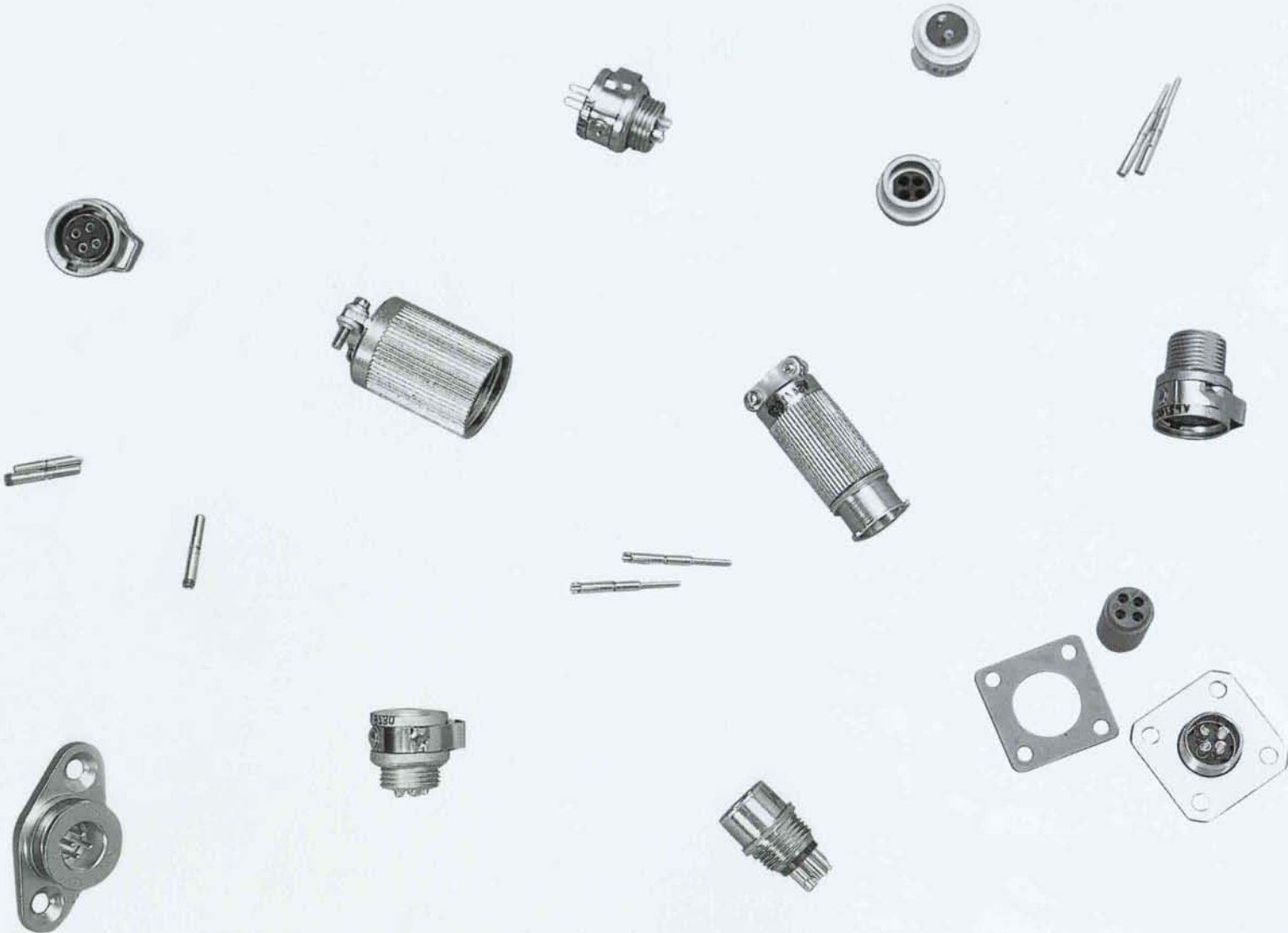


# SNAP-LOCK



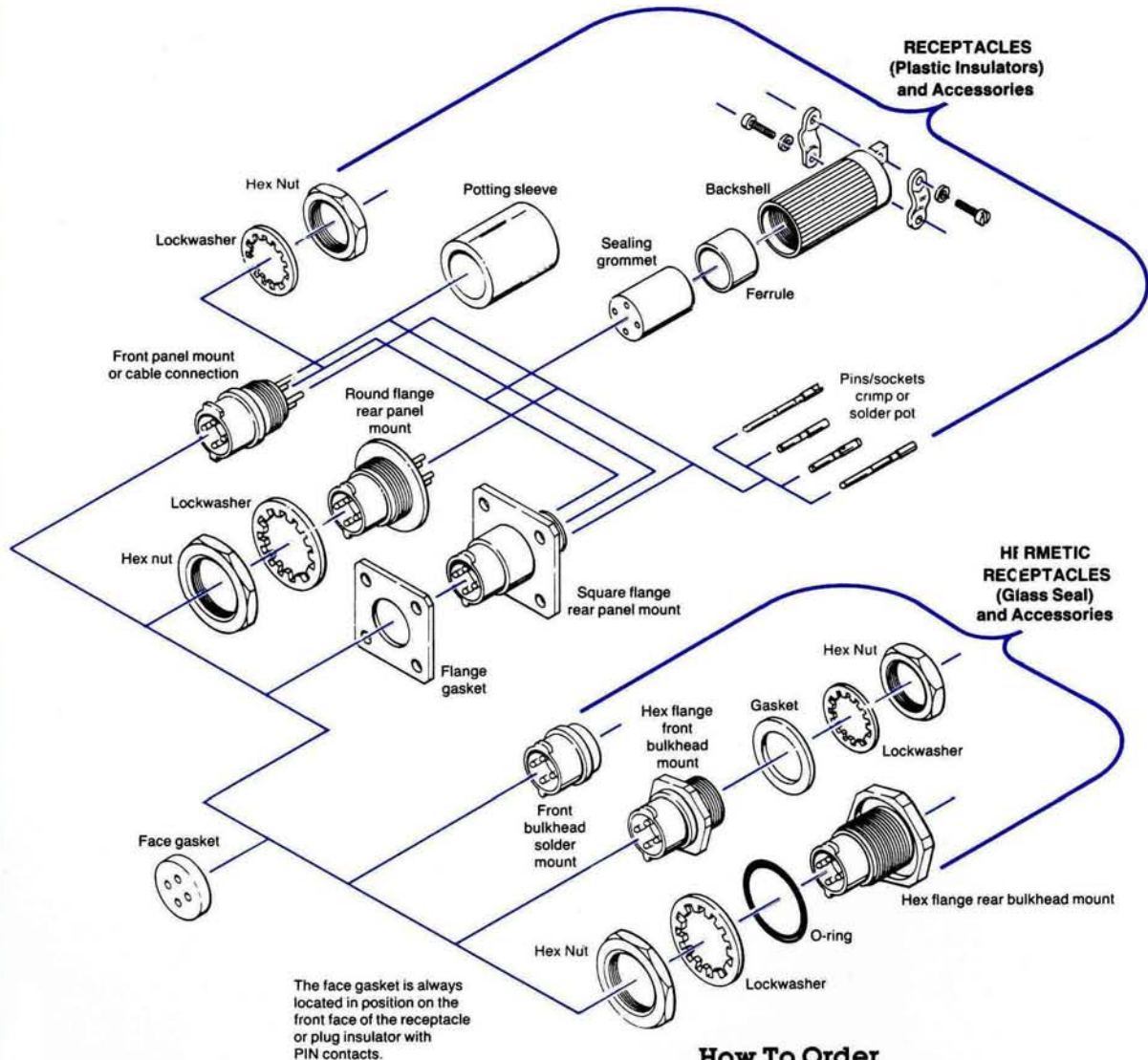
## MINIATURE CIRCULAR CONNECTORS



**WPI® Viking**

## SNAP-LOCK Connectors

Mounting styles  
and accessories  
(available in 2  
shell sizes)



### How To Order

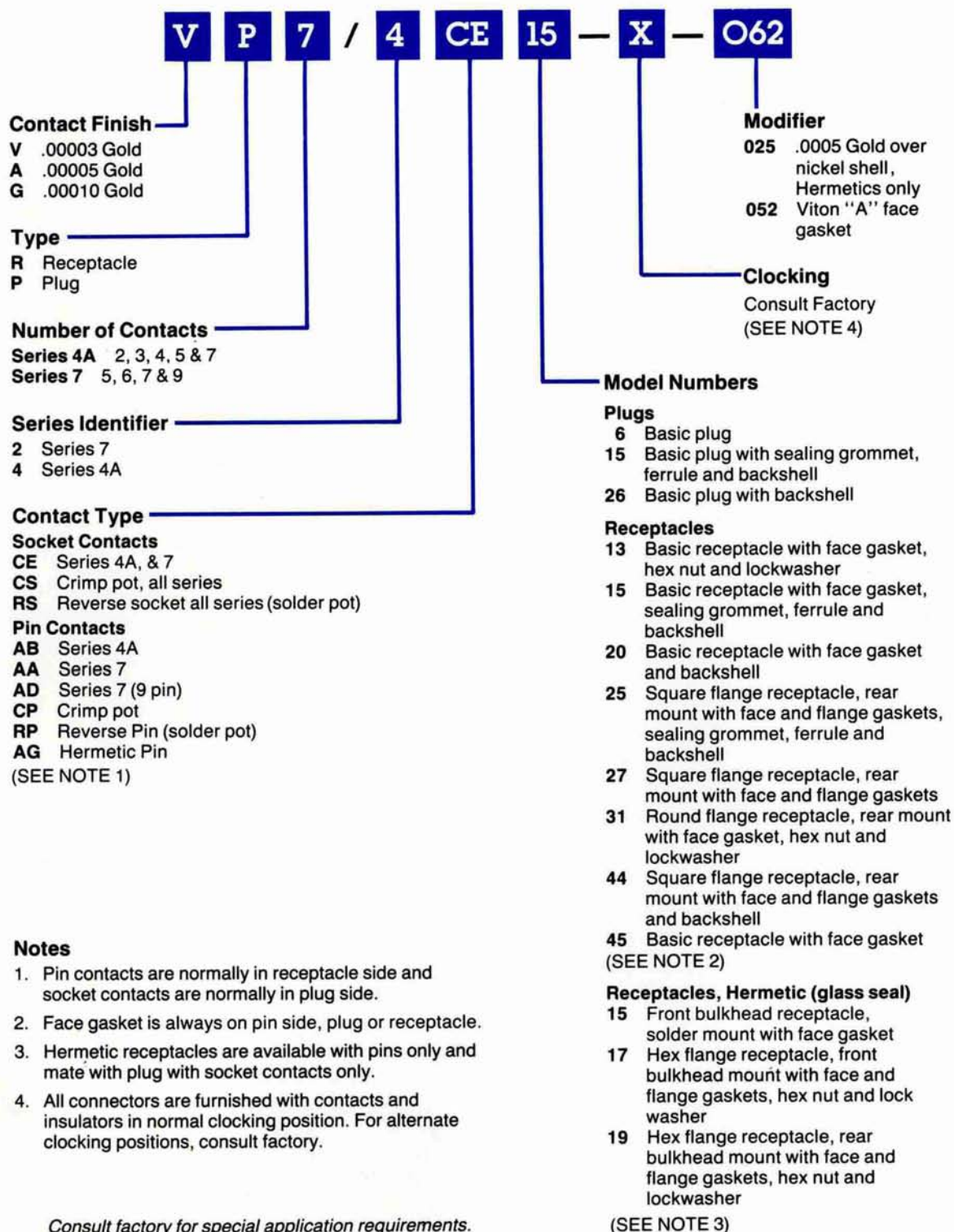
All plugs and receptacles with applicable hardware, accessories and contacts are reflected above. You may procure parts two ways: Basic plug and receptacles, accessories purchased separately; basic plug and receptacles with accessories. See index below to locate item desired and part number. Do not create a part number from the Part Number Explanation on the opposite page.

