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Underwater Connectivity

‘J’ HV Electrical Connector Subsea / Underwater / Marine

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‘J’ HV Electrical Connector Subsea / Underwater / Marine

Introduction:

CRE has developed a wide range of metal shell connectors over the years focussed on delivering high reliability in tough environments. They are designed for heavy duty use in the most rigorous underwater applications on the planet. The design offers a high integrity sealing arrangement, metal key-ways,multiple options,size,pin quantity,voltage and current rating along with our ability to design specific solutions for your application.

Manufactured as standard from stainless steel or custom built with any material specified, they come with high open face pressure resistance. The standard connectors are rated to 6000m WD and are designed for use in moulded, oil filled and PBOF assemblies in power, signal and electro-mechanical applications.

Common applications:

- ROV, Resident ROV & AUV
- Manned underwater vehicles
- Aquaculture
- Renewables
- Ocean science/research
- Dive / depressurisation systems

Key features:

- Up to 8 contacts
- Mixed contact sizing options
- Custom solutions (contact qty/size/type, glass to metal)
- Rated for 6000m WD mated and open face as standard, higher pressure available on application
- Oil filled (OF) available as standard, moulded on application.
- Working voltage : 6 x 1.56mm @ 600v, 2 x 3.3mm @ 4500vac

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Underwater Connectivity

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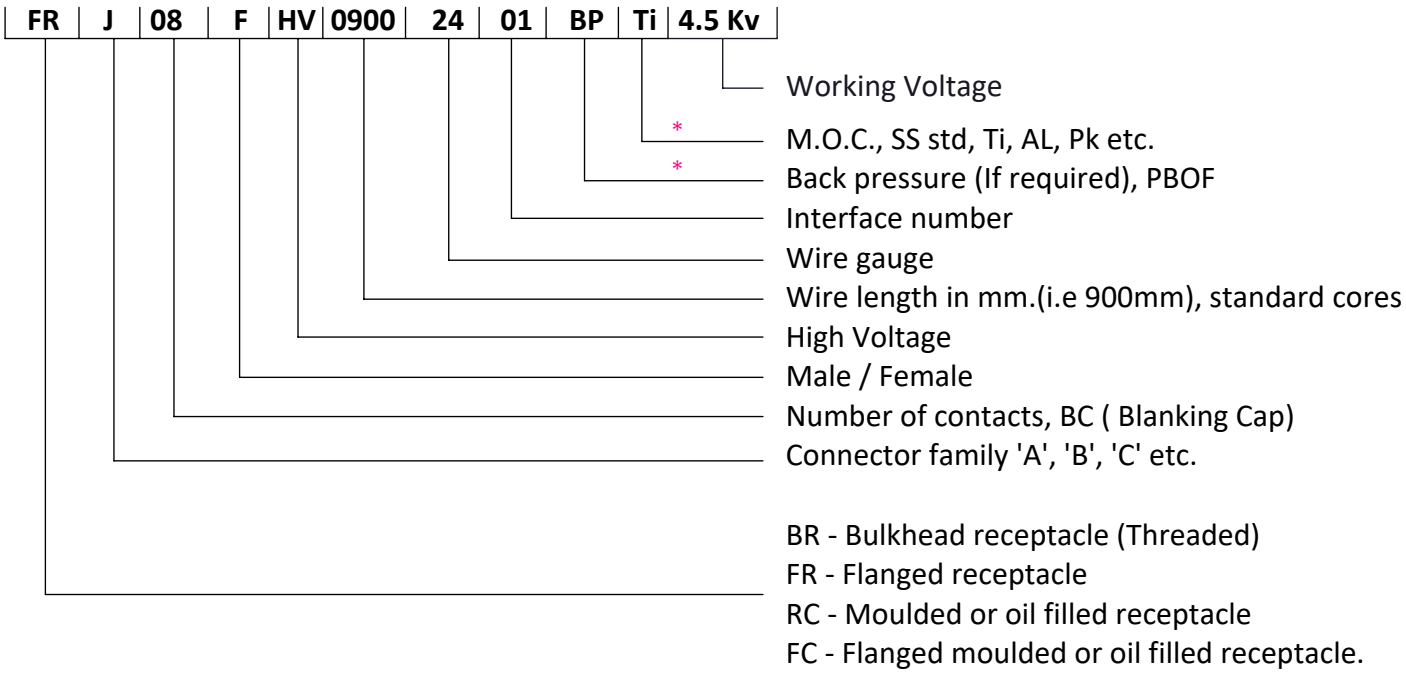
Subsea / Underwater / Marine

Part numbering:

Bulkhead example:



Notes:

1. For standard assemblies, the part number structure indicated * above is left blank.
2. Where custom wiring is required, Engineering will issue a BA**** (Bulkhead Assembly Part Number) to substitute for the wire length/gauge in the part number structure. For example, in the part nunber above 090024 would be replaced by BA followed by a four digit number to create a unique identifier.

