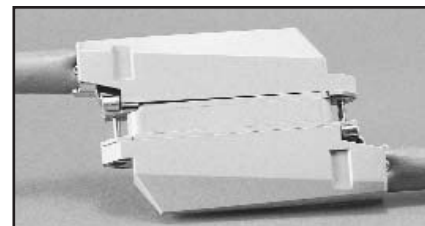
Ordering Information, 180° (Top-Entry) Cable Bail Latching Plug

| Size | Solid Wire | | | |
|------|-----------------------------|-------------|-----------------------------|-------------|
| | Large (.296") Cable Opening | | Small (.250") Cable Opening | |
| | Commercial | 30Au/Ni | Commercial | 30Au/Ni |
| 50 | 77-32500LP | 77-32500LPA | 77-32500SP | 77-32500SPA |

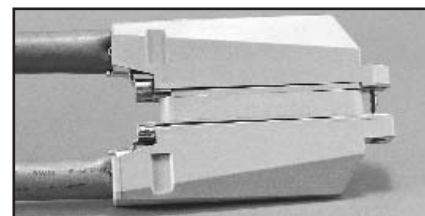
90° (Standard) / 270° (Reverse) End-Entry Cable

End-Entry connectors include a hood and integral cable clamp for cable exit from the end of the connector.

- The standard-orientation plug has the cable clamp on the position-1 end, and the standard-orientation socket has the clamp on the high position end.
- Cables may be extended end-to-end (i.e., “running cable”) by mating standard-orientation plugs and sockets, or “doubled back” by mating a standard-orientation connector with a reverse-orientation mate.
- Cables may exit either direction on a cable-to-panel application by choosing standard or reverse-orientation, depending on the desired direction of cable exit.
- Pointed-nose versions of the standard-orientation, 50-position size are slightly smaller than the square-end product and are suited to applications with limited space such as bridging adapters, etc.
- #4-40 versions include screws that are 3/4" long, suitable for locking directly to the body of another connector. For locking to connectors panel-mounted with screwlock hardware, shorter screws are required. See pages 6-51 thru 6-53 for these and other accessories, such as dust covers.



Running Cable Application



Doubled-Back Cable Application

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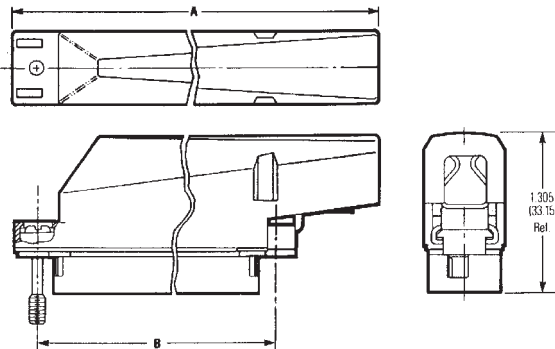
IDC, SUPERIBBON™
All-Plastic



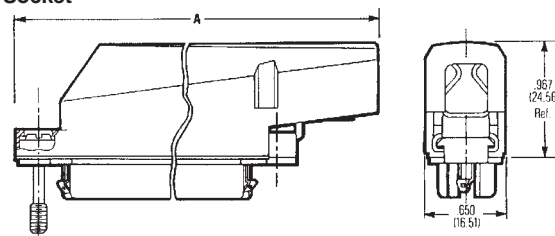
Dimensions, Square End

| Size | A | | B | |
|------|-------|--------|-------|-------|
| | in | mm | in | mm |
| 14 | 2.114 | 53.70 | 1.417 | 35.99 |
| 24 | 2.539 | 64.49 | 1.842 | 46.79 |
| 36 | 3.049 | 77.44 | 2.352 | 59.74 |
| 50 | 3.677 | 93.40 | 2.947 | 74.85 |
| 64 | 4.511 | 114.58 | 3.542 | 89.97 |

Plug



Socket



**Ordering Information, Square End
Standard (90°) Orientation**

Plug, InstaLatching

| Mount | Size | Solid Wire | |
|-----------------------|------|-------------|--------------|
| | | Commercial | 30Au/Ni |
| .125 Hole | 14 | 97-12140-90 | 97-12140-90A |
| | 24 | 97-12240-90 | 97-12240-90A |
| | 36 | 97-12360-90 | 97-12360-90A |
| | 50 | 97-12500-90 | 97-12500-90A |
| | 64 | 97-12640-90 | 97-12640-90A |
| #4-40 Hole with Screw | 14 | 97-12140-91 | 97-12140-91A |
| | 24 | 97-12240-91 | 97-12240-91A |
| | 36 | 97-12360-91 | 97-12360-91A |
| | 50 | 97-12500-91 | 97-12500-91A |
| | 64 | 97-12640-91 | 97-12640-91A |

Socket

| Latch | Mount | Size | Solid Wire | |
|--------------|-----------------------|------|-------------|--------------|
| | | | Commercial | 30Au/Ni |
| InstaLatches | .125 Hole | 14 | 97-22140-90 | 97-22140-90A |
| | | 24 | 97-22240-90 | 97-22240-90A |
| | | 36 | 97-22360-90 | 97-22360-90A |
| | | 50 | 97-22500-90 | 97-22500-90A |
| | | 64 | 97-22640-90 | 97-22640-90A |
| | #4-40 Hole with Screw | 14 | 97-22140-91 | 97-22140-91A |
| | | 24 | 97-22240-91 | 97-22240-91A |
| | | 36 | 97-22360-91 | 97-22360-91A |
| | | 50 | 97-22500-91 | 97-22500-91A |
| | | 64 | 97-22640-91 | 97-22640-91A |
| No Latches | .125 Hole | 14 | 97-22140-92 | 97-22140-92A |
| | | 24 | 97-22240-92 | 97-22240-92A |
| | | 36 | 97-22360-92 | 97-22360-92A |
| | | 50 | 97-22500-92 | 97-22500-92A |
| | | 64 | 97-22640-92 | 97-22640-92A |
| | #4-40 Hole with Screw | 14 | 97-22140-93 | 97-22140-93A |
| | | 24 | 97-22240-93 | 97-22240-93A |
| | | 36 | 97-22360-93 | 97-22360-93A |
| | | 50 | 97-22500-93 | 97-22500-93A |
| | | 64 | 97-22640-93 | 97-22640-93A |

Ordering Information, Square End (Cont'd)

Reverse (270°) Orientation

Plug, InstaLatching

| Mount | Size | Solid Wire | |
|--------------------------|------|--------------|---------------|
| | | Commercial | 30Au/Ni |
| .125 Hole | 14 | 97-12140-270 | 97-12140-270A |
| | 24 | 97-12240-270 | 97-12240-270A |
| | 36 | 97-12360-270 | 97-12360-270A |
| | 50 | 97-12500-270 | 97-12500-270A |
| | 64 | 97-12640-270 | 97-12640-270A |
| #4-40 Hole with Screw | 14 | 97-12140-271 | 97-12140-271A |
| | 24 | 97-12240-271 | 97-12240-271A |
| | 36 | 97-12360-271 | 97-12360-271A |
| | 50 | 97-12500-271 | 97-12500-271A |
| | 64 | 97-12640-271 | 97-12640-271A |

Socket

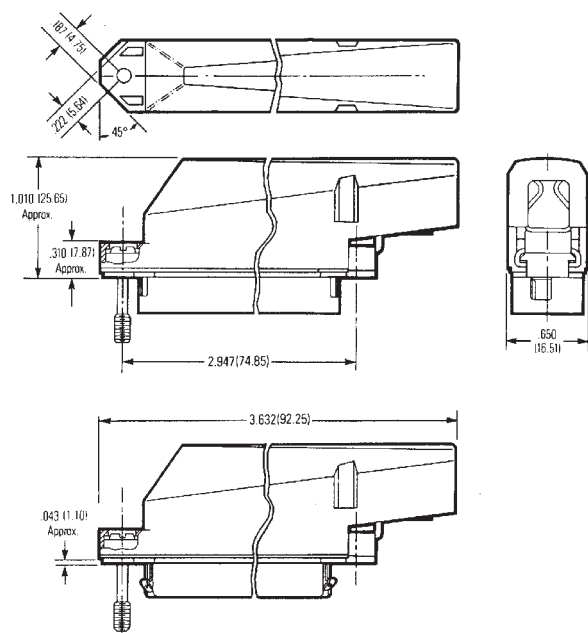
| Latch | Mount | Size | Solid Wire | |
|--------------|--------------------------|------|--------------|---------------|
| | | | Commercial | 30Au/Ni |
| InstaLatches | .125 Hole | 14 | 97-22140-270 | 97-22140-270A |
| | | 24 | 97-22240-270 | 97-22240-270A |
| | | 36 | 97-22360-270 | 97-22360-270A |
| | | 50 | 97-22500-270 | 97-22500-270A |
| | | 64 | 97-22640-270 | 97-22640-270A |
| | #4-40 Hole with Screw | 14 | 97-22140-271 | 97-22140-271A |
| | | 24 | 97-22240-271 | 97-22240-271A |
| | | 36 | 97-22360-271 | 97-22360-271A |
| | | 50 | 97-22500-271 | 97-22500-271A |
| | | 64 | 97-22640-271 | 97-22640-271A |
| No Latches | .125 Hole | 14 | 97-22140-272 | 97-22140-272A |
| | | 24 | 97-22240-272 | 97-22240-272A |
| | | 36 | 97-22360-272 | 97-22360-272A |
| | | 50 | 97-22500-272 | 97-22500-272A |
| | | 64 | 97-22640-272 | 97-22640-272A |
| | #4-40 Hole with Screw | 14 | 97-22140-273 | 97-22140-273A |
| | | 24 | 97-22240-273 | 97-22240-273A |
| | | 36 | 97-22360-273 | 97-22360-273A |
| | | 50 | 97-22500-273 | 97-22500-273A |
| | | 64 | 97-22640-273 | 97-22640-273A |

**.085 in. (2.16mm)
Density
Miniature Ribbon**

IDC, SUPERIBBON™
All-Plastic



Pointed-End 50-Position 90° End-Entry Cable



Ordering Information, Pointed-End

| | Solid Wire | |
|------------------------------|---------------------------------------|----------------|
| | #4-40 Threaded Hole with Screw | |
| | Commercial | 30Au/Ni |
| Plug, InstaLatching | | |
| With Dust Cover | 97-12500-91PD | 97-12500-91PDA |
| Without Dust Cover | 97-12500-91P | 97-12500-91PA |
| Socket, InstaLatching | | |
| With Dust Cover | 97-22500-91PD | 97-22500-91PDA |
| Without Dust Cover | 97-22500-91P | 97-22500-91PA |
| Socket, No Latches | | |
| With Dust Cover | 97-22500-93PD | 97-22500-93PDA |
| Without Dust Cover | 97-22500-93P | 97-22500-93PA |

**.085 in. (2.16mm)
Density
Miniature Ribbon**

IDC
Metal Shell



FEATURES

- **Patented contact terminates Discrete Wire (loose or jacketed cable) without stripping or soldering. Solid and stranded wire versions available.**
- **Metal shell provides grounding and shielding capability.**
- **Available in plug and socket styles in 14, 24, 36, and 50 position sizes.**
- **Designed for panel mount, 180° (Top-Entry), or 90° (Standard) / 270° (Reverse) End-Entry cable applications.**
- **Available as overmold kit in 36 and 50 position sizes.**
- **All Plugs lock with InstaLatch passive latch feature for automatic latching. Sockets available with InstaLatches where indicated.**
- **Industry-standard bail latch feature available for locking/unlocking without tools in applications such as SCSI-1 and Centronics.**
- **Full range of application tooling available for termination, unlatching, etc. See page 6-54 for details.**
- **UL Recognized - Files E170218 (UL1977), E130965 (UL1863).**
- **CSA Approved - File LR31996-7.**

MATERIALS

Insulator: Blue UL94V-0 rated glass-filled polyester
Contact: Copper alloy
Contact Plating: Select gold over 50µin. select nickel standard;
 30µin. select gold over 50µin. select nickel available
 where indicated
Shell: Steel
Shell Plating: Zinc with clear chromate coating standard
 Tin available where indicated

ENVIRONMENTAL

Operating Temperature: -40°C to +105°C
Shock: 50G Peak, per EIA Std. RS364, TP27, Condition A
Vibration: 3 cycles @ 10-55Hz in each of 3 axes per EIA Std. 364, TP28,
 Condition A
Moisture Resistance: Per EIA Std. RS364, TP31, Condition B, with Step
 7B excluded

ELECTRICAL

Voltage Rating: 500 VAC @ sea level; 125 VAC @ 70,000 ft.
Withstanding Voltage: 1200 VAC RMS @ sea level, per EIA Std.
 RS364, TP20
Contact Rating: 5 Amps (4 Amps per CSA)
Contact Resistance: 6 milliohms maximum, per EIA Std. RS364, TP6
Contact Resistance Change During Life Conditioning:

| Wire Size | Resistance Change (milliohms, max.) |
|-----------------|--|
| 24 AWG Solid | 0.5 |
| 26 AWG Solid | 0.5 |
| 26 AWG Stranded | 2.0 |
| 28 AWG Stranded | 5.0 |

Insulation Resistance: 5000 Megohms minimum initial;
 1000 Megohms minimum after moisture

**.085 in. (2.16mm)
Density
Miniature Ribbon**

IDC
Metal Shell



Mechanical Characteristics

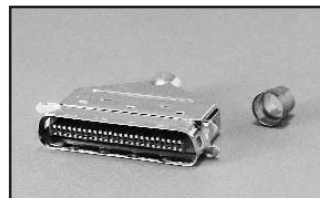
Durability: 200 mating/unmating cycles

Mating / Unmating Forces:



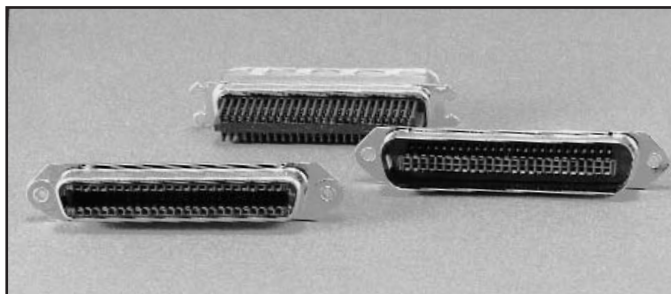
| Size | Mating Force (max.) with InstaLatches | | Unmating Force (min.) without InstaLatches | |
|------|--|-------|---|------|
| | Lb. | Kg | Lb. | Kg |
| 14 | 12 | 5.44 | 2 | 0.91 |
| 24 | 17 | 7.71 | 4 | 1.81 |
| 36 | 23 | 10.43 | 6 | 2.72 |
| 50 | 32 | 14.52 | 7 | 3.18 |

Termination: Solid IDC versions terminate 22 AWG - 26 AWG solid wire; Stranded IDC versions terminate 24 AWG - 28 AWG stranded wire; Recommended Wire Insulation: soft PVC, .040" (1.02mm) max. OD



Wire Grip Strength (using recommended wire type):

| Wire Size | Min. Force | |
|-----------------|------------|------|
| | Lb. | Kg |
| 24 AWG Solid | 7 | 3.42 |
| 26 AWG Solid | 5 | 2.44 |
| 26 AWG Stranded | 5 | 2.44 |



**.085 in. (2.16mm)
Density
Miniature Ribbon**

IDC
Metal Shell



Panel Mount

“Panel mount” products are connectors without hoods. They are typically used to provide signal I/O from a system panel or cabinet, where strain relief to a cable jacket is not required.

- Standard versions have .103" mounting holes (sockets have .103" with float bushings) for use with #3 hardware, or with .185" mounting holes for use with #8 hardware.
- Select sizes are available with .120" or .113" mounting holes for use with #4 hardware, or with integral panel clips, which allow snap-in front mounting on .093" thick panels for more cost-effective assembly.
- Bail latching sockets are available, as are bail latching plugs. While the plugs would not be panel-mounted, they are available for premold/solder overmolding applications.
- SuperShield products include modified shells that assure interference fit between mated connectors for improved shielding performance.

See page 6-4 for recommended standard panel cutout dimensions.

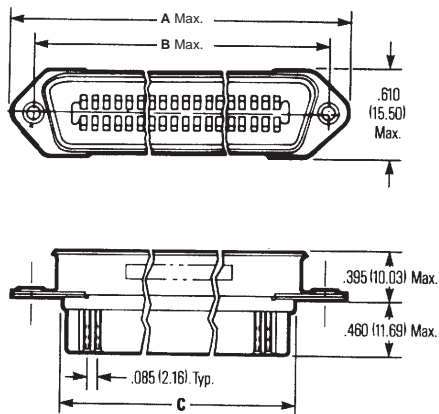
See pages 6-51 thru 6-52 for accessories such as wire restraints, mounting screws, and dust covers, which make the use of Cinch Miniature Ribbon connectors even more cost-effective in panel-mount applications.

See the appropriate cable connector section that follows for products that include hoods for exposed-cable applications.

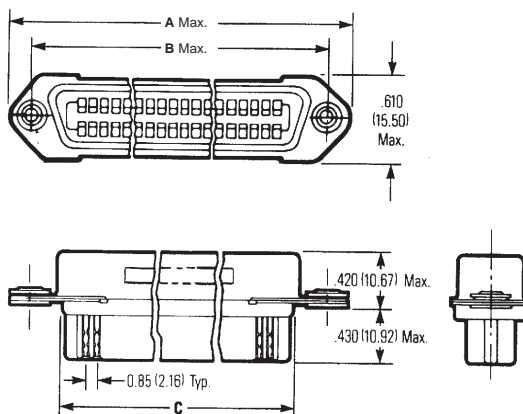
Dimensions

| Size | A | | B | | C | | D | |
|------|-------|-------|-------|-------|-------|-------|-------|-------|
| | in | mm | in | mm | in | mm | in | mm |
| 14 | 1.750 | 44.45 | 1.417 | 35.99 | 0.910 | 23.11 | - | - |
| 24 | 2.175 | 55.25 | 1.842 | 46.79 | 1.335 | 33.91 | - | - |
| 36 | 2.685 | 68.20 | 2.352 | 59.74 | 1.845 | 46.86 | 2.426 | 61.62 |
| 50 | 3.280 | 83.31 | 2.947 | 74.85 | 2.440 | 61.98 | 3.020 | 76.71 |

Plug



Socket



**.085 in. (2.16mm)
Density
Miniature Ribbon**

IDC
Metal Shell



Ordering Information, Panel Mount

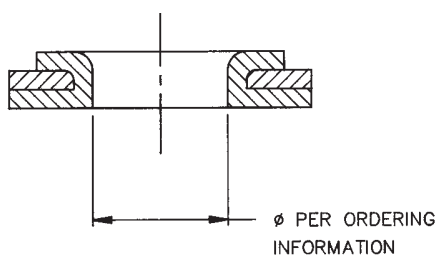
Plug, InstaLatching

| Mount | Size | Solid Wire | |
|--------------------------------|------|--------------|---------------|
| | | Commercial | 30Au/Ni |
| .103 Hole | 14 | 77-12140 | 77-12140A |
| | 24 | 77-12240 | 77-12240A |
| | 36 | 77-12360 | 77-12360A |
| | 50 | 77-12500 | 77-12500A |
| .103 Hole Tin-Plated Shells | 24 | 77-12240-32 | 77-12240-32A |
| | 36 | 77-12360-32 | 77-12360-32A |
| | 50 | 77-12500-32 | 77-12500-32A |
| .185 Hole | 14 | 77-12140-185 | 77-12140-185A |
| | 24 | 77-12240-185 | 77-12240-185A |
| | 36 | 77-12360-185 | 77-12360-185A |
| | 50 | 77-12500-185 | 77-12500-185A |
| .185 Hole Tin-Plated Shells | 24 | 77-12240-186 | 77-12240-186A |
| | 36 | 77-12360-186 | 77-12360-186A |
| | 50 | 77-12500-186 | 77-12500-186A |
| .120 Hole | 50 | 77-12500-120 | 77-12500-120A |
| .120 Hole, Tin-Plated Shells | 50 | 77-12500-121 | 77-12500-121A |
| SuperShield, .133 Hole | 50 | 77-12500-SH | 77-12500-SHA |
| Bail Latching | 36 | 77-12360-5 | 77-12360-5A |
| Tin-Plated Shells | 50 | 77-12500-10 | 77-12500-10A |
| .103 Hole | 50 | 77-12500-41 | 77-12500-41A |
| Fixed 4-40 Screwlock | 50 | 77-12500-43 | 77-12500-43A |
| SuperShield, .103 Hole | 50 | 77-12500-SC | 77-12500-SCA |

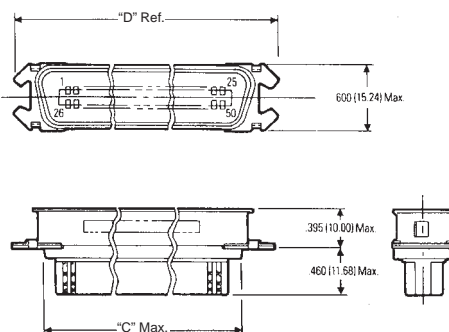
* Integral Panel Clips

*Integral Panel Clips, for front-mount only, require modified panel cutout. See page 6-52 for details.

