





55 SERIES

UNDERWATER ELECTRICAL DRY-MATE CONNECTORS

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66 SERIES 1-7



INTRODUCTION

The SEACON 55 SERIES of underwater electrical dry-mate connectors contain significant design improvements over other industry standard connectors, whilst maintaining compatibility and interchangeability with them. This connector range is also available in PEEK (Polyetheretherketone) which was selected for its superior chemical resistance, excellent electrical properties, wear and abrasion resistance and light weight. This PEEK series of connectors are not affected by corrosion or cathodic delamination.

Key features include:-

- · Industry Standard Compatibility
- · Proven Sealing Technology
- · Heavy Duty Stub Acme Threads (except shell size 15)
- · Pressure Rated Blanking Caps available

AVAILABILITY

Pressure rated to 10,000 psi (22,500ft/7,000m), the **55 SERIES** is available in 5 shell sizes with up to 24 contacts with PBOF (Pressure Balanced Oil Filled) options. Manufactured from 316L Stainless Steel as standard, other materials are also available upon request including Titanium, Aluminium Bronze and Alloy 625.

APPLICATIONS

This connector range is suitable for a variety of applications including ROV's, underwater cameras, diver communications, lights and pan and tilts.

TESTING

Please contact SEACON for details.

SPECIAL ASSEMBLIES

SEACON 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. SEACON also prides itself with the ability to perform stringent quality conformance testing procedures which are in accordance with the MIL-SPEC programs.

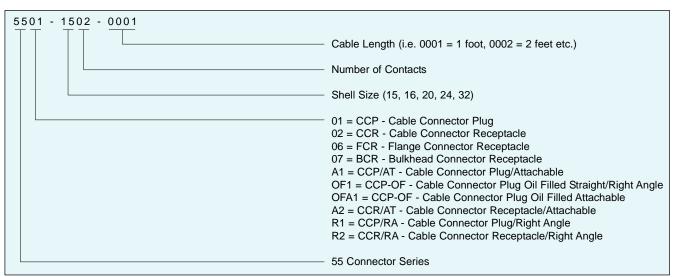
Please contact SEACON for further information.

ETHERNET

Ethernet compatible connectors in the 55 SERIES include the 1504 and 2004 for speeds up to 100 mbit/s compatible with Cat5 systems (cable dependant).

The 1508 and 2008 are suitable for speeds up to 1 Gbit/s compatible with Cat5e/6 and the 2013 for speeds up to 1 Gbit/s with the option to have an additional 4 power cores plus a screen, also compatible with Cat5e/6 systems (cable dependant).

PART NUMBER SYSTEM - EXAMPLE



NOTE:

- Dummy connectors are available. Please contact SEACON for details.
- · For new high power version availability please see page 10.









GENERAL INFORMATION

COMPONENT		MATERIAL	
CONNECTOR SHELL	STANDARD: OPTIONAL:	316L Stainless Steel electro polished. Titanium, Aluminium Bronze, Alloy 625 & PEEK. Others available upon request.	
ENGAGING NUT STANDARD: OPTIONAL:		316L Stainless Steel coated with a special anti-galling compound. Titanium, Aluminium Bronze & Alloy 625. Others available upon request.	
ELECTRICAL CONTA	стѕ	Copper Alloy and gold plated per MIL-G-45204.	
CONNECTOR BODY	STANDARD: OPTIONAL:	Neoprene. Nitrile, Hypalon. Others available upon request.	
OVERMOULD (STAN	DARD)	Neoprene, Nitrile, Hypalon. Others available upon request.	
CABLE	STANDARD: OPTIONAL:	Neoprene. Polyurethane & Polyethylene. Others available upon request.	
BULKHEAD TAILS		P.T.F.E insulated #16 AWG. Others available upon request. Please contact SEACON .	

