Hidden Gems with Scion 436/456 Gas Chromatograph User Interface

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Routine operations with Scion 436/456 Gas Chromatographs are quite easy to set up parameters for column temperature, injector settings and detector entries. The following is a discussion of hidden gems that may not be obvious of their usefulness.

1. Single screen displays status of all thermal zones – click on any moves screen to full parameters





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icion_GC (10.2.128.6)	-GC Method Run: 10.53 E	nd 13.00 Z	Ť Q
End 13.00	Oven 9	90.0 °C	×
10.53			▲ 厚
		•) 🗗
Status Run	T Signals		✓ 🗗
n Vial	- Front FID	56 µV (7)	89-1
-	Mid TCD 9	.940 mV	560
Force Standby		Method	
		Log	
6 0	0 💿 0	9	STRUMENTS

2. Temperature programming profile displayed on Home screen.

3. "System Running" icon displayed on Home screen.



4. Ethernet connection confirmed in upper right corner of Home screen.

t STAT	US	MSWS 45X-GC M	ethod Run: 0.	86 End 20	✓ …	÷ 0	
Instru	iment	External I/O		4		<u> </u>	
	Status	Run	ColumnOven	Ready	2582		
Front Front	● EFC23	Ready	 FID EFC11 Methanizer 	Ready Ready Ready			-
🗗 мід	EFC23	Ready	TCDEFC14	Ready Ready	\`.		
P Rear	● LargeVak	veOven Ready		Log			

Tools Help							
s_Gas_Analyzer [10.2.128.5]	0						
DETECTOR	MSWS 45X	-GC Method	Run: 6.22	End: 20.00	2 222	Ť O	
ρ FID	🗗 TCD				000	<u>*</u> ¥	
Actual	120 °C	Signal	432	μν 🦷	atu		
Enable Electronics Femperature Flameout Threshold	Σ 120 ℃ 300 μ∨	Time Rar > Initial 12	nge Autozero			▲ ┣ ● ┣	
Fime Constant	Fast 📩	EFC11	Enable Set	Actual		- 🖻	
Methanizer Femperature 3 Enable F	Set Actual 180 380 °C 🗸	MakeUp Combustion Combustion	He 13.0 H _a 20.0 Air 300.0	13.0 mL/min 20.0 mL/min 300.0 mL/min	7(8 9 - 1 5 6 ←	
)	Ignite	Clear Autozero	Autozero			
	0 0	0				3	_

5. Complete remote entries through full keyboard/display with GC Remote Access

6. Setup is accessible at any time, even while running, and does not interrupt normal operations.



7. Changes available for display formats though Preferences.

PREFERENCES		
Set Language Pressure Display Units Temperature Display Units	English psi °C	9 9 9
Date Format	Ok	Cancel

PREFERENCES		
Set Language Pressure Display Units Temperature Display Units Date Format	English ภาษาไทย Español Pycский Português Polski 한국어 日本語	Cancel

8. Twelve Languages are available for displays.



9. Reboot gas chromatograph from keyboard by accessing system time/date. Useful when accessing through GC Remote.

	a none consistent	agenerate i comerche		ñññ Ť 🛇
Configuration	Sample Delivery	Oven	Column	
General	Injector	All EFC	System	🔲 🖾 💥
Change date ar	nd time settings			
Date	(day/month/year) 2	6 /07 /2020		
Time	(hour min sec) 1	2 :02 :07		
🚹 Changes	require a system	reboot after setu	p is completed.	
1 Changes	require a system	reboot after setu Ok	p is completed.	
Changes	require a system	reboot after setu Ok	p is completed.	

GC Remote Control File Tools Help				-		×
	MSWS 45X-GC Method	Run: 16.1	4 End: 20.00 E	ñññ Ť	0	
Enc 20.0		Oven	60.0 °c	un (71	*	
Status		Signals		< _)	F F	
Ö Vial	_ Front Mid	FID TCD	58 μV 12.485 mV	789		
Force Standby			Method	(1) 2) 3 (1) 2) 3 (1) 2) 3	5	
	600	• •				TS

10. Elapsed Time Indication from Home Screen. Clicking on center converts display to time remaining

11. Time remaining displayed.



12. Instrument keyboard active during run, allowing changes to parameters and timing of parameters not yet executed.

DETECTOR	MSWS 45X	-GC Method	Run 622 End	20.00		
T FID	Л ТСD			<u> </u>	ōōō _	<u>į</u>
Actual	120 *0	Signal	432	μV Θ	atte	□ 🗙
Enable Electronics Temperature Flameout Threshold	⊽ 120 ℃ 300 μ∨	Time Rang > Initial 12	ge Autozero		`	₽ ₽
Time Constant	Fast 💌	EFC11	Enable 🔽	•	~	E
Methanizer Temperature 3 Enable F	Set Actual 80 380 *C	MakeUp Combustion Combustion	He 13.0 13.0 H _a 20.0 20.0 Air 300.0 300.0	mL/min mL/min) mL/min	78 (4) (5)	9 → ● ↓
		Ignite	Clear Autozero Au	tozero	12 +/-0	

on_GC (10.2.128.6)]							
OVEN	MSWS 45X-GC M	ethod	Run: 8.62	End: 20.00	ñññ	т 🕥	
☐ Large∀alveOven	ColumnOven				000		
Set 60.0 °C	Actual 6	0.0 °C		•	sitte		
Enable	V						
Stabilization Time	0.20 min						
Step Temp	o. Rate	Hold)局	
(°C)	(°C/min)	(min)	m		े ५		
initiai C		20.0	~			<u> </u>	
					~		
			Total	20.00 min	7(8)9→	
					(4)(5	→ () (
					ÖĞ		
End Stabilization							
				Log	(+/-) (C))년	

13. Chromatogram end time adjusted while running with column oven hold time

14. Default method - automatically loaded on power up. Default method is set up by renaming and saving an existing method as "Default".



