Finnigan PolarisQ
Preinstallation Guide

PN 120011, Revision D

Thermo
ELECTRON CORPORATION

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Finnigan PolarisQ Preinstallation Checklist

120011 Revision D

Remove this sheet and use it as a guide while preparing your site for the Finnigan PolarisQ system installation. First, make sure that your site meets all the requirements listed in this guide. Then request installation by returning this completed form to your local Thermo Electron Product/Customer Support office.

1. Complete the checklist below and answer the questions.

Refer to the related topic in this guide for more information about each step.

- ❑ All items in *Entrance Requirements, pp.10* are met.
- ❑ All items in Workbench & Space Requirements, pp.11 are met.
- ❑ All items in Lighting Requirements , pp.14 are met.
- ❑ All items in Power Requirements , pp.15 are met.
- ❑ Inform your local customer service office of the plug types in your lab, so they can bring the proper power cords or a 230 V plug.
- ❑ All items in Gas Equipment Requirements , pp.20 are met.
- ❑ All items in Solvent Requirements , pp.23 are met.
- ❑ All items in Environment Requirements , pp.24 are met.
- ❑ All items in Telephone Requirements , pp.27 are met.
- ❑ I have read and understood the information contained in Receiving Instructions, pp.28.
- ❑ I have read and understood the information contained in What Happens Next?, pp.30.
- ❑ All relevant safety regulations are met.
- ❑ The principal operator will be available during the installation / certification period.

Fold

Have any special acceptance specifications been agreed within the contract? If YES please attach full details of specifications.	Yes	No
Is there any additional equipment that needs to be interfaced to the system? If YES please supply details.	Yes	No
Are there any special precautions that an engineer should take when on site? If YES please supply details.	Yes	No

Note If the laboratory is not ready for the installation when the engineer arrives, we reserve the right to invoice for the engineer's time. ▲

2. Request installation.

Once you have completed the checklist, fill out the form below and fax or mail this page to your local **Thermo Electron Product Support/Customer Service** office. If you are not sure where to send this form, FAX this form to (Marketing USA) 512-251-1597.

Name _____
Title _____ _____
Company _____
Address _____
City/State/Postal Code _____
Country _____
Telephone _____ Fax _____
Finnigan PolarisQ Serial # _____
Date purchased _____
THERMO Electron Signature/Date _____

From _____

_____

_____

_____

PLACE
STAMP
HERE

Editor, Technical Publications
THERMO ELECTRON Corporation
2215 GRAND AVENUE PKWY
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About This Guide

This guide contains preinstallation requirements that must be in compliance before your instrument can be installed.

Thermo Electron Finnigan PolarisQ systems operate reliably under carefully controlled environmental conditions. If you maintain a system outside the specifications listed in this guide, failures of many types may occur. The repair of such failures is specifically excluded from the Standard Warranty and service contract coverage.

Who Uses This Guide

At the time you purchased your system, your sales representative should have left you this preinstallation guide to help you prepare your laboratory for the arrival and installation of your system.

How to Use This Guide

Before you get started, take the time to review and tear out the Preinstallation Checklist located in the front of the book. Follow the instructions before scheduling your instrument installation. Each item on the Preinstallation Checklist must be in compliance and checked off before the Field Service Engineer arrives. Having a completed checklist helps Customer Service get your system installed quickly and properly. If any item on the checklist is not completed prior to installation, additional customer service visits and fees may be required.

For More Information

Some information refers to the continental USA exclusively. Assurances and specifications might differ in other locations. Specific details are available from your regional Thermo Electron Tech Support office. If you have questions, contact the Thermo Electron Customer Service office assigned to your area.

Chapter 1 Site Preparation

This chapter contains detailed specifications to prepare your site before having the Finnigan PolarisQ system installed.

