

Medical Connectors

OPERATING INSTRUCTIONS



INTRODUCTION TO FASTEST

Why Choose FasTest? ...

FasTest is a dedicated manufacturer of advanced connection tools for pressure, vacuum testing and filling applications. Our connection tools are easy, safe, and reliable and can dramatically lower your operating costs and increase operational throughput.

FasTest customers have switched from inefficient plugging or sealing methods for their testing or filling needs. Our connectors are used in the compressed gas, manufacturing, calibration, processing with refrigerant and medical industries, as well as major automotive manufacturers and leading appliance companies internationally.

Our connection products and extensive experience since 1985 will help you specify the right connector for your application. At **FasTest**, we regularly modify standard products to fit your specific application and testing requirements.

FasTest Connection Tools Offer:

- A unique and proprietary pressure-assisted gripping and sealing technology that increases gripping pressure as the pressure increases, virtually eliminating accidental removal under pressure
- A floating split collet design that eliminates operator adjustment
- Dynamic Seals that minimize seal stress to increase seal life, reliability and sealing pressure
- Seals that provide a wide range of options to meet your application demands
- Minimal maintenance, easy seal replacement, long life and ergonomically friendly designs

Thank You ...

We thank you for deciding to use **FasTest** series gas connectors. The following pages include operating and maintenance instructions. Read these instructions carefully and follow them before using any gas connectors.

The information corresponds with product knowledge at the time of printing. Failure to observe these instructions may result in loss of warranty.

FasTest connectors may be used for a variety of applications. However, the customer should check with **FasTest** to see whether the connector is appropriate for their application.

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APPLICATION GUIDELINES

- **FasTest** medical gas series connectors are designed to connect to specific CGA medical gas valves.
- Connectors for respiratory air/oxygen must be kept free from oil and grease. Use Krytox or approved equivalent lubricant as required.
- Do not connect to a damaged cylinder valve.
- Contact **FasTest** if the product is damaged, or if you have inquiries on the proper function of the connector. Do not use the connector until clarification is sought.
- Connectors may only be dismantled by **FasTest** or trained personnel.
- Do not use excessive force when connecting. See Operating Instructions outlined in this manual.
- Filling gas cylinders is potentially dangerous. Appropriate safety measures must be taken. **FasTest** is not liable for injuries to persons or property arising from incorrect use.
- Connectors without an operating loop require additional security by means of safety wire, safety cage, etc.
- When using a quick connector with filling hose, please ensure that the cylinders to be filled are secure.
- **FasTest** does NOT recommend hanging cylinders from connectors.

INSTALLATION

Step 1

Protect the connector from damage and dirt by keeping it in the original packaging until you are ready to use it.

Step 2

Check that the connector part number and delivery notes (if applicable) comply with the application.

Step 3

Connect the hose securely and leak-tight to inlet or outlet. Tighten to a max torque of 15 ft-lbs. A higher torque can result in damage causing leaks when the system is pressurized. Ensure that the connectors cannot be damaged when loading and removing the cylinder (Figure 1).

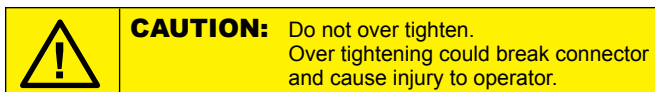


Figure 1. Torque to maximum 15 ft-lb.

Step 4

Review total connector function:

MediMate CGA 870 and CGA 950 (Figure 2)

- Check leak-tight seal.
- Check handle operation.
- Check seal-face/piston movement.
- Check that marking complies with application.



Figure 2.

Medical and Industrial CGA 540 (Figure 3)

- Check leak-tight seal.
- Check that collets open and close properly by actuating the connector several times.
- Check that marking complies with application.



Figure 3.

Note

Avoid lateral forces like short connecting hoses as this could cause leakage.

MediMate CGA 870 AND CGA 950 OPERATION

Step 1

At the start of each shift:

- Check all connectors for main seal condition.
- Check for smooth operation of the handle before the first fill.
- Check seal-face/piston movement.

