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## Introduction

This is a quick start guide designed for typical installations only. It is recommended that inexperienced technicians consult the ABB Totalflow<sup>®</sup> NGC8106 User's Manual for more detailed information while performing the installation and startup. Scan through the guide to view the available information before beginning the installation. If there are questions that are not answered in this guide or other documentation, call the local ABB Totalflow representative or call the number listed on the back page of this guide. Alternate methods of installation are acceptable and may save time; however, it is recommended that inexperienced technicians perform these procedures in the presented order.

Unpack and inspect the NGC8106 Single Stream Sampler and optional equipment, if purchased. Inspect all parts and pieces for damage and missing or incorrect components.

## **Before Beginning**

The NGC8106 can be configured with a multitude of optional equipment. Please see the NGC8106 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, these components should be installed in a Division 2 or General Purpose area prior to the NGC8106 installation. Specific instructions for these components are found in the NGC8106 User's Manual. Communication wiring information is found in this guide following the Installation section.

## **Basic Installation**

#### Step 1 Locate Suitable Installation Site

The NGC8106 should be located close to the sample probe to minimize 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

The NGC8106 can be mounted on a meter run, wall shelf, stand-alone pipe or inside a cold weather enclosure.

**Note:** The NGC8106 should not be connected to any section of the pipeline where cathodic protection exists.

The NGC8106 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 #12 AWG wire.



# Step 3Install the Sample Conditioning Bracket, Sample<br/>Conditioning Modules and Connect to Feed-Through<br/>Assembly

**Important:** A Particulate Filter with a Liquid/Vapor Separator Sample Conditioning Module is strongly recommended. Operating the NGC8106 without a Sample Conditioning Module can allow liquids and particulates to contaminate columns. This can then damage the unit and void the warranty.

If these components are not required, connections are made directly to the Feed-Through Assembly.



Mount the Sample Conditioning Bracket on the pipe.



SINGLE MODULE BRACKET MULTIPLE MODULE BRACKET



**3B** Mount the Sample Conditioning Modules on the Sample Conditioning Bracket.

#### Step 4

Install the Sample Probe

It is strongly suggested that a Temperature Compensating, Pressure Regulating Sample Probe be used. Refer to the manufacturer's recommendations supplied with 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 NGC8106.

**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 the sealing screws from the input ports to connect the tubing. Unused ports **MUST** remain sealed to prevent moisture from entering the manifold and potentially damaging the instrument.
- **5A** Connect the tubing between the Sample Probe and the Conditioning Modules. See Precautions.
- **5B** Connect the tubing between the Conditioning Modules and the Feed-Through Assembly. Purge the sample gas through the tubing during connection.



## Precautions:

1. **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 and calibration gas and the sample line. Use of poor quality, stainless steel tubing will return unsatisfactory results.

- 2. 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 Installation chapter of the NGC8106 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 (10) feet.

- 4. Purge all lines prior to connecting to the NGC8106.
- 5. 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 ABB Totalflow. Call the number listed on the back page of this guide for more information.



- **6A** Remove the sealing screws. Upon completion, connect the vent tubing to the Feed-Through Assembly 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 the plastic caps from the ends of the purge coil on any Sample Conditioning Module(s).

**6B** Connect the Carrier (CAR) to the Feed-Through Assembly. Purge gas through the tubing during connection.

**Note:** If using the pressure regulators that include a built-in low pressure switch, these can be connected to digital inputs on the NGC8106. However, to meet 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 16.

Step 7

#### Set Carrier Regulator at 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.





Leave sample, carrier and calibration gas valves open.

## Step 9 Install Power Supply

Install the power source. Upon completion, 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 NGC8106 User's Manual.

## Step 10 Adjust Voltage at Power Source

To allow for the maximum distance between the NGC8106 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 following wire sizes is used and the

optional auxiliary heater is <u>not</u> used. The maximum wire size is 12 AWG  $(2.5 \text{MM}^2)$ .

	12 Volt	System	24 Volt	System
Wire	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
$2.5 \text{ mm}^2$	224'	68 M	387'	117 M
1.5 mm <sup>2</sup>	137'	41 M	237'	75 M

Disconnect power temporarily prior to beginning the next step.

