



SMA Male Connector Crimp/Solder Attachment for LMR-195, PE-C195

RF Connectors
Technical Data Sheet



TC-195-SM-SS-X

Times Microwave Systems Connector Specification

Configuration

- SMA Male Connector
- 50 Ohms
- Straight Body Geometry
- Connector Interface Types: LMR-195, PE-C195
- 5/16 Inch Hex

Features

- Max. Operating Frequency 8 GHz
- Good VSWR of 1.3:1
- Gold Plated Brass Contact
- Contact plating according to ASTM B488

Applications

- General Purpose Test
- Custom Cable Assemblies

Description

Pasternack's TC-195-SM-SS-X SMA male connector with crimp/solder attachment for LMR-195 and PE-C195 is part of our full line of RF components available for same-day shipping. Our SMA male connector operates up to a maximum frequency of 8 GHz and offers good VSWR of 1.3:1.

Our SMA male connector TC-195-SM-SS-X datasheet specifications and drawing with dimensions are shown below in this PDF. Pasternack's broad catalog of RF, microwave and millimeter wave connectors allows designers to configure and customize their signal connections however they like. Whether the need is to provide an I/O for a board design, or simply create a custom cable assembly configuration, Pasternack has the right connector for the job. Pasternack can also expertly build your custom cable assemblies for you and ship same-day.

Electrical Specifications

| Description | Minimum | Typical | Maximum | Units |
|-----------------|---------|---------|---------|-------|
| Frequency Range | DC | | 8 | GHz |
| VSWR | | | 1.3:1 | |

Mechanical Specifications

| Size | |
|------------|--------------------|
| Length | 1.17 in [29.72 mm] |
| Width/Dia. | 0.375 in [9.53 mm] |
| Weight | 0.019 lbs [8.62 g] |

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SMA Male Connector Crimp/Solder Attachment for LMR-195, PE-C195 TC-195-SM-SS-X](#)



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Material Specifications

| Description | Material | Plating |
|--------------|----------------------------|-------------------|
| Contact | Brass | Gold ASTM B488 |
| Insulation | Teflon | |
| Body | Passivated Stainless Steel | |
| Coupling Nut | Passivated Stainless Steel | |

Environmental Specifications

Compliance Certifications (see [product page](#) for current document)

Plotted and Other Data

Notes:

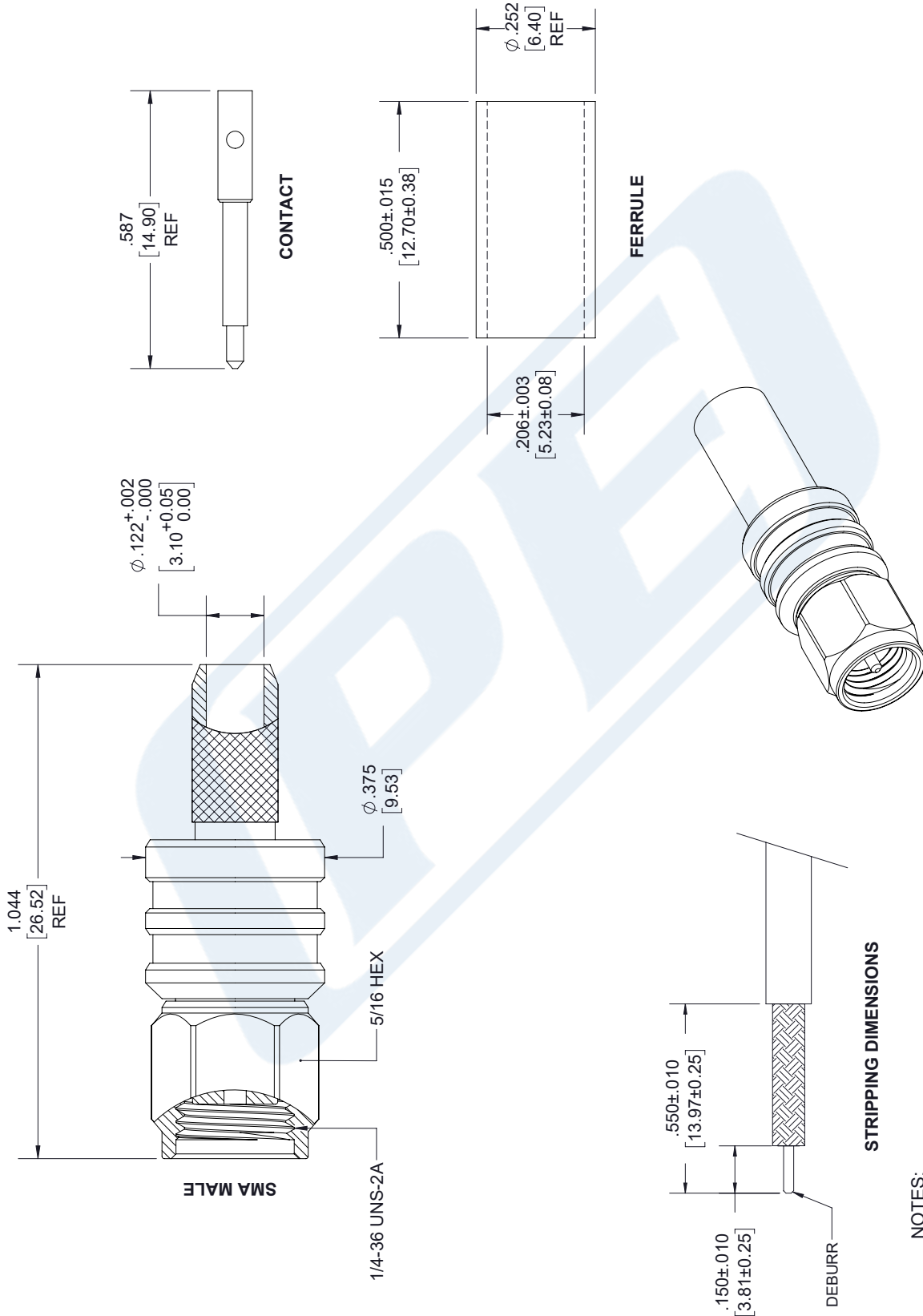
SMA Male Connector Crimp/Solder Attachment for LMR-195, PE-C195 from Pasternack Enterprises has same day shipment for domestic and International orders. Our RF, microwave and millimeter wave products maintain a 99.4% availability and are part of the broadest selection in the industry.

Click the following link (or enter part number in "SEARCH" on website) to obtain additional part information including price, inventory and certifications: [SMA Male Connector Crimp/Solder Attachment for LMR-195, PE-C195 TC-195-SM-SS-X](#)

URL: <https://www.pasternack.com/sma-male-lmr-195-pe-c195-connector-tc-195-sm-ss-x-p.aspx>

The information contained in this document is accurate to the best of our knowledge and representative of the part described herein. It may be necessary to make modifications to the part and/or the documentation of the part, in order to implement improvements. Pasternack reserves the right to make such changes as required. Unless otherwise stated, all specifications are nominal. Pasternack does not make any representation or warranty regarding the suitability of the part described herein for any particular purpose, and Pasternack does not assume any liability arising out of the use of any part or documentation.

| REVISIONS | | | |
|-----------|-----------------|----------|----------|
| REV. | DESCRIPTION | DATE | APPROVED |
| A | INITIAL RELEASE | 10/22/19 | S. ELLIS |



STRIPPING DIMENSIONS

- NOTES:
- CABLE ATTACHMENT:
 - OUTER: CRIMP.
 - INNER: SOLDER.
 - CRIMP SIZE REQUIRED:
 - FERRULE: .213 [5.41] HEX. CRIMP TOOL.
 - CONTACT: SOLDER.