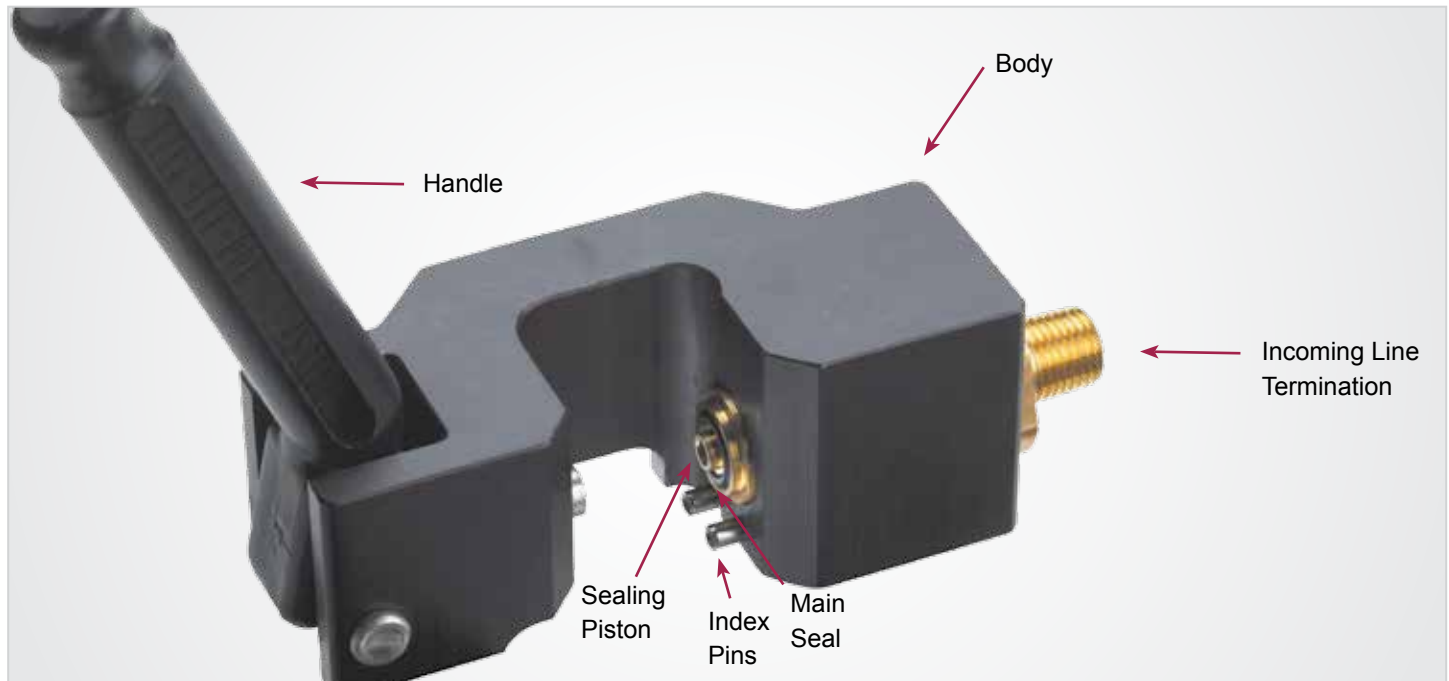


Figure 4. MediMate CGA 870, CGA 950

Step 2

Safety features:

- If the handle is accidentally disconnected under pressure, the sealing piston will travel with the valve to retain a seal. The piston will retract and return to its original position once the pressure has dropped below 250 psig.



Figure 6. The piston retains position against valve during accidental disconnection.

MediMate CGA 870 AND CGA 950 OPERATION

Step 3

Connecting to the cylinder:

- A three step process locks the valve into place.



Figure 7. Valve properly aligned.



Figure 8. Connector in transition.



Figure 9. Fully connected.