#### Page Index

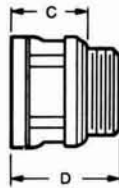
Page Index	Page
Plugs	4
Receptacles	4&5
Hermetic Receptacles (Glass Seal)	6
Custom Connectors	7
Accessories and Contacts	8
Contact Arrangements	9
Materials and Specifications	10
Tools	10
Wiring Procedures	11

## Part Number Explanation

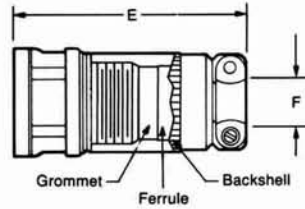
This chart is for reference only. Do not create catalog numbers from this chart without factory validation of catalog number.



## Plug



Basic Plug



Basic Plug with sealing grommet, ferrule and backshell

	A	B	C	D	E	F	Part Numbers			
							Solder Pot Contacts		Crimp Removable Contacts	
							Sockets	Pins	Sockets	Pins
<b>4A Series 2, 3, 4, 5 &amp; 7 Contacts</b>	.56 (14.2)	.72 (18.3)	.39 (9.9)	.56 (14.2)	1.23 (31.2)	.26 (6.6)	VP*/4CE†	VP*/4RP†	VP*/4CS†	VP*/4CP†
<b>7 Series 5, 6 &amp; 7 Contacts</b>	.81 (20.6)	.99 (25.1)	.41 (10.4)	.62 (15.7)	1.36 (34.5)	.38 (9.6)	VP*/2CE†	VP*/2RP†	VP*/2CS†	VP*/2CP†
<b>7 Series 9 Contacts</b>	.81 (20.6)	.99 (25.1)	.41 (10.4)	.62 (15.7)	1.36 (34.5)	.38 (9.6)	VP9/2CE†	VP9/2RP†	VP9/2CS†	VP9/2CP†

\* Indicate number of contacts.

† Indicate model number as follows:

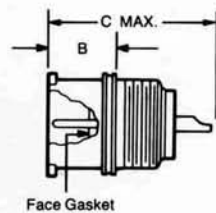
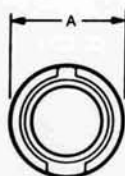
6: Basic plug, no backshell.

26: Basic plug with backshell. Backshell length: 4A Series—.84, 7 Series—.95

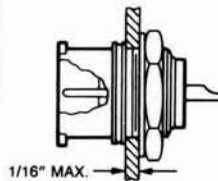
15: Basic plug with backshell, sealing grommet and ferrule. Backshell lengths same as 26 above.

## Receptacle

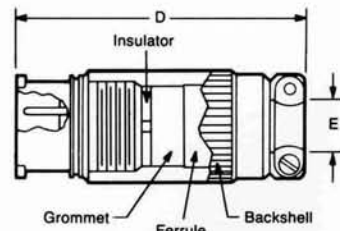
Panel Mount or  
In-line Cable  
Connectors



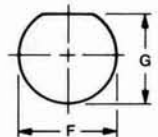
Basic Receptacle



Basic Receptacle  
panel mounted



Basic Receptacle as in-line  
cable connector with sealing grommet,  
ferrule and backshell



Panel Hole

	A	B	C	D	E	F	G	Part Numbers			
								Solder Pot Contacts		Crimp Removable Contacts	
								Pins	Sockets	Pins	Sockets
<b>4A Series 2, 3, 4, 5 &amp; 7 Contacts</b>	.50 (12.7)	.32 (8.1)	.83 (21.1)	1.40 (35.6)	.26 (6.6)	.442 (11.2)	.416 (10.6)	VR*/4AB†	VR*/4RS†	VR*/4CP†	VR*/4CS†
<b>7 Series 5, 6 &amp; 7 Contacts</b>	.72 (18.3)	.34 (8.6)	.87 (22.1)	1.54 (39.1)	.38 (9.6)	.631 (16.0)	.605 (15.4)	VR*/2AA†	VR*/2RS†	VR*/2CP†	VR*/2CS†
<b>7 Series 9 Contacts</b>	.72 (18.3)	.34 (8.6)	.92 (23.4)	1.54 (39.1)	.38 (9.6)	.631 (16.0)	.605 (15.4)	VR9/2AD†	VR9/2RS†	VR9/2CP†	VR9/2CS†

\* Indicate number of contacts.

