FASTEST®

Bail Handle Actuated Connectors

Operating Instructions

fastestinc.com

Bail Handle Compressed Gas Connectors

INTRODUCTION TO FASTEST

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

Thank You ...

We thank you for deciding to use ***FasTest G*** 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.

Table of Contents

Bail Handle Compressed Gas Connectors

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
- 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 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 (Figure 1). Tighten to a max torque of 15 ft-lb. (20 Nm), or 2 to 3 turns past finger tight for tapered threads. For parallel thread connections (M16, M20, etc) please refer to the hose manufacturer's suggested torque values, with a maximum torque of 30 ft-lb (40 Nm). For WOB style connectors, also connect pilot pressure line to 1/8" NPT or BSPT pilot pressure port in the back of connector. Tighten to max torque of 8 ft-lb (11 Nm). 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.

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

Step 4

Review total function:

- Check leak-tight seal
- Check if collets open and close properly by actuating the connector several times
- For WOB style connectors, check if pin extends and retracts properly when pilot pressure is applied and removed, and that there are no leaks.
- Check if connector marking complies with the application
- The ***FasTest*** connector is ready to operate

Note

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

Figure 1. Torque to the recommended value for your hose connection

OPERATION

Step 1

At the start of each shift

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

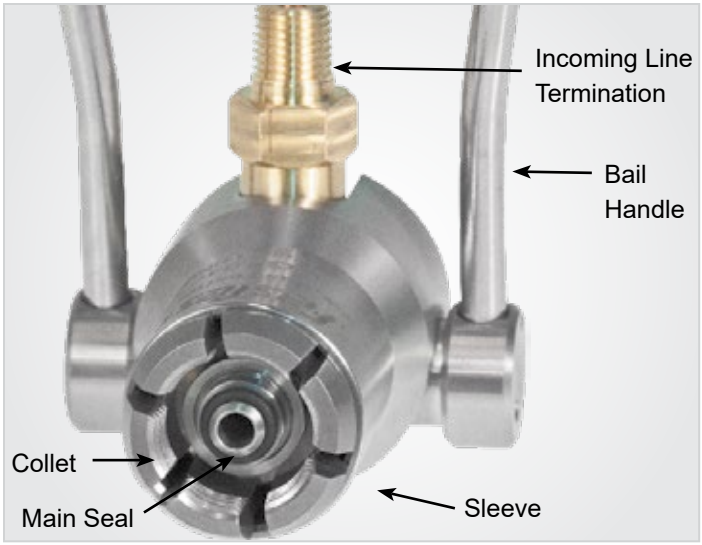


Figure 2. Connection for valves with EXTERNAL threads: NF type C, UNI 4406, CGA 540, etc.

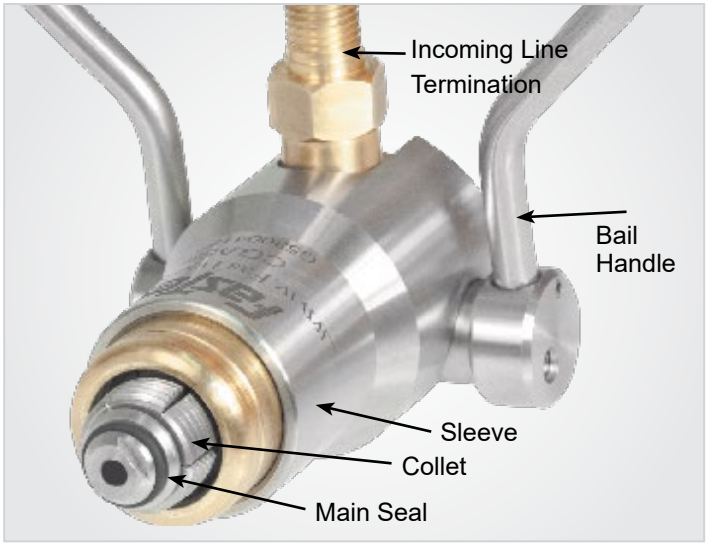


Figure 3. Connection for valves with INTERNAL threads: NF type F, UNI 4412, CGA 580, etc.

