MISSION-CRITICAL
INTERCONNECT
SOLUTIONS

Glenair®

Pneumatic Products for Pure Gas Applications

High-Pressure, Pure Air Contact and Piping Assemblies, Rotary Joints, and Solenoid Valves for Mission-Critical Applications

United States ■ United Kingdom ■ Germany ■ France ■ Nordic ■ Italy ■ Spain ■ Japan

Pure Gas Assemblies

FOR USE IN MIL-DTL-38999 TYPE AND OTHER HIGH PERFORMANCE CONNECTORS

Proven Technology, In-Stock Availability and Outstanding Customer Service

Quality-Control Performance Tested to 10,000 PSI

Glenair high pressure pure air tube assemblies are designed for use in a wide variety of commercial aerospace, defense, and space applications, including the cooling of infrared detectors, missile-seekers, and other pneumatic actuation and deployment systems such as infrared super coolers, sealed boxes, gas purge/chargers, cryogenics or any gas transfer system, and propulsion systems in space.

The precision gas contacts are designed for direct incorporation into MS type multi-pin cylindrical connectors, Glenair ultra-miniature conectors, as well as customer bespoke/non-standard designs. The high-pressure assemblies are suitable for use in pneumatic cooling systems—especially Joule-Thompson (JT) cryogenic systems—or other applications that require connectorized, separable components.

1211 Air Way, Glendale, California 91201-2497
Telephone: 818-247-6000 · Facsimile: 818-500-9912 · E-mail: sales@glenair.com

Pneumatic Products for Pure Gas Applications

Facility Equipment & Manufacturing Capabilities in Mansfield, UK & Bologna, Italy

Pure Air Assemblies are used in Mission-Critical applications, including Missile Ejection Systems & Space Thrusters and as such require clean Pure Air to function correctly.

Glenair production test equipment is capable of testing cleanliness to DEF STAN 58-96, the governing standard for Pure Gases for Weapons Systems & Ejector Cooling Applications.

All Pure Air Assemblies are precision manufactured using Induction Coil Brazing facilities to certify precision and repeatable joints, whilst micro-blasting allows for selective finishing.

All processes that are needed to suppport the production of reliable Gas Pipe Components for these Harsh Applications.

The cleanliness is paramount to ensure that the gas is delivered to the Joule-Thompson (JT) Cyrostat in its purist condition.

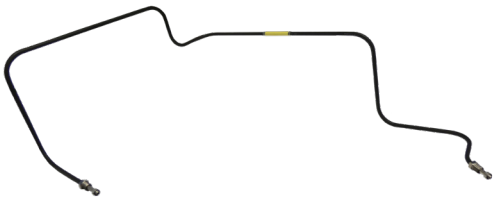
By carrying out these processes, in line with DEF STAN 58-96, Glenair guarantees the Gas is free of any contaminants, moisture or particles left over from the manufacturing process.

Once manufactured all parts are thoroughly tested to ensure they meet the stringent requirements needed for these applications.

The testing includes Hydrostatic & Flow Rate, the latter is critical in guaranteeing the final Flow Rate of the finished Pipe Assembly.

Pneumatic Products for Pure Gas Applications

High-Pressure Assemblies for Pure Air Pneumatic / Cryogenic Applications



Glenair High-Pressure Pure Gas solutions are designed and performance tested for use in a wide variety of Defense, Space and Aerospace applications, including cooling of infrared detectors, missile seekers and all High-Pressure Pneumatic Actuation and Deployment Systems.

Products include, Sealed for Life Gas Supply Systems, Re-chargable Gas Supply Systems, High Pressure Solenoid Valves (miniature & low voltage), Small Bore pipe Assemblies, Relief Valves, Integrated Manifold Assemblies, Charge Valves and High Pressure Vessels.

All Systems and Ancillaries are designed for direct incorporation into Joule Thompson (JT) cryogenic systems and all applications which require reliable pressurization, blow down, actuation, and IR Cooling. Glenair Pure-Air and High Pressure Systems and components are designed to exact customer requirements and specification.

Glenair Pure Air / Nitrogen Systems and Sub-Assemblies provide passage of Nitrogen and other pure, pressurized gases through precision-machined components such as pressure regulating valves, solenoids, and Joule-Thompson (JT) cryogenic cooling systems.

Assemblies feature precision stainless steel pipeworks and tubing which are fabricated using a flux-free brazing process and are ultrasonically cleaned and packaged in a sealed, dust-free environment. Electromechanical components are also precision-machined with material properties and dimensional attributes per customer specifications.

Contact Glenair to discuss your custom design requirements.

- **Manifold Assemblies – including Charging Valves, Relief Valves or Burst Discs, Pressure Gauges, Control Valves**
- **Pipework Sub-Assemblies connecting cylinders to manifolds or components**
- **Pressure Regulating Valves**
- **Solenoid Valves – manifold or in-line; single or two-stage**
- **Manifolds to other sub-assemblies**

PERFORMANCE DATA

- **Pressure Range**
  Working Pressures (WP) from 3,000 PSI (207 bar) to 10,000 PSI (690 bar).
- **Pipe Sizes Currently Available**
  1/32", 1/16", 1/8", 1/4", 3mm and 6mm.
- **For Use with the Following Gases**
  Nitrogen, Pure Air and Argon.
- **CNC Forming Available**
  For 1/4" and 6mm diameter pipe.
- **Additional Requirements**
  Please consult us for performance requirements outside of the above current listing.

