



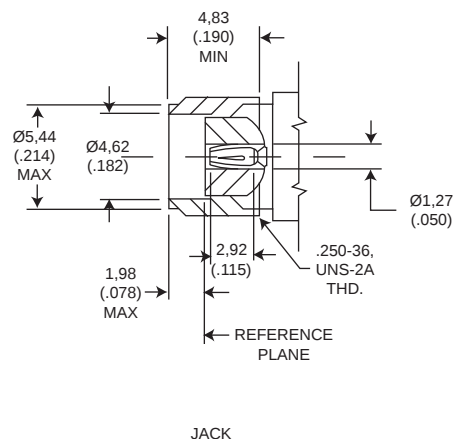
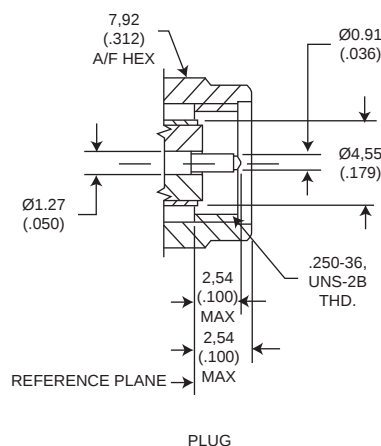
### Key Features

- Military grade
- Rugged stainless steel design
- Intermateable with all SMAs to Mil-C-39012
- Frequency range DC to 18 GHz

Cannon's precision SMA connectors feature the MIL-C-39012 Series SMA interface and envelope configuration. They can be mated with all connectors meeting the MIL specification dimensions. Designed for use with a variety of subminiature coaxial cables, superior results are obtained from DC to 18 GHz when used with semi-rigid cables and from DC to 12.4 GHz with flexible cable. These connectors are manufactured with beryllium copper bodies which are gold plated or stainless steel bodies which can be supplied with either a gold plated or passivated finish.

Cannon also offers a range of commercial SMA brass bodied connectors. For further details, please see page 13.