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
- Align the connector to the thread to prevent damage to the front seal from sharp edges of the valve
- Place the connector onto/into the valve until it stops. DO NOT USE EXCESSIVE FORCE!
- 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 to a position below parallel to the connector body. Check to make sure the collets are fully engaged.
  (See good vs. bad connection photos, pages 4-5)

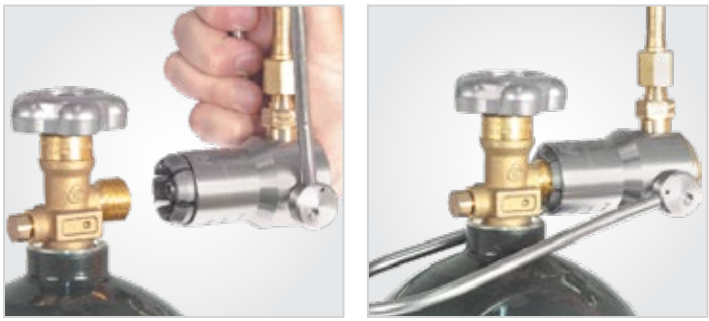


Figure 4a - 4b. Correct alignment and connection of connector for externally threaded valves.

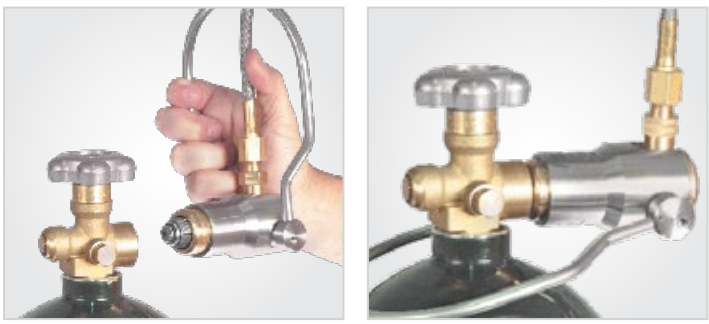


Figure 4c - 4d. Correct alignment and connection of connector for internally threaded valves. Note: align connector tight and square to valve face with no visible gap showing collet threads.

OPERATION

580 RPV Pin Retraction

Note
Pin retraction is shown using ***FasTest*** tool G580RPVPT.
Retraction may also be done using standard pliers

Figure 5a. Note how the pin is extended

Figure 5b. Push down

Figure 5c. Rotate 90°

Figure 5d. Retracted

Step 3

Connecting to the Cylinder/Good Connections

Figure 6a. Demonstrates setting up for a good connection to valves with external threads

Figure 6b. Only minimal force may be needed to drop bail over the cylinder valve. The bail should typically drop freely.

Figure 7a. Demonstrates good connection to valves with internal threads.

Figure 7b. Use minimal force on bail and handle

Correct Handle Positioning

Figure 8a. Correct positioning: The bail handle rests at a downward angle relative to connector body. Connector should be "upright" with hose pointing vertically to ensure proper connection. A tilted connector may result in insufficient handle travel for an adequate connection.

OPERATION

Incorrect Connections

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

WARNING: Keep clear of device while under pressure to avoid injury.

Figure 6c. Misaligned connection with externally threaded valve.

Figure 6d. Exposed threads indicating possible short connection on externally threaded cylinder valve.

Figure 7c. Misaligned connection with internally threaded cylinder valve.

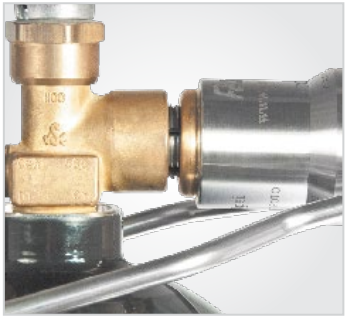
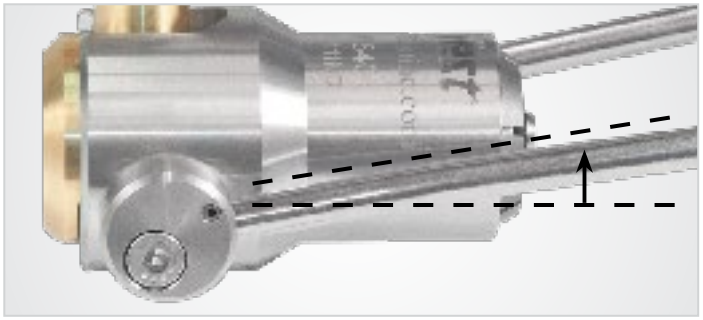


Figure 7d. Exposed threads indicating possible short connection with internally threaded cylinder valve.

