

D-SUBMINIATURE COMBINATION CONNECTORS

D-Subminiature Combination Connector Hardware and Options

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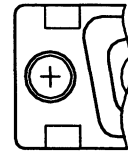
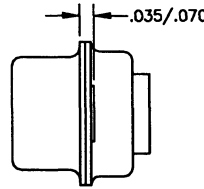
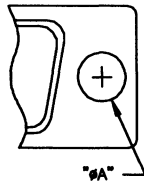
HARDWARE OPTIONS

INCLUDES: THROUGH HOLE

NOTES:

RIVET SHELL SHOWN. REFER TO SHELL DIMENSION PAGE FOR DIMENSIONS OF TAB AND RIVET SHELL.

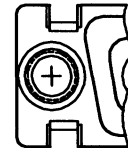
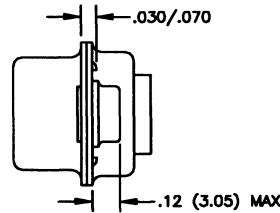
MODIFIER	A DIMENSION	SECURING METHOD
BLANK	.120 (3.05)	RIVET
A	.165 (4.19)	TAB



INCLUDES: #4-40 CLINCH NUT

MATERIAL: Low Carbon Steel
FINISH: Yellow Chromate over Zinc

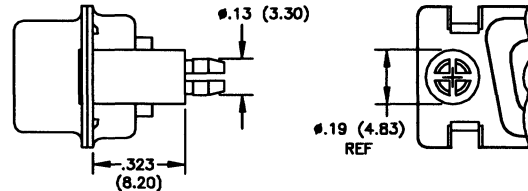
MODIFIER
B



INCLUDES: #4-40 SWAGED STANDOFF FASTENER

MATERIAL: Phosphor Bronze
FINISH: Nickel Plating

MODIFIER
C



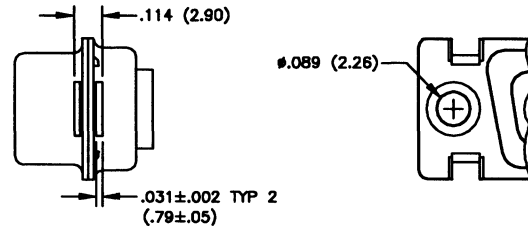
.19 (4.83) REF

RECOMMEND .120 (3.05) PLATED THRU HOLE FOR PRINTED CIRCUIT BOARD

INCLUDES: DUAL FLOAT MOUNT WASHER

MATERIAL: Cold Rolled Steel
FINISH: Yellow Chromate over Zinc

MODIFIER
D



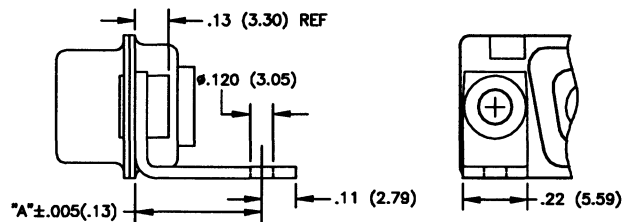
.032 (.81) Diametrical Float

INCLUDES: #4-40 STANDOFF

MATERIAL: Brass Alloy
FINISH: Yellow Chromate over Zinc

RIGHT ANGLE BRACKET
MATERIAL: Cold Rolled Steel
FINISH: Yellow Chromate over Zinc

MODIFIER	A DIMENSION
E	.420 (10.67)
F	.395 (10.03)*
F	.340 (8.64)



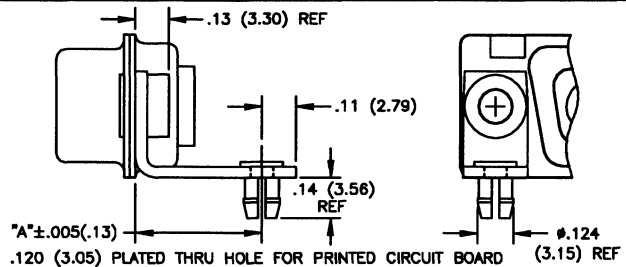
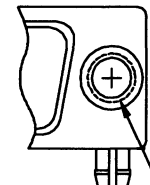
*FOR 'D' SIZE SHELL ONLY

INCLUDES: #4-40 STANDOFF

MATERIAL: Brass Alloy
FINISH: Yellow Chromate over Zinc

RIGHT ANGLE BRACKET &
PUSH-ON FASTENER
MATERIAL: Cold Rolled Steel
FINISH: Yellow Chromate over Zinc

MODIFIER	A DIMENSION
G	.420 (10.67)
H	.395 (10.03)*
H	.340 (8.64)



*FOR 'D' SIZE SHELL ONLY

RECOMMEND .120 (3.05) PLATED THRU HOLE FOR PRINTED CIRCUIT BOARD

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES (mm) TOLERANCES ARE: .XX±.01 .XXX±.005 REF-REFERENCE DIMENSIONS, NO TOLERANCE APPLIES



