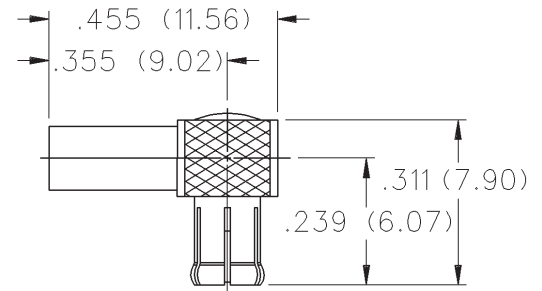


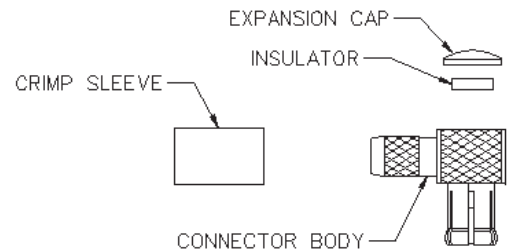
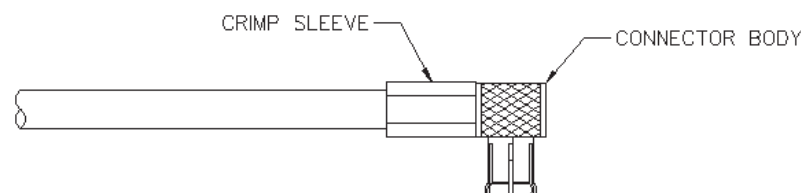
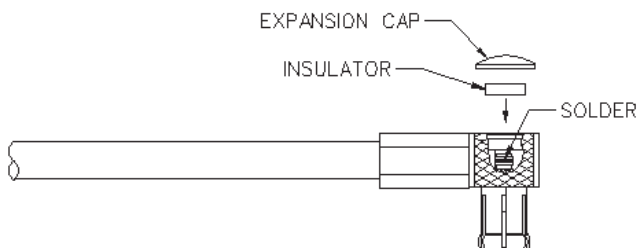
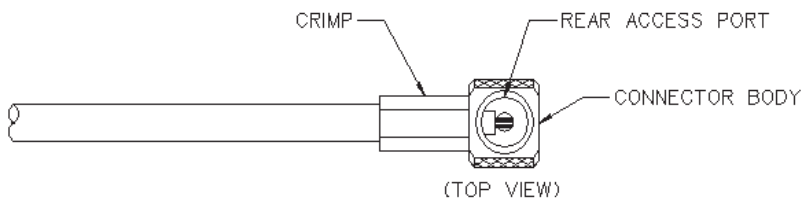
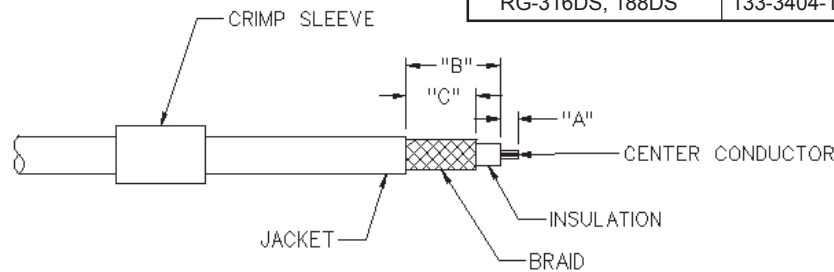
# MCX 50 Ohm Right Angle Crimp Type Plug - Captivated Contact



| CABLE TYPE           | GOLD PLATED  | NICKEL PLATED |
|----------------------|--------------|---------------|
| RG-188 DS, RG-316 DS | 133-3404-101 | 133-3404-106  |



| CABLE GROUP     | PART NUMBER      | "A"         | "B"         | "C"         | CRIMP HEX   |
|-----------------|------------------|-------------|-------------|-------------|-------------|
| RG-316DS, 188DS | 133-3404-101/106 | .050 (1.27) | .270 (6.86) | .200 (5.08) | .151 (3.83) |