MediMate CGA 870 AND CGA 950 OPERATION

Correct Connections

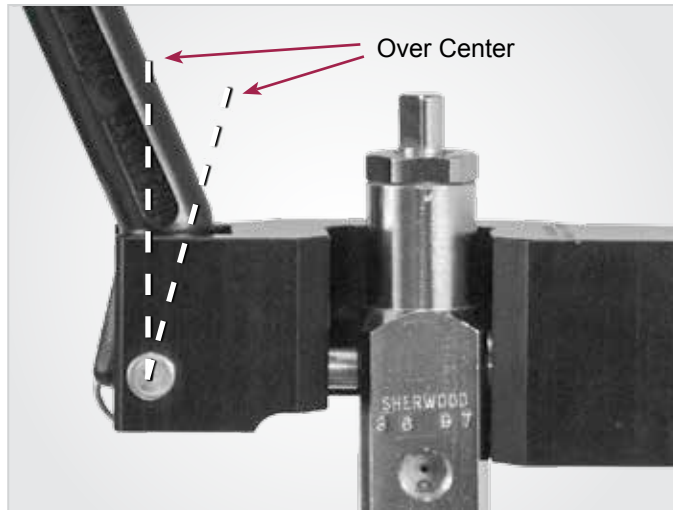


Figure 10. Handle cammed beyond center.
Note angle of handle.

Incorrect Connections

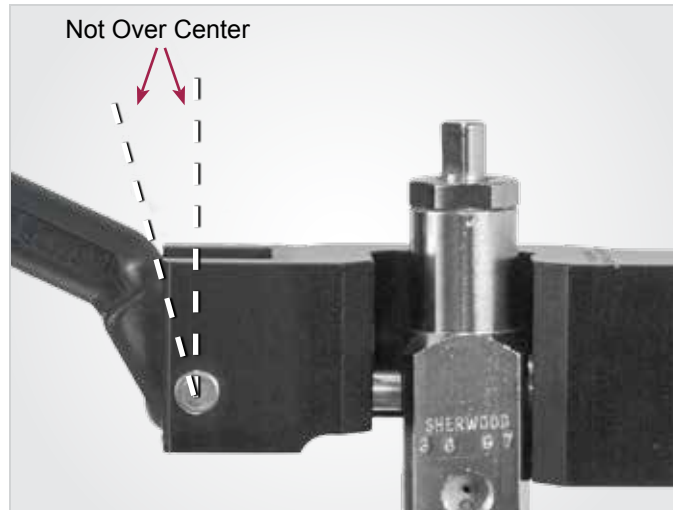


Figure 12. Handle is not cammed beyond center.
Note angle of handle.

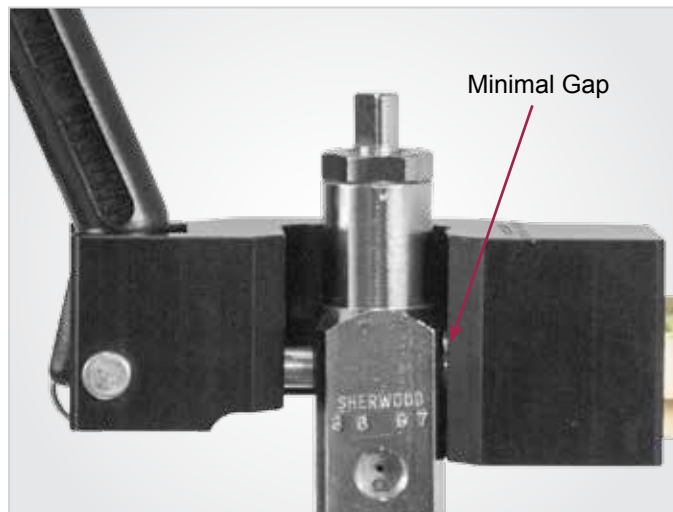


Figure 11. Valve is tight to the body.

Step 4

Disconnect

- Once pressure is relieved, move handle and release connector.

MEDICAL AND INDUSTRIAL CGA 540 OPERATION

Step 1

At the start of each shift:

- Check all connectors for main seal condition.
- Check for smooth operation of the sleeve and collets before the first fill.