Incorrect Handle Positioning

Figure 8b. Incorrect positioning: handle is parallel or at an upward angle relative to the connector body



Step 4

Connect. The stop pin protrudes out (engages) at a pressure of approximately 150 psig, depending on connector age, cleanliness and lubrication.

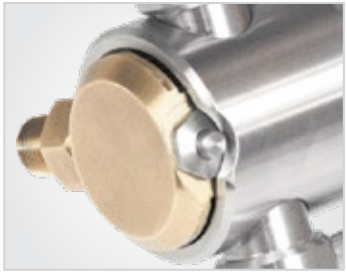


Figure 9. Stop pin extends to stop sleeve travel and accidental disconnection

Step 5

Disconnect. Disconnect only when the connector is depressurized and the stop pin retracts.
DO NOT ATTEMPT TO DISCONNECT ACTUATOR STYLE CONNECTORS WHILE UNDER SYSTEM PRESSURE. (See Stop pin care in Maintenance section of this manual).

Figure 10. Stop pin retracts when connector is depressurized

MAINTENANCE

Good Maintenance Practices

- Maintain accurate and complete product maintenance records.
- In addition to these suggested maintenance guidelines, your company's overall safety and maintenance requirements should be applied to FasTest gas connector products.
- With proper care and maintenance, FasTest bail handle connectors should have a lifetime of up to 30,000 cycles or 15 years, after which we recommend connector replacement.
- 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 or 5 years. Whichever comes first.
- 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 3 months or 1,000 cycles, whichever comes first. 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 11. An example of a good O-ring main seal

Figure 12. An example of a bad O-ring main seal

MAINTENANCE

Bail Handles

Figure 13. Tighten with a torque wrench

FasTest recommends a periodic inspection and tightening of the actuator handles on applicable connectors. If screws are loose, tighten to 8-10 ft-lb (11-13 N-m). Do not over tighten screws.

A drop of Loctite 242 on the threads of the screw is appropriate.

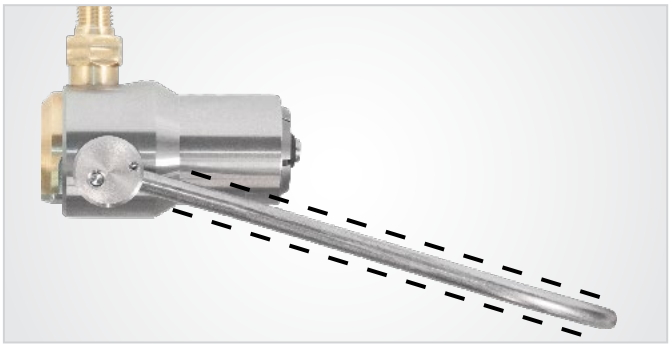


Figure 14a. Inspect bail handles for straight position

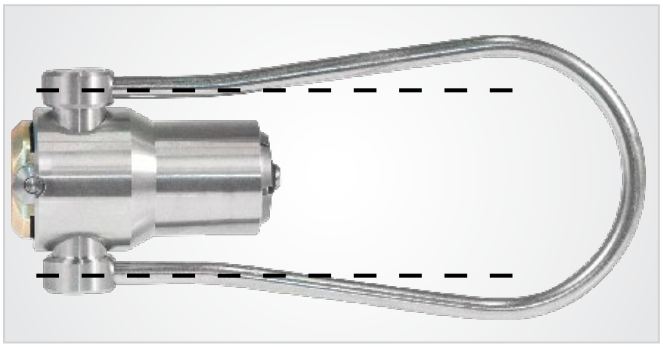


Figure 14b. Straight handles, side view

Stop pins

Stop pin operation must be inspected daily. With actuator handle connectors, the stop pin will protrude out during the filling cycle at approximately 150-psig (70-psig for WOB style). The stop pin retracts back into the connector body upon completion of the fill cycle. The actuator handle will flip back easily when the connector is depressurized and the stop pin retracts. Failure to wait may cause damage to the stop pin.

