



NGC8206 Start-Up Guide



TOTALFLOW

MEASUREMENT & CONTROL SYSTEMS

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Introduction

This is a quick start guide designed for typical installations only. It is recommended that inexperienced technicians consult the Totalflow NGC8206 User’s Manual for more detailed information while performing the installation and start-up. Scan through the guide to see what information is available before beginning the installation. If there are questions that are not answered in this guide or other documentation, the user should call their local Totalflow representative, or call the number listed on the back of this guide. Although there are alternate methods of installation, it is recommended that technicians perform these procedures in the presented order.

Unpack and inspect the NGC8206 and optional equipment, if purchased. Inspect all parts and pieces for damage and missing or incorrect components.

Before Beginning

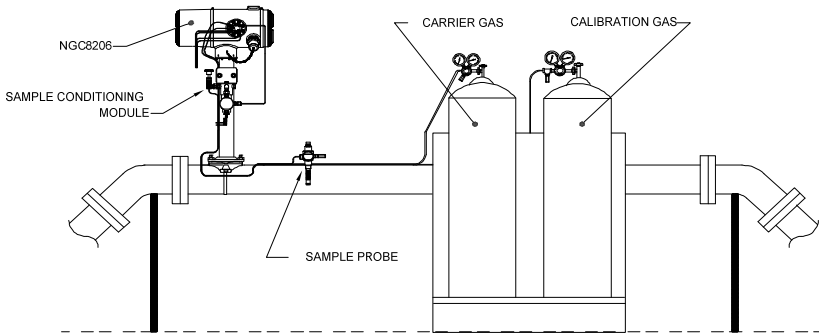
The NGC may be configured with a multitude of optional equipment. Please see the NGC8206 User’s Manual for optional equipment installation instructions.

If the Optional Equipment Unit (OEU) was purchased to house the power supply, battery and/or communications, this should be installed in a Division 2 or general purpose area prior to the NGC installation. Specific instructions may also be found in the NGC8206 User’s Manual. Communication wiring information is presented in this guide.

Basic Installation

Step 1 Locate Suitable Installation Site

The NGC should be located close to the sample probe in an effort to minimize the sample line length. See the table below for transport tubing distances and lag times.



1/8" Transport Tubing Lag Time Considerations

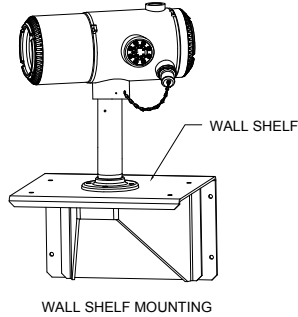
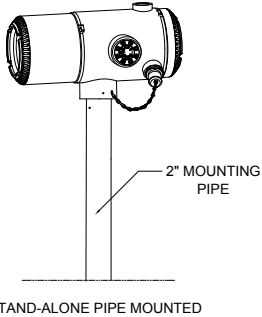
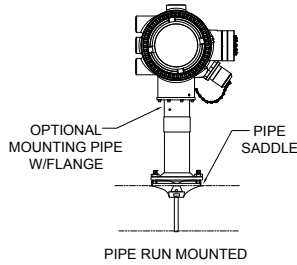
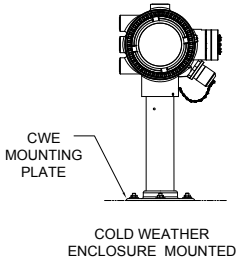
Distance	Conditioning Module	Seconds
10' (3.05 m)	2102023-XXX	36
20' (6.10 m)	2102023-XXX	48
30' (9.14 m)	2102023-XXX	60
50' (15.20 m)	2102024-XXX	16
100' (30.48 m)	2102024-XXX	23
150' (45.72 m)	2102024-XXX	30
200' (60.10 m)	2102024-XXX	36
250' (76.20 m)	2102024-XXX	42
300' (91.44 m)	2102024-XXX	50
350' (106.68 m)	2102024-XXX	56
380' (115.82 m)	2102024-XXX	60

Step 2 Mount the Unit

Mount the unit on a meter run, wall shelf, stand-alone pipe or inside a cold weather enclosure.

NOTE: The NGC should not be connected to any section of pipeline where cathodic protection exists.

The NGC has a grounding lug on the mounting neck of the enclosure. This lug should be tied to a good earth ground with no smaller than #12AWG wire.



Step 3

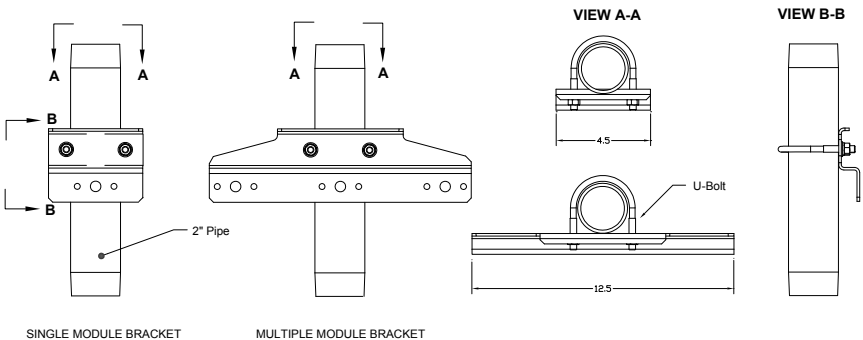
Install the Sample Conditioning Bracket and Sample Conditioning Modules, and Connect to Feed-Through Assembly

IMPORTANT: A particulate filter with a liquid/vapor separator sample conditioning module is strongly recommended. Operating the NGC without a sample conditioning module can allow liquids and particulates to contaminate columns. This can damage the unit and void the warranty.