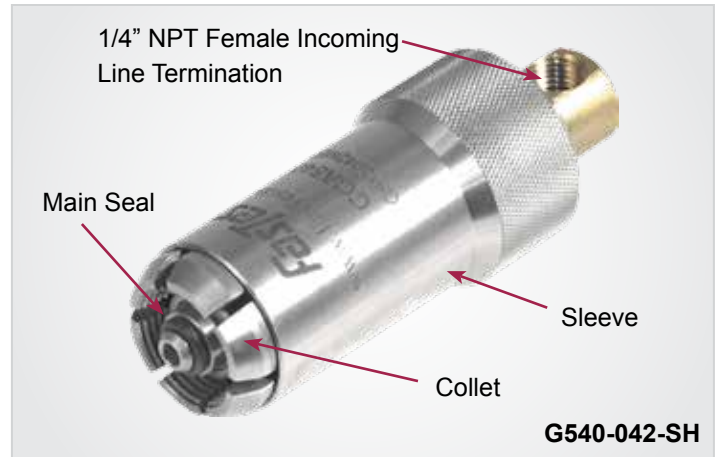
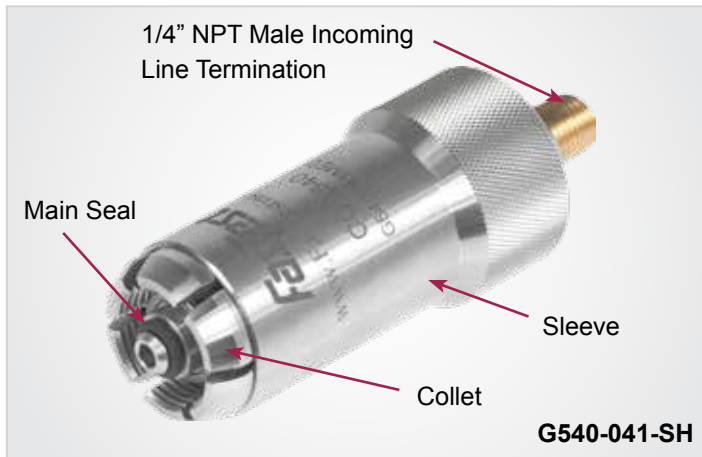


Figure 13. Medical and Industrial CGA 540.

Safety features:

- The CGA 540 Medical and Industrial connectors have an internal locking mechanism. Once the pressure exceeds 60 psig, the connector will lock the sleeve to prevent removal.

MEDICAL AND INDUSTRIAL CGA 540 OPERATION

Step 2

Connecting to the cylinder:

- A three step process locks the valve into place.



Figure 14. Valve properly aligned with connector.



Figure 15. Connector in transition.



Figure 16. Fully connected.

MEDICAL AND INDUSTRIAL CGA 540 OPERATION

Correct Connections



Figure 17. Connector tight to valve.



Figure 18. Sleeve is forward.

Incorrect Connections



Figure 19. Note excess threads.



Figure 20. Connector loose and sleeve not forward.

Step 3

Disconnect

- Once pressure is relieved, pull back on sleeve and remove connector.

MAINTENANCE

Good Maintenance Practices

- **FasTest's MediMate** CGA 870, CGA 950, Medical and Industrial CGA 540 series connectors may require periodic lubrication. Use Krytox or approved equivalent ONLY!
- Maintain accurate and complete product maintenance records.
- In addition to these suggested maintenance guidelines, your companies overall safety and maintenance requirements should be applied to **FasTest** gas connector products.
- It is recommended that gas connector products involved in high-volume filling be returned to **FasTest** for a complete product inspection and required maintenance every 5 years.
- Adhering to a consistent product maintenance program will minimize product returns for inspection as well as required maintenance costs.
- Minimize the use of soap solutions sprayed directly onto connector. These types of solutions cause a build-up that can hamper proper connector operation. Also, avoid contacting connector with any petroleum base chemicals that can cause product contamination.
- **DO NOT EXCEED THE MAXIMUM OPERATING PRESSURE AS STATED IN BOTH PRODUCT LITERATURE AND ON ALL INDIVIDUAL CONNECTOR PRODUCTS SOLD BY FASTEST.**

Connector Maintenance

The following maintenance guidelines apply to all **FasTest** gas connector products. Additional guidelines that apply only to a specific CGA standard connector are noted.

