RF COAXIAL
CONNECTORS

AEP COAXIAL CONNECTORS

Full Line Catalog

AEP
A Radiall Brand

SIMPLIFICATION IS OUR INNOVATION

Radiall

SIMPLIFICATION *is our* INNOVATION

Radiall is a community of dedicated individuals with a shared purpose: simplify life for all those who innovate. Our manufacturing expertise allows us to deliver lighter and smaller products that simplify implementation and drive performance. We recognize that simplification starts with us, but proves its true benefits when it reaches you.

TABLE OF **CONTENTS**

MIL-QPL	**1**
SMA	**2**
SMB/SMC/SLB	**3**
SSMB/SSMC/SSLB	**4**
SMP	**5**
75 OHM Series	**6**
Cable Terminations	**7**
QCD (Quick Connect-Disconnect)	**8**
Adapters	**9**
BNC	**10**
Type N	**11**
TNC	**12**
Assemblies	**13**
Tooling	**14**
Part Number Index	**15**


AEROSPACE
DEFENSE
TELECOM
INDUSTRIAL & RAIL
SPACE
TEST & MEASUREMENT
MEDICAL

OUR **COMPANY**

Since 1952, we have been enabling the future through collaboration with our customers. The results are a range of innovative and award-winning products that customers trust for unrivaled repeatability and performance.

We are a global company with facilities around the world that specializes in manufacturing the highest-quality interconnect components to support the most demanding applications. At Radiall, you can rely on us to be the industry's global market leader.

INDUSTRIES WE SERVE

For over 60 years, we have fostered relationships grounded in trust by sharing our extensive market knowledge, technological expertise and experience in each and every interaction. Through an understanding of our customers' unique challenges, we are able to design simple solutions specific to their application and requirements.

*Visit **www.radiall.com** for more information.*

OUR VALUES

Guiding Our Actions Every Day

GROW TOGETHER

With Our Teams and the World Around Us

BE GENUINE

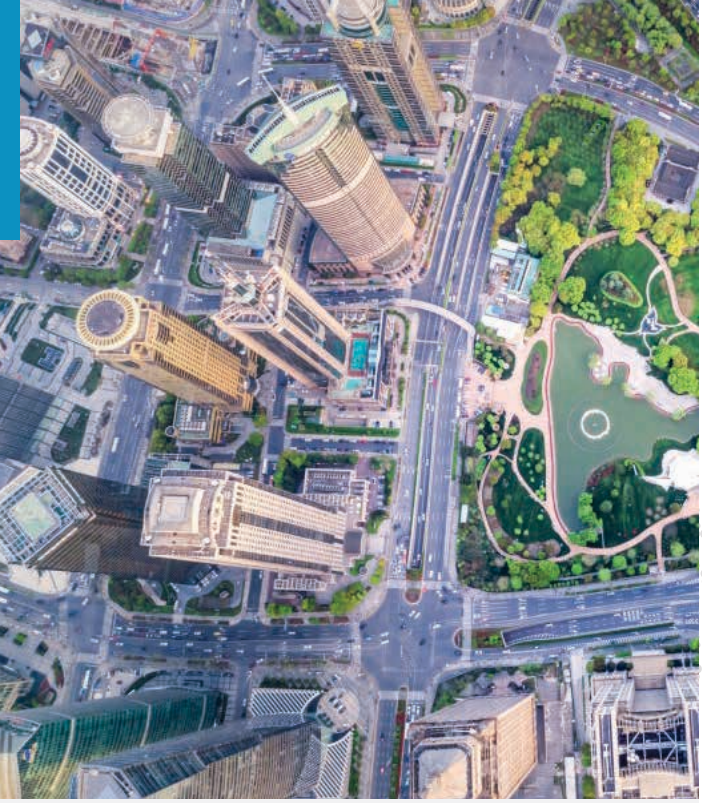
To Foster Mutual Trust and Grow

MAKE IT SIMPLE

To Accelerate Innovation

DARE TO BE AUDACIOUS

To Make a Difference



Connecticut

Obregón

AWARDS & CERTIFICATIONS

Being recognized for our product performance, innovation and timely fulfillment is a testament to our employees' commitment to our customers. We are a world market leader in reliable, repeatable performance and take great pride in providing award-winning innovation and vendor support.

Our leadership is focused on long-term success and developing key technologies that simplify our customers' lives.

We're committed to our people, the environment and to the highest quality standards including ISO 9001, ISO 14001 and AS9100 certifications. We are compliant with the EU Restriction of Hazardous Substances (RoHS) as well as the Registration, Evaluation, Authorization and Restrictions of Chemicals (REACH) systems.

Visit our website to view RoHS and REACH compliance information for specific Radiall part numbers.

IN-HOUSE TECHNOLOGIES

- *High-Precision Machining*
- *Stamping*
- *Plating*
- *Molding*
- *Polishing*
- *Laser, Ultrasonic, Vapor, Soldering*
- *Etching on Si*
- *Thick Film on AlN*
- *Testing and Simulation*

Château-Renault

Shanghai

L'Isle-d'Abeau

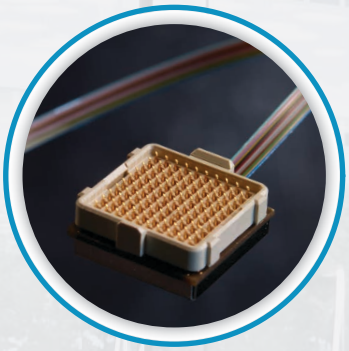
Centr'Alp

GLOBAL PRESENCE

Recognizing that relationships are rooted in trust, we strive to earn our customers' confidence by demonstrating our market knowledge, technological expertise and experience in each and every interaction.

SALES OFFICES **INDUSTRIAL PLANTS**

COMPREHENSIVE **PORTFOLIO**



Active Optics

Our high-performance, optical interconnection brand, D-Lightsys®, provides optical transceiver and electronic solutions suitable for harsh environments.

Antennas

With a military and industrial focus, we have solutions for radio tactical communications, vehicles, positioning, LMR/PMR and telemetry applications.

Microwave Components

Our range covers a wide frequency spectrum from DC to 50 GHz, and includes terminations, attenuators, couplers, power dividers, filters and other specialized components.

Optical Connectors

Designed for demanding applications where reliability and high performance are required, our cost-effective optical connectors serve telecom, industrial, aerospace and defense markets.

Outdoor Connectors

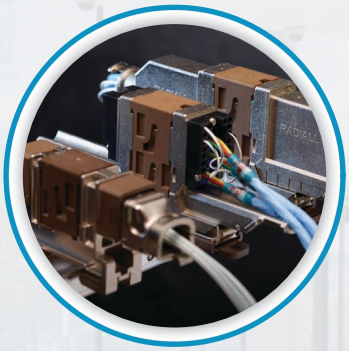
Designed for outdoor conditions, our range includes high-power RF coaxial connectors, linking antennas and radio units, as well as innovative multi-signal I/O solutions for optical, Ethernet, power or coaxial links between radio and network.

RF & Microwave Switches

The patented design of our unique, modular actuator and transmission links guarantees operation up to 10 million cycles with superior repeatability.

At Radiall, we provide a comprehensive portfolio of products that meet the application requirements of the key industries we serve. By listening to our customers, we continuously develop new solutions and update our extensive range of products.

With over sixty years of experience and an understanding of the ever-changing business and our customers' technical requirements, we deliver the optimal and most cost-effective, end-to-end interconnect solutions available today.



Multipin Aerospace Connectors

For more than 40 years, commercial airframes have trusted our range of rack and panel connectors and modular solutions. Our new miniature connector series combines high performance and reduced weight to meet civil and military aerospace industry demands.

Multipin Industrial Connectors

Our Van-System brand designs and produces a range of robust circular electrical connectors suitable for harsh environments, such as railways, machine tools, and plant engineering equipment.

Optical Cable Assemblies

Our extensive product range and worldwide presence supports customers with standard configurations as well as optimized solutions based on customer requirements.

RF Cable Assemblies

Low-loss and high-frequency characterize our extensive range of cable assemblies, including flexible, semi-rigid and hand-formable solutions with a broad combination of cables and connectors.

RF Coaxial Connectors

We offer the widest range of RF coaxial connectors in the industry; 55 product series are available, including AEP and Mil QPL connectors.

Space Qualified Components

Known for high quality as well as reliability and performance, our product offering includes a wide range of coaxial connectors, cable assemblies, microwave components and switches with a frequency range up to K_a band.

NUMBERING **SYSTEM**

The following guide illustrates the AEP part numbering system for connectors. For additional information or AEP connector data sheets, visit us at www.radiall.com. Click on "Product Finder," then "RF Coaxial Connectors" and select AEP.

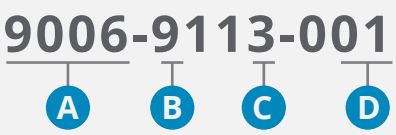
AEP PART NUMBERS

Applied Engineering Products (AEP) was established in 1973 and quickly became a recognized leader in the RF coaxial connector and cable assembly industries. In 2005, Radiall, a well known world leader for reliable and innovative product solutions acquired Applied Engineering Products (AEP).

Since acquiring AEP, Radiall has maintained the initial customer-centric service established by AEP over 40 years ago and has become a center of excellence dedicated to providing design engineering, manufacturing, quality and supply chain functions to support worldwide demand.

Today, AEP is a Radiall product brand commercialized alongside the core Radiall RF product lines. AEP connectors and cable assemblies are designed and qualified by our dedicated staff. Radiall is well positioned to serve the needs of the Telecom, Industrial, Defense and Aerospace industries.

AEP NUMBER SYSTEM

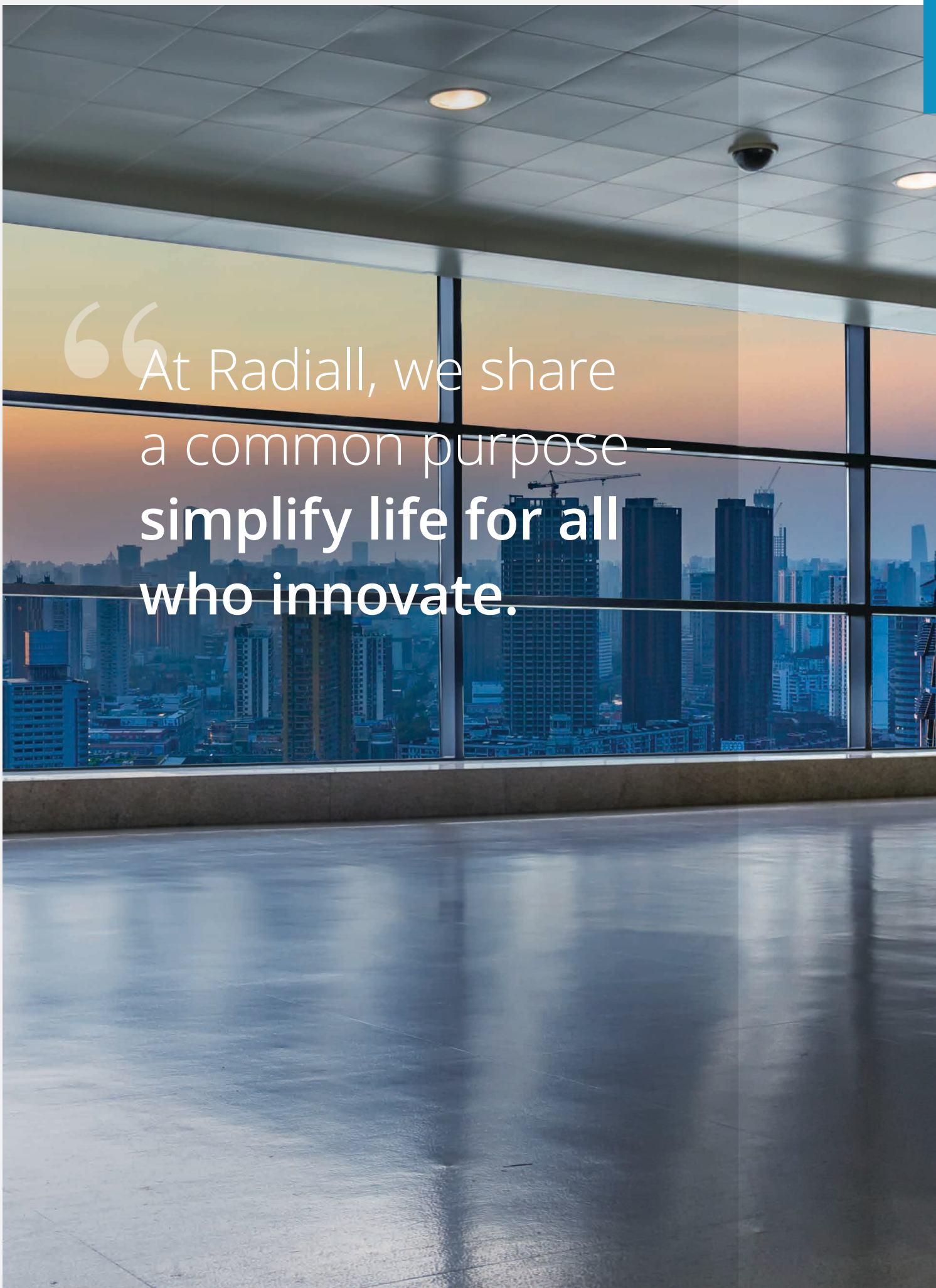


A MODEL NUMBER
- 1000-1999 - SMC
- 2000-2999 - SMB
- 3000-3999 - SLB
- 4000-4999 - N
- 5000-5999 - Adapters
- 6000-6499 - TNC
- 6500-6999 - BNC
- 7000-7199 - SSMC
- 7200-7299 - SSMB
- 7300-7499 - SSLB
- 8000-8999 - Others
- 9000-9999 - SMA - SSMA

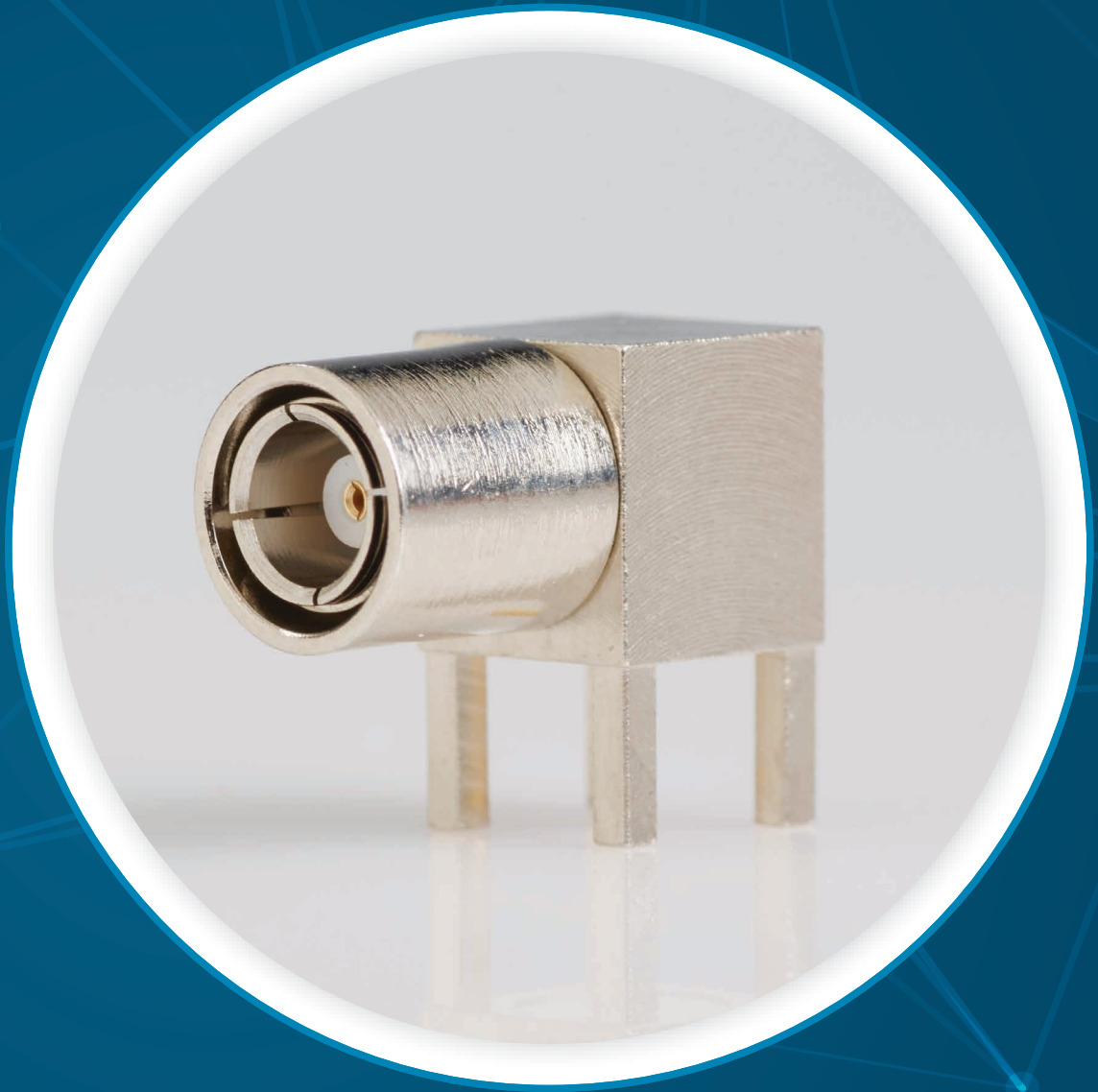
B PLATING
- 1 - Gold
- 6 - Silver
- 7 - Nickel
- 8 - Tin
- 9 - Passivated

C MATERIAL
- 1 - Brass
- 2 - Beryllium copper
- 3 - Stainless steel
- 4 - Brass & Stainless steel
- 6 - Ph bronze
- 7 - Brass over Ni

D CABLE GROUP
- 01 - RG55, RG142, RG223
- 02 - RG178, RG196
- 03 - RG174, RG188, RG316
- 05 - RD196, RD178
- 06 - RG58, RG141
- 07 - RG59, RG62
- 08 - RD188, RD316, RD174
- 09 - .141, RG402
- 10 - .085, RG405
- 11 - .047
- 12 - .250, RG401
- 25 - RD178
- 30 - RG122


“At Radiall, we share a common purpose – **simplify life for all who innovate.**

NOTES



MIL-QPL

SMB.....1-2

SMB

Straight plug for flexible cable Clamp type (Category A)		Pg.
Gold-Plated	Cable	3-6
M39012/67-0004	RG-316	-

Straight plug for flexible cable Crimp type (Category B)		Pg.
Gold-Plated	Cable	3-6
M39012/67B0009	RG-316	-
M39012/67B0010	RG-179	

Straight jack for flexible cable Clamp type (Category A)		Pg.
Gold-Plated	Cable	3-8
M39012/68-0004	RG-316	-

Straight jack for flexible cable Crimp type (Category B)		Pg.
Gold-Plated	Cable	3-8
M39012/68B0009	RG-316	-
M39012/68B0010	RG-179	

Right angle plug for flexible cable Clamp type (Category A)		Pg.
Gold-Plated	Cable	3-8
M39012/69-0004	RG-316	-

Bulkhead jack for flexible cable Clamp type (Category A)		Pg.
Gold-Plated	Cable	3-9
M39012/70-0004	RG-316	-

Rear mount bulkhead receptacle Solder pot contact	Pg.
Gold-Plated	3-10
M39012/71-0001	-

Front mount bulkhead receptacle Solder pot contact	Pg.
Gold-Plated	3-10
M39012/71-0002	-

Straight P.C. board receptacle			Pg.
Gold-Plated	Silver-Plated	Leg Length	3-12
M39012/95-0001	-	0.155	-
M39012/95-0002	-	0.125	
M39012/95-0003	M39012/95-0006	0.093	

Right angle P.C. board receptacle			Pg.
Gold-Plated	Silver-Plated	Leg Length	3-12
M39012/96-0001	-	0.155	-
M39012/96-0002	-	0.125	
M39012/96-0003	M39012/96-0006	0.093	

MIL-PRF-39012 P/N	AEP MIL-QPL Status	AEP Old* MIL-QPL P/N	AEP Commercial Equivalent P/N
M39012/55-3006	Discontinued	9201-9553-902	9201-9553-402
M39012/55-3007	Discontinued	9201-9553-903	9201-9553-503
M39012/55-3008	Discontinued	9201-9553-930	9201-9553-230
M39012/55-3009	Discontinued	9201-9553-901	9201-9553-401
M39012/55-3010	Discontinued	9201-9553-906	9201-9553-206
M39012/55-3025	Discontinued	9101-9573-902	9101-9573-402
M39012/55-3026	Discontinued	9101-9573-903	9101-9973-003
M39012/55-3027	Discontinued	9101-9573-930	9101-9573-230
M39012/55-3028	Discontinued	9101-9573-901	9101-9573-401
M39012/55-3029	Discontinued	9101-9573-906	9101-9573-206
M39012/55-3106	Discontinued	9201-9553-802	9201-9553-302
M39012/55-3107	Discontinued	9201-9553-803	9201-9553-403
M39012/55-3108	Discontinued	9201-9553-830	9201-9553-130
M39012/55-3109	Discontinued	9201-9553-801	9201-9553-301
M39012/55-3110	Discontinued	9201-9553-806	9201-9553-106
M39012/55-3125	Discontinued	9101-9573-802	9101-9573-302
M39012/55-3126	Discontinued	9101-9573-803	9101-9873-003
M39012/55-3127	Discontinued	9101-9573-830	9101-9573-130
M39012/55-3128	Discontinued	9101-9573-801	9101-9573-301
M39012/55-3129	Discontinued	9101-9573-806	9101-9573-106
M39012/59-3006	Discontinued	9230-9553-902	9230-9553-602
M39012/59-3007	Discontinued	9230-9553-903	9230-9553-103
M39012/59-3008	Discontinued	9230-9553-930	9230-9553-130
M39012/59-3009	Discontinued	9230-9553-901	9230-9553-101
M39012/59-3010	Discontinued	9230-9553-906	9230-9553-106
M39012/60-3001	Discontinued	9404-9113-999	9404-9113-009
M39012/60-3002	Discontinued	9408-9113-999	9408-9113-007
M39012/61-3001	Discontinued	9432-9113-999	9432-9113-001
M39012/61-3002	Discontinued	9465-9113-999	9465-9113-001
M39012/67-0003	Discontinued	2002-1551-902	2002-1551-202
M39012/67-0004	Active	2002-1551-903	N/A
M39012/67-0103	Discontinued	2002-6551-902	2002-6551-202
M39012/67-0104	Discontinued	2002-6551-903	2002-6551-603
M39012/67B0008	Discontinued	2002-1571-902	2002-1571-302
M39012/67B0009	Active	2002-1571-903	N/A

*Only applies where status is "Discontinued"; the AEP part is no longer active.

MIL-PRF-39012 P/N	AEP MIL-QPL Status	AEP Old* MIL-QPL P/N	AEP Commercial Equivalent P/N
M39012/67B0010	Active	2002-1571-803	N/A
M39012/67B0013	Discontinued	2002-6571-902	2002-6571-302
M39012/67B0014	Discontinued	2002-6571-903	2002-6571-703
M39012/67B0015	Discontinued	2002-6571-803	2002-6571-603
M39012/68-0003	Discontinued	2001-1551-902	2001-1551-102
M39012/68-0004	Active	2001-1551-903	N/A
M39012/68-0103	Discontinued	2001-6551-902	2001-6551-102
M39012/68-0104	Discontinued	2001-6551-903	2001-6551-203
M39012/68B0008	Discontinued	2001-1571-902	2001-1571-202
M39012/68B0009	Active	2001-1571-903	N/A
M39012/68B0010	Active	2001-1571-803	N/A
M39012/68B0013	Discontinued	2001-6571-902	2001-6571-202
M39012/68B0014	Discontinued	2001-6571-903	2001-6571-603
M39012/68B0015	Discontinued	2001-6571-803	2001-6571-403
M39012/69-0003	Discontinued	2005-1551-902	2005-1551-202
M39012/69-0004	Active	2005-1551-903	N/A
M39012/69-0012	Discontinued	2105-1921-803	2105-1001-803
M39012/69-0017	Discontinued	2105-6921-903	2105-1001-903
M39012/69-0103	Discontinued	2005-6551-902	2005-6551-202
M39012/69-0104	Discontinued	2005-6551-903	2005-6551-403
M39012/69B0008	Discontinued	2105-1521-902	2105-1921-102
M39012/69B0009	Discontinued	2105-1521-903	2105-1921-503
M39012/69B0010	Discontinued	2105-1521-803	2105-1921-603
M39012/69B0013	Discontinued	2105-6521-902	2105-6921-102
M39012/69B0014	Discontinued	2105-6521-903	2105-6921-503
M39012/69B0015	Discontinued	2105-6521-803	2105-6921-603
M39012/70-0003	Discontinued	2003-1551-902	2003-1551-302
M39012/70-0004	Active	2003-1551-903	N/A
M39012/70-0103	Discontinued	2003-6551-902	2003-6551-302
M39012/70-0104	Discontinued	2003-6551-903	2003-6551-603
M39012/70B0008	Discontinued	2003-1571-902	2003-1571-502
M39012/70B0009	Discontinued	2003-1571-903	2003-1571-603
M39012/70B0010	Discontinued	2003-1571-803	2003-1571-403
M39012/70B0013	Discontinued	2003-6571-902	2003-6571-502
M39012/70B0014	Discontinued	2003-6571-903	2003-6571-603

*Only applies where status is "Discontinued"; the AEP part is no longer active.

MIL-PRF-39012 P/N	AEP MIL-QPL Status	AEP Old* MIL-QPL P/N	AEP Commercial Equivalent P/N
M39012/70B0015	Discontinued	2003-6571-803	2003-6571-403
M39012/71-0001	Active	2004-1511-999	N/A
M39012/71-0002	Active	2019-1511-999	N/A
M39012/71-0003	Discontinued	2004-6511-999	2004-6511-012
M39012/71-0004	Discontinued	2019-6511-999	2019-6511-025
M39012/73-0003	Discontinued	1002-1551-902	1002-1551-202
M39012/73-0004	Discontinued	1002-1551-903	1002-1851-003
M39012/73-0103	Discontinued	1002-6551-902	1002-6551-202
M39012/73-0104	Discontinued	1002-6551-903	1002-6851-003
M39012/73B0008	Discontinued	1002-1571-902	1002-1571-102
M39012/73B0009	Discontinued	1002-1571-903	1002-1571-603
M39012/73B0010	Discontinued	1002-1571-803	1002-1571-503
M39012/73B0013	Discontinued	1002-6571-902	1002-6571-102
M39012/73B0014	Discontinued	1002-6571-903	1002-6571-603
M39012/73B0015	Discontinued	1002-6571-803	1002-6571-503
M39012/74-0003	Discontinued	1001-1551-902	1001-1551-102
M39012/74-0004	Discontinued	1001-1551-903	1001-1551-303
M39012/74-0103	Discontinued	1001-6551-902	1001-6551-102
M39012/74-0104	Discontinued	1001-6551-903	1001-6551-303
M39012/74B0008	Discontinued	1001-1571-902	1001-1571-102
M39012/74B0009	Discontinued	1001-1571-903	1001-1571-203
M39012/74B0010	Discontinued	1001-1571-803	1001-1571-103
M39012/74B0014	Discontinued	1001-6571-902	1001-6571-102
M39012/74B0015	Discontinued	1001-6571-903	1001-6571-203
M39012/74B0016	Discontinued	1001-6571-803	1001-6571-103
M39012/75-0003	Discontinued	1005-1551-902	1005-1551-202
M39012/75-0004	Discontinued	1005-1551-903	1005-1551-303
M39012/75-0103	Discontinued	1005-6551-902	1005-6551-202
M39012/75-0104	Discontinued	1005-6551-903	1005-6551-303
M39012/75B0008	Discontinued	1105-1521-902	1105-1521-402
M39012/75B0009	Discontinued	1105-1521-903	1105-1821-003
M39012/75B0010	Discontinued	1105-1521-803	1105-1521-703
M39012/75B0014	Discontinued	1105-6521-902	1105-6521-402
M39012/75B0015	Discontinued	1105-6521-903	1105-6821-003
M39012/75B0016	Discontinued	1105-6521-803	1105-6521-703

*Only applies where status is "Discontinued"; the AEP part is no longer active.

MIL-PRF-39012 P/N	AEP MIL-QPL Status	AEP Old* MIL-QPL P/N	AEP Commercial Equivalent P/N
M39012/76-0003	Discontinued	1003-1551-902	1003-1551-102
M39012/76-0004	Discontinued	1003-1551-903	1003-1551-203
M39012/76-0103	Discontinued	1003-6551-902	1003-6551-102
M39012/76-0104	Discontinued	1003-6551-903	1003-6551-203
M39012/76B0008	Discontinued	1003-1571-902	1003-1571-102
M39012/76B0009	Discontinued	1003-1571-903	1003-1571-303
M39012/76B0010	Discontinued	1003-1571-803	1003-1571-203
M39012/76B0014	Discontinued	1003-6571-902	1003-6571-102
M39012/76B0015	Discontinued	1003-6571-903	1003-6571-303
M39012/76B0016	Discontinued	1003-6571-803	1003-6571-203
M39012/77-0001	Discontinued	1004-1511-999	1004-1511-011
M39012/77-0002	Discontinued	1019-1511-999	1019-1511-017
M39012/77-0003	Discontinued	1004-6511-999	1004-6511-011
M39012/77-0004	Discontinued	1019-6511-999	1019-6511-017
M39012/79B3003	Discontinued	9501-9593-910	9501-9593-210
M39012/79B3004	Discontinued	9501-9593-909	9501-9593-509
M39012/79B3103	Discontinued	9501-9593-810	9501-9593-110
M39012/79B3104	Discontinued	9501-9593-809	9501-9593-409
M39012/83B3003	Discontinued	9530-9593-910	9530-9593-210
M39012/83B3004	Discontinued	9530-9593-909	9530-9593-209
M39012/92B3001	Discontinued	9301-1063-909	9301-1863-009
M39012/92B3101	Discontinued	9301-1003-909	9301-1803-009
M39012/95-0001	Active	2009-1511-999	N/A
M39012/95-0002	Active	2009-1511-899	N/A
M39012/95-0003	Active	2009-1511-799	N/A
M39012/95-0004	Discontinued	2009-6511-999	2009-6511-048
M39012/95-0005	Discontinued	2009-6511-899	2009-6511-052
M39012/95-0006	Active	2009-6511-799	N/A
M39012/96-0001	Active	2010-1511-999	N/A
M39012/96-0002	Active	2010-1511-899	N/A
M39012/96-0003	Active	2010-1511-799	N/A
M39012/96-0004	Discontinued	2010-6511-999	2010-6511-032
M39012/96-0005	Discontinued	2010-6511-899	2010-6511-031
M39012/96-0006	Active	2010-6511-799	N/A

*Only applies where status is "Discontinued"; the AEP part is no longer active.

SMA

SECTION 2 TABLE OF CONTENTS

Specifications....2-3
Cable Attachment Methods....2-4
Semi-rigid Connectors....2-8
Flexible Cable Connectors....2-14
Panel (Flange Mount) Receptacles....2-19
Bulkhead Receptacles....2-28
Knurl Mount....2-30
P.C. Board Receptacles....2-31
Stripline Receptacles....2-32
Hermetic Seal Launchers....2-33
Adapters Within Series....2-52

All AEP SMA series connectors meet or exceed MIL-PRF-39012 requirements, offering good electrical performance to 18 GHz. Our unique method of captivating contacts and insulators greatly reduces RF leakage by eliminating epoxy fill holes in the connector body (see page 2-7 for details).

Most of the items shown are available with either gold-plated bodies or a less expensive finish (nickel-plating or passivated finish); part numbers for each finish are shown in the product section. The coupling nuts of the plug connectors are passivated in all cases.

Pages 2-4 through 2-6 show the various options for cable attachment types. Standard cables for use with AEP SMA connectors are shown at the bottom of the appropriate product pages. If you require an SMA for use with a cable type other than those shown, please contact your local representative. A complete listing of cable groups is on page 13-6.

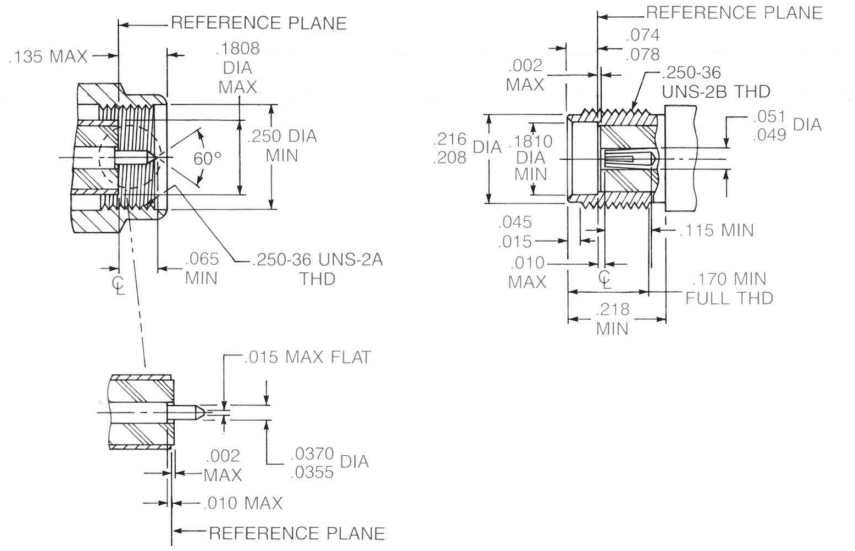
The index listing for each connector shows the appropriate assembly instruction number and trim code; assembly instructions start on page 13-7.

Please contact us directly for custom solutions as we have made hundreds of variations of the items shown here and can likely supply a solution for special connector requirements.

Factory-built cable assemblies using these connectors are available from AEP.

INTERFACE DIMENSIONS

PER MIL-STD-348



SPECIFICATIONS

MIL-PRF-39012

MATERIALS:

Body parts: Stainless steel per ASTM-A-582, type 303
Contacts: Beryllium copper per ASTM B196, condition HT
Insulators: Teflon TFE per ASTM-D-1710
Gaskets: Silicone rubber per ZZ-R-765, class 2B, grade 65-75

FINISH:

Center contacts: Gold-plate per MIL-G-45204
All other parts are finished to meet MIL-PRF-39012 corrosion requirements.

ELECTRICAL:

Insulation resistance:
Greater than 5,000 MΩ
Dielectric withstanding voltage:
Per MIL-STD-202, method 301
RF highpot voltage:
335-675 VAC at 5-7.5 MHz, dependent on cable type
Contact resistance: 3 mΩ max
RF leakage: -60 dB min, 2-3 GHz
Insertion loss: 0.03×√f (GHz) max test frequency 6 GHz
VSWR (straight cable plugs and jacks):
RG178: 1.20+[0.025×f (GHz)], DC-12.4 GHz
RG316: 1.15+[0.020×f (GHz)], DC-12.4 GHz
RG142: 1.15+[0.010×f (GHz)], DC-12.4 GHz
RG402 (non-captive contact): 1.05+[0.008×f (GHz)], DC-18 GHz
RG402 (captive contact): 1.05+[0.001×f (GHz)], DC-18 GHz
RG405 (captive contact): 1.07+[0.010×f (GHz)], DC-18 GHz
RG405 (non-captive contact): 1.07+[0.008×f (GHz)], DC-18 GHz

VSWR SPECIFICATIONS ARE NOT APPLICABLE TO NON-CABLED CONNECTORS.
Impedance: 50 Ω
Frequency range: DC to 8, 12.4 or 18 GHz, dependent on cable type and configuration

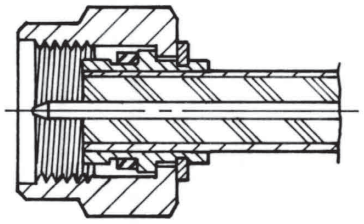
MECHANICAL:

Engage/disengage force: 2 lb max
Mating characteristics: Dimensions per above
For female contacts (after 5 insertions of 0.0375 Ø pin, 0.040 min depth):
Insertion force with 0.037 min Ø pin, 2 lb max
Withdrawal force for 0.0355 max Ø pin, 1 oz min
Contact retention (captive contact connectors):
6 lb min axial force
Durability: 500 mating cycles

ENVIRONMENTAL: (per MIL-STD-202)

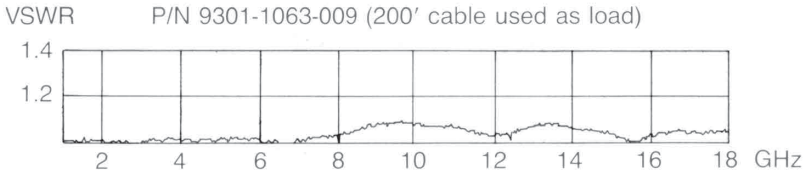
Vibration: Method 204, test condition D
Mechanical shock: Method 213, condition I
Thermal shock: Method 107, condition B
Corrosion: Method 101, condition B, 5% salt solution
Moisture resistance: Method 106
Corona level: Corona free at 70,000 ft
Voltage dependent on cable size
Temperature rating: -65°C to + 165°C

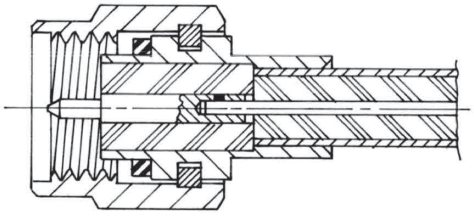
CABLE ATTACHMENT METHODS



Direct Solder for Semi-Rigid Cable
(Cable Center Conductor Used as Contact)

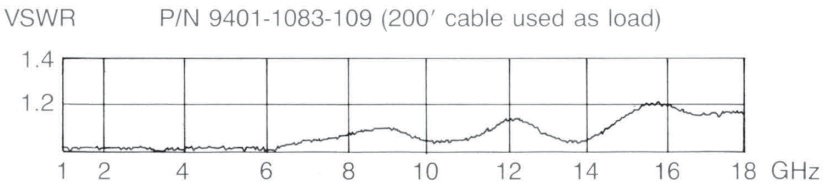
The use of this type of connector ensures the best possible electrical performance since there are no discontinuities introduced by a separate contact. It is best used in applications not requiring frequent mating and unmating, since the pointed center conductor will tend to shed metal chips when mated with an SMA female contact.

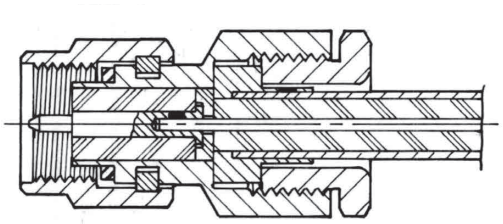




Direct Solder for Semi-Rigid Cable
(Provided with Contact and Insulator)

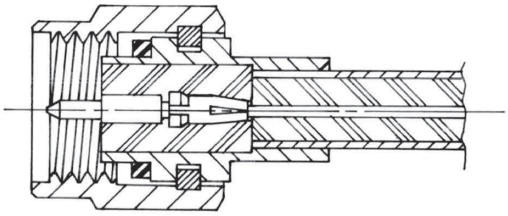
Although this type of connector will have slightly higher VSWR versus when the center conductor is used as a contact, it does provide an outer conductor with no brass from the cable jacket exposed to the interface. This, combined with a center contact with a rounded point, ensures clean interfaces through many mating cycles.





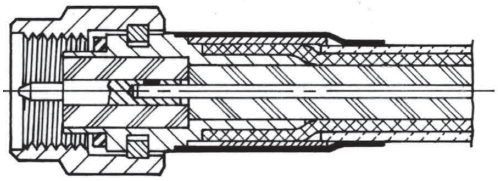
Solder-Clamp for Semi-Rigid Cable

This attachment method is the most useful for right angle plugs and all bulkhead jacks. After the connector is assembled to the cable, it can be repositioned relative to the cable by loosening the clamp nut. When the proper orientation is reached, it can be held in the correct position by retightening the nut. The electrical performance is similar to direct-solder plugs with contacts.



Direct Solder with Captive Contact for Semi-Rigid Cable

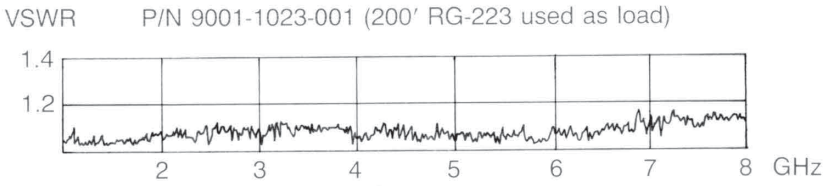
These connectors have electrical performance similar to types with non-captive contacts, but assembly is much easier. The cable is simply stripped and inserted into the connector until it stops, and the jacket soldered to the body. The proper contact gap is automatically held and no contact soldering is required.

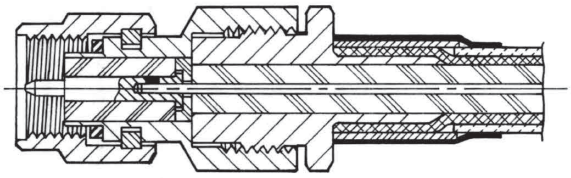


Crimp Type for Flexible Cable
(Non-captive Contact)

This attachment method provides the best possible electrical performance with flexible cable and is the easiest to assemble.

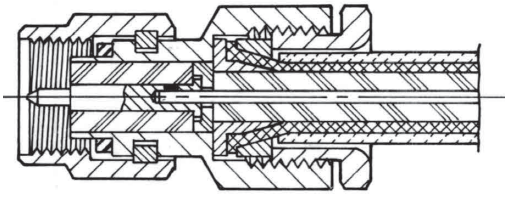
Solder-type connectors for flexible cable use this construction, but have a solder hole in the side of the sleeve for soldering the cable braid. We recommend against using this method, as the soldering heat damages the cable dielectric.





Crimp Type for Flexible Cable
(Captive Contact)

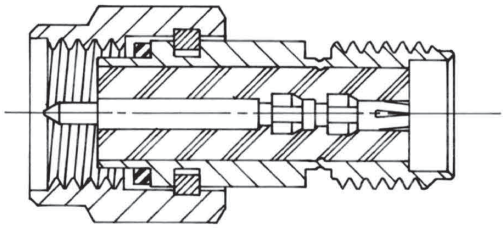
This attachment method mechanically captivates the center contact to eliminate movement during cable flexure or thermal stress.

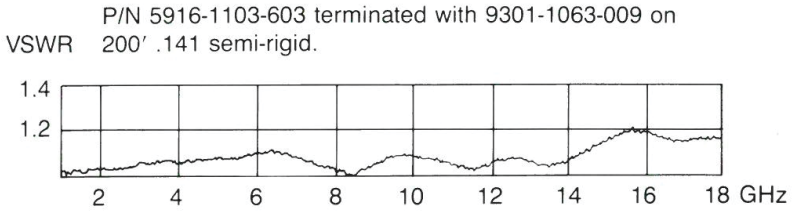


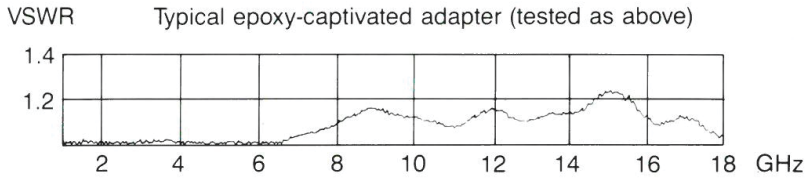
Clamp Type for Flexible Cable
(Captive Contact)

These connectors can be assembled without special tooling and are field replaceable.

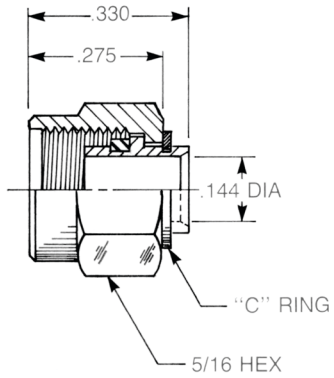
All AEP SMA receptacles and adapters use our unique mechanical captivation for contacts and insulators. This method provides retention strengths to meet MIL-PRF-39012 requirements, and eliminates RF leakage from epoxy fill holes. The contact barbs and body staking are designed and located to provide electrical performance as good as, or better than, epoxy captivation. The test plots below illustrate the electrical performance of our captivation versus a typical epoxy-captivated adapter of the same configuration.







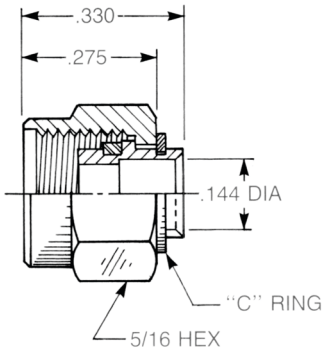
Semi-Rigid Cable Plugs



Straight Plug

- Direct solder attachment
- Retractable coupling nut
- Cable center conductor used as contact

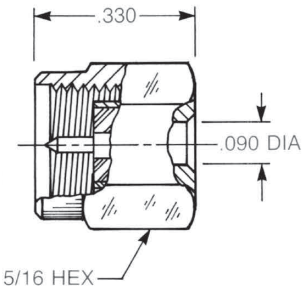
For 0.141″ semi-rigid:
9301-1063-009 (Gold-plated)
9301-7063-009 (Nickel-plated)



Straight Plug

- Direct solder attachment
- Retractable coupling nut
- Cable center conductor used as contact
- Stepped body for use in applications requiring frequent mating and unmating

For 0.141″ semi rigid:
9301-1063-109 (gold-plated)
9301-7063-109 (nickel-plated)

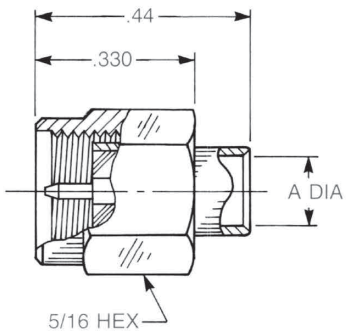


Straight Plug

- Direct solder attachment
- Provided with contact and insulator
- Non-captive contact
- Short body length allows very tight cable bend in dense packaging applications

For 0.085″ semi-rigid:
9401-1083-210 (Gold-plated)
9401-7083-210 (Nickel-plated)

Semi-Rigid Cable Plugs

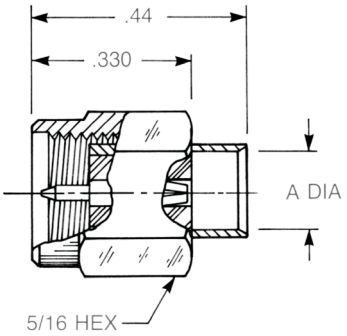


Straight Plug

- Direct solder attachment
- Provided with contact and insulator
- Non-captive contact

For 0.085″ semi-rigid (A = 0.089):
9401-1083-010 (Gold-plated)
9401-7083-010 (Nickel-plated)

For 0.141″ semi-rigid (A = 0.144):
9401-1083-109 (Gold-plated)
9401-7083-109 (Nickel-plated)

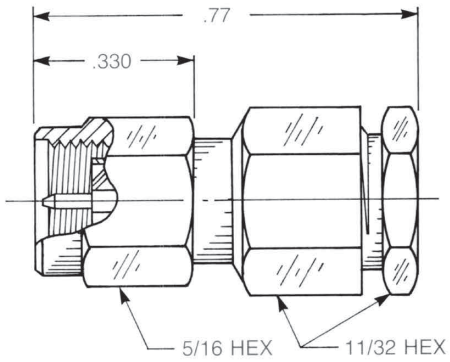


Straight Plug

- Direct solder attachment
- Provided with contact and insulator
- Captive contact for one-step cable assembly

For 0.085″ semi-rigid (A = 0.089):
9401-1583 -010 (Gold-plated)
9401-7583-010 (Nickel-plated)

For 0.141″ semi-rigid (A = 0.144):
9401-1583-109 (Gold-plated)
9401-7583-109 (Nickel-plated)



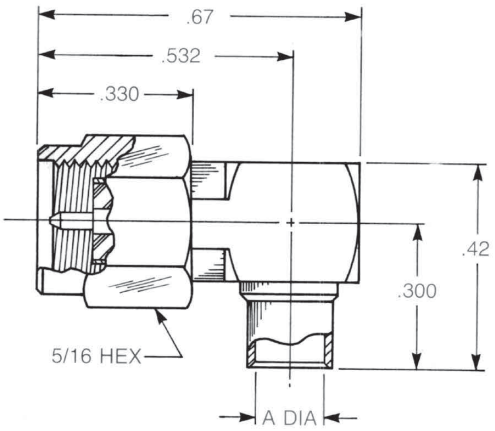
Straight Plug

- Solder-clamp attachment
- Captive contact

For 0.085″ semi-rigid:
9501-1593-010 (Gold-plated)
9501-9593-010 (Passivated)

For 0.141″ semi-rigid:
9501-1593-009 (Gold-plated)
9501-9593-009 (Passivated)

Semi-Rigid Cable Plugs

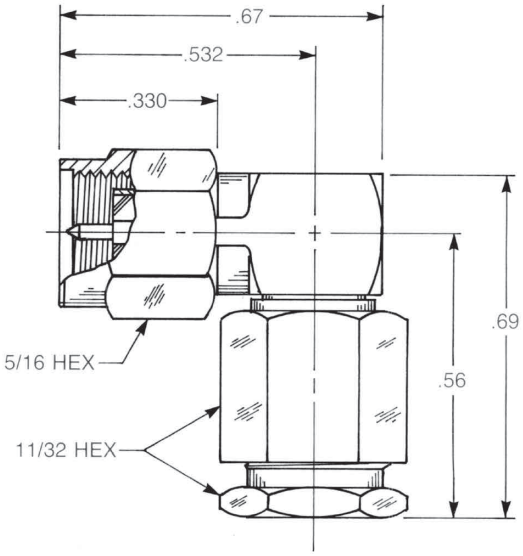


Right Angle Plug

- Direct solder attachment

For 0.085″ semi-rigid (A = 0.089):
9443-1563-010 (Gold-plated)
9443-7563-010 (Nickel-plated)

For 0.141″ semi-rigid (A = 0.144):
9443-1563-009 (Gold-plated)
9443-7563-009 (Nickel-plated)



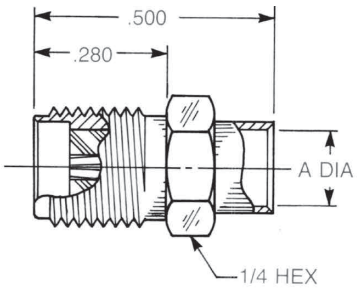
Right Angle Plug

- Solder clamp attachment

For 0.085″ semi-rigid:
9543-1593-010 (Gold-plated)
9543-9593-010 (Passivated)

For 0.141″ semi-rigid:
9543-1593-009 (Gold-plated)
9543-9593-009 (Passivated)

Semi-Rigid Cable Jacks

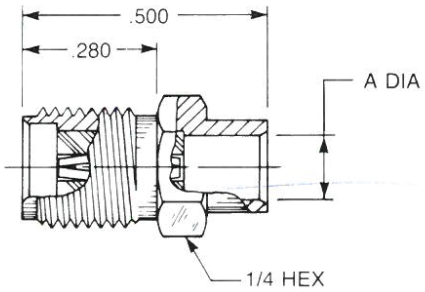


Straight Jack

- Direct solder attachment
- Non-captive contact

For 0.085″ semi-rigid (A = 0.089):
9402-1083-010 (Gold-plated)
9402-7083-010 (Nickel-plated)

For 0.141″ semi-rigid (A = 0.144):
9402-1083-009 (Gold-plated)
9402-7083-009 (Nickel-plated)

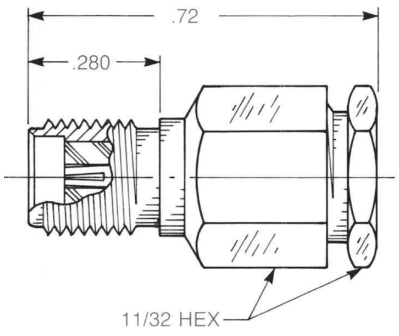


Straight Jack

- Direct solder attachment
- Captive contact for one-step cable assembly

For 0.085″ semi-rigid (A = 0.089):
9402-1583-010 (Gold-plated)
9402-7583-010 (Nickel-plated)

For 0.141″ semi-rigid (A = 0.144):
9402-1583-009 (Gold-plated)
9402-7583-009 (Nickel-plated)



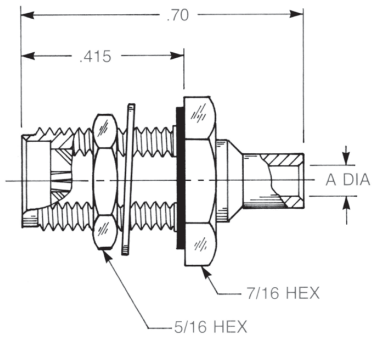
Straight Jack

- Solder clamp attachment
- Captive contact

For 0.085″ semi-rigid:
9502-1593-010 (Gold-plated)
9502-9593-010 (Passivated)

For 0.141″ semi-rigid:
9502-1593-009 (Gold-plated)
9502-9593-009 (Passivated)

Semi-Rigid Cable Jacks

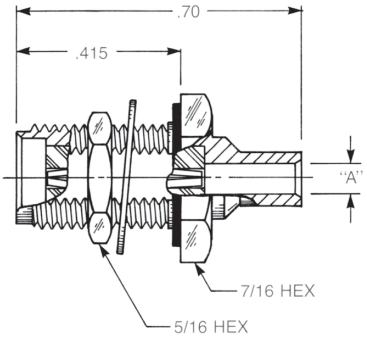


Straight Bulkhead Jack

- Direct solder attachment
- With mounting gasket
- Non-captive contact

For 0.085″ semi-rigid (A = 0.089)
9453-1083-010 (Gold-plated)
9453-7083-010 (Nickel-plated)

For 0.141″ semi-rigid (A = 0.144):
9453-1083-009 (Gold-plated)
9453-7083-009 (Nickel-plated)

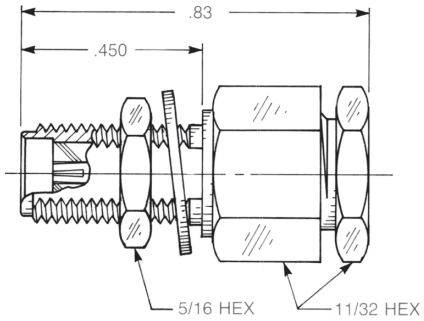


Straight Bulkhead Jack

- Direct solder attachment
- With mounting gasket
- Captive contact for one-step cable assembly

For 0.085″ semi-rigid (A = 0.089):
9453-1583-010 (Gold-plated)
9453-7583-010 (Nickel-plated)

For 0.141″ semi-rigid (A = 0.0144):
9453-1583-009 (Gold-plated)
9453-7583-009 (Nickel-plated)

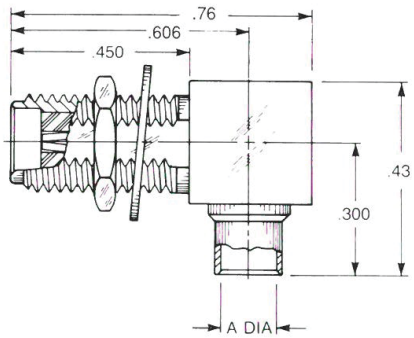


Straight Bulkhead Jack

- Solder clamp attachment
- Captive contact

For 0.085″ semi-rigid:
9530-1593-010 (Gold-plated)
9530-9593-010 (Passivated)

For 0.141″ semi-rigid:
9530-1593-009 (Gold-plated)
9530-9593-009 (Passivated)



Right Angle Bulkhead Jack

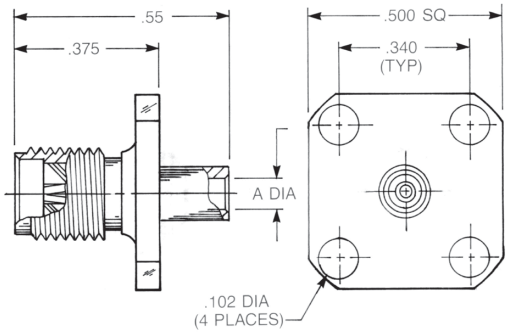
- Direct solder attachment

For 0.085″ semi-rigid (A = 0.089):
9613-1563-010 (Gold-plated)
9613-7563-010 (Nickel-plated)

For 0.141″ semi-rigid (A = 0.144):
9613-1563-009 (Gold-plated)
9613-7563-009 (Nickel-plated

Designed for use with 0.125″ max thick panel.

Semi-Rigid Cable Jacks

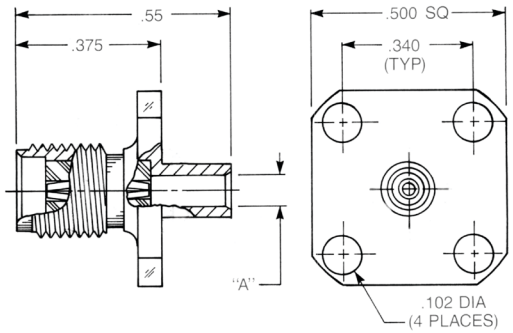


Straight Panel Jack

- Direct solder attachment
- Square flange
- Non-captive contact

For 0.085″ semi-rigid (A = 0.089):
9431-1083-010 (Gold-plated)
9431-7083-010 (Nickel-plated)

For 0.141″ semi-rigid (A = 0.144):
9431-1083-009 (Gold-plated)
9431-7083-009 (Nickel-plated)

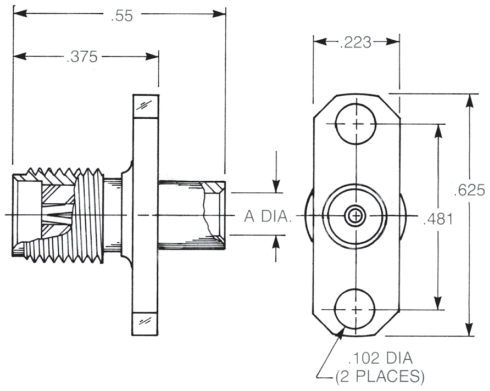


Straight Panel Jack

- Direct solder attachment
- Square flange
- Captive contact for one-step cable assembly

For 0.085″ semi-rigid (A = 0.089):
9431-1583-010 (Gold-plated)
9431-7583-010 (Nickel-plated)

For 0.141″ semi-rigid (A = 0.144)
9431-1583-009 (Gold-plated)
9431-7583-009 (Nickel-plated)

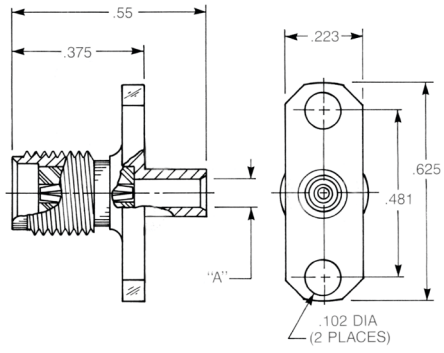


Straight Panel Jack

- Direct solder attachment
- 2-hole flange
- Non-captive contact

For 0.085″ semi-rigid (A = 0.089):
9441-1083-010 (Gold-plated)
9441-7083-010 (Nickel-plated)

For 0.141″ semi-rigid (A = 0.144):
9441-1083-009 (Gold-plated)
9441-7083-009 (Nickel-plated)



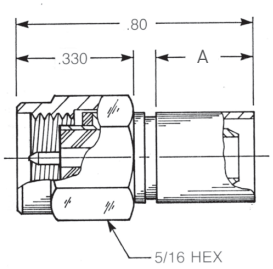
Straight Panel Jack

- Direct solder attachment
- 2-hole flange
- Captive contact for one-step cable assembly

For 0.085″ semi-rigid (A = 0.089):
9441-1583-010 (Gold-plated)
9441-7583-010 (Nickel-plated)

For 0.141″ semi-rigid (A = 0.144):
9441-1583-009 (Gold-plated)
9441-7583-009 (Nickel-plated)

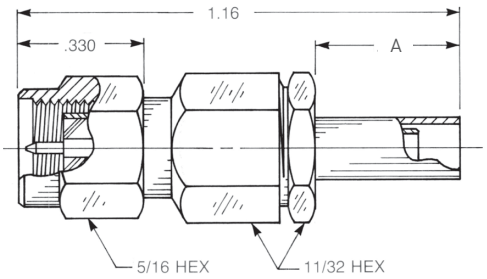
Flexible Cable Plugs



Straight Plug
- Non-captive contact

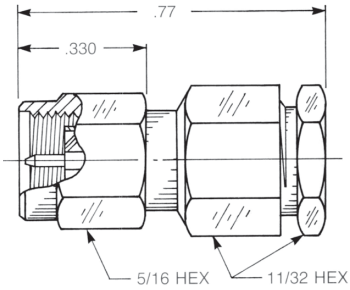
Crimp type:
9001-1023-0XX (Gold-plated)
9001-9023-0XX (Passivated)

Solder type:
9001-1033-0XX (Gold-plated)



Straight Plug
- Captive contact

Crimp type:
9101-1573-0XX (Gold-plated)
9101-9573-0XX (Passivated)



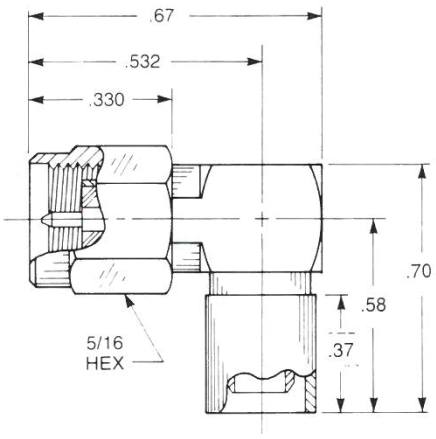
Straight Plug
- Captive contact

Clamp type:
9201-1553-0XX (Gold-plated)
9201-9553-0XX (Passivated)

Substitute XX with the Appropriate Cable Group Below			
01	RG142, RG223, M17/60, M17/84, M17/158	04	RG180, RG195, M17/95
02	RG178, RG196, M17/93, M17/169	05	RG178DS, RG196DS
03	RG174, RG179, RG316, M17/113,	06	RG58, RG141, RG303, M17/111, M17/155
	M17/119, M17/172, M17/173	19	RG174DS, RG316DS, M17/152, Times RD316

A Dim = 0.303 for cable groups 01, 04 and 06
A Dim = 0.375 for cable groups 02, 03, 05 and 19

Flexible Cable Plugs

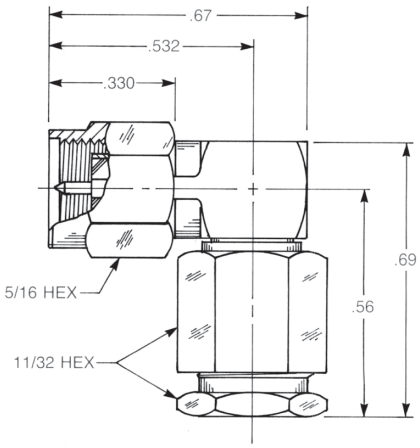


Right Angle Plug

- Captive contact

Crimp type:
9043-1523-0XX (Gold-plated)
9043-9523-0XX (Passivated)

Solder type:
9043-1533-0XX (Gold-plated)



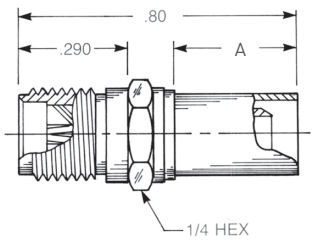
Right Angle Plug

- Captive contact

Clamp type:
9243-1553-0XX (Gold-plated)
9243-9553-0XX (Passivated)

Substitute XX with the Appropriate Cable Group Below			
01	RG142, RG223, M17/60, M17/84, M17/158	04	RG180, RG195, M17/95
02	RG178, RG196, M17/93, M17/169	05	RG178DS, RG196DS
03	RG174, RG179, RG316, M17/113,	06	RG58, RG141, RG303, M17/111, M17/155
	M17/119, M17/172, M17/173	19	RG174DS, RG316DS, M17/152, Times RD316

Flexible Cable Jacks

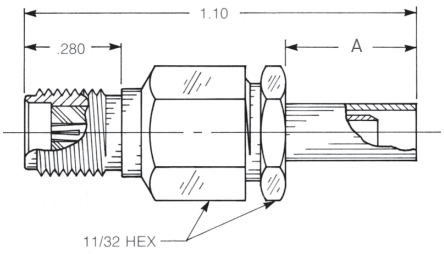


Straight Jack

- Non-captive contact

Crimp type:
9002-1023-0XX (Gold-plated)
9002-9023-0XX (Passivated)

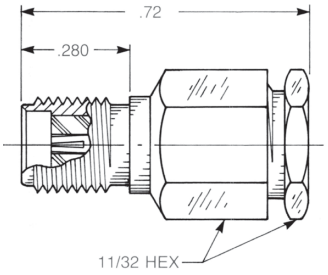
Solder type:
9002-1033-0XX (Gold-plated)



Straight Jack

- Captive contact

Crimp type:
9102-1573-0XX (Gold-plated)
9102-9573-0XX (Passivated)



Straight Jack

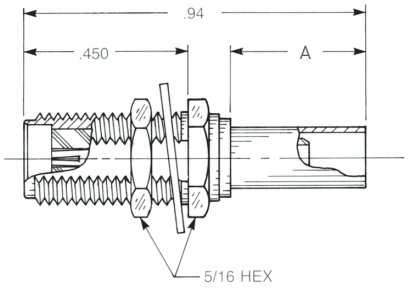
- Captive contact

Clamp type:
9202-1553-0XX (Gold-plated)
9202-9553-0XX (Passivated)

Substitute XX with the Appropriate Cable Group Below			
01	RG142, RG223, M17/60, M17/84, M17/158	04	RG180, RG195, M17/95
02	RG178, RG196, M17/93, M17/169	05	RG178DS, RG196DS
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	06	RG58, RG141, RG303, M17/111, M17/155
		19	RG174DS, RG316DS, M17/152, Times RD316

A Dim = 0.303 for cable groups 01, 04 and 06
A Dim = 0.375 for cable groups 02, 03, 05 and 19

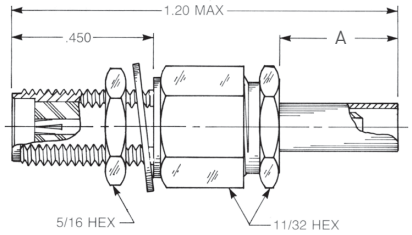
Flexible Cable Jacks



Straight Bulkhead Jack
- Non-captive contact

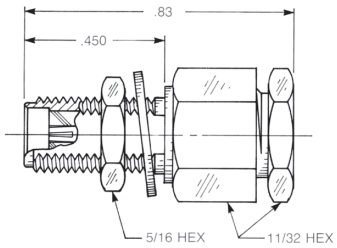
Crimp type:
9030-1023-0XX (Gold-plated)
9030-9023-0XX (Passivated)

Solder type:
9030-1033-0XX (Gold-plated)



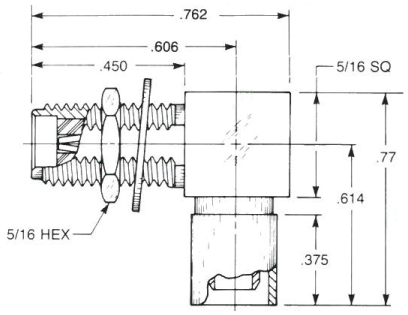
Straight Bulkhead Jack
- Captive contact

Crimp type:
9130-1573-0XX (Gold-plated)
9130-9573-0XX (Passivated)



Straight Bulkhead Jack
- Captive contact

Clamp type:
9230-1553-0XX (Gold-plated)
9230-9553-0XX (Passivated)



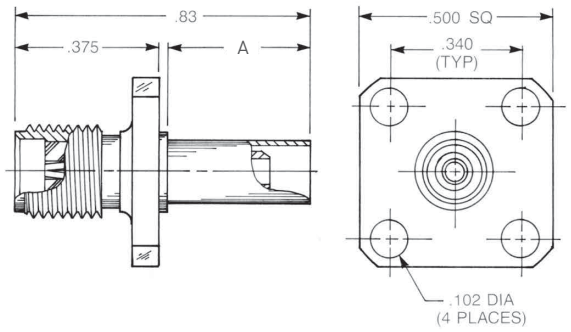
Right Angle Bulkhead Jack

Crimp type:
9613-1523-0XX (Gold-plated)
9613-9523-0XX (Passivated)

Substitute XX with the Appropriate Cable Group Below			
01	RG142, RG223, M17/60, M17/84, M17/158	04	RG180, RG195, M17/95
02	RG178, RG196, M17/93, M17/169	05	RG178DS, RG196DS
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	06	RG58, RG141, RG303, M17/111, M17/155
		19	RG174DS, RG316DS, M17/152, Times RD316

A Dim = 0.303 for cable groups 01, 04 and 06
A Dim = 0.375 for cable groups 02, 03, 05 and 19
Designed for use with 0.125″ max thick panel.