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HARDWARE OPTIONS

INCLUDES: INTERNAL D-SUB GUIDE PIN
 MATERIAL: Stainless Steel
 FINISH: Passivate
 #4-40 SWAGED STANDOFF FASTENER
 MATERIAL: Phosphor Bronze
 FINISH: Nickel Plating

MODIFIER	
J	

RECOMMEND .120 (3.05) PLATED THRU HOLE FOR PRINTED CIRCUIT BOARD

INCLUDES: INTERNAL D-SUB GUIDE BUSHING
 MATERIAL: Brass Alloy or Steel
 FINISH: Yellow Chromate over Zinc
 RIGHT ANGLE BRACKET
 MATERIAL: Cold Rolled Steel
 FINISH: Yellow Chromate over Zinc

MODIFIER	A DIMENSION
K	.420 (10.67)
L	.395 (10.03)*
L	.340 (8.64)

RECOMMEND .120 (3.05) PLATED THRU HOLE FOR PRINTED CIRCUIT BOARD *FOR 'D' SIZE SHELL ONLY

INCLUDES: INTERNAL D-SUB GUIDE BUSHING
 MATERIAL: Brass Alloy or Steel
 FINISH: Yellow Chromate over Zinc
 RIGHT ANGLE BRACKET &
 PUSH-ON FASTENER
 MATERIAL: Cold Rolled Steel
 FINISH: Yellow Chromate over Zinc

MODIFIER	A DIMENSION
M	.420 (10.67)
N	.395 (10.03)*
N	.340 (8.64)

RECOMMEND .120 (3.05) PLATED THRU HOLE FOR PRINTED CIRCUIT BOARD *FOR 'D' SIZE SHELL ONLY

INCLUDES: SCREW LOCK KIT PLUG (SCREW AND RETAINER)
 MATERIAL: Cold Rolled Steel
 FINISH: Yellow Chromate over Zinc

Note:
 May be ordered separately under part # P205980-1

MODIFIER	
P	

INCLUDES: SCREW LOCK KIT RECEPTACLE
 MATERIAL: Cold Drawn Steel
 FINISH: Yellow Chromate over Zinc

Note:
 May be ordered separately under part # P20418-2

MODIFIER	
Q	

GROUND STRAPS—REFER TO SUCCEEDING PAGES

MODIFIER	
R	

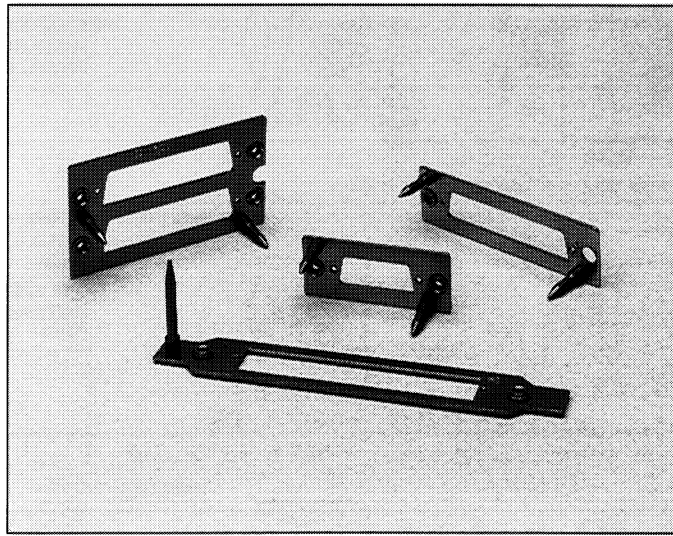
GUIDE PIN PLATES—REFER TO SUCCEEDING PAGES

MODIFIER	PLATE
S	STANDARD
T	REVERSED

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES (mm) TOLERANCES ARE: .XX±.01 .XXX±.005 REF—REFERENCE DIMENSIONS, NO TOLERANCE APPLIES



D-SUBMINIATURE GUIDE PIN PLATES



To control alignment in blindmate applications, Phoenix offers a wide variety of guide pin plates that align D-subminiature housings prior to mating. Phoenix guide pin plates are available to accommodate all standard D-subminiature shell sizes, as well as dual configurations. Consult the factory for custom applications or optional housing requirements.