- A daily, weekly and periodic inspection of the connector by a competent person is recommended. Inspection should include wear of swivel joints, damage to the body, leak-tightness, ease of operation, sufficient lubrication, wear, dirt accumulation and damage. (See Maintenance Checklist)
- If upon inspection a problem is noted, refer to the Troubleshooting Guide at the end of this manual.
DO NOT DISMANTLE THE CONNECTOR.
- **FasTest** should refurbish connectors after 50,000 fill cycles.
- You may use only original **FasTest** spare parts that are designed for the application and are subject to strict quality control. See Warranty.

MAINTENANCE

Main Seal

The main O-ring seal should be replaced at least every 1000 cycles. **Fastest** recommends a daily visual inspection of the sealing O-ring, located at the tip of the filling nozzle. Inspect for tears or cracks in the O-ring surface. Replace O-ring if tears or cracks are visible or verified. *Some applications require more frequent seal changes.*



Figure 21. An example of a “good O-ring” main seal.



Figure 22. An example of a “bad O-ring” main seal.

Main Seal Accessibility

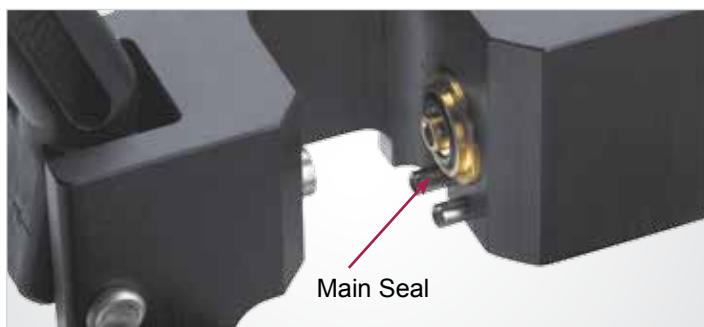


Figure 23. *MediMate* CGA 870, CGA 950 main seal.



Figure 24. Medical and Industrial CGA 540 main seal.

MAINTENANCE

MediMate CGA 870 and CGA 950

The connector must remain clean to allow for proper operation.

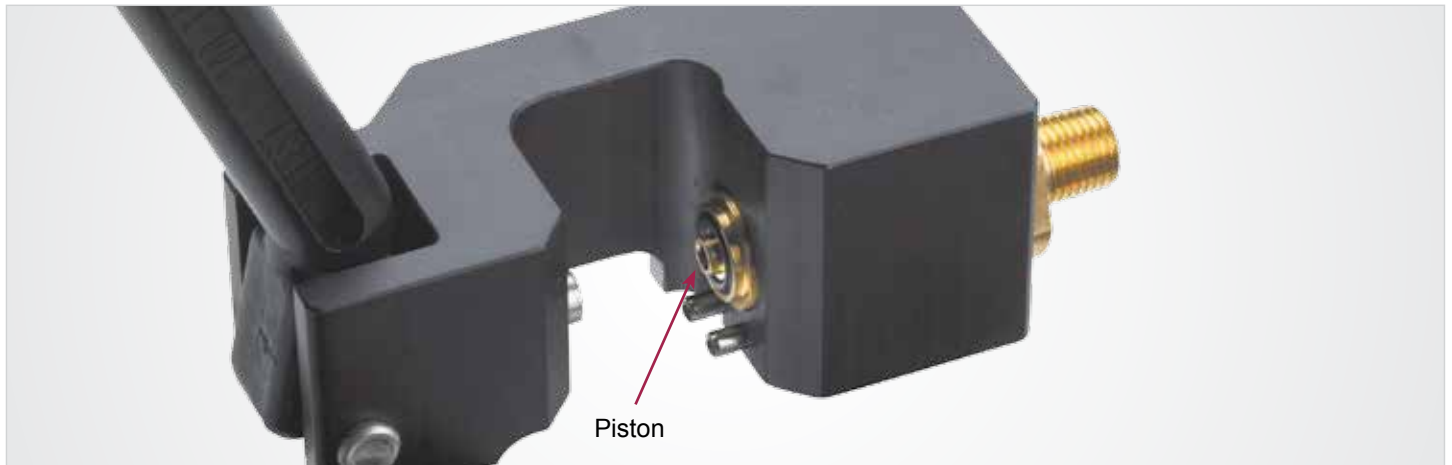


Figure 25. Press on the piston. If it does not spring back, the internal components may be clogged with soap residue. Approximately 33lbs will be required to depress the piston.