Flexible Cable Jacks

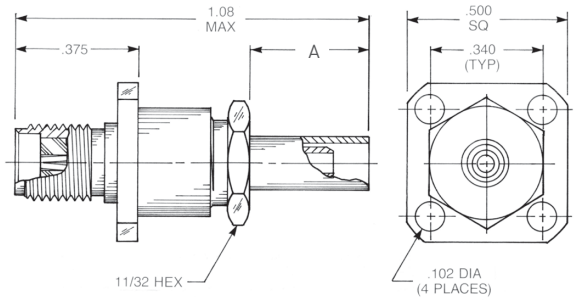


Straight Panel Jack

- Non-captive contact
- Square flange

Crimp type:
9031-1023-0XX (Gold-plated)
9031-9023-0XX (Passivated)

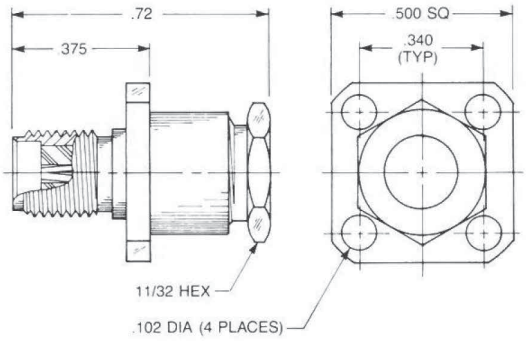
Solder type:
9031-1033-0XX (Gold-plated)



Straight Panel Jack

- Captive contact
- Square flange

Crimp type:
9131-1573-0XX (Gold-plated)
9131-9573-0XX (Passivated)



Straight Panel Jack

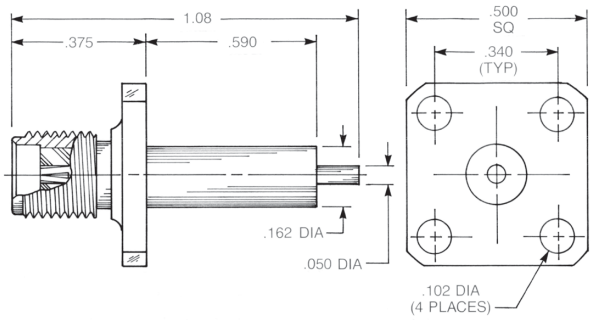
- Captive contact
- Square flange

Clamp type:
9231-1553-0XX (Gold-plated)
9231-9553-0XX (Passivated)

Substitute XX with the Appropriate Cable Group Below			
01	RG142, RG223, M17/60, M17/84, M17/158	04	RG180, RG195, M17/95
02	RG178, RG196, M17/93, M17/169	05	RG178DS, RG196DS
03	RG174, RG179, RG316, M17/113,	06	RG58, RG141, RG303, M17/111, M17/155
	M17/119, M17/172, M17/173	19	RG174DS, RG316DS, M17/152, Times RD316

A Dim = 0.303 for cable groups 01, 04 and 06
A Dim = 0.375 for cable groups 02, 03, 05 and 19

Panel Jack Receptacles

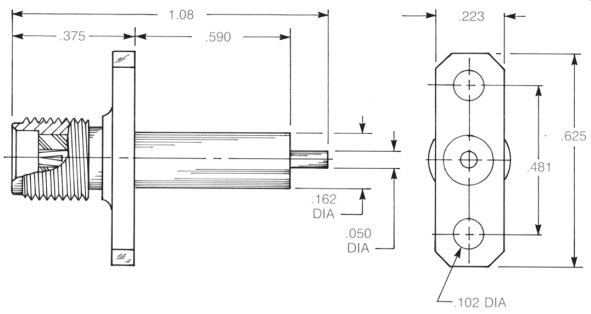


Straight Panel Jack Receptacle

- Extended contact and insulator
- ½″ square flange

Captive contact:
9004-1113-000 (Gold-plated)
9004-9113-000 (Passivated)

Non-captive contact:
9004-1213-000 (Gold-plated)
9004-9213-000 (Passivated)

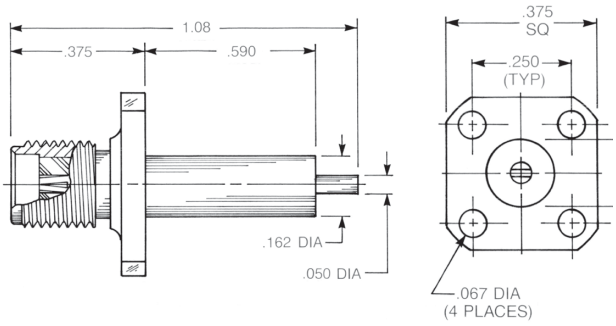


Straight Panel Jack Receptacle

- Extended contact and insulator
- 2-hole flange

Captive contact:
9008-1113-000 (Gold-plated)
9008-9113-000 (Passivated)

Non-captive contact:
9008-1213-000 (Gold-plated)
9008-9213-000 (Passivated)

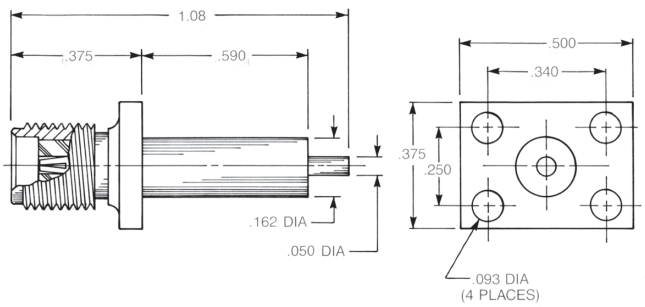


Straight Panel Jack Receptacle

- Extended contact and insulator
- ⅜″ square flange

Captive contact:
9076-1113-000 (Gold-plated)
9076-9113-000 (Passivated)

Non-captive contact:
9076-1213-000 (Gold-plated)
9076-9213-000 (Passivated)



Straight Panel Jack Receptacle

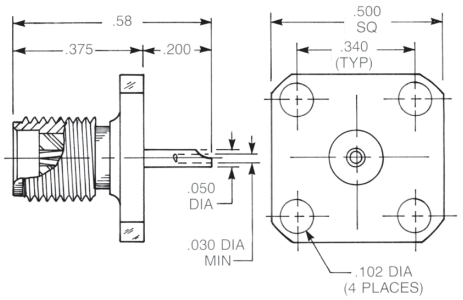
- Extended contact and insulator
- Rectangular flange

Captive contact:
9007-1113-000 (Gold-plated)
9007-9113-000 (Passivated)

Non-captive contact:
9007-1213-000 (Gold-plated)
9007-9213-000 (Passivated)

Additional contact and insulator diameters and lengths available upon request.

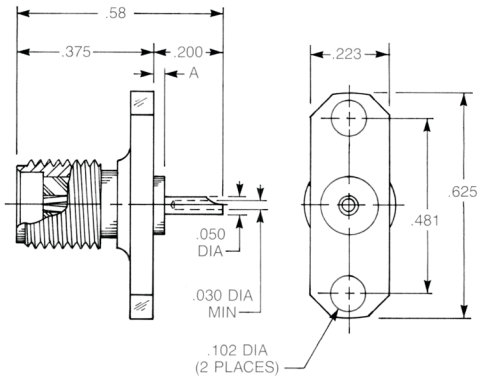
Panel Jack Receptacles



Straight Panel Jack Receptacle

- Solder pot contact
- ½″ square flange

Captive contact:
9404-1113-000 (Gold-plated)
9404-9113-000 (Passivated)

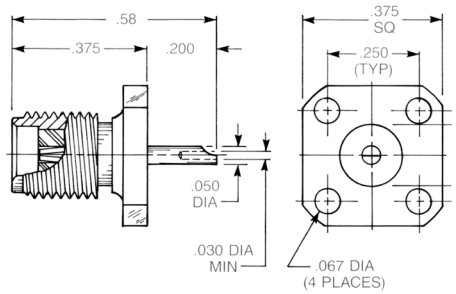


Straight Panel Jack Receptacle

- Solder pot contact
- 2-hole flange

Captive contact (A = 0.030):
9408-1113-000 (Gold-plated)
9408-9113-000 (Passivated)

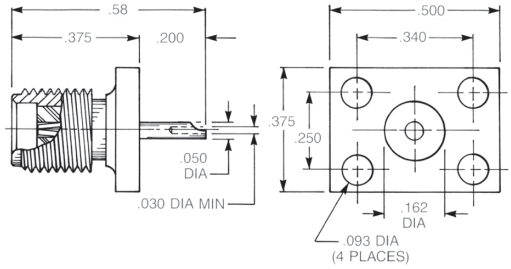
Captive contact (A = 0.000):
9408-1113-002 (Gold-plated)
9408-9113-002 (Passivated)



Straight Panel Jack Receptacle

- Solder pot contact
- ⅜″ square flange

Captive contact:
9476-1113-000 (Gold-plated)
9476-9113-000 (Passivated)

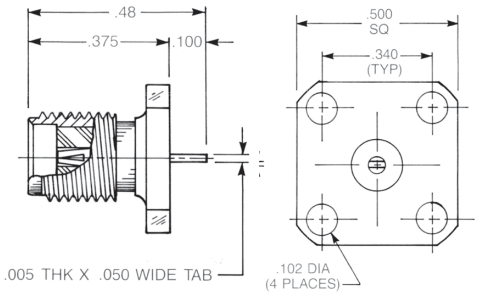


Straight Panel Jack Receptacle

- Solder pot contact
- Rectangular flange

Captive contact:
9407-1113-000 (Gold-plated)
9407-9113-000 (Passivated)

Panel Jack Receptacles

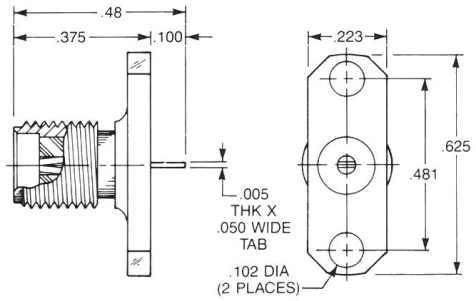


Straight Panel Jack Receptacle

- Tab contact
- ½″ square flange

Captive contact:
9104-1113-000 (Gold-plated)
9104-9113-000 (Passivated)

Non-captive contact:
9104-1213-000 (Gold-plated)
9104-9213-000 (Passivated)

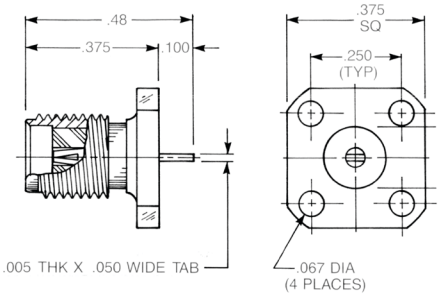


Straight Panel Jack Receptacle

- Tab contact
- 2-hole flange

Captive contact:
9108-1113-000 (Gold-plated)
9108-9113-000 (Passivated)

Non-captive contact:
9108-1213-000 (Gold-plated)
9108-9213-000 (Passivated)

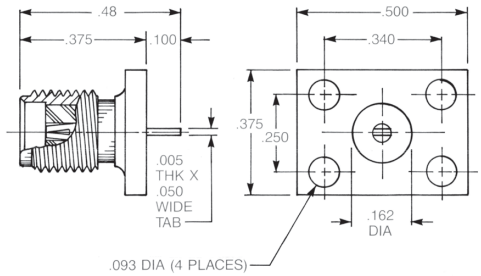


Straight Panel Jack Receptacle

- Tab contact
- ⅜″ square flange

Captive contact:
9176-1113-000 (Gold-plated)
9176-9113-000 (Passivated)

Non-captive contact:
9176-1213-000 (Gold-plated)
9176-9213-000 (Passivated)



Straight Panel Jack Receptacle

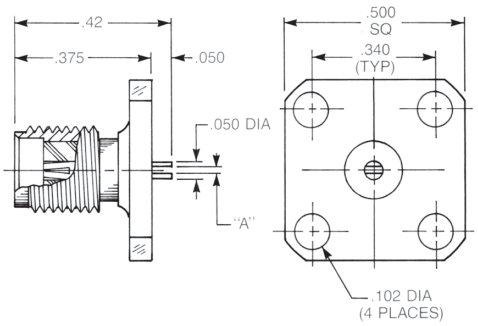
- Tab contact
- Rectangular flange

Captive contact:
9107-1113-000 (Gold-plated)
9107-9113-000 (Passivated)

Non-captive contact:
9107-1213-000 (Gold-plated)
9107-9213-000 (Passivated)

Additional tab contacts available in other lengths, widths and thicknesses.

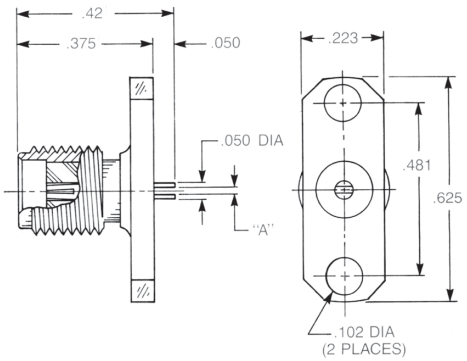
Panel Jack Receptacles



Straight Panel Jack Receptacle

- Slotted contact
- ½″ square flange

Dim. A	Captive contact:
0.012	**9204-1113-002** (Gold-plated)
	9204-9113-002 (Passivated)
0.018	**9204-1113-001** (Gold-plated)
	9204-9113-001 (Passivated)
0.025	**9204-1113-003** (Gold-plated)
	9204-9113-003 (Passivated)
	Non-captive contact:
0.012	**9204-1213-002** (Gold-plated)
	9204-9213-002 (Passivated)
0.018	**9204-1213-001** (Gold-plated)
	9204-9213-001 (Passivated)
0.025	**9204-1213-003** (Gold-plated)
	9204-9213-003 (Passivated)



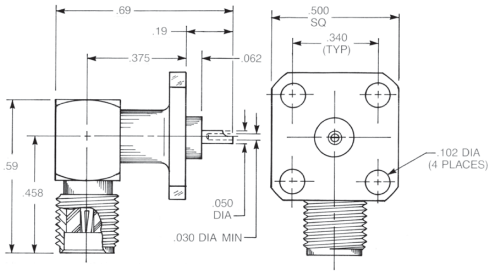
Straight Panel Jack Receptacle

- Slotted contact
- 2-hole flange

Dim. A	Captive contact:
0.012	**9208-1113-000** (Gold-plated)
	9208-9113-000 (Passivated)
0.018	**9208-1113-001** (Gold-plated)
	9208-9113-001 (Passivated)
0.025	**9208-1113-002** (Gold-plated)
	9208-9113-002 (Passivated)
	Non-captive contact:
0.012	**9208-1213-000** (Gold-plated)
	9208-9213-000 (Passivated)
0.018	**9208-1213-001** (Gold-plated)
	9208-9213-001 (Passivated)
0.025	**9208-1213-002** (Gold-plated)
	9208-9213-002 (Passivated)

Slotted contacts available in other widths and depths.

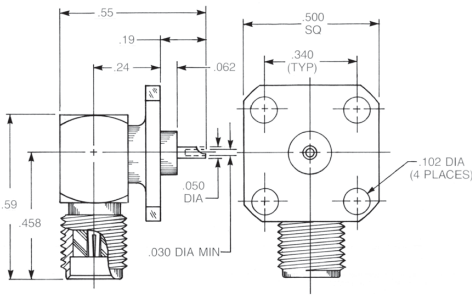
Panel Jack Receptacles



Right Angle Panel Jack Receptacle

- Solder pot contact
- ½″ square flange

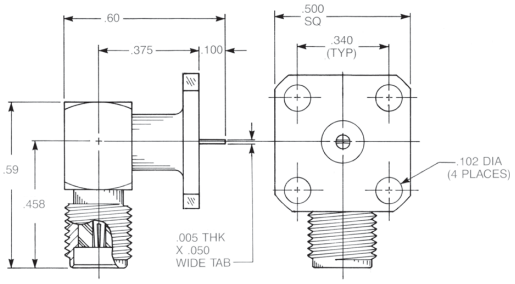
9424-1513-000 (Gold-plated)
9424-9513-000 (Passivated)



Low Profile Right Angle Panel Jack Receptacle

- Solder pot contact
- ½″ square flange

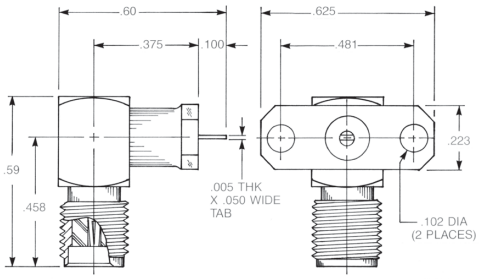
9425-1513-000 (Gold-plated)
9425-9513-000 (Passivated)



Right Angle Panel Jack Receptacle

- Tab contact
- ½″ hole flange

9124-1513-000 (Gold-plated)
9124-9513-000 (Passivated)



Right Angle Panel Jack Receptacle

- Tab contact
- 2-hole flange

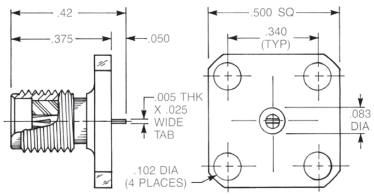
9126-1513-000 (Gold-plated)
9126-9513-000 (Passivated)

Receptacles for 0.025″ Microstrip

Standard SMA receptacles with tab contacts have the tab milled from a 0.050″ diameter round contact. This 0.050″ diameter is flush with the rear insulator of the connector.

When these connectors are used with 0.025″ thick microstrip, a capacitive coupling can be introduced because of the close proximity of the microstrip ground plane to the 0.050″ diameter.

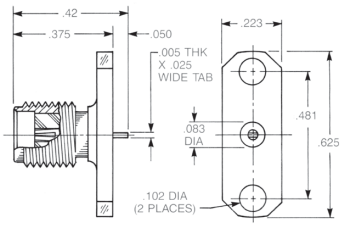
These receptacles eliminate the coupling by reducing the contact rear diameter to 0.025″. The insulator diameter at the rear of the connector is reduced to 0.083″ to maintain 50 ohm impedance.



Straight Jack Receptacle

- ½″ square flange

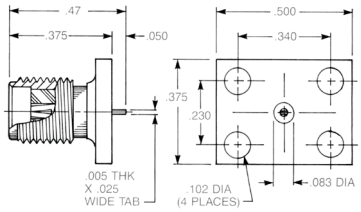
Captive contact:
9114-1113-000 (Gold-plated)
9114-9113-000 (Passivated)



Straight Jack Receptacle

- 2-hole flange

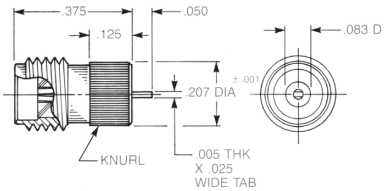
Captive contact:
9118-1113-000 (Gold-plated)
9118-9113-000 (Passivated)



Straight Jack Receptacle

- Rectangular flange

Captive contact:
9117-1113-000 (Gold-plated)
9117-9113-000 (Passivated)



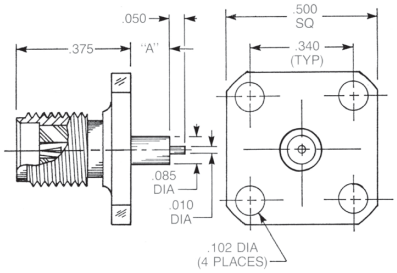
Straight Jack Receptacle

- Knurl mount

Captive contact:
9163-1113-000 (Gold-plated)
9163-9113-000 (Passivated)

Receptacles for 0.010″ Microstrip

The receptacles shown below have 0.010″ diameter contacts for good electrical transition to narrow microstrip lines. The reduced-diameter insulators are extended beyond the flange face to carry 50 ohm impedance through the microstrip package wall. All have captive contacts.

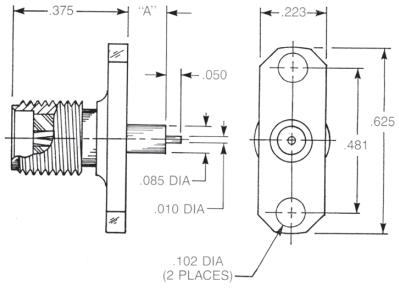


Straight Jack Receptacle

- ½″ square flange

A = 0.057:
9304-1113-014 (Gold-plated)
9304-9113-014 (Passivated)

A = 0.0125:
9304-1113-013 (Gold-plated)
9304-9113-013 (Passivated)

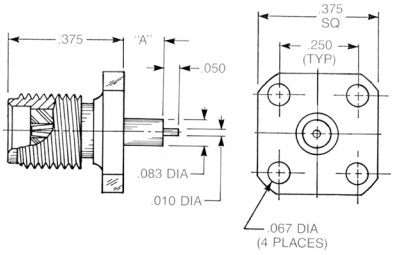


Straight Jack Receptacle

- 2-hole flange

A = 0.057:
9308-1113-003 (Gold-plated)
9308-9113-003 (Passivated)

A = 0.125:
9308-1113-001 (Gold-plated)
9308-9113-001 (Passivated)

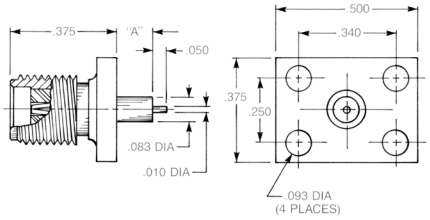


Straight Jack Receptacle

- ⅜″ square flange

A = 0.057:
9376-1113-002 (Gold-plated)
9376-9113-002 (Passivated)

A = 0.125:
9376-1113-001 (Gold-plated)
9376-9113-001 (Passivated)



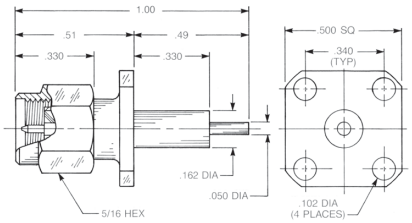
Straight Jack Receptacle

- Rectangular flange

A = 0.057:
9307-1113-002 (Gold-plated)
9307-9113-002 (Passivated)

A = 0.125:
9307-1113-001 (Gold-plated)
9307-9113-001 (Passivated)

Panel Plug Receptacles

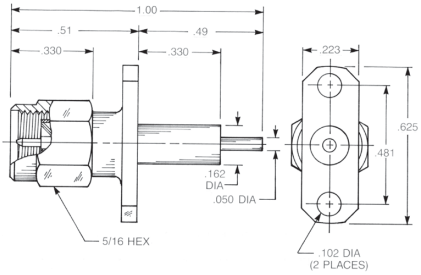


Straight Panel Plug Receptacle

- Extended contact and insulator
- ½″ square flange

Captive contact:
9009-1113-000 (Gold-plated)
9009-9113-000 (Passivated)

Non-captive contact:
9009-1213-000 (Gold-plated)
9009-9213-000 (Passivated)

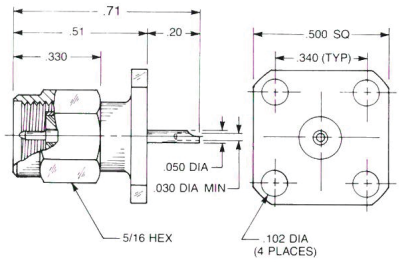


Straight Panel Plug Receptacle

- Extended contact and insulator
- 2-hole flange

Captive contact:
9055-1113-000 (Gold-plated)
9055-9113-000 (Passivated)

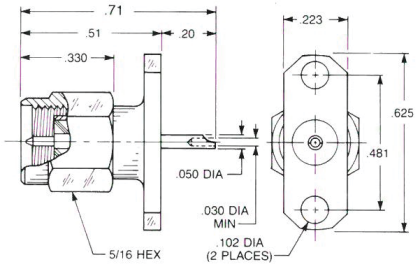
Non-captive contact:
9055-1213-000 (Gold-plated)
9055-9213-000 (Passivated)



Straight Panel Plug Receptacle

- Solder pot contact
- ½″ square flange

Captive contact:
9409-1113-000 (Gold-plated)
9409-9113-000 (Passivated)



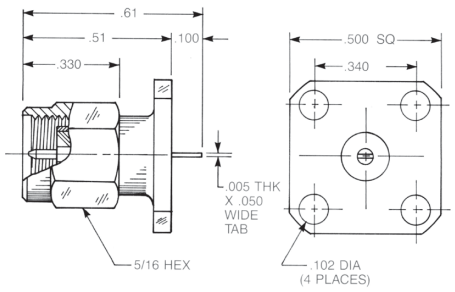
Straight Panel Plug Receptacle

- Solder pot contact
- 2-hole flange

Captive contact:
9455-1113-000 (Gold-plated)
9455-9113-000 (Passivated)

Additional contact and insulator configurations available upon request.

Panel Plug Receptacles

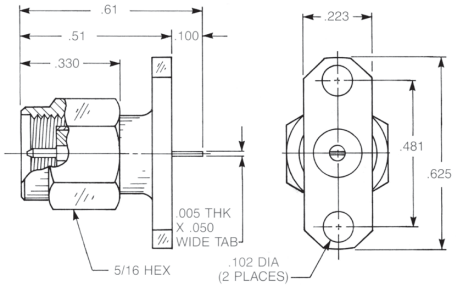


Straight Panel Plug Receptacle

- Tab contact
- ½″ square flange

Captive contact:
9109-1113-000 (Gold-plated)
9109-9113-000 (Passivated)

Non-captive contact:
9109-1213-000 (Gold-plated)
9109-9213-000 (Passivated)

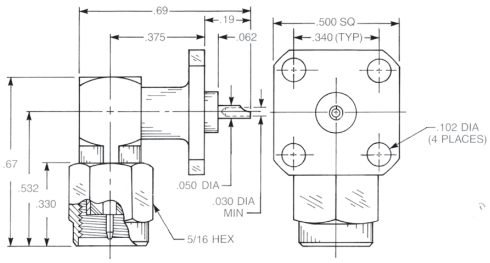


Straight Panel Plug Receptacle

- Tab contact
- 2-hole flange

Captive contact:
9155-1113-000 (Gold-plated)
9155-9113-000 (Passivated)

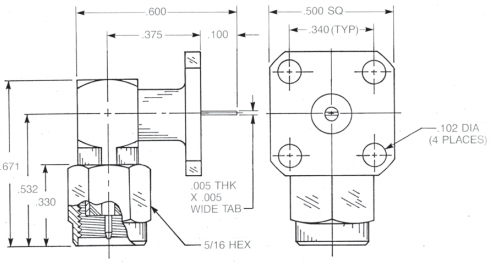
Non-captive contact:
9155-1213-000 (Gold-plated)
9155-9213-000 (Passivated)



Right Angle Panel Plug Receptacle

- Solder pot contact
- ½″ square flange

9454-1513-000 (Gold-plated)
9454-9513-000 (Passivated)



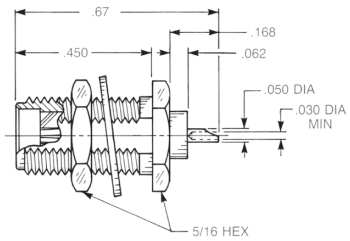
Right Angle Panel Plug Receptacle

- Tab contact
- ½″ square flange

9154-1513-000 (Gold-plated)
9154-9513-000 (Passivated)

Additional contact and insulator configurations available upon request.

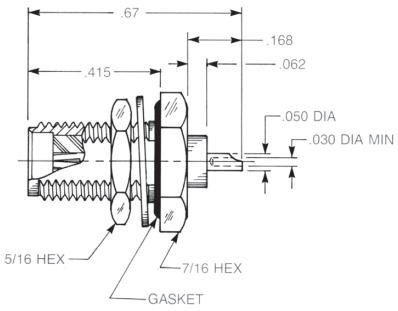
Bulkhead Jack Receptacles



Straight Bulkhead Jack Receptacle

- Solder pot contact
- Rear mount

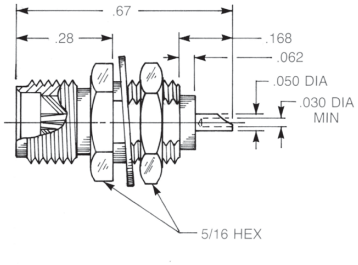
Captive contact:
9412-1113-000 (Gold-plated)
9412-9113-000 (Passivated)



Straight Bulkhead Jack Receptacle

- Solder pot contact
- Rear mount
- With mounting gasket

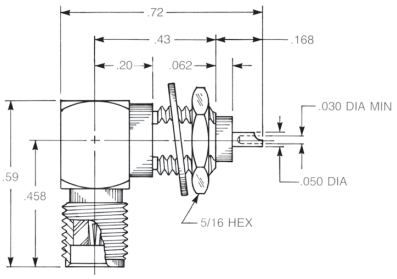
Captive contact:
9432-1113-000 (Gold-plated)
9432-9113-000 (Passivated)



Straight Bulkhead Jack Receptacle

- Solder pot contact
- Front mount

Captive contact:
9422-1113-000 (Gold-plated)
9422-9113-000 (Passivated)



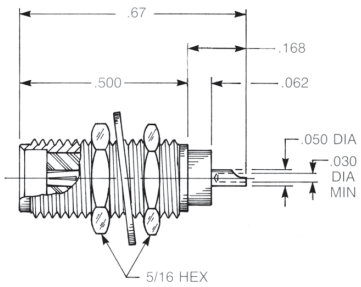
Right Angle Bulkhead Jack Receptacle

- Solder pot contact
- Front mount

Captive contact:
9609-1513-000 (Gold-plated)
9609-9513-000 (Passivated)

Additional contact and insulator configurations available upon request. Designed for use with 0.125″ thick max panel.

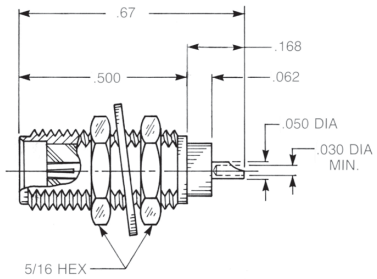
Bulkhead Jack Receptacles



Straight Bulkhead Jack Receptacle

- Solder pot contact
- Round body
- Provided with two mounting nuts and one lockwasher

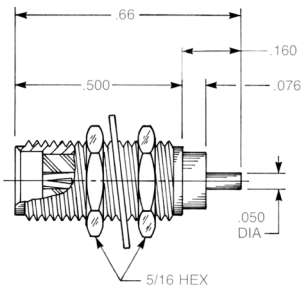
Captive contact:
9413-1113-000 (Gold-plated)
9413-9113-000 (Passivated)



Straight Bulkhead Jack Receptacle

- Solder pot contact
- D-flatted body
- Provided with two mounting nuts and one lockwasher

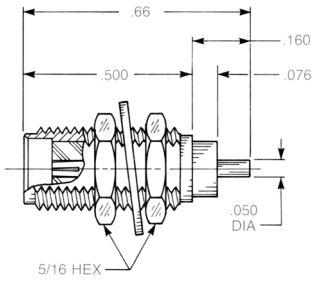
Captive contact:
9456-1113-002 (Gold-plated)
9456-9113-002 (Passivated)



Straight Bulkhead Jack Receptacle

- Post contact
- Round body
- Provided with two mounting nuts and one lockwasher

Captive contact:
9013-1113-000 (Gold-plated)
9013-9113-000 (Passivated)



Straight Bulkhead Jack Receptacle

- Post contact
- D-flatted body
- Provided with two mounting nuts and one lockwasher

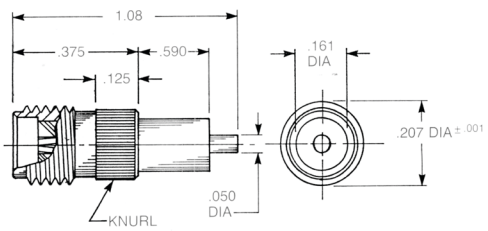
Captive contact:
9056-1113-000 (Gold-plated)
9056-9113-000 (Passivated)

Additional contact and insulator configurations available upon request. Designed for use with .125″ thick max panel.

Knurl Mount

These knurl mount connectors can provide an economical alternative to flange mounted connectors and are especially useful in dense packaging applications.

To ensure retention, these connectors should be used in panels of 0.100″ minimum thickness. Gold-plated bodies can be soldered to the panel if necessary, but an absolute minimum of heat should be used to prevent insulator damage.

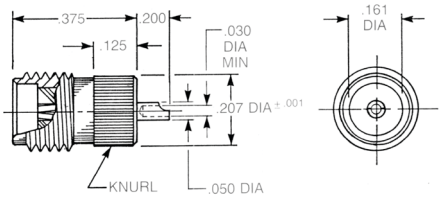


Straight Jack Receptacle

- Extended contact and insulator

Captive contact:
9033-1113-000 (Gold-plated)
9033-9113-000 (Passivated)

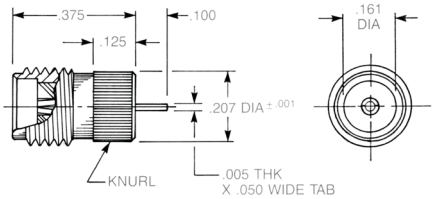
Non-captive contact:
9033-1213-000 (Gold-plated)
9033-9213-000 (Passivated)



Straight Jack Receptacle

- Solder pot contact

Captive contact:
9433-1113-000 (Gold-plated)
9433-9113-000 (Passivated)

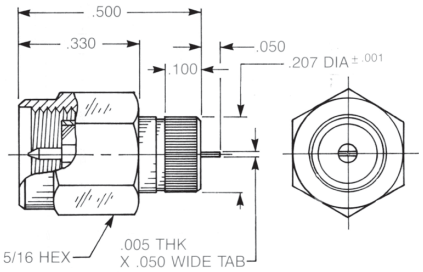


Straight Jack Receptacle

- Tab contact

Captive contact:
9133-1113-000 (Gold-plated)
9133-9113-000 (Passivated)

Non-captive contact:
9133-1213-000 (Gold-plated)
9133-9213-000 (Passivated)



Straight Plug Receptacle

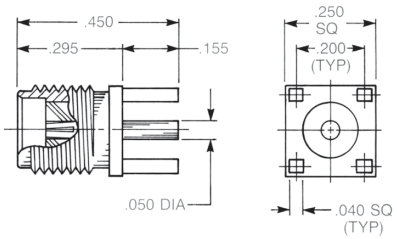
- Tab Contact

Captive contact:
9139-1113-000 (Gold-plated)
9139-9113-000 (Passivated)

Non-captive contact:
9139-1213-000 (Gold-plated)
9139-9213-000 (Passivated)

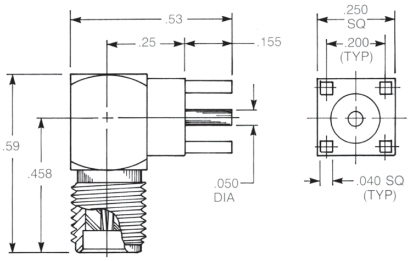
Additional contact and insulator configurations available upon request.

PCB Receptacles



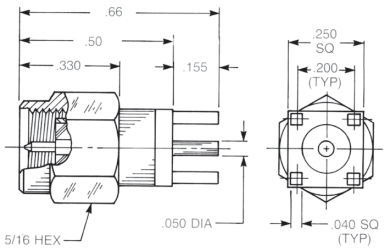
Straight Jack Receptacle

9650-1113-000 (Gold-plated)



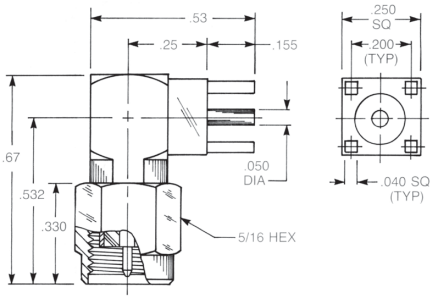
Right Angle Jack Receptacle

9647-1513-000 (Gold-plated)



Straight Plug Receptacle

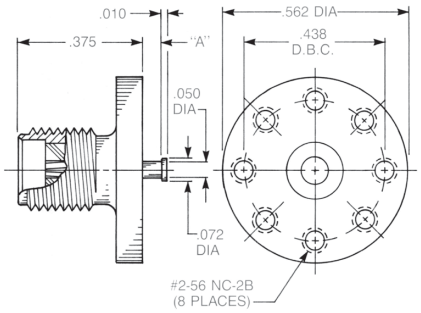
9649-1113-000 (Gold-plated)



Right Angle Plug Receptacle

9646-1513-000 (Gold-plated)

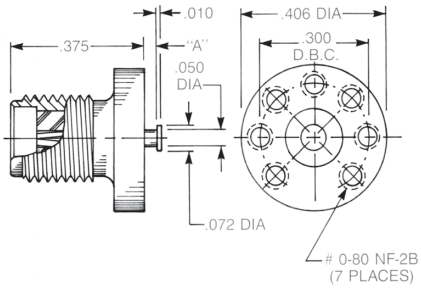
Stripline Receptacles



Straight Surface Mount Jack Receptacle

- Standard flange
- Non-captive contact

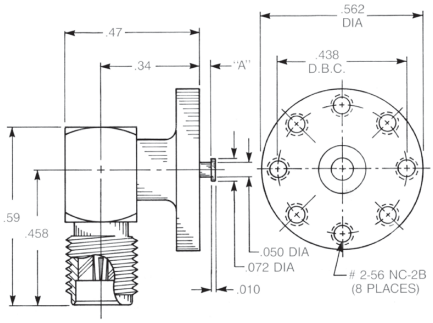
Dim. A	
0.031	**9003-1213-001** (Gold-plated)
	9003-9213-001 (Passivated)
0.063	**9003-1213-002** (Gold-plated)
	9003-9213-002 (Passivated)
0.125	**9003-1213-003** (Gold-plated)
	9003-9213-003 (Passivated)



Straight Surface Mount Jack Receptacle

- Small diameter flange
- Non-captive contact

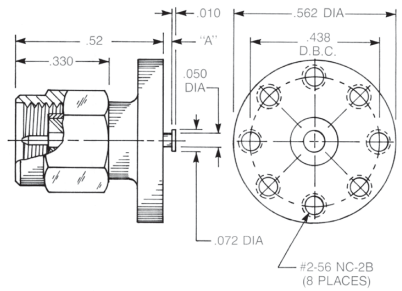
Dim. A	
0.031	**9610-1213-001** (Gold-plated)
	9610-9213-001 (Passivated)
0.063	**9610-1213-002** (Gold-plated)
	9610-9213-002 (Passivated)
0.125	**9610-1213-003** (Gold-plated)
	9610-9213-003 (Passivated)



Right Angle Surface Mount Jack Receptacle

- Standard flange
- Non-captive contact

Dim. A	
0.031	**9035-1513-001** (Gold-plated)
	9035-9513-001 (Passivated)
0.063	**9035-1513-002** (Gold-plated)
	9035-9513-002 (Passivated)
0.125	**9035-1513-003** (Gold-plated)
	9035-9513-003 (Passivated)



Straight Surface Mount Plug Receptacle

- Standard flange
- Non-captive rear contact

Dim. A	
0.031	**9034-1213-001** (Gold-plated)
	9034-9213-001 (Passivated)
0.063	**9034-1213-002** (Gold-plated)
	9034-9213-002 (Passivated)
0.125	**9034-1213-003** (Gold-plated)
	9034-9213-003 (Passivated)

Connectors for use with other board thicknesses are available.

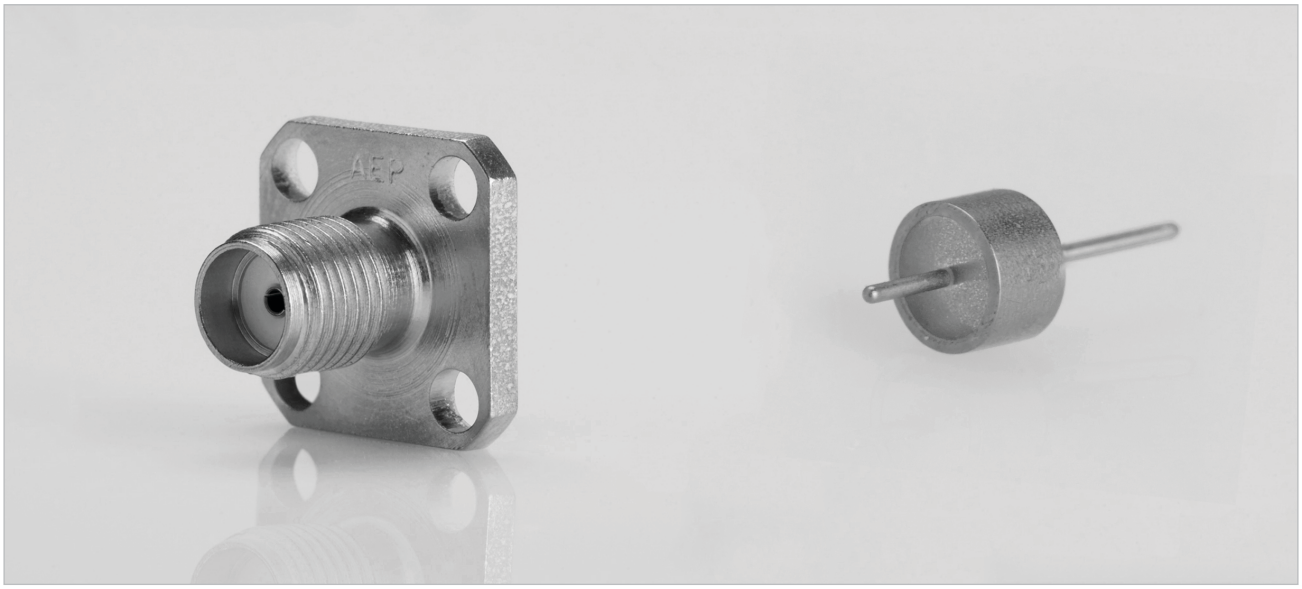
Hermetic Seal Launchers

AEP SMA hermetic seal launchers are designed for use with separate hermetic seals with pin diameters ranging from 0.012″ to 0.036″. The use of a connector/seal system rather than a connector with an integral seal means that microstrip boxes can remain sealed when connectors are removed or changed. The connectors can be reused many times on components that need to be "connectorized" only for testing.

All the items in this section have passivated bodies. All other characteristics are as shown on page 2-3 for SMA series connectors.

The electrical performance of these launchers is dependent to a great extent upon the method used to affix the inner seal pin to the microstrip line. The application notes on pages 2-34 to 2-40 give a detailed explanation of the connectors' electrical characteristics.

We also have a wide variety of hermetic seals available in configurations other than those shown here. For more information, please contact us directly.



APPLICATION NOTES

INTRODUCTION

In recent years, as hermetically sealed MIC (Microwave Integrated Circuit) devices have come into common usage, designers have sought an alternative to "spark plug" type SMA connectors for launching from microstrip to a coaxial line. "Spark plug" launchers perform well electrically and mechanically, but they have some disadvantages: Because the hermetic seal is integral to the connector, the package loses hermeticity if the connector is removed. They are also expensive to manufacture, requiring costly special welding and testing equipment, and manufacturing yields can be quite low.

The alternative approach discussed here is to seal the package with an inexpensive 50 ohm hermetic seal and use a non-hermetic SMA connector that fits over the protruding seal pin. There are several advantages to this method: If the seal is damaged during installation, it can be replaced easily and inexpensively. If a connector is damaged during service, it can be replaced without compromising the package's hermeticity. If devices are to be shipped with pins only, a connector can be put on for testing, removed and reused for testing on other packages.

This type of connector is known by many names as no industry-wide generic term has come into use. It may be variously described as a hermetic seal launcher, MIC launcher, field replaceable jack or various combinations of these terms.

All of these terms are descriptions of the same thing: SMA series receptacles designed for mounting on a hermetic seal which provides an environmental, mechanical and electrical transition from a microstrip line to a coaxial line. They typically have flanges for mounting to the package; screw-in types are available but require a thick-walled package to allow for seal mounting.

DESIGN

AEP SMA hermetic seal launchers are designed with mechanically captivated contacts and insulators. Epoxy captivation is avoided in order to eliminate RF leakage through epoxy fill holes at high frequencies.

50 ohm hermetic seals with pin diameters of 0.012″, 0.015″ and 0.018″ use glass dielectrics that yield an outer ring diameter considerably smaller than the inner diameter of a standard SMA body. In order to make the transition from an SMA interface to this smaller diameter, the diameters of the connector body, contact and insulator must be stepped down from the front (SMA interface) end of the connector to the rear (seal interface) end.

These steps, together with the barbs and shoulders used to captivate the contact and insulator, are designed and located to perform electrical compensation for locally capacitive or inductive sections. The seal's electrical characteristics and the impedance at the connector/seal interface are also compensated for, in order to produce a connector and seal combination as close to 50 ohm overall as possible. Figure A illustrates the transitional steps and contact captivation method.

APPLICATION NOTES

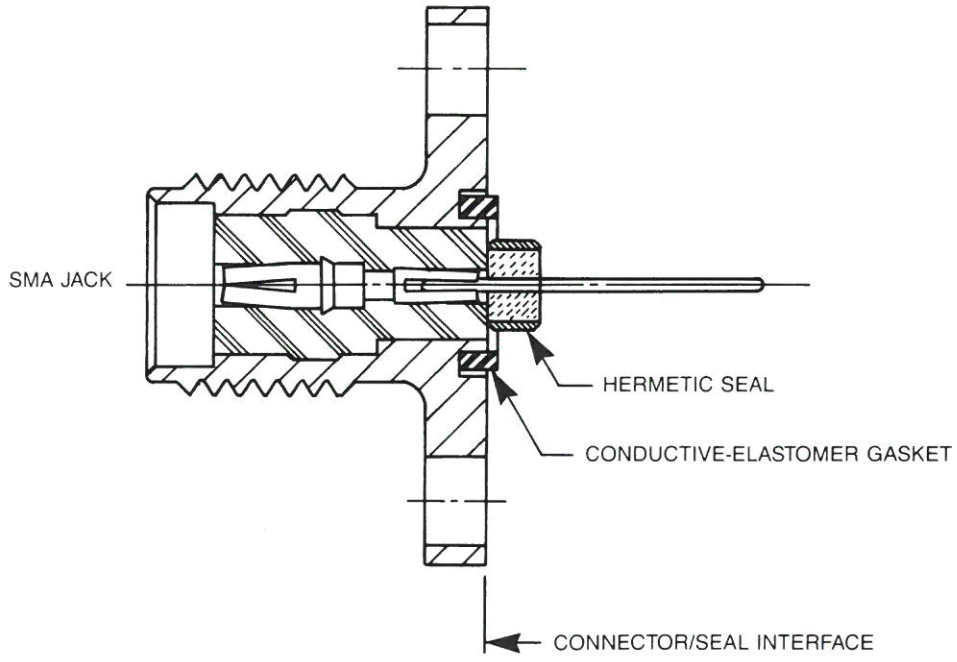
DESIGN (continued)

A conductive-elastomer gasket is placed in a groove in the rear flange of the connector. This gasket ensures good RF grounding and guards against RF leakage due to irregularities in the connector flange or package surface.

Seals with 0.020″ pin diameters have an outer ring diameter of 0.158″. This is close enough to the inner diameter of an SMA body that the stepdown transition discussed above is not needed. Connectors for use with these seals have "straight through" contact and insulator diameters. This design precludes the use of the conductive gasket on the flange end.

FIGURE A

CONNECTOR/SEAL DESIGN



(Proportions altered to illustrate detail.)

APPLICATION NOTES

THE COAXIAL LINE TO MICROSTRIP INTERFACE

Although the impedance of the connectors and seals can be tightly controlled at the point of manufacture, their performance in a system will be greatly affected by the method and process of attaching the seal pin to the microstrip line. It is very important for any discontinuities introduced by the pin attachment to be minimized and "tweaked" as much as possible to get the maximum electrical performance from the connector and seal.

The first step toward the best match is to select a seal with a pin diameter as close as possible to the microstrip line width. If the coaxial section (pin) is significantly larger than the microstrip section (line), the circuit will show an inductive discontinuity as the input signal radiates farther on the pin before entering the line (antenna effect). Conversely, if the line section is significantly larger than the pin, the circuit will become capacitive in this section.

Perhaps the most important part of the entire connector/seal/microstrip assembly is the pin-to-line attachment method and process. Please note that as connector manufacturers rather than microstrip circuit designers, we cannot recommend any specific method of pin attachment. The information shown here has been compiled from discussions with our customers. The method used in a given situation will depend on the specific design and operating requirements of the device, and the equipment available to the circuit manufacturer. As with any electronic device, tradeoffs are commonly required to balance the need for performance over a narrow or wide frequency bandwidth and environmental and mechanical considerations.

When a microstrip device is subjected to a wide temperature range during service, a circumstance frequently arises which adds yet another consideration to the decision on the pin attachment method. If the thermal expansion coefficient of the package material is different from that of the substrate, relative movement between the pin and the line will occur during temperature changes. With widely different expansion rates and/or wide temperature ranges, this movement can be enough to break a direct pin-to-line bond. In these cases, an attachment incorporating a sliding contact or a looped gold ribbon is commonly used to permit movement of the line relative to the pin. Keep in mind that most methods used to allow this movement will add discontinuities greater than those from a direct bond.

Whichever method is used for the pin attachment, a prototype unit should be examined with a fast rise-time TDR to determine if the attachment section is inductive or capacitive. An appropriate amount of capacitance or inductance should be added to the circuit to compensate for the discontinuities found.

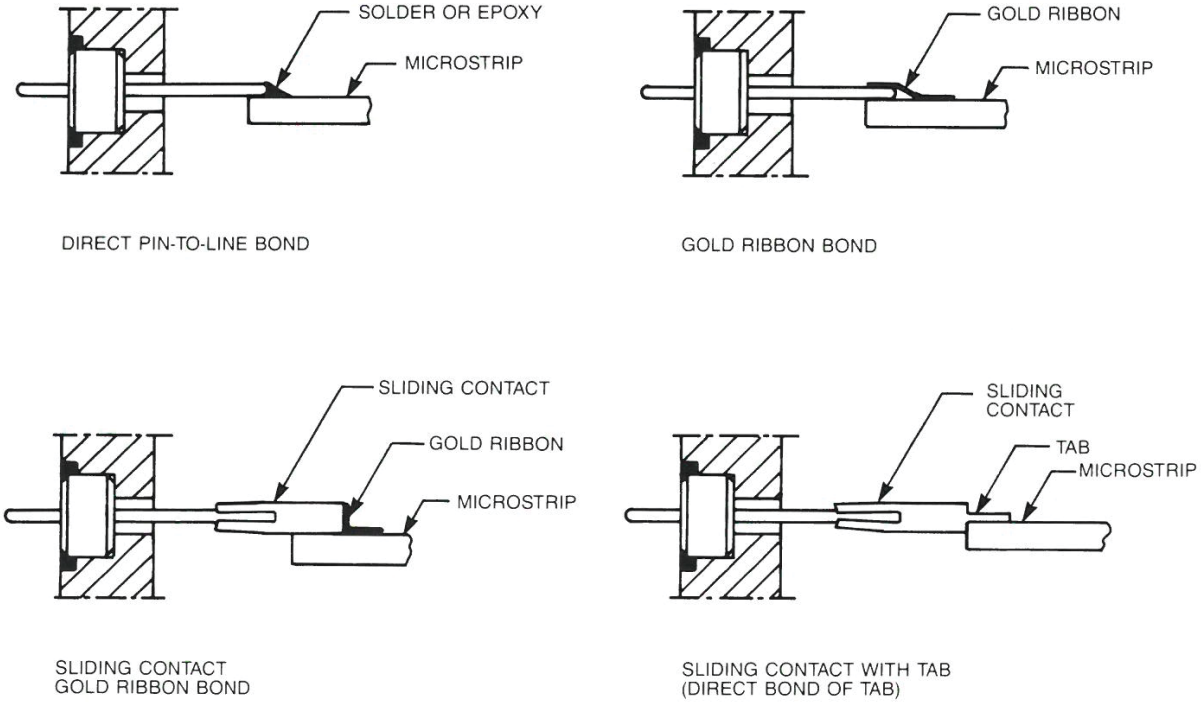
APPLICATION NOTES

THE COAXIAL LINE TO MICROSTRIP INTERFACE (continued)

Figure B shows some of the more common methods of pin attachment: solder, gold ribbon bonding (commonly bonded by ultrasonic welding) and conductive epoxy. Mechanical pressure is sometimes used to hold the pin in contact with the line; this eliminates heating the circuit during attachment.

FIGURE B

PIN TO LINE ATTACHMENT METHODS



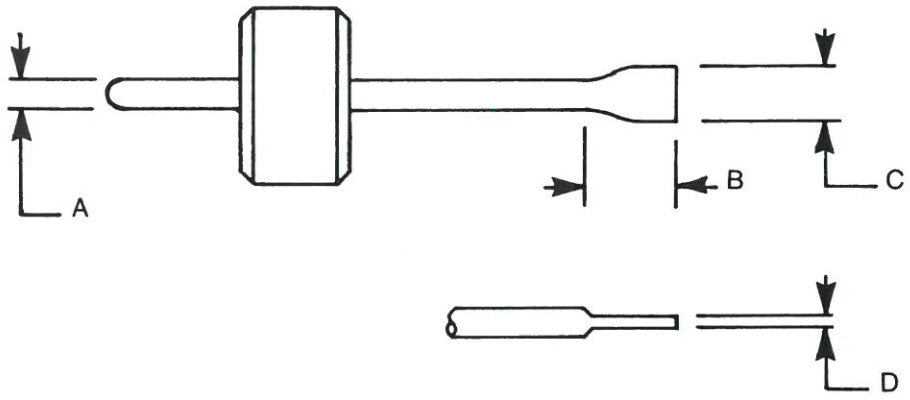
(Proportions altered to illustrate detail.)

APPLICATION NOTES

Some users report that using a seal with the circuit-end of the seal pin flattened gives them better results than a standard round pin. Besides providing a smooth round-to-planar transition, the flattened pin can lessen discontinuity when the line width must be greater than the pin diameter. Figure C shows the dimensions of flattened ends for each standard pin size. Flattened-ends are available at a small extra charge on all seals shown in our main catalog.

FIGURE C

SEALS WITH FLATTENED-END PINS



A (Pin ø)	B (± 0.005) (Flat Length)*	C (± 0.005) (Flat Width)	D (± 0.002) (Flat Thickness)
0.012	0.050	0.025	0.006
0.015	0.050	0.030	0.007
0.018	0.050	0.035	0.009
0.020	0.050	0.040	0.010

*Other flat lengths available upon request.

TEST METHODS

Test methods for these connectors vary widely, and disputes often arise when a user tests by a method different from the manufacturer's. It is important to remember that, as with any published data, **the manufacturer's published performance specifications are based solely on testing by his method.** If the user prefers another way of testing, their results can only be used to compare different manufacturer's parts or to check lot consistency.

APPLICATION NOTES

We have tested our connectors by several methods and have found significant drawbacks in all except the last:

1) Testing on a "dummy" microstrip package (direct line from input to output) most closely simulates the final application of the connectors and seals. However, the test results will be skewed by the pin attachment method and will be valid for production units only if the attachment method in production is 100% the same as on the test fixture.

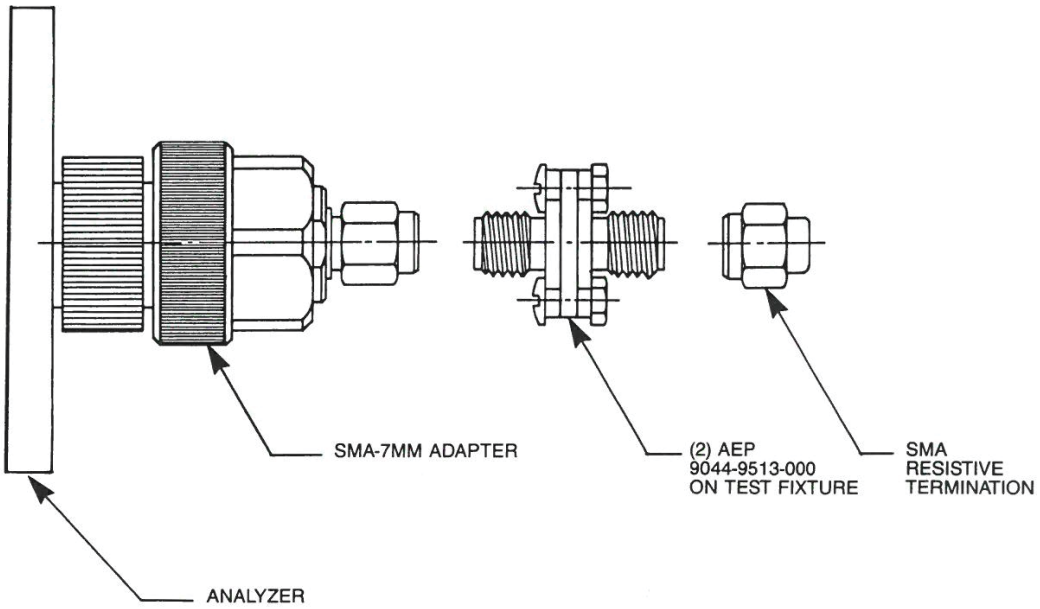
2) Testing two connectors bolted back-to-back with a pin joining the center contacts is inaccurate because it does not include the seal with which the connectors are designed to be used. This test method can also be inconsistent because of the difficulty of making sure the connectors are lined up with each other accurately.

3) Special resistive terminations that plug into the back of the connector also do not account for the compensation designed into the connector for the seal. One user who tests by this method found that the brand of connectors rated worst by the test fixture actually worked the best when installed on one of their products.

The test method used to obtain the information in Figure E is to mount two connectors back-to-back on a fixture that has the appropriate seal installed (See Figure D). The thickness of the fixture (a brass plate) is such that the seal surfaces are flush with the fixture surface, as they should be with the MIC package surface.

FIGURE D

TEST SETUP FOR HERMETIC SEAL LAUNCHERS



APPLICATION NOTES

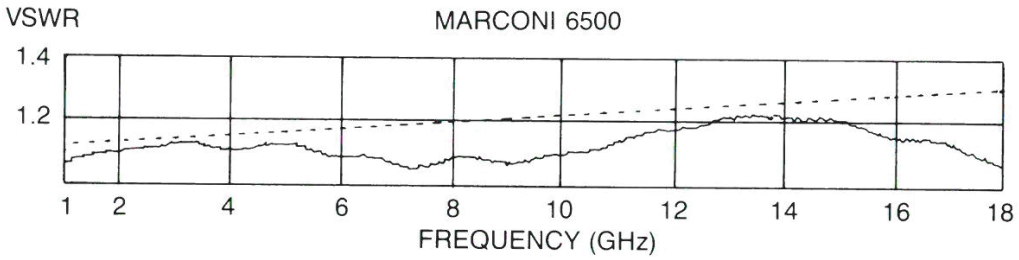
This method tests the connectors as they are ultimately used (two connector interfaces and two seal inter faces), and eliminates the variable of pin-to-line transitions. The VSWR figures obtained from this test method can be translated to single connector/seal VSWR by extracting the square root of the result.

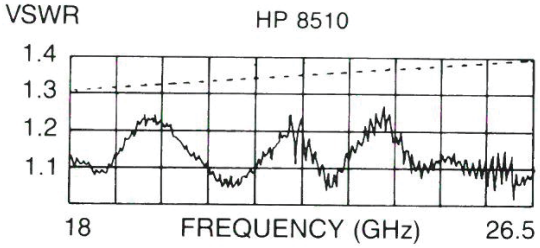
Although we believe that this test method most accurately reflects the performance of our connectors and seals, the results (Figure E) should only be used as a baseline for estimating their VSWR contribution to a device. Any VSWR contributed by the pin-to-line attachment must be accounted for before the final performance of the device can be known.