Component	Material
Bulkhead Body	Stainless steel 316L standard
Contact Insert	Isoval Glass Fabric
Electrical contacts	BS2874 CZ121
Plating detail	1um Acid Gold over 2.5 um Nickel Copper Flash
Retaining nut/washer (optional, order if req.)	Stainless steel
Flange retainers (optional, order if req.)	Stainless steel
'O' Rings	Nitrile NI70 or as specified by customer

Notes:

1. Contact CRE for any special-order materials required

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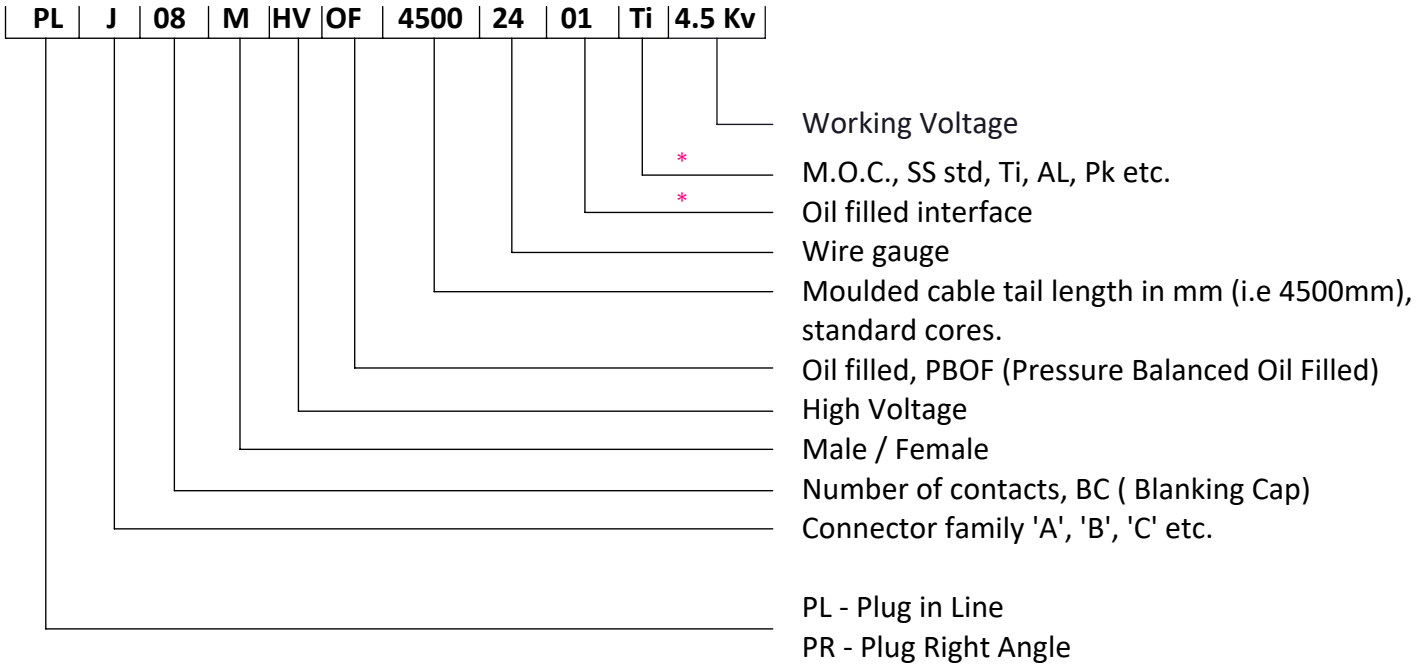
Part numbering:

Connector example:



Notes:

1. For standard moulded assemblies, the part number structure indicated * above is left blank.
2. Where custom wired moulded tail is required, Engineering will issue a CA**** (Connector Assembly Part Number) to substitute for the wire length/gauge in the part number structure. For example, in the part nunber above 090024 would be replaced by CA followed by a four digit number to create a unique identifier.

