Waters Xevo TQ-S

Site Preparation Guide

Notice

Table of contents

Introduction

This document describes the environmental conditions, power supplies, and gas supplies that are required for the operation of the Xevo™ TQ-S. Operating the instrument in conformance with these conditions will enable the instrument to achieve its optimum performance and safe use.

Responsibilities

A Waters™ engineer is responsible for installing and commissioning the system to ensure that the instrument is properly installed and operational. The laboratory must be prepared in advance to allow the engineer to carry out the installation efficiently. A site preparation checklist is included at the end of this document for you to fill in and return to Waters when the laboratory is ready.

Important: The installation of the system cannot begin until the checklist is completed and returned to the mass spectrometer sales support representative at your local Waters office.

The installation time may vary, depending on the instrument options being installed. The site preparation checklist must be completed as accurately as possible to help minimize installation time.

A major aspect of the system installation is the implementation of tests designed to evaluate the instrument functionality under specific operating conditions. At the completion of each test, the actual test result obtained is entered in the Installation Checklist or Instrument Qualification Workbook, whichever is appropriate.

Important: A user who is designated to be responsible for the normal use and upkeep of the instrument must be present during the installation.

The user must be present during the functionality tests at installation. This allows the user to be trained in the basic system operation. If there are foreseen periods when the intended user cannot be present, please notify us in advance. This will enable us to schedule the installation for a more convenient time.

If you have questions regarding the information in this document or any specific site problems, contact your local Waters sales representative. If necessary, we will arrange a site survey.

Storage

The following storage conditions are required prior to installation:

- Unopened shipping crates
- Palletized cartons and crates stored away from heavy machinery such as compressors or generators, which generate excessive floor vibration
- Storage area temperature -30 to 60 °C (-22 to 140 °F) and humidity 20 to 80%, non-condensing

Contact your local Waters representative if you need further advice regarding storage conditions.

Unpacking and moving

The instrument is delivered in several palletized cartons and crates. Their sizes may vary dependent on instrument specification and optional accessories, typical sizes for the instrument crate are:

- Width 830 mm (32.7 inch)
- Length 1210 mm (47.6 inch)
- Height 1230 mm (48.4 inch)
- Weight 230 kg (507 lbs)

It is a warranty condition that the cartons and crates are unpacked only when the Waters engineer is present.

After the installation, it is the customer's responsibility to dispose of the cartons, crates, and packaging.

It is essential that the instrument is not bumped or jolted during unpacking or any subsequent transport. If the instrument needs to be transported across an uneven surface, the instrument must be carried on a forklift truck or trolley.

Doorways, elevators, and corridors (including corners) must be sufficiently wide for maneuvering of the instrument. Special handling arrangements may be necessary if access to the laboratory is via a staircase.

Lifting equipment

Once unpacked, the instrument weights are approximately as shown in Table 1:

Table 1: Instrument weights

Xevo TQ-S	160 kg (353 lbs)
Data system (computer, monitor, and optional printer)	<50 kg (110 lbs)
Ebara pump option*	65 kg (143 lbs)
Sogevac pump option*	124 kg (273 lbs)

Note: ***The System includes *either* one Ebara pump option or one Sogevac pump option. The Sogevac option contains two Sogevac pumps.

Warning: The instrument and pump must only be lifted using lifting equipment capable of raising the instrument's weight safely. The instrument and pump must not be lifted manually. The lifting equipment must be capable of lifting the instrument to the same height as the laboratory bench. The Waters engineer will require assistance lifting and positioning the instrument and pump.

Important: It is essential that you provide suitable equipment. If suitable lifting equipment is not available when the Waters engineer arrives on site, the installation cannot be implemented and additional costs may be incurred.

A forklift truck or A-frame hoist is recommended for lifting and transporting the instrument. The instrument is supplied with a lifting harness, which must be used to lift the instrument from the shipping crate onto the bench.

Bench loading

The bench must be able to support the combined weight of the mass spectrometer, data system and LC system. Nominal weights for the instrument and data system are shown in Table 1. Refer to the appropriate LC site preparation guide for its specific weight information.