| | |
|--|-------------|
| UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES DIMENSIONS IN [] ARE MILLIMETERS | |
| TOLERANCES: | FRACTIONS |
| X±.2 [5.08] | ±.132 |
| .XX±.01 [0.25] | ±.132 |
| .XXX±.005 [0.13] | ANGLES ± 1° |
| ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY. | |
| THIRD-ANGLE PROJECTION | |

PE PASTERNAK
 an INFINITO brand

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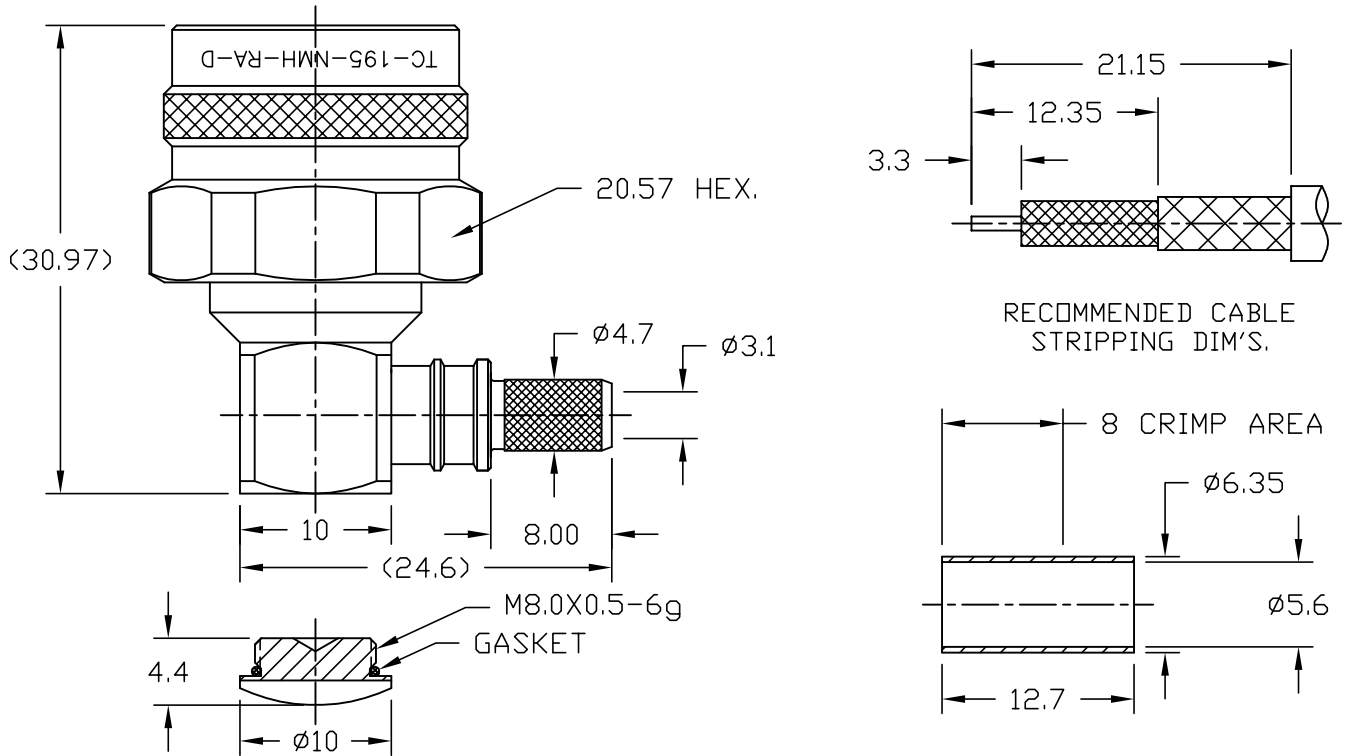
SHEET 1 OF 1
 SCALE N/A