Component	Material
Connector Body	Stainless steel 316L standard
Locking Collar	Aluminium Nickel Bronze
Backing Washer	Acetal
Contact Insert	Isoval Glass Fabric
Electrical Contacts	BS2874 CZ121
Plating detail	1um Acid Gold over 2.5 um Nickel Copper Flash
'O' Rings	Nitrile NI70 or as specified by customer

Notes:

1. Contact CRE for any special-order materials required
2. Penetrator options are also available as required.

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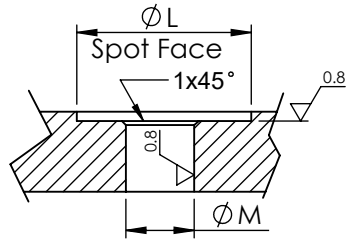
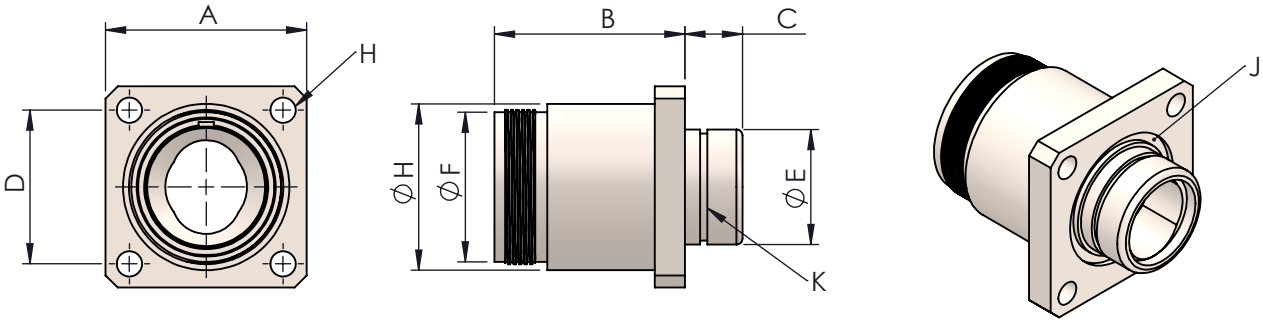
Underwater Connectivity

Reference Dimensions 'J' Connector

Flanged Bulkhead Connector Receptacle (FR)



INTERFACE DETAILS



A	B	C	D	E	F	G	H	J-'O'RING	K-'O'Ring	L	M	TYPE
66.5	63	19	50.8	38.05	49.5	8.35	55	BS130	BS028	92	38.1/38.15	01

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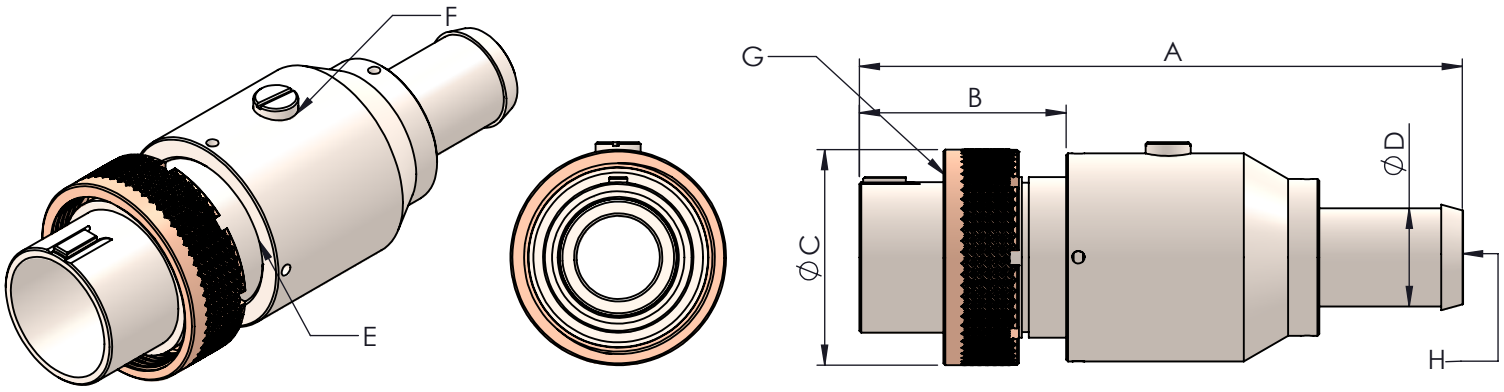
Underwater Connectivity