File Tools Help METHODS MSWS 45X-GC Method Run: 0.00 ōōō <u>Ť</u> <u>©</u> MSWS 45X-GC Method Enter ostiz 0 Del 2 3 4 5 6 7 8 9 昬 w q θ r t V u р > ₽ 15. Alphanumeric labeling of instrument E а s d h g methods becomes available when n z х с v b m 789→ Caps Clear 456 ← 123 Cancel ₩0.H Active method Log 6 0 0 • 0

File Tools Help Scion_GC [10.2.128.6] ŌŌŌ Ť 0 Last Saved at otto 9/07/2019 23:23:1 × ault Method Method 昏 ₽ F Active method MSWS 45X-GC Method Last Saved at 26/07/2020 14:04:58 789-1 Load 456← Standby Standby method Standby Method 123 Select method ₩00.4 Standby method Log 6 0 0 0

method is saved.

16. Standby Method can be used to save resources during the time that the GC is idle. It is possible to set temperature and gas flow settings to save gas supplies and energy.

17. Standby method is set up by renaming and saving an existing method as "Standby Method".



18. If the 436-GC/456-GC is idle for more than the Standby Timeout setting, the Standby Method is activated.

SETUP	MSWS 45X-GC Me	thod	Run: 14.71	End 20.00 2		Ŧ	
Detector Configuration	Injector Sample Delivery	Aux EFC Oven		System Column	000	<u> </u>	2
ColumnOven Temperature Limit Coolant Type General Standby Timeout	300 °C - •				• •		< ⊨ ⊨
Rear LargeVal Temperature Limit	lveOven 200 *C					- 1	
		_	Ok	Cancel	7 (4) (1) (+-)	89- 56- 23-	

🐨 GC Remote Control	×
File Tools Help	
Lature Gas_Modipier [10.2128.5] OPERATION MSWS 45X-GC Method Run: 0.00 End: 20.00 Z	000 <u>v</u>
End 20.00	■ ■ ×
0.00	▲ 厚
	<) F
Status Ready I Signals	✓ 🗗
6 Vial Front FD 19 µV	(7)8)9→1
Force Standby	456-
Force Standby Method	
Log	0000
6 6 6 🕞 0	

19. Manual activation of Standby from Status Screen.

20. Full access to Setup while running allows a peek at Setup parameters.



21. Full access to method parameters while running. Changes are allowed for parameters yet to be executed in run.

- GC Remote Control File Tools Help		- a x
Lotus_Gas_Analyzer [10.2:128.5]		
🕴 OVEN	MSWS 45X-GC Method Run: 5.51 End: 20.00 🝾	333 Ť (0)
ColumnOven		000 <u>v</u> ¥
Set 45.0 °C	Actual 46.4 °C	🔤 🍱 🔆
Enable Stabilization Time	✓ Coolant ✓ 0.50 min Start Coolant at 250 ℃	▲ F
Step Temp. (°C) Initial 45	Rate Hold ("C/min) (min) 0 20.00	< _ > == ==
End Stabilization	Total 20.00 min	789 466 123 +++++++++++++++++++++++++++++++++++
G		

GC Remote Control					-	0.0
e Tools Help						
on_GC [10.2.128.6]						
SETUP	MSWS 45X-GC Me	thod Run: 4	.21 End: 13.00	2 888	Ť	0
Detector	Injector	Aux EFC	System	000	-Y	¥.
Configuration	Sample Delivery	Oven	Column		1999	2/
ColumnOven				stra	-	ð.
Temperature Limit	300 °C					
Coolant Type						_
General				_ / /	~ 1	∃+-
Standby Timeout	0.00 min			•		.
· Dese Level/el				`.		_
- Ci Kear Large van	weoven				• 1	
Temperature Limit	200 °C					
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				Q	000	5
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					23	
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				LVY		
	0 0 0				0	_
				9	501	

22. User-selectable separate settings for maximum temperature limits for each thermal zone. These parameters set the range available for entries and triggers a fatal error that shuts down operations when exceeded until issue is corrected.

23. Current status of all valve actions. Display is updated as the run proceeds.



- 24. FID Ignitor enabled only when detector temperature > 100 °C. This delay allows this detector to reach an adequate temperature to prevent accumulation of liquid water inside detector.
- 25. Automatic one minute delay after FID ignition. Status is displayed as "Equilibrating" with no specific indication of cause for delay. This deferment permits the detector to stabilize after ignition.
- 26. Each thermal zone has independent user-settable temperature maximums to protect from exceeding design limits.



27. Manual syringe injection without removal of 8400 AutoSampler.



28. Numerical counter for number of syringe strokes.





29. Plunger Stroke Warning Limit. This alert indicates timing for replacement of septum or syringe after a predetermined number.

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