As with all of our products, requests for variations of the standard parts shown in our literature are welcome.

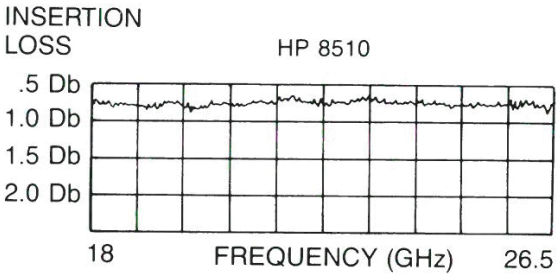
FIGURE E

TEST RESULTS, (2) 9044-9513-000
TESTED PER FIGURE D





Dotted line = VSWR $(1.05 + .005F\ [GHz])^2$
Max. VSWR DC-18 GHz: 1.23: 1 @ 13.93 GHz
Max. VSWR DC-26.5 GHz: 1.28: 1 @ 23.74 GHz



HERMETIC SEAL DATA

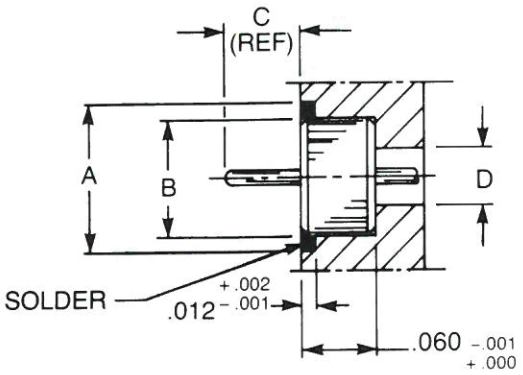
MATERIALS

All metal parts: Kovar, gold-plated per MIL-G-45204 type II, grade C, class 1 over nickel per MIL-C-26074, class 1, over copper per MIL-C-14550
Glass: Corning glass as noted:

P/N	Glass
920-55	7052
920-56	7070
920-69	7052
920-82	7070
920-92	7052

Hermeticity: Greater than 1 x 10^{-8} cc/sec at 1 atmosphere
Impedance: 50 ± 1 ohms

Frequency range: DC-26 GHz
Insertion loss:
0.1 dB max to 12.4 GHz
0.2 dB max to 18 GHz
0.25 dB max to 26 GHz
VSWR: Dependent on application
Rated voltage: 335 VRMS max at sea level
Rated current: 500 mA
DWV: 1,000 VRMS at sea level
Insulation resistance: 100 kMΩ (25°C)
Solderability: Per MIL-STD-202, method 209
Meniscus: 0.005″ max
Pin concentricity: 0.003 T.I.R.
Temperature range: -65°C to 250°C



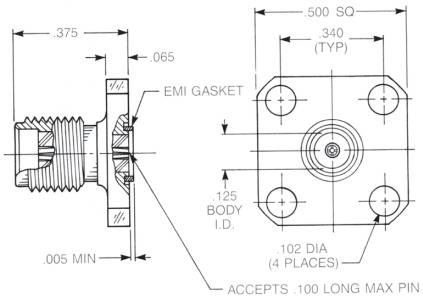
MOUNTING DIMENSIONS

P/N	A (+ 0.001)	B (+ 0.001)	C
920-55	0.127	0.102	0.070
920-56	0.140	0.115	0.070
920-69	0.188	0.163	0.060
920-82	0.127	0.102	0.070
920-92	0.188	0.163	0.075

1) The hermetic seal should be as flush as possible with the surface of the package. When the seal is recessed into the mounting hole, an air gap is created which adversely affects electrical performance. A slight protrusion (less than 0.005″) is acceptable.
2) A solder ring should be used which will fill the counterbore flush with the package surface after soldering. The counterbore can be an 80° to 90° countersink rather than square-bottomed as shown, but still must be filled to avoid an air gap.
3) Some users, especially when using a small pin diameter and a thick-walled package, use a Teflon insulator in the package wall to support the pin. The through-hole diameters shown below are for 50 ohm impedance.

Pin ø	"D" Air Dielectric	"D" Teflon Dielectric
0.012	0.028	0.040
0.015	0 .035	0.050
0.018	0.041	0.059
0.020	0.046	0.066

Hermetic Seal Launchers for 0.012″ Diameter Pins

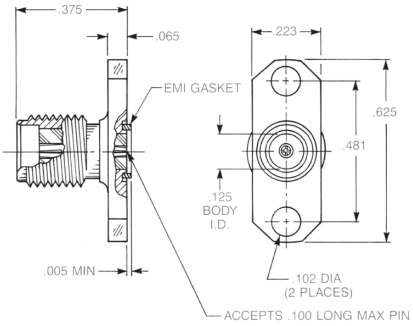


Straight Jack

- ½″ Square flange

9045-9513-000

Optional packaging:
9145-9513-000 (Includes 920-55)
9245-9513-000 (Includes 920-55 and 907-111-1)
9345-9513-000 (Includes 907-111-1)

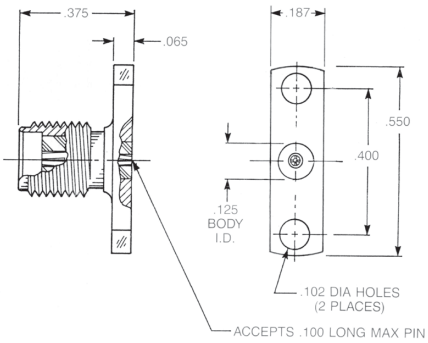


Straight Jack

- 2-hole flange

9044-9513-000

Optional packaging:
9144-9513-000 (Includes 920-55)
9244-9513-000 (Includes 920-55 and 907-111-1)
9344-9513-000 (Includes 907-111-1)

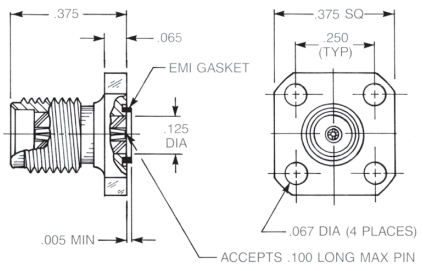


Straight Jack Narrow

- 2-hole flange
- No EMI gasket

9080-9513-000

Optional packaging:
9180-9513-000 (Includes 920-55)
9280-9513-000 (Includes 920-55 and 907-111-1)
9380-9513-000 (Includes 907-111-1)



Straight Jack

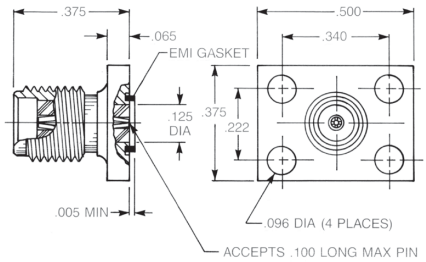
- ⅜″ Square flange

9079-9513-000

Optional packaging:
9179-9513-000 (Includes 920-55)
9279-9513-000 (Includes 920-55 and 907-111-1)
9379-9513-000 (Includes 907-111-1)

These parts accept pin diameters from 0.011″ to 0.015″.

Hermetic Seal Launchers for 0.012″ Diameter Pins

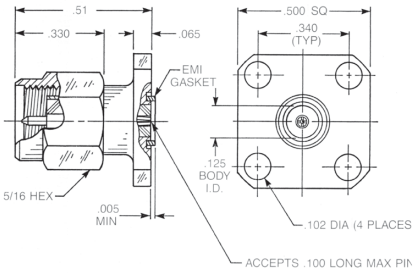


Straight Jack

- Rectangular flange

9062-9513-000

Optional packaging:
9162-9513-000 (Includes 920-55)
9262-9513-000 (Includes 920-55 and 907-111-1)
9362-9513-000 (Includes 907-111-1)

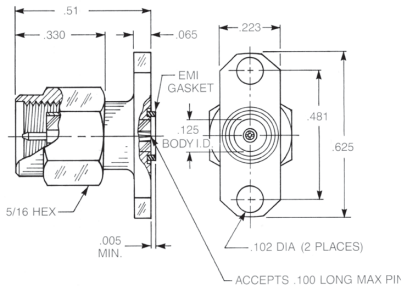


Straight Plug

- ½″ Square flange

9047-9513-000

Optional packaging:
9147-9513-000 (Includes 920-55)
9247-9513-000 (Includes 920-55 and 907-111-1)
9347-9513-000 (Includes 907-111-1)



Straight Plug

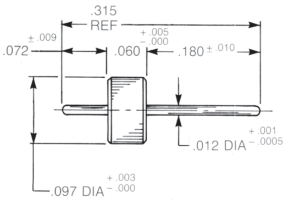
- 2-hole flange

9046-9513-000

Optional packaging:
9146-9513-000 (Includes 920-55)
9246-9513-000 (Includes 920-55 and 907-111-1)
9346-9513-000 (Includes 907-111-1)

Solder-In Hermetic Seal

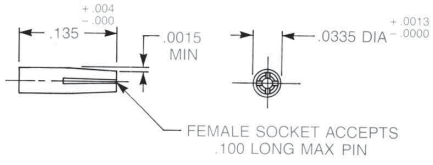
P/N **920-55**



See page 2-41 for material and finish specifications and mounting dimensions.

Accessory Contact

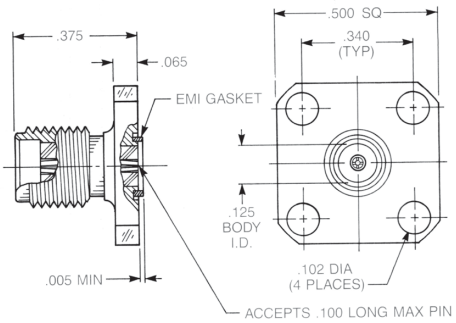
P/N **907-111-1**



Material: Beryllium copper
Finish: Gold per MIL-G-45204, type II, class I, grade C, over 0.0001 copper per MIL-C-14550

These parts accept pin diameters from 0.011″ to 0.015″.

Hermetic Seal Launchers for 0.015″ Diameter Pins

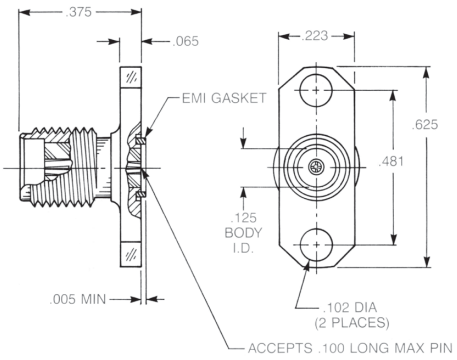


Straight Jack

- ½″ Square flange

9045-9513-001

Optional packaging:
9145-9513-001 (Includes 920-82)
9245-9513-001 (Includes 920-82 and 907-111-5)
9345-9513-001 (Includes 907-111-5)

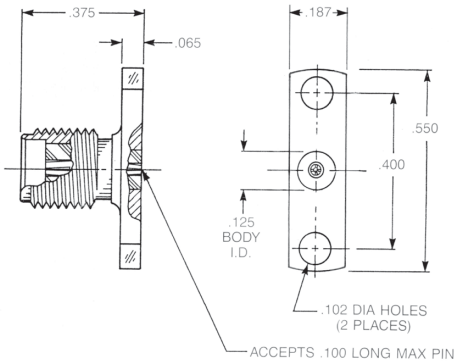


Straight Jack

- 2-hole flange

9044-9513-001

Optional packaging:
9144-9513-001 (Includes 920-82)
9244-9513-001 (Includes 920-82 and 907-111-5)
9344-9513-001 (Includes 907-111-5)

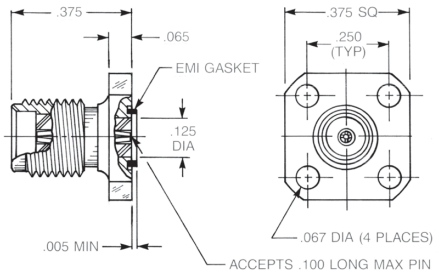


Straight Jack Narrow

- 2-hole flange
- No EMI gasket

9080-9513-001

Optional packaging:
9180-9513-001 (Includes 920-82)
9280-9513-001 (Includes 920-82 and 907-111-5)
9380-9513-001 (Includes 907-111-5)



Straight Jack

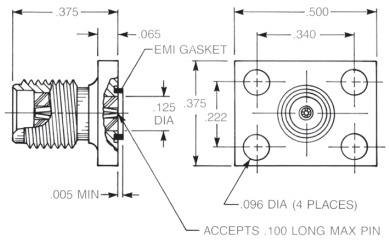
- ⅜″ Square flange

9079-9513-001

Optional packaging:
9179-9513-001 (Includes 920-82)
9279-9513-001 (Includes 920-82 and 907-111-5)
9379-9513-001 (Includes 907-111-5)

These parts accept pin diameters from 0.014″ to 0.016″.

Hermetic Seal Launchers for 0.015″ Diameter Pins

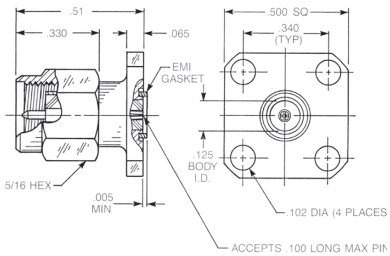


Straight Jack

- Rectangular flange

9062-9513-001

Optional packaging:
9162-9513-001 (Includes 920-82)
9262-9513-001 (Includes 920-82 and 907-111-5)
9362-9513-001 (Includes 907-111-5)

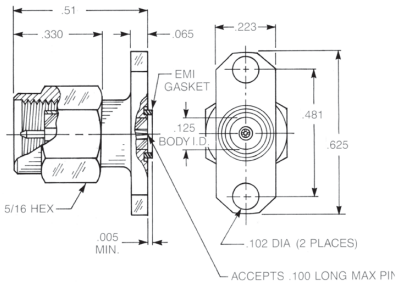


Straight Plug

- ½″ Square flange

9047-9513-001

Optional packaging:
9147-9513-001 (Includes 920-82)
9247-9513-001 (Includes 920-82 and 907-111-5)
9347-9513-001 (Includes 907-111-5)



Straight Plug

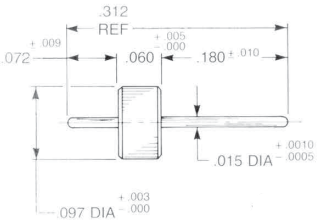
- 2-hole flange

9046-9513-001

Optional packaging:
9146-9513-001 (Includes 920-82)
9246-9513-001 (Includes 920-82 and 907-111-5)
9346-9513-001 (Includes 907-111-5)

Solder-In Hermetic Seal

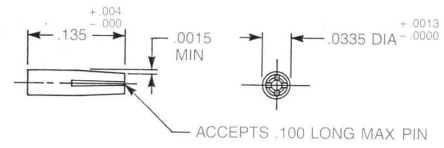
P/N **920-82**



See page 2-41 for material and finish specifications and mounting dimensions.

Accessory Contact

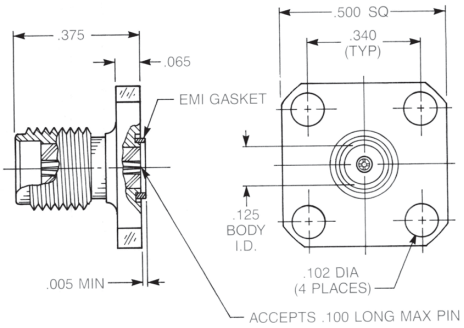
P/N **907-111-5**



Material: Beryllium copper
Finish: Gold per MIL-G-45204, type II, class I, grade C, over 0.0001 copper per MIL-C-14550

These parts accept pin diameters from 0.014″ to 0.016″.

Hermetic Seal Launchers for 0.018″ Diameter Pins

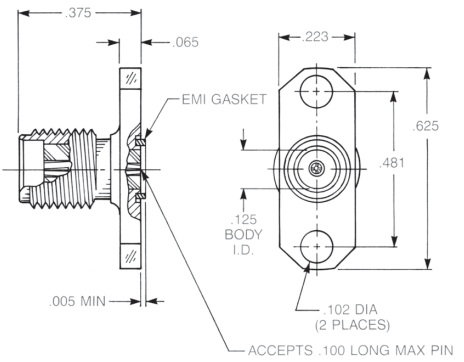


Straight Jack

- ½″ Square flange

9049-9513-000

Optional packaging:
9149-9513-000 (Includes 920-56)
9249-9513-000 (Includes 920-56 and 907-111-2)
9349-9513-000 (Includes 907-111-2)

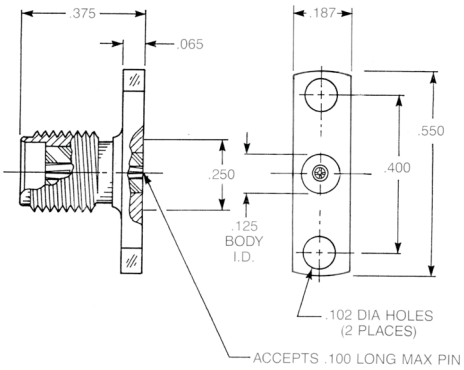


Straight Jack

- 2-hole flange

9048-9513-000

Optional packaging:
9148-9513-000 (Includes 920-56)
9248-9513-000 (Includes 920-56 and 907-111-2)
9348-9513-000 (Includes 907-111-2)

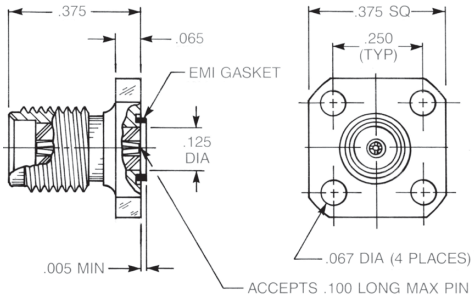


Straight Jack

- Narrow 2-hole flange
- No EMI gasket

9081-9513-000

Optional packaging:
9181-9513-000 (Includes 920-56)
9281-9513-000 (Includes 920-56 and 907-111-2)
9381-9513-000 (Includes 907-111-2)



Straight Jack

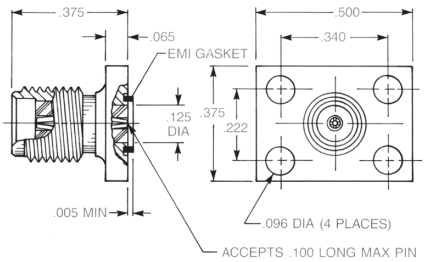
- ⅜″ Square flange

9074-9513-000

Optional packaging:
9174-9513-000 (Includes 920-56)
9274-9513-000 (Includes 920-56 and 907-111-2)
9374-9513-000 (Includes 907-111-2)

These parts accept pin diameters from 0.016″ to 0.020″.

Hermetic Seal Launchers for 0.018″ Diameter Pins

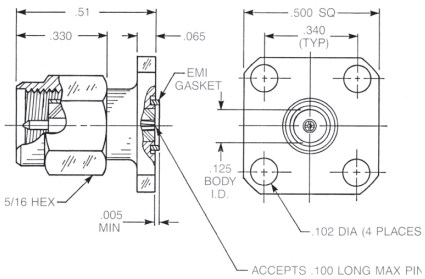


Straight Jack

- Rectangular flange

9068-9513-000

Optional packaging:
9168-9513-000 (Includes 920-56)
9268-9513-000 (Includes 920-56 and 907-111-2)
9368-9513-000 (Includes 907-111-2)

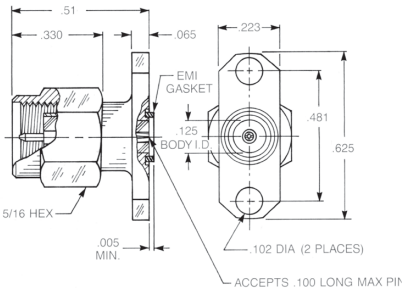


Straight Plug

- ½″ Square flange

9051-9513-000

Optional packaging:
9151-9513-000 (Includes 920-56)
9251-9513-000 (Includes 920-56 and 907-111-2)
9351-9513-000 (Includes 907-111-2)



Straight Plug

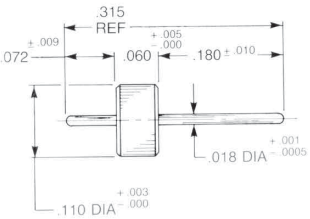
- 2-hole flange

9050-9513-000

Optional packaging:
9150-9513-000 (Includes 920-56)
9250-9513-000 (Includes 920-56 and 907-111-2)
9350-9513-000 (Includes 907-111-2)

Solder-In Hermetic Seal

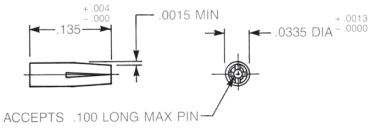
P/N **920-56**



See page 2-41 for material and finish specifications and mounting dimensions.

Accessory Contact

P/N **907-111-2**

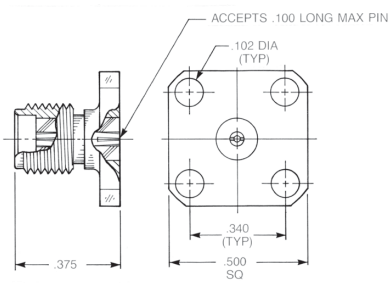


Material: Beryllium copper
Finish: Gold per MIL-G-45204 , type II, class I, grade C, over .0001 copper per MIL-C-14550

These parts accept pin diameters from 0.016″ to 0.020″.

Hermetic Seal Launchers for 0.020″ Diameter Pins

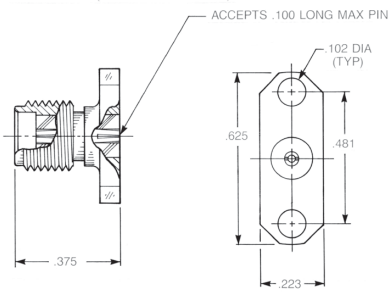
The hermetic seal launchers shown here are designed for use with seals having a 0.020″ pin diameter and a 0.160″ outer ring diameter. The contact and insulator diameters are constant through these connectors since they do not require the internal compensation featured in the launchers for smaller seals. The large outer diameter of the seals precludes the use of EMI gaskets on these connectors.



Straight Jack

- ½″ Square flange

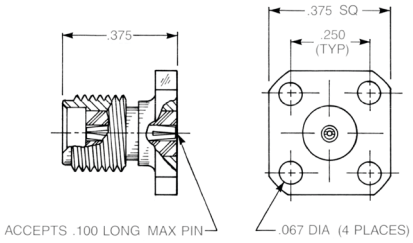
Optional packaging:
9504-9113-031
9504-9113-034 (Includes 920-69)



Straight Jack

- 2-hole flange

Optional packaging:
9508-9113-002
9508-9113-003 (Includes 920-69)

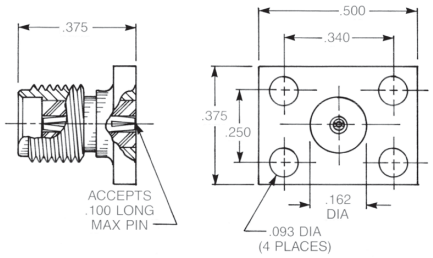


Straight Jack

- ⅜″ Square flange

Optional packaging:
9576-9113-001
9576-9113-002 (Includes 920-69)

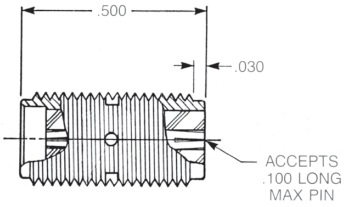
Hermetic Seal Launchers for 0.020″ Diameter Pins



Straight Jack

- Rectangular flange

9507-9113-003
9507-9113-004 (Includes 920-69)

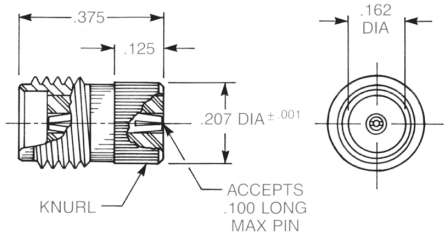


Straight Jack

- Screw-in mounting

9513-9113-009
9513-9113-012 (Includes 920-69)

These connectors require a minimum package wall thickness of 0.250″ for proper retention.

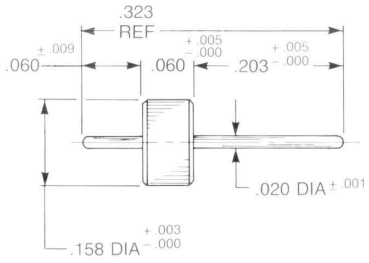


Straight Jack

- Knurl mount

9533-9113-003
9533-9113-002 (Includes 920-69)

These connectors require a minimum package wall thickness of 0.235″ for proper retention.



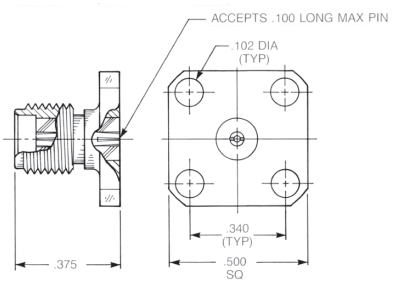
Solder-In Hermetic Seal

P/N **920-56**

See page 2-41 for material and finish specifications and mounting dimensions.

Hermetic Seal Launchers for 0.036″ Diameter Pins

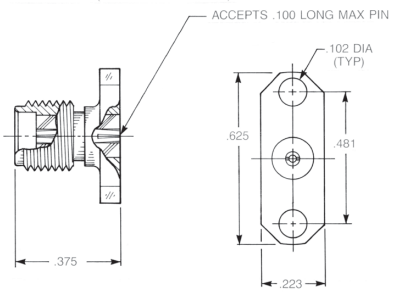
The hermetic seal launchers shown here are designed for use with hermetic seals having a 0.036″ diameter pin on the connector (outer) side and a 0.020″ diameter pin on the circuit (inner) side. The seal outer ring is 0.158″ diameter. The contact and insulator diameters are constant through these connectors since they do not require the internal compensation featured in the launchers for smaller seals. The large outer diameter of the seals precludes the use of EMI gaskets on these connectors.



Straight Jack

- ½″ Square flange

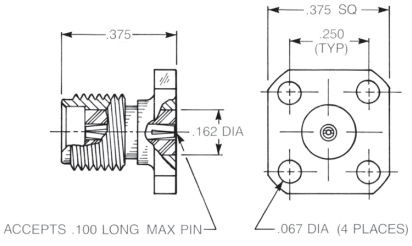
Optional packaging:
9504-9113-009
9504-9113-035 (Includes 920-92)



Straight Jack

- 2-hole flange

Optional packaging:
9508-9113-001
9508-9113-011 (Includes 920-92)

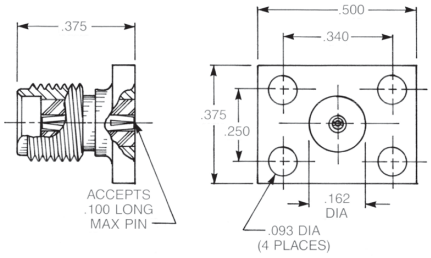


Straight Jack

- ⅜″ Square flange

Optional packaging:
9576-9113-003
9576-9113-004 (Includes 920-92)

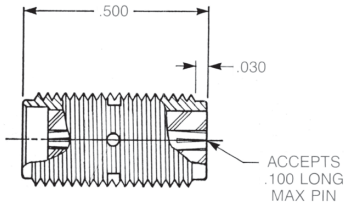
Hermetic Seal Launchers for 0.036″ Diameter Pins



Straight Jack

- Rectangular flange

9507-9113-005
9507-9113-006 (Includes 920-92)

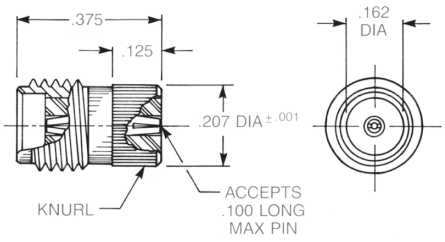


Straight Jack

- Screw-in mounting

9513-9113-008
9513-9113-013 (Includes 920-92)

These connectors require a minimum package wall thickness of 0.250″ for proper retention.

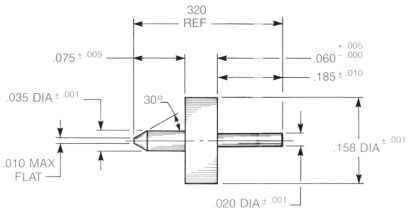


Straight Jack

- Knurl mount

9533-9113-001
9533-9113-004 (Includes 920-92)

These connectors require a minimum package wall thickness of 0.235″ for proper retention.

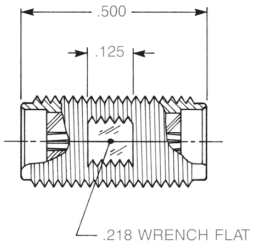


Solder-In Hermetic Seal

P/N **920-92**

See page 2-41 for material and finish specifications and mounting dimensions.

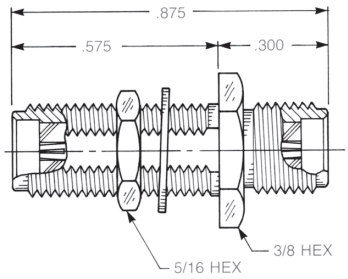
Adapters Within Series



Straight Adapter

- Jack to jack
- Connects two plugs

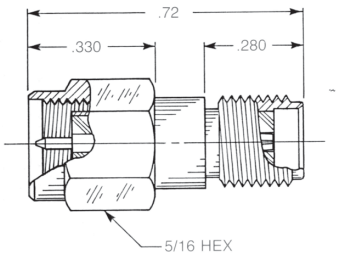
Captive contact:
5917-1103-000 (Gold-plated)
5917-9103-000 (Passivated)



Straight Bulkhead Mounted Adapter

- Jack to jack
- Connects two plugs

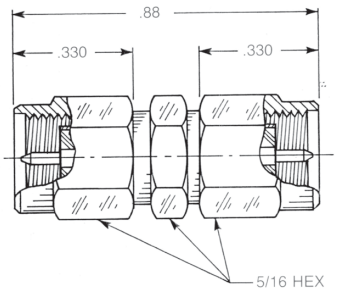
Captive contact:
5909-1103-000 (Gold-plated)
5909-9103-000 (Passivated)



Straight Adapter

- Jack to plug
- Prevents damage to equipment-mounted jacks during frequent mating and unmating

Captive contact:
5916-1103-603 (Gold-plated)
5916-9103-603 (Passivated)

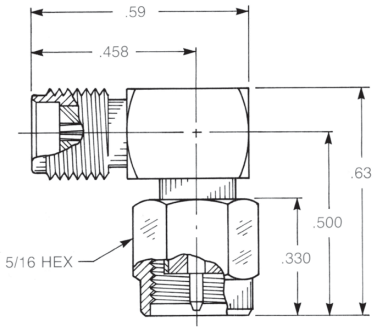


Straight Adapter

- Plug to plug
- Connects two jacks

Captive contact:
5918-1103-000 (Gold-plated)
5918-9103-000 (Passivated)

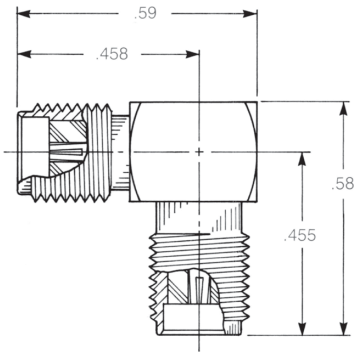
Adapters Within Series



Right Angle Adapter

- Jack to plug
- Connects one jack and one plug

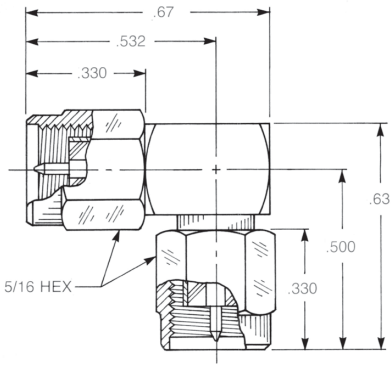
5919-1503-000 (Gold-plated)
5919-9503-000 (Passivated)



Right Angle Adapter

- Jack to jack
- Connects two plugs

5919-1503-003 (Gold-plated)
5919-9503-003 (Passivated)

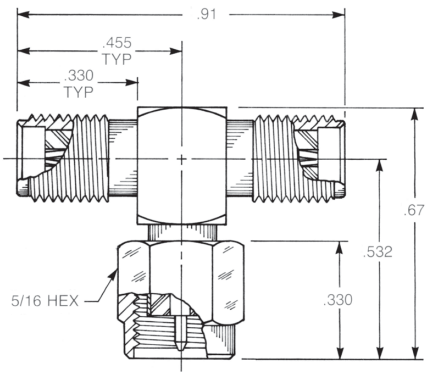


Right Angle Adapter

- Plug to plug
- Connects two jacks

5919-1503-001 (Gold-plated)
5919-9503-001 (Passivated)

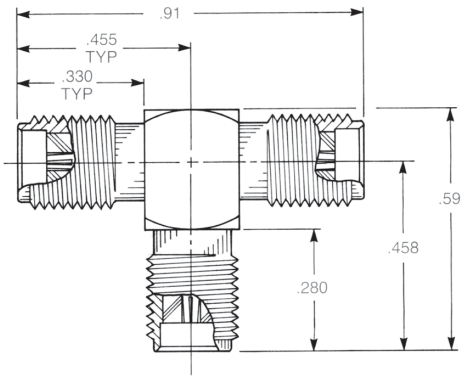
Tee Adapters - Resistive Terminations



Tee Adapter
(Unmatched Power Divider)

- Jack to plug to jack
- Connects two plugs and one jack

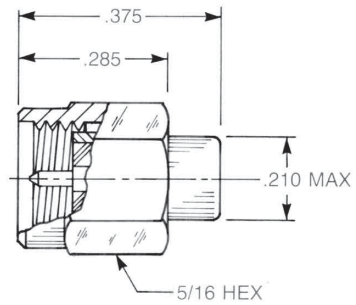
5905-1503-000 (Gold-plated)
5905-9503-000 (Passivated)



Tee Adapter
(Unmatched Power Divider)

- Jack to jack to jack
- Connects three plugs

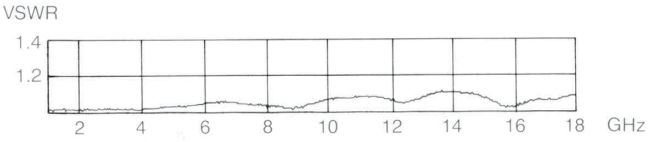
5903-1503-000 (Gold-plated)
5903-9503-000 (Passivated)



Plug Resistive Termination
(Dummy Load)

- VSWR 1.15: 1 max to 18 GHz
- Maximum average power: 1 W
- Peak power: 1.5 W

9620-9003-151 (Passivated)



SMB/SMC/SLB

SECTION 3 TABLE OF CONTENTS

Specifications 3-4

SMB SERIES
Cable Plugs 3-6
Cable Jacks 3-8
Bulkhead Receptacles 3-9
P.C. Board Receptacles 3-12
Stripline Receptacles 3-14
Adapters Within Series 3-15
Resistive Terminations 3-16

SMC SERIES
Cable Plugs 3-17
Cable Jacks 3-18
Bulkhead Receptacles 3-20
P.C. Board Receptacles 3-21
Panel (Flange Mount) Receptacles 3-22
Stripline Receptacles 3-23
Adapters Within Series 3-24
Resistive Terminations 3-25

SLB SERIES
Cable Plugs 3-26
Cable Jacks 3-28
Bulkhead Receptacles 3-30
P.C. Board Receptacles 3-32
Float Mount/Blind Mate Connectors 3-35

AEP SMB series connectors meet or exceed MIL-PRF-39012 performance requirements, offering good electrical performance up to 10 GHz. Their **snap-on** mating makes them ideal for use in confined areas where the use of wrenches is not practical.

AEP SMC series connectors offer the same low cost and small size as SMB series, but their **screw-on** mating provides extra mating security. Frequency range: DC-10 GHz.

AEP SLB series connectors are similar to SMB series, but have **slide-on** mating for use in multiple mounting or rack and panel applications. SLB plugs will mate with SMB jacks.

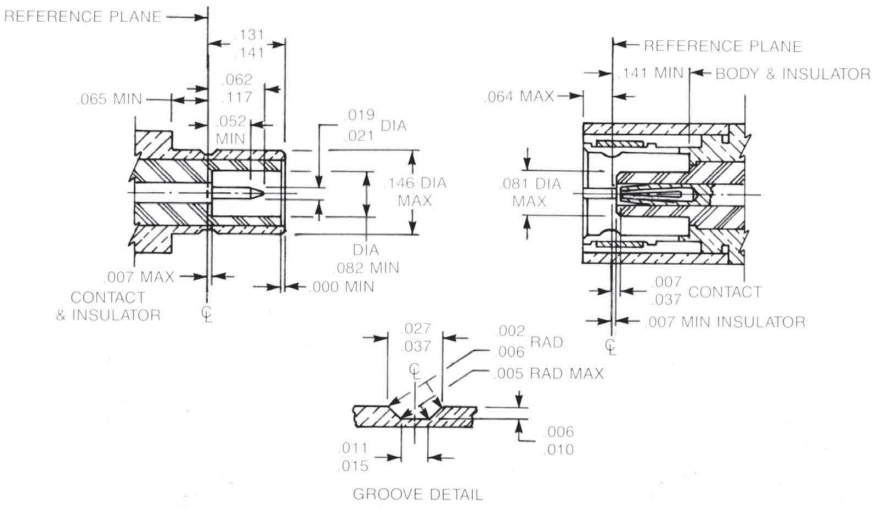
Standard cables for use with these connectors are shown at the bottom of the appropriate product pages. A complete listing of cable groups is on page 13-6. All the items shown are available with either gold or nickel-plated bodies; part numbers for each finish are shown in the product section. The index listing for each connector shows the appropriate cable assembly instruction. Assembly instructions start on page 13-14.

Factory-built cable assemblies using these connectors are available from AEP.

SMB

INTERFACE DIMENSIONS

PER MIL-STD-348

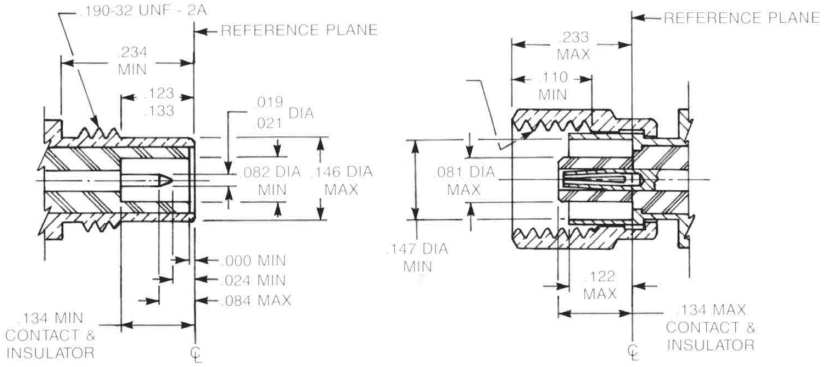


SLB dimensions identical to above except without detent.

SMC

INTERFACE DIMENSIONS

PER MIL-STD-348



SPECIFICATIONS MIL-PRF-39012

MATERIALS:

Body components, male contacts:
Brass per ASTM B16, alloy 360, 1/2 hard
Female contact: Beryllium copper per ASTM B196, condition HT
Insulators: Teflon TFE per ASTM-D-1710

FINISH:

Center contacts: Gold-plated per MIL-G-45204
All other parts finished to meet MIL-PRF-39012 corrosion requirements.

ELECTRICAL:

Impedance: 50 Ω
Frequency range: SMC: DC-10 GHz. SMB, SLB: DC-4 GHz
Voltage rating:
RG178: 250 VRMS, sea level
RG316: 335 VRMS, sea level
Insulation resistance: 1,000 MΩ min
VSWR:
SMB, SLB straight connector:
RG178: 1.30+[0.04×f (GHz)]
RG316: 1.25+[0.04×f (GHz)]
SMB, SLB right angle:
RG178: 1.45+[0.06×f (GHz)]
RG316: 1.35+[0.04×f (GHz)]
SMC straight connector:
RG178: 1.25+[0.04×f (GHz)]
RG316: 1.20+[0.04×f (GHz)]
SMC right angle:
RG178: 1.40+[0.06×f (GHz)]
RG316: 1.30+[0.04×f (GHz)]
Contact resistance:
Straight: 6 mΩ max initial,
8 mΩ max after environment.
Right angle: 12 mΩ max initial,
16 mΩ max after environment.
Dielectric withstanding voltage (sea level):
RG178: 750 VRMS
RG316: 1,000 VRMS
Corona level at 70,000 ft:
RG178: 185 VRMS
RG316: 250 VRMS
RF highpot at 5 MHz:
RG178: 500 VRMS
RG316: 700 VRMS
RF leakage:
SMB, SLB: -55 dB min, 2-3 GHz
SMC: -60 dB min, 2-3 GHz
Insertion loss:
SMB, SLB at 1.5 GHz:
Straight 0.30 dB max
Right angle 0.60 dB max
SMC at 4 GHz:
Straight 0.25 dB max
Right angle 0.50 dB max

MECHANICAL:

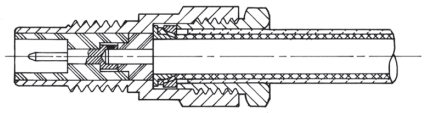
Force to engage: SMB, 14 lb max, SLB 6 lb max
Mating torque: SMC, 35-50 in-oz
Coupling nut pulloff resistance: SMC, 35 lb min
Contact retention (captive contact connectors):
4 lb min axial force
Durability: 500 mating cycles

ENVIRONMENTAL: (per MIL-STD-202)

Temperature rating: -65° C to + 165° C
Corrosion: Method 101, condition B, 5% salt solution
Vibration: Method 204,
SMB, condition B
SMC, condition D
Mechanical shock: Method 213,
SMB, condition B
SMC, condition C
Thermal shock: method 107, condition B

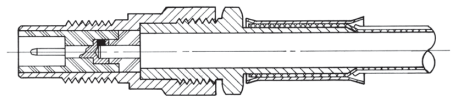
Cable Attachment Methods

All connectors in these series have captivated contacts which are soldered to the cable center conductor. The cable attachment methods shown have gripping force greater than the breaking strength of the cable.



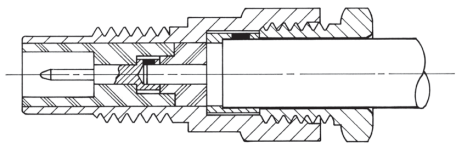
Clamp Type For Flexible Cable

These connectors can be assembled without special tooling and are field replaceable. They provide metal-to-metal clamping of the cable braid.



Crimp Type For Flexible Cable

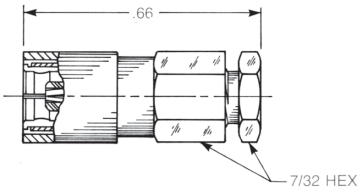
Crimping the cable braid is the most reliable and repeatable method of cable assembly and provides support for the cable during flexure. AEP crimp type connectors are assembled quickly and easily using readily available commercial or MIL crimp tools.



Solder-Clamp For Semi-Rigid Cable

This method allows retrimming of the cable dielectric, if necessary, during assembly. Connectors can be repositioned relative to the cable after assembly by loosening the clamp nut. Solder-clamp connectors are field replaceable without requiring special tools.

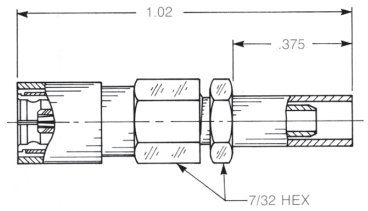
Cable Plugs



Straight Female Cable Plug

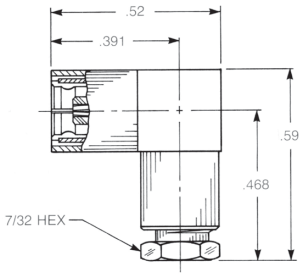
Clamp type for flexible cable:
2002-1551-0XX (Gold-plated)
2002-7551-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
2002-1541-0XX (Gold-plated)
2002-7541-0XX (Nickel-plated)



Straight Female Cable Plug

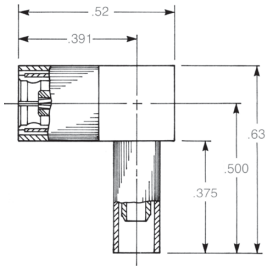
Crimp type for flexible cable:
2002-1571-0XX (Gold-plated)
2002-7571-0XX (Nickel-plated)



Right Angle Female Cable Plug

Clamp type for flexible cable:
2005-1551-0XX (Gold-plated)
2005-7551-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
2005-1541-0XX (Gold-plated)
2005-7541-0XX (Nickel-plated)

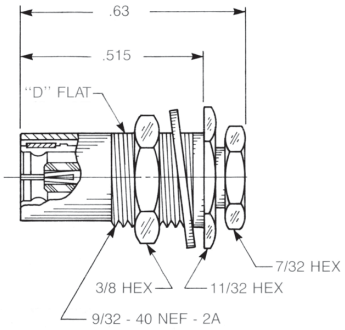


Right Angle Female Cable Plug

Crimp type for flexible cable:
2105-1521-0XX (Gold-plated)
2105-7521-0XX (Nickel-plated)

Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	09	0.141″ semi-rigid, RG402, M17/130
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	10	0.085″ semi-rigid, RG405, M17/133
05	RG178DS, RG196DS	19	RG174DS, RG316DS, M17/152, Times RD316

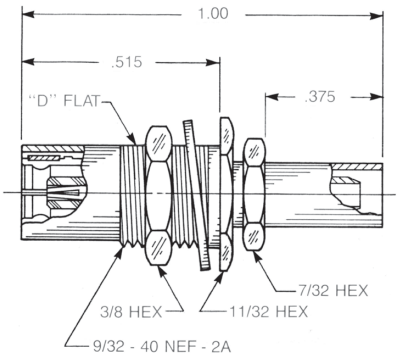
Bulkhead Mounted Cable Plugs



Bulkhead Mounted Straight Cable Plug

Clamp type for flexible cable:
2028-1551-0XX (Gold-plated)
2028-7551-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
2028-1541-0XX (Gold-plated)
2028-7541-0XX (Nickel-plated)



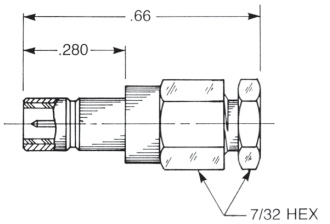
Bulkhead Mounted Straight Cable Plug

Crimp type for flexible cable:
2028-1571-0XX (Gold-plated)
2028-7571-0XX (Nickel-plated)

Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	09	0.141″ semi-rigid, RG402, M17/130
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	10	0.085″ semi-rigid, RG405, M17/133
05	RG178DS, RG196DS	19	RG174DS, RG316DS, M17/152, Times RD316

Designed for use with 0.093″ max thick panel.

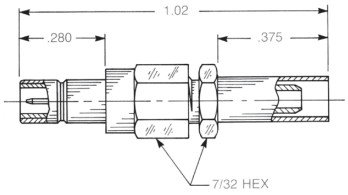
Cable Jacks



Straight Male Cable Jack

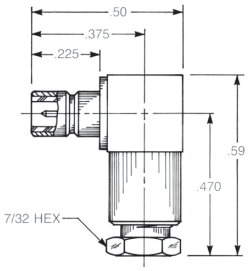
Clamp type for flexible cable:
2001-1551-0XX (Gold-plated)
2001-7551-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
2001-1541-0XX (Gold-plated)
2001-7541-0XX (Nickel-plated)



Straight Male Cable Jack

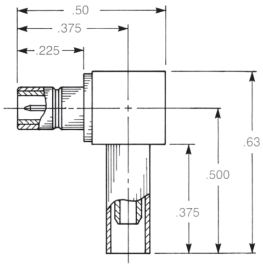
Crimp type for flexible cable:
2001-1571-0XX (Gold-plated)
2001-7571-0XX (Nickel-plated)



Right Angle Male Cable Jack

Clamp type for flexible cable:
2041-1551-0XX (Gold-plated)
2041-7551-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
2041-1541-0XX (Gold-plated)
2041-7541-0XX (Nickel-plated)

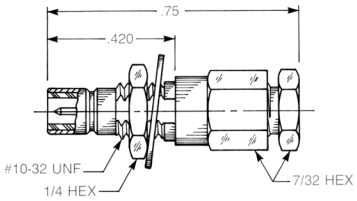


Right Angle Male Cable Jack

Clamp type for flexible cable:
2141-1521-0XX (Gold-plated)
2141-7521-0XX (Nickel-plated)

Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	09	0.141″ semi-rigid, RG402, M17/130
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	10	0.085″ semi-rigid, RG405, M17/133
05	RG178DS, RG196DS	19	RG174DS, RG316DS, M17/152, Times RD316

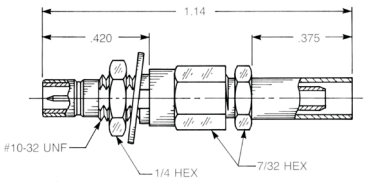
Bulkhead Jacks



Straight Male Bulkhead Cable Jack

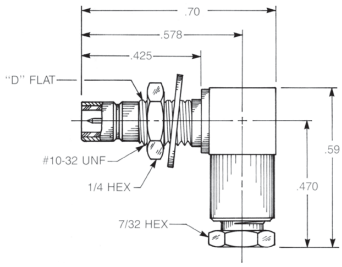
Clamp type for flexible cable:
2003-1551-0XX (Gold-plated)
2003-7551-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
2003-1541-0XX (Gold-plated)
2003-7541-0XX (Nickel-plated)



Straight Male Bulkhead Cable Jack

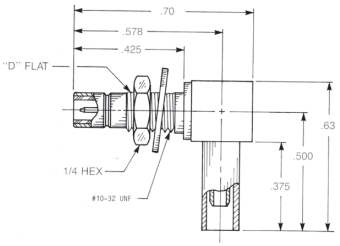
Crimp type for flexible cable:
2003-1571-0XX (Gold-plated)
2003-7571-0XX (Nickel-plated)



Bulkhead Mounted Right Angle Male Cable Jack

Clamp type for flexible cable:
2006-1551-0XX (Gold-plated)
2006-7551-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
2006-1541-0XX (Gold-plated)
2006-7541-0XX (Nickel-plated)



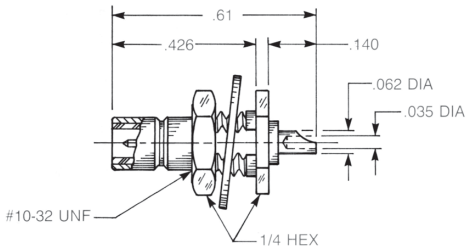
Bulkhead Mounted Right Angle Male Cable Jack

Crimp type for flexible cable:
2106-1521-0XX (Gold-plated)
2106-7521-0XX (Nickel-plated)

Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	09	0.141″ semi-rigid, RG402, M17/130
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	10	0.085″ semi-rigid, RG405, M17/133
05	RG178DS, RG196DS	19	RG174DS, RG316DS, M17/152, Times RD316

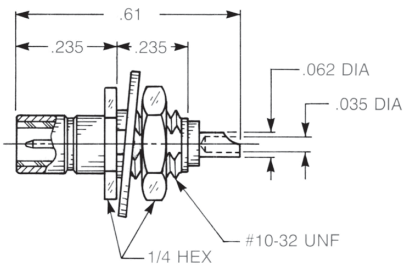
Designed for use with 0.093″ max thick panel. See page 12-3 for D-flat location in relation to hex.

Bulkhead Jack Receptacles



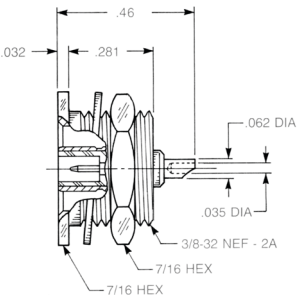
Straight Male Bulkhead Jack Receptacle
- Solder pot contact
- Rear mount

2004-1511-000 (Gold-plated)
2004-7511-000 (Nickel-plated)



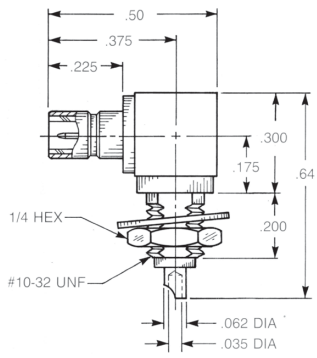
Straight Male Bulkhead Jack Receptacle
- Solder pot contact
- Front mount

2019-1511-000 (Gold-plated)
2019-7511-000 (Nickel-plated)



Straight Male Bulkhead Jack Receptacle
- Solder pot contact
- Recessed front mount

2014-1511-000 (Gold-plated)
2014-7511-000 (Nickel-plated)

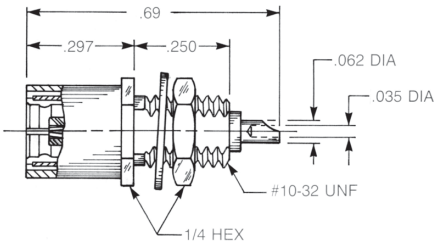


Straight Male Cable Jack
- Solder pot contact
- Front mount

2012-1511-000 (Gold-plated)
2012-7511-000 (Nickel-plated)

Designed for use with 0.093″ max thick panel. See page 12-3 for D-flat location in relation to hex.

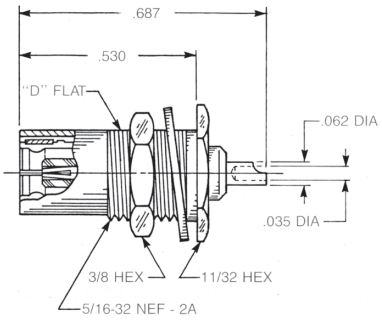
Bulkhead Plug Receptacles



Straight Female Bulkhead Plug Receptacle

- Solder pot contact
- Front mount

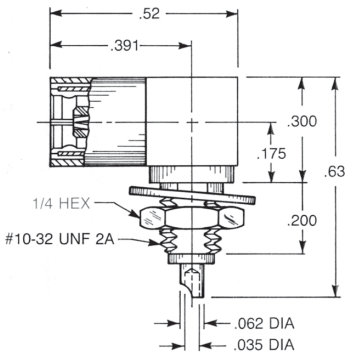
2017-1511-000 (Gold-plated)
2017-7511-000 (Nickel-plated)



Straight Female Bulkhead Plug Receptacle

- Solder pot contact
- Rear mount

2048-1511-000 (Gold-plated)
2048-7511-000 (Nickel-plated)



Right Angle Female Bulkhead Plug Receptacle

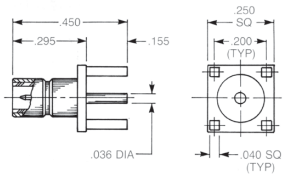
- Solder pot contact
- Front mount

2097-1511-000 (Gold-plated)
2097-7511-000 (Nickel-plated)

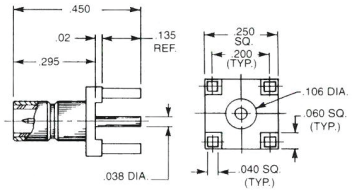
Designed for use with 0.093″ max thick panel.

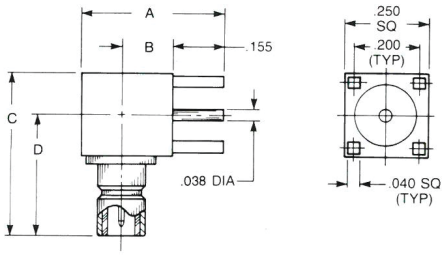
Straight Male Jack Receptacle

2009-1511-000 (Gold-plated)
2009-7511-000 (Nickel-plated)



2009-1511-050 (Gold-plated)
2009-7511-050 (Nickel-plated)

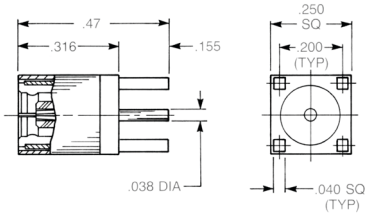




Right Angle Male Jack Receptacle

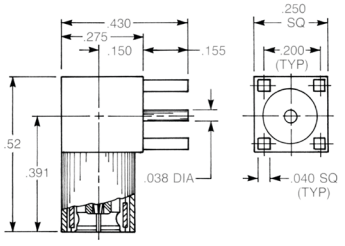
A	B	C	D
0.43	0.15	0.50	0.38
2010-1511-000 (Gold-plated)			
2010-7511-000 (Nickel-plated)			

A	B	C	D
0.50	0.215	0.56	0.437
2010-1511-002 (Gold-plated)			
2010-7511-002 (Nickel-plated)			



Straight Female Plug Receptacle

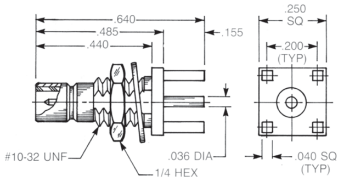
2025-1511-000 (Gold-plated)
2025-7511-000 (Nickel-plated)



Right Angle Female Plug Receptacle

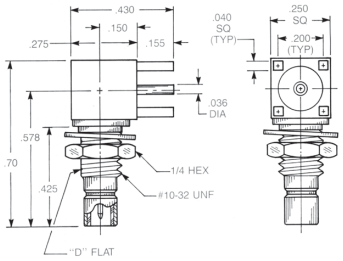
2042-1511-000 (Gold-plated)
2042-7511-000 (Nickel-plated)

PCB and Panel Receptacles



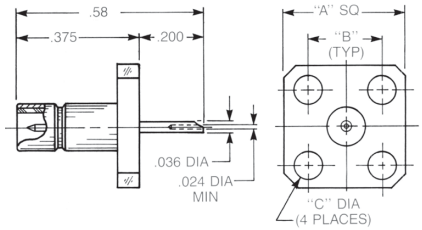
Bulkhead Mounted Straight Male Jack PCB Receptacle

2109-1511-000 (Gold-plated)
2109-7511-000 (Nickel-plated)



Bulkhead Mounted Right Angle Male Jack PCB Receptacle

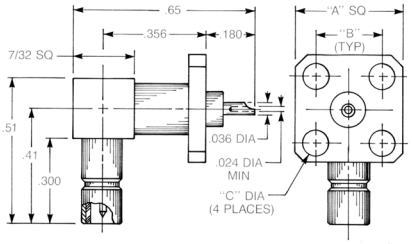
2110-1511-000 (Gold-plated)
2110-7511-000 (Nickel-plated)



Straight Male Panel Receptacle

A sq	B	C Ø
0.500	0.340	0.102
2486-1511-000 (Gold-plated)		
2486-7511-000 (Nickel-plated)		

A sq	B	C Ø
0.375	0.232	0.093
2484-1511-000 (Gold-plated)		
2484-7511-000 (Nickel-plated)		

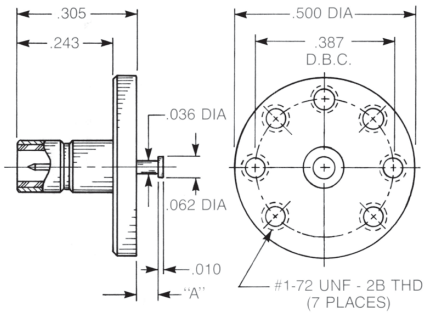


Right Angle Male Panel Receptacle

A sq	B	C Ø
0.500	0.340	0.102
2490-1511-000 (Gold-plated)		
2490-7511-000 (Nickel-plated)		

A sq	B	C Ø
0.375	0.232	0.093
2488-1511-000 (Gold-plated)		
2488-7511-000 (Nickel-plated)		

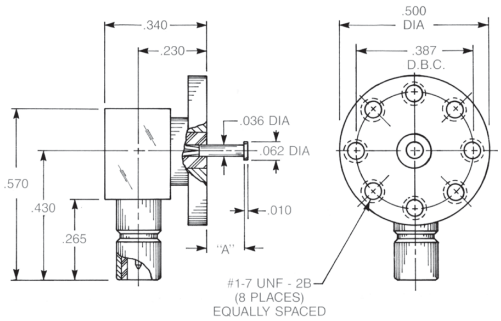
Stripline Receptacles



Straight Male Top Launch Jack

- Non-captive contact

Dim. A	Part Number:
0.031	**2029-1211-001** (Gold-plated)
	2029-7211-001 (Nickel-plated)
0.063	**2029-1211-002** (Gold-plated)
	2029-7211-002 (Nickel-plated)
0.125	**2029-1211-003** (Gold-plated)
	2029-7211-003 (Nickel-plated)

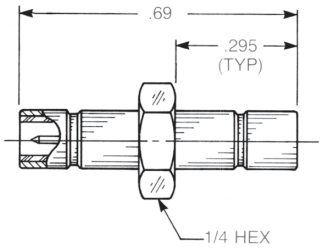


Right Angle Male Top Launch Jack

- Removable rear contact

Dim. A	Part Number:
0.031	**2092-1511-001** (Gold-plated)
	2092-7511-001 (Nickel-plated)
0.063	**2092-1511-002** (Gold-plated)
	2092-7511-002 (Nickel-plated)
0.125	**2092-1511-003** (Gold-plated)
	2092-7511-003 (Nickel-plated)

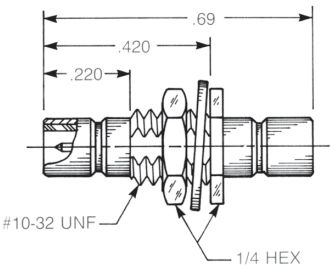
Adapters Within Series



Straight Male Adapter

- Jack to jack
- Connects two plugs

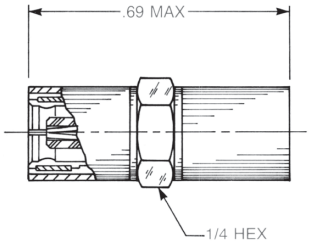
5213-1501-000 (Gold-plated)
5213-7501-000 (Nickel-plated)



Bulkhead Mounted Straight Male Adapter

- Jack to jack
- Connects two plugs
- For 0.093″ max panel

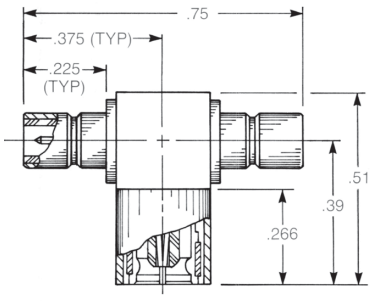
5222-1501-000 (Gold-plated)
5222-7501-000 (Nickel-plated)



Straight Female Adapter

- Plug to plug
- Connects two jacks

5216-1501-000 (Gold-plated)
5216-7501-000 (Nickel-plated)

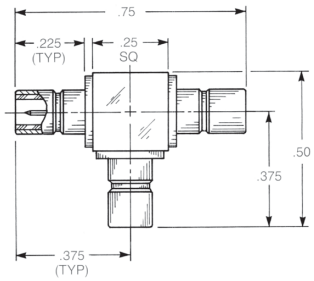


Tee Adapter
(Unmatched Power Divider)

- Jack to plug to jack
- Connects two plugs and one jack

5215-1501-000 (Gold-plated)
5215-7501-000 (Nickel-plated)

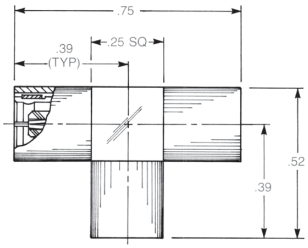
Adapters Within Series - Resistive Terminations



Tee Adapter (Unmatched Power Divider)

- Jack to jack to jack
- Connects three plugs

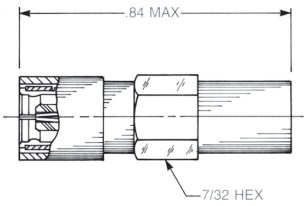
5207-1501-000 (Gold-plated)
5207-7501-000 (Nickel-plated)



Tee Adapter (Unmatched Power Divider)

- Plug to plug to plug
- Connects three jacks

5208-1501-000 (Gold-plated)
5208-7501-000 (Nickel-plated)

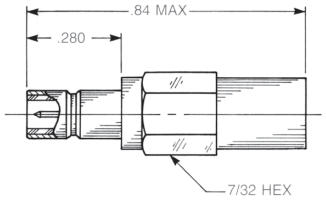


Female Plug Resistive Termination (Dummy Load)

Standard resistor:
51 Ω, ½ W, 5% tolerance

2036-1511-051 (Gold-plated)
2036-7511-051 (Nickel-plated)

Available with other resistive values.