CATEGORY	VALUE
PRESSURE	10,000 psi mated and un-mated.
VOLTAGE RATING (STANDARD)	600 VDC/440 VAC. 3kVDC for new high power version.
CURRENT (MAXIMUM)	5 to 18 amps dependant on contact and cable conductor size. 50 amps for new high power version.
OPERATING TEMPERATURE	-4°F to 194°F (-20°C to 90°C).
BULKHEAD MOUNTING TORQUE	15 shell size = 125 inch/lbs.* 16 shell size = 125 inch/lbs.* 20 shell size = 165 inch/lbs.* 24 shell size = 225 inch/lbs.* 32 shell size = 325 inch/lbs.*
MATING CYCLES	500.

NOTES:
. * Torque values refers to installation into dry metal threads.

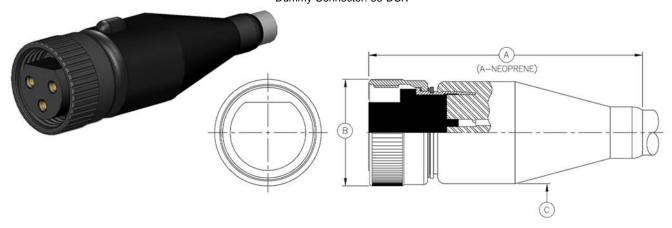
CURRENT TABLE

WIDE CALICE	CAPACITY AMPS					
WIRE GAUGE	1-3 Conductors	4-6 Conductors	7-9 Conductors	10-25 Conductors		
18	7	5	4	4		
16	10	8	6	5		
14	15	12	10	9		
12	20	20	14	12		
8	50	40	32	30		



55 **SERIES** 5501-CCP

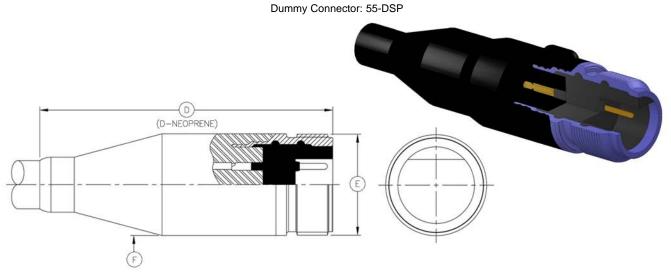
55 SERIES Cable Connector Plug Mates with 55-BCR/CCR/FCR Dummy Connector: 55-DSR



CONNECTOR	A - (INCHES)	A - NEOPRENE (INCHES)	B - Ø (INCHES)	C - Ø (INCHES)
5501-15	3.67	2.56	1.07	1.00
5501-16	3.67	2.56	1.17	1.125
5501-20	4.75	3.90	1.45	1.38
5501-24	5.38	3.76	1.70	1.64
5501-32	7.12	7.12	2.23	1.98

55 SERIES 5502-CCR

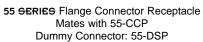
55 SERIES Cable Connector Receptacle Mates with 55-CCP

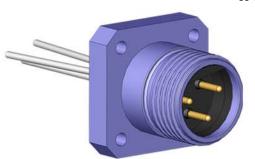


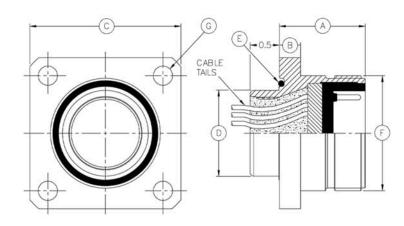
CONNECTOR	D - (INCHES)	D - NEOPRENE (INCHES)	E - THREAD	F - Ø (INCHES)
5502-15	3.37	2.62	15/16-20 UNEF	1.00
5502-16	T.B.A.	T.B.A.	T.B.A.	T.B.A.
5502-20	4.95	4.10	1 1/4-9 STUB ACME	1.38
5502-24	5.58	3.96	1 1/2-9 STUB ACME	1.64
5502-32	7.12	7.32	2-9 STUB ACME	1.98



