FASTEST®

Medical Connectors

Operating Instructions

fastestinc.com

Medical Compressed Gas Connectors

INTRODUCTION TO FASTEST

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.

Why Choose FasTest? ...

FasTest is a dedicated manufacturer of advanced connection tools for pressure and vacuum testing 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

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APPLICATION GUIDELINES

- ***FasTest*** gas series connectors are designed to connect to specific gas valve standards
- 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 or injuries to persons or property arising from incorrect use.
- Connectors for respiratory air/oxygen must be kept free from oil and grease.
- Connectors without an operating loop require additional security by means of safety wire, safety cage, etc.

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

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

Step 4 - Review total connector function:

MediMate Style (CGA 870 shown in Figure 2)

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

Medical and Industrial CGA 540 (Figure 3 and 4)

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

Note

Avoid lateral forces (like hoses that are too short/tight) because this could cause leakage.

Figure 2.

Figure 3.

Figure 4.

MEDIMATE OPERATION

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.
- The MediMate series of connectors uses the “pin index safety system” to ensure that there are specific connection configurations for different gasses. Be sure you have the correct connector specified for your application.

Figure 5. The piston retains position against valve during accidental disconnection

Step 1 - Check Connector

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.

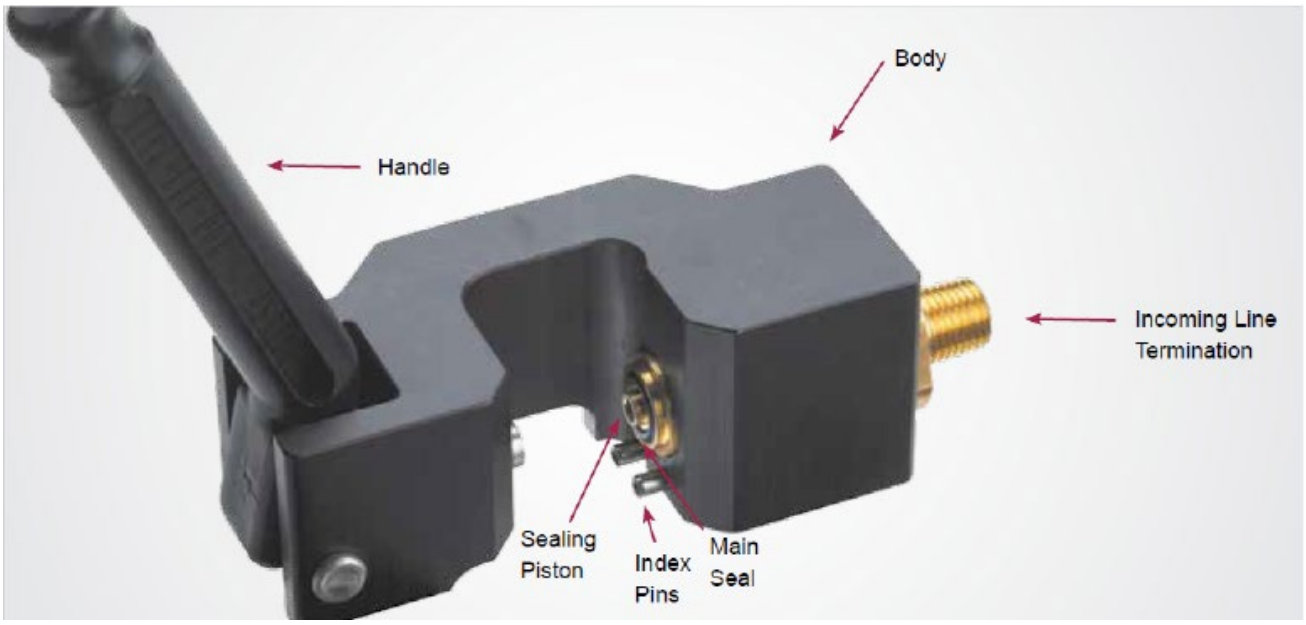

Figure 7. MediMate CGA 870 shown. Also applies to CGA 950, 910, 940, and other MediMate models.

