



Proper Operating Instructions for Medical Connections



FastTest™

Dear Customer!

We thank you for deciding to use FastTest series gas connectors. The following pages include Operating and Maintenance Instructions. Read these instructions carefully and follow them before using any gas connector.

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

FastTest connectors may be used for a variety of applications. However, the customer should check with FastTest to see whether the connector is appropriate for his/her 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 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.

Installation

- Step 1:** Protect the connector from damage and dirt by keeping it in its original packaging until you are ready for use.
- 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 (VariQuik). 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).



- Step 4:** Review connector function

MediMate CGA 870 (Figure 2)

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

WEH Medical CGA 540 (Figure 3)

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

VariQuik System (Figure 4)

- Check leak-tight seal
- Check for full insertions and sleeve operation

Note: Avoid lateral forces like short connecting hoses because this could cause leakage.



Figure 1. Torque to maximum 15 ft-lb.



Torque wrench.

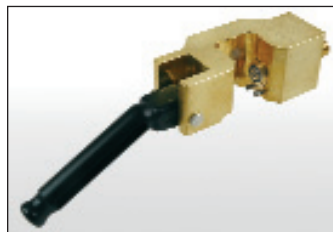


Figure 2.



Figure 3.



Figure 4.

MediMate CGA 870 Operation

- Step 1:** At the start of each shift
- Check main seal condition
 - Check for smooth operation of the handle before the first fill.
 - Check seal-face/piston movement.

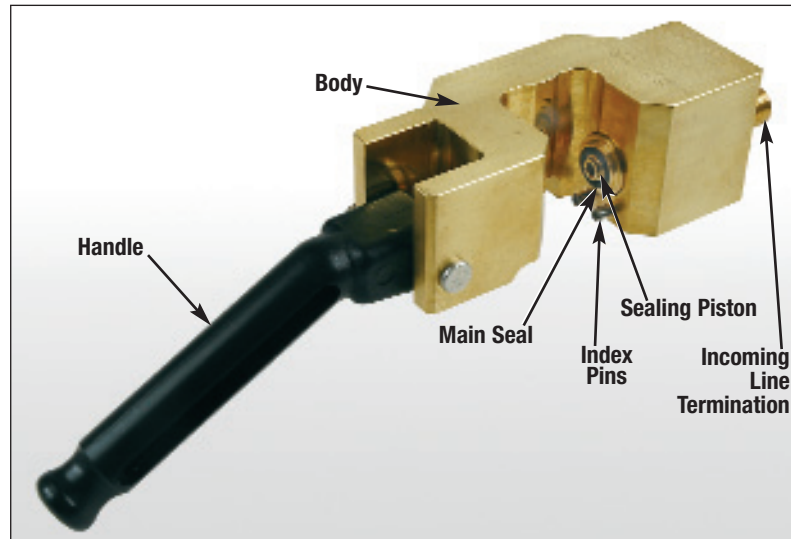
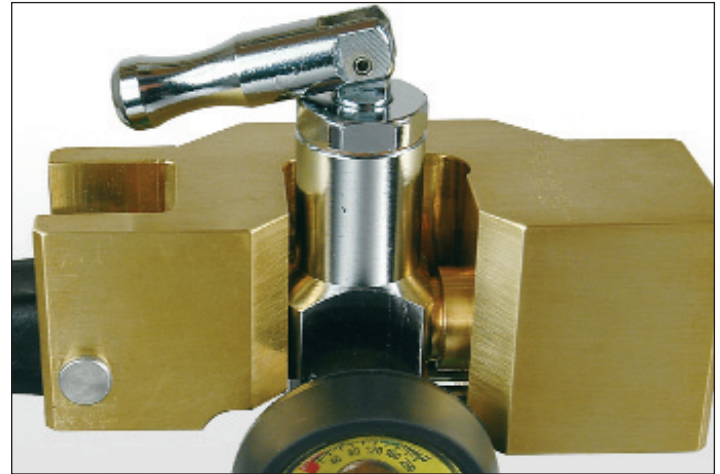


Figure 5. MediMate CGA 870.

- 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.



Figures 6 and 7. The piston retains position against valve during accidental disconnection.

MediMate CGA 870 Operation

Step 3: Connecting to the cylinder.
A three-step process locks the valve in place.



Figure 8. Valve properly aligned.



Figure 9. Connector in transition.



Figure 10. Fully connected.

