

SEACON[®]

UNDERWATER ELECTRICAL AND FIBER OPTIC CONNECTORS



METAL SHELL SERIES (MSS)

UNDERWATER ELECTRICAL DRY-MATE CONNECTORS

METAL SHELL SERIES DRY-MATE CONNECTORS

INTRODUCTION

The well established Metal Shell Series (MSS) of connectors are designed to withstand full ocean depth pressure and harsh environments, including offshore, exploration and military applications. Fully ruggedized for ease of handling and deployment, this connector range is manufactured from 316 Stainless Steel as standard, with Glass Reinforced Epoxy (GRE) inserts molded around gold plated electrical contacts, however optional materials are available upon request including Monel™, Titanium, Aluminum and PEEK (Polyetheretherketone). This connector range is continually being up-graded, please contact SEA CON® for further information and availability.

AVAILABILITY

Contact configurations are available in various shell sizes ranging from a single electrical contact or coax, through to 156 contacts with options available for fiber optic and high voltage. The MSS range is pressure rated upto 20,000 psi (mated and potted) with a temperature range of -50 degrees to 100 degrees centigrade although SEA CON® is also able to offer glass sealed inserts for higher pressure and temperature ratings.

APPLICATIONS

The MSS series is used extensively throughout various industries for a variety of applications including: high power motors, submersible pumps, SEM control units, cameras and lamps. The versatility of this connector makes it suitable for systems that require multiple applications through a single interface, eg. power, signal and optic.

TESTING

The MSS range of connectors have been subjected to the following testing:-

- Insulation Resistance: 15 Gohms @ 500 VDC.
- Dielectric Withstanding: 1200 VAC with a maximum leakage of .1 mA.

SEA CON®'S ENVIRONMENTAL TESTING CAPABILITY

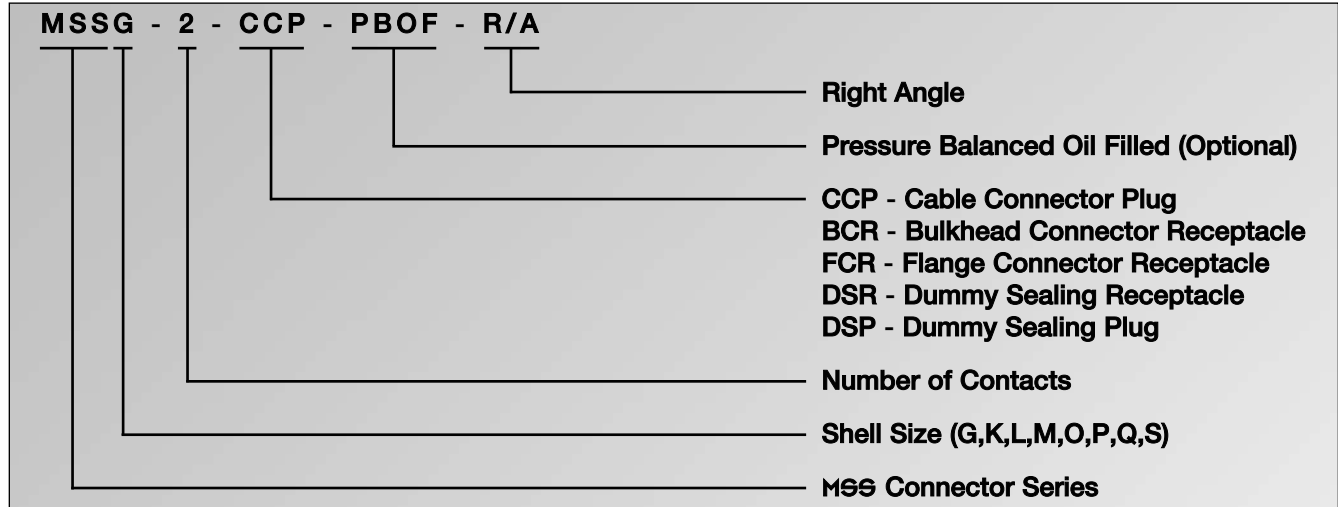
- Four hydrostatic pressure vessels capable of testing underwater components to 1,000 psi, 10,000 psi, 18,000 psi and 20,000 psi.
- Connectors can be tested mated, or in an open face condition and tests can be performed in water or oil.
- Electrical properties can often be monitored during the pressure cycling process.

Please contact SEA CON® for further information.

MSS SERIES

PART NUMBER SYSTEM

EXAMPLE:



GENERAL INFORMATION

COMPONENT	MATERIAL
BULKHEAD BODY (BCR/FCR)	316 Stainless Steel (or equivalent)
CCP BODY	316 Stainless Steel (or equivalent)
CONTACT INSERTS	Glass filled epoxy per MIL-M-24325
ELECTRICAL INSERTS	Copper alloy gold plated per MIL-G-45204
ENGAGING NUT	CA630 (or equivalent)
O-RINGS	Nitrile (formerly known as Buna N)

CATEGORY	VALUE
MATED PRESSURE	Upto 20,000 psi mated and potted for standard non-PBOF. 5,000 psi if not potted. Upto 7,500 psi mated and potted for standard PBOF. 2,500 psi if not potted.
OPEN FACE PRESSURE	Pressure ratings can be accomplished with most of this range, but the connectors are not open face rated as standard. Please contact SEA CON® for further information.
VOLTAGE RATING	600 VDC as standard although higher voltage versions are available. Please refer to the contact configuration pages 11-16.
CURRENT RATING	Upto 200 amps dependent on contact size and cable (see below for electrical contact sizes)

OPTIONS

Pressure Balanced Oil Filled (PBOF).
Higher Voltages.
Slip on assemblies (in-field termination).
Armored cable terminations.
Available in alternative materials; Monel™, Titanium, Aluminum and PEEK. Please contact SEA CON® for further information.

ELECTRICAL CONTACT SIZES

CONTACT AWG	DIAMETER (INCHES)	AMPACITY (AMPS)
#28 AWG	0.015	0.5
#22 AWG	0.031	2.5
#20 AWG	0.040	4
#16 AWG	0.062	13
#14 AWG	0.093	16
#10 AWG	0.125	23
#8 AWG	0.156	50
#6 AWG	0.218	65
#4 AWG	0.255	90
#1/0 AWG	0.355	200

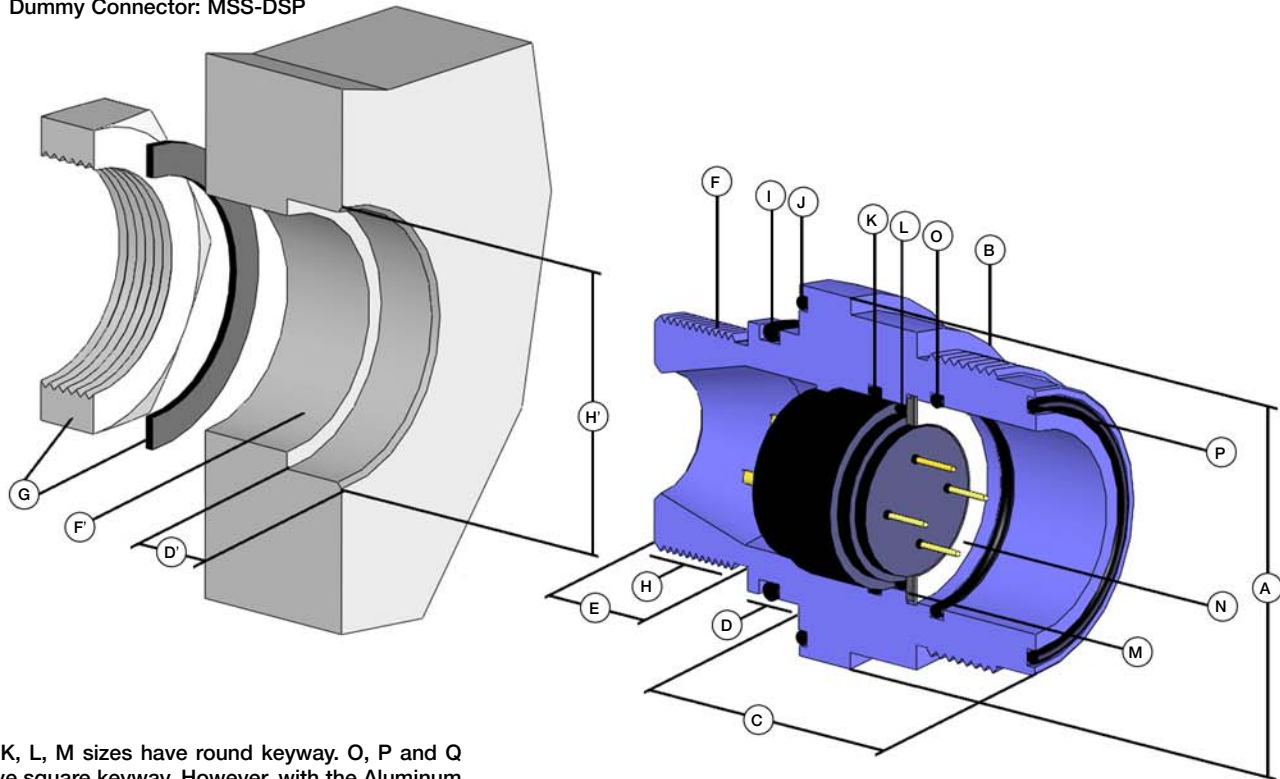
NOTE:

The ampacity is computed at temperature range of +30°F + 68°F. Above 70°F the ampacity drops.
Current ratings can be impacted by cable selection.

