

Thermo Scientific

TRACE GC Ultra

Gas Chromatograph

Preventive Maintenance Schedule

PN 31709280, Revision May 2010



TRACE™ GC Ultra Preventive Maintenance Schedule

May 2010 Edition

Part Number 317 092 80

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Reference to System Configurations and Specifications supercede all previous information and are subject to change without notice.

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Manufacturer: *Thermo Fisher Scientific*

Thermo Fisher Scientific is the manufacturer of the instrument described in this manual and, as such, is responsible for the instrument safety, reliability and performance only if:

- installation
- re-calibration
- changes and repairs

have been carried out by authorized personnel and if:

- the local installation complies with local law regulations
- the instrument is used according to the instructions provided, and if its operation is only entrusted to qualified, trained personnel

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About This Manual

Overview

This document provides a recommended schedule of preventive maintenance and a 52-week instrument log for recording all maintenance performed on the TRACE GC Ultra.

This manual contains the following parts:

Suggested Maintenance Schedule lists the recommended maintenance schedule for the TRACE GC Ultra.

52 weeks of *Daily/Weekly Maintenance Logs* with *Notes* and *Supplies Needed* pages

Two *Semiannual Maintenance Logs*

One *Annual Maintenance Log*

One *Biannual Maintenance Log*

Two *Service Records*

The logs list the recommended maintenance items and leave spaces for you to record additional procedures.

Appendix **A**, *Customer Communication*, contains contact information for Thermo Fisher Scientific offices worldwide. Use the *Reader Survey* in this section to give us feedback on this manual and help us improve the quality of our documentation.

Using the TRACE GC Ultra Document Set

The TRACE GC Ultra Document Set (CD-Rom PN 317 095 00) includes all manuals in electronic format, and serves as your library for information about the TRACE GC hardware and software.

The TRACE GC Ultra Document Set (PN 317 093 00) as paper copy is also available. Furthermore, Thermo Fisher Scientific part numbers (PN) for the paper copy manuals are provided for each book title.

Site Preparation and Installation Manual (PN31709190)

This manual describes how to set up a workspace for the TRACE GC Ultra and how to connect the TRACE GC Ultra to the gas supplies and peripheral devices. It also contains a list of spare parts. An online help version of this manual is provided also.

Acceptance Package (PN 31709220)

This folder contains required shipping documents and quality report forms.

Getting Started (PN 31709230)

This guide contains procedures for checking configuration, installing detectors, and making a first analysis with the TRACE GC Ultra.

Operating Manual (PN 31709170)

This manual provides descriptions of the TRACE GC Ultra hardware and software and instructions for their use. It also contains the instrument warranty.

UFM Ultra Fast Module Device (PN 317 093 87)

This manual provides descriptions of the TRACE GC Ultra equipped with the UFM device. and instructions for it use.

Quick Reference Template (PN 31709240)

This reference card contains guidelines for carrier gas use and injection procedures.

K-Factor Quick Reference (P/N 317 09241)

This card indicates the theoretical K-Factor related to the carrier gas and the column in use.

Preventive Maintenance Schedule (PN 31709280)

This document provides a list of recommended scheduled maintenance and a year-long log book to record maintenance, observations, supply lists, and service records.

Maintenance and Troubleshooting Guide (PN 31709180)

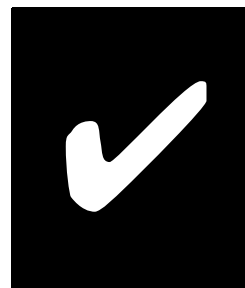
This manual contains instructions for diagnosing and resolving operational problems.

Standard Operating Procedures (PN 31709200)

This guide contains instructions for determining the quality of the TRACE GC Ultra's performance.

Spare Parts Catalog (PN 31709210)

This catalog contains the list of the spare parts for the TRACE GC Ultra System.



Suggested Maintenance Schedule

This chapter lists the recommended maintenance schedule for the TRACE GC Ultra. Preventive maintenance keeps your instruments running at peak performance. The recommended maintenance schedule shown in Table 1-1 on page 12 is based on a GC running multiple samples in an 8-hour day. You may need to adapt the schedule to your situation depending on:

- the number of analyses per day
- how clean the samples are
- condition of the autosampler syringe needle
- environmental conditions such as dirt and ambient temperature

Septa degrade over time. Different types will degrade at varying rates. Factors affecting septa life include:

- number of samples injected
- injector temperature
- condition of the syringe needle

Our recommendations for septa replacement are based 200 injections in a Thermo Fisher Scientific standard septum. Septa from other manufacturers may show different rates of degradation.