MediMate CGA 870 Operation

Good Connections

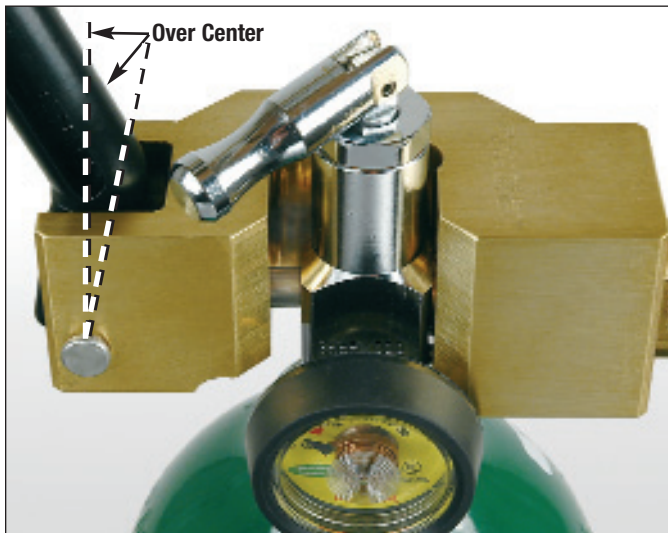


Figure 11. Handle came beyond center. Note angle of handle.



Figure 12. Valve is tight to the body.

Bad Connections

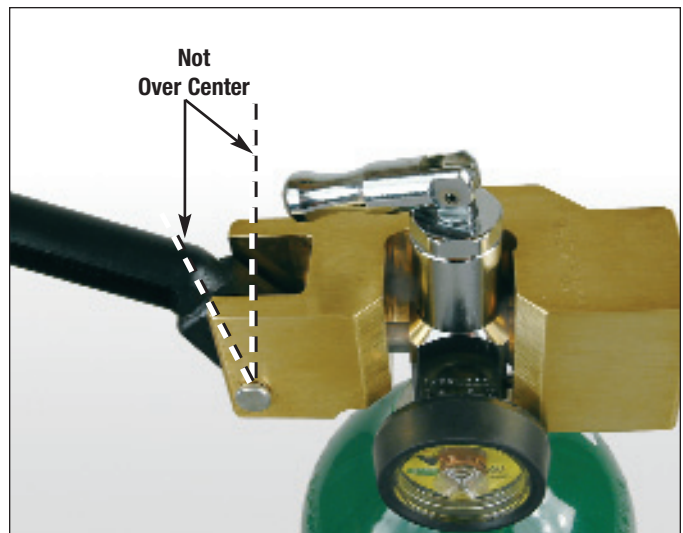


Figure 13. Handle is not came beyond center. Note angle of handle.

Step 4: Disconnect

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

WEH Medical CGA 540 Operation

- Step 1:** At the start of each shift
- Check main seal condition
 - Check for smooth operation of the sleeve and collets before the first fill.

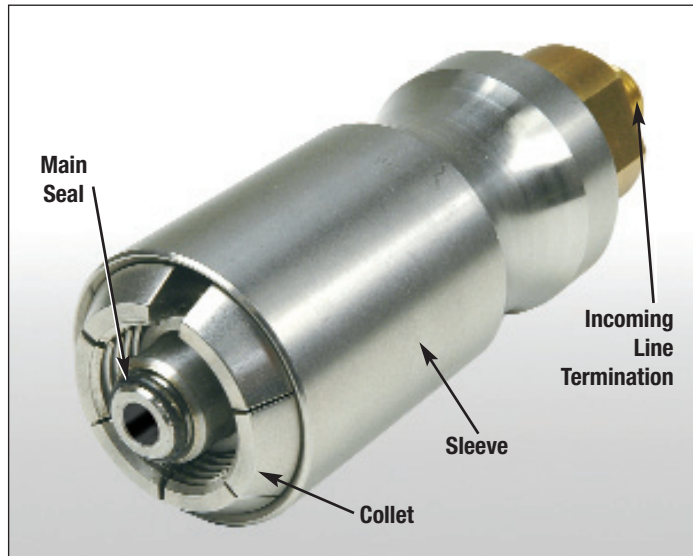


Figure 14. WEH Medical CGA 540.

- Step 2:** Safety Features
- The WEH Medical CGA 540 connector has internal locking pistons. Once the pressure exceeds 150 psig, the connector will lock the sleeve in place.