Contents:

Guide Pin Plate

Specifications - Male

Specifications - Female

D – SUBMINIATURE GUIDE PIN PLATES (MALE)

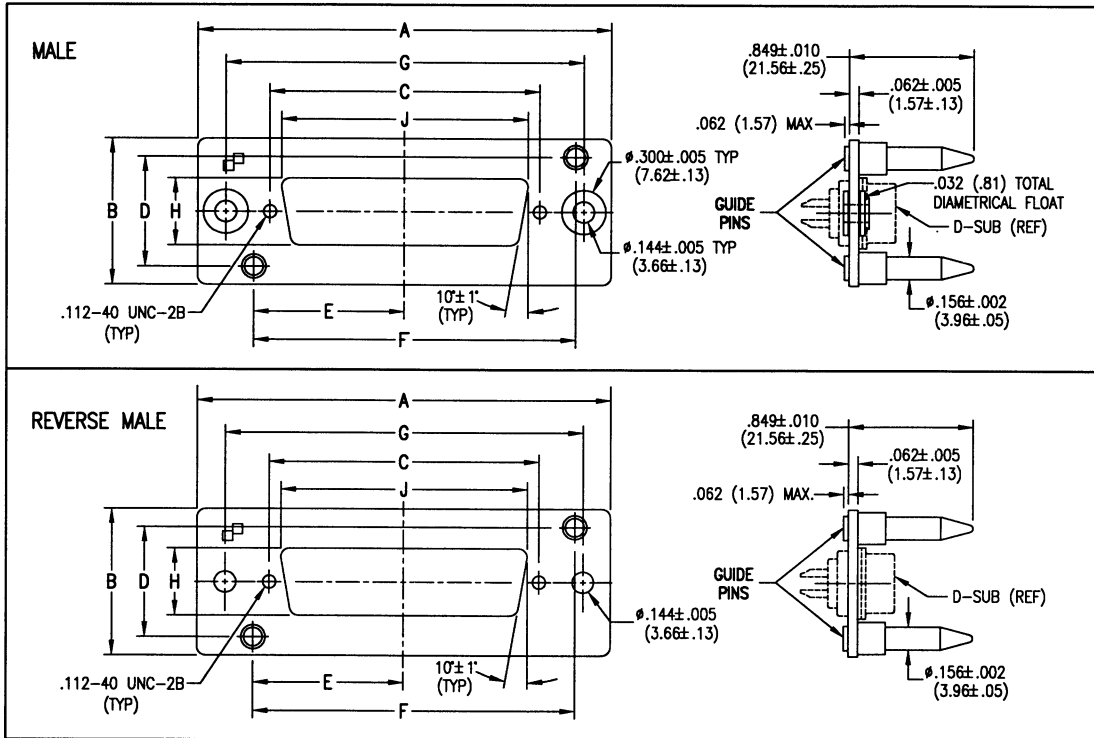
SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

MATERIALS

Plate: Cold Rolled Steel, No. 2 Temper, No. 4 Finish, per ASTM A 620.
 Washer: Cold Rolled Steel, UNS #G10080 through G10180 per ASTM A 109.
 Bushing: Cold Rolled Steel per ASTM A 108, SAE 12L14.

FINISHES/COLORS

Plate: Yellow Chromate over Zinc, Class SC2 per ASTM B 633.
 Washer: Yellow Chromate over Zinc, Class SC2 per ASTM B 633.
 Bushing: Passivate, Type IV, per QQ-P-35.



Shell Size	Part No.	Reverse Part No.	A	B	C	D	E	F	G	H	J
			±.015 (±.38)	±.015 (±.38)	±.005 (±.13)	±.003 (±.08)	±.005 (±.13)	±.003 (±.08)	±.005 (±.13)	±.005 (±.13)	±.005 (±.13)
E	PE22203	PE22203-9	1.953 (49.61)	1.000 (25.40)	.984 (24.99)	.750 (19.05)	.734 (18.64)	1.335 (33.91)	1.578 (40.08)	.458 (11.63)	.827 (21.01)
A	PA22213	PA22213-9	2.281 (57.94)	1.000 (25.40)	1.312 (33.32)	.750 (19.05)	.898 (22.81)	1.663 (42.24)	1.906 (48.41)	.458 (11.63)	1.153 (29.29)
B	PB22255	PB22255-9	2.820 (71.63)	1.000 (25.40)	1.852 (47.04)	.750 (19.05)	1.168 (29.67)	2.203 (55.96)	2.446 (62.13)	.458 (11.63)	1.695 (43.05)
C	PC22070	PC22070-9	3.468 (88.09)	1.000 (25.40)	2.500 (63.50)	.750 (19.05)	1.492 (37.90)	2.851 (72.42)	3.094 (78.59)	.458 (11.63)	2.342 (59.49)
D	PD21962	PD21962-9	3.375 (85.73)	1.125 (28.58)	2.406 (61.11)	.874 (22.20)	1.437 (36.50)	2.749 (69.82)	3.000 (76.20)	.569 (14.45)	2.248 (57.10)



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D – SUBMINIATURE GUIDE PIN PLATES (FEMALE)

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

MATERIALS

Plate: Cold Rolled Steel, No. 2 Temper, No. 4 Finish, per ASTM A 620.

Washer: Cold Rolled Steel, UNS #G10080 through G10180 per ASTM A 109.

