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7 Attorney for Plaintiff Cyber Instruments Technology, L.L.C.

8 **UNITED STATES DISTRICT COURT**

9 **DISTRICT OF ARIZONA**

10	Cyber Instruments Technology, L.L.C., an )	Case No. _____
11	Arizona limited liability company, )	
12	Plaintiff, )	<b>COMPLAINT FOR PATENT</b>
13	v. )	<b>INFRINGEMENT</b>
14	Pivotal Systems Corporation, a Delaware )	(Jury Trial Requested)
15	corporation. )	
16	Defendant. )	

17  
18  
19 Plaintiff Cyber Instruments Technology, LLC (“Cyber”) files this Original  
20 Complaint for patent infringement against Defendant Pivotal Systems Corporation  
21 (“Pivotal”), and states as follows:

22 **PARTIES**

23 1. Plaintiff Cyber Instrument Technologies, LLC is an Arizona limited  
24 liability company with its principal place of business at 4920 West Dream Weaver  
25 Lane, Prescott, AZ 86305.  
26  
27  
28

1           2.     On information and belief, Pivotal is a corporation existing under the  
2 laws of Delaware with its principal place of business at 48389 Fremont Blvd. Suite  
3 100, Fremont, CA 94538.

4           3.     Cyber is the assignee of all right, title and interest in and to United  
5 States Patent No. 6,119,710 (the “’710 Patent”) entitled “Method for Wide Range  
6 Gas Flow with Real Time Flow Measurement and Correction.”

7           4.     Cyber has the sole right to sue for the relief sought herein, including,  
8 without limitation, injunctive relief and monetary damages.

9           5.     A true and correct copy of the ’710 Patent is attached as Exhibit 1.

10          6.     A true and correct copy of a website page from the United States  
11 Patent and Trademark Office website showing the assignment of the ’710 Patent to  
12 Cyber is attached as Exhibit 2.

13          7.     Upon information and belief, Pivotal has directly and/or indirectly  
14 imported into the United States, made, used, sold, and/or offered for sale within the  
15 United States mass flow controllers with real time flow measurement and  
16 correction, including, but not limited to, the GFC and GFM series gas flow  
17 controllers.

18          8.     Pivotal’s mass flow controllers with real time flow measurement and  
19 correction, such as the GFC and GFM series controllers, fall within the scope of at  
20 least claims 1-3, 5, 7, 9, 13-15, 19, 21, 25, 26, and 28-33 of the ’710 Patent.

21          9.     Upon information and belief, Pivotal offers for sale, sells, installs,  
22 consigns, and/or services mass flow controllers with real time flow measurement  
23 and correction, such as the GFC and GFM series controllers, in Arizona directly  
24 and/or through sales representatives.

25          10.    Upon information and belief, Pivotal has had actual knowledge of the  
26 ’710 Patent and actual knowledge that its activities constitute either direct or  
27

1 indirect infringement of the '710 Patent, yet Pivotal has not ceased its infringing  
2 activities.

3 **JURISDICTION AND VENUE**

4 11. This is an action for patent infringement under the patent laws of the  
5 United States, 35 U.S.C. §271.

6 12. Pivotal has engaged, directly and indirectly, in activities that infringe  
7 the '710 Patent.

8 13. This Court has subject matter jurisdiction pursuant to 28 U.S.C. §§  
9 1331 and 1338.

10 14. This Court has personal jurisdiction over Pivotal. On information and  
11 belief, Pivotal has conducted and continues to conduct business within the State of  
12 Arizona. On information and belief, Pivotal, directly and/or through intermediaries,  
13 imports, makes, uses, ships, distributes, offers for sale, sells, installs, and/or  
14 advertises its gas flow controllers, including the GFC-200 Gas Flow Controller,  
15 that infringe the '710 Patent in the United States and the State of Arizona.  
16 Additionally, on information and belief, Pivotal, directly and through subsidiaries  
17 or intermediaries, has purposefully and voluntarily places one or more of its  
18 infringing products into the stream of commerce with the intention and expectation  
19 that they will be purchased and used by consumers in the State of Arizona. These  
20 infringing products, including the GFC-200 Gas Flow Controller, have been and  
21 continue to be purchased and used by consumers in the State of Arizona.

22 15. Pivotal operates a website, [www.pivotalsys.com](http://www.pivotalsys.com), that can be accessed  
23 from Arizona and elsewhere and that, among other things, allows customers (and  
24 potential customers) to review Pivotal's "Products," which include mass flow  
25 controllers with real time flow measurement and correction.

26 16. Venue is proper in this Court pursuant to 28 U.S.C. §§ 1391 and  
27 1400(b).