DIMENSION DETAILS

METAL SHELL SERIES (MSS) MSS-BCR

MSS Bulkhead Connector Receptacle
(Mates with MSS-CCP)
Dummy Connector: MSS-DSP



G, K, L, M sizes have round keyway. O, P and Q have square keyway. However, with the Aluminum option all sizes have a square keyway. Refer to pages 11-16 for contact configurations. G, K, L, M Aluminum connectors will not mate with Stainless Steel connectors.

PART DESCRIPTION	CONNECTOR SIZE						
	G	K	L	M	O	P	Q
A - DIAMETER (INCHES)	1.37	1.87	2.12	2.75	3.50	3.75	4.50
B - WRENCH FLATS	1.18	1.62	1.88	2.25	2.75	3.00	3.62
C - HEIGHT	1.50	2.00	2.00	2.25	2.25	2.25	2.25
D - SHOULDER	0.37	0.37	0.37	0.50	0.50	0.75	0.75
E - THREAD LENGTH	0.62	1.00	1.00	0.87	1.25	1.50	1.75
F - THREAD SIZE	3/4 - 16UNF - 2A	1 - 14UNS - 2A	1 1/4 - 2UN - 2A	1 3/4 - 12UN - 2A	2 1/4 - 12UN - 2A	2 1/2 - 12UN - 2A	2 3/4 - 12UN - 2B
G - HEX NUT (ACROSS FLATS INCHES)	1.2 X 0.25	1.50 X 0.37	1.75 X 0.25	2.25 X 0.50	3.00 X 0.50	3.25 X 0.50	3.75 X 0.50
H - DIAMETER	0.810 max	1.060 max	1.310 max	1.997 max	2.497 max	2.747 max	3.122 max
I - O-RING	2 - 017	2 - 21	2 - 122	2 - 224	2 - 228	2 - 230	2 - 233
J - O-RING	2 - 023	2 - 29	2 - 131	2 - 142	2 - 234	2 - 236	2 - 241
K - O-RING	2 - 016	2 - 118	2 - 122	2 - 126	2 - 225	2 - 227	2 - 230
L - O-RING	NONE	2 - 18	2 - 022	2 - 123	2 - 131	2 - 135	2 - 141
M - WASHER	NONE	77 - 1 - 274	77 - 1 - 374	77 - 1 - 474	77 - 1 - 574	77 - 1 - 674	77 - 1 - 774
N - SPIROLOX RING	UR - 62	UR - 106	UR - 131	UR - 150	UR - 187	UR - 212	UR - 250
O - O-RING	2 - 016	2 - 23 - 70	2 - 027	2 - 128	2 - 225	2 - 227	2 - 230
P - O-RING	2 - 020	2 - 27 - 70	5 - 320	2 - 132	2 - 140	2 - 144	2 - 151

MOUNTING DIMENSIONS

DIMENSIONS IN INCHES

D' - BORE DEPTH	0.380/min	0.380/min	0.380/min	0.520/min	0.520/min	0.520/min	0.770/min
F' - BORED	0.750/min	0.995/min	1.250/min	1.750/min	2.250/min	2.500/min	2.750/min
THREADED	3/4 - 16UNF - 2B	1 - 14NS - 2B	1 1/4 - 12UN - 2B	1 3/4 - 12UN - 2B	2 1/4 - 12UN - 2B	2 1/2 - 12UN - 2B	2 3/4 - 12UN - 2B
H' - BORE DIAMETER	0.812/0.814	1.062/1.064	1.312/1.314	2.000/2.002	2.500/2.502	2.750/2.752	3.125/3.127

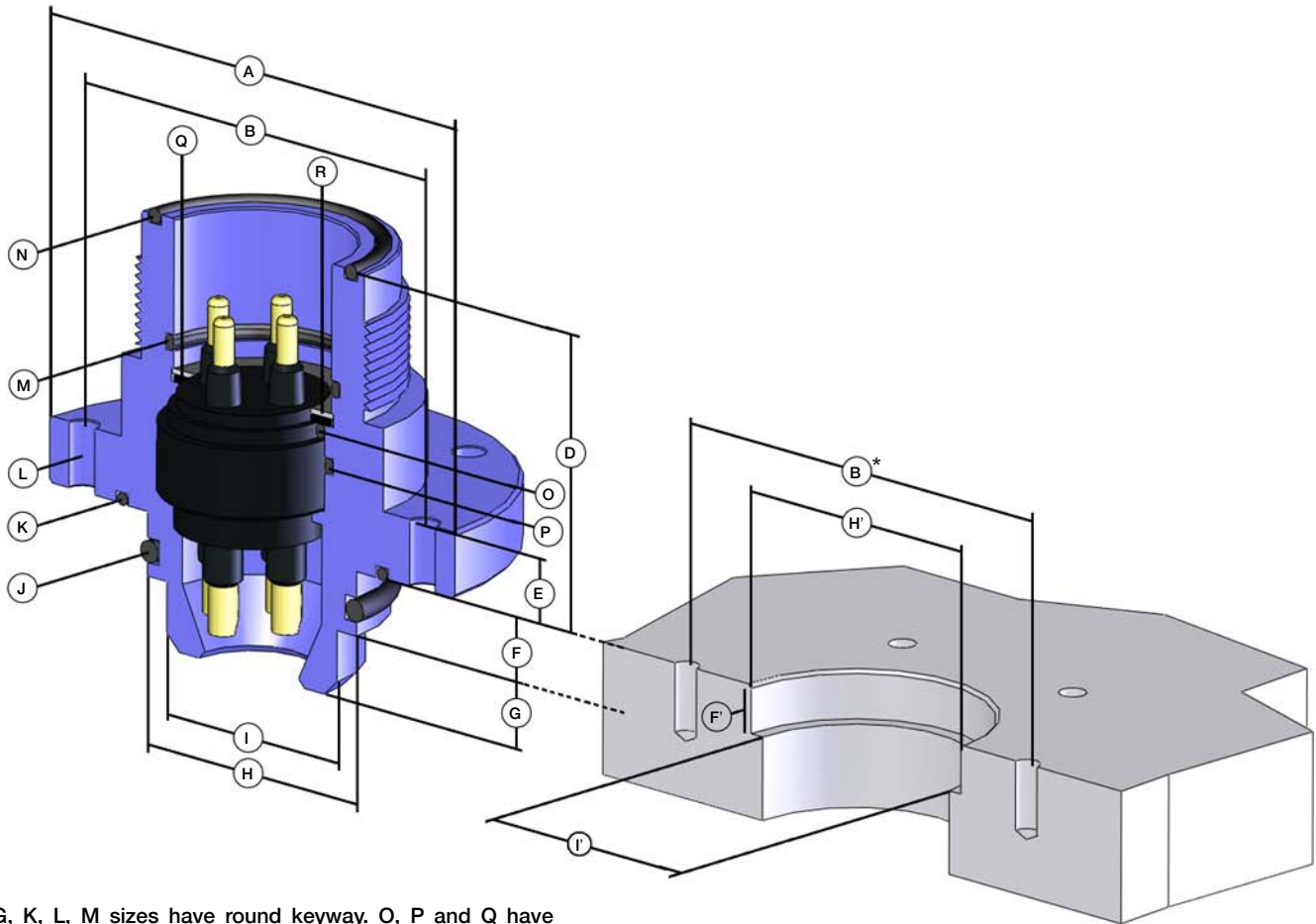
NOTE:

For MSS-S connector details please contact SEA CON®.

DIMENSION DETAILS

METAL SHELL SERIES (MSS) MSS-FCR

MSS Flange Connector Receptacle
Mates with CCP
Dummy Connector: MSS-DSP



G, K, L, M sizes have round keyway. O, P and Q have square keyway. However, with the Aluminum option all sizes have a square keyway. Refer to page pages 11-16 for contact configurations. G, K, L, M Aluminum connectors will not mate with Stainless Steel connectors.

G, K, L, M, sizes have round keyway. O, P, and Q have square keyway.

NOTE: * 6 holes equally spaced.