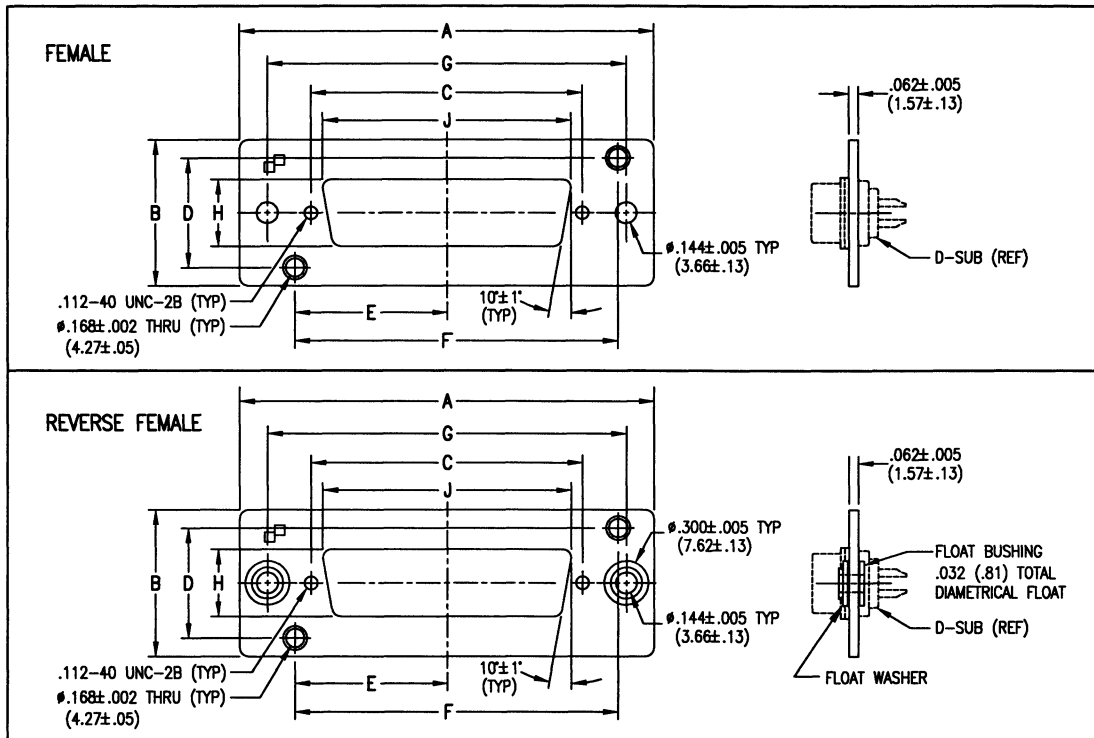
Bushing: Cold Rolled Steel per ASTM A 108, SAE 12L14.

FINISHES/COLORS

Plate: Yellow Chromate over Zinc, Class SC2 per ASTM B 633.

Washer: Yellow Chromate over Zinc, Class SC2 per ASTM B 633.

Bushing: Passivate, Type IV, per QQ-P-35.



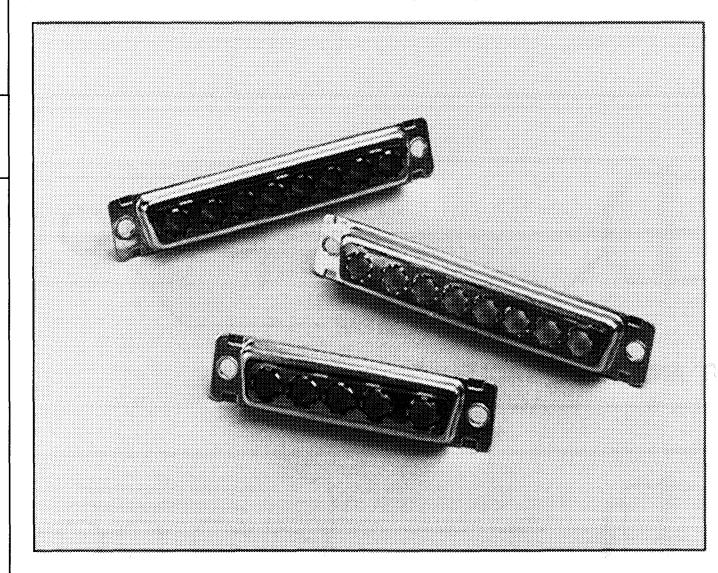
Shell Size	Part No.	Reverse Part No.	A ±.015 (±.38)	B ±.015 (±.38)	C ±.005 (±.13)	D ±.003 (±.08)	E ±.005 (±.13)	F ±.003 (±.08)	G ±.005 (±.13)	H ±.005 (±.13)	J ±.005 (±.13)
E	PE22204	PE22204-9	1.953 (49.61)	1.000 (25.40)	.984 (24.99)	.750 (19.05)	.734 (18.64)	1.335 (33.91)	1.578 (40.08)	.458 (11.63)	.827 (21.01)
A	PA22214	PA22214-9	2.281 (57.94)	1.000 (25.40)	1.312 (33.32)	.750 (19.05)	.898 (22.81)	1.663 (42.24)	1.906 (48.41)	.458 (11.63)	1.153 (29.29)
B	PB22254	PB22254-9	2.820 (71.63)	1.000 (25.40)	1.852 (47.04)	.750 (19.05)	1.168 (29.67)	2.203 (55.96)	2.446 (62.13)	.458 (11.63)	1.695 (43.05)
C	PC22071	PC22071-9	3.468 (88.09)	1.000 (25.40)	2.500 (63.50)	.750 (19.05)	1.492 (37.90)	2.851 (72.42)	3.094 (78.59)	.458 (11.63)	2.342 (59.49)
D	PD21961	PD21961-9	3.375 (85.73)	1.125 (28.58)	2.406 (61.11)	.874 (22.20)	1.437 (36.50)	2.749 (69.82)	3.000 (76.20)	.569 (14.45)	2.248 (57.10)



