FasTest® Operating Instructions

FasTest® Proper Operating Instructions for Medical Connections

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Operating Instructions for Medical Connection

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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.
- FasTest does NOT recommend hanging cylinders from connectors.

INSTALLATION

Step 1: Protect the connector from damage and dirt by keeping it in it's 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 (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).

CAUTION:
Do not over tighten.
Over tightening could break connector and cause injury to operator.

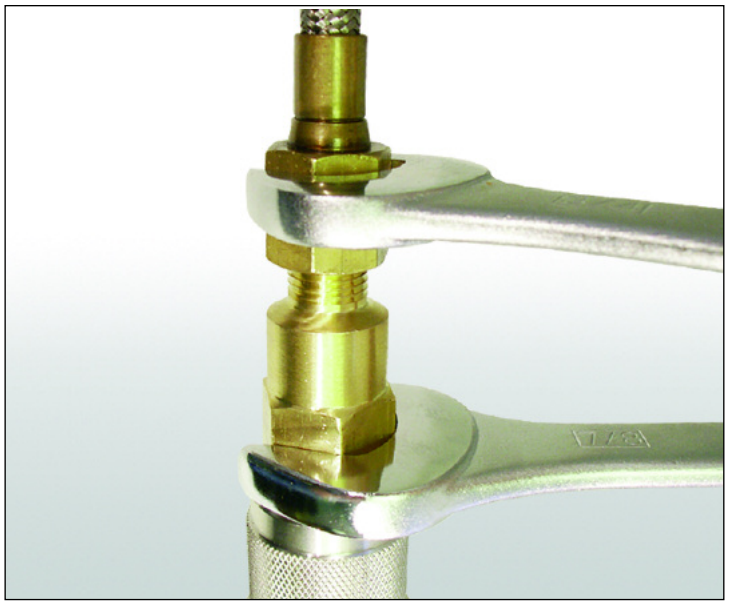


Figure 1. Torque to maximum 15 ft-lb.

Torque wrench.

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

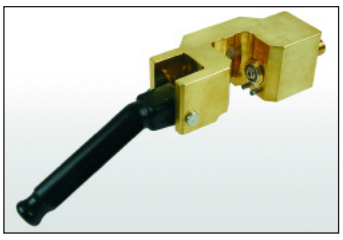


Figure 2.

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

Figure 3.

VariQuik System (Figure 4)

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

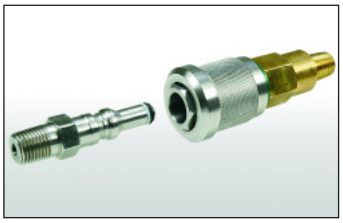


Figure 4.

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

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.

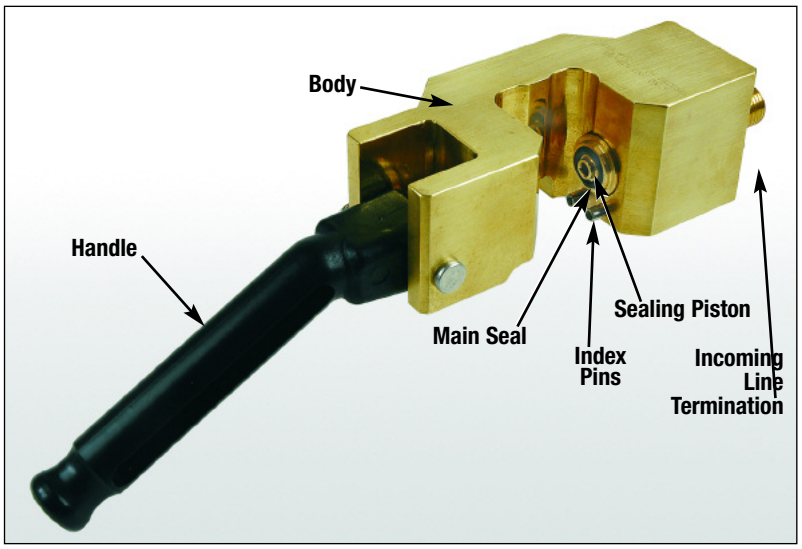
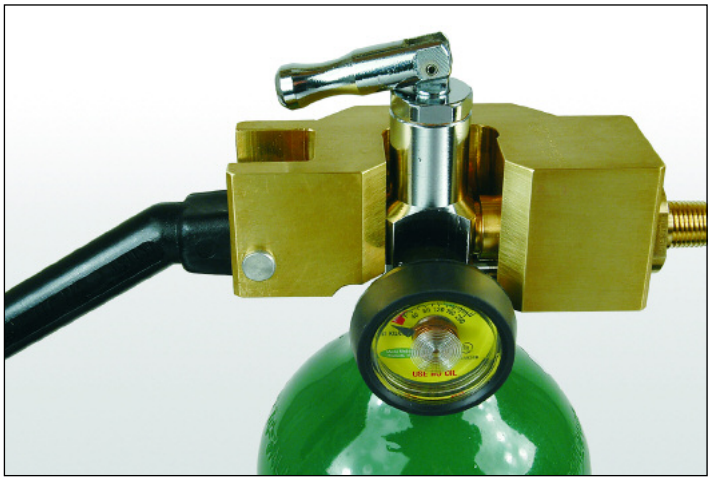
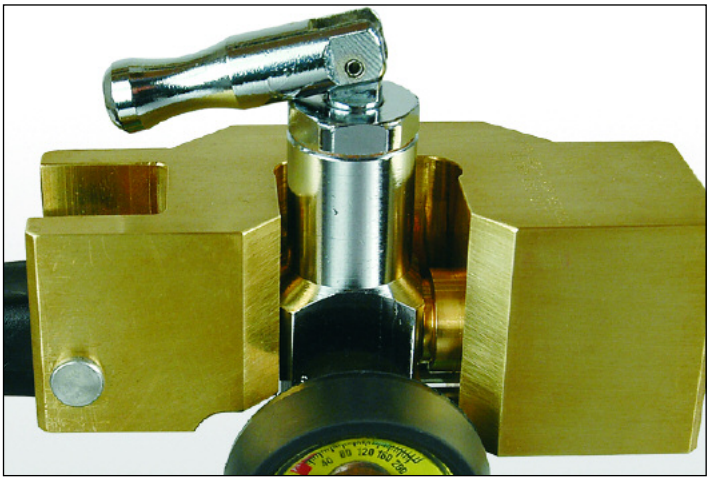


Figure 5. MediMate CGA 870.

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.