SIZE [CAGE CODE] DRAWN BY PART NUMBER
 A 53919 K.DANG TC-195-SM-SS-X
 REV A

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| SYM | REVISION DESCRIPTION | DFTM | DATE | APPD | DATE |
|-----|-------------------------|----------|---------|----------|---------|
| A | RELEASED FOR PRODUCTION | D. J. H. | 1/13/09 | J. D. B. | 1/13/09 |
| B | CHANGED PER CDC #40023 | D. J. H. | 6/2/14 | J. D. B. | 6/4/14 |



NOTES:

- CONTACT PIN IS SOLDERED.
- FERRULE IS CRIMPED TO .217" HEX.

ALL PARTS SATISFIED ROHS REQUIREMENTS

| MATERIALS AND PLATING | | UNIT: MICRO-INCHES |
|-----------------------|--------------------|---------------------|
| BODY, SHELL | BRASS C3604 | ALBALOY 80μ"/COPPER |
| CONTACT PIN | BRASS C3604 | GOLD 50μ"/COPPER |
| INSULATOR | TEFLON MIL-P-19468 | NATURAL |
| FERRULE | BRASS | ALBALOY 80μ"/COPPER |
| GASKET | SILICONE | RED |

| ELECTRICAL CHARACTERISTICS | |
|---------------------------------|---|
| Impedance | 50 Ω |
| Voltage rating | 750 V(rms) |
| Frequency range | 0~6 GHz |
| Dielectric withstanding voltage | 1000V |
| Contact resistance | Center contact ≤ 3 mΩ Outer contact ≤ 2 mΩ |
| Insulation resistance | ≥ 5000MΩ |
| Insertion loss | According as the cable |
| VSWR | ≤ 1.2 (DC-2GHz) ≤ 1.3 (DC-6GHz) |

| MECHANICAL CHARACTERISTICS | |
|--------------------------------|--------------|
| Force to engage and disengage | 6 lbs MAX. |
| Center contact retention force | 6 lbs MIN. |
| Recommended Coupling torque | 6-10 in-lbs. |
| Coupling nut retention force | 100 lbs MIN. |
| Durability | ≥ 500 cycles |

| ENVIRONMENTAL CHARACTERISTICS | |
|-------------------------------|-------------------------------------|
| Temperature range | -55°C - +155°C |
| Thermal shock | US MIL- STD 202, Meth. 107, Cond. B |
| Vibration | US MIL- STD 202, Meth. 204, Cond. B |
| Shock | US MIL- STD 202, Meth. 213, Cond. I |
| Climatic class | IEC 60068 65/165/21 |

| | | | |
|----------------------|---|----------------|---|
| MATERIAL: | UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN mm MACHINED SURFACES FINISH 1.6 RMS MAX. REMOVE ALL BURRS 0.15X45° MAX. BREAK MACHINE CORNERS 0.15X45° MAX. FILLET R. TOLERANCES ON DECIMALS .X ± 0.3 .XX ± 0.2 ANGLES ± 3° FRACTIONS ± N/A | DFTM. D. J. H. | TIMES MICROWAVE SYSTEMS |
| | | DATE 1/13/09 | |
| USED ON: B | | CHKD. J. D. B. | TC-195-NMH-RA-D 90° "N" MALE FOR LMR-195 CABLE |
| | | DATE 1/13/09 | |
| SCALE: N/A | DWG. SIZE A | APPD. J. D. B. | SHEET 1 of 1 |
| | | DATE 1/13/09 | |
| DO NOT SCALE DRAWING | CODE IDENT 68999 | DATE 1/13/09 | REV. B |

LMR[®]-195

Flexible Low Loss Communications Coax

Ideal for...