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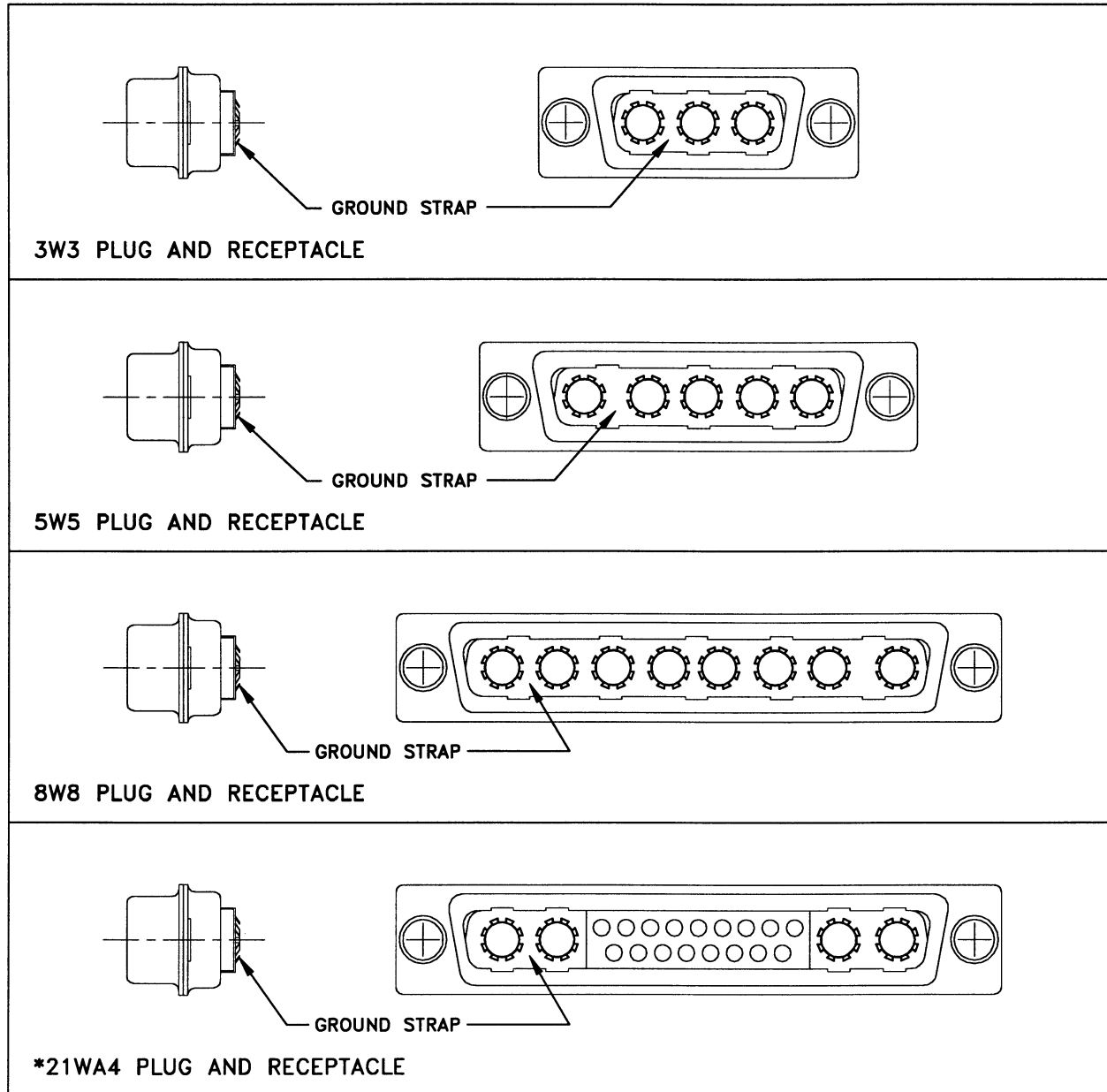
Conductive ground straps are available on combination connectors for improved shielding and grounding of RF and microwave size 8 contacts. These connector housings feature excellent continuity between the RF contact's outer conductor and the D-subminiature connector shell. Grounding straps are manufactured from beryllium copper and are also available in custom designs for unique applications.