## Step 11

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

Remove the J1 terminal from NGC8106 termination board. Field wire power (+) to pin 1 and power (-) to pin 2. Reinstall the J1 terminal on the termination board. Apply power to unit. The oven will begin heating providing 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, verify a minimum of 11.5 Vdc at J1 on the 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 for the 12 Volt system or 21 Vdc for the 24 Volt system.

Maximum instantaneous current for a 12 Volt system should be less than 4 amps (no Auxiliary Heater) and 8.2 amps (with Auxiliary Heater). Maximum instantaneous current for a 24 Volt system should be less than 2.2 amps (no Auxiliary Heater) and 5.2 amps (with Auxiliary Heater). Maximum instantaneous current is usually experienced at startup.

## 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, move to Start-Run and type: D:\Disk1\setup.exe (D being the CD drive designation). Follow the screen prompts. Enter the name, company, destination folder (the default recommended) and program folder.
- **12B** One of the install options will ask the user if they want to install ActiveSync. If the local connection on the NGC8106 is USB, the user will need ActiveSync to use the local connection. This is the outside connector on the NGC8106 with an explosion-proof cap. The user may already have ActiveSync installed if communicating with a PDA device. If ActiveSync is already installed and it is an older version, selecting the Install

ActiveSync box will give the opportunity later in the install process to update the current version.

- **12C** A subsequent option screen will allow the user to select the local port used for the local connection. If the user makes the wrong choice, it can be changed later in PCCU32's System Setup.
  - Use USB Port Select this option if the local connection is USB.
  - Use Serial Port If the local connection is the serial port, the external connection on the NGC8106 is a round, militarytype connector as opposed to a USB connector.
  - Keep Current Port If PCCU32 is currently installed on the computer and the user is upgrading to a newer version, select this option to keep the current local port set up.

#### Step 13 Connect Local Communications Cable

The local communications cable will either have a USB connector or a round, RS-232 military-type connector on the NGC end. Connect to the appropriate communication port on the PC (default is COM1) for serial RS-232 or any USB connector for USB and then to the MMI connector on the NGC. If using USB and a dialog box displays asking to set up a partnership, click the Cancel button, click OK and then close the third screen.



## Step 14 Start PCCU32 Software

**14A** Click the Start button, select Programs and then select Totalflow PCCU (or correct program folder if changed during installation). After completion, select PCCU32 to display the initial screen.



- **14B** If a communication error is received, click on the Setup icon along the top of the screen, and verify the PCCU com port. If using USB, this should indicate USB. If this does not occur, click on the down arrow and select USB from the available options. If using serial communications with the round connector on the NGC end, select the communication port being used (COM1, etc.). When finished, close the Setup screen.
- **TIP:** If the Invalid Security Code screen should display, enter four (4) zeros (0000) for the new code. Upon completion, click OK. The NGC should have defaulted to 0000 on start up.

## Step 15 NGC Startup Wizard

When PCCU32 establishes a connection with the NGC, the NGC Startup Wizard begins automatically. This will only happen upon the first connection to the unit or if the user did not finish the set up. In these instances, the NGC Startup Wizard will automatically start again after reconnection. This happens until the NGC Startup Wizard is completed. After start up, the user can still access the NGC Startup 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 enable the NGC to become operational. Each screen has an associated Help screen that will automatically display

when moving from screen to screen. Click on the Help or 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 which should be read thoroughly.

As information is entered, the NGC's oven will be warming up and diagnostics will be running. The diagnostics cannot finish until the oven is up to temperature and stabilized. Additionally, the startup procedure cannot finish until the diagnostics are completed. Depending on the ambient temperature, this can take up to 30 minutes or more.

During startup, the input stream is disabled. The last phase of the diagnostics are stream tests. As such, if the input stream has pressure applied, it will be enabled.

**15A** Enter the information in the NGC Startup Wizard. Step through all the screens and fill in the required information. Ensure that the unit in Run mode, as instructed, and allow the unit to run at least eight (8) hours or overnight if possible.