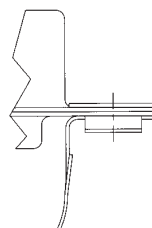
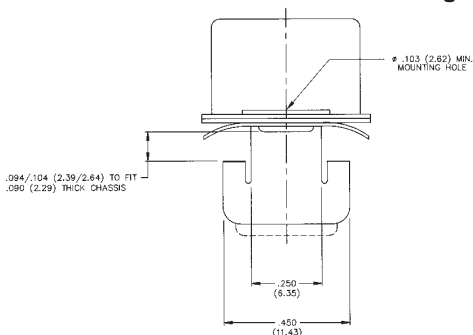
Through Hole



Bail Latching



Integral Panel Clip



**.085 in. (2.16mm)
Density
Miniature Ribbon**

IDC
Metal Shell

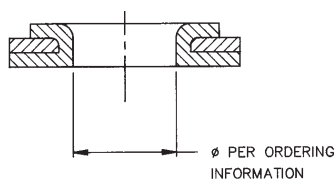


Ordering Information, Panel Mount (Cont'd)

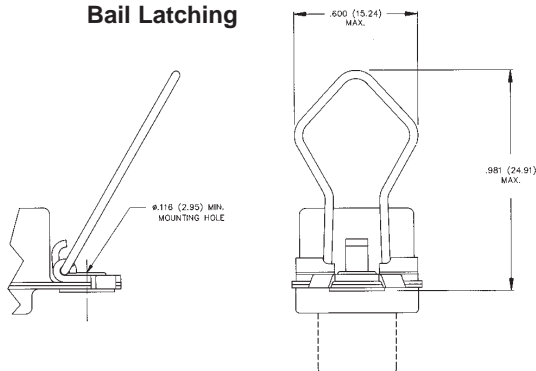
| Socket | | Solid Wire | | |
|--|--|--------------|---------------|--------------|
| Mount | Size | Commercial | 30Au/Ni | |
| Float Mounts with .103 Hole | 14 | 77-22140 | 77-22140A | |
| | 24 | 77-22240 | 77-22240A | |
| | 36 | 77-22360 | 77-22360A | |
| | 50 | 77-22500 | 77-22500A | |
| .103 Hole Tin-Plated Shells | 24 | 77-22240-34 | 77-22240-34A | |
| | 36 | 77-22360-34 | 77-22360-34A | |
| | 50 | 77-22500-34 | 77-22500-34A | |
| No Latches .185 Hole | 14 | 77-22140-185 | 77-22140-185A | |
| | 24 | 77-22240-185 | 77-22240-185A | |
| | 36 | 77-22360-185 | 77-22360-185A | |
| | 50 | 77-22500-185 | 77-22500-185A | |
| .185 Hole Tin-Plated Shells | 24 | 77-22240-186 | 77-22240-186A | |
| | 36 | 77-22360-186 | 77-22360-186A | |
| | 50 | 77-22500-186 | 77-22500-186A | |
| .120 Hole | 50 | 77-22500-120 | 77-22500-120A | |
| Integral Panel Clips*, .103 Hole | 50 | 77-22500-41 | 77-22500-41A | |
| Integral Panel Clips* Fixed 4-40 Screwlocks | 50 | 77-22500-43 | 77-22500-43A | |
| Bail Latches .116 Hole | 14 | 77-42140 | 77-42140A | |
| | 24 | 77-42240 | 77-42240A | |
| | 36 | 77-42360 | 77-42360A | |
| | 50 | 77-42500 | 77-42500A | |
| .116 Hole with Tin-Plated Shell | 36 | 77-42360-5 | 77-42360-5A | |
| | 50 | 77-42500-5 | 77-42500-5A | |
| Instalatches .103 Hole Tin-Plated Shell | 50 | 77-22500-36 | 77-22500-36A | |
| | .113 Hole Tin-Plated Shell | 50 | 77-22500-38 | 77-22500-38A |
| | SuperShield, .103 Hole with Integral Panel Clips* | 50 | 77-22500-SC | 77-22500-SCA |

* Integral Panel Clips, for front-mount only, require modified panel cutout.
See page 6-52 for details.

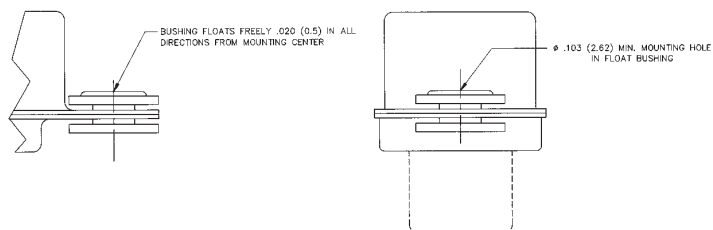
Through Hole



Bail Latching



Float Mount



**.085 in. (2.16mm)
Density
Miniature Ribbon**

IDC
Metal Shell



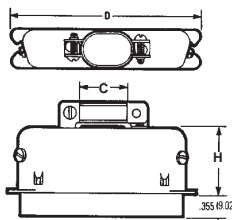
180° (Top-Entry) Cable

Top-Entry products include a connector, hood (or overmold can), and associated hardware.

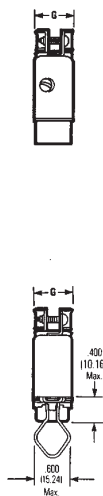
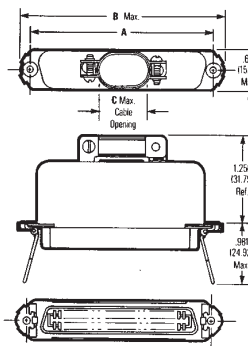
They are typically used at the end of a cable, where it is subject to physical strain and protection of the termination area is required.

- Includes all hardware required to attach hood to connector.
- Bail latching sockets have latch hardware integral to the connector body, making cable assembly more efficient.
- Bail latching plugs include notches that lock with industry-standard bail-latch sockets.
- Select configurations are available as overmold kits, which lower assembly costs by eliminating premolding and foil soldering. Kits include connector and overmold cans. Crimp ferrules, which ground cable shields and provide strain relief, must be ordered separately.
- Ordering information for crimp ferrules is at end of end-entry product section. See page 6-22.

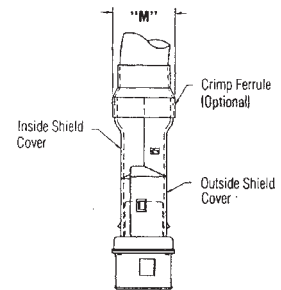
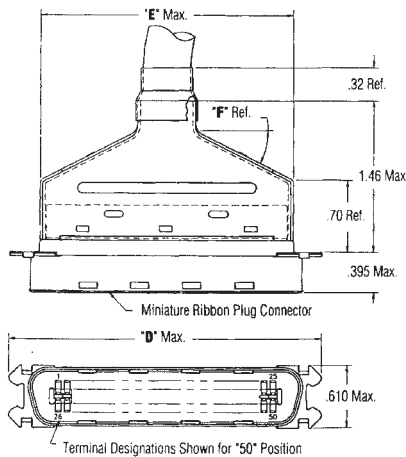
Plug



Socket



Overmold Kit



Dimensions

| Size | A | | B | | C | | D | | E | | F | G | | H | | M | |
|------|-------|-------|-------|-------|------|-------|-------|-------|------|-------|------|------|-------|------|-------|-----|-------|
| | in | mm | in | mm | in | mm | in | mm | in | mm | Deg. | in | mm | in | mm | in | mm |
| 14 | 1.417 | 35.99 | 1.750 | 44.45 | .306 | 7.77 | 1.495 | 37.97 | - | - | - | .422 | 10.72 | .843 | 21.41 | - | - |
| 24 | 1.842 | 46.79 | 2.175 | 55.25 | .473 | 11.10 | 1.920 | 48.77 | - | - | - | .473 | 12.01 | .825 | 20.96 | - | - |
| 36 | 2.352 | 59.74 | 2.685 | 68.20 | .639 | 16.23 | 2.431 | 61.75 | 1.83 | 46.48 | 37° | .473 | 12.01 | .905 | 22.99 | .52 | 13.21 |
| 50 | 2.947 | 74.85 | 3.270 | 83.06 | .766 | 19.46 | 3.025 | 76.84 | 2.43 | 61.72 | 27° | .473 | 12.01 | .995 | 25.27 | .60 | 15.24 |

**.085 in. (2.16mm)
Density
Miniature Ribbon**

IDC
Metal Shell



Ordering Information, 180° (Top-Entry) Cable

Plug, InstaLatching

| | Mount | Size | Solid Wire | |
|--------------|----------------------|------|-------------|--------------|
| | | | Commercial | 30Au/Ni |
| Overmold kit | Bail Latching | 14 | 77-32140 | 77-32140A |
| | | 24 | 77-32240 | 77-32240A |
| | | 36 | 77-32360 | 77-32360A |
| | | 50 | 77-32500 | 77-32500A |
| | Captive 4-40 Screws | 50 | 77-32500-30 | 77-32500-30A |
| | Bail Latching, | 36 | 77-32360-51 | 77-32360-51A |
| | Tin Shell | 50 | 77-32500-51 | 77-32500-51A |
| | .103 Hole, Tin Shell | 36 | 77-32360-52 | 77-32360-52A |
| | | 50 | 77-32500-52 | 77-32500-52A |

Socket

| | Mount | Size | Solid Wire | |
|----------------------------|---------------------------------|------|-------------|--------------|
| | | | Commercial | 30Au/Ni |
| Overmold kit InstaLatch | With Bail Latches | 14 | 77-62140 | 77-62140A |
| | | 24 | 77-62240 | 77-62240A |
| | | 36 | 77-62360 | 77-62360A |
| | | 50 | 77-62500 | 77-62500A |
| | .103 Hole, Tin-Plated Shells | 50 | 77-62500-54 | 77-62500-54A |
| | .113 Hole, Tin-Plated Shells | 50 | 77-62500-55 | 77-62500-55A |

**.085 in. (2.16mm)
Density
Miniature Ribbon**

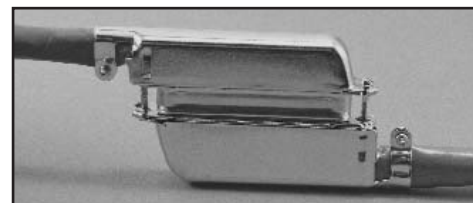
IDC
Metal Shell



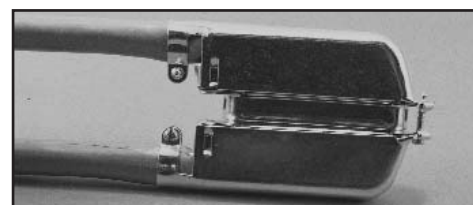
90° (Standard) / 270° (Reverse) End-Entry Cable

End-Entry connectors, available in 50 position size only, include a hood and integral cable clamp for cable exit from the end of the connector.

- The standard-orientation plug has the cable clamp on the position 1/26 end, and the standard-orientation socket has the clamp on the position 25/50 end.
- Cables may be extended end-to-end (i.e., “running cable”) by mating standard-orientation plugs and sockets, or “doubled back” by mating a standard-orientation connector with a reverse-orientation mate.
- Cables may exit either direction on a cable-to-panel application by choosing standard or reverse-orientation, depending on the desired direction of cable exit.
- Include screw that is 5/8" long, suitable for locking directly to the body of another connector. For locking to connectors panel-mounted with screwlock hardware, shorter screws are required. See page 6-51 for these and other accessories, such as dust covers.

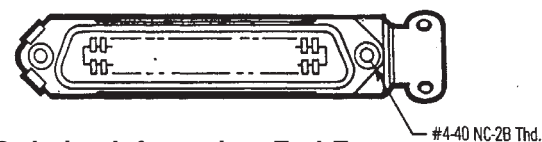
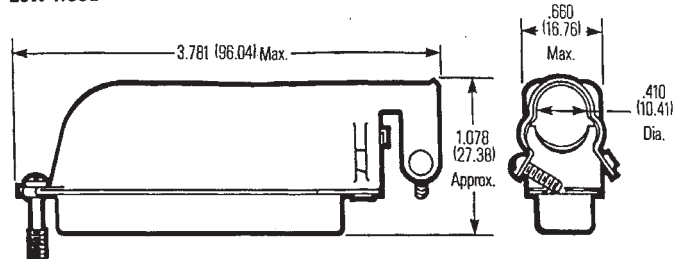


Running Cable Application

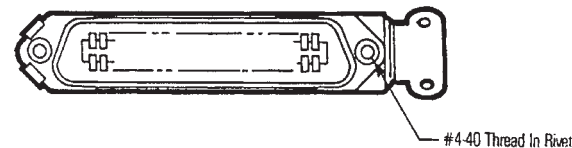
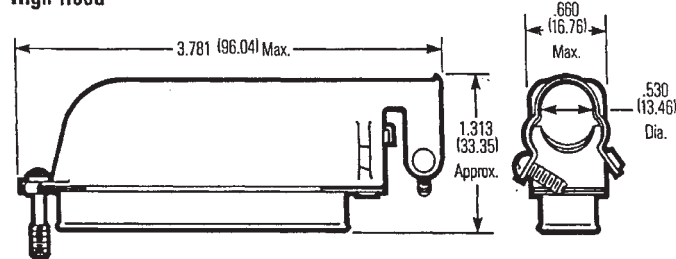


Double-Back Cable Application

Low Hood



High Hood



Ordering Information, End-Entry

Standard (90°) Orientation

| | | Solid Wire | | | |
|----------------------|--|-------------------------|------|-------------|--------------|
| | | Mount | Size | Commercial | 30Au/Ni |
| Plug | | High (Standard) Hood | 50 | 77-72500 | 77-72500A |
| | | Low-Profile Hood | 50 | 77-72500-1 | 77-72500-1A |
| | | SuperShield, 4-40 Screw | 50 | 77-72500-SS | 77-72500-SSA |
| Socket no latches | | High (Standard) Hood | 50 | 77-82500 | 77-82500A |
| | | Low-Profile Hood | 50 | 77-82500-1 | 77-82500-1A |
| | | SuperShield, 4-40 Screw | 50 | 77-82500-SS | 77-82500-SSA |

Reverse (270°) Orientation

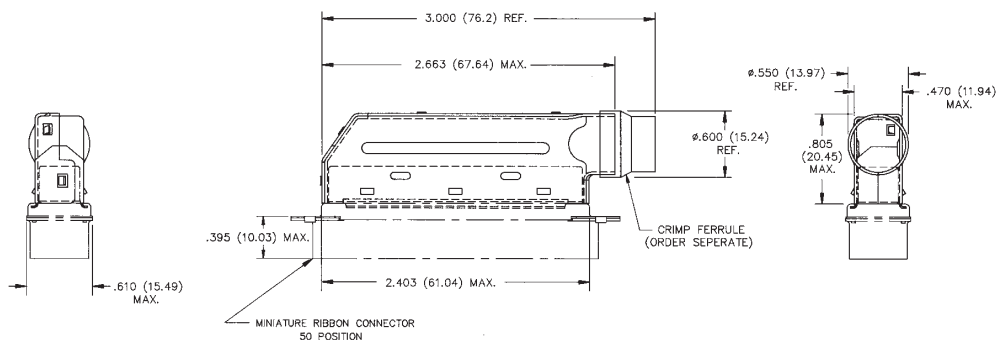
| | | Solid Wire | | | |
|-------------------|--|----------------------|------|--------------|---------------|
| | | Mount | Size | Commercial | 30Au/Ni |
| Plug | | High (Standard) Hood | 50 | 77-72500-270 | 77-72500-270A |
| | | Low-Profile Hood | 50 | 77-72500-271 | 77-72500-271A |
| Socket latches | | High (Standard) Hood | 50 | 77-82500-270 | 77-82500-270A |
| | | Low-Profile Hood | 50 | 77-82500-271 | 77-82500-271A |

**.085 in. (2.16mm)
Density
Miniature Ribbon**

IDC
Metal Shell



**Overmold Kit, End-Entry
(May be assembled with cable exit in either direction)**



Ordering Information, End-Entry Overmold Kit

| | | Solid Wire | | |
|-------------------------|--------------------------------|------------|-------------|--------------|
| | | Size | Commercial | 30Au/Ni |
| Socket Install/Latch | Plug, Bail Latching, Tin Shell | 50 | 77-72500-51 | 77-72500-51A |
| | .103 Hole, Tin-Plated Shells | 50 | 77-82500-54 | 77-82500-54A |
| | .113 Hole, Tin-Plated Shells | 50 | 77-82500-55 | 77-82500-55A |

Overmold Crimp Ferrules

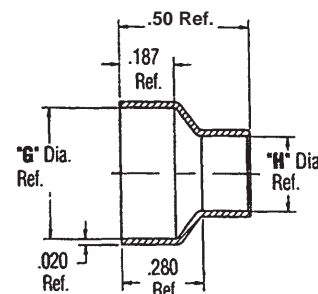
- Connect cable's shield to can of overmold kit
- Seal off cable exit to keep molding compound from penetrating termination cavity

See page 6-56 for tools and dies required to crimp ferrules onto overmold cans.

