

SMA Connectors

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While every precaution has been taken to ensure accuracy and completeness herein, Cinch Connectivity Solutions assumes no responsibility, and disclaims all liability for damages resulting from use of this information or for any errors or omissions. Specifications subject to change without notice.

Specifications

Electrical Ratings

Impedance: 50 Ohms

Frequency Range:

Dummy loads.....	0-2.00 GHz
Flexible cabled connectors.....	0-12.4 GHz
Uncabled receptacles, Right Angle Semi-Rigid cabled connectors and adapters.....	0-18.0 GHz
Straight Semi-Rigid cabled connectors and field replaceable connectors	0-26.5 GHz

VSWR: (max) (f = GHz)

	Straight Cabled Connectors	Right Angle Cabled Connectors
RG-178.....	1.20 + .025f	1.20 + .03f
RG-316, LMR-100.....	1.15 + .02f	1.15 + .03f
RG-58, LMR-195.....	1.15 + .01f	1.15 + .02f
RG-142.....	1.15 + .01f	1.15 + .02f
LMR-200, LMR-240.....	1.10 + .03f	1.10 + .06f
RG-405.....	1.07 + .008f	1.18 + .015f
RG-402 (w/contact).....	1.05 + .008f	1.15 + .015f
RG-402 (w/o contact).....	1.035 + .005f	
Jack-bulkhead jack adapter and plug-plug adapter.....		1.05 + .010f
Jack-jack adapter and plug-jack adapter.....		1.05 + .005f
Uncabled receptacles, dummy loads.....		N/A
Field replaceable (see page 80).....		N/A

Working Voltage: (VRMS max)†

	Sea Level	70K Feet
RG-178.....	170	45
RG-316, LMR-100, 195, 200.....	250	65
RG-58, RG-142, LMR-240, RG-405, uncabled receptacles, RG-402 w/o contact.....	335	85
RG-402 with contact and adapters.....	500	125
Dummy loads.....		N/A

Dielectric Withstanding Voltage: (VRMS min at sea level)†

RG-178.....	500
RG-316, LMR-100, 195, 200.....	750
RG-58, RG-142, LMR-240, RG-405, field replaceable, uncabled receptacles.....	1000
RG-402 with contact and adapters.....	1500
RG-402 w/o contact, dummy loads.....	N/A

Insulation Resistance: 5000 megohms min

Contact Resistance: (milliohms max)

	Initial	After Environmental
Center contact (straight cabled connectors and uncabled receptacles).....	3.0*	4.0*
Center contact (right angle cabled connectors and adapters).....	4.0	6.0
Field replaceable connectors.....	6.0	8.0
Outer contact (all connectors).....	2.0	N/A
Braid to body (gold plated connectors).....	0.5	N/A
Braid to body (nickel plated connectors).....	5.0	N/A

*N/A where the cable center conductor is used as a contact

Corona Level: (Volts min at 70,000 feet)†

RG-178.....	125
RG-316, LMR-100, 195, 200.....	190
RG-58, RG-142, LMR-240, RG-405, uncabled receptacles, RG-402 w/o contact.....	250
RG-402 with contact and adapters.....	375
Dummy loads.....	N/A

Insertion Loss: (dB max)

Straight flexible cable connectors and adapters.....	0.06 $\sqrt{f}$ (GHz), tested at 6 GHz
Right angle flexible cable connectors.....	0.15 $\sqrt{f}$ (GHz), tested at 6 GHz
Straight Semi-Rigid cable connectors with contact	0.03 $\sqrt{f}$ (GHz), tested at 10 GHz
Right angle Semi-Rigid cable connectors	0.05 $\sqrt{f}$ (GHz), tested at 10 GHz
Straight Semi-Rigid cable connectors w/o contact	0.03 $\sqrt{f}$ (GHz), tested at 16 GHz
Straight low loss flexible cable connectors	0.06 $\sqrt{f}$ (GHz), tested at 1 GHz
Right Angle low loss flexible cable connectors	0.15 $\sqrt{f}$ (GHz), tested at 1 GHz
Uncabled receptacles, field replaceable, dummy loads	N/A

RF Leakage: (dB min, tested at 2.5 GHz)

Flexible cable connectors, adapters and RG-402 connectors w/o contact.....	-60 dB
Field replaceable w/o EMI gasket.....	-70 dB
RG-405 connectors and RG-402 connectors with contact, and field replaceable with EMI Gasket	-90 dB
Two-way adapters	-90 dB
Uncabled receptacles, dummy loads.....	N/A

RF High Potential Withstanding Voltage:

(VRMS min, tested at 4 and 7 MHz)†

RG-178.....	335
RG-316, LMR-100, 195, 200	500
RG-58, RG-142, LMR-240, RG-405, RG-402 connectors w/o contact, uncabled receptacles.....	670
RG-402 with contact and adapters.....	1000

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

Engagement Design:	MIL-STD-348, Series SMA
Engagement/Disengagement Force:	2 lb-in max
Mating Torque:	7 to 10 lb-in
Bulkhead Mounting Nut Torque:	15 lb-in
Coupling Proof Torque:	15 lb-in min
Coupling Nut Retention:	60 lbs min
Contact Retention:	6 lbs min axial force (captivated contacts) 4 oz-in min torque (uncabled receptacles)

Cable Retention:	Axial Force* (lbs)	Torque (oz-in)
RG-178	10	N/A
RG-316, LMR-100	20	N/A
LMR-195, 200	30	N/A
RG-58, LMR-240.....	40	N/A
RG-142	45	N/A
RG-405	30	16
RG-402	60	55

*Or cable breaking strength whichever is less.

Durability: 500 cycles min 100 cycles min for RG-402 connectors w/o contact**Environmental Specifications**

(Meets or Exceeds the Applicable Paragraph of MIL-PRF-39012)

Temperature Range:	- 65°C to + 165°C
Thermal Shock:	MIL-STD-202, Method 107, Condition B (N/A dummy loads)
Corrosion:	MIL-STD-202, Method 101, Condition B (N/A dummy loads)
Shock:	MIL-STD-202, Method 213, Condition I (N/A dummy loads)
Vibration:	MIL-STD-202, Method 204, Condition Dv
Moisture Resistance:	MIL-STD-202, Method 106 (N/A dummy loads)

† Avoid user injury due to misapplication. See safety advisory definitions.

For more information, please contact customer service at (507) 833-8822 or (800) 247-8256 • cinch.com

Illustrations are shown in inches (millimeters).

Specifications

Material Specifications

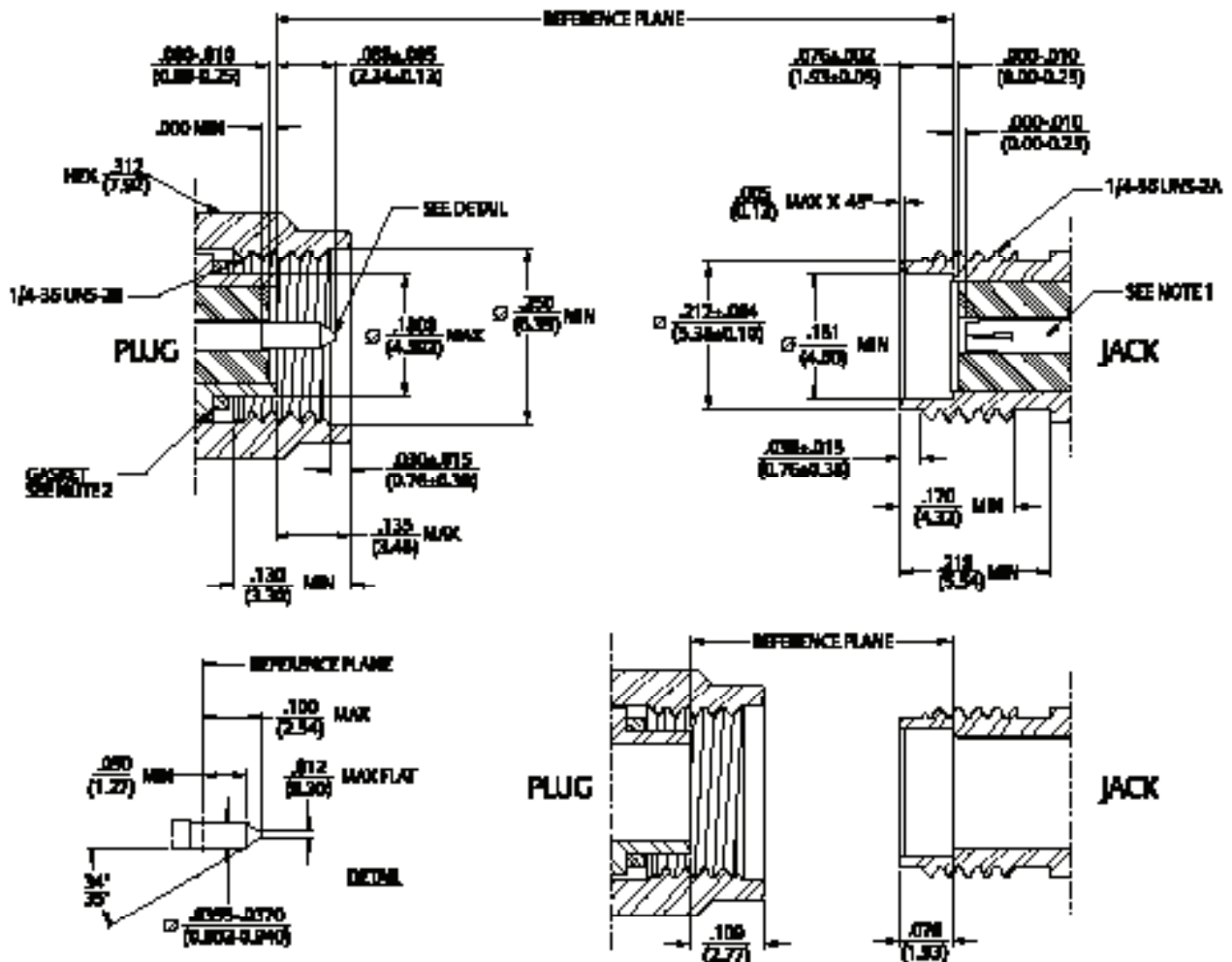
Bodies:	Brass per ASTM B16, gold plated* per MIL-DTL-45204 .00001" min. or nickel plated per SAE-AMS2423
Contacts:	Male - brass per ASTM B16, gold plated per MIL-DTL-45204 .00005" min Female - beryllium copper per ASTM B196, gold plated per MIL-DTL-45204 .00005" min
Nut Retention Spring:	Beryllium copper per ASTM B196, Unplated
Insulators:	PTFE fluorocarbon per ASTM D 1710 and ASTM D 1457 or Tefzel per ASTM D 3159 or PFA 340 per ASTM D 3307
Expansion Caps:	Brass per ASTM B36, gold plated per MIL-DTL-45204 .00001" min. or nickel plated per SAE-AMS2423
Crimp Sleeves:	Copper per ASTM B301 or brass per ASTM B16, gold plated per MIL-DTL-45204 .00001" min or nickel plated per SAE-AMS2423
Mounting Hardware:	Brass (nuts) per ASTM B16 or phosphor bronze (lockwashers), gold plated per MIL-DTL-45204 .00005" min or nickel plated per SAE-AMS2423
Seal Rings:	Silicone rubber per A-A-59588A
EMI Gaskets:	Conductive silicone rubber per MIL-G-83528, Type M

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

Mating Engagement for SMA Series

NOTES

1. ID to meet VSWR, contact resistance and insertion withdrawal forces when mated with a die. KES55-JES770 pin.
2. Gasket is not supplied with loose connections.



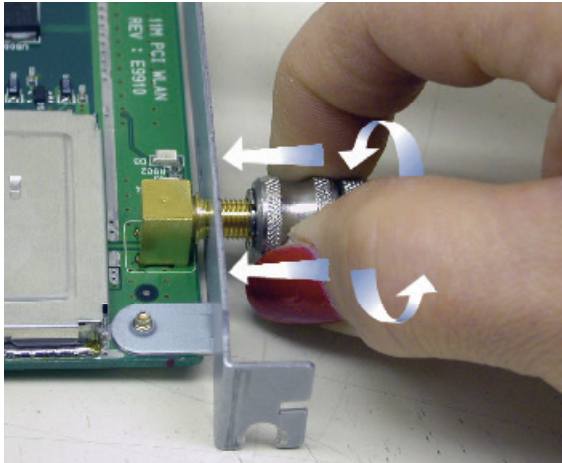
The Johnson line of **SMA Quick-Connect Plug** quickly mates to a standard, threaded SMA Jack receptacle allowing rapid test connections to devices utilizing SMA threaded jacks.

SMA electrical performance is not compromised because the connector retains all the benefits of a threaded coaxial coupling. The final connection is a solid metal to metal coupling not relying on spring forces to maintain the coupling. This results in a more reliable connection with less signal leakage and a lower VSWR than most push-on connectors.

Full MIL-PRF-39012 electrical compatibility is obtained with a push and twist motion. The knurled thumbnut requires only one half to one full turn to create a solid electromechanical connection. Rapid disconnect is accomplished with a twist and pull motion.

The SMA Quick-Connect Plug Adapter converts a standard SMA Plug test cable into a Quick-Connect cable. This makes the testing process more efficient by reducing the time and effort required to connect and disconnect the test cable.

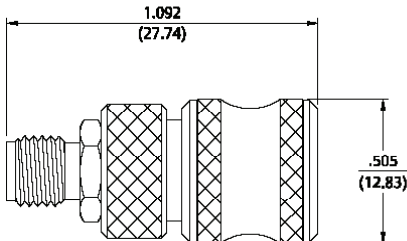
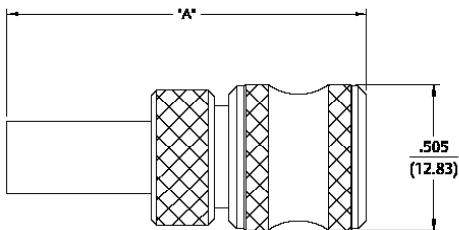
Note: Push-on using front of connector, twist back-end coupling nut to secure.



Plugs		
Cable Type	Gold Plated *	"A"
RG-161, 174, 188, 316	142-1403-001	1.249
RG-188 DS, RG-316 DS	142-1404-001	1.249
RG-58, 141, 303	142-1407-001	1.099
RG-55, 142, 223, 400	142-1408-001	1.249

Adapters	
Gold Plated *	
142-1901-821	

*Nickel plated coupling hardware, gold plated body
Assembly instructions page 219.



Semi-Rigid Cable

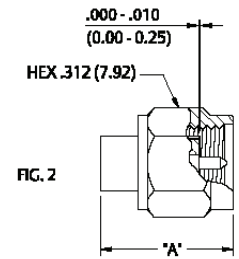
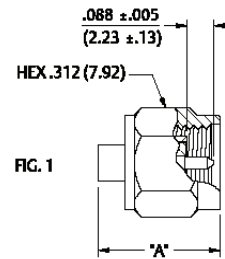
Straight Solder Type Plug – with Contact, Captive Nut Thin Wall Connector Interface



Cable Type	Gold Plated	Nickel Plated	Fig.	"A"
RG-405	142-0693-001	142-0693-006	1	.405 (10.29)
RG-402	142-0694-001*	142-0694-006*	2	.440 (11.18)

Assembly instructions page 214.

*Mating torque 8 lb-in max, coupling proof torque 8 lb-in max.



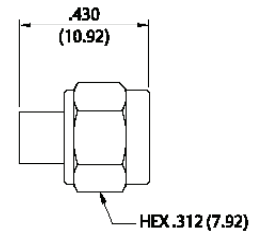
Straight Solder Type Plug – without Contact, Thread-on Nut



Cable Type	Gold Plated	Nickel Plated
RG-402	142-0694-011	142-0694-016

Assembly instructions page 214.

Center conductor of cable serves as contact.

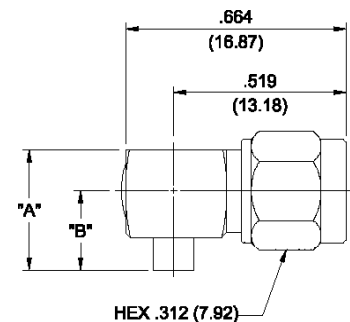


Right Angle Solder Type Plug (1-piece body)

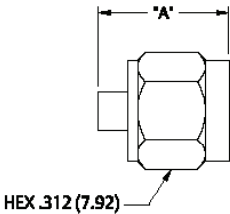


Cable Type	Gold Plated	Nickel Plated	"A"	"B"
RG-405	142-0693-101	142-0693-106	.336 (8.53)	.253 (6.43)
RG-402	142-0694-101	142-0694-106	.462 (11.73)	.306 (7.77)

Assembly instructions page 213.



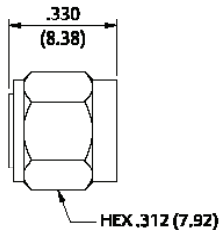
Straight Solder Type Plug – with Contact, Thread-on Nut



Cable Type	Gold Plated	Nickel Plated	"A"
RG-405	142-0693-051	142-0693-056	.405 (10.29)
RG-402	142-0694-051	142-0694-056	.438 (11.13)

Assembly instructions page 216.

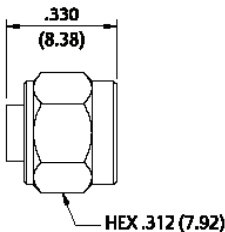
Straight Solder Type Plug – Short Profile – without Contact, Captive Nut



Cable Type	Gold Plated	Nickel Plated
RG-402	142-0694-031	142-0694-036

Assembly instructions page 215. Center conductor of cable serves as contact.

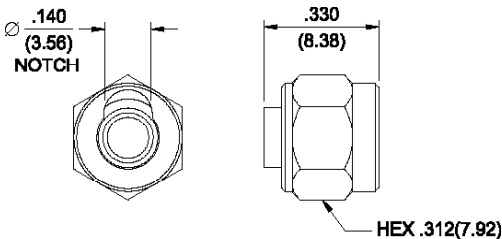
Straight Solder Type Plug – without Contact, Slide-on Nut



Cable Type	Gold Plated	Nickel Plated
RG-402	142-0694-021	142-0694-026

Assembly instructions page 215.
Center conductor of cable serves as contact.

Straight Solder Type Plug – without Contact, Slide-on Notched Nut



Cable Type	Gold Plated	Nickel Plated
RG-402	142-0694-041	142-0694-046

Assembly instructions page 215. Center conductor of cable serves as contact.

For more information, please contact customer service at (507) 833-8822 or (800) 247-8256 • cinch.com
Illustrations are shown in inches (millimeters).

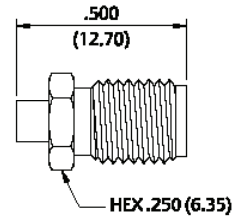
Semi-Rigid Cable

Straight Solder Type Jack



Cable Type	Gold Plated	Nickel Plated
RG-405	142-0593-001	142-0593-006
RG-402	142-0594-001	142-0594-006

Assembly instructions page 214.

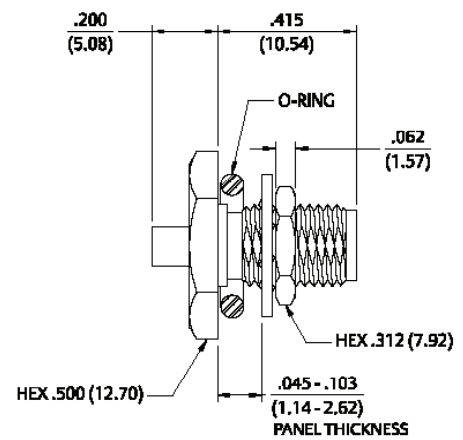


Straight Solder Type Bulkhead Jack with O-Ring



Cable Type	Gold Plated	Nickel Plated
RG-405	142-0593-401	142-0593-406
RG-402	142-0594-401	142-0594-406

Assembly instructions page 214.
Mounting hole layout figure 1 page 194.

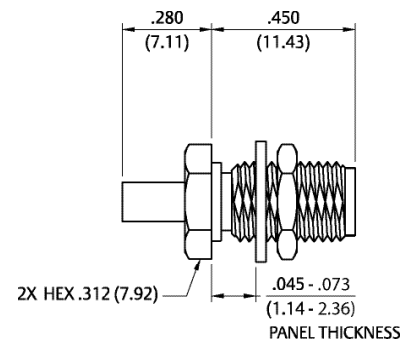


Straight Solder Type Bulkhead Jack

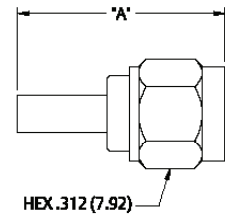


Cable Type	Gold Plated
RG-405	142-0593-411

Assembly instructions page 214.
Mounting hole layout figure 1 page 194.