Contents:

Selection Guide

GROUNDING STRAPS

To select a ground strap for these combination connectors shown, use Hardware Modifier R.

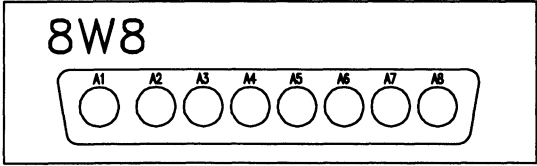
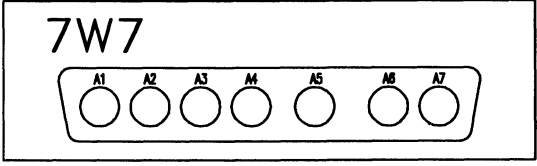
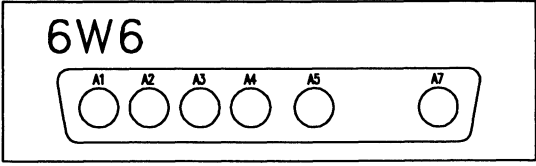
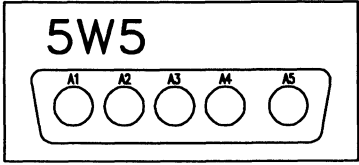
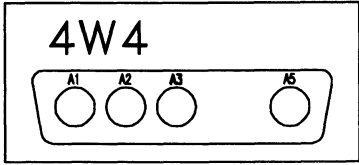
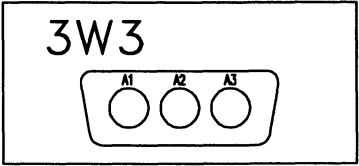
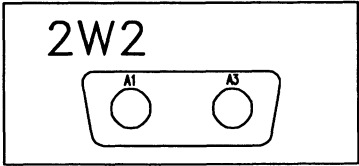


*Consult factory for other options and availability.



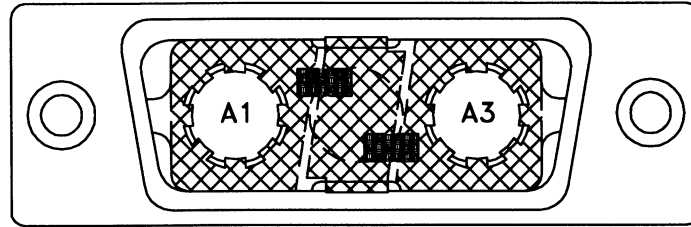
EMI/RFI BARRIER PLATING

To enhance EMI/RFI protection, a special manufacturing plating process can be selected for treating size 8 connector insulators on 2W2 through 8W8 configurations. To choose this insulator option, select series prefix "E" when specifying your part number.

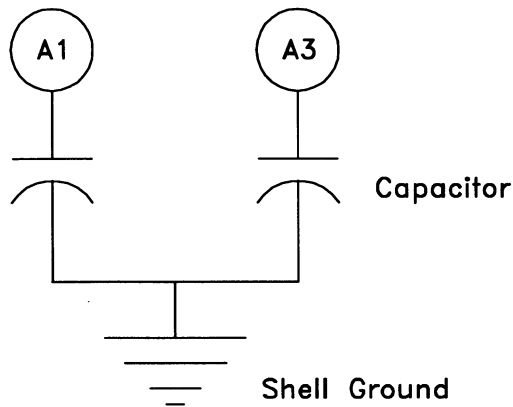


CAPACITIVELY DECOUPLED CAPABILITIES

A capability for reducing signal noise on size 8 coax and power contacts is available through the use of capacitively decoupled combination connectors. An electrical path is established between the D-subminiature shell and any coax or high power contact which shunts high frequency noise to ground while blocking the DC path. An example of a 2 position combination connector with both size 8 contacts decoupled is shown below. Application engineering is available for unique requirements.



A Size, 2 Position Combination Connector



Both Size 8 Contacts Decoupled

Filtering of combination connectors is available for commercial applications requiring protection against EMI and RFI. Our technical staff can assist in matching your filter requirements in signal and or power and RF contacts.



D – SUBMINIATURE NON–MAGNETIC CONNECTORS

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE
CONNECTOR IS COMPATIBLE WITH THE REQUIREMENTS OF MIL–24308, LATEST REVISION.