- Jumper Assemblies in Wireless Communications Systems
 - Short Antenna Feeder runs
 - Any application (e.g. WLL, GPS, LMR, WLAN, WISP, WiMax, SCADA, Mobile Antennas) requiring an easily routed, low loss RF cable
 - Drop-in replacement for RG-58 and RG-142
- **LMR[®]** standard is a UV Resistant Polyethylene jacketed cable designed for 20-year service outdoor use. The bending and handling characteristics are significantly better than air-dielectric and corrugated hard-line cables.
 - **LMR[®]-DB** is identical to standard LMR plus has the advantage of being watertight. The addition of waterproofing compound in and around the foil/braid insures continuous reliable service should the jacket be inadvertently damaged during installation or in the future.
 - **LMR[®]-FR** is a non-halogen (non-toxic), low smoke, fire retardant cable designed for in-building runs that can be routed anywhere except air handling plenums. LMR-FR is UL/NEC & CSA rated 'CMR' and 'FT4' respectively, meets FAA FAR25 requirements and is MSHA-P for mining applications.
 - **LMR[®]-FR-PVC** is a general-purpose indoor cable and has a UL/NEC & CSA rating of 'CMR' and 'FT4' respectively. It is less expensive than LMR-FR, however it emits toxic fumes (HCL) and greater smoke density when burned.
 - **LMR[®]-PVC** is designed for low loss general-purpose applications and is somewhat more flexible than the standard polyethylene jacketed LMR.
 - **LMR[®]-PVC-W** is a white-jacketed version of LMR-PVC for marine and other applications where color compatibility is desired.
 - **LMR[®]-MA** is a flexible cable designed specifically for mobile antenna applications. It has a PVC jacket and un-bonded aluminum tape to facilitate end stripping with automated equipment.
 - **Flexibility** and bendability are hallmarks of the LMR-195 cable design. The flexible outer conductor enables the tightest bend radius available for any cable of similar size and performance.
 - **Low Loss** is another hallmark feature of LMR-195. Size for size LMR has the lowest loss of any flexible cable and comparable loss to semirigid hard-line cables.
 - **RF Shielding** is 50 dB greater than typical single shielded coax (40 dB). The multi-ply bonded foil outer conductor is rated conservatively at > 90 dB (i.e. >180 dB between two adjacent cables).
 - **Weatherability:** LMR-195 cables designed for outdoor exposure incorporate the best materials for UV resistance and have life expectancy in excess of 20 years.
 - **Connectors:** A wide variety of connectors are available for LMR-195 cable, including all common interface types, reverse polarity, and a choice of solder or non-solder center pins. Most LMR connectors employ crimp outer attachment using standard hex crimp sizes.
 - **Cable Assemblies:** All LMR-195 cable types are available as pre-terminated cable assemblies. Refer to the section on FlexTech for further details.

| Part Description | | | | Stock | |
|------------------|----------------------|--------|-------|-------|-------|
| Part Number | Application | Jacket | Color | Code | |
| LMR-195 | Outdoor | PE | Black | 54110 | |
| LMR-195-DB | Outdoor/Watertight | PE | Black | 54113 | |
| LMR-195-FR | Indoor/Outdoor Riser | CMR | FRPE | Black | 54111 |
| LMR-195-FR-W | Indoor/Outdoor Riser | CMR | FRPE | White | 54158 |
| LMR-195-FR-PVC | Indoor/Outdoor Riser | CMR | FRPVC | Black | 54105 |
| LMR-195-MA | Mobile Antennas | PVC | Black | 54210 | |
| LMR-195-PVC | General Purpose | PVC | Black | 54215 | |
| LMR-195-PVC-W | General Purpose | PVC | White | 54199 | |

| Construction Specifications | | | |
|-----------------------------|-------------------|-------|--------|
| Description | Material | In. | (mm) |
| Inner Conductor | Solid BC | 0.037 | (0.94) |
| Dielectric | Foam PE | 0.110 | (2.79) |
| Outer Conductor | Aluminum Tape | 0.116 | (2.95) |
| Overall Braid | Tinned Copper | 0.139 | (3.53) |
| Jacket | (see table above) | 0.195 | (4.95) |