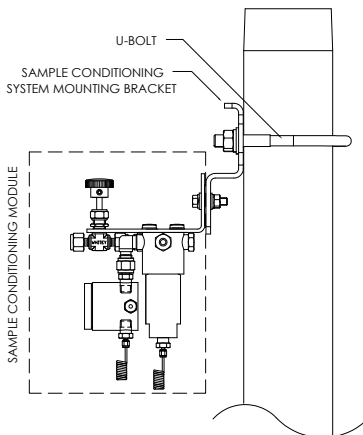
If none are required, connections are made directly to the feed-through assembly.

3A

Mount the sample conditioning bracket on the pipe.



3B Mount the sample conditioning module on the sample conditioning bracket.



Step 4 Install the Sample Probe(s)

Totalflow strongly suggests a temperature compensating pressure regulating sample probe be used. Refer to any manufacturer's recommendations supplied with the probe. If the sample probe is to be mounted in a section of pipe where cathodic currents exist, the user should install isolators in the sample tubing between the probe and the NGC.

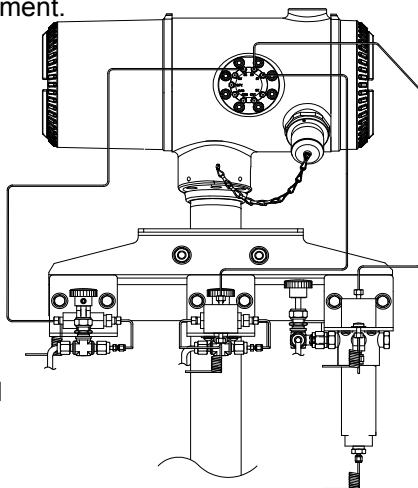
NOTE: API 14.1 recommends using a Strouhal number to determine probe lengths. This reduces the effects of resonant vibration. Please refer to API standards for additional information.

Step 5 Connect Sample Streams

IMPORTANT: Remove sealing screws from the input ports to connect the tubing. Unused ports **MUST** remain sealed to keep moisture from entering the manifold and potentially damaging the instrument.

5A Connect the tubing between the sample probe and conditioning module. See Precautions below.

5B Connect the tubing between the conditioning module and feed-through assembly. Purge sample gas through tubing during connection.



Precautions:

- **DO NOT use any type of plastic, Teflon or Teflon-lined braided steel tubing.** Use only good quality, clean stainless steel chromatographic grade transport tubing for carrier, calibration gas and sample lines. Use of poor quality stainless steel tubing will generate unsatisfactory results.
- Use only high purity 99.995% grade helium or better for carrier.
- Sample Transport Tubing Lengths: When sample conditioning modules are used, the sample transport tubing run can be up to 50 feet. Lengths longer than 50 feet must adhere to the rules of calculated lag time per the Calculating Lag Time section in the System Description chapter of the NGC8206 User's Manual.

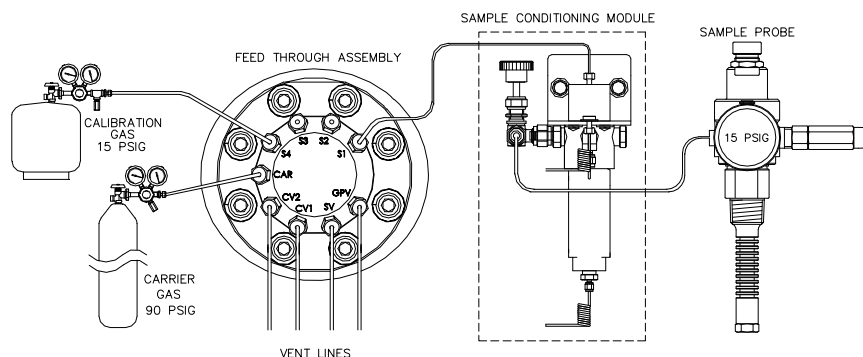
If a sample conditioning module is not being used, the sample transport tubing should be 1/16-inch tubing and no longer than ten feet.

- Purge all lines prior to connecting to the NGC.
- Suggested calibration blend component concentrations:

Component	% Blend	Component	% Blend	Component	% Blend
N2	2.5%	C3	1.0%	iC5	0.1%
CO2	1.0%	iC4	0.3%	nC5	0.1%
C1	89.57%	nC4	0.3%	C6	0.03%
C2	5.0%	NeoC5	0.1%		

Step 6 Connect Vents, Carrier and Calibration Gas Lines

A number of installation kits are available from Totalflow. Call the number listed on the back page of this guide for more information.



6A

Remove the sealing screws, and connect the vent tubing to the feed-through assembly column vent 2 (CV2), column vent 1 (CV1), sample vent (SV) and gauge port vent (GPV) ports. All four vents **MUST** be open. Use vent kits included with the unit.

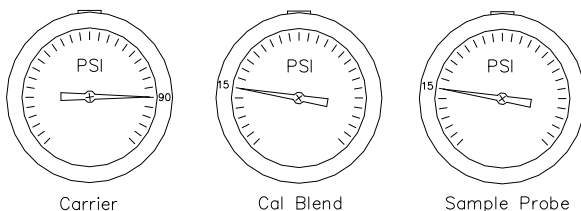
Position the vent tubing in a downward direction so that moisture does not accumulate in the tubing. Units mounted inside a building may require vents to be extended outside.

IMPORTANT: Remove plastic caps from the ends of the purge coil on any sample conditioning module(s).

6B Connect carrier (CAR) and calibration gas (S4, default) to the feed-through assembly. Purge gas through the tubing during connection.

NOTE: If using pressure regulators that include a built-in low pressure switch, these can be connected to digital inputs on the NGC. However, to meet the Division 1 certification, the user must go through a barrier located in a safe area. If used, the carrier bottle connects to digital input 1 (DI1) and the calibration blend bottle to digital input 2 (DI2). See the termination board drawing on page 15.