55 **SERIES** 5506-FCR

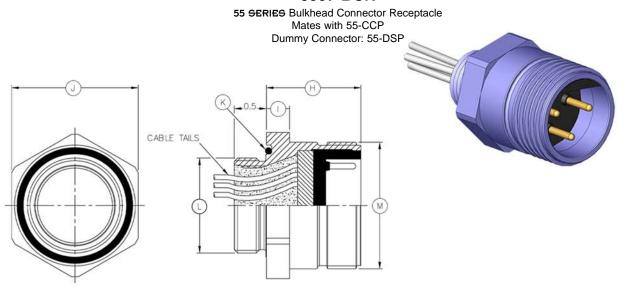






CONNECTOR	A - LENGTH (INCHES)	B - LENGTH (INCHES)	C - LENGTH (INCHES)	D - Ø (INCHES)	E - O-RING	F - THREAD	G - MOUNTING HOLE Ø (INCHES
5506-15	1.25	0.313	1.50	0.625	116	15/16-20 UNEF	0.215
5506-16	1.50	0.375	1.625	0.625	116	1-9 STUB ACME	0.219
5506-20	1.50	0.375	1.75	0.74	118	1 1/4-9 STUB ACME	0.276
5506-24	1.50	0.375	2.00	0.99	122	1 1/2-9 STUB ACME	0.276
5506-32	1.50	0.375	2.625	1.50	130	2-9 STUB ACME	0.335

55 SERIES 5507-BCR



CONNECTOR	H - LENGTH (INCHES)	I - LENGTH (INCHES)	J - ACROSS FLATS (INCHES)	K - O-RING	L - THREAD	M - THREAD
5507-15	1.25	0.313	1.12	116	5/8-18 UNF	15/16-20 UNEF
5507-16	1.50	0.375	1.12	116	5/8-18 UNF	1-9 STUB ACME
5507-20	1.50	0.375	1.25	118	3/4-16 UNF	1 1/4-9 STUB ACME
5507-24	1.50	0.375	1.50	122	1-14 UNS	1 1/2-9 STUB ACME
5507-32	1.50	0.375	2.00	130	1 1/2-12 UNF	2-9 STUB ACME

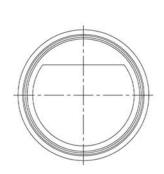


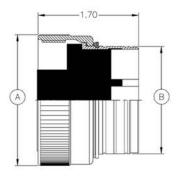


55 SERIES 55A1-CCP/AT

55 SERIES Cable Connector Plug Attachable Mates with 55-BCR/CCR/FCR Dummy Connector: 55-DSR

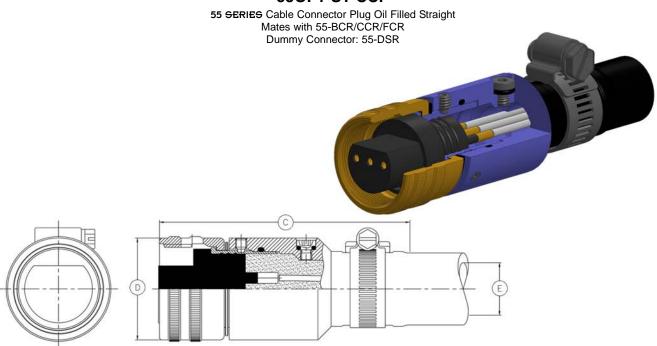






CONNECTOR	A - Ø (INCHES)	B - Ø (INCHES)
55A1-15	1.08	0.69
55A1-16	1.17	0.813
55A1-20	1.45	1.085
55A1-24	1.70	1.30
55A1-32	2.23	1.81