| Mechanical Specifications | | | |
|---------------------------|----------------|-------|----------|
| Performance Property | Units | US | (metric) |
| Bend Radius: installation | in. (mm) | 0.5 | (12.7) |
| Bend Radius: repeated | in. (mm) | 2.0 | (50.8) |
| Bending Moment | ft-lb (N-m) | 0.2 | (0.27) |
| Weight | lb/ft (kg/m) | 0.021 | (0.03) |
| Tensile Strength | lb (kg) | 40 | (18.2) |
| Flat Plate Crush | lb/in. (kg/mm) | 15 | (0.27) |

| Electrical Specifications | | | |
|---------------------------|-------------------|-------|----------|
| Performance Property | Units | US | (metric) |
| Velocity of Propagation | % | 76 | |
| Dielectric Constant | NA | 1.56 | |
| Time Delay | nS/ft (nS/m) | 1.27 | (4.17) |
| Impedance | ohms | 50 | |
| Capacitance | pF/ft (pF/m) | 25.4 | (83.3) |
| Inductance | uH/ft (uH/m) | 0.064 | (0.21) |
| Shielding Effectiveness | dB | >90 | |
| DC Resistance | | | |
| Inner Conductor | ohms/1000ft (/km) | 7.6 | (24.9) |
| Outer Conductor | ohms/1000ft (/km) | 4.9 | (16.1) |
| Voltage Withstand | Volts DC | 1000 | |
| Jacket Spark | Volts RMS | 3000 | |
| Peak Power | kW | 2.5 | |

| Environmental Specifications | | |
|--------------------------------|----------|---------|
| Performance Property | °F | °C |
| Installation Temperature Range | -40/+185 | -40/+85 |
| Storage Temperature Range | -94/+185 | -70/+85 |
| Operating Temperature Range | -40/+185 | -40/+85 |



Connectors

| Interface | Description | Part Number | Stock Code | VSWR** Freq. (GHz) | Coupling Nut | Inner Contact Attach | Outer Contact Attach | Finish* Body /Pin | Length in (mm) | Width in (mm) | Weight lb (g) |
|-----------|---------------|-----------------|------------|--------------------|--------------|----------------------|----------------------|-------------------|----------------|---------------|---------------|
| N male | Straight Plug | TC-195-NM | 3190-1555 | <1.25:1 (2.5) | Knurl | Solder | Crimp | S/G | 1.5 (38.1) | 0.75 (19.1) | 0.073 (33.1) |
| N male | Right Angle | TC-195-NMH-RA-D | 3190-2425 | <1.35:1 (6) | Hex/Knurl | Solder | Crimp | A/G | 1.3 (32.1) | 1.19 (30.1) | 0.083 (37.5) |
| SMA male | Straight Plug | TC-195-SM | 3190-1553 | <1.25:1 (2.5) | Hex | Solder | Crimp | SS/G | 1.0 (25.4) | 0.32 (8.1) | 0.015 (6.8) |
| TNC male | Straight Plug | TC-195-TM | 3190-1554 | <1.25:1 (2.5) | Knurl | Solder | Crimp | S/G | 1.4 (35.6) | 0.59 (15.0) | 0.045 (20.4) |

* Finish metals: N=Nickel, S=Silver, G=Gold, SS=Stainless Steel, A=Alloy **VSWR spec based on 3 foot cable with a connector pair

Install Tools

| Type | Part Number | Stock Code | Description |
|-------------------|--------------------|------------|--|
| Crimp Tool | CT-240/200/195/100 | 3190-667 | Crimp tool for LMR-100,195, 200 and 240 connectors |
| Cutting Tool | CCT-01 | 3190-1544 | Cable end flush cut tool |
| Deburr Tool | DBT-U | 3192-001 | Removes center conductor rough edges |
| Replacement Blade | RB-01 | 3190-1609 | Replacement blade for cutting tool |