MATERIAL AND FINISH

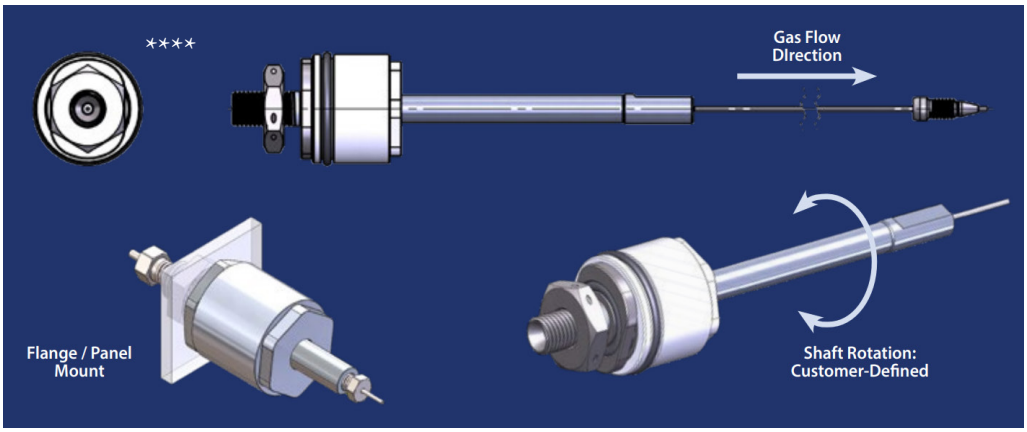
- Contact Body: Passivated Stainless Steel
- Internal O-Ring (Socket): High-Pressure Rated Elastomer
- Internal Washer (Socket): Temperature and Chemically Resistant Polymer
- Particle Filter (Socket): Stainless Steel
- Brazing Material: Silver Alloy
- Tubing: 304 or 316 Stainless Steel

Please consult the Glenair factory for made-to-order Nitrogen / Pure Air contacts, hermetics, mixed contact AWG assemblies, point-to-point tubing assemblies with unique route and bend requirements as well as integrated cable harnesses that combine our Nitrogen / Pure Air contacts with standard electrical and / or fiber optic media.

Single-Passage Pneumatic Rotary Joints for Guided Weapons Cooling

Glenair high-pressure Pure Gas Rotary Joint solutions are designed and performance-tested for use in a wide variety of defense and aerospace applications, including cooling of infrared detectors, missile seekers and all high-pressure pneumatic actuation systems.

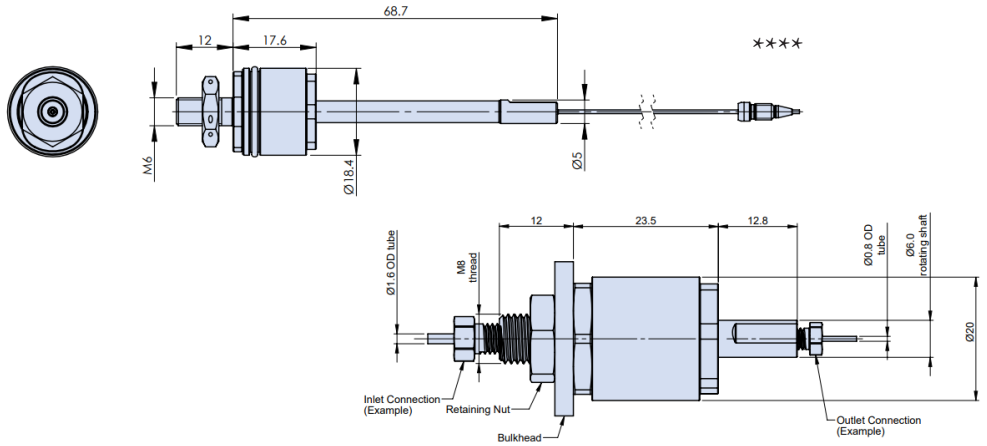
These compact, lightweight rotary devices incorporate small-bore pipe assemblies for low friction and low external-leakage for Pure Gas Rotary applications.



WHY ORDER FROM GLENAIR?

- **Free Application Engineering**
  The industry's largest and most experienced engineering team is standing by to assist with non-standard designs and customizations.
- **Delivery**
  Glenair offers the fastest delivery in the business—guaranteed.
- **Quality Control**
  Every gas tube assembly is 100% inspected and tested.
- **Local Support**
  Glenair offers comprehensive worldwide support on your schedule and at your convenience.