55 SERIES 55OF1-ST-CCP



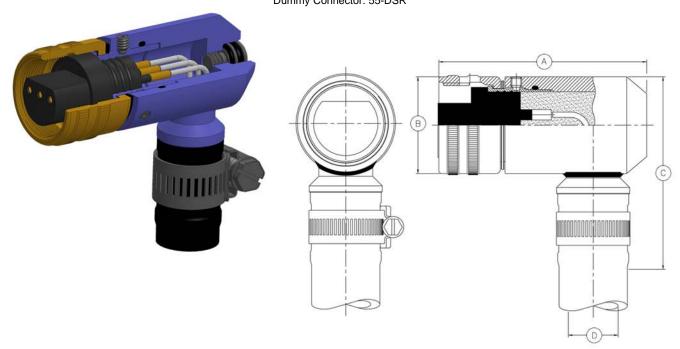
CONNECTOR	C - LENGTH (INCHES)	D - Ø (INCHES)	E - Ø HOSE (INCHES)
55OF1-15	3.56	1.102	0.50
55OF1-20	3.56	1.450	0.75
55OF1-24	3.69	1.670	0.75





55 SERIES 55OF1-R/A-CCP

55 SERIES Cable Connector Plug Oil Filled Right Angle Mates with 55-BCR/CCR/FCR Dummy Connector: 55-DSR

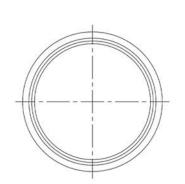


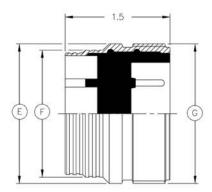
CONNECTOR	A - LENGTH (INCHES)	B - Ø (INCHES)	C - LENGTH (INCHES)	D - Ø HOSE (INCHES)
55OF1-15	2.86	1.102	2.53	0.50
55OF1-20	3.12	1.450	2.88	0.75
55OF1-24	3.12	1.670	3.10	0.75

55 SERIES 55A2-CCR

55 SERIES Cable Connector Receptacle/Attachable Mates with 55-CCP

Dummy Connector: 55-DSP







CONNECTOR	E - Ø (INCHES)	F - Ø (INCHES)	G - THREAD
55A2-15	1.00	0.77	15/16-20 UNEF
55A2-16	T.B.A.	T.B.A.	T.B.A.
55A2-20	1.25	1.02	1 1/4-9 STUB ACME
55A2-24	1.50	1.28	1 1/2-9 STUB ACME
55A2-32	2.00	1.82	2-9 STUB ACME

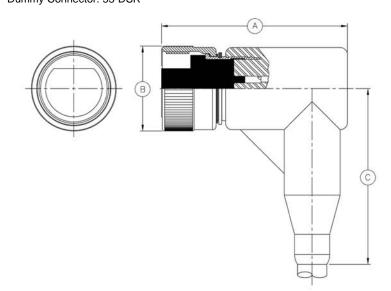




55 SERIES 55R1-CCP

55 SERIES Cable Connector Plug/Right Angle Mates with 55-BCR/CCR/FCR Dummy Connector: 55-DSR

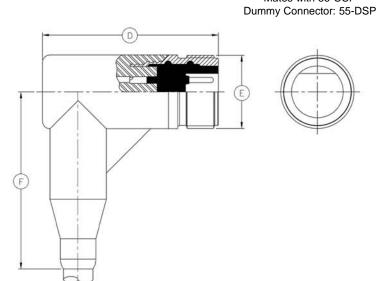




CONNECTOR	A - LENGTH (INCHES)	B - Ø (INCHES)	C - LENGTH (INCHES)
55R1-15	2.91	1.08	2.63
55R1-16	2.91	1.17	2.63
55R1-20	3.16	1.45	3.42
55R1-24	3.42	1.70	3.84
55R1-32	3.63	2.23	4.85

55 SERIES 55R2-CCR

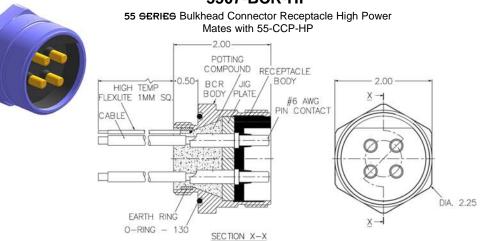
55 SERIES Cable Connector Receptacle/Right Angle Mates with 55-CCP