#### Step 16 Calibrate the NGC

After the unit has run for a minimum of eight (8) hours, it is time to calibrate the unit.

- **16A** Connect the MMI cable to the unit, and start PCCU32. If using USB and a screen displays regarding a partnership, cancel or close the screens.
- **16B** On the Operation screen, the unit should be in Run mode. Click the Hold button beside the Next Mode indicators. The Next Mode indicator will illuminate, and the unit will move into Hold mode at the end of the cycle. The user can move to the next step without waiting for the end of cycle.
- **16C** On the Operation screen, click on the Calibration button. This will display the Setup tab for Calibration. The user can verify or make changes to a scaled down version of this screen in the NGC Startup Wizard. The user will need to verify certain calibration information before starting the actual calibration:
  - Verify that the calibration stream being used (First Calibration Stream) is correct; change if needed.
  - There are default values displayed in the Calibration Cycles Average and in the Purge Cycles windows. The user can change these values now even if they were changed during the NGC Startup Wizard.
  - Verify the values in the % Blend 1 column matches the calibration blend bottle and Total Mole % is at 100. If not at 100% and all components are correct, modify the Methane (C1) to receive 100%.

- **16D** If the user made changes in the Calibration Setup, click the Send button. The user will then need to click the Re-read button to verify the changes. Upon verification, click the Close button.
- **16E** On the Operation screen, the unit should indicate that it is in Hold mode. If not, wait until it finishes the cycle and moves into Hold mode.
- **16F** Click the Cal button. The Current Mode indicator for Calibrate will illuminate, and the user will receive a visual indication of the Calibration stream flowing, as shown below. The Next Mode should still indicate Hold, and the unit will go back into Hold mode when the calibration process is finished. If using two (2) purge cycles and three (3) cycles to average, the calibration process will take approximately 60 minutes.



## Step 17 Verify Calibration Data

In this step, it is assumed that the unit has completed calibration and has gone back into Hold mode. It is now necessary to verify certain items before placing the unit in Run mode.

**17A** Click on the Peak Find button within the Operation screen. A chromatogram will load at the bottom of the screen representing the last cycle of the calibration stream. There will be a delay as the data downloads. There is a tab for C3-NC5 (Heavy Components) and N2-C2 (C6+) (Light Components). C3-NC5 is displayed first. If no chromatograms display, click the Re-read button.

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 means that the calibration data was accepted (no alarms, etc.). If this displays an older date/time (factory calibrated), the new calibration data was not updated. If this is the situation, an alarm will display on the Operation screen.

17B



C3-NC5 (Heavy Components)

- **17C** Verify there are seven (7) peaks labeled: C6+, C3, iC4, nC4, neoC5, iC5 and nC5. The second double-looking peak from the left is a composite peak of C2- and may or may not be labeled but is not used in the calculations.
- **17D** Place the vertical line of the cursor over the little tick mark on nC5. Upon completion, verify the time in the upper right-hand corner of the chrom is approximately 200 seconds. Although it is not critical that it be exactly 200 seconds, it should be within three (3) or four (4) seconds.
- **17E** Click on the N2-C2 (C6+) tab. 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 peak 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 displayed below between CO2 and C2.
- **17F** Place the vertical line of the cursor over the little tick mark on C2. Upon completion, verify the time in the upper right-hand corner of the chrom is approximately 180 seconds. Although it is not

critical that it be exactly 180 seconds, it should be within three (3) or four (4) seconds.



## N2-C2 (C6+) (Light Components)

## Step 18

## Disconnect Cal Blend, and Connect Sample Line

At this point, disconnect the calibration blend. Upon completion, connect the sample line to the NGC8106. Allow the unit to purge in residual calibration gases before analyzing the sample line gases.

## Step 19 Put the Unit in Run Mode

On the Operation screen, click the Run button. The Current and Next Mode indicators for Run will illuminate. The unit will run in this mode until it is either manually placed in a different mode or it is automatically placed into Calibration mode by the calibration schedule. To set up an automatic calibration schedule, click on the Calibration button within the Operation screen, and select the Calibration Schedule tab. After a scheduled calibration, the unit will return to normal operation.