† Indicate model number as follows:

45: Basic receptacle, no hardware.

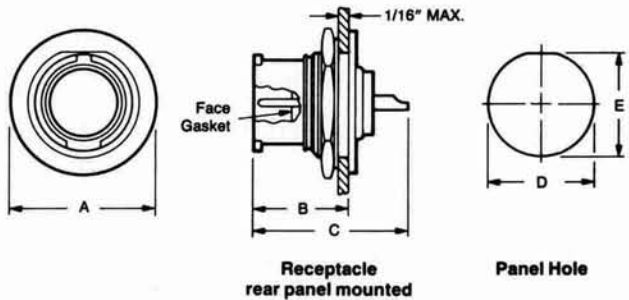
13: Basic receptacle with hex nut and lockwasher for panel mount.

20: Basic receptacle with backshell. Backshell length: 4A Series—1.08, 7 Series—1.20

15: Basic receptacle with backshell, sealing grommet and ferrule. Backshell length same as 20 above.

# Receptacle

Round Flange,  
Rear Panel Mount

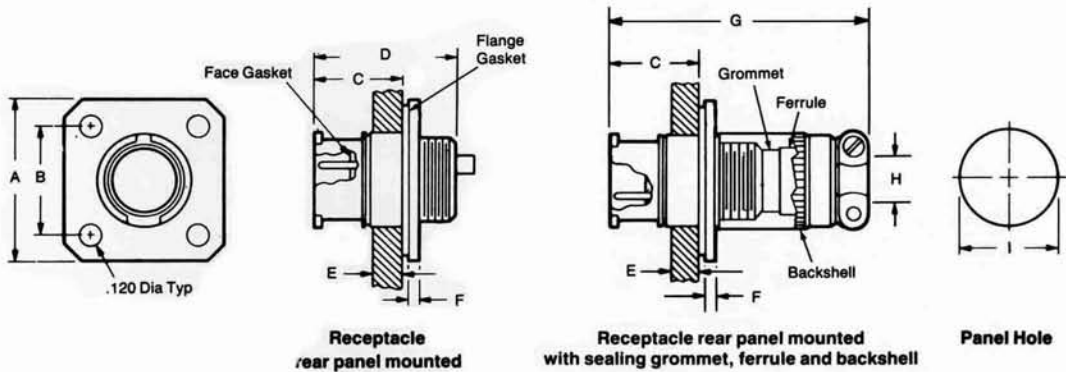


	A	B	C	D	E	Part Numbers			
						Solder Pot Contacts		Crimp Removable Contacts	
						Pins	Sockets	Pins	Sockets
4A Series 2, 3, 4, 5 & 7 Contacts	.75 (19.2)	.49 (12.4)	.82 (20.8)	.570 (14.5)	.537 (13.6)	VR*/4AB31	VR*/4RS31	VR*/4CP31	VR*/4CS31

\* Indicate the number of contacts.

# Receptacle

Square Flange,  
Rear Panel Mount



	A	B	C	D	E	F	G	H	I	Part Numbers			
										Solder Pot Contacts		Crimp Removable Contacts	
										Pins	Sockets	Pins	Sockets
4A Series 2, 3, 4, 5 & 7 Contacts	.87 (22.1)	.594 (15.1)	.50 (12.7)	.83 (21.1)	.187 (4.7)	.04 (1.0)	1.41 (35.8)	.26 (6.6)	.502 (12.7)	VR*/4AB†	VR*/4RS†	VR*/4CP†	VR*/4CS†
7 Series 5, 6 & 7 Contacts	1.00 (25.4)	.738 (18.7)	.59 (15.0)	.87 (22.1)	.250 (6.3)	.04 (1.0)	1.62 (41.2)	.38 (9.6)	.730 (18.5)	VR*/2AA†	VR*/2RS†	VR*/2CP†	VR*/2CS†
7 Series 9 Contacts	1.00 (25.4)	.738 (18.7)	.59 (15.0)	.92 (23.4)	.250 (6.3)	.04 (1.0)	1.62 (41.2)	.38 (9.6)	.730 (18.5)	VR9/2AD†	VR9/2RS†	VR9/2CP†	VR9/2CS†

\* Indicate number of contacts.

† Indicate model number as follows:

27: Receptacle with flange gasket.

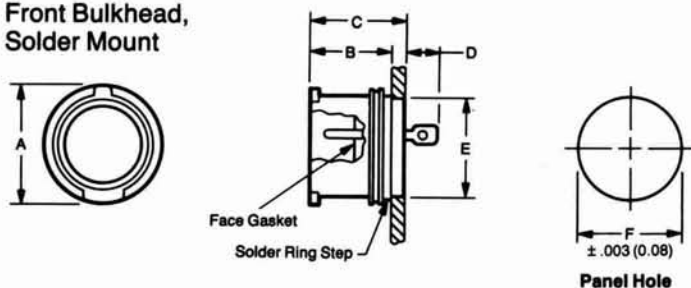
44: Receptacle with flange gasket and backshell. Hood length: 4A Series—.84, 7 Series—.95.

25: Receptacle with flange gasket, backshell, sealing grommet and ferrule. Backshell length same as 44, above.