## MATING INTERFACES



**SPECIFICATIONS**

|               |                                                                                                                                                                 |                                                                                                                                                                                                                                                                                      |              |             |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|
| ELECTRICAL    | Impedance                                                                                                                                                       | 50Ω nominal                                                                                                                                                                                                                                                                          |              |             |
|               | Frequency Range                                                                                                                                                 | 0 to 18.0 GHz                                                                                                                                                                                                                                                                        |              |             |
|               | Voltage Rating                                                                                                                                                  | Connectors for RG178/U series cable: At Sea Level=170 Vrms. At 21km (70k feet) = 45 Vrms<br>Connectors for RG316/U series cable: At Sea Level = 250 Vrms. At 21km (70k feet) = 65 Vrms<br>Connectors for RG142/U series cable: At Sea Level = 335 Vrms. At 21km (70k feet) = 85 Vrms |              |             |
|               | Insulation Resistance                                                                                                                                           | 5000 MΩ minimum                                                                                                                                                                                                                                                                      |              |             |
|               | Contact resistance                                                                                                                                              | Center Contact = 3.0 m Ω maximum initial. 4.0 m Ω maximum after environment<br>Outer Contact = 2.0 m Ω maximum initial. 2.0 m Ω maximum after environment<br>Braid to Body = 0.5 m Ω maximum                                                                                         |              |             |
|               | Contact Current Rating                                                                                                                                          | 2.0 A dc maximum                                                                                                                                                                                                                                                                     |              |             |
|               | Insertion Loss                                                                                                                                                  | 0.06 x $\sqrt{\text{freq. GHz}}$ tested at 6 GHz                                                                                                                                                                                                                                     |              |             |
|               | RF Leakage                                                                                                                                                      | -60 dB minimum @ 2 - 3 GHz                                                                                                                                                                                                                                                           |              |             |
|               | Voltage Standing Wave Ratio (VSWR)<br>To 18 GHz or 80% of upper cut-off frequency of the cable , whichever is lower.<br>Applicable to 50Ω cables only.(F = GHz) | Connector Configuration                                                                                                                                                                                                                                                              |              |             |
|               |                                                                                                                                                                 | Cable group                                                                                                                                                                                                                                                                          | Straight     | Right Angle |
|               |                                                                                                                                                                 | RG178/U braided                                                                                                                                                                                                                                                                      | 1.20 + .025F | 1.20 + .03F |
|               |                                                                                                                                                                 | RG316/U braided                                                                                                                                                                                                                                                                      | 1.15 + .02F  | 1.15 + .03F |
| MECHANICAL    | Dielectric Withstanding Voltage (DWV)<br>Corona Level                                                                                                           | RG142/U braided                                                                                                                                                                                                                                                                      | 1.15 + .01F  | 1.15 + .02F |
|               |                                                                                                                                                                 | Connectors used with RG316/U series cable = 750 Vrms @ Sea Level                                                                                                                                                                                                                     |              |             |
|               |                                                                                                                                                                 | Connectors used with RG316/U series cable = 190 V @ 21km (70k feet) minimum                                                                                                                                                                                                          |              |             |
|               |                                                                                                                                                                 | SMA per MIL-C-39012, Series SMA                                                                                                                                                                                                                                                      |              |             |
|               | Engagement Design                                                                                                                                               | Torque: 0.23 Nm (2 in. lbs.) maximum                                                                                                                                                                                                                                                 |              |             |
|               | Engagement Forces                                                                                                                                               | 0.03 Nm (4 in. ozs.) minimum. (For captivated contacts)                                                                                                                                                                                                                              |              |             |
|               | Contact Torque                                                                                                                                                  | 0.8 Nm to 1.1 Nm (7 to 10 in. lbs.)                                                                                                                                                                                                                                                  |              |             |
|               | Mating Torque                                                                                                                                                   | 1.4 Nm to 1.7 Nm (12 to 15 in. lbs.) minimum                                                                                                                                                                                                                                         |              |             |
|               | Locknut Torque                                                                                                                                                  | 267 N (60 lbs.) minimum                                                                                                                                                                                                                                                              |              |             |
|               | Coupling Nut Retention                                                                                                                                          | Body & Body Components: Non-magnetic stainless steel or beryllium copper.<br>Female Contacts: Beryllium copper. Insulators: PTFE. Crimp Ferrule: Annealed copper alloy.<br>Gaskets: Silicone rubber                                                                                  |              |             |
| ENVIRONMENTAL | Materials                                                                                                                                                       | Center Contacts: Gold plated. Other Metal Parts: Gold plated or passivated (as specified) to meet the finish and corrosion requirements of MIL-C-39012                                                                                                                               |              |             |
|               | Finish/Plating                                                                                                                                                  | -65° C to 165° C                                                                                                                                                                                                                                                                     |              |             |
|               | Temperature Rating                                                                                                                                              | MIL-STD-202, Method 101, test condition B, 5% salt solution                                                                                                                                                                                                                          |              |             |
|               | Corrosion (salt spray)                                                                                                                                          | MIL-STD-202, Method 204, test condition D (20 G's)                                                                                                                                                                                                                                   |              |             |
|               | Vibration, High Frequency                                                                                                                                       | MIL-STD-202, Method 213, test condition I (100 G's)                                                                                                                                                                                                                                  |              |             |
|               | Shock                                                                                                                                                           | MIL-STD-202, Method 107, test condition B                                                                                                                                                                                                                                            |              |             |
|               | Thermal Shock                                                                                                                                                   | MIL-STD-202, Method 106. No measurements at high humidity. Insulation resistance shall be 200 M Ω minimum within 5 minutes after removal from humidity.                                                                                                                              |              |             |
|               | Moisture Resistance                                                                                                                                             | 500 matings minimum                                                                                                                                                                                                                                                                  |              |             |
| GENERAL       | Connector Durability                                                                                                                                            | Unless otherwise specified, all connectors feature captivated contacts. When captivated the contacts will withstand 26.7 N (6 lbs.) minimum axial force.                                                                                                                             |              |             |
|               | Contact Captivation                                                                                                                                             | When properly assembled to the compatible single braided coaxial cable, the retention is equal to the breaking strength of the cable.                                                                                                                                                |              |             |
|               | Cable Retention                                                                                                                                                 | Body Plating Options<br>The following part number suffices can be specified for Precision SMA Connectors<br>..... 310 gold body, gold coupling nut<br>..... 890 passivated body & coupling nut<br>except <u>Direct Solder Types</u> ; gold body, passivated coupling nuts            |              |             |
|               |                                                                                                                                                                 |                                                                                                                                                                                                                                                                                      |              |             |