Make sure you not only perform each scheduled item, but that you record it as well, along with any observations about instrument performance. Your records and notes can be invaluable when trying to trace a service problem.

Suggested Maintenance Schedule

In addition to the routine and preventive maintenance that you perform, we recommend annual inspections by Thermo Fisher Scientific customer service engineers. These yearly checkups ensure that your instrument remains in peak condition.

Table 1-1. Standard Maintenance Schedule

Frequency	Task
Daily	Run leak test. Run performance check standard as required by method. Run calibration curve as required by method. Note gas pressure when the weekly pressure check shows it to be below 5000 kPa (50 bar or 750 psig).
Weekly	Change injector liner. Check pressure of gas cylinders. Replace the cylinder when its pressure drops below 3500 kPa (35 bar or 500 psig). Change S/SL septum. Change PTV septum. Change OC septum (AS 2000).
Monthly	Check for leaks from the primary gas supply to the GC.
Semiannually	Regenerate the S/SL inlet vent line trap. Regenerate the PTV inlet vent line trap. Replace FID jet. Clean FPD windows and stainless steel mirror. Clean PID cell and UV lamp window. Replace NPD source and clean collector. Clean or replace ECD collector. Recondition or replace internal and external traps.
Annually	Clean FID collector. Replace PID lamp. Regenerate carrier gas and split lines active carbon filters.
Biannually	Replace FPD photomultiplier. Clean or replace ECD source. ¹
As required by local law	Perform wipe test on ECD .

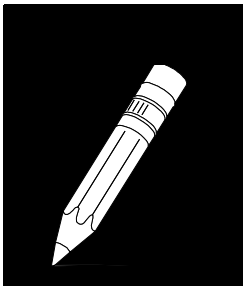
1. Only a licensed laboratory can perform this operation.



Your Contacts

Local Sales Office _____

Thermo Fisher Scientific Service Engineer _____



Notes

Log

Week of _____

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum.								

Comments/Observations

Week of _____

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum.								

Comments/Observations

Week of _____

		Maintenance	M	T	W	T	F	S	S	Operator
Daily	Run leak test.									
	Run performance check standard as required by method.									
	Run calibration curve as required by method.									
	Note gas when below 5000 kPa/50 bar/750 psig.									
Weekly	Check gas pressure at cylinder.									
	Change injector liner.									
	Change S/SL septum.									
	Change PTV septum.									
	Change OC septum.									

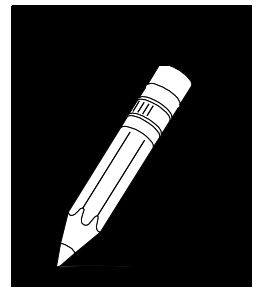
Comments/Observations

Log, Week #4

Week of _____

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change OC septum.								
	Change PTV septum.								
Monthly Maintenance:		Checkpoints & Dates							
	Check for leaks from primary gas supply to GC.								

Comments/Observations



Notes



Supplies Needed

Log

Week of _____

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change OC septum.								
	Change PTV septum.								

Comments/Observations

Week of _____

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum.								

Comments/Observations

Week of _____

		Maintenance	M	T	W	T	F	S	S	Operator
Daily	Run leak test.									
	Run performance check standard as required by method.									
	Run calibration curve as required by method.									
	Note gas when below 5000 kPa/50 bar/750 psig.									
Weekly	Check gas pressure at cylinder.									
	Change injector liner.									
	Change S/SL septum.									
	Change PTV septum.									
	Change OC septum.									

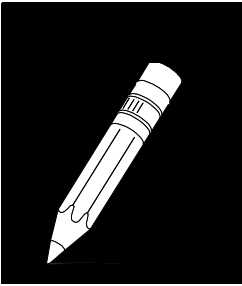
Comments/Observations

Log, Week #8

Week of _____

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum.								
Monthly Maintenance:		Checkpoints & Dates							
	Check for leaks from primary gas supply to GC.								

Comments/Observations



Notes



Supplies Needed

Log

Week of

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum.								

Comments/Observations

Week of _____

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum.								