## **FACTUAL BACKGROUND**

### **A. The Design and Development of the Real-Time Flow Measurement and Correction Mass Flow Controller.**

17. The manager of Cyber, Timothy Brown, is an expert in the field of semiconductor technologies with over 30 years of industry experience. In 1999, Mr. Brown formed Cyber's predecessor, Cyber Instrument Technologies ("Cyber Instrument") to focus on the idea of bringing self-calibrating mass flow controller ("MFC") technology to the semiconductor industry. Mr. Brown and Cyber Instruments applied for and obtained two patents for an innovative improved real-time auto calibrating mass flow controller valve—the '710 Patent and U.S. Patent No. 6,216,726. To substantiate the claims of these patents, Cyber Instruments dedicated significant technical effort and money to invent, design, and develop (in a garage) a working proof of concept prototype of an improved real-time self-calibrating mass flow controller. The prototype demonstrated performance attributes which exceeded Cyber Instruments' objectives. Between 1999 and 2000, Mr. Brown sought funding to manufacture and commercialize his improved real-time mass flow controller prototype. Unfortunately, because of existing financial conditions, the company never launched a commercial manufacturing operation. In 2009, Mr. Brown disbanded Cyber Instruments and transferred the '710 Patent to the newly formed Cyber Instruments Technology.

18. Cyber Instruments' improved real-time mass flow controller, embodied in the '710 Patent, represents a significant improvement over traditional MFCs. Many industrial processes, such as semiconductor manufacturing, rely on the accurate delivery of gasses to processing chambers. Semiconductor devices are made up of alternating layers of various materials, constructed in patterns, to create electronic circuits referred to as "chips." These chips are fabricated on thin disks called silicon "wafers." An important step in creating these chips is known as

1 “diffusion.” During diffusion, carefully controlled amounts of gases are passed  
2 over the heated wafers. A specialized valve, known as a mass flow controller,  
3 controls the amount of gas to which the silicon wafer is exposed. If the MFC goes  
4 out of calibration, the wrong amount of gas enters the chamber and the wafers are  
5 ruined. MFCs, also, are notoriously unreliable. Traditional MFCs must be  
6 periodically removed from operation and calibrated by a technician, requiring that  
7 the entire wafer fabrication line be shut down. Additionally, even with proper  
8 maintenance, MFCs have periodic operation failures that can ruin entire batches of  
9 wafers at a cost of tens of thousands of dollars.

10 19. To remedy the shortcomings of traditional MFCs, Cyber Instruments  
11 developed an improved real-time mass flow controller with a built-in self-  
12 calibration system that performs real-time, in-situ calibration of all gas flow  
13 operations. The Cyber Instruments’ innovative real-time mass flow controller,  
14 embodied in the ’710 Patent, eliminates the need to shut down wafer fabrication  
15 for MFC calibration and is orders of magnitude more accurate than traditional  
16 MFCs, thus saving end-users significant time and money.

17 **B. Pivotal Makes or Imports, Uses, Sells, and/or Offers for Sale Mass**  
18 **Flow Controllers with Real-Time Flow Measurement and**  
19 **Correction Capabilities.**

20 20. Pivotal’s mass flow controllers at issue include, but are not limited to,  
21 the Pivotal GFC series Gas Flow Controllers and GFM series Gas Flow Monitors  
22 (the “Accused Products”).

23 21. Upon information and belief, Pivotal makes, uses, sells, and/or offers  
24 to sell the Accused Products with real-time flow measurement and correction in the  
25 State of Arizona.

22. Pivotal’s GFC and GFM series mass flow controllers infringe at least one claim of the ’710 Patent, and in particular, at least claims 1-3, 5, 7, 9, 13-15, 19, 21, 25, 26, and 28-33 of the ’710 Patent.

23. The Pivotal GFC-200 Gas Flow Controller will be used as an example to show that Pivotal GFC and GFM series mass flow controllers infringe at least one claim of the ’710 Patent. As show below, the Pivotal GFC-200 mass flow controller measures mass flow in a gas delivery system.



Gas Flow Controller (GFC)

As process geometries within the semiconductor industry continue to shrink to 14 nm and beyond, the need for highly accurate, responsive and repeatable gas flow control during wafer processing is essential. With the emergence of low gas flow rates, short processing times and continuous plasma processing, best-in-class MFCs are struggling to meet the accuracy, settling time and repeatability requirements demanded to ensure high yield and matched chambers.

Pivotal’s GFC paves the way for the future of gas flow control by delivering an order of magnitude improvement in key performance specifications.