In This Chapter

Entrance Requirements

1. **See if your delivery doors are at least 102 cm (40 in.) across.**

2. **Consider any additional room you might need for moving the boxes around corners, into elevators, or through doorways.**

The MS detector, rotary-vane pump, and accessories are shipped in boxes with these approximate dimensions:

Table 1-1. Box Dimensions

Box	Length	Width	Height	Weight
MS detector, rotary-vane pump, and accessories	102 cm (40 in.)	102 cm (40 in.)	117 cm (46 in.)	185 kg (408 lbs)
Data System (computer)	These modules, such as the computer, monitor, gas chromatograph, and optional instruments are shipped in their own containers. Their dimensions and weights are less than those of the detector's container.			
Monitor				
TRACE GC Ultra				
Options				

Workbench & Space Requirements

This section will help you find a suitable location for your instrument.

Table 1-2. Workbench and Space Requirements

	Depth		Width		Height		Weight	
Instrument	**cm**	**in.**	**cm**	**in.**	**cm**	**in.**	**kg**	**lbs**
Finnigan PolarisQ MS	68	27	38	15	44	17	45	98
TRACE GC Ultra	65	25.5	61	24	44	17	48	105
Rotary Vane Pump[1,2]	45	18	20	8	25	10	24	52
Computer[1,2]	44.5	17.5	16.5	6.5	42	16.5	12	27
Monitor[2]	43	17	40	16	42	16.5	14	30
Keyboard[2]	18	7	47	18	2.5	1	1	2
AI/AS 3000 Autosampler[3]	30	12	40	16	48	19	6	13
TriPlus Autosampler[3]	50	19.7	54	21.3	87	34.3	25	56
Direct Sample Probe[4]	54	21	33	13	12	5	6	13

[1]This item is placed on the floor under the system, thereby reducing the weight requirements for your workbench.

[2]Dimensions vary per manufacturer, therefore approximations are provided.

[3]Mounts on top of GC.

[4]Sits on top or to the side of the MS.

1. **Determine if you have at least 2 m (6 ft.) of workbench space for a standard Finnigan PolarisQ System.**

This includes 98 cm (39 in.) for the MS and GC, 40 cm (16 in.) to the left of the MS for maintenance, and 47 cm (18 in.) for the monitor and keyboard.

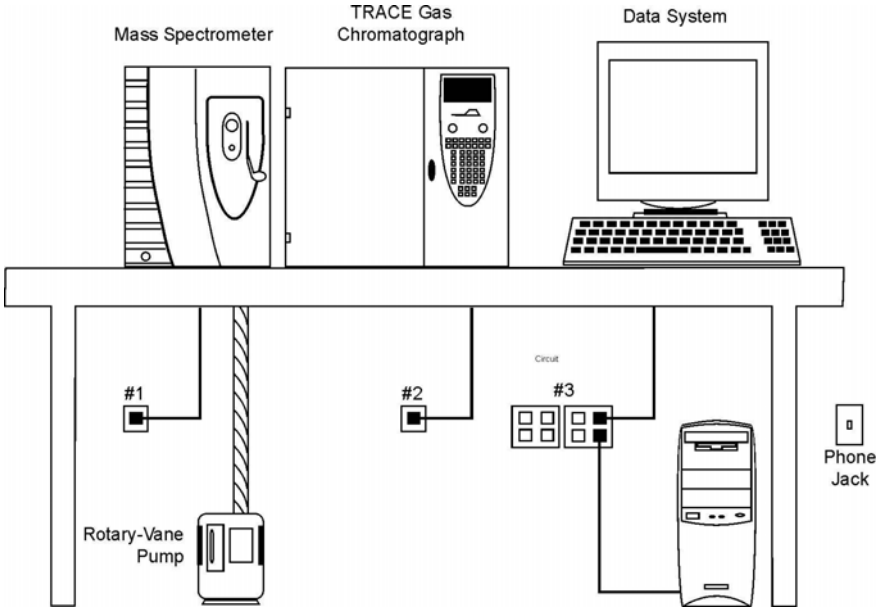


Figure 1-1. Finnigan PolarisQ System (Recommended Layout)

2. **Allow at least 20 cm (8 in.) of clearance behind the workbench.**

This space allows for proper air circulation, clearance of the gas lines, electrical connections, and horizontal movement of the TriPlus "Y" axis arm.