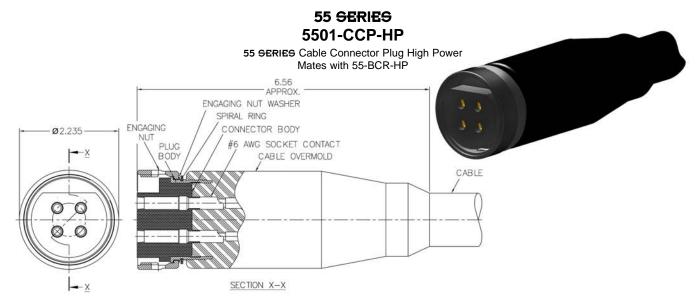
CONNECTOR	D - LENGTH (INCHES)	E - THREAD	F - LENGTH (INCHES)
55R2-15	2.52	15/16-20 UNEF	2.63
55R2-16	2.52	1-9 STUB ACME	2.63
55R2-20	3.48	1 1/4-9 STUB ACME	3.42
55R2-24	3.52	1 1/2-9 STUB ACME	3.84
55R2-32	3.54	2-9 STUB ACME	4.85

55 SERIES 5507-BCR-HP

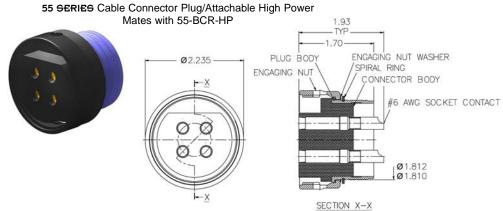


NOTES:

- · High power BCR only available in size 32, #6 AWG and 4 contact configurations.
- · Only mates to high power 55 SERIES CCP.



55 SERIES 55A1-CCP/AT-HP



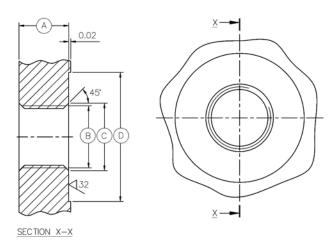
NOTES

- · High power CCP only available in size 32, #6 AWG and 4 contact configurations.
- · Only mates to high power 55 SERIES BCR.



55 SERIES 5507-BCR INTERFACE DETAILS

55 SERIES Bulkhead Connector Receptacle

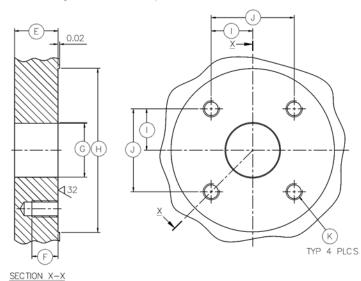


BCR INTERFACE MOUNTING INFORMATION

CONNECTOR	A - MIN LENGTH (INCHES) B - THREAD		C - Ø (INCHES)	D - MIN Ø (INCHES)
5507-15	0.50	5/8-18 UNF 2B	0.68	1.30
5507-16	0.50	5/8-18 UNF 2B	0.68	1.30
5507-20	0.50	3/4-16 UNF 2B	0.79	1.44
5507-24	0.50	1-14 UNS 2B	1.05	1.73
5507-32	0.50	1 1/2-12 UNF 2B	1.55	2.31