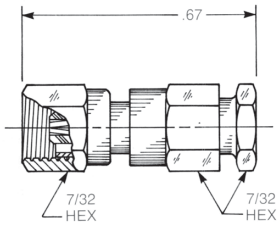
Male Jack Resistive Termination (Dummy Load)

Standard resistor:
51 Ω, ½ W, 5% tolerance

2037-1511-051 (Gold-plated)
2037-7511-051 (Nickel-plated)

Available with other resistive values.

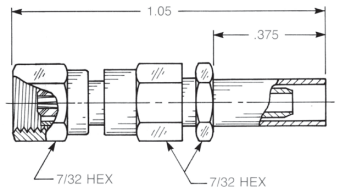
Cable Plugs



Straight Female Cable Plug

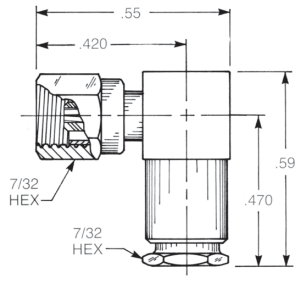
Clamp type for flexible cable:
1002-1551-0XX (Gold-plated)
1002-7551-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
1002-1541-0XX (Gold-plated)
1002-7541-0XX (Nickel-plated)



Straight Female Cable Plug

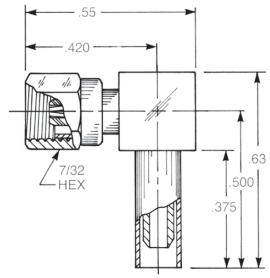
Crimp type for flexible cable:
1002-1571-0XX (Gold-plated)
1002-7571-0XX (Nickel-plated)



Right Angle Female Cable Plug

Clamp type for flexible cable:
1005-1551-0XX (Gold-plated)
1005-7551-0XX (Nickel-plated)

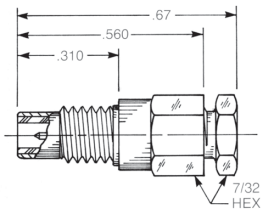
Solder-clamp for semi-rigid cable:
1005-1541-0XX (Gold-plated)
1005-7541-0XX (Nickel-plated)



Right Angle Female Cable Plug

Clamp type for flexible cable:
1105-1521-0XX (Gold-plated)
1105-7521-0XX (Nickel-plated)

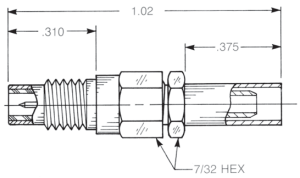
Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	09	0.141″ semi-rigid, RG402, M17/130
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	10	0.085″ semi-rigid, RG405, M17/133
05	RG178DS, RG196DS	19	RG174DS, RG316DS, M17/152, Times RD316



Straight Male Cable Jack

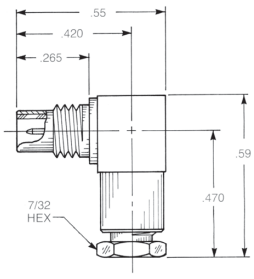
Clamp type for flexible cable:
1001-1551-0XX (Gold-plated)
1001-7551-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
1001-1541-0XX (Gold-plated)
1001-7541-0XX (Nickel-plated)



Straight Male Cable Jack

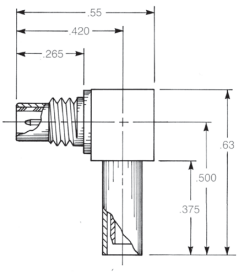
Crimp type for flexible cable:
1001-1571-0XX (Gold-plated)
1001-7571-0XX (Nickel-plated)



Right Angle Male Cable Jack

Clamp type for flexible cable:
1041-1551-0XX (Gold-plated)
1041-7551-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
1041-1541-0XX (Gold-plated)
1041-7541-0XX (Nickel-plated)

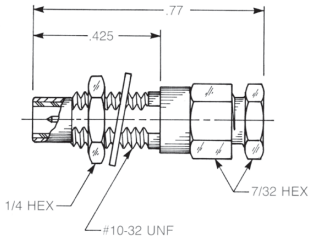


Right Angle Male Cable Jack

Clamp type for flexible cable:
1141-1521-0XX (Gold-plated)
1141-7521-0XX (Nickel-plated)

Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	09	0.141″ semi-rigid, RG402, M17/130
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	10	0.085″ semi-rigid, RG405, M17/133
05	RG178DS, RG196DS	19	RG174DS, RG316DS, M17/152, Times RD316

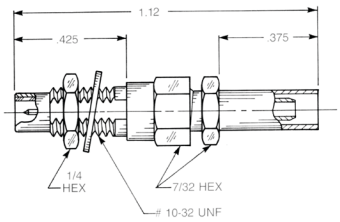
Bulkhead Jacks



Straight Male Bulkhead Cable Jack

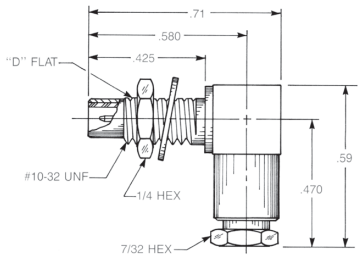
Clamp type for flexible cable:
1003-1551-0XX (Gold-plated)
1003-7551-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
1003-1541-0XX (Gold-plated)
1003-7541-0XX (Nickel-plated)



Straight Male Bulkhead Cable Jack

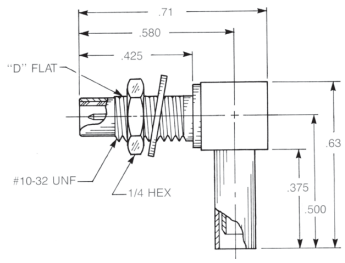
Crimp type for flexible cable:
1003-1571-0XX (Gold-plated)
1003-7571-0XX (Nickel-plated)



Bulkhead Mounted Right Angle Male Cable Jack

Clamp type for flexible cable:
1006-1551-0XX (Gold-plated)
1006-7551-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
1006-1541-0XX (Gold-plated)
1006-7541-0XX (Nickel-plated)



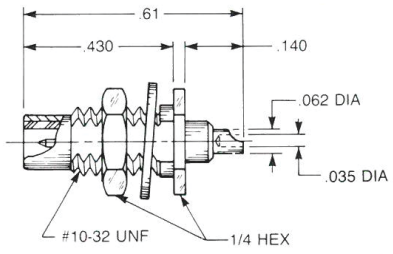
Bulkhead Mounted Right Angle Male Cable Jack

Crimp type for flexible cable:
1106-1521-0XX (Gold-plated)
1106-7521-0XX (Nickel-plated)

Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	09	0.141″ semi-rigid, RG402, M17/130
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	10	0.085″ semi-rigid, RG405, M17/133
05	RG178DS, RG196DS	19	RG174DS, RG316DS, M17/152, Times RD316

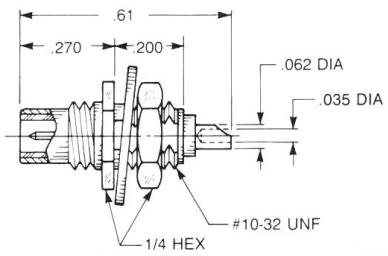
Designed for use with 0.093″ max thick panel. See page 12-3 for D-flat location in relation to hex.

Bulkhead Mounted Receptacles



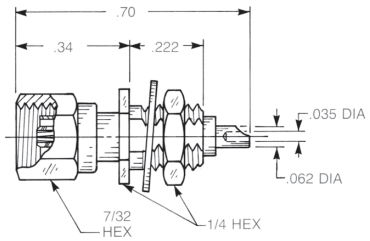
Straight Male Bulkhead Jack Receptacle
- Solder pot contact
- Rear mount

1004-1511-000 (Gold-plated)
1004-7511-000 (Nickel-plated)



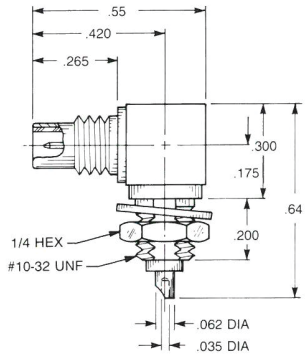
Straight Male Bulkhead Jack Receptacle
- Solder pot contact
- Front mount

1019-1511-000 (Gold-plated)
1019-7511-000 (Nickel-plated)



Straight Female Bulkhead Plug Receptacle
- Solder pot contact
- Front mount

1017-1511-000 (Gold-plated)
1017-7511-000 (Nickel-plated)

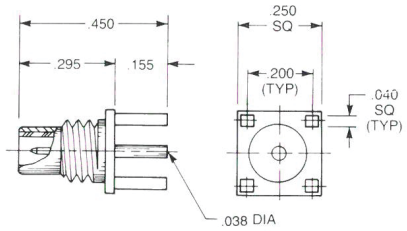


Right Angle Male Bulkhead Jack Receptacle
- Solder pot contact
- Front mount

1012-1511-000 (Gold-plated)
1012-7511-000 (Nickel-plated)

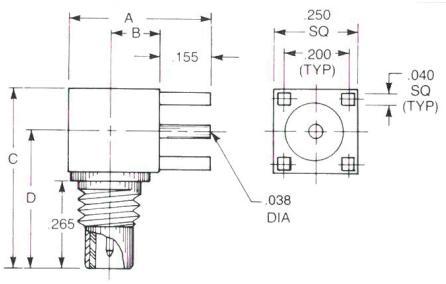
Designed for use with 0.093″ max thick panel. See page 12-3 for D-flat location in relation to hex.

PCB Receptacles



Straight Male Jack Receptacle

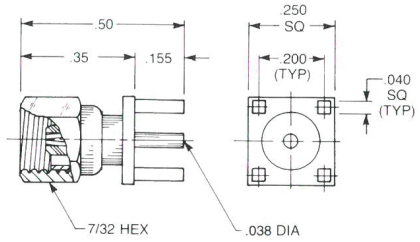
1009-1511-000 (Gold-plated)
1009-7511-000 (Nickel-plated)



Right Angle Male Jack Receptacle

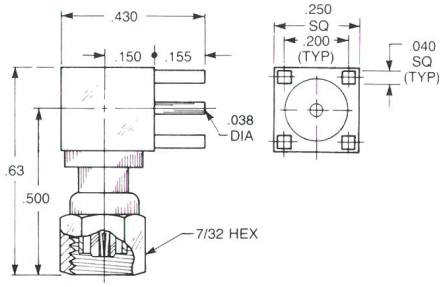
A	B	C	D
0.43	0.15	0.55	0.42
1010-1511-000 (Gold-plated)			
1010-7511-000 (Nickel-plated)			

A	B	C	D
0.50	0.215	0.55	0.42
1010-1511-001 (Gold-plated)			
1010-7511-001 (Nickel-plated)			



Straight Female Plug Receptacle

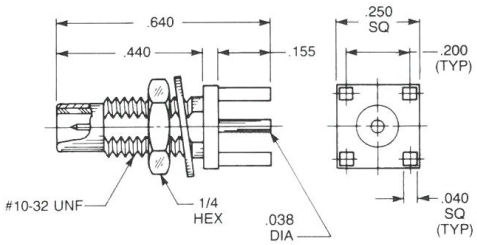
1025-1511-000 (Gold-plated)
1025-7511-000 (Nickel-plated)



Right Angle Female Plug Receptacle

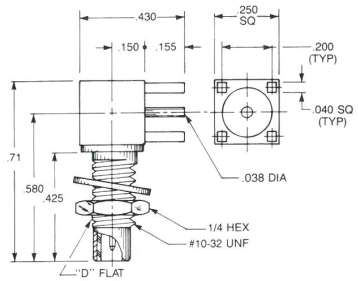
1042-1511-000 (Gold-plated)
1042-7511-000 (Nickel-plated)

PCB and Panel Receptacles



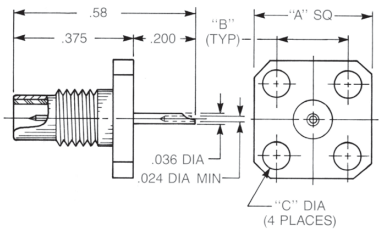
Bulkhead Mounted Straight Male Jack PCB Receptacle

1109-1511-000 (Gold-plated)
1109-7511-000 (Nickel-plated)



Bulkhead Mounted Right Angle Male Jack PCB Receptacle

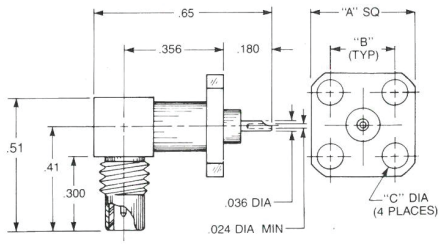
1110-1511-000 (Gold-plated)
1110-7511-000 (Nickel-plated)



Straight Male Panel Receptacle

A sq	B	C Ø
0.500	0.340	0.102
1486-1511-000 (Gold-plated)		
1486-7511-000 (Nickel-plated)		

A sq	B	C Ø
0.375	0.232	0.093
1484-1511-000 (Gold-plated)		
1484-7511-000 (Nickel-plated)		

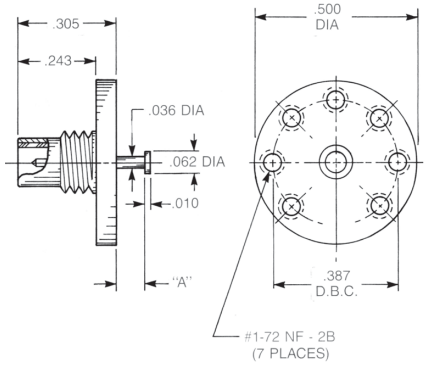


Right Angle Male Panel Receptacle

A sq	B	C Ø
0.500	0.340	0.102
1490-1511-000 (Gold-plated)		
1490-7511-000 (Nickel-plated)		

A sq	B	C Ø
0.375	0.232	0.093
1488-1511-000 (Gold-plated)		
1488-7511-000 (Nickel-plated)		

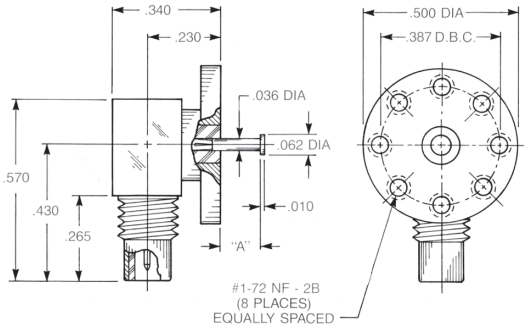
Stripline Receptacles



Straight Male Top Launch Jack

- Non-captive contact

Dim. A	Part Number:
0.031	**1029-1211-001** (Gold-plated)
	1029-7211-001 (Nickel-plated)
0.063	**1029-1211-002** (Gold-plated)
	1029-7211-002 (Nickel-plated)
0.125	**1029-1211-003** (Gold-plated)
	1029-7211-003 (Nickel-plated)

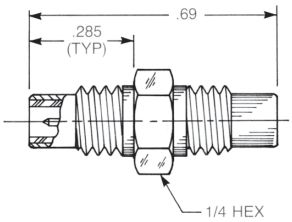


Right Angle Male Top Launch Jack

- Removable rear contact

Dim. A	Part Number:
0.031	**1092-1511-001** (Gold-plated)
	1092-7511-001 (Nickel-plated)
0.063	**1092-1511-002** (Gold-plated)
	1092-7511-002 (Nickel-plated)
0.125	**1092-1511-003** (Gold-plated)
	1092-7511-003 (Nickel-plated)

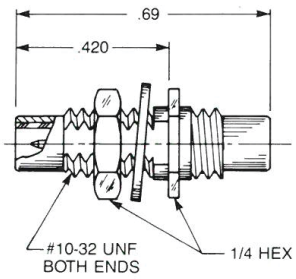
Adapters Within Series



Straight Male Adapter

- Jack to jack
- Connects two plugs

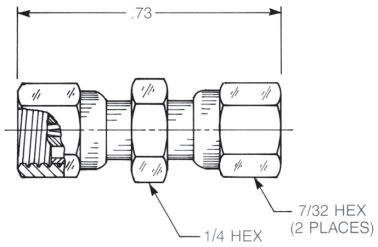
5813-1501-000 (Gold-plated)
5813-7501-000 (Nickel-plated)



Bulkhead Mounted Straight Male Adapter

- Jack to jack
- Connects two plugs
- For 0.093″ max panel

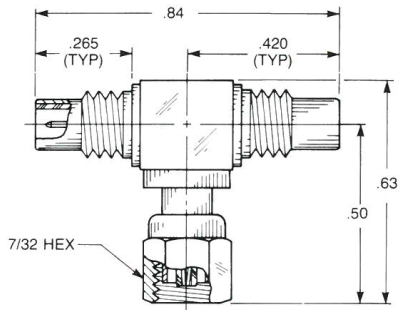
5822-1501-000 (Gold-plated)
5822-7501-000 (Nickel-plated)



Straight Female Adapter

- Plug to plug
- Connects two jacks

5816-1501-000 (Gold-plated)
5816-7501-000 (Nickel-plated)

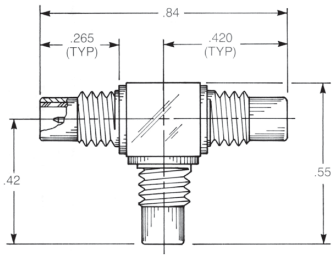


Tee Adapter
(Unmatched Power Divider)

- Jack to plug to jack
- Connects two plugs and one jack

5815-1501-000 (Gold-plated)
5815-7501-000 (Nickel-plated)

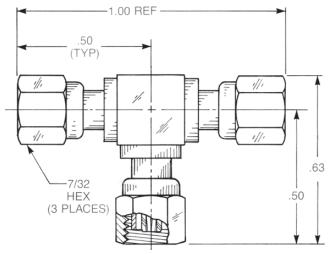
Adapters Within Series - Resistive Terminations



Tee Adapter (Unmatched Power Divider)

- Jack to jack to jack
- Connects three plugs

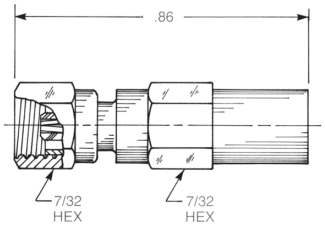
5807-1501-000 (Gold-plated)
5807-7501-000 (Nickel-plated)



Tee Adapter (Unmatched Power Divider)

- Plug to plug to plug
- Connects three jacks

5808-1501-000 (Gold-plated)
5808-7501-000 (Nickel-plated)

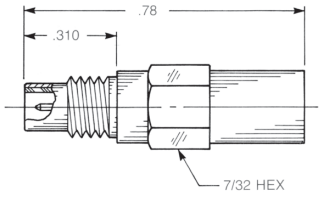


Female Plug Resistive Termination (Dummy Load)

Standard resistor:
51 Ω, ½ W, 5% tolerance

1036-1511-051 (Gold-plated)
1036-7511-051 (Nickel-plated)

Available with other resistive values.



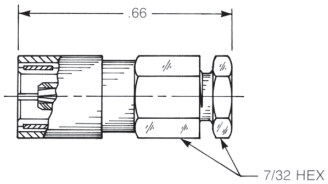
Male Jack Resistive Termination (Dummy Load)

Standard resistor:
51 Ω, ½ W, 5% tolerance

1037-1511-051 (Gold-plated)
1037-7511-051 (Nickel-plated)

Available with other resistive values.

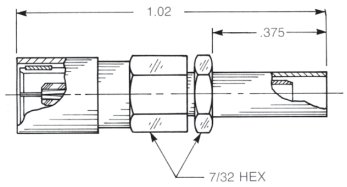
Cable Plugs



Straight Female Cable Plug

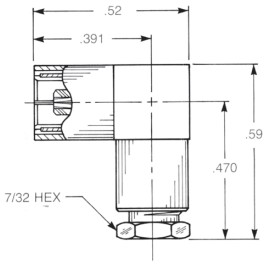
Clamp type for flexible cable:
3002-1551-0XX (Gold-plated)
3002-7551-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
3002-1541-0XX (Gold-plated)
3002-7541-0XX (Nickel-plated)



Straight Female Cable Plug

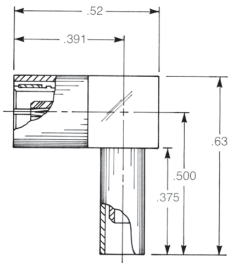
Crimp type for flexible cable:
3002-1571-0XX (Gold-plated)
3002-7571-0XX (Nickel-plated)



Right Angle Female Cable Plug

Clamp type for flexible cable:
3005-1551-0XX (Gold-plated)
3005-7551-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
3005-1541-0XX (Gold-plated)
3005-7541-0XX (Nickel-plated)

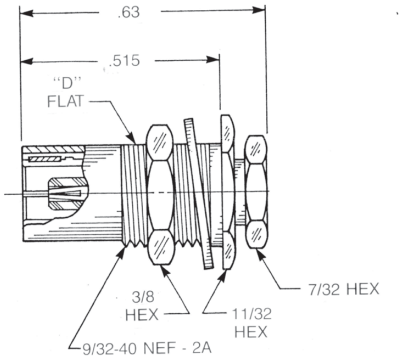


Right Angle Female Cable Plug

Crimp type for flexible cable:
3105-1521-0XX (Gold-plated)
3105-7521-0XX (Nickel-plated)

Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	09	0.141″ semi-rigid, RG402, M17/130
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	10	0.085″ semi-rigid, RG405, M17/133
05	RG178DS, RG196DS	19	RG174DS, RG316DS, M17/152, Times RD316

Bulkhead Mounted Cable Plugs

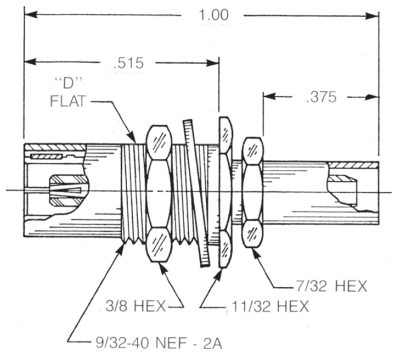


Bulkhead Mounted Straight Female Cable Plug

Clamp type for flexible cable:
3028-1551-0XX (Gold-plated)
3028-7551-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
3028-1541-0XX (Gold-plated)
3028-7541-0XX (Nickel-plated)

See page 3-35 for float mount version.



Bulkhead Mounted Straight Female Cable Plug

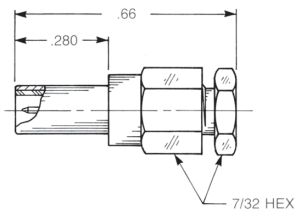
Crimp type for flexible cable:
3028-1571-0XX (Gold-plated)
3028-7571-0XX (Nickel-plated)

See page 3-35 for float mount version.

Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	09	0.141″ semi-rigid, RG402, M17/130
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	10	0.085″ semi-rigid, RG405, M17/133
05	RG178DS, RG196DS	19	RG174DS, RG316DS, M17/152, Times RD316

Designed for use with 0.093″ max thick panel.

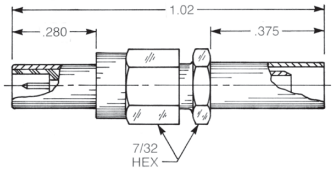
Cable Jacks



Straight Male Cable Jack

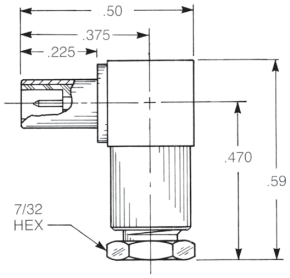
Clamp type for flexible cable:
3001-1551-0XX (Gold-plated)
3001-7551-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
3001-1541-0XX (Gold-plated)
3001-7541-0XX (Nickel-plated)



Straight Male Cable Jack

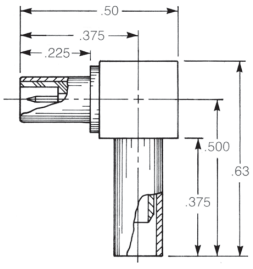
Crimp type for flexible cable:
3001-1571-0XX (Gold-plated)
3001-7571-0XX (Nickel-plated)



Right Angle Male Cable Jack

Clamp type for flexible cable:
3041-1551-0XX (Gold-plated)
3041-7551-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
3041-1541-0XX (Gold-plated)
3041-7541-0XX (Nickel-plated)

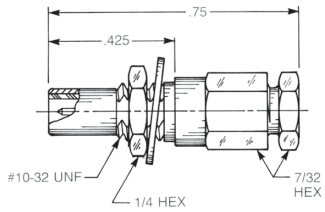


Right Angle Male Cable Jack

Crimp type for flexible cable:
3141-1571-0XX (Gold-plated)
3141-7571-0XX (Nickel-plated)

Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	09	0.141″ semi-rigid, RG402, M17/130
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	10	0.085″ semi-rigid, RG405, M17/133
05	RG178DS, RG196DS	19	RG174DS, RG316DS, M17/152, Times RD316

Bulkhead Jacks

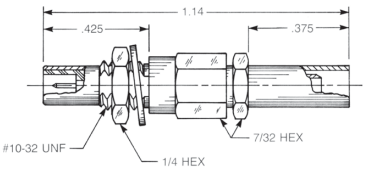


Straight Male Bulkhead Cable Jack

Clamp type for flexible cable:
3003-1551-0XX (Gold-plated)
3003-7551-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
3003-1541-0XX (Gold-plated)
3003-7541-0XX (Nickel-plated)

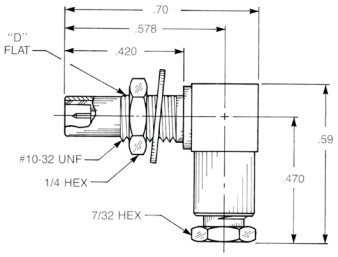
See page 3-36 for float mount version.



Straight Male Bulkhead Cable Jack

Crimp type for flexible cable:
3003-1571-0XX (Gold-plated)
3003-7571-0XX (Nickel-plated)

See page 3-36 for float mount version.

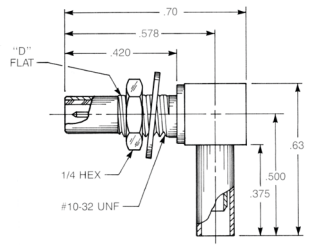


Right Angle Male Bulkhead Cable Jack

Clamp type for flexible cable:
3006-1551-0XX (Gold-plated)
3006-7551-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
3006-1541-0XX (Gold-plated)
3006-7541-0XX (Nickel-plated)

See page 3-37 for float mount version.



Right Angle Male Bulkhead Cable Jack

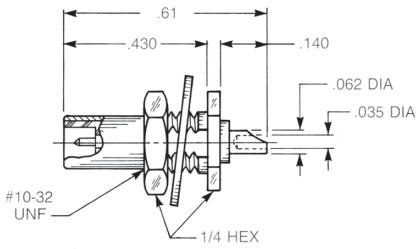
Crimp type for flexible cable:
3106-1521-0XX (Gold-plated)
3106-7521-0XX (Nickel-plated)

See page 3-37 for float mount version.

Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	09	0.141″ semi-rigid, RG402, M17/130
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	10	0.085″ semi-rigid, RG405, M17/133
05	RG178DS, RG196DS	19	RG174DS, RG316DS, M17/152, Times RD316

Designed for use with 0.093″ max thick panel. See page 12-3 for D-flat location in relation to hex.

Bulkhead Jack Receptacles

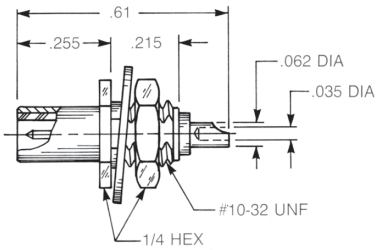


Straight Male Bulkhead Jack Receptacle

- Solder pot contact
- Rear mount

3004-1511-000 (Gold-plated)
3004-7511-000 (Nickel-plated)

See page 3-38 for float mount version.

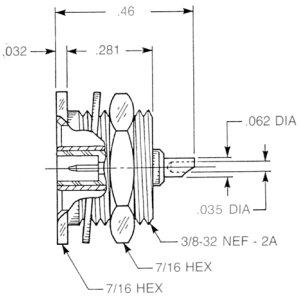


Straight Male Bulkhead Jack Receptacle

- Solder pot contact
- Front mount

3019-1511-000 (Gold-plated)
3019-7511-000 (Nickel-plated)

See page 3-38 for float mount version.

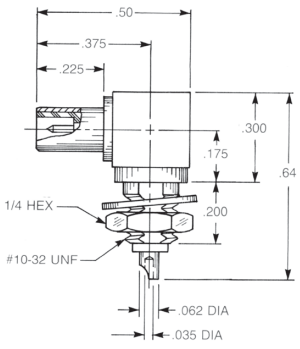


Straight Male Bulkhead Jack Receptacle

- Solder pot contact
- Recessed front mount

3014-1511-000 (Gold-plated)
3014-7511-000 (Nickel-plated)

See page 3-38 for float mount version.



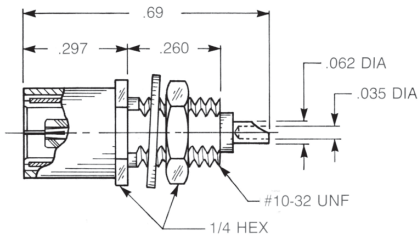
Right Angle Male Bulkhead Jack Receptacle

- Solder pot contact
- Front mount

3012-1511-000 (Gold-plated)
3012-7511-000 (Nickel-plated)

Designed for use with 0.093″ max thick panel. See page 12-3 for D-flat location in relation to hex.

Bulkhead Plug Receptacles

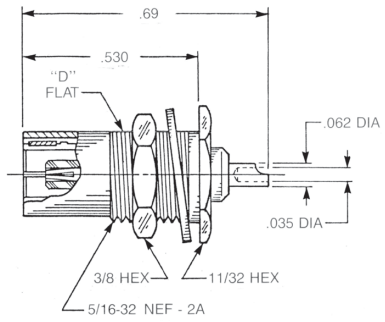


Straight Female Bulkhead Plug Receptacle

- Solder pot contact
- Front mount

3017-1511-000 (Gold-plated)
3017-7511-000 (Nickel-plated)

See page 3-39 for float mount version.

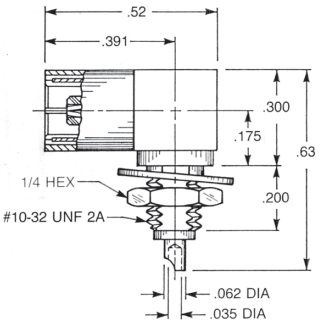


Straight Female Bulkhead Plug Receptacle

- Solder pot contact
- Rear mount

3048-1511-000 (Gold-plated)
3048-7511-000 (Nickel-plated)

See page 3-39 for float mount version.



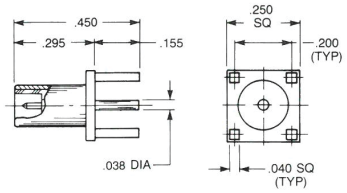
Right Angle Female Bulkhead Plug Receptacle

- Solder pot contact
- Front mount

3097-1511-000 (Gold-plated)
3097-7511-000 (Nickel-plated)

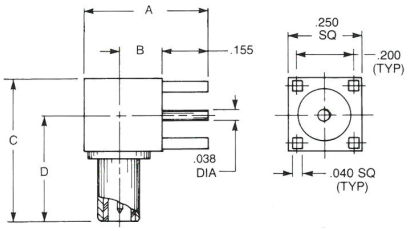
Designed for use with 0.093″ max thick panel.

PCB Receptacles



Straight Male Jack Receptacle

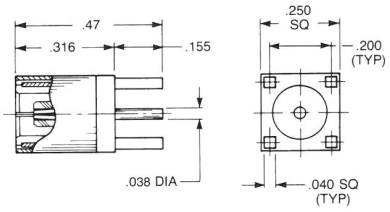
3009-1511-000 (Gold-plated)
3009-7511-000 (Nickel-plated)



Right Angle Male Jack Receptacle

A	B	C	D
0.43	0.15	0.50	0.38
3010-1511-000 (Gold-plated)			
3010-7511-000 (Nickel-plated)			

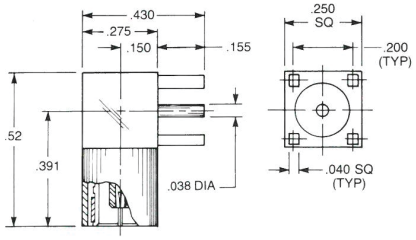
A	B	C	D
0.50	0.215	0.56	0.437
3010-1511-003 (Gold-plated)			
3010-7511-003 (Nickel-plated)			



Straight Female Plug Receptacle

3025-1511-000 (Gold-plated)
3025-7511-000 (Nickel-plated)

See page 3-40 for blind mate version.

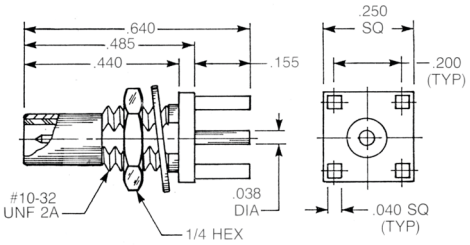


Right Angle Female Plug Receptacle

3042-1511-000 (Gold-plated)
3042-7511-000 (Nickel-plated)

See page 3-40 for blind mate version.

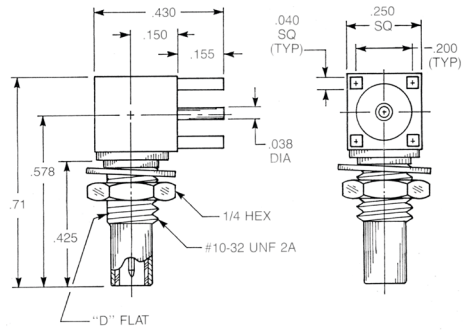
PCB Receptacles - Adapter



Bulkhead Mounted Straight Male Jack PCB Receptacle

3109-1511-000 (Gold-plated)
3109-7511-000 (Nickel-plated)

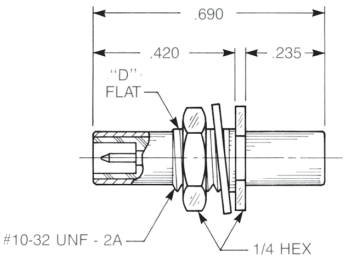
See page 3-40 for float mount version.



Bulkhead Mounted Right Angle Male Jack PCB Receptacle

3110-1511-000 (Gold-plated)
3110-7511-000 (Nickel-plated)

See page 3-40 for float mount version.



Bulkhead Mounted Straight Male

- Jack to jack adapter

5252-1501-000 (Gold-plated)
5252-7501-000 (Nickel-plated)

See page 3-39 for float mount version.

Designed for use with 0.093″ max thick panel.

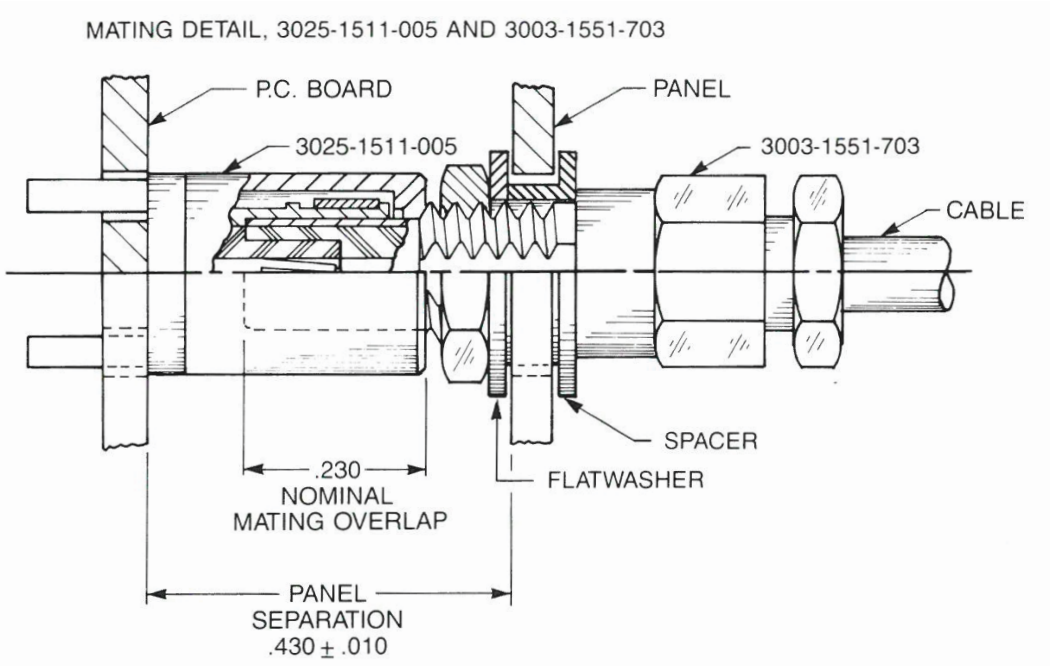
Float Mount - Blind Mate

AEP SLB series connectors can provide a low-cost alternative to other float mount/blind mate connector systems in applications below 4 GHz.

The radial float of the panel mounted connectors, combined with the closed-entry mating end hood of the plugs, allows the mating pairs to be misaligned up to about 0.025″ without damage occuring during mating. Since the axial float is not spring-loaded, panel-to-panel separation should be maintained within ± 0.010″.

Mating force per connector is 6 pounds maximum, and unmating force is 8 ounces minimum. External actuators, such as levers or jackscrews, should be considered in applications requiring simultaneous mating of multiple connector pairs, especially when one side is P.C. board mounted.

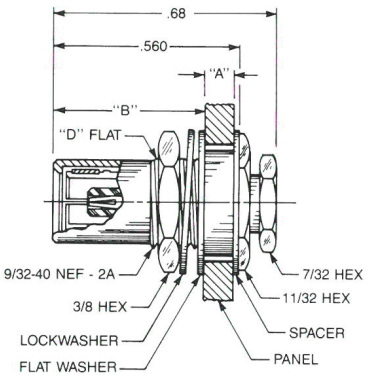
We recommend that only one side of the mating pair be float mounted.



To determine panel separation, add projection from panel or P.C. board for each connector used and subtract mating overlap (0.230″). Projection for each connector is shown on product pages, and is with all axial float loaded toward panel. Axial float is 0.008″ for all items. Lockwasher is not included with connectors for 0.093″ panel.

Radial float: when desired float is determined, drill panel to 0.230″ diameter plus float amount.

Cable Plugs - Float Mount/Blind Mate

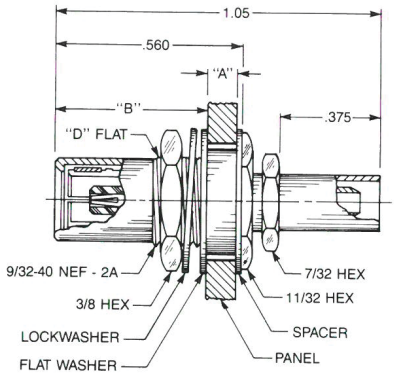


Bulkhead Mounted
Straight Female Cable Plug
Float Mount/Blind Mate

- Closed-entry mating end hood

Dim. A	Dim. B	Clamp type for flexible cable:
0.031	0.500	**3028-1551-5XX** (Gold-plated)
		3028-7551-5XX (Nickel-plated)
0.062	0.469	**3028-1551-6XX** (Gold-plated)
		3028-7551-6XX (Nickel-plated)
0.093	0.438	**3028-1551-7XX** (Gold-plated)
		3028-7551-7XX (Nickel-plated)

Dim. A	Dim. B	Solder-clamp for semi-rigid cable:
0.031	0.500	**3028-1541-5XX** (Gold-plated)
		3028-7541-5XX (Nickel-plated)
0.062	0.469	**3028-1541-6XX** (Gold-plated)
		3028-7541-6XX (Nickel-plated)
0.093	0.438	**3028-1541-7XX** (Gold-plated)
		3028-7541-7XX (Nickel-plated)



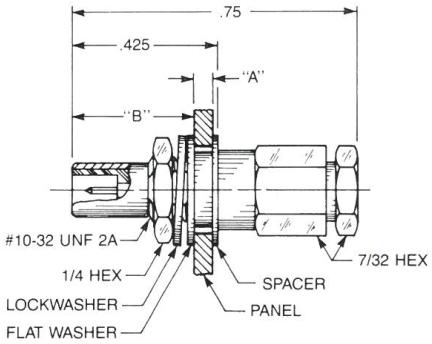
Bulkhead Mounted
Straight Female Cable Plug
Float Mount/Blind Mate

- Closed-entry mating end hood

Dim. A	Dim. B	Crimp type for flexible cable:
0.031	0.500	**3028-1571-5XX** (Gold-plated)
		3028-7571-5XX (Nickel-plated)
0.062	0.469	**3028-1571-6XX** (Gold-plated)
		3028-7571-6XX (Nickel-plated)
0.093	0.438	**3028-1571-7XX** (Gold-plated)
		3028-7571-7XX (Nickel-plated)

Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	09	0.141″ semi-rigid, RG402, M17/130
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	10	0.085″ semi-rigid, RG405, M17/133
05	RG178DS, RG196DS	19	RG174DS, RG316DS, M17/152, Times RD316

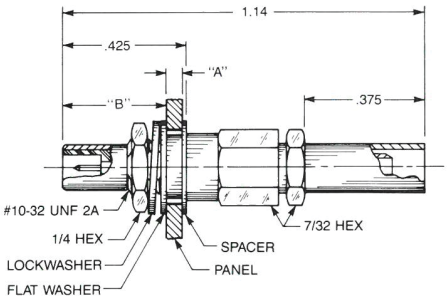
See page 3-34 for float mount details.



Float Mount
Straight Male
Bulkhead Cable Jack

Dim. A	Dim. B	Clamp type for flexible cable:
0.031	0.365	**3003-1551-5XX** (Gold-plated)
		3003-7551-5XX (Nickel-plated)
0.062	0.334	**3003-1551-6XX** (Gold-plated)
		3003-7551-6XX (Nickel-plated)
0.093	0.303	**3003-1551-7XX** (Gold-plated)
		3003-7551-7XX (Nickel-plated)

Dim. A	Dim. B	Solder-clamp for semi-rigid cable:
0.031	0.365	**3003-1541-5XX** (Gold-plated)
		3003-7541-5XX (Nickel-plated)
0.062	0.334	**3003-1541-6XX** (Gold-plated)
		3003-7541-6XX (Nickel-plated)
0.093	0.303	**3003-1541-7XX** (Gold-plated)
		3003-7541-7XX (Nickel-plated)



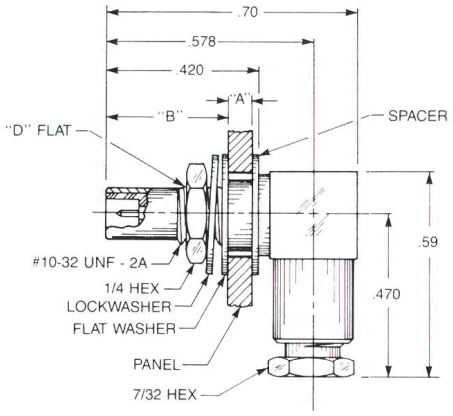
Float Mount
Straight Male
Bulkhead Cable Jack

Dim. A	Dim. B	Crimp type for flexible cable:
0.031	0.365	**3003-1571-5XX** (Gold-plated)
		3003-7571-5XX (Nickel-plated)
0.062	0.334	**3003-1571-6XX** (Gold-plated)
		3003-7571-6XX (Nickel-plated)
0.093	0.303	**3003-1571-7XX** (Gold-plated)
		3003-7571-7XX (Nickel-plated)

Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	09	0.141″ semi-rigid, RG402, M17/130
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	10	0.085″ semi-rigid, RG405, M17/133
05	RG178DS, RG196DS	19	RG174DS, RG316DS, M17/152, Times RD316

See page 3-34 for float mount details.

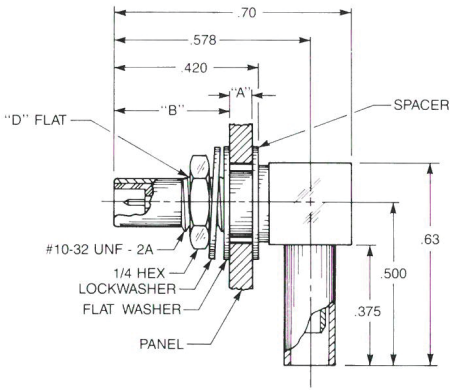
Bulkhead Jack Receptacles - Float Mount/Blind Mate



Float Mount
Right Angle Male
Bulkhead Cable Jack

Dim. A	Dim. B	Clamp type for flexible cable:
0.031	0.360	**3006-1551-5XX** (Gold-plated)
		3006-7551-5XX (Nickel-plated)
0.062	0.329	**3006-1551-6XX** (Gold-plated)
		3006-7551-6XX (Nickel-plated)
0.093	0.298	**3006-1551-7XX** (Gold-plated)
		3006-7551-7XX (Nickel-plated)

Dim. A	Dim. B	Solder-clamp for semi-rigid cable:
0.031	0.360	**3006-1541-5XX** (Gold-plated)
		3006-7541-5XX (Nickel-plated)
0.062	0.329	**3006-1541-6XX** (Gold-plated)
		3006-7541-6XX (Nickel-plated)
0.093	0.298	**3006-1541-7XX** (Gold-plated)
		3006-7541-7XX (Nickel-plated)

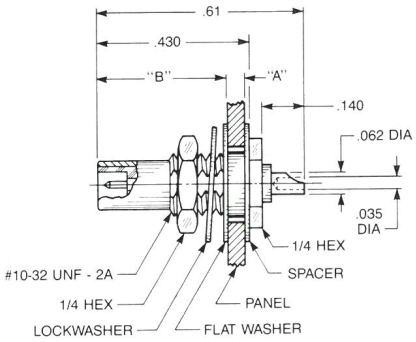


Float Mount
Right Angle Male
Bulkhead Cable Jack

Dim. A	Dim. B	Crimp type for flexible cable:
0.031	0.360	**3106-1521-5XX** (Gold-plated)
		3106-7521-5XX (Nickel-plated)
0.062	0.329	**3106-1521-6XX** (Gold-plated)
		3106-7521-6XX (Nickel-plated)
0.093	0.298	**3106-1521-7XX** (Gold-plated)
		3106-7521-7XX (Nickel-plated)

Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	09	0.141″ semi-rigid, RG402, M17/130
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	10	0.085″ semi-rigid, RG405, M17/133
05	RG178DS, RG196DS	19	RG174DS, RG316DS, M17/152, Times RD316

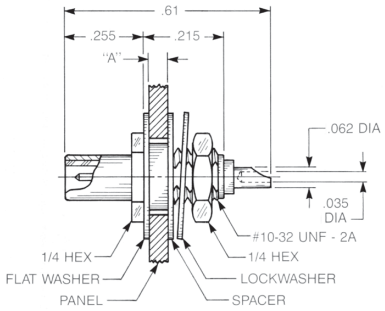
See page 3-34 for float mount details.



Float Mount Straight Male Bulkhead Jack Receptacle

- Solder pot contact
- Rear mount

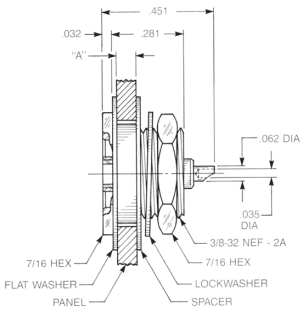
Dim. A	Dim. B	
0.031	0.370	**3004-1511-500** (Gold-plated)
		3004-7511-500 (Nickel-plated)
0.062	0.339	**3004-1511-600** (Gold-plated)
		3004-7511-600 (Nickel-plated)
0.093	0.308	**3004-1511-700** (Gold-plated)
		3004-7511-700 (Nickel-plated)



Float Mount Straight Male Bulkhead Jack Receptacle

- Solder pot contact
- Front mount

Dim. A	
0.031	**3019-1511-500** (Gold-plated)
	3019-7511-500 (Nickel-plated)
0.062	**3019-1511-600** (Gold-plated)
	3019-7511-600 (Nickel-plated)
0.093	**3019-1511-700** (Gold-plated)
	3019-7511-700 (Nickel-plated)



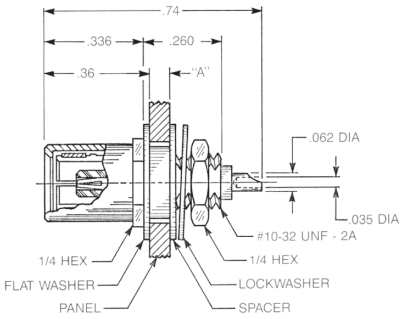
Float Mount Straight Male Bulkhead Jack Receptacle

- Solder pot contact
- Recessed front mount

Dim. A	
0.031	**3014-1511-500** (Gold-plated)
	3014-7511-500 (Nickel-plated)
0.062	**3014-1511-600** (Gold-plated)
	3014-7511-600 (Nickel-plated)
0.093	**3014-1511-700** (Gold-plated)
	3014-7511-700 (Nickel-plated)

See page 3-34 for float mount details.

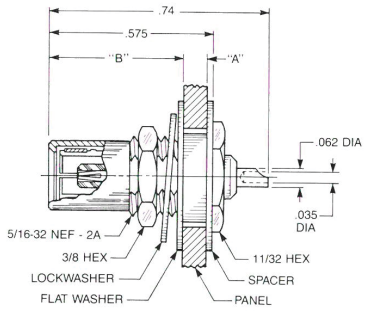
Bulkhead Plug Receptacles - Float Mount/Blind Mate



Float Mount Straight Female Bulkhead Plug Receptacle

- Solder pot contact
- Front mount
- Closed-entry mating end hood

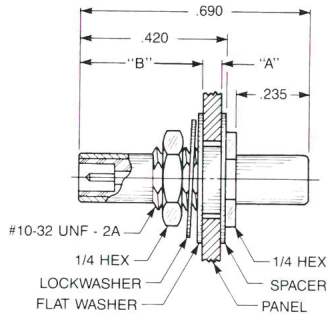
Dim. A	
0.031	**3017-1511-500** (Gold-plated)
	3017-7511-500 (Nickel-plated)
0.062	**3017-1511-600** (Gold-plated)
	3017-7511-600 (Nickel-plated)
0.093	**3017-1511-700** (Gold-plated)
	3017-7511-700 (Nickel-plated)



Float Mount Straight Female Bulkhead Plug Receptacle

- Solder pot contact
- Front mount
- Closed-entry mating end hood

Dim. A	Dim. B	
0.031	0.515	**3048-1511-500** (Gold-plated)
		3048-7511-500 (Nickel-plated)
0.062	0.484	**3048-1511-600** (Gold-plated)
		3048-7511-600 (Nickel-plated)
0.093	0.453	**3048-1511-700** (Gold-plated)
		3048-7511-700 (Nickel-plated)

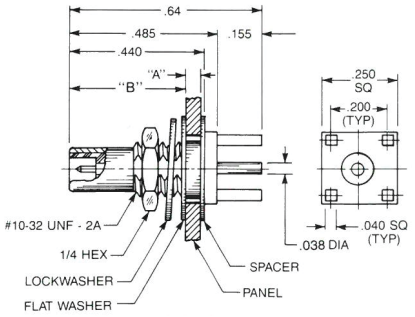


Float Mount Straight Male Adapter

- Jack to jack
- Connects two plugs

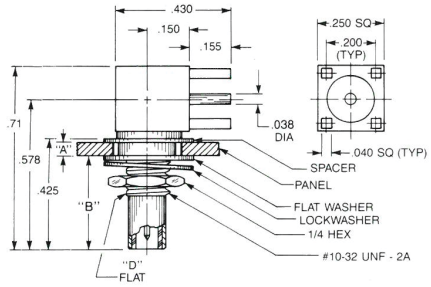
Dim. A	Dim. B	
0.031	0.360	**5252-1501-500** (Gold-plated)
		5252-7501-500 (Nickel-plated)
0.062	0.329	**5252-1501-600** (Gold-plated)
		5252-7501-600 (Nickel-plated)
0.093	0.298	**5252-1501-700** (Gold-plated)
		5252-7501-700 (Nickel-plated)

See page 3-34 for float mount details.



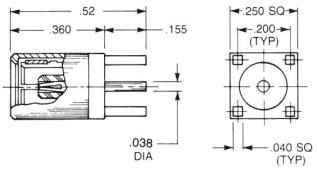
Float Mount
Straight Male Jack
PCB Receptacle

Dim. A	Dim. B	
0.031	0.380	**3109-1511-500** (Gold-plated)
		3109-7511-500 (Nickel-plated)
0.062	0.349	**3109-1511-600** (Gold-plated)
		3109-7511-600 (Nickel-plated)
0.093	0.318	**3109-1511-700** (Gold-plated)
		3109-7511-700 (Nickel-plated)



Float Mount
Right Angle Male Jack
PCB Receptacle

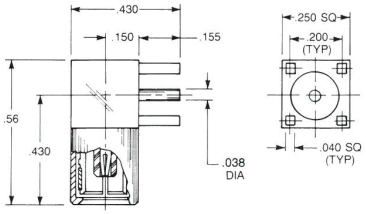
Dim. A	Dim. B	
0.031	0.365	**3110-1511-500** (Gold-plated)
		3110-7511-500 (Nickel-plated)
0.062	0.334	**3110-1511-600** (Gold-plated)
		3110-7511-600 (Nickel-plated)
0.093	0.303	**3110-1511-700** (Gold-plated)
		3110-7511-700 (Nickel-plated)



Straight Female Plug
PCB Receptacle

- Closed-entry mating end hood

3025-1511-005 (Gold-plated)
3025-7511-005 (Nickel-plated)



Right Angle Female Plug
PCB Receptacle

- Closed-entry mating end hood

3042-1511-006 (Gold-plated)
3042-7511-006 (Nickel-plated)

See page 3-34 for float mount details.

SSMB/SSMC/SSLB

SECTION 4 TABLE OF CONTENTS

SSMB SERIES

Specifications....4-3
Cable Plugs....4-4
Cable Jacks....4-5
Bulkhead Receptacles....4-6
P.C. Board Receptacles....4-7
Panel (Flange Mount) Receptacles....4-8

SSMC SERIES

Specifications....4-9
Cable Plugs....4-10
Cable Jacks....4-11
Bulkhead Receptacles....4-12
P.C. Board Receptacles....4-13
Receptacles and Adapters....110

SSLB SERIES

Mating Plugs....4-15
Cable Plugs....4-16

With AEP SSMB and SSMC series microminiature connectors, having to trade reliability for small size is no longer a design consideration. These rugged little connectors have been tested to 1,000 mating cycles with no change in insertion loss or mating forces. They have also passed all MIL-PRF-39012 qualification parameters for SMB connectors.

The key to this reliability is our use of beryllium copper outer contacts in plug connectors and closed entry female contacts.

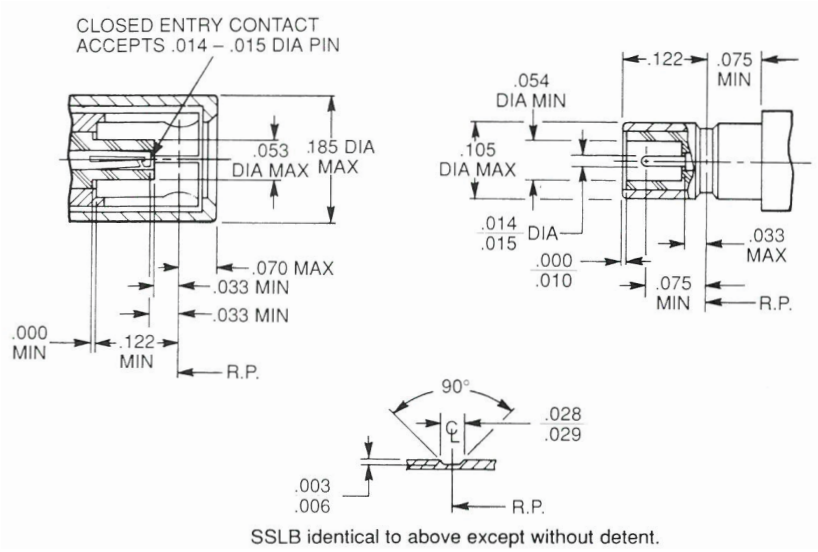
The standard mating design for SSMB and SSMC series connectors are similar to SMB and SMC but with a size reduction of approximately one-third. This makes them ideal for use in confined areas where the use of wrenches is not practical. Pages 4-15 and 4-16 show a group of plugs with slide-on mating for use where multiple connector pairs must be mated simultaneously.

These connectors have gained wide acceptance and usage in military radio systems, where small size is needed for miniaturization but ruggedness and reliability are paramount.

Because of the SSMB and SSMC series small size and tight tolerance, finishes other than gold-plating are not recommended.

Factory-built cable assemblies using these connectors are available from AEP. The index listing for each connector shows the appropriate cable assembly instruction. Assembly instructions start on page 13-14.

Interface Dimensions



SSLB identical to above except without detent.

SPECIFICATIONS MIL-PRF-39012

MATERIALS:

Female body components, center contacts: Beryllium copper per ASTM B196, condition HT

All other metal parts: Brass per ASTM B16. alloy 360, ½ hard

Insulators: Teflon TFE per ASTM-D-1710

FINISH:

Center contacts: Gold-plated per MIL-G-45204, type II, class 1, grade C

All other parts finished to meet MIL-PRF-39012 corrosion requirements.

ELECTRICAL:

Impedance: 50 Ω

Frequency range: DC-12.4 GHz

Voltage rating: 250 VRMS, sea level 60 VRMS, 70,000 ft

Insulation resistance: 1,000 MΩ min

VSWR:

Straight connector:

RG178: 1.25+[0.020×f (GHz)]

RG316: 1.30+[0.020×f (GHz)]

0.085″ SR: 1.25+[0.015×f (GHz)]

Right angle connector:

RG178: 1.25+[0.030×f (GHz)]

RG316: 1.30+[0.030×f (GHz)]

0.085″ SR: 1.25+[0.025×f (GHz)]

Contact resistance:

Center: 4.0 mΩ max initial
6.0 mΩ max after environment

Outer contact: 1.0 mΩ max initial
1.5 mΩ max after environment

Braid to body: 1.0 mΩ max initial
N/A after environment.