Comments/Observations

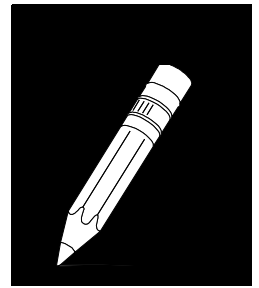
Week of _____

		Maintenance	M	T	W	T	F	S	S	Operator
Daily	Run leak test.									
	Run performance check standard as required by method.									
	Run calibration curve as required by method.									
	Note gas when below 5000 kPa/50 bar/750 psig.									
Weekly	Check gas pressure at cylinder.									
	Change injector liner.									
	Change S/SL septum.									
	Change PTV septum.									
	Change OC septum.									

Comments/Observations

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change OC septum.								
Monthly Maintenance:		Checkpoints & Dates							
	Check for leaks from primary gas supply to GC.								

Comments/Observations



Notes



Supplies Needed

Log

Week of

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum.								

Comments/Observations

Week of _____

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum.								

Comments/Observations

Week of _____

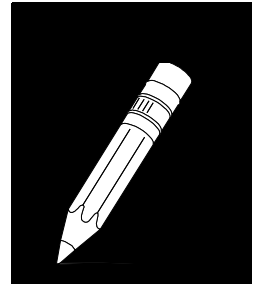
		Maintenance	M	T	W	T	F	S	S	Operator
Daily	Run leak test.									
	Run performance check standard as required by method.									
	Run calibration curve as required by method.									
	Note gas when below 5000 kPa/50 bar/750 psig.									
Weekly	Check gas pressure at cylinder.									
	Change injector liner.									
	Change S/SL septum.									
	Change PTV septum.									
	Change OC septum.									

Comments/Observations

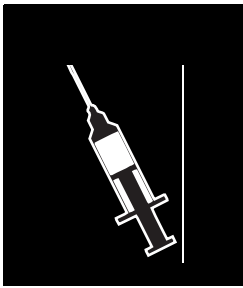
Week of _____

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum.								
Monthly Maintenance:		Checkpoints & Dates							
	Check for leaks from primary gas supply to GC.								

Comments/Observations



Notes



Supplies Needed

Log

Week of

		Maintenance	M	T	W	T	F	S	S	Operator
Daily	Run leak test.									
	Run performance check standard as required by method.									
	Run calibration curve as required by method.									
	Note gas when below 5000 kPa/50 bar/750 psig.									
Change PTV septum.	Check gas pressure at cylinder.									
	Change injector liner.									
	Change S/SL septum.									
	Change PTV septum.									
	Change OC septum.									

Comments/Observations

Week of _____

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum.								

Comments/Observations

Week of _____

		Maintenance	M	T	W	T	F	S	S	Operator
Daily	Run leak test.									
	Run performance check standard as required by method.									
	Run calibration curve as required by method.									
	Note gas when below 5000 kPa/50 bar/750 psig.									
Weekly	Check gas pressure at cylinder.									
	Change injector liner.									
	Change S/SL septum.									
	Change PTV septum.									
	Change OC septum.									

Comments/Observations

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum.								
Monthly Maintenance:		Checkpoints & Dates							
	Check for leaks from primary gas supply to GC.								

Comments/Observations



Supplies Needed

Log

Week of

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum.								

Comments/Observations

Week of _____

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum.								

Comments/Observations

Week of _____

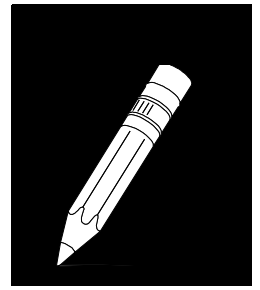
		Maintenance	M	T	W	T	F	S	S	Operator
Daily	Run leak test.									
	Run performance check standard as required by method.									
	Run calibration curve as required by method.									
	Note gas when below 5000 kPa/50 bar/750 psig.									
Weekly	Check gas pressure at cylinder.									
	Change injector liner.									
	Change S/SL septum.									
	Change PTV septum.									
	Change OC septum.									

Comments/Observations

Week of _____

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum.								
Monthly Maintenance:		Checkpoints & Dates							
	Check for leaks from primary gas supply to GC.								

Comments/Observations



Notes



Supplies Needed

Log

Week of _____

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum.								