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

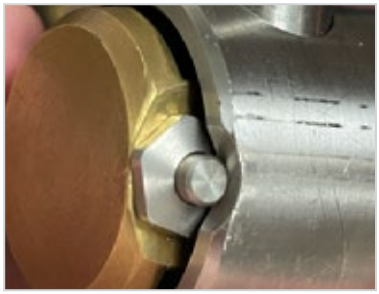


Figure 15. Example of a bad or damaged stop pin. When the pin is bent it will not retract. There is a noticeable indentation on the sleeve from contact with pin. The handle is also bent from forcing actuation while the pin is protruding out

Figure 16. Stop pin area for WOB style connector shown. Pin is in the area beneath access hole.

MAINTENANCE

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 stop pin properly protrude and lock the connector under pressure?
- Does the stop pin retract when the system is depressurized?
- WOB stop pin actuation and retraction may be checked visually through access hole, or by use of a pin to gauge stop pin depth. Hole may also be used to push stop pin "in" if it does not retract upon removing pressure from system.

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 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.

				Replace Every 3 Months/1000 cycles	
Valve Type	**Product Family**	**Example Part Number**	**Seal Material**	**Main Seal Kit Qty 5**	**Main Seal Kit Qty 100**
CGA 346	G346	G346041XXX	FKM (Viton)	SG346	SG346100
CGA 540	G540	G540041XXX	FKM (Viton)	SG540	SG540100
CGA 540R	G540 RPV	G540041XXRP	FKM (Viton)	SG540	SG540100
CGA 540R	G540 WOB	G540041XWOB	FKM (Viton)	SG540	SG540100
CGA 580	G580	G580041XXX	EPDM	SG580	SG580100
CGA 580R	G580 RPV	G580041XXRP	EPDM	SG580RPV	SG580RPV100
CGA 590	G590	G590041XXX	EPDM	SG580	SG580100
CGA 590R	G590 RPV	G590041XXRP	EPDM	SG580RPV	SG580RPV100
NF Type F (France)	GNFF	GNFFXXXXXX1	EPDM	SGNFF	SGNFF0100
NF Type F (Spain)	GNFF	GNFFXXXXXX2	EPDM	SGNFF	SGNFF0100
NF Type F	GNFF WOB	GNFFXXXXXWOB	EPDM	SGNFF	SGNFF0100
NF Type C (France)	GNFC	GNFCXXXXXX	EPDM	SGNFC	SGNFC0100
NF Type C (Spain)	GNFC	GNFCXXXXXX2	EPDM	SGNFC	SGNFC0100
NF Type C	GNFC WOB	GNFCXXXXXWOB	EPDM	SGNFC	SGNFC0100
NF Type C	GNFC AP	GNFCXXXXXAP	EPDM	SGNFC	SGNFC0100
UNI 4406	GU06	GU06XXXXXX	EPDM	SGU06	SGU060100
UNI 4406	GU06 WOB	GU06XXXXXWOB	EPDM	SGU06	SGU060100
UNI 4409	GU09	GU09XXXXXX	EPDM	SGU09	SGU090100
UNI 4412	GU12	GU12XXXXXX	EPDM	SGU12	SGU120100

Standard parts shown. For additional parts or material options, contact FastSales.