3. **Make sure you have least 92 cm (3 ft.) of clearance above the instrument.**

This allows room for optional accessories (such as autosamplers) and proper heat dissipation.

4. **Make sure your workbench supports at least 250 lbs (113 kg) for a standard Finnigan PolarisQ system.**

Keep in mind additional instruments add to the total weight.

5. **Ensure that your work area is stable and free from vibration, because the Finnigan PolarisQ system is a sensitive instrument.**

Be aware of vibrations caused by equipment located nearby. For example, place the rotary-vane pump on the floor, because it vibrates as it operates. The rotary-vane pump should never be on the same workbench as the instruments.

Lighting Requirements

1. **Ensure that your work area is properly lit.**

2. **Use an overhead lamp to light your work area.**

3. **Use a small, high-intensity lamp when you clean the Finnigan PolarisQ components.**

Power Requirements

The power quality supplied to your system is very important. It must be stable and within the minimum specifications listed in this section.

1. **Test the power source quality in your laboratory to offset line voltage problems.**

Improving power source quality is a complex task best handled by a company or consultant specializing in that field. Contact your regional Thermo Electron Customer Service office for assistance in locating a power consultant. Having a poor quality power source degrades Finnigan PolarisQ system performance. Here are some examples of poor power source quality:

- Harmonic Distortion causes noise in the power supply lines and degrades instrument performance. Harmonic distortion is a high-frequency disturbance that may affect operation of your Finnigan PolarisQ. This disturbance appears as distortion of the fundamental sine wave. Total harmonic distortion should be less than 6%. For more information, refer to the IEC 1000-2-2 (1990), pp. 9-13. However, the power specifications for the Finnigan PolarisQ system are more exact than those of the IEC.

- Sags are constant low line voltage, which cause the system to function erratically or not at all.

- Slow changes are gradual, long-term changes in average root mean square (RMS) voltage level, with typical durations greater than 2 s.

- Surges are constant high line voltage, which cause overheating and component failure. Sags and surges are slow changes in average root mean square (RMS) voltage level, with typical durations between 50 ms and 2 s.

- Transients, even of a few microseconds duration cause electronic devices to fail or to degrade and significantly shorten their lives. Transients (or impulses) are brief voltage excursions of up to several thousand volts with durations less than 50 ms.

2. **Get a UPS (Uninterruptible Power Supply) or power line conditioner if your laboratory's power source does not meet the specifications for the Finnigan PolarisQ.**

However, most UPS systems do not produce power that is within our specifications. Therefore, the only UPS approved for use on the Finnigan PolarisQ is the Toshiba 1400XL Plus rated at 6.0 kVA.

Table 1-3. UPS Ordering Information

UPS Type	International PN	North American PN
Toshiba 1400XL Plus rated at 6.0 kVa	BSM6.0ITQ	BSM6.0DTQ
Please make purchase orders to: Reliable Power Solutions PO Box 272658 Boca Raton, FL 33427-2658 Telephone: (800) 777-7434 Fax: (561) 750-1791		

3. Use Table 1-4 or Table 1-5 to determine how many circuits and wall outlets you need.

Keep in mind:

- Power must be single phase
- Wall outlets must have earth-ground hard-wired to the main panel
- Included power cords are at least 2 m (6 ft.) long

    a. Look at your Customer Sales Order to determine if the instrument is 120 V or 230 V, because it cannot be reconfigured once your field service engineer arrives.

    b. Contact your local customer service office to discuss power cordsets concerns.