PART DESCRIPTION	CONNECTOR SIZE						
	G	K	L	M	O	P	Q
A - DIAMETER	2.12	2.62	3.00	3.87	4.50	4.75	5.25
B - HOLE CIRCLE	1.812	2.250	2.500	3.250	3.875	4.125	4.625
D - HEIGHT	1.68	2.00	2.00	2.26	2.26	2.26	2.26
E - HEIGHT	0.37	0.37	0.38	0.51	0.51	0.51	0.51
F - HEIGHT	0.37	0.37	0.37	0.48	0.48	0.48	0.75
G - HEIGHT	0.26	0.38	0.38	0.50	0.50	0.50	0.74
H - DIAMETER	0.810 max	1.060 max	1.310 max	1.997 max	2.497 max	2.747 max	3.122 max
I - DIAMETER	0.68	0.87	1.12	1.62	2.12	2.37	2.75
J - O-RING	2 - 017	2 - 021	2 - 122	2 - 224	2 - 228	2 - 230	2 - 233
K - O-RING	2 - 023	2 - 029	2 - 131	2 - 142	2 - 234	2 - 236	2 - 240
L - BOLT SIZE	3 / 16"	3 / 16"	1 / 4"	1 / 4"	3 / 8"	3 / 8"	3 / 8"
M - O-RING	2 - 016	2 - 23 - 70	2 - 027	2 - 128	2 - 225	2 - 227	2 - 230
N - O-RING	2 - 020	2 - 27 - 70	5 - 320	2 - 132	2 - 140	2 - 144	2 - 151
O - O-RING	NONE	2 - 18	2 - 022	2 - 123	2 - 131	2 - 135	2 - 141
P - O-RING	2 - 016	2 - 118	2 - 122	2 - 126	2 - 225	2 - 227	2 - 230
Q - WASHER	NONE	77 - 1 - 274	77 - 1 - 374	77 - 1 - 474	77 - 1 - 574	77 - 1 - 674	77 - 1 - 774
R - SPIROLOX RING	UR - 62	UR - 106	UR - 131	UR - 150	UR - 187	UR - 212	UR - 250

MOUNTING DIMENSIONS

DIMENSIONS IN INCHES

F' - BORE DEPTH MIN	0.385/min	0.385/min	0.385/min	0.520/min	0.520/min	0.520/min	0.770/min
H' - BORE DIAMETER	0.812/0.814	1.062/1.064	1.312/1.314	2.000/2.002	2.500/2.502	2.750/2.752	3.125/3.127
I' - BORE MIN	0.750/min	0.890/min	1.140/min	1.780/min	2.140/min	2.406/min	2.765/min

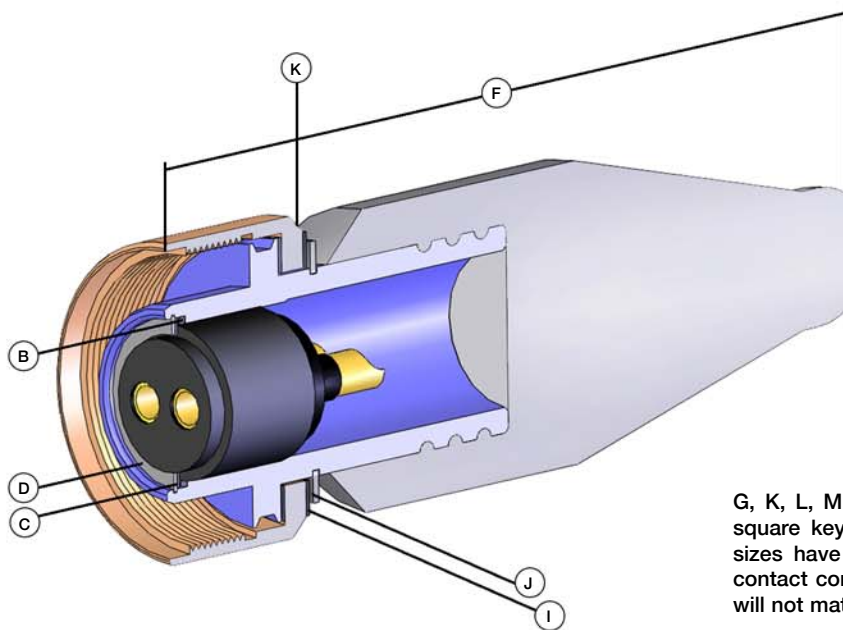
NOTE:

For MSS-S connector details please contact SEA CON®.

DIMENSION DETAILS

METAL SHELL SERIES (MSS) MSS-CCP

MSS Cable Connector Plug, Straight
Mates with MSS-BCR/CCR/FCR
Dummy Connector: MSS-DSR

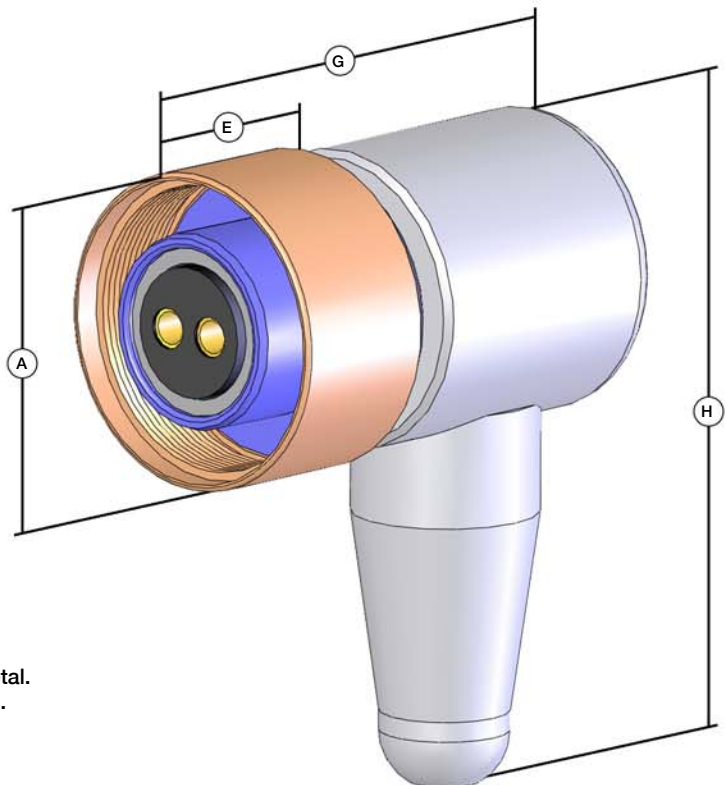


G, K, L, M sizes have round keyway. O, P and Q have square keyway. However, with the Aluminum option all sizes have a square keyway. Refer to pages 11-16 for contact configurations. G, K, L, M Aluminum connectors will not mate with Stainless Steel connectors.

PART DESCRIPTION	CONNECTOR SIZE						
	G	K	L	M	O	P	Q
A - DIAMETER	1.37	1.87	2.12	2.50	3.00	3.25	3.87
B - O-RING	-	2 - 017	2 - 021	2 - 024	-	2 - 131	2 - 137
C - WASHER	-	77 - 1 - 261	77 - 1 - 373	77 - 1 - 473	77 - 1 - 573	77 - 1 - 673	14 - 979
D - SPIROLOX	-	UR - 87	UR - 112	UR - 137	UR - 162	UR - 187	UR - 225
E - ENGAGING NUT	1.09	1.22	1.22	1.87	1.87	1.87	1.87
F - LENGTH	5.3	6.0	6.0	10.5	10.5	10.8	11.5
G - HEIGHT	3.0	3.25	3.25	4.7	5.3	5.3	6.0
H - HEIGHT	3.5	3.5	4.50	6.7	7.8	7.8	9.6
I - ENGAGING NUT	77 - 1 - 148	77 - 1 - 248	77 - 1 - 348	77 - 1 - 448	77 - 1 - 548	77 - 1 - 648	77 - 1 - 748
J - RETAINING RING	5100 - 87	5100 - 112	5100 - 137	5100 - 162	5100 - 212	5100 - 237	5100 - 275
K - DIAMETER	0.87	1.12	1.37	1.62	2.12	2.37	2.75

METAL SHELL SERIES (MSS) MSS-CCP-R/A

MSS Cable Connector Plug, Right Angle
Mates with MSS-BCR/CCR/FCR
Dummy Connector: MSS-DSR



NOTE:

Dimensions in inches.
Refer to pages 11-16 for contact configurations.

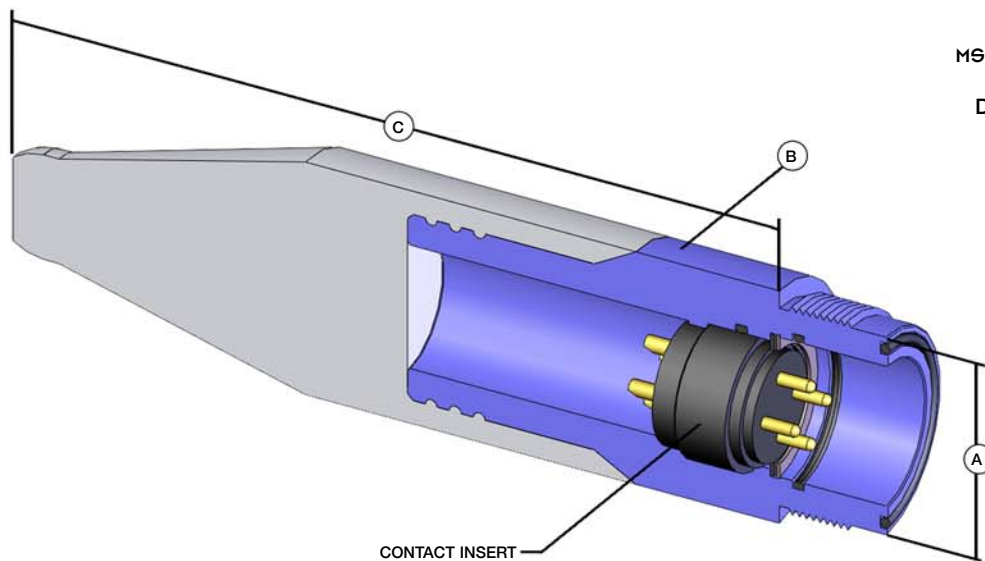
MSS-G-CCP body is Glass Reinforced Epoxy. The nut is metal.
Connector does not come molded to cable unless specified.