Space requirements

Instrument

The instrument has the following dimensions:

- Width 610 mm (24 inch)
- Length 995 mm (39 inch)
- Height 711 mm (28 inch)

Note: A moveable workbench of suitable load rating is the preferred arrangement for the system setup, to provide ease of access for servicing.

For service access, a minimum clearance of 600 mm (23.6 inch) is required for the front, back, and right side of the instrument. A temporary clearance of 1000 mm (39.4 inch) is required for the left side of the instrument. If the instrument is placed on a bench that can be moved out during service visits, the minimum clearance at the back is 150 mm (6 inch) with the pumps positioned beneath the instrument. The mass spectrometer must be installed on a surface that is level to within ±1° in any direction.

The instrument is supplied with a 2.5-m (8-ft) power cord.

A possible layout for the Xevo TQ-S, pump option, data system, and ancillary equipment is shown in Figure 1 and Figure 2.

Note: An additional 100 mm (4 inch) is recommended behind the workbench to accommodate vacuum tubing.

Location of feet on underside of instrument is shown.

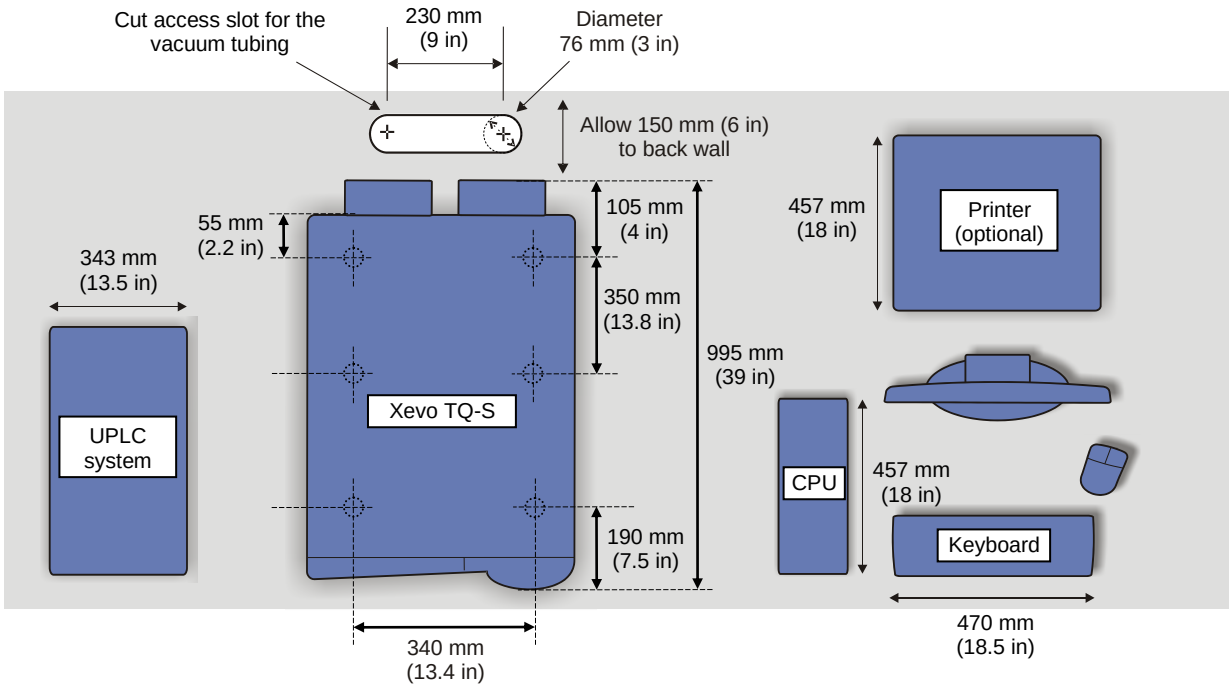


Figure 1 - Plan view, showing space requirements