Ordering Information, Overmold Crimp Ferrules

| Kit Size | Max. Cable O.D. | Ferrule Part Number | Dimensions | |
|-------------|-----------------|------------------------|--------------|--------------|
| | | | G | H |
| 36 | 0.400 | CF-64 | .480 (12.19) | .400 (10.16) |
| 50 | 0.390 | CF-60 | .580 (14.73) | .390 (9.91) |
| | 0.480 | CF-57 | .580 (14.73) | .480 (12.19) |

Ferrule



**.085 in. (2.16mm)
Density
Miniature Ribbon**

Solder Cup
Metal Shell

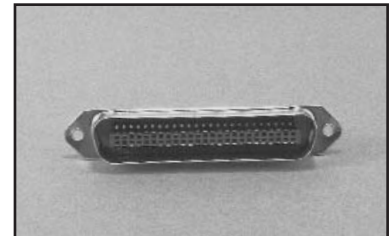


FEATURES

- Terminates Discrete Wire (loose or jacketed cable) with ultra-low-resistance solder connections.
- Metal shell provides grounding and shielding capability.
- Available in plug and socket styles in 14, 24, 36, and 50 position sizes.
- Designed for panel mount, 180° (Top-Entry), or 90° (Standard) / 270° (Reverse) End-Entry cable applications.
- All plugs lock with InstaLatch passive latch feature for automatic latching.
- Industry-standard bail latch feature available for locking/unlocking without tools in applications such as SCSI-1 and Centronics.
- UL Recognized - Files E170218 (UL1977), E130965 (UL1863).
- CSA Approved - File LR31996-7.

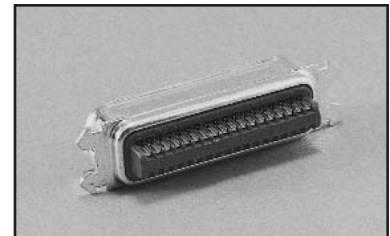
MATERIALS

Insulator: Blue UL94V-0 rated diallyl phthalate type MDG, per MIL-M14F
Contact: Copper alloy
Contact Plating: Select gold over 50µin. select nickel standard;
 30µin. select gold over 50µin. select nickel available where indicated
Shell: Steel
Shell Plating: Zinc with clear chromate coating



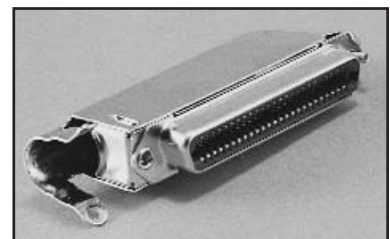
ENVIRONMENTAL

Operating Temperature: -40°C to +105°C
Shock: 50G Peak, per EIA Std. RS364, TP27, Condition A
Vibration: 3 cycles @ 10-55Hz in each of 3 axes per EIA Std. 364, TP28, Condition A
Moisture Resistance: Per EIA Std. RS364, TP31, Condition B, with Step 7B excluded



ELECTRICAL

Voltage Rating: 500 VAC @ sea level; 125 VAC @ 70,000 ft.
Withstanding Voltage: 1200 VAC RMS @ sea level, per EIA Std. RS364, TP20
Contact Rating: 5 Amps (4 Amps per CSA)
Contact Resistance: 6 Milliohms maximum, per EIA Std. RS364, TP6
Insulation Resistance: 5000 Megohms minimum initial;
 1000 Megohms minimum after moisture

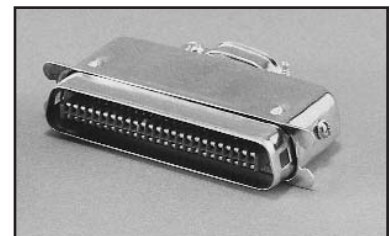


MECHANICAL

Durability: 200 mating/unmating cycles
Mating / Unmating Forces:

| Size | Mating Force (max.) | | Unmating Force (min.) | |
|------|---------------------|------|-----------------------|------|
| | Lb. | Kg | Lb. | Kg |
| 14 | 5 | 2.27 | 2 | 0.91 |
| 24 | 8 | 3.63 | 4 | 1.81 |
| 36 | 12 | 5.44 | 6 | 2.72 |
| 50 | 15 | 6.80 | 7 | 3.18 |

Termination: Each contact accepts maximum 22 AWG solid wire or maximum 24 AWG stranded wire



.085 in. (2.16mm) Density Miniature Ribbon

Solder Cup
Metal Shell



Panel Mount

"Panel mount" products are connectors without hoods. They are typically used to provide signal I/O from a system panel or cabinet, where strain relief to a cable jacket is not required.

- Available with high barrier insulators that extend beyond the end of the solder cup, physically isolating adjacent contacts.
- Standard versions have .103" mounting holes (sockets have .103" with float bushings) for use with #3 hardware, or .185" mounting holes for use with #8 hardware.
- Select sizes are available with .120" mounting holes for use with #4 hardware, or with integral panel clips, which allow snap-in front mounting for more cost-effective assembly.
- Bail latching sockets are available, as are bail latching plugs. While the plugs would not be panel-mounted, they are available for premold/solder overmolding applications.

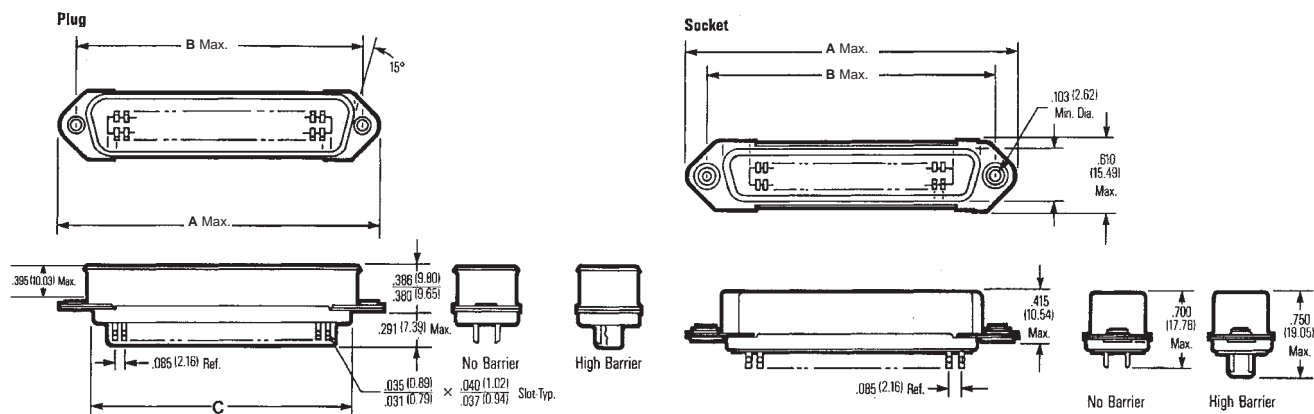
See page 6-4 for recommended standard panel cutout dimensions.

See page 6-51 for accessories such as mounting screws and dust covers, which make the use of Cinch Miniature Ribbon connectors even more cost-effective in panel-mount applications.

See the appropriate cable connector section that follows for products that include hoods for exposed-cable applications.

Dimensions

| Size | A | | B | | C | |
|------|-------|-------|-------|-------|-------|-------|
| | in | mm | in | mm | in | mm |
| 14 | 1.750 | 44.45 | 1.417 | 35.99 | 0.910 | 23.11 |
| 24 | 2.175 | 55.25 | 1.842 | 46.79 | 1.335 | 33.91 |
| 36 | 2.685 | 68.20 | 2.352 | 59.74 | 1.845 | 46.86 |
| 50 | 3.260 | 82.80 | 2.947 | 74.85 | 2.440 | 61.98 |

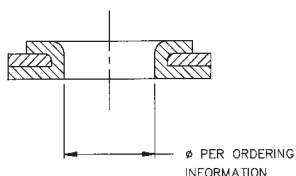


**.085 in. (2.16mm)
Density
Miniature Ribbon**

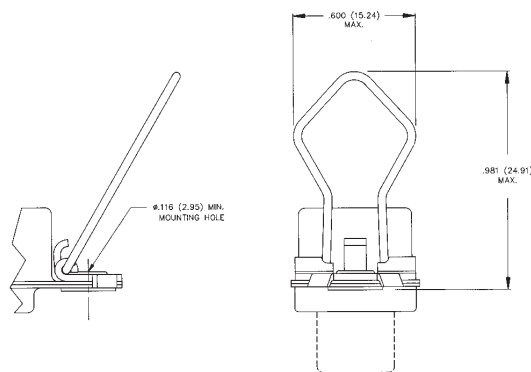
Solder Cup
Metal Shell



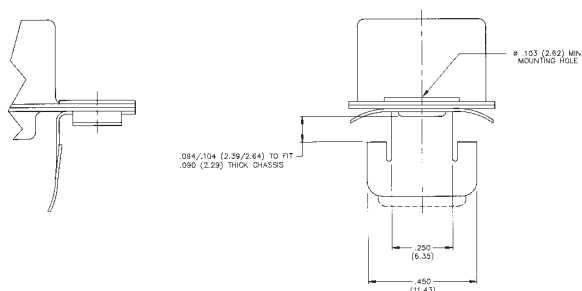
Through Hole



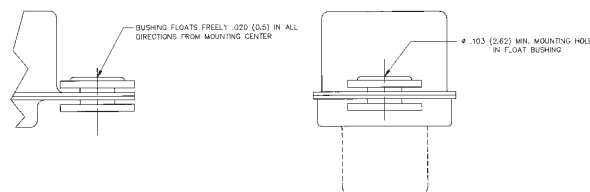
Bail Latches



Integral Panel Clips



Float Mounts



Ordering Information, Panel Mount

Plug, InstaLatching

| Mount | Size | No Barrier | | High Barrier | |
|-------------------|----------------------------------|--------------|---------------|--------------|---------------|
| | | Commercial | 30Au/Ni | Commercial | 30Au/Ni |
| .103 Hole | 14 | 57-10140 | 57-10140A | 57-10140-6 | 57-10140-6A |
| | 24 | 57-10240 | 57-10240A | 57-10240-6 | 57-10240-6A |
| | 36 | 57-10360 | 57-10360A | 57-10360-14 | 57-10360-14A |
| | 50 | 57-10500 | 57-10500A | 57-10500-6 | 57-10500-6A |
| .185 Hole | 14 | 57-10140-185 | 57-10140-185A | - | - |
| | 24 | 57-10240-4 | 57-10240-4A | - | - |
| | 36 | 57-10360-22 | 57-10360-22A | - | - |
| .120 Hole | 50 | - | - | 57-10500-120 | 57-10500-120A |
| | Integral Panel Clips*, .103 Hole | - | - | 57-10500-41 | 57-10500-41A |
| Bail Latching | 36 | - | - | 57-10360-28† | 57-10360-28A† |
| Tin-Plated Shells | 50 | - | - | 57-10500-79 | 57-10500-79A |

† IEEE 1284-B (for foil wrap & overmold applications)

Socket

| Latch | Mount | Size | No Barrier | | High Barrier | |
|---------------------------------|-----------------------------|----------------------------------|------------|-------------|--------------|---------------|
| | | | Commercial | 30Au/Ni | Commercial | 30Au/Ni |
| No latches | Float Mounts with .103 Hole | 14 | 57-20140 | 57-20140A | 57-20140-6 | 57-20140-6A |
| | | 24 | 57-20240 | 57-20240A | 57-20240-6 | 57-20240-6A |
| | | 36 | 57-20360 | 57-20360A | 57-20360-10 | 57-20360-10A |
| | | 50 | 57-20500 | 57-20500A | 57-20500-6 | 57-20500-6A |
| | .185 Hole | 14 | 57-20140-4 | 57-20140-4A | - | - |
| | | 24 | 57-20240-2 | 57-20240-2A | - | - |
| | | 36 | 57-20360-3 | 57-20360-3A | - | - |
| | .120 Hole | 50 | - | - | 57-20500-120 | 57-20500-120A |
| | | Integral Panel Clips*, .103 Hole | 50 | - | - | 57-20500-41 |
| | Bail latches | .116 Hole | 14 | 57-40140 | 57-40140A | 57-40140-HB |
| 24 | | | 57-40240 | 57-40240A | 57-40240-HB | 57-40240-HBA |
| 36 | | | 57-40360† | 57-40360A† | 57-40360-9† | 57-40360-9A† |
| 50 | | | 57-40500 | 57-40500A | 57-40500-4 | 57-40500-4A |
| .116 Hole with Tin-Plated Shell | | 50 | 57-40500-5 | 57-40500-5A | 57-40500-28† | 57-40500-28A† |

* Integral Panel Clips, for front-mount only, require modified panel cutout. See page 6-52 for details.

† IEEE 1284-B

**.085 in. (2.16mm)
Density
Miniature Ribbon**

Solder Cup
Metal Shell

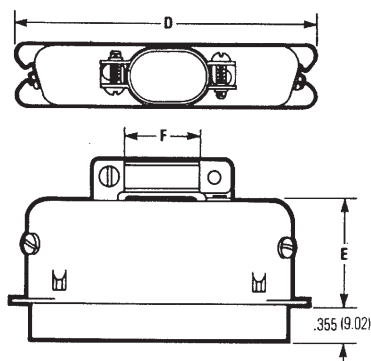


180° (Top-Entry) Cable

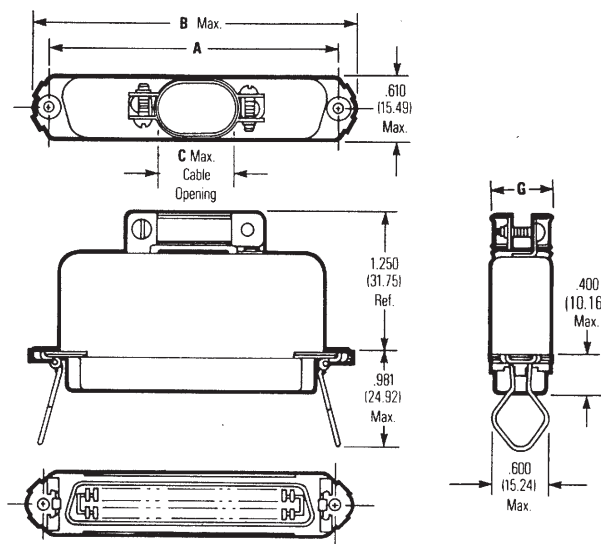
Top-Entry products include a connector, hood, and associated hardware. They are typically used at the end of a cable, where it is subject to physical strain and protection of the termination area is required.

- Includes all hardware required to attach hood to connector.
- Bail latching sockets have latch hardware integral to connector body, making cable assembly less costly.
- Bail latching plugs include notches that lock with industry-standard bail-lock sockets.

Plug



Socket



Dimensions

| Size | A | | B | | C | | D | | E | | F | | G | |
|------|-------|-------|-------|-------|------|-------|-------|-------|------|-------|------|-------|------|-------|
| | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm | in | mm |
| 14 | 1.417 | 35.99 | 1.750 | 44.45 | .306 | 7.77 | 1.495 | 37.97 | .843 | 21.41 | .306 | 7.77 | .422 | 10.72 |
| 24 | 1.842 | 46.79 | 2.175 | 55.25 | .473 | 11.10 | 1.920 | 48.77 | .825 | 20.96 | .473 | 12.01 | .473 | 12.01 |
| 36 | 2.352 | 59.74 | 2.685 | 68.20 | .639 | 16.23 | 2.431 | 61.75 | .905 | 22.99 | .640 | 16.26 | .473 | 12.01 |
| 50 | 2.947 | 74.85 | 3.270 | 83.06 | .766 | 19.46 | 3.025 | 76.84 | .995 | 25.27 | .766 | 19.46 | .473 | 12.01 |

Ordering Information, 180° (Top-Entry) Cable

Plug, InstaLatching

| Mount | Size | No Barrier | | High Barrier | |
|-------------------------------|------|------------|-------------|--------------|-------------|
| | | Commercial | 30Au/Ni | Commercial | 30Au/Ni |
| Bail Latching | 14 | 57-30140 | 57-30140A | - | - |
| | 24 | 57-30240 | 57-30240A | - | - |
| | 36 | 57-30360 | 57-30360A | - | - |
| | 50 | 57-30500 | 57-30500A | 57-30500-3 | 57-30500-3A |
| #4-40 Holes for captive screw | 50 | 57-30500-4 | 57-30500-4A | - | - |

Socket

| Mount | Size | No Barrier | | High Barrier | |
|-------------------|------|------------|-----------|--------------|---------|
| | | Commercial | 30Au/Ni | Commercial | 30Au/Ni |
| With Bail Latches | 14 | 57-60140 | 57-60140A | - | - |
| | 24 | 57-60240 | 57-60240A | - | - |
| | 36 | 57-60360 | 57-60360A | - | - |
| | 50 | 57-60500 | 57-60500A | - | - |

**.085 in. (2.16mm)
Density
Miniature Ribbon**

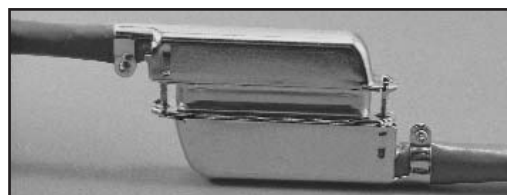
Solder Cup
Metal Shell



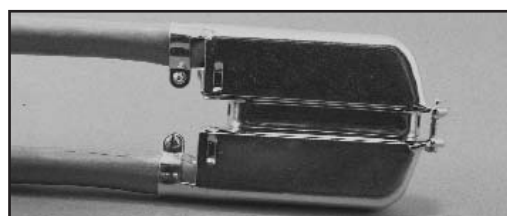
90° (Standard) / 270° (Reverse) End-Entry Cable

End-Entry connectors, available in 50 position size only, include a hood and integral cable clamp for cable exit from the end of the connector

- The standard-orientation plug has the cable clamp on the position 1/26 end, and the standard-orientation socket has the clamp on the position 25/50 end.
- Cables may be extended end-to-end (i.e., “running cable”) by mating standard-orientation plugs and sockets, or “doubled back” by mating a standard-orientation connector with a reverse-orientation mate.
- Cables may exit either direction on a cable-to-panel application by choosing standard- or reverse-orientation, depending on the desired direction of cable exit.
- Include screw that is 5/8" long, suitable for locking directly to the body of another connector. For locking to connectors panel-mounted with screw-lock hardware, shorter screws are required. See page 6-51 for these and other accessories, such as dust covers.