## Hermetic Receptacles

Glass Seal  
(Pin Contacts)

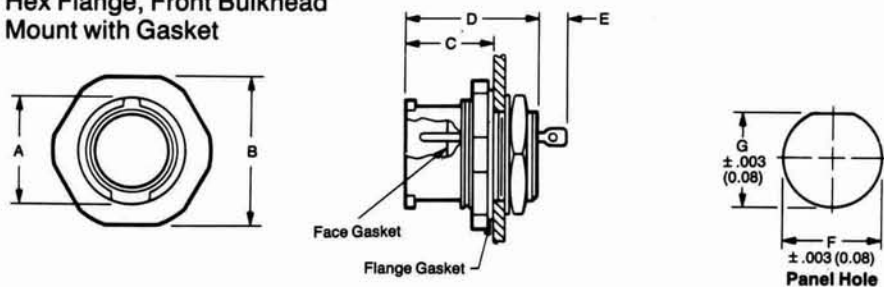
### Front Bulkhead, Solder Mount



	A	B	C	D	E	F	Part Number
<b>4A Series</b> 2, 3, 4, 5 & 7 Contacts	.50 (12.7)	.34 (8.6)	.40 (10.2)	.14 (3.5)	.420 (10.7)	.430 (10.9)	VR*/4AG15

\* Indicate number of contacts.

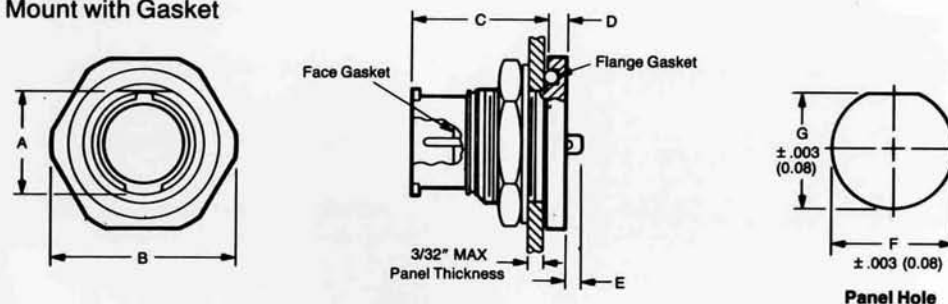
### Hex Flange, Front Bulkhead Mount with Gasket



	A	B	C	D	E	F	G	Part Number
<b>4A Series</b> 2, 3, 4, 5 & 7 Contacts	.50 (12.7)	.69 (17.5)	.38 (9.6)	.60 (15.2)	.15 (3.8)	.442 (11.2)	.416 (10.6)	VR*/4AG17
<b>7 Series</b> 5, 6 & 7 Contacts	.72 (18.3)	.75 (19.0)	.44 (11.2)	.75 (19.0)	.15 (3.8)	.631 (16.0)	.605 (15.4)	VR*/2AG17
<b>7 Series</b> 9 Contacts	.72 (18.3)	.75 (19.0)	.44 (11.2)	.75 (19.0)	.15 (3.8)	.631 (16.0)	.605 (15.4)	VR9/2AG17

\* Indicate number of contacts.

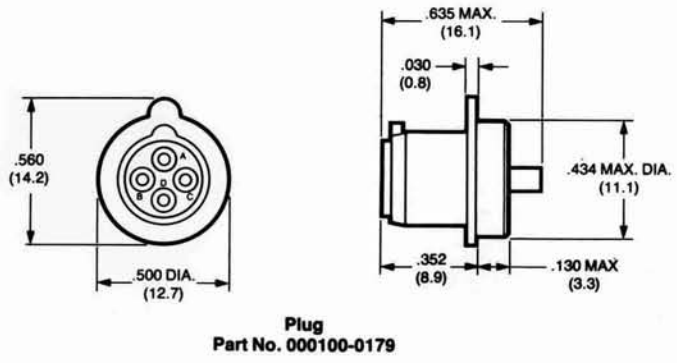
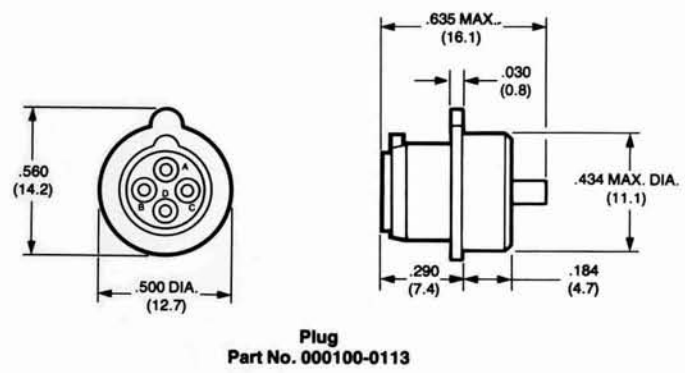
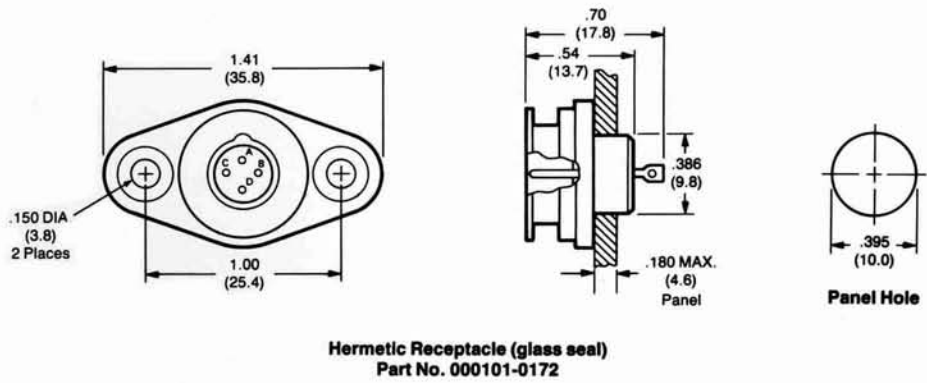
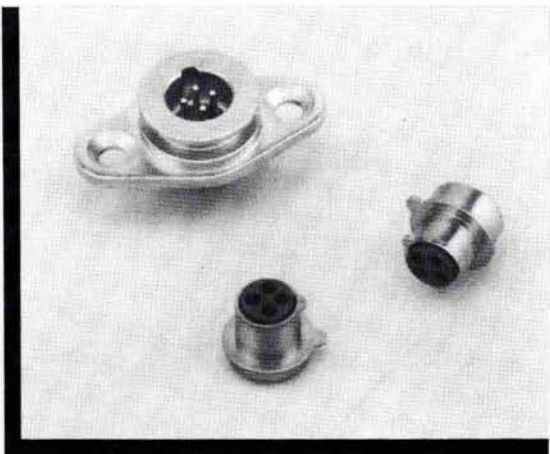
### Hex Flange, Rear Bulkhead Mount with Gasket