Bail Handle Compressed Gas Connectors

			Replace Every 3 Months/1000 cycles					
Valve Type	**Product Family**	**Example Part Number**	**Stop Pin Kit**	**RPV Pin Qty 5**	**RPV Pin/ Nut**	**RPV Spring**	**RPV Pin Tool**	**PRV Torque Tool**
CGA 346	G346	G346041XXX	G5XSPK	-	-	-	-	-
CGA 540	G540	G540041XXX	G5XSPKM	-	-		G580RPVPT	-
CGA 540R	G540 RPV	G540041XXRP	G5XSPKM	G580RPVP	G540RPVPN	-	G580RPVPT	G540RPVTK
CGA 540R	G540 WOB	G540041XWOB	-	-	-	-	-	-
CGA 580	G580	G580041XXX	G5XSPK	-	-	-	-	-
CGA 580R	G580 RPV	G580041XXRP	G5XSPK	G580RPVP	G580RPVPN	G580RPVS	G580RPVPT	-
CGA 590	G590	G590041XXX	G5XSPK	-	-	-	-	-
CGA 590R	G590 RPV	G590041XXRP	G5XSPK	G580RPVP	G580RPVPN	G580RPVS	G580RPVPT	-
NF Type F (France)	GNFF	GNFFXXXXXX1	G5XSPKME	GNFFRPVP1	-	-	GNFFRPVPT (socket)	GNFFRPVTK
NF Type F (Spain)	GNFF	GNFFXXXXXX2	G5XSPKME	GNFFRPVP2	-	-	-	-
NF Type F	GNFF WOB	GNFFXXXXXWOB	-	-	-	-	-	-
NF Type C (France)	GNFC	GNFCXXXXXX	G5XSPKME	GNFCRPVP	-	-	-	-
NF Type C (Spain)	GNFC	GNFCXXXXXX2	G5XSPKME	GNFCRPVP2	-	-	-	-
NF Type C	GNFC WOB	GNFCXXXXXWOB	-	-	-	-	-	-
NF Type C	GNFC AP	GNFCXXXXXAP	-	-	-	-	-	-
UNI 4406	GU06	GU06XXXXXX	G5XSPKME	GU06RPVP	-	-	-	-
UNI 4406	GU06 WOB	GU06XXXXXWOB	-	-	-	-	-	-
UNI 4409	GU09	GU09XXXXXX	G5XSPKME	GU09RPVP	-	-	-	-
UNI 4412	GU12	GU12XXXXXX	G5XSPKME	G580RPVP	G580RPVPN	G580RPVS	G580RPVPT	-

Standard parts shown. For additional parts or material options, contact FastSales.

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 every 3 months or 1000 cycles - whichever comes first
Gas leakage at initiation of filling cycle, leakage decreasing as pressure increases	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	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
Stop pin does not activate during filling cycle	Stop pin at rear of connector not extended outward from connector body	(a) Damaged or bent pin (b) Lack of lubrication and/or dirt contamination	(a) Field replacement of stop pin assembly using stop pin kit (b) Remove stop pin assembly, clean and lubricate with approved lubricant
Stop pin does not retract upon completion of filling cycle	Unable to remove connector	(a) Damaged or bent pin (b) Lack of lubrication and/or dirt contamination (c) System under pressure	(a) Field replacement of stop pin assembly using stop pin kit (b) Remove stop pin assembly, clean and lubricate with approved lubricant (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 screw(s)	Replace missing screw or remove loose screw. Apply thread lock to screw threads. Reinsert and tighten to 8-10 ft-lbs. Do not over tighten screw
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 8.

TROUBLESHOOTING

Problem	Recognized By	Probable Cause	Recommended Action
Connector's thread collets not expanding/collapsing 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 FasTest
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! Contact FasTest to dertermine if issue is warrrantable.
Inability to connect to, or leakage with 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 pin and/or nut (b) Contact FasTest to determine if issue is covered under warranty and how to proceed
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 actuator pin according to instructions on pg 4
WOB will not properly vent/vac cylinders, or leakage detected	WOB RPV pin fails to actuate or leakage when pilot pressure is applied	(a) Insufficient pilot pressure to connector (b) Bent pin/shaft (c) Damaged shaft sea	(a) Check pilot connections and line pressure. 80-120psi recommended. (b) Replace pin/shaft (c) Contact FasTest to determine if issue is covered under warranty and how to proceed
WOB RPV pin fails to retract	Difficulty connecting to valve due to pin in the way	(a) Bent pin/shaft (b) Damaged shaft sea	(a) Replace pin/shaft (b) Contact FasTest to determine if issue is covered under warranty and how to proceed
Also applies to standard stop pin stuck in retracted position	Visual or gauge inspection, or ability of connector to actuate under pressure above 200psi	Damaged or worn pin or associated seals	Contact FasTest to determine if issue is covered under warranty and how to proceed
Also applies to standard stop pin stuck in extended position	Visual or gauge inspection, or inability of connector to actuate after pressure has been fully vented	Damaged or worn pin, seals, spring, or adjacent parts interfering.	Pin may be pushed to retracted position through the access hole (see Fig 16). Contact FasTest to determine if issue is covered under warranty and how to proceed

NOTES

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.

Notifications and Copyright

Specifications in this brochure are subject to change without notice. FasTest also reserves the right to make modifications and makes no guarantee of the accuracy of the information contained herein.

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