**19A** Allow several cycles to complete. Once accomplished, verify that the Unnormalized total is 100% +/- .5 (99.5 – 100.5).

At this point, the set up of the NGC8106 is complete in relation to processing analysis data. If wiring for communications is needed, there is information in the Communications section of this guide. For additional information, see the NGC 8106 User's Manual or the corresponding Help topic for each communication port. Port information can be viewed by moving to the tree-view within PCCU32 and clicking on a port under the Communications menu.

## **Remote Communication**

To communicate with the host, the NGC8106 defaults to com 1 and Totalflow Remote protocol. This protocol primarily deals with communications between the NGC8106 and the host (typically, WinCCU). Com 2 is defaulted as an NGC interface, communicates via Modbus and functions as a Modbus Slave.

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

	RS232	RS485	RS422
PIN	<u>COMM 1 (J8) &amp; 2 (J10)</u>	COMM 1 (J8) & 2 (J10)	COMM 1 (J8) & 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 o	or Only Unit (RS-485)	Pins 1–2	Pins 1–2
RS23	2	Pins 2–3	Pins 2–3

All communication parameters are found on the Setup tabs for each instantiated communication application in PCCU32. Systems are shipped with default settings for communications but may need fine tuning. For additional information, please refer to the NGC8106 User's Manual.



## **Communication Troubleshooting**

A new radio or modem system that does not communicate can be difficult to troubleshoot. This is due to proper operation not having been proven and initial hardware and software settings being suspect. More than one problem can be present and causes component replacement to be an inadequate troubleshooting technique.

- Ensure base radio is working for other locations.
- Verify Station ID and Device ID matches with WinCCU's ID Manager and is the only device with that ID.
- Verify baud rate, stop bits, security code and listen cycle time match in WinCCU and PCCU32.
- Verify the wiring from the NGC8106 to the OEU terminal strip and then to the terminal strip to the radio. Verify cable from the radio to the antenna.
- Verify J9 and J11 switches on the NGC8106 termination board are in the proper position.

For more information on troubleshooting, see the Troubleshooting chapter in the NGC8106 User's Manual.

## Start Up Troubleshooting

The NGC8106 is factory calibrated and comes with a standard set of configuration files. Typically, the NGC8106 should not require adjustments. However, unknown factors such as. barometric pressure may require the unit to be adjusted.

This section is designed for troubleshooting new installation issues only. Detailed troubleshooting techniques and procedures may be found in the Troubleshooting chapter of the Totalflow NGC8106 User's Manual. Following the 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 requires the user to manually change the carrier pressures, inject time, backflush time, etc.

To use the Peak Find function, first place the unit in HOLD. Once in HOLD, select Peak Find from the Analyzer Operation screen.

Within the Analyzer Operation screen, click on the Peak Find button. The Peak Setup table displays and the windows such as carrier pressures are activated. This means they can be changed. There are areas in the Peak Setup table such as Slope (Run), Slope (Rise) and Front Height Ratio that cannot be changed. The Gate On, Gate Off and Minimum Peak Area can be changed. If needing 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 require a Run Single Cycle to process new data. Click the Help button for more information on these parameters.

Chrom	Gate On	Gate Off	Slope(Run) Sample Periods	Slope(Rise)	Min. Peak	Front Height Patio	^	C3 - NC5		Re-read
Yes	17	33	15	3	3000	0.75		Carrier Pressure Setpoint:	0	In the second second
Yes	33	48	15	3	3000	0.75		Sample Purge Time:	10	Hour brogle o
Yes	56	66	30	3	3000	0.75		Sample Bleed Time:	5	Post Proce
Yes	66	81	60	3	3000	0.75		Forward Flow / Inject Time:	245	
Yes	92	109	100	3	3000	0.75		Backflush / Reverse Time:	460	Help
Yes 3 - NC5 N2-6 Detector T Count	135 2 (C6+) C:	162	100	3	3000	0.75		Cyde Time: 0:00 /	( 12: 1 e : -20.27	Close
Ves 3 · NC5 N2.0 Detector Count 50683 38852 27021	135  2 (C6+)	162 2- C	3	3	3000	0.75		Cycle Time: 0:00 /	(12:1 e:-20.27	Close
Yes 3 - NC5 N2-6 Detector T Count	135 2 (C6+) C:	162	100	3	3000	0.75		Cyde Time: 0:00 /	( 12: 1 e : -20.27	Amplitude