**Now Shipping:**

- GFC-20 (20 sccm full scale)
- GFC-200
- GFC-1000
- GFC-2000

**Releasing soon:**

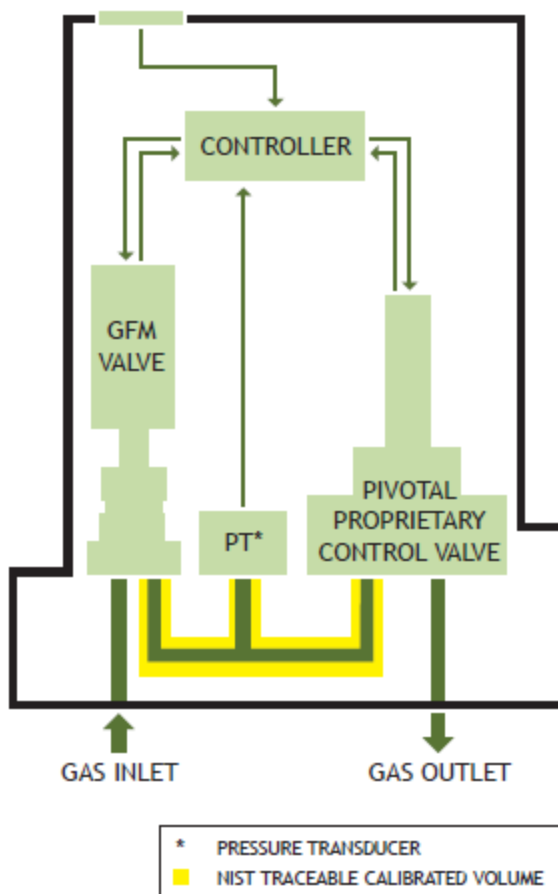
- GFC-5000 (5 slpm full scale)

Innovative Design	Robust Design, No Orifice
Widest Flow Range with Accuracy	0.5 - 100% Full Scale
Best Flow Accuracy	0.5% of Set Point for 0.5 - 100% Full Scale
Fastest Settling Time for Turn-on and Turndown	< 100 ms
Effect of Pressure and Temperature	Invariant
Automated In Situ Calibration	NIST Traceable
Competitive Comparison	Best-in-Class

<http://www.pivotalsys.com/index.php/products/product-overview/gas-flow-controller>

24. The GFC-200 “NIST Traceable Calibrated Volume” is an example of a calibration volume. It is the internal volume of the GFC-200 flow path after the input valve and before the output valve. As shown below, the GFC-200 NIST Traceable Calibrated Volume is charged with the process gas during normal mass flow control operation.

*GFC Schematic*



<http://www.pivotalsys.com/pdf/gfc-200datasheetsmall.pdf>

25. As shown below, when the inlet valve of the GFC-200 closes, the amount of gas in the calibration volume is no longer in steady state and the process gas starts flowing from the calibration volume into the flow path.

Figure 1: Typical Pressure Curve for GFM Measurements

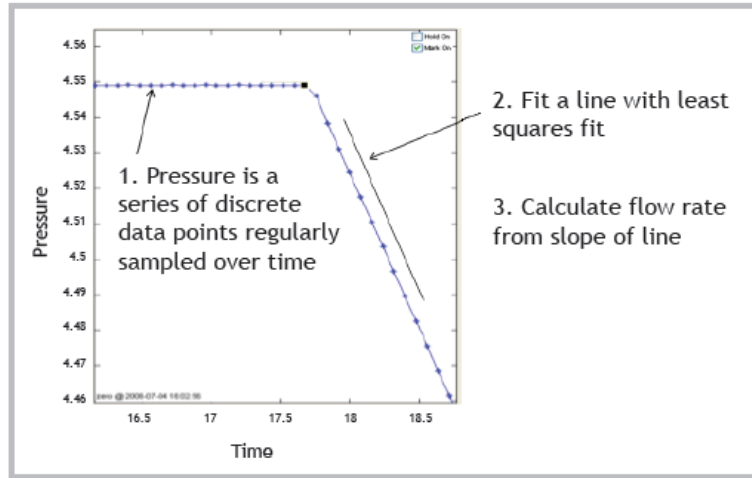
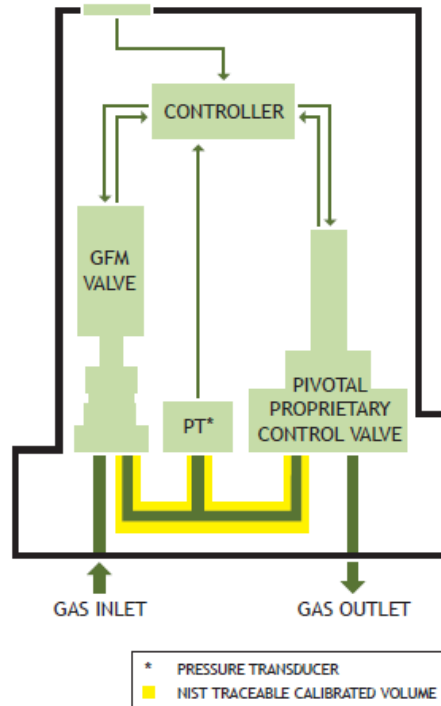


Figure 1 illustrates a typical pressure curve that is observed when a mass flow controller (MFC) begins to flow and the GFM's observed pressure begins to drop. With a known volume and temperature, the flow can be calculated in real time by observing the slope of pressure decline.