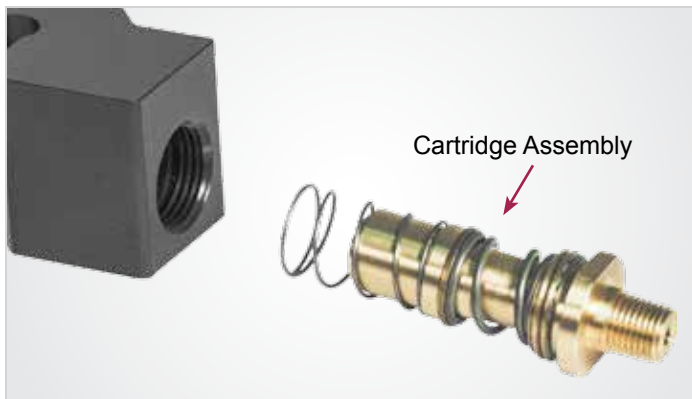


Figure 26. Remove cartridge assembly and clean residue with water and agitation.

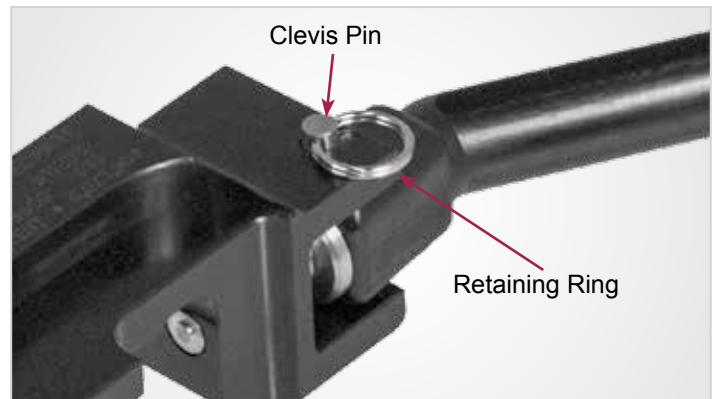


Figure 28. Check condition of clevis pin and retaining ring. If clevis pin is broken or retaining ring is not functional, contact factory.



Figure 27. Example of contamination.

MAINTENANCE

Medical and Industrial CGA 540

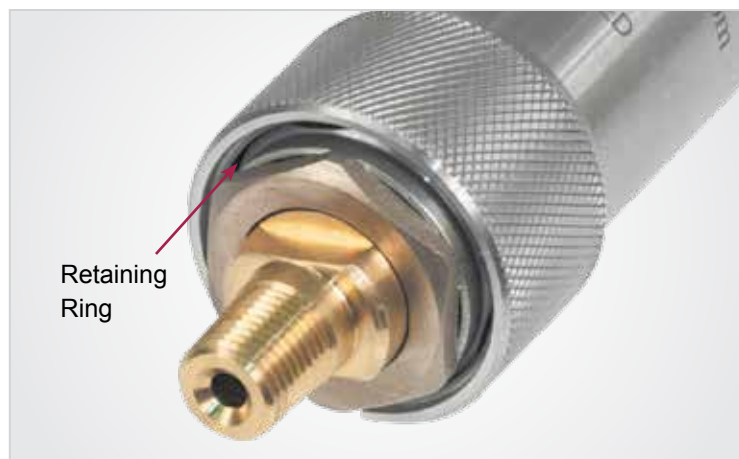


Figure 29. Check retaining ring to make sure it is tightly seated in its groove.