Table 1-4. 120 VAC Requirements. 120 VAC +6/-10%, 50/60 Hz ± 2 Hz, Single-Phase < 6% Total Harmonic Distortion

Instrument	Circuit	Max. Current (A)	Max. Power (VA)	Power cord Provided[1]
Finnigan PolarisQ[2] MS (including rotary-vane pump)	1	15	1800	NEMA 5-20P to IEC 60320-C19 
TRACE GC Ultra[2]	2	16	1920	NEMA 5-20P to IEC 60320-C19 
Computer[3]	Additional (as needed)	5	600	NEMA 5-15P to IEC 60320-C13 
Monitor[3]	Additional(as needed)	2	240	NEMA 5-15P to IEC 60320-C13 
AI/AS 3000[4]	Additional (as needed)	0.8	95	NEMA 5-15P to IEC 60320-C13 
TriPlus Autosampler[4]	Additional (as needed)	2	240	NEMA 5-15P to IEC 60320-C13 
Direct Sample Probe	Additional (as needed)	1.3	160	NEMA 5-15P to IEC 60320-C13 

[1]Any suitable power cord can be used as long as it meets the voltage and current requirements and conforms to local electrical standards.

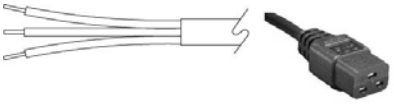
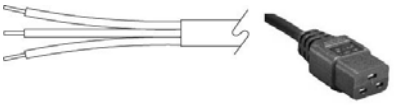
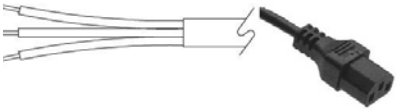
[2]This instrument must be on its own circuit.

[3]Only North American Cordset supplied from computer manufacturer.

[4]North American Cordset and Continental European Cordset supplied.

Note TRACE GC Ultra and Finnigan PolarisQ 230 VAC power cords terminate to bare wires. Inform your local customer service office as to your plug type so they can bring the proper power cord or plug. ▲

Table 1-5. 230 VAC Requirements: 230 VAC ±10%, 50/60 Hz ± 2 Hz, Single-Phase < 6% Total Harmonic Distortion

Instrument	Circuit	Max. Current (A)	Max. Power (VA)	Power cord Provided[1]
Finnigan PolarisQ[2] MS (including rotary-vane pump)	1	8	1800	Bare wires to IEC 60320-C19 
TRACE GC Ultra[2]	2	10	1920	Bare wires to IEC 60320-C19 
Computer[3]	Additional (as needed)	2.6	600	none
Monitor[3]	Additional (as needed)	1	240	none
AI/AS 3000[4]	Additional (as needed)	0.4	95	CEE 7/7 to IEC 60320-C13 
TriPlus Autosampler[4]	Additional (as needed)	1	240	CEE 7/7 to IEC 60320-C13 
Direct Sample Probe	Additional (as needed)	0.7	160	Bare wires to IEC 60320-C13 

[1]Any suitable power cord can be used as long as it meets the voltage and current requirements and conforms to local electrical standards.

[2]This instrument must be on its own circuit.

[3]Only North American Cordset supplied from computer manufacturer.

[4]North American Cordset and Continental European Cordset supplied.

4. **Make sure you have at least three (3) separate circuits. They should be within 2 m (6 ft.) of the instrument (see Figure 1-1).**

For example, use one circuit for the GC, one circuit for the Finnigan PolarisQ, and one circuit for the data system and any options. But, do not connect the GC and Finnigan PolarisQ to the same circuit. The extra outlets illustrated in Figure 1-1 are for additional options.

5. **Make sure that the instruments you plug in do not exceed the maximum circuits and amp rating.**

Refer to Table 1-4 or Table 1-5 for a list of maximum current and power consumption.

Gas Equipment Requirements

Provide the gas supplies for your system far enough ahead of time to have them ready for your installation.

1. Obtain the correct carrier gas and regulator.

You must provide a supply of ultra-high purity helium for the GC carrier gas. A single full-size tank is adequate for the typical flow of 30-50 mL/min. Typical cylinders are abut 23 cm (9 in.) wide by 140 cm (55 in.) tall and output >15,000 kPa (2200 psig.) A cylinder with about 8 m^3 of helium will last about three (3) months. You must also provide a suitable dual-stage stainless steel diaphragm regulator with a 1/8-in. Swagelok-type connector.