<http://www.pivotalsys.com/pdf/GFM-Accuracyappnote.pdf>

26. Additionally, the GFC-200 utilizes a Pressure sensor to take pressure measurements. As can be seen in the schematic below, the pressure sensor in the GFC-200 is downstream of a portion of the calibration volume.

GFC Schematic



<http://www.pivotalsys.com/pdf/gfc-200datasheetsmall.pdf>



27. Multiple pressure measurements are taken by the GFC-200 each time a calibration cycle runs. As explained below, “[p]ressure is a series of discrete data points regularly sampled over time” and “[h]ighly sensitive sensors monitor the gas pressure and temperature every millisecond.”

Figure 1: Typical Pressure Curve for GFM Measurements

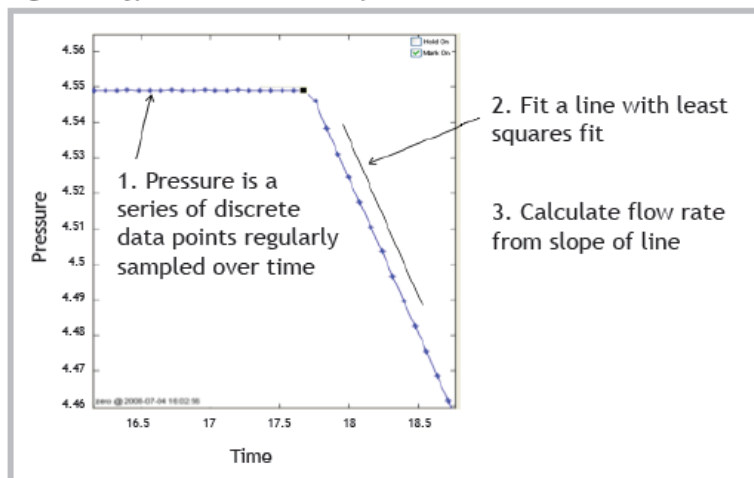


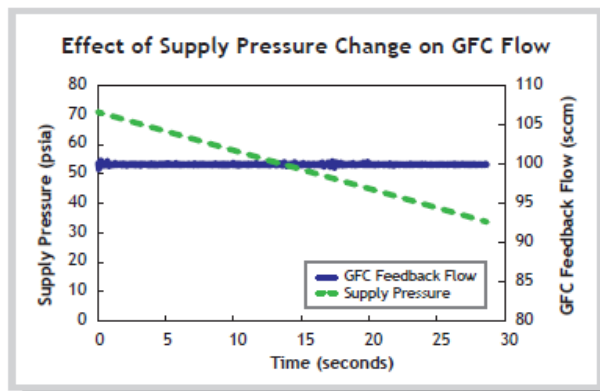
Figure 1 illustrates a typical pressure curve that is observed when a mass flow controller (MFC) begins to flow and the GFM’s observed pressure begins to drop. With a known volume and temperature, the flow can be calculated in real time by observing the slope of pressure decline.

<http://www.pivotalsys.com/pdf/GFM-Accuracyappnote.pdf>

### Pressure and Temperature

The unique design of the Pivotal valve results in the GFC being unaffected by variations in the upstream or downstream pressure or temperature.

Highly sensitive sensors monitor the gas pressure and temperature every millisecond and the control scheme accounts for any variations.

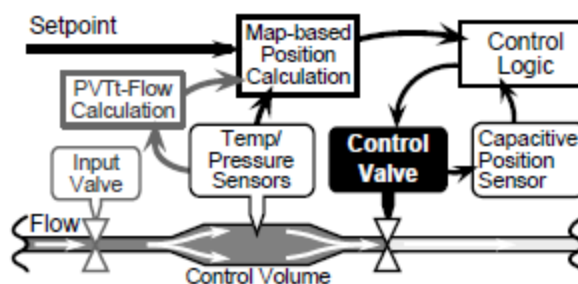


[www.pivotalsys.com/pdf/gfc-200datasheetlarge.pdf](http://www.pivotalsys.com/pdf/gfc-200datasheetlarge.pdf)

28. On information and belief, the GFC-200 implements a rate of decay (“ROD”) calibration method when the input valve is closed and the pressure and temperature data are used to calculate the absolute flow rate through the control valve, with the control valve acting as a flow restrictor. As explained below, “an

1 input valve can be closed and the pressure temperature data can be used to  
 2 calculate the absolute flow rate through the control valve.”