Reference Dimensions 'J' Connector



A	B	C	D	E-'O'Ring	F-'O'Ring	G-'O'Ring	BORE H	TYPE
159.5	54.5	57	26	BS030	6 x 1.5	BS030	22	01

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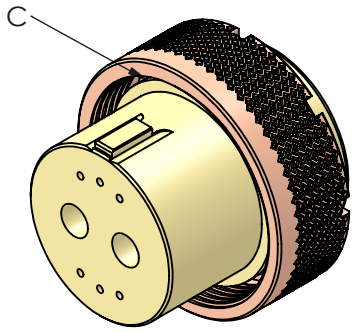
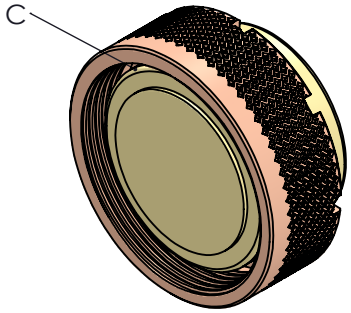
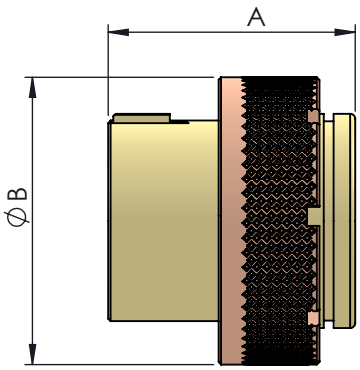
Underwater Connectivity

Reference Dimensions 'J' Connector

Bulkhead Blanking Plug - PLJHVBC



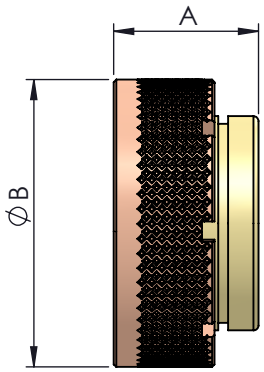




MALE BULKHEAD

FEMALE ASSEMBLY		
A	B	C-'O'Ring
49	57	BS030

PLJ08FHVBC

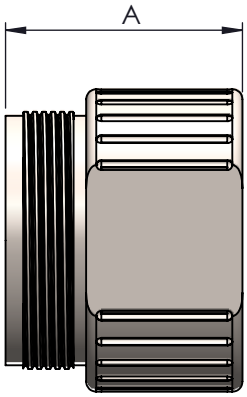


FEMALE BULKHEAD

MALE ASSEMBLY		
A	B	C-'O'Ring
28.5	57	BS030

PLJMHVBC

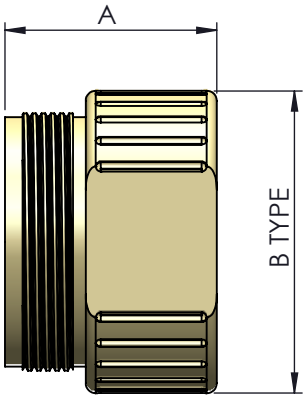
Cable Connector Blanking Cap - BRJHVBC



MALE CCP

FEMALE CAP		
A	B	C
47	60	52

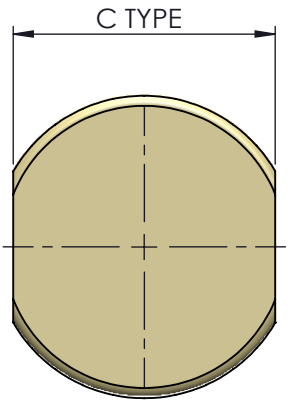
BRJ08FHVBC



FEMALE CCP

MALE CAP		
A	B	C
42	60	52

BRJMHVBC



All dimension in mm

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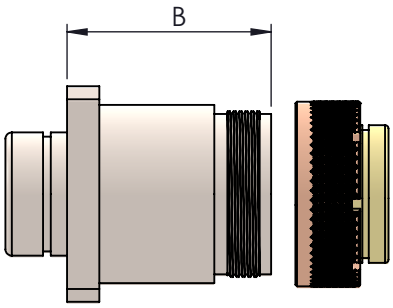
Underwater Connectivity