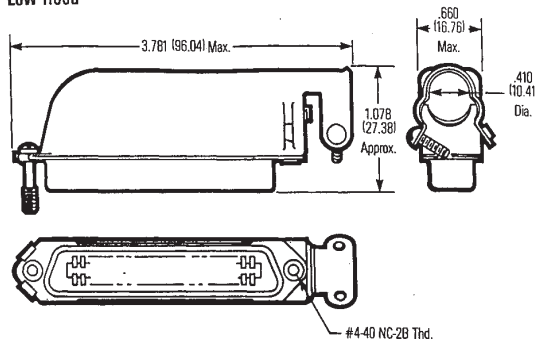


Running Cable Application

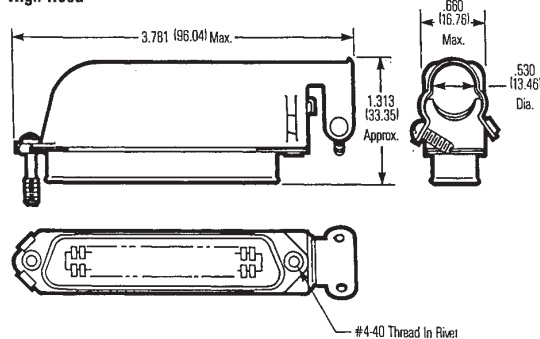


Double-Back Cable Application

Low Hood



High Hood



Ordering Information, End-Entry

Plug, InstaLatching (High Barrier, with Dust Cover)

| Mount | Size | Standard (90°) Orientation | | Reverse (270°) Orientation | |
|----------------------|------|----------------------------|--------------|----------------------------|---------------|
| | | Commercial | 30Au/Ni | Commercial | 30Au/Ni |
| High (Standard) Hood | 50 | 57-10500-14 | 57-10500-14A | 57-10500-270 | 57-10500-270A |
| Low-Profile Hood | 50 | 57-10500-7 | 57-10500-7A | 57-10500-271 | 57-10500-271A |

Socket (High Barrier, with Dust Cover)

| Mount | Size | Standard (90°) Orientation | | Reverse (270°) Orientation | |
|----------------------|------|----------------------------|--------------|----------------------------|---------------|
| | | Commercial | 30Au/Ni | Commercial | 30Au/Ni |
| High (Standard) Hood | 50 | 57-20500-7 | 57-20500-7A | 57-20500-270 | 57-20500-270A |
| Low-Profile Hood | 50 | 57-20500-19 | 57-20500-19A | 57-20500-271 | 57-20500-271A |

**.085 in. (2.16mm)
Density
Miniature Ribbon**

Wire Wrap
Metal Shell and All-Plastic

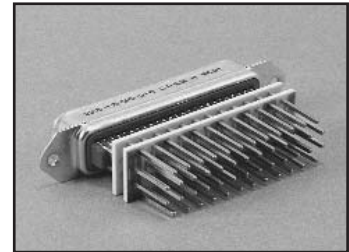


FEATURES

- Terminates Discrete Wire without soldering, on .025" sq. or .045" sq. tails.
- All-plastic design reduces cost. Metal Shell available where indicated for improved shielding.
- Available in plug and socket styles in 14, 24, 36, 50, and 64 position sizes.
- All plugs lock with InstaLatch passive latch feature for automatic latching. Sockets available with InstaLatches where indicated.
- Available with industry-standard bail latch feature for positive locking/unlocking without tools.
- UL Recognized - Files E170218 (UL1977), E130965 (UL1863).
- CSA Approved - File LR31996-7.

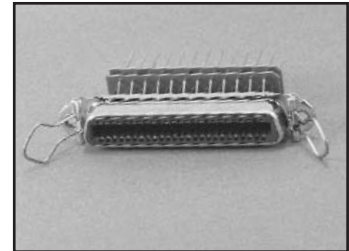
MATERIALS

Insulator (Metal Shell Product): Blue UL94V-0 rated dialyl phthalate type MDG per MIL-M14F
Insulator (All-Plastic Product): Gray UL94V-0 rated dialyl phthalate type MDG per MIL-M14F
Contact: Copper alloy
Contact Plating: Select gold over 50µin. select nickel standard;
 30µin. select gold over 50µin. select nickel available where indicated
Wire-Wrap Terminal: Cupro nickel
Shell (Metal Shell Product): Steel
Shell Plating (Metal Shell Product): Zinc with clear chromate coating



ENVIRONMENTAL

Operating Temperature: -40°C to +105°C
Shock: 50G Peak, per EIA Std. RS364, TP27, Condition A
Vibration: 3 cycles @ 10-55Hz in each of 3 axes per EIA Std. 364, TP28, condition A
Moisture Resistance: Per EIA Std. RS364, TP31, Condition B, with step 7B excluded



ELECTRICAL

Voltage Rating: 500 VAC @ sea level; 125 VAC @ 70,000 ft.
Withstanding Voltage: 1200 VAC RMS @ sea level, per EIA Std. RS364, TP20
Contact Rating: 5 Amps (4 Amps per CSA)
Contact Resistance: 6 milliohms maximum, per EIA Std. RS364, TP6
Insulation Resistance: 5000 Megohms minimum initial;
 1000 Megohms minimum after moisture

MECHANICAL

Durability: 200 mating/unmating cycles

Mating / Unmating Forces:

| Size | Mating Force (max.) with InstaLatches | | Unmating Force (min.) without InstaLatches | |
|------|--|-------|---|------|
| | Lb. | Kg | Lb. | Kg |
| 14 | 12 | 5.44 | 2 | 0.91 |
| 24 | 17 | 7.71 | 4 | 1.81 |
| 36 | 23 | 10.43 | 6 | 2.72 |
| 50 | 32 | 14.52 | 7 | 3.18 |
| 64 | 37 | 16.78 | 8 | 3.63 |

.085 in. (2.16mm) Density Miniature Ribbon

Wire Wrap
Metal Shell and All-Plastic

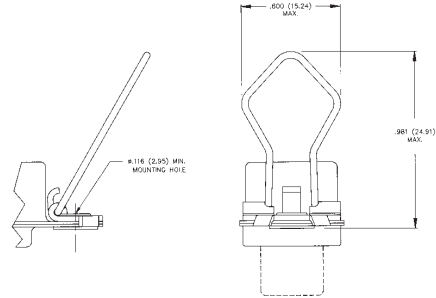


Metal Shell

- Metal Shell Wire Wrap connectors are available with .025" sq. or .045" sq. x 1.35" (.56" wrap length) terminals. .045" sq. terminals are also available with .850" (.28" wrap length) terminals.
- Available with .103" mounting holes for #3 hardware. Sockets also available with bail latches and .116" holes.

See page 6-4 for recommended standard panel cutout dimensions.

See page 6-51 for accessories such as mounting screws, bent bail latches, and dust covers, which make the use of Cinch Miniature Ribbon connectors even more cost-effective.

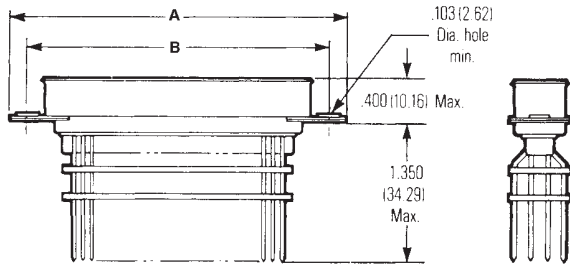


Bail Latches

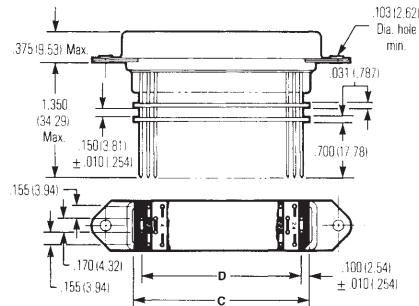
Dimensions

| Sizes | A | | B | | C | | D | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | in | mm | in | mm | in | mm | in | mm |
| 14 | 1.750 | 44.45 | 1.417 | 35.99 | 0.710 | 18.03 | 0.510 | 12.95 |
| 24 | 2.175 | 55.25 | 1.842 | 46.79 | 1.135 | 28.83 | 0.935 | 23.75 |
| 36 | 2.665 | 67.69 | 2.352 | 59.74 | 1.645 | 41.78 | 1.445 | 36.70 |
| 50 | 3.260 | 82.80 | 2.947 | 74.85 | 2.240 | 56.90 | 2.040 | 51.82 |

Metal Plug



Metal Socket



Ordering Information, Metal Shell

Plug, InstaLatching

| | Size | .025" sq. x 1.35" Terminals | | .045" sq. x 1.35" Terminals | | .045" sq. x .85" Terminals | |
|-----------|------|-----------------------------|---------------|-----------------------------|---------------|----------------------------|---------------|
| | | Commercial | 30Au/Ni | Commercial | 30Au/Ni | Commercial | 30Au/Ni |
| .103 Hole | 14 | 57-10140-WW1 | 57-10140-WW1A | 57-10140-WW2 | 57-10140-WW2A | 57-10140-WW3 | 57-10140-WW3A |
| | 24 | 57-10240-WW1 | 57-10240-WW1A | 57-10240-WW2 | 57-10240-WW2A | 57-10240-WW3 | 57-10240-WW3A |
| | 36 | 57-10360-WW1 | 57-10360-WW1A | 57-10360-WW2 | 57-10360-WW2A | 57-10360-WW3 | 57-10360-WW3A |
| | 50 | 57-10500-WW1 | 57-10500-WW1A | 57-10500-WW2 | 57-10500-WW2A | 57-10500-WW3 | 57-10500-WW3A |

Socket

| | Size | .025" sq. x 1.35" Terminals | | .045" sq. x 1.35" Terminals | | .045" sq. x .85" Terminals | |
|-------------------------|------|-----------------------------|---------------|-----------------------------|---------------|----------------------------|---------------|
| | | Commercial | 30Au/Ni | Commercial | 30Au/Ni | Commercial | 30Au/Ni |
| .103 Hole | 14 | 57-20140-WW1 | 57-20140-WW1A | 57-20140-WW2 | 57-20140-WW2A | 57-20140-WW3 | 57-20140-WW3A |
| | 24 | 57-20240-WW1 | 57-20240-WW1A | 57-20240-WW2 | 57-20240-WW2A | 57-20240-WW3 | 57-20240-WW3A |
| | 36 | 57-20360-WW1 | 57-20360-WW1A | 57-20360-WW2 | 57-20360-WW2A | 57-20360-WW3 | 57-20360-WW3A |
| | 50 | 57-20500-WW1 | 57-20500-WW1A | 57-20500-WW2 | 57-20500-WW2A | 57-20500-WW3 | 57-20500-WW3A |
| Bail Latches, .116 Hole | 14 | 57-20140-WW4 | 57-20140-WW4A | - | - | - | - |
| | 24 | 57-20240-WW4 | 57-20240-WW4A | - | - | - | - |
| | 36 | 57-20360-WW4 | 57-20360-WW4A | - | - | - | - |
| | 50 | 57-20500-WW4 | 57-20500-WW4A | - | - | - | - |

**.085 in. (2.16mm)
Density
Miniature Ribbon**

Wire Wrap
Metal Shell and All-Plastic



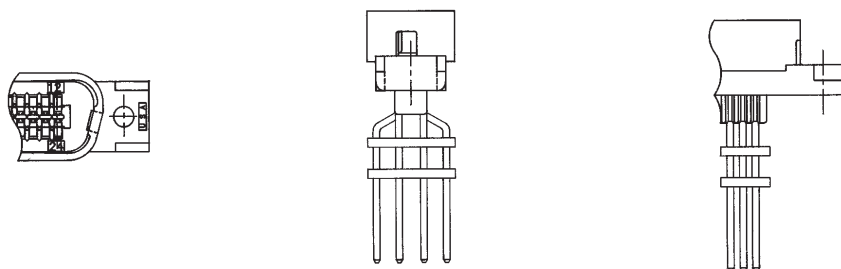
All-Plastic

- All-plastic Wire Wrap connectors are available with .025" sq. or .045" sq. x 1.35" (.56" wrap length) terminals.
- Available with .141" or .125" mounting holes as indicated, for #4 hardware.
- Includes InstaLatch passive latch feature for automatic latching. Sockets also available without latches.

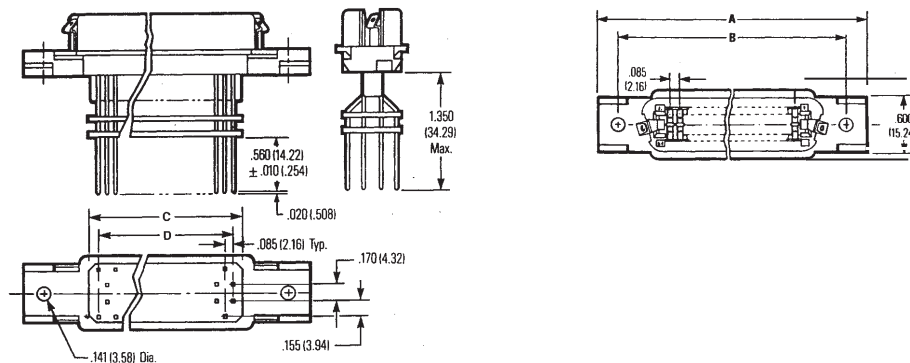
See pages 6-4 and 6-52 for recommended panel cutout dimensions.

See pages 6-51 thru 6-52 for accessories such as mounting screws and dust covers, which make the use of Cinch Miniature Ribbon connectors even more cost-effective in panel-mount applications.

Plug



All-Plastic Socket



Dimensions, All-Plastic

| Size | A | | B | | C | | D | |
|------|-------|-------|-------|-------|-------|-------|-------|-------|
| | in | mm | in | mm | in | mm | in | mm |
| 14 | 1.745 | 44.32 | 1.417 | 35.99 | 0.710 | 18.03 | 0.510 | 12.95 |
| 24 | 2.170 | 55.12 | 1.842 | 46.79 | 1.135 | 28.83 | 0.935 | 23.75 |
| 36 | 2.680 | 68.07 | 2.352 | 59.74 | 1.645 | 41.78 | 1.445 | 36.70 |
| 50 | 3.275 | 83.19 | 2.947 | 74.85 | 2.240 | 56.90 | 2.040 | 51.82 |
| 64 | 3.875 | 98.43 | 3.542 | 89.97 | 2.835 | 72.01 | 2.635 | 66.93 |

**.085 in. (2.16mm)
Density
Miniature Ribbon**

Wire Wrap
Metal Shell and All-Plastic



Ordering Information, All-Plastic

Plug, InstaLatching

| Mount | Size | .025" sq. x 1.35" Terminals | | .045" sq. x 1.35" Terminals | |
|-----------|------|-----------------------------|---------|-----------------------------|---------------|
| | | Commercial | 30Au/Ni | Commercial | 30Au/Ni |
| .140 Hole | 24 | - | - | 97-10240-WW2 | 97-10240-WW2A |
| | 64 | - | - | 97-10640-WW2 | 97-10640-WW2A |

Socket

| Mount | Size | .025" sq. x 1.35" Terminals | | .045" sq. x 1.35" Terminals | | |
|------------|-----------|-----------------------------|---------------|-----------------------------|---------------|---------------|
| | | Commercial | 30Au/Ni | Commercial | 30Au/Ni | |
| No latches | .141 Hole | 14 | 97-22140-WW5 | 97-22140-WW5A | 97-22140-WW6 | 97-22140-WW6A |
| | | 24 | 97-22240-WW5 | 97-22240-WW5A | 97-22240-WW6 | 97-22240-WW6A |
| | 36 | 97-22360-WW5 | 97-22360-WW5A | 97-22360-WW6 | 97-22360-WW6A | |
| | 50 | 97-22500-WW5 | 97-22500-WW5A | 97-22500-WW6 | 97-22500-WW6A | |
| .159 Hole | 64 | 97-22640-WW5 | 97-22640-WW5A | 97-22640-WW6 | 97-22640-WW6A | |
| | .141 Hole | 14 | 97-22140-WW1 | 97-22140-WW1A | 97-22140-WW2 | 97-22140-WW2A |
| 24 | | 97-22240-WW1 | 97-22240-WW1A | 97-22240-WW2 | 97-22240-WW2A | |
| 36 | | 97-22360-WW1 | 97-22360-WW1A | 97-22360-WW2 | 97-22360-WW2A | |
| .159 Hole | 50 | 97-22500-WW1 | 97-22500-WW1A | 97-22500-WW2 | 97-22500-WW2A | |
| | 64 | 97-22640-WW1 | 97-22640-WW1A | 97-22640-WW2 | 97-22640-WW2A | |

**.085 in. (2.16mm)
Density
Miniature Ribbon**

Vertical-Mount Solder Tail
Metal Shell

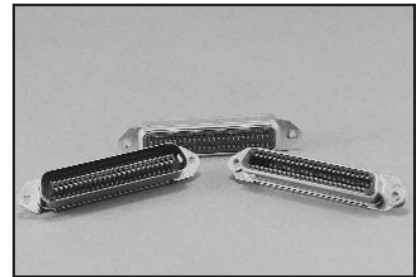


FEATURES

- **Straight Solder Tails for solder termination to printed circuit board in lengths for use on all standard thickness boards.**
- **Surface Mount Compatible; withstands vapor-phase and IR reflow processes.**
- **Metal shell provides grounding and shielding capability.**
- **Available in plug and socket styles in 14, 24, 36, and 50 position sizes.**
- **All plugs lock with InstaLatch passive latch feature for automatic latching.**
- **Industry-standard bail latch feature available for locking/unlocking without tools in applications such as SCSI-1 and Centronics.**
- **Available, where indicated, with J-Hook latches that automatically lock down mating end-entry connectors.**
- **Available, where indicated, with through-hole or threaded standoffs for improved board mounting.**
- **Sockets available with through holes or with float mounts to provide limited self-alignment.**
- **UL Recognized - Files E170218 (UL1977), E130965 (UL1863).**
- **CSA Approved - File LR31996-7.**

MATERIALS

Insulator: Blue UL94V-0 rated diallyl phthalate type MDG, per MIL-M14F
Contact: Copper alloy
Contact Plating: Select gold over 50µin. select nickel standard;
 30µin. select gold over 50µin. select nickel available where indicated.
 Gold flash on solder tails
Shell: Steel
Shell Plating: Zinc with clear chromate coating standard. Tin available where indicated.