WEH Medical CGA 540 Operation

Step 3: Connecting to the cylinder.
A three-step process for proper connection.



Figure 15. Valve properly aligned.



Figure 16. Connector in transition.

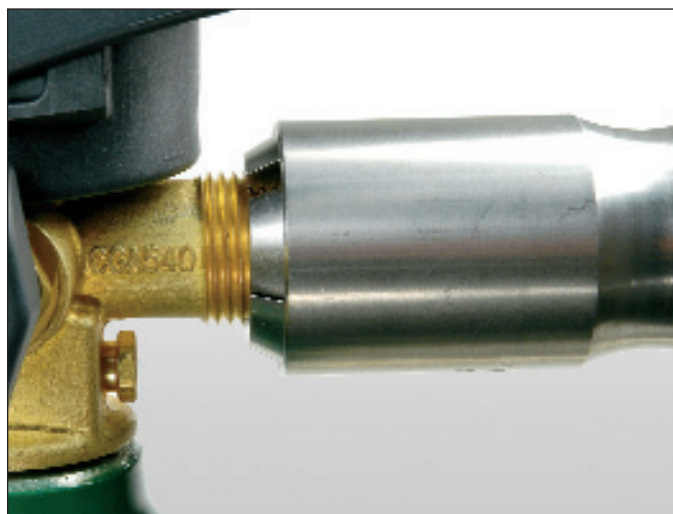


Figure 17. Fully connected.

WEH Medical CGA 540 Operation

Good Connections



Figure 18. Connector tight to valve.



Figure 19. Sleeve is forward.

Bad Connections

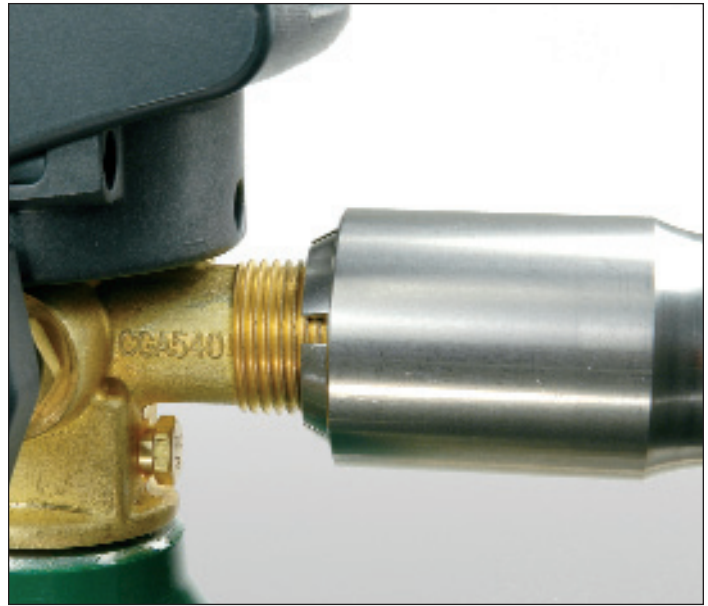


Figure 20. Note excess threads.



Figure 21. Connector loose. Sleeve not forward.

Step 4: Disconnect

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

VariQuik System Operation

- Step 1:** At the start of each shift
- Check main seal condition
 - Check for smooth operation before the first fill.

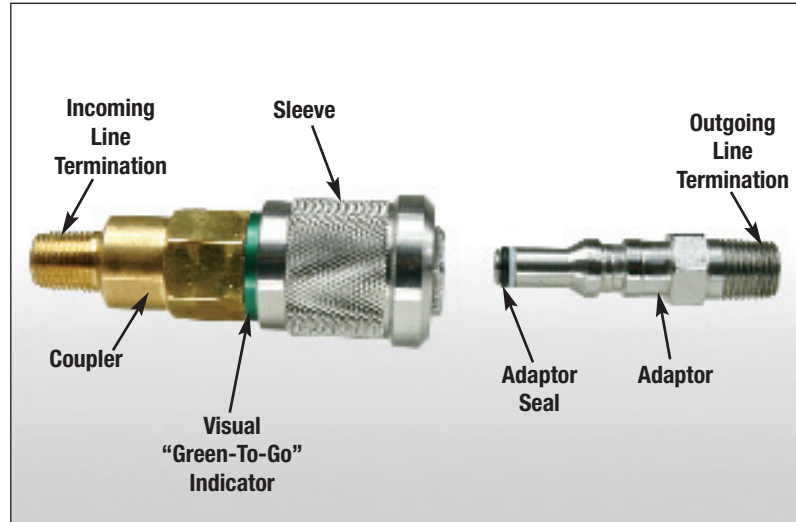


Figure 22. VariQuik.