- Check internal thread collets for a fixed-center position and even spacing.
- An “out-of-round” condition may hinder sleeve operation. A visual inspection of the sleeve is usually sufficient.

Maintenance Checklist

Daily

Inspect for Leak-tight seal

- The main seal must be replaced more frequently depending on wear. Dismantling of the connector for this purpose is not required. It is recommended that an O-ring pick be used for removal to avoid damage to the groove. Clean groove if required and insert new O-ring.
- Connection should operate smoothly. If the connector is forced, remove from service.
- Check for contamination, bent or missing components.
- Check for leaks.

Weekly

Inspect for correct function

- Inspect the correct engagement of the valve, collets or fittings.
- Check for any bent or missing components.

Periodic

- Inspect that all threaded components are tight and properly torqued.
- Check for any bent or missing components.
- Check for proper actuation of handle, collets and all moving components.
- Check for leaks.

STANDARD FIELD REPLACEMENT PARTS

Gas connector standard replacement parts listed in this section are available for field replacement. **FasTest** does not offer any further replacement components as special tools and handling precautions may be required.

Due to the high pressure of compressed gas filling, as well as the Oxygen cleaning requirements of specific CGA standards, **FasTest** requires you to return gas connector products for maintenance and repair. Specific CGA standards require O² cleaning before being returned to field service. Please contact **FasTest**, Inc. for additional information.

Connector	Part Number	Seal Material	Description
MediMate CGA 870	SG870 SG870100 SG870250 SG8706500 G870-041AR	Viton FDA	Main Seal Set (5/pkg) Main Seal Set (100/pkg) Main Seal Set (250/pkg) Main Seal Set (500/pkg) Refurbished Connector (Aluminum)
MediMate CGA 950	SG950 SG950100 SG950250 SG9506500 G950-041AR	Viton FDA	Main Seal Set (5/pkg) Main Seal Set (100/pkg) Main Seal Set (250/pkg) Main Seal Set (500/pkg) Refurbished Connector (Aluminum)
Medical and Industrial CGA 540	SG540 SG540100 SG540250 SG540500	Viton	Main Seal Set (5/pkg) Main Seal Set (100/pkg) Main Seal Set (250/pkg) Main Seal Set (500/pkg)

ReConnect



FasTest's innovative ReConnect program for compressed gas connectors provides a simple and quick connect replacement solution for existing connector technology used for bulk gas filling applications. Through this program, companies can trade in their old or current gas connectors and receive a one-time discount for each connector replaced. ReConnect offers the opportunity to trade up and test drive the latest in connector technology by replacing their outdated, worn or otherwise damaged connectors and quickly realize the benefits by modernizing their current filling applications. **FasTest** also lowers the cost of ownership by offering quick delivery turnarounds, fast service for factory repairs or replacements as well as parts availability for field maintenance.

Visit www.fastestinc.com or contact **FasTest** for details.

TROUBLESHOOTING

MediMate CGA 870 and CGA 950

Problem	Recognized By	Probable Cause	Recommended Action
Gas leakage at connection of connector to valve.	Continual sound of escaping gas.	(a) Damaged or worn connector sealing O-ring or damaged cylinder valve. (b) Contaminated or clogged pressure piston.	(a) Visual inspection of connector O-ring. Replace as required. Recommended O-ring replacement every 1000 filling cycles. (b) Clean.
Loose cylinder connection with MediMate 870 or 950 connector. Ability to move connector side-to-side once connection is made.	(a) Disconnect and inspect connector. (b) Check index pins.	Index pins removed.	Replace and/or reinsert index pins properly. Do Not Remove Index Pins!
MediMate 870 or 950 leakage.	Hissing or popping off under pressure. Main seal blows out.	Internal connector components are contaminated, which does not allow internal piston to move freely.	Disassemble connector, clean component parts, apply approved lubricant, and reassemble.
Gas leakage at connection. Loss of main seal.	Continual sound of escaping gas.	Connection pressure piston is clogged with contaminates.	(a) Visual inspection of connector O-ring. Replace as required. Recommend O-ring replacement every 1000 cycles. (b) Remove cartridge assembly and clean.