Peak Find Screen for C3-NC5 (Heavy Components)

eak Setup Pe	ak Table							1		Send Setup
Chrom Processing	Gate On	Gate Off	Slope(Run) Sample Periods	Slope(Rise) Det counts	Min. Peak Area	Front Height Ratio	^	N2-C2 (C6+)		Re-read
Yes	45	54	30	3	3000	0.75		Carrier Pressure Setpoint:	40	
Yes	54	82	30	3	3000	0.75	=	Sample Purge Time:	10	Profit angle cyc
Yes	82	101	60	3	3000	0.75		Sample Bleed Time:	5	Post Process
Yes	163	192	60	3	3000	0.75		Forward Flow / Inject Time:	245	
Yes	325	350	60	2		1		1		Help
		CORP. Construction	00	3	3000	0.75		Backflush / Reverse Time:	460	· · · · · ·
No 3 - NC5 N2-C Detector	0 2 (D6+)	0	0	0	0	0.75		Backflush / Reverse Time: Cycle Time: 0:00 / Time	460 12: 1 62.50 Am	Close
No 3 - NC5 N2C Detector Count 129089 96828 94863	2 (06+)	0 C1		0	0 0	0.75		Backflush / Reverse Time: Cycle Time: 0:00 / Time:	460 12: 1 62.50 Am	Close

Peak Find Screen for N2-C2 (C6+) (Light Components)

#### **Troubleshooting Clues:**

#### **Clue:** Unnormalized total is not ±0.5% of 100% Possibility: • Carrier pressure set points are out of

• 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 to be 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. However, for the oven and other components to fully stabilized, ABB Totalflow recommends that the unit be allowed a warm up period of eight (8) hours. The end caps should be installed during this period and during normal processing. Based on ambient temperatures and not having the end caps installed could impede the oven temperature from stabilizing at  $60^{\circ}$  C ( $140^{\circ}$  F).

#### **Carrier Pressure Set Point**

The NGC8106 has two column trains. Each has its own carrier pressure regulator. Tests show that if nC5 on Column 1 elutes at approximately 200 seconds and C2 on Column 2 elutes at approximately 180 seconds, the unit performs best. 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 times, the user may prefer to change the carrier pressures. However, changing the carrier pressures will move the other peaks. As such, the user will need to perform another Peak Find.

To change carrier pressures, the device 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.

Units will vary some from one to another; however, it is surmised that one (1) PSI change will move the nC5 or C2 peak 10 – 12 seconds. Increase pressure to decrease the time 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 12 minutes). Repeat this process until the preferred results are achieved.

**Note:** In the Peak Find screen, changes to Gate Times and Peak Labeling may be seen immediately by selecting Post Process. All changes in the Pressure or Time windows are reflected following a Run Single Cycle.

#### Gating Peaks

In the Peak Find screen, locate the Gate On and Gate Off times within the Peak Setup table. These parameter values instruct the process when to start and stop looking for peaks. Each Gate On/Gate Off time applies the parameters in its corresponding 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, and click the Send Setup button. Upon completion, select Post Process to see the 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. Within the Peak Find screen, zoom in on the chrom. Place a cursor inside of the peak, rightclick on it, select a component for that peak from the drop-down menu and click the Label Peak button. Continue this until all peaks are labeled.

Click the Send Setup button, and the select 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 Peak Find screen. Upon completion, click the Send Setup button, and run a single cycle. Repeat as necessary. If Cal Blend component concentrations IC5 and NC5 are similar, the peak areas should be within 3% of each other. If using a standard blend, IC5 and NC5 are approximately 0.1%.

If water is a problem, the user may need to increase the Backflush/Reverse Time. For additional information, see the Troubleshooting chapter in the NGC8106 User's Manual.



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