Step 7 **Set Carrier Regulator to 90 PSIG , Cal. Blend and Sample Probe Regulators to 15 PSIG and Open Valves**



Step 8 **Check for Leaks**

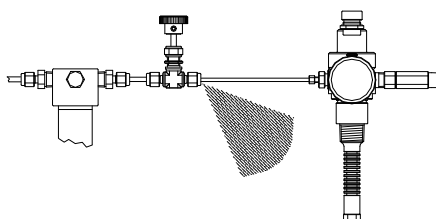
Leaks in the carrier, sample or calibration gas lines will produce unsatisfactory results from the unit.

8A Close tank valves, and monitor the gauges on the regulator. If pressure drops, a leak is present.

8B Locate and repair all leaks.

8C Continue until all leaks have been corrected and regulator gauges maintain pressure.

8D Leave sample, carrier and calibration gas valves open.



Step 9 **Install Power Supply**

Install the power source, and complete all power wiring before continuing. Reference any power wiring drawings supplied with the unit plus any corresponding instructions in the Installation chapter of the NGC8206 User's Manual.

Step 10 Adjust Voltage at Power Source

To allow for maximum distance between the NGC and the power source, adjust the no-load output at the power source to 14.5 to 15 VDC for 12 Volt systems and approximately 25 VDC for 24 Volt systems. This assumes one of the below wire sizes is used, and the optional auxiliary heater is not used. The maximum wire size is 12 AWG (2.5MM²).

Temporarily disconnect power prior to beginning the next step.

Wire	12 Volt System		24 Volt System	
	Max. Length (Ft)	Max Length (M)	Max. Length (Ft)	Max Length (M)
12 AWG	296'	90 M	511'	155 M
14 AWG	185'	56 M	320'	97 M
2.5 mm ²	224'	68 M	387'	117 M
1.5 mm ²	137'	41 M	237'	75 M

NOTE: It is strongly recommended that 12 or 14 AWG wire be used to avoid power problems.

Step 11 Apply DC Power to the Termination Board J1 Terminal, and Check Voltage

Remove the J1 terminal from the NGC termination board, and field wire power (+) to pin 1 and power (-) to pin 2. Reinstall the J1 terminal on the termination board. Apply power to the unit. The oven will begin heating and will provide maximum load conditions. Due to the fast pulsing action of the oven circuit, the true voltage cannot be read with a traditional voltmeter. However, using a voltmeter, the user needs to verify that they can read a minimum of 11.5 VDC at J1 on the NGC termination board for 12 Volt systems or a minimum of 25 VDC at J1 for 24 Volt systems. Voltages must **NEVER** drop below 10.5 VDC on the 12 Volt system or 21 VDC on the 24 Volt system.

Maximum instantaneous current for a 12 Volt system should be between 4 Amps (no auxiliary heater) and 8.2 Amps (with auxiliary heater). Maximum instantaneous current for a 24 Volt system should be between 2.2 Amps (no auxiliary heater) and 5.2 Amps (with auxiliary heater). Maximum instantaneous current is usually experienced at start-up.

Start-Up

Step 12 Install the PCCU32 Software Provided on CD

12A Insert the PCCU32 disk into the laptop's CD drive. The installation process should begin automatically. If not, click the Start button, and select Run. In the Run dialog box, type: D:\Disk1\setup.exe (D being the CD drive designation). Follow the screen prompts. The user needs to enter their name, company, destination folder (PCCU_NGC recommended) and program folder.







12B Upon completion, the user is asked if they want to install ActiveSync. If the local connection on the NGC is USB, the user will need ActiveSync. The user may already have ActiveSync installed if they communicate with a PDA device. If the user has ActiveSync and it is an older version, checking the Install ActiveSync box will give them the opportunity later in the install procedure to update their current version.

12C A subsequent option screen will enable the user to select the local port used for the local connection. If the wrong choice is made, it can be changed later in PCCU's System Setup.

- Use USB Port – Select if connecting through USB. This is the outside connector on the NGC with an explosion-proof cap.
- Use Serial Port – If using the serial port, the external connection on the NGC is a round, military type connector.
- Keep Current Port – If PCCU is currently installed on the computer and the user is upgrading to a newer version, select this option to keep the current local port setup.

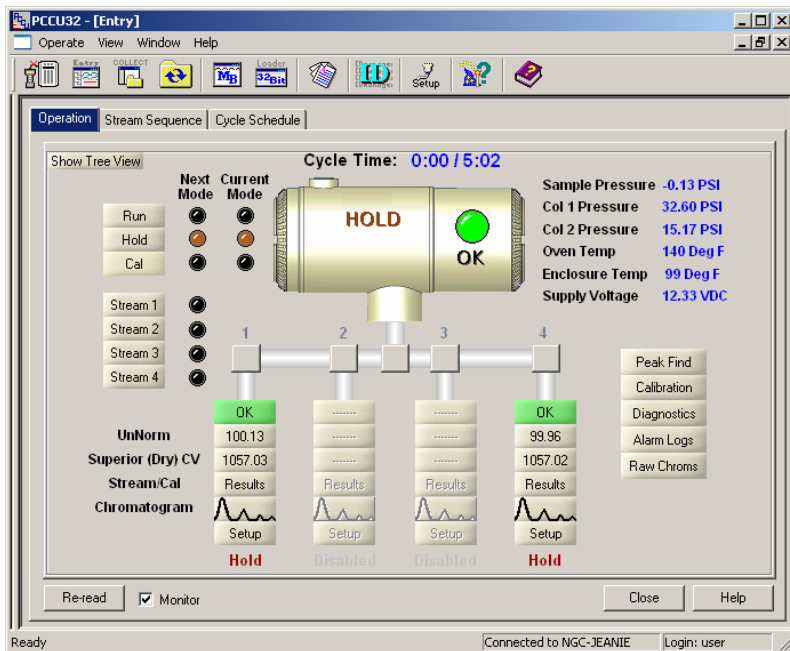
Step 13 **Connect Local Communications Cable**

The local communication cable will either have a USB connector or a RS-232 military style connector on the NGC end. Connect to the appropriate communication port on the PC (default is COM1). If the user elects to employ the USB and receives a dialog box asking to set up a partnership, click the Cancel button. On the next screen, click OK and then the Close button on the third screen.