MEDIMATE CGA 870 AND CGA 950 OPERATION

Step 2 - Make Connection

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 OPERATION

Step 3 - Ensure Proper Connection

Proper Connection

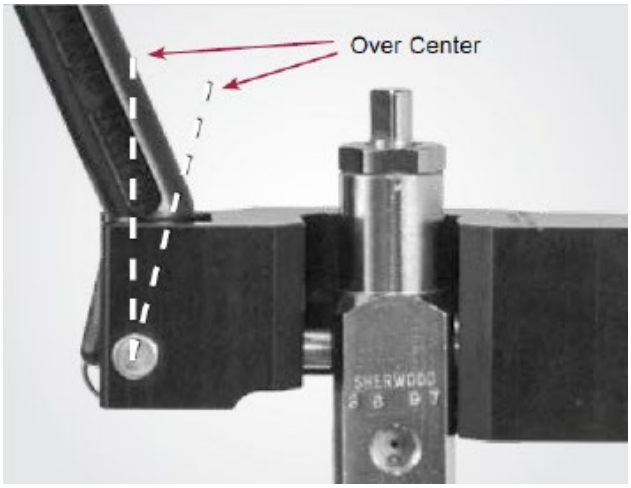

Figure 10. Handled camed beyond center. Note angle of handle.

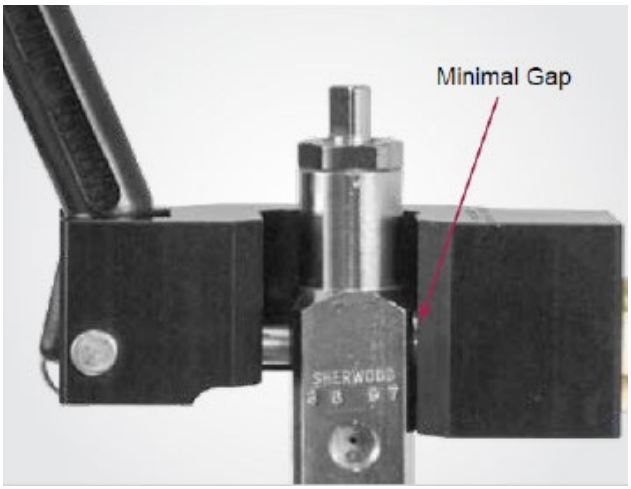

Figure 11. Valve is tight to the body

Step 4 - Connect Safely

- The MediMate is now connected and should look like what is shown in Figure 11. It is now ready for the cylinder filling process to begin.

Step 5 - Disconnect

- Once pressure is relieved, actuate handle and release connector from the valve.

Incorrect Connection

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

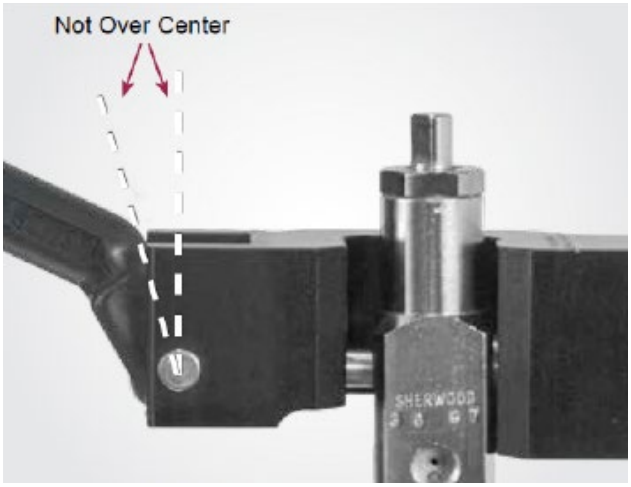

Figure 12. Handled is not camed beyond center. Note angle of handle.

MEDICAL AND INDUSTRIAL SLEEVE CONNECTOR OPERATION

Step 1 - Check Connection

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.

RVP Pin Section - Figures 14-18

Note:
Pin retraction is shown using FasTest tool G580RVPVPT.
Retraction may also be done using standard pliers.

Figure 14. Note how the pin is extended

Figure 15. Push down

Figure 16. Rotate 90º

Figure 18. Retracted

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.
- Secondary release sleeve must be actuated to remove connector
- Green ring indicates in connected position
- Red ring indicates in unconnected position (for G54004XSRXXMX models only)

MEDICAL AND INDUSTRIAL SLEEVE CONNECTOR OPERATION

Step 2 - Make Connection

Connecting to the cylinder:

- A three step process locks the valve into place.