Corona level: 125 V at 70,000 ft

RF highpot: 400 VRMS at 5 MHz

RF leakage: -70 dB min at 2-3 GHz

Insertion loss: 0.30 dB max at 1.5 GHz

MECHANICAL:

Force to engage:

SSMB: Initial -6 lb max engagement, 2 lb min disengagement

After 500 matings -6 lb max engagement, 1 lb min disengagement

SSLB: Initial 6 lb max engagement, 0.5 lb min disengagement

Contact retention: 2 lb min axial force

Durability: 500 mating cycles

ENVIRONMENTAL: (per MIL-STD-202)

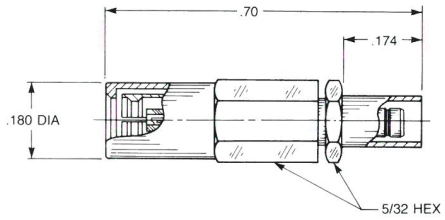
Temperature rating: -65° C to +165° C

Corrosion: Method 101, condition B, 5% salt solution

Vibration: Method 204,
SSMB, condition B (15G)
SSLB, condition A (10G)

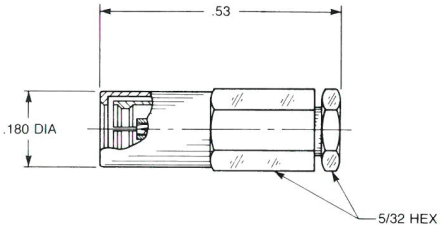
Mechanical shock: Method 213, SSMB, condition B, 75 G at 6 ms at ½ sine SSLB, N/A

Cable Plugs



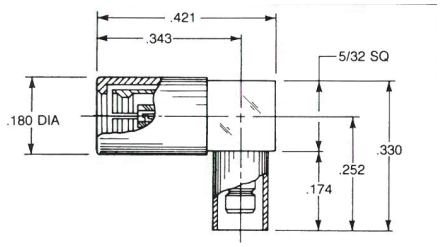
Straight Plug

Crimp type for flexible cable:
7202-1572-0XX



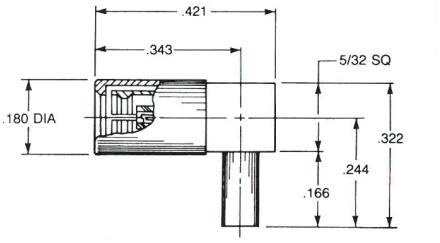
Straight Plug

Solder type for semi-rigid:
7202-1542-0XX



Right Angle Plug

Crimp type for flexible cable:
7405-1521-0XX

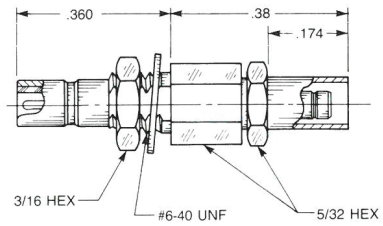


Right Angle Plug

Solder type for semi-rigid:
7405-1561-0XX

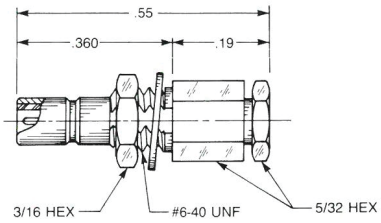
Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	10	0.085″ semi-rigid, RG405, M17/133
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	11	0.047″ semi-rigid, M17/151
		19	RG174DS, RG316DS, M17/152, Times RD316
05	RG178DS, RG196DS	21	0.056″ semi-rigid

Cable Jacks



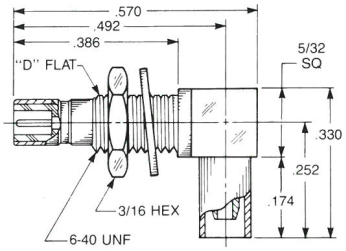
Straight Bulkhead Jack

Crimp type for flexible cable:
7203-1571-0XX



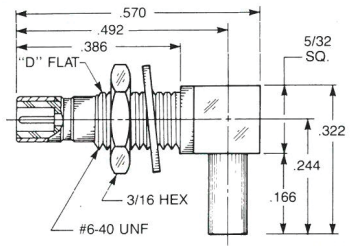
Straight Bulkhead Jack

Solder type for semi-rigid:
7203-1541-0XX



Right Angle Bulkhead Jack

Crimp type for flexible cable:
7406-1521-0XX

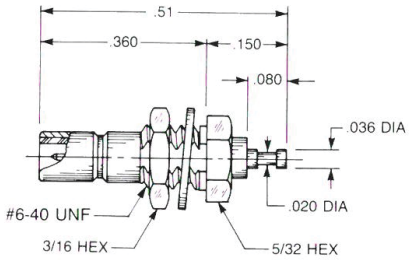


Right Angle Bulkhead Jack

Solder type for flexible cable:
7406-1561-0XX

Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	10	0.085″ semi-rigid, RG405, M17/133
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	11	0.047″ semi-rigid, M17/151
		19	RG174DS, RG316DS, M17/152, Times RD316
05	RG178DS, RG196DS	21	0.056″ semi-rigid

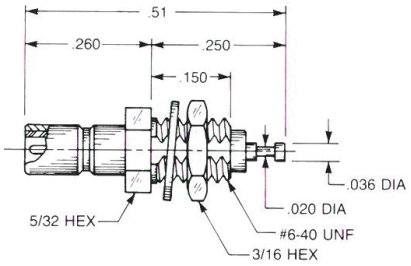
Bulkhead Receptacles



Straight Bulkhead Jack Receptacle

- Turret contact
- Rear mount

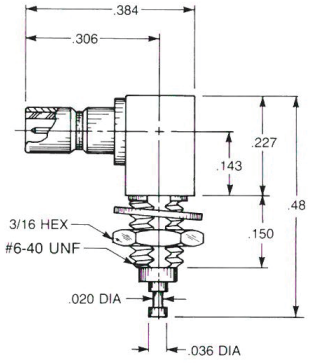
7204-1511-000



Straight Bulkhead Jack Receptacle

- Turret contact
- Front mount

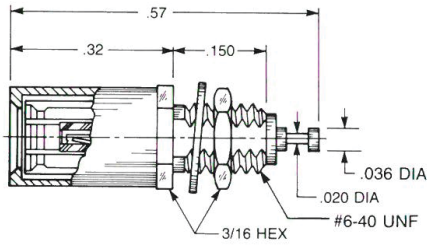
7219-1511-000



Right Angle Bulkhead Jack Receptacle

- Turret contact
- Front mount

7212-1511-000

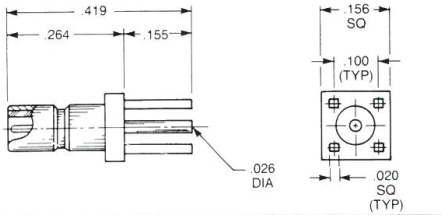


Straight Bulkhead Plug Receptacle

- Turret contact
- Front mount

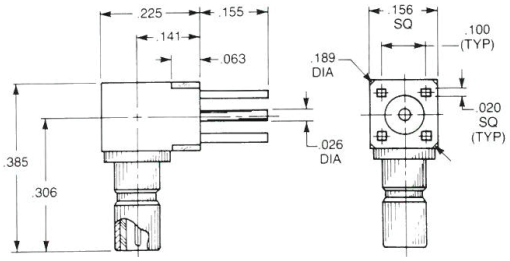
7217-1512-000

PCB Receptacles



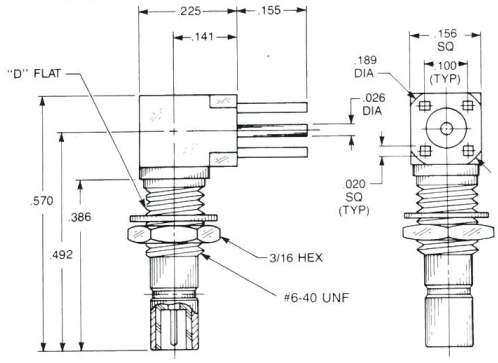
Straight Jack

7209-1511-000



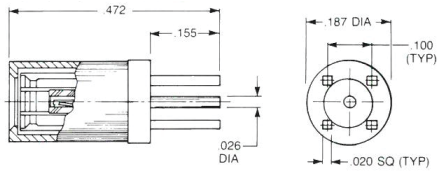
Right Angle Jack

7210-1511-000



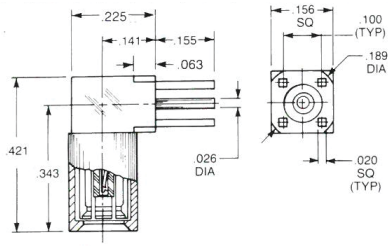
Right Angle Bulkhead Jack

7410-1511-000



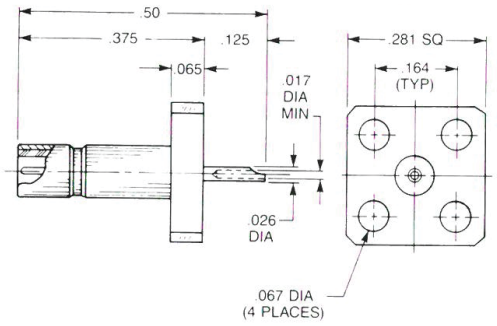
Straight Plug

7225-1512-000



Right Angle Plug

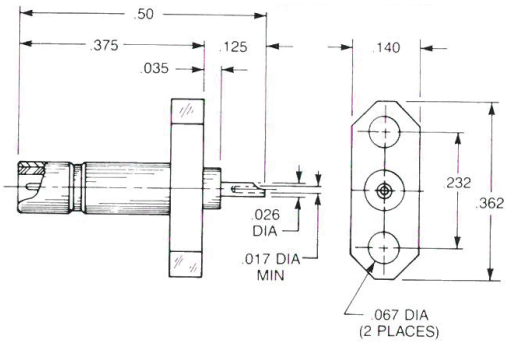
7242-1511-000



Straight Panel Receptacle

- Solder pot contact
- Stainless steel body

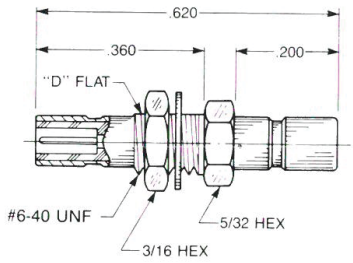
Square flange:
7498-1513-000



Straight Panel Receptacle

- Solder pot contact
- Stainless steel body

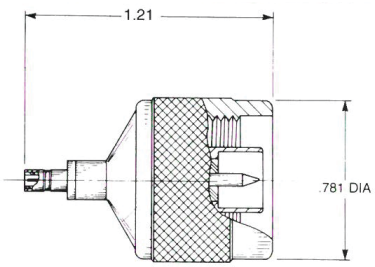
2-hole flange:
7499-1513-000



Bulkhead Mounted Adapter

- Jack to jack
- Connects two plugs

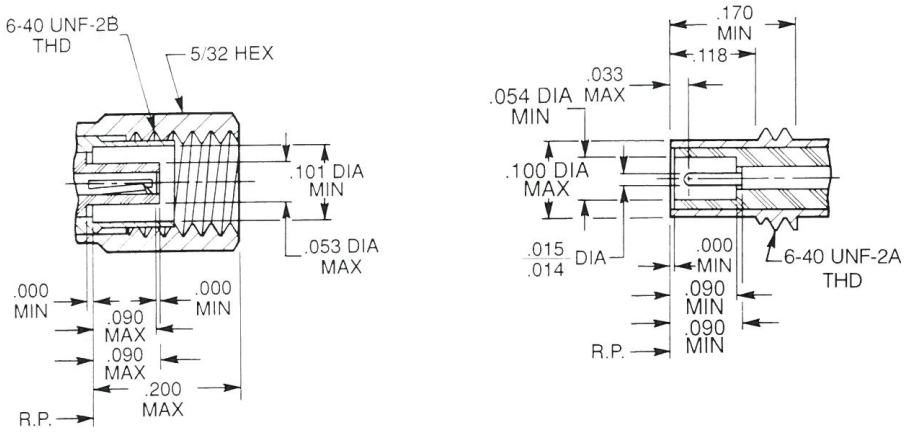
7222-1501-000



Precision Type N Plug to SSMB Series Jack Adapter

5011-1503-000

Interface Dimensions



SPECIFICATIONS MIL-PRF-39012

MATERIALS:

Female body components, center contacts: Beryllium copper per ASTM B196, condition HT

All other metal parts: Brass per ASTM B16, alloy 360, ½ hard

Insulators: Teflon TFE per ASTM-D-1710

FINISH:

Center contacts: Gold-plated per MIL-G-45204, type II, class 1, grade C.

All other parts finished lo meet MIL-PRF-39012 corrosion requirements.

ELECTRICAL:

Impedance: 50 Ω

Frequency range: DC-12.4 GHz

Voltage rating: 250 VRMS, sea level 60 VRMS, 70,000 ft

Insulation resistance: 1,000 MΩ min

VSWR:

Straight connector:

RG178: 1.20+[0.020×f (GHz)]

RG316: 1.25+[0.020×f (GHz)]

0.085″ SR: 1.20+[0.015×f (GHz)]

Right angle connector:

RG178: 1.20+[0.030×f (GHz)]

RG316: 1.25+[0.030×f (GHz)]

0.085″ SR: 1.20+[0.025×f (GHz)]

Contact resistance:

Center: 4.0 mΩ max initial
6.0 mΩ max after environment

Outer contact: 1.0 mΩ max initial,
1.5 mΩ max after environment

Braid to body: 1.0 mΩ max initial,
N/A after environment

Corona level: 125 V at 70,000 ft

RF highpot: 400 VRMS at 5 MHz

RF leakage: -50 dB min at 2-3 GHz

Insertion loss: 0.30 dB max at 1.5 GHz

MECHANICAL:

Force to engage: 16 in-oz torque max

Mating Torque: 28-32 in-oz

Contact retention: 2 lb min axial force

Coupling nut pulloff resistance: 25 lb min

Durability: 500 mating cycles

ENVIRONMENTAL: (per MIL-STD-202)

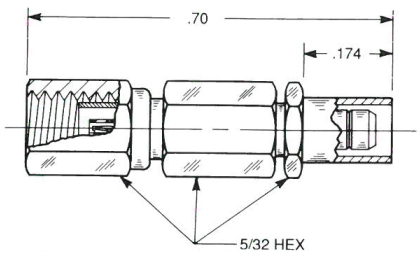
Temperature rating: -65° C to +165° C

Corrosion: Method 101, condition B, 5% salt solution

Vibration: Method 204,condition D (20 G)

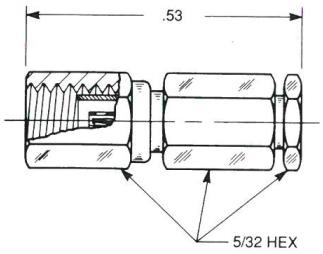
Mechanical shock: Method 213, condition B;
75 G at 6 ms at ½ sine

Cable Plugs



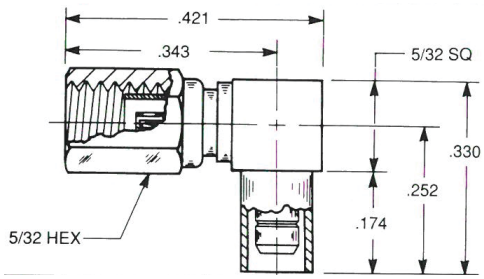
Straight Plug

Crimp type for flexible cable:
7002-1572-0XX



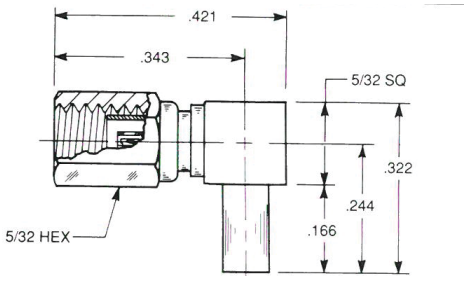
Straight Plug

Solder type for semi-rigid:
7002-1542-0XX



Right Angle Plug

Crimp type for flexible cable:
7105-1521-0XX

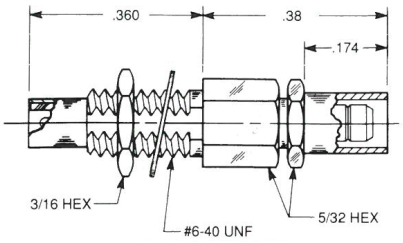


Right Angle Plug

Solder type for semi-rigid:
7105-1561-0XX

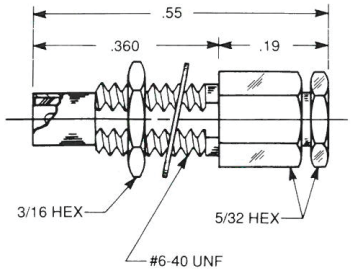
Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	10	0.085″ semi-rigid, RG405, M17/133
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	11	0.047″ semi-rigid, M17/151
		19	RG174DS, RG316DS, M17/152, Times RD316
05	RG178DS, RG196DS	21	0.056″ semi-rigid

Cable Jacks



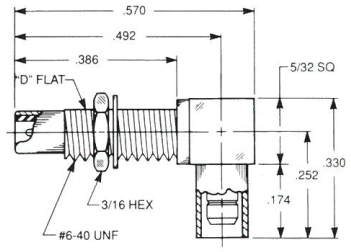
Straight Bulkhead Jack

Crimp type for flexible cable:
7003-1572-0XX



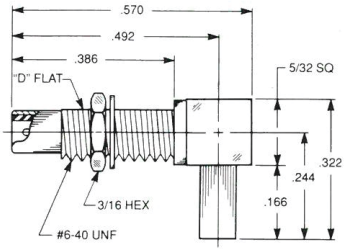
Straight Bulkhead Jack

Solder type for semi-rigid:
7003-1542-0XX



Right Angle Bulkhead Jack

Crimp type for flexible cable:
7106-1521-0XX

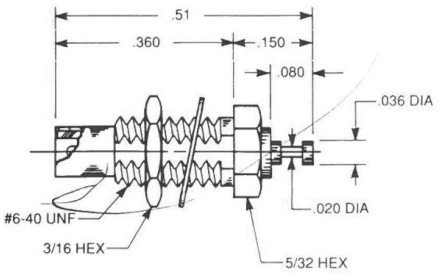


Right Angle Bulkhead Jack

Solder type for flexible cable:
7106-1561-0XX

Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	10	0.085″ semi-rigid, RG405, M17/133
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	11	0.047″ semi-rigid, M17/151
		19	RG174DS, RG316DS, M17/152, Times RD316
05	RG178DS, RG196DS	21	0.056″ semi-rigid

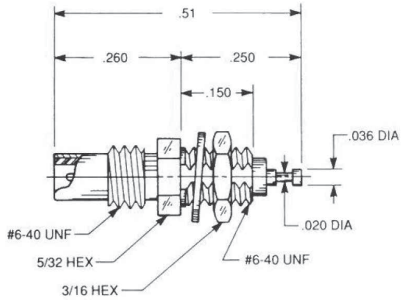
Bulkhead Receptacles



Straight Bulkhead Jack Receptacle

- Turret contact
- Rear mount

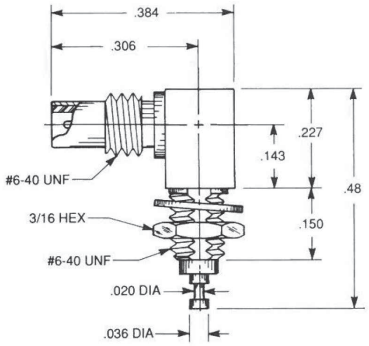
7004-1512-000



Straight Bulkhead Jack Receptacle

- Turret contact
- Front mount

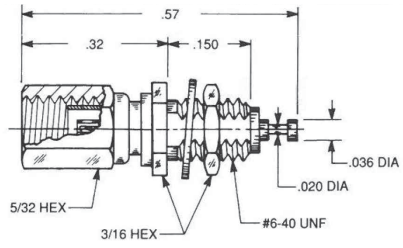
7119-1512-000



Right Angle Bulkhead Jack Receptacle

- Turret contact
- Front mount

7012-1511-000

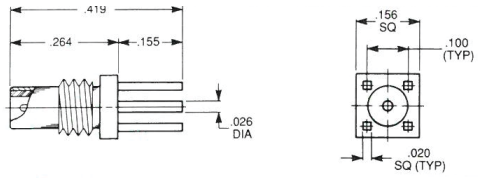


Straight Bulkhead Plug Receptacle

- Turret contact
- Front mount

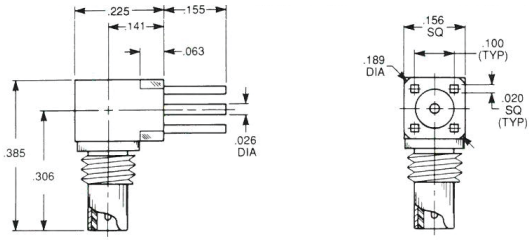
7017-1512-000

PCB Receptacles



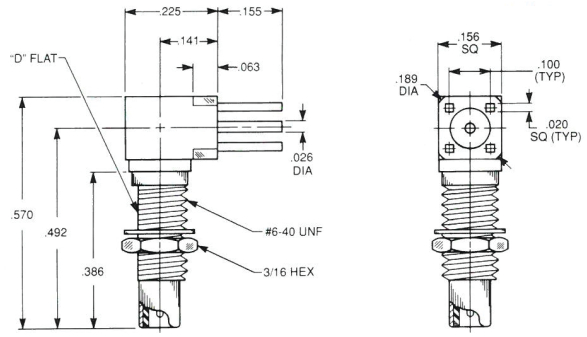
Straight Jack

7009-1511-000



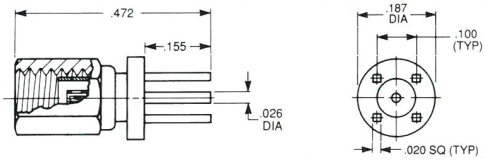
Right Angle Jack

7010-1511-000



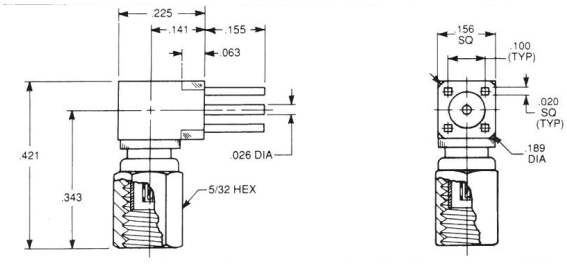
Right Angle Bulkhead Jack

7110-1511-000



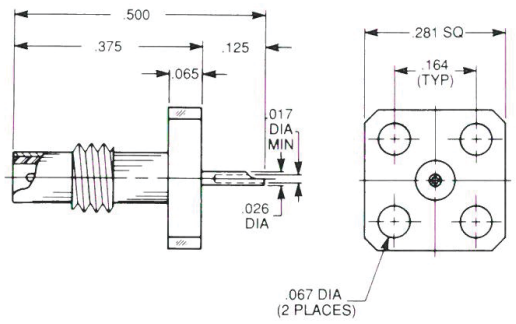
Straight Plug

7025-1512-000



Right Angle Plug

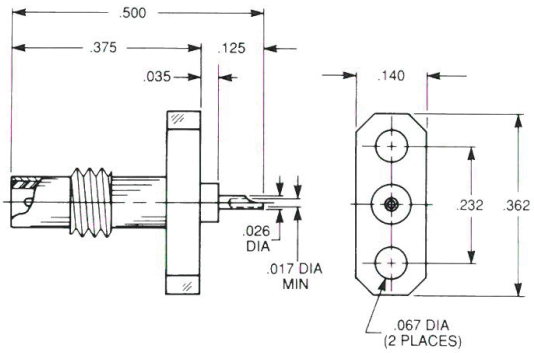
7042-1511-000



Straight Panel Receptacle

- Solder pot contact
- Stainless steel body

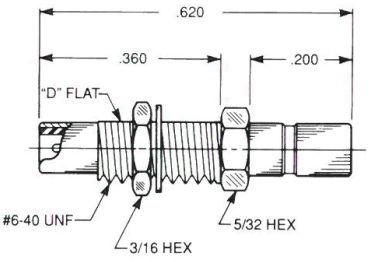
Square flange:
7198-1513-000



Straight Panel Receptacle

- Solder pot contact
- Stainless steel body

2-hole flange:
7100-1513-000



Bulkhead Mounted
SSMC Jack to SSMB Jack Adapter

- Connects SSMB plug and SSMC plug

7022-1502-000

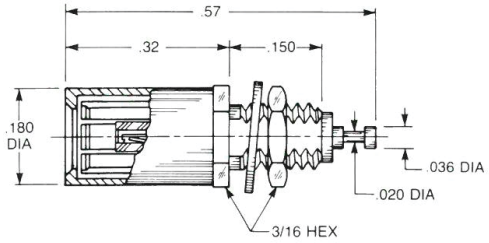
Slide-On Mating Plugs

AEP SSMB series snap-on connectors were designed to provide the highest practical mating and unmating forces in microminiature size, making them the most rugged and reliable microminiature coaxial connectors available. This high mating force can, however, cause damage to bulkheads or P.C. boards when the connectors are mated in multiple pairs in rack and panel or blind mate applications.

The slide-on SSLB plugs shown here were designed to reduce mating forces from 6 pounds maximum to 3 pounds maximum per pair, and unmating forces from 2 pound minimum to ½ pound minimum per pair. These forces are high enough to ensure consistent outer conductor grounding, but low enough to allow the connectors to be used in multiple mating arrays.

The use of external actuators, such as levers or jackscrews, should be considered in applications requiring the simultaneous mating of multiple connector pairs, especially when one side is P.C. board mounted.

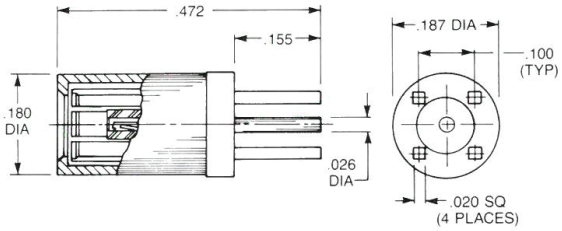
These slide-on plugs will mate with any SSMB series snap-on jack.



Slide-On Bulkhead Plug Receptacle

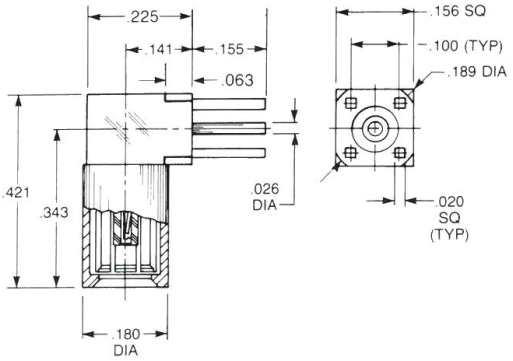
- Turret contact
- Front mount

7317-1512-000



Slide-On Straight PCB Plug

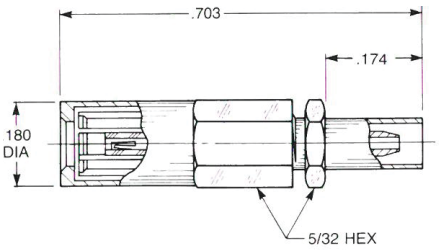
7325-1512-000



Slide-On Right Angle PCB Plug

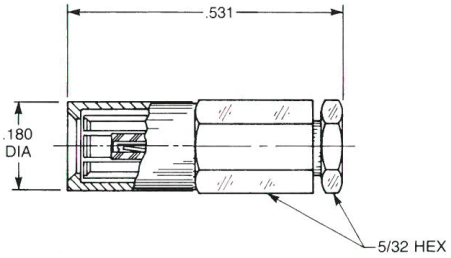
7342-1511-000

Slide-On Cable Plugs



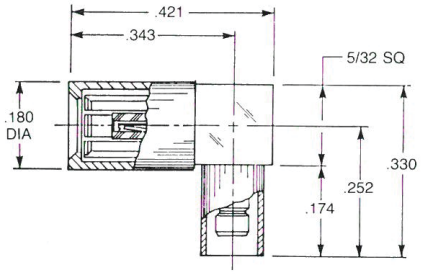
Straight Plug

Crimp type for flexible cable:
7302-1572-0XX



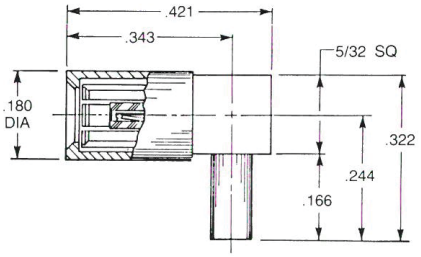
Straight Plug

Solder type for semi-rigid:
7302-1542-0XX



Right Angle Plug

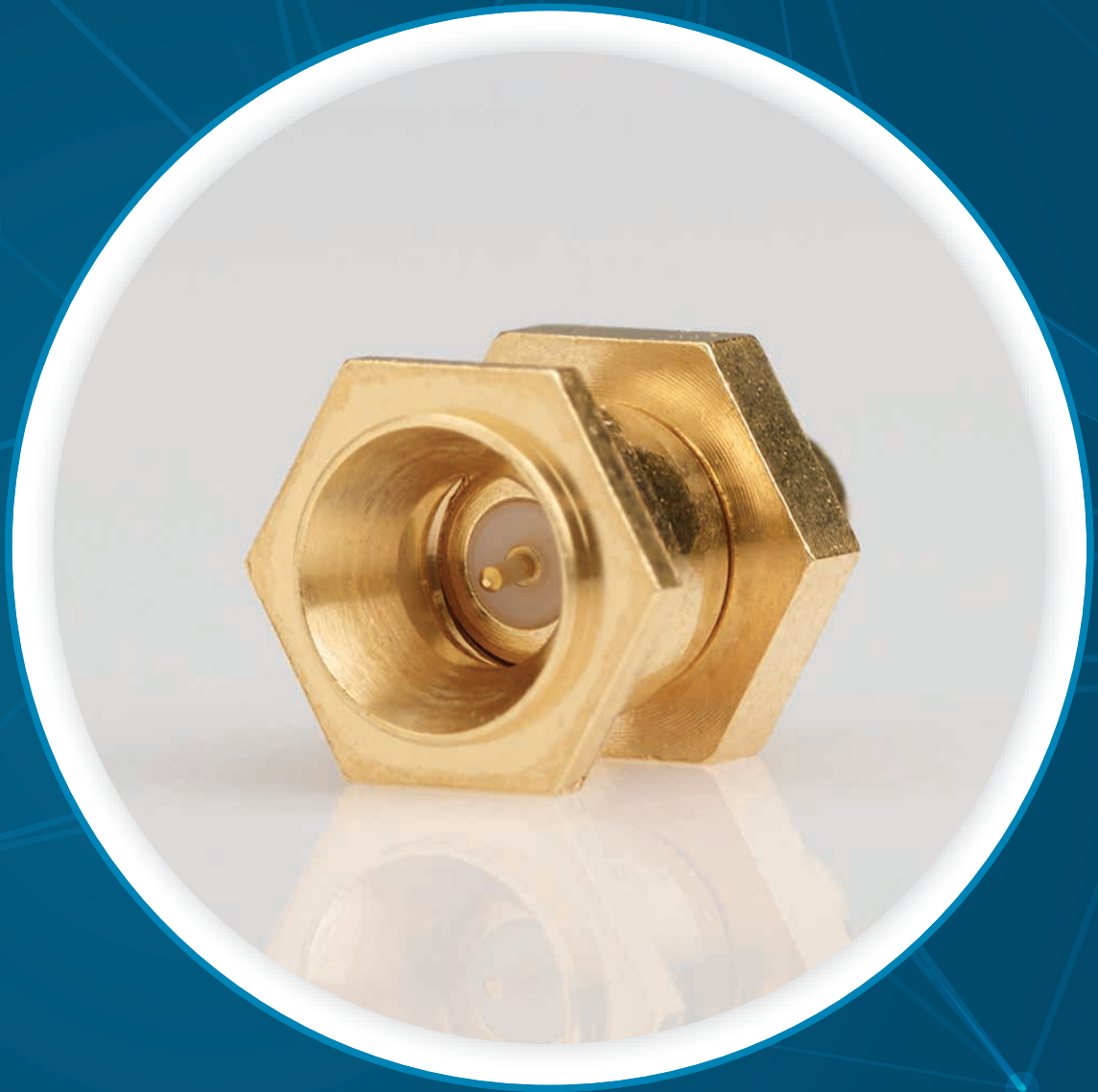
Crimp type for flexible cable:
7305-1521-0XX



Right Angle Plug

Solder type for semi-rigid:
7305-1561-0XX

Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	10	0.085″ semi-rigid, RG405, M17/133
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	11	0.047″ semi-rigid, M17/151
		19	RG174DS, RG316DS, M17/152, Times RD316
05	RG178DS, RG196DS	21	0.056″ semi-rigid



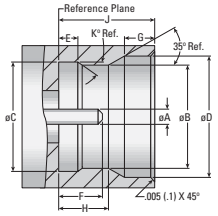
SMP

SECTION 5 TABLE OF CONTENTS

Mating Interfaces 5-2
Male Shrouds with Hermetic Seals and Bullet Adapters 5-3
Male Shrouds with Cable Connectors 5-4
Hermetic Seals 5-5
Straight Female Cable Connectors 7
Straight Male Cable Connectors 7
Male Panel Mounted Cable Connectors (Two-Piece) 8
Hermetic Seal Installation 9

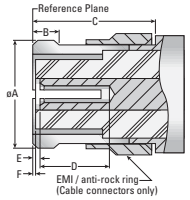
SMP Specifications

SMP Male Interface Dimensions



Dimension	Full Detent		Limited Detent		Smooth Bore	
	Min	Max	Min	Max	Min	Max
øA	0.014	0.016	0.014	0.016	0.014	0.016
øB	0.114	0.118	0.118	0.122	0.123	0.127
øC	0.124	0.126	0.124	0.126	N/A	N/A
øD	0.139	0.145	0.139	0.145	0.139	0.145
E	0.0205	0.0235	0.0205	0.0235	N/A	N/A
F	0.045	0.055	0.045	0.055	0.045	0.055
G	0.033	0.037	0.033	0.037	0.033	0.037
H	0.051	0.057	0.054	0.060	0.059	0.065
J	0.108	0.112	0.108	0.112	0.108	0.112
K	28°	32°	28°	32°	N/A	N/A

SMP Female Interface Dimensions



Dimension	Cabled		Uncabled	
	Min	Max	Min	Max
øA	-	0.135	-	0.135
B	0.025	0.035	0.018	0.025
C	0.132	-	0.112	-
D	0.070	-	0.070	-
E	0.000	0.008	0.000	0.008
F	0.000	0.010	0.000	0.010

MATERIALS:

Body components: Beryllium copper per ASTM B196, condition HT, or stainless steel per ASTM A582, type 303.
Contacts: Beryllium copper per ASTM B196, condition HT
Insulators: Teflon (PTFE) per ASTM D1710

FINISH:

Center contacts: Gold-plated per MIL-G-45204, type II, class 1, grade C
Other metal parts: Gold-plated (beryllium copper or stainless steel) or passivated (stainless steel) to meet current MIL-PRF-39012 corrosion requirements

ELECTRICAL:

Impedance: 50 Ω
Frequency range: DC–40 GHz
Voltage rating: 335 VRMS max at sea level; 65 VRMS max at 70,000 ft
Dielectric withstanding voltage: 500 VRMS min at sea level; 1 25 VRMS min at 70,000 ft
VSWR: DC–23 GHz: 1.10:1 max; 23–26.5 GHz: 1.15:1 max; 26.5–40 GHz: 1.35:1 max.*
Insertion Loss: 0.10√f(GHz) (female bullets); 0.12√f (GHz) (cable connectors)
Insulation resistance: 5,000 MΩ min
Contact resistance: Center contact: 6.0 mΩ max
Outer contact: 2.0 mΩs max
Corona Level: 190 V min at 70,000 ft
RF highpot: 325 VRMS at 5 MHz
RF leakage: -80 dB min to 3 GHz; -65 dB min. 3 GHz–26.5 GHz

MECHANICAL:

Force to engage: Full detent, 15 lb
Limited detent, 10 lb
Smooth bore, 2 lb
Force to disengage: Full detent, 5 lb
Limited detent, 2 lb
Smooth bore, 0.5 lb
Contact retention: 1.5 lb min axial force
Axial misalignment: 0.000/0.010″
Radial misalignment: 0.010″ centerline to centerline (0.020″ with special shrouds)
Durability: Full detent, 100 mating cycles min
Limited detent, 500 mating cycles min
Smooth bore, 1,000 mating cycles min

ENVIRONMENTAL (MIL-STD-202):

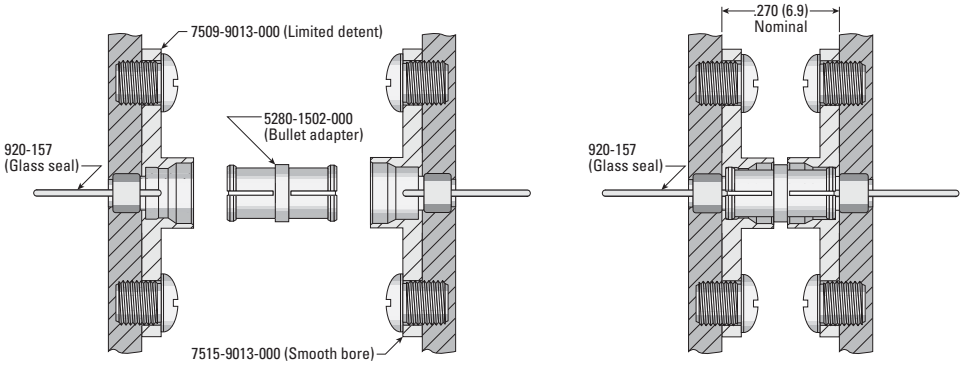
Temperature range: -65° C to +165° C
Vibration: Method 204, condition D
Mechanical shock: Method 213, condition I
Thermal shock: Method 107, condition B

*VSWR for P/N 5280-1502-000 "bullet" adapter. Performance of other configurations may vary. Contact factory for additional information.

These specifications change periodically with updates to MIL-PRF-39012 requirements. Contact factory for latest specifications.

PANEL MOUNTED SHROUDS

With Bullet Adapter



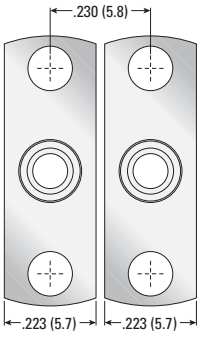
In low-profile, blind mate applications, flange-mount shrouds are used with "bullet" adapters to provide axial and radial "float" for proper mating.

The bullet adapter mates with the pins of glass-to-metal hermetic seals soldered into the panels.

In these applications, one of the shrouds is typically a "limited detent" type, and the other a "smooth bore" type. This pairing keeps mating and unmating forces to a minimum, and retains the bullet adapter in the "limited detent" shroud when the panels are separated.

The space between panels when mated can be changed by the use of different-length bullet adapters.

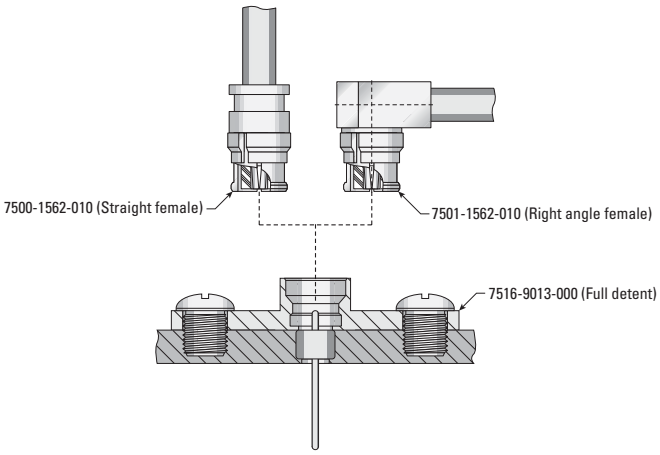
Spacing for Mounted Shrouds



Shrouds may be mounted with centerline spacing as little as 0.230″ for units with 0.223″ wide flanges. Narrower flanges can be provided to allow for spacing as little as 0.170″ (4.3 mm).

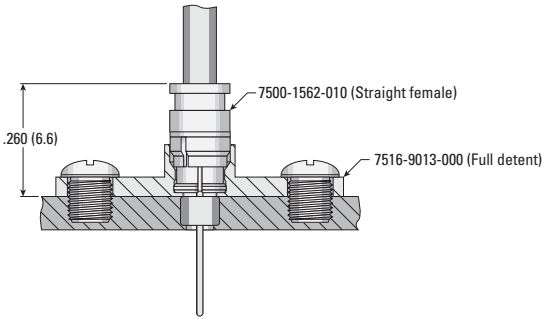
PANEL MOUNTED SHROUDS

With Cable Connectors

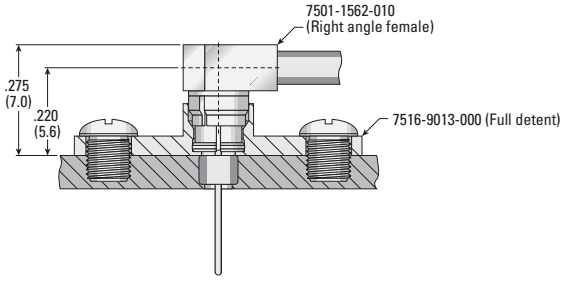


A "full-detent" shroud is used in applications with cable connectors to provide secure mating.

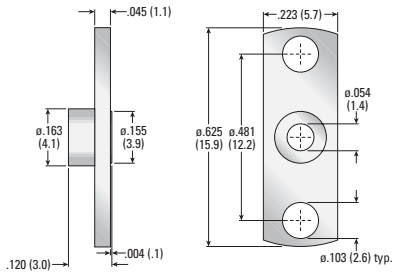
Height Above Panel for Typical Straight Cable Connector



Height Above Panel for Typical Right Angle Cable Connector



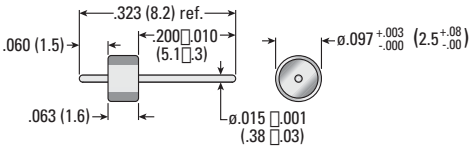
MALE SHROUDS FOR USE WITH HERMETIC SEALS



Detent Type	AEP P/N
Full detent	7516-9013-000
Limited detent	7509-9013-000
Smooth bore	7515-9013-000

Body material: Stainless steel

HERMETIC SEAL



AEP P/N
920-157

MATERIALS:

Outer ring and pin: Kovar

Glass bead: Corning 7070 or equivalent

FINISH:

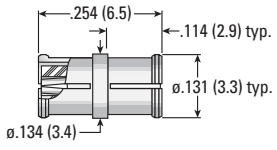
Outer ring and pin: Gold-plated per MIL-G-45204, type II, grade C, class 1, over nickel per MIL-C-26074, class I, over copper per MIL-C-14550

HERMETICITY:

Leak rate: Less than 1×10^{-8} cc/second

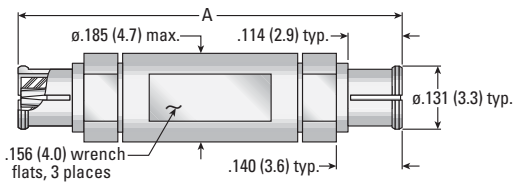
See page 5-8 for hermetic seal installation instructions.

FEMALE-TO-FEMALE STRAIGHT BULLET ADAPTERS FOR USE WITH SHROUDS



AEP P/N
5280-1502-000

Body material: Beryllium copper

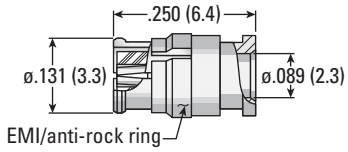


A	AEP P/N
0.805 (20.4)	5280-1502-001
1.142 (29.0)	5280-1502-002

Body material: Beryllium copper

STRAIGHT FEMALE CABLE CONNECTORS (DIRECT SOLDER FOR SEMI-RIGID CABLE)

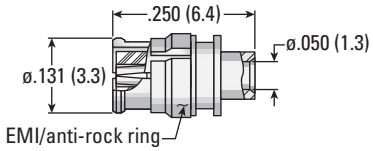
For 0.086″ semi-rigid cable



Type	AEP P/N
Standard	7500-1562-010
High frequency	7500-1262-010

Body material: Beryllium copper

For 0.047″ semi-rigid cable

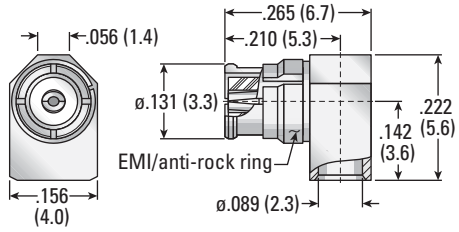


AEP P/N
7500-1582-011

Body material: Beryllium copper

RIGHT ANGLE FEMALE CABLE CONNECTORS (DIRECT SOLDER FOR SEMI-RIGID CABLE)

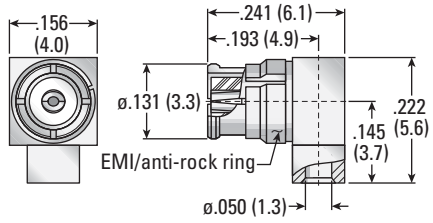
For 0.086″ semi-rigid cable



AEP P/N
7501-1562-010

Body material: Beryllium copper

For 0.047″ semi-rigid cable

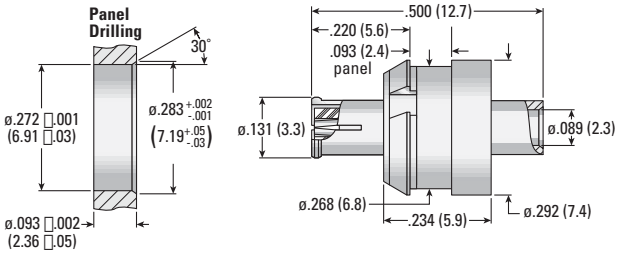


AEP P/N
7501-1562-011

Body material: Beryllium copper

STRAIGHT FEMALE CABLE CONNECTOR (DIRECT SOLDER FOR SEMI-RIGID CABLE)

For 0.086″ semi-rigid cable—Snap-in panel mounting (float mount)



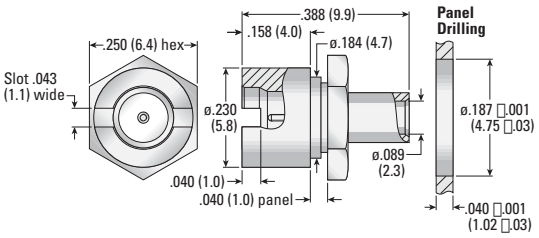
AEP P/N
7504-2282-010

Body material: Beryllium copper

Cable assembly instructions are shipped with each connector.

STRAIGHT MALE CABLE CONNECTOR (DIRECT SOLDER FOR SEMI-RIGID CABLE)

Captive Contact, for 0.086″ semi-rigid/0.040″ thick panel

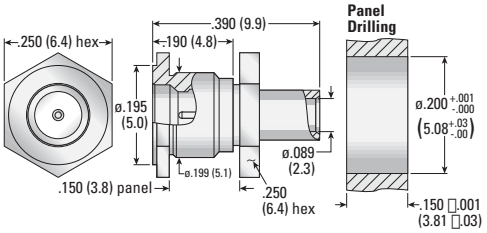


Detent Type	AEP P/N
Full detent	7503-1582-010
Limited detent	7506-1582-010
Smooth bore	7502-1582-010

Body material: Beryllium copper

STRAIGHT MALE CABLE CONNECTOR (DIRECT SOLDER FOR SEMI-RIGID CABLE)

Captive Contact, for 0.086″ semi-rigid/0.150″ thick panel

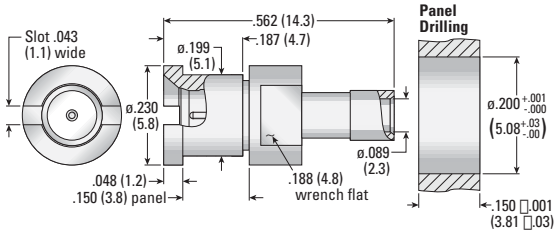


Detent Type	AEP P/N
Full detent	7503-1582-110
Limited detent	7506-1582-110
Smooth bore	7502-1582-110

Body material: Beryllium copper

STRAIGHT MALE CABLE CONNECTOR (CATCHER'S MITT* DIRECT SOLDER FOR SEMI-RIGID CABLE)

Non-Captive Contact, for 0.086″ semi-rigid/0.150″ thick panel



Detent Type	AEP P/N
Full detent	7503-1083-010
Limited detent	7506-1083-010
Smooth bore	7502-1083-010

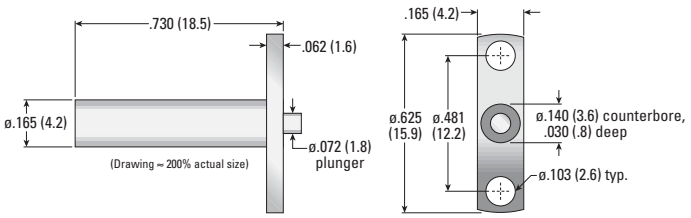
Body material: Stainless steel

*The "Catcher's Mitt" configuration features a wider-than-standard flare at the mating end, increasing its ability to "capture" a misaligned mating connector and guide it to center for proper mating.

These panel connectors have two-piece bodies; after the rear assembly is inserted through the panel, the front shroud is assembled and tightened with a screwdriver or wrench.

Cable assembly instructions are shipped with each connector.

HERMETIC SEAL FIXTURING TOOL

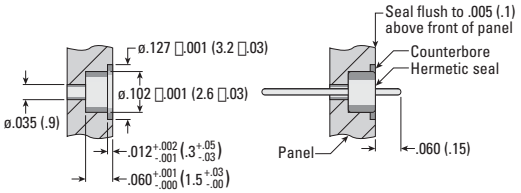


AEP P/N
TA-0453

Body material: Tool steel

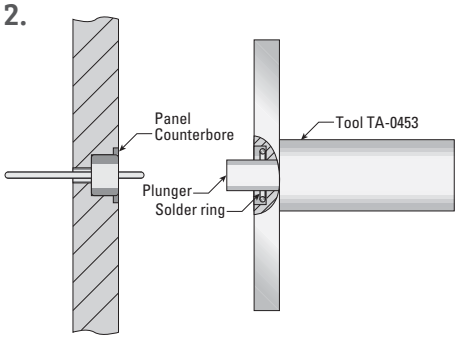
HERMETIC SEAL INSTALLATION

1.



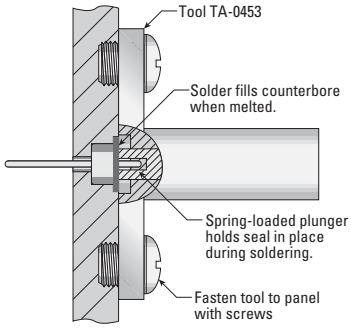
- Drill panel as shown.
- Front of seal should be as close to flush as possible with front surface of panel; if front of seal is below panel surface, an air gap is created which adversely affects electrical performance.
- Front of seal should be flush with front surface of panel, but may protrude up to 0.005″ without affecting performance.

2.



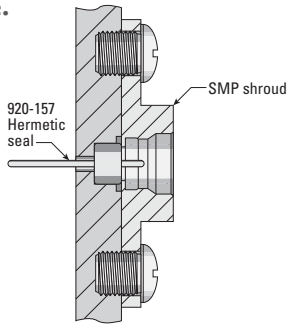
- Form solder ring of a size to completely fill panel counterbore when melted.
- Place preformed solder ring into counterbore of tool.

3.



- Secure tool to panel with screws.
- Apply heat to completely melt solder.
- Remove tool only after solder joint has cooled.

4.



- Secure SMP shroud flange to panel with screws.

75 OHM

SECTION 6 TABLE OF CONTENTS

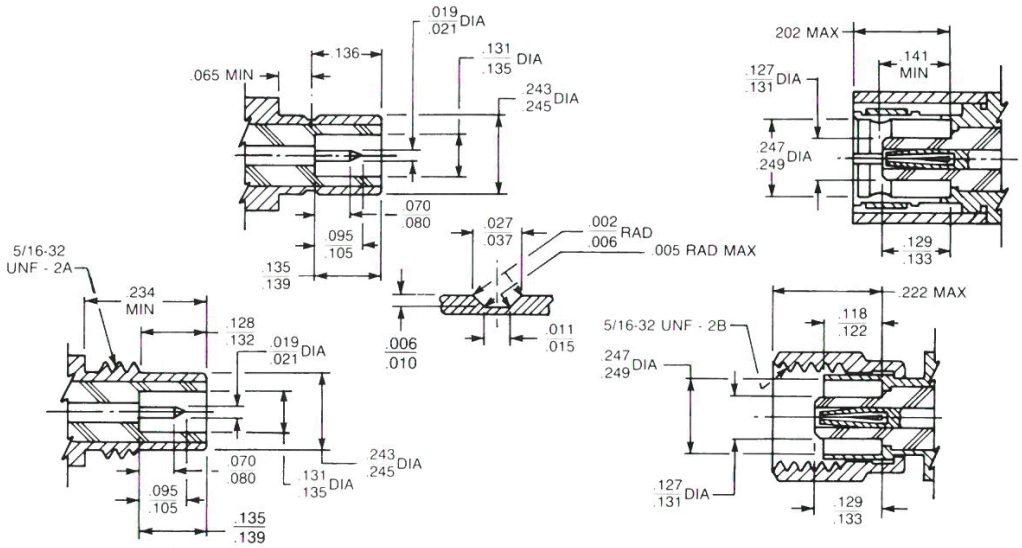
Specifications....6-3
Screw-On Mating:
Cable Plugs....6-4
Cable Jacks....6-5
Receptacles....6-6
Adapters and Terminations....6-7
Snap-On Mating:
Cable Plugs....6-8
Cable Jacks....6-9
Receptacles....6-10
Adapters and Terminations....6-12

The 75 ohm connectors shown on the following pages provide matched impedance for critical applications such as CATV or Telecom. The screw-on interface is similar in configuration to SMC, and the snap-on interface is similar in configuration to SMB. The cable attachment methods are the same as shown on page 3-5.

Standard cables for use with these connectors are shown at the bottom of the appropriate product pages. A complete listing of cable groups is provided on page 13-6. All the items shown are available with either gold or nickel-plated bodies; part numbers for each finish are shown on the product pages. The index listing shows the appropriate cable assembly instruction. Assembly instructions start on page 13-7.

Factory-built cable assemblies using these connectors are available from AEP.

Interface Dimensions



SPECIFICATIONS

MATERIALS:

Body components: Male contacts and nuts
Brass per ASTM B16, alloy 360, ½ hard
Spring contacts: Beryllium copper, ASTM B196, condition HT
Lockwashers: Phosphor Bronze per ASTM B139

FINISH:

Center contacts: Gold-plated per MIL-G-45204, type II, class 1, grade C
Other metal parts: Gold-plated per MIL-G-45204, type II, class 1, grade C, over Copper per MIL-C-14550, class 4 or per customer specifications

ELECTRICAL:

Impedance: 75 Ω, nominal
Frequency: 0 to 2 GHz
Voltage rating (max): Sea level 165 VRMS, 70,000 ft, 65 VRMS
Voltage drop: 4 mV max at 1 amp including mating connector
Insulation Resistance: 1,000 MΩ (min)
Contact Resistance: (mΩ max)

Initial	STRAIGHT	RT. ANGLE
Center	6.0	12.0
Outer contact	1.0	1.0
Braid to body	1.0	1.0

Dielectric withstanding voltage (sea level): 75 Ω conn. for RG-180B/U cable, 2,000 VRMS
Corona level: at 70,000 ft altitude (min) 75 Ω conn. for RG-180B/U Cable, 350 V
R.F. high-potential voltage: Frequency 5 MHz 75 Ω conn. for RG-180B/U cable, 1,000 VRMS
R.F. leakage: dB min at 2 to 3 GHz: SNAP-ON, 55; SCREW-ON, 60
Insertion loss: (dB) max at 1.5 GHz: STRAIGHT, 0.30; RIGHT ANGLE, 0.60

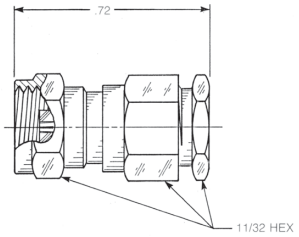
MATING CHARACTERISTICS:

Interface design: Interchangeable with leading manufacturers

Engagement Force:	SNAP-ON	SCREW-ON
Longitudinal force	14 lb max	N/A
Torque	N/A	90 in-oz

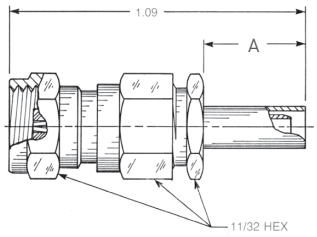
Cable pullout resistance: 18 lb min, clamp and crimp types
Coupling nut pullout resistance: Female screw-on types, 35 lb min to 100 lb

Plugs - Screw-On Mating



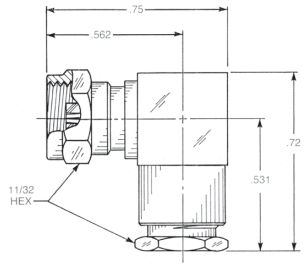
Straight Female Cable Plug

Clamp type for flexible cable:
1702-1551-0XX (Gold-plated)
1702-7551-0XX (Nickel-plated)



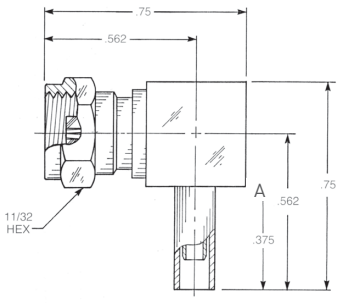
Straight Female Cable Plug

Crimp type for flexible cable:
1702-1571-0XX (Gold-plated)
1702-7571-0XX (Nickel-plated)



Right Angle Female Cable Plug

Clamp type for flexible cable:
1705-1551-0XX (Gold-plated)
1705-7551-0XX (Nickel-plated)



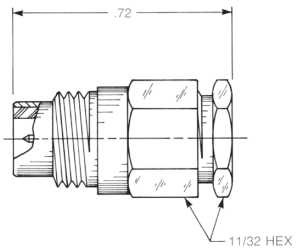
Right Angle Female Cable Plug

Crimp type for flexible cable:
1715-1521-0XX (Gold-plated)
1715-7521-0XX (Nickel-plated)

Substitute XX with the Appropriate Cable Group Below			
03	RG179, M17/94	07	RG59, RG62, M17/29, M17/30
04	RG180, RG195, M17/95	-	-

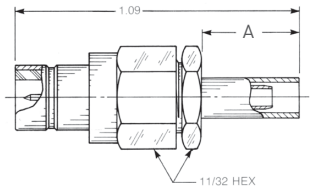
A Dim = 0.303 for cable group 07
A Dim = 0.375 for cable groups 03 and 04

Jacks - Screw-On Mating



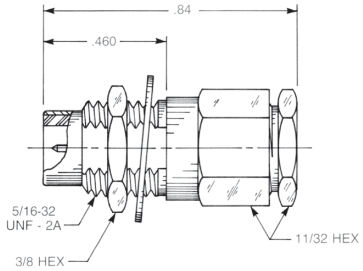
Straight Male Cable Jack

Clamp type for flexible cable:
1701-1551-0XX (Gold-plated)
1701-7551-0XX (Nickel-plated)



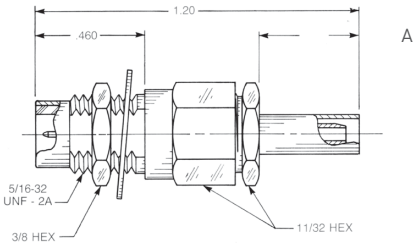
Straight Male Cable Jack

Crimp type for flexible cable:
1701-1571-0XX (Gold-plated)
1701-7571-0XX (Nickel-plated)



Straight Male Bulkhead Cable Jack

Clamp type for flexible cable:
1703-1551-0XX (Gold-plated)
1703-7551-0XX (Nickel-plated)



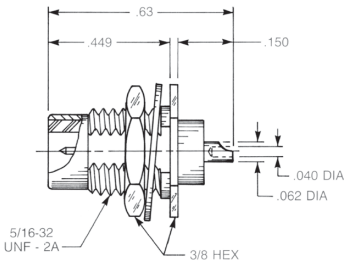
Straight Male Bulkhead Cable Jack

Crimp type for flexible cable:
1703-1571-0XX (Gold-plated)
1703-7571-0XX (Nickel-plated)

Substitute XX with the Appropriate Cable Group Below			
03	RG179, M17/94	07	RG59, RG62, M17/29, M17/30
04	RG180, RG195, M17/95	-	-

A Dim = 0.303 for cable group 07
A Dim = 0.375 for cable groups 03 and 04

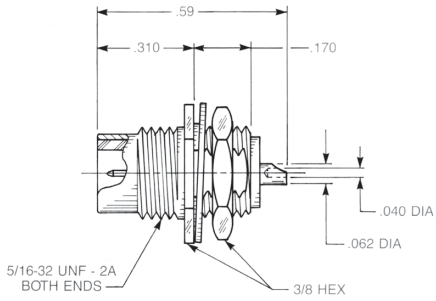
Receptacles - Screw-On Mating



Straight Male Bulkhead Jack Receptacle

- Solder pot contact
- Rear mount

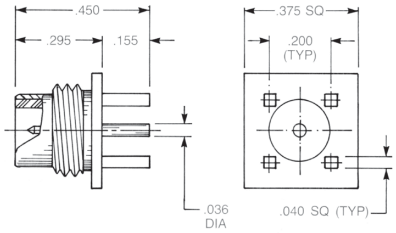
1704-1511-000 (Gold-plated)
1704-7511-000 (Nickel-plated)



Straight Male Bulkhead Jack Receptacle

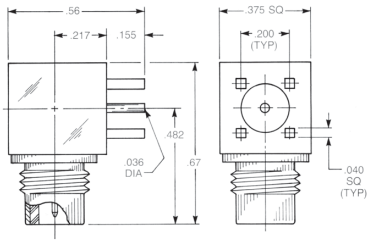
- Solder pot contact
- Front mount

1719-1511-000 (Gold-plated)
1719-7511-000 (Nickel-plated)



Straight Male PCB Receptacle

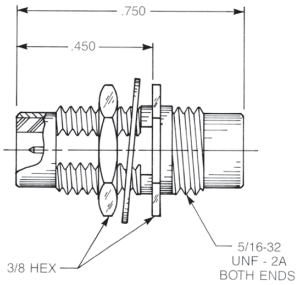
1709-1511-000 (Gold-plated)
1709-7511-000 (Nickel-plated)



Right Angle Male PCB Receptacle

1710-1511-000 (Gold-plated)
1710-7511-000 (Nickel-plated)

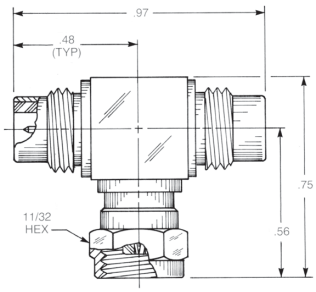
Adapters - Screw-On Mating



Bulkhead Mounted Straight Male Adapter

- Jack to jack
- Connects two plugs

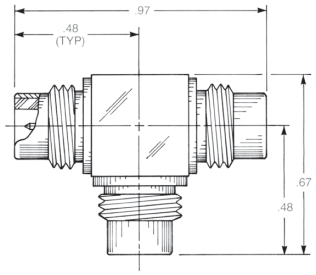
5722-1501-000 (Gold-plated)
5722-7501-000 (Nickel-plated)



Tee Adapter
(Unmatched Power Divider)

- Jack to plug to Jack
- Connects two plugs and one jack

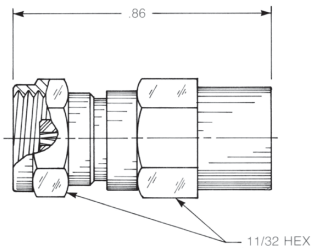
5715-1501-000 (Gold-plated)
5715-7501-000 (Nickel-plated)



Tee Adapter
(Unmatched Power Divider)

- Jack to jack to jack
- Connects three plugs

5707-1501-000 (Gold-plated)
5707-7501-000 (Nickel-plated)

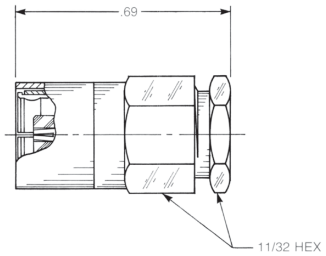


Female Plug Resistive Termination
(Dummy Load)

Standard resistor:
75 Ω, ½ W, 5% tolerance

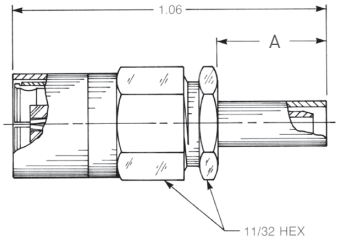
1736-1511-075 (Gold-plated)
1736-7511-075 (Nickel-plated)

Plugs - Snap-On Mating



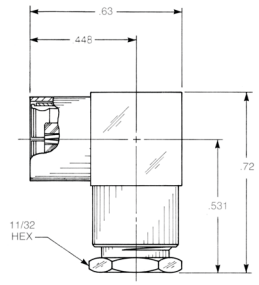
Straight Female Cable Plug

Clamp type for flexible cable:
2702-1551-0XX (Gold-plated)
2702-7551-0XX (Nickel-plated)



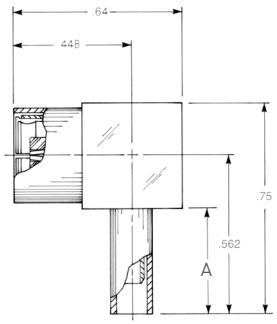
Straight Female Cable Plug

Crimp type for flexible cable:
2702-1571-0XX (Gold-plated)
2702-7571-0XX (Nickel-plated)



Right Angle
Female Cable Plug

Clamp type for flexible cable:
2705-1551-0XX (Gold-plated)
2705-7551-0XX (Nickel-plated)



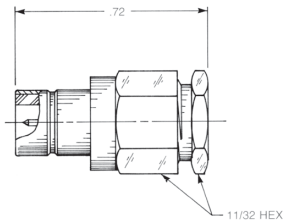
Right Angle Female Cable Plug

Crimp type for flexible cable:
2715-1521-0XX (Gold-plated)
2715-7521-0XX (Nickel-plated)

Substitute XX with the Appropriate Cable Group Below			
03	RG179, M17/94	07	RG59, RG62, M17/29, M17/30
04	RG180, RG195, M17/95	-	-

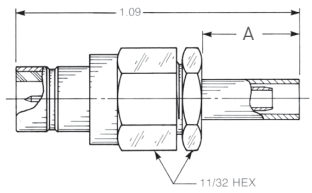
A Dim = 0.303 for cable group 07
A Dim = 0.375 for cable groups 03 and 04

Jacks - Snap-On Mating



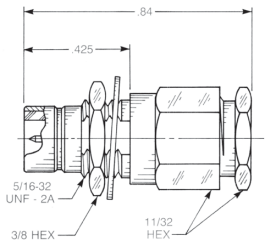
Straight Male Cable Jack

Clamp type for flexible cable:
2701-1551-0XX (Gold-plated)
2701-7551-0XX (Nickel-plated)



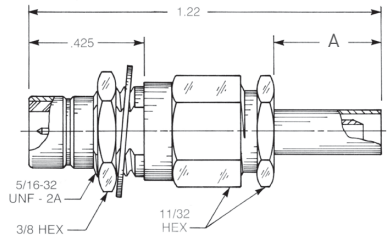
Straight Male Cable Jack

Crimp type for flexible cable:
2701-1571-0XX (Gold-plated)
2701-7571-0XX (Nickel-plated)



Straight Male Bulkhead Cable Jack

Clamp type for flexible cable:
2703-1551-0XX (Gold-plated)
2703-7551-0XX (Nickel-plated)



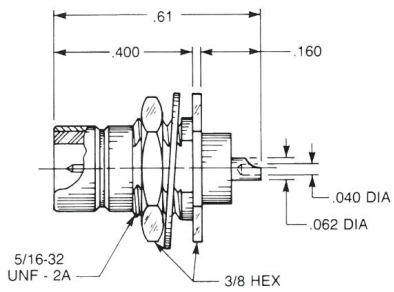
Straight Male Bulkhead Cable Jack

Crimp type for flexible cable:
2703-1571-0XX (Gold-plated)
2703-7571-0XX (Nickel-plated)

Substitute XX with the Appropriate Cable Group Below			
03	RG179, M17/94	07	RG59, RG62, M17/29, M17/30
04	RG180, RG195, M17/95	-	-

A Dim = 0.303 for cable group 07
A Dim = 0.375 for cable groups 03 and 04

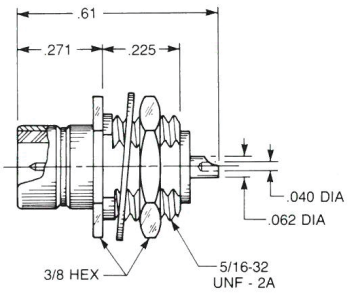
Receptacles - Snap-On Mating



Straight Male Bulkhead Jack Receptacle

- Solder pot contact
- Rear mount

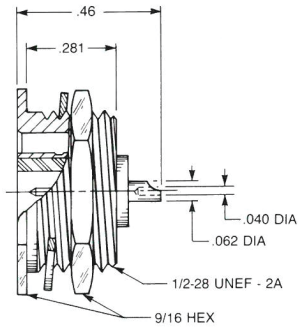
2704-1511-000 (Gold-plated)
2704-7511-000 (Nickel-plated)



Straight Bulkhead Jack Receptacle

- Solder pot contact
- Front mount

2719-1511-000 (Gold-plated)
2719-7511-000 (Nickel-plated)

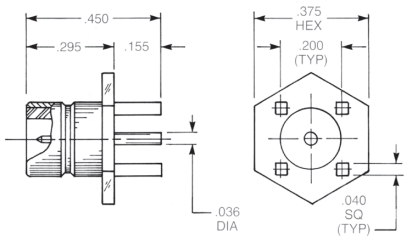


Straight Male Bulkhead Jack Receptacle

- Solder pot contact
- Recessed front mount

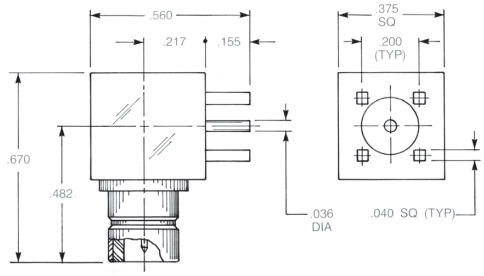
2776-1511-000 (Gold-plated)
2776-7511-000 (Nickel-plated)

Receptacles - Snap-On Mating



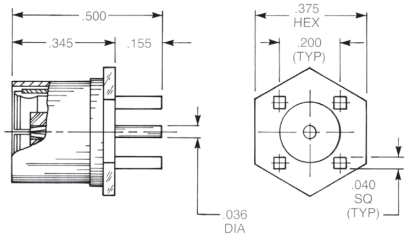
Straight Male Jack PCB Receptacle

2709-1511-001 (Gold-plated)
2709-7511-001 (Nickel-plated)



Right Angle Male Jack PCB Receptacle

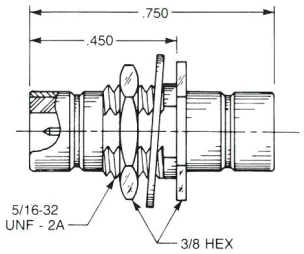
2710-1511-000 (Gold-plated)
2710-7511-000 (Nickel-plated)



Straight Female Plug PCB Receptacle

2725-1511-000 (Gold-plated)
2725-7511-000 (Nickel-plated)

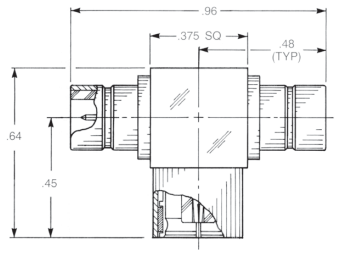
Adapters - Snap-On Mating



Bulkhead Mounted Straight Male

- Jack to jack adapter
- Connects two plugs

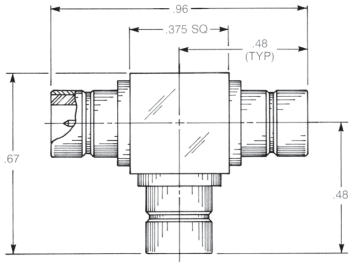
5732-1501-000 (Gold-plated)
5732-7501-000 (Nickel-plated)



Tee Adapter (Unmatched Power Divider)

- Jack to plug to jack
- Connects two plugs and one jack

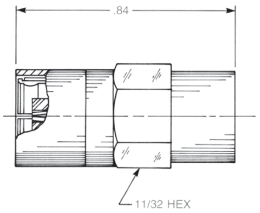
5725-1501-000 (Gold-plated)
5725-7501-000 (Nickel-plated)



Tee Adapter (Unmatched Power Divider)

- Jack to jack to jack
- Connects three plugs

5727-1501-000 (Gold-plated)
5727-7501-000 (Nickel-plated)



Female Plug Resistive Termination (Dummy Load)

Standard resistor:
75 Ω, ½ W, 5% tolerance

2736-1511-075 (Gold-plated)
2736-7511-075 (Nickel-plated)

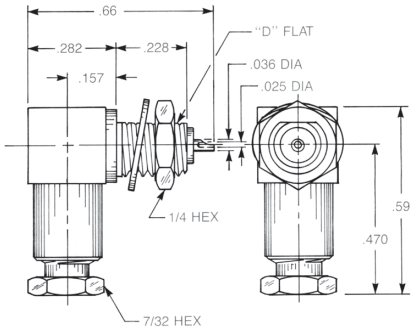
CABLE TERMINATIONS

SECTION 7 TABLE OF CONTENTS

Cable Terminations 124

Some applications require that a signal or cable core be fed through a bulkhead or into a P.C. board, but do not need the option of disconnecting the cable.