For MSS-S connector details please contact SEA CON®.

DIMENSION DETAILS

METAL SHELL SERIES (MSS) MSS-CCR

INLINE RECEPTACLE
MSS Cable Connector Receptacle
Mates with MSS-CCP
Dummy Connector: MSS-DSP



G, K, L, M sizes have round keyway. O, P and Q have square keyway. Refer to pages 11-16 for contact configurations. G, K, L, M Aluminum connectors will not mate with Stainless Steel connectors.

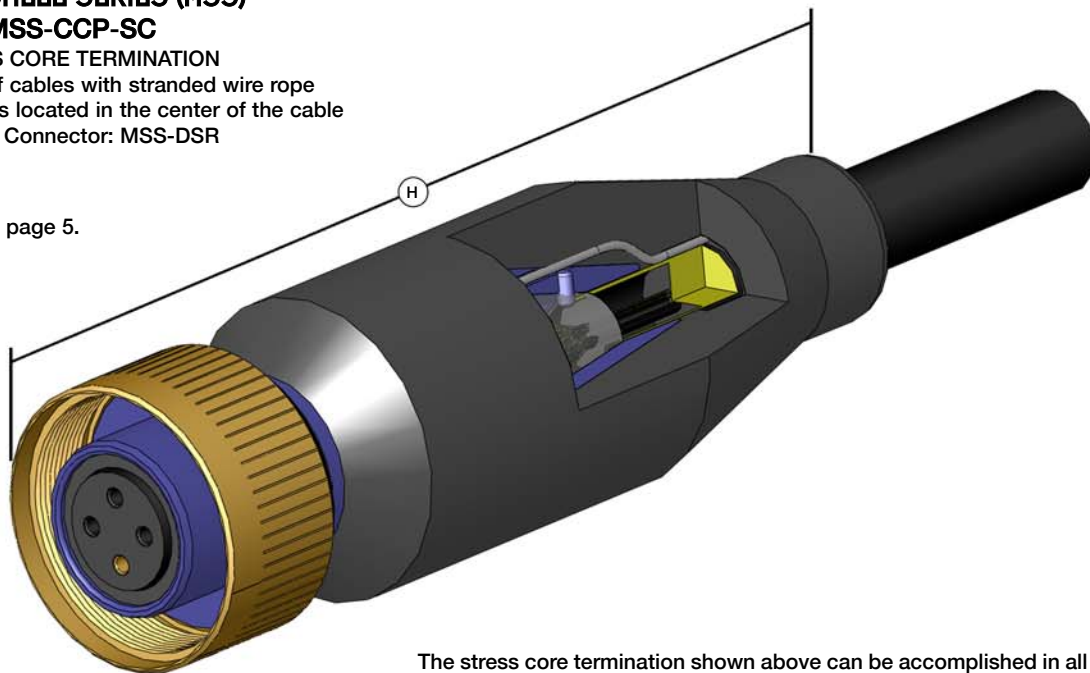
PART DESCRIPTION	CONNECTOR SIZE						
	G	K	L	M	O	P	Q
A - DIAMETER	1.37	1.87	2.12	2.50	3.00	3.25	3.87
B - WRENCH FLAT	1.118	1.62	1.87	2.25	2.75	3.00	3.62
C - LENGTH	5.5	6.7	7.0	9.5	10.0	11.5	12.0

METAL SHELL SERIES (MSS) MSS-CCP-SC

STRESS CORE TERMINATION

For termination of cables with stranded wire rope mechanical members located in the center of the cable
Dummy Connector: MSS-DSR

H - Refer to chart on page 5.



The stress core termination shown above can be accomplished in all the MSS Series sizes with the exception of the MSS-G.

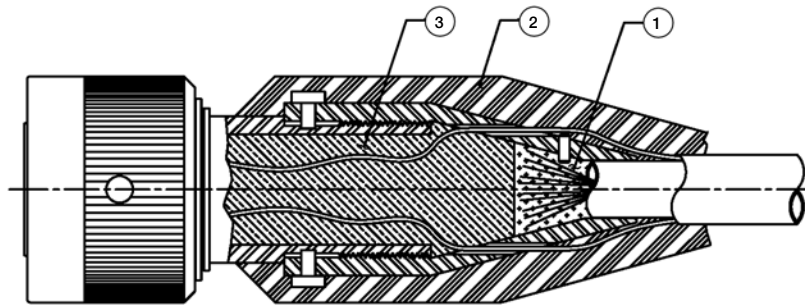
This type of termination will develop the full breaking strength of the electro mechanical cable.

Strength is carried through CCP coupling nut and BCTR or CCR threads. Connector bodies do not come molded to cables unless so specified when ordering.

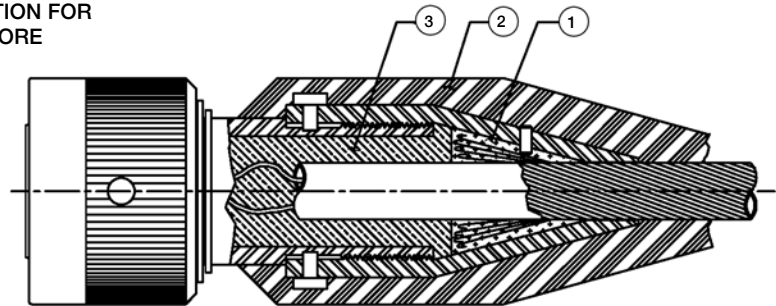
NOTE:

For MSS-S connector details please contact SEA CON®.

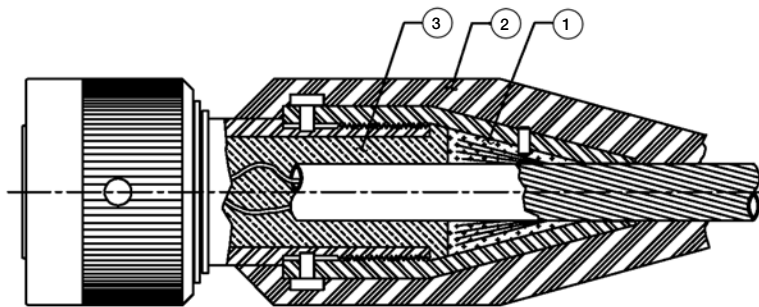
TYPICAL STRESS CORE TERMINATIONS



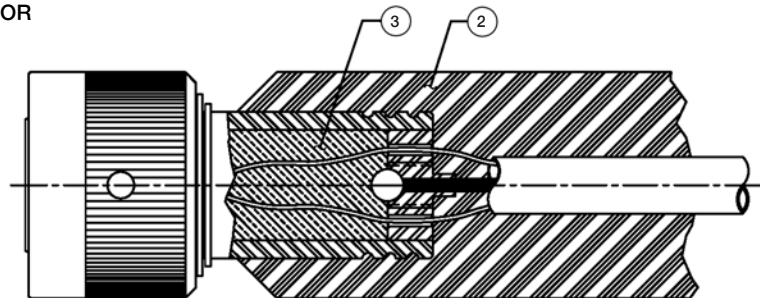
CONCEPTUAL TERMINATION FOR
KEVLAR, CENTER CORE



CONCEPTUAL TERMINATION FOR
STEEL, DOUBLE ARMOR



CONCEPTUAL TERMINATION FOR
KEVLAR, OUTER BRAID



CONCEPTUAL TERMINATION FOR
STEEL, CENTER CORE

- 1 - Polyurethane.
- 2 - Overmold.
- 3 - Hard Potting Compound.