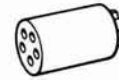
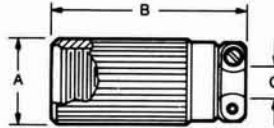
	A	B	C	D	E	F	G	Part Number
<b>4A Series</b> 2, 3, 4, 5 & 7 Contacts	.50 (12.7)	.88 (22.3)	.62 (15.7)	.09 (2.3)	.03 (.76)	.570 (14.5)	.537 (13.6)	VR*/4AG19

\* Indicate number of contacts.

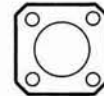
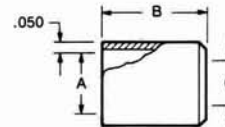
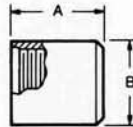
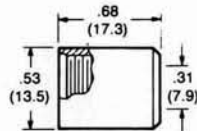
Modified SNAP-LOCK connectors have proven to be very suitable for special applications requiring a rugged, high density connecting device. This page features a custom glass seal receptacle and mating plugs used in a hydraulic system application.



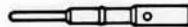
# Accessories and Contacts



	Lockwasher	Hex Nut	Hood				Sealing Grommet		Ferrule
	Part Number	Part Number	A	B	C	Part Number	No. of Contacts	Part Number	Part Number
4A Series 2, 3, 4, 5 & 7 Contacts	990-0001-030	096-0016-000	.50 (12.7)	.52 (13.2)	.26 (6.6)	VS4/16C5	2	027-0063-000	021-0013-000
							3	027-0064-000	
							4	027-0065-000	
							5	027-0066-000	
			.50 (12.7)	.84 (21.3)	.26 (6.6)	VS4/16C6	7	027-0067-000	
7 Series 5, 6, 7 & 9 Contacts	990-0001-024	096-0013-000	.72 (18.3)	.95 (24.1)	.38 (9.6)	VS7/23C9	5	027-0068-000	021-0014-000
							6	027-0069-000	
							7	027-0070-000	
							9	027-0071-000	
			.72 (18.3)	1.45 (36.8)	.38 (9.6)	036-0006-000			



	Threaded Plastic Potting Sleeve	Threaded Metal Potting Sleeve			Plastic Potting Sleeve (No thread)				Flange Gasket
	Part Number	A	B	Part Number	A	B	C	Part Number	Part Number
4A Series 2, 3, 4, 5 & 7 Contacts	106-0262-000	.35 (8.9)	.50 (12.7)	VS4/16C9	.43 (10.9)	.68 (17.3)	.31 (7.9)	VS4/16C10-2	024-0046-000
7 Series 5, 6, 7 & 9 Contacts	Not available	.63 (16.0)	.75 (19.0)	VS7/23C5	.62 (15.7)	.81 (20.6)	.50 (12.7)	VS7/23C6-1	024-0047-000



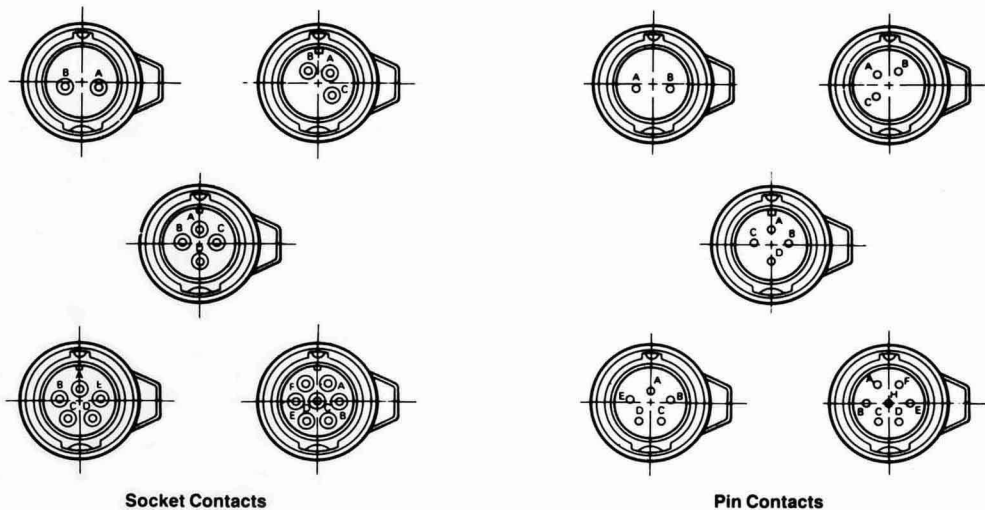
Crimp Removable Contacts

	Pin Part Number	Socket Part Number
4A Series 2, 3, 4, 5 & 7 Contacts	020-0009-002	019-0039-002
7 Series 5, 6 & 7 Contacts	020-0008-002	019-0013-002
7 Series 9 Contacts	020-0010-002	019-0041-002