- Step 2:** Safety Features
- The VariQuik System has a visual indicator that is visible when properly connected. Once the connection is made, the adapter will push back from the coupler, leaving a small gap. This will lock the sleeve (See good vs. bad connection photos, page 10).
- Step 3:** A four-step process locks the adapter in place.



Figure 23. Coupler properly aligned.



Figure 24. Coupler in transition.



Figure 25. Adapter fully inserted.

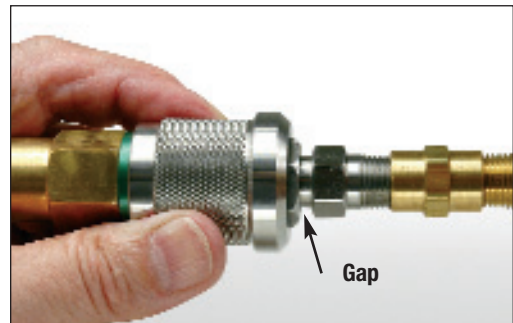


Figure 26. Sleeve released, connector pushes back leaving a visible gap between hex.

VariQuik System Operation

Good Connections

Bad Connections

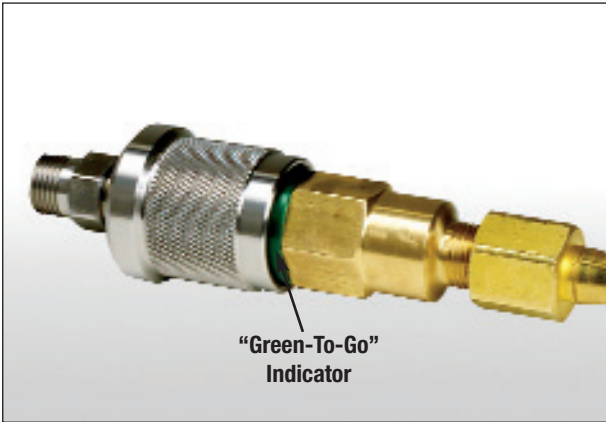


Figure 27. Visual indicator present.



Figure 29. No visual indicator present.

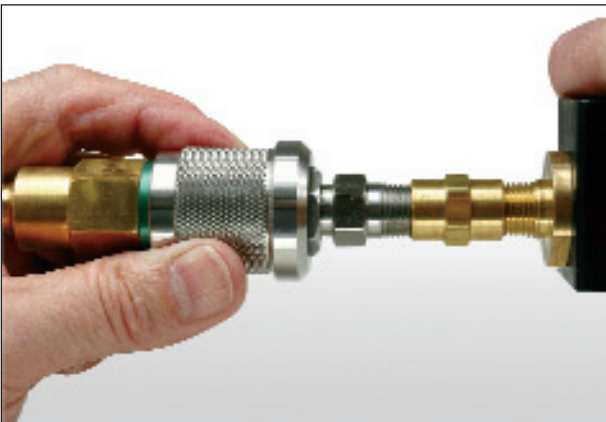


Figure 28. Sleeve is forward, visual indicator present, visible gap between hex.

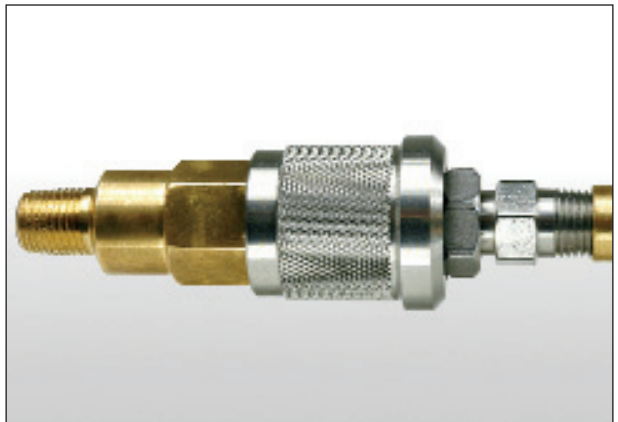


Figure 30. No visual indicator.