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

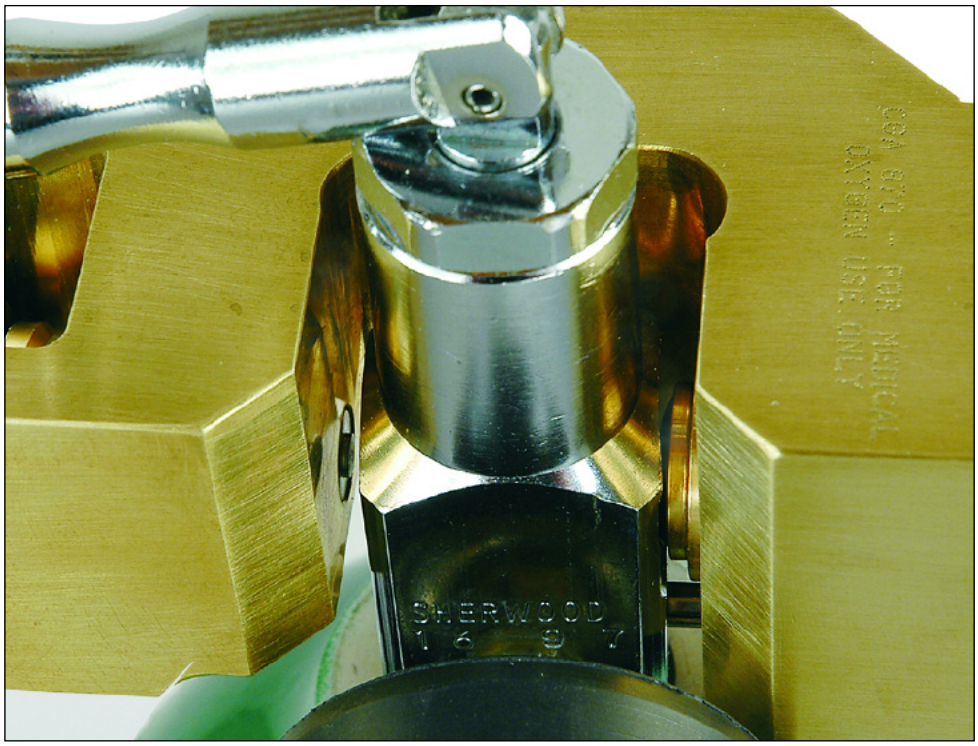


Figure 8. *Valve properly aligned.*

Figure 9. *Connector in transition.*

Figure 10. *Fully connected.*

MEDIMATE CGA 870 OPERATION

Good Connections

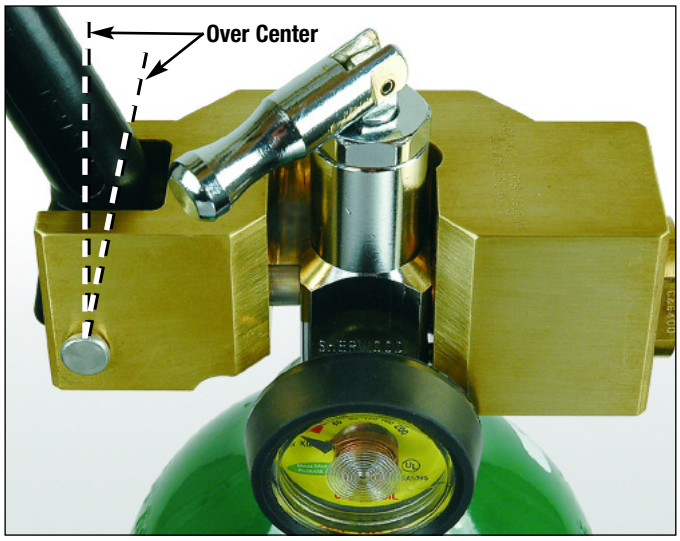


Figure 11. Handle camed beyond center. Note angle of handle.

Figure 12. Valve is tight to the body.

Bad Connections

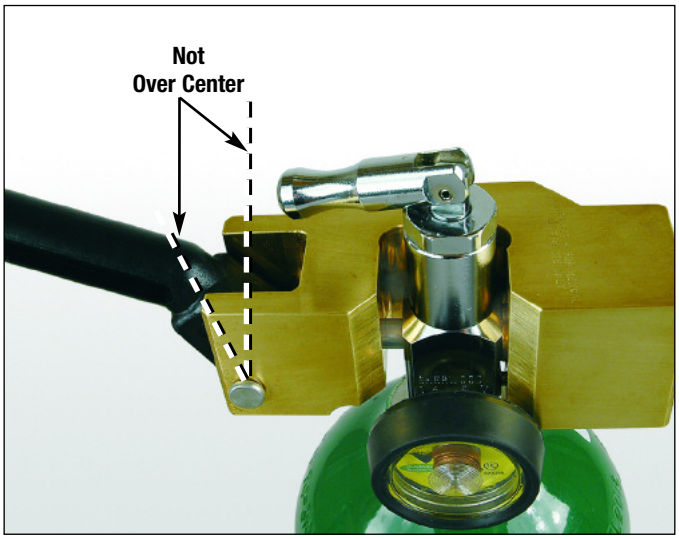


Figure 13. Handle is not camed beyond center. Note angle of handle.

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.

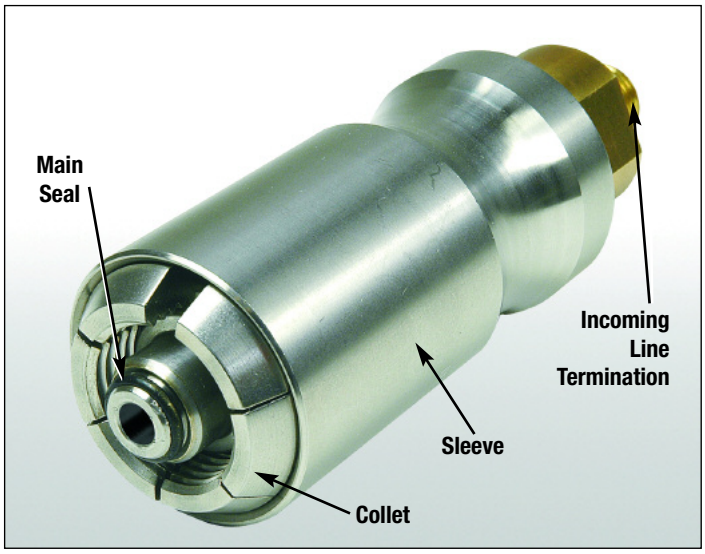


Figure 14. WEH Medical CGA 540.

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.
Make the proper connection in three steps.

Figure 15. Valve properly aligned with connector.

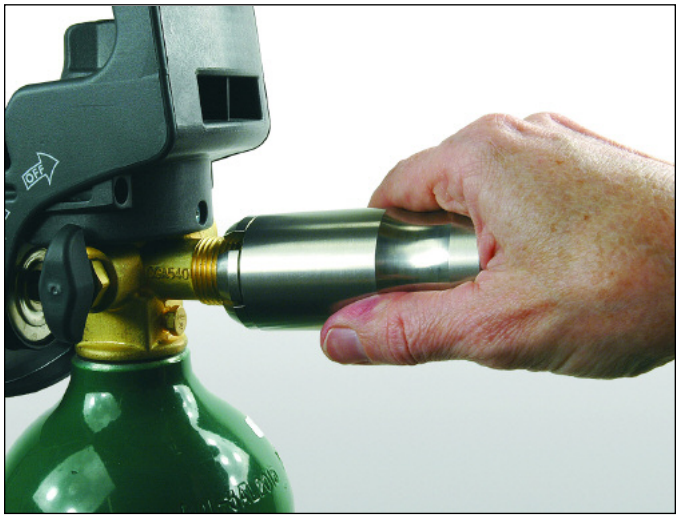


Figure 16. Connector in transition.

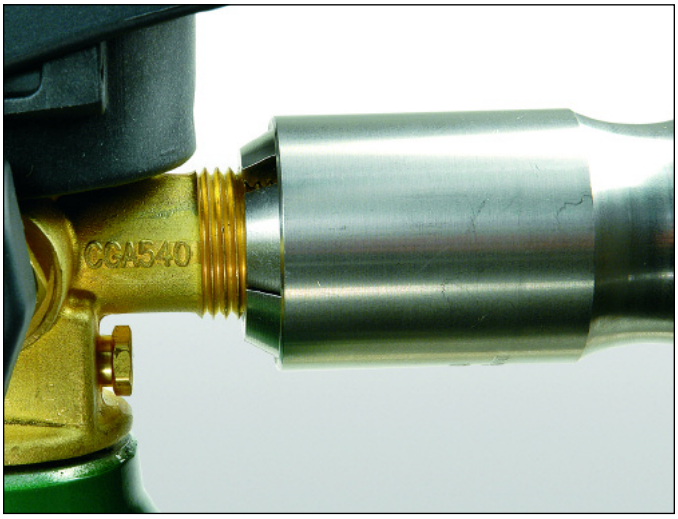


Figure 17. Fully connected.