Gas connector products should be visibly inspected on a routine basis to ensure efficient product performance.
Refer to the Maintenance Checklist on page 12.

TROUBLESHOOTING

Medical and Industrial CGA 540

Problem	Recognized By	Probable Cause	Recommended Action
Short connection of connector to valve.	Visual inspection of connection joint.	Connector thread collets not expanding properly during initial hook-up to cylinder valve.	a) Visual inspection of valve. Replace if damaged or worn. b) Disconnect and reconnect connector to valve. Be sure sleeve is fully engaged. If problem is unresolved, contact FasTest .
Loose connection.	Connector is loose despite proper connection.	Worn or damaged threads of cylinder valve.	Replace cylinder valve.
Improper operation. Possible internal leakage.	Visual inspection of connector. Connector difficult to operate.	Damaged, deformed or distorted connector body, sleeve and collet threads.	Remove connector from filling operation immediately. Return to FasTest to determine probable cause.
Gas leakage at initiation of filling cycle, leakage decreasing as pressure increases.	Continual sound of escaping gas.	(a) Improper connection. (b) Side load to filling connector due to rigid supply line.	(a) Terminate filling cycle and repeat connection. (b) Replace supply line with swivel and/or flexible pigtail.
Gas leakage increases as pressure increases.	Continual sound of escaping gas.	Valve threads damaged. Seat area of valve scored or damaged.	Terminate filling cycle and replace damaged or worn valve.
Gas leakage at connection of connector to valve.	Continual sound of escaping gas.	(a) Damage or worn connector sealing O-ring or damaged cylinder valve.	(a) Visual inspection of connector O-ring. Replace as required. Recommend O-ring replacement every 1000 cycles.

NOTES

NOTES

Connector Refurbishment Program

ReConnect



Extend the service life and warranty of your investment - Our connector refurbishment and competitor replacement program delivers the latest product improvements and ensures proper connector operation and performance in your application. Connectors routinely maintained can be refurbished or replaced economically relative to the cost of a new connector replacement.

Visit www.fastestinc.com or contact **FasTest** for details.

Warranty

FasTest, Inc. warrants its products against defects in workmanship and materials for 12 months from the date of sale by FasTest, Inc. or its authorized distributor. This warranty is void if the product is misused, tampered with or used in a manner that is contrary to FasTest, Inc.'s written recommendations and/or instructions. FasTest, Inc. does not warrant the suitability of the product for any particular application. Determining product application suitability is solely the customer's responsibility. FasTest, Inc. is not liable for consequential or other damages including, but not limited to, loss, damage, personal injury, or any other expense directly or indirectly arising from the use of or inability to use its products either separately or in combination with other products. ALL OTHER WARRANTIES EXPRESS OR IMPLIED, WHETHER ORAL, WRITTEN OR IN ANY OTHER FORM, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSLY EXCLUDED.

The sole and exclusive remedy under this warranty is limited to replacement of the product or an account credit in the amount of the original selling price, at the option of FasTest, Inc. All allegedly defective products must be returned prepaid transportation to FasTest, Inc., together with information describing the product's performance, unless disposition in the field is authorized in writing by FasTest, Inc.

WARNING: High pressure is potentially dangerous. Do not use Gas Filling connectors without first reading and following the operating instructions included with the product. Additional copies of all gas product instructions may be obtained from FasTest, Inc.

INTENDED USE/ MODIFICATION WARNING: FasTest gas connector products are ONLY intended for use with a specific CGA standard. FasTest assumes no product liability if modifications are made to the product. If modifications are made, the product warranty becomes null and void.

Non-Warranty Claims: FasTest gas connector products which are no longer covered by the original warranty period are subject to a flat rate charge for required product repairs. Flat rate charges will vary depending on CGA standard. Non-warranty connectors, returned to FasTest for repairs, are subject to inspection to determine feasibility of repair.

Contact FasTest, Inc. directly for non-warranty repair and maintenance requests.

Notifications and Copyright

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Certifications: FasTest Inc. is ISO 9001: 2008 certified.