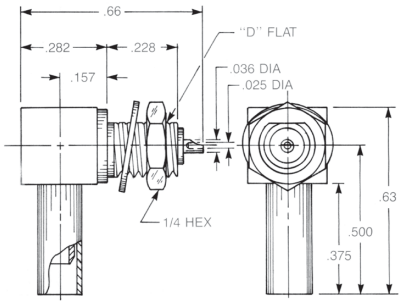
In these cases, a cable termination provides a method of securely anchoring the cable mechanically and electrically. In addition, considerable expense can be saved compared with the use of a pair of connectors.



Bulkhead Mounted Right Angle Cable Termination

Clamp type for flexible cable:
8044-1551-0XX (Gold-plated)
8044-7551-0XX (Nickel-plated)

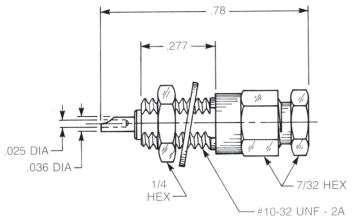
Solder-clamp for semi-rigid cable:
8044-1541-0XX (Gold-plated)
8044-7541-0XX (Nickel-plated)



Bulkhead Mounted Right Angle Cable Termination

Crimp type for flexible cable:
8144-1521-0XX (Gold-plated)
8144-7521-0XX (Nickel-plated)

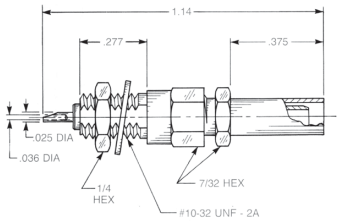
Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	09	0.141″ semi-rigid, RG402, M17/130
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	10	0.085″ semi-rigid, RG405, M17/133
05	RG178DS, RG196DS	19	RG174DS, RG316DS, M17/152, Times RD316



Bulkhead Mounted Straight Cable Termination

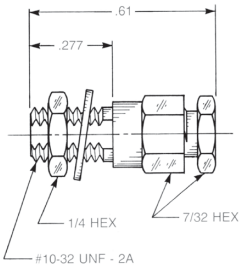
Clamp type for flexible cable:
8020-1551-0XX (Gold-plated)
8020-7551-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
8020-1541-0XX (Gold-plated)
8020-7541-0XX (Nickel-plated)



Bulkhead Mounted Straight Cable Termination

Crimp type for flexible cable:
8020-1571-0XX (Gold-plated)
8020-7571-0XX (Nickel-plated)

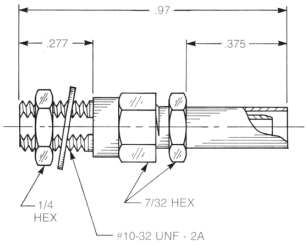


Bulkhead Mounted Straight Cable Feedthrough

- Feeds cable dielectric and center conductor through bulkhead

Clamp type for flexible cable:
8021-1051-0XX (Gold-plated)
8021-7051-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
8021-1041-0XX (Gold-plated)
8021-7041-0XX (Nickel-plated)

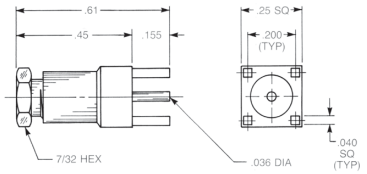


Bulkhead Mounted Straight Cable Feedthrough

- Feeds cable dielectric and center conductor through bulkhead

Crimp type for flexible cable:
8021-1071-0XX (Gold-plated)
8021-7071-0XX (Nickel-plated)

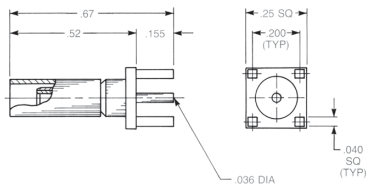
Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	09	0.141″ semi-rigid, RG402, M17/130
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	10	0.085″ semi-rigid, RG405, M17/133
05	RG178DS, RG196DS	19	RG174DS, RG316DS, M17/152, Times RD316



Straight PCB Cable Termination

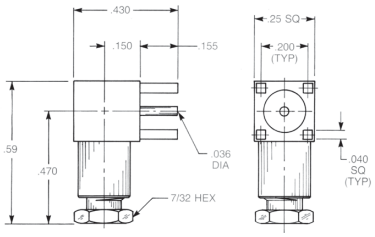
Clamp type for flexible cable:
8046-1551-0XX (Gold-plated)
8046-7551-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
8046-1541-0XX (Gold-plated)
8046-7541-0XX (Nickel-plated)



Straight PCB Cable Termination

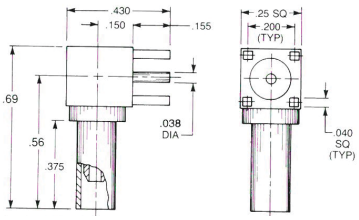
Crimp type for flexible cable:
8146-1521-0XX (Gold-plated)
8146-7521-0XX (Nickel-plated)



Right Angle PCB Cable Termination

Clamp type for flexible cable:
8045-1551-0XX (Gold-plated)
8045-7551-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
8045-1541-0XX (Gold-plated)
8045-7541-0XX (Nickel-plated)



Right Angle PCB Cable Termination

Crimp type for flexible cable:
8145-1521-0XX (Gold-plated)
8145-7521-0XX (Nickel-plated)

Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	09	0.141″ semi-rigid, RG402, M17/130
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	10	0.085″ semi-rigid, RG405, M17/133
05	RG178DS, RG196DS	19	RG174DS, RG316DS, M17/152, Times RD316

QCD

SECTION 8 TABLE OF CONTENTS

QCD (Quick Connect-Disconnect)..... 124

QCD

QCD (Quick Connect-Disconnect) provides a 26 GHz bayonet to SMA connector solution that reduces time for setup, reduces calibration steps, provides a quick test setup and aids in preserving test cable durability. The QCD is a perfect time saving solution for high density, high-count test environments.

Features

- 50 Ω
- DC to 26.5 GHz
- Low VSWR and insertion loss
- 5,000 matings minimum
- Reduces time for setup, calibration and testing
- Reduces need for additional calibration
- Perfect for high mating/ unmating applications
- Bayonet coupling for easy mating
- Extended life of test cables

MATERIALS:

Body parts: Stainless steel
Contacts: Beryllium copper
Insulators: PTFE
Gaskets: Silicone rubber

FINISH:

Body: Passivated
Center contacts: NPGR
Outer contact: Gold 0.2 over nickel 2

ELECTRICAL:

Impedance: 50 Ω
Frequency range: 0-26 GHz
VSWR: 1.1+0.0000×f (GHz) max
Insertion loss: 0.06√(f) (GHz) dB max
RF leakage: -[$\frac{N}{A}$ -f (GHz)] dB max
Voltage rating: 500 Veff max
Dielectric withstanding voltage: 1,000 Veff min
Insulation resistance: 5,000 MΩ min

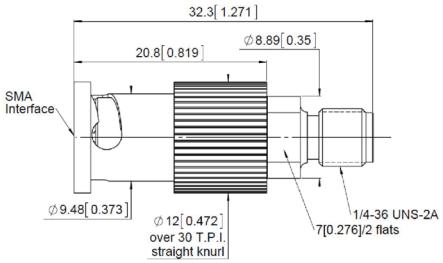
MECHANICAL:

5913-2503-000
Center contact retention:
Axial force – Mating end: 2.8 N min
Axial force – Opposite end: N min
Torque: Ncm min
Recommended torque:
Mating: SMA 0 Ncm
Mating life: 5,000 cycles min
Weight: 12.3520 g

5914-9503-000
Center contact retention:
Axial force – Mating end: 27 N min
Axial force – Opposite end: 27 N min
Torque: 2.8 Ncm min
Recommended torque:
Mating: SMA 110 Ncm
Mating life: 5,000 cycles min
Weight: 4.2470 g

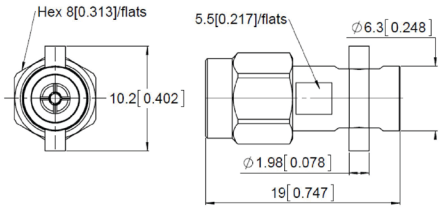
ENVIRONMENTAL:

Operating: -65°C/+165°C
Hermetic seal: Atm cm 3/s
panel leakage



SMA Straight Flange Floating Jack to QCD Plug Adapter

5913-2503-000



SMA Plug to Female QCD Adapter

5914-9503-000

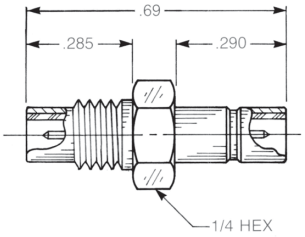
NOTES

ADAPTERS

SECTION 9 TABLE OF CONTENTS

SMB to SMC 9-2
BNC to Subminiature 9-3
N to Subminiature 9-4
TNC to Subminiature 9-5

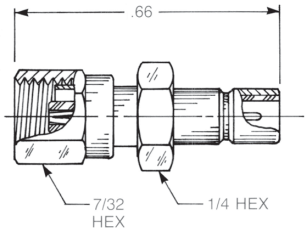
Between Series - SMB to SMC



SMB Male Jack to SMC Male Jack

- Connects SMB plug to SMC plug

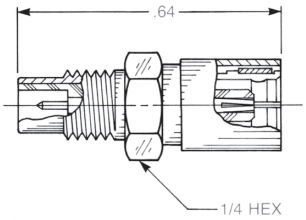
5814-1501-000 (Gold-plated)
5814-7501-000 (Nickel-plated)



SMB Male Jack to SMC Female Plug

- Connects SMB plug to SMC jack

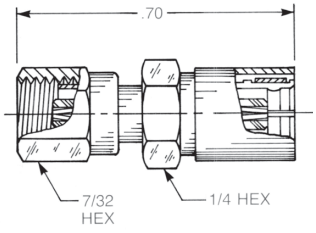
5830-1501-000 (Gold-plated)
5830-7501-000 (Nickel-plated)



SMB Female Plug to SMC Male Jack

- Connects SMB jack to SMC plug

5832-1501-000 (Gold-plated)
5832-7501-000 (Nickel-plated)



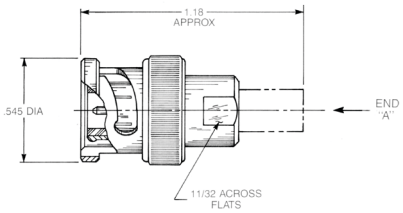
SMB Female Plug to SMC Female Plug

- Connects SMB jack to SMC jack

5831-1501-000 (Gold-plated)
5831-7501-000 (Nickel-plated)

Between Series - BNC to Subminiature

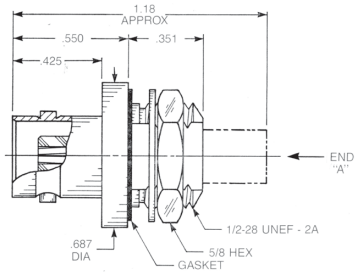
BNC Plug



END "A" CONFIGURATION		
	SMC MALE JACK	**5402-1501-000** (Gold-plated) **5402-7501-000** (Nickel-plated)
	SMC FEMALE PLUG	**5403-1501-000** (Gold-plated) **5403-7501-000** (Nickel-plated)
	SMB MALE JACK	**5404-1501-000** (Gold-plated) **5404-7501-000** (Nickel-plated)
	SMB FEMALE PLUG	**5405-1501-000** (Gold-plated) **5405-7501-000** (Nickel-plated)
	75 OHM SCREW-ON MALE JACK	**5406-1501-000** (Gold-plated) **5406-7501-000** (Nickel-plated)
	75 OHM SCREW-ON FEMALE PLUG	**5407-1501-000** (Gold-plated) **5407-7501-000** (Nickel-plated)
	75 OHM SNAP-ON MALE JACK	**5408-1501-000** (Gold-plated) **5408-7501-000** (Nickel-plated)
	75 OHM SNAP-ON FEMALE PLUG	**5409-1501-000** (Gold-plated) **5409-7501-000** (Nickel-plated)

BNC Bulkhead Jack

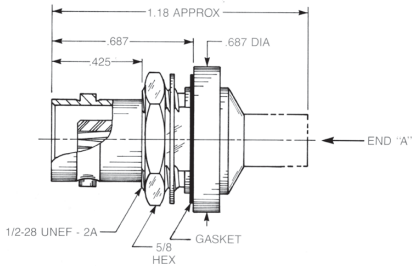
- Front mount



END "A" CONFIGURATION		
	SMC MALE JACK	**5510-1501-000** (Gold-plated) **5510-7501-000** (Nickel-plated)
	SMC FEMALE PLUG	**5511-1501-000** (Gold-plated) **5511-7501-000** (Nickel-plated)
	SMB MALE JACK	**5512-1501-000** (Gold-plated) **5512-7501-000** (Nickel-plated)
	SMB FEMALE PLUG	**5513-1501-000** (Gold-plated) **5513-7501-000** (Nickel-plated)
	75 OHM SCREW-ON MALE JACK	**5514-1501-000** (Gold-plated) **5514-7501-000** (Nickel-plated)
	75 OHM SCREW-ON FEMALE PLUG	**5515-1501-000** (Gold-plated) **5515-7501-000** (Nickel-plated)
	75 OHM SNAP-ON MALE JACK	**5516-1501-000** (Gold-plated) **5516-7501-000** (Nickel-plated)
	75 OHM SNAP-ON FEMALE PLUG	**5517-1501-000** (Gold-plated) **5517-7501-000** (Nickel-plated)

BNC Bulkhead Jack

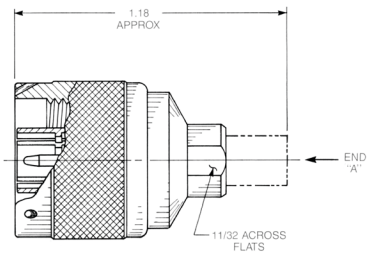
- Rear mount



END "A" CONFIGURATION		
	SMC MALE JACK	**5502-1501-000** (Gold-plated) **5502-7501-000** (Nickel-plated)
	SMC FEMALE PLUG	**5503-1501-000** (Gold-plated) **5503-7501-000** (Nickel-plated)
	SMB MALE JACK	**5504-1501-000** (Gold-plated) **5504-7501-000** (Nickel-plated)
	SMB FEMALE PLUG	**5505-1501-000** (Gold-plated) **5505-7501-000** (Nickel-plated)
	75 OHM SCREW-ON MALE JACK	**5506-1501-000** (Gold-plated) **5506-7501-000** (Nickel-plated)
	75 OHM SCREW-ON FEMALE PLUG	**5507-1501-000** (Gold-plated) **5507-7501-000** (Nickel-plated)
	75 OHM SNAP-ON MALE JACK	**5508-1501-000** (Gold-plated) **5508-7501-000** (Nickel-plated)
	75 OHM SNAP-ON FEMALE PLUG	**5509-1501-000** (Gold-plated) **5509-7501-000** (Nickel-plated)

Between Series - N to Subminiature

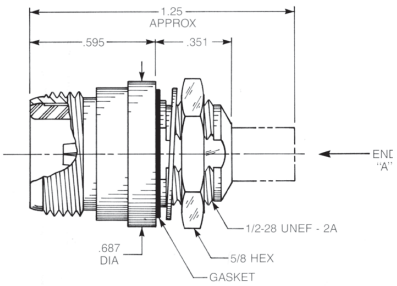
N Plug



END "A" CONFIGURATION	
SMC MALE JACK	**5002-1501-000** (Gold-plated) **5002-7501-000** (Nickel-plated)
SMC FEMALE PLUG	**5003-1501-000** (Gold-plated) **5003-7501-000** (Nickel-plated)
SMB MALE JACK	**5004-1501-000** (Gold-plated) **5004-7501-000** (Nickel-plated)
SMB FEMALE PLUG	**5005-1501-000** (Gold-plated) **5005-7501-000** (Nickel-plated)
75 OHM SCREW-ON MALE JACK	**5006-1501-000** (Gold-plated) **5006-7501-000** (Nickel-plated)
75 OHM SCREW-ON FEMALE PLUG	**5007-1501-000** (Gold-plated) **5007-7501-000** (Nickel-plated)
75 OHM SNAP-ON MALE JACK	**5008-1501-000** (Gold-plated) **5008-7501-000** (Nickel-plated)
75 OHM SNAP-ON FEMALE PLUG	**5009-1501-000** (Gold-plated) **5009-7501-000** (Nickel-plated)

N Bulkhead Jack

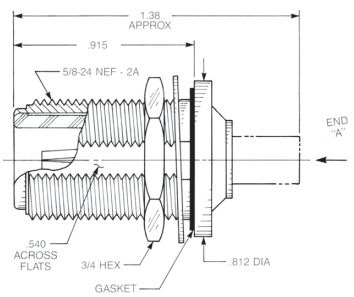
- Front mount



END "A" CONFIGURATION	
SMC MALE JACK	**5610-1501-000** (Gold-plated) **5610-7501-000** (Nickel-plated)
SMC FEMALE PLUG	**5611-1501-000** (Gold-plated) **5611-7501-000** (Nickel-plated)
SMB MALE JACK	**5612-1501-000** (Gold-plated) **5612-7501-000** (Nickel-plated)
SMB FEMALE PLUG	**5613-1501-000** (Gold-plated) **5613-7501-000** (Nickel-plated)
75 OHM SCREW-ON MALE JACK	**5614-1501-000** (Gold-plated) **5614-7501-000** (Nickel-plated)
75 OHM SCREW-ON FEMALE PLUG	**5615-1501-000** (Gold-plated) **5615-7501-000** (Nickel-plated)
75 OHM SNAP-ON MALE JACK	**5616-1501-000** (Gold-plated) **5616-7501-000** (Nickel-plated)
75 OHM SNAP-ON FEMALE PLUG	**5617-1501-000** (Gold-plated) **5617-7501-000** (Nickel-plated)

N Bulkhead Jack

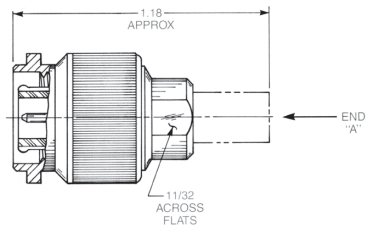
- Rear mount



END "A" CONFIGURATION	
SMC MALE JACK	**5602-1501-000** (Gold-plated) **5602-7501-000** (Nickel-plated)
SMC FEMALE PLUG	**5603-1501-000** (Gold-plated) **5603-7501-000** (Nickel-plated)
SMB MALE JACK	**5604-1501-000** (Gold-plated) **5604-7501-000** (Nickel-plated)
SMB FEMALE PLUG	**5605-1501-000** (Gold-plated) **5605-7501-000** (Nickel-plated)
75 OHM SCREW-ON MALE JACK	**5606-1501-000** (Gold-plated) **5606-7501-000** (Nickel-plated)
75 OHM SCREW-ON FEMALE PLUG	**5607-1501-000** (Gold-plated) **5607-7501-000** (Nickel-plated)
75 OHM SNAP-ON MALE JACK	**5608-1501-000** (Gold-plated) **5608-7501-000** (Nickel-plated)
75 OHM SNAP-ON FEMALE PLUG	**5609-1501-000** (Gold-plated) **5609-7501-000** (Nickel-plated)

Between Series - TNC to Subminiature

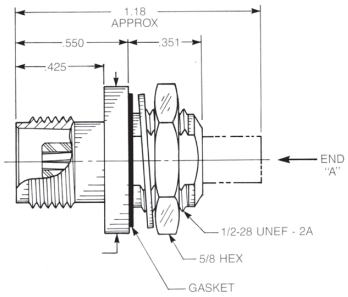
TNC Plug



END "A" CONFIGURATION		
	SMC MALE JACK	**5302-1501-000** (Gold-plated) **5302-7501-000** (Nickel-plated)
	SMC FEMALE PLUG	**5303-1501-000** (Gold-plated) **5303-7501-000** (Nickel-plated)
	SMB MALE JACK	**5304-1501-000** (Gold-plated) **5304-7501-000** (Nickel-plated)
	SMB FEMALE PLUG	**5305-1501-000** (Gold-plated) **5305-7501-000** (Nickel-plated)
	75 OHM SCREW-ON MALE JACK	**5306-1501-000** (Gold-plated) **5306-7501-000** (Nickel-plated)
	75 OHM SCREW-ON FEMALE PLUG	**5307-1501-000** (Gold-plated) **5307-7501-000** (Nickel-plated)
	75 OHM SNAP-ON MALE JACK	**5308-1501-000** (Gold-plated) **5308-7501-000** (Nickel-plated)
	75 OHM SNAP-ON FEMALE PLUG	**5309-1501-000** (Gold-plated) **5309-7501-000** (Nickel-plated)

TNC Bulkhead Jack

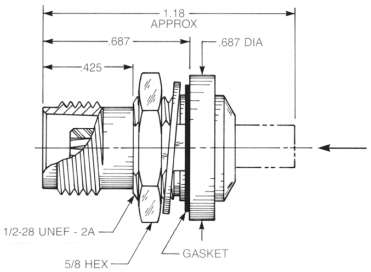
- Front mount



END "A" CONFIGURATION		
	SMC MALE JACK	**5110-1501-000** (Gold-plated) **5110-7501-000** (Nickel-plated)
	SMC FEMALE PLUG	**5111-1501-000** (Gold-plated) **5111-7501-000** (Nickel-plated)
	SMB MALE JACK	**5112-1501-000** (Gold-plated) **5112-7501-000** (Nickel-plated)
	SMB FEMALE PLUG	**5113-1501-000** (Gold-plated) **5113-7501-000** (Nickel-plated)
	75 OHM SCREW-ON MALE JACK	**5114-1501-000** (Gold-plated) **5114-7501-000** (Nickel-plated)
	75 OHM SCREW-ON FEMALE PLUG	**5115-1501-000** (Gold-plated) **5115-7501-000** (Nickel-plated)
	75 OHM SNAP-ON MALE JACK	**5116-1501-000** (Gold-plated) **5116-7501-000** (Nickel-plated)
	75 OHM SNAP-ON FEMALE PLUG	**5117-1501-000** (Gold-plated) **5117-7501-000** (Nickel-plated)

TNC Bulkhead Jack

- Rear mount



END "A" CONFIGURATION		
	SMC MALE JACK	**5102-1501-000** (Gold-plated) **5102-7501-000** (Nickel-plated)
	SMC FEMALE PLUG	**5103-1501-000** (Gold-plated) **5103-7501-000** (Nickel-plated)
	SMB MALE JACK	**5104-1501-000** (Gold-plated) **5104-7501-000** (Nickel-plated)
	SMB FEMALE PLUG	**5105-1501-000** (Gold-plated) **5105-7501-000** (Nickel-plated)
	75 OHM SCREW-ON MALE JACK	**5106-1501-000** (Gold-plated) **5106-7501-000** (Nickel-plated)
	75 OHM SCREW-ON FEMALE PLUG	**5107-1501-000** (Gold-plated) **5107-7501-000** (Nickel-plated)
	75 OHM SNAP-ON MALE JACK	**5108-1501-000** (Gold-plated) **5108-7501-000** (Nickel-plated)
	75 OHM SNAP-ON FEMALE PLUG	**5109-1501-000** (Gold-plated) **5109-7501-000** (Nickel-plated)

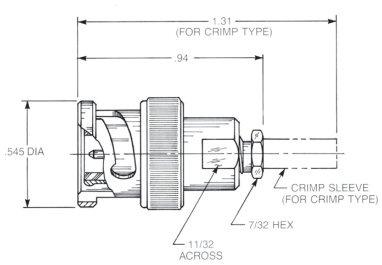
NOTES

BNC

SECTION 10 TABLE OF CONTENTS

BNC Cable Connectors 10-2

Cable Connectors

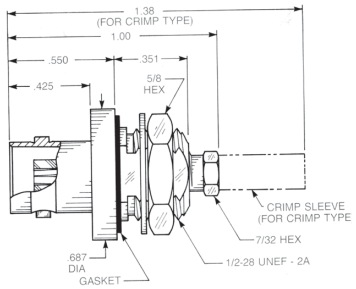


Straight Plug for Flexible or Semi-Rigid Cable

Clamp type for flexible cable:
6500-1051-0XX (Gold-plated)
6500-7051-0XX (Nickel-plated)

Crimp type for flexible cable:
6500-1071-0XX (Gold-plated)
6500-7071-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
6500-1041-0XX (Gold-plated)
6500-7041-0XX (Nickel-plated)



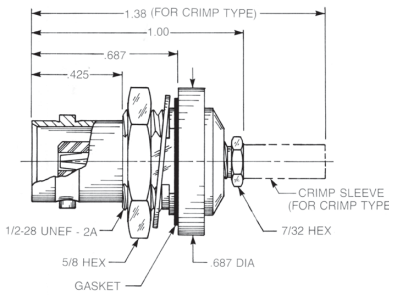
Bulkhead Jack

- Front mount

Clamp type for flexible cable:
6502-1051-0XX (Gold-plated)
6502-7051-0XX (Nickel-plated)

Crimp type for flexible cable:
6502-1071-0XX (Gold-plated)
6502-7071-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
6502-1041-0XX (Gold-plated)
6502-7041-0XX (Nickel-plated)



Bulkhead Jack

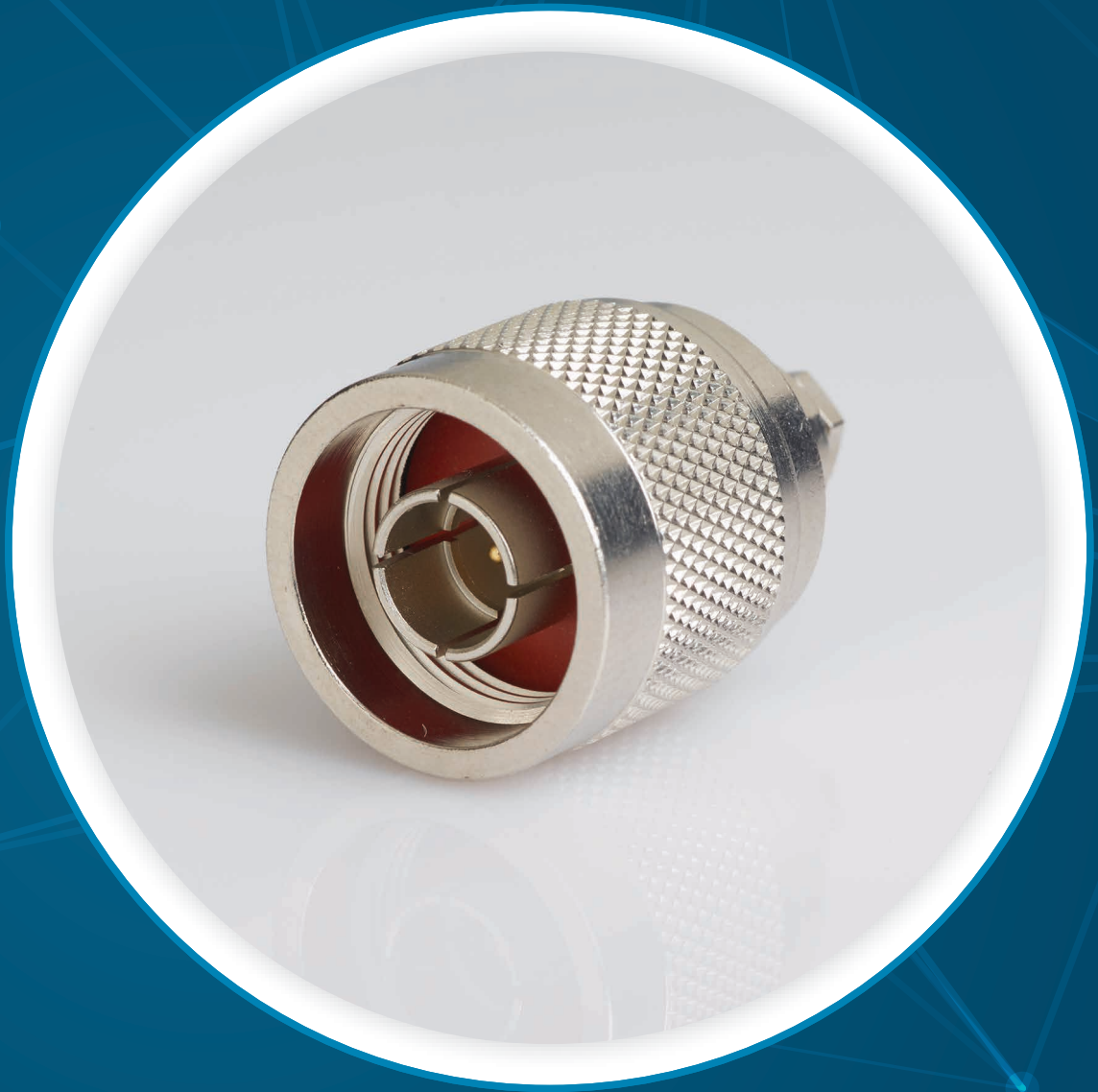
- Rear mount

Clamp type for flexible cable:
6501-1051-0XX (Gold-plated)
6501-7051-0XX (Nickel-plated)

Crimp type for flexible cable:
6501-1071-0XX (Gold-plated)
6501-7071-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
6501-1041-0XX (Gold-plated)
6501-7041-0XX (Nickel-plated)

Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	09	0.141″ semi-rigid, RG402, M17/130
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	10	0.085″ semi-rigid, RG405, M17/133
05	RG178DS, RG196DS	19	RG174DS, RG316DS, M17/152, Times RD316

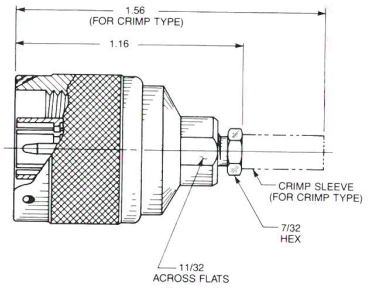


TYPE N

SECTION 11 TABLE OF CONTENTS

Cable Connectors 11-2
Precision Plugs and Jacks 11-3

Cable Connectors

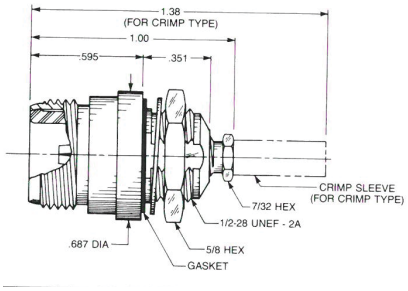


Straight Plug for Flexible or Semi-Rigid Cable

Clamp type for flexible cable:
4000-1051-0XX (Gold-plated)
4000-7051-0XX (Nickel-plated)

Crimp type for flexible cable:
4000-1071-0XX (Gold-plated)
4000-7071-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
4000-1041-0XX (Gold-plated)
4000-7041-0XX (Nickel-plated)



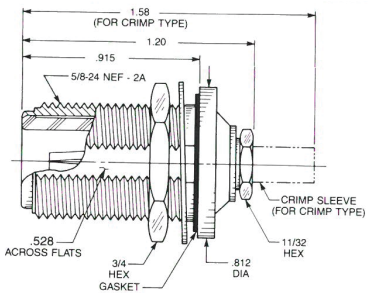
Bulkhead Jack

- Front mount

Clamp type for flexible cable:
4502-1051-0XX (Gold-plated)
4502-7051-0XX (Nickel-plated)

Crimp type for flexible cable:
4502-1071-0XX (Gold-plated)
4502-7071-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
4502-1041-0XX (Gold-plated)
4502-7041-0XX (Nickel-plated)



Bulkhead Jack

- Rear mount

Clamp type for flexible cable:
4501-1051-0XX (Gold-plated)
4501-7051-0XX (Nickel-plated)

Crimp type for flexible cable:
4501-1071-0XX (Gold-plated)
4501-7071-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
4501-1041-0XX (Gold-plated)
4501-7041-0XX (Nickel-plated)

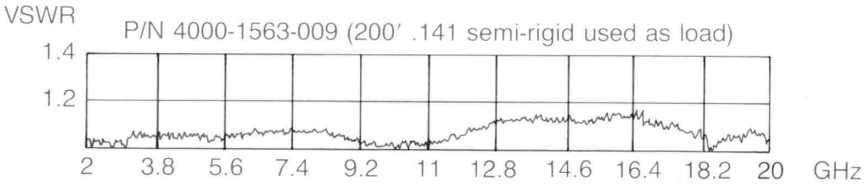
Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	09	0.141″ semi-rigid, RG402, M17/130
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	10	0.085″ semi-rigid, RG405, M17/133
05	RG178DS, RG196DS	19	RG174DS, RG316DS, M17/152, Times RD316

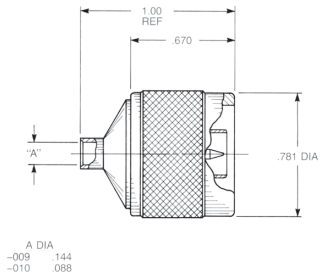
Precision Plugs and Jacks

The precision type N connectors shown here are constructed from 303 stainless steel with Teflon insulators and beryllium copper contacts.

These plugs and jacks all have captivated contacts which plug on to the cable center conductor, eliminating contact soldering and gapping. Simply trim the cable, slide the connector on and solder the jacket.

The VSWR data shown is taken from production units.



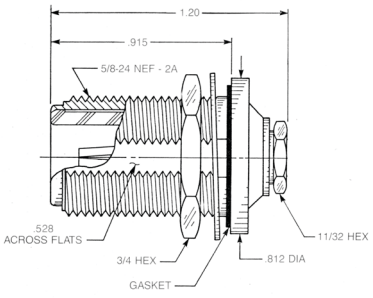


Straight Plug

- Direct solder type
- Gold-plated body, passivated coupling nut

For 0.085″ semi-rigid (A = 0.089):
4000-1563-010

For 0.141″ semi-rigid (A = 0.144):
4000-1563-009



Bulkhead Jack

- Solder-clamp type to allow repositioning of D-flats after assembly
- Passivated body, gold-plated solder ferrule
- Rear mount

For 0.085″ semi-rigid (A = 0.089):
4501-9543-010

For 0.141″ semi-rigid (A = 0.144):
4501-9543-009

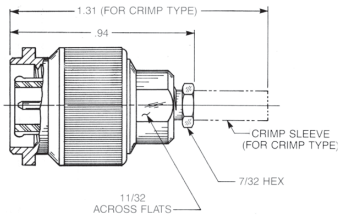
NOTES

TNC

SECTION 12 TABLE OF CONTENTS

TNC Cable Connectors 12-2

Cable Connectors

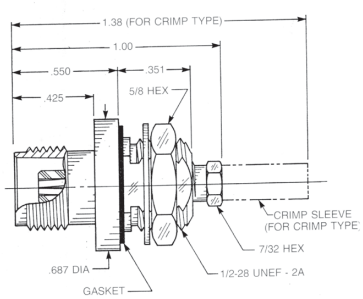


Straight Plug for Flexible or Semi-Rigid Cable

Clamp type for flexible cable:
6000-1051-0XX (Gold-plated)
6000-7051-0XX (Nickel-plated)

Crimp type for flexible cable:
6000-1071-0XX (Gold-plated)
6000-7071-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
6000-1041-0XX (Gold-plated)
6000-7041-0XX (Nickel-plated)



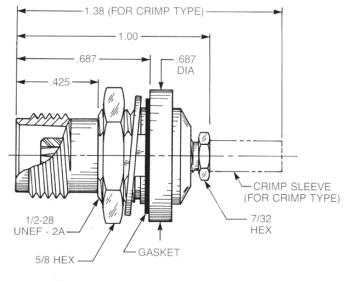
Bulkhead Jack

- Front mount

Clamp type for flexible cable:
6002-1051-0XX (Gold-plated)
6002-7051-0XX (Nickel-plated)

Crimp type for flexible cable:
6002-1071-0XX (Gold-plated)
6002-7071-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
6002-1041-0XX (Gold-plated)
6002-7041-0XX (Nickel-plated)



Bulkhead Jack

- Rear mount

Clamp type for flexible cable:
6001-1051-0XX (Gold-plated)
6001-7051-0XX (Nickel-plated)

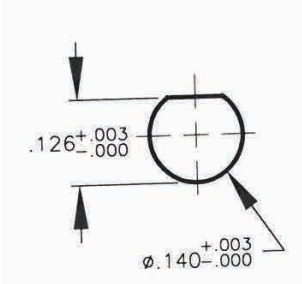
Crimp type for flexible cable:
6001-1071-0XX (Gold-plated)
6001-7071-0XX (Nickel-plated)

Solder-clamp for semi-rigid cable:
6001-1041-0XX (Gold-plated)
6001-7041-0XX (Nickel-plated)

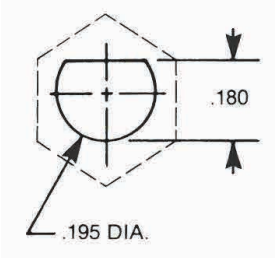
Substitute XX with the Appropriate Cable Group Below			
02	RG178, RG196, M17/93, M17/169	09	0.141″ semi-rigid, RG402, M17/130
03	RG174, RG179, RG316, M17/113, M17/119, M17/172, M17/173	10	0.085″ semi-rigid, RG405, M17/133
05	RG178DS, RG196DS	19	RG174DS, RG316DS, M17/152, Times RD316

ALL DIMENSIONS ± 0.003 UNLESS OTHERWISE SPECIFIED

SSMB/SSMC SERIES BULKHEAD CONNECTORS

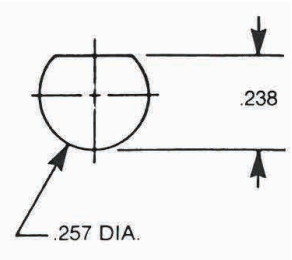


SMB, SMC, SLB BULKHEAD CONNECTORS

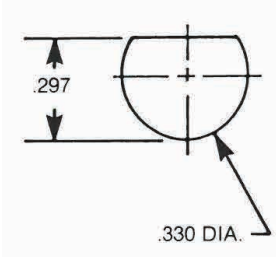


DOTTED LINE INDICATES FLAT LOCATION IN RELATION TO HEX.

SMA BULKHEAD CONNECTORS

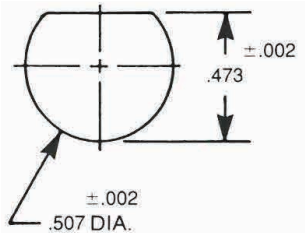


75 0HM BULKHEAD CONNECTORS

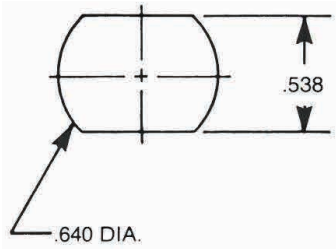


BNC, TNC, N BULKHEAD CONNECTORS AND BETWEEN SERIES ADAPTERS

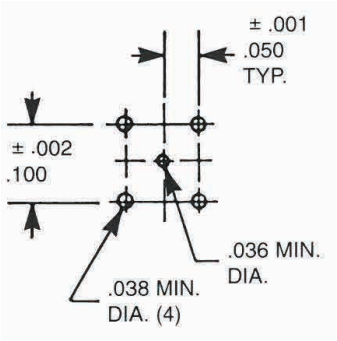
(Except type N rear mount)



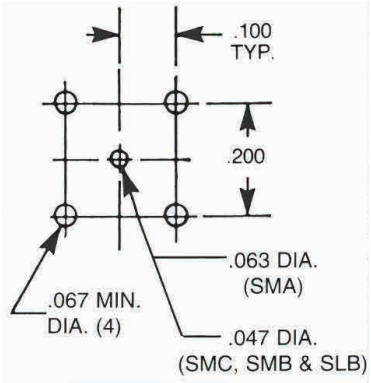
TYPE N REAR MOUNT CONNECTORS AND ADAPTERS



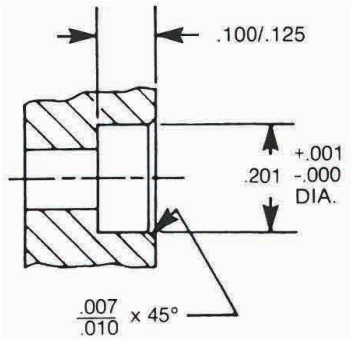
SSMB/SSMC SERIES PRINTED-CIRCUIT BOARD CONNECTORS



ALL PRINTED-CIRCUIT BOARD CONNECTORS EXCEPT SSMB/SSMC



SMA KNURL MOUNT CONNECTORS



NOTES

CABLE ASSEMBLIES

SECTION 13 TABLE OF CONTENTS

Design Considerations 13-3
Cable Data 13-5
Cable Groups 13-6
Trim Codes 13-7
Short Bend Assemblies 13-8
Standard Flexible Assemblies 13-9
Standard Semi-Rigid Assemblies 13-12
Assembly Instructions 13-14

Even the best coaxial connector won't work right unless it is correctly assembled to the cable. Since we make the connectors, we have the knowledge and the ability to do the job right.

If you make your own cable assemblies, here's what you have to do:

- Determine what you'll need to do the job, accounting for scrap rates.
- Buy and stock connectors, cable, markers and shrink tubing.
- Develop a training system for your assemblers.
- Develop and maintain the assembly tooling and test equipment.
- Scrap parts damaged during assembly as well as complete assemblies that don't meet specifications.
- Juggle your production schedule to make sure the right assemblies are ready for installation at the right time.

If you buy complete assemblies from us, here's what you have to do:

- Install the assemblies in your equipment.

The following pages show a number of suggestions for minimizing your cost of cable assemblies. Send us your drawings and we'll show you how to get the assemblies you need, when you need them, without frustration.

DESIGN CONSIDERATIONS FOR FLEXIBLE ASSEMBLIES

There are a number of things that, when kept in mind while specifying flexible cable assemblies, can cut costs and ensure the best possible performance:

1) Crimp type connectors are faster and less expensive to assemble than clamp types and provide better strain relief at the cable junction. Crimp connectors grip five to ten times more length of braid than clamp connectors do, an important consideration given the small cross-sectional area of most coaxial cable braid wires.

2) Nickel-plated or passivated connectors provide the same electrical performance as gold-plated connectors but at a lower price.

3) Cable terminations (see pages 7-1 to 7-4) can often eliminate the need for (and expense of) a cable connector/receptacle combination in applications where one end of the cable will not need to be disconnected during service.

4) Cables with wrapped-tape dielectrics and/or jackets are generally more expensive to buy and always more expensive to assemble than cables with extruded dielectrics and jackets.

5) Soldering the braid of flexible cables to connectors should ALWAYS be avoided. The heat used in soldering will damage even cables with Teflon dielectrics, and will destroy cables with polyethylene dielectrics. All AEP connectors grip the cable with strength greater than the breaking strength of the cable braid, so soldering is also redundant.

6) Excessively tight tolerances will increase cost. Additionally, if enough slack is not designed into the specification, you may run the risk of having cables that will be under constant mechanical stress when installed, thereby degrading the electrical performance over time.

7) All screw-on connectors have some play in the coupling nuts, so lengths should be dimensioned to the reference plane. In general, length should be dimensioned to the following points:
   - Straight plugs and jacks: To reference plane.
   - Bulkhead jacks: To bulkhead mounting surface.
   - Right angle connectors: To centerline of mating side.

The standard flexible cable assemblies shown on the following pages all have nickel-plated crimp type connectors, and have heat-shrink tubing installed at the cable junction.

DESIGN CONSIDERATIONS FOR SEMI-RIGID ASSEMBLIES

Since semi-rigid assemblies are generally used at higher frequencies than flexible assemblies, the design and construction elements are more critical. We make our own bending and trimming equipment, and use induction heating only (not resistance pliers) for soldering cable jackets. We can make semi-rigid assemblies using any connectors on cable sizes from 0.047″ to 0.250″, made and tested to meet your specifications, 100% guaranteed.

Keeping the following in mind can cut cost and ensure the best possible performance in semi-rigid assemblies:

Cable Assembly Guidelines (continued)

1) When using 0.141″ semi-rigid cable and SMA connectors, the best performance is gained from using plugs that use the cable center conductor as the contact, such as our 9301-1063-009. One problem presented by this connector used to be that the sharp edge of the pointed center conductor would shed metal chips onto the interface each time the connector was mated. Since we use only the best equipment available to manufacture our cable assemblies, we are able to produce a point which virtually eliminates this problem. Our equipment also enables us to machine an extremely smooth, burr-free finish on the interface, which is critical for high-frequency applications.

2) Dimensions should be as tight as possible and tolerances as loose as possible. Tolerances less than ± 0.030" add extra expense.

3) Extremely tight bends are expensive and will cause the cable center conductor to migrate toward the outside of the bend over time. Bend radii should be as large as possible and never smaller than 1.5 times the cable diameter (measured to the inside of the cable). A minimum of two cable diameters of straight length should be allowed from the connector attachment before starting bends.

4) Lengths should be dimensioned to the following points, since they are a fixed characteristic of the connectors and installation locations:
   - Straight plugs and jacks: To reference plane.
   - Bulkhead jacks: To bulkhead mounting surface.
   - Right angle connectors: To centerline of mating end.

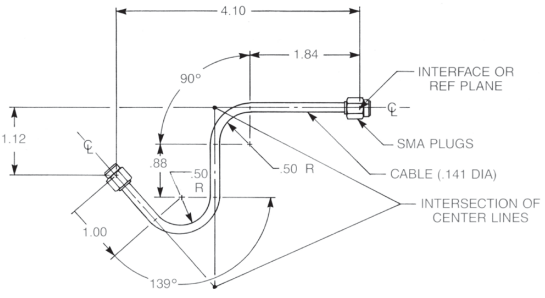
5) We can bend cables tightly enough, without damage, that a straight SMA plug with a 90° bend will fit in the same space as a right angle plug. Right angle plugs are more expensive and have relatively poor electrical performance at high frequency.

6) The drawing below illustrates a dimensioning method that is easiest to translate into finished assemblies.

   a) Straight lengths should be dimensioned to the start of bends.

   b) Bends should be specified by radius to the inside of cable and degrees of bend. Radii to center of cable are unmeasurable.

   c) Dimensions that cannot be definitively measured, such as intersections of centerlines of bent cables as shown below, should be avoided.



The standard semi-rigid assemblies shown on the following pages all use nickel-plated connectors and hand-formable (soft jacketed) semi-rigid cable.

FLEXIBLE CABLE

RG-	M17	AEP CABLE GROUP	CENTER CONDUCTOR	DIELECTRIC	BRAID	JACKET	IMPEDANCE	MAX FREQUENCY (GHZ)	ATTENUATION (dB/100 FT) AT MAX	(POWER (W) AT MAX
55	26, 167	01	A 0.032	G 0.116	DE 0.176	G 0.206	50	USE	RG-	223
58	28, 155, 197	06	SE 0.036	G 0.116	E 0.150	J 0.195	50	1.0	28	55
59	29	07	C 0.023	G 0.146	F 0.191	J 0.242	75	1.0	16	72
62	30, 91, 97	07	C 0.025	G 0.146	F 0.191	J 0.242	93	1.0	13	45
122	54, 197, 197	30	SE 0.031	G 0.096	E 0.126	J 0.160	50	1.0	30	35
141	59, 170	06	B 0.039	H 0.116	A 0.146	I 0.190	50	USE	RG-	303
142	60, 158	01	B 0.037	H 0.116	DA 0.171	K 0.195	50	12.4	76	140
174	119, 173	03	SC 0.019	H 0.060	E 0.088	J 0.110	50	1.0	45	17
178	93, 169	02	SB 0.012	H 0.033	A 0.054	K 0.071	50	3.0	94	47
179	94	03	SB 0.012	H 0.063	A 0.084	K 0.100	75	3.0	43	150
180	95	04	SB 0.012	H 0.102	A 0.124	K 0.141	95	3.0	36	150
187	68, 94	03	SB 0.012	H 0.063	A 0.084	K 0.100	75	USE	RG-	179
188	69, 113	03	SB 0.020	H 0.060	A 0.081	K 0.110	50	USE	RG-	316
195	70, 95	04	SB 0.012	H 0.102	A 0.124	K 0.155	95	USE	RG-	180
196	71, 169	02	SB 0.012	H 0.034	A 0.054	K 0.080	50	USE	RG-	178
223	84, 167, 200	01	A 0.035	G 0.116	DA 0.176	J 0.212	50	12.4	100	11
303	111, 170	06	B 0.037	H 0.116	A 0.146	K 0.170	50	3.0	26	350
316	1136, 172	03	SB 0.020	H 0.060	A 0.081	K 0.098	50	3.0	58	78
400	128, 175	01	SA 0.038	H 0.116	DA 0.171	K 0.095	50	12.4	90	140
-	152	19	SB 0.020	H 0.060	DA 0.096	K 0.114	50	12.4	85	37
TIMES RD-178		25	SB 0.012	H 0.034	DA 0.070	K 0.092	50	3.0	94	47
TIMES RD-316		19	SB 0.020	H 0.060	DA 0.096	K 0.118	50	3.0	58	78

SEMI-RIGID CABLE

RG-	M17	AEP CABLE GROUP	CENTER CONDUCTOR	DIELECTRIC	OUTER CONDUCTOR	IMPEDANCE	ATTENUATION (DB/100 FT)	10 GHz	18 GHz
402	130	09	B .036	H .118	F .141	50	12	45	64
405	133	10	B .020	H .066	F .086	50	22	80	123
-	151	11	B .011	H .037	F .047	50	40	130	180
0.056″ SEMI-RIGID		21	B .011	H .037	F .056	50	35	117	161

KEY TO MATERIAL CODES:

A. Silver-covered copper
B. Silver-covered copperweld
C. Copperweld
D. Double braid
E. Tinned copper
F. Bare copper
G. Polyethylene
H. PTFE (Teflon)
I. Fiberglass
J. PVC
K. FEP (Teflon)
S. Stranded center conductor

Data is compiled from MIL-C-17 and manufacturer 's literature and is not a guarantee of performance.

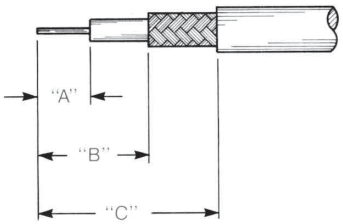
AEP CABLE GROUPS

Each cable group includes all modification letters for RG numbers shown and all dash numbers for M17 slash sheets shown. For specific information on cables, please consult MIL-C-17 or the cable manufacturers.

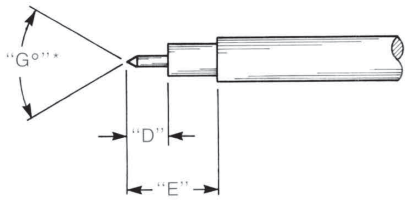
Group	Cable(s)	Standard Application	Die Size for Crimp
01	RG-55, 142, 223, M17/60, M17/84, M17/158, M17/167	All series except SSMB/SSMC. Crimp only for SMB, SMC, BNC, TNC, N, terminations.	0.213
02	RG-178, 196, M17/93, M17/169	All series	0.105
03	RG-174, 179, 187, 188, 316, M17/94, 113, 119, 172, 173	All series	0.128
04	RG-180, 195, M17/95, Essex 21-597, Raychem 9527-A-1317, 9528-A-1317	All series except SSMB/SSMC. Crimp only for SMB, SMC, BNC, N, TNC, terminations.	0.156
05	RG 178DS, 196DS, Microdot 250-3908	All series	0.128 (0.105 for SSMB/SSMC)
06	RG-58, 141, 303, M17/111, M17/28, M17/155, M17/170	All series except SSMB/SSMC. Crimp only for SMB, SMC, BNC, N, TNC, terminations.	0.213
07	RG-59, 62, M17/29, M17/30	75 Ohm	0.255
09	0.141″ semi-rigid, RG-402, M17/130	All series except SSMB/SSMC	N/A
10	0.085″ semi-rigid, RG-405, M17/133	All series	N/A
11	0.045″/0.047″ semi-rigid	SSMB/SSMC series	N/A
13	Raychem 9530-A-1317, Microdot 295-3986	Contact factory	-
14	Microdot 250-4021	All series	0.128
15	Microdot 250-3953	Contact factory	-
19	RG-174DS,316DS, M17/152, Times RD316	All series except SMA	0.128 (0.156 for SMA)
21	0.056″ semi-rigid	SSMB/SSMC series	N/A
25	Times RD178	All series	0.128
30	RG-122, M17/54, M17/157	SMA QPL	-

The references above indicate only standard cable/connector combinations. Please contact us directly if you need something you don't see.

FLEXIBLE CABLE



SEMI-RIGID CABLE



* Break edge if no angle for "G" given.

TRIM CODE #	DIM "A"	DIM "B"	DIM "C"
1	0.080	0.120	0.240
2	0.100	0.430	0.700
3	0.080	0.180	0.300
4	0.070	0.200	0.450
5	0.100	0.125	0.265
6	0.100	0.475	0.725
7	0.075	0.200	0.350
8	0.075	0.250	0.500
9	0.125	0.300	0.400
10	0.100	0.230	0.500
11	0.125	0.600	0.850
12	0.100	0.600	0.870
13	0.125	0.325	0.425
14	0.100	0.160	0.390
15	0.100	0.470	0.720
16	0.100	0.100	0.230
17	0.100	0.210	0.430
18	0.100	0.275	0.400
19	0.125	0.125	0.275
20	0.125	0.515	0.765
21	0.200	0.220	0.310
22	0.200	0.510	0.760
23	0.125	0.300	0.490
24	0.125	0.300	0.490
25	0.050	0.100	0.250
26	0.070	0.265	0.515
27	0.080	0.180	0.425
28	0.150	0.300	0.400
29	0.150	0.600	0.850
30	0.100	0.280	0.550

TRIM CODE #	DIM "D"	DIM "E"	DIM "G"
101	0.090	0.090	-
102	0.090	0.180	70° - 90°
103	0.100	0.135	-
104	0.080	0.170	-
105	0.125	0.125	-
106	0.125	0.290	-
107	0.090	0.090	70° - 90°
108	0.100	0.215	-
109	0.060	0.120	-
110	0.115	0.330	-
111	0.125	0.330	-
112	0.090	0.170	-
113	0.105	0.130	-
114	0.120	0.150	-
115	0.200	0.350	-
116	0.100	0.180	-
117	0.125	0.195	-
118	0.075	0.100	-
119	0.110	0.140	-
120	0.110	0.150	-
121	0.125	0.125	70° - 90°
122	0.090	0.090	70° - 90°
123	0.125	0.195	70° - 90°
124	0.000	0.125	70° - 90°
125	0.075	0.075	-

AEP SHORT BEND ASSEMBLIES

Designed for test labs and production environments, Radiall AEP introduces the line of Short Bend cable assemblies. Short bend is a perfect solution when a low-loss coaxial cable assembly is needed for point-to-point applications that require low profile bending.

Radiall AEP Short Bend is a 26 GHz, low-loss coaxial cable assembly specifically designed for point-to-point applications that require low profile bending. Short Bend is an alternative to semi rigid and/or hand conformable cables and eliminates the need for special cable bending tools.

Short Bend provides a flexible solution in tight spaces and can possibly eliminate the need for right angle connectors.

ELECTRICAL:

Impedance: 50 Ω
Frequency range: DC-26 GHz
VSWR: 1.02+0.01×f (GHz)
Intermodulation: typ. -123 dBM (-166 dBc, 2 carriers 2X20 W + 43 dBM) 2×20 W+43 dBM

ENVIRONMENTAL:

Operating temperature: -55°C/+125°C
Moisture: IP67

MECHANICAL:

Coupling nut retention force: ≥450 N
Coupling torque: Ncm min
Recommended torque: 10 Nm for tool screw version
Mating life: 100 cycles min

Straight Plug to Straight Plug
0.086″ CABLE: **81-6200-XXXX**

Straight Plug to Straight Plug
0.141″ CABLE: **81-6201-XXXX**

(-XXXX refers to length of assembly (example 81-6200-0600 is 6″ long)
Standard lengths available from 2.5″ up to 16″; Custom lengths available upon request.