1. Identify connector parts. (4 piece parts except RG-58)
2. Strip cable to dimensions shown. Do not nick braid or center conductor. A wire stripper of correct size is recommended for this step. Twist stranded center conductor into tight bundle and tin (optional). Slide crimp sleeve onto cable shown.
3. Flair braid and slide cable into body making certain that the cable insulation bottoms on center contact. Arrange braid uniformly around crimp stem. Slide crimp sleeve over braid and crimp securely using recommended crimp tool.
4. Solder center conductor to contact through rear access port. Use a minimum amount of solder for a full fillet joint. **.020 (0.51) diameter solder is recommended.**
5. Assemble insulator if applicable then place expansion cap in access port and seat with .156 (3.96) diameter flat punch or MCX hand assembly tool 141-0000-908. Shrink heat shrink tubing over crimp sleeve if applicable.

# MCX - 50 Ohm Connectors

## Specifications



INCHES (MILLIMETERS)  
CUSTOMER DRAWINGS AVAILABLE UPON REQUEST

### ELECTRICAL RATINGS

**Impedance:** 50 Ohms

**Frequency Range:** Connectors ..... 0-6 GHz  
Dummy loads ..... 0-1 GHz

**VSWR:** (f = GHz)

Straight Cabled Right Angle  
Connectors Cabled Connectors

RG-178 cable ..... 1.17 + .04f 1.07 + .06f

RG-316 and .086 semi-rigid cable ... 1.13 + .04f 1.07 + .04f

Adapters ..... 1.13 + .04f

Uncabled receptacles, Dummy loads ..... N/A

**Working Voltage:** (Vrms maximum)†

Connectors for Cable Type Sea Level 70K Feet

RG-178 ..... 250 65

RG-316, .086 semi-rigid uncabled

uncabled receptacles, adapters ..... 335 85

Dummy loads ..... N/A

**Dielectric Withstanding Voltage:** (VRMS minimum at sea level)

Connectors for RG-178 ..... 750

Connectors for RG-316, .086 semi-rigid,

uncabled receptacles, adapters ..... 1000

Dummy loads ..... N/A

**Corona Level:** (Volts minimum at 70,000 feet)

Connectors for RG-178 ..... 190

Connectors for RG-316, .086 semi-rigid

uncabled receptacles, adapters ..... 250

Dummy loads ..... N/A

**Insertion Loss:** (dB maximum, tested at 1 GHz)

Straight cable connectors and adapters ..... 0.1 dB

Right angle cable connectors ..... 0.2 dB

Uncabled receptacles, dummy loads ..... N/A

**Insulation Resistance:** 10,000 megohms minimum

**Contact Resistance:** (milliohms maximum)

Initial After  
Environmental

Center contact (straight cabled connectors,  
uncabled receptacles and adapters) ..... 5.0 8.0

Center contact (right angle cabled connectors) .... 5.0 15.0

Outer contact ..... 1.0 1.5

Braid to body (gold plated connectors) ..... 1.0 N/A

Braid to body (nickel plated connectors) ..... 2.5 N/A

**RF Leakage:** (dB typical tested at 2.5 GHz)

Cable connectors ..... -55 dB

Uncabled receptacles and adapters, dummy loads ..... N/A

**RF High Potential Withstanding Voltage:** (Vrms minimum, tested at 4 and 7 MHz)

Connectors for RG178 ..... 500

Connectors for RG316 and adapters ..... 700

.086 semi-rigid ..... 670

Uncabled receptacles ..... 600

Dummy loads ..... N/A

**Power Rating (Dummy Load):** 0.5 watt @ +25°C, derated to 0.25 watt @ +125°C

### MECHANICAL RATINGS

**Engagement Design:** Compatible with CECC 22220, Series MCX

**Engagement Force:** 5.6 pounds maximum axial force

**Disengagement Force:** 8 pounds maximum axial force, 1 pound min.

**Contact Retention:** 2.3 pounds min. axial force (captivated contacts)

1 inch-ounce min. torque (uncabled receptacles)

**Cable Retention:** Axial Force\* Torque  
(pounds) (in-oz)

Connectors for RG178 ..... 10 N/A

Connectors for RG316 ..... 20 N/A

Connectors for RG316DS ..... 25 N/A

Connectors for .086 semi-rigid ..... 30 16

\* or cable breaking strength whichever is less.