DIMENSIONAL DRAWINGS, CUSTOM DESIGN (TOP) AND GENERIC CONFIGURATION



Typical Performance - Lightweight Modular Colling & Actuation Systems	
Flow Rate	Typical Flow Rate is 5 liters per minute (lpm) @ 150 PSI.
Operating Temperature	-65°C +175°C for all applicable mechanical requirements.
Physical Shock	No loosening of parts, cracking or other deleterious results hindering further part operation after 300 G's in each of 3 mutually p7erpendicular planes.
High Impact Shock	All components withstand high impact shock per MIL-S-901.
Vibration	All components withstand high-vibration with no evidence of cracking, breaking or loosening of parts. ****

Typical Performance - Rotary Joints for Guided Weapons Cooling	
Nominal Operating Pressure	480 bar at 20°C
Maximum Operating Pressure	600 bar at 60°C
Operating Temperature	-40°C +60°C for all applicable mechanical requirements ****
Normal Rotation Speed	100 RPM; increasing to 800 RPM
Typical Mass	34 grams

High-Pressure Assemblies for Pure Air Pneumatic / Cryogenic Applications

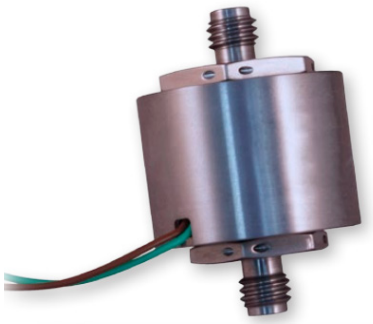
Glenair manufactures a variety of Solenoid Valves that can be used in a wide range of Mission-Critical Applications including Defense, Aerospace and Space.

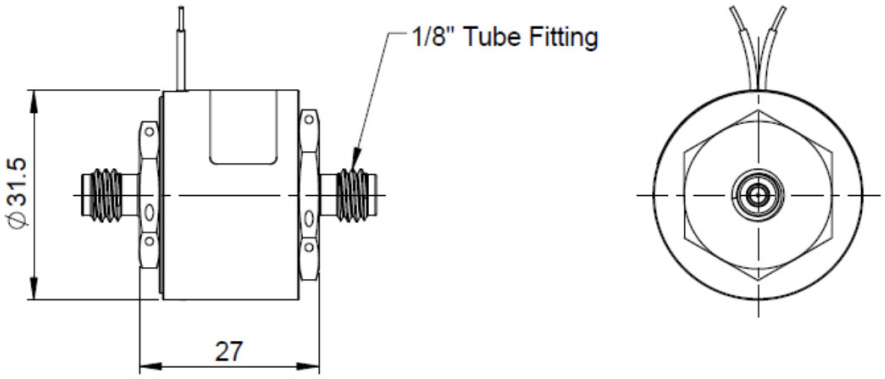
The standard valve is designed to be used with compression type fittings, but can be adapted as required to suit customer interface connections.

Designed to be used with clean gases, such as Nitrogen and Pure Air, but Glenair can design new valve configurations to suit the customers media requirements, including lower or higher pressure.

Solenoid Valve applications can include IR Guided Missiles, Small Satellites (Thruster Valves & Ground Based Systems) and Gas Supply Systems.

Contact Glenair to discuss your custom design requirements.





OUTLINE SPECIFICATION

- Gases: Pure Air, Nitrogen, & Argon
- Inlet Pressure: 7,250 PSI (500 Bar)
- Flow Area: 0.5mm diameter (through valve)
- Proof Test Pressure: 10, 850 PSI (750 bar) gauge
- Leakage Test: To Be Defined - Subject to Application (for a specific gas, "bubble" test or maximum flow rate)
- Temperature Range: - 40°C to 70°C
- Voltage Range: 18 - 32 Volts (dc)
- Coil Resistance: 105 Ohms (nominal) at 20°C
- Maximum Power: 10 W at 20°C
- Operation: For continous operation of the valve illustrated, the current is reduced after opening to a holding value. To operate continuously at the maximum voltage, a longer valve would be required. Similar designs are possible, with a different coil resistance and maximum power, affecting the time to open the valve
- Fittings (shown): Tube fitting ends (Swagelok-type) for 1/8" OD tube; other options would be possible, subject to pressure rating
- Mass: 116 grams (excluding the flying wires)

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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 Microway Systems
7000 North Lawndale Avenue
Lincolnwood, IL
60712
Telephone:
847-679-8833
Fax:
847-679-8849

Glenair GmbH
Schaberweg 28
61348 Bad Homburg
Germany
Telephone:
06172 / 68 16 0
Fax:
06172 / 68 16 90
info@glenair.de

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 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 UK Ltd
40 Lower Oakham Way
Oakham Business Park
Mansfield, Notts
NG18 5BY England
Telephone:
+44-1623-638100
sales@glenair.co.uk

Glenair Nordic AB
Gustav III:s Boulevard 42
SE-169 27 Solna
Sweden
Telephone:
+46-8-50550000
sales@glenair.se

Glenair Iberica S.L.
Av. De Manoteras, 24 – 2º
28050 Madrid
Spain
Telephone:
+34 915 562 687
sales@glenair.es

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 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

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