MMI Cables	
	
 Client	 Host
 Military Connector	 9-Pin RS-232
USB Cable P/N 1801800-xxx	RS-232 Cable P/N 2015240-xxx

Step 14 Start PCCU32 Software

14A The user will need to start PCCU32, and move to the initial screen.



Initial NGC Screen

14B If a communication error is received, click the Setup icon on the main toolbar, and verify the PCCU com port. Based on the type of connection the user needs, click the corresponding radio button. Upon completion, click the Close button.

TIP: If the Invalid Security Code screen displays, enter four zeros (0000) for the new code. Click OK. The NGC should have defaulted to 0000 on start-up.

Step 15 NGC Start-Up Wizard

When PCCU establishes a connection with the NGC, the NGC Start-Up Wizard begins automatically. This will only happen the first time the user connects to the unit. In the event they do not finish the start-up, the Start-Up Wizard will start again upon re-connection. This happens until the Start-Up Wizard is complete. After start-up, the user can still access the Start-Up Wizard under the Help menu on the initial (Local Connect) screen.

The wizard will walk the user through the process of entering all the necessary information to get the NGC up and running. Each screen has

an associated Help screen that will automatically display when moving from screen-to-screen. Click on the Help or the Entry screen to bring it to the front, as needed. The initial Help screen includes a Read Me First area at the top of the screen. This should be read thoroughly.

As information is entered, the NGC's oven will warm up, and diagnostics will run. The diagnostics cannot finish until the oven is at the correct temperature and stabilized. The start-up procedure cannot be finished until the diagnostics are complete. Depending on the ambient temperature, this can take up to 30 minutes or longer.

During initial start-up, all streams are disabled. The last phase of the diagnostics is Stream Tests, and streams that have input pressure are re-enabled. Therefore, if a stream is going to be used, it should be plumbed in and sample pressure applied so that the stream can be tested during start-up; however, a stream can always be added and enabled at a later date.

15A Step through all the screens in the Start-Up Wizard, and fill in the required information. Be sure to put the unit in Run mode, as instructed, and allow the unit to run anywhere from eight (8) hours to overnight.

Step 16 Calibrate the NGC

After the unit has run for a minimum of eight (8) hours, it will need to be calibrated.

16A Connect the MMI cable to the unit, and start PCCU. If using a USB connection, a screen may display asking about a partnership. Click Cancel, or close the screen.

16B On the Operation screen, the unit should be in Run mode. Click the Hold button. The Next Mode indicator will illuminate, and the unit will go into Hold mode at the end of the cycle. The user can go on to the next step without waiting for the end of the cycle.

16C On the Operation screen, click on the Calibration button to display the Calibration Setup dialog box. Within this area, the user will need to verify the following calibration information:

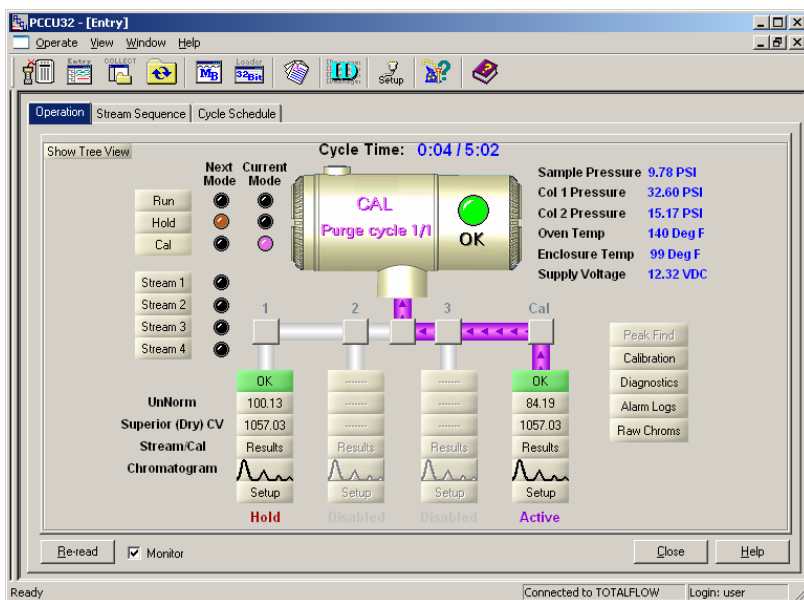
- Verify that the calibration stream being used (First Calibration Stream) is correct; change if needed.
- There are default values in the Calibration Cycles Average and in the Purge Cycles windows. The user can change these values now even if they changed them during the Start-Up Wizard.
- Verify that the values in the % Blend 1 column match the calibration blend bottle and Total Mole % is 100. If not 100%

and all components are correct, modify the Methane (C1) to receive 100%.

16D If changes were made in the Calibration Setup, click the Send button. Afterwards, click the Re-read button to verify changes, and then click the Close button on Calibration Setup.

16E On the Operation screen, the unit will indicate that it is Hold mode. If this does not occur, wait until the cycle finishes and moves into Hold.

16F Click the Cal button on the left side of the screen. The Current Mode indicator for Calibrate will illuminate. Additionally, a visual indicator of the flowing calibration stream will display. The Next Mode should still indicate Hold, and the unit will go back into Hold mode when the calibration process is finished. If using 2 Purge cycles and 3 cycles to average, the calibration process will take approximately 25 minutes.