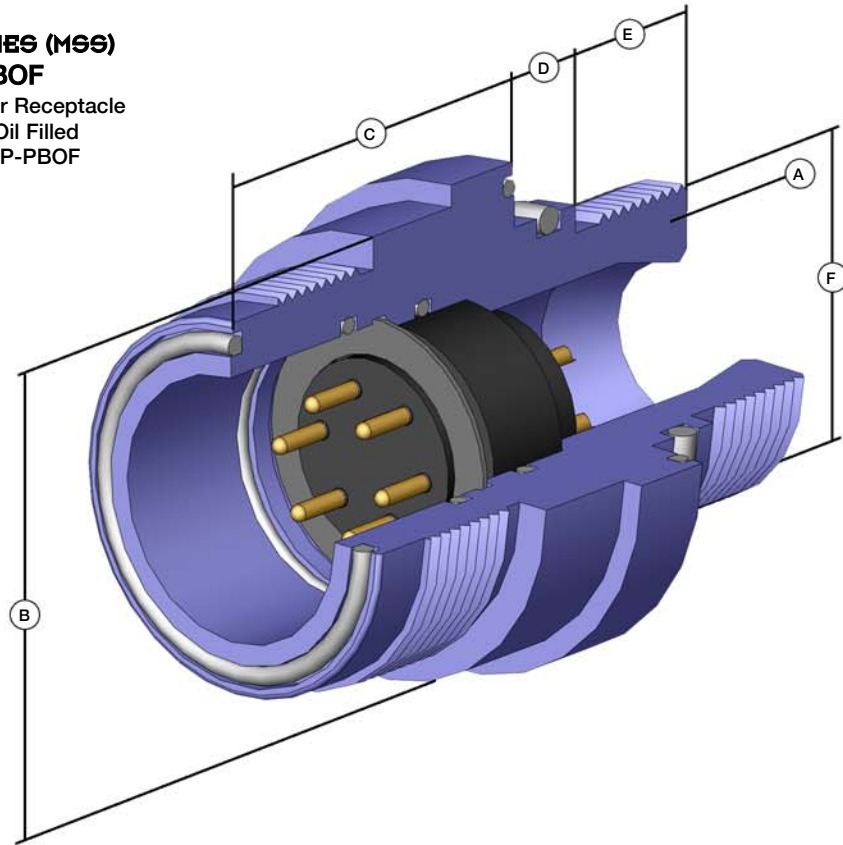
NOTE:

The above are typical strain termination solutions. We have facilities to bespoke stress terminations to specific customer cable requirements.

D I M E N S I O N D E T A I L S

METAL SHELL SERIES (MSS) MSS-BCR-PBOF

MSS Bulkhead Connector Receptacle
Pressure Balanced Oil Filled
Mates with MSS-CCP-PBOF



NOTES:

The short pin in the CCP contact insert opens the check valve in the CCP assembly when mated, thus accomplishing complete pressure balancing, completely eliminating the pistoning effect of conductors during pressurization.

Tubing stems are designed to fit standard tubing sizes.

Pressure Balanced Oil Filled Series

The unique valve assembly allows oil into the connector interface area when mated and seals when unmated.

CONNECTOR	A - THREAD	B - DIAMETER (INCHES)	C - LENGTH (INCHES)	D - LENGTH (INCHES)	E - LENGTH (INCHES)	F - DIAMETER (INCHES)
MSSK-BCR-PBOF*	1-1/4NS-2A	1.87	2.0	0.375	1.00	1.060
MSSL-BCR-PBOF	1-1/4-12 UN-2A	2.12	2.0	0.375	1.00	1.310
MSSM-BCR-PBOF	1-3/4-12 UN-2A	2.75	2.25	0.500	0.870	1.997
MSSO-BCR-PBOF	2-1/4-12 UN-2A	3.50	2.25	0.500	1.250	2.497
MSSP-BCR-PBOF	2-1/2-12 UN-2A	3.75	2.25	0.500	1.500	2.747
MSSQ-BCR-PBOF	2-3/4-12 UN-2A	4.50	2.25	0.750	1.750	3.122

* These parts are standard and require no set-up charge.

Parts where no asterix appears may require set-up charges and have longer deliveries.

Refer to pages 11-18 for available contact configurations.

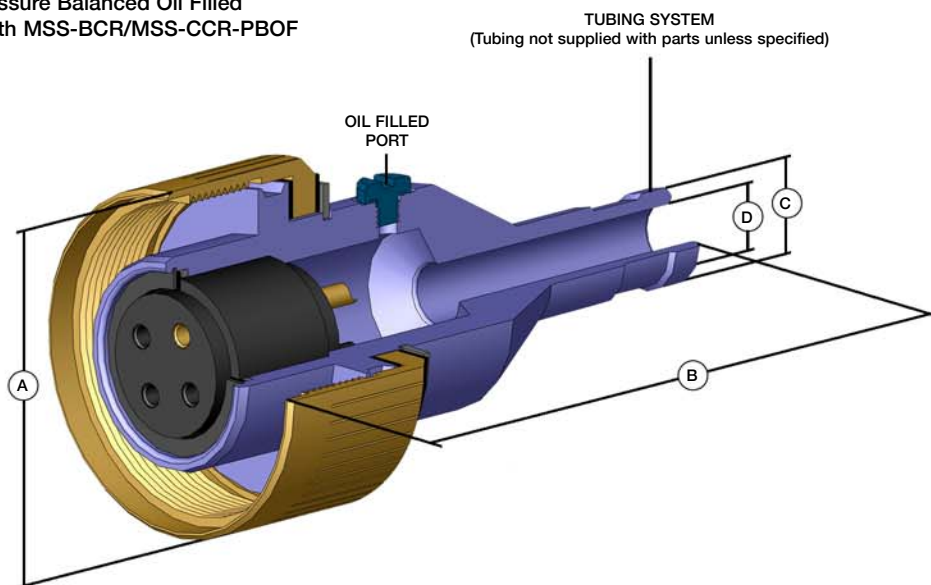
SPECIFICATION:

- BODY MATERIAL: 316 Stainless Steel.
- INSERT: Glass Reinforced Epoxy.
- CONTACTS: Brass, gold plated.
- PRESSURE RATING: 7,500 psi (2,500 psi or more requires the BCR to be back potted or pressure balanced on solder cup side of insert).

DIMENSION DETAILS

METAL SHELL SERIES (MSS) MSS-CCP-PBOF

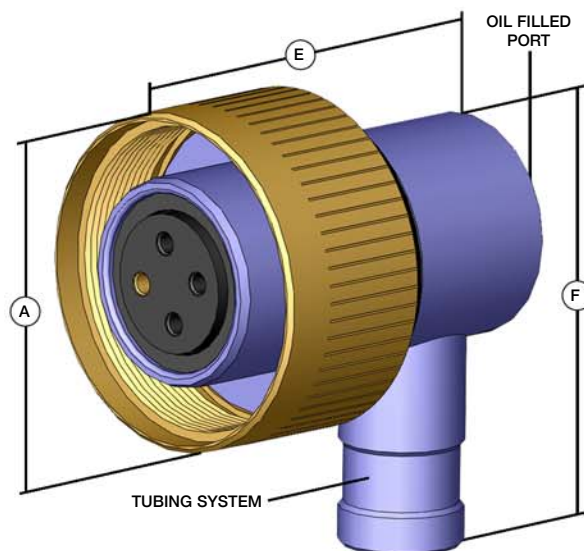
MSS Cable Connector Plug
Pressure Balanced Oil Filled
Mates with MSS-BCR/MSS-CCR-PBOF



CONNECTOR	A - DIAMETER (INCHES)	B - LENGTH (INCHES)	C - DIAMETER (INCHES)	D - DIAMETER (INCHES)	E - LENGTH (INCHES)	F - R/A HEIGHT (INCHES)
MSSK-CCP-PBOF	1.87	3.00	0.672	0.48	2.37	2.12
MSSL-CCP-PBOF	2.12	3.75	0.844	0.62	2.82	2.56
MSSM-CCP-PBOF	2.50	5.00	0.844	0.62	3.26	3.00
MSSO-CCP-PBOF	3.00	5.81	1.000	0.62	3.50	3.75
MSSP-CCP-PBOF	3.25	6.62	1.000	0.82	3.37	3.75
MSSQ-CCP-PBOF	3.87	7.00	1.250	1.06	4.19	4.12

METAL SHELL SERIES (MSS) MSS-CCP-PBOF-R/A

MSS Cable Connector Plug
Pressure Balanced Oil Filled
Mates with MSS-BCR/MSS-CCR-PBOF



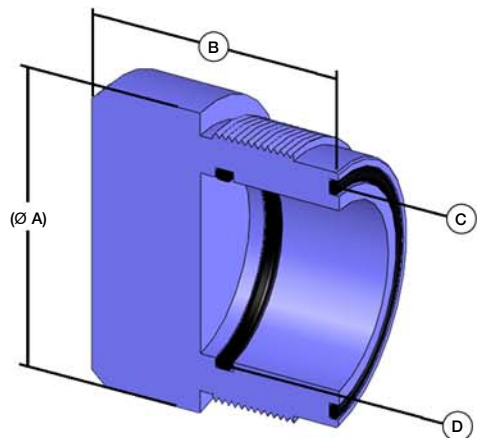
SPECIFICATION:

- BODY MATERIAL: 316 Stainless Steel.
- NUT: Bronze.
- INSERT: Glass Reinforced Epoxy.
- CONTACTS: Brass, gold plated.
- PRESSURE RATING: 7,500 psi.