WEH MEDICAL CGA 540 OPERATION

Good Connections

Figure 18. *Connector tight to valve.*

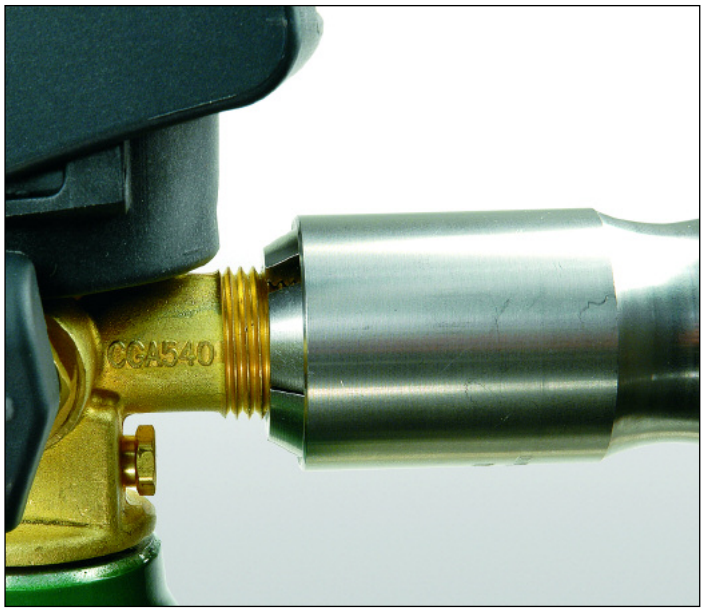


Figure 19. *Sleeve is forward.*

Bad Connections

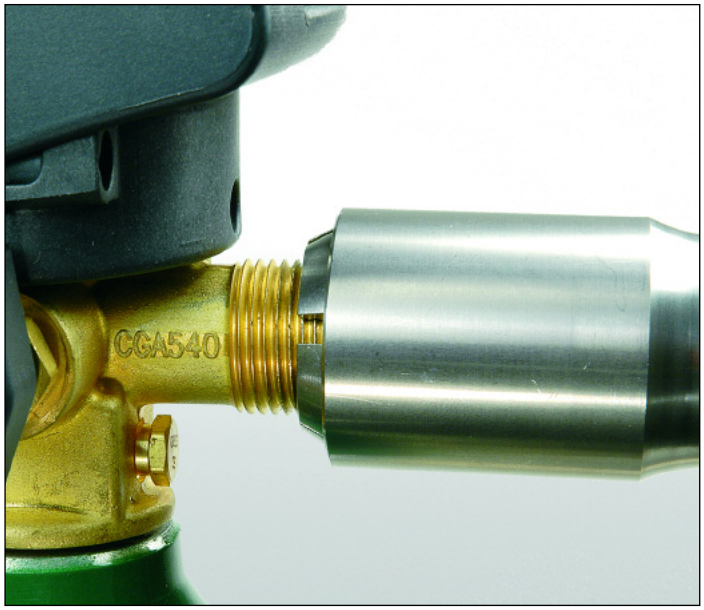


Figure 20. *Note excess threads.*

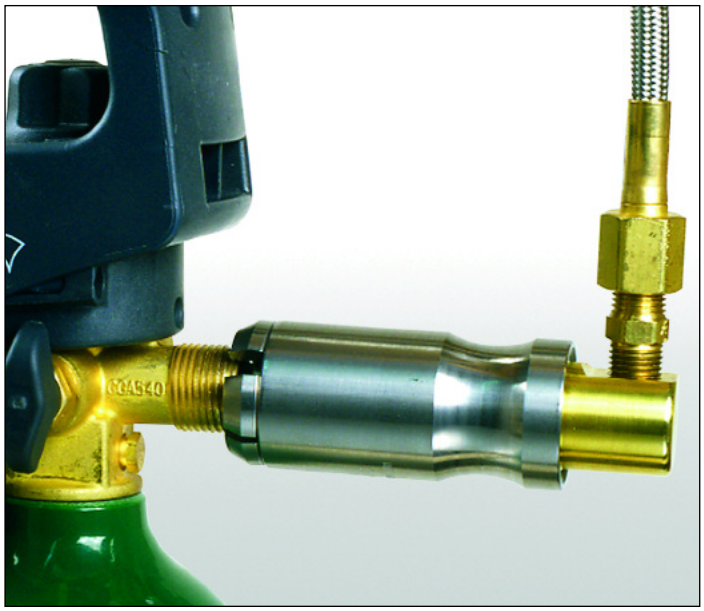


Figure 21. *Connector loose. Sleeve not forward.*

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.

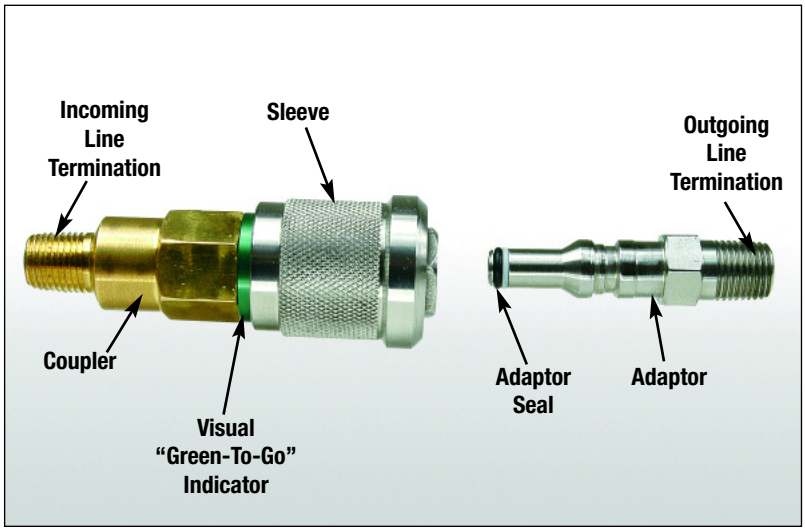


Figure 22. VariQuik.

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* **7C**-10*).*

Step 3: A four-step process locks the adapter in place.

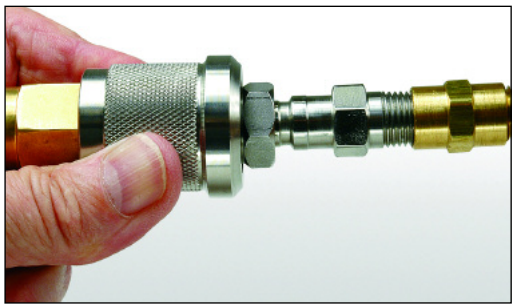


Figure 23. Coupler properly aligned.

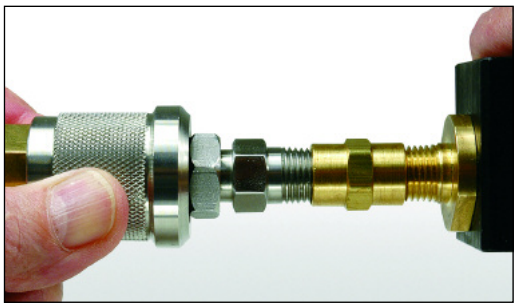


Figure 24. Coupler in transition.

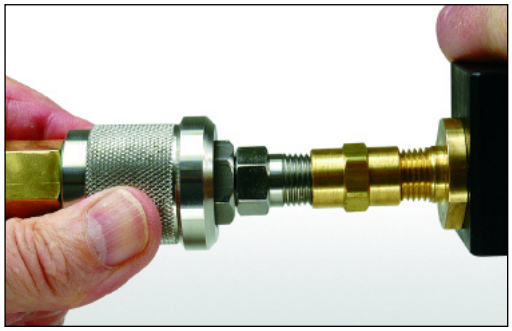


Figure 25. Adapter fully inserted.

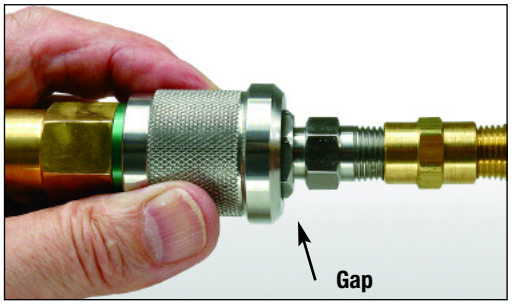


Figure 26. Sleeve released, connector pushes back leaving a visible gap between hex.

Good Connections

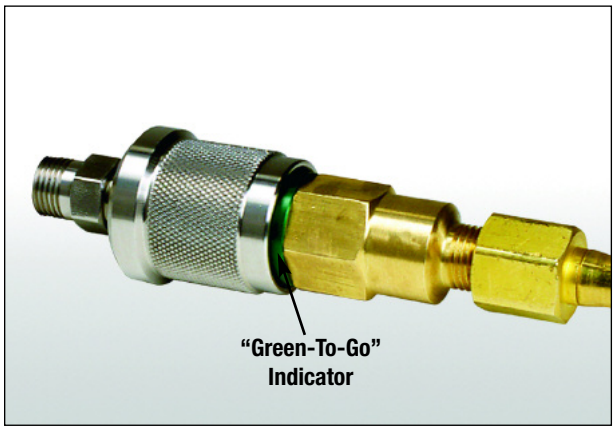


Figure 27. Visual indicator present.

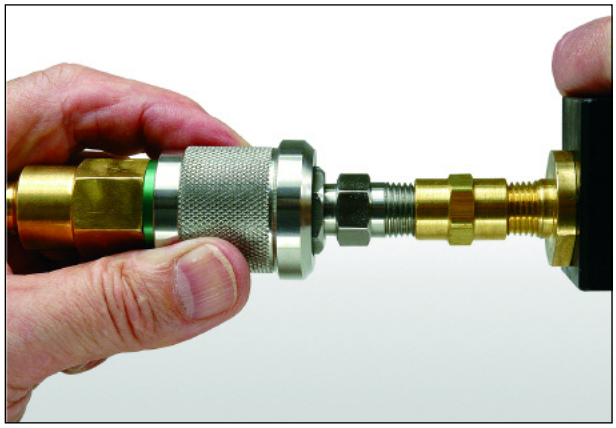


Figure 28. Sleeve is forward, visual indicator present, visible gap between hex.