3 To overcome some of the limitations present in the two  
 4 designs, Pivotal Systems has proposed a new type of gas  
 5 flow control device which is focused on improving response  
 6 time and long-term accuracy. In Pivotal's gas flow controller  
 7 (GFC™), there are two independent control systems for  
 8 measuring and controlling flow. The primary system is a fast,  
 9 map-based valve control system that allows the device to  
 10 respond rapidly to changes in setpoint and upstream pressure.  
 11 The secondary system, named Gas Flow Monitor (GFM™),  
 12 measures the flow of the GFC using a pressure-rate-of-change  
 13 flow measurement. This secondary system does not operate  
 14 as rapidly as the primary system; it is used to validate and if  
 15 necessary, update, the control map.



16 Figure 2. Schematic of flow control schemes for the Pivotal Gas Flow  
 17 Controller. A capacitive position sensor measures the position of the control  
 18 valve. Based on the pressure, temperature, and external setpoint input, a  
 19 position is calculated, and the control logic drives the control valve to move  
 20 to the desired position. Additionally, an input valve can be closed and the  
 21 pressure and temperature data can be used to calculate the absolute flow rate  
 22 through the control valve.

23 [www.pivotalsys.com/pdf/2.pdf](http://www.pivotalsys.com/pdf/2.pdf)

24 29. Additionally, on information and belief, the GFC-200 uses pressure  
 25 measurements to calculate the mass flow rate through the control valve acting as a  
 26 flow restrictor:

27 The layout of the flow controller also allows for the incorporation of a  
 28 pressure-volume-time-temperature-based flow measurement, which is  
 a primary standard flow measurement, to confirm and maintain flow  
 accuracy throughout the device's lifetime.

1 [www.pivotalsys.com/pdf/2.pdf](http://www.pivotalsys.com/pdf/2.pdf)

2 30. As explained in the excerpt above, and as further shown in the image  
 3 below, on information and belief, the GFC-200 incorporates a pressure rate-of-  
 4 decay system for flow verification. Pressure rate-of-decay systems use the time  
 5 rate of change of the measured pressure and the determined temperature to  
 6 compute the actual mass flow rate of gas flowing from the calibration volume.

7 *Figure 1: Typical Pressure Curve for GFM Measurements*

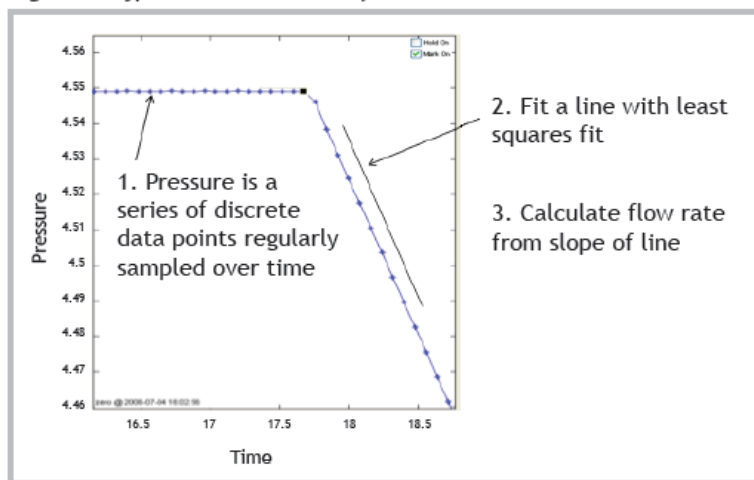


Figure 1 illustrates a typical pressure curve that is observed when a mass flow controller (MFC) begins to flow and the GFM's observed pressure begins to drop. With a known volume and temperature, the flow can be calculated in real time by observing the slope of pressure decline.

16 <http://www.pivotalsys.com/pdf/GFM-Accuracyappnote.pdf>

17 31. On information and belief, the GFC-200 measured mass flow is  
 18 compared to the calibration mass flow determined from the ROD of the pressure in  
 19 the reference volume for flow verification. As show below, flow verification is an  
 20 example of determining whether there is any discrepancy between the actual mass  
 21 flow rate and the measured mass flow rate.

### B. PVTt Measurement Verification

As described in the previous section, a built-in GFM system is used for the flow verification and calibration. To generate the data shown in Fig. 7, the input valve is closed prior to setpoint change. GFM measurements occur continuously as long as the input valve is closed. In this test, the GFM flow calculation window was set at 0.8 sec; in other words, at each DSP cycle, the most recent 0.8 second of pressure and temperature data are used to calculate the flow through the control valve. This time is not fixed; generally, a GFM calculation uses between 0.05 and 2.0 seconds of data to calculate a flow rate. The amount of data used is primarily a function of flow rate and desired accuracy; higher flow rates can be accurately determined in a shorter time period. As shown in Fig. 7, the GFC was set to flow 20 sccm at time 0, and while the GFC valve took only  $\sim 30$  msec to reach the setpoint, the GFM flow calculation took  $\sim 0.8$  sec to show the true flow change.