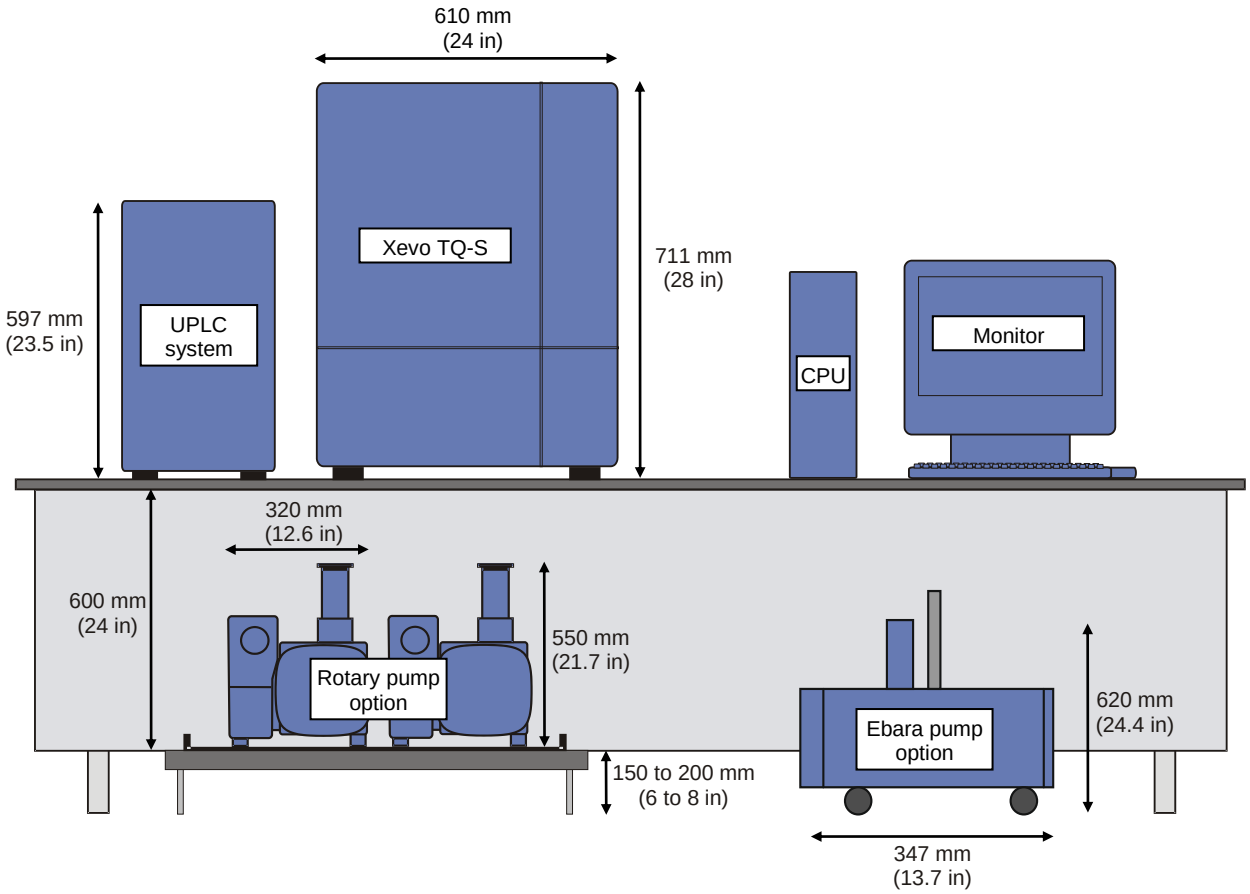


Figure 2 - Front view, showing space requirements

Backing pumps

The backing pumps must be installed underneath or behind the detector and within 1.5 m (5 ft) of the rear of the instrument chassis. To prevent over heating it is not recommended that the backing pumps are installed behind closed doors. The backing pumps are supplied with a 2.5-m (8-ft) power cord, which connects directly to a power outlet. It is recommended that the backing pumps are elevated 150 to 200 mm (6 to 8 inch) above the floor to provide easy access during routine maintenance (for example, changing the pump oil).

If the backing pumps are positioned under the instrument bench, it may be necessary to cut an access slot in the bench top to allow the tubing to be passed through to the instrument (Figure 1). The access slot must allow the vacuum tubes to follow a smooth radial bend when connected to the rear of the instrument. The diameter of the vacuum tubes must not be pinched or kinked in any way.

LC system

Ensure that there is sufficient space to the left of the mass spectrometer for the LC system. Refer to the appropriate site preparation guide for the relevant space requirements.