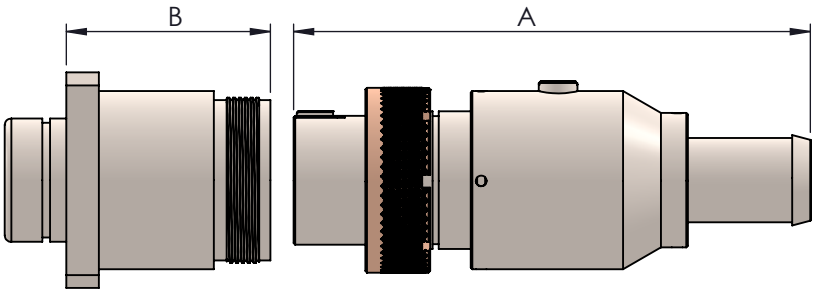
Assembled Dimensions 'J' Connector



PLJBCHV

Assembled Dimension = 'B' + 13.5mm Male Assy
Assembled Dimension = 'B' + 15.5mm Female Assy

FLANGED BULKHEADS
FRJ01



PLJOF01HV

Assembled Dimension = 'B' + 'A' - 23mm

EXAMPLE: FRJ01 'B' = 63.0, PLJOF01HV 'A' = 159.5
THEREFORE ASSEMBLED DIMENSION IS 63.0 + 159.5 - 23 = 199.5

Note: Step files for design purposes available from engineering@CRE-marine.com

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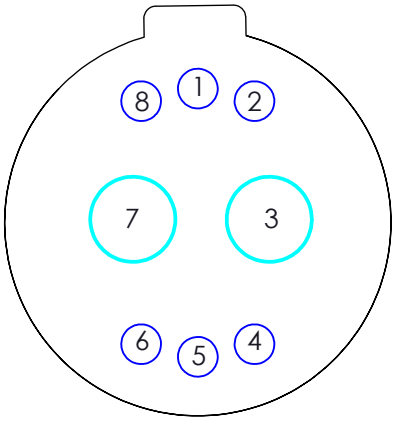
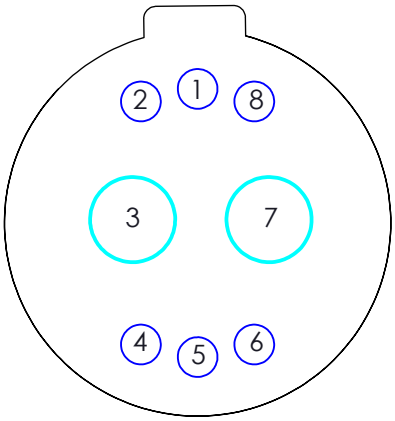
Pin Face View



8 WAY
600/4500 VAC

Socket Face View



8 WAY
600/4500 VAC

∅1.56 Pin ∅3.3 Pin

For current carrying capacity and wire recommendations see page 10

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Underwater Connectivity

Current Capacity and Wire Recommendations

- The wire options for bulkheads are governed by the through bore of the bulkhead body and the dimensions of the solder bucket on the contact.
- Heat, caused by an electrical current flowing through a conductor will determine the amount of current that the wire will handle.
- The current rating follows industry standards for a single wire in free air at 30 deg. C with derating for bundled wires.
- The table below shows the current required to raise the temperature of a single insulated conductor to the limits of its insulation temperature.

Contact dia.	**1.56**	**3.3**
Wire size	16 awg	8 awg
Current	26 amps	50 amps
Contact rating based on PTFE type C cable		

Derating Factors for Bundled Conductors	
Bundle #	Derating Factor (x Amps)
2 - 5	0.8
6 - 15	0.7

The table above shows the recommended tightening torque values for threaded bulkhead interfaces into metallic housings.
We recommend the use of a small quantity of anti-seize lubricant such as Copaslip applied to the pin thread as a lubricant to aid the make-up process.
Should you require any further information or advice please contact CRE direct on sales@cre-marine.com