**ENVIRONMENTAL RATINGS (Meets or exceed the applicable**

**paragraph of MIL-C-39012)Durability:** 500 cycles minimum

**Temperature Range:** Connectors ..... - 65°C to + 165°C

Dummy loads ..... - 65°C to + 125°C

**Thermal Shock:** MIL-STD-202, Method 107, Condition F (N/A dummy loads)

**Corrosion:** MIL-STD-202, Method 101, Condition B (N/A dummy loads)

**Shock:** MIL-STD-202, Method 213, Condition B (N/A dummy loads)

**Vibration:** MIL-STD-202, Method 204, Condition B (N/A dummy loads)

**Moisture Resistance:** MIL-STD-202, Method 106 (N/A dummy loads)

### MATERIAL SPECIFICATIONS

**Bodies:** Brass per QQ-B-626 or zinc per ASTM B86-71, gold plated\*\* per MIL-G-45204 .00001" min or nickel plated per QQ-N-290 or bright tin plated

**Contacts:** Male - brass per QQ-B-626, gold plated per MIL-G-45204 .00003" min.

Female - beryllium copper per QQ-C-530, gold plated per MIL-G-45204 .00003" min.

**Insulators:** PTFE fluorocarbon per ASTM D 1710 and ASTM D 1457

**Expansion Caps:** Brass per QQ-B-613, gold plated per MIL-G-45204 .00001" min. or nickel plated per QQ-N-290

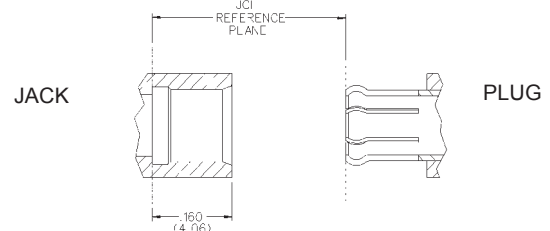
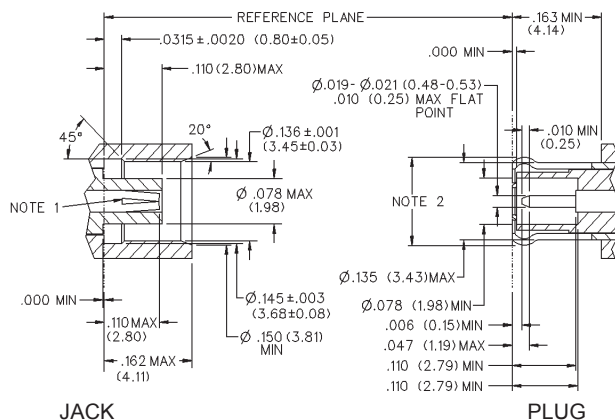
**Crimp Sleeves:** Copper per WW-T-799, gold plated per MIL-G-45204 .00001" min. or nickel plated per QQ-N-290

**Mounting Hardware:** Brass (nuts) per QQ-B-626 or phosphor bronze (lockwashers) QQ-B-750, gold plated per MIL-G-45204 .00001" min. or nickel plated per QQ-N-290

Avoid user injury due to misapplication. See safety advisory definitions on page 2.

\*\* All gold plated parts include a .00005" min. nickel underplate barrier layer.

### MATING ENGAGEMENT FOR MCX SERIES COMPATIBLE WITH CECC 22220



#### NOTES

1. ID of contact to meet VSWR mating characteristics and connector durability when mated with a dia. .019-.021 (0.48-0.53) male contact.
2. Must meet the force to engage and disengage when mated with mating part.