DIMENSION DETAILS

METAL SHELL SERIES (MSS) MSS-DSR

MSS Dummy Sealing Receptacle



PART DESCRIPTION	CONNECTOR SIZE							
	G	K	L	M	O	P	Q	S
A - DIAMETER	1.37	1.87	2.12	2.50	3.00	3.25	3.87	4.62
B - LENGTH	1.25	1.50	1.50	2.00	2.00	2.00	2.12	2.12
C - O-RING	2-020	2-027	5-320	2-132	2-140	2-144	2-151	2-153
D - O-RING	2-016	2-023	2-027	2-128	2-225	2-227	2-230	2-236

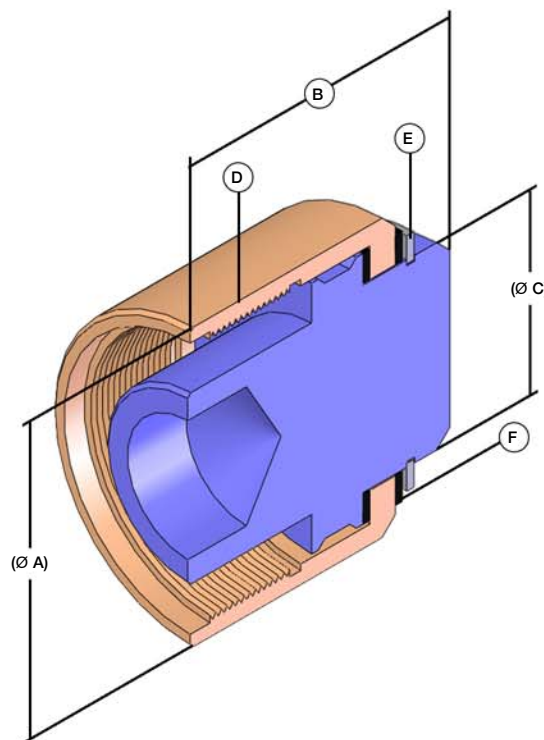
NOTE:

MATERIAL: 316 Stainless Steel.

Other materials available on request.

METAL SHELL SERIES (MSS) MSS-DSP

MSS Dummy Sealing Plug




















































PART DESCRIPTION	CONNECTOR SIZE							
	G	K	L	M	O	P	Q	S
A - DIAMETER	1.37	1.87	2.12	2.50	3.00	3.25	3.87	4.62
B - LENGTH	1.56	1.56	1.56	2.37	2.37	2.37	2.37	2.37
C - DIAMETER	0.87	1.12	1.37	1.62	2.12	2.37	2.75	3.50
D - ENGAGING NUT	77-2-120	77-2-220	77-2-320	77-2-420	77-2-520	77-2-620	77-2-720	77-2-920
E - RETAINING RING	5100-87	5100-112	5100-137	5100-162	5100-212	5100-237	5100-275	5100-350
F - WASHER	77-1-148	77-1-248	77-1-348	77-1-448	77-1-548	77-1-648	77-1-748	77-1-948

NOTE:

MATERIAL: 316 Stainless Steel with a CA630 engaging nut, however the material for the MSSG is GRE (Glass Reinforced Epoxy) with a CA630 engaging nut.

Other materials available on request.

CONTACT CONFIGURATIONS

SIZE	M66 SERIES CONTACT CONFIGURATIONS						
G	 #22/20 ohm COAX	 2#14	 3#16	 4#16 *	 6#16	 7#16	 7#20 *
	 #22/20 ohm COAX	 1#2	 2#10	 2#16	 3#22/20 ohm COAX	 3#14	 4#16
K	 1#16/3#14 * (4)	 2#22/20 ohm COAX 4#16 (6)	 6#16 *	 6#16 (WITH BOOT)	 7#16	 8#20 *	 10#16
	 12#20	 12#20 (PBOF)	 12S#20	 16#20			
L	 1#1/0	 2#8	 2A#6 HV	 3#10 *	 3A#8 *	 1#4/2#14 (3B)	
	 4#8	 4A#16 HV	 6#16 *	 6A#10	 6B#16	 2#22/20 ohm COAX 2#10/3#16 (7)	
	 8#16	 8#16 (PBOF)	 12#16	 12B#16 (PBOF)	 12S#16	 4#10/8#20 (12A)	
	 16#20 *	 5#20/11#16 (16A)	 18#16	 18A#20	 2#10/16#20 (18B)	 22#20 *	

NOTES:

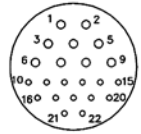
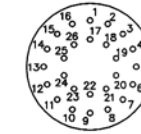
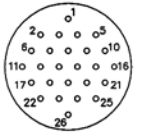
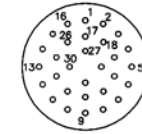
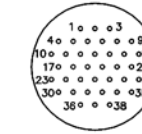
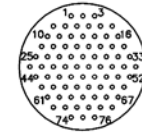
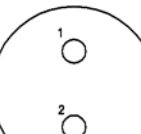
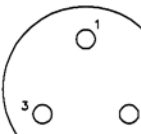
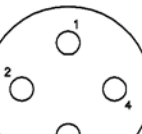
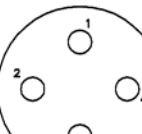
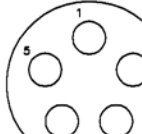
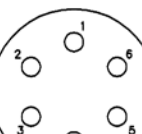
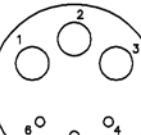
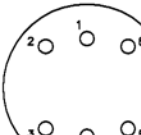
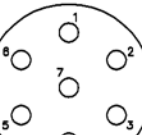
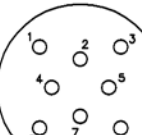
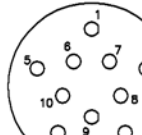
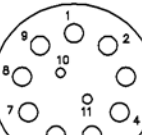
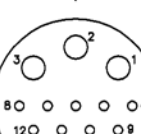
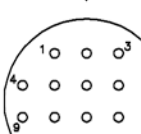
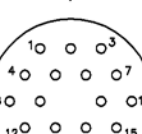
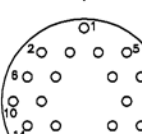
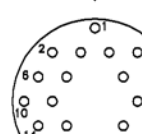
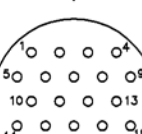



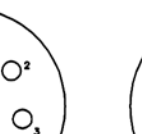

All configurations shown are the face view of the receptacle connector (BCR/FCR/CCR).

▼ This symbol refers to the receptacle shell keyway which keys the BCR, FCR, CCR shell to the mating CCP shell.

PBOF is the abbreviation for pressure balanced oil filled style connectors, reference catalog for more information.

* Upon request, these configurations are also available with the PBOF option.

CONTACT CONFIGURATIONS

SIZE	MSS SERIES CONTACT CONFIGURATIONS					
L	 <p>9#16/13#20</p>	 <p>26#20 *</p>	 <p>26#20 SP</p>	 <p>30#20</p>	 <p>38#22</p>	 <p>76#22</p>
M	 <p>2#8 HV</p>	 <p>3#10 *</p>	 <p>4#8 *</p>	 <p>4#8 HV *</p>	 <p>5#6</p>	 <p>6#10 HV *</p>
	 <p>3#6/3#16* (6)</p>	 <p>6#14 *</p>	 <p>7#10</p>	 <p>8#14</p>	 <p>10#14</p>	 <p>2#16/9#10 (11)</p>
	 <p>3#8/12#16 (15)</p>	 <p>16#16</p>	 <p>18#16</p>	 <p>21#16 *</p>	 <p>22#16 (PBOF)</p>	 <p>22#16</p>
O	 <p>3#4</p>	 <p>4#6 *</p>	 <p>7#8</p>	 <p>8#16</p>	 <p>10#10</p>	

NOTES:

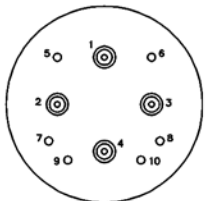
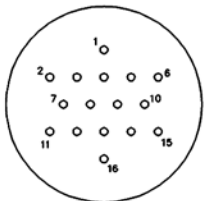
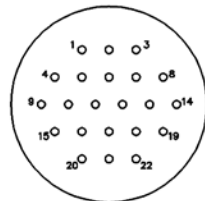
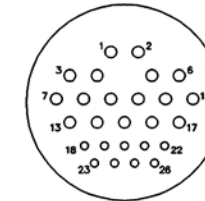
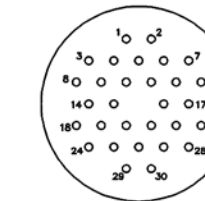
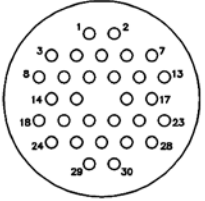
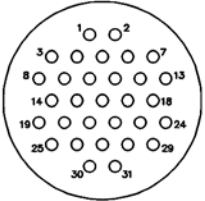
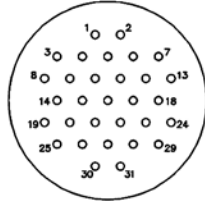
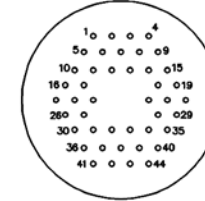
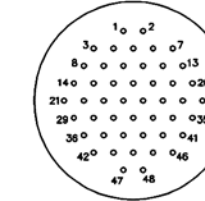
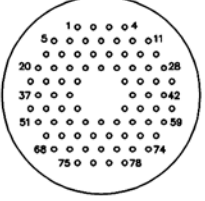
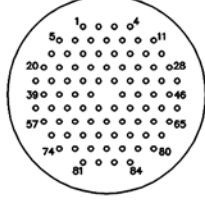
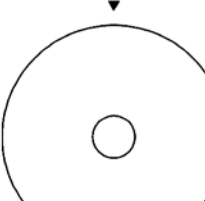
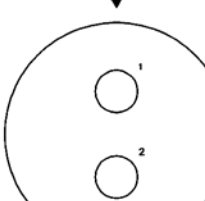
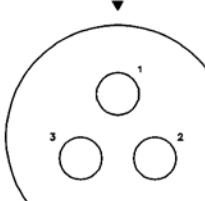
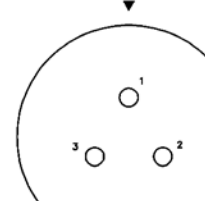
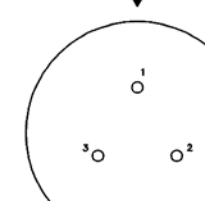
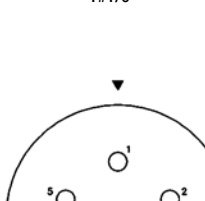
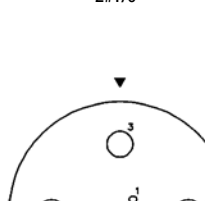
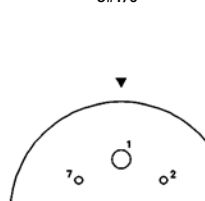
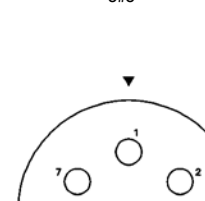
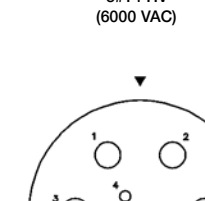
All configurations shown are the face view of the receptacle connector (BCR/FCR/CCR).