ENVIRONMENTAL

Operating Temperature: -40°C to +105°C
Shock: 50G Peak, per EIA Std. RS364, TP27, Condition A
Vibration: 3 cycles @ 10-55Hz in each of 3 axes per EIA Std. 364, TP28, Condition A
Moisture Resistance: Per EIA Std. RS364, TP31, Condition B, with Step 7B excluded

ELECTRICAL

Voltage Rating: 500 VAC @ sea level; 125 VAC @ 70,000 ft.
Withstanding Voltage: 1200 VAC RMS @ sea level, per EIA Std. RS364, TP20
Contact Rating: 5 Amps (4 Amps per CSA)
Contact Resistance: 6 milliohms maximum, per EIA Std. RS364, TP6
Insulation Resistance: 5000 Megohms minimum initial;
 1000 Megohms minimum after moisture

MECHANICAL

Durability: 200 mating/unmating cycles
Mating / Unmating Forces:

| Size | Mating Force (max.) | | Unmating Force (min.) | |
|------|---------------------|------|-----------------------|------|
| | Lb. | Kg | Lb. | Kg |
| 14 | 5 | 2.27 | 2 | 0.91 |
| 24 | 8 | 3.63 | 4 | 1.81 |
| 36 | 12 | 5.44 | 6 | 2.72 |
| 50 | 15 | 6.80 | 7 | 3.18 |

**.085 in. (2.16mm)
Density
Miniature Ribbon**

Vertical-Mount Solder Tail
Metal Shell

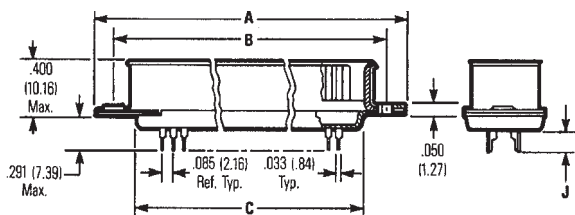


Plug, InstaLatching

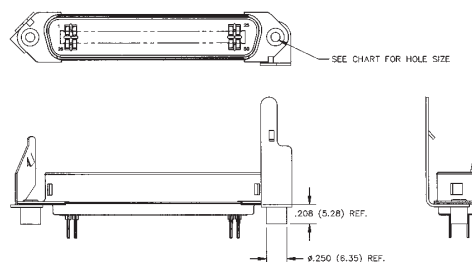
Dimensions

| Size | A | | B | | C | |
|------|-------|-------|-------|-------|-------|-------|
| | in | mm | in | mm | in | mm |
| 14 | 1.750 | 44.45 | 1.417 | 35.99 | 0.910 | 23.11 |
| 24 | 2.175 | 55.25 | 1.842 | 46.79 | 1.335 | 33.91 |
| 36 | 2.685 | 68.20 | 2.352 | 59.74 | 1.845 | 46.86 |
| 50 | 3.260 | 82.80 | 2.947 | 74.85 | 2.440 | 61.98 |

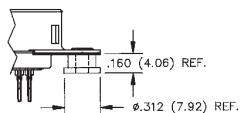
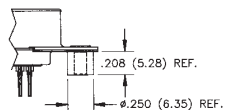
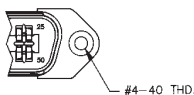
Plug



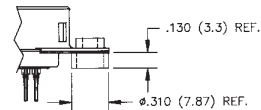
J-Hook Latches



Conductive Standoff



Insulated Standoff



Ordering Information, Plug, InstaLatching

| Mount | Size | .110" Tail Length (J) (for PCB thickness up to .062" nominal) | | .145" Tail Length (J) (for PCB thickness up to .093" nominal) | | .190" Tail Length (J) (for PCB thickness up to .125" nominal) | |
|--|--|--|--------------|--|--------------|--|---------------|
| | | Commercial | 30Au/Ni | Commercial | 30Au/Ni | Commercial | 30Au/Ni |
| .103 Hole | 14 | 57-10140-4 | 57-10140-4A | 57-10140-5 | 57-10140-5A | 57-DS14P2-3 | 57-DS14P2-3A |
| | 24 | 57-10240-3 | 57-10240-3A | 57-10240-5 | 57-10240-5A | 57-10240-12 | 57-10240-12A |
| | 36 | 57-10360-13 | 57-10360-13A | 57-10360-17 | 57-10360-17A | 57-10360-25 | 57-10360-25A |
| | 50 | 57-10500-27 | 57-10500-27A | 57-10500-46 | 57-10500-46A | 57-10500-73 | 57-10500-73A |
| .185 Hole | 14 | 57-DS14P1-1 | 57-DS14P1-1A | 57-DS14P1-2 | 57-DS14P1-2A | 57-DS14P1-3 | 57-DS14P1-3A |
| | 24 | 57-DS24P1-1 | 57-DS24P1-1A | 57-DS24P1-2 | 57-DS24P1-2A | 57-DS24P1-3 | 57-DS24P1-3A |
| | 36 | 57-DS36P1-1 | 57-DS36P1-1A | 57-DS36P1-2 | 57-DS36P1-2A | 57-DS36P1-3 | 57-DS36P1-3A |
| | 50 | 57-DS50P1-1 | 57-DS50P1-1A | 57-DS50P1-2 | 57-DS50P1-2A | 57-DS50P1-3 | 57-DS50P1-3A |
| Conductive Standoff .120 (Ref) Hole | 50 | - | - | - | - | 57-10500-76 | 57-10500-76A |
| Conductive Standoff 4-40 Hole | 50 | - | - | - | - | 57-10500-77 | 57-10500-77A |
| Insulated Standoff .120 (Ref) Hole | 50 | - | - | - | - | 57-10500-68 | 57-10500-68A |
| Insulated Standoff 4-40 Hole | 50 | - | - | - | - | 57-10500-69 | 57-10500-69A |
| J-Hook Latches | Conductive Standoff .120 (Ref) Hole | 50 | - | - | - | 57-10500J-76 | 57-10500J-76A |
| | Conductive Standoff 4-40 Hole | 50 | - | - | - | 57-10500J-77 | 57-10500J-77A |
| | Insulated Standoff .120 (Ref) Hole | 50 | - | - | - | 57-10500J-68 | 57-10500J-68A |
| | Insulated Standoff 4-40 Hole | 50 | - | - | - | 57-10500J-69 | 57-10500J-69A |

**.085 in. (2.16mm)
Density
Miniature Ribbon**

Vertical-Mount Solder Tail
Metal Shell

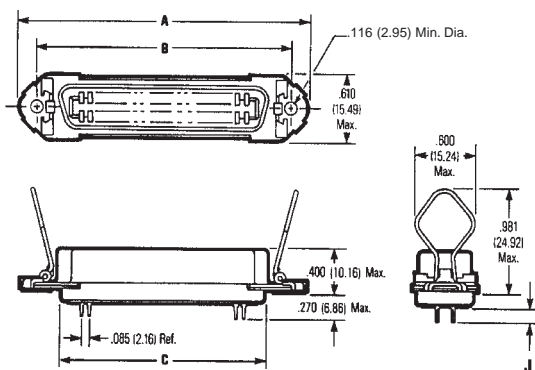


Socket

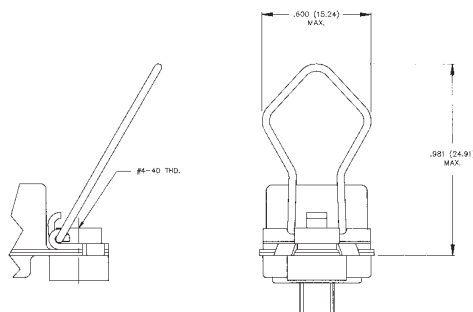
Dimensions

| Size | A | | B | | C | |
|------|-------|-------|-------|-------|-------|-------|
| | in | mm | in | mm | in | mm |
| 14 | 1.750 | 44.45 | 1.417 | 35.99 | 0.910 | 23.11 |
| 24 | 2.175 | 55.25 | 1.842 | 46.79 | 1.335 | 33.91 |
| 36 | 2.685 | 68.2 | 2.352 | 59.74 | 1.845 | 46.86 |
| 50 | 3.260 | 82.8 | 2.947 | 74.85 | 2.440 | 61.98 |

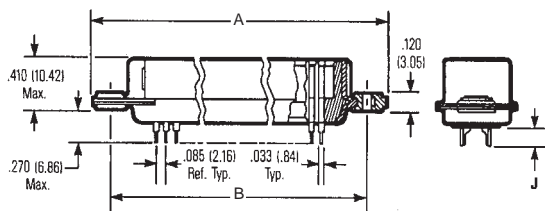
Socket with Bail Latches



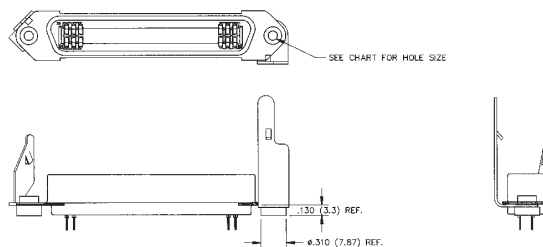
Bail Latches with Standoffs



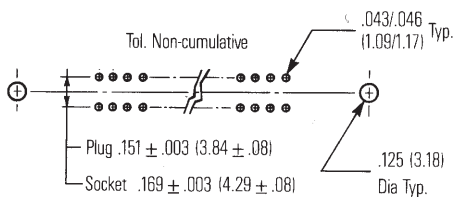
Socket with Float Bushing



J-Hook Latches



Recommended PCB Hole Layout



**.085 in. (2.16mm)
Density
Miniature Ribbon**

Vertical-Mount Solder Tail
Metal Shell



Socket

Ordering Information

| Latch Mount | Size | .110" Tail Length (J) (for PCB thickness up to .062" nominal) | | .145" Tail Length (J) (for PCB thickness up to .093" nominal) | | .190" Tail Length (J) (for PCB thickness up to .125" nominal) | | | |
|----------------|---------------------------------|--|--------------|--|--------------|--|--------------|---------------|---------------|
| | | Commercial | 30Au/Ni | Commercial | 30Au/Ni | Commercial | 30Au/Ni | | |
| No Latches | Float Mounts with .103 Hole | 14 | 57-20140-8 | 57-20140-8A | - | - | - | - | |
| | | 24 | 57-20240-8 | 57-20240-8A | - | - | - | - | |
| | | 36 | 57-20360-9 | 57-20360-9A | - | - | - | - | |
| | | 50 | 57-20500-31 | 57-20500-31A | - | - | - | - | |
| | .185 Hole | 14 | 57-20140-12 | 57-20140-12A | 57-20140-10 | 57-20140-10A | 57-DS14S1-3 | 57-DS14S1-3A | |
| | | 24 | 57-20240-14 | 57-20240-14A | 57-20240-11 | 57-20240-11A | 57-20240-23 | 57-20240-23A | |
| | | 36 | 57-20360-15 | 57-20360-15A | 57-20360-13 | 57-20360-13A | 57-20360-19 | 57-20360-19A | |
| | | 50 | 57-20500-65 | 57-20500-65A | 57-20500-58 | 57-20500-58A | 57-20500-85 | 57-20500-85A | |
| | | 14 | 57-40140-8 | 57-40140-8A | 57-40140-11 | 57-40140-11A | 57-DS14S-3 | 57-DS14S-3A | |
| | | 24 | 57-40240-9 | 57-40240-9A | 57-40240-11 | 57-40240-11A | 57-40240-14 | 57-40240-14A | |
| Bail Latches | .116 Hole | 36 | 57-40360-12† | 57-40360-12A† | 57-40360-16† | 57-40360-16A† | 57-40360-24† | 57-40360-24A† | |
| | | 50 | 57-40500-9 | 57-40500-9A | 57-40500-16 | 57-40500-16A | 57-40500-24 | 57-40500-24A | |
| | | Conductive Standoff 4-40 Hole | | 50 | - | - | - | 57-40500-26 | 57-40500-26A |
| | | Insulated Standoff .120 (Ref) Hole | | 50 | - | - | - | 57-20500J-78 | 57-20500J-78A |
| J-Hook Latches | Insulated Standoff 4-40 Hole | | 50 | - | - | - | 57-20500J-79 | 57-20500J-79A | |

† IEEE 1284-B

**.085 in. (2.16mm)
Density
Miniature Ribbon**

Vertical-Mount Solder Tail
All-Plastic

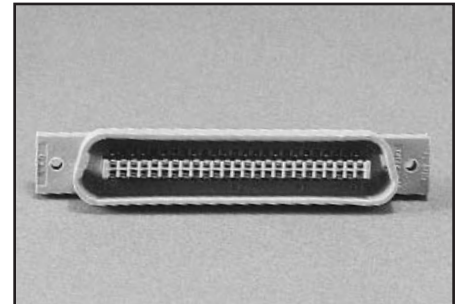


FEATURES

- **Straight Solder Tails for solder termination to printed circuit board.**
- **Available with .145" or .190" tail lengths to suit applications with any thickness PC board.**
- **All-plastic design reduces cost.**
- **Available in plug and socket styles in 14, 24, 36, 50, and 64 position sizes.**
- **All plugs lock with InstaLatch passive latch feature for automatic latching. Sockets available with InstaLatches, with Bail Latches in sizes indicated, or with no latches.**
- **Available with through holes or with #4-40 holes for mounting/latching.**
- **UL Recognized - Files E170218 (UL1977), E130965 (UL1863).**
- **CSA Approved - File LR31996-7.**

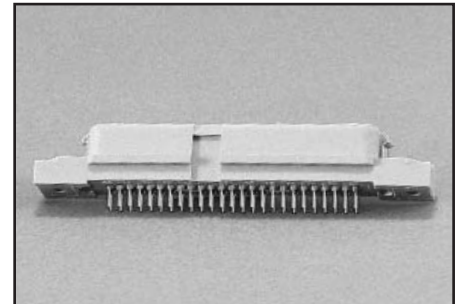
MATERIALS

Insulator: Gray UL94V-0 rated glass-filled polyester
Contact: Copper Alloy
Contact Plating: Select gold over 50µin. select nickel standard;
 30µin. select gold over 50µin. select nickel
 available where indicated. Gold flash on
 solder tails



ENVIRONMENTAL

Operating Temperature: -40°C to +105°C
Shock: 50G Peak, per EIA Std. RS364, TP27, Condition A
Vibration: 3 cycles @ 10-55Hz in each of 3 axes per EIA
 Std. 364, TP28, Condition A
Moisture Resistance: Per EIA Std. RS364, TP31, Condition B,
 with Step 7B excluded



ELECTRICAL

Voltage Rating: 500 VAC @ sea level; 125 VAC @ 70,000 ft.
Withstanding Voltage: 1200 VAC RMS @ sea level, per EIA
 Std. RS364, TP20
Contact Rating: 5 Amps (4 Amps per CSA)
Contact Resistance: 6 milliohms maximum, per EIA Std.
 RS364, TP6
Insulation Resistance: 5000 Megohms minimum initial;
 1000 Megohms minimum after moisture

MECHANICAL

Durability: 200 mating/unmating cycles
Mating / Unmating Forces:

| Size | Mating Force (max.) with InstaLatches | | Unmating Force (min.) without InstaLatches | |
|------|--|-------|---|------|
| | Lb. | Kg | Lb. | Kg |
| 14 | 12 | 5.44 | 2 | 0.91 |
| 24 | 17 | 7.71 | 4 | 1.81 |
| 36 | 23 | 10.43 | 6 | 2.72 |
| 50 | 32 | 14.52 | 7 | 3.18 |
| 64 | 37 | 16.78 | 8 | 3.63 |

.085 in. (2.16mm)
Density
Miniature Ribbon

Vertical-Mount Solder Tail
 All-Plastic



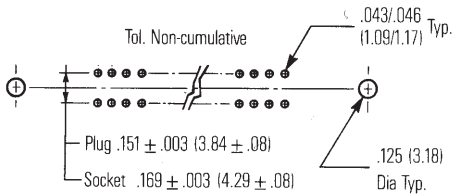
Vertical-mount Miniature Ribbon connectors provide I/O directly from printed circuit boards, where the mating face of the connector is in a plane parallel to that of the board.

See page 6-51 for accessories such as dust covers, bent bail latches, and mounting screws that make the use of Cinch Miniature Ribbon connectors even more cost-effective in board-mount applications.

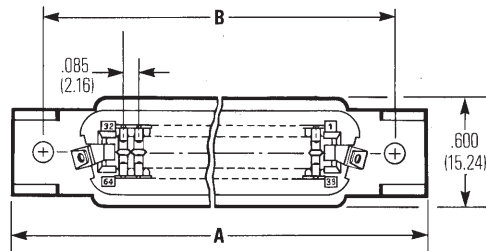
Dimensions

| Size | A | | B | |
|------|-------|-------|-------|-------|
| | in | mm | in | mm |
| 14 | 1.745 | 44.32 | 1.417 | 35.99 |
| 24 | 2.170 | 55.12 | 1.842 | 46.79 |
| 36 | 2.680 | 68.07 | 2.352 | 59.74 |
| 50 | 3.275 | 83.19 | 2.947 | 74.85 |
| 64 | 3.875 | 98.43 | 3.542 | 89.97 |

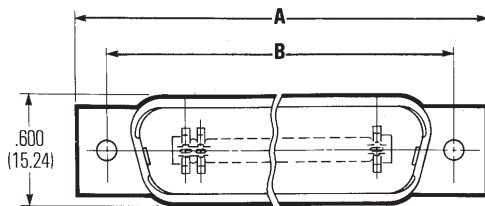
Recommended PCB Hole Layout



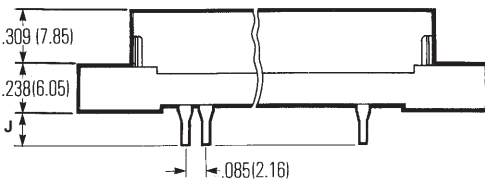
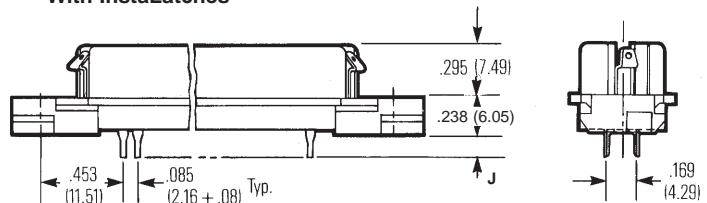
Socket



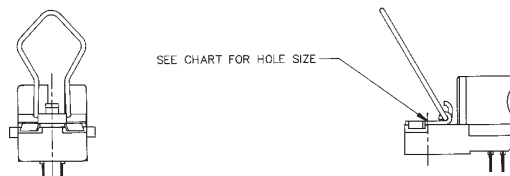
Plug



With InstaLatches



With Bail Latches



**.085 in. (2.16mm)
Density
Miniature Ribbon**

Vertical-Mount Solder Tail
All-Plastic



Ordering Information, Vertical-Mount Solder Tail

Plug, InstaLatching

| Mount | Size | .138" Tail Length (J) (for PCB thickness up to .093" nominal) | | .183" Tail Length (J) (for PCB thickness up to .125" nominal) | |
|------------|------|---|--------------|---|--------------|
| | | Commercial | 30Au/Ni | Commercial | 30Au/Ni |
| .125 Hole | 14 | 97-DSP14-2 | 97-DSP14-2A | 97-DSP14-3 | 97-DSP14-3A |
| | 24 | 97-DSP24-2 | 97-DSP24-2A | 97-DSP24-3 | 97-DSP24-3A |
| | 36 | 97-DSP36-2 | 97-DSP36-2A | 97-DSP36-3 | 97-DSP36-3A |
| | 50 | 97-DSP50-2 | 97-DSP50-2A | 97-DSP50-3 | 97-DSP50-3A |
| #4-40 Hole | 64 | 97-DSP64-2 | 97-DSP64-2A | 97-DSP64-3 | 97-DSP64-3A |
| | 14 | 97-DSP14-12 | 97-DSP14-12A | 97-DSP14-13 | 97-DSP14-13A |
| | 24 | 97-DSP24-12 | 97-DSP24-12A | 97-DSP24-13 | 97-DSP24-13A |
| | 36 | 97-DSP36-12 | 97-DSP36-12A | 97-DSP36-13 | 97-DSP36-13A |
| | 50 | 97-DSP50-12 | 97-DSP50-12A | 97-DSP50-13 | 97-DSP50-13A |
| | 64 | 97-DSP64-12 | 97-DSP64-12A | 97-DSP64-13 | 97-DSP64-13A |