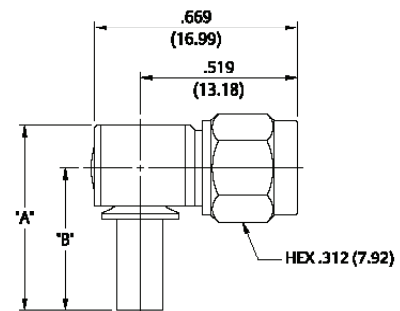
Straight Crimp Type Plug (3-piece) – Solder or Crimp Captivated Contact



Cable Type	Gold Plated	Nickel Plated	"A"
RG-178, 196	142-0402-011	142-0402-016	.591 (15.01)
RG-161, 174, 188, 316, LMR-100 HPF-100 RF-100	142-0403-011	142-0403-016	.706 (17.93)
RG-188 DS, RG-316 DS	142-0404-011	142-0404-016	.706 (17.93)
RG-58, 141, 303, LMR-195, HPF-195, RF-195	142-0407-011	142-0407-016	.706 (17.93)
RG-55, 142, 223, 400	142-0408-011	142-0408-016	.706 (17.93)
RG-179, 187	142-0433-011	142-0433-016	.706 (17.93)
LMR-200, HPF-200, RF-200	142-0439-001	142-0439-006	.844 (21.44)
LMR-240, HPF-240, RF-240	142-0435-001	142-0435-006	.844 (21.44)

Assembly Instructions: RG-178 page 217. LMR 195, 200 and 240, see page 220.
Other cable groups, see page 219.

Right Angle Crimp Type Plug – Captivated Contact



Cable Type	Gold Plated	Nickel Plated	"A"	"B"
RG-178, 196	142-0402-101	142-0402-106	.611 (15.52)	.470 (11.94)
R-161, 174, 188, 316, LMR-100, HPF-100, RF-100	142-0403-101	142-0403-106	.611 (15.52)	.470 (11.94)
RG-188 DS, RG-316 DS	142-0404-101	142-0404-106	.611 (15.52)	.470 (11.94)
LMR-195, HPF-195, RF-195, RG-58, 141, 303	142-0407-101	142-0407-106	.611 (15.52)	.470 (11.94)
RG-55, 142, 223, 400	142-0408-101	142-0408-106	.611 (15.52)	.470 (11.94)
RG-179, 187	142-0433-101	142-0433-106	.611 (15.52)	.470 (11.94)
LMR-200, HPF-200, RF-200	142-0439-101	142-0439-106	.611 (15.52)	.470 (11.94)
LMR-240, HPF-240, RF-240	142-0435-101	142-0435-106	.635 (16.13)	.490 (12.45)

Assembly Instructions: LMR 195, 200 and 240 page 229.
Other cable groups, see page 224.

For more information, please contact customer service at (507) 833-8822 or (800) 247-8256 • cinch.com

Illustrations are shown in inches (millimeters).

Flexible Cable

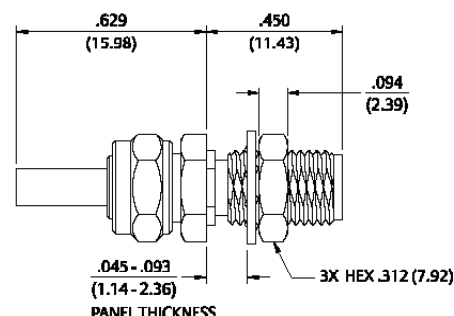
Straight Crimp Type Bulkhead Jack – Captivated Contact



Cable Type	Gold Plated	Nickel Plated
RG-178, 196	142-0302-401	142-0302-406
RG-161, 174, 188, 316	142-0303-401	142-0303-406
RG-188 DS, RG-316 DS	142-0304-401	142-0304-406
RG-58, 141, 303	142-0307-401	142-0307-406
RG-55, 142, 223, 400	142-0308-401	142-0308-406

Assembly instructions page 225.

Mounting hole layout figure 1 page 194.



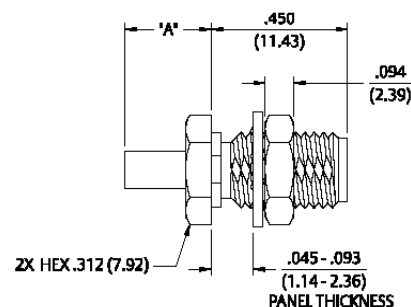
Straight Crimp Type Bulkhead Jack (3-piece) – Solder or Crimp Captivated Contact



Cable Type	Gold Plated	Nickel Plated	"A"
RG-178, 196	142-0302-431	142-0302-436	.285 (7.24)
RG-161, RG-16, 174, 188, 316, LMR-100 HPF-100 RF-100	142-0303-411	142-0303-416	.385 (9.78)
RG-188 DS, RG-316 DS	142-0304-411	142-0304-416	.385 (9.78)
RG-58, 141, 303, LMR-195, HPF-195, RF-195	142-0307-411	142-0307-416	.385 (9.78)
RG-55, 142, 223, 400	142-0308-411	142-0308-416	.385 (9.78)
RG-179, 187	142-0333-411	142-0333-416	.385 (9.78)
LMR-200, HPF-200, RF-200	142-0339-401	142-0339-406	.545 (13.84)
LMR-240, HPF-240, RF-240	142-0335-401	142-0335-406	.545 (13.84)

Assembly Instructions: RG-178 page 217. LMR 195, 200 and 240, see page 220.

Other cable groups, see page 219. Mounting hole layout figure 1 page 194.



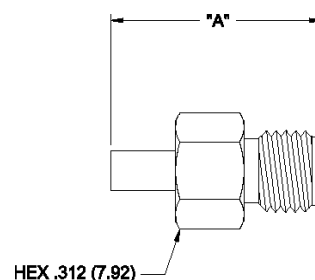
Straight Crimp Type Jack (3-piece) – Solder or Crimp Captivated Contact



Cable Type	Gold Plated	Nickel Plated	"A"
RG-178, 196	142-0302-011	142-0302-016	.651 (16.54)
RG-161, 174, 188, 316	142-0303-011	142-0303-016	.756 (19.20)
RG-188 DS, RG-316 DS	142-0304-011	142-0304-016	.756 (19.20)
RG-58, 141, 303	142-0307-011	142-0307-016	.756 (19.20)
RG-55, 142, 223, 400	142-0308-011	142-0308-016	.756 (19.20)

Assembly Instructions: RG-178 page 217. LMR 195, 200 and 240, see page 220.

Other cable groups, see page 219. Mounting hole layout figure 1 page 194.



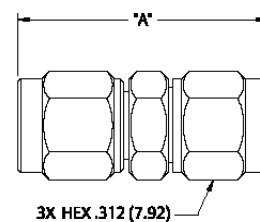
Straight Clamp Type Plug – Captivated Contact



Cable Type	Gold Plated	Nickel Plated	"A"
RG-178, 196	142-0202-011	142-0202-016	.816 (20.73)
RG-161, 174, 188, 316	142-0203-011	142-0203-016	.816 (20.73)
RG-58, 141, 303, 55, 142, 223, 400	142-0207-011	142-0207-016	.895 (22.73)

Assembly instructions page 230.

Mounting hole layout figure 1 page 194.



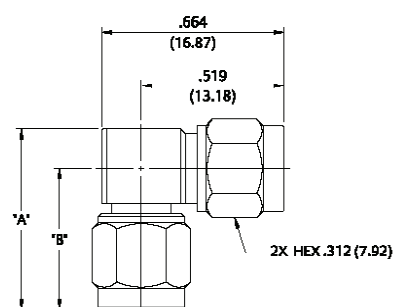
Right Angle Clamp Type Plug – Captivated Contact



Cable Type	Gold Plated	Nickel Plated	"A"	"B"
RG-178 196	142-0202-101	142-0202-106	.569 (14.45)	.428 (10.81)
RG-161 174, 188, 316	142-0203-101	142-0203-106	.574 (14.58)	.433 (11.00)
RG-58, 141, 303, 55, 142, 223, 400	142-0207-101	142-0207-106	.686 (17.42)	.545 (13.84)

Assembly instructions page 231.

Mounting hole layout figure 1 page 194.

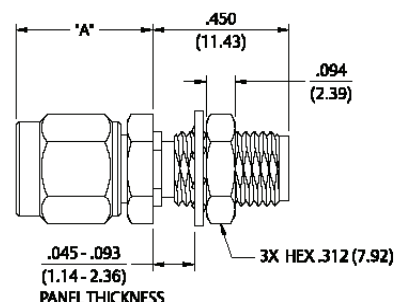


Straight Clamp Type Bulkhead Jack – Captivated Contact



Cable Type	Gold Plated	Nickel Plated	"A"
RG-178, 196	142-0102-401	142-0102-406	.452 (11.48)
RG-161, 174, 188, 316	142-0103-401	142-0103-406	.487 (12.37)
RG-58, 141, 303, 55, 142, 223, 400	142-0107-401	142-0107-406	.531 (13.49)

Assembly instructions page 230.



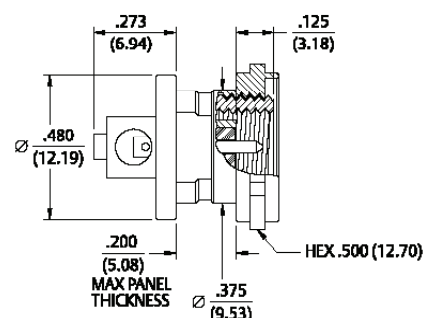
Rear Mount Bulkhead Plug – Antenna Connector



Cable Type	Gold Plated
RG-178, .047 Semi-Rigid	142-0801-421*

* With Nickel mounting nut. Assembly instructions page 216.

Mates with SMA Jack Antenna Interface.



For more information, please contact customer service at (507) 833-8822 or (800) 247-8256 • cinch.com

Illustrations are shown in inches (millimeters).

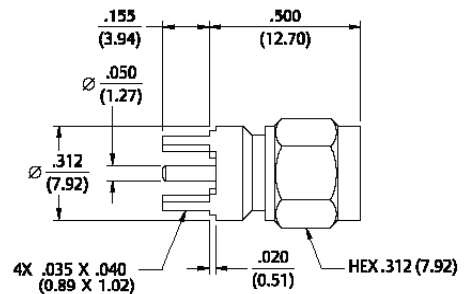
PC Mount

Straight Plug Receptacle



Gold Plated	Nickel Plated
142-0801-201	142-0801-206

Mounting hole layout figure 2 page 194.

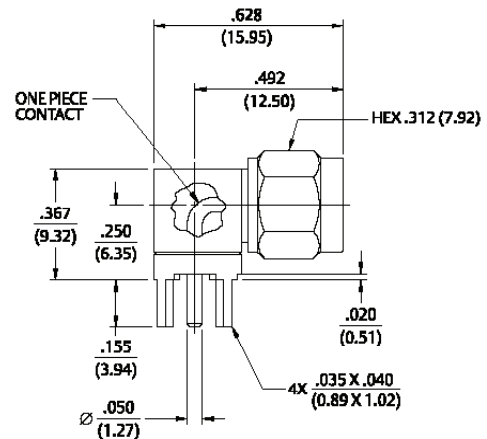


Right Angle Plug Receptacle



Gold Plated	Nickel Plated
142-0801-301	142-0801-306

Mounting hole layout figure 2 page 194.

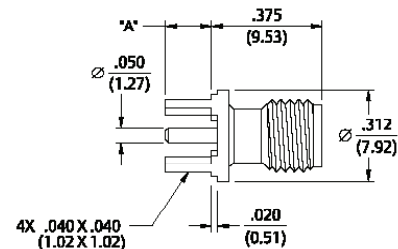


Straight Jack Receptacle



Gold Plated	Nickel Plated	"A"
142-0701-201	142-0701-206	.155 (3.94)
142-0701-231	142-0701-236	.110 (2.79)

Mounting hole layout figure 2 page 194.

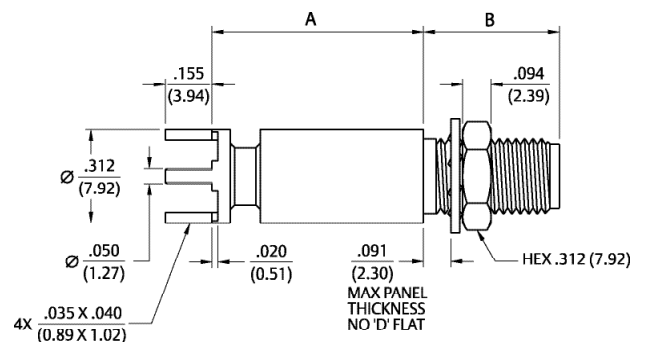


Straight Bulkhead Jack Receptacle



Gold Plated	Nickel Plated	"A"	"B"
142-0701-421	142-0701-426	.700 (17.78)	.450 (11.43)
142-0701-491	142-0701-496	.065 (1.65)	.755 (19.18)

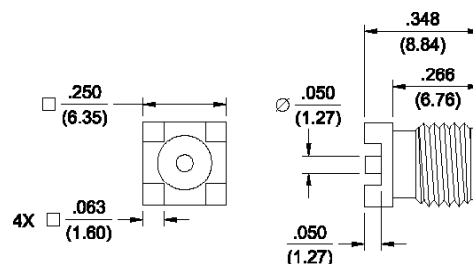
Mounting hole layout figure 2 page 194.



Straight Jack Receptacle – Surface Mount



Gold Plated	Packaging
142-0711-201	Stock
142-0711-202	Tape and Reel 500 pcs/reel

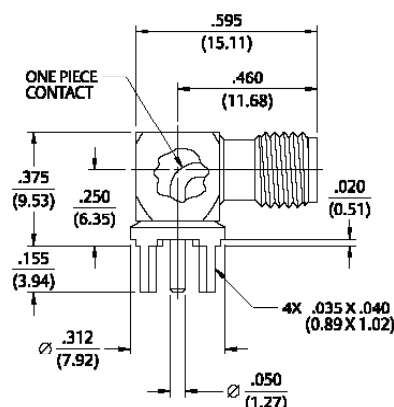


Right Angle Jack Receptacle



Gold Plated	Nickel Plated
142-0701-301	142-0701-306

Recommended Land Pattern figure 2 page 194.

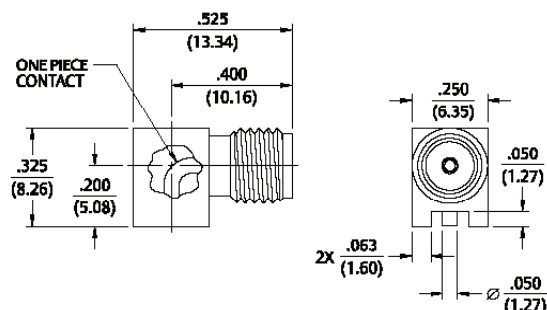


Right Angle Jack Receptacle – Surface Mount



Gold Plated	Packaging
142-0711-301	Stock
142-0711-302	Tape and Reel 425 pcs/reel

Recommended Land Pattern figure 7 page 194.

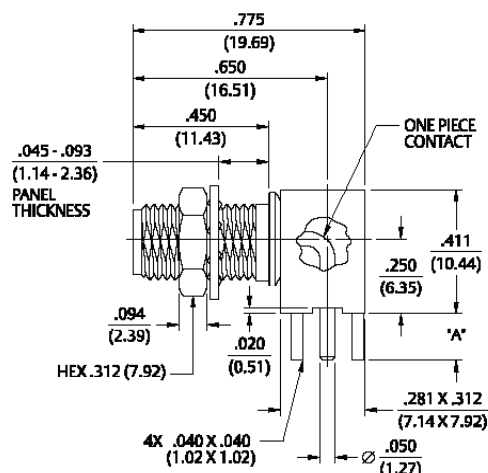


Right Angle Bulkhead Jack Receptacle



Gold Plated	Nickel Plated	"A"
142-0701-501	142-0701-506	.155 (3.94)
142-0701-551	142-0701-556	.110 (2.79)

Mounting hole layout figure 1 and 2 page 194.



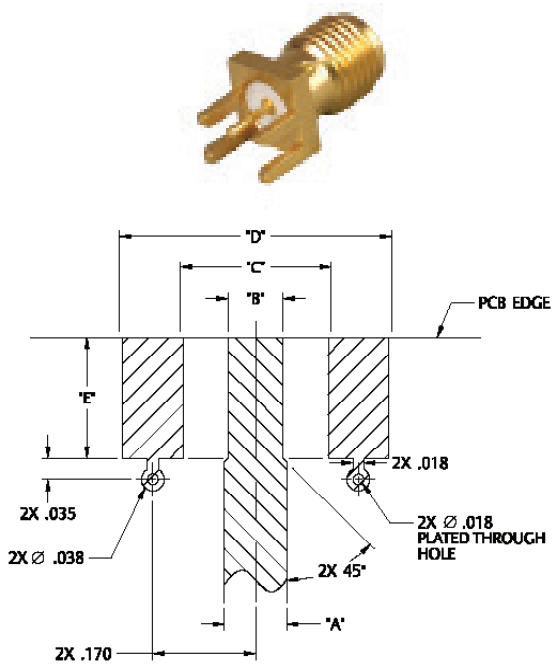
For more information, please contact customer service at (507) 833-8822 or (800) 247-8256 • cinch.com

Illustrations are shown in inches (millimeters).

PC Mount

The **End Launch** connector is attached to the circuit board by inserting the board edge between the legs and soldering the legs and center conductor to pads on the board. For optimum high frequency performance, the connector to circuit board transition must be adjusted for low VSWR. To compensate for the transition from coax to microstrip, trace widths "A" and "B" must be adjusted based on circuit board thickness. When properly adjusted, this technique yields a low VSWR over a wide bandwidth.

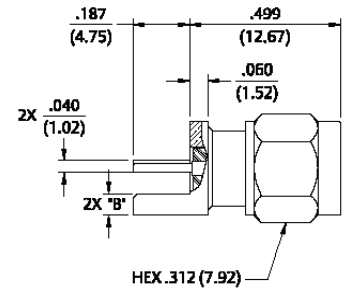
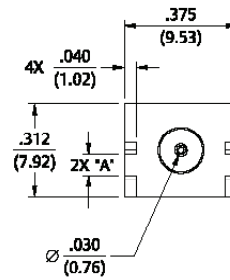
The tabulated dimensions "A", "B", "C", "D", and "E" were determined experimentally to achieve low VSWR (typically less than 1.5 up to 18 GHz). The circuit board used connectors for these tests was double-sided FR 4 with 1 oz. copper on both sides. The copper was left on the bottom of the board to create a ground plane for the 50 Ohm microstrip structure. While not all inclusive, these dimensions are given as reference information for selected SMA End Launch connectors. Further adjustments may be necessary depending upon the application. All dimensions are in inches.



Part No.	Base Width	Board Thickness	"A"	"B"	"C"	"D"	"E"
142-0701-801/806	.375	.062	.103	.090	.250	.440	.200
142-0701-851/858	.375	.062	.103	.090	.250	.440	.200
142-0701-871/876	.375	.062	.103	.090	.250	.440	.200
142-0711-821/826	.250	.062	.103	.070	.170	.380	.165
142-0711-871/876	.375	.047	.083	.075	.250	.440	.200
142-0711-881/886	.375	.047	.083	.075	.250	.440	.200
142-0701-881/886	.375	.031	.050	.045	.250	.440	.200

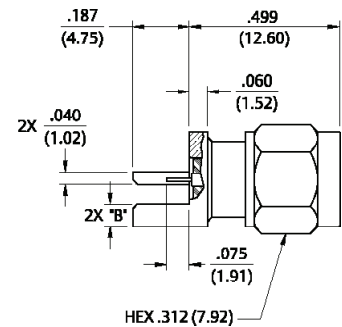
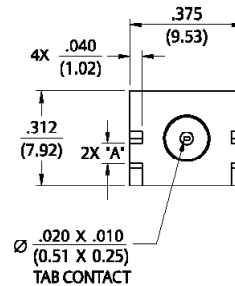
Tabulated Dimensions "A", "B", "C", and "D" are symmetrical about the center line.