Table 1-6. Carrier Gas Specifications

Gas Type	Purity	Outlet Pressure	Regulator	Connector
Helium	99.999%[1]	400-700 kPa (60-100 psig)	Dual stage brass regulator with SS diaphragm. Use PN 116636-0580 or equivalent.	CGA-580

[1]Ultra-high purity with less than 1.0 ppm each of water, oxygen, and total hydrocarbons and contained in one tank.

2. [Optional] If necessary, obtain the correct CI Reagent Gas.

If your instrument is equipped with the chemical ionization (CI) option, you must provide Methane. Typical flow rates are only 1-3 mL/min, so smaller tanks such 0.1 m^3 can be used depending on your expected usage. You must also provide a suitable regulator (dual-stage is preferred) with a 1/8-in. Swagelok type connector.

Table 1-7. CI Gas Specifications

Gas Type	Purity	Outlet Pressure	Regulator	Connector
Methane	99.99% high-purity	35-240 kPa (5-35 psig)	Dual stage brass regulator with SS diaphragm. Use PN 116636-0350 or equivalent	CGA-350
Isobutane	99.9% instrument grade	35-240 kPa (5-35 psig),	Consult gas supplier for specific regulator requirements	CGA-510
Ammonia	99.99%, anhydrous grade	35-240 kPa, (5-35 psig)	Consult gas supplier for specific regulator requirements	CGA-240

CAUTION Do not exceed 240 kPa (35 psig) or damage to the CI reagent gas flow module may result. ▲

3. Obtain the correct compressed air, if necessary.

Compressed air is required to cool the Direct Sample Probe option. Refer to the Compressed Air specifications in this table before installation. Usage depends on how often the direct sample probe option is used. We recommend a full-size tank like the size of the helium cylinder. You must provide a single or dual-stage regulator with a 1/8-in. Swagelok type connector.

Table 1-8. Compressed Air Specifications

Gas Type	**Purity**	**Outlet Pressure**	**Regulator**	**Connector**
Direct Sample Probes	90%[1]	550-700 kPa (80-100 psig)	Dual stage brass regulator with SS diaphragm. Use PN116636-0590 or equivalent.	CGA-590

[1]Pure, particle and oil free, and contained in one tank.

4. [Optional] If necessary, obtain the correct cryogenic coolant.

If you have purchased a cryogenic cooling option for the GC and PTV injector, then you will need to provide a coolant supply like liquid nitrogen or liquid carbon dioxide. Be sure to specify to your coolant supplier the exact cryogenic cooling option your GC is configured for before you order cryogenic coolant.

Specific details for the TRACE GC Ultra is in the TRACE GC Ultra Site Preparation and Installation Manual. Contact Customer Support for an additional copy or go to Web address: http://www.thermo.com and type TRACE GC Ultra Manuals in the SEARCH box. This will link you to the latest release of TRACE GC Ultra gas requirements.

5. Check your gas lines if the tanks are not located within 2 m (6 ft.) of the instrument. Gas lines should be:

- As close as possible to the bench where the Finnigan PolarisQ system will be installed
- Copper or stainless steel for helium, methane, and isobutane
- Free of oil
- Free of moisture
- Stainless steel for ammonia

6. Obtain the correct gas line filters.

Gas line filters decrease impurities and contaminants from entering your system. Water, oxygen, and total hydrocarbons should be less than 1 ppm in all cases to avoid high background noise and contaminating the Finnigan PolarisQ system. Otherwise, you can use appropriate gas filters to purify the gas. The PolarisQ is supplied with a gas line filter.

7. Store gas tanks and bottles properly.

Store gas tanks or lecture bottles where they cannot damage cables or gas lines. Also be sure they are secured in accordance with standard safety practices.

Solvent Requirements

1. **Determine the solvent specifications to maintain and clean your system.**

Table 1-9. Solvent Specifications

Solvent	Grade
Acetone[1]	Reagent or HPLC Grade
Detergent	Alconox, Micro, or equivalent
Glycerol	Reagent Grade
Methanol	Reagent or HPLC Grade

[1]Do not use Acetone on components made from PEEK.