Bad Connections

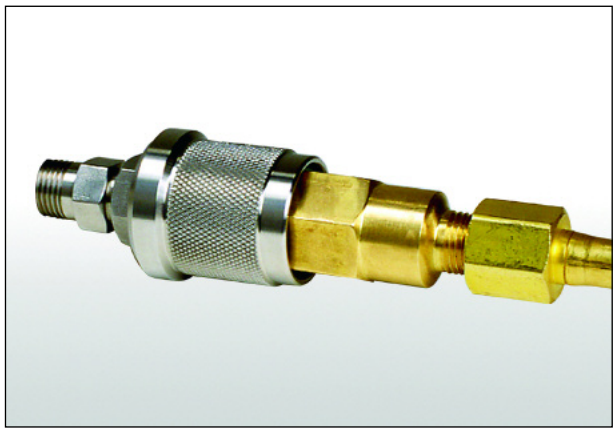


Figure 29. No visual indicator present.

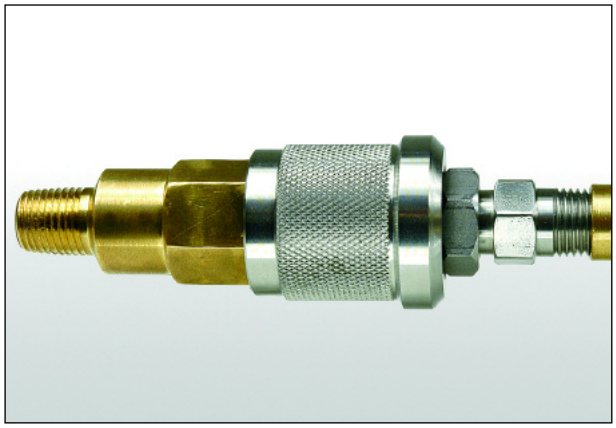


Figure 30. No visual indicator.

Step 3: Disconnection

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

Main Seal

The main O-ring seal must be replaced at least every 1,000 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.

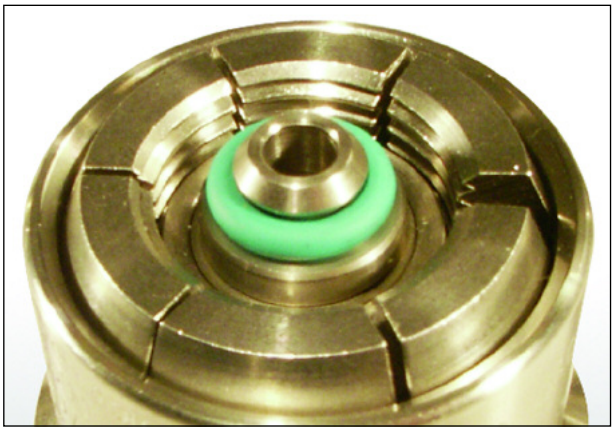


Figure 31.
An example of a "good O-ring" main seal.

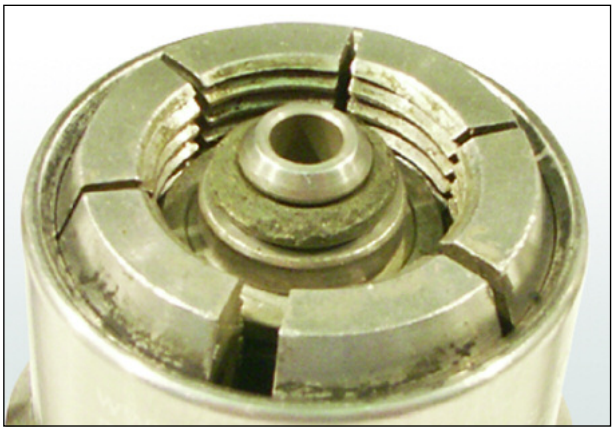


Figure 32.
An example of a "bad O-ring" main seal.

Main Seal Accessibility

MediMate

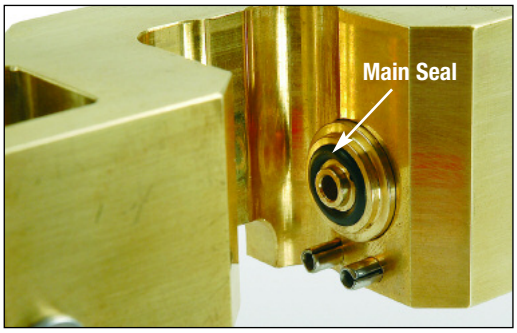


Figure 33.
MediMate CGA 870 main seal.

540 Medical

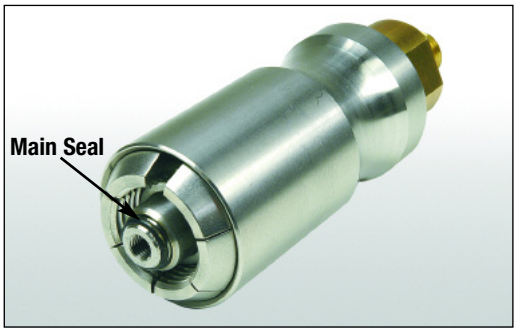


Figure 34.
WEH Medical CGA 540 main seal.

VariQuik

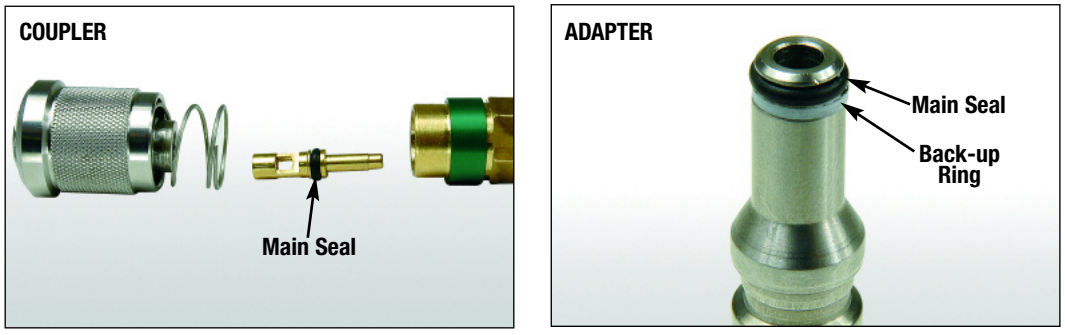


Figure 35 and 36. VariQuik System has an coupler and adapter. The main seal in the coupler will require disassembly to replace. The main seal and back-up ring on the adapter are easily accessible.

MAINTENANCE

MediMate CGA 870

The connector must remain clean to allow for proper operation.

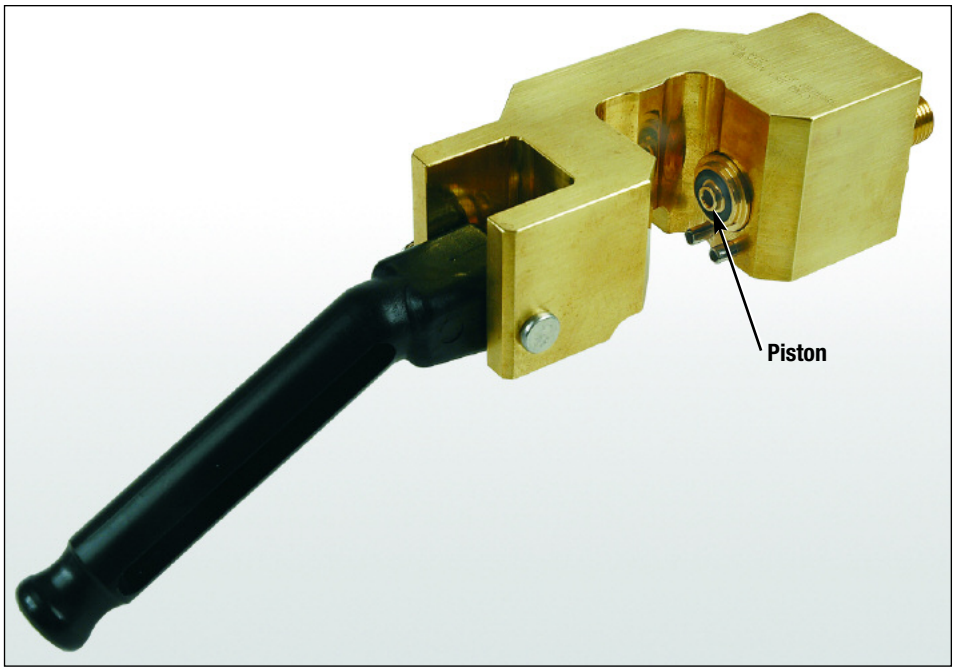


Figure 37. Press on the piston. If it does not spring back, the internal components may be clogged with soap residue. Approximately 33lbs will be required to depress piston.