End Launch Plug Receptacle – Round Cont



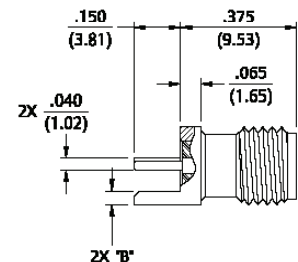
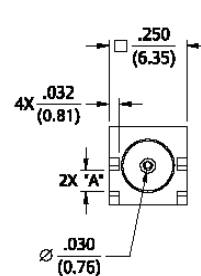
Gold Plated	Nickel Plated	Board Thickness	"A"	"B"
142-0801-801	142-0801-806	.062 (1.57)	.068 (1.73)	.073 (1.85)
142-0801-821	142-0801-826	.042 (1.07)	.048 (1.22)	.093 (2.36)

End Launch Plug Receptacle – Tab Contact



Gold Plated	Nickel Plated	Board Thickness	"A"	"B"
142-0801-811	142-0801-816	.062 (1.57)	.068 (1.73)	.083 (2.11)
142-0801-831	142-0801-836	.042 (1.07)	.048 (1.22)	.103 (2.62)

End Launch Plug Receptacle – Round Contact



Gold Plated	Nickel Plated	Board Thickness	"A"	"B"
142-0711-821	142-0711-826	.062 (1.57)	.068 (1.73)	.042 (1.07)
142-0711-841	142-0711-846	.042 (1.07)	.048 (1.22)	.062 (1.57)

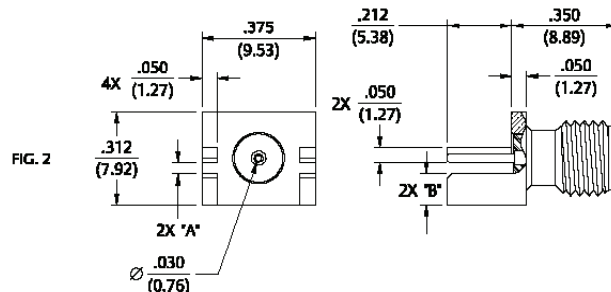
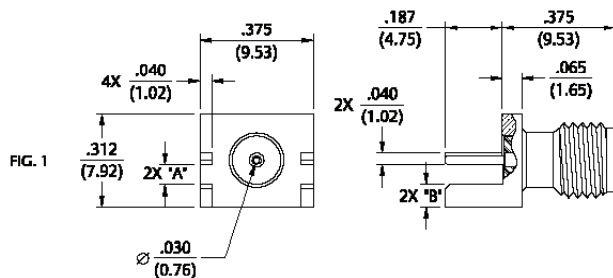
Coupling proof torque 8 lb-ins maximum without support .083 (2.11) wrench.

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Illustrations are shown in inches (millimeters).

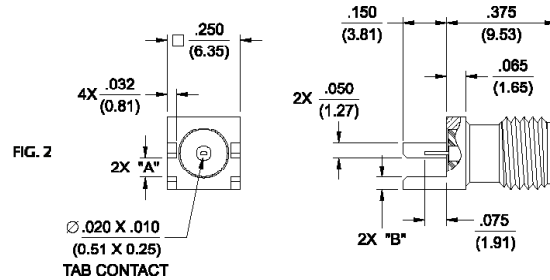
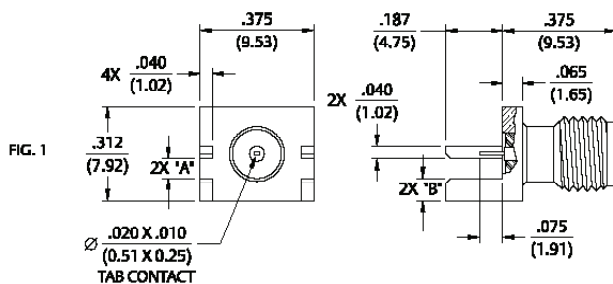
PC Mount

End Launch Jack Receptacle – Round Contact



Gold Plated	Nickel Plated	Board Thickness	"A"	"B"	Figure
142-0701-801	142-0701-806	.062 (1.57)	.068 (1.73)	.073 (1.85)	1
142-0701-831	142-0701-836	.042 (1.07)	.048 (1.22)	.093 (2.36)	1
142-0701-881	142-0701-886	.031 (0.79)	.037 (0.94)	.104 (2.64)	2
142-0711-871	142-0711-876	.047 (1.19)	.053 (1.35)	.088 (2.24)	1

End Launch Jack Receptacle – Tab Contact



Gold Plated	Nickel Plated	Board Thickness	"A"	"B"	Figure
142-0701-851	142-0701-856	.062 (1.57)	.068 (1.73)	.083 (2.11)	1
142-0701-841	142-0701-846	.042 (1.07)	.048 (1.22)	.103 (2.62)	1
142-0711-881	142-0711-886	.047 (1.19)	.053 (1.35)	.098 (2.24)	1
142-0721-811	142-0721-816	.025 (0.64)	.030 (0.76)	.121 (3.07)	1
142-0721-861	142-0721-866	.032 (0.81)	.037 (0.94)	.083 (2.11)	2

End Launch Bulkhead Jack Receptacle – Round Contact

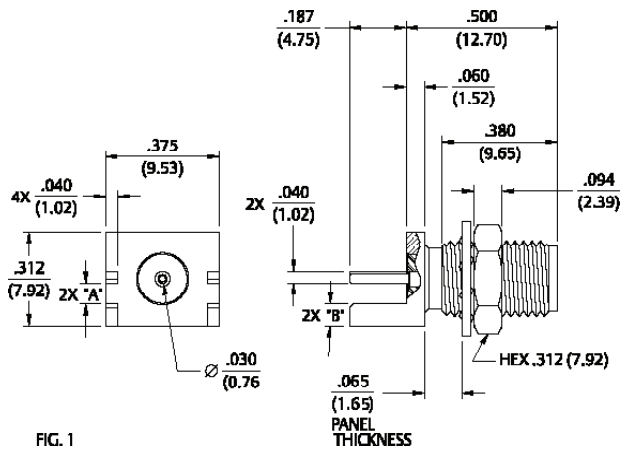


FIG. 1

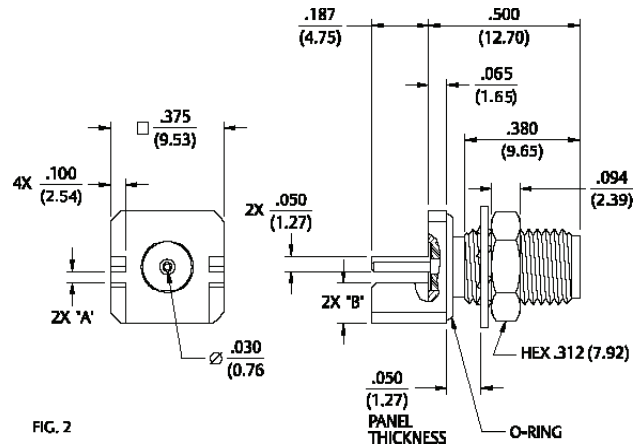


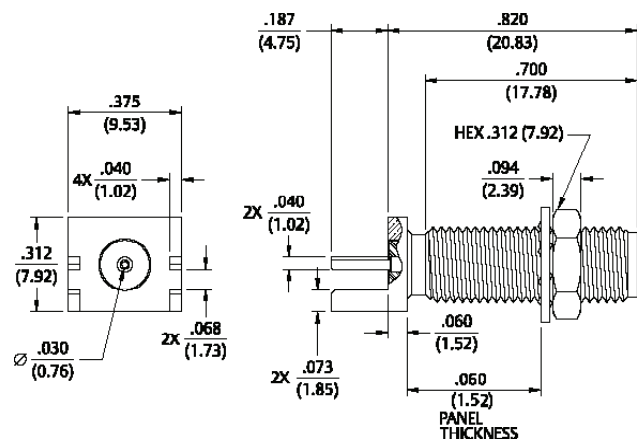
FIG. 2

Gold Plated	Nickel Plated	Board Thickness	"A"	"B"	"O" Ring	Figure
142-0701-871	142-0701-876	.062 (1.57)	.068 (1.73)	.073 (1.85)	No	1
142-0721-871	142-0721-876	.074 (1.88)	.080 (2.03)	.061 (1.55)	No	1
142-0721-841	142-0721-846	.069 (1.75)	.075 (1.91)	.066 (1.68)	No	1
142-0731-861	142-0731-866	.031 (0.79)	.037 (0.94)	.135 (3.43)	Yes	2

End Launch Bulkhead Jack Receptacle – Round Contact



Gold Plated	Nickel Plated	Board Thickness
142-0711-811	142-0711-816	.062 (1.57)



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Illustrations are shown in inches (millimeters).

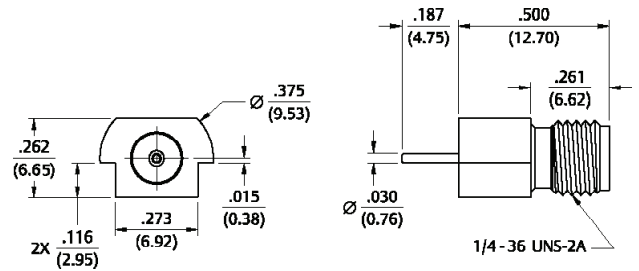
Bulkhead Mount

End Launch Jack Receptacle – Surface Mount



Gold Plated	Packaging
142-0721-881	Stock
142-0721-882	Tape and Reel 475 pcs/reel

Recommended land pattern figure 22 page 195.

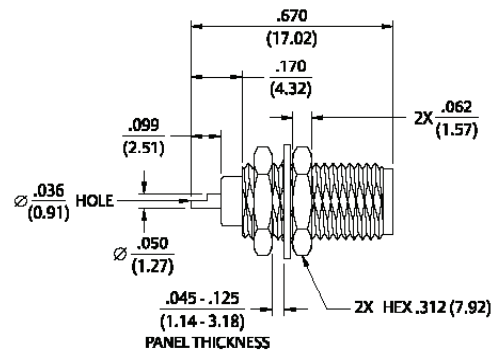


Front Mount Bulkhead Jack Receptacle



Gold Plated	Nickel Plated
142-0701-411	142-0701-416

Mounting hole layout figure 1 page 194.

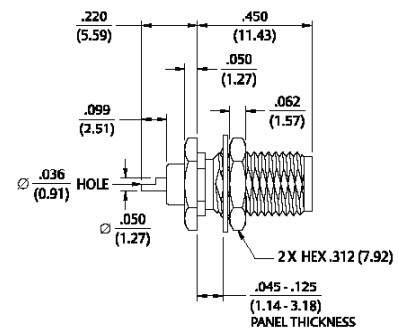


Rear Mount Bulkhead Jack Receptacle



Gold Plated	Nickel Plated
142-0701-401	142-0701-406

Mounting hole layout figure 1 page 194.

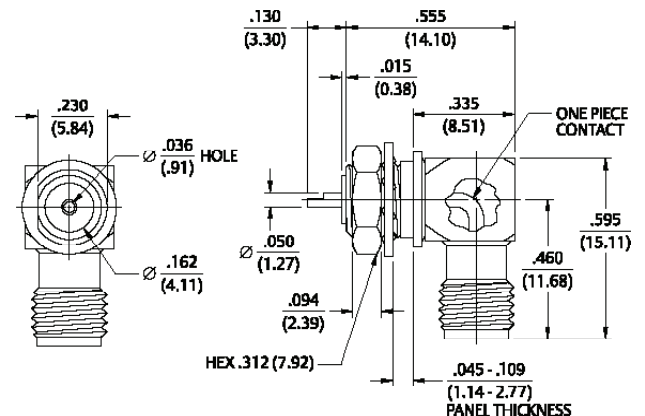


Right Angle Bulkhead Mount Jack Receptacle

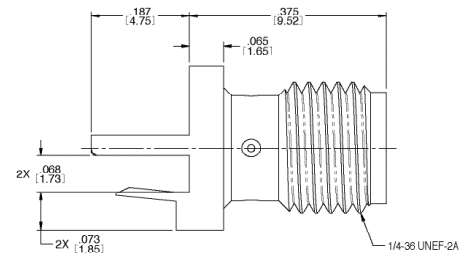
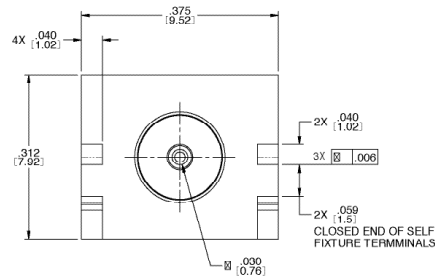
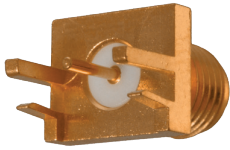


Gold Plated	Nickel Plated
142-0701-531	142-0701-536

Mounting hole layout figure 1 page 194.



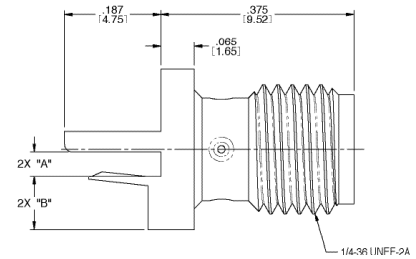
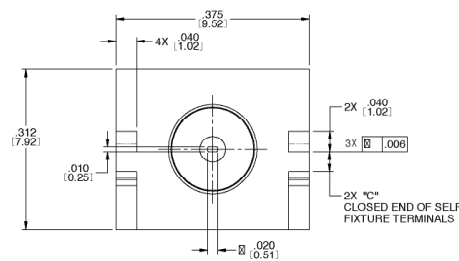
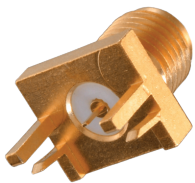
Gold Plated, Round Contact



Part No.	Board Thickness
142-0791-801	.062 (1.57)

Assembly instructions page 227.

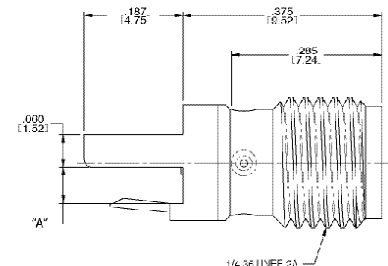
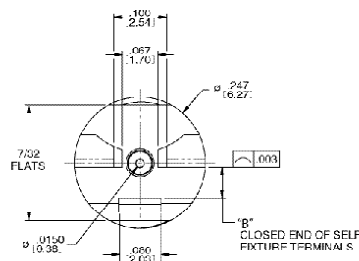
Gold Plated, Tab Contact



Part No.	Board Thickness	"A"	"B"	"C"
142-0791-811	.042 (1.07)	.048 (1.22)	.103 (2.62)	.039 (0.99)
142-0791-821	.062 (1.57)	.068 (1.73)	.083 (2.11)	.059 (1.50)

Assembly instructions page 227.

Gold Plated, Round Contact – High Frequency



Part No.	Frequency Range	Board Thickness	"A"	"B"
142-1701-821	0-26.5 GHz	.062 (1.57)	.068	.059
142-1701-831	0-26.5 GHz	.059 (1.49)	.063	.054

Assembly instructions page 227.

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Illustrations are shown in inches (millimeters).

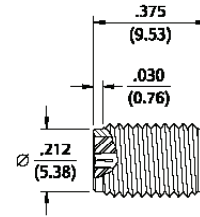
Spark Plugs

Jack Receptacle – Thread Mount Field Replaceable



Gold Plated	Nickel Plated	Accepts Pin Size
142-1731-001	142-1731-006	.020 (0.51)
142-1731-011	142-1731-016	.036 (0.91)

Mounting hole layout figure 19 page 195.



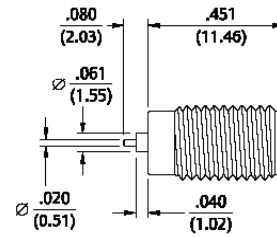
Jack Receptacle – Thread Mount Extended Dielectric (Non-Hermetic)



Gold Plated	Nickel Plated
142-1731-021	142-1731-026

Mounting hole layout for 142-1731-021 figure 19 page 195.

Mounting hole layout for 142-1731-026 figure 18 page 195.



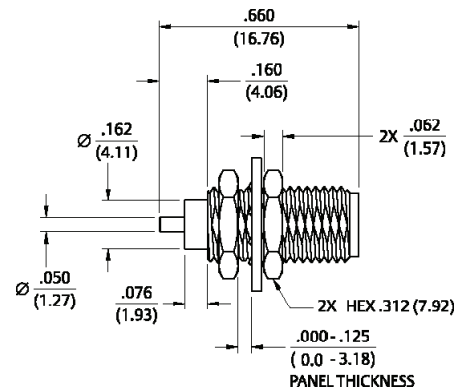
Jack Receptacle – Thread Mount with Hardware Extended Dielectric Bulkhead



Gold Plated	Nickel Plated
142-1731-031	142-1731-036

Mounting hole layout for 142-1731-031 figure 18 page 195.

Mounting hole layout for 142-1731-036 figure 1 page 194.

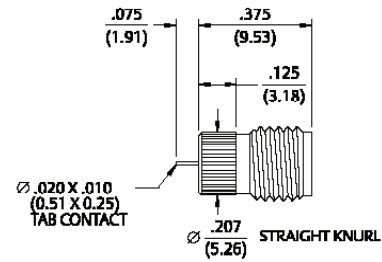


Jack Receptacle – Knurl Mount* Tab Contact



Gold Plated	Nickel Plated
142-1721-001	142-1721-006

* Not intended for use in materials harder than Rockwell B82.
 Assembly tool 140-0000-954 page 188.
 Mounting hole layout figure 17 page 195.

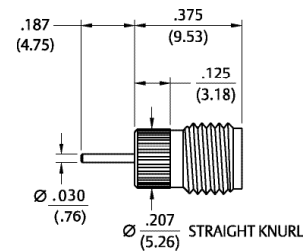


Jack Receptacle – Knurl Mount* Round Contact



Gold Plated	Nickel Plated
142-1721-011	142-1721-016

* Not intended for use in materials harder than Rockwell B82.
 Assembly tool 140-0000-954 page 188.
 Mounting hole layout figure 17 page 195.



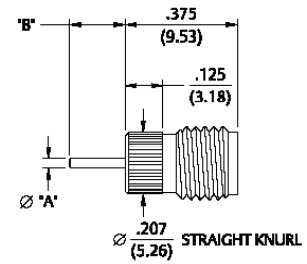
Spark Plugs

Jack Receptacle – Knurl Mount* Round Contact



Gold Plated	Nickel Plated	"A"	"B"
142-1721-011	142-1721-016	.030 (0.76)	.187 (3.18)
142-1721-021	142-1721-026	.050 (1.24)	.190 (4.83)

* Not intended for use in materials harder than Rockwell B82.
Mounting hole layout figure 17 page 195.

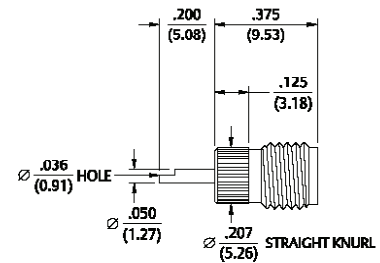


Jack Receptacle – Knurl Mount* Solder Cup Contact



Gold Plated	Nickel Plated
142-0701-481	142-0701-486

* Not intended for use in materials harder than Rockwell B82.
Mounting hole layout figure 17 page 195.

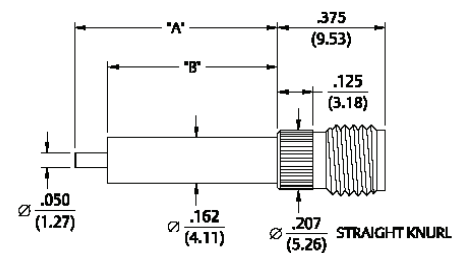


Jack Receptacle – Knurl Mount* Extended Dielectric



Gold Plated	Nickel Plated	"A"	"B"
142-1721-031	142-1721-036	.190 (4.83)	.095 (2.41)
142-1721-041	142-1721-046	.240 (6.10)	.180 (4.57)
142-1721-051	142-1721-056	.705 (17.91)	.590 (14.99)

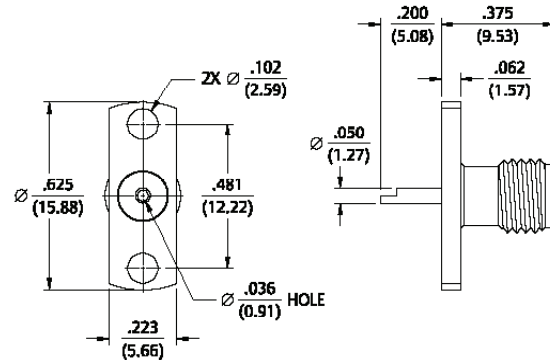
* Not intended for use in materials harder than Rockwell B82.
Mounting hole layout figure 17 page 195.