Straight Plug to Straight Plug

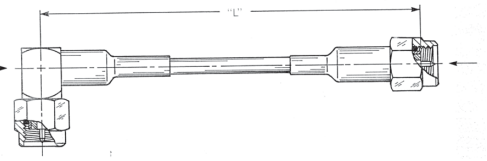
RG-316/U CABLE: **80-1161-XXXX**
RG-223/U CABLE: **80-1162-XXXX**

9001-9023-0XX → ← 9001-9023-0XX

Right Angle Plug to Straight Plug

RG-316/U CABLE: **80-1163-XXXX**
RG-223/U CABLE: **80-1164-XXXX**

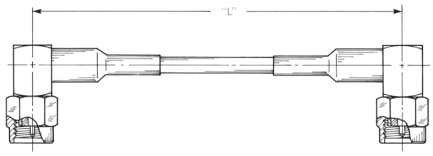
9043-9523-0XX → ← 9001-9023-0XX



Right Angle Plug to Right Angle Plug

RG-316/U CABLE: **80-1165-XXXX**
RG-223/U CABLE: **80-1166-XXXX**

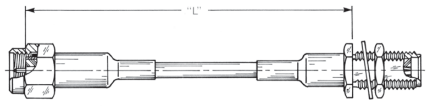
9043-9523-0XX → ← 9043-9523-0XX



Straight Plug to Bulkhead Jack

RG-316/U CABLE: **80-1167-XXXX**
RG-223/U CABLE: **80-1168-XXXX**

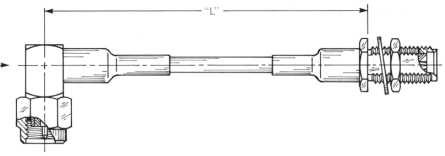
9001-9023-0XX → ← 9030-9023-0XX



Right Angle Plug to Bulkhead Jack

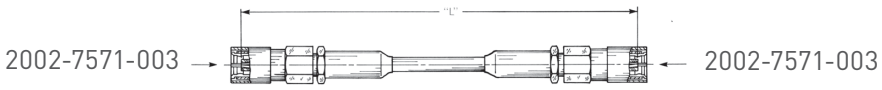
RG-316/U CABLE: **80-1169-XXXX**
RG-223/U CABLE: **80-1170-XXXX**

9043-9523-0XX → ← 9030-9023-0XX

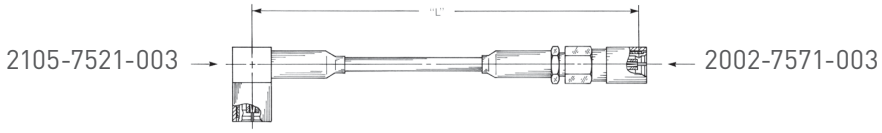


The last four digits represent length "L" in inch and decimal fractions.
Example: 80-1154-1200 indicates one ft O.A.L. Tolerance: ± 1/8″

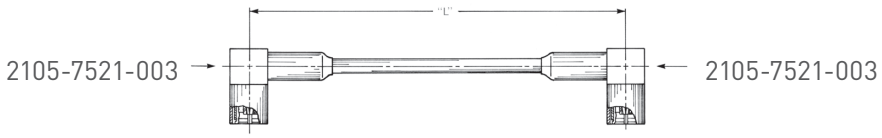
Straight Plug to Straight Plug
RG-316/U CABLE: **80-1151-XXXX**



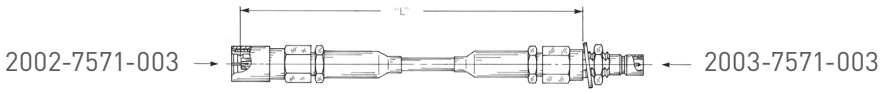
Right Angle Plug to Straight Plug
RG-316/U CABLE: **80-1152-XXXX**



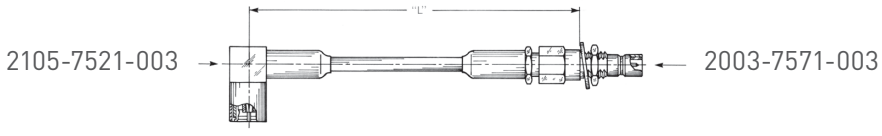
Right Angle Plug to Right Angle Plug
RG-316/U CABLE: **80-1153-XXXX**



Straight Plug to Bulkhead Jack
RG-316/U CABLE: **80-1154-XXXX**



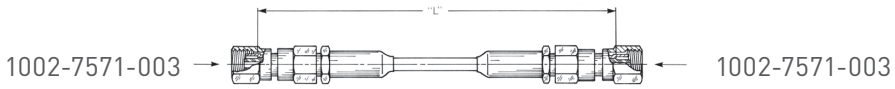
Right Angle Plug to Bulkhead Jack
RG-316/U CABLE: **80-1155-XXXX**



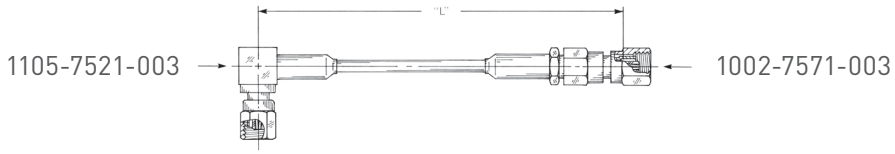
The last four digits represent length "L" in inch and decimal fractions.
Example: 80-1154-1200 indicates one ft O.A.L. Tolerance: ± 1/8″

Flexible - SMC Series Connectors

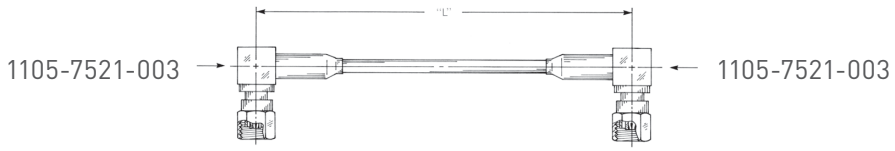
Straight Plug to Straight Plug
RG-316/U CABLE: **80-1156-XXXX**



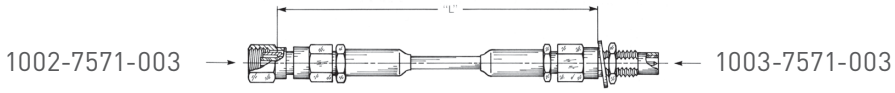
Right Angle Plug to Straight Plug
RG-316/U CABLE: **80-1157-XXXX**



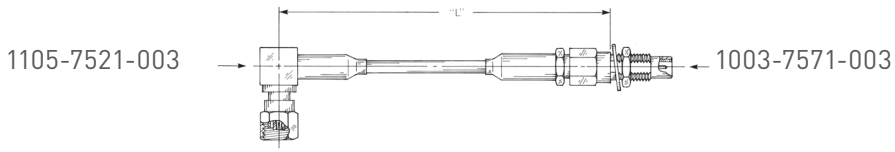
Right Angle Plug to Right Angle Plug
RG-316/U CABLE: **80-1158-XXXX**



Straight Plug to Bulkhead Jack
RG-316/U CABLE: **80-1159-XXXX**



Right Angle Plug to Bulkhead Jack
RG-316/U CABLE: **80-1160-XXXX**



The last four digits represent length "L" in inch and decimal fractions.
Example: 1157-1425-1200 indicates 14 ¼″ O.A.L. Tolerance: ± ⅛″

Straight Plug to Straight Plug

0.085″ SEMI-RIGID: **81-1224-XXXX**
0.141″ SEMI-RIGID: **81-1212-XXXX**

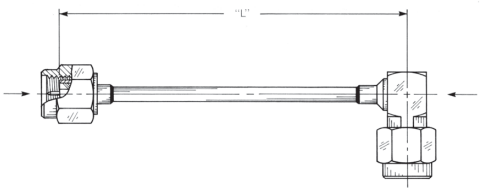
0.085″: 9401-7083-010
0.141″: 9301-7063-009

0.085″: 9401-7083-010
0.141″: 9301-7063-009

Straight Plug to Right Angle Plug

0.085″ SEMI-RIGID: **81-1225-XXXX**
0.141″ SEMI-RIGID: **81-1226-XXXX**

0.085″: 9401-7083-010
0.141″: 9301-7063-009

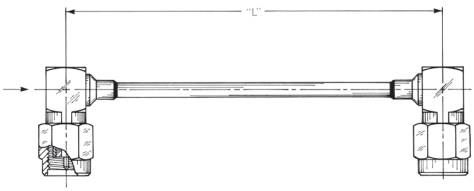


9443-7563-0XX

Right Angle Plug to Right Angle Plug

0.085″ SEMI-RIGID: **81-1227-XXXX**
0.141″ SEMI-RIGID: **81-1228-XXXX**

9443-7563-0XX



9443-7563-0XX

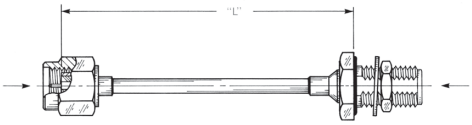
The last four digits represent length "L" in inch and decimal fractions.
Example: 81-1225-1850 indicates 18 ½″ O.A.L. Tolerance: ± ⅛″

Semi-Rigid Cable Assemblies - SMA Series Connectors

Straight Plug to Bulkhead Jack

0.085″ SEMI-RIGID: **81-1229-XXXX**
0.141″ SEMI-RIGID: **81-1230-XXXX**

0.085″: 9401-7083-010
0.141″: 9301-7063-009

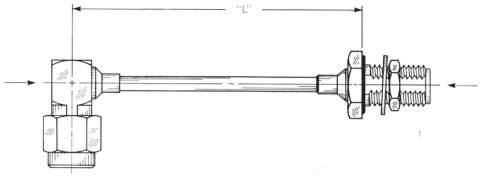


9453-7083-0XX

Right Angle Plug to Bulkhead Jack

0.085″ SEMI-RIGID: **81-1231-XXXX**
0.141″ SEMI-RIGID: **81-1232-XXXX**

9443-7563-0XX

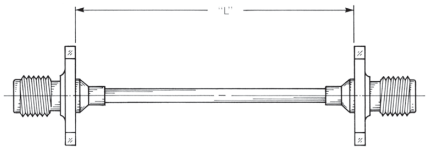


9453-7083-0XX

Panel Jack to Panel Jack
2-Hole Flange

0.085″ SEMI-RIGID: **81-1233-XXXX**
0.141″ SEMI-RIGID: **81-1234-XXXX**

9441-7083-0XX



9441-7083-0XX

The last four digits represent length "L" in inch and decimal fractions.
Example: 81-1233-0925 indicates 9 ½″ O.A.L. Tolerance: ± ⅛″

General Notes:

1) All cuts when trimming cable should be square and of precise depth. Nicking the layer underneath the layer being cut will weaken the cable mechanically and adversely affect electrical performance.

2) The hole in the side of the cable entry hole in contacts is there for two reasons: A) To visually inspect for proper cable insertion, and B) to allow gases formed during the soldering process to escape. It is NOT for feeding solder into the contact. Even the steadiest operator will end up with a glob of solder on the outside of the contact when using the inspection hole to feed solder. This solder on the outside of the contact makes the connector hard or impossible to assemble, and degrades electrical performance. Filing the solder glob off the contact removes plating. The proper procedure is to tin the cable center conductor, and add some liquid flux to the tinned end just before soldering to the contact. Simply insert the tinned and fluxed cable into the contact and reheat until the solder has melted.

3) Always avoid excessive heat when soldering. Carbon-jawed resistance pliers are much more precise and faster than soldering irons.

4) Always heat the sleeve, body, or contact, not the cable component being soldered.

5) When soldering nickel-plated connector bodies to semi-rigid cable, use Kester #2331 flux. This flux is active enough to ensure good solder bonding and is water-soluble.

6) When soldering to the jacket of semi-rigid cable, the cable and solder ferrule or connector body should be fixtured as tightly as possible. The soldering operation should be carried out as rapidly as possible and the joint cooled by brushing with alcohol. This, combined with a thermal cycling of the bent cable before assembly, will minimize Teflon extrusion during soldering. All major semi-rigid cable manufacturers outline cable thermal cycling procedures in their literature.

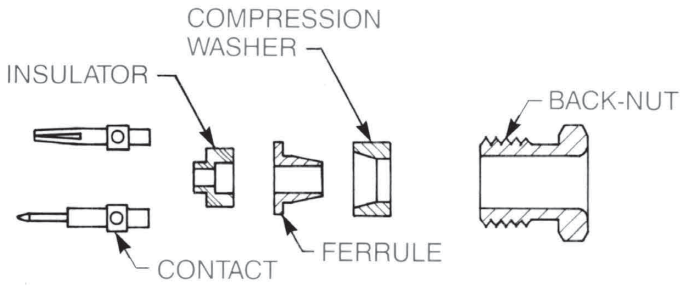
7) When cable sub-assemblies are threaded into bodies, always turn the nut, not the body, to prevent twisting the cable and breaking the center conductor.

8) After trimming cable for use with crimp connectors, rotate the dielectric several times to flare the cable braid slightly. This step prevents braid wires from sliding inside the crimp tail during assembly.

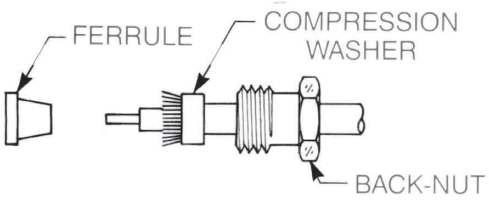
9) When installing assemblies into equipment using screw-on connectors, use a torque wrench for mating. Overtorquing the plugs will damage both the cable connector and the equipment-mounted jack and will void any warranties.

10) For best results when soldering SMA series connectors, use interface mates (TA-0434) with plugs and (TA-0435) with jacks.

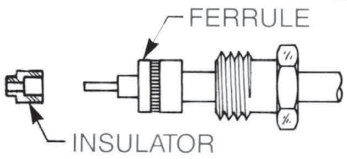
ASSEMBLY PROCEDURE: A



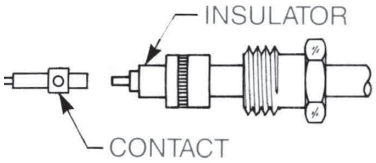
1) Trim cable per trim code.
2) Tin end of center conductor.
3) Slide back nut onto cable.



4) Slide compression washer over the braid until it bottoms out on the cable jacket.
5) Fan out braid radially against the compression washer by rotating the cable dielectric.

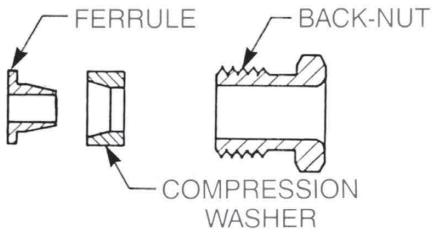


6) Slide ferrule onto cable, over dielectric and under braid. Push into washer until it stops. If necessary trim excess braid flush with surface of compression washer and flange of ferrule.

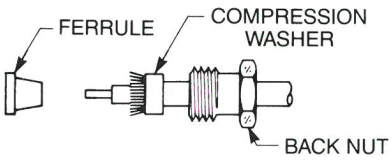


7) Install small insulator over cable dielectric.
8) Solder contact to center conductor. When contact adapter is also supplied, install contact adapter onto center conductor, then solder contact to center conductor.
9) Insert cable assembly into body and tighten nut with a torque of 90-100 inch-ounces on the 50 ohm impedance sizes and 140-150 inch-ounces on the 75 ohm impedance sizes.

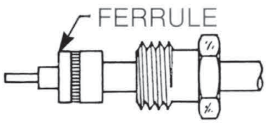
ASSEMBLY PROCEDURE: B



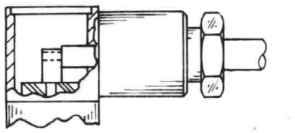
1) Trim cable per trim code.
2) Tin end of center conductor.
3) Slide back nut onto cable.



4) Slide compression washer over the braid until it bottoms out on the cable jacket.
5) Fan out braid radially against the compression washer by rotating the cable dielectric.

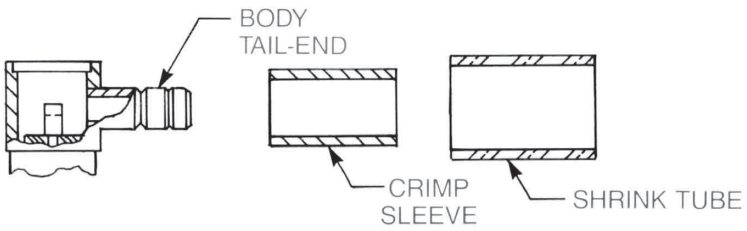


6) Slide ferrule onto cable, over dielectric and under braid. Push into washer until it stops. If necessary trim excess braid flush with surface of compression washer and flange of ferrule.

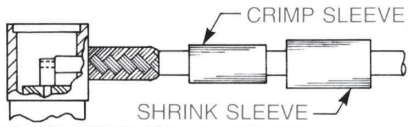


7) Insert cable assembly into body and tighten nut with a torque of 90-100 inch-ounces on the 50 ohm impedance sizes and 140-150 inch-ounces on the 75 ohm impedance sizes.
8) Solder center conductor of cable to contact.
9) Place insulator and end cap into connector body as shown and use a 0.185″ diameter flat bottom arbor to press cap into place. Cap must be below body surface to seat properly.

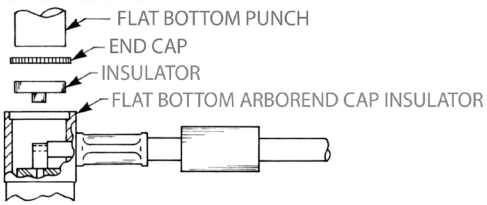
ASSEMBLY PROCEDURE: C



1) Trim cable per trim code.
2) Tin end of center conductor.
3) Slide crimp sleeve and shrink tube (if supplied) over cable jacket.
4) Flare cable braid out slightly by rotating dielectric.

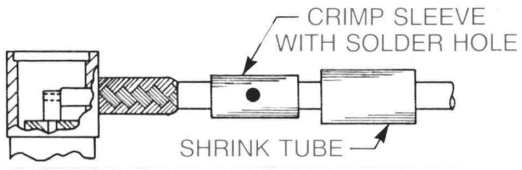


5) Insert cable assembly into body tail-end making sure tail goes over dielectric and under braid. Slide in until braid touches rear surface of body.
6) Slide crimp sleeve forward and use applicable hex die to crimp sleeve to braid.
7) Solder center conductor of cable to contact.



8) Place insulator and end cap into connector body as shown and use a 0.185″ diameter flat bottom punch to press cap in place. Cap must be below surface to seat properly.
9) Slide shrink tube over crimp sleeve and shrink to fit.

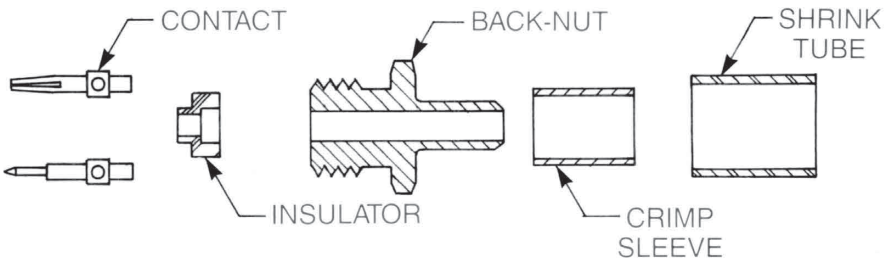
ASSEMBLY PROCEDURE: D



Follow Procedure C, except step 6. At this step, slide sleeve forward and use applicable hex die to crimp sleeve to braid. Solder braid through cross hole of crimp sleeve.

Proceed with step 7 of Procedure C.

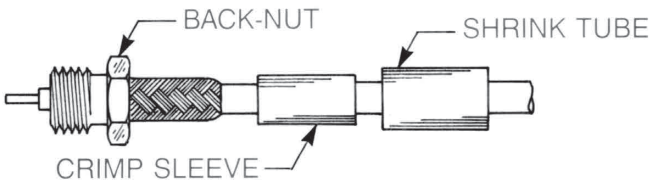
ASSEMBLY PROCEDURE: E



1) Trim cable per trim code.
2) Tin end of center conductor.
3) Slide crimp sleeve and shrink tube over cable jacket.
4) Flare cable braid out slightly by rotating dielectric.

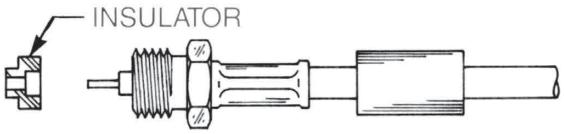
(Continued on next page)

ASSEMBLY PROCEDURE: E (continued)

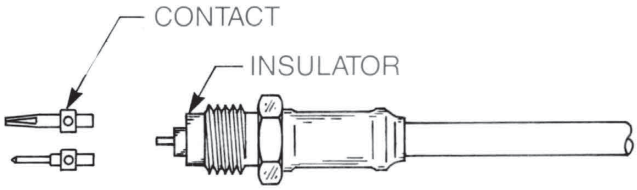


5) Insert cable into tail-end of back nut, making sure tail goes over dielectric and under braid. Slide in until braid touches rear surface of nut.

6) Slide crimp sleeve forward and use applicable hex die to crimp.



7) Position insulator over cable dielectric and center conductor.



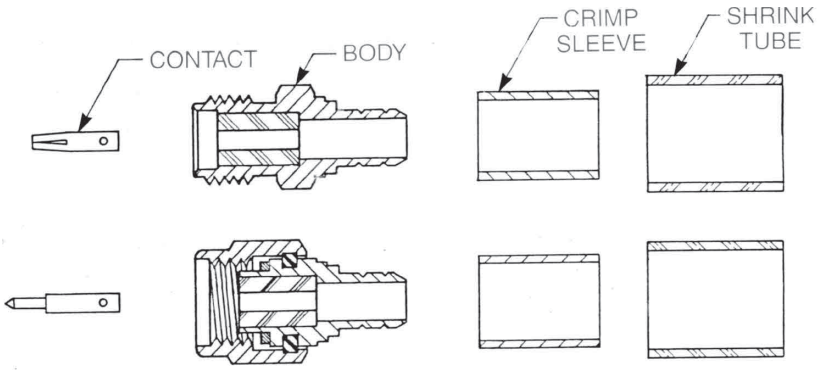
8) Solder contact to center conductor.

9) Insert cable assembly into body and tighten nut with a torque wrench with a torque of 70-100 inch-ounces on the 50 ohm impedance sizes and 140-150 inch-ounces on the 75 ohm sizes. 35-45 inch-ounces for SSMB and SSMC series.

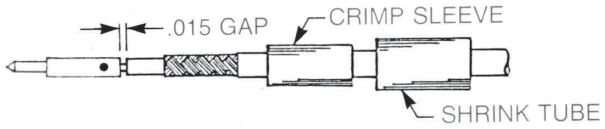
10) Slide shrink tube over crimp sleeve and shrink to fit.

ASSEMBLY PROCEDURE: F

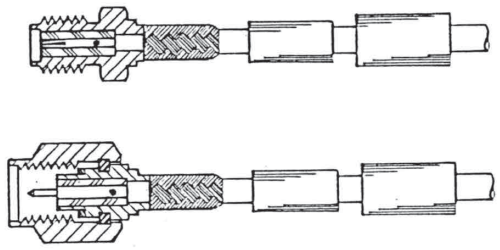
Note: On cable group -002, an additional sleeve and insulator are supplied.



1) Trim cable per trim code.
2) Tin end of center conductor.
3) Slide crimp sleeve and shrink tube over cable jacket.
4) Flare braid out slightly by rotating dielectric.



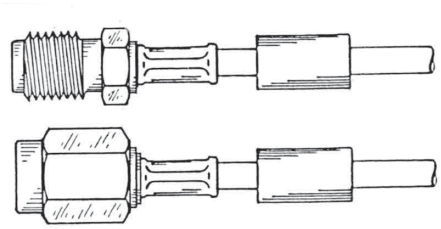
5) Solder contact to center conductor, leaving a 0.015″ gap between rear of contact and cable dielectric.



6) Insert cable into tail-end of body, making sure the body goes over dielectric and under the braid.
7) Check interface dimensions of insulator and contact.

(Continued on next page)

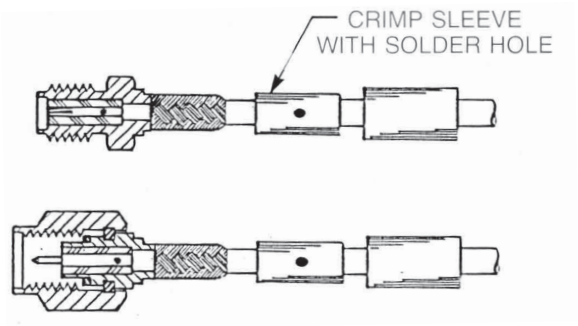
ASSEMBLY PROCEDURE: F (continued)



8) Slide crimp sleeve forward and use applicable hex die to crimp.

9) Slide shrink tube over crimp sleeve and shrink to fit.

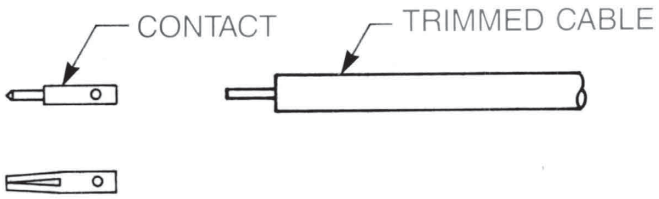
ASSEMBLY PROCEDURE: G



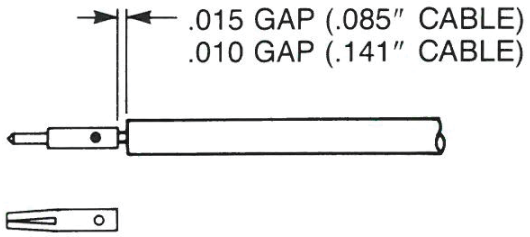
Follow Procedure F, except step 8. At this step, slide crimp sleeve forward and use applicable hex die to crimp. Solder braid through cross hole of crimp sleeve.

Proceed with step 9 of Procedure F.

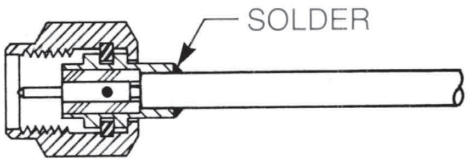
ASSEMBLY PROCEDURE: H

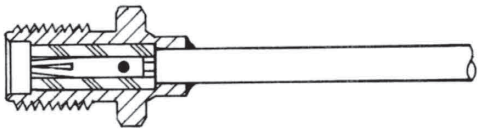


1) Trim cable per trim code.



2) Solder contact to center conductor, leaving a gap between rear of contact and cable jacket as shown.

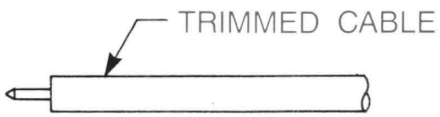




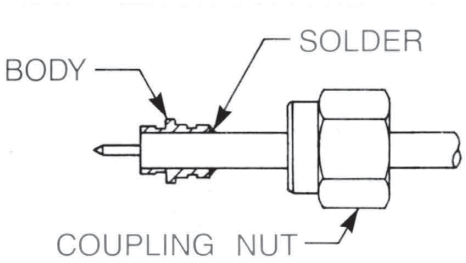
3) Insert cable into body until it bottoms. Check that insulator and contact meet interface dimensions.

4) Solder cable jacket to connector body. Do not disturb joint until it has cooled. Clean flux residue.

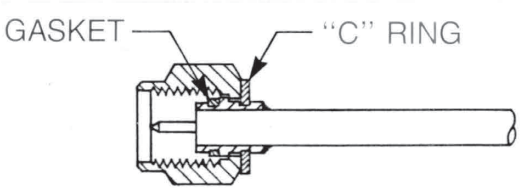
ASSEMBLY PROCEDURE: I



1) Trim cable per trim code.
2) Slide coupling nut onto cable, threads forward.

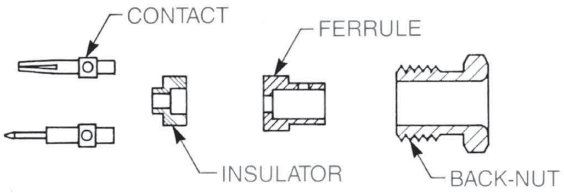


3) Insert cable into body until trimmed end is flush with interface. Fixture in this position.
4) Solder cable jacket to connector body. Do not disturb joint until it has cooled. Clean flux residue.

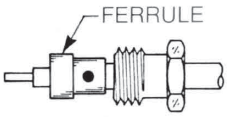


5) Install gasket on front face of connector body.
6) Slide coupling nut forward and snap on "C" ring.

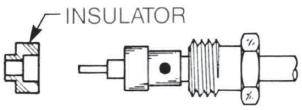
ASSEMBLY PROCEDURE: J



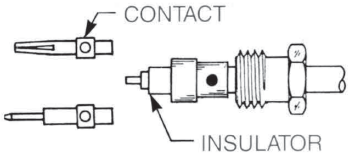
1) Trim cable per trim code.
2) Slide back nut onto cable.



3) Slide ferrule over cable dielectric until it bottoms on the cable jacket.
4) Solder ferrule to cable jacket. Do not disturb solder joint until it has cooled.



5) Install small insulator over cable dielectric.

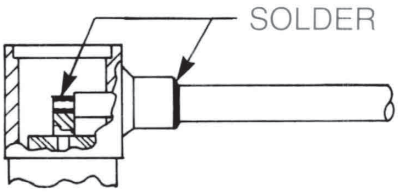


6) Solder contact to center conductor.
7) Insert cable assembly into connector body and tighten back nut to 90-100 inch-ounces torque for SMB and SMC, 140-150 inch-ounces torque tor SMA.

ASSEMBLY PROCEDURE: K

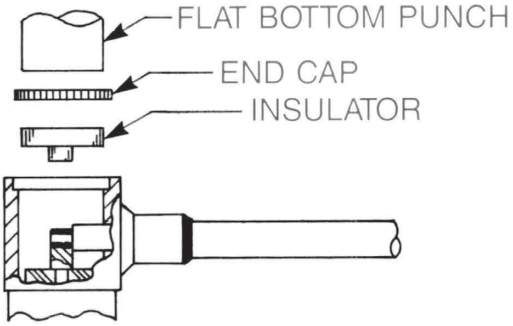
1) Trim cable per trim code.

2) Insert cable into body. Cable jacket should bottom on step inside body and center conductor should lie in slot of contact. Fixture in this position.



3) Solder center conductor to contact.

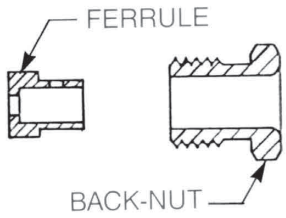
4) Solder cable jacket to connector body. Do not disturb joint until it has cooled. Clean flux residue.



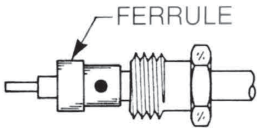
5) Press insulator and end cap into connector body and use a 0.185″ diameter flat bottom arbor to press cap in place. Cap must be below body surface to seat properly.

6) Slide coupling nut forward and snap on "C" ring.

ASSEMBLY PROCEDURE: L



1) Trim cable per trim code.
2) Slide back nut onto cable.

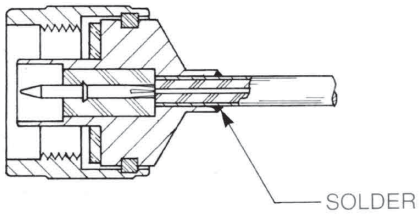


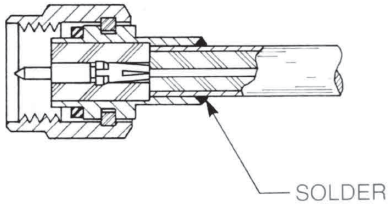
3) Slide ferrule over cable dielectric until it bottoms on the cable jacket.
4) Solder ferrule to cable jacket. Do not disturb solder joint until it has cooled.
5) Insert cable assembly into body and tighten to 90-100 inch-ounces torque for SMB and SMC, 140-150 inch-ounces torque for SMA.

6) Solder center conductor to contact.
7) Press insulator and end cap into connector body and use a 0.185″ diameter flat bottom arbor to press cap in place. Cap must be below body surface to seat properly.

ASSEMBLY PROCEDURE: M

1) Trim cable per trim code.



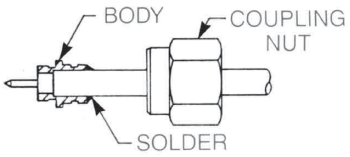


2) Insert cable into body until it bottoms, making sure center conductor of cable goes into contact.

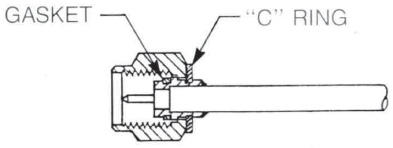
3) Solder cable jacket to connector body. Do not disturb joint until it has cooled. Clean flux residue.

ASSEMBLY PROCEDURE: N

1) Trim cable per trim code.
2) Slide coupling nut onto cable, threads forward.



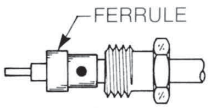
3) Insert cable into body until cable dielectric is flush with interface. Cable jacket should bottom on step inside connector body. Fixture in this position.
4) Solder cable jacket to connector body. Do not disturb joint until it has cooled. Clean flux residue.



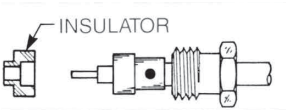
5) Install gasket on front face of body.
6) Slide coupling nut forward and snap on "C" ring.

ASSEMBLY PROCEDURE: O

1) Trim cable per trim code.
2) Slide back nut onto cable.



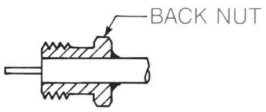
3) Slide ferrule over cable dielectric until it bottoms on the cable jacket.
4) Solder ferrule to cable jacket. Do not disturb solder joint until it has cooled.



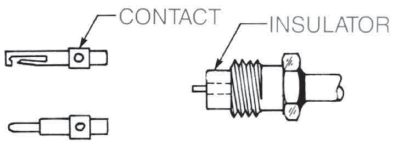
5) Install small insulator over cable dielectric (one applies for 0.085 semi-rigid cable).
6) Trim dielectric flush with ferrule, then point center conductor 70° to 90° (only applies to 0.141 diameter semi-rigid cable).
7) Insert cable assembly into body until it bottoms, making sure center conductor of cable goes into contact.
8) Torque back nut to 90-100 inch-ounces.

ASSEMBLY PROCEDURE: P

1) Trim cable per trim code.



2) Slide back nut onto cable until trimmed end of jacket is flush with front of nut. Solder nut to cable.



3) Install insulator over cable center conductor.
4) Solder contact to center conductor.
5) Insert cable assembly into connector body and tighten to 35-45 inch-ounces torque.

NOTES

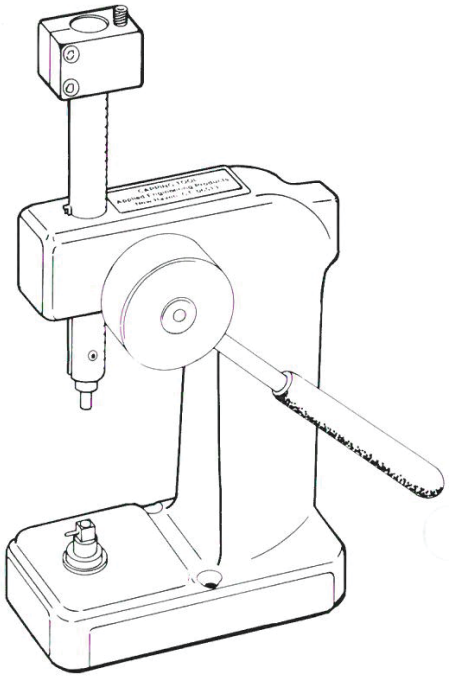
TOOLING

SECTION 14 TABLE OF CONTENTS

Crimp Tools 14-2
Torque Wrenches 14-2
SMA Interface Gages 14-3

CRIMP TOOLS FOR FLEXIBLE CABLE

Complete tools	Die set only	Die size(s)
TA-0007	**TA-0008-1**	0.128, 0.213
TA-0071	**TA-0008-4**	0.156
TA-0105	**TA-0089**	0.105, 0.128
TA-0190	**TA-0008-6**	0.255, 0.068
TA-0234	**TA-0008-5**	0.255



Capping tool for right angle connectors.

Die size application:

0.105: All connectors for -002 cable groups, SSMB, SSLB and SSMC series.

0.128: All connectors for -002, -003, -005, -014 and -025 cable groups and -19 for SMB, SMC, SLB, BNC, TNC and N.

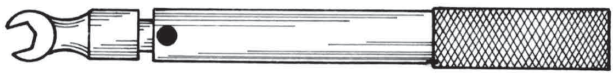
0.156: All connectors for -004 and -19 for SMA series.

0.213: All connectors for -001, -006 cable groups.

0.255: All connectors for -007 cable group.

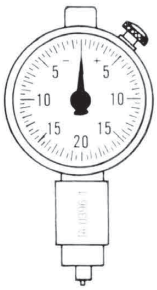
TORQUE WRENCHES

Using a torque wrench for mating SMA, SMC and SSMC plugs will prevent damage to equipment mounted jacks as well as to the plugs themselves.

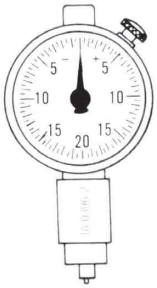


P/N	Application	Jaw Size	Preset Torque
TA-0397	SMA plugs	$^{5}/_{16}$″	8 in-lb ± 1
TA-0398	SMC plugs	$^{7}/_{32}$″	3 in-lb ± 1
TA-0432	SSMC plugs	$^{5}/_{32}$″	30 in-oz ± 1

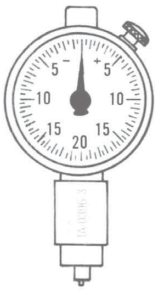
SMA INTERFACE GAGES



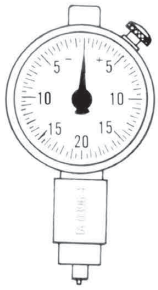
P/N **TA-0396-1**



P/N **TA-0396-2**



P/N **TA-0396-3**



P/N **TA-0396-4**

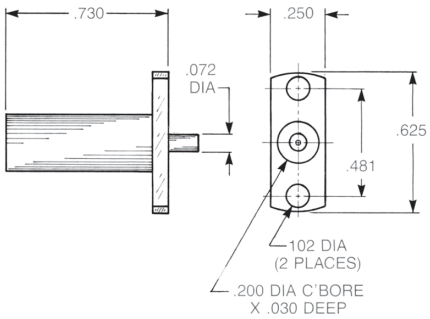
SMA interface dimensions are critical to connector performance and are largely determined by correct cable assembly procedure. We strongly recommend the use of interface gages after cable assembly to prevent damage to equipment mounted jacks at installation.

The gages shown here are "right reading", giving a minus indication for interface components below the reference plane, and a plus indication for components above the reference plane. Standard dial indicators read the opposite way and can be confusing for operators.

These gages are accurate to 0.00025 inches, have graduation values of 0.0005 inches and are zero-set before shipment. Replacement parts and master zero-setting gages are available.

Part numbers:

TA-0396:	Set of four gages listed below, in padded wooden box with instruction booklet
TA-0396-1:	SMA plug insulator gage
TA-0396-2:	SMA plug contact gage
TA-0396-3:	SMA jack insulator gage
TA-0396-4:	SMA jack contact gage



Hermetic Seal Soldering Tool

This tool can be used with any hermetic seal, except for 920-92. The spring-loaded plunger holds the seal in place during the soldering operation.

Part number:
TA-0394

AEP
A Radiall Brand

NOTES

PART NUMBER INDEX

AEP P/N INDEX

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
1001-1541-009	J	113	3-18
1001-1541-010	J	112	3-18
1001-1551-002	A	1	3-18
1001-1551-003	A	1	3-18
1001-1551-005	A	1	3-18
1001-1551-019	A	1	3-18
1001-1571-002	E	2	3-18
1001-1571-003	E	2	3-18
1001-1571-005	E	2	3-18
1001-1571-019	E	2	3-18
1001-7541-009	J	113	3-18
1001-7541-010	J	112	3-18
1001-7551-002	A	1	3-18
1001-7551-003	A	1	3-18
1001-7551-005	A	1	3-18
1001-7551-019	A	1	3-18
1001-7571-002	E	2	3-18
1001-7571-003	E	2	3-18
1001-7571-005	E	2	3-18
1001-7571-019	E	2	3-18
1002-1541-009	J	113	3-17
1002-1541-010	J	112	3-17
1002-1551-002	A	1	3-17
1002-1551-003	A	1	3-17
1002-1551-005	A	1	3-17
1002-1551-019	A	1	3-17
1002-1571-002	E	2	3-17
1002-1571-003	E	2	3-17
1002-1571-005	E	2	3-17
1002-1571-019	E	2	3-17
1002-7541-009	J	113	3-17
1002-7541-010	J	112	3-17
1002-7551-002	A	1	3-17
1002-7551-003	A	1	3-17
1002-7551-005	A	1	3-17
1002-7551-019	A	1	3-17
1002-7571-002	E	2	3-17
1002-7571-003	E	2	3-17
1002-7571-005	E	2	3-17
1002-7571-019	E	2	3-17
1003-1541-009	J	113	3-19
1003-1541-010	J	112	3-19
1003-1551-002	A	1	3-19
1003-1551-003	A	1	3-19
1003-1551-005	A	1	3-19
1003-1551-019	A	1	3-19
1003-1571-002	E	2	3-19
1003-1571-003	E	2	3-19
1003-1571-005	E	2	3-19
1003-1571-019	E	2	3-19
1003-7541-009	J	113	3-19
1003-7541-010	J	112	3-19
1003-7551-002	A	1	3-19
1003-7551-003	A	1	3-19
1003-7551-005	A	1	3-19
1003-7551-019	A	1	3-19
1003-7571-002	E	2	3-19
1003-7571-003	E	2	3-19
1003-7571-005	E	2	3-19
1003-7571-019	E	2	3-19
1004-1511-000	N/A	N/A	3-20
1004-7511-000	N/A	N/A	3-20
1005-1541-009	L	120	3-17
1005-1541-010	L	120	3-17
1005-1551-002	B	3	3-17
1005-1551-003	B	3	3-17
1005-1551-005	B	3	3-17
1005-1551-019	B	3	3-17
1005-7541-009	L	120	3-17
1005-7541-010	L	120	3-17
1005-7551-002	B	3	3-17
1005-7551-003	B	3	3-17
1005-7551-005	B	3	3-17
1005-7551-019	B	3	3-17

AEP P/N INDEX

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
1006-1541-009	L	120	3-19
1006-1541-010	L	120	3-19
1006-1551-002	B	3	3-19
1006-1551-003	B	3	3-19
1006-1551-005	B	3	3-19
1006-1551-019	B	3	3-19
1006-7541-009	L	120	3-19
1006-7541-010	L	120	3-19
1006-7551-002	B	3	3-19
1006-7551-003	B	3	3-19
1006-7551-005	B	3	3-19
1006-7551-019	B	3	3-19
1009-1511-000	N/A	N/A	3-21
1009-7511-000	N/A	N/A	3-21
1010-1511-000	N/A	N/A	3-21
1010-1511-001	N/A	N/A	3-21
1010-7511-000	N/A	N/A	3-21
1010-7511-001	N/A	N/A	3-21
1012-1511-000	N/A	N/A	3-20
1012-7511-000	N/A	N/A	3-20
1017-1511-000	N/A	N/A	3-20
1017-7511-000	N/A	N/A	3-20
1019-1511-000	N/A	N/A	3-20
1019-7511-000	N/A	N/A	3-20
1025-1511-000	N/A	N/A	3-21
1025-7511-000	N/A	N/A	3-21
1029-1211-001	N/A	N/A	3-23
1029-1211-002	N/A	N/A	3-23
1029-1211-003	N/A	N/A	3-23
1029-7211-001	N/A	N/A	3-23
1029-7211-002	N/A	N/A	3-23
1029-7211-003	N/A	N/A	3-23
1036-1511-051	N/A	N/A	3-25
1036-7511-051	N/A	N/A	3-25
1037-1511-051	N/A	N/A	3-25
1037-7511-051	N/A	N/A	3-25
1041-1541-009	L	120	3-18
1041-1541-010	L	120	3-18
1041-1551-002	B	3	3-18
1041-1551-003	B	3	3-18
1041-1551-005	B	3	3-18
1041-1551-019	B	3	3-18
1041-7541-009	L	120	3-18
1041-7541-010	L	120	3-18
1041-7551-002	B	3	3-18
1041-7551-003	B	3	3-18
1041-7551-005	B	3	3-18
1041-7551-019	B	3	3-18
1042-1511-000	N/A	N/A	3-21
1042-7511-000	N/A	N/A	3-21
1092-1511-001	N/A	N/A	3-23
1092-1511-002	N/A	N/A	3-23
1092-1511-003	N/A	N/A	3-23
1092-7511-001	N/A	N/A	3-23
1092-7511-002	N/A	N/A	3-23
1092-7511-003	N/A	N/A	3-23
1105-1521-002	C	4	3-17
1105-1521-003	C	4	3-17
1105-1521-005	C	4	3-17
1105-1521-019	C	4	3-17
1105-7521-002	C	4	3-17
1105-7521-003	C	4	3-17
1105-7521-005	C	4	3-17
1105-7521-019	C	4	3-17
1106-1521-002	C	4	3-19
1106-1521-003	C	4	3-19
1106-1521-005	C	4	3-19
1106-1521-019	C	4	3-19
1106-7521-002	C	4	3-19
1106-7521-003	C	4	3-19
1106-7521-005	C	4	3-19
1106-7521-019	C	4	3-19
1109-1511-000	N/A	N/A	3-22
1109-7511-000	N/A	N/A	3-22

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
1110-1511-000	N/A	N/A	3-22
1110-7511-000	N/A	N/A	3-22
1141-1521-002	C	4	3-18
1141-1521-003	C	4	3-18
1141-1521-005	C	4	3-18
1141-1521-019	C	4	3-18
1141-7521-002	C	4	3-18
1141-7521-003	C	4	3-18
1141-7521-005	C	4	3-18
1141-7521-019	C	4	3-18
1484-1511-000	N/A	N/A	3-22
1484-7511-000	N/A	N/A	3-22
1486-1511-000	N/A	N/A	3-22
1486-7511-000	N/A	N/A	3-22
1488-1511-000	N/A	N/A	3-22
1488-7511-000	N/A	N/A	3-22
1490-1511-000	N/A	N/A	3-22
1490-7511-000	N/A	N/A	3-22
1701-1551-003	A	5	6-5
1701-1551-004	A	5	6-5
1701-1551-007	A	5	6-5
1701-1571-003	E	6	6-5
1701-1571-004	E	6	6-5
1701-1571-007	E	6	6-5
1701-7551-003	A	5	6-5
1701-7551-004	A	5	6-5
1701-7551-007	A	5	6-5
1701-7571-003	E	6	6-5
1701-7571-004	E	6	6-5
1701-7571-007	E	6	6-5
1702-1551-003	A	5	6-4
1702-1551-004	A	5	6-4
1702-1551-007	A	5	6-4
1702-1571-003	E	6	6-4
1702-1571-004	E	6	6-4
1702-1571-007	E	6	6-4
1702-7551-003	A	5	6-4
1702-7551-004	A	5	6-4
1702-7551-007	A	5	6-4
1702-7571-003	E	6	6-4
1702-7571-004	E	6	6-4
1702-7571-007	E	6	6-4
1703-1551-003	A	5	6-5
1703-1551-004	A	5	6-5
1703-1551-007	A	5	6-5
1703-1571-003	E	6	6-5
1703-1571-004	E	6	6-5
1703-1571-007	E	6	6-5
1703-7551-003	A	5	6-5
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1703-7551-007	A	5	6-5
1703-7571-003	E	6	6-5
1703-7571-004	E	6	6-5
1703-7571-007	E	6	6-5
1704-1511-000	N/A	N/A	6-6
1704-7511-000	N/A	N/A	6-6
1705-1551-003	B	7	6-4
1705-1551-004	B	7	6-4
1705-1551-007	B	7	6-4
1705-7551-003	B	7	6-4
1705-7551-004	B	7	6-4
1705-7551-007	B	7	6-4
1709-1511-000	N/A	N/A	6-6
1709-7511-000	N/A	N/A	6-6
1710-1511-000	N/A	N/A	6-6
1710-7511-000	N/A	N/A	6-6
1715-1521-003	C	8	6-4
1715-1521-004	C	8	6-4
1715-1521-007	C	8	6-4
1715-7521-003	C	8	6-4
1715-7521-004	C	8	6-4
1715-7521-007	C	8	6-4
1719-1511-000	N/A	N/A	6-6
1719-7511-000	N/A	N/A	6-6

AEP P/N INDEX

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
1736-1511-075	N/A	N/A	6-7
1736-7511-075	N/A	N/A	6-7
2001-1541-009	J	113	3-8
2001-1541-010	J	112	3-8
2001-1551-002	A	1	3-8
2001-1551-003	A	1	3-8
2001-1551-005	A	1	3-8
2001-1551-019	A	1	3-8
2001-1551-903	E	2	1-4
2001-1571-002	E	2	3-8
2001-1571-003	E	2	3-8
2001-1571-005	E	2	3-8
2001-1571-019	E	2	3-8
2001-1571-803	E	2	1-4
2001-1571-903	E	2	1-4
2001-7541-009	J	113	3-8
2001-7541-010	J	112	3-8
2001-7551-002	A	1	3-8
2001-7551-003	A	1	3-8
2001-7551-005	A	1	3-8
2001-7551-019	A	1	3-8
2001-7571-002	E	2	3-8
2001-7571-003	E	2	3-8
2001-7571-005	E	2	3-8
2001-7571-019	E	2	3-8
2002-1541-009	J	113	3-6
2002-1541-010	J	112	3-6
2002-1551-002	A	1	3-6
2002-1551-003	A	1	3-6
2002-1551-005	A	1	3-6
2002-1551-019	A	1	3-6
2002-1551-903	A	1	1-3
2002-1571-002	E	2	3-6
2002-1571-003	E	2	3-6
2002-1571-005	E	2	3-6
2002-1571-019	E	2	3-6
2002-1571-803	E	2	1-4
2002-1571-903	E	2	1-3
2002-7541-009	J	113	3-6
2002-7541-010	J	112	3-6
2002-7551-002	A	1	3-6
2002-7551-003	A	1	3-6
2002-7551-005	A	1	3-6
2002-7551-019	A	1	3-6
2002-7571-002	E	2	3-6
2002-7571-003	E	2	3-6
2002-7571-005	E	2	3-6
2002-7571-019	E	2	3-6
2003-1541-009	J	113	3-9
2003-1541-010	J	112	3-9
2003-1551-002	A	1	3-9
2003-1551-003	A	1	3-9
2003-1551-005	A	1	3-9
2003-1551-019	A	1	3-9
2003-1551-903	A	1	1-4
2003-1571-002	E	2	3-9
2003-1571-003	E	2	3-9
2003-1571-005	E	2	3-9
2003-1571-019	E	2	3-9
2003-7541-009	J	113	3-9
2003-7541-010	J	112	3-9
2003-7551-002	A	1	3-9
2003-7551-003	A	1	3-9
2003-7551-005	A	1	3-9
2003-7551-019	A	1	3-9
2003-7571-002	E	2	3-9
2003-7571-003	E	2	3-9
2003-7571-005	E	2	3-9
2003-7571-019	E	2	3-9
2004-1511-000	N/A	N/A	3-10
2004-1511-999	N/A	N/A	1-5
2004-7511-000	N/A	N/A	3-10
2005-1541-009	L	120	3-6
2005-1541-010	L	120	3-6

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
2005-1551-002	B	3	3-6
2005-1551-003	B	3	3-6
2005-1551-005	B	3	3-6
2005-1551-019	B	3	3-6
2005-1551-903	B	3	1-4
2005-7541-009	L	120	3-6
2005-7541-010	L	120	3-6
2005-7551-002	B	3	3-6
2005-7551-003	B	3	3-6
2005-7551-005	B	3	3-6
2005-7551-019	B	3	3-6
2006-1541-009	L	120	3-9
2006-1541-010	L	120	3-9
2006-1551-002	B	3	3-9
2006-1551-003	B	3	3-9
2006-1551-005	B	3	3-9
2006-1551-019	B	3	3-9
2006-7541-009	L	120	3-9
2006-7541-010	L	120	3-9
2006-7551-002	B	3	3-9
2006-7551-003	B	3	3-9
2006-7551-005	B	3	3-9
2006-7551-019	B	3	3-9
2009-1511-000	N/A	N/A	3-12
2009-1511-050	N/A	N/A	3-12
2009-1511-799	N/A	N/A	1-6
2009-1511-899	N/A	N/A	1-6
2009-1511-999	N/A	N/A	1-6
2009-6511-799	N/A	N/A	1-6
2009-7511-000	N/A	N/A	3-12
2009-7511-050	N/A	N/A	3-12
2010-1511-000	N/A	N/A	3-12
2010-1511-002	N/A	N/A	3-12
2010-1511-799	N/A	N/A	1-6
2010-1511-899	N/A	N/A	1-6
2010-1511-999	N/A	N/A	1-6
2010-6511-799	N/A	N/A	1-6
2010-7511-000	N/A	N/A	3-12
2010-7511-002	N/A	N/A	3-12
2012-1511-000	N/A	N/A	3-10
2012-7511-000	N/A	N/A	3-10
2014-1511-000	N/A	N/A	3-10
2014-7511-000	N/A	N/A	3-10
2017-1511-000	N/A	N/A	3-11
2017-7511-000	N/A	N/A	3-11
2019-1511-000	N/A	N/A	3-10
2019-1511-999	N/A	N/A	1-5
2019-7511-000	N/A	N/A	3-10
2025-1511-000	N/A	N/A	3-12
2025-7511-000	N/A	N/A	3-12
2028-1541-009	J	113	3-7
2028-1541-010	J	112	3-7
2028-1551-002	A	1	3-7
2028-1551-003	A	1	3-7
2028-1551-005	A	1	3-7
2028-1551-019	A	1	3-7
2028-1571-002	E	2	3-7
2028-1571-003	E	2	3-7
2028-1571-005	E	2	3-7
2028-1571-019	E	2	3-7
2028-7541-009	J	113	3-7
2028-7541-010	J	112	3-7
2028-7551-002	A	1	3-7
2028-7551-003	A	1	3-7
2028-7551-005	A	1	3-7
2028-7551-019	A	1	3-7
2028-7571-002	E	2	3-7
2028-7571-003	E	2	3-7
2028-7571-005	E	2	3-7
2028-7571-019	E	2	3-7
2029-1211-001	N/A	N/A	3-14
2029-1211-002	N/A	N/A	3-14
2029-1211-003	N/A	N/A	3-14
2029-7211-001	N/A	N/A	3-14

AEP P/N INDEX

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
2029-7211-002	N/A	N/A	3-14
2029-7211-003	N/A	N/A	3-14
2036-1511-051	N/A	N/A	3-16
2036-7511-051	N/A	N/A	3-16
2037-1511-051	N/A	N/A	3-16
2037-7511-051	N/A	N/A	3-16
2041-1541-009	L	120	3-8
2041-1541-010	L	120	3-8
2041-1551-002	B	3	3-8
2041-1551-003	B	3	3-8
2041-1551-005	B	3	3-8
2041-1551-019	B	3	3-8
2041-7541-009	L	120	3-8
2041-7541-010	L	120	3-8
2041-7551-002	B	3	3-8
2041-7551-003	B	3	3-8
2041-7551-005	B	3	3-8
2041-7551-019	B	3	3-8
2042-1511-000	N/A	N/A	3-12
2042-7511-000	N/A	N/A	3-12
2048-1511-000	N/A	N/A	3-11
2048-7511-000	N/A	N/A	3-11
2092-1511-001	N/A	N/A	3-14
2092-1511-002	N/A	N/A	3-14
2092-1511-003	N/A	N/A	3-14
2092-7511-001	N/A	N/A	3-14
2092-7511-002	N/A	N/A	3-14
2092-7511-003	N/A	N/A	3-14
2097-1511-000	N/A	N/A	3-11
2097-7511-000	N/A	N/A	3-11
2105-1521-002	C	4	3-6
2105-1521-003	C	4	3-6
2105-1521-005	C	4	3-6
2105-1521-019	C	4	3-6
2105-7521-002	C	4	3-6
2105-7521-003	C	4	3-6
2105-7521-005	C	4	3-6
2105-7521-019	C	4	3-6
2106-1521-002	C	4	3-9
2106-1521-003	C	4	3-9
2106-1521-005	C	4	3-9
2106-1521-019	C	4	3-9
2106-7521-002	C	4	3-9
2106-7521-003	C	4	3-9
2106-7521-005	C	4	3-9
2106-7521-019	C	4	3-9
2109-1511-000	N/A	N/A	3-13
2109-7511-000	N/A	N/A	3-13
2110-1511-000	N/A	N/A	3-13
2110-7511-000	N/A	N/A	3-13
2141-1521-002	C	4	3-8
2141-1521-003	C	4	3-8
2141-1521-005	C	4	3-8
2141-1521-019	C	4	3-8
2141-7521-002	C	4	3-8
2141-7521-003	C	4	3-8
2141-7521-005	C	4	3-8
2141-7521-019	C	4	3-8
2484-1511-000	N/A	N/A	3-13
2484-7511-000	N/A	N/A	3-13
2486-1511-000	N/A	N/A	3-13
2486-7511-000	N/A	N/A	3-13
2488-1511-000	N/A	N/A	3-13
2488-7511-000	N/A	N/A	3-13
2490-1511-000	N/A	N/A	3-13
2490-7511-000	N/A	N/A	3-13
2701-1551-003	A	5	6-9
2701-1551-004	A	5	6-9
2701-1551-007	A	5	6-9
2701-1571-003	E	6	6-9
2701-1571-004	E	6	6-9
2701-1571-007	E	6	6-9
2701-7551-003	A	5	6-9
2701-7551-004	A	5	6-9

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
2701-7551-007	A	5	6-9
2701-7571-003	E	6	6-9
2701-7571-004	E	6	6-9
2701-7571-007	E	6	6-9
2702-1551-003	A	5	6-8
2702-1551-004	A	5	6-8
2702-1551-007	A	5	6-8
2702-1571-003	E	6	6-8
2702-1571-004	E	6	6-8
2702-1571-007	E	6	6-8
2702-7551-003	A	5	6-8
2702-7551-004	A	5	6-8
2702-7551-007	A	5	6-8
2702-7571-003	E	6	6-9
2702-7571-004	E	6	6-9
2702-7571-007	E	6	6-9
2703-1551-003	A	5	6-9
2703-1551-004	A	5	6-9
2703-1551-007	A	5	6-9
2703-1571-003	E	6	6-9
2703-1571-004	E	6	6-9
2703-1571-007	E	6	6-9
2703-7551-003	A	5	6-9
2703-7551-004	A	5	6-9
2703-7551-007	A	5	6-9
2703-7571-003	E	6	6-9
2703-7571-004	E	6	6-9
2703-7571-007	E	6	6-9
2704-1511-000	N/A	N/A	6-10
2704-7511-000	N/A	N/A	6-10
2705-1551-003	B	7	6-8
2705-1551-004	B	7	6-8
2705-1551-007	B	7	6-8
2705-7551-003	B	7	6-8
2705-7551-004	B	7	6-8
2705-7551-007	B	7	6-8
2709-1511-001	N/A	N/A	6-11
2709-7511-001	N/A	N/A	6-11
2710-1511-000	N/A	N/A	6-11
2710-7511-000	N/A	N/A	6-11
2715-1521-003	C	8	6-8
2715-1521-004	C	8	6-8
2715-1521-007	C	8	6-8
2715-7521-003	C	8	6-8
2715-7521-004	C	8	6-8
2715-7521-007	C	8	6-8
2719-1511-000	N/A	N/A	6-10
2719-7511-000	N/A	N/A	6-10
2725-1511-000	N/A	N/A	6-11
2725-7511-000	N/A	N/A	6-11
2736-1511-075	N/A	N/A	6-12
2736-7511-075	N/A	N/A	6-12
2776-1511-000	N/A	N/A	6-10
2776-7511-000	N/A	N/A	6-10
3001-1541-009	J	113	3-28
3001-1541-010	J	112	3-28
3001-1551-002	A	1	3-28
3001-1551-003	A	1	3-28
3001-1551-005	A	1	3-28
3001-1551-019	A	1	3-28
3001-1571-002	E	2	3-28
3001-1571-003	E	2	3-28
3001-1571-005	E	2	3-28
3001-1571-019	E	2	3-28
3001-7541-009	J	113	3-28
3001-7541-010	J	112	3-28
3001-7551-002	A	1	3-28
3001-7551-003	A	1	3-28
3001-7551-005	A	1	3-28
3001-7551-019	A	1	3-28
3001-7571-002	E	2	3-28
3001-7571-003	E	2	3-28
3001-7571-005	E	2	3-28
3001-7571-019	E	2	3-28

AEP P/N INDEX

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
3002-1541-009	J	113	3-26
3002-1541-010	J	112	3-26
3002-1551-002	A	1	3-26
3002-1551-003	A	1	3-26
3002-1551-005	A	1	3-26
3002-1551-019	A	1	3-26
3002-1571-002	E	2	3-26
3002-1571-003	E	2	3-26
3002-1571-005	E	2	3-26
3002-1571-019	E	2	3-26
3002-7541-009	J	113	3-26
3002-7541-010	J	112	3-26
3002-7551-002	A	1	3-26
3002-7551-003	A	1	3-26
3002-7551-005	A	1	3-26
3002-7551-019	A	1	3-26
3002-7571-002	E	2	3-26
3002-7571-003	E	2	3-26
3002-7571-005	E	2	3-26
3002-7571-019	E	2	3-26
3003-1541-009	J	113	3-29
3003-1541-010	J	112	3-29
3003-1541-509	J	113	3-36
3003-1541-510	J	112	3-36
3003-1541-609	J	113	3-36
3003-1541-610	J	112	3-36
3003-1541-709	J	113	3-36
3003-1541-710	J	112	3-36
3003-1551-002	A	1	3-29
3003-1551-003	A	1	3-29
3003-1551-005	A	1	3-29
3003-1551-019	A	1	3-29
3003-1551-502	A	1	3-36
3003-1551-503	A	1	3-36
3003-1551-505	A	1	3-36
3003-1551-519	A	1	3-36
3003-1551-602	A	1	3-36
3003-1551-603	A	1	3-36
3003-1551-605	A	1	3-36
3003-1551-619	A	1	3-36
3003-1551-702	A	1	3-36
3003-1551-703	A	1	3-36
3003-1551-705	A	1	3-36
3003-1551-719	A	1	3-36
3003-1571-002	E	2	3-29
3003-1571-003	E	2	3-29
3003-1571-005	E	2	3-29
3003-1571-019	E	2	3-29
3003-1571-502	E	2	3-36
3003-1571-503	E	2	3-36
3003-1571-505	E	2	3-36
3003-1571-519	E	2	3-36
3003-1571-602	E	2	3-36
3003-1571-603	E	2	3-36
3003-1571-605	E	2	3-36
3003-1571-619	E	2	3-36
3003-1571-702	E	2	3-36
3003-1571-703	E	2	3-36
3003-1571-705	E	2	3-36
3003-1571-719	E	2	3-36
3003-7541-009	J	113	3-29
3003-7541-010	J	112	3-29
3003-7541-509	J	113	3-36
3003-7541-510	J	112	3-36
3003-7541-609	J	113	3-36
3003-7541-610	J	112	3-36
3003-7541-709	J	113	3-36
3003-7541-710	J	112	3-36
3003-7551-002	A	1	3-29
3003-7551-003	A	1	3-29
3003-7551-005	A	1	3-29
3003-7551-019	A	1	3-29
3003-7551-502	A	1	3-36
3003-7551-503	A	1	3-36

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
3003-7551-505	A	1	3-36
3003-7551-519	A	1	3-36
3003-7551-602	A	1	3-36
3003-7551-603	A	1	3-36
3003-7551-605	A	1	3-36
3003-7551-619	A	1	3-36
3003-7551-702	A	1	3-36
3003-7551-703	A	1	3-36
3003-7551-705	A	1	3-36
3003-7551-719	A	1	3-36
3003-7571-002	E	2	3-29
3003-7571-003	E	2	3-29
3003-7571-005	E	2	3-29
3003-7571-019	E	2	3-29
3003-7571-502	E	2	3-36
3003-7571-503	E	2	3-36
3003-7571-505	E	2	3-36
3003-7571-519	E	2	3-36
3003-7571-602	E	2	3-36
3003-7571-603	E	2	3-36
3003-7571-605	E	2	3-36
3003-7571-619	E	2	3-36
3003-7571-702	E	2	3-36
3003-7571-703	E	2	3-36
3003-7571-705	E	2	3-36
3003-7571-719	E	2	3-36
3004-1511-000	N/A	N/A	3-30
3004-1511-500	N/A	N/A	3-38
3004-1511-600	N/A	N/A	3-38
3004-1511-700	N/A	N/A	3-38
3004-7511-000	N/A	N/A	3-30
3004-7511-500	N/A	N/A	3-38
3004-7511-600	N/A	N/A	3-38
3004-7511-700	N/A	N/A	3-38
3005-1541-009	L	120	3-26
3005-1541-010	L	120	3-26
3005-1551-002	B	3	3-26
3005-1551-003	B	3	3-26
3005-1551-005	B	3	3-26
3005-1551-019	B	3	3-26
3005-7541-009	L	120	3-26
3005-7541-010	L	120	3-26
3005-7551-002	B	3	3-26
3005-7551-003	B	3	3-26
3005-7551-005	B	3	3-26
3005-7551-019	B	3	3-26
3006-1541-009	L	120	3-29
3006-1541-010	L	120	3-29
3006-1541-509	L	120	3-37
3006-1541-510	L	120	3-37
3006-1541-609	L	120	3-37
3006-1541-610	L	120	3-37
3006-1541-709	L	120	3-37
3006-1541-710	L	120	3-37
3006-1551-002	B	3	3-29
3006-1551-003	B	3	3-29
3006-1551-005	B	3	3-29
3006-1551-019	B	3	3-29
3006-1551-502	B	3	3-37
3006-1551-503	B	3	3-37
3006-1551-505	B	3	3-37
3006-1551-519	B	3	3-37
3006-1551-602	B	3	3-37
3006-1551-603	B	3	3-37
3006-1551-605	B	3	3-37
3006-1551-619	B	3	3-37
3006-1551-702	B	3	3-37
3006-1551-703	B	3	3-37
3006-1551-705	B	3	3-37
3006-1551-719	B	3	3-37
3006-7541-009	L	120	3-29
3006-7541-010	L	120	3-29
3006-7541-509	L	120	3-37
3006-7541-510	L	120	3-37