Data system

The data system can be positioned on the same bench as the mass spectrometer or on a separate desk (available as an option). A 3-m (10-ft) X-wire network cable connects the computer to the mass spectrometer. The two data system power cords for the PC and monitor are approximately 2.5 m (8 ft) in length.

Warning: To avoid damage to and/or risk of electric shock and fire, the data system and any ancillary equipment must not be exposed to dripping or splashing liquids nor should objects filled with liquid, such as solvent bottles, be placed on them.

Electrical safety

The Xevo TQ-S complies with the International Safety Standard IEC 61010-1:2010 and meets the European Low Voltage Directive 2014/35/EU by means of European harmonized Standard EN 61010-1:2010.

For installations in Australia and New Zealand, the building installation must comply with AS3000: Electrical Installations for Australia and New Zealand.

The instrument is suitable for use in environments categorized as Pollution Degree 2 and Over-voltage Category II.

Power requirements

Power supply

The Xevo TQ-S is rated at 200 to 240 V 50/60 Hz, 2 kW maximum.

Power supply sockets must be located within 2 m (6.6 ft) of the instrument. Do not position the equipment so that it is difficult to disconnect the power cords.

The backing pumps switch on simultaneously and must be individually fused, and if connected to a common fuse/breaker, the connection must be rated to at least 30 A:

- UK wiring - 13 to 16 A fused outlets to 30 A (minimum) main power supply
- US / European wiring - separate 13 to 16 A spurs

The data system typically requires two power sockets located adjacent to the Xevo TQ-S for the MassLynx PC and monitor. Further outlets may be required for optional equipment, such as a printer. Do not position the equipment so that it is difficult to disconnect the power cords.

Important: Main power supply voltage fluctuations must not exceed ±10%.

The power requirements for the equipment are summarized in Table 2.

Table 2: Summary of power requirements

	Nominal rated voltage	**Rated current or power**	**Typical power consumption**	**Power cord connector**	**Power sockets**	**UPS power sockets** (230 V)	**UPS power sockets** (110 V)
Xevo TQ-S	200 to 240 V, 50/60 Hz	13 to 16 A	750 to 1600 W (application dependant)	IEC 60320 C20	1	2	1
PC	100 to 240 V 50/60 Hz	10 to 5 A	110 W	IEC 60320 C13	1		
Monitor	100 to 240 V 50/60 Hz	1.5 A	25 W	IEC 60320 C13	1		
Backing pumps							
SV65BI	200 to 240 V, 50/60 Hz	13 to 16 A	900 W	IEC 60320 C20	2		
Ebara EV-SA20	200 to 240 V, 50/60 Hz	13 to 16 A	500 W	IEC 60320 C20	1		

Important: Voltage supply stability is critical for instrument operation, the nominal power supply voltage must fall within the ranges specified in Table 2 at all times to allow for the occasional 10% surge.

The supplies must be wired with a protective earth and fused or fitted with circuit-breakers of the specified ratings, in accordance with local regulations.

The main power supply must not have brown-outs/surges greater than ±10%, and must not exceed the specified maximum operating range for more than 0.3 sec. Transient voltage drops to half nominal voltage or less must have a duration of less than 20 ms. There must be less than 1.0 V RMS of ripple on the main power supply.

The backing pumps are normally in continuous operation. It is recommended that the system is installed such that the supply cannot be inadvertently switched off.

It is also recommended that additional protection is provided for the instrument by means of:

- Residual Current Devices (RCDs) for UK and Europe
- Ground Fault Circuit Interrupters (GFCIs) for the rest of the world

Electrical transformers

If there is a possibility that the supply voltages will not meet the specified operating range under all conditions, a transformer must be used to change the primary supply voltage to the specified range. Main power supply conditioners/stabilizers are also available as an optional accessory. Contact Waters with advance notification if power supply problems are likely to be experienced and for additional advice.

In the case of instruments fitted with a transformer, the RCD/GFCI must be fitted on the primary (supply) side of the transformer.

If your order includes a nitrogen generator and the main power supply is known to run continuously at voltages less than 220 V, Waters and Peak Scientific recommend that you fit the following transformer between the generator and main power supply.