2-Hole Flange Mount Jack Receptacle – Flush Dielectric



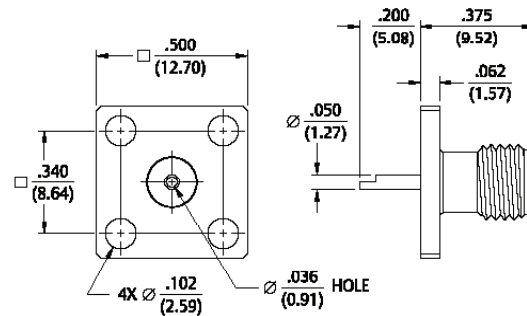
Gold Plated	Nickel Plated
142-0701-621	142-0701-626



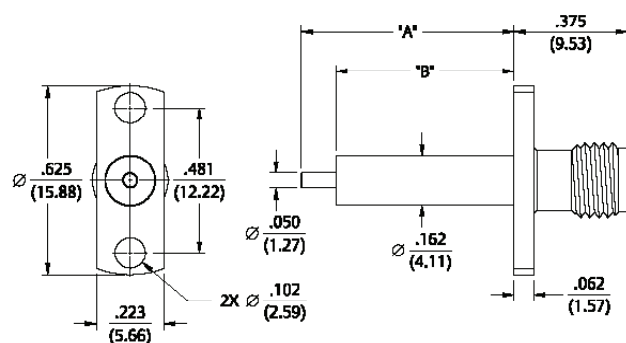
4-Hole Flange Mount Jack Receptacle – Flush Dielectric



Gold Plated	Nickel Plated
142-0701-631	142-0701-636



2-Hole Flange Mount Jack Receptacle – Extended Dielectric



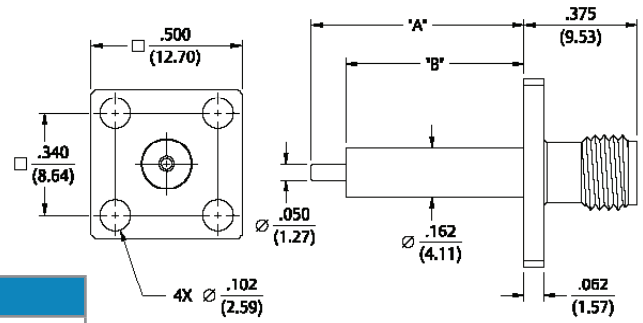
Gold Plated	Nickel Plated	"A"	"B"
142-1701-131	142-1701-136	.705 (17.91)	.590 (14.99)
142-1701-031	142-1701-036	.240 (6.10)	.180 (4.57)

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Illustrations are shown in inches (millimeters).

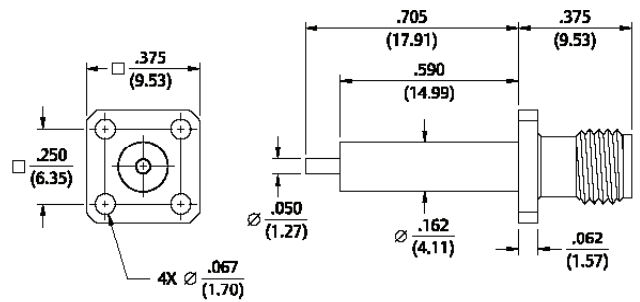
Panel Mount

4-Hole Flange Mount Jack Receptacle – Extended Dielectric



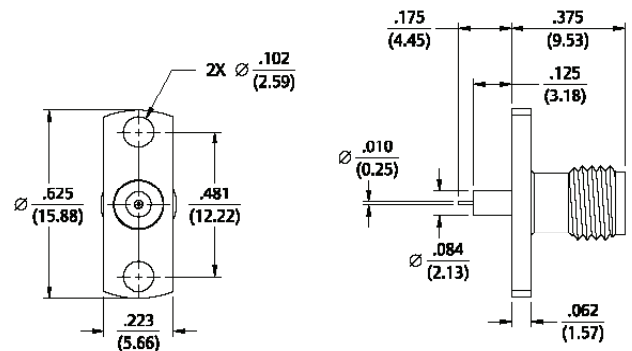
Gold Plated	Nickel Plated	"A"	"B"
142-1701-121	142-1701-126	.705 (17.91)	.590 (14.99)
142-1701-041	142-1701-046	.190 (4.83)	.095 (2.41)

4-Hole Flange Mount Jack Receptacle – Extended Dielectric



Gold Plated	Nickel Plated
142-1701-011	142-1701-016

2-Hole Flange Mount Jack Receptacle – Extended Dielectric

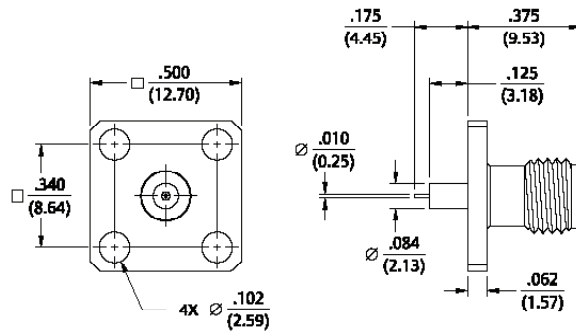


Gold Plated	Nickel Plated
142-1701-201	142-1701-206

4-Hole Flange Mount Jack Receptacle – Extended Dielectric



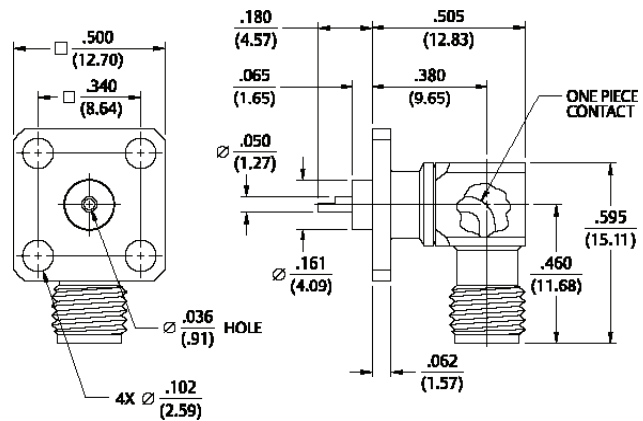
Gold Plated	Nickel Plated
142-1701-191	142-1701-196



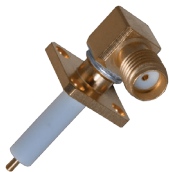
4-Hole Right Angle Flange Mount Jack Receptacle – Extended Dielectric



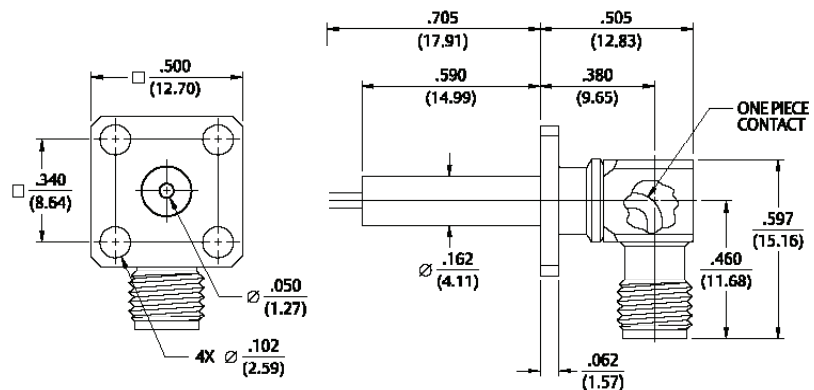
Gold Plated	Nickel Plated
142-0701-701	142-0701-706



4-Hole Right Angle Flange Mount Jack Receptacle – Extended Dielectric



Gold Plated	Nickel Plated
142-1711-001	142-1711-006

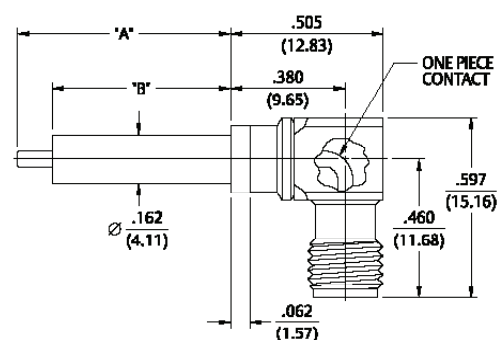
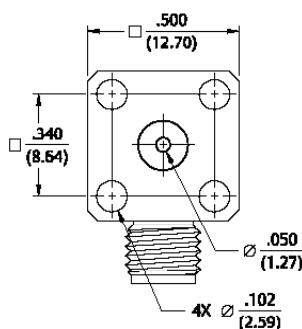


For more information, please contact customer service at (507) 833-8822 or (800) 247-8256 • cinch.com

Illustrations are shown in inches (millimeters).

Panel Mount

2-Hole Right Angle Flange Mount Jack Receptacle – Extended Dielectric 90° Orientation

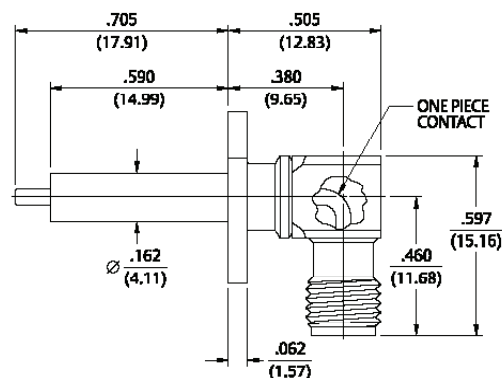
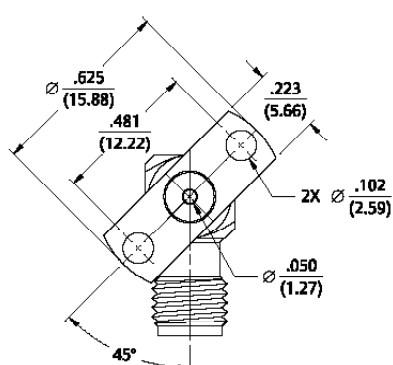


Gold Plated	Nickel Plated	"A"	"B"
142-1711-011	142-1711-016	.705 (17.91)	.590 (14.99)
142-1711-061	142-1711-066	.195 (4.95)	.130 (3.30)

2-Hole Right Angle Flange Mount Jack Receptacle – Extended Dielectric +45° Orientation



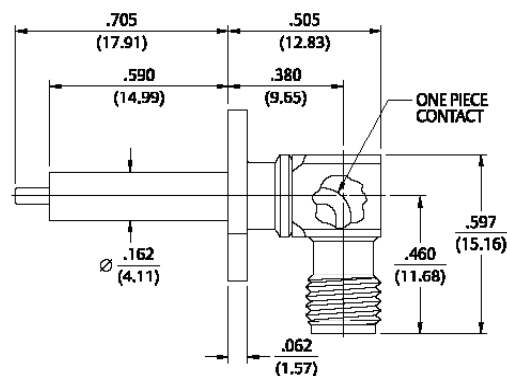
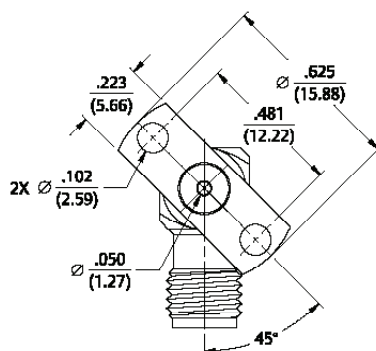
Gold Plated	Nickel Plated
142-1711-021	142-1711-026



2-Hole Right Angle Flange Mount Jack Receptacle – Extended Dielectric -45° Orientation



Gold Plated	Nickel Plated
142-1711-031	142-1711-036

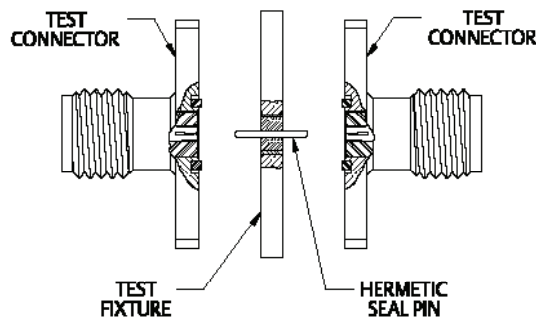


Application Notes

The field replaceable style of connector is known by many names in the industry, such as MIC launcher, hermetic seal launcher, spark plug launcher, etc. Some types, such as those known as “spark plugs,” have the hermetic seal incorporated into the connector. These types require special welding to install and can not be replaced without destroying the hermeticity of the circuit housing. True field replaceable connectors, such as the Johnson line, are easy to install and replace. Because the hermetic seal is not incorporated into the connector design, the connector can be removed and replaced without destroying the hermetic seal or the hermeticity of the circuit housing.

All of the above-mentioned connector types perform the same basic function—creating a transition from microstrip circuitry to a coaxial transmission line. Whenever possible, the hermetic seal pin diameter should be chosen as close as possible to the microstrip trace width. For optimum electrical performance, the transition from the hermetic seal to the microstrip trace must be properly compensated which involves adjusting the microstrip trace width to minimize any impedance discontinuities found in the transition area.

The plot shown below is representative of the typical return loss of a Johnson SMA field replaceable connector. To produce the data shown below, a test fixture is created using the appropriate Johnson hermetic seal. The fixture consists of a suitably thick spacer plate with the hermetic seal mounted flush to both surfaces. Two connectors are mounted back to back around the fixture and the VSWR of this test assembly is measured. The return loss data shown is equivalent to the square root of the measured VSWR of the test assembly. Since the connectors tested are of identical design, it can be stated with fair accuracy that the data shown represents the response of a single field replaceable connector and its transition to the hermetic seal.



Although we do not publish a VSWR specification for field replaceable connectors, typical connector VSWR can be expected to be better than $1.1 + .01f$ ($f = \text{GHz}$). A VSWR specification is not stated because an industry standardized method for testing field replaceable connectors does not exist. The actual performance of the connector is dependent upon the application for the following reasons:

1. The choice of hermetic seal to be used by the customer is not specified by the connector manufacturer. Hermetic seals produced by different manufacturers will not have the same electrical characteristics. For optimum electrical performance, we recommend the use of our standard 142-1000-001, 002, 003 and 004 hermetic seals for pin diameters of .012 (.30), .015 (.38), .018 (0.46) and .020 (0.51). Custom hermetic seal configurations can be quoted.
2. It is recommended that the hermetic seal be mounted flush with the circuit housing. Tolerance variations between the hermetic seal and machined housing do not always guarantee an optimum transition to the connector. Emerson does not recommend the addition of a counter bore in the circuit housing to accommodate solder washers as solder voids will cause electrical discontinuities.
3. As stated above, the transition between the hermetic seal pin and the microstrip trace will affect electrical performance. Several different methods of hermetic seal mounting and seal pin to microstrip trace attachment are used in the industry. We cannot recommend one method over the other as this is dependent upon the customer's application.

“As always, quotes for non-standard field replaceable connectors and/or hermetic seals are welcome.”

For more information, please contact customer service at (507) 833-8822 or (800) 247-8256 • cinch.com

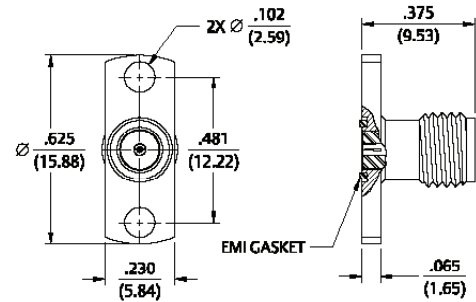
Illustrations are shown in inches (millimeters).

Field Replaceable Panel Mount

2-Hole Flange Mount Jack Receptacle – with EMI Gasket



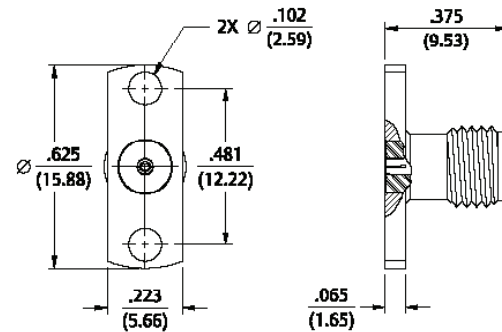
Accepts Pin Size	Gold Plated	Nickel Plated
.012 (0.30)	142-1701-601	142-1701-606
.015 (0.38)	142-1701-611	142-1701-616
.018 (0.46)	142-1701-621	142-1701-626



2-Hole Flange Mount Jack Receptacle – without EMI Gasket



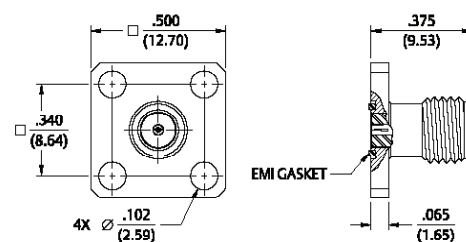
Accepts Pin Size	Gold Plated	Nickel Plated
.020 (0.51)	142-1701-631	142-1701-636
.036 (0.91)	142-1701-641	142-1701-646



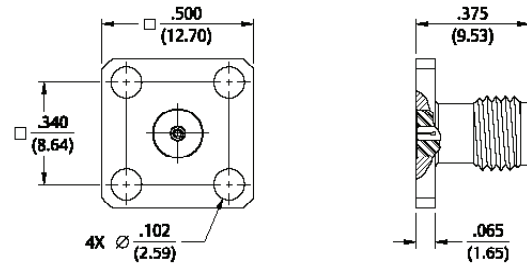
4-Hole Flange Mount Jack Receptacle – with EMI Gasket



Accepts Pin Size	Gold Plated	Nickel Plated
.012 (0.30)	142-1701-501	142-1701-506
.015 (0.38)	142-1701-511	142-1701-516
.018 (0.46)	142-1701-521	142-1701-526

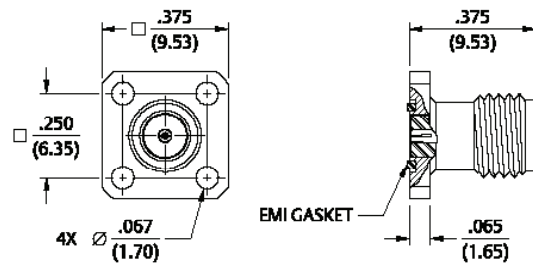


4-Hole Flange Mount Jack Receptacle – without EMI Gasket



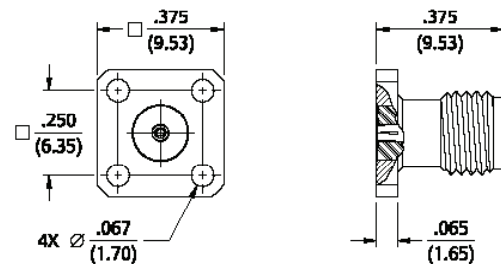
Accepts Pin Size	Gold Plated	Nickel Plated
.020 (0.51)	142-1701-531	142-1701-536
.036 (0.91)	142-1701-541	142-1701-546

4-Hole Flange Mount Jack Receptacle – with EMI Gasket



Accepts Pin Size	Gold Plated	Nickel Plated
.012 (0.30)	142-1701-551	142-1701-556
.015 (0.38)	142-1701-561	142-1701-566
.018 (0.46)	142-1701-571	142-1701-576

4-Hole Flange Mount Jack Receptacle – without EMI Gasket



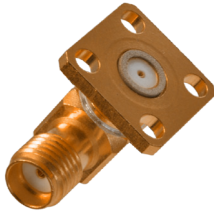
Accepts Pin Size	Gold Plated	Nickel Plated
.020 (0.51)	142-1701-581	142-1701-586
.036 (0.91)	142-1701-591	142-1701-596

For more information, please contact customer service at (507) 833-8822 or (800) 247-8256 • cinch.com

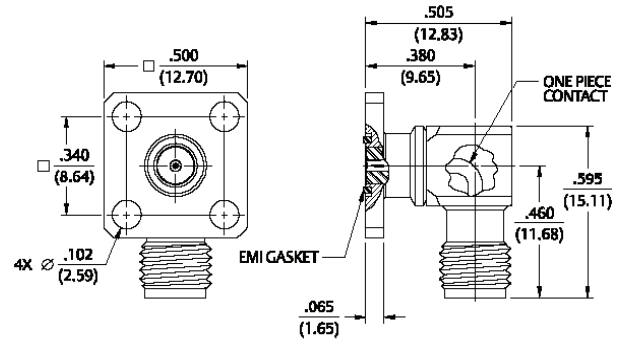
Illustrations are shown in inches (millimeters).