Comments/Observations

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum								

Comments/Observations

Log

Semiannual

	Semiannual Maintenance	Date	Operator
Standard Semiannual	Regenerate the S/SL inlet vent line trap.		
	Regenerate the PTV inlet vent line trap.		
	Replace FID jet.		
	Clean FPD windows and stainless steel inner cell surface.		
	Clean PID cell and UV lamp window.		
	Replace NPD source and clean collector.		
	Replace ECD collector.		
	Recondition or replace internal and external traps.		
Customized Semiannual			
	Perform wipe test on ECD when required by local law.		

Comments/Observations

Service Record

User/Operator _____

Service Person _____

Instrument Serial # _____ Date _____

Service Issue

Actions Taken

Results

Parts Used

Part Description	Part #	Rev./Date Code	Serial #

Log

Week of _____

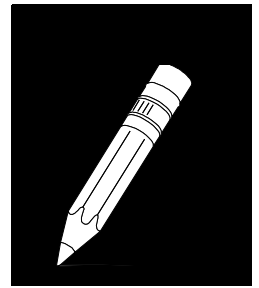
Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum.								

Comments/Observations

Week of _____

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum.								
Monthly Maintenance:		Checkpoints & Dates							
	Check for leaks from primary gas supply to GC.								

Comments/Observations



Notes

Log

Week of _____

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum.								

Comments/Observations

Week of _____

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum.								

Comments/Observations

Week of _____

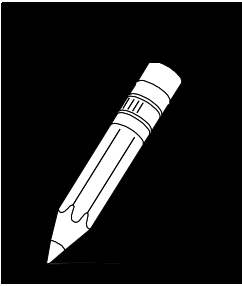
		Maintenance	M	T	W	T	F	S	S	Operator
Daily	Run leak test.									
	Run performance check standard as required by method.									
	Run calibration curve as required by method.									
	Note gas when below 5000 kPa/50 bar/750 psig.									
Weekly	Check gas pressure at cylinder.									
	Change injector liner.									
	Change S/SL septum.									
	Change PTV septum.									
	Change OC septum.									

Comments/Observations

Week of _____

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum								
	Change OC septum.								
Monthly Maintenance:		Checkpoints & Dates							
	Check for leaks from primary gas supply to GC.								

Comments/Observations



Notes



Supplies Needed

Log

Week of

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum.								

Comments/Observations

Week of _____

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
	Run calibration curve as required by method.								
	Note gas when below 5000 kPa/50 bar/750 psig.								
Weekly	Check gas pressure at cylinder.								
	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum.								

Comments/Observations

Week of _____

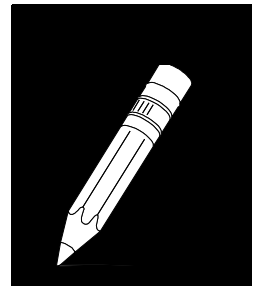
		Maintenance	M	T	W	T	F	S	S	Operator
Daily	Run leak test.									
	Run performance check standard as required by method.									
	Run calibration curve as required by method.									
	Note gas when below 5000 kPa/50 bar/750 psig.									
Weekly	Check gas pressure at cylinder.									
	Change injector liner.									
	Change S/SL septum.									
	Change PTV septum									
	Change OC septum.									

Comments/Observations

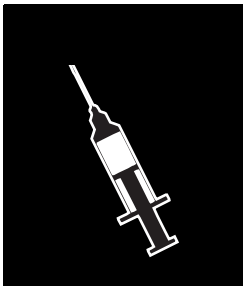
Week of _____

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Daily	Run leak test.								
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	Change injector liner.								
	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum.								
Monthly Maintenance:		Checkpoints & Dates							
	Check for leaks from primary gas supply to GC.								

Comments/Observations



Notes



Supplies Needed

Log

Week of _____

Maintenance		M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
	Run performance check standard as required by method.								
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Comments/Observations

Week of _____

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Comments/Observations

Week of _____

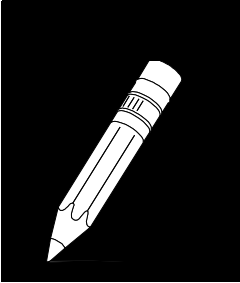
		Maintenance	M	T	W	T	F	S	S	Operator
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Comments/Observations

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Monthly Maintenance:		Checkpoints & Dates							
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Comments/Observations