55 SERIES 5506-FCR INTERFACE DETAILS

55 SERIES Flange Connector Receptacle

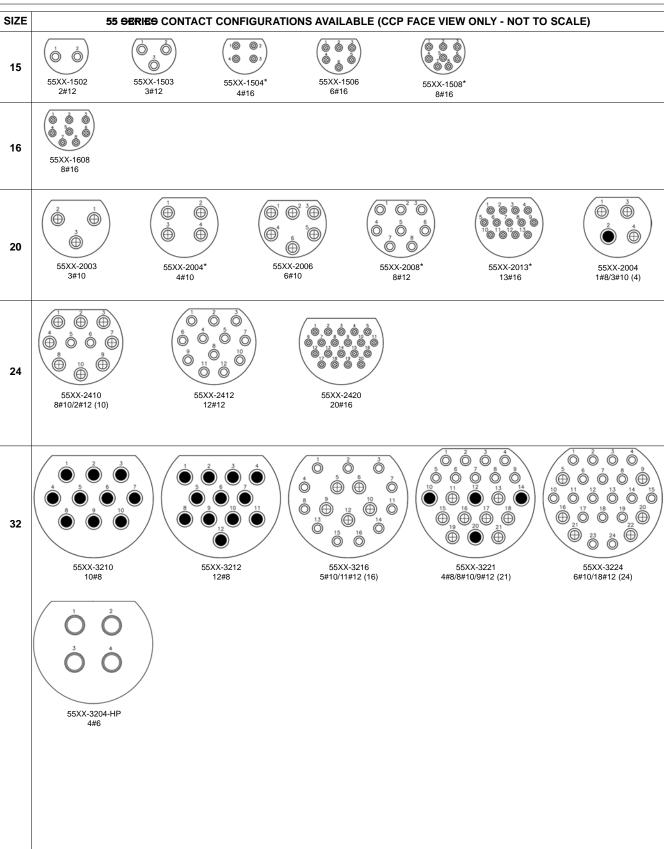


FCR INTERFACE MOUNTING INFORMATION

CONNECTOR	E - MIN (INCHES)	F - TYPICAL (INCHES)	G - Ø (INCHES)	H - Ø (INCHES)	I - (INCHES)	J - (INCHES)	K - THREAD	RECOMMENDED FIXING SCREW LENGTH
5506-15	0.525	0.315	0.65	1.98	0.50	1.00	M5x0.8p 6H	15mm
5506-16	0.525	0.315	0.65	2.13	0.5625	1.125	M5x0.8p 6H	16mm
5506-20	0.625	0.375	0.77	2.33	0.625	1.25	M6x1.0p 6H	18mm
5506-24	0.625	0.375	1.02	2.655	0.75	1.50	M6x1.0p 6H	18mm
5506-32	0.825	0.50	1.52	3.53	1.00	2.00	M8x1.25p 6H	20mm







Pin Diameter	1/16	3/32	1/8	5/32
Wire Accomodation (AWG)	18	16	16	12

NOTES:

 $\cdot\,$ * Ethernet compatible connectors. Please see page 3 for more details.







66 SERIES

UNDERWATER ELECTRICAL DRY-MATE CONNECTORS

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INTRODUCTION

SEACON (europe) Ltd is pleased to announce the release of a new range of underwater electrical dry-mate connectors to compliment the existing 55 SERIES. The new 66 SERIES of reverse gender connectors enable power to be applied to the bulkhead connector yet still be safe to use. Manufactured utilizing tried and tested methods and materials, this new range also incorporates shorter locking sleeves to ensure easier mating capability.

Other key features include:-

- Industry Standard Compatibility
- · Proven Sealing Technology
- · Heavy Duty Stub Acme Threads*
- Pressure Rated Blanking Caps available

AVAILABILITY

The 66 SERIES is currently available in two shell sizes; 16 and 20 with two configurations (8#16/13#16), however more configurations will be added to the range if required.

APPLICATIONS

This new connector range is suitable for a variety of applications including ROV's, underwater cameras, diver communications, lights and pan and tilts.