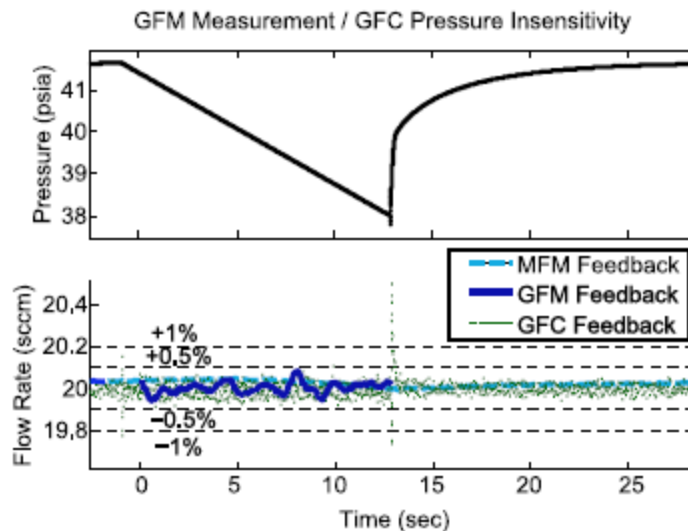


Figure 8. Plot of the combined GFC and GFM feedback signals. The GFM only calculates flow while the input valve is closed. After a measurement is taken, the input valve opens and the pressure increases. The GFC control valve responds to this rapid pressure increase (in this case 10 psi/sec). To verify that flow is not disturbed, a MFM is used to be a third independent measurement; there is no deviation in the MFM output during recharge.

[www.pivotalsys.com/pdf/2.pdf](http://www.pivotalsys.com/pdf/2.pdf)

## Automated In Situ Calibration

The GFC executes a robust calibration sequence on every run. This feature, unique to the Pivotal GFC, results in highly accurate NIST traceable measurements run-to-run and reduces downtime significantly.

<http://www.pivotalsys.com/pdf/gfc-200datasheetsmall.pdf>

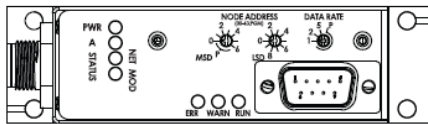
32. On information and belief, the Pivotal GFC-200 uses automated in-situ calibration to correct the computational process whenever a discrepancy is found between the actual mass flow rate and the measured mass flow rate. As shown above, the GFC-200 performs automated in situ calibration. The result of the automated in situ calibration must be reported and acted upon. As shown below, the GFC-200 communicates this information via an external process controller.

### Supported Protocols

The GFC supports analog, DeviceNet and RS-485 communication protocols.

### Analog Interface

The GFC has a 9-pin male D-sub connector on the top of its enclosure (below) for operating in the analog mode. The table (right) shows the allocation for these pins.



A suitable mating connector is Tyco PN# 1-747943-6.

The power requirement for the GFC when using the analog mode of operation is:

- ▶ +15 VDC: 150A continuous
- ▶ -15 VDC: 150A continuous

Pin	Signal Name	Specification
1	Valve Override	+15 VDC = valve fully opened -15 VDC = valve forced closed GND or open = no override
2	Flow Feedback	0-5 VDC analog output 0 VDC = no flow 5 VDC = 100% flow
3	Positive Power Supply	+15 VDC
4	Power Supply Common	Return for ±15 VDC
5	Negative Power Supply	-15 VDC
6	Flow Setpoint	0-5 VDC analog input 0 VDC = no flow 5 VDC = 100% flow
7	Signal Ground	Return for pins 1, 2 and 6
8	Positive RS-485 Data	RS-485 serial data line
9	Negative RS-485 Data	Return for pin 8

Note: In the analog mode, the GFC ignores pins 8 and 9.

[www.pivotalsys.com/pdf/gfc-200datasheetlarge.pdf](http://www.pivotalsys.com/pdf/gfc-200datasheetlarge.pdf)

**COUNT I: PATENT INFRINGEMENT OF THE '710 PATENT**

33. Paragraphs 1-32 are incorporated by references as if fully stated herein.

34. Pivotal has been and is now directly infringing and/or indirectly infringing the '710 Patent by way of inducement and/or contributory infringement, literally and/or under the Doctrine of Equivalents, in violation of 35 U.S.C. § 271, including by importing into the United States or making, using, selling, consigning, and/or offering for sale in the United States infringing products, namely the Accused Products and/or related services using the Accused Products. As explained in paragraphs 35-41 below, these Accused Products and related services are covered by at least one claim of the '710 Patent, including, but not limited to, Claims 1-3, 5, 7, 9, 13-15, 19, 21, 25, 26, and 28-33. The Accused Products have been designed, marketed, and sold to control mass flow with real time flow measurement and correction and have no substantial non-infringing use.

