

SuperG55™ / G66™
10K PSI, 700 BAR,
7000M
High Pressure,
Dry-Mate Subsea
Connectors



Advanced-Performance
Series 55 / 66 Type
SuperG55 / SuperG66 Connectors

Glenair G55 / G66 Handling Instructions

Please follow all instructions carefully to ensure correct use of your
G55 / G66 connectors.



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.

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Performance Specifications	
Mating Cycles	500
Pressure	689 Bar (10K PSI) mated & unmated
Operating Temperature	-20 °C to +90 °C
Voltage Rating	600 VDC / 440 VAC
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***

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 is no foreign object debris (FOD) 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's 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.

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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

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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.

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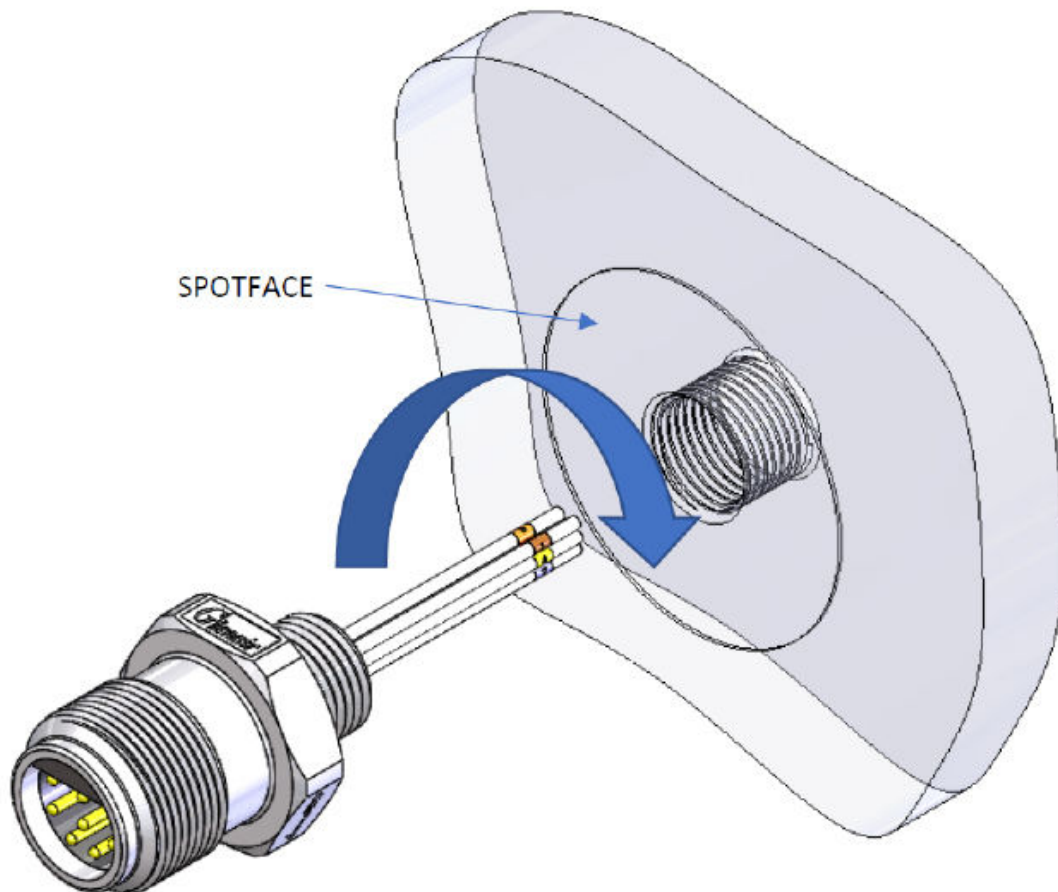
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Take care not to chafe or nick any of the pigtail wires when passing through the interface