Operation Screen (Cal Mode)

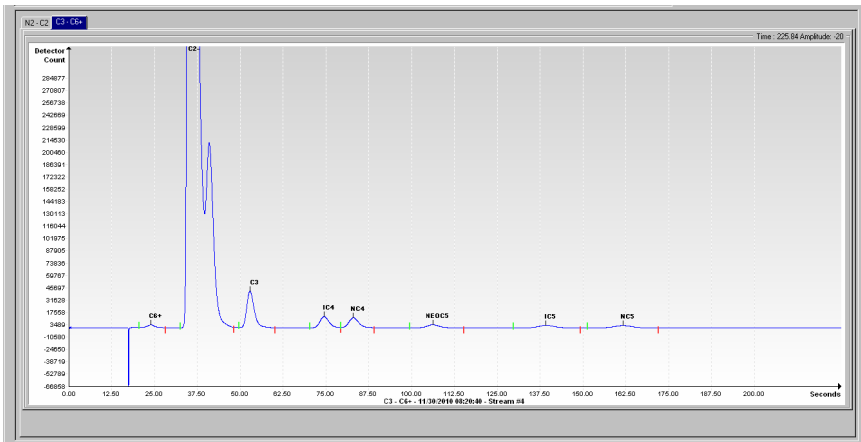
NOTE: On the Operation screen, if enabled, a stream will display information on the stream blocks, shown by stream 1 above. This is always process stream data for that stream. If it is a calibration stream only, the data shown on the blocks is still process stream data and not calibration data. As such, it is not relative. It should be noted that if enabled, a calibration stream is grayed out during Calibration.

Step 17 Verify Calibration Data

This step assumes that the unit has completed calibration and moved back into Hold mode. The user will need to verify several things before moving into Run mode.

17A Click on the Peak Find icon on the right side of the Operation screen. A chromatogram will load at the bottom of the screen. This is the last cycle of the calibration stream. There will be a delay as the data downloads. There is a tab for C3-C6+ (Heavy Components) and N2-C2 (Light Components). C3-C6+ is displayed first. If no chromatograms display, click the Re-read button.

17B Look at the date/time below the chromatogram. This time should coincide with the start of the last cycle of the calibration process that was just run. This signifies that the calibration data was accepted (no alarms, etc.). If this displays an older date and time (generally indicating factory calibration), the new calibration data has not updated. If this occurs, an alarm should show up on the Operation screen.



C3-C6+ (Heavies)

17C Verify that there are seven (7) peaks: C6+, C3, iC4, nC4, neoC5, iC5 and nC5. The second double-looking peak from the left is a composite peak of C2-. This may or may not be labeled but is not used in calculations.

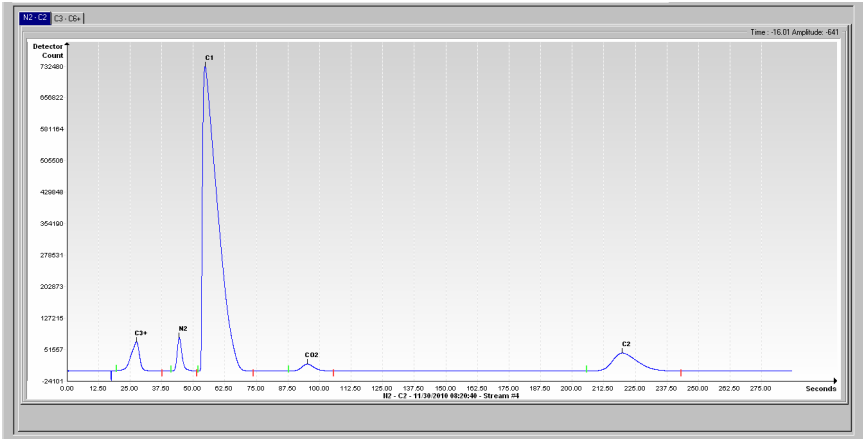
17D Place the vertical line of the cursor over the small tick mark on nC5, and verify the time in the upper right-hand corner of the chrom is approximately 160 seconds. It is not critical that it be exactly 160 seconds but should be within 3 or 4 seconds.

17E Click on the N2-C2 tab, and verify that there are four (4) peaks: N2, C1, CO2 and C2. The first peak on the left is a composite

peak of C3+. This may or may not be labeled but is not used in calculations. There could be trace amounts of other components in the calibration blend as indicated by gates with no component label. This is shown below between the CO2 and C2 peaks.

17F

Place the vertical line of the cursor over the small tick mark on C2, and verify the time in the upper right hand corner of the chrom is approximately 220 seconds. It is not critical that it be exactly 220 seconds but should be within 3 or 4 seconds.



N2-C2 (Lights)

Step 18 Verify the Stream Sequence

While the stream sequence was verified during the Start-Up Wizard, the user may want to see if the streams they set to run automatically are

For a stream to automatically sequence, it must be enabled and be present in the stream sequence. The calibration stream will function without being enabled. Additionally, the stream should not be enabled or be present in the stream sequence unless the user prefers to run cycles on the calibration stream.

A reason that the user may not want the calibration stream enabled is the fact that when enabled, a stream displays information (Unnormalized Total, Superior CV, etc.) on the Operation screen. This information represents process stream information and not calibration stream information and can lead to confusion.

After confirming the streams, close the Stream Sequence screen.

Operation Stream Sequence Cycle Schedule		
	Description	Value
	----- Stream Enable -----	
46.0.7	Stream 1	Enabled
46.0.8	Stream 2	Enabled
46.0.9	Stream 3	Enabled
46.0.10	Stream 4	Enabled
	----- Stream Sequence -----	
46.6.0	Sequence #1	Stream 1
46.6.1	Sequence #2	Stream 1
46.6.2	Sequence #3	Stream 1
46.6.3	Sequence #4	Stream 1
46.6.4	Sequence #5	Stream 2
46.6.5	Sequence #6	Stream 2
46.6.6	Sequence #7	Stream 2
46.6.7	Sequence #8	Stream 2
46.6.8	Sequence #9	Stream 3
46.6.9	Sequence #10	Stream 3

Re-read Monitor Print Screen Save Send Close Help XHelp

Step 19 Placing the Unit in Run Mode

19A On the Operation screen, click the Run button. The Current and Next Mode indicators for Run will illuminate. The unit will now run the streams as specified by the Stream Sequence screen. The unit will run in this mode until manually placed in a different mode or automatically put into the Calibration mode by the Calibration Schedule.