35. Upon information and belief, Pivotal derives revenue, directly and indirectly, from the activities relating to the Accused Products, including their importation, manufacture, use, sale and offer for sale.

36. The Accused Products measure mass flow in a gas delivery system that provides real time flow measurement and correction.

37. The Accused Products, and in particular the GFC-200 Gas Flow Controller, charge a calibration volume with a process gas, as outline in paragraph 24 above.

38. As shown above in paragraph 25, the Accused Products, and in particular the GFC-200 Gas Flow Controller, start a flow of process gas from the calibration volume into a flow path.

39. As show above in paragraphs 26-29, during gas flow, the Accused Products, and in particular the GFC-200 Gas Flow Controller, repeatedly use at

1 least one sensor downstream of the calibration volume to take pressure  
2 measurements and perform a computation process using data including the  
3 pressure measurements to compute a measured mass flow rate through a flow  
4 restrictor in the path.

5 40. As show in paragraphs 30 and 31, the Accused Products, and in  
6 particular the GFC-200 Gas Flow Controller, repeatedly perform operations  
7 comprising: measuring pressure and determining the temperature of the gas in the  
8 calibration volume, using a time rate of change of the measured pressure and the  
9 determined temperature to compute an actual mass flow rate of gas flowing from  
10 the calibration volume, and determining whether there is any discrepancy between  
11 the actual mass flow rate and the measured mass flow rate.

12 41. As shown above in paragraph 32, whenever a discrepancy is found,  
13 the Accused Products, and in particular the GFC-200 Gas Flow Controller, correct  
14 the computational process such that the measured mass flow rate matches the  
15 actual mass flow rate thereby eliminating the discrepancy.

16 42. Upon information and belief, Pivotal has activated and used the  
17 Accused Products, and in particular the GFC-200 Gas Flow Controller, in an  
18 infringing manner at least through testing the Accused Products to determine  
19 performance and other product specification.

20 43. Upon information and belief, Pivotal has had actual knowledge of the  
21 '710 Patent and actual knowledge that its activities constitute either direct or  
22 indirect infringement of the '710 Patent, yet it has not ceased infringing activities.  
23 Pivotal's infringement of the '710 Patent has been and continues to be willful and  
24 deliberate. Pivotal also has knowledge of the '710 Patent by way of this complaint  
25 and, to the extent it does not cease infringing activities, Pivotal's infringement is  
26 and continues to be willful and deliberate.

27 44. Pivotal has and continues to indirectly infringe the '710 Patent by  
28

1 inducing infringement by others, in accordance with 35 U.S.C. § 271(b) in this  
2 District and elsewhere in the United States.

3 45. Upon information and belief, Pivotal, its manufacturers, resellers,  
4 distributors, and end-users of the Accused Products each have engaged in and  
5 currently engage in activities that constitute direct infringement of one or more  
6 claims of the '710 Patent.

7 46. For example and without limitation, as explained in paragraphs 20-41  
8 above, operation and use of the Accused Products infringes one or more claims of  
9 the '710 Patent. The use and operation of these Accused Products by Pivotal, its  
10 resellers, manufacturers, distributors and/or end-user customers constitutes a direct  
11 infringement of one or more claims of the '710 Patent.

12 47. Pivotal's affirmative acts of selling or offering to sell the Accused  
13 Products, causing the Accused Products to be manufactured, and providing  
14 instruction manuals and support services for the Accused Products (as outlined  
15 above) have induced and continue to induce Pivotal's manufacturers, resellers,  
16 distributors and end-user customers to make or use the Accused Products in their  
17 normal and customary way to infringe the '710 Patent.

18 48. Through its manufacture and sale or consignment of the Accused  
19 Products, Pivotal specifically intends that its manufacturers, resellers, distributors,  
20 and end-user customers directly infringe one or more claims of the '710 Patent.  
21 Pivotal has knowledge of the '710 Patent and actually induces others, such as  
22 resellers, manufacturers, distributors, and end-user customers, to directly infringe,  
23 by using, making, selling, exporting, supplying and/or distributing within the  
24 United States the Accused Products, such as resellers, distributors and end-user  
25 customers. Pivotal is aware that such actions induce actual infringement. Further,  
26 Pivotal remains aware that these normal and customary activities would infringe  
27 the '710 Patent.



1           49. For example and without limitation, in connection with its sale,  
2 offering to sell, importation into the United States, and distribution within the  
3 United States of the Accused Products, as show in paragraphs 20-41, Pivotal  
4 willfully provides manuals and support services to resellers, distributors and end-  
5 user customers regarding the use and operation of Accused Products in a way that  
6 infringes the '710 Patent. When resellers, distributors and end-user customers  
7 follow instructions and/or support services provided by Pivotal regarding the use of  
8 the Accused Products, they directly infringe the '710 Patent. Pivotal knows or  
9 should know that by willfully providing such instructions and support services, the  
10 resellers, distributors, and end-user customers, in following those instructions and  
11 support services, directly infringe the '710 Patent.