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

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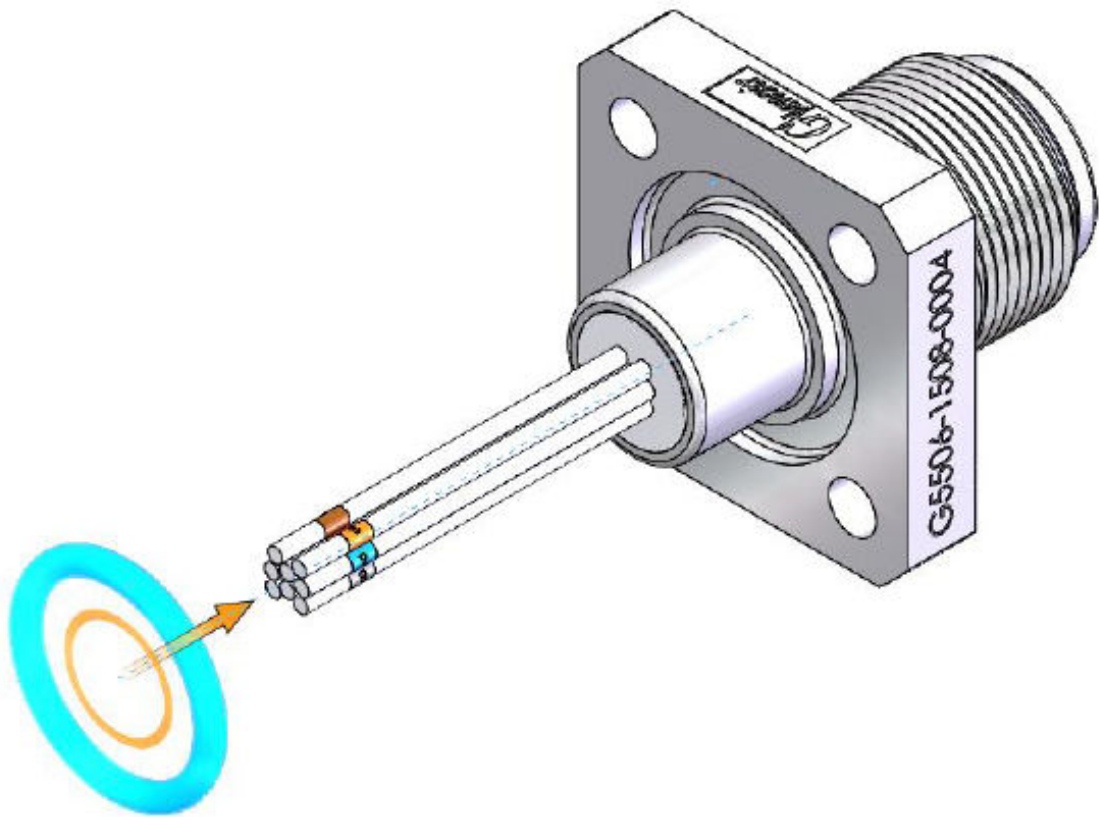


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Replacement receptacle O-Ring Sizes Applicable to both G5506 FCR and G5507 BCR	
Shell Size	O-Ring
15	BS1806-116
20	BS1806-118
24	BS1806-122
32	BS1806-130

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



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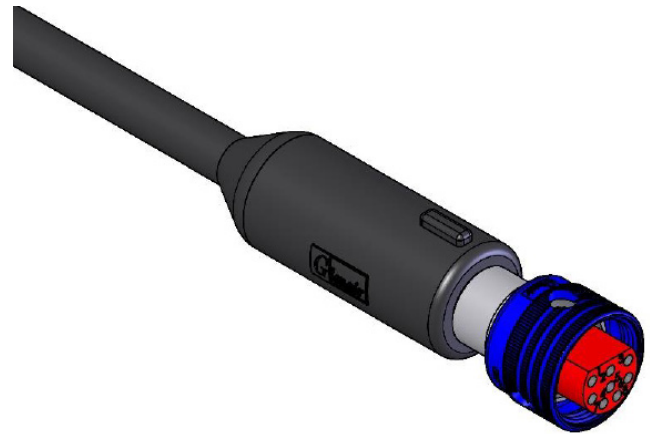
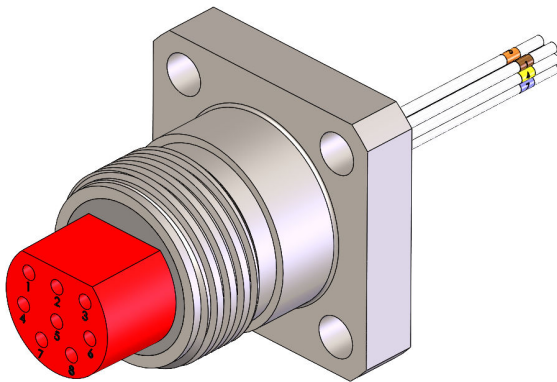


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Connector Engagement - Mating a G5501 Plug Connector to a Receptacle

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.***



G6606 -2008 FCR / 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.