2. **Store and handle these solvents in accordance with standard safety procedures.**

3. **Use laboratory grade detergents as specified. Common dishwashing often leave residue from fragrance or lotion additives.**

Environment Requirements

Ensure your laboratory meets the minimum environment requirements. Regulating your environment for temperature, humidity, particulate matter, and electrostatic discharge helps maintain system performance.

1. Ensure that your room temperature is 15-31 °C (59-88 °F).

The ideal operating temperature is 18-21 ºC [64- 70 ºF]. Electronic components generate heat while operating; the heat must dissipate into the surrounding air for the components to continue to operate. This is why it is important to maintain a consistent temperature and air flow around the system. Cooling a basic Finnigan PolarisQ system with air conditioning is approximately 3,940 W (13,450 Btu hr-1) see Table 1-10. The cost of air conditioning is more than offset by good sample throughput and reduced repair costs.

Table 1-10. Maximum Heat Temperatures

	Instrument	Heat Output (in Btu hr-1)	Heat Output (in W)
Standard	Finnigan PolarisQ MS	2390	700
	TRACE GC Ultra	8190	2400
	Monitor	820	240
	Computer	2050	600
Options	AS 2000, AI/AS 3000 Autosampler	570	170
	TriPlus Autosampler	820	240
	Tekmar Velocity	2040	600
	Tekmar Aquatek	2570	750
	Tekmar Solatek	2460	720
	Direct Sample Probe	820	240
	Hewlett-Packard DeskJet printer/plotter	410	120
	Hewlett-Packard LaserJet printer	3200	940

2. Ensure that the relative humidity in your laboratory is between 40 and 80%, with no condensation.

a. If you operate your Finnigan PolarisQ system in low humidity, static electricity accumulates and discharges, which shortens the life-cycle

of electronic components. In contrast, high humidity causes condensation and short circuits to occur.

b. Put a temperature and humidity monitor in your laboratory to ensure that temperature and humidity do not exceed these specifications.

3. Ensure that the air in your site is free of excess particulate matter.

For reference, the air should contain fewer than 100,000 particles (larger than 5 µm) per cubic Foot.

Dust forms a layer on electronic components that reduces their heat dissipation, causing them to overheat. Dust, smoke and other particulate matter clogs air pathways, reducing air flow around your electronic components.

4. Ensure that your site is free of electrostatic discharge.

Electrostatic Discharge (ESD) damages the electronic components of your Finnigan PolarisQ system. Human beings cannot detect ESD until the potential is about 4000 V. Many electronic Components, however, are damaged by a discharge of electrostatic potential of as little as 100 V. ESD can damage sensitive components, resulting in premature failures.

ESD Precautions

- Use a static-dissipating floor covering (such as tile or conductive linoleum) in your laboratory.
- Use laboratory chairs covered with natural fiber or other static-dissipating material.
- Wear laboratory coats and clothing made of natural fiber or other static-dissipating material.
- Do not place polystyrene (foam) cups or packing materials on the instrument.

Note CI equipped systems use flammable methane which must be suitably vented. ▲

5. Supply a 1-in. i.d. hose to a fume hood or other suitable exhaust port[1].

CAUTION The pump exhaust contains carrier gas, solvents, analytes, and a small amount of oil vapor, which are characteristic for these pumps to emit. For your safety, the exhaust must be vented outside the building. A 1-in. (25.4 mm) hose fitting is provided on the pump exhaust. You must provide a suitable hose to outside the building or a fume hood. Positive pressure exhausts are not suitable. ▲

[1]1. Consult local Environmental and Safety Regulations for instructions in exhausting fumes from your system.

Telephone Requirements

1. **Check if your telephone is within 2 m (6 ft.) of your system.**

This allows you to operate the system while talking on the phone with Thermo Electron Technical Support, should the need arise. Thermo Electron Technical Support staff are available by phone or fax to help you.

2. **Call your Thermo Electron Customer Service Representative for questions about parts, instruments, or service.**

Receiving Instructions

1. **Complete the Preinstallation Checklist located at the front of your guide and forward it to the customer support office.**

2. **When the boxes arrive, determine if your instrument was shipped either Domestic or International, to determine shipping liabilities.**

Domestic Shipments

Instruments are shipped in one of two manners: Free On Board (FOB) Austin, TX, USA, or FOB destination.