12           50. Accordingly, Pivotal has performed and continues to perform the acts  
13 that constitute induced infringement, and that induce actual infringement, with the  
14 knowledge of the '710 Patent and with the knowledge or willful blindness to the  
15 fact that the induced acts constitute direct infringement.

16           51. Pivotal indirectly infringes one or more claims of the '710 Patent by  
17 contributing to infringement by others, such as manufacturers, resellers,  
18 distributors, and end-user customers, in accordance with 35 U.S.C. § 271(c).

19           52. As explained above, Pivotal, its manufacturers, resellers, distributors,  
20 and end-user customers of the Accused Products each use and operate the Accused  
21 Products in a manner that directly infringes one or more claims of the '710 Patent.

22           53. As shown in paragraphs 20-41 above, the Accused Products  
23 incorporate functionality that directly infringes one or more claims of the '710  
24 Patent, and the associated hardware and software that Pivotal configures, installs,  
25 and includes in the Accused Products to perform the function of measuring mass  
26 flow in a gas delivery system directly infringe one or more claims of the '710  
27 Patent. On information and belief, these functions cannot operate in an acceptable  
28

1 manner absent the hardware and software that Pivotal configures, installs, and  
2 includes in the Accused Products for the specific purpose of performing such  
3 functions. On information and belief, Pivotal has designed, manufactured, had  
4 manufactured, configured, and installed such software and hardware in the  
5 Accused Products to entice users of the Accused Products to use the Accused  
6 Products in a manner that directly infringes one or more claims of the '710 Patent.

7 54. The functionality and associated hardware and software of the  
8 Accused Products, as described in paragraphs 20-41 above, do not constitute staple  
9 articles or commodities of commerce. Moreover, use of the functionality and  
10 associated hardware and software of the Accused Products is required for the  
11 operation of the Accused Products. Any other use of the functionality and  
12 associated hardware and software of the Accused Products would be unusual, far-  
13 fetched, illusory, impractical, occasional, aberrant, or experimental.

14 55. The functionality and associated hardware and software of the  
15 Accused Products, as described in paragraphs 20-41 above, are all material parts of  
16 the invention of the '710 Patent, are especially made for the infringing  
17 manufacture, sale, and use of the Accused Products, and have no substantial non-  
18 infringing use.

19 56. Accordingly, Pivotal offers to sell or sells within the United States a  
20 component of a patented machine, manufacture, combination, or composition, or a  
21 material or apparatus for use in practicing the '710 Patent, constituting a material  
22 part of the invention, knowing the same to be especially made or especially  
23 adapted for use in an infringement of the '710 Patent, and not a staple article or  
24 commodity of commerce suitable for substantial non-infringing use.

25 57. Pivotal, by way of its infringing activities, has caused and continues to  
26 cause Cyber to suffer damages, the exact amount to be determined at trial.  
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28

**PRAYER FOR RELIEF**

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2 58. WHEREFOR, Cyber requests the Court grant the following relief in  
3 their favor and against Pivotal:

4 59. A judgment in favor of Cyber that Pivotal has infringed, directly and  
5 indirectly, by way of inducement and/or contributory infringement, literally and/or  
6 under the doctrine of equivalents, one or more claims of the '710 Patent;

7 60. A preliminary and permanent injunction, enjoining Pivotal and their  
8 officers, directors, agents, servants, employees, affiliates, divisions, branches,  
9 subsidiaries, parents, and all others acting in concert or privity with any of them  
10 from infringing, inducing the infringement of, or contributing to the infringement  
11 of the '710 Patent;

12 61. An award of damages to which Cyber is entitled under 35 U.S.C. §  
13 284 for Pivotal's past infringement and any continuing or infringement post-trial  
14 up until the date Pivotal is finally and permanently enjoined from further  
15 infringement and a final judgment is entered, including both compensatory  
16 damages and treble damages for willful infringement;

17 62. A judgment and order requiring Pivotal to pay the costs of this action  
18 (including all disbursements), as well as attorneys' fees as provided by by 35  
19 U.S.C. § 285;

20 63. A judgment and order requiring that, in the event a permanent  
21 injunction preventing future infringement is not granted, Pivotal pay to Cyber  
22 compulsory ongoing licensing fees, as determined by the Court in equity; and

23 64. Such other and further relief in law or in equity to which Cyber may  
24 be justly entitled.

1 **DEMAND FOR JURY TRIAL**

2 Cyber demand a trial by jury of any and all issues triable or fright  
3 before a jury, except for future patent infringement, which is an issue in equity to  
4 be determined by the Court.

5  
6 DATED: August 19, 2016

7 /s/ Albert L. Underhill

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