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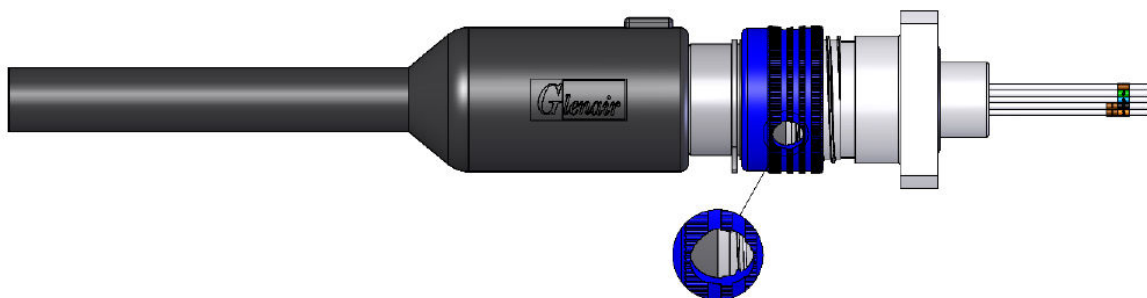
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- Higher density Contact Configurations may require a light force to engage.
- Trapped air can be removed by manipulating the Plug connector with a gentle rocking motion.
- If excessive force is felt, remove the Plug and check:
 - Connector type (G55 does not mate to G66) Sizing and Contact Configuration
 - For foreign object debris (FOD)
- 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:

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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.

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MISSION-CRITICAL INTERCONNECT SOLUTIONS



**3D Parts
Models**

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Glenair, Inc.

1211 Air Way • Glendale, California • 91201-2497

Telephone: 818-247-6000 • Fax: 818-500-9912

sales@glenair.com • **www.glenair.com**

Glenair East

20 Sterling Drive
Wallingford, CT
06492

Telephone:

203-741-1115

Fax:

203-741-0053
sales@glenair.com

Glenair UK Ltd

40 Lower Oakham Way
Oakham Business Park
Mansfield, Notts
NG18 5BY England

Telephone:

+44-1623-638100

sales@glenair.co.uk

Glenair Microway Systems

7000 North Lawndale Avenue
Lincolnwood, IL
60712

Telephone:

847-679-8833

Fax:

847-679-8849

Glenair Nordic AB

Frösundaviks allé 1
SE -169 70 Solna
Sweden

Telephone:

+46-8-50550000

sales@glenair.se

Glenair GmbH

Schaberweg 28
61348 Bad Homburg
Germany

Telephone:

06172 / 68 16 0

Fax:

06172 / 68 16 90
info@glenair.de

Glenair Iberica S.L.

Av. De Manoteras, 24 – 2º
28050 Madrid
Spain

Telephone:

+34 915 562 687

sales@glenair.es

Glenair Italia S.p.A.

Via Del Lavoro, 7
40057 Quarto Inferiore –
Granarolo dell'Emilia
Bologna, Italy

Telephone:

+39-051-782811

Fax:

+39-051-782259
info@glenair.it

Glenair France SARL

7, Avenue Parmentier
Immeuble Central Parc #2
31200 Toulouse
France

Telephone:

+33-5-34-40-97-40

Fax:

+33-5-61-47-86-10
sales@glenair.fr

Glenair Korea

6-21Tapsil-ro 58beon-gil
Giheung-gu, Yongin-si
Gyeonggi-do
Republic of Korea

Telephone:

+82-07-5067-2437

Fax:

+82-504-375-4549
sales@glenair.kr

Glenair Japan

40F, Nagoya Lucent Tower,
6-1, Ushijima-cho,
Nishi-ku, Nagoya, 451-6040
Japan

Telephone:

+81-52-569-2521

Fax:

+81-52-569-2523
sales@glenair.jp