

**Request Glenair Documents GDS337-G55 & GDS337-G66 for full connector and accessories range**

The SuperG55™ & SuperG66™ family of dry-mate deep-sea-high pressure connectors are a revolutionary new design of the popular industry-standard used in countless ROV, underwater camera, diver communications, lights, pan and tilts, and other subsea applications

Available in multiple shell sizes and configurations, both the SuperG55™ & SuperG66™ are manufactured from 316L Stainless Steel with insert molded contact assemblies designed for pressure-seal applications up to 689 Bar mated and unmated. Inter-mateable and inter-mountable with other “55” & “66” series connectors, the Glenair solution introduces a long list of product innovations, designed to improve performance and durability.

Performance Specifications	
Mating Cycles	500
Pressure	689 Bar (10k psi) mated & unmated
Operating Temperature	-20°C to +90°C
Voltage Rating	600 VDC / 440VAC
Current (max)	5 to 18A, configuration dependant
Insulation Resistance	>1GΩ, 1000V
Dielectric Withstand Voltage	<2mA @ 1800V, 30 secs

**SuperG55™ & SuperG66™ has undergone a full, rigorous qualification test.  
 Consult Glenair UK for further details**

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## Pre-installation Checks

SuperG55™ & SuperG66™ Connectors are manufactured and tested at Glenair UK, Mansfield. Prior to installation, a few simple checks are recommended:

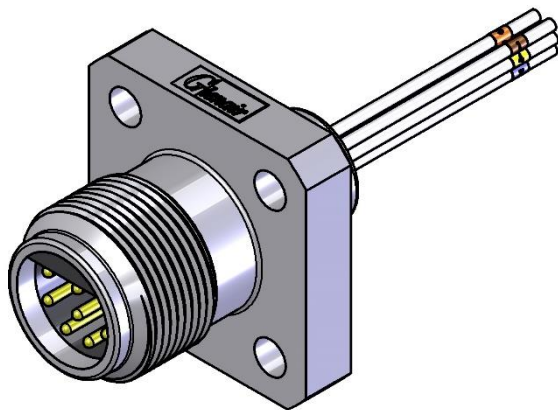
- Visually inspect the Connectors for damage, paying particular attention to the mating Connector faces, ensuring there are no foreign object debris evident.
  - Clean off any contaminants carefully; Glenair recommend a clean brush and water only.
  - Solvents may damage the Rubber faces.
  - Low pressure compressed air should only be used if it is free from contaminants.
- Inspect the Pins and Sockets and ensure the Connector Contact Configuration is paired correctly.
- Confirm that the Receptacle Connector metalwork is free from dents, nicks and scratches on all faces, including any threads, and that the O-Ring is present.
  - Damage to the metalwork may compromise a reliable seal.
- Ensure all cables and wires are free from abrasions, bends, tangles and kinks.
- Do not install a potentially damaged connector. If in doubt, contact Glenair UK.

## Installation

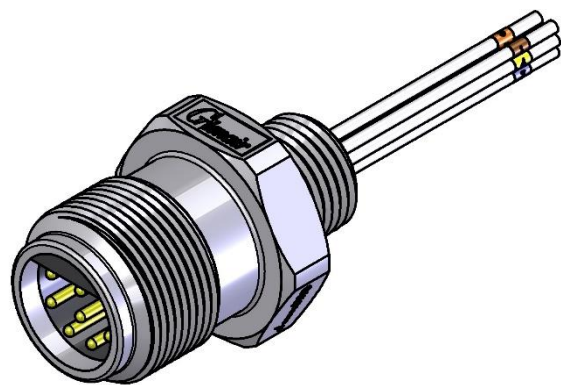
### Receptacle Connectors G5506 FCR and G5507 BCR

#### Mounting

SuperG55™ interface-sealing Receptacle Connectors are available in two configurations:



**G5506 Flanged Connector**



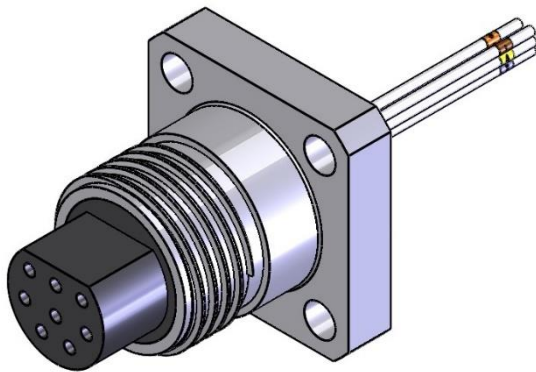
**G5507 Bulkhead Connector**

## Installation

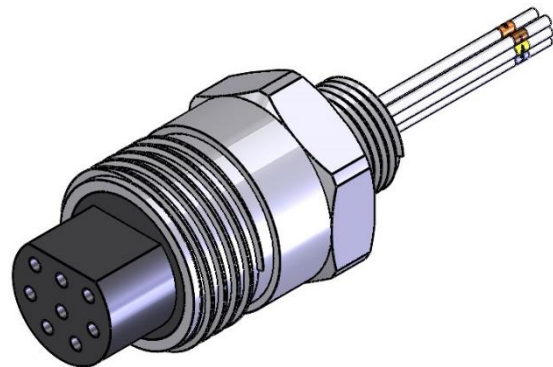
### Receptacle Connectors G6606 FCR and G6607 BCR

#### Mounting

SuperG66™ interface-sealing Receptacle Connectors are available in two configurations:



**G6606 Flanged Connector**



**G6607 Bulkhead Connector**

#### Interface

A sealing surface finish of N6 [0.8µm, 32µinch] or smoother is required for sealing. The surface must be free from corrosion and scratches. Glenair recommend a dedicated spotface to achieve this.

**Consult Glenair UK GDS337 for full interface drilling details**

#### G5506 & G6606 Flanged Connector Receptacle

G5507 & G6607 FCR Connectors are supplied without fixtures and require 4-off bolts, typically Hexagon Socket Head Cap Screws, to mount with:

G5506 Mounting Fixtures – 4-off	
Shell Size	Thread
15	M5
20	M6
24	M6
32	M8

Glenair do not advise on FCR fixture torque settings given variances in materials and grades.

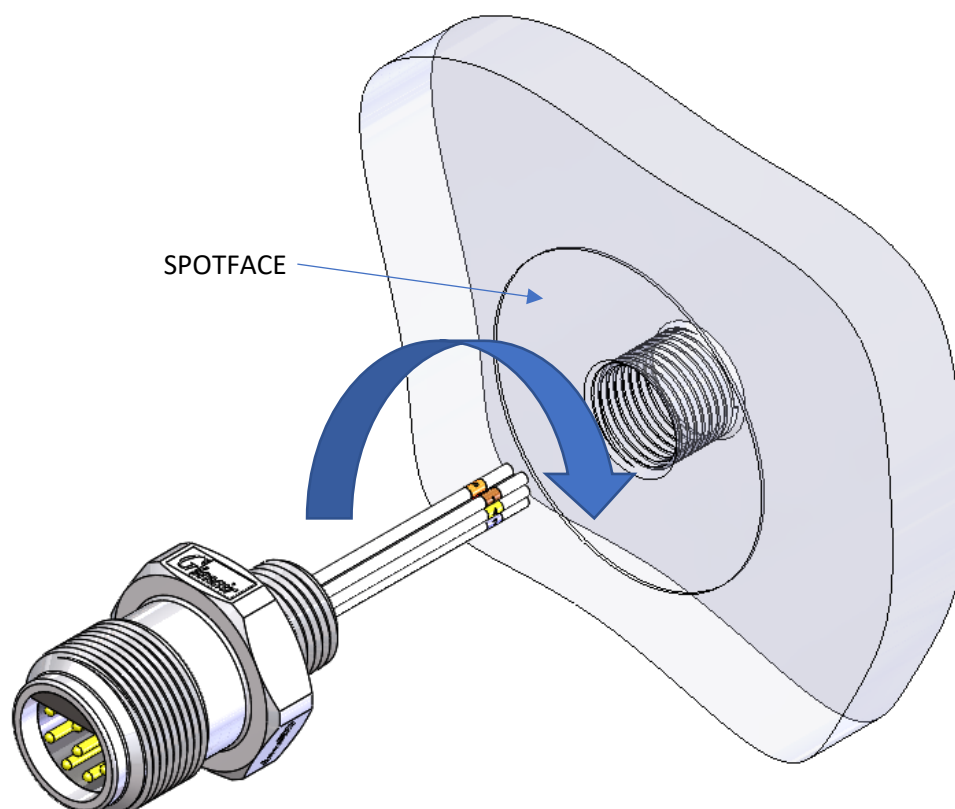
## G5507 & G6607 Bulkhead Connector Receptacle