AEP P/N INDEX

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
3006-7541-609	L	120	3-37
3006-7541-610	L	120	3-37
3006-7541-709	L	120	3-37
3006-7541-710	L	120	3-37
3006-7551-002	B	3	3-29
3006-7551-003	B	3	3-29
3006-7551-005	B	3	3-29
3006-7551-019	B	3	3-29
3006-7551-502	B	3	3-37
3006-7551-503	B	3	3-37
3006-7551-505	B	3	3-37
3006-7551-519	B	3	3-37
3006-7551-602	B	3	3-37
3006-7551-603	B	3	3-37
3006-7551-605	B	3	3-37
3006-7551-619	B	3	3-37
3006-7551-702	B	3	3-37
3006-7551-703	B	3	3-37
3006-7551-705	B	3	3-37
3006-7551-719	B	3	3-37
3009-1511-000	N/A	N/A	3-32
3009-7511-000	N/A	N/A	3-32
3010-1511-000	N/A	N/A	3-32
3010-1511-003	N/A	N/A	3-32
3010-7511-000	N/A	N/A	3-32
3010-7511-003	N/A	N/A	3-32
3012-1511-000	N/A	N/A	3-30
3012-7511-000	N/A	N/A	3-30
3014-1511-000	N/A	N/A	3-30
3014-1511-500	N/A	N/A	3-38
3014-1511-600	N/A	N/A	3-38
3014-1511-700	N/A	N/A	3-38
3014-7511-000	N/A	N/A	3-30
3014-7511-500	N/A	N/A	3-38
3014-7511-600	N/A	N/A	3-38
3014-7511-700	N/A	N/A	3-38
3017-1511-000	N/A	N/A	3-31
3017-1511-500	N/A	N/A	3-39
3017-1511-600	N/A	N/A	3-39
3017-1511-700	N/A	N/A	3-39
3017-7511-000	N/A	N/A	3-31
3017-7511-500	N/A	N/A	3-39
3017-7511-600	N/A	N/A	3-39
3017-7511-700	N/A	N/A	3-39
3019-1511-000	N/A	N/A	3-30
3019-1511-500	N/A	N/A	3-38
3019-1511-600	N/A	N/A	3-38
3019-1511-700	N/A	N/A	3-38
3019-7511-000	N/A	N/A	3-30
3019-7511-500	N/A	N/A	3-38
3019-7511-600	N/A	N/A	3-38
3019-7511-700	N/A	N/A	3-38
3025-1511-000	N/A	N/A	3-32
3025-1511-005	N/A	N/A	3-40
3025-7511-000	N/A	N/A	3-32
3025-7511-005	N/A	N/A	3-40
3028-1541-009	J	113	3-27
3028-1541-010	J	112	3-27
3028-1541-509	J	113	3-35
3028-1541-510	J	112	3-35
3028-1541-609	J	113	3-35
3028-1541-610	J	112	3-35
3028-1541-709	J	113	3-35
3028-1541-710	J	112	3-35
3028-1551-002	A	1	3-27
3028-1551-003	A	1	3-27
3028-1551-005	A	1	3-27
3028-1551-019	A	1	3-27
3028-1551-502	A	1	3-35
3028-1551-503	A	1	3-35
3028-1551-505	A	1	3-35
3028-1551-519	A	1	3-35
3028-1551-602	A	1	3-35
3028-1551-603	A	1	3-35

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
3028-1551-605	A	1	3-35
3028-1551-619	A	1	3-35
3028-1551-702	A	1	3-35
3028-1551-703	A	1	3-35
3028-1551-705	A	1	3-35
3028-1551-719	A	1	3-35
3028-1571-002	E	2	3-27
3028-1571-003	E	2	3-27
3028-1571-005	E	2	3-27
3028-1571-019	E	2	3-27
3028-1571-502	E	2	3-35
3028-1571-503	E	2	3-35
3028-1571-505	E	2	3-35
3028-1571-519	E	2	3-35
3028-1571-602	E	2	3-35
3028-1571-603	E	2	3-35
3028-1571-605	E	2	3-35
3028-1571-619	E	2	3-35
3028-1571-702	E	2	3-35
3028-1571-703	E	2	3-35
3028-1571-705	E	2	3-35
3028-1571-719	E	2	3-35
3028-7541-009	J	113	3-27
3028-7541-010	J	112	3-27
3028-7541-509	J	113	3-35
3028-7541-510	J	112	3-35
3028-7541-609	J	113	3-35
3028-7541-610	J	112	3-35
3028-7541-709	J	113	3-35
3028-7541-710	J	112	3-35
3028-7551-002	A	1	3-27
3028-7551-003	A	1	3-27
3028-7551-005	A	1	3-27
3028-7551-019	A	1	3-27
3028-7551-502	A	1	3-35
3028-7551-503	A	1	3-35
3028-7551-505	A	1	3-35
3028-7551-519	A	1	3-35
3028-7551-602	A	1	3-35
3028-7551-603	A	1	3-35
3028-7551-605	A	1	3-35
3028-7551-619	A	1	3-35
3028-7551-702	A	1	3-35
3028-7551-703	A	1	3-35
3028-7551-705	A	1	3-35
3028-7551-719	A	1	3-35
3028-7571-002	E	2	3-27
3028-7571-003	E	2	3-27
3028-7571-005	E	2	3-27
3028-7571-019	E	2	3-27
3028-7571-502	E	2	3-35
3028-7571-503	E	2	3-35
3028-7571-505	E	2	3-35
3028-7571-519	E	2	3-35
3028-7571-602	E	2	3-35
3028-7571-603	E	2	3-35
3028-7571-605	E	2	3-35
3028-7571-619	E	2	3-35
3028-7571-702	E	2	3-35
3028-7571-703	E	2	3-35
3028-7571-705	E	2	3-35
3028-7571-719	E	2	3-35
3041-1541-009	L	120	3-28
3041-1541-010	L	120	3-28
3041-1551-002	B	3	3-28
3041-1551-003	B	3	3-28
3041-1551-005	B	3	3-28
3041-1551-019	B	3	3-28
3041-7541-009	L	120	3-28
3041-7541-010	L	120	3-28
3041-7551-002	B	3	3-28
3041-7551-003	B	3	3-28
3041-7551-005	B	3	3-28
3041-7551-019	B	3	3-28

AEP P/N INDEX

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
3042-1511-000	N/A	N/A	3-32
3042-1511-006	N/A	N/A	3-40
3042-7511-000	N/A	N/A	3-32
3042-7511-006	N/A	N/A	3-40
3048-1511-000	N/A	N/A	3-31
3048-1511-500	N/A	N/A	3-39
3048-1511-600	N/A	N/A	3-39
3048-1511-700	N/A	N/A	3-39
3048-7511-000	N/A	N/A	3-31
3048-7511-500	N/A	N/A	3-39
3048-7511-600	N/A	N/A	3-39
3048-7511-700	N/A	N/A	3-39
3097-1511-000	N/A	N/A	3-31
3097-7511-000	N/A	N/A	3-31
3105-1521-002	C	4	3-26
3105-1521-003	C	4	3-26
3105-1521-005	C	4	3-26
3105-1521-019	C	4	3-26
3105-7521-002	C	4	3-26
3105-7521-003	C	4	3-26
3105-7521-005	C	4	3-26
3105-7521-019	C	4	3-26
3106-1521-002	C	4	3-29
3106-1521-003	C	4	3-29
3106-1521-005	C	4	3-29
3106-1521-019	C	4	3-29
3106-1521-502	C	4	3-37
3106-1521-503	C	4	3-37
3106-1521-505	C	4	3-37
3106-1521-519	C	4	3-37
3106-1521-602	C	4	3-37
3106-1521-603	C	4	3-37
3106-1521-605	C	4	3-37
3106-1521-619	C	4	3-37
3106-1521-702	C	4	3-37
3106-1521-703	C	4	3-37
3106-1521-705	C	4	3-37
3106-1521-719	C	4	3-37
3106-7521-002	C	4	3-29
3106-7521-003	C	4	3-29
3106-7521-005	C	4	3-29
3106-7521-019	C	4	3-29
3106-7521-502	C	4	3-37
3106-7521-503	C	4	3-37
3106-7521-505	C	4	3-37
3106-7521-519	C	4	3-37
3106-7521-602	C	4	3-37
3106-7521-603	C	4	3-37
3106-7521-605	C	4	3-37
3106-7521-619	C	4	3-37
3106-7521-702	C	4	3-37
3106-7521-703	C	4	3-37
3106-7521-705	C	4	3-37
3106-7521-719	C	4	3-37
3109-1511-000	N/A	N/A	3-33
3109-1511-500	N/A	N/A	3-40
3109-1511-600	N/A	N/A	3-40
3109-1511-700	N/A	N/A	3-40
3109-7511-000	N/A	N/A	3-33
3109-7511-500	N/A	N/A	3-40
3109-7511-600	N/A	N/A	3-40
3109-7511-700	N/A	N/A	3-40
3110-1511-000	N/A	N/A	3-33
3110-1511-500	N/A	N/A	3-40
3110-1511-600	N/A	N/A	3-40
3110-1511-700	N/A	N/A	3-40
3110-7511-000	N/A	N/A	3-33
3110-7511-500	N/A	N/A	3-40
3110-7511-600	N/A	N/A	3-40
3110-7511-700	N/A	N/A	3-40
3141-1521-002	C	4	3-28
3141-1521-003	C	4	3-28
3141-1521-005	C	4	3-28
3141-1521-019	C	4	3-28

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
3141-7521-002	C	4	3-28
3141-7521-003	C	4	3-28
3141-7521-005	C	4	3-28
3141-7521-019	C	4	3-28
4000-1041-009	J	115	11-2
4000-1041-010	J	115	11-2
4000-1051-002	A	28	11-2
4000-1051-003	A	28	11-2
4000-1051-005	A	28	11-2
4000-1051-019	A	28	11-2
4000-1071-002	E	29	11-2
4000-1071-003	E	29	11-2
4000-1071-005	E	29	11-2
4000-1071-019	E	29	11-2
4000-1563-009	M	121	11-3
4000-1563-010	M	121	11-3
4000-7041-009	J	115	11-2
4000-7041-010	J	115	11-2
4000-7051-002	A	28	11-2
4000-7051-003	A	28	11-2
4000-7051-005	A	28	11-2
4000-7051-019	A	28	11-2
4000-7071-002	E	29	11-2
4000-7071-003	E	29	11-2
4000-7071-005	E	29	11-2
4000-7071-019	E	29	11-2
4501-1041-009	J	105	11-2
4501-1041-010	J	117	11-2
4501-1051-002	A	19	11-2
4501-1051-003	A	19	11-2
4501-1051-005	A	19	11-2
4501-1051-019	A	19	11-2
4501-1071-002	E	20	11-2
4501-1071-003	E	20	11-2
4501-1071-005	E	20	11-2
4501-1071-019	E	20	11-2
4501-7041-009	J	105	11-2
4501-7041-010	J	117	11-2
4501-7051-002	A	19	11-2
4501-7051-003	A	19	11-2
4501-7051-005	A	19	11-2
4501-7051-019	A	19	11-2
4501-7071-002	E	20	11-2
4501-7071-003	E	20	11-2
4501-7071-005	E	20	11-2
4501-7071-019	E	20	11-2
4501-9543-009	P	124	11-3
4501-9543-010	P	123	11-3
4502-1041-009	J	114	11-2
4502-1041-010	J	114	11-2
4502-1051-002	A	21	11-2
4502-1051-003	A	21	11-2
4502-1051-005	A	21	11-2
4502-1051-019	A	21	11-2
4502-1071-002	E	22	11-2
4502-1071-003	E	22	11-2
4502-1071-005	E	22	11-2
4502-1071-019	E	22	11-2
4502-7041-009	J	114	11-2
4502-7041-010	J	114	11-2
4502-7051-002	A	21	11-2
4502-7051-003	A	21	11-2
4502-7051-005	A	21	11-2
4502-7051-019	A	21	11-2
4502-7071-002	E	22	11-2
4502-7071-003	E	22	11-2
4502-7071-005	E	22	11-2
4502-7071-019	E	22	11-2
5002-1501-000	N/A	N/A	9-4
5002-7501-000	N/A	N/A	9-4
5003-1501-000	N/A	N/A	9-4
5003-7501-000	N/A	N/A	9-4
5004-1501-000	N/A	N/A	9-4
5004-7501-000	N/A	N/A	9-4

AEP P/N INDEX

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
5005-1501-000	N/A	N/A	9-4
5005-7501-000	N/A	N/A	9-4
5006-1501-000	N/A	N/A	9-4
5006-7501-000	N/A	N/A	9-4
5007-1501-000	N/A	N/A	9-4
5007-7501-000	N/A	N/A	9-4
5008-1501-000	N/A	N/A	9-4
5008-7501-000	N/A	N/A	9-4
5009-1501-000	N/A	N/A	9-4
5009-7501-000	N/A	N/A	9-4
5011-1503-000	N/A	N/A	4-8
5102-1501-000	N/A	N/A	9-5
5102-7501-000	N/A	N/A	9-5
5103-1501-000	N/A	N/A	9-5
5103-7501-000	N/A	N/A	9-5
5104-1501-000	N/A	N/A	9-5
5104-7501-000	N/A	N/A	9-5
5105-1501-000	N/A	N/A	9-5
5105-7501-000	N/A	N/A	9-5
5106-1501-000	N/A	N/A	9-5
5106-7501-000	N/A	N/A	9-5
5107-1501-000	N/A	N/A	9-5
5107-7501-000	N/A	N/A	9-5
5108-1501-000	N/A	N/A	9-5
5108-7501-000	N/A	N/A	9-5
5109-1501-000	N/A	N/A	9-5
5109-7501-000	N/A	N/A	9-5
5110-1501-000	N/A	N/A	9-5
5110-7501-000	N/A	N/A	9-5
5111-1501-000	N/A	N/A	9-5
5111-7501-000	N/A	N/A	9-5
5112-1501-000	N/A	N/A	9-5
5112-7501-000	N/A	N/A	9-5
5113-1501-000	N/A	N/A	9-5
5113-7501-000	N/A	N/A	9-5
5114-1501-000	N/A	N/A	9-5
5114-7501-000	N/A	N/A	9-5
5115-1501-000	N/A	N/A	9-5
5115-7501-000	N/A	N/A	9-5
5116-1501-000	N/A	N/A	9-5
5116-7501-000	N/A	N/A	9-5
5117-1501-000	N/A	N/A	9-5
5117-7501-000	N/A	N/A	9-5
5207-1501-000	N/A	N/A	3-16
5207-7501-000	N/A	N/A	3-16
5208-1501-000	N/A	N/A	3-16
5208-7501-000	N/A	N/A	3-16
5213-1501-000	N/A	N/A	3-15
5213-7501-000	N/A	N/A	3-15
5215-1501-000	N/A	N/A	3-15
5215-7501-000	N/A	N/A	3-15
5216-1501-000	N/A	N/A	3-15
5216-7501-000	N/A	N/A	3-15
5222-1501-000	N/A	N/A	3-15
5222-7501-000	N/A	N/A	3-15
5252-1501-000	N/A	N/A	3-33
5252-1501-500	N/A	N/A	3-39
5252-1501-600	N/A	N/A	3-39
5252-1501-700	N/A	N/A	3-39
5252-7501-000	N/A	N/A	3-33
5252-7501-500	N/A	N/A	3-39
5252-7501-600	N/A	N/A	3-39
5252-7501-700	N/A	N/A	3-39
5280-1502-000	N/A	N/A	5-5
5280-1502-001	N/A	N/A	5-5
5280-1502-002	N/A	N/A	5-5
5302-1501-000	N/A	N/A	9-5
5302-7501-000	N/A	N/A	9-5
5303-1501-000	N/A	N/A	9-5
5303-7501-000	N/A	N/A	9-5
5304-1501-000	N/A	N/A	9-5
5304-7501-000	N/A	N/A	9-5
5305-1501-000	N/A	N/A	9-5
5305-7501-000	N/A	N/A	9-5

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
5306-1501-000	N/A	N/A	9-5
5306-7501-000	N/A	N/A	9-5
5307-1501-000	N/A	N/A	9-5
5307-7501-000	N/A	N/A	9-5
5308-1501-000	N/A	N/A	9-5
5308-7501-000	N/A	N/A	9-5
5309-1501-000	N/A	N/A	9-5
5309-7501-000	N/A	N/A	9-5
5402-1501-000	N/A	N/A	9-3
5402-7501-000	N/A	N/A	9-3
5403-1501-000	N/A	N/A	9-3
5403-7501-000	N/A	N/A	9-3
5404-1501-000	N/A	N/A	9-3
5404-7501-000	N/A	N/A	9-3
5405-1501-000	N/A	N/A	9-3
5405-7501-000	N/A	N/A	9-3
5406-1501-000	N/A	N/A	9-3
5406-7501-000	N/A	N/A	9-3
5407-1501-000	N/A	N/A	9-3
5407-7501-000	N/A	N/A	9-3
5408-1501-000	N/A	N/A	9-3
5408-7501-000	N/A	N/A	9-3
5409-1501-000	N/A	N/A	9-3
5409-7501-000	N/A	N/A	9-3
5502-1501-000	N/A	N/A	9-3
5502-7501-000	N/A	N/A	9-3
5503-1501-000	N/A	N/A	9-3
5503-7501-000	N/A	N/A	9-3
5504-1501-000	N/A	N/A	9-3
5504-7501-000	N/A	N/A	9-3
5505-1501-000	N/A	N/A	9-3
5505-7501-000	N/A	N/A	9-3
5506-1501-000	N/A	N/A	9-3
5506-7501-000	N/A	N/A	9-3
5507-1501-000	N/A	N/A	9-3
5507-7501-000	N/A	N/A	9-3
5508-1501-000	N/A	N/A	9-3
5508-7501-000	N/A	N/A	9-3
5509-1501-000	N/A	N/A	9-3
5509-7501-000	N/A	N/A	9-3
5510-1501-000	N/A	N/A	9-3
5510-7501-000	N/A	N/A	9-3
5511-1501-000	N/A	N/A	9-3
5511-7501-000	N/A	N/A	9-3
5512-1501-000	N/A	N/A	9-3
5512-7501-000	N/A	N/A	9-3
5513-1501-000	N/A	N/A	9-3
5513-7501-000	N/A	N/A	9-3
5514-1501-000	N/A	N/A	9-3
5514-7501-000	N/A	N/A	9-3
5515-1501-000	N/A	N/A	9-3
5515-7501-000	N/A	N/A	9-3
5516-1501-000	N/A	N/A	9-3
5516-7501-000	N/A	N/A	9-3
5517-1501-000	N/A	N/A	9-3
5517-7501-000	N/A	N/A	9-3
5602-1501-000	N/A	N/A	9-4
5602-7501-000	N/A	N/A	9-4
5603-1501-000	N/A	N/A	9-4
5603-7501-000	N/A	N/A	9-4
5604-1501-000	N/A	N/A	9-4
5604-7501-000	N/A	N/A	9-4
5605-1501-000	N/A	N/A	9-4
5605-7501-000	N/A	N/A	9-4
5606-1501-000	N/A	N/A	9-4
5606-7501-000	N/A	N/A	9-4
5607-1501-000	N/A	N/A	9-4
5607-7501-000	N/A	N/A	9-4
5608-1501-000	N/A	N/A	9-4
5608-7501-000	N/A	N/A	9-4
5609-1501-000	N/A	N/A	9-4
5609-7501-000	N/A	N/A	9-4
5610-1501-000	N/A	N/A	9-4
5610-7501-000	N/A	N/A	9-4

AEP P/N INDEX

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
5611-1501-000	N/A	N/A	9-4
5611-7501-000	N/A	N/A	9-4
5612-1501-000	N/A	N/A	9-4
5612-7501-000	N/A	N/A	9-4
5613-1501-000	N/A	N/A	9-4
5613-7501-000	N/A	N/A	9-4
5614-1501-000	N/A	N/A	9-4
5614-7501-000	N/A	N/A	9-4
5615-1501-000	N/A	N/A	9-4
5615-7501-000	N/A	N/A	9-4
5616-1501-000	N/A	N/A	9-4
5616-7501-000	N/A	N/A	9-4
5617-1501-000	N/A	N/A	9-4
5617-7501-000	N/A	N/A	9-4
5707-1501-000	N/A	N/A	6-7
5707-7501-000	N/A	N/A	6-7
5715-1501-000	N/A	N/A	6-7
5715-7501-000	N/A	N/A	6-7
5722-1501-000	N/A	N/A	6-7
5722-7501-000	N/A	N/A	6-7
5725-1501-000	N/A	N/A	6-12
5725-7501-000	N/A	N/A	6-12
5727-1501-000	N/A	N/A	6-12
5727-7501-000	N/A	N/A	6-12
5732-1501-000	N/A	N/A	6-12
5732-7501-000	N/A	N/A	6-12
5807-1501-000	N/A	N/A	3-25
5807-7501-000	N/A	N/A	3-25
5808-1501-000	N/A	N/A	3-25
5808-7501-000	N/A	N/A	3-25
5813-1501-000	N/A	N/A	3-24
5813-7501-000	N/A	N/A	3-24
5814-1501-000	N/A	N/A	9-2
5814-7501-000	N/A	N/A	9-2
5815-1501-000	N/A	N/A	3-24
5815-7501-000	N/A	N/A	3-24
5816-1501-000	N/A	N/A	3-24
5816-7501-000	N/A	N/A	3-24
5822-1501-000	N/A	N/A	3-24
5822-7501-000	N/A	N/A	3-24
5830-1501-000	N/A	N/A	9-2
5830-7501-000	N/A	N/A	9-2
5831-1501-000	N/A	N/A	9-2
5831-7501-000	N/A	N/A	9-2
5832-1501-000	N/A	N/A	9-2
5832-7501-000	N/A	N/A	9-2
5903-1503-000	N/A	N/A	2-54
5903-9503-000	N/A	N/A	2-54
5905-1503-000	N/A	N/A	2-54
5905-9503-000	N/A	N/A	2-54
5909-1103-000	N/A	N/A	2-52
5909-9103-000	N/A	N/A	2-52
5913-2503-000	N/A	N/A	8-3
5914-9503-000	N/A	N/A	8-3
5916-1103-603	N/A	N/A	2-52
5916-9103-603	N/A	N/A	2-52
5917-1103-000	N/A	N/A	2-52
5917-9103-000	N/A	N/A	2-52
5918-1103-000	N/A	N/A	2-52
5918-9103-000	N/A	N/A	2-52
5919-1503-000	N/A	N/A	2-53
5919-1503-001	N/A	N/A	2-53
5919-1503-003	N/A	N/A	2-53
5919-9503-000	N/A	N/A	2-53
5919-9503-001	N/A	N/A	2-53
5919-9503-003	N/A	N/A	2-53
6000-1041-009	J	110	12-2
6000-1041-010	J	111	12-2
6000-1051-002	A	13	12-2
6000-1051-003	A	13	12-2
6000-1051-005	A	13	12-2
6000-1051-019	A	13	12-2
6000-1071-002	E	12	12-2
6000-1071-003	E	12	12-2

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
6000-1071-005	E	12	12-2
6000-1071-019	E	12	12-2
6000-7041-009	J	110	12-2
6000-7041-010	J	111	12-2
6000-7051-002	A	13	12-2
6000-7051-003	A	13	12-2
6000-7051-005	A	13	12-2
6000-7051-019	A	13	12-2
6000-7071-002	E	12	12-2
6000-7071-003	E	12	12-2
6000-7071-005	E	12	12-2
6000-7071-019	E	12	12-2
6001-1041-009	J	110	12-2
6001-1041-010	J	111	12-2
6001-1051-002	A	9	12-2
6001-1051-003	A	9	12-2
6001-1051-005	A	9	12-2
6001-1051-019	A	9	12-2
6001-1071-002	E	11	12-2
6001-1071-003	E	11	12-2
6001-1071-005	E	11	12-2
6001-1071-019	E	11	12-2
6001-7041-009	J	110	12-2
6001-7041-010	J	111	12-2
6001-7051-002	A	9	12-2
6001-7051-003	A	9	12-2
6001-7051-005	A	9	12-2
6001-7051-019	A	9	12-2
6001-7071-002	E	11	12-2
6001-7071-003	E	11	12-2
6001-7071-005	E	11	12-2
6001-7071-019	E	11	12-2
6002-1041-009	J	110	12-2
6002-1041-010	J	111	12-2
6002-1051-002	A	9	12-2
6002-1051-003	A	9	12-2
6002-1051-005	A	9	12-2
6002-1051-019	A	9	12-2
6002-1071-002	E	11	12-2
6002-1071-003	E	11	12-2
6002-1071-005	E	11	12-2
6002-1071-019	E	11	12-2
6002-7041-009	J	110	12-2
6002-7041-010	J	111	12-2
6002-7051-002	A	9	12-2
6002-7051-003	A	9	12-2
6002-7051-005	A	9	12-2
6002-7051-019	A	9	12-2
6002-7071-002	E	11	12-2
6002-7071-003	E	11	12-2
6002-7071-005	E	11	12-2
6002-7071-019	E	11	12-2
6500-1041-009	J	110	10-2
6500-1041-010	J	111	10-2
6500-1051-002	A	13	10-2
6500-1051-003	A	13	10-2
6500-1051-005	A	13	10-2
6500-1051-019	A	13	10-2
6500-1071-002	E	12	10-2
6500-1071-003	E	12	10-2
6500-1071-005	E	12	10-2
6500-1071-019	E	12	10-2
6500-7041-009	J	110	10-2
6500-7041-010	J	111	10-2
6500-7051-002	A	13	10-2
6500-7051-003	A	13	10-2
6500-7051-005	A	13	10-2
6500-7051-019	A	13	10-2
6500-7071-002	E	12	10-2
6500-7071-003	E	12	10-2
6500-7071-005	E	12	10-2
6500-7071-019	E	12	10-2
6501-1041-009	J	110	10-2
6501-1041-010	J	111	10-2

AEP P/N INDEX

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
6501-1051-002	A	9	10-2
6501-1051-003	A	9	10-2
6501-1051-005	A	9	10-2
6501-1051-019	A	9	10-2
6501-1071-002	E	11	10-2
6501-1071-003	E	11	10-2
6501-1071-005	E	11	10-2
6501-1071-019	E	11	10-2
6501-7041-009	J	110	10-2
6501-7041-010	J	111	10-2
6501-7051-002	A	9	10-2
6501-7051-003	A	9	10-2
6501-7051-005	A	9	10-2
6501-7051-019	A	9	10-2
6501-7071-002	E	11	10-2
6501-7071-003	E	11	10-2
6501-7071-005	E	11	10-2
6501-7071-019	E	11	10-2
6502-1041-009	J	110	10-2
6502-1041-010	J	111	10-2
6502-1051-002	A	9	10-2
6502-1051-003	A	9	10-2
6502-1051-005	A	9	10-2
6502-1051-019	A	9	10-2
6502-1071-002	E	11	10-2
6502-1071-003	E	11	10-2
6502-1071-005	E	11	10-2
6502-1071-019	E	11	10-2
6502-7041-009	J	110	10-2
6502-7041-010	J	111	10-2
6502-7051-002	A	9	10-2
6502-7051-003	A	9	10-2
6502-7051-005	A	9	10-2
6502-7051-019	A	9	10-2
6502-7071-002	E	11	10-2
6502-7071-003	E	11	10-2
6502-7071-005	E	11	10-2
6502-7071-019	E	11	10-2
7002-1542-010	Q	125	4-10
7002-1542-011	Q	125	4-10
7002-1542-021	Q	105	4-10
7002-1572-002	E	24	4-10
7002-1572-003	E	23	4-10
7002-1572-005	E	24	4-10
7002-1572-019	E	23	4-10
7003-1542-010	Q	125	4-11
7003-1542-011	Q	125	4-11
7003-1542-021	Q	125	4-11
7003-1572-002	E	24	4-11
7003-1572-003	E	24	4-11
7003-1572-005	E	24	4-11
7003-1572-019	E	24	4-11
7004-1512-000	N/A	N/A	4-12
7009-1511-000	N/A	N/A	4-13
7010-1511-000	N/A	N/A	4-13
7012-1511-000	N/A	N/A	4-12
7017-1512-000	N/A	N/A	4-12
7022-1502-000	N/A	N/A	4-14
7025-1512-000	N/A	N/A	4-13
7042-1511-000	N/A	N/A	4-13
7100-1513-000	N/A	N/A	4-14
7105-1521-002	C	25	4-10
7105-1521-003	C	25	4-10
7105-1521-005	C	25	4-10
7105-1521-019	C	25	4-10
7105-1561-010	K	109	4-10
7105-1561-011	K	109	4-10
7105-1561-021	K	109	4-10
7106-1521-002	C	25	4-11
7106-1521-003	C	25	4-11
7106-1521-005	C	25	4-11
7106-1521-019	C	25	4-11
7106-1561-010	K	109	4-11
7106-1561-011	K	109	4-11

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
7106-1561-021	K	109	4-11
7110-1511-000	N/A	N/A	4-13
7119-1512-000	N/A	N/A	4-12
7198-1513-000	N/A	N/A	4-14
7202-1542-010	Q	125	4-4
7202-1542-011	Q	105	4-4
7202-1542-021	Q	105	4-4
7202-1572-002	E	23	4-4
7202-1572-003	E	23	4-4
7202-1572-005	E	23	4-4
7202-1572-019	E	23	4-4
7203-1541-010	Q	125	4-5
7203-1541-011	Q	105	4-5
7203-1541-021	Q	105	4-5
7203-1571-002	E	24	4-5
7203-1571-003	E	24	4-5
7203-1571-005	E	24	4-5
7203-1571-019	E	24	4-5
7204-1511-000	N/A	N/A	4-6
7209-1511-000	N/A	N/A	4-7
7210-1511-000	N/A	N/A	4-7
7212-1511-000	N/A	N/A	4-6
7217-1512-000	N/A	N/A	4-6
7219-1511-000	N/A	N/A	4-6
7222-1501-000	N/A	N/A	4-8
7225-1512-000	N/A	N/A	4-7
7242-1511-000	N/A	N/A	4-7
7302-1542-010	Q	125	4-16
7302-1542-011	Q	125	4-16
7302-1542-021	Q	105	4-16
7302-1572-002	E	23	4-16
7302-1572-003	E	23	4-16
7302-1572-005	E	23	4-16
7302-1572-019	E	23	4-16
7305-1521-002	C	25	4-16
7305-1521-003	C	25	4-16
7305-1521-005	C	25	4-16
7305-1521-019	C	25	4-16
7305-1561-010	K	109	4-16
7305-1561-011	K	109	4-16
7305-1561-021	K	109	4-16
7317-1512-000	N/A	N/A	4-15
7325-1512-000	N/A	N/A	4-15
7342-1511-000	N/A	N/A	4-15
7405-1521-002	C	25	4-4
7405-1521-003	C	25	4-4
7405-1521-005	C	25	4-4
7405-1521-019	C	25	4-4
7405-1561-010	K	109	4-4
7405-1561-011	K	109	4-4
7405-1561-021	K	109	4-4
7406-1521-002	C	25	4-5
7406-1521-003	C	25	4-5
7406-1521-005	C	25	4-5
7406-1521-019	C	25	4-5
7406-1561-010	K	109	4-5
7406-1561-011	K	109	4-5
7406-1561-021	K	109	4-5
7410-1511-000	N/A	N/A	4-7
7498-1513-000	N/A	N/A	4-8
7499-1513-000	N/A	N/A	4-8
7500-1262-010	N/A	N/A	5-6
7500-1562-010	N/A	N/A	5-6
7500-1582-011	N/A	N/A	5-6
7501-1562-010	consult factory		5-6
7501-1562-011	consult factory		5-6
7502-1083-010	consult factory		5-7
7502-1582-010	consult factory		5-7
7502-1582-110	consult factory		5-7
7503-1083-010	consult factory		5-7
7503-1582-010	consult factory		5-7
7503-1582-110	consult factory		5-7
7504-2282-010	consult factory		5-6
7506-1083-010	consult factory		5-7

AEP P/N INDEX

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
7506-1582-010	consult factory		5-7
7506-1582-110	consult factory		5-7
7509-9013-000	N/A	N/A	5-5
7515-9013-000	N/A	N/A	5-5
7516-9013-000	N/A	N/A	5-5
80-1151-XXXX	N/A	N/A	13-10
80-1152-XXXX	N/A	N/A	13-10
80-1153-XXXX	N/A	N/A	13-10
80-1154-XXXX	N/A	N/A	13-10
80-1155-XXXX	N/A	N/A	13-10
80-1156-XXXX	N/A	N/A	13-11
80-1157-XXXX	N/A	N/A	13-11
80-1158-XXXX	N/A	N/A	13-11
80-1159-XXXX	N/A	N/A	13-11
80-1160-XXXX	N/A	N/A	13-11
80-1161-XXXX	N/A	N/A	13-9
80-1162-XXXX	N/A	N/A	13-9
80-1163-XXXX	N/A	N/A	13-9
80-1164-XXXX	N/A	N/A	13-9
80-1165-XXXX	N/A	N/A	13-9
80-1166-XXXX	N/A	N/A	13-9
80-1167-XXXX	N/A	N/A	13-9
80-1168-XXXX	N/A	N/A	13-9
80-1169-XXXX	N/A	N/A	13-9
80-1170-XXXX	N/A	N/A	13-9
8020-1541-009	J	113	7-3
8020-1541-010	J	112	7-3
8020-1551-002	A	1	7-3
8020-1551-003	A	1	7-3
8020-1551-005	A	1	7-3
8020-1551-019	A	1	7-3
8020-1571-002	E	2	7-3
8020-1571-003	E	2	7-3
8020-1571-005	E	2	7-3
8020-1571-019	E	2	7-3
8020-7541-009	J	113	7-3
8020-7541-010	J	112	7-3
8020-7551-002	A	1	7-3
8020-7551-003	A	1	7-3
8020-7551-005	A	1	7-3
8020-7551-019	A	1	7-3
8020-7571-002	E	2	7-3
8020-7571-003	E	2	7-3
8020-7571-005	E	2	7-3
8020-7571-019	E	2	7-3
8021-1041-009	J	113	7-3
8021-1041-010	J	112	7-3
8021-1051-002	A	1	7-3
8021-1051-003	A	1	7-3
8021-1051-005	A	1	7-3
8021-1051-019	A	1	7-3
8021-1071-002	E	2	7-3
8021-1071-003	E	2	7-3
8021-1071-005	E	2	7-3
8021-1071-019	E	2	7-3
8021-7041-009	J	113	7-3
8021-7041-010	J	112	7-3
8021-7051-002	A	1	7-3
8021-7051-003	A	1	7-3
8021-7051-005	A	1	7-3
8021-7051-019	A	1	7-3
8021-7071-002	E	2	7-3
8021-7071-003	E	2	7-3
8021-7071-005	E	2	7-3
8021-7071-019	E	2	7-3
8044-1541-009	L	120	7-2
8044-1541-010	L	120	7-2
8044-1551-002	B	3	7-2
8044-1551-003	B	3	7-2
8044-1551-005	B	3	7-2
8044-1551-019	B	3	7-2
8044-7541-009	L	120	7-2
8044-7541-010	L	120	7-2
8044-7551-002	B	3	7-2

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
8044-7551-003	B	3	7-2
8044-7551-005	B	3	7-2
8044-7551-019	B	3	7-2
8045-1541-009	L	120	7-4
8045-1541-010	L	120	7-4
8045-1551-002	B	3	7-4
8045-1551-003	B	3	7-4
8045-1551-005	B	3	7-4
8045-1551-019	B	3	7-4
8045-7541-009	L	120	7-4
8045-7541-010	L	120	7-4
8045-7551-002	B	3	7-4
8045-7551-003	B	3	7-4
8045-7551-005	B	3	7-4
8045-7551-019	B	3	7-4
8046-1541-009	J	118	7-4
8046-1541-010	J	119	7-4
8046-1551-002	A	1	7-4
8046-1551-003	A	1	7-4
8046-1551-005	A	1	7-4
8046-1551-019	A	1	7-4
8046-7541-009	J	118	7-4
8046-7541-010	J	119	7-4
8046-7551-002	A	1	7-4
8046-7551-003	A	1	7-4
8046-7551-005	A	1	7-4
8046-7551-019	A	1	7-4
81-1224-XXXX	N/A	N/A	13-12
81-1225-XXXX	N/A	N/A	13-12
81-1226-XXXX	N/A	N/A	13-12
81-1227-XXXX	N/A	N/A	13-12
81-1228-XXXX	N/A	N/A	13-12
81-1229-XXXX	N/A	N/A	13-13
81-1230-XXXX	N/A	N/A	13-13
81-1231-XXXX	N/A	N/A	13-13
81-1232-XXXX	N/A	N/A	13-13
81-1233-XXXX	N/A	N/A	13-13
81-1234-XXXX	N/A	N/A	13-13
8144-1521-002	C	4	7-2
8144-1521-003	C	4	7-2
8144-1521-005	C	4	7-2
8144-1521-019	C	4	7-2
8144-7521-002	C	4	7-2
8144-7521-003	C	4	7-2
8144-7521-005	C	4	7-2
8144-7521-019	C	4	7-2
8145-1521-002	C	26	7-4
8145-1521-003	C	26	7-4
8145-1521-005	C	26	7-4
8145-1521-019	C	26	7-4
8145-7521-002	C	26	7-4
8145-7521-003	C	26	7-4
8145-7521-005	C	26	7-4
8145-7521-019	C	26	7-4
8146-1521-002	F	27	7-4
8146-1521-003	F	27	7-4
8146-1521-005	F	27	7-4
8146-1521-019	F	27	7-4
8146-7521-002	F	27	7-4
8146-7521-003	F	27	7-4
8146-7521-005	F	27	7-4
8146-7521-019	F	27	7-4
81-6200-XXXX	N/A	N/A	13-8
81-6201-XXXX	N/A	N/A	13-8
9001-1023-001	F	14	2-14
9001-1023-002	F	14	2-14
9001-1023-003	F	14	2-14
9001-1023-004	F	14	2-14
9001-1023-005	F	14	2-14
9001-1023-006	F	14	2-14
9001-1023-019	F	14	2-14
9001-1033-001	G	14	2-14
9001-1033-002	G	14	2-14
9001-1033-003	G	14	2-14

AEP P/N INDEX

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
9001-1033-004	G	14	2-14
9001-1033-005	G	14	2-14
9001-1033-006	G	14	2-14
9001-1033-019	G	14	2-14
9001-9023-001	F	14	2-14
9001-9023-002	F	14	2-14
9001-9023-003	F	14	2-14
9001-9023-004	F	14	2-14
9001-9023-005	F	14	2-14
9001-9023-006	F	14	2-14
9001-9023-019	F	14	2-14
9002-1023-001	F	14	2-16
9002-1023-002	F	14	2-16
9002-1023-003	F	14	2-16
9002-1023-004	F	14	2-16
9002-1023-005	F	14	2-16
9002-1023-006	F	14	2-16
9002-1023-019	F	14	2-16
9002-1033-001	G	14	2-16
9002-1033-002	G	14	2-16
9002-1033-003	G	14	2-16
9002-1033-004	G	14	2-16
9002-1033-005	G	14	2-16
9002-1033-006	G	14	2-16
9002-1033-019	G	14	2-16
9002-9023-001	F	14	2-16
9002-9023-002	F	14	2-16
9002-9023-003	F	14	2-16
9002-9023-004	F	14	2-16
9002-9023-005	F	14	2-16
9002-9023-006	F	14	2-16
9002-9023-019	F	14	2-16
9003-1213-001	N/A	N/A	2-32
9003-1213-002	N/A	N/A	2-32
9003-1213-003	N/A	N/A	2-32
9003-9213-001	N/A	N/A	2-32
9003-9213-002	N/A	N/A	2-32
9003-9213-003	N/A	N/A	2-32
9004-1113-000	N/A	N/A	2-19
9004-1213-000	N/A	N/A	2-19
9004-9113-000	N/A	N/A	2-19
9004-9213-000	N/A	N/A	2-19
9007-1113-000	N/A	N/A	2-19
9007-1213-000	N/A	N/A	2-19
9007-9113-000	N/A	N/A	2-19
9007-9213-000	N/A	N/A	2-19
9008-1113-000	N/A	N/A	2-19
9008-1213-000	N/A	N/A	2-19
9008-9113-000	N/A	N/A	2-19
9008-9213-000	N/A	N/A	2-19
9009-1113-000	N/A	N/A	2-26
9009-1213-000	N/A	N/A	2-26
9009-9113-000	N/A	N/A	2-26
9009-9213-000	N/A	N/A	2-26
9013-1113-000	N/A	N/A	2-29
9013-9113-000	N/A	N/A	2-29
9030-1023-001	F	17	2-17
9030-1023-002	F	17	2-17
9030-1023-003	F	17	2-17
9030-1023-004	F	17	2-17
9030-1023-005	F	17	2-17
9030-1023-006	F	17	2-17
9030-1023-019	F	17	2-17
9030-1033-001	G	17	2-17
9030-1033-002	G	17	2-17
9030-1033-003	G	17	2-17
9030-1033-004	G	17	2-17
9030-1033-005	G	17	2-17
9030-1033-006	G	17	2-17
9030-1033-019	G	17	2-17
9030-9023-001	F	17	2-17
9030-9023-002	F	17	2-17
9030-9023-003	F	17	2-17
9030-9023-004	F	17	2-17

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
9030-9023-005	F	17	2-17
9030-9023-006	F	17	2-17
9030-9023-019	F	17	2-17
9031-1023-001	F	14	2-18
9031-1023-002	F	14	2-18
9031-1023-003	F	14	2-18
9031-1023-004	F	14	2-18
9031-1023-005	F	14	2-18
9031-1023-006	F	14	2-18
9031-1023-019	F	14	2-18
9031-1033-001	G	14	2-18
9031-1033-002	G	14	2-18
9031-1033-003	G	14	2-18
9031-1033-004	G	14	2-18
9031-1033-005	G	14	2-18
9031-1033-006	G	14	2-18
9031-1033-019	G	14	2-18
9031-9023-001	F	14	2-18
9031-9023-002	F	14	2-18
9031-9023-003	F	14	2-18
9031-9023-004	F	14	2-18
9031-9023-005	F	14	2-18
9031-9023-006	F	14	2-18
9031-9023-019	F	14	2-18
9033-1113-000	N/A	N/A	2-30
9033-1213-000	N/A	N/A	2-30
9033-9113-000	N/A	N/A	2-30
9033-9213-000	N/A	N/A	2-30
9034-1213-001	N/A	N/A	2-32
9034-1213-002	N/A	N/A	2-32
9034-1213-003	N/A	N/A	2-32
9034-9213-001	N/A	N/A	2-32
9034-9213-002	N/A	N/A	2-32
9034-9213-003	N/A	N/A	2-32
9035-1513-001	N/A	N/A	2-32
9035-1513-002	N/A	N/A	2-32
9035-1513-003	N/A	N/A	2-32
9035-9513-001	N/A	N/A	2-32
9035-9513-002	N/A	N/A	2-32
9035-9513-003	N/A	N/A	2-32
9043-1523-001	C	10	2-15
9043-1523-002	C	10	2-15
9043-1523-003	C	10	2-15
9043-1523-004	C	10	2-15
9043-1523-005	C	10	2-15
9043-1523-006	C	10	2-15
9043-1523-019	C	10	2-15
9043-1533-001	D	10	2-15
9043-1533-002	D	10	2-15
9043-1533-003	D	10	2-15
9043-1533-004	D	10	2-15
9043-1533-005	D	10	2-15
9043-1533-006	D	10	2-15
9043-1533-019	D	10	2-15
9043-9523-001	C	10	2-15
9043-9523-002	C	10	2-15
9043-9523-003	C	10	2-15
9043-9523-004	C	10	2-15
9043-9523-005	C	10	2-15
9043-9523-006	C	10	2-15
9043-9523-019	C	10	2-15
9044-9513-000	N/A	N/A	2-42
9044-9513-001	N/A	N/A	2-44
9045-9513-000	N/A	N/A	2-42
9045-9513-001	N/A	N/A	2-44
9046-9513-000	N/A	N/A	2-43
9046-9513-001	N/A	N/A	2-45
9047-9513-000	N/A	N/A	2-43
9047-9513-001	N/A	N/A	2-45
9048-9513-000	N/A	N/A	2-43
9049-9513-000	N/A	N/A	2-43
9050-9513-000	N/A	N/A	2-47
9051-9513-000	N/A	N/A	2-47
9055-1113-000	N/A	N/A	2-26

AEP P/N INDEX

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
9055-1213-000	N/A	N/A	2-26
9055-9113-000	N/A	N/A	2-26
9055-9213-000	N/A	N/A	2-26
9056-1113-000	N/A	N/A	2-29
9056-9113-000	N/A	N/A	2-29
9062-9513-000	N/A	N/A	2-43
9062-9513-001	N/A	N/A	2-45
9068-9513-000	N/A	N/A	2-47
907-111-1	N/A	N/A	2-43
907-111-2	N/A	N/A	2-47
907-111-5	N/A	N/A	2-45
9074-9513-000	N/A	N/A	2-46
9076-1113-000	N/A	N/A	2-19
9076-1213-000	N/A	N/A	2-19
9076-9113-000	N/A	N/A	2-19
9076-9213-000	N/A	N/A	2-19
9079-9513-000	N/A	N/A	2-42
9079-9513-001	N/A	N/A	2-44
9080-9513-000	N/A	N/A	2-42
9080-9513-001	N/A	N/A	2-44
9081-9513-000	N/A	N/A	2-46
9101-1573-001	E	15	2-14
9101-1573-002	E	15	2-14
9101-1573-003	E	15	2-14
9101-1573-004	E	15	2-14
9101-1573-005	E	15	2-14
9101-1573-006	E	15	2-14
9101-1573-019	E	15	2-14
9101-9573-001	E	15	2-14
9101-9573-002	E	15	2-14
9101-9573-003	E	15	2-14
9101-9573-004	E	15	2-14
9101-9573-005	E	15	2-14
9101-9573-006	E	15	2-14
9101-9573-019	E	15	2-14
9102-1573-001	E	15	2-16
9102-1573-002	E	15	2-16
9102-1573-003	E	15	2-16
9102-1573-004	E	15	2-16
9102-1573-005	E	15	2-16
9102-1573-006	E	15	2-16
9102-1573-019	E	15	2-16
9102-9573-001	E	15	2-16
9102-9573-002	E	15	2-16
9102-9573-003	E	15	2-16
9102-9573-004	E	15	2-16
9102-9573-005	E	15	2-16
9102-9573-006	E	15	2-16
9102-9573-019	E	15	2-16
9104-1113-000	N/A	N/A	2-21
9104-1213-000	N/A	N/A	2-21
9104-9113-000	N/A	N/A	2-21
9104-9213-000	N/A	N/A	2-21
9107-1113-000	N/A	N/A	2-21
9107-1213-000	N/A	N/A	2-21
9107-9113-000	N/A	N/A	2-21
9107-9213-000	N/A	N/A	2-21
9108-1113-000	N/A	N/A	2-21
9108-1213-000	N/A	N/A	2-21
9108-9113-000	N/A	N/A	2-21
9108-9213-000	N/A	N/A	2-21
9109-1113-000	N/A	N/A	2-27
9109-1213-000	N/A	N/A	2-27
9109-9113-000	N/A	N/A	2-27
9109-9213-000	N/A	N/A	2-27
9114-1113-000	N/A	N/A	2-24
9114-9113-000	N/A	N/A	2-24
9117-1113-000	N/A	N/A	2-24
9117-9113-000	N/A	N/A	2-24
9118-1113-000	N/A	N/A	2-24
9118-9113-000	N/A	N/A	2-24
9124-1513-000	N/A	N/A	2-23
9124-9513-000	N/A	N/A	2-23
9126-1513-000	N/A	N/A	2-23

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
9126-9513-000	N/A	N/A	2-23
9130-1573-001	E	15	2-17
9130-1573-002	E	15	2-17
9130-1573-003	E	15	2-17
9130-1573-004	E	15	2-17
9130-1573-005	E	15	2-17
9130-1573-006	E	15	2-17
9130-1573-019	E	15	2-17
9130-9573-001	E	15	2-17
9130-9573-002	E	15	2-17
9130-9573-003	E	15	2-17
9130-9573-004	E	15	2-17
9130-9573-005	E	15	2-17
9130-9573-006	E	15	2-17
9130-9573-019	E	15	2-17
9131-1573-001	E	15	2-18
9131-1573-002	E	15	2-18
9131-1573-003	E	15	2-18
9131-1573-004	E	15	2-18
9131-1573-005	E	15	2-18
9131-1573-006	E	15	2-18
9131-1573-019	E	15	2-18
9131-9573-001	E	15	2-18
9131-9573-002	E	15	2-18
9131-9573-003	E	15	2-18
9131-9573-004	E	15	2-18
9131-9573-005	E	15	2-18
9131-9573-006	E	15	2-18
9131-9573-019	E	15	2-18
9133-1113-000	N/A	N/A	2-30
9133-1213-000	N/A	N/A	2-30
9133-9113-000	N/A	N/A	2-30
9133-9213-000	N/A	N/A	2-30
9139-1113-000	N/A	N/A	2-30
9139-1213-000	N/A	N/A	2-30
9139-9113-000	N/A	N/A	2-30
9139-9213-000	N/A	N/A	2-30
9144-9513-000	N/A	N/A	2-42
9144-9513-001	N/A	N/A	2-44
9145-9513-000	N/A	N/A	2-42
9145-9513-001	N/A	N/A	2-44
9146-9513-000	N/A	N/A	2-43
9146-9513-001	N/A	N/A	2-45
9147-9513-000	N/A	N/A	2-43
9147-9513-001	N/A	N/A	2-45
9148-9513-000	N/A	N/A	2-46
9149-9513-000	N/A	N/A	2-46
9150-9513-000	N/A	N/A	2-47
9151-9513-000	N/A	N/A	2-47
9154-1513-000	N/A	N/A	2-27
9154-9513-000	N/A	N/A	2-27
9155-1113-000	N/A	N/A	2-27
9155-1213-000	N/A	N/A	2-27
9155-9113-000	N/A	N/A	2-27
9155-9213-000	N/A	N/A	2-27
9162-9513-000	N/A	N/A	2-43
9162-9513-001	N/A	N/A	2-45
9163-1113-000	N/A	N/A	2-24
9163-9113-000	N/A	N/A	2-24
9168-9513-000	N/A	N/A	2-47
9174-9513-000	N/A	N/A	2-46
9176-1113-000	N/A	N/A	2-21
9176-1213-000	N/A	N/A	2-21
9176-9113-000	N/A	N/A	2-21
9176-9213-000	N/A	N/A	2-21
9179-9513-000	N/A	N/A	2-42
9179-9513-001	N/A	N/A	2-44
9180-9513-000	N/A	N/A	2-42
9180-9513-001	N/A	N/A	2-44
9181-9513-000	N/A	N/A	2-46
9201-1553-001	A	16	2-14
9201-1553-002	A	16	2-14
9201-1553-003	A	16	2-14
9201-1553-004	A	16	2-14

AEP P/N INDEX

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
9201-1553-005	A	16	2-14
9201-1553-006	A	16	2-14
9201-1553-019	A	16	2-14
920-157	N/A	N/A	5-5
9201-9553-001	A	16	2-14
9201-9553-002	A	16	2-14
9201-9553-003	A	16	2-14
9201-9553-004	A	16	2-14
9201-9553-005	A	16	2-14
9201-9553-006	A	16	2-14
9201-9553-019	A	16	2-14
9202-1553-001	A	16	2-16
9202-1553-002	A	16	2-16
9202-1553-003	A	16	2-16
9202-1553-004	A	16	2-16
9202-1553-005	A	16	2-16
9202-1553-006	A	16	2-16
9202-1553-019	A	16	2-16
9202-9553-001	A	16	2-16
9202-9553-002	A	16	2-16
9202-9553-003	A	16	2-16
9202-9553-004	A	16	2-16
9202-9553-005	A	16	2-16
9202-9553-006	A	16	2-16
9202-9553-019	A	16	2-16
9204-1113-001	N/A	N/A	2-22
9204-1113-002	N/A	N/A	2-22
9204-1113-003	N/A	N/A	2-22
9204-1213-001	N/A	N/A	2-22
9204-1213-002	N/A	N/A	2-22
9204-1213-003	N/A	N/A	2-22
9204-9113-001	N/A	N/A	2-22
9204-9113-002	N/A	N/A	2-22
9204-9113-003	N/A	N/A	2-22
9204-9213-001	N/A	N/A	2-22
9204-9213-002	N/A	N/A	2-22
9204-9213-003	N/A	N/A	2-22
920-55	N/A	N/A	2-41
920-56	N/A	N/A	2-41
920-69	N/A	N/A	2-41
9208-1113-000	N/A	N/A	2-22
9208-1113-001	N/A	N/A	2-22
9208-1113-002	N/A	N/A	2-22
9208-1213-000	N/A	N/A	2-22
9208-1213-001	N/A	N/A	2-22
9208-1213-002	N/A	N/A	2-22
920-82	N/A	N/A	2-41
9208-9113-000	N/A	N/A	2-22
9208-9113-001	N/A	N/A	2-22
9208-9113-002	N/A	N/A	2-22
9208-9213-000	N/A	N/A	2-22
9208-9213-001	N/A	N/A	2-22
9208-9213-002	N/A	N/A	2-22
920-92	N/A	N/A	2-41
9230-1553-001	A	16	2-17
9230-1553-002	A	16	2-17
9230-1553-003	A	16	2-17
9230-1553-004	A	16	2-17
9230-1553-005	A	16	2-17
9230-1553-006	A	16	2-17
9230-1553-019	A	16	2-17
9230-9553-001	A	16	2-17
9230-9553-002	A	16	2-17
9230-9553-003	A	16	2-17
9230-9553-004	A	16	2-17
9230-9553-005	A	16	2-17
9230-9553-006	A	16	2-17
9230-9553-019	A	16	2-17
9231-1553-001	A	16	2-18
9231-1553-002	A	16	2-18
9231-1553-003	A	16	2-18
9231-1553-004	A	16	2-18
9231-1553-005	A	16	2-18
9231-1553-006	A	16	2-18

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
9231-1553-019	A	16	2-18
9231-9553-001	A	16	2-18
9231-9553-002	A	16	2-18
9231-9553-003	A	16	2-18
9231-9553-004	A	16	2-18
9231-9553-005	A	16	2-18
9231-9553-006	A	16	2-18
9231-9553-019	A	16	2-18
9243-1553-001	B	16	2-15
9243-1553-002	B	16	2-15
9243-1553-003	B	16	2-15
9243-1553-004	B	16	2-15
9243-1553-005	B	16	2-15
9243-1553-006	B	16	2-15
9243-1553-019	B	16	2-15
9243-9533-001	B	16	2-15
9243-9533-002	B	16	2-15
9243-9533-003	B	16	2-15
9243-9533-004	B	16	2-15
9243-9533-005	B	16	2-15
9243-9533-006	B	16	2-15
9243-9533-019	B	16	2-15
9244-9513-000	N/A	N/A	2-42
9244-9513-001	N/A	N/A	2-44
9245-9513-000	N/A	N/A	2-42
9245-9513-001	N/A	N/A	2-44
9246-9513-000	N/A	N/A	2-43
9246-9513-001	N/A	N/A	2-45
9247-9513-000	N/A	N/A	2-43
9247-9513-001	N/A	N/A	2-45
9248-9513-000	N/A	N/A	2-46
9249-9513-000	N/A	N/A	2-46
9250-9513-000	N/A	N/A	2-47
9251-9513-000	N/A	N/A	2-47
9262-9513-000	N/A	N/A	2-43
9262-9513-001	N/A	N/A	2-45
9268-9513-000	N/A	N/A	2-47
9274-9513-000	N/A	N/A	2-46
9279-9513-000	N/A	N/A	2-42
9279-9513-001	N/A	N/A	2-44
9280-9513-000	N/A	N/A	2-42
9280-9513-001	N/A	N/A	2-44
9281-9513-000	N/A	N/A	2-46
9301-1063-009	I	107	2-8
9301-1063-109	N	102	2-8
9301-7063-009	I	107	2-8
9301-7063-109	N	102	2-8
9304-1113-013	N/A	N/A	2-25
9304-1113-014	N/A	N/A	2-25
9304-9113-013	N/A	N/A	2-25
9304-9113-014	N/A	N/A	2-25
9307-1113-001	N/A	N/A	2-25
9307-1113-002	N/A	N/A	2-25
9307-9113-001	N/A	N/A	2-25
9307-9113-002	N/A	N/A	2-25
9308-1113-001	N/A	N/A	2-25
9308-1113-003	N/A	N/A	2-25
9308-9113-001	N/A	N/A	2-25
9308-9113-003	N/A	N/A	2-25
9344-9513-000	N/A	N/A	2-42
9344-9513-001	N/A	N/A	2-44
9345-9513-000	N/A	N/A	2-42
9345-9513-001	N/A	N/A	2-44
9346-9513-000	N/A	N/A	2-43
9346-9513-001	N/A	N/A	2-45
9347-9513-000	N/A	N/A	2-43
9347-9513-001	N/A	N/A	2-45
9348-9513-000	N/A	N/A	2-46
9349-9513-000	N/A	N/A	2-46
9350-9513-000	N/A	N/A	2-47
9351-9513-000	N/A	N/A	2-47
9362-9513-000	N/A	N/A	2-43
9362-9513-001	N/A	N/A	2-45
9368-9513-000	N/A	N/A	2-47

AEP P/N INDEX

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
9374-9513-000	N/A	N/A	2-46
9376-1113-001	N/A	N/A	2-25
9376-1113-002	N/A	N/A	2-25
9376-9113-001	N/A	N/A	2-25
9376-9113-002	N/A	N/A	2-25
9379-9513-000	N/A	N/A	2-42
9379-9513-001	N/A	N/A	2-44
9380-9513-000	N/A	N/A	2-42
9380-9513-001	N/A	N/A	2-44
9381-9513-000	N/A	N/A	2-46
9401-1083-010	H	101	2-9
9401-1083-109	H	101	2-9
9401-1083-210	H	101	2-8
9401-1583-010	M	122	2-9
9401-1583-109	M	122	2-9
9401-7083-010	H	101	2-9
9401-7083-109	H	101	2-9
9401-7083-210	H	101	2-8
9401-7583-010	M	122	2-9
9401-7583-109	M	122	2-9
9402-1083-009	H	101	2-11
9402-1083-010	H	101	2-11
9402-1583-009	M	122	2-11
9402-1583-010	M	122	2-11
9402-7083-009	H	101	2-11
9402-7083-010	H	101	2-11
9402-7583-009	M	122	2-11
9402-7583-010	M	122	2-11
9404-1113-000	N/A	N/A	2-20
9404-9113-000	N/A	N/A	2-20
9407-1113-000	N/A	N/A	2-20
9407-9113-000	N/A	N/A	2-20
9408-1113-000	N/A	N/A	2-20
9408-1113-002	N/A	N/A	2-20
9408-9113-000	N/A	N/A	2-20
9408-9113-002	N/A	N/A	2-20
9409-1113-000	N/A	N/A	2-26
9409-9113-000	N/A	N/A	2-26
9412-1113-000	N/A	N/A	2-28
9412-9113-000	N/A	N/A	2-28
9413-1113-000	N/A	N/A	2-29
9413-9113-000	N/A	N/A	2-29
9422-1113-000	N/A	N/A	2-28
9422-9113-000	N/A	N/A	2-28
9424-1513-000	N/A	N/A	2-23
9424-9513-000	N/A	N/A	2-23
9425-1513-000	N/A	N/A	2-23
9425-9513-000	N/A	N/A	2-23
9431-1083-009	H	101	2-13
9431-1083-010	H	101	2-13
9431-1583-009	M	122	2-13
9431-1583-010	M	122	2-13
9431-7083-009	H	101	2-13
9431-7083-010	H	101	2-13
9431-7583-009	M	122	2-13
9431-7583-010	M	122	2-13
9432-1113-000	N/A	N/A	2-28
9432-9113-000	N/A	N/A	2-28
9433-1113-000	N/A	N/A	2-30
9433-9113-000	N/A	N/A	2-30
9441-1083-009	H	101	2-13
9441-1083-010	H	101	2-13
9441-1583-009	M	122	2-13
9441-1583-010	M	122	2-13
9441-7083-009	H	101	2-13
9441-7083-010	H	101	2-13
9441-7583-009	M	122	2-13
9441-7583-010	M	122	2-13
9443-1563-009	K	104	2-10
9443-1563-010	K	104	2-10
9443-7563-009	K	104	2-10
9443-7563-010	K	104	2-10
9453-1083-009	H	101	2-12
9453-1083-010	H	101	2-12

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
9453-1583-009	M	122	2-12
9453-1583-010	M	122	2-12
9453-7083-009	H	101	2-12
9453-7083-010	H	101	2-12
9453-7583-009	M	122	2-12
9453-7583-010	M	122	2-12
9454-1513-000	N/A	N/A	2-27
9454-9513-000	N/A	N/A	2-27
9455-1113-000	N/A	N/A	2-26
9455-9113-000	N/A	N/A	2-26
9456-1113-002	N/A	N/A	2-29
9456-9113-002	N/A	N/A	2-29
9476-1113-000	N/A	N/A	2-20
9476-9113-000	N/A	N/A	2-20
9501-1593-009	J	103	2-9
9501-1593-010	J	103	2-9
9501-9593-009	J	103	2-9
9501-9593-010	J	103	2-9
9502-1593-009	J	103	2-11
9502-1593-010	J	103	2-11
9502-9593-009	J	103	2-11
9502-9593-010	J	103	2-11
9504-9113-009	N/A	N/A	2-50
9504-9113-031	N/A	N/A	2-48
9504-9113-034	N/A	N/A	2-48
9504-9113-035	N/A	N/A	2-50
9507-9113-003	N/A	N/A	2-49
9507-9113-004	N/A	N/A	2-49
9507-9113-005	N/A	N/A	2-51
9507-9113-006	N/A	N/A	2-51
9508-9113-001	N/A	N/A	2-50
9508-9113-002	N/A	N/A	2-48
9508-9113-003	N/A	N/A	2-48
9508-9113-011	N/A	N/A	2-50
9513-9113-008	N/A	N/A	2-51
9513-9113-009	N/A	N/A	2-49
9513-9113-012	N/A	N/A	2-49
9513-9113-013	N/A	N/A	2-51
9530-1593-009	J	103	2-12
9530-1593-010	J	103	2-12
9530-9593-009	J	103	2-12
9530-9593-010	J	103	2-12
9533-9113-001	N/A	N/A	2-51
9533-9113-002	N/A	N/A	2-49
9533-9113-003	N/A	N/A	2-49
9533-9113-004	N/A	N/A	2-51
9543-1593-009	L	106	2-10
9543-1593-010	L	106	2-10
9543-9593-009	L	106	2-10
9543-9593-010	L	106	2-10
9576-9113-001	N/A	N/A	2-48
9576-9113-002	N/A	N/A	2-48
9576-9113-003	N/A	N/A	2-50
9576-9113-004	N/A	N/A	2-50
9609-1513-000	N/A	N/A	2-28
9609-9513-000	N/A	N/A	2-28
9610-1213-001	N/A	N/A	2-32
9610-1213-002	N/A	N/A	2-32
9610-1213-003	N/A	N/A	2-32
9610-9213-001	N/A	N/A	2-32
9610-9213-002	N/A	N/A	2-32
9610-9213-003	N/A	N/A	2-32
9613-1523-001	C	30	2-17
9613-1523-002	C	30	2-17
9613-1523-003	C	30	2-17
9613-1523-004	C	30	2-17
9613-1523-005	C	30	2-17
9613-1523-006	C	30	2-17
9613-1523-019	C	30	2-17
9613-1563-009	K	108	2-12
9613-1563-010	K	108	2-12
9613-7563-009	K	108	2-12
9613-7563-010	K	108	2-12
9613-9523-001	C	30	2-17

PART NUMBER	ASSEMBLY PROCEDURE	TRIM CODE	PAGE
9613-9523-002	C	30	2-17
9613-9523-003	C	30	2-17
9613-9523-004	C	30	2-17
9613-9523-005	C	30	2-17
9613-9523-006	C	30	2-17
9613-9523-019	C	30	2-17
9620-9003-151	N/A	N/A	2-54
9646-1513-000	N/A	N/A	2-31
9647-1513-000	N/A	N/A	2-31
9649-1113-000	N/A	N/A	2-31
9650-1113-000	N/A	N/A	2-31
TA-0007	N/A	N/A	14-2
TA-0008-1	N/A	N/A	14-2
TA-0008-4	N/A	N/A	14-2
TA-0008-5	N/A	N/A	14-2
TA-0008-6	N/A	N/A	14-2
TA-0071	N/A	N/A	14-2
TA-0089	N/A	N/A	14-2
TA-0105	N/A	N/A	14-2
TA-0190	N/A	N/A	14-2
TA-0234	N/A	N/A	14-2
TA-0394	N/A	N/A	14-3
TA-0396	N/A	N/A	14-3
TA-0396-1	N/A	N/A	14-3
TA-0396-2	N/A	N/A	14-3
TA-0396-3	N/A	N/A	14-3
TA-0396-4	N/A	N/A	14-3
TA-0397	N/A	N/A	14-2
TA-0398	N/A	N/A	14-2
TA-0432	N/A	N/A	14-2
TA-0453	N/A	N/A	5-8

NOTES

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