The method of shipment determines who has responsibility for filing a claim against the carrier if the system is damaged in transit.

Most systems are shipped FOB Austin, TX, and in this instance any damages incurred in shipment are the responsibility of the purchaser and the carrier. If necessary, we will assist with filing claims and (billable) repairs. If the system is shipped FOB destination, we will file a claim against the carrier. However, we do not accept liability for damage if materials are received with obvious damage, and the damage is not recorded on the receiving documents.

International Shipments

Instruments shipped outside of the USA are usually shipped Carriage and Insurance Paid (CIP) to Destination, unless otherwise specified.

If the system is shipped CIP destination and damages occur during shipment, we will file a claim against the carrier. However, we do not accept liability for damage if materials are received with obvious damage, and the damage is not recorded on the receiving documents.

3. **Inspect the boxes for damage when the instrument arrives.**

Our instruments are shipped by electronic equipment carriers who specialize in the handling of delicate equipment. Occasionally, however, equipment is inadvertently damaged in transit. By following these instructions, you can protect yourself and your company from any possible loss or liability.

Please inspect for obvious damage or evidence of rough handling, including triggering of the Shockwatch® or Tiltwatch™ labels when receiving material.

If you see external damage:

- Do not refuse shipment. Instead, make a note of any damage on the receiving documents and leave the instruments in their original packaging.

- Request inspection from the carrier within 15 days of delivery (3 days for international), and contact our Customer Service Representative to report the damage.

- Move the cartons to a protected location, preferably the installation site.

- Leave the boxes as complete as possible and do not unpack or open the boxes without our Field Service Engineer (FSE) present. Doing otherwise may void your warranty or order.

4. Contact your Customer Service Representative that your instruments are ready to be installed.

If your site meets all items listed on the Preinstallation Checklist, then a standard Finnigan PolarisQ system takes about 48-hours for an engineer to install.

What Happens Next?

Your field service engineer will unpack and install your system. Next, the engineer will run tests to make sure the system is working according to factory specifications. Afterwards, the engineer will provide a brief demonstration on how to use your system and the software.

Your field service engineer will:

1. **Unpack and install your Finnigan PolarisQ system including optional instruments.**

2. **Install a TR-5MS column in the GC and allow the MS to pump down overnight.**

3. **Run a series of tests the next day to verify the performance of the system.**

The field service engineer performs the same series of injections that we do at the factory in your laboratory. For example, at the factory, your Finnigan PolarisQ is put through a series of tests to qualify that it meets specifications before shipping.

   a. First, it is thoroughly checked for leaks in the vacuum systems.

   b. Next, it is put through a series of diagnostic checks to verify all of the electronics are functioning properly.

   c. Finally, it is attached to your GC and the complete system is tested.

4. **Perform a series of injections with the test compound to verify the system meets signal and noise requirements.**

5. **Place the instrument methods on your hard-drive for each test and the data file generated on your PC for your review.**

These methods are stored under \Xcalibur\Examples\Methods and the raw data files are stored under \Xcalibur\Data\Factory Test Data.

6. **Verify that the system is in working order and meets the required Ion Mode Specifications.**

7. **Provide basic instrument and software training.**

These are topics you will want to know to get started.

Table 1-11. Xcalibur Getting Started Topics

Software
1) Brief overview of the components location and function.
2) Brief explanation how components interact with the hardware.
Instrument Configuration
1) How to configure instruments using the software.
2) Adding and deleting hardware.
Instrument Setup
1) Creating a method using installed instruments.
MS Tune
1) Opening the Tune window.
2) Performing basic diagnostics.
3) Running Autotune.
Sequence Setup
1) Opening an existing sequence.
2) Creating a new sequence.
3) Editing a sequence.
4) Starting, pausing, stopping, and deleting runs.
Qual Browser
1) Opening a raw data file.
2) Adding a window.
3) Viewing the spectrum.
4) Using background subtraction.
5) Using the push pins.
6) Changing the range and mass.
7) Labeling and detecting peaks.
8) Searching for a library match of an unknown spectrum.
Processing Setup
1) Opening a *.raw file.
2) Opening the Quan section of Processing Setup.
3) Setting up a calibration curve.
4) Selecting internal or external standard reference.
5) Entering a compound name, reference spectrum, and retention time for peak identification.