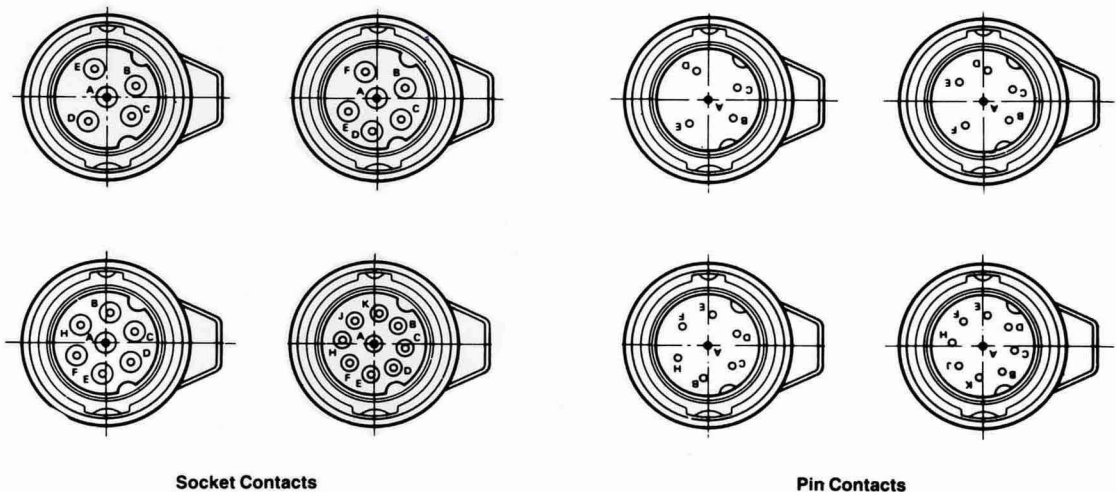
# Contact Arrangements

Views show front face of plug in normal clocking position.  
Consult factory for alternate clocking positions.

## 4A Series Plug



## 7 Series Plug



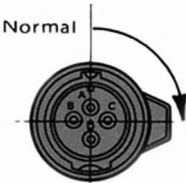
## ALTERNATE CLOCKING ARRANGEMENTS

Indicate clocking designation desired at end of part number (see pages 3, 4, 5 and 6)

Example: VP5/4CS6X

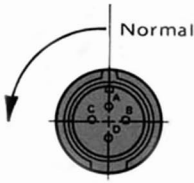
Designates 180° clocking of insulator from normal position

Unless clocking designation is indicated in part number, part will be supplied with insulator in normal position



Plug Front Face

Rotated clockwise number of degrees indicated in chart.

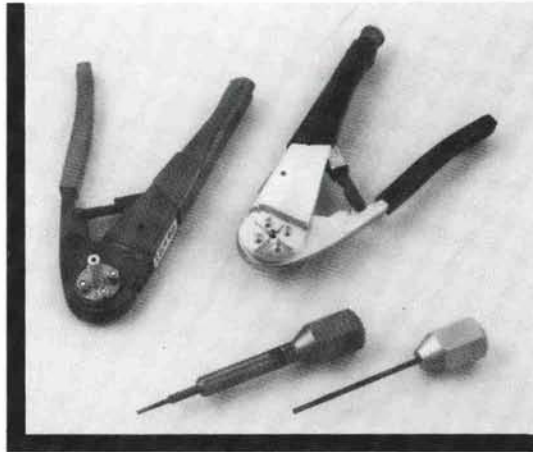


Receptacle Front Face

Rotated counter-clockwise number of degrees indicated in chart.

Series	No. Contacts	Degrees			
		W	X	Y	Z
4A	2	135	180	225	300
	3	105	180	225	300
	4	113	160	247	320
	5	113	180	247	320
7	5		120	240	
	6		120	240	

## Tools



Part Numbers

	Series 4A 2, 3, 4, 5, 7 Contacts	Series 7 5, 6, 7 Contacts	Series 7 9 Contacts
Crimp Tool (Buchanan)	000407-0001	000407-0034	000407-0001
Crimp Tool (Davo)	000407-0111	000407-0110	000407-0116
Insertion Tool	000407-0003	000407-0003	000407-0003
Removal Tool	000407-0004	000407-0028	000407-0004

## Materials and Specifications

### Plastic Insulator Plugs and Receptacles

#### MATERIALS

**Insulators:** Diallyl Phthalate per MIL-M-14 SDG-F

**Shells:** Plugs/Aluminum Alloy 2024-T-4 per QQ-A-268, grade 50, nickel plate per MIL-C-26074  
Receptacles/stainless steel per QQ-S-763

**Contacts:** Copper Alloy UNS No. C18700 plating .000030" gold per MIL-G-45204 Type II. Special plating consult factory.