G55 & G66 Bulkhead Connectors are supplied with an integral rear-mounting thread. The following mounting installation torque values are recommended:

G5507 Mounting Torque	
Shell Size	Torque
15	14Nm [125 lb-in]
20	18Nm [165 lb-in]
24	25Nm [225 lb-in]
32	36Nm [325 lb-in]

The values quoted are for reference only, calculated using dry, non-lubricated threads into a Stainless Steel 316L interface Port. Customers may elect to lubricate mounting threads with a light oil or anti-galling/anti-seize compound at their discretion. Optimum torque values may therefore vary. Always ensure the O-Ring is not contaminated by any thread lubricant.

**Take care not to chafe or nick any of the pigtail wires when passing through the interface**



## O-Ring Lubrication

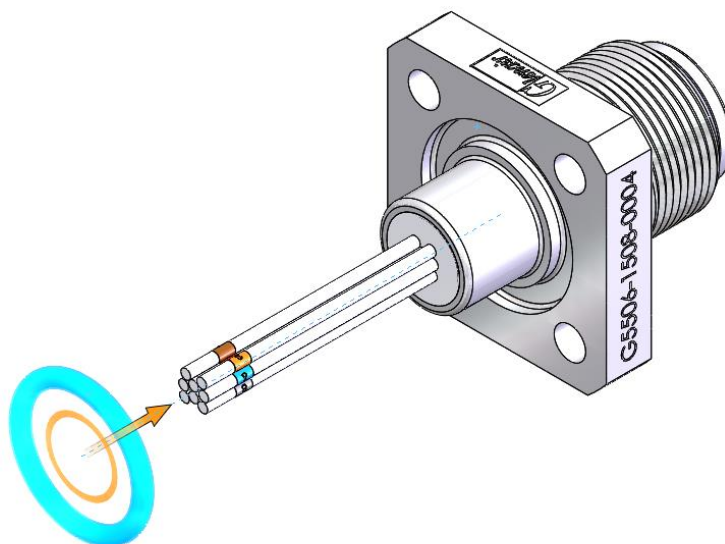
Receptacle Connectors utilise an O-Ring to create a pressure-proof, reliable seal to the interface. G5506 FCR and G5507 BCR Connectors are supplied from Glenair UK with the O-Ring installed in-situ.

- Lubricate the O-Ring with a **thin** film of Silicone Grease and ensure the O-Ring is re-seated in the groove correctly.
  - Glenair recommend Dow Corning DC4 or equivalent. Aerosols are not advised.
  - Observe the manufacturers health and safety recommendations.
  - **Do not over-grease the O-Ring**
  - Take care with O-Rings and if in doubt, replace the seal

Replacement receptacle O-Ring Sizes Applicable to both G5506 FCR and G5507 BCR	
Shell Size	O-Ring
15	BS1806-116
20	BS1806-118
24	BS1806-122
32	BS1806-130

Glenair recommend and supply Nitrile O-Rings with a Shore 70 hardness which is suitable for most applications.