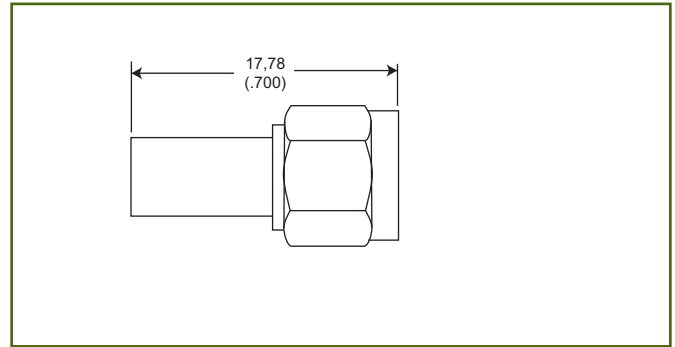
Dimensions shown in mm (inch)

Specifications and dimensions subject to change

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**CRIMP TYPE CABLE CONNECTORS FOR FLEXIBLE CABLE****Straight Plug, Non-Captive Contact**

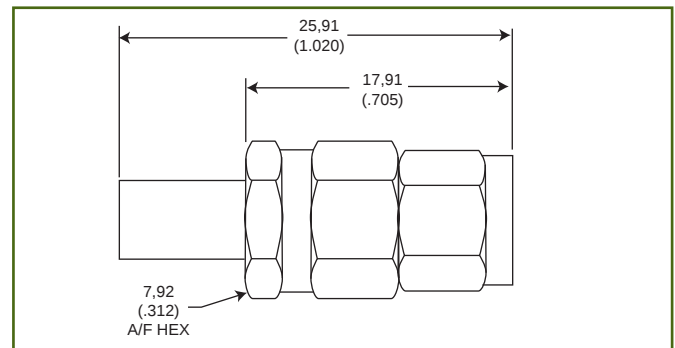
| Part Number         | Cable Numbers  |
|---------------------|----------------|
| 050 - 622 - 9188890 | RG174/U, 316/U |
| 050 - 622 - 9875890 | RD316          |



Assembly Instructions AI-102 (Page 43)

**Straight Plug, Captive Contact**

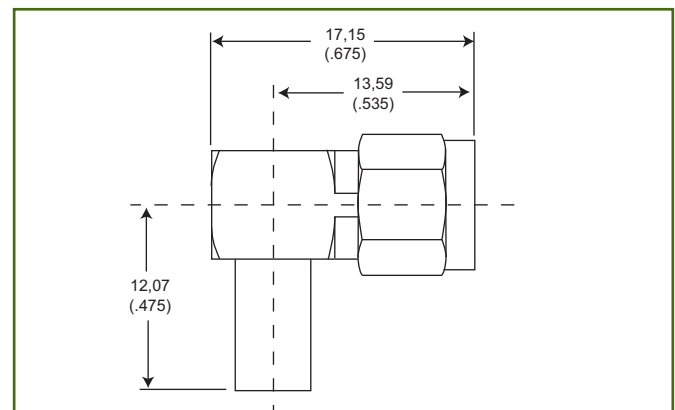
| Part Number         | Cable Numbers  |
|---------------------|----------------|
| A50 - 624- 9188890  | RG174/U, 316/U |
| A50 - 624 - 9875890 | RD316          |



Assembly Instructions AI-703 (Page 51)