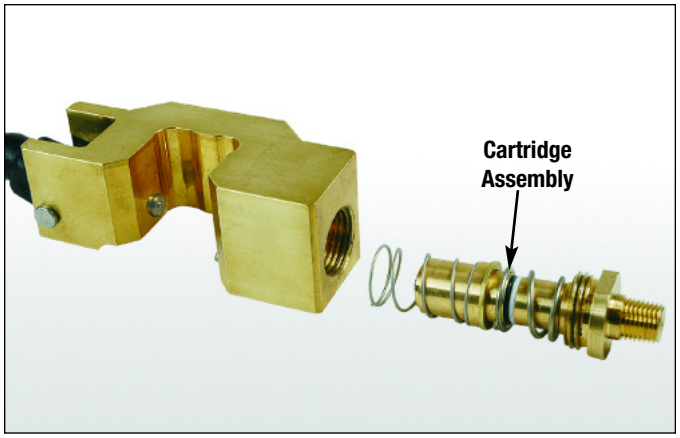


Figure 38. Remove cartridge assembly and clean residue with water and agitation.

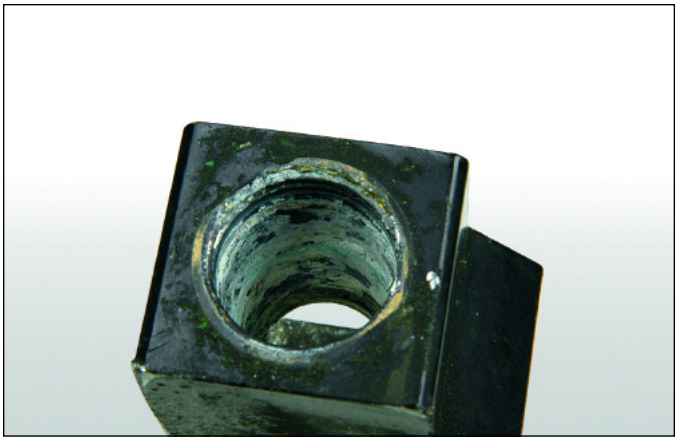


Figure 39. Example of contamination.

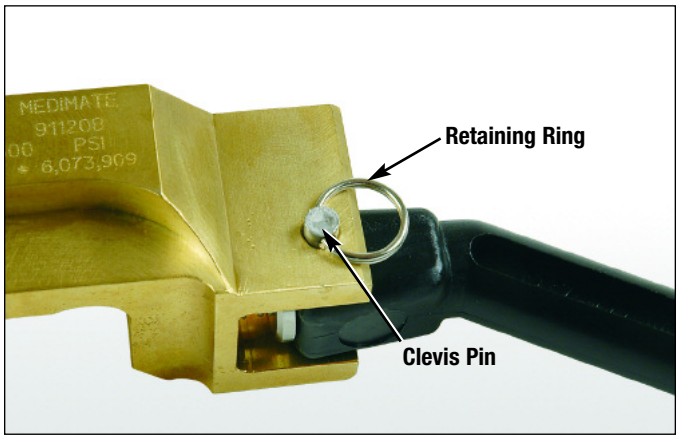


Figure 40. Check condition of clevis pin and retaining ring. If clevis pin is broken or retaining ring is not functional, contact factory.

WEH Medical CGA 540

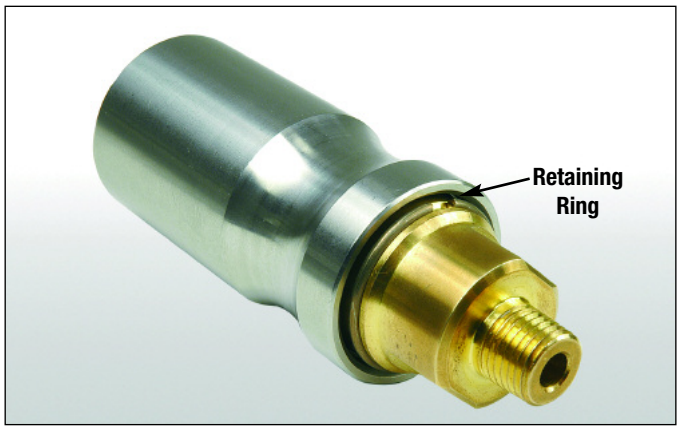
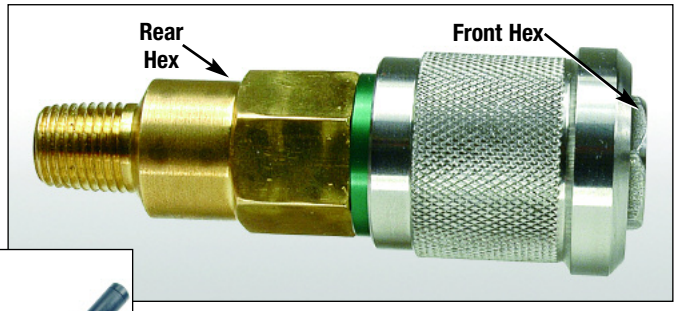


Figure 41. Check retaining ring to make sure it is tightly seated in its groove.

- *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 Ratermann Mfg., Inc. for additional information.***

Connector	Part #	Description	Ratermann Pt #
MediMate CGA 870			
G870041	SG870	Replacement Main Seal Set (5/pkg)	**QF-H870**
	SG870100	Replacement Main Seal Set (100/pkg)	**QF-H870SPK100**
	SG870250	Replacement Main Seal Set (250/pkg)	**QF-H870SPK250**
	SG870500	Replacement Main Seal Set (500/pkg)	**QF-H870SPK500**
	G870041R	Refurbished	**QF-H870REPAIR**
WEH Medical CGA 540			
521042540	E5046786S611	Replacement Main Seal	**QF-MED540F**
521041540			**QF-MED540M**
VariQuik System			
G02042 Coupler	1106V70	Main seal	**QF-VC**
G02041 Adapter			**QF-VAM**
Male NPT Termination	GS02A	Seal set	
G02042 Adapter			**QF-VAF**
Female NPT Termination	GS02A	Seal set	

Krytox GPL-203 Grease

For use on medical o-ring seals such as the QF-H870 fill connectors or the QF-540 connectors. Can also be used on medical fill racks for general lubrication.

Part # KRY-GPL2032OZ
Part # KRY-GPL2038OZ
Larger sizes available upon request.

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 Ratermann Mfg., Inc.
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.

BAIL ACTUATOR OPERATION

Step 1: At the start of each shift

- Check all connectors for main seal condition.
- Check for smooth operation of the actuating loop before the first fill.

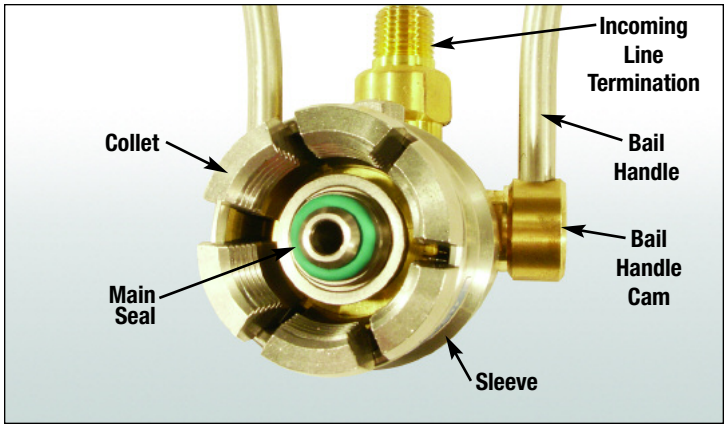


Figure 2. CGA 540.

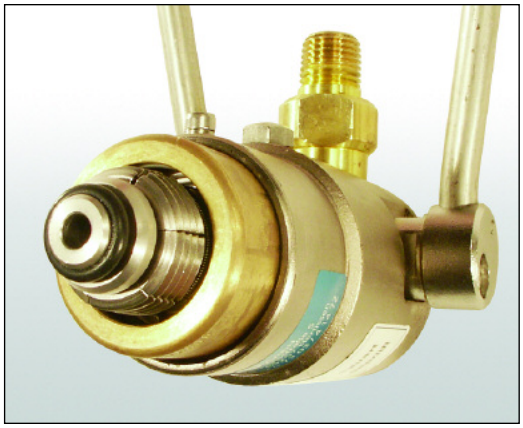


Figure 3. CGA 580.

Step 2: When making a connection, ensure that the connector is in the fully open position and in direct contact with the front of the valve before moving the actuator. Place the connector onto/into the valve until it stops. **Do not use force!** Align the connector to the thread to prevent damage to the front seal from sharp edges of the valve. Rotate the bail to engage the connector. Do not actuate the loop with excessive force. If the connection is made correctly, it will connect with relative ease. Ensure that the actuating loop has traveled through it's full stroke and the bail cams are square with the sleeve. Check to make sure the collets are fully engaged. (See good vs. bad connection photos, page **7C-20**.)