Figure 19. Make sure valve is clean and undamaged with room for connection

Figure 20. Align connector with valve and push on gripping the outer sleeve

Figure 21. Fully connected.

MEDICAL AND INDUSTRIAL CGA 540 OPERATION

Correct Connections

Figure 22. Connector tight to valve

Figure 23. Sleeve is forward

Step 3 Disconnect

- Once pressure is relieved, pull back on sleeve and remove connector.
- For G540XXXSRPXX connectors only: Once pressure is relieved, pull back on “release sleeve” and then pull back on front sleeve to remove connector.

Figure 24. Sleeve pulled back

Incorrect Connections

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

Figure 25. Note excess threads.

Figure 26. Connector loose and sleeve not forward.

MAINTENANCE

Good Maintenance Practices

- CGA standards for medical oxygen filling, CGA 870 and CGA 346/540 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. Consider replacing connectors after 50,000 fill cycles (100,000 for MediMate)
- 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.
- Replacement should be considered 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.

Main Seal

The main O-ring seal must 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.

MAINTENANCE

Main Seal

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Figure 27. An example of a good O-ring main seal

Figure 28. An example of a bad O-ring main seal

Main Seal Accessibility

Figure 29. MediMate main seal

Figure 30. Medical and Industrial CGA 540 main seal.

MAINTENANCE

MediMate

The connector must remain clean to allow for proper operation

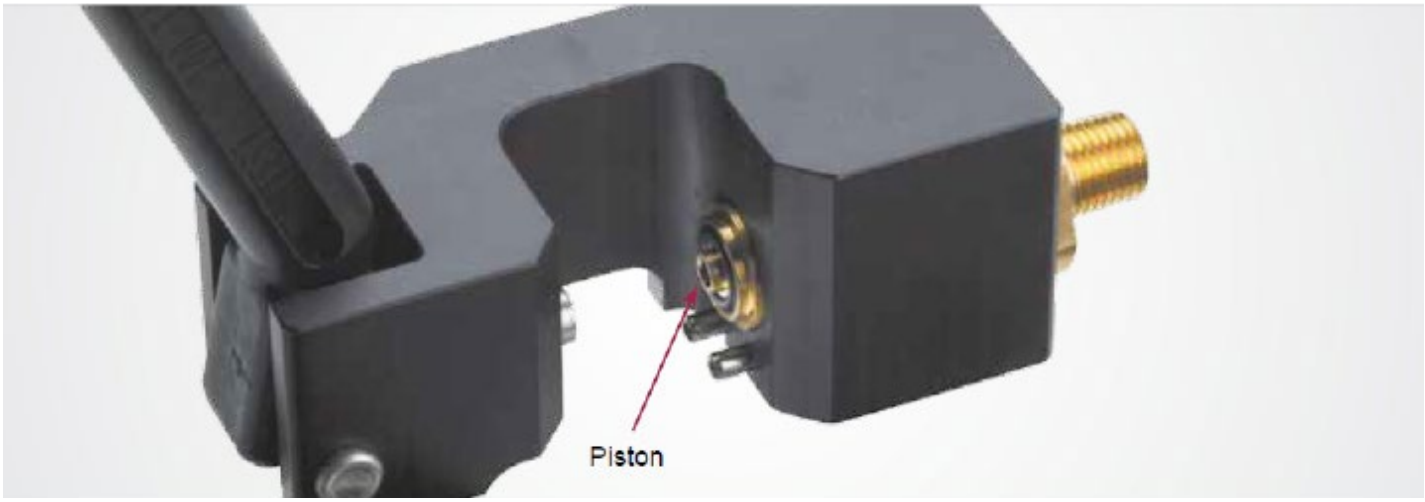

Figure 31. Press on the piston. If it does not spring back, the internal components may be clogged with soap residue. Approximately 33lbs will be required to depress the piston.