TESTING

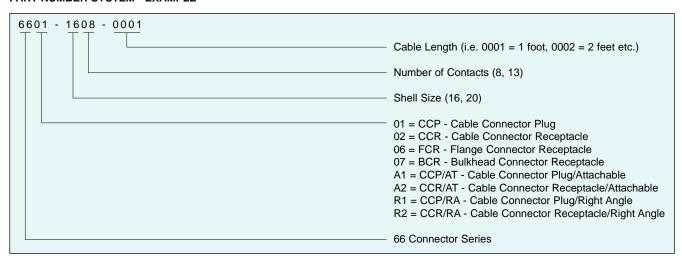
Please contact SEACON for details.

SPECIAL ASSEMBLIES

SEACON 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. SEACON also prides itself with the ability to perform stringent quality conformance testing procedures which are in accordance with the MIL-SPEC programs.

Please contact SEACON for further information

PART NUMBER SYSTEM - EXAMPLE



GENERAL INFORMATION

COMPONENT	MATERIAL
CONNECTOR BODY BCR/CCP/FCR	316L Stainless Steel Shell / Neoprene internals.
CONTACTS	Gold plated per MIL-G-45204.
O-RING	Nitrile N70.
ENGAGING NUT	316L Stainless Steel coated with special anti-galling compound.
IN-LINE CABLE	Neoprene. Other materials are also available. Please contact GEACON® for details.
SPIRAL RETAINING RING	316L Stainless Steel.

CATEGORY	VALUE
OPEN FACE PRESSURE	Up to 10,000 psi.
MATED PRESSURE	10,000 psi.
VOLTAGE RATING	600 VDC / 440 VAC.
CURRENT	7 amps (contacts 13 amps) and cable dependent.
BULKHEAD MOUNTING TORQUE	16 shell size = 125 inch/lbs*. 20 shell size = 165 inch/lbs*.

NOTE:

* Torque values refers to installation into dry metal threads.

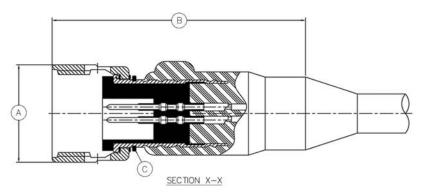




66 SERIES 6601-CCP

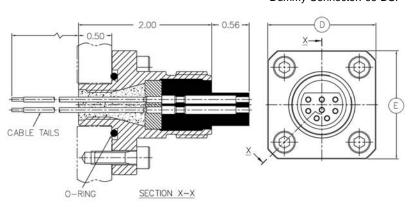






66 SERIES 6606-FCR

66 SERIES Flanged Connector Receptacle Mates with 66-CCP Dummy Connector: 66-DSP

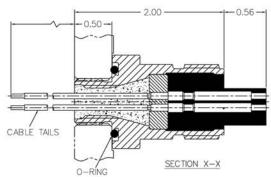


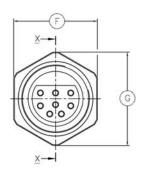


66 **SERIES** 6607-BCR

66 SERIES Bulkhead Connector Receptacle Mates with 66-CCP Dummy Connector: 66-DSP







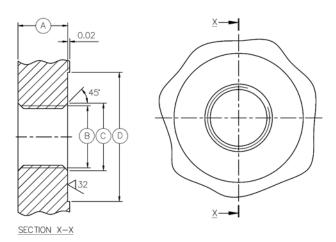
CONNECTOR	A - Ø (INCHES)	B - LENGTH (INCHES)	С	A - LENGTH (INCHES)	B - LENGTH (INCHES)	C - LENGTH (INCHES)	D - LENGTH (INCHES)
6601 / 6606 / 6607-16	1.17	3.04 APPROX	SPIRAL RETAINING RING	1.625	1.625	1.12	1.25
6601 / 6606 / 6607-20	1.45	3.70 APPROX	CIRCLIP	1.75	1.75	1.25	1.40