Field Replaceable Panel Mount

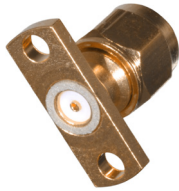
4-Hole Right Angle Flange Mount Jack Receptacle – with EMI Gasket



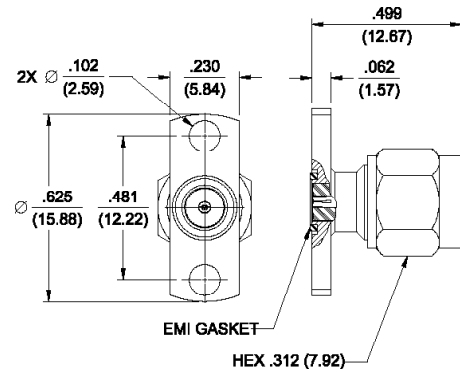
Accepts Pin Size	Gold Plated	Nickel Plated
.015 (0.38)	142-1711-511	142-1711-516
.018 (0.46)	142-1711-521	142-1711-526



2-Hole Flange Mount Plug Receptacle – with EMI Gasket



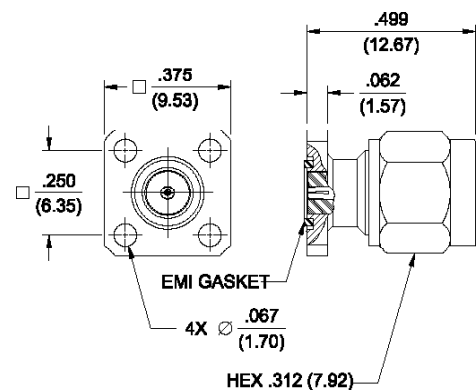
Accepts Pin Size	Gold Plated	Nickel Plated
.012 (0.30)	142-1801-601	142-1801-606
.015 (0.38)	142-1801-611	142-1801-616
.018 (0.46)	142-1801-621	142-1801-626



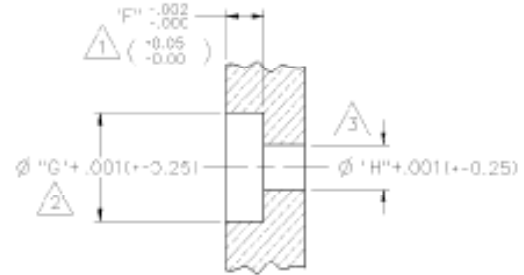
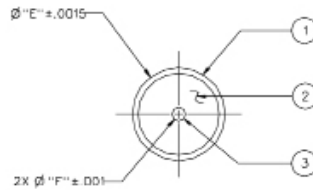
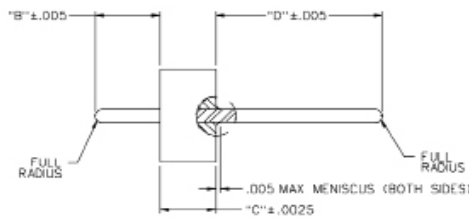
4-Hole Flange Mount Plug Receptacle – with EMI Gasket



Accepts Pin Size	Gold Plated	Nickel Plated
.012 (0.30)	142-1801-551	142-1801-556
.015 (0.38)	142-1801-561	142-1801-566
.018 (0.46)	142-1801-571	142-1801-576



Hermetic Seal Feedthrough



Recommended Mounting Hole Detail

Part No.	Item 1 Outer Ring	Item 2 Insulator	Item 3 Pin	"A"	"B"	"C"	"D"	"E"
142-1000-001	Kovar Gold pl .00005 min over Nickel pl .000005 min	Glass Corning 7052 or equivalent	Kovar Gold pl .00005 min over Nickel pl .000005 min	.070 (1.78)	.0625 (1.59)	.180 (4.57)	.0985 (2.50)	.012 (0.30)
142-1000-002	Kovar Gold pl .00005min over Nickel pl .000005 min	Glass Corning 7070 or equivalent	Kovar Gold pl .00005 min over Nickel pl .000005 mm	.072 (1.83)	.0625 (1.59)	.180 (4.57)	.0985 (2.50)	.015 (0.38)
142-1000-003	Kovar Gold pl .00005 min over Nickel pl .000005 min	Glass Corning 7050 or equivalent	Kovar Gold pl .00005 min over Nickel p1 .000005 min	.072 (1.83)	.0600 (1.52)	.180 (4.57)	.1100 (2.79)	.018 (0.46)
142-1000-004	Kovar Gold pl .00005min over Nickel pl .000005 min	Glass Corning 7052 or equivalent	Kovar Gold pl .00005 min over Nickel pl .000005 min	.070 (1.78)	.0600 (1.52)	.203 (5.16)	.1580 (4.01)	.020 (0.51)

Mounting Hole Dimensions

Part No.	Pin Diameter	"F"	"G"	Air "H"	Teflon * "H"
142-1000-001	.012 (0.30)	.063 (1.60)	.102 (2.59)	.028 (0.71)	.039 (0.99)
142-1000-002	.015 (0.38)	.063 (1.60)	.102 (2.59)	.035 (0.89)	.049 (1.24)
142-1000-003	.018 (0.46)	.060 (1.52)	.114 (2.90)	.042 (1.07)	.059 (1.50)
142-1000-004	.020 (0.51)	.060 (1.52)	.162 (4.11)	.046 (1.17)	.065 (1.65)

* Teflon is a registered trademark of DuPont

Notes:

1. The hermetic seal should be mounted as flush as possible with the housing. Excessive recession will create a high impedance air gap which degrades electrical performance.
2. The use of an additional counterbore to accommodate a solder ring for seal mounting is not recommended. A slight chamfer may be used if care is taken to completely fill the area with solder—avoid air gaps.
3. Dimensions shown are given to achieve 50 Ohms with either air or a teflon insulator. A teflon insulator may be helpful insupporting small pin diameters.

Electrical

Impedance:	50 Ohms
Frequency Range:	DC to 26.5 GHz
VSWR:	Dependent upon application
Working Voltage:	250 VRMS max at sea level
Dielectric Withstanding Voltage:	500 VRMS min at sea level
Insulation Resistance:	5000 Megohm min
Insertion Loss:	.015F dB max (F in GHz)

Environmental

Hermeticity:	1x10 ⁻⁸ cc/sec at one atmosphere
Solderability:	MIL-STD-202, Method 209
Operating Temperature:	-55° C to +165° C

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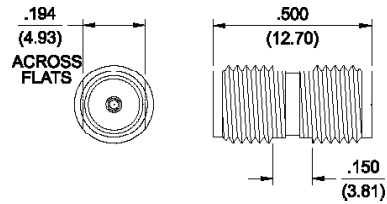
Illustrations are shown in inches (millimeters).

In-Series Adapters

Jack to Jack Adapter



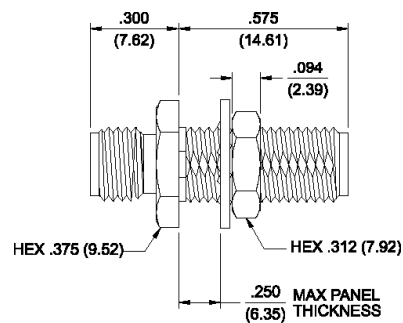
Gold Plated	Nickel Plated
142-0901-801	142-0901-806



Jack to Bulkhead Jack Adapter



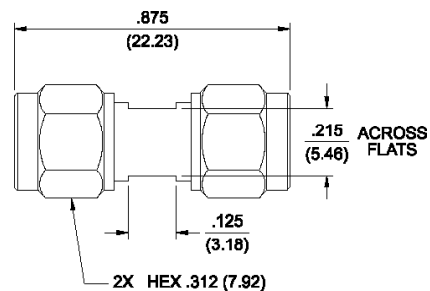
Gold Plated	Nickel Plated
142-0901-401	142-0901-406



Plug to Plug Adapter



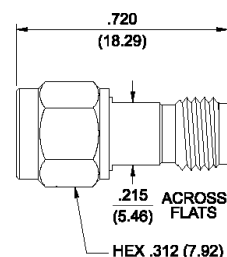
Gold Plated	Nickel Plated
142-0901-811	142-0901-816



Plug to Jack Adapter



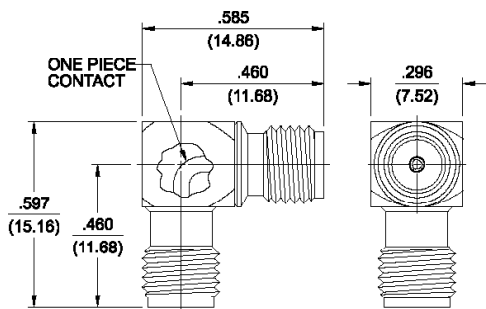
Gold Plated	Nickel Plated
142-0901-821	142-0901-826



Right Angle Jack to Jack Adapter



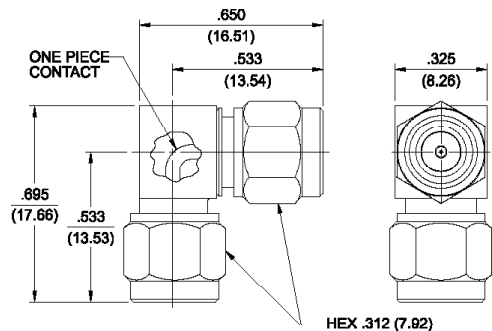
Gold Plated
142-0901-921



Right Angle Plug to Plug Adapter



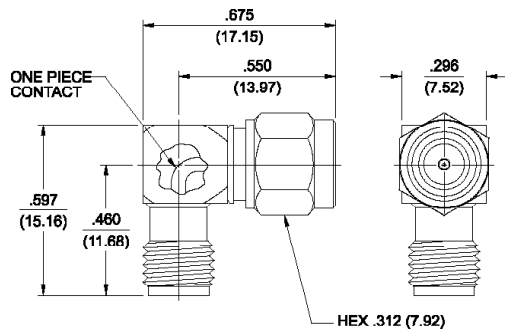
Gold Plated
142-0901-931



Right Angle Jack to Plug Adapter



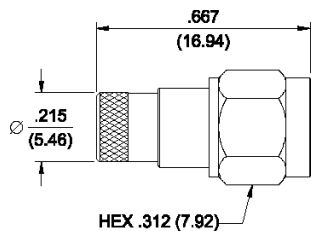
Gold Plated
142-0901-941



Dummy Load Plug



Gold Plated	Nickel Plated	Resistance
142-0801-861	142-0801-866	50 Ohm



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Illustrations are shown in inches (millimeters).

Specifications

Electrical Specifications

Impedance: 50 Ohms

Frequency Range:

Flexible cable connectors.....0-12.4 GHz

Flexible cable connectors.....0-18.0 GHz

VSWR: (max) (f = GHz)

	Straight Cabled Connectors	Right Angle Cabled Connectors
RG-316, LMR-100 cable	1.15 + .02f	1.15 + .03f
RG-58, LMR-195 cable.....	1.17 + .025f	1.17 + .06f
RG-142 cable.....	1.17 + .02f	1.15 + .03f
LMR-200, LMR-240 cable.....	1.10 + .03f	1.10 + .06f
Uncabled receptacles	N/A	

Working Voltage: (VRMS max)

	Sea Level	70K Feet
RG-316, LMR-100, 195, 200	250	65
RG-58, RG-142, LMR-240, uncabled receptacles	335	85

Dielectric Withstanding Voltage: (VRMS min at sea level)

RG-316; LMR-100, 195, 200	750
RG-58, RG-142, LMR-240, uncabled receptacles	1000

Insulation Resistance: 5000 megohms min

Contact Resistance: (milliohms max)

	Initial	After Environmental
Center contact (straight cabled connectors and uncabled receptacles)	3.0	4.0
Center contact (right angle cabled connectors).....	4.0	6.0
Outer contact (all connectors)	2.0	N/A
Braid to body (gold plated connectors)	0.5	N/A
Braid to body (nickel plated connectors).....	5.0	N/A

Corona Level: (Volts min at 70,000 feet)

RG-316, LMR-100, 195, 200	190
RG-58, RG-142, LMR-240, uncabled receptacles	250

Insertion Loss: (dB max)

Straight flexible cable connectors	$0.06 \sqrt{f \text{ (GHz)}}$, tested at 6 GHz
Right angle flexible cable connectors.....	$0.15 \sqrt{f \text{ (GHz)}}$, tested at 6 GHz
Low loss flexible straight cable connectors.....	$0.06 \sqrt{f \text{ (GHz)}}$, tested at 1 GHz
Low loss flexible right angle cable connectors.....	$0.15 \sqrt{f \text{ (GHz)}}$, tested at 1 GHz
Uncabled receptacles, field replaceable	N/A

RF Leakage: (dB min, tested at 2.5 GHz)

Flexible cable connectors.....	-60 dB
Uncabled receptacles and adapters	N/A

RF High Potential Withstanding Voltage:

(VRMS min tested at 4 and 7 MHz)† RG-316; LMR-100, 195, 200.....	500
RG-58, RG-142, LMR-240, uncabled receptacles.....	670

† Avoid user injury due to misapplication. See safety advisory definitions.

Mechanical Ratings

Engagement Design:

Reverse Polarity, Series SMA

Engagement/Disengagement Force:

2 lb-in max max

Mating Torque:

7 to 10 lb-in

Bulkhead Mounting Nut Torque:

15 lb-in

Coupling Proof Torque:

15 lb-in min

Coupling Nut Retention:

60 lbs min

Contact Retention:

6 lbs min axial force (captivated contacts)

4 oz-in min 4 oz-in min

Cable Retention:

	Axial Force* (lbs)	Torque (oz-in)
Connectors for RG-316, LMR-100	20	N/A
Connectors for LMR195, 200	30	N/A
Connectors for RG-58, LMR-240.....	40	N/A
Connectors for RG-142.....	45	N/A

*Or cable breaking strength whichever is less.

Durability: 500 cycles minimum

Environmental Specifications

(Meets or Exceeds the Applicable Paragraph of MIL-PRF-39012)

Temperature Range:	- 65°C to + 165°C
Thermal Shock:	MIL-STD-202, Method 107, Condition B
Corrosion:	MIL-STD-202, Method 101, Condition B
Shock:	MIL-STD-202, Method 213, Condition I
Vibration:	MIL-STD-202, Method 204, Condition D
Moisture Resistance:	MIL-STD-202, Method 106

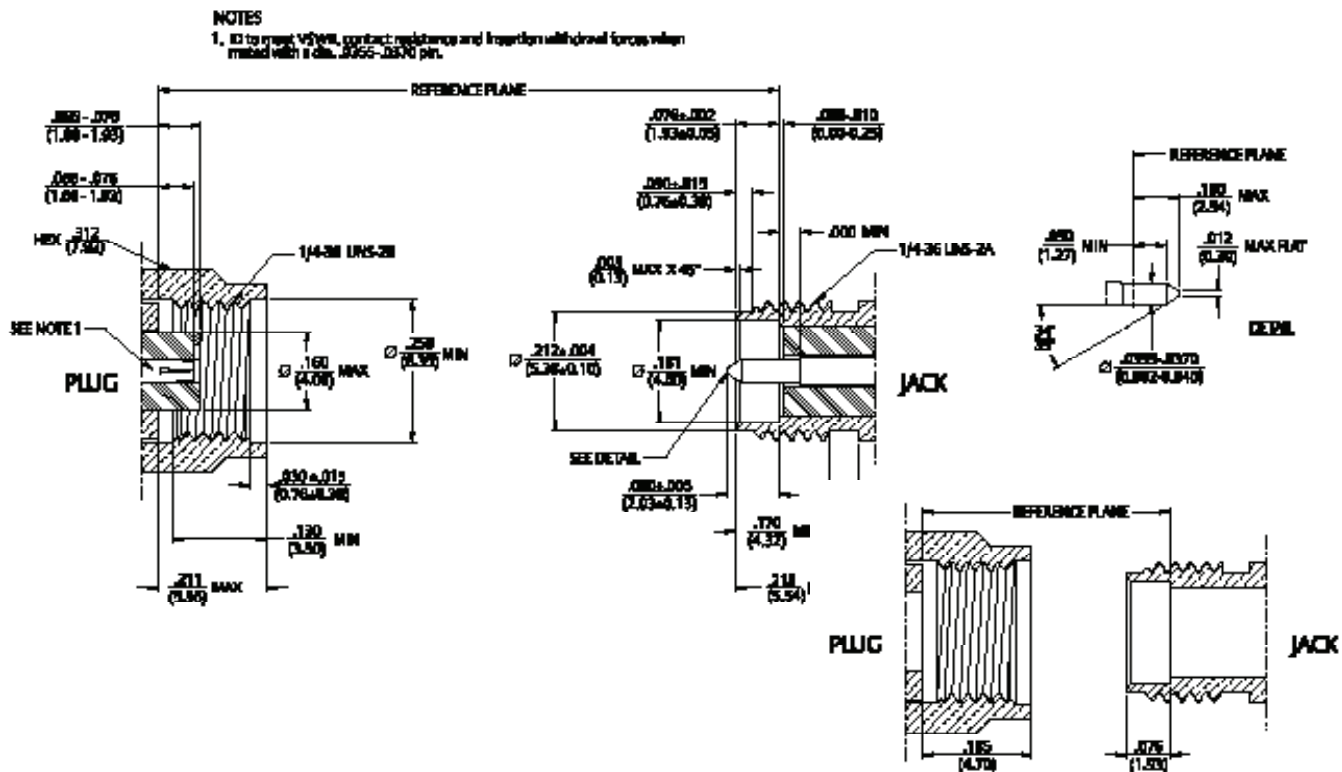
Material Specifications

Bodies:	Brass per ASTM B16, gold plated* per MIL-DTL-45204 .00001" min or nickel plated per ASTM B16
Contacts:	Male - brass per QQ-B-626, gold plated per MIL-DTL-45204 .00003" min Female - beryllium copper per ASTM B196, gold plated* per MIL-DTL-45204 .00003" min
Nut Retention Spring:	Beryllium copper per ASTM B196, unplated
Insulators:	PTFE fluorocarbon per ASTM D 1710 and ASTM D 1457 or Tefzel per ASTM D 3159
Expansion Caps:	Brass per ASTM B16, gold plated* per MIL-DTL-45204 .00001" min. or nickel plated per SAE-AMS2423
Crimp Sleeves:	Copper per ASTM B301 or brass per ASTM B16, gold plated* per MIL-DTL-45204 .00001" min or nickel plated per SAE-AMS2423
Mounting Hardware:	Brass (nuts) per ASTM B16 or phosphor bronze (lockwashers) per ASTM B139, gold plated* per MIL-DTL-45204 .00001" min

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

† Avoid user injury due to misapplication. See safety advisory definitions.

Mating Engagement for SMA Reverse Polarity Series

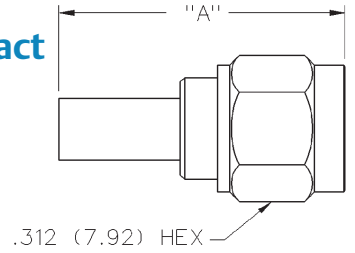


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Illustrations are shown in inches (millimeters).

Flexible Cable

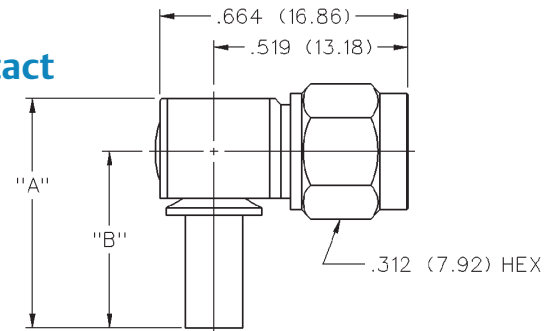
Straight Crimp Type Plug – Solder or Crimp Captivated Contact



Cable Type	Gold Plated	Nickel Plated	"A"
RG-316/U, 188, 174, 161, LMR-100 HPF-100, RF-100	142-4403-001	142-4403-006	.706 (17.93)
RG-316 DS, 188 DS	142-4404-001	142-4404-006	.706 (17.93)
RG-58, 141, 303 LMR-195, HPF-195, RF-195	142-4407-001	142-4407-006	.706 (17.93)
RG-142, 55, 223, 400	142-4408-001	142-4408-006	.706 (17.93)
LMR-200, HPF-200, RF-200	142-4439-001	142-4439-006	.844 (21.44)
LMR-240, HPF-240, RF-240	142-4435-001	142-4435-006	.844 (21.44)

Assembly Instructions: LMR 195, 200 and 240 page 219. All other cables page 220.