19B To set up an automatic calibration schedule, click on the Calibration icon. Upon completion, select the Calibration Schedule tab, and click the appropriate radio button for the schedule that the user prefers. After a scheduled calibration, the unit will return to its normal stream sequence.

NOTE: Allow at least the first stream to complete and verify that the Unnormalized total is 100% +/- .5 (99.5 – 100.5)

This concludes setting up the NGC in relation to processing analysis data. Information regarding wiring for communications is presented in the Communications section of this guide. For more thorough information, refer to the NGC 8206 User's Manual or corresponding Help file. Port information can be viewed by displaying the tree-view within the PCCU32 software and clicking on a port under the Communications application.

Remote Communication

To communicate with the host, the NGC defaults to Comm 1 and defaults the protocol to Totalflow Remote. The protocol deals primarily with communications between the NGC and host (typically WinCCU).

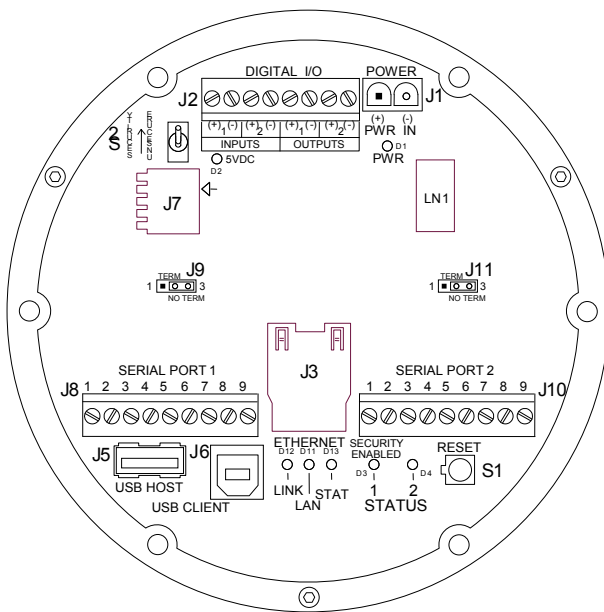
Comm 2 defaults to NGC Interface, communicates via Modbus and functions as a Modbus Slave.

Both communication ports (Comm 1 and Comm 2) can function as RS-232, RS-422 or RS-485. The following table details the connections for remote communications.

Comm 1 and Comm 2 Pin-Outs/Terminations

	RS232	RS485	RS422
PIN	COMM 1 (J8)	COMM 1 (J8)	COMM 1 (J8)
1	Power Out	Power Out	Power Out
2	Ground	Ground	Ground
3	Switched Power Out	Switched Power Out	Switched Power Out
4	Operate	Operate	Operate
5	Not Used	RRTS	RTS
6	Request To Send	Bus +	Transmit Bus +
7	Transmit Data	Bus -	Transmit Bus -
8	Receive Data	No Connection	Receive Bus +
9	Clear To Send (CTS)	No Connection	Receive Bus -
	COMM 2 (J10)	COMM 2 (J10)	COMM 2 (J10)
1	Power Out	Power Out	Power Out
2	Ground	Ground	Ground
3	Switched Power Out	Switched Power Out	Switched Power Out
4	Operate	Operate	Operate
5	Not Used	RRTS	RTS
6	Request To Send	Bus +	Transmit Bus +
7	Transmit Data	Bus -	Transmit Bus -
8	Receive Data	No Connection	Receive Bus +
9	Clear To Send (CTS)	No Connection	Receive Bus -
TERMINATIONS		Comm 1 (J9)	Comm 2 (J11)
First or Intermediate Unit (RS-485)		Pins 2–3	Pins 2–3
Last or Only Unit (RS-485)		Pins 1–2	Pins 1–2
RS232		Pins 2–3	Pins 2–3

All communication parameters are found in the Setup tabs for each instantiated Communication application in PCCU32. Systems are shipped with default settings for communications but may need further modification. For additional information, please refer to the NGC8206 User's Manual.



NGC Termination Board

Communication Troubleshooting

It can be difficult to troubleshoot a new radio or modem system that does not communicate properly due to the fact it has never been proven. As a result, all the initial hardware and software settings are suspect. More than one problem can be present and causes component replacement to be an inadequate troubleshooting technique.. The following checklist can serve as an aid:

- Insure the base radio is working for other locations.
- Verify that the Station ID and Device ID match WinCCU's ID Manager and it is the only device with that ID.
- Verify baud rate, stop bits, security code and the listen cycle time match in WinCCU and PCCU.
- Verify the wiring from the NGC8206 to the Optional Equipment Unit (OEU) terminal strip and then the terminal strip to the radio. Verify the cable from the radio to the antenna.
- Verify J9 and J11 switches on the NGC termination board are in the proper position. (See the figure above and the table on previous page).

For more information on troubleshooting, see Chapter 5-Troubleshooting in the NGC8206 User's Manual.

Start-Up Troubleshooting

The NGC is factory calibrated and comes with a standard set of configuration files. Typically, the NGC should not require adjustments; however, due to outside factors (Barometric Pressure, etc.), the unit may require some adjustments.

This section is designed for troubleshooting new installation issues only. Detailed troubleshooting techniques and procedures may be found in the Troubleshooting section of the Totalflow NGC8206 User's Manual. Following successful completion of any of these troubleshooting techniques, the unit should be calibrated.

Using Peak Find

Many of the troubleshooting techniques will require use of the Peak Find tools. The following provides basic information on how this feature works.

Peak Find is divided into two levels of functionality: Automatic Peak Find and Manual Peak Find. Auto Peak Find performs many of the tasks for the user to include locating and labeling peaks. As such, it requires little or no input from the user. Manual Peak Find, on the other hand, requires the user to manually change carrier pressures, inject time, backflush time, etc. If the unit gets in a condition and/or the sample blend being used causes the Auto Peak Find to not work properly, the user may be required to use Manual Peak Find to perform some fine tuning.