**Right Angle Plug, Captive Contact**

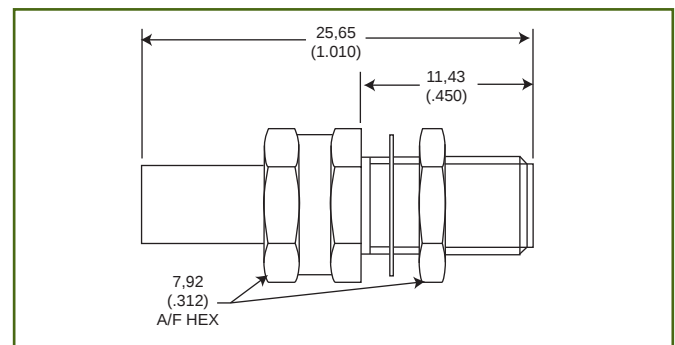
| Part Number         | Cable Numbers  |
|---------------------|----------------|
| 050 - 628- 9188890  | RG174/U, 316/U |
| 050 - 628 - 9875890 | RD316          |



Assembly Instructions AI-90 (Page 41)

**Bulkhead Jack, Captive Contact**

| Part Number        | Cable Numbers  |
|--------------------|----------------|
| 050 - 627- 9188890 | RG174/U, 316/U |
| 050 - 627- 9875890 | RD316          |



Mounting Plan W (Page 40)

Assembly Instructions AI-227 (Page 46)

The surface finish on these products is passivated stainless steel. For gold plated versions change last three digits of the the part number from 890 to 310.



Dimensions shown in mm (inch)  
Specifications and dimensions subject to change

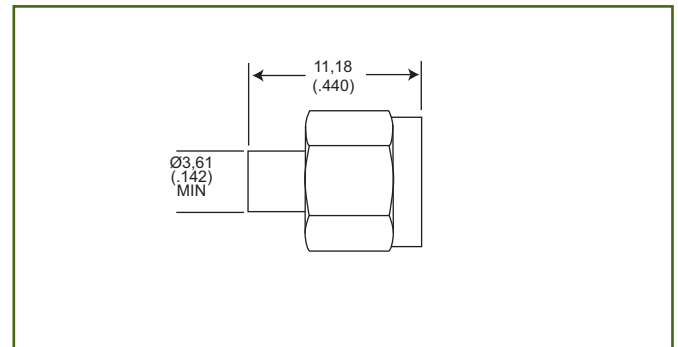
[www.ittcannon.com](http://www.ittcannon.com)

## DIRECT SOLDER TYPE CABLE CONNECTORS FOR SEMI-RIGID CABLE

### Straight Plug without Center Contact\*

| Part Number        | Cable Numbers |
|--------------------|---------------|
| 055 - 607- 2003890 | RG402/U       |

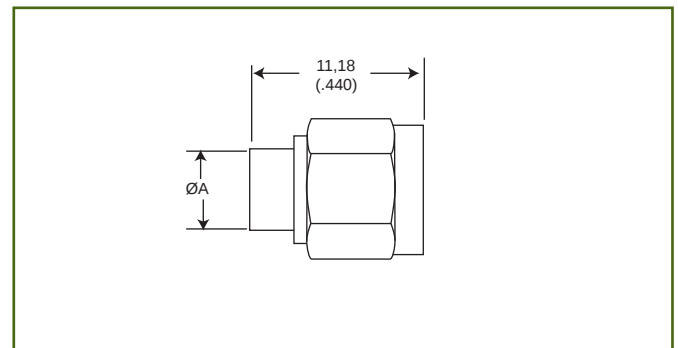
\*Center conductor of cable is used as contact



Assembly Instructions AI-302 (Page 48)

### Straight Plug with Center Contact

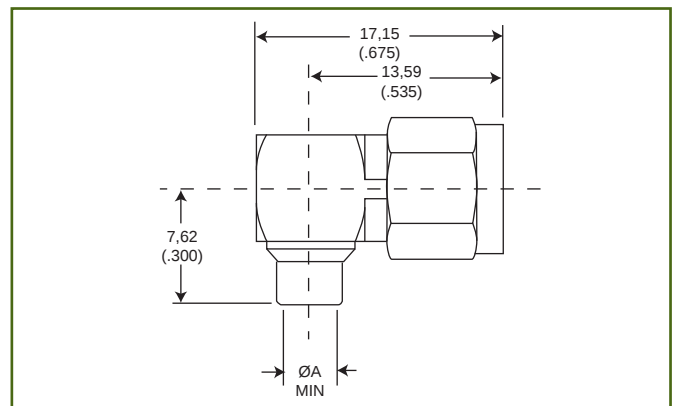
| Part Number         | Cable Numbers | A           |
|---------------------|---------------|-------------|
| 055 - 607- 9172890  | RG405/U       | 2,20 (.088) |
| 055 - 607 - 9173890 | RG402/U       | 3,60 (.142) |