Table 1-11. Xcalibur Getting Started Topics

6) Entering peak integration parameters for detection.
7) Entering calibration choices.
8) Opening the Qual Browser of Processing Setup.
9) Using the Spectrum Enhancement and Library Search options in the Qual Browser of Processing Setup.
10) Selecting Sample Reports and Summary Reports in Processing Method.
11) Saving a processing method.
Quan Browser
1) Opening a *.rst (result) file.
2) Opening an *.sld (sequence) file.
3) Reviewing and printing calibration plots.
4) Exporting to Excel.
Library Browser
1) Opening a library.
2) Searching a library for compounds by name.
3) CAS (Chemical Abstract Structure)
4) MW (molecular weight)
5) Printing reports from the Library Browser.
6) Searching a library for a match to an unknown spectrum.
7) Creating a user library.
8) Importing spectra for a user library.
9) Installing a commercial library.

Glossary

µ micro (10^{-6})

A ampere

ac alternating current

amu atomic mass unit

ADC analog-to-digital converter

ASCII American Standard Code for Information Interchange

baud rate data transmission speed in events per second

°C degrees Celsius

CD-ROM compact disc read-only memory

CE (*F. Conformité Européenne*) European conformity. Mandatory European marking for certain product groups to indicate conformity with essential health and safety requirements set out in European Directives.

cfm cubic feet per minute

CI chemical ionization

CIP Carriage and Insurance Paid To

cm centimeter

cc or cm^3 cubic centimeter

CPU central processing unit (in a computer)

Da Dalton

DAC digital-to-analog converter

dc direct current

DDS direct digital synthesizer

DEP™ direct exposure probe

DIP direct insertion probe

DS data system

DSP digital signal processor

EI electron ionization

ESD electrostatic discharge

eV electron volt

EN european conformity

f femto (10^{-15})

°F degrees Fahrenheit

FCC Federal Communication Commission

FOB Free on Board

ft. foot

FSE Field Service Engineer

FTP file transfer protocol

g gram

G giga (10^9)

GB gigabytes 1024 MB (billion)

GC gas chromatograph

GC/MS gas chromatograph / mass spectrometer

GND electrical ground

GPIB general-purpose interface bus

GUI graphical user interface

HV high voltage

Hz hertz (cycles per second)

ICIS™ Interactive Chemical Information System

IEC International Electrotechnical Commission

IEEE Institute of Electrical and Electronics Engineers

in. inch

I/O input/output

k kilo (10^3, 1000);

K kilo (2^{10}, 1024); Kelvin

kb kilobyte 1024 bytes (thousand)

kg kilogram

kPa kilopascal

L liter

LAN local area network

lb pound

LED light-emitting diode

m meter; milli (10^{-3})

M mega (10^6)

MB megabyte 1, 048, 576 kb (million)

M^+ molecular ion

min minute

mL milliliter

mm millimeter

MS scan power: MS^1, Mass Spectrometer

m/z mass-to-charge ratio

n nano (10^{-9})

p pico (10^{-12})

Pa Pascal

PCB printed circuit board

PID proportional / integral / differential

PN part number

P/P peak-to-peak voltage

ppm parts per million

psig pounds per square inch, gauge

RAM random access memory

RF radio frequency

RMS root mean square

ROM read-only memory

RS-232 industry standard for serial communications

s second

SCSI small computer system interface

SIM selected ion monitoring

SI International System of Units

S/N signal to noise ratio

TIC total ion current

TCP/IP transmission control protocol / Internet protocol

Torr torr

URL uniform resource locator

USB universal serial bus

V volt

V ac volts alternating current

V dc volts direct current

W ohm

Index

Numerics

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