**When re-installing a Receptacle Connector, always replace the O-Ring**



## Connector Engagement

### Mating a G5501 Plug Connector to a Receptacle

SuperG55™ Connectors are simple to mate but the following guidelines should always be consulted:

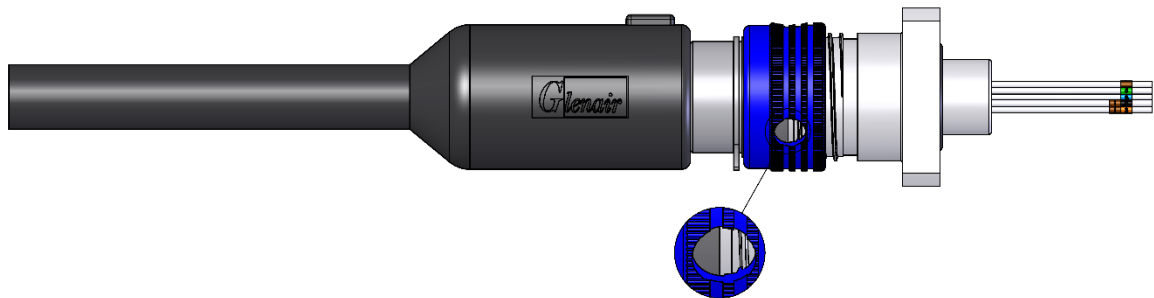
- Ensure both the Receptacle and Plug Connectors Contact Configuration are the same.
  - The integral rubber key and keyways will not prevent a mismatch in Pin and Socket Contact Configurations from attempting to be mated.
- Visually inspect both Connectors for damage to the rubber faces and Contacts
  - After previous use, impressions may form on the mating faces. These are normal.
- Connector faces must not have water on prior to mating.
  - If the Connector faces are wet, allow to dry naturally.
- Lightly lubricate the Plug Connector faces with Silicone Grease.
  - Glenair recommend Dow Corning DC4.



**G5501-1508 Plug Connector with Connector faces highlighted in red for clarity**

- Align the Plug Connector to the Receptacle Connector so that the integral 'D' key profiles mate.
- Whilst holding the Plug Connector Overmould, engage the Plug Connector into the Receptacle.
- The rubber 'D' profiles should glide together until the Contacts begin to engage.
- Higher density Contact Configurations may require a light force to engage.
- Trapped air can be removed by manipulating the Plug connector with a gentle rocking motion.
- If excessive force is felt, remove the Plug and check:
  - Connector type (G55 does not mate to G66) Sizing and Contact Configuration
  - Foreign object debris
- Once the Connectors are engaged sufficiently, the Coupling Nut can be used to aid mating.
- The Coupling Nut has a knurled profile for easy grip.
  - Hand tools should not be required for tightening and excess force may cause damage.
  - The Coupling Nut is coated with an anti-galling Fluorocarbon plating and does not require lubricating.

- As the Coupling Nut pulls the Connectors together, use the Inspection Port in the Nut to observe the Connector faces meeting.
- Keep tightening the Coupling Nut until the Connector faces fully meet.



#### **Sealing face of Plug Connector mated with Receptacle Connector Shell**

- Note that there will be a length of exposed thread on the Receptacle. This is normal.
- Once the faces have fully mated, a higher resistance will be felt.
- To fully mate the Connectors, apply further torque to the Coupling Nut to turn an additional distance:

Final torque	
Shell Size	Number of Turns
15	½ min.
20	¼ min.
24	¼ min.
32	¼ min.

Torque should be applied by hand only, tools are not required  
 All figures are a recommended minimum when mating Glenair Connector pairs  
 Intermating to other “55” Connectors may require varying torque

**Once mated in accordance with the instructions, G55 Connectors will continue supply a reliable electrical connection and environmental seal up to 689 Bar.**

## De-mating

- After deep deployment the Coupling Nut may become loose.
  - Compression set in the rubber is normal and will not affect operation.
- Whilst holding onto the Plug Connector Overmould, unscrew the Coupling Nut fully.
- Pull the Connectors apart.
  - A gentle rocking motion may help.
  - **Do not pull on the cable to de-mate; connections may be damaged.**
- Inspect the Connectors before allowing to fully dry.
- Store in a dry, clean environment where possible whenever not in use.
- Glenair offer a full range of “Dummy” Connectors to environmentally seal Connectors that remain on equipment when not in operation. Consult Glenair UK or GDS 337 for details.
- Reference Pre-Installation Checks and Connector Engagement sections prior to re-use.





## *Out of This World* **INTERCONNECT SOLUTIONS**

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**SuperG55™ & SuperG66™**

**Installation Instructions**

**Revision B**