Step 3: Disconnection

- Push the adapter into the coupler and pull sleeve back. Remove adapter.

Maintenance

Good Maintenance Practices

- FasTest's MediMate CGA 870, WEH Medical CGA 540 and the VariQuik System 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 3 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 the manual.
DO NOT DISMANTLE THE CONNECTOR.
- FasTest should refurbish connectors after 30,000 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 must be replaced at least every 1,000 cycles. FastTest 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.**

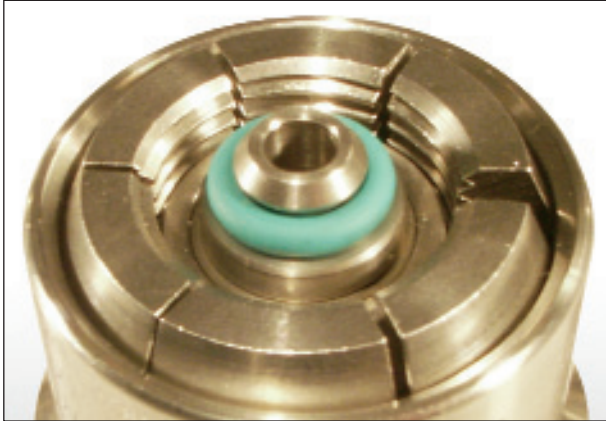


Figure 31. An example of a "good O-ring" main seal.

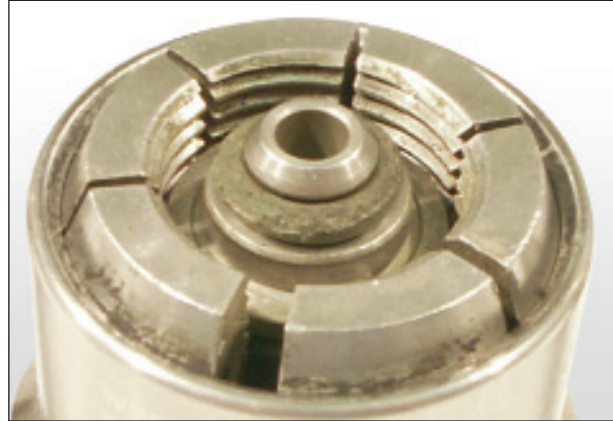


Figure 32. An example of a "bad O-ring" main seal.

Main Seal Accessibility

Medimate

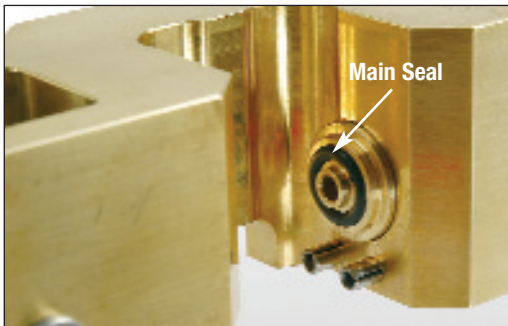


Figure 33. MediMate CGA 870 main seal.

540 Medical



Figure 34. WEH Medical CGA 540 main seal.

VariQuik

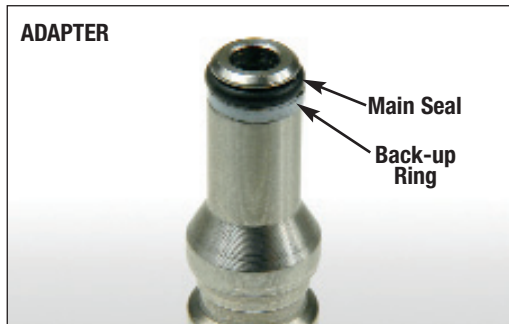
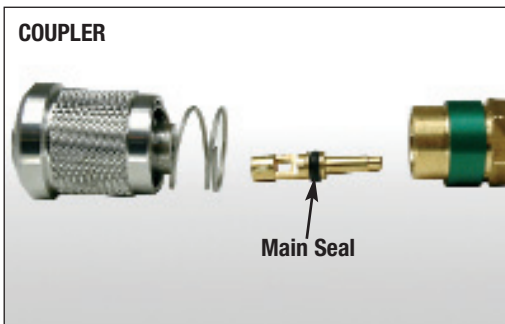


Figure 35 and 36: VariQuik System has a coupler and an adapter. The main seal in the coupler will require disassembly to replace. The main seal and back-up ring on the adapter are easily accessible.