Notes

Log

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Comments/Observations

Week of _____

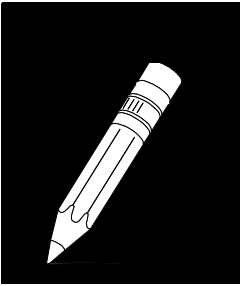
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Comments/Observations

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Monthly Maintenance:		Checkpoints & Dates							
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Comments/Observations



Notes



Supplies Needed

Log

Week of

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Comments/Observations

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Comments/Observations

Week of _____

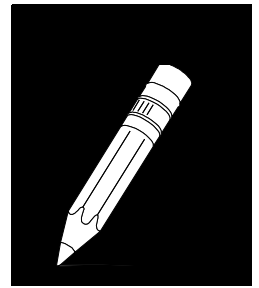
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Comments/Observations

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Monthly Maintenance:		Checkpoints & Dates							
	Check for leaks from primary gas supply to GC.								

Comments/Observations



Notes



Supplies Needed

Log

Week of

	Maintenance	M	T	W	T	F	S	S	Operator
Daily	Run leak test.								
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Comments/Observations

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Comments/Observations

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Comments/Observations

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	Change S/SL septum.								
	Change PTV septum.								
	Change OC septum.								
Monthly Maintenance:		Checkpoints & Dates							
	Check for leaks from primary gas supply to GC.								

Comments/Observations

Log

Semiannual

Semiannual Maintenance		Date	Operator
Standard Semiannual	Regenerate the S/SL inlet vent line trap.		
	Regenerate the PTV inlet vent line trap.		
	Replace FID jet.		
	Clean FPD windows and stainless steel inner cell surface.		
	Clean PID cell and UV lamp window.		
	Replace NPD source and clean collector.		
	Replace ECD collector.		
	Recondition or replace internal and external traps.		
Customized Semiannual			
	Perform wipe test on ECD when required by local law.		

Comments/Observations

Service Record

User/Operator _____

Service Person _____

Instrument Serial # _____ Date _____

Service Issue

Actions Taken

Results

Parts Used

Part Description	Part #	Rev./Date Code	Serial #

Log

Annual

Annual Maintenance		Date	Operator
Standard	Clean FID collector.		
	Replace PID lamp.		
Customized Annual			
	Regenerate carrier gas and split lines active carbon filters.		
	Perform wipe test on ECD when required by local law.		

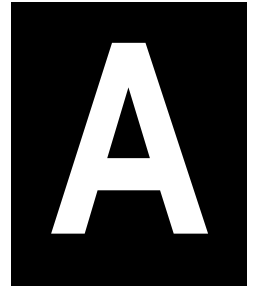
Comments/Observations

Log

Biannual

	Biannual Maintenance	Date	Operator
Standard	Replace FPD photomultiplier.		
	Have a licensed laboratory clean or replace ECD source.		
Customized Biannual			
	Perform wipe test on ECD when required by local law.		

Comments/Observations



Customer Communication

Thermo Fisher Scientific provides comprehensive technical assistance worldwide and is dedicated to the quality of our customer relationships and services.

This appendix also contains a one-page *Reader Survey*. Use this survey to give us feedback on this manual and help us improve the quality of our documentation

How To Contact Us

Use http://www.thermo.com/com/cda/resources/resource_detail/1,,12512,00.html address for products information.

Use <http://www.gc-gcms-customersupport.com/WebPage/Share/Default.aspx> address to contact your local Thermo Fisher Scientific office or affiliate GC-GC/MS Customer Support.

Reader Survey

Product: TRACE GC Ultra
Manual: Preventive Maintenance Schedule
Part No.: 317 092 80

**Please help us improve the quality of our documentation by completing and returning this survey.
 Circle one number for each of the statements below.**

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The manual is well organized.	1	2	3	4	5
The manual is clearly written.	1	2	3	4	5
The manual contains all the information I need.	1	2	3	4	5
The instructions are easy to follow.	1	2	3	4	5
The instructions are complete.	1	2	3	4	5
The technical information is easy to understand.	1	2	3	4	5
Examples of operation are clear and useful.	1	2	3	4	5
The figures are helpful.	1	2	3	4	5
I was able to install the system using this manual.	1	2	3	4	5

If you would like to make additional comments, please do. (Attach additional sheets if necessary.)

Fax or mail this form to:

Thermo Fisher Scientific S.p.A.
 Strada Rivoltana km 4
 20090 Rodano (MI)
 ITALY
 Fax: 39 02 95059388