Assembly Instructions AI-252 (Page 47)

### Right Angle Plug

| Part Number        | Cable Numbers | A           |
|--------------------|---------------|-------------|
| 055 - 611- 3702890 | RG405/U       | 2,20 (.088) |
| 055 - 611- 3703890 | RG402/U       | 3,60 (.142) |



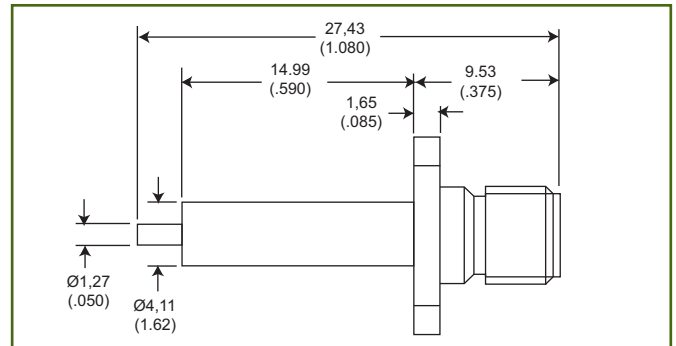
Assembly Instructions AI-98 (Page 42)

The surface finish on these products is passivated stainless steel. For gold plated versions change last three digits of the the part number from 890 to 310.

## FLANGE MOUNT RECEPTACLES

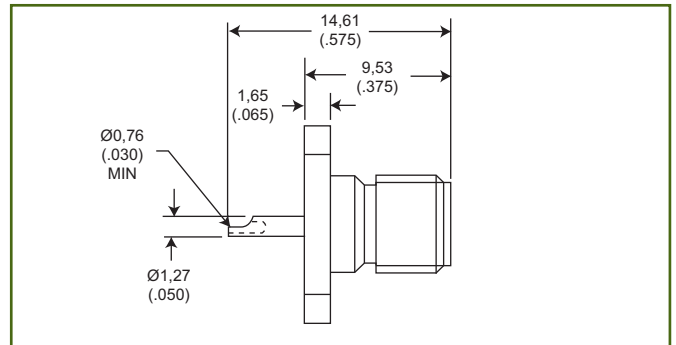
Straight Jack, Stub Contact, Extended Dielectric

| Part Numbers        |                     |
|---------------------|---------------------|
| Square Flange       | Narrow Flange       |
| 050 - 645 - 9009890 | 050 - 645 - 4540890 |



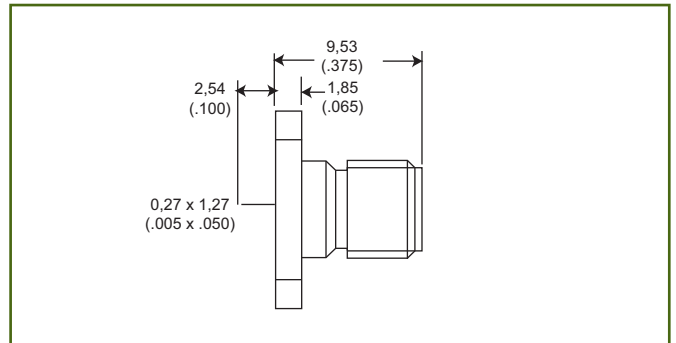
Straight Jack, Solder Pot Contact, Flush Dielectric

| Part Numbers        |                          |
|---------------------|--------------------------|
| Square Flange       | Narrow Flange            |
| 050 - 645 - 9019890 | Contact Customer Service |