Right Angle Crimp Type Plug – Captivated Contact

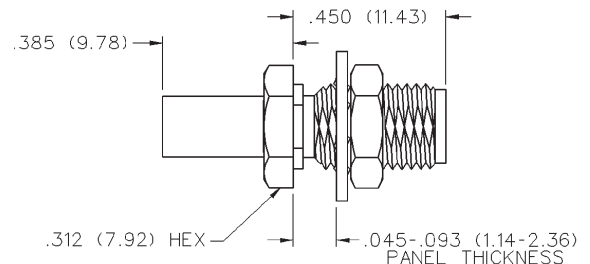


Cable Type	Gold Plated	Nickel Plated	"A"	"B"
RG-316, 188, 174, 161, LMR-100, HPF-100, RF-100	142-4403-101	142-4403-106	.611 (15.52)	.470 (11.94)
RG-316 DS, 188 DS	142-4404-101	142-4404-106	.611 (15.52)	.470 (11.94)
RG-58, 141, 303, LMR-195, HPF-195, RF-195	142-4407-101	142-4407-106	.611 (15.52)	.470 (11.94)
RG-142, 55, 223, 400	142-4408-101	142-4408-106	.611 (15.52)	.470 (11.94)
LMR-200, HPF-200, RF-200	142-4439-101	142-4439-106	.611 (15.52)	.470 (11.94)
LMR-240, HPF-240, RF-240	142-4435-101	142-4435-106	.635 (16.13)	.490 (12.45)

Assembly Instructions: LMR 195, 200 and 240 page 224. All other cables page 229.

Center conductor of cable serves as contact.

Straight Crimp Type Bulkhead Jack – Captivated Contact



Cable Type	Gold Plated	Nickel Plated
RG-316, 188, 174, 161	142-4303-401	142-4303-406
RG-316 DS, 188 DS	142-4304-401	142-4304-406
RG-58, 141, 303	142-4307-401	142-4307-406
RG-142, 55, 223, 400	142-4308-401	142-4308-406

Assembly instructions page 219.

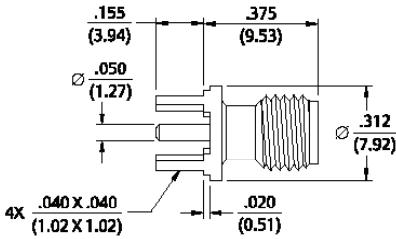
Mounting hole layout figure 1 page 194.

Straight Jack Receptacle



Gold Plated	Nickel Plated
142-4701-201	142-4701-206

Mounting hole layout figure 2 page 194.

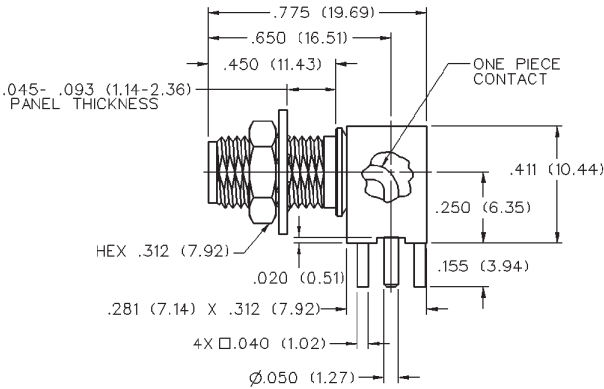


Right Angle Bulkhead Jack Receptacle



Gold Plated	Nickel Plated
142-4701-501	142-4701-506

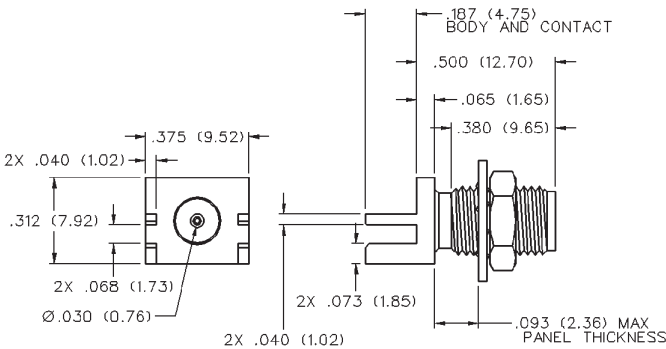
Mounting hole layout figure 1 and 2 page 194.



End Launch Bulkhead Jack Receptacle



Gold Plated	Nickel Plated	Board Thickness
142-4701-801	142-4701-806	.062 (1.57)



Specifications

Electrical Specifications

Impedance: 50 Ohms

Frequency Range:

Flexible cable connectors..... 0-12.4 GHz

Uncabled receptacles..... 0-18.0 GHz

VSWR: (max) (f = GHz)

	Straight Cabled Connectors	Right Angle Cabled Connectors
RG-316, LMR-100 cable.....	1.15 + .02f	1.15 + .03f
RG-58, LMR-195 cable.....	1.15 + .01f	1.15 + .02f
RG-142 cable.....	1.15 + .01f	1.15 + .02f
LMR-200, LMR-240 cable.....	1.10 + .03f	1.10 + .06f
Uncabled receptacles.....	N/A	N/A

Working Voltage: (VRMS max)

	Sea Level	70K Feet
RG-316; LMR-100, 195, 200.....	250	65
RG-58, RG-142, LMR-240, uncabled receptacles.....	335	85

Dielectric Withstanding Voltage: (VRMS min at sea level)

RG-316; LMR-100, 195, 200.....	750
RG-58, RG-142, LMR-240, uncabled receptacles.....	1000

Insulation Resistance: 5000 megohms min

Contact Resistance: (milliohms max)

	Initial	After Environmental
Center contact (straight cabled connectors and uncabled receptacles).....	3.0	4.0
Center contact (right angle cabled connectors).....	4.0	6.0
Outer contact (all connectors).....	2.0	N/A
Braid to body (gold plated connectors).....	0.5	N/A
Braid to body (nickel plated connectors).....	5.0	N/A

Corona Level: (Volts min at 70,000 feet)†

RG-316, LMR-100, 195, 200.....	190
RG-58, RG-142, LMR-240, uncabled receptacles.....	250

Insertion Loss: (dB max)

Straight flexible cable connectors.....	$0.06 \sqrt{f \text{ (GHz)}}$, tested at 6 GHz
Right angle flexible cable connectors.....	$0.15 \sqrt{f \text{ (GHz)}}$, tested at 6 GHz
Low loss flexible straight cable connectors.....	$0.06 \sqrt{f \text{ (GHz)}}$, tested at 1 GHz
Low loss flexible right angle cable connectors.....	$0.15 \sqrt{f \text{ (GHz)}}$, tested at 1 GHz
Uncabled receptacles, field replaceable.....	N/A

RF Leakage: (dB min tested at 2.5 GHz)

† Avoid user injury due to misapplication. See safety advisory definitions.

Mechanical Ratings

Engagement Design: Reverse Thread, Series SMA

Engagement/Disengagement Force: 2 lb-in max

Mating Torque: 7 to 10 lb-in

Bulkhead Mounting Nut Torque: 15 lb-in

Coupling Proof Torque: 15 lb-in min

Coupling Nut Retention: 60 lbs min

Contact Retention: 6 lbs. min axial force (captivated contacts)

4 oz-in min torque (uncabled receptacles)

Cable Retention:

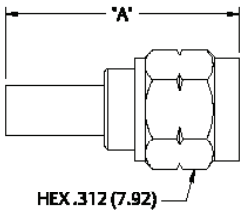
	Axial Force* (lbs)	Torque (oz-in)
RG-316, LMR-100.....	20	N/A
LMR195, 200.....	30	N/A
RG-58, LMR-240.....	40	N/A
RG-142.....	45	N/A

*Or cable breaking strength whichever is less.

Durability: 500 cycles min

Flexible Cable

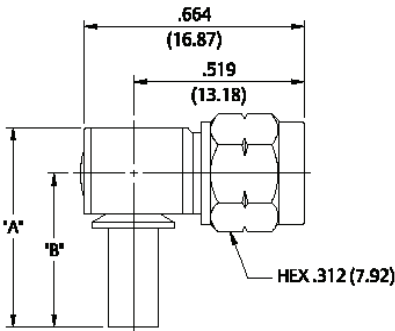
Straight Crimp Type Plug – Solder or Crimp Captivated Contact



Cable Type	Gold Plated	Nickel Plated	"A"
RG-316, 188, 174, 161, LMR-100 HPF-100 RF-100	142-5403-001	142-5403-006	.706 (17.93)
RG-316 DS, 188 DS,	142-5404-001	142-5404-006	.706 (17.93)
RG-58, 141, 303 LMR-195, HPF-195, RF-195	142-5407-001	142-5407-006	.706 (17.93)
RG-142, 55, 223, 400	142-5408-001	142-5408-006	.706 (17.93)
LMR-200, HPF-200, RF-200	142-5439-001	142-5439-006	.844 (21.44)
LMR-240, HPF-240, RF-240	142-5435-001	142-5435-006	.844 (21.44)

Assembly Instructions: LMR 195, 200 and 240 page 220. All other cables page 219.

Right Angle Crimp Type Plug – Captivated Contact



Cable Type	Gold Plated	Nickel Plated	A	B
RG-316, 188, 174, 161, LMR-100 HPF-100 RF-100	142-5403-101	142-5403-106	.611 (15.52)	.470 (11.94)
RG-316 DS 188 DS	142-5404-101	142-5404-106	.611 (15.52)	.470 (11.94)
RG-58, 141, 303, LMR-195 HPF-195 RF195	142-5407-101	142-5407-106	.611 (15.52)	.470 (11.94)
RG-142, 55, 223, 400	142-5408-101	142-5408-106	.611 (15.52)	.470 (11.94)
LMR-200 HPF-200 RF-200	142-5439-101	142-5439-106	.611 (15.52)	.470 (11.94)
LMR-240 HPF-240 RF-240	142-5435-101	142-5435-106	.635 (16.13)	.490 (12.45)

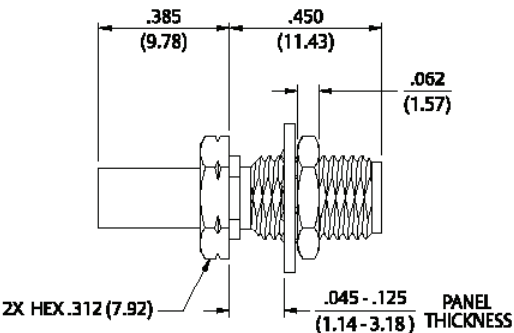
Assembly instructions: LMR 195, 200 and 240 page 229. All other cables page 224.

Straight Crimp Type Bulkhead Jack – Solder or Crimp



Cable Type	Gold Plated	Nickel Plated
RG-316, 188, 174, 161	142-5303-401	142-5303-406
RG-316 DS, 188 DS	142-5304-401	142-5304-406
RG-58, 141, 303	142-5307-401	142-5307-406
RG-142, 55, 223, 400	142-5308-401	142-5308-406

Assembly instructions page 219.
Mounting hole layout figure 1 page 194.

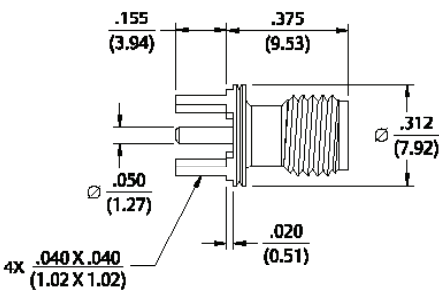


Straight Jack Receptacle

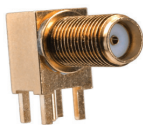


Gold Plated	Nickel Plated
142-5701-201	142-5701-206

Mounting hole layout figure 2 page 194.

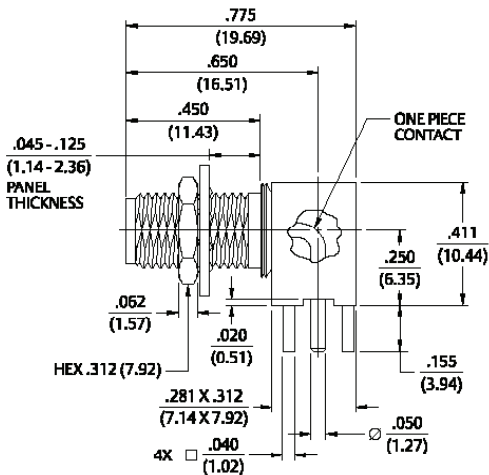


Right Angle Bulkhead Jack Receptacle



Gold Plated	Nickel Plated
142-5701-501	142-5701-506

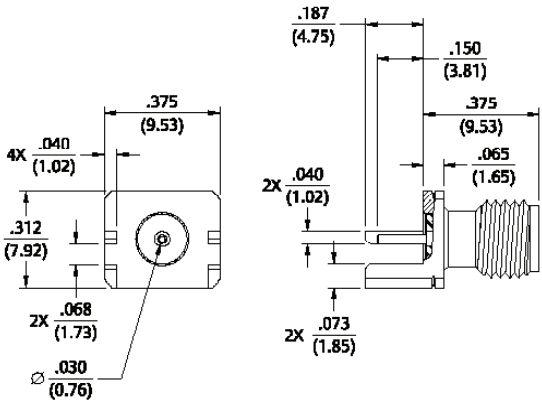
Mounting hole layout figures 1 and 2 page 194.



End Launch Bulkhead – Round Contact



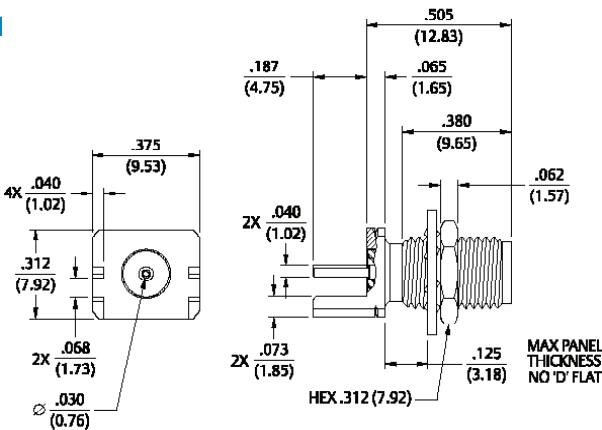
Gold Plated	Nickel Plated	Board Thickness
142-5701-801	142-5701-806	.062 (1.57)



End Launch Bulkhead Jack Receptacle – Rou



Gold Plated	Nickel Plated	Board Thickness
142-5701-811	142-5701-816	.062 (1.57)



For more information, please contact customer service at (507) 833-8822 or (800) 247-8256 • cinch.com
Illustrations are shown in inches (millimeters).

Specifications

Electrical Specifications

Impedance: 50 Ohms

Frequency Range: Flexible cable connectors 0-12.4 GHz

Uncabled receptacles 0-18.0 GHz

VSWR: (max) (f = GHz)

	Straight Cabled Connectors	Right Angle Cabled Connectors
RG-316 cable	1.15 + .02f	1.15 + .03f
RG-58 cable	1.15 + .01f	1.15 + .02f
Uncabled receptacles	N/A	N/A

Working Voltage: (VRMS max)†

	Sea Level	70K Feet
RG-316	250	65
RG-58, uncabled receptacles	335	85

Dielectric Withstanding Voltage: (VRMS min at sea level)†

RG-316	750
RG-58, uncabled receptacles	1000

Insulation Resistance: 5000 megohms min

Contact Resistance: (milliohms max)

	Initial	After Environmental
Center contact (straight cabled connectors, uncabled receptacles)	3.0	4.0
Center contact (right angle cabled connectors)	4.0	6.0
Outer contact (all connectors)	2.0	N/A
Braid to body	0.5	N/A

Corona Level: (Volts min at 70,000 feet)†

RG-316 190	250
RG-58, uncabled receptacles	250

Insertion Loss: (dB max)

Straight flexible cable connectors	$0.06\sqrt{f \text{ (GHz)}}$, tested at 6 GHz
Right angle flexible cable connectors	$0.15\sqrt{f \text{ (GHz)}}$, tested at 6 GHz
Uncabled receptacles	N/A

RF Leakage: (dB min tested at 2.5 GHz)

Flexible cable connectors	-60 dB
Uncabled receptacles	N/A

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

RG-316	500
RG-58, uncabled receptacles	670

† Avoid user injury due to misapplication. See safety advisory definitions inside front cover.

Mechanical Specifications

Engagement Design:

MIL-STD-348, Series SMA

Engagement/Disengagement Force: 2 lb-in min max

Mating Torque: 7 to 10 lb-in min

Coupling Proof Torque: 15 lb-in min

Coupling Nut Retention: 60 lbs min

Contact Retention: 6 lbs min axial force (captivated contacts)

4 oz-in min torque (uncabled receptacles)

Cable Retention:

	Axial Force* (lbs)	Torque (oz-in)
RG-316	20	N/A
RG-58	40	N/A

*Or cable breaking strength whichever is less.

Durability: 500 cycles min

Environmental Specifications

(Meets or Exceeds the Applicable Paragraph of MIL-PRF-39012)

Temperature Range: - 65°C to + 165°C

Thermal Shock: MIL-STD-202, Method 107, Condition B

Corrosion: MIL-STD-202, Method 101, Condition B

Shock: MIL-STD-202, Method 213, Condition I

Vibration: MIL-STD-202, Method 204, Condition D

Moisture Resistance: MIL-STD-202, Method 106

Material Specifications

(See non-magnetic materials page 10)

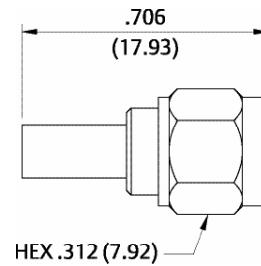
† Avoid user injury due to misapplication. See safety advisory definitions inside front cover.

Straight Crimp Type Plug (3-piece) – Captivated Contact



Cable Type	Gold Plated
RG-316, 188, 174	142-9403-011
RG-316 DS, 188 DS	142-9404-011
RG-58, 141, 303	142-9407-001

Assembly instructions page 219.

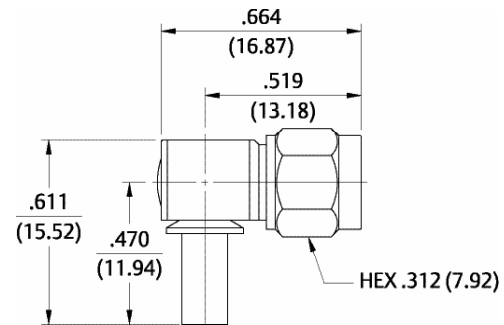


Right Angle Crimp Type Plug – Captivated Contact



Cable Type	Gold Plated
RG-316, 188, 174	142-9403-101
RG-316 DS, 188 DS	142-9404-101
RG-58, 141	142-9407-101

Assembly instructions page 224.

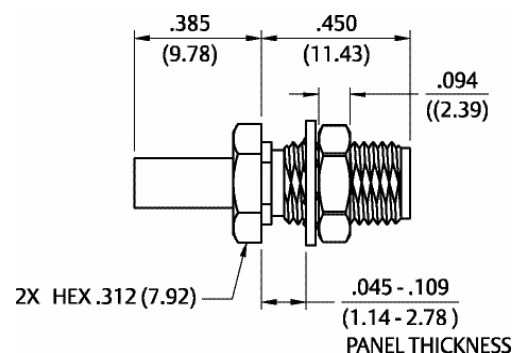


Straight Crimp Type Bulkhead Jack (3-piece) – Captivated Contact



Cable Type	Gold Plated
RG-316, 188, 174	142-9303-411

Assembly instructions page 219.



For more information, please contact customer service at (507) 833-8822 or (800) 247-8256 • cinch.com

Illustrations are shown in inches (millimeters).

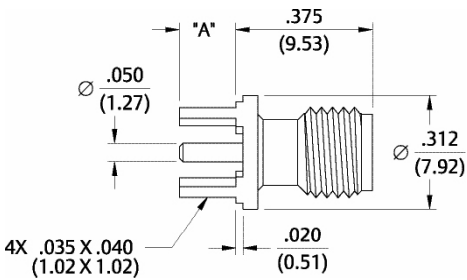
PC Mount

Straight Jack Receptacle



Gold Plated	"A"
142-9701-201	.155 (3.94)
142-9701-211	.110 (2.79)

Mounting hole layout figure 3 on page 194.