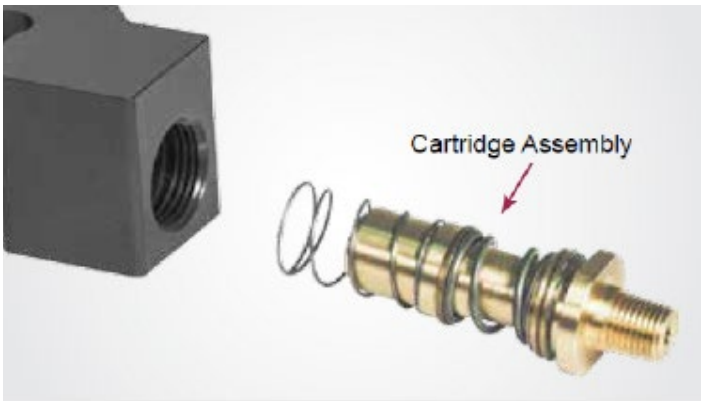

Figure 32. Remove cartridge assembly and clean residue with water and agitation.

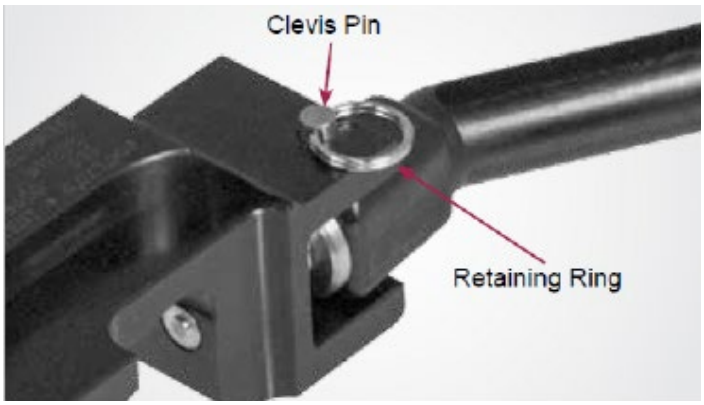

Figure 33. Check condition of clevis pin and retaining ring. If clevis pin is broken or retaining ring is not functional, contact factory.

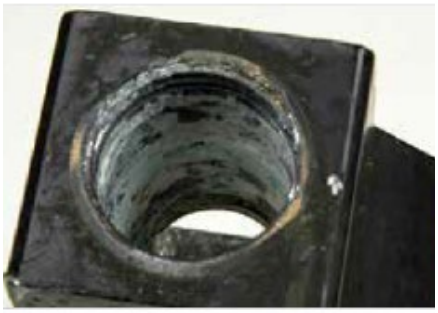

Figure 34. . Example of contamination

MAINTENANCE

Medical and Industrial CGA 540

Figure 35. 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 collets
- 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 components listed in this section are immediately available for field replacement. Additional field replacement components such as bail handles are also available by consulting FasTest. Remaining components are not offered for field replacement as they typically require special tools and handling precautions during assembly.

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 Oxygen cleaning before being returned to field service. Please contact FasTest, Inc. for additional information.

Connectors	Part Numbers	Material	Description
MediMate CGA 870 CGA 950 CGA 940 CGA 910	SG870/950 SG870/950100 SG870/950250 SG870/950500	Viton FDA	Main Seal Set (5/pkg) Main Seal Set (100/pkg) Main Seal Set (250/pkg) Main Seal Set (500/pkg)
MediMate CGA 870 CGA 950 CGA 940 CGA 910	SG950/950E SG950100/950E100 SG950250/950E250 SG9506500/950E500	EDMP	Main Seal Set (5/pkg) Main Seal Set (100/pkg) Main Seal Set (250/pkg) Main Seal Set (500/pkg)
Medical and Industrial CGA 540 SH	SG540SRP1 SG540SRP1100 SG540SRP1250 SG540SRP1500	Viton	Main Seal Set (5/pkg) Main Seal Set (100/pkg) Main Seal Set (250/pkg) Main Seal Set (500/pkg)
Medical “CGA 540SR	SG540SRPR1, SG540SRPR1100, SG540SRPR1250, SG540SRPR1500	Viton	Main seal kits - G54004XSRPRX1, G54004XSRX
	G540SRPVP1 G540SRPVP2		5 Pack RVP pins and springs - G54004XSRPRX1 5 Pack RVP pins and springs - G54004XSRPRX2
	SG540SRP2 SG540SRP2100 SG540SRP2250 SG540SRP2500		Main seal kits - G54004XSRPRX2

*Replacement seals available in quantites of 100, 250 and 500. Example: SG540-100 = 100 seals

TROUBLESHOOTING

MediMate

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.
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

Warranty

1 Year Warranty - Limited Express 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.

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Certifications: FasTest Inc. is ISO 9001: 2015 certified.