▼ This symbol refers to the receptacle shell keyway which keys the BCR, FCR, CCR shell to the mating CCP shell.

PBOF is the abbreviation for pressure balanced oil filled style connectors, reference catalog for more information.

* Upon request, these configurations are also available with the PBOF option.

CONTACT CONFIGURATIONS

SIZE	MSS SERIES CONTACT CONFIGURATIONS					
O	 <p>4#22/20 ohm COAX 6#16 (10)</p>	 <p>16#16</p>	 <p>22#16</p>	 <p>9#16/17#14 (26)</p>	 <p>30#16 *</p>	
	 <p>30#14</p>	 <p>31#14</p>	 <p>31#16</p>	 <p>44#20 *</p>	 <p>48#20</p>	
	 <p>78#20</p>	 <p>84#20</p>				
	P	 <p>1#1/0</p>	 <p>2#1/0</p>	 <p>3#1/0</p>	 <p>3#8 *</p>	 <p>3#14 HV (6000 VAC)</p>
		 <p>5#8 *</p>	 <p>2#16/4#16 (6)</p>	 <p>4#16/3#8 * (7)</p>	 <p>2#16/5#16 * (7)</p>	 <p>6#6/2#14 (8)</p>

NOTES:

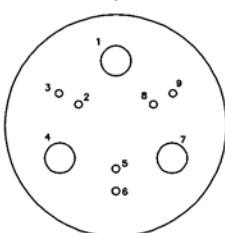
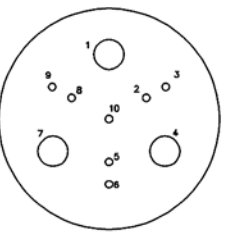
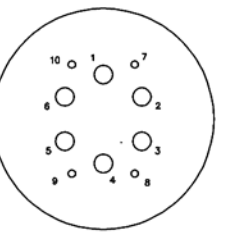
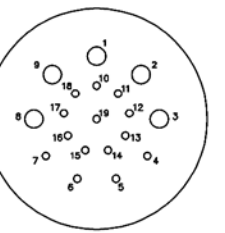
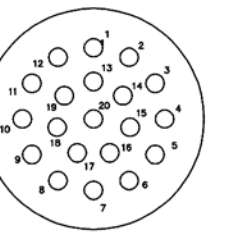
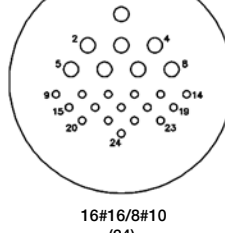
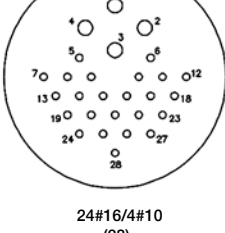
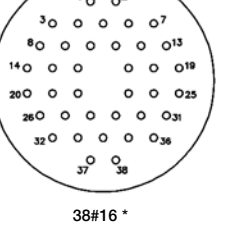
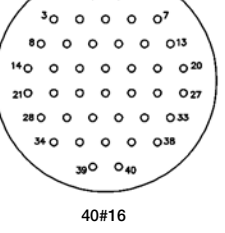
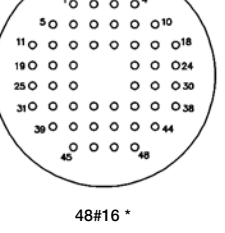
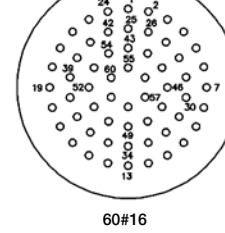
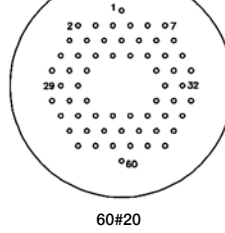
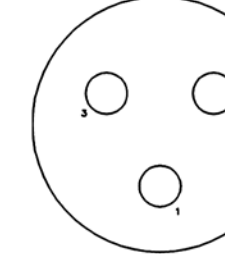
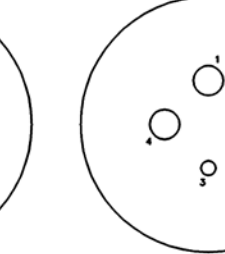
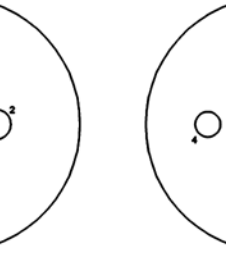
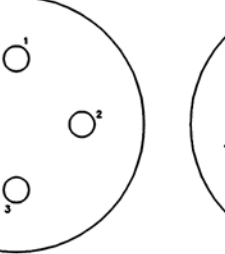
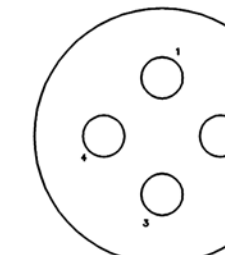
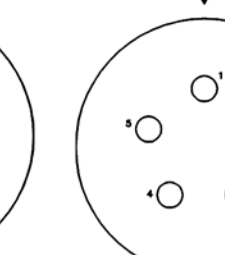
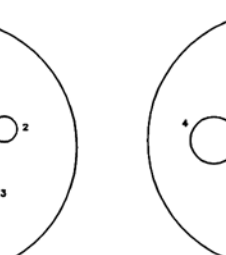
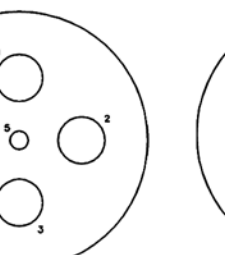
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PBOF is the abbreviation for pressure balanced oil filled style connectors, reference catalog for more information.

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CONTACT CONFIGURATIONS

SIZE	MSS SERIES CONTACT CONFIGURATIONS AVAILABLE					
P	 <p>3#4/6#16 (9)</p>	 <p>3#16/7#16 (10)</p>	 <p>6#8/4#16 (10)</p>	 <p>14#16/5#8 (19)</p>	 <p>20#14</p>	
	 <p>16#16/8#10 (24)</p>	 <p>24#16/4#10 (28)</p>	 <p>38#16 *</p>	 <p>40#16</p>	 <p>48#16 *</p>	
	 <p>60#16</p>	 <p>60#20</p>				
	Q	 <p>3#1/0 *</p>	 <p>3#4/1#10 HV* (4)</p>	 <p>4A#6 *</p>	 <p>4B#2/0 *</p>	
		 <p>40#1/0 *</p>	 <p>5#6</p>	 <p>1#8/4#2/0 (5A)</p>	 <p>12#6/2#14 (14)</p>	

NOTES:

All configurations shown are the face view of the receptacle connector (BCR/FCR/CCR).

▼ This symbol refers to the receptacle shell keyway which keys the BCR, FCR, CCR shell to the mating CCP shell.

PBOF is the abbreviation for pressure balanced oil filled style connectors, reference catalog for more information.

* Upon request, these configurations are also available with the PBOF option.