Maintenance

MediMate CGA 870

The connector must remain clean to allow for proper operation.

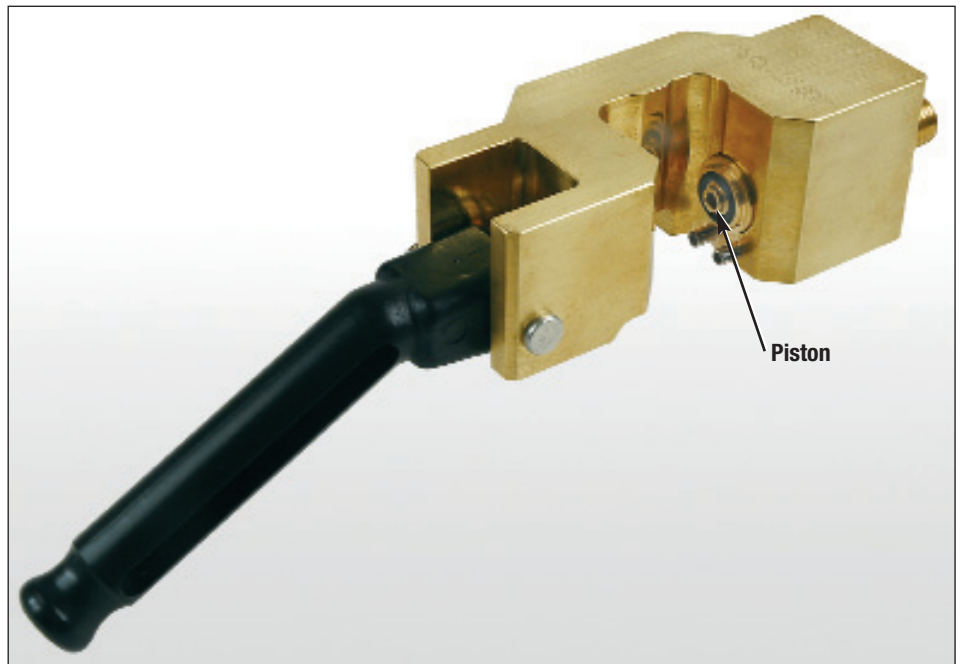


Figure 37. Press on the piston. If it does not spring back, the internal components may be clogged with soap residue. Approximately 33lbs will be required to depress piston.

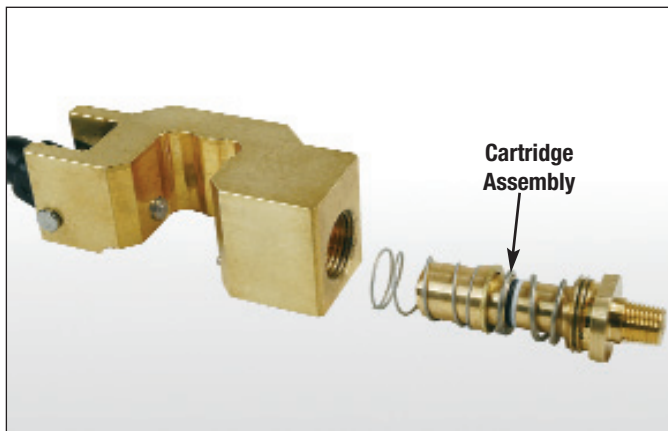


Figure 38. Remove cartridge assembly and clean residue with water and agitation.

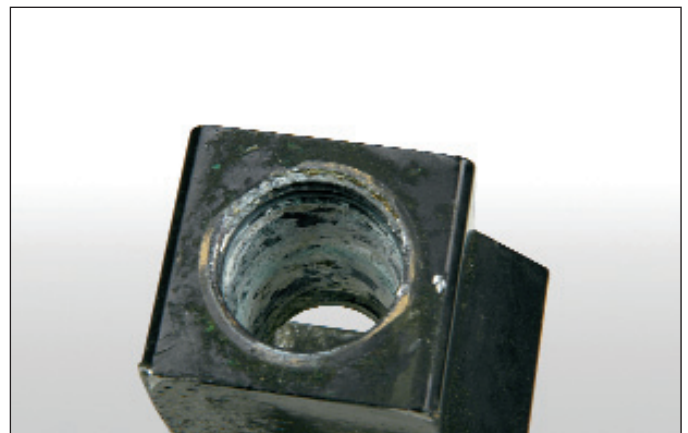


Figure 39. Example of contamination.