Straight Jack, Tab Contact, Flush Dielectric

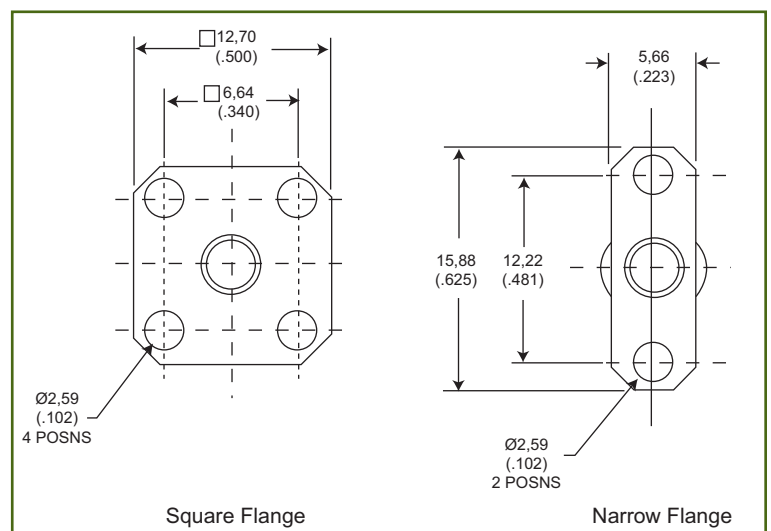
| Part Numbers        |                     |
|---------------------|---------------------|
| Square Flange       | Narrow Flange       |
| 050 - 645 - 4575890 | 050 - 645 - 4528890 |



Flange Dimensions for Flange Mount Receptacles and Panel Jacks

ALL FLANGE MOUNT RECEPTACLES HAVE CAPTIVATED CONTACTS

The surface finish on these products is passivated stainless steel. For gold plated versions change last three digits of the the part number from 890 to 310.



Dimensions shown in mm (inch)  
Specifications and dimensions subject to change

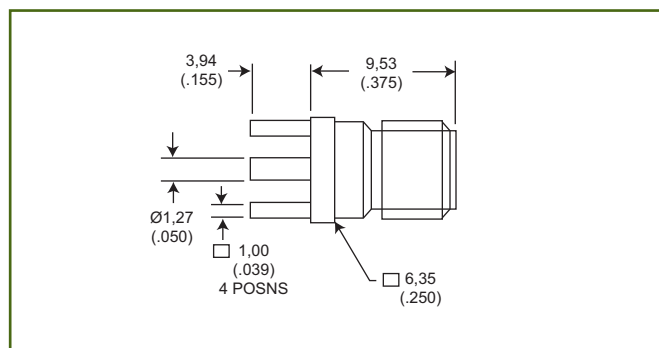
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## PRINTED CIRCUIT RECEPTACLES

Straight Jack

Part Number

050 - 651 - 0000310

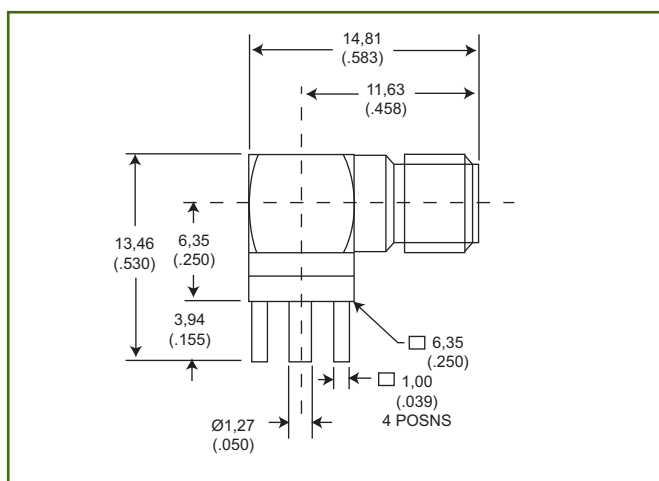


Mounting Plan D (Page 40)