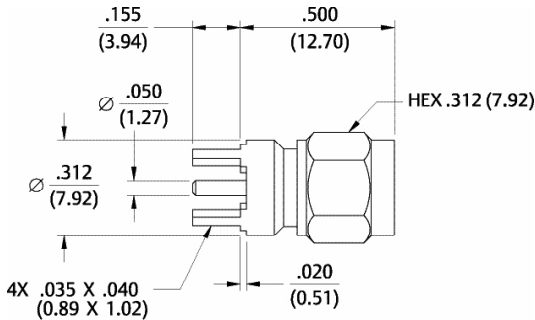


Straight Plug Receptacle



Gold Plated
142-9801-201

Mounting hole layout figure 3 on page 194.

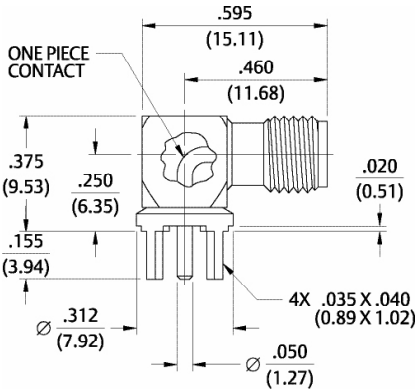


Right Angle Jack Receptacle



Gold Plated
142-9701-301

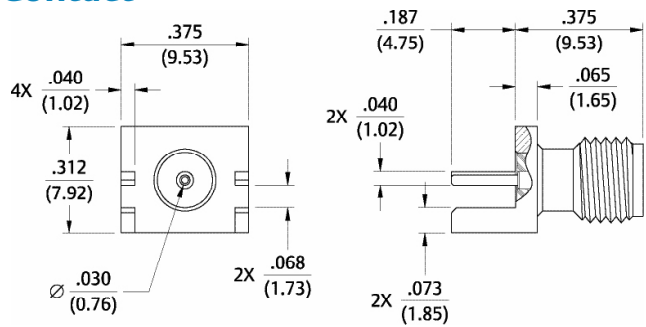
Mounting hole layout figure 3 on page 194.



End Launch Jack Receptacle – Round Contact



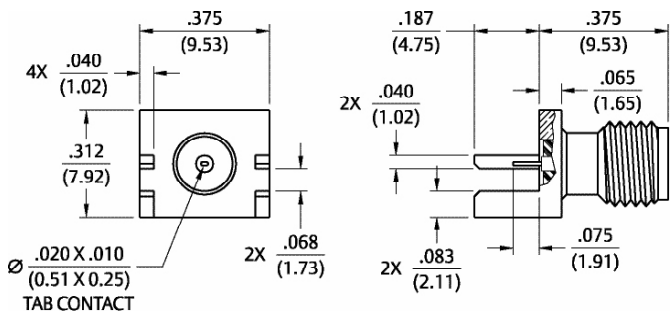
Gold Plated	Board Thickness
142-9701-801	.062 (1.57)



End Launch Jack Receptacle – Tab Contact



Gold Plated	Board Thickness
142-9701-811	.062 (1.57)



Specifications

Electrical Specifications

Impedance:	50 Ohms
Frequency Range:	0-26.5 GHz
VSWR: (max)	1.05+.02f(GHz) max at 0-18 GHz, <1.50 typical at 18-26.5 GHz
Working Voltage:	170 VRMS max at sea level, 45 VRMS max at 70K feet
Dielectric Withstanding Voltage:	500 VRMS min at sea level
Insulation Resistance:	1000 Megohms min

Contact Resistance: (milliohms max)	<u>Initial</u>	<u>After Environmental</u>
Center Contact	3.0	4.0
Outer Conductor	2.0	NA
Corona Level:	125 Volts at 70K feet	
Insertion Loss:	(Dependant upon application)	

RF Leakage: Not Applicable

RF High Potential Withstanding Voltage: 335 VRMS min at 4 and 7 MHz

Mechanical Specifications

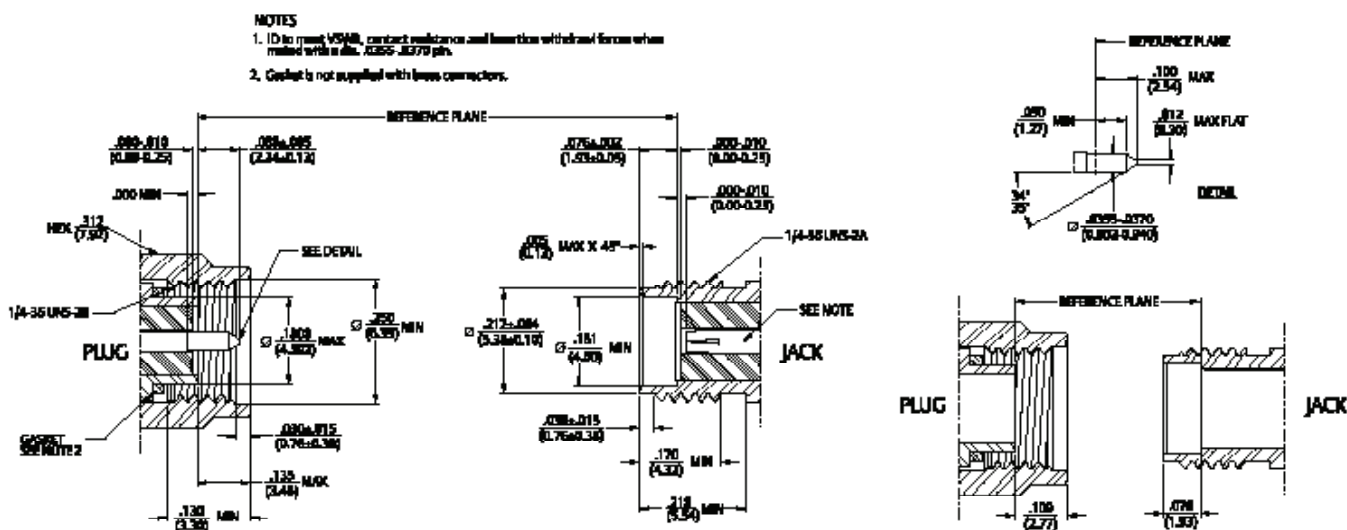
Engagement Design:	MIL-STD-348, Series SMA
Engagement/Disengagement Force:	2 lb-in max
Mating Torque:	7 to 10 lb-in
Contact Retention:	6 lbs min axial force, 4 oz-in min radial torque

Environmental Ratings

(Meets or Exceeds the Applicable Paragraph of MIL-PRF-39012)

Temperature Range:	- 65°C to + 165°C
Thermal Shock:	MIL-STD-202, Method 107, Condition B - Except 115°C High Temp
Corrosion:	MIL-STD-202, Method 101, Condition B
Shock:	MIL-STD-202, Method 213, Condition I
Vibration:	MIL-STD-202, Method 204, Condition D
Moisture Resistance:	MIL-STD-202, Method 106

Mating Engagement for SMA Series Thickwall Plug Compatible with MIL-STD-348



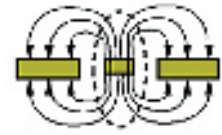
High Frequency SMA End Launch Connectors for Microwave PC Board Substrates

The Johnson line of High Frequency End Launch connectors are used to transition microwave energy from coaxial to planar transmission line structures. These connectors provide a unique solution for microwave engineers who fabricate circuit designs on very thin high frequency board substrates. The in-line connector design minimizes reflections as compared to a right-angle (perpendicular) pc mount transition.

- Cellular Linear Power Amplifiers
- Broadband MMIC Power Amplifiers
- Microwave Filters, Mixers and Combiners
- Wireless Infrastructure Antennas
- DBS Low-Noise Block Down Converters
- Remote Sensing and Metering
- Global Positioning Satellite Antennas
- Phased Array Antennas
- Radar Systems
- High Speed Routers and Switches
- Automated Test Equipment
- RF Identification Tags

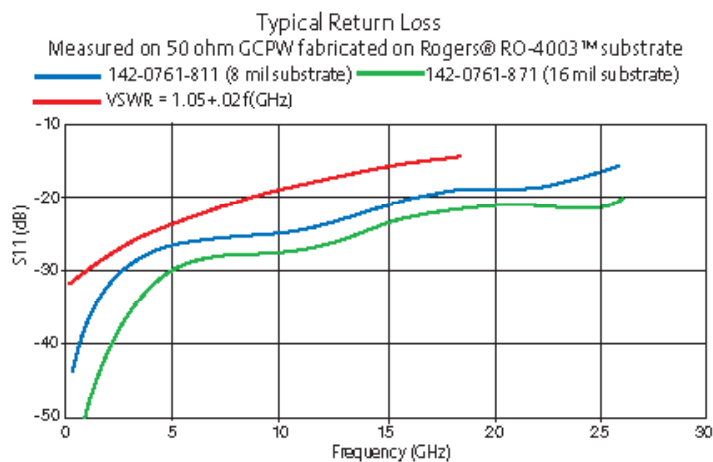


COAXIAL



COPLANAR

High Frequency End Launch connectors are designed to attach directly to a high frequency coplanar waveguide (CPW) circuit board transmission line, although other lines such as microstrip can be used with good results. These connectors can be used on high frequency PC board substrate layers as thin as 8 mils, and operate at frequencies up to 26.5 GHz (see Return Loss chart).



Design Features

This connector is an economical alternative to other high frequency designs in the industry. This design differentiates itself from other launch connectors:

- Design of the connector is self contained, no external mounting screws, adapter sections, spring clips, etc. are required for assembly to the circuit board.
- Center contact pin does not require special orientation to the surface of the circuit board. The center contact is mechanically captivated and optimized to maintain proper impedance while withstanding torque and axial force stress.
- Output coax of the connector at board launch is sized appropriately to match the thickness of the high frequency board substrate. The output coax section extends well within the connector while maintaining constant inner and outer coaxial diameters.
- Signal side grounding legs of the connector are spaced close enough to keep grounding paths short, but far enough apart to maintain constant impedance in the launch transition area.
- Signal side grounding legs and GCPW geometry control radiation, no additional shielding is required to prevent signal cross-talk effects in the transition area. The launch transition is effectively isolated from adjacent transmis-

sion lines in the signal plane.

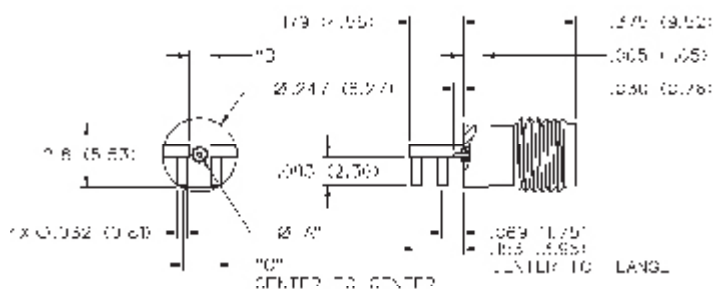
- Connector is not locked into position when placed on the circuit board. Intentional floating design allows proper alignment in X, Y and Z, minimizing discontinuities due to manufacturing tolerances.
- The distinctive through hole mounting technique allows the use of one connector with varying circuit board thicknesses. The connectors are also available in a traditional straddle mount end launch design, which was pioneered by Cinch Connectivity Solutions over 30 years ago.
- A small amount of PTFE insulation projects from the rear mating plane of the connector, acting as a seal when soldering the center conductor pin to the trace. The connector is held against the circuit board edge during the soldering process, compressing the PTFE insulation. This effectively creates a barrier between the inner and outer conductors, preventing the bridging of solder.
- Appropriate sized connectors do not require additional compensation to standard coplanar or microstrip matched impedance line geometries. Transition can be fine-tuned by pulling the trace back a slight amount from the board edge.

For more information, please contact customer service at (507) 833-8822 or (800) 247-8256 • cinch.com

Illustrations are shown in inches (millimeters).

PC Mount

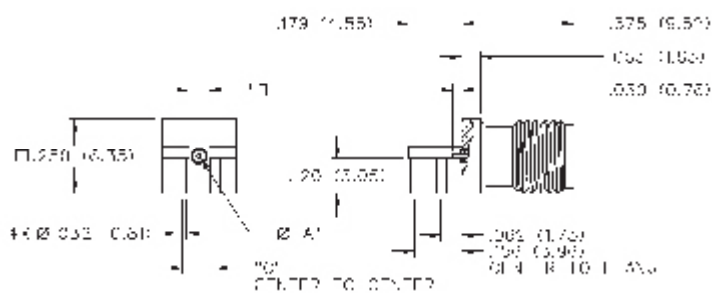
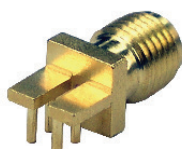
Jack Receptacle – Round Body



Gold Plated	High Frequency Substrate Thickness	“A”	“B”	“C”
142-0761-801	.008 (0.20) - .014 (0.36)	.010 (0.25)	.050 (1.27)	.096 (2.44)
142-0761-821	.014 (0.36) - .020 (0.51)	.015 (0.38)	.067 (1.70)	.113 (2.87)

Assembly instructions page 228.

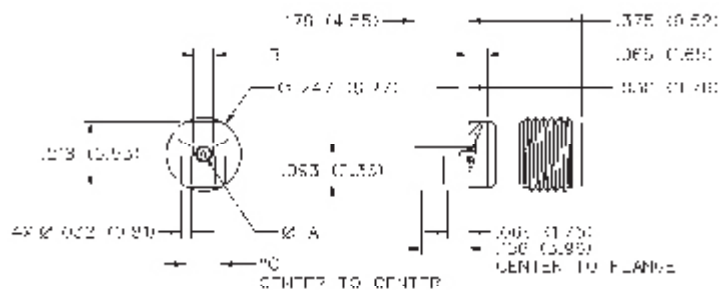
Jack Receptacle, Square Body



Gold Plated	High Frequency Substrate Thickness	“A”	“B”	“C”
142-0761-811	.008 (0.20) - .014 (0.36)	.010 (0.25)	.050 (1.27)	.096 (2.44)
142-0761-831	.014 (0.36) - .020 (0.51)	.015 (0.38)	.067 (1.70)	.113 (2.87)

Assembly instructions page 228.

Jack Receptacle – PC Mount, Round Body with Thick Legs

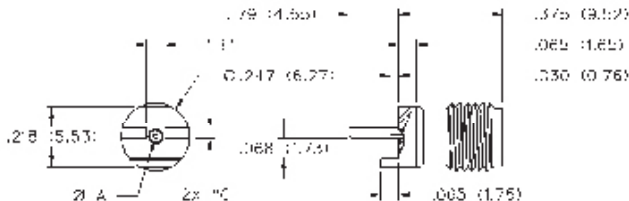


Gold Plated	High Frequency Substrate Thickness	"A"	"B"	"C"
142-0761-881	.008 (0.20) - .014 (0.36)	.010 (0.25)	.050 (1.27)	.096 (2.44)
142-0771-821	.014 (0.36) - .020 (0.51)	.015 (0.38)	.067 (1.70)	.113 (2.87)

Assembly instructions page 228.

* Coupling proof torque 8 inch pounds maximum without support wrench.

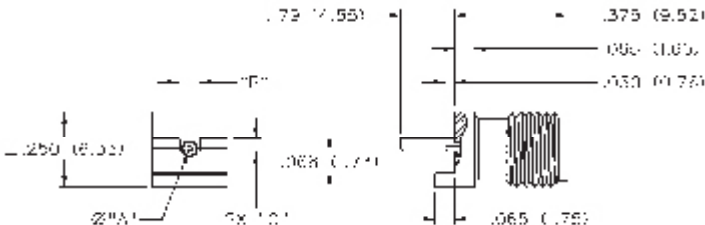
Jack Receptacle – for .062 Board, Round Body



Gold Plated	High Frequency Substrate Thickness	"A"	"B"	"C"
142-0761-841	.008 (0.20) - .014 (0.36)	.010 (0.25)	.050 (1.27)	.032 (0.81)
142-0761-861	.014 (0.36) - .020 (0.51)	.015 (0.38)	.067 (1.70)	.040 (1.02)

Assembly instructions page 228.

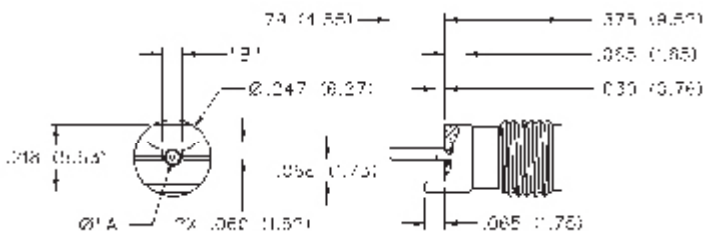
Jack Receptacle – for .062 Board, Square Body



Gold Plated	High Frequency Substrate Thickness	"A"	"B"	"C"
142-0761-851	.008 (0.20) - .014 (0.36)	.010 (0.25)	.050 (1.27)	.032 (0.81)
142-0761-871	.014 (0.36) - .020 (0.51)	.015 (0.38)	.067 (1.70)	.040 (1.02)

Assembly instructions page 228.

Jack Receptacle – for .062 Board, Round Body with Thick Legs



Gold Plated	High Frequency Substrate Thickness	"A"	"B"	"C"
142-0761-891	.008 (0.20) - .014 (0.36)	.010 (0.25)	.050 (1.27)	.032 (0.81)
142-0771-831	.014 (0.36) - .020 (0.51)	.015 (0.38)	.067 (1.70)	.040 (1.02)

Assembly instructions page 228.

* Coupling proof torque 8 inch pounds maximum without support wrench.

Specifications

Electrical Ratings

Impedance: 50 Ohms

Frequency Range:

Flexible cable connectors	0-12.4 GHz
Uncabled receptacles	0-18.0 GHz
Straight Semi-Rigid cable connectors	0-26.5 GHz

VSWR: (max) (f = GHz)

	Straight Cabled Connectors	Right Angle Cabled Connectors
RG-316, LMR-100 cable	1.15+.02f	1.15+.03f
RG-58, LMR-195 cable	1.15+.01f	1.15+.02f
RG-142 cable	1.15+.01f	1.15+.02f
RG-405 cable (0 - 18 GHz)	1.07+.008f	
RG-405 cable (18 - 26.5 GHz)	1.35 max	
RG-402 cable (w/contact)	1.05+.008f	
RG-402 cable (w/o contact)	1.035+.005f	

Insertion Loss: (dB max)

Straight flexible cable connectors	0.06 $\sqrt{f}$ (GHz), tested at 6 GHz
Right angle flexible cable connectors	0.15 $\sqrt{f}$ (GHz), tested at 6 GHz
Straight Semi-Rigid cable connectors with contact	0.03 $\sqrt{f}$ (GHz), tested at 10 GHz
Straight Semi-Rigid cable connectors w/o contact	0.03 $\sqrt{f}$ (GHz), tested at 16 GHz
Uncabled receptacles	N/A

Working Voltage: (VRMS max)

	Sea Level	70K Feet
RG-316, LMR-100, 195	250	65
RG-58, RG-142, RG-405, uncabled receptacles, RG-402 w/o contact	335	85
RG-402 with contact	500	125

Dielectric Withstanding Voltage: (VRMS min at sea level) †

	Sea Level
RG-316, LMR-100, 195	750
RG-58, RG-142, RG-405, uncabled receptacles	1000
RG-402 with contact	1500
RG-402 w/o contact	N/A

Corona Level: (Volts min at 70,000 feet)

	70K Feet
RG-316, LMR-100, 195	190
RG-58, RG-142, .086 Semi-Rigid, uncabled receptacles, RG-402 w/o contact	250
RG-402 with contact	375

Insulation Resistance: 5000 Megohms min

Contact Resistance: (milliohms max)	Initial	After Environmental
Center contact (straight cabled connectors and uncabled receptacles)	3.0*	4.0*
Center contact (right angle cabled connectors)	4.0	6.0
Outer contact (all connectors)	2.0	N/A
Braid to Body (gold plated bodies)	0.5	N/A

*N/A where the cable center conductor is used as a contact

RF Leakage: (dB min, tested at 2.5 GHz)

Flexible cable connectors and RG-402 connectors w/o contact	-60
RG-405 connectors and RG-402 connectors with contact	-90
Uncabled receptacles	N/A

RF High Potential Withstanding Voltage: (VRMS min, tested at 4 and 7 MHz)

RG-316, LMR-100, 195	500
RG-58, RG-142, RG-405, RG-402 cable w/o contact, Uncabled receptacles	670
RG-402 with contact	1000

† Avoid user injury due to misapplication. See safety advisory definitions.