Combination D–subminiature connectors are available for Non–Magnetic applications. These connectors are built with selected materials and specially processed to keep residual magnetism to levels below 20 gamma. When ordering, be sure to specify a Non–magnetic finish code modifier for 20 gage signal contacts, coax contacts and a D–subminiature shell. Refer to part number selection system for applicable code modifier.

SHELL

Materials: Copper Alloy per UNS No. C26000.

Plating: Yellow Chromate over Cadmium per QQ–P–416.

Signal Contacts: Copper Alloy per ASTM B 140.

Signal Retention Ring: Copper Alloy per QQ–C–530 with Silvery Lubricant.

Insert: Thermoplastic Type GPT–30F per MIL 24519.



MILITARY COMBINATION CONNECTORS


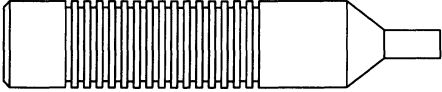

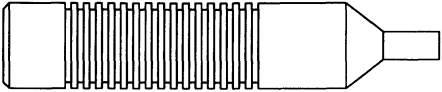
The Phoenix Company is listed as an approved source of supply on the following DESC drawings covering combination connectors. This cross reference is intended for convenience only. Items must be purchased under the DESC part number to ensure conformance.

DESC Drawing Part Number	PHOENIX Equivalent Part Number	DESC Drawing Part Number	PHOENIX Equivalent Part Number
85040GBEPT	PAMMHW7W2P	89075GULPT	PAMMHW3W3P
85040GBEST	PAMMHW7W2S	89075GULST	PAMMHW3W3S
85040GBEPR	PAMMW7W2P	89075GULPR	PAMMW3W3P
85040GBESR	PAMMW7W2S	89075GULSR	PAMMW3W3S
85041GBEPT	PAMMHW11W1P	89076GBEPT	PBMMHW9W4P
85041GBEST	PAMMHW11W1S	89076GBEST	PBMMHW9W4S
85041GBEPR	PAMMW11W1P	89076GBEPR	PBMMW9W4P
85041GBESR	PAMMW11W1S	89076GBESR	PBMMW9W4S
85043GULPT	PBMMHW5W5P	89077GBEPT	PBMMHW21W1P
85043GULST	PBMMHW5W5S	89077GBEST	PBMMHW21W1S
85043GULPR	PBMMW5W5P	89077GBEPR	PBMMW21W1P
85043GULSR	PBMMW5W5S	89077GBESR	PBMMW21W1S
85044GBEPT	PBMMHW17W2P	89078GBEPT	PCMMHW13W6P
85044GBEST	PBMMHW17W2S	89078GBEST	PCMMHW13W6S
85044GBEPR	PBMMW17W2P	89078GBEPR	PCMMW13W6P
85044GBESR	PBMMW17W2S	89078GBESR	PCMMW13W6S
85045GBEPT	PBMMHW13W3P	89079GBEPT	PCMMHW17W5P
85045GBEST	PBMMHW13W3S	89079GBEST	PCMMHW17W5S
85045GBEPR	PBMMW13W3P	89079GBEPR	PCMMW17W5P
85045GBESR	PBMMW13W3S	89079GBESR	PCMMW17W5S
85047GULPT	PCMMHW8W8P	89080GBEPT	PCMMHW25W3P
85047GULST	PCMMHW8W8S	89080GBEST	PCMMHW25W3S
85047GULPR	PCMMW8W8P	89080GBEPR	PCMMW25W3P
85047GULSR	PCMMW8W8S	89080GBESR	PCMMW25W3S
85048GBEPT	PCMMHW21WA4P	89081GBEPT	PCMMHW27W2P
85048GBEST	PCMMHW21WA4S	89081GBEST	PCMMHW27W2S
85048GBEPR	PCMMW21WA4P	89081GBEPR	PCMMW27W2P
85048GBESR	PCMMW21WA4S	89081GBESR	PCMMW27W2S
85054GBEPT	PDMMHW24W7P	89082GBEPT	PDMMHW36W4P
85054GBEST	PDMMHW24W7S	89082GBEST	PDMMHW36W4S
85054GBEPR	PDMMW24W7P	89082GBEPR	PDMMW36W4P
85054GBESR	PDMMW24W7S	89082GBESR	PDMMW36W4S
89074GBEPT	PEMMHW5W1P	89083GBEPT	PDMMHW43W2P
89074GBEST	PEMMHW5W1S	89083GBEST	PDMMHW43W2S
89074GBEPR	PEMMW5W1P	89083GBEPR	PDMMW43W2P
89074GBESR	PEMMW5W1S	89083GBESR	PDMMW43W2S



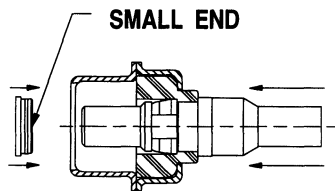
STABILIZING RINGS

A stabilizing ring is used to reduce the radial play or misalignment of a plug within a male housing. Palco Connector manufactures two stabilizing ring options machined to exacting tolerances, accommodating the PDM, PDM (50 Ohm), PDM (75 Ohm) and PkZ, or PDM (High Power), D-subminiature series. Palco stabilizing rings can also be used with other industry standard, size-8 contacts in D-Subminiature combination housings.