CONTACT CONFIGURATIONS

SIZE	MSS SERIES CONTACT CONFIGURATIONS AVAILABLE			
	<p>3#8/15#16 * (18)</p>	<p>6#10/18#16 (24A)</p>	<p>8#10/16#16 (24)</p>	<p>25#16 *</p>
	<p>9#8/4#16/12#20 (25A)</p>	<p>3#4/15#10/12#16 (30)</p>	<p>3#10/1#14/31#16 (35)</p>	<p>2#22/20 ohm COAX 6#10/28#16 (36)</p>
Q	<p>15#14/21#20 HV (36)</p>	<p>12#10/17#14/20#16 (49)</p>	<p>12#10/38#16 (50)</p>	<p>6#8/8#10/36#16 * (50A)</p>
	<p>10#10/45#16 (55)</p>	<p>10#10/45#16 (55A)</p>	<p>60#16 *</p>	<p>56#14/4#16/9#20 (69)</p>

NOTES:

All configurations shown are the face view of the receptacle connector (BCR/FCR/CCR).

▼ This symbol refers to the receptacle shell keyway which keys the BCR, FCR, CCR shell to the mating CCP shell.

PBOF is the abbreviation for pressure balanced oil filled style connectors, reference catalog for more information.

* Upon request, these configurations are also available with the PBOF option.

CONTACT CONFIGURATIONS

SIZE	M99 SERIES CONTACT CONFIGURATIONS AVAILABLE			
Q				
S				

NOTES:

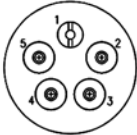
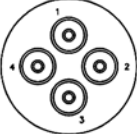
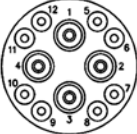
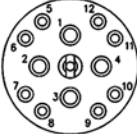

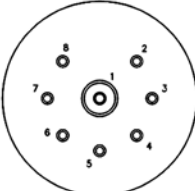
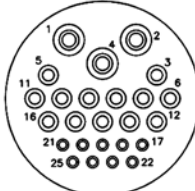
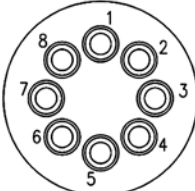
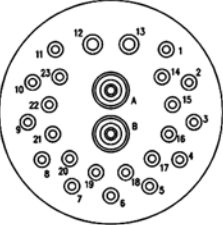
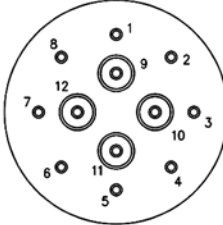
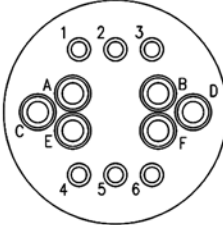
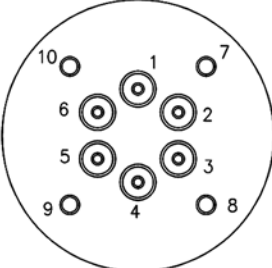
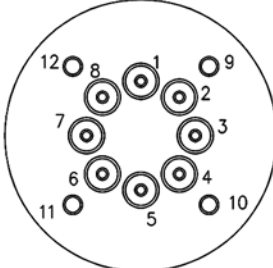
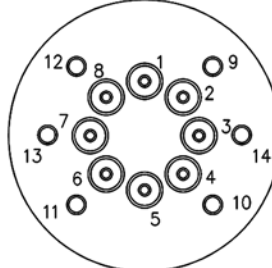

All configurations shown are the face view of the receptacle connector (BCR/FCR/CCR).

▼ This symbol refers to the receptacle shell keyway which keys the BCR, FCR, CCR shell to the mating CCP shell.

PBOF is the abbreviation for pressure balanced oil filled style connectors, reference catalog for more information.

* Upon request, these configurations are also available with the PBOF option.

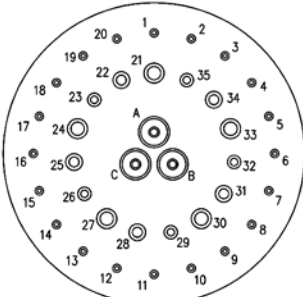
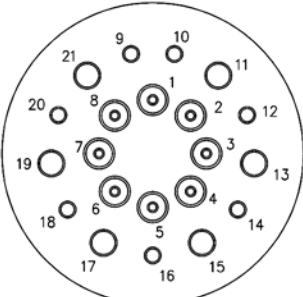
CONTACT CONFIGURATIONS

SIZE	MSS FIBER OPTIC SERIES CONTACT CONFIGURATIONS AVAILABLE
L	 <p>4FO-PBOF</p>
M	    <p>4FO 4FO/8#16 4FO/8#16-PBOF 4FO/8#16</p>
O	   <p>1FO/7#16 3FO/13#14/9#16 8FO</p>
P	   <p>2FO/2#14/21#16 4FO/8#16 6FO/6#10</p>
Q	    <p>6FO/4#10 8FO/4#10 8FO/6#10 8FO/8#10</p>

NOTES:

For further information please see our dry-mate fiber optic section or contact SEA CON®.

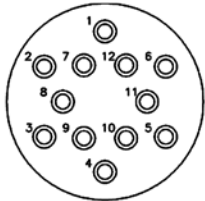
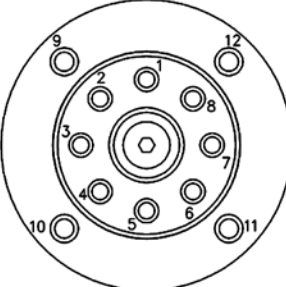
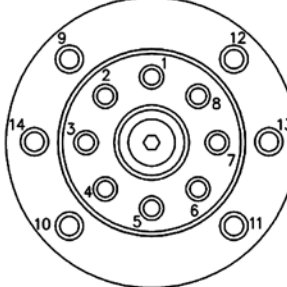
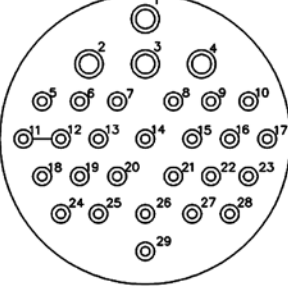
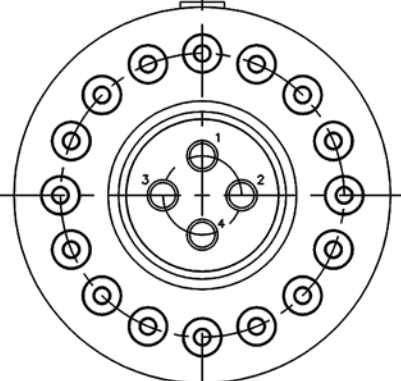
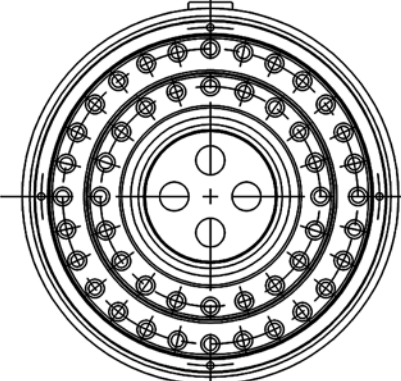
CONTACT CONFIGURATIONS

SIZE	MSS FIBER OPTIC SERIES CONTACT CONFIGURATIONS AVAILABLE
S	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  <p data-bbox="308 556 511 577">3FO/5#10/5#14/5#16/20#20</p> </div> <div style="text-align: center;">  <p data-bbox="779 556 885 577">8FO/6#6/7#10</p> </div> </div>

NOTES:

For further information please see our dry-mate fiber optic section or contact SEA CON®.

DIMENSION DETAILS

SIZE	MSS SERIES 'SPECIALS' AVAILABLE TO ORDER ONLY		
L	 <p>12#16</p>		
Q	 <p>8FO/4#10</p>	 <p>8FO/6#10</p>	 <p>25#16/4#10</p>
S	 <p>16FO/4#8</p>		 <p>48FO/4#8</p>

NOTES:

For further information please see our dry-mate fiber optic section or contact SEA CON®.

HANDLING PROCEDURES AND SPECIAL CAPABILITIES

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E-Mail: sales@seaconphoenixllc.com
Website: www.seaconphoenixllc.com

Even though these procedures appear simple, only qualified technicians should perform the installation and maintenance.

INSTALLATION PROCEDURES

Torque values referenced assume installation into dry metal threads. Bulkhead connector receptacle (BCR) o-ring should be lubricated with an appropriate silicone grease before installing. This lubricant should be applied to form an adequate film. Excessive lubrication is detrimental to the operation of the connector. Care must be taken to ensure no grease or dirt is present on the face of the fiber optic contact. Cleaning of the contact is recommended using only suitable products. CCP o-ring should be greased as above with the same care being taken.

CARE AND MAINTENANCE

Once mated the connector requires no maintenance. When stored all fiber contacts should be protected with suitable dust caps.

CABLE AND CONTINUITY PRESERVATION

Avoid sharp bends in cables. Cables subjected to vibration or exposed to seawater drag should be adequately clamped to prevent conductor fatigue infringing cable minimum bend radius and ultimate failure.

SPECIAL ASSEMBLIES

SEA CON® maintains all facilities necessary to furnish complete underwater and environmental electrical connector/cable systems, including Research and Development, Engineering, Manufacturing, Quality Control and Pressure Testing. As well as supplying our standard 'off-the-shelf' items, we have the capability to design and manufacture SPECIAL CUSTOMIZED CONNECTORS AND CABLE ASSEMBLIES to suit your individual needs.

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