Mechanical Specifications

Engagement Design:	MIL-STD-348, Series SMA
Durability:	500 cycles min 100 cycles min for RG-402 connectors w/o contact
Engagement/Disengagement Force:	2 inch-pounds max
Mating Torque:	7 to 10 lb-in
Bulkhead Mounting Nut Torque:	15 lb-ins recommended
Coupling Proof Torque:	15 lb-ins min
Coupling Nut Retention:	60-lbs min
Contact Retention:	6 lbs. min axial force (captivated contacts) 4 oz-in min torque (uncabled receptacles)

Cable Retention: (minimum *)

	<u>Axial Force (lbs)</u>	<u>Torque (oz-in)</u>
RG-316, LMR-100	20	N/A
RG-58.....	40	N/A
RG-142 Cabled	45	N/A
RG-405	30	16
RG-402	60	55
LMR-195.....	30	N/A

* Or cable breaking strength, whichever is less

Environmental Specifications

(Meets or Exceeds the Applicable Paragraph of MIL-PRF-39012)

Temperature Range:	-65°C to +165°C
Thermal Shock:	MIL-STD-202, Method 107, Condition B (except +85°C high temperature)
Corrosion:	MIL-STD-202, Method 101, Condition B
Shock:	MIL-STD-202, Method 213, Condition I
Vibration:	MIL-STD-202, Method 204, Condition D
Moisture Resistance:	MIL-STD-202, Method 106

Material Specifications

Bodies:	Stainless Steel, type 303, per ASTM A 582, passivated per MIL-DTL-14072 (EL 300), or gold Plated per MIL-G-45204 .00005" min
Contacts:	Male - Brass per ASTM B16, Gold plated* per MIL-G-45204 (.00005" min) Female – Beryllium Copper per ASTM B196, Gold plated* per MIL-G-45204 (.00005" min)
Insulators:	PTFE Fluorocarbon per ASTM D1710 and ASTM D1457
Gaskets:	Silicon Rubber per A-A-59588A
Expansion Caps:	Brass per ASTM B16, gold plated per MIL-G-45204 .00005" min or nickel plated per AMS-QQ-N-290
Crimp Sleeves:	Copper per ASTM A75, gold plated per MIL-G-45204 .0005"min or nickel per AMS-QQ-N-290 plated (.00005" min)
Nut Retention Spring (Plugs):	Beryllium Copper per ASTM B196, un-plated
Mounting Hardware:	Stainless Steel, type 303, Per ASTM A582, passivated per MIL-DTL-14072 (EL 300), or gold plated* per MIL-G-45204 .00005" min

Note: All Gold plated parts include a .00005" min Nickel under plated barrier layer.

For more information, please contact customer service at (507) 833-8822 or (800) 247-8256 • cinch.com

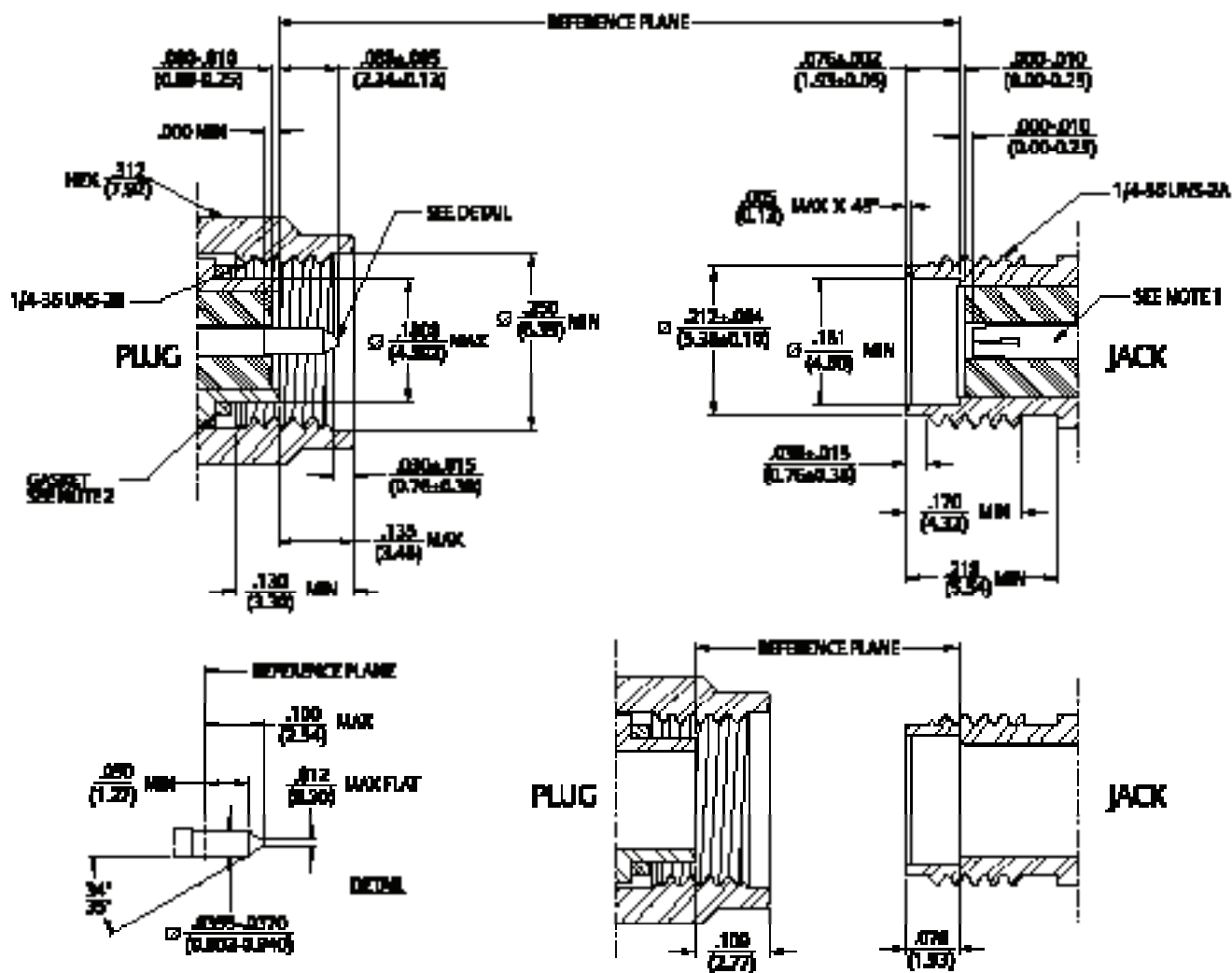
Illustrations are shown in inches (millimeters).

Specifications

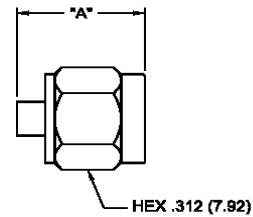
Mating Engagement for Stainless Steel SMA Series Per MIL-STD-348A

NOTES

1. Do not mount VSAM, contact resistance and insertion withdrawal force when mated with a die. J3555-J3719 pins.
2. Contact is not supplied with loose connections.



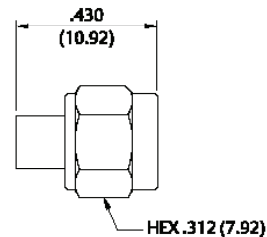
Straight Solder Type Plug – with Contact, Captive Nut Thin Wall



Cable Type	Gold Plated Body	"A"
RG-405	141-0693-002	.405
RG-402	141-0694-002	.440

Assembly instructions page 214.

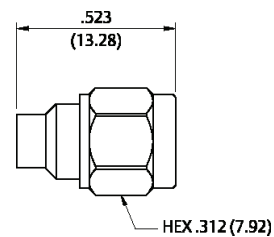
Straight Solder Type Plug – Without Contact, Thread-On Nut



Cable Type	Gold Plated Body
RG-402	141-0694-012

Assembly instructions page 214.

Straight Solder Type Plug with Captivated Solderless Contact, Captive Nut and Thick Wall Interface



Cable Type	Gold Plated Body
RG-405	141-0693-062
RG-402	141-0694-062

Assembly instructions page 222.

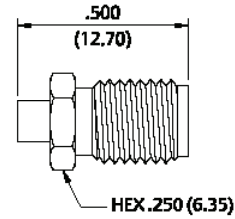
Semi-Rigid

Straight Solder Type Jack

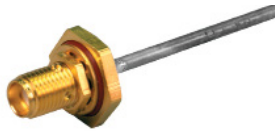


Cable Type	Gold Plated Body
RG-405	141-0593-001
RG-402	141-0594-001

Assembly instructions page 214.

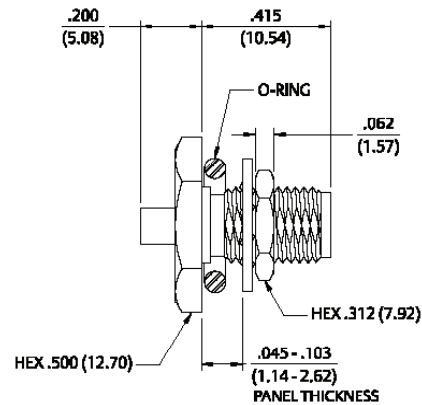


Straight Solder Type Bulkhead Jack with O-Ring



Cable Type	Gold Plated Body
RG-405	141-0593-401
RG-402	141-0594-401

Assembly instructions page 214.

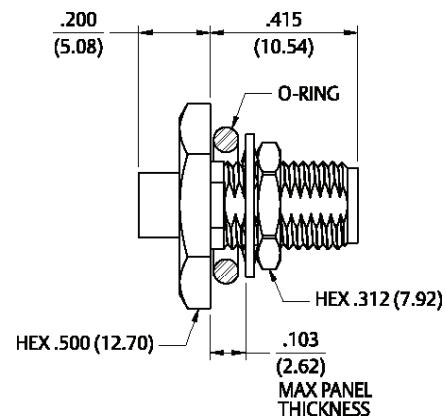


Straight Solder Type Bulkhead Jack with Captivated Solderless Contact and O-Ring



Cable Type	Gold Plated Body
RG-405	141-0593-421
RG-402	141-0594-421

Assembly instructions page 222.

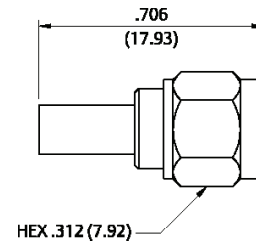


Straight Crimp Type Plug (3-piece) – Solder or Crimp Captivated Contact



Cable Type	Passivated
RG-161, 174,188, 316, LMR-100, HPF-100, RF-100	141-0403-012
RG-188 DS, RG-316 DS	141-0404-012
RG-58, 141, 303, LMR-195, HPF-195, RF-195	141-0407-012
RG-55, 142, 223, 400	141-0408-012

Assembly instructions page 219.

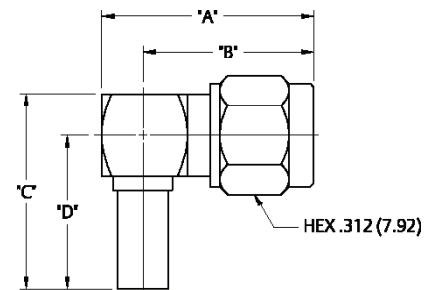


Right Angle Crimp Type Plug – Captivated Contact



Cable Type	Passivated	"A"	"B"	"C"	"D"
RG-161, 174,188, 316	141-0403-102	.652	.527	.593	.467
RG-188 DS, RG-316 DS	141-0404-112	.652	.527	.593	.467
RG-58, 141, 303	141-0407-102	.636	.519	.596	.471
RG-55, 142, 223, 400	141-0408-102	.636	.519	.596	.471

Assembly instructions page 224.

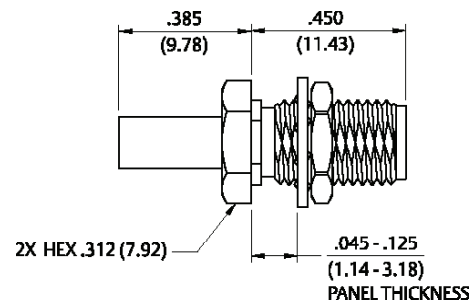


Straight Crimp Type Bulkhead Jack (3-piece) – Solder or Crimp Captivated Contact



Cable Type	Passivated
RG-161, 174,188, 316	141-0303-412
RG-188 DS, RG-316 DS	141-0304-412
RG-58, 141, 303	141-0307-412
RG-55, 142, 223, 400	141-0308-412

Assembly instructions page 219.



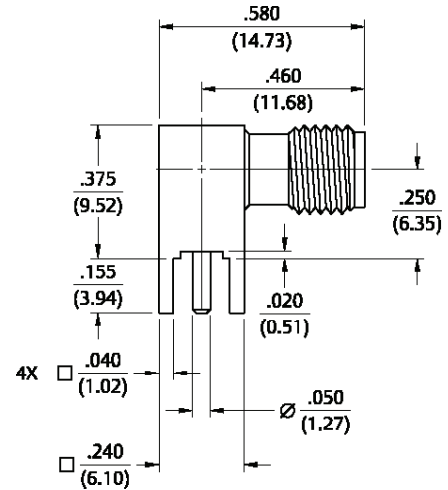
PC Mount, Bulkhead and Panel Mount

Right Angle PC Mount Jack Receptacle



Gold Plated

141-0701-301

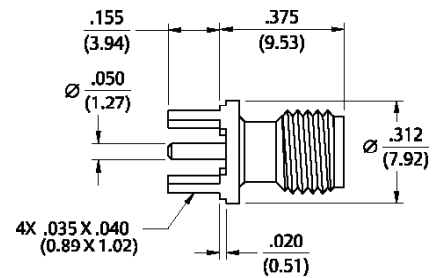


Straight PC Mount Jack Receptacle



Gold Plated

141-0701-201

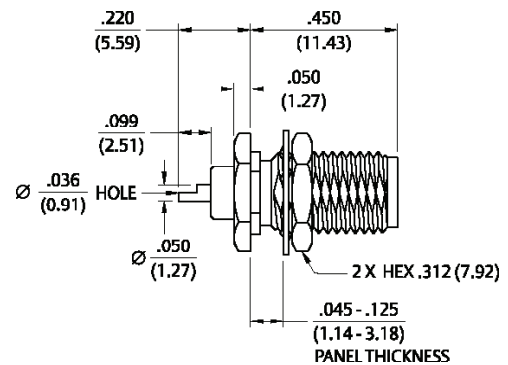


Rear Mount Bulkhead Jack Receptacle



Passivated

141-0701-402

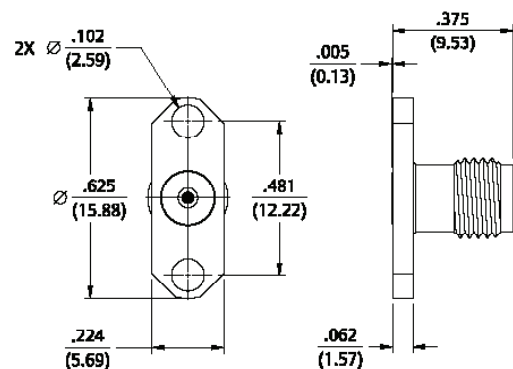


2-Hole Flange Mount Jack Receptacle – Flush Dielectric



Passivated

141-0701-602

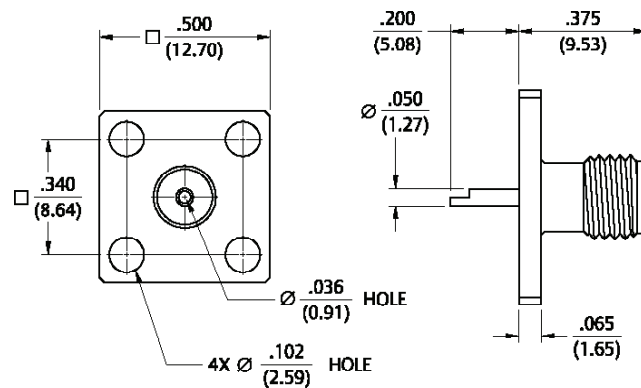


4-Hole Flange Mount Jack Receptacle – Flush Dielectric



Passivated

141-0701-612

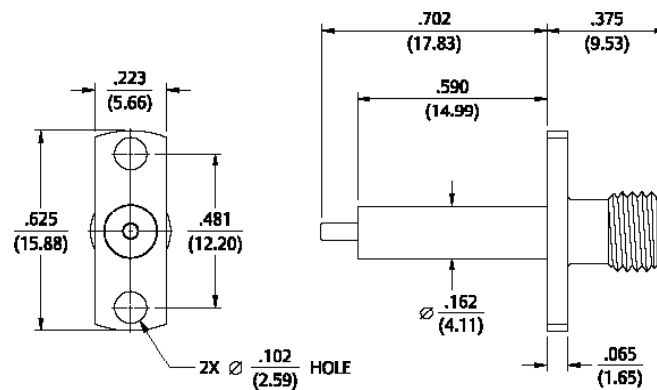


2-Hole Flange Mount Jack Receptacle – Extended Dielectric



Passivated

141-0701-622

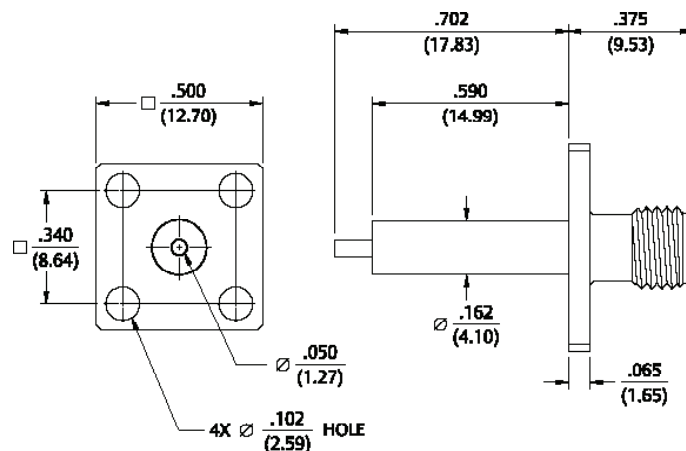


4-Hole Flange Mount Jack Receptacle – Extended Dielectric



Passivated

141-0701-632



For more information, please contact customer service at (507) 833-8822 or (800) 247-8256 • cinch.com

Illustrations are shown in inches (millimeters).

Specifications

Electrical Specifications

Impedance:	50 Ohms		
Frequency Range:	0-6 GHz		
Attenuation Values:	1, 2, 3, 6 and 10 dB Nominal*		
Attenuation Accuracy:			
dB*	0 - 4 GHz	4 - 6 GHz	
1-3	±0.3	±0.5	
4-6	±0.4	±0.5	
7-10	±0.5	±0.5	
VSWR Max:			
dB*	0 - 2.5 GHz	2.5 - 4 GHz	4 - 6 GHz
1-3	1.15 : 1	1.20 : 1	1.25 : 1
4-6	1.15 : 1	1.20 : 1	1.25 : 1
7-10	1.15 : 1	1.25 : 1	1.30 : 1
Average Input Power:	2 W Max @ +25°C		
	Derated Linearly to 0.5W at +125°C		

*Other values available, please contact Factory

Mechanical Specifications

SMA Connectors: Per MIL-STD-348A

Environmental Specifications

Temperature Range:	-55°C to +125°C
Thermal Shock:	MIL-STD-202, Method 107, Condition B except +100°C high temperature)
Shock:	MIL-STD-202, Method 213, Condition I
Vibration:	MIL-STD-202, Method 204, Condition D

Material Specifications

Connector Body:	303 Stainless Steel per ASTM A582, Passivated per MIL-F-14-72 (EL 300)
Coupling Nut:	303 Stainless Steel per ASTM A582, Passivated per MIL-F-14-72 (EL 300)
Retaining Ring:	Beryllium Copper per ASTM B196, Unplated
SMA Plug Gasket:	Silicone Rubber per ZZ-R-765
Male Contact:	Brass per ASTM B16, Gold Plated per MIL-G-45204 (.00003 min)
Female Contact:	Beryllium Copper per ASTM B196, Gold Plated per MIL-G-45204 (.00003 min)
Insulators:	PTFE per ASTM D1710
Attenuator Card:	Alumina per Mil-I-10, RoHS Compliant Terminals

SMA Fixed Attenuators Commercial Series



Attenuation (dB Nominal)*	Freq. Range	Stainless Steel Passivated
1	(0-6 GHz)	141-3901-801
2	(0-6 GHz)	141-3901-802
3	(0-6 GHz)	141-3901-803
6	(0-6 GHz)	141-3901-806
10	(0-6 GHz)	141-3901-810

* Standard values shown. Contact factory for other requirements. Inches (millimeters).