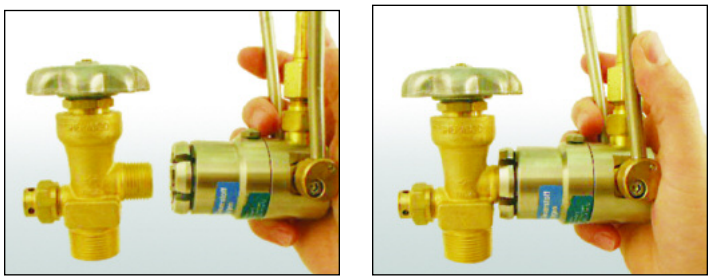


Figure 4a - 4b. CGA 540 or 346 alignment.

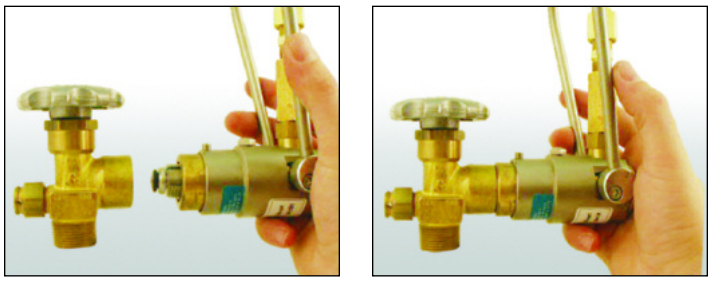


Figure 4c - 4d. Align the CGA 580 tight and square against valve with no visible gap. Align the CGA 580 RPV with valve to avoid damage to the sealing surface.

580 RPV Pin Retraction

Retract pin if connecting to a standard 580 valve.

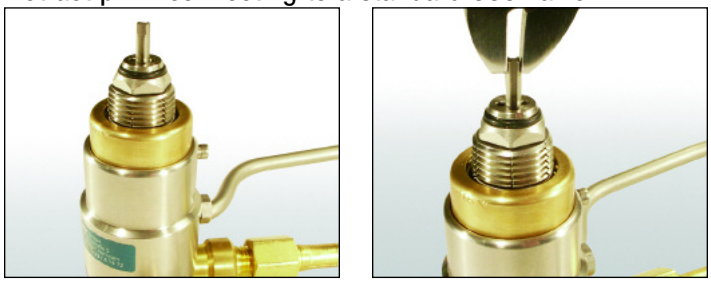


Figure 5a. Note how the pin is extended.

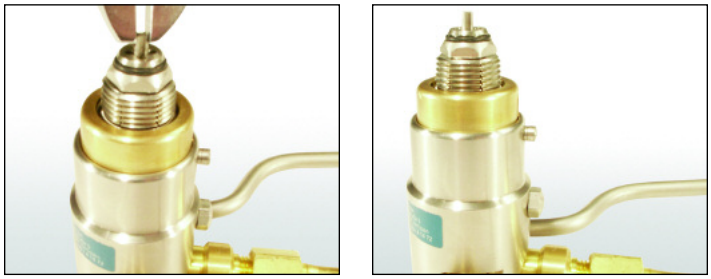


Figure 5b-5c. Push and turn to retract.

Figure 5d. Retracted.

BAIL ACTUATOR OPERATION

Step 3: Connecting to the cylinder.

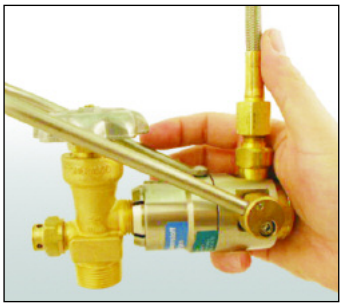


Figure 6a. *Demonstrates a good connection using the CGA 540/CGA 346.*

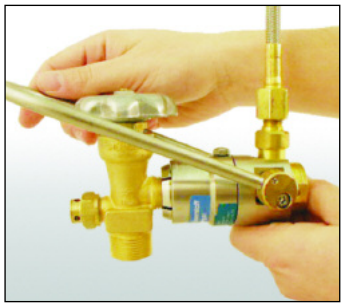


Figure 6b. *Use minimal force on bail.*

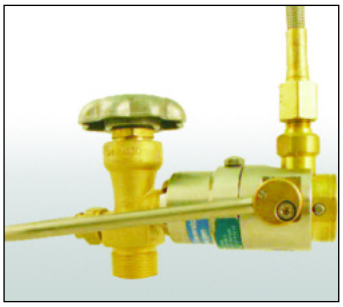


Figure 6c. *A good connection to the cylinder with the CGA 346 and 540.*

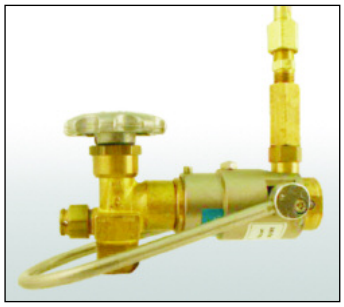


Figure 7. *Demonstrates a good connection to the cylinder with the CGA 580.*

Good Connections

Figure 8. *Collets retract into sleeve.*

WARNING: Improper thread connection can result in injury or death.

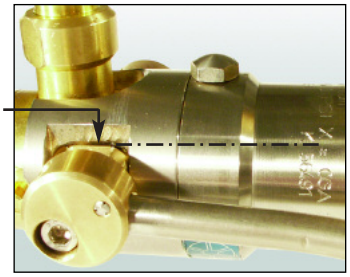


Figure 11. *Cams are square to sleeve.*

Bad Connections

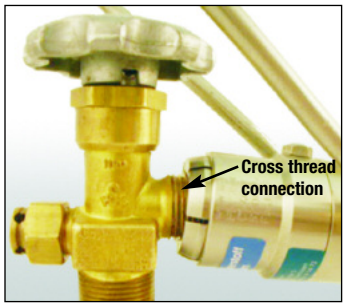


Figure 9. *An incomplete or cross thread connection.*

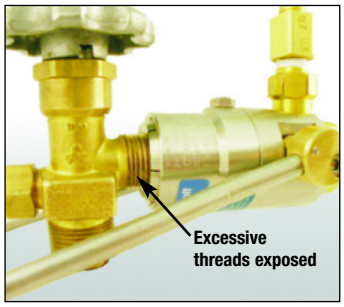


Figure 10. *Short connection.*

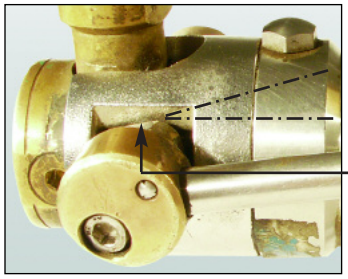


Figure 12. *Cams are not square to sleeve.*

Step 4: **Connect.** The safety pin protrudes out (engages) at a pressure of approximately 250 psig, depending on connector age, cleanliness and lubrication.

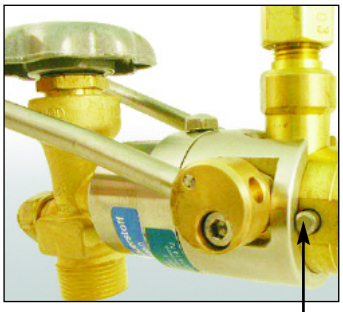


Figure 13. *Safety pin extends to stop sleeve travel and accidental disconnection.*

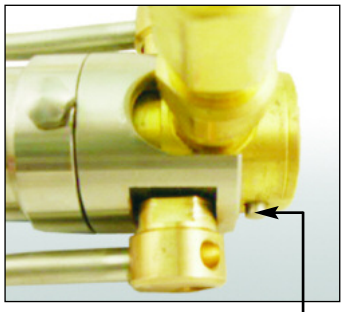


Figure 14. *Note safety pin.*

Step 5: **Disconnect.** Disconnect only when the connector is depressurized and the safety pin retracts in. DO NOT ATTEMPT TO DISCONNECT ACTUATOR STYLE CONNECTORS WHILE UNDER SYSTEM PRESSURE. (See Safety Pin care in Maintenance section of this manual).