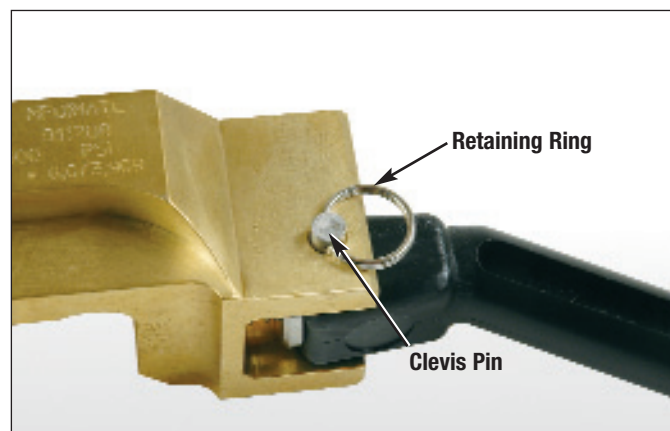


Figure 40. Check condition of clevis pin and retaining ring. If clevis pin is broken or retaining ring is not functional, contact factory.

Maintenance

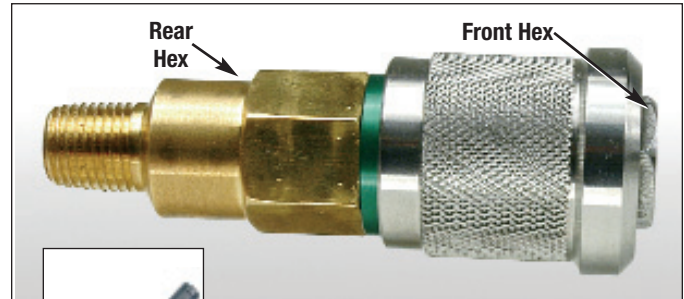
WEH Medical CGA 540



Figure 41. 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.

VariQuik System



Torque wrench.

Figure 42. Make sure coupler does not thread apart. Examine the connector length and thread tightness periodically. The threads should be tight to 10ft-lbs between the front and rear hex.



Figure 43: Check main seal and back-up ring for damage or loss. Replace main seal O-ring and back-up ring as recommended.

Maintenance Checklist

Daily

Inspect for Leak-tight seal

- ✗ The main seal must be replaced more frequently depending on wear. 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 connection 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 the connector's collet thread with gauge.
- ✗ 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, sleeve 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 #	Description
MediMate CGA 870		
G870041	SG870	Replacement Main Seal Set (5/pkg)
	SG870100	Replacement Main Seal Set (100/pkg)
	SG870250	Replacement Main Seal Set (250/pkg)
	SG870500	Replacement Main Seal Set (500/pkg)
	G870041R	Refurbished
WEH Medical CGA 540		
521042540	E5046786S611	Replacement Main Seal
521041540		
VariQuik System		
G02042 Coupler	1106V70	Main seal
G02041 Adapter		
Male NPT Termination	GS02A	Seal set
G02042 Adapter		
Female NPT Termination	GS02A	Seal set

Troubleshooting

MediMate CGA 870

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. Recommend O-ring replacement every 1000 cycles. (b) Clean
Loose cylinder connection with MediMate 870 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 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.

VariQuik System

Problem	Recognized By	Probable Cause	Recommended Action
Gas leakage at connection.	Continued sound of escaping gas.	Damage or worn sealing O-ring on adapter.	Visual inspection of adapter O-ring. Replace as required. Recommend O-ring replacement every 1000 cycles.
Gas leakage through coupler when not connected.	Continued sound of escaping gas.	Damaged or worn sealing O-ring in coupler.	Visual inspection of connector O-ring. Replace as required.
Gas leakage around sleeve area.	Continued sound of escaping gas.	Coupler body is threading apart.	Tighten connector body to 10 ft-lb.
Cannot make full connection.	Cannot connect	(a) Adapter is deformed and will not fully insert. (b) Wrong adapter style.	(a) Replace adapter (b) Replace with correct adapter.
Sleeve will not retract.	Cannot move sleeve.	System remains under pressure.	Remove internal pressure.



Troubleshooting

WEH Medical 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.

Gas connector products should be visibly inspected on a routine basis to ensure efficient product performance. Refer to the Maintenance Checklist on page 14.



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.



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