To use either Peak Find function, the user must first place the unit in Hold. Once in Hold, select Peak Find from the Analyzer Operation screen. Please notice that the Manual check box is grayed out and not available at this level of access. Windows for Carrier Pressures, Purge Time, etc., will be grayed out but will periodically be refreshed to reflect changes during the Auto Peak Find process.

Using Auto Peak Find

Select Run Auto PF on the Peak Find screen. The unit will typically require 9 or 10 cycles (approximately 50 - 55 minutes) to complete the process. Even though chromatograms are refreshed after each cycle and may be viewed by clicking between C3-C6+ and N2-C2, the peaks and component labeling will not be correct until the Auto Peak Find process is complete. The user should receive a message indicating a successful completion. Acknowledge the message, and click the Re-read button to insure that the latest data is being displayed. At this point, look at Chrom-1 and Chrom-2 to verify that all peaks are accounted for, and they are labeled. If a problem exists, see Manual Peak Find below.

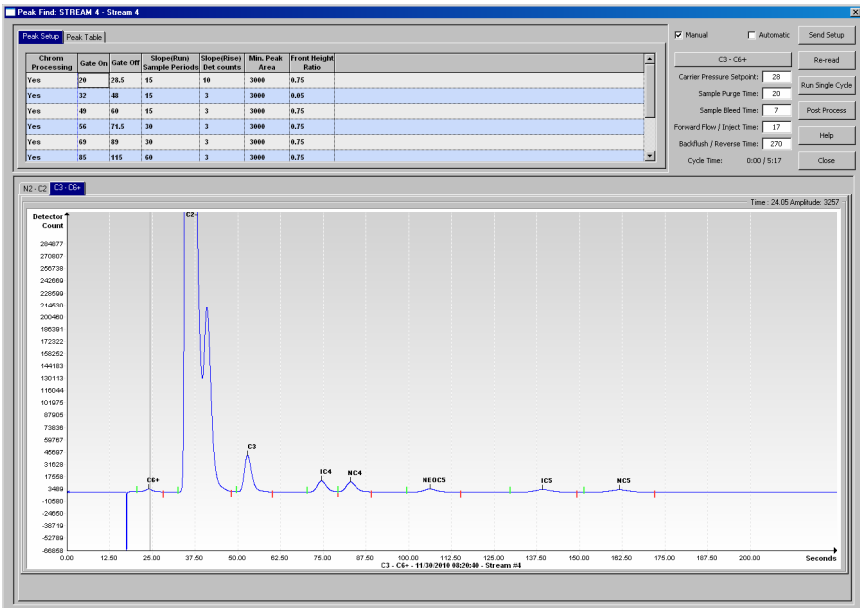
After verifying that the chromatograms look correct, close the Peak Find screen, put the unit in Run mode and allow it to stabilize for 5 or 6 cycles. If no alarms occur during this period, perform a calibration. Note that some alarms are just warnings and may not stop the user from proceeding with the calibration. The user should be able to tell from the

warning description whether to proceed or stop and take care of the alarm condition.

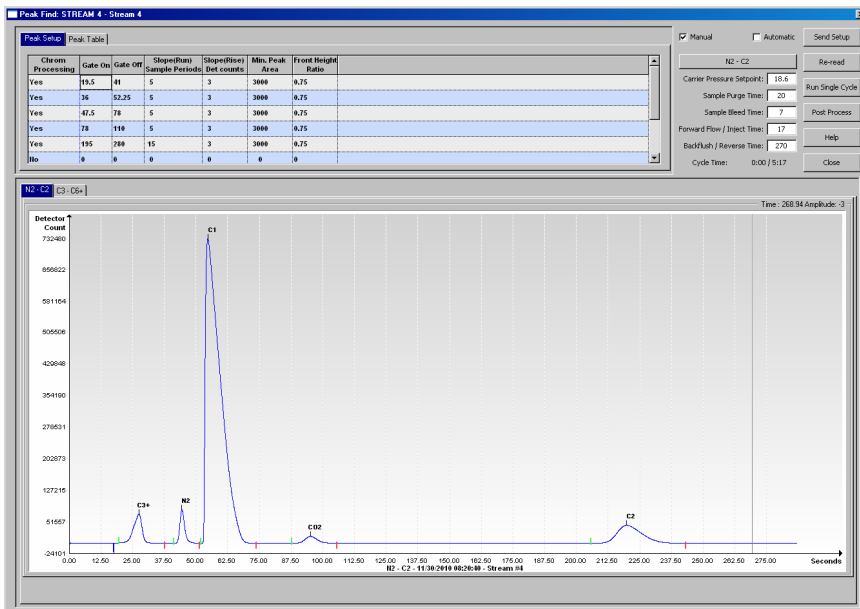
Using Manual Peak Find

From the Analyzer Operation screen, click on the Peak Find button, and check the Manual box at the top of the screen. If the Manual check box is grayed out, close the Peak Find screen, click on the View option from the main toolbar and select Expert. Return to the Analyzer Operation screen, and click on the Peak Find button. The user should now be able to check the Manual box.

There is now a Peak Setup table, and the various parameter fields can be modified. There are areas in the Peak Setup table such as Slope (Run), Slope (Rise) and Front Height Ratio that cannot be modified. The Gate On, Gate Off and Minimum Peak Area can be changed. If the user needs to make adjustments in the Peak Setup table, the Post Process feature will reprocess the change without having to run a cycle. Pressure and time/duration changes in this area require a Run Single Cycle be performed to process new data. Click the Help button for more information on these parameters.



Peak Find Screen for Chrom 1 (Heavies)



Peak Find Screen for Chrom 2 (Lights)

Troubleshooting Clues

Clue: *Unnormalized total is not $\pm 0.5\%$ of 100%.*

- Possibility:
- Carrier pressure set points are out of range. See Using Peak Find.
 - Peaks are integrated correctly but not labeled. See Labeling Peaks.
 - Peaks are incorrectly labeled. See Labeling Peaks.