Socket

| Latch Mount | Size | .138" Tail Length (J) (for PCB thickness up to .093" nominal) | | .183" Tail Length (J) (for PCB thickness up to .125" nominal) | | |
|-------------|-------------------------|---|--------------|---|--------------|--------------|
| | | Commercial | 30Au/Ni | Commercial | 30Au/Ni | |
| No latches | .125 Hole | 14 | 97-DSS14-22 | 97-DSS14-22A | 97-DSS14-23 | 97-DSS14-23A |
| | | 24 | 97-DSS24-22 | 97-DSS24-22A | 97-DSS24-23 | 97-DSS24-23A |
| | | 36 | 97-DSS36-22 | 97-DSS36-22A | 97-DSS36-23 | 97-DSS36-23A |
| | | 64 | 97-DSS64-22 | 97-DSS64-22A | 97-DSS64-23 | 97-DSS64-23A |
| | .160 Hole | 50 | 97-DSS50-22 | 97-DSS50-22A | 97-DSS50-23 | 97-DSS50-23A |
| | | 14 | 97-DSS14-32 | 97-DSS14-32A | 97-DSS14-33 | 97-DSS14-33A |
| | | 24 | 97-DSS24-32 | 97-DSS24-32A | 97-DSS24-33 | 97-DSS24-33A |
| | | 36 | 97-DSS36-32 | 97-DSS36-32A | 97-DSS36-33 | 97-DSS36-33A |
| #4-40 Hole | 50 | 97-DSS50-32 | 97-DSS50-32A | 97-DSS50-33 | 97-DSS50-33A | |
| | 64 | 97-DSS64-32 | 97-DSS64-32A | 97-DSS64-33 | 97-DSS64-33A | |
| | .125 Hole | 14 | 97-DSS14-2 | 97-DSS14-2A | 97-DSS14-3 | 97-DSS14-3A |
| | | 24 | 97-DSS24-2 | 97-DSS24-2A | 97-DSS24-3 | 97-DSS24-3A |
| 36 | | 97-DSS36-2 | 97-DSS36-2A | 97-DSS36-3 | 97-DSS36-3A | |
| 64 | | 97-DSS64-2 | 97-DSS64-2A | 97-DSS64-3 | 97-DSS64-3A | |
| .160 Hole | 50 | 97-DSS50-2 | 97-DSS50-2A | 97-DSS50-3 | 97-DSS50-3A | |
| | 14 | 97-DSS14-12 | 97-DSS14-12A | 97-DSS14-13 | 97-DSS14-13A | |
| | 24 | 97-DSS24-12 | 97-DSS24-12A | 97-DSS24-13 | 97-DSS24-13A | |
| | 36 | 97-DSS36-12 | 97-DSS36-12A | 97-DSS36-13 | 97-DSS36-13A | |
| #4-40 Hole | 50 | 97-DSS50-12 | 97-DSS50-12A | 97-DSS50-13 | 97-DSS50-13A | |
| | 64 | 97-DSS64-12 | 97-DSS64-12A | 97-DSS64-13 | 97-DSS64-13A | |
| | Bail Latches, .116 Hole | 24 | 97-DSS24-42 | 97-DSS24-42A | 97-DSS24-43 | 97-DSS24-43A |
| | | 36 | 97-DSS36-42 | 97-DSS36-42A | 97-DSS36-43 | 97-DSS36-43A |
| 50 | | 97-DSS50-42 | 97-DSS50-42A | 97-DSS50-43 | 97-DSS50-43A | |

**.085 in. (2.16mm)
Density
Miniature Ribbon**

Vertical-Mount Compliant Pin
All-Plastic and Metal Shell



FEATURES

- **Straight Compliant Pin for solderless termination to printed circuit board.**
- **All-plastic design reduces cost. Metal Shell also available where indicated for improved shielding.**
- **Available in plug and socket styles in 14, 24, 36, 50, and 64 position sizes.**
- **All plugs lock with InstaLatch passive latch feature for automatic latching. Sockets available with InstaLatches, with Bail Latches where indicated, or with no latches.**
- **Available with through holes or with #4-40 holes for mounting/latching.**
- **Includes Seating Cover that allows for flat-rock insertion and serves as dust cover after insertion.**
- **UL Recognized - Files E170218 (UL1977), E130965 (UL1863).**
- **CSA Approved - File LR31996-7.**

MATERIALS

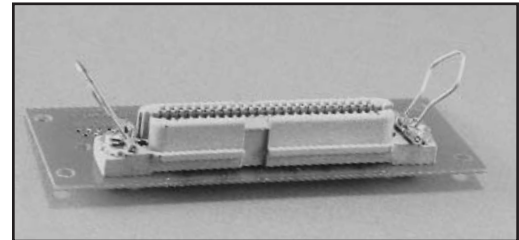
Insulator and Seating Cover: Gray UL94V-0 rated glass-filled polyester

Contact: Phosphor bronze

Contact Plating: Select gold over 50µin. select nickel standard; 30µin. select gold over 50µin. select nickel available where indicated. Gold flash in termination area

Shell (Metal Shell Version Only): Steel

Shell Plating (Metal Shell Version Only): Tin



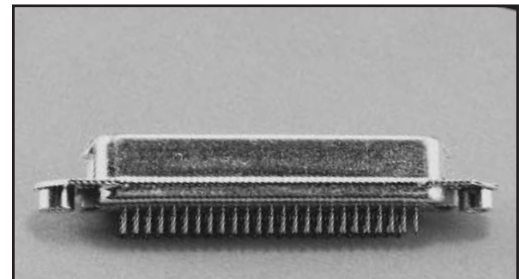
ENVIRONMENTAL

Operating Temperature: -40°C to +105°C

Shock: 50G Peak, per EIA Std. RS364, TP27, Condition A

Vibration: 3 cycles @ 10-55Hz in each of 3 axes per EIA Std. 364, TP28, Condition A

Moisture Resistance: Per EIA Std. RS364, TP31, Condition B, with Step 7B excluded



ELECTRICAL

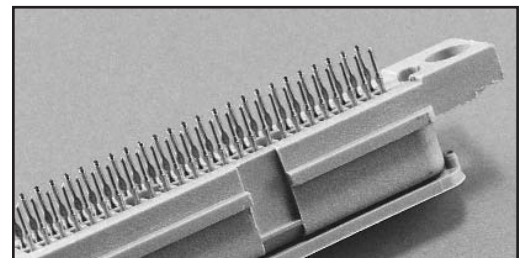
Voltage Rating: 500 VAC @ sea level; 125 VAC @ 70,000 ft.

Withstanding Voltage: 1200 VAC RMS @ sea level, per EIA Std. RS364, TP20

Contact Rating: 5 Amps (4 Amps per CSA)

Contact Resistance: 6 milliohms maximum, per EIA Std. RS364, TP6

Insulation Resistance: 5000 Megohms minimum initial; 1000 Megohms minimum after moisture



MECHANICAL

Durability: 200 mating/unmating cycles

Mating / Unmating Forces:

| Size | Mating Force (max.) with InstaLatches | | Unmating Force (min.) without InstaLatches | |
|------|--|-------|---|------|
| | Lb. | Kg | Lb. | Kg |
| 14 | 12 | 5.44 | 2 | 0.91 |
| 24 | 17 | 7.71 | 4 | 1.81 |
| 36 | 23 | 10.43 | 6 | 2.72 |
| 50 | 32 | 14.52 | 7 | 3.18 |
| 64 | 37 | 16.78 | 8 | 3.63 |

Connector/PCB Insertion Force (maximum): 25 lbs (12.3Kg) per contact

Connector/PCB Retention Force: 5 lb. (2.44Kg) per contact (minimum, without mounting hardware)

.085 in. (2.16mm) Density Miniature Ribbon

Vertical-Mount Compliant Pin All-Plastic and Metal Shell



Vertical-mount Miniature Ribbon connectors provide I/O directly from printed circuit boards, where the mating face of the connector is in a plane parallel to that of the board.

Compliant-pin connectors terminate without solder to plated-through holes in printed circuit boards. The tail conforms to the hole, providing a gas-tight termination without damaging the plating in the printed circuit board.

The seating cover acts as an insertion tool fixture, and *must be left in place until the connector is installed on the PCB*. It may also be left on after insertion to serve as a dust cover to protect the connector from contamination.

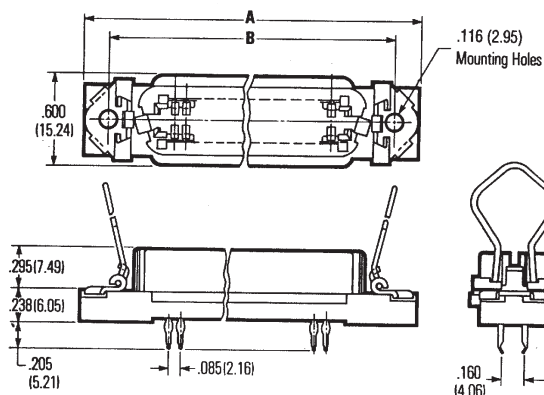
See pages 6-51 through 6-53 for accessories such as bent bail latches and mounting screws that make the use of Cinch Miniature Ribbon connectors even more cost-effective in board-mount applications.

Dimensions

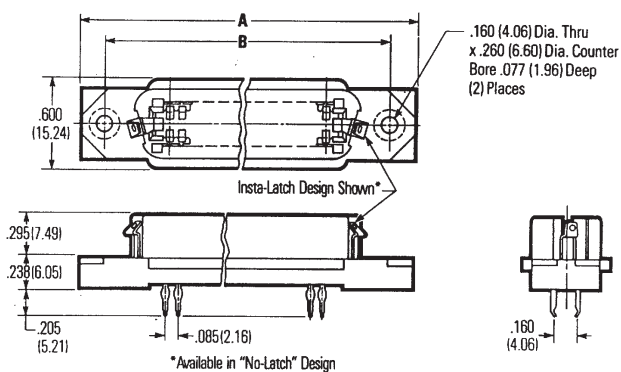
| Size | A | | B | | C | |
|------|-------|-------|-------|-------|-------|-------|
| | in | mm | in | mm | in | mm |
| 14 | 1.745 | 44.32 | 1.417 | 35.99 | .625 | 15.88 |
| 24 | 2.170 | 55.12 | 1.842 | 46.79 | 1.050 | 26.67 |
| 36 | 2.680 | 68.07 | 2.352 | 59.74 | 1.560 | 39.62 |
| 50 | 3.275 | 83.19 | 2.947 | 74.85 | 2.155 | 54.74 |
| 64 | 3.875 | 98.43 | 3.542 | 89.97 | 2.750 | 69.85 |

Plug

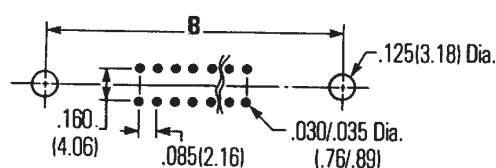
Socket with Bail Latches



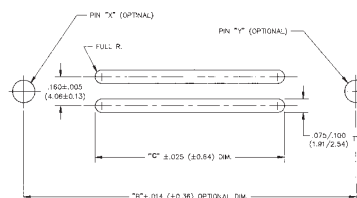
Socket with InstaLatches



Recommended PCB Hole Layout



Insertion Fixture Backer Plate



**.085 in. (2.16mm)
Density
Miniature Ribbon**

Vertical-Mount Compliant Pin
All-Plastic and Metal Shell



Ordering Information, Vertical-Mount Compliant Pin

All-Plastic Plug, InstaLatching

| Mount | Size | Commercial | 30Au/Ni |
|------------|------|------------|------------|
| .125 Hole | 14 | 97-CP-14 | 97-CP-14A |
| | 24 | 97-CP-24 | 97-CP-24A |
| | 36 | 97-CP-36 | 97-CP-36A |
| | 50 | 97-CP-50 | 97-CP-50A |
| | 64 | 97-CP-64 | 97-CP-64A |
| #4-40 Hole | 14 | 97-CP-14T | 97-CP-14TA |
| | 24 | 97-CP-24T | 97-CP-24TA |
| | 36 | 97-CP-36T | 97-CP-36TA |
| | 50 | 97-CP-50T | 97-CP-50TA |
| | 64 | 97-CP-64T | 97-CP-64TA |

All-Plastic Socket

| | Latch Mount | Size | Commercial | 30Au/Ni |
|--------------|-------------|------|------------|-------------|
| No latches | .160 Hole | 14 | 97-CS-14 | 97-CS-14A |
| | | 24 | 97-CS-24 | 97-CS-24A |
| | | 36 | 97-CS-36 | 97-CS-36A |
| | | 50 | 97-CS-50 | 97-CS-50A |
| | | 64 | 97-CS-64 | 97-CS-64A |
| | #4-40 Hole | 14 | 97-CS-14T | 97-CS-14TA |
| | | 24 | 97-CS-24T | 97-CS-24TA |
| | | 36 | 97-CS-36T | 97-CS-36TA |
| | | 50 | 97-CS-50T | 97-CS-50TA |
| | | 64 | 97-CS-64T | 97-CS-64TA |
| InstaLatches | .160 Hole | 14 | 97-CSI-14 | 97-CSI-14A |
| | | 24 | 97-CSI-24 | 97-CSI-24A |
| | | 36 | 97-CSI-36 | 97-CSI-36A |
| | | 50 | 97-CSI-50 | 97-CSI-50A |
| | | 64 | 97-CSI-64 | 97-CSI-64A |
| | #4-40 Hole | 14 | 97-CSI-14T | 97-CSI-14TA |
| | | 24 | 97-CSI-24T | 97-CSI-24TA |
| | | 36 | 97-CSI-36T | 97-CSI-36TA |
| | | 50 | 97-CSI-50T | 97-CSI-50TA |
| | | 64 | 97-CSI-64T | 97-CSI-64TA |
| Bail latches | .116 Hole | 14 | 97-CSB-14 | 97-CSB-14A |
| | | 24 | 97-CSB-24 | 97-CSB-24A |
| | | 36 | 97-CSB-36 | 97-CSB-36A |
| | | 50 | 97-CSB-50 | 97-CSB-50A |
| | | 64 | 97-CSB-64 | 97-CSB-64A |

Metal Shell Socket, with InstaLatches

| | | Commercial | 30Au/Ni |
|------------------------------------|----|------------|------------|
| Conductive Standoff with .120 Hole | 50 | 57-CSI-50 | 57-CSI-50A |

**.085 in. (2.16mm)
Density
Miniature Ribbon**

Right-Angle Solder Tail
Metal Shell



FEATURES

- **Right-Angle Solder Tails for solder termination to printed circuit board.**
- **Metal shell provides grounding and shielding capability.**
- **Available in plug and socket styles in 14, 24, 36, and 50 position sizes.**
- **Sockets available with industry-standard bail latch feature for positive locking/unlocking without tools, for applications such as SCSI-1 and Centronics.**
- **#4-40 threaded board mounting holes provide means to secure and ground connector to board.**
- **UL Recognized - File E170218.**

MATERIALS

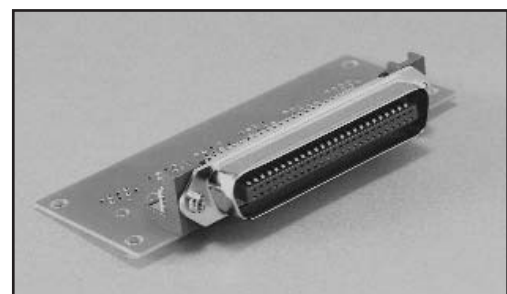
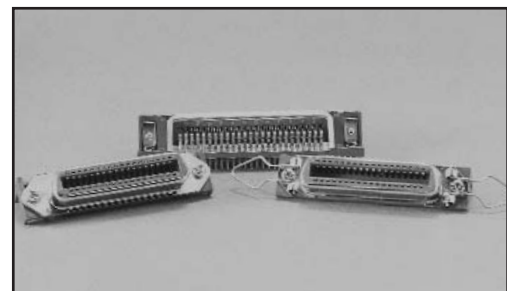
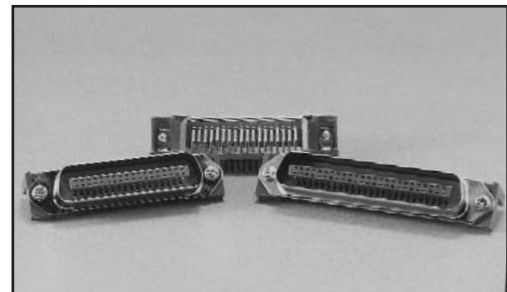
Insulator: Blue UL94V-0 rated glass-filled polyester
Contact: Phosphor bronze
Contact Plating: Select gold over nickel in mating area as indicated; tin-lead on solder tails
Shell: Steel
Shell Plating: Nickel

ENVIRONMENTAL

Operating Temperature: -55°C to +105°C

ELECTRICAL

Withstanding Voltage: 1000 VAC RMS @ sea level
Contact Rating: 5 Amps
Contact Resistance: 30 milliohms maximum
Insulation Resistance: 1000 Megohms minimum



Right-Angle Miniature Ribbon connectors provide I/O directly from printed circuit boards, where the mating face of the connector is perpendicular to the board. It is well-suited to front-panel I/O on plug-in cards, rear-I/O from system/peripheral motherboards, etc.

See page 6-51 for accessories such as dust covers, bent bail latches and mounting screws that make the use of Cinch Miniature Ribbon connectors even more cost-effective in board-mount applications.