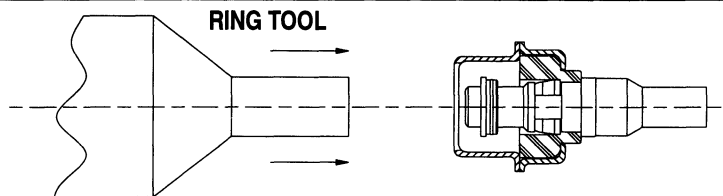
<p>STABILIZING RING 15-03010</p>	<p>TOOL: TO626</p>
<p style="text-align: center;"></p> <p style="text-align: center;">For use with 15, 16, 24, 26 Series Standard Connectors Material: Delrin 150 Color: Natural</p>	<p style="text-align: center;"></p> <p style="text-align: center;">For use with part number 15-03010</p>
<p>STABILIZING RING 15-03012</p>	<p>TOOL: TO627</p>
<p style="text-align: center;"></p> <p style="text-align: center;">For use with 15 Series High Power Connectors Material: Delrin 150 Color: Black</p>	<p style="text-align: center;"></p> <p style="text-align: center;">For use with part number 15-03012</p>

INSTALLATION PROCEDURE

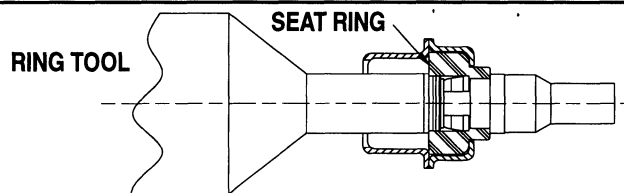
STEP 1: Install ring with small end first over coax body.



STEP 2: Press over body diameter finger tight.



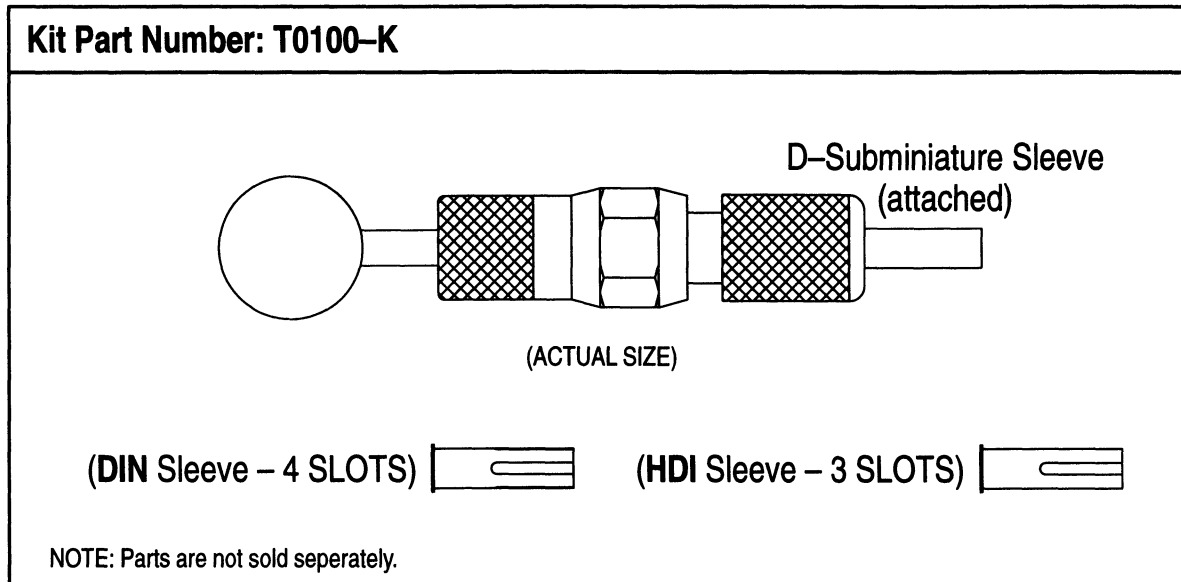
STEP 3: Seat ring into housing with appropriate tool as shown.



CONTACT EXTRACTION TOOL

(T0100-K ASSEMBLY)

The contact extraction tool is a hand-held instrument used to remove a size 8 coaxial contact from a housing. Exclusive to "Industry Standard" tools, the Phoenix Extraction Tool Kit includes three interchangeable sleeves to accommodate D-Subminiature combination, DIN and HDI (High Density) housing options.



Procedure: Insert the tool (sleeve end) into the mating face of the contact and push. This motion will compress the retaining ring and the tool will extract the contact.