66 SERIES DIMENSION DETAILS SE A C O N

66 SERIES 6607-BCR INTERFACE DETAILS

66 SERIES Bulkhead Connector Receptacle

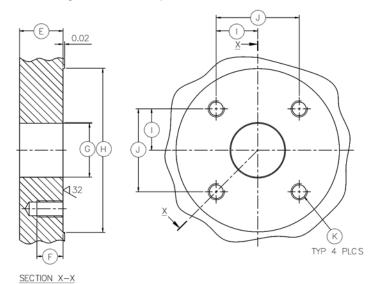


BCR INTERFACE MOUNTING INFORMATION

CONNECTOR	A - MIN LENGTH (INCHES)	B - THREAD	C - Ø (INCHES)	D - MIN Ø (INCHES)	
6607-16	0.50	5/8-18 UNF 2B	0.68	1.30	
6607-20	0.50	3/4 -16 UNF 2A	0.79	1.44	

66 SERIES 6606-FCR INTERFACE DETAILS

66 SERIES Flange Connector Receptacle



FCR INTERFACE MOUNTING INFORMATION

CONNECTOR	E - MIN LENGTH (INCHES)	F - TYPICAL Ø (INCHES)	G - Ø (INCHES) H - Ø (INCHES)		I - LENGTH J - LENGTH (INCHES)		K - THREAD	RECOMMENDED FIXING SCREW LENGTH
6606-16	0.525	0.315	0.65	2.13	0.5625	1.125	M5x0.8p 6H	16mm
6606-20	0.625	0.375	0.77	2.33	0.625	1.25	M5x0.8p 6H	18mm



SIZE	66 SERIES CONTACT CONFIGURATIONS AVAILABLE (CCP FACE VIEW ONLY - NOT TO SCALE)
16	0 ³ 0 ² 0 66 0 ⁵ 0 ⁴ 80 07 66XX-1608 8#16
20	30 20 10 60 50 40 80 70 66XX-2008 8#16 66XX-2013 13#16

NOTE:

· Shell size 16 only available in 8#16 configuration.

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Even though these procedures appear simple, only qualified technicians should perform the installation and maintenance. Connectors are designed for installation on one atmosphere vessels. Contact SEACON for recommendations if using compensated vessels.

Torque values referenced in this literature assume installation into dry metal threads. For other applications, please contact SEACON for recommendations.

BULKHEAD CONNECTOR (BC): The BC may be installed using one of two methods. The preferred method is to spotface the bulkhead surface and thread the hole, then screw the connector by means of a nut and washer. The bored hole (or threaded hole) should be free of any "burrs" and all o-ring sealing surfaces polished to a number 32 finish. Lubricate the BC o-ring with an appropriate silicon spray or grease before installing. This lubrication should be applied to form an adequate film. Excessive lubrication is detrimental to the operation of the connector. Bulkhead nut, if used, should not be over-torqued.

IN-LINE CONNECTOR: Lubricate the sealing areas around the male pins, using an appropriate silicon spray, or grease lightly.

The 55 & 66 SERIES connectors require very little maintenance. They are designed to be used in harsh environments and thus limited amounts of dirt and grit do not affect their performance.

It is recommended that, upon disconnecting or retrieving the system, the connectors be cleaned, to storage (if possible, remate with dummy plugs). Prior to deployment the following maintenance procedure is recommended:

- 1. Demate the connector set.
- 2. Flush connector interface with fresh water (deionized water if available), remove all dirt, grit and grease.
- 3. Inspect for damage in sealing areas, excessive corrosion, debonding of the cable and connector interface and cuts in the cable jacket.
- 4. Apply thin film of dilectric compound (DC) grease, silicon based, to sealing areas of male connector and across the face of the female connector*. If the BC is removed from it's housing then replace facial o-ring and make sure that o-rings are lubricated and in good
- 5. Mate the connector halves, wipe away any excess grease off the interface line of the mated set.
- * CAUTION: The use of some oil-based propellants in spray cans can cause conductivity problems in neoprene.

Avoid sharp bends in cables. Cables subjected to vibration or exposed to seawater drag should be adequately clamped to prevent conductor fatique and ultimate failure.

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