**.085 in. (2.16mm)
Density
Miniature Ribbon**

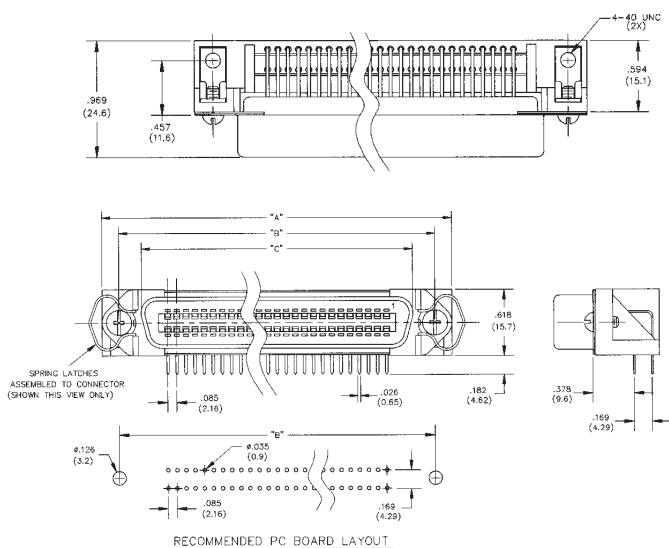
**Right-Angle Solder Tail
Metal Shell**



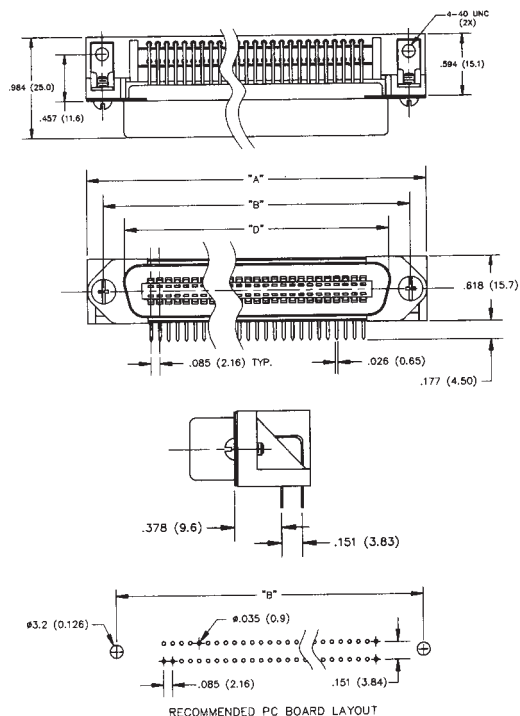
Dimensions

| Size | A | | B | | C | | D | |
|------|-------|-------|-------|-------|-------|-------|-------|-------|
| | in | mm | in | mm | in | mm | in | mm |
| 14 | 1.720 | 43.70 | 1.417 | 35.99 | 0.992 | 25.20 | 1.008 | 25.60 |
| 24 | 2.146 | 54.50 | 1.842 | 46.79 | 1.417 | 36.00 | 1.436 | 36.00 |
| 36 | 2.661 | 67.60 | 2.352 | 59.74 | 1.925 | 48.90 | 1.943 | 49.35 |
| 50 | 3.260 | 82.80 | 2.947 | 74.85 | 2.520 | 64.00 | 2.538 | 64.00 |

Socket



Plug



Ordering Information, Right-Angle Solder Tail

Plug, 4-40 Board Mount

| Size | Flash | 15Au/Ni | 30Au/Ni |
|------|------------|-------------|-------------|
| 36 | 57-LRP36-F | 57-LRP36-15 | 57-LRP36-30 |
| 50 | 57-LRP50-F | 57-LRP50-15 | 57-LRP50-30 |

Socket, 4-40 Board Mount

| Latch | Size | Flash | 15Au/Ni | 30Au/Ni |
|------------|------|--------------|---------------|---------------|
| No Latches | 14 | 57-LRS14-F | 57-LRS14-15 | 57-LRS14-30 |
| | 24 | 57-LRS24-F | 57-LRS24-15 | 57-LRS24-30 |
| | 36 | 57-LRS36-F | 57-LRS36-15 | 57-LRS36-30 |
| | 50 | 57-LRS50-F | 57-LRS50-15 | 57-LRS50-30 |
| Bail Latch | 14 | 57-LRS14-BF | 57-LRS14-B15 | 57-LRS14-B30 |
| | 24 | 57-LRS24-BF | 57-LRS24-B15 | 57-LRS24-B30 |
| | 36 | 57-LRS36-BF† | 57-LRS36-B15† | 57-LRS36-B30† |
| | 50 | 57-LRS50-BF | 57-LRS50-B15 | 57-LRS50-B30 |

† IEEE 1284-B

**.085 in. (2.16mm)
Density
Miniature Ribbon**

Filtered
Vertical-Mount Solder Tail
and Male/Female Adapter

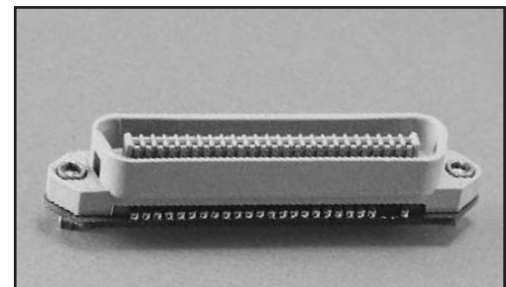


FEATURES

- *Low-pass (single-pole, capacitive) filtered contacts reduce inbound and outbound conducted EMI standard capacitance values of 50pF through 1,200pF.*
- *Saves space by incorporating required filter functions directly into footprint of I/O connector.*
- *Available as straight Solder Tail plug for solder termination to printed circuit board (nominal thickness through .093") and as plug/socket adapter, in 50-position size.*
- *All-plastic design reduces cost.*
- *All plugs lock with InstaLatch passive latch feature for automatic latching.*
- *Adapters available with InstaLatches, with Bail Latches, or with no latches on socket side.*
- *Available with through holes, #4-40 holes, #6-32 holes, or M3 holes for mounting/latching.*

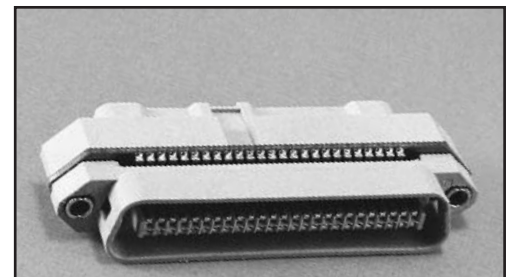
MATERIALS

Insulator: Gray UL94V-0 rated glass-filled polyester
Contact: Copper alloy
Contact Plating: 30µin. select gold over 50µin. select nickel standard; tin-lead on solder tails
Mounting Hardware Plating: Tin-lead



ENVIRONMENTAL

Operating Temperature: -50°C to +105°C
Shock: 50G Peak, per EIA Std. RS364, TP27, Condition A
Vibration: 3 cycles @ 10-55Hz in each of 3 axes per EIA Std. 364, TP28, Condition A
Moisture Resistance: Per EIA Std. RS364, TP31, Condition B, with Step 7B excluded



ELECTRICAL

Voltage Rating: 500VDC @ sea level
Contact Rating: 3 Amps
RF Current Rating: 0.3 Amps
Leakage Current: 10mA maximum per contact when subjected to 1000 VAC test voltage, applied over 30 seconds and held for 60 seconds per FCC Part 68.5
Voltage Surge: Withstands 1,500V peak longitudinal voltage surge with 10µsec. risetime, 160µsec. decay
Contact Resistance: 6 milliohms maximum, per EIA Std. RS364, TP6
Insulation Resistance: 5000 Megohms minimum
Dissipation Factor: 5% maximum @ 25°C, 1kHz and 1 VAC RMS maximum

Insertion Loss:

| Capacitance @ 25°C, 1kHz, 1 VAC RMS max. | Insertion Loss, min. (dB, @ 25°C, @ 50 ohm, no load, per MIL-STD-220) | | | | | | |
|---|---|-------|-------|-------|--------|--------|------|
| | 10MHz | 30MHz | 50MHz | 70MHz | 100MHz | 500MHz | 1GHz |
| 50pF±15% | - | - | - | - | 2 | 14 | 11 |
| 100pF±15% | - | - | - | - | 3 | 14 | 11 |
| 220pF±15% | - | - | 4 | 7 | 12 | 14 | 11 |
| 470pF±15% | - | 5 | 11 | 14 | 20 | 14 | 11 |
| 820pF±15% | 3 | 3 | 16 | 20 | 20 | 14 | 11 |
| 1,000pF±15% | 3 | 3 | 16 | 20 | 20 | 14 | 11 |
| 1,200pF±15% | 3 | 3 | 16 | 20 | 20 | 14 | 11 |

MECHANICAL

Durability: 200 mating/unmating cycles
Mating / Unmating Forces:

| Size | Mating Force (max.) with InstaLatches | | Unmating Force (min.) without InstaLatches | |
|------|--|-------|---|------|
| | Lb. | Kg | Lb. | Kg |
| 50 | 32 | 14.52 | 7 | 3.18 |

**.085 in. (2.16mm)
Density
Miniature Ribbon**

**Filtered
Vertical-Mount Solder Tail
and Male/Female Adapter**

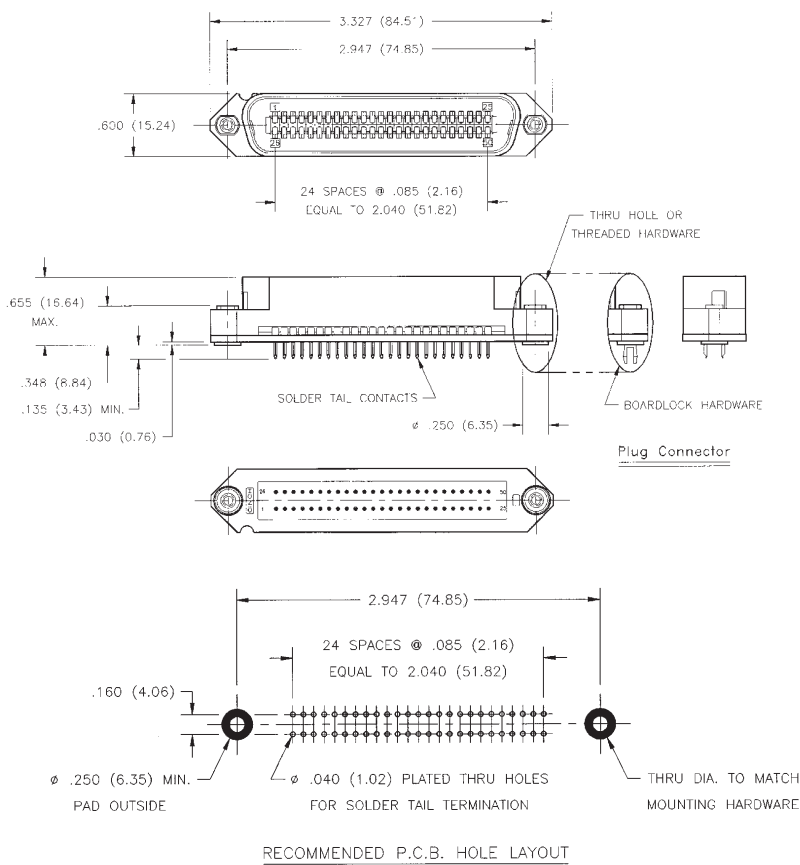


Filtered Vertical-Mount Solder Tail Plug

Vertical-mount Filtered Miniature Ribbon plugs provide filtered I/O directly from printed circuit boards, where the mating face of the connector is in a plane parallel to that of the board. Filtering keeps conducted EMI from passing between the system board and I/O cable.

The connector's filter must be grounded to the system at the mounting holes, via either top flange or through the lower standoff to a pad on the component side of the printed circuit board.

See page 6-51 for accessories such as dust covers and mounting screws that make the use of Cinch Filtered Miniature Ribbon connectors even more cost-effective in board-mount applications.



Ordering Information, Filtered Vertical-Mount Solder Tail Plug, 50 Position

| | Capacitance | .144 Hole | #4-40 Hole | #6-32 Hole | M3 -0.5 Hole |
|-----------------------------|-------------|--------------|--------------|--------------|--------------|
| Through or threader hole | 50pF±15% | CF97-50PB-TH | CF97-50PB-4T | CF97-50PB-6T | CF97-50PB-3T |
| | 100pF±15% | CF97-50PC-TH | CF97-50PC-4T | CF97-50PC-6T | CF97-50PC-3T |
| | 220pF±15% | CF97-50PD-TH | CF97-50PD-4T | CF97-50PD-6T | CF97-50PD-3T |
| | 470pF±15% | CF97-50PE-TH | CF97-50PE-4T | CF97-50PE-6T | CF97-50PE-3T |
| | 820pF±15% | CF97-50PF-TH | CF97-50PF-4T | CF97-50PF-6T | CF97-50PF-3T |
| | 1,000pF±15% | CF97-50PH-TH | CF97-50PH-4T | CF97-50PH-6T | CF97-50PH-3T |
| | 1,200pF±15% | CF97-50PJ-TH | CF97-50PJ-4T | CF97-50PJ-6T | CF97-50PJ-3T |
| Threaded Boardlock | 50pF±15% | - | CF97-50PB-4B | CF97-50PB-6B | CF97-50PB-3B |
| | 100pF±15% | - | CF97-50PC-4B | CF97-50PC-6B | CF97-50PC-3B |
| | 220pF±15% | - | CF97-50PD-4B | CF97-50PD-6B | CF97-50PD-3B |
| | 470pF±15% | - | CF97-50PE-4B | CF97-50PE-6B | CF97-50PE-3B |
| | 820pF±15% | - | CF97-50PF-4B | CF97-50PF-6B | CF97-50PF-3B |
| | 1,000pF±15% | - | CF97-50PH-4B | CF97-50PH-6B | CF97-50PH-3B |
| | 1,200pF±15% | - | CF97-50PJ-4B | CF97-50PJ-6B | CF97-50PJ-3B |

**.085 in. (2.16mm)
Density
Miniature Ribbon**

**Filtered
Vertical-Mount Solder Tail
and Male/Female Adapter**



Filtered Panel Mount Feedthrough Adapter

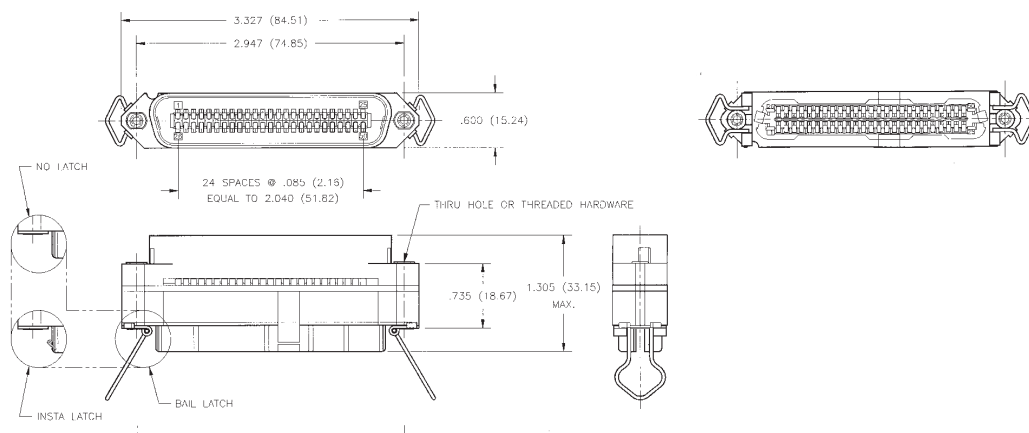
Filtered Ribbon Panel Mount Adapters provide filtered I/O in systems where internal cabling carries signals to the system panel.

By filtering right at the panel, EMI that could otherwise be generated over the length of the internal cable is prevented. The use of a plug/socket adapter also yields a benefit in serviceability. Should it ever be necessary to replace the filter, an adapter can be readily replaced without replacing a bulky, more expensive cable assembly.

The adapter must be grounded to the system panel through the mounting hardware, which extends to both plug and socket flanges; thus, the adapter may be mounted with either side to the panel.

Adapters are also available without filter capacitors. Often referred to as “connector savers”, these devices are most useful as “throw away” intermediate interconnects in applications where numerous mating/unmating cycles are required.

See page 6-51 for accessories such as bent bail latches, dust covers, and mounting screws that make the use of Cinch Miniature Ribbon Filtered Adapters even more cost-effective in panel mount-applications.



Ordering Information, Filtered Adapter, 50 position

| | Capacitance | #4-40 Hole | #6-32 Hole | M3 -0.5 Hole |
|--------------------------|------------------------|---------------|---------------|---------------|
| Socket without latches | None (Connector Saver) | CF97-50AA-4T | CF97-50AA-6T | CF97-50AA-3T |
| | 50pF±15% | CF97-50AB-4T | CF97-50AB-6T | CF97-50AB-3T |
| | 100pF±15% | CF97-50AC-4T | CF97-50AC-6T | CF97-50AC-3T |
| | 220pF±15% | CF97-50AD-4T | CF97-50AD-6T | CF97-50AD-3T |
| | 470pF±15% | CF97-50AE-4T | CF97-50AE-6T | CF97-50AE-3T |
| | 820pF±15% | CF97-50AF-4T | CF97-50AF-6T | CF97-50AF-3T |
| | 1,000pF±15% | CF97-50AH-4T | CF97-50AH-6T | CF97-50AH-3T |
| | 1,200pF±15% | CF97-50AJ-4T | CF97-50AJ-6T | CF97-50AJ-3T |
| Socket with InstaLatches | None (Connector Saver) | CF97-50AA-4TI | CF97-50AA-6TI | CF97-50AA-3TI |
| | 50pF±15% | CF97-50AB-4TI | CF97-50AB-6TI | CF97-50AB-3TI |
| | 100pF±15% | CF97-50AC-4TI | CF97-50AC-6TI | CF97-50AC-3TI |
| | 220pF±15% | CF97-50AD-4TI | CF97-50AD-6TI | CF97-50AD-3TI |
| | 470pF±15% | CF97-50AE-4TI | CF97-50AE-6TI | CF97-50AE-3TI |
| | 820pF±15% | CF97-50AF-4TI | CF97-50AF-6TI | CF97-50AF-3TI |
| | 1,000pF±15% | CF97-50AH-4TI | CF97-50AH-6TI | CF97-50AH-3TI |
| | 1,200pF±15% | CF97-50AJ-4TI | CF97-50AJ-6TI | CF97-50AJ-3TI |
| Socket with Bail latches | None (Connector Saver) | CF97-50AA-4TB | CF97-50AA-6TB | CF97-50AA-3TB |
| | 50pF±15% | CF97-50AB-4TB | CF97-50AB-6TB | CF97-50AB-3TB |
| | 100pF±15% | CF97-50AC-4TB | CF97-50AC-6TB | CF97-50AC-3TB |
| | 220pF±15% | CF97-50AD-4TB | CF97-50AD-6TB | CF97-50AD-3TB |
| | 470pF±15% | CF97-50AE-4TB | CF97-50AE-6TB | CF97-50AE-3TB |
| | 820pF±15% | CF97-50AF-4TB | CF97-50AF-6TB | CF97-50AF-3TB |
| | 1,000pF±15% | CF97-50AH-4TB | CF97-50AH-6TB | CF97-50AH-3TB |
| | 1,200pF±15% | CF97-50AJ-4TB | CF97-50AJ-6TB | CF97-50AJ-3TB |

.085 in. (2.16mm) Density Miniature Ribbon

Accessories

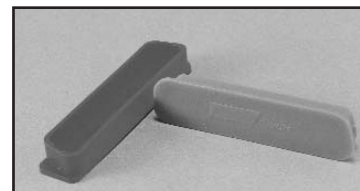


The following accessories are available to make your application using Cinch Miniature Ribbon and SUPERIBBON products as complete and cost-effective as possible.

Dust Covers for all Metal Shell and All-Plastic Miniature Ribbon Connectors

Dust covers may be added to Miniature Ribbon or SUPERIBBON assemblies to protect the mating area from damage or contamination when the connector is left unmated. They can be useful for protection from handling damage during assembly, or can be left on the connector for protection of unused system I/O ports.

Compliant-pin Miniature Ribbon products come with special seating fixtures that must be used to install the connectors onto the printed circuit board. These may be replaced after insertion; however, with standard dust covers to maintain the standard color code, if so desired. Material: UL94V-0 rated polyethelene (blue for plug covers; red for socket covers)



Ordering Information, Dust Covers

| Size | Plug Cover | Socket Cover |
|------|------------|--------------|
| 14 | 57-1001 | 57-1002 |
| 24 | 57-1003 | 57-1004 |
| 36 | 57-1005 | 57-1006 |
| 50 | 57-1008 | 57-1022 |
| 64 | 57-1009 | 57-1010 |

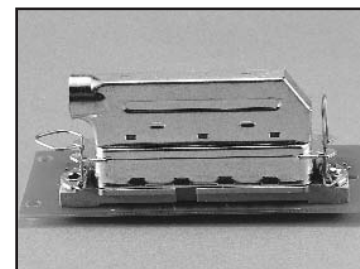
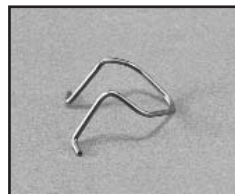
Bent Bail Latch for End-Entry Applications

Standard Bail Latches will not lock under a plug cable in a typical end-entry application. This latch, which is bent at a 90° angle, may be used to replace a standard latch in this situation.