Right Angle Jack

Part Number

050 - 653 - 0000310

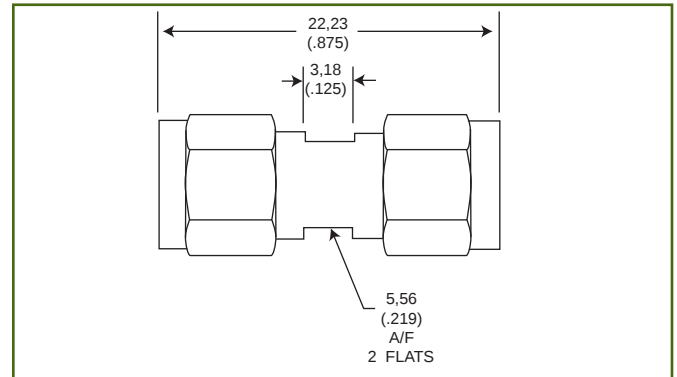


Mounting Plan D (Page 40)

**IN-SERIES ADAPTORS****Plug to Plug Adaptor, Straight**

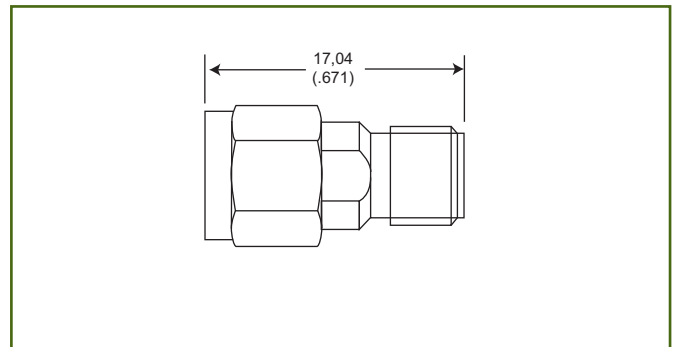
Part Number

050 - 673 - 0000890

**Plug to Jack Adaptor, Straight**

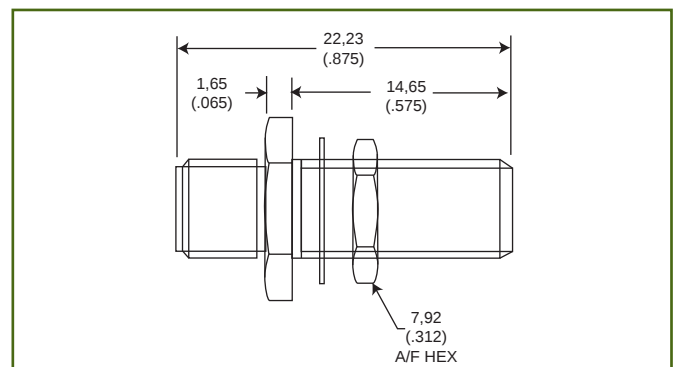
Part Number

050 - 674 - 0000890

**Jack to Jack Adaptor, Bulk Head Mount, Straight**

Part Number

050 - 675 - 0000890

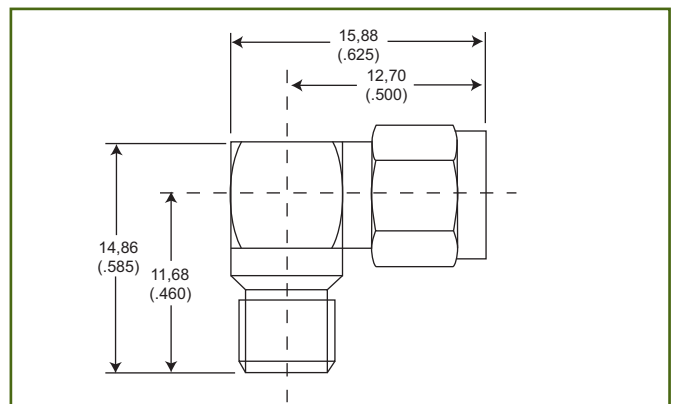


Mounting Plan W (Page 40)

**Plug to Jack Adaptor, Right Angle**

Part Number

050 - 678 - 0000890



The surface finish on these products is passivated stainless steel. For gold plated versions change last three digits of the the part number from 890 to 310.



Dimensions shown in mm (inch)  
Specifications and dimensions subject to change

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