**Lock Band:** Stainless Steel per QQ-S-766  
Cond. H passivated

**Backshells:** Aluminum alloy 2024-T4 per QQ-A-268 nickel plated per MIL-C-26074

**Resilient Seals:** Silicone elastomer ZZ-R-765, Class III

**Lock Washer:** Steel, nickel plated

**Hex Nut:** Brass, nickel plated

**Ferrule:** Aluminum alloy 6061-T6, anodized

**Metal Potting Sleeve:** Aluminum alloy 6061-T6, nickel plated

**Plastic Potting Sleeve:** Polyethylene

#### SPECIFICATIONS

**Contact Current Rating:** 7½ amps

**Insulation Resistance:** 5000 megohms (Min.)

**Operating Temperature:** -67° to 250° F  
(-55° C to +125° C)

**Wire Size:** No. 18 AWG (Max.)

**Shock:** 50G

**Vibration:** 5 to 2000 CPS @ 30G

**WEIGHT** (Approx.) For estimation purposes only. Plugs and receptacles vary according to style and hardware.

Basic Connector	Series 4A	Series 7
Plugs:	.16 oz.	.26 oz.
Receptacles:	.08 oz.	.12 oz.

#### Environmental Connector

Plugs:	.27 oz.	.54 oz.
Receptacles:	.32 oz.	.71 oz.

### Hermetic Receptacles, Glass Seal

#### MATERIALS

**Shell:** Steel, QQ-S-631 and QQ-S-634, plated gold over nickel

**Insulator:** Compression glass, DC9010

**Face and Flange Seals:** Silicone rubber, ZZ-R-765, Class III

**Contacts:** Steel, MIL-I-23011, CL III plated gold over nickel

**Panel Nut:** Steel, QQ-S-630, Brass, QQ-S-626, plated gold over nickel

#### SPECIFICATIONS

**Contact Current Rating:** 7½ amps

**Insulation Resistance:** 5000 Megohms, Min.

**Operating Temperature:** -67° to 250° F  
(-55° C to +125° C)

**Leakage Rate:** 10<sup>-9</sup> cc/sec (helium)

**Contact Terminal Wire Size:** #20, #22, #24 awg

**Header Pressure Rating:** Series 4A-1500 PSI, Series 7-1250 PSI

**Shock:** 50G

**Vibration:** 5 to 2000 CPS @ 30 G

### Maximum Operating Voltage

#### Basic Connector

Series	No. of Contacts	Sea Level	70,000 FT.
4A	2, 3, 4, 5, 7	750 VDC	200 VDC
7	5, 6, 7	1500 VDC	500 VDC
7	9	750 VDC	200 VDC

#### Environmental Connector

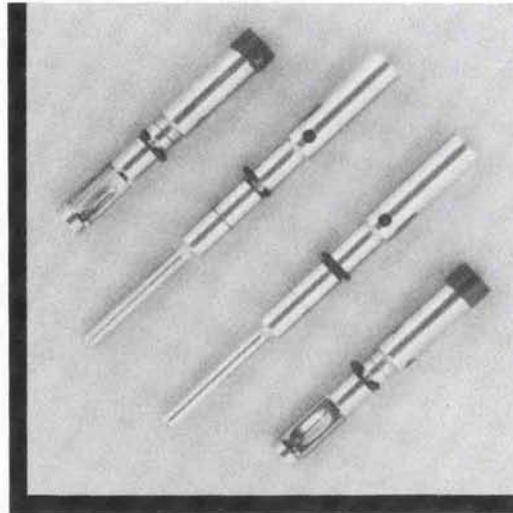
Series	No. of Contacts	Sea Level	70,000 FT.
4A	2, 3, 4, 5, 7	1000 VDC	750 VDC
7	5, 6, 7	2000 VDC	1500 VDC
7	9	1000 VDC	750 VDC



## Crimp Removable Contacts

Crimp contacts are supplied with plugs and receptacles. Spare contacts may be ordered separately (see page 8).

Pins and sockets will accommodate No. 18 AWG (MAX.) wire—.049 inside diameter x .070 insulation support.



1. Strip insulation, exposing 3/16" of bare wire for both solder and crimp type contacts.
2. Remove the backshell, ferrule and sealing grommet from the connector.
3. Feed the wire bundle through the backshell and ferrule, and insert the individual wires through the desired holes in the grommet if applicable. The grommet hole pattern should line up perfectly with the contact hole pattern on the back of the insulator.
4. Terminate wires to contacts. If using crimp contacts use the crimp tool noted in table. After crimping, insert the contact into its proper hole using the correct insertion tool.
5. A small amount of DC-200 compound should be applied to wires between contact and grommet to aid assembly and sealing characteristics.
6. When using either SNAP-LOCK without grommets or Hermetic receptacles, step 2 and step 5 can be omitted.
7. Slide grommet and ferrule, if applicable, in place and tighten hood securely. Then tighten hood cable clamps.
8. To remove a crimp contact, unscrew backshell and slide back ferrule and grommet, if applicable. Place the removal tool over the front of the contact and into the insulator. Hold the tool straight in relation to the contact and connector axis and push against the handle until the contact releases out the rear of the insulator. The spring in the tool is designed to exert enough pressure against the tool sleeve to collapse the "C" ring on the contact. The tool spring should exert 6 lbs. to collapse "C" ring before plunger pushes against the contact. Some care and 'feel' must be used to efficiently remove contacts with the "C" ring retention system.

## Wiring Procedures



## FOR FURTHER INFORMATION



- Card-Edge
- D-Subminiature
- Relay Sockets
- Mini-Circulars
- Stacking
- Specialty

**VIKING ELECTRONICS, INC**  
 5455 Endeavor Court  
 Moorpark, CA 93021-8009  
 Phone (805) 553-9633  
 Fax (805) 553-9655  
<http://www.vikingconnectors.com>