Clue: *Gate Markers are located on the side of a peak.*

- Possibility:
- Front Height Ratio may need refined. See Integrating Peaks.
 - Gates may need to be added. See Gating Peaks.

Clue: *Chrom 2, C2 peak time is not eluting around 220 seconds.*

- Possibility:
- Column 2 Carrier Pressure may not be correct. See Carrier Pressure Set Point.

Clue: *NC5 peak time is not eluting at approximately 160 seconds.*

- Possibility:
- Column 1 Carrier Pressure may not be correct. See Carrier Pressure Set Point.

Clue: *A small peak elutes after NC5 Peak.*

- Possibility:
- Inject time may be too long. See Forward Flow Duration.

Clue: Some components are not gated correctly.

- Possibility:
- Carrier Pressure Set Point may be too high or too low. See Carrier Pressure Set Point.
 - Gate times may be incorrect. See Gating Peaks.

Clue: NGC is “processing” unused streams.

- Possibility:
- Unused streams need to be disabled. See Stream Sequencing-Enable or Disable Streams.

Troubleshooting Solutions

Oven Temperature Stabilization

The oven temperature must be stabilized to receive good, repeatable data. The oven temperature is typically stable enough in 30 to 60 minutes to pass diagnostics. This allows the user to proceed with all the required setup information. Despite this, for the oven and other components to fully stabilize, Totalflow recommends that the unit be allowed a burn-in period of eight (8) hours. The end caps should be installed during this period and during normal processing. Ambient temperatures and not having the end caps installed could impede the oven temperature from stabilizing at 60° C (140° F).

Carrier Pressure Set Point

The NGC has two column trains that have their own carrier pressure regulator. Tests show that if nC5 on Column 1 elutes at approximately 160 seconds and C2 on Column 2 elutes at approximately 220 seconds, the unit performs optimally. This is not to say that there may be special applications which can cause these times to be different.

If nC5 and C2 are not within 3 - 4 seconds of these ranges, the user may want to change the carrier pressures. It should be noted that changing the carrier pressures will move the other peaks. As such, the user may want to perform an Auto Peak Find.

To change carrier pressures, the user must be in Hold mode. Click the Hold button on the Operation screen, and wait until the end of the cycle. When the unit enters Hold mode, click on the Peak Find button. If the Manual check box at the top of the screen is grayed out, close the Peak Find screen, and click on the View option from the main toolbar. Select Expert from the drop-down. Return to the Analyzer Operation screen, and click the Peak Find button again. Manual mode will now be selectable.

While units vary from one to the other, it should be noted that one PSI change will move the nC5 or C2 peak by 10-12 seconds. Increase pressure to decrease the time that the components elute, and decrease pressure to increase the time they elute. After making a pressure change, click Send Setup and then Run Single Cycle. The chromatograms will update at the end of the cycle (typically, 5 minutes). The user should repeat this process until they receive the preferred results.

NOTE: In the Manual Peak Find screen, changes to Gate Times and Peak Labeling may be seen immediately by selecting Post Process. All changes in the pressure or times windows at the right of the screen will be reflected following a Run Single Cycle.

Gate Peaks

Gate On and Gate Off times in the Peak Setup table in the Manual Peak Find screen instructs the process when to start and stop looking for peaks. Each Gate On/Gate Off time applies the parameters in its row to the peaks in its time frame. The Gate On time should begin in an area prior to the first component peak and in a relatively flat area on the baseline. Likewise, the Gate Off time should be on a flat area and not fall during a component peak.

Make changes in the Peak Setup table in the Peak Find screen. Send Setup and then Post Process to see updated chromatograms.

Labeling Peaks

If peaks are integrated correctly and column pressures are within range but no labels display, the user may need to label the peaks. Manually label the peaks in the Peak Find screen by zooming in on the chrom, placing the cursor inside of the peak, right clicking and selecting Label Peak. When the new window displays, select the component for that peak from the drop-down selection, and click the Label Peak button. Continue until all peaks are labeled.

Send Setup, and click the Post Process button. Wait for the screen to update the chromatograms.

Forward Flow Duration

A small peak (part of C6+) displaying after the nC5 peak indicates that the Forward Flow is too long. It may be necessary to shorten the Forward Flow Flow/Inject Time. Make small time increment changes to avoid over compensation. Make adjustments to the Forward Flow Time on the Manual Peak Find screen, send Setup and run a Single Cycle. Repeat as necessary. If the Cal Blend component concentrations IC5 and nC5 are similar, the peak areas should be within 3% of each other. If using Totalflow's standard blend, IC5 and NC5 are approximately 0.1%.

If water causes a problem, the user may need to increase the Backflush/Reverse Time. For additional information, see the chapter on troubleshooting in the NGC8206 User's Manual.

Stream Sequencing—Enable or Disable Streams

Following the initial setup, if a stream was not connected or connected/disconnected after start-up, the user may be required to manually enable or disable a stream.

NOTE: Disable streams that do not have sample gas connected to them. If a stream (typically stream 4) is a dedicated calibration stream, the user may want to disable it, or remove it from the Stream Sequence. Enabling it will display ambiguous data on the Analyzer Operation screen because it only displays process stream data.

To disable any streams not in use:

- On the Analyzer Operation screen, click the Stream Sequence tab. Under the Stream Enable section, set the value next to the corresponding stream to Disable.
- Remove unused streams from the Stream Sequence by setting the value next to the unused stream to Stream (none).
- When finished, click on the Send button.

NOTE: Streams enabled but removed from the sequence will display as Skip on the Analyzer Operation screen. Streams disabled and removed from the sequence will display as Disabled.

To enable additional streams:

- Enable the stream by selecting the Value column next to the corresponding stream number and changing to Enable.
- In the Stream Sequence tab, select the Value column next to the corresponding sequence number, and select the stream number to add.



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