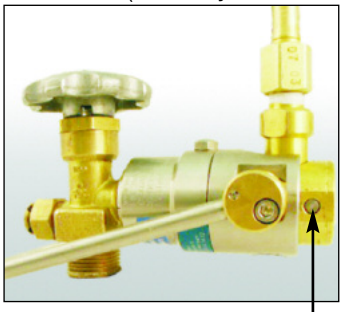


Figure 15. *Safety pin retracted.*

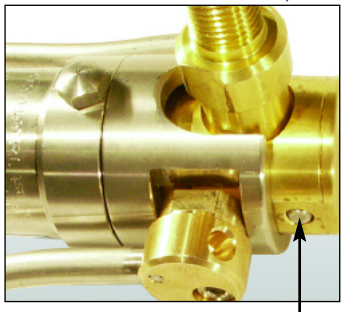


Figure 16. *Safety pin retracted.*

BAIL ACTUATOR MAINTENANCE

Good Maintenance Practices

- CGA standards for medical oxygen filling, CGA 870 and 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 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, missing or loosened screws, 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.**
- The manufacturer (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.

Main Seal

The main O-ring seal must be replaced at least every 1,000 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.

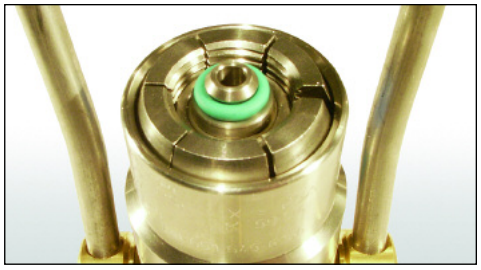


Figure 17. *An example of a "good O-ring" main seal.*

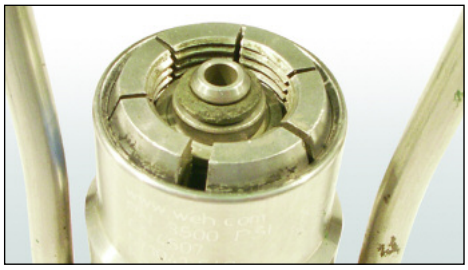


Figure 18. *An example of a "bad O-ring" main seal.*

BAIL ACTUATOR MAINTENANCE

Bail Handles

FasTest recommends a periodic inspection and tightening of the actuator handles on applicable CGA standards. If screws are loose, tighten to 7 ft-lb. **Do not over tighten screws.** A drop of Loctite 242 on the threads of each screw is appropriate.

Figure 19. If screws are loose, tighten to 7 ft-lb.

Use torque wrench.

Good Handles

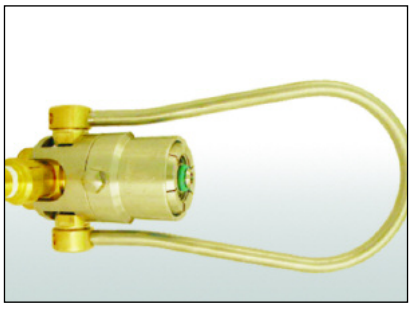


Figure 20. Straight handle.

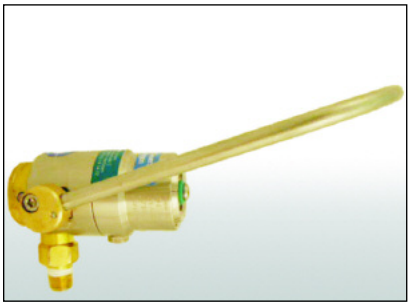


Figure 22. Straight handle, side view.

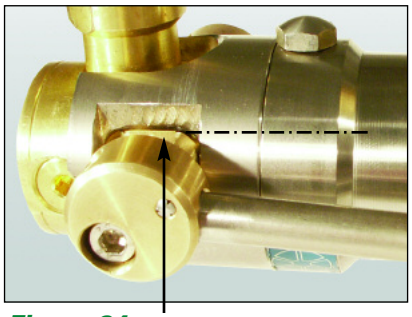


Figure 24. Handle and cams are square to sleeve and body.

Bad Handles

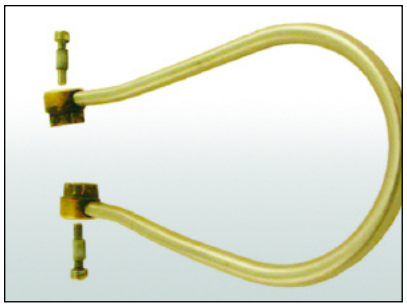


Figure 21. Bent handle, bent screws.

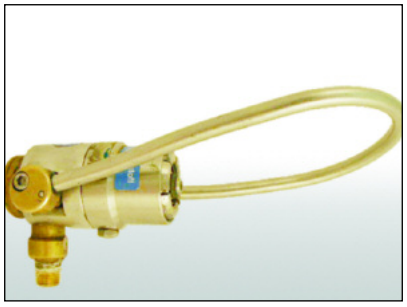


Figure 23. Bent handle, side view.

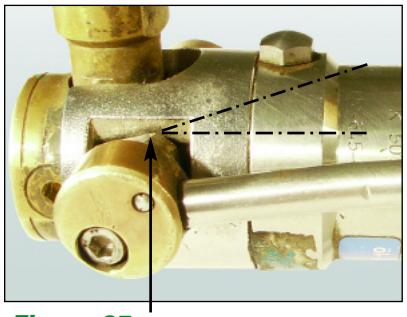


Figure 25. Handle and cams are not square to sleeve and body.

BAIL ACTUATOR MAINTENANCE

Safety Pin

Safety pin operation must be inspected daily. With actuator handle connectors, the safety pin will protrude out during the filling cycle at approximately 250-psig. The safety pin retracts back into the connector body upon completion of the fill/vent cycle. The actuator handle will flip back easily when the connector is depressurized and the safety pin retracts. Failure to wait may cause damage to the safety pin.

If the safety pin does not function properly, the pin assembly may require cleaning and lubrication. Or, if bent, the safety pin will require total replacement. Attempting to disconnect the connector while pressurized contributes to the bending of the safety pin. **DO NOT ATTEMPT TO DISCONNECT ACTUATOR STYLE CONNECTORS WHILE UNDER PRESSURE.**

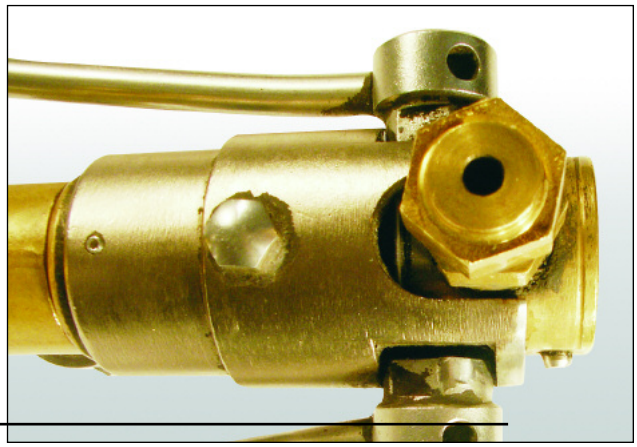


Figure 26.
Example of a bad or damaged safety pin. When the pin is bent it will not retract. There is a noticeable indentation on the sleeve from contact with pin. The handle is also bent from forcing actuation while the pin is protruding out.

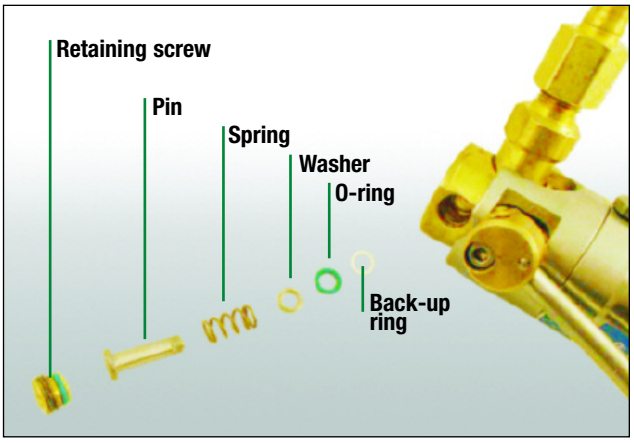


Figure 27.
Replacing the safety pin requires attention to detail. Make sure that dismantling and assembly are executed in the right order when replacing the safety pin and corresponding seals, springs and parts. The seal and the safety pin must be greased sparingly with Krytox or equivalent.

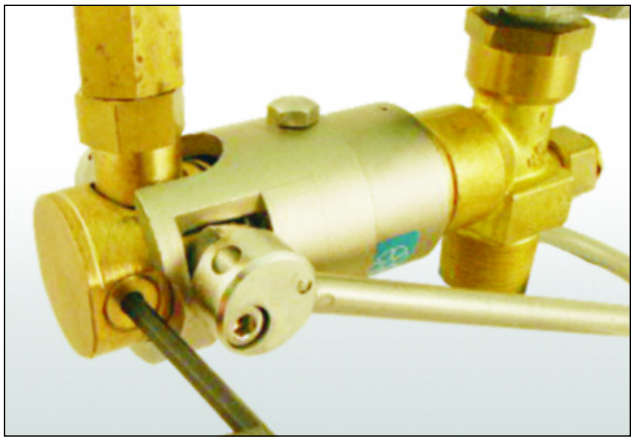


Figure 28.
The retaining screw has to be tightened to a torque of 2.5 ft-lb using a 4mm hex key and a calibrated torque wrench. Ensure that all parts are cleaned before reassembling the connector.
(See torque wrench, Figure 19).