Material: Stainless Steel

Ordering Information, Bent Bail Latch

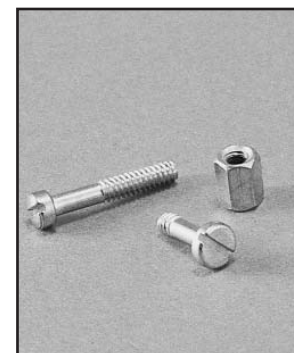
Part No. 57-BL-90



Mounting Screws and Related Hardware

Many Cinch Miniature Ribbon and SUPERIBBON products include all the hardware required for the most common application for the product; however, these alternatives may be desirable to better fit product to a specific use.

| Part No. | Description | Typical Applications |
|-----------------|--|---|
| 4-40UNC2AX11/32 | #4-40 x .343 Pan Head Screw | <ul style="list-style-type: none"> SUPERIBBON to mate with female screwlock PC Mount connector to PCB (secured from rear) |
| 4-40UNC2AX17/32 | #4-40 x .525 Pan Head Screw | <ul style="list-style-type: none"> SUPERIBBON to threaded panel |
| 4-40UNC2AX5/8 | #4-40 x .625 Fillister Head Screw | <ul style="list-style-type: none"> Metal Shell Running Cable (included on standard end-entry metal shell products) |
| 4-40UNC2AX3/4 | #4-40 x .750 Pan Head Screw | <ul style="list-style-type: none"> SUPERIBBON Running Cable (included on standard end-entry SUPERIBBON products) SUPERIBBON to front-panel mounted SUPERIBBON held by panel clips |
| 4-40UNC2AX7/8 | #4-40 x .875 | <ul style="list-style-type: none"> Miscellaneous |
| 4-40X1/4SPCR | Hex Spacer, #4-40 Internal Thread x .250 | <ul style="list-style-type: none"> Female Screwlock |



**.085 in. (2.16mm)
Density
Miniature Ribbon**

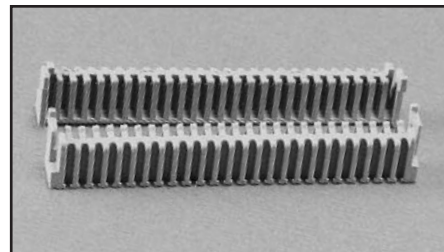
Accessories



Wire Restraints for Panel-Mount SUPERIBBON™ All-Plastic Connectors

Wire restraints provide added security to terminated wires, preventing radial pullout. They are intended for use on panel mounted connectors where hoods are not required (wire restraints cannot be applied simultaneously with hoods), and snap on after connector termination.

Material: Gray UL94V-0 rated polyester.



Ordering Information, SUPERIBBON Wire Restraints

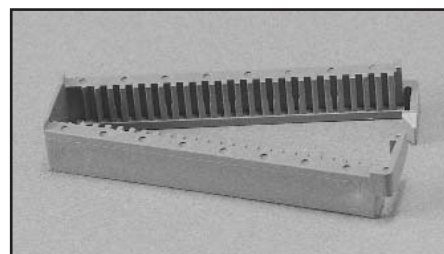
(Two restraints required per connector)

| Size | Plug | Socket |
|------|-----------|-----------|
| 14 | 97-WR-P14 | 97-WR-S14 |
| 24 | 97-WR-P24 | 97-WR-S24 |
| 36 | 97-WR-P36 | 97-WR-S36 |
| 50 | 97-WR-P50 | 97-WR-S50 |
| 64 | 97-WR-P64 | 97-WR-S64 |

Wire Restraints for Panel-Mount Miniature Ribbon Metal Shell Connectors

Metal Shell Wire Restraints serve the same purpose as their SUPERIBBON counterparts, but are for IDC terminated metal shell connectors. These one-piece restraints snap in place around the termination area after assembly.

Material: Blue UL94V-0 rated polyester.



Ordering Information, Miniature Ribbon Wire Restraints

(One restraint required per connector)

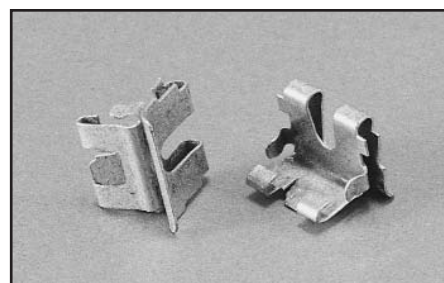
| Size | Plug or Socket |
|------|----------------|
| 36 | 77-WR-36 |
| 50 | 77-WR-50 |

Panel Mounting Clips for All-Plastic Miniature Ribbon Connectors

These clips slip into each end of a modified panel cutout, and allow all-plastic Miniature Ribbon connectors to be snapped into place and securely front-mounted to the panel with no additional hardware. Threaded holes are not required in the panel, and connectors can be loaded without needing access to the rear of the panel.

Material: Steel

Finish: Tin-cadmium/clear chromate



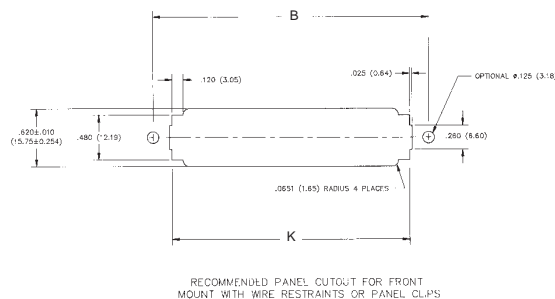
Ordering Information, Panel Mounting Clips

(Two clips required per connector)

| Chassis Thickness | Panel Clip Part Number |
|-------------------|------------------------|
| .062" (1.57mm) | 97-MC-062 |
| .093" (2.36mm) | 97-MC-093 |
| .125" (3.18mm) | 97-MC-125 |

Dimensions

| Size | B | | K | |
|------|-------|-------|-------|-------|
| | in | mm | in | mm |
| 14 | 1.417 | 35.99 | 1.060 | 26.92 |
| 24 | 1.842 | 46.79 | 1.485 | 37.72 |
| 36 | 2.352 | 59.74 | 1.995 | 50.67 |
| 50 | 2.947 | 74.85 | 2.590 | 65.79 |
| 64 | 3.542 | 89.97 | 3.185 | 80.90 |



**.085 in. (2.16mm)
Density
Miniature Ribbon**

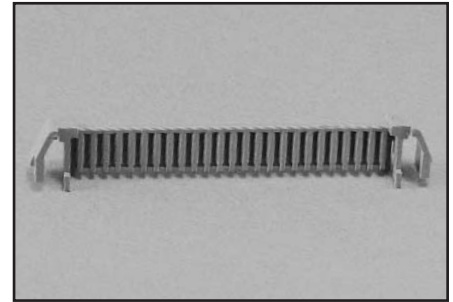
Accessories



Wire Restraint with Integral Panel Clip

This accessory for All-Plastic Miniature Ribbon products combines the Wire Restraint and Panel Mounting Clip into one molded device. Available only for 50 position size connectors, it provides a significant material and labor cost savings compared to alternate mounting methods.

Material: Gray UL94V-0 rated polyester.



**Ordering Information, Wire Restraint with Integral Panel Clip
(Two required per connector)**

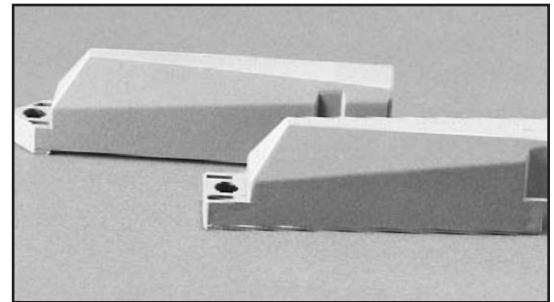
| Chassis Thickness | Panel Clip Part Number |
|-------------------|------------------------|
| .062" (1.57mm) | 97-WRC-062 |
| .093" (2.36mm) | 97-WRC-093 |

Hoods for SUPERIBBON Connectors

180° (Top-Entry) Hoods can be used with panel-mount All-Plastic SUPERIBBON connectors to provide strain relief and protection of the wire terminations. The two-piece snap-on assembly has adjustable tabs that allow effective strain relief on a wide range of cable sizes.

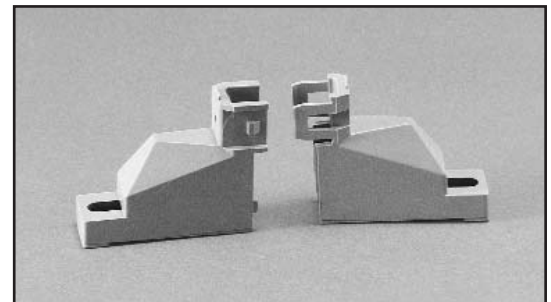
90°/270° (End-Entry) Hoods are for replacement on End-Entry SUPERIBBON connectors. They are available for all sizes, as well as for the pointed-nose 50 position size. *Note: End-Entry Hoods cannot be added to panel-mount connectors because the finished assembly would not have the end-entry cable grip. See pages 6-10 thru 6-13 for complete end-entry connectors.*

Material: Gray UL94V-0 rated polyester.



Ordering Information, Hoods for All-Plastic Miniature Ribbon

| | Size | 180° (Top-Entry) | 90°/270° (End-Entry) |
|--------------|------|------------------|----------------------|
| | 14 | 97-14-180 | 97-14-90 |
| Square | 24 | 97-24-180 | 97-24-90 |
| Nose | 36 | 97-36-180 | 97-36-90 |
| | 50 | 97-50-180 | 97-50-90 |
| | 64 | 97-64-180 | 97-64-90 |
| Pointed Nose | 50 | - | 97-50-90P |



**.085 in. (2.16mm)
Density
Miniature Ribbon**

Application Tools



A full range of tooling is available to make the use of Cinch Miniature Ribbon and SUPERIBBON™ products as cost-effective as possible. From hand repair tools to the high production rate Auto-Clinch™ termination tool, Cinch has the tool to fit your needs.

Auto-Clinch Model 200S Termination Tool

Auto-Clinch is a semi-automatic Connector Termination Machine that terminates IDC connectors pair-by-pair. The basic machine comes equipped ready to terminate 50-position end-entry Miniature Ribbon or SUPERIBBON connectors, which it can do in approximately 1.5 minutes.



The Auto-Clinch is pneumatically powered and requires a min. 60psi air supply. It is electrically controlled, and requires a 117V, 60Hz Single Phase electrical circuit (5 Amps). Weight: 120 lbs. (54.48kg.), Dimensions: 25.5" (64.77cm.) wide; 20" (50.8cm) deep; 9" (22.86cm) high. *Note: These specifications may change with the addition of certain options.*

Order Part No. AC-371

Several options are available that make the Auto-Clinch a versatile application tool:

- Remote Visual Color Display shows wire color codes. It can be used to train new operators or to assist the operator in terminating non-standard wire sequences. **Part No. ACO-482**
- The Selective Programmer allows the operator to set the machine to skip over positions that are not to be terminated, thus speeding up the termination process. **Part No. ACO-495**
- The End-Entry Cable Clamp closer automatically closes the cable clamp on end-entry SUPERIBBON or SuperShield connectors as they are terminated. **Part No. ACO-374**
A power assist for this device is also available. **Part No. ACO-405**
- The Top-Entry Adapter dresses the wires during termination such that they are properly aligned for exit through a Top-Entry hood. **Part No. ACO-218**
NOTE: Auto-Clinch™ cannot be equipped with both Cable Clamp Closer and Top-Entry Adapter simultaneously.
- Insertion Blades are included for terminating solid wire. For replacement, order **Part No. ACB-443**
To terminate stranded wire, order stranded-wire blades, **Part No. ACB-872**
- Nests for Panel Mount and Top-Entry Ribbon Connectors, and All Plastic SUPERIBBON connectors allow the use of Auto-Clinch to terminate other IDC Ribbon Connectors:

| Connector Size | For All-Plastic IDC Connectors | | | For Metal-Shell IDC Connectors | | |
|----------------|--------------------------------|-----------|-----------|--------------------------------|-----------------|---------------------------|
| | End-Entry | Top-Entry | End-Entry | Panel Mount/Top-Entry Sockets | Top-Entry Plugs | Top-Entry Plug With Hood* |
| 14 | ACEN-850 | ACTN-568 | - | ACMN-231 | - | ACMN-232 |
| 24 | ACEN-851 | ACTN-569 | - | ACMN-229 | - | ACMN-230 |
| 36 | ACEN-852 | ACTN-797 | - | ACMN-228 | ACMN-203 | ACMN-227 |
| 50 | ACEN-853 | ACTN-798 | ACMN-484 | ACMN-527 | ACMN-858 | ACMN-526 |
| 64 | ACEN-570 | ACTN-799 | - | - | - | - |

* For Bail-Latch plugs with hood where hood forms rear of connector body, i.e., 77-32500.
For overmold kits, use panel mount/top-entry plug nests.

AutoClinch is a trademark of Cinch Connector Division of Labinal Components & Systems, Inc.

.085 in. (2.16mm) Density Miniature Ribbon

Application Tools

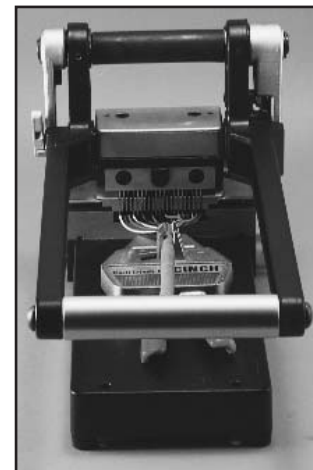


Certi-Clinch™ Portable Termination Tool

Certi-Clinch is a portable, manually operated tool that terminates Cinch all-plastic and metal shell Miniature Ribbon connectors with discrete-wire IDC contacts. It is designed for field use assembling cables on-site, yet is efficient enough to fit well into lower-volume factory assembly operations.

Its 10.5 lb. (4.77Kg) weight and versatile configuration make it readily portable for field use, and allow temporary use with virtually no setup time to handle peak demands in factory environments. A leather case is available for carrying Certi-Clinch onto a job site or for storing Certi-Clinch in the factory when not being used.

Certi-Clinch measures 6" (15.24cm) wide x 13" (33.02cm) long x 6.5" (16.5cm) high.



Ordering Information, Certi-Clinch

| <u>Model</u> | <u>Description</u> |
|--------------|---|
| SCT-330 | Certi-Clinch Tool with 25-pair nest, for Solid Wire |
| SCT-335 | Certi-Clinch Tool with 32-pair nest, for Solid Wire |
| SCT-360 | Certi-Clinch Tool with 25-pair nest, for Stranded Wire |
| SCT-342 | Kit to convert 25-pair tool to 32-pair operation |
| SCT-343 | Kit to convert 32-pair tool to 25-pair operation |
| SCT-645 | Insertion Blades to convert 25-pair tool to Stranded Wire |
| SCT-038 | Insertion Blades to convert 32-pair tool to Stranded Wire |
| SCT-649 | Carrying Case for all Certi-Clinch Tools |

Handi-Clinch™ Hand Termination Tool

This hand-operated tool terminates wires individually to Cinch SUPERIBBON™ and metal shell Miniature Ribbon IDC connectors. Its integral nest holds the connector in place during use. **Part No. HCTT-539**

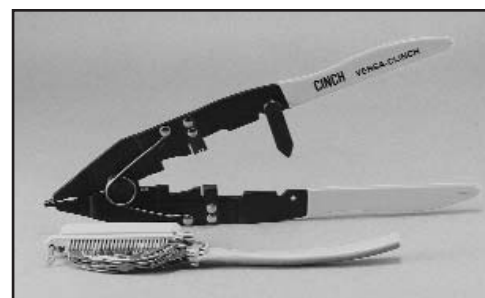


Versa-Clinch™ Multi-Function Hand Tool

This versatile tool performs four basic functions in applying Cinch SUPERIBBON and metal shell Miniature Ribbon products:

- Terminate individual wires to the IDC contact
- Unlatch the hood for removal on end-entry SUPERIBBON products
- Open and close the cable clamp on SUPERIBBON and SuperShield
- Unlock InstaLatches to unmate connectors

Part No. VCTT-361



**.085 in. (2.16mm)
Density
Miniature Ribbon**

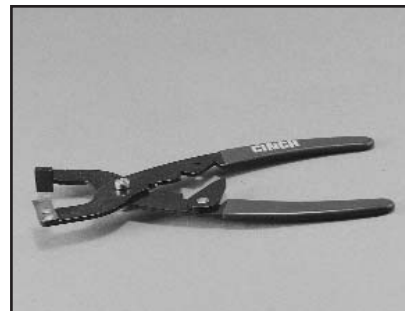
Application Tools



Termination Repair Pliers

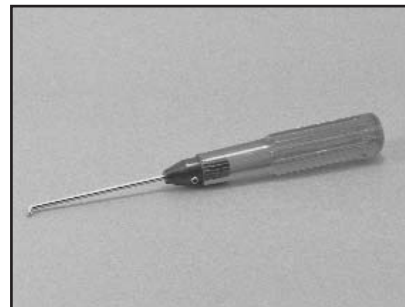
These plier type tools allow you to rework misterminated cable assemblies and/or perform specialized termination operations. They terminate wires individually into Cinch IDC contacts. Repair Pliers for Standard Termination: **Part No. SRT-345**

Repair Pliers for Half-Tap (Daisy-Chaining) allows you to terminate one wire to multiple contacts to short contacts together, or even to two separate connectors to make back/back connections, etc. **Part No. HT-560**



InstaLatch™ Unlatching Tool

While InstaLatches may be unlocked with something as simple as a center punch or ballpoint pen, this tool provides a “hooked” end that allows you to unlock InstaLatches even in tight areas. **Part No. UT-304**

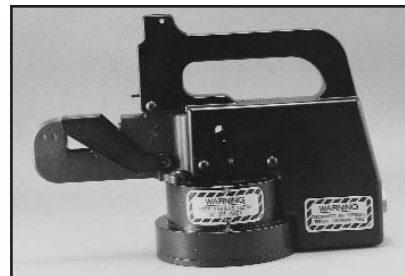


Crimping Tools for Overmold Kit Ferrules

Two model tools are available to crimp ferrules onto overmold kits:

- Pneumatically powered bench-top press, which is portable so it can be placed in storage when not required. **Part No. FCT-551**
- Hand-operated crimping tool, satisfactory for lower-volume applications. **Part No. FCT-552**

Both tools use the same crimp dies. Select the crimp die(s) below for the particular ferrule being used (ferrules shown on page 6-22).



| Crimp Die Part No. | Crimp Ferrule Part No. |
|-----------------------|---------------------------|
| CD08 | CF57 |
| CD09 | CF60 |
| CD10 | CF64 |