BAIL ACTUATOR MAINTENANCE

Main Body Set Screw: The main body set screw should be inspected periodically and tightened to 7 ft-lb. (See torque wrench, Figure 1).

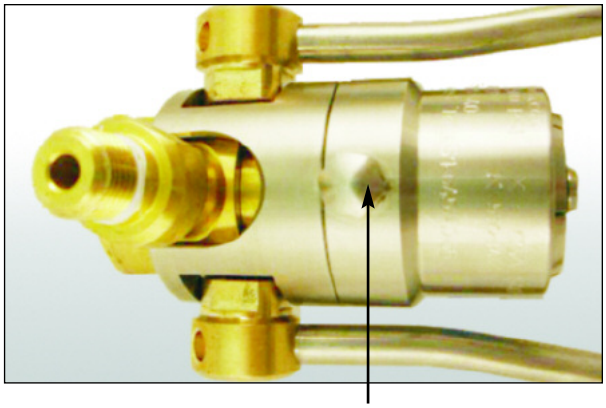
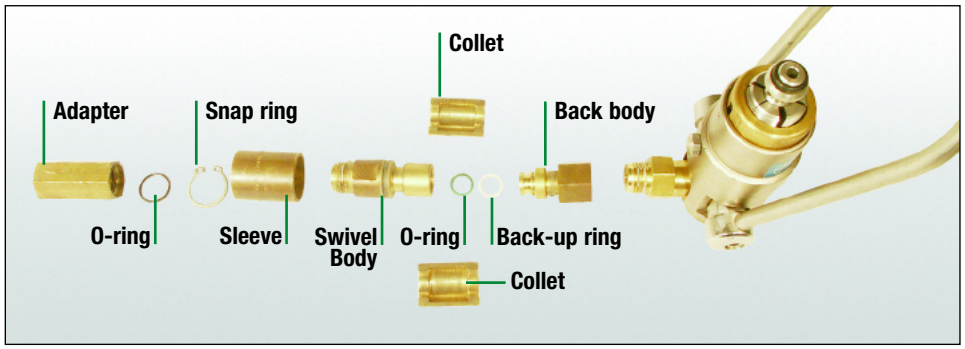


Figure 29. The main body set screw is the one on top of the connector.

Swivel Adapter: The swivel adapter incorporates an O-ring that will wear over time. A periodic disassembly, clean and lubrication will be required. Lubricate with Krytox or equivalent. Replacing the internal seal requires attention to detail. Make sure dismantle and assemble are executed in the correct order. The threaded components are tightened to a torque of 15 ft-lb using a calibrated torque wrench.



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.

Inspect for correct function

☒ Does the safety pin properly protrude and lock the connector under pressure?

☒ Does the safety pin move backwards when the system is depressurized?

Weekly

Inspect for correct function

☒ Inspect the correct engagement of the collets.

☒ 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 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 Ratermann Mfg., Inc. for additional information.***

Connector	Part #	Description
QF-MED540M QF-MED540F CGA 540 Medical Oxygen	QF-MEDSEAL	Replacement Main Seal
QF-H346 CGA 346	QF-H346S QF-HDL1FIT See pages **7B-5 & 6**	Replacement Main Seal Replacement Handle Screws Replacement Handle
QF-H540 CGA-540 Industrial Oxygen	QF-H540SPK5 QF-H540SPK100 QF-H540SPK250 QF-HDL1FIT See pages **7B-5 & 6**	Replacement Main Seal Set (5/pkg) Replacement Main Seal Set (100/pkg) Replacement Main Seal Set (250/pkg) Replacement Handle Screws Replacement Handle
QF-H580 CGA 580	QF-H580SPK5 QF-H580SPK100 QF-H580SPK250 QF-HDL1FIT See pages **7B-5 & 6** QF-PINSEALKIT	Replacement Main Seal Set (5/pkg) Replacement Main Seal Set (100/pkg) Replacement Main Seal Set (250/pkg) Replacement Handle Screws Replacement Handle Safety Pin Seal Kit
QF-RPV-H580 CGA 580 RPV	QF-RPB-H580S QF-RPB-H580PIN QF-RPB-H580TK QF-HDL1FIT See pages **7B-5 & 6** QF-PINSEALKIT	Replacement Main Seal Replacement Actuator Pin (5/pkg) Tool Kit to Replace Actuator Pin Replacement Handle Screws Replacement Handle Safety Pin Seal Kit

BAIL ACTUATOR TROUBLESHOOTING

Problem	Recognized By	Probable Cause	Recommended Action
Gas leakage at connection of connector to valve	Continual sound of escaping gas	Damaged or worn connector sealing O-ring or damaged cylinder valve	Visual inspection of connector O-ring. Replace as required. Recommended O-ring replacement every 1000 filling cycles.
Gas leakage at initiation of filling cycle, leakage decreasing as pressure increases	Sound of escaping gas	(a) Improper connection	(a) Terminate filling cycle and repeat connection
		(b) Side load to filling connector due to rigid supply line	(b) Replace supply line with swivel and/or flexible pigtail
Gas leakage increases as pressure increases	Sound of escaping gas Blow off	Valve threads damaged Seat area of valve scored or damaged	Terminate filling cycle and replace damaged or worn valve.
Gas leakage at swivel joint	Sound of escaping gas	Damaged or worn sealing O-ring	Replace O-ring
Safety pin does not activate during filling cycle	Safety pin at rear of connector not extended outward from connector body. Filling pressure must exceed 250 psi for pin actuation.	(a) Damaged or bent pin	(a) Field replacement of actuator pin assembly
		(b) Lack of lubrication and/or dirt contamination	(b) Remove safety pin assembly, clean and lubricate with approved lubricant.
Safety pin does not retract upon completion of filling cycle	Visual inspection of safety pin at rear of connector body Activated and not retracted into connector body	(a) Damaged or bent pin	(a) Field replacement of actuator pin assembly
		(b) Lack of lubrication and/or dirt contamination	(b) Remove safety pin assembly, clean and lubricate with approved lubricant.
		(c) System under pressure	(c) Vent or exhaust system of gas before attempting disconnection
Actuator handle loose	Excessive handle movement from side-to-side when connected to valve.	Loose or missing actuator handle screws	Replace missing screw(s) or remove existing screws. Apply thread lock to screw threads. Reinsert and tighten to 7 ft-lbs. Do not over tighten screws
Inability to fully engage actuator handle	Visually inspect connection with valve to determine if connector threads are exposed	Short connection to cylinder valve	Disconnect and reconnect to valve with connector fully seated into valve

Gas Connector CGA standards 346, 540, 580 and 580 RPV series. Gas connector products should be visibly inspected on a routine basis to ensure efficient product performance. Refer to the Maintenance Checklist on page **7C-24**.

BAIL ACTUATOR TROUBLESHOOTING

Problem	Recognized By	Probable Cause	Recommended Action
Connector's thread collets not expanding properly during initial hook-up to cylinder valve.	Visual inspection of connection joint	Short connection of connector to valve	Visual inspection of valve. Replace if damaged or worn. Disconnect and reconnect connector to valve. Be sure actuator handle sleeve is fully engaged. If problem is unresolved, contact Ratermann Mfg., Inc.
Loose connection	Connector is loose despite proper connection	Worn or damaged threads of cylinder valve	Replace cylinder valve.
Damage, deformation or distortion to connector body, sleeve, and collet threads. Possible internal leakage	Visual inspection of connector Difficult operation of connector	Improper operation	Remove connector from filling operation immediately! Return to FasTest to determine probable cause.
Connecting collet(s) missing or difficult to connect to valve and/or front outer sleeve loose	Visual inspection of socket head screw on front of outer sleeve or connector body	Loose or missing	Discontinue use of connector until socket head screw is tightened to 7 ft-lbs. or replaced
Inability to connect to, or a leakage with, CGA 540 and 580 RPV style connectors and Residual Pressure Valves	Inability to fully actuate connector actuator handle and/or outer sleeve	(a) Bent actuator pin (b) Damaged actuator piston	(a) Replace actuator pin (b) Return to FasTest for repair
Inability to connect or leakage of RPV version connector to non RPV cylinder valves	Inability to fully actuate and/or gas leakage at initial filling	(c) Actuator pin not retracted	(c) Retract/remove actuator pin according to specific connector operation instructions

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.