Caution: Running nitrogen generators continuously at voltages less than 220 V is not recommended and extended periods at these extremes can affect the operation and life of the generator.

Table 3: Nitrogen generator transformer option

Model type	**06-3200**
View	
Description	208 volt AC to 230 volt AC boost transformer

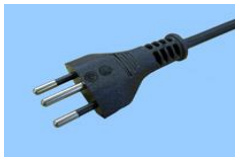
System plug options

The system plug options are shown in Table 4. The instrument is shipped with the plugs that were requested at the point of order. The customer must provide appropriate sockets for the relevant type of plug used. If the available sockets are incompatible with the plugs supplied, the customer must supply appropriate cord sets for the instrument and pumps. The cord sets must comply with local regulations.

Note: If ancillary equipment is to be installed (for example, compressors) additional power outlets, possibly requiring 3-phase supplies, may be needed. Such supplemental needs must be confirmed with the local Waters agent prior to the start of the installation.

Table 4: Power cords supplied by Waters

	IEC 60320 C13 (10A rating)	**IEC 60320 C19 (16A Rating)**
Equipment end of cord		
Australia	 10A	 15A
Brazil	 16A	 16A
China	 10A	 16A
Denmark	 DK 2-5a "Data"; 10A	 DK 2-1a; 13A
EU	 CEE 7/VII "Schuko"; 16A	 CEE 7/VII "Schuko"; 16A

India	 16A	 16A
Japan	 5-15P; 15A	 L6-15; 15A
Korea	 CEE 7/VII “Schuko”; 16A	 CEE 7/VII “Schuko”; 16A
Switzerland	 Type 12; 10A	 Type 23; 16A
Taiwan	 5-15P; 15A	 13A
UK	 13A	 13A
USA	 NEMA 5-15P	 NEMA L6-15P

Uninterruptible power supply

To prevent instabilities in local main power supply impacting system reliability and performance, Waters recommends the use of an uninterruptible power supply (UPS). In support of this recommendation, Waters supplies UPS units that are specifically configured and evaluated for use with Waters MS systems. Your local Waters field sales representative can provide further details.

These UPS units step up single-phase line voltage to 230 V AC, provide power conditioning and protection for the MS system.

For North America, and other areas using a 110 V supply, Waters recommends a 5.2 kVA UPS unit requiring one L6-30 (30 amp) wall socket.

For the UK and Europe (230 V supply), Waters recommends two 3.6 kVA UPS units requiring two power sockets to support the following components:

- One to support the Xevo TQ-S, one backing pump, and PC/monitor
- The second to support the ACQUITY™ and the second backing pump

Caution: One backing pump must remain on the second UPS, even where the ACQUITY does not require UPS support.

The UPS system will typically connect to your laboratory main power supply using the standard MS instrument power cord and wall socket required for your system. See Table 2 and Table 4.

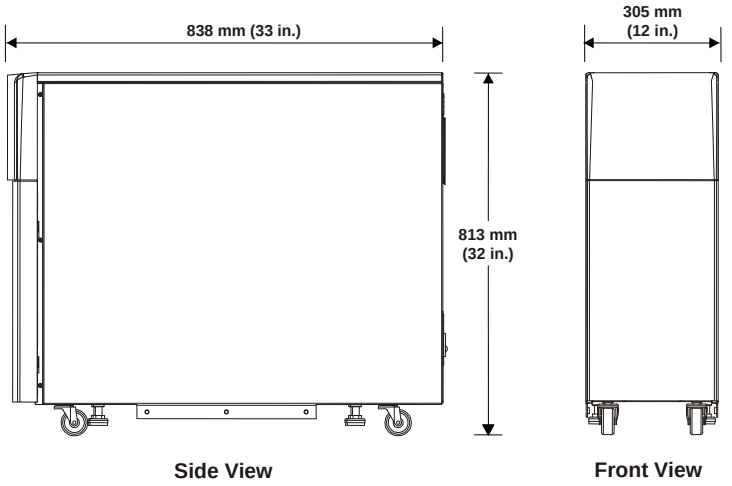


Figure 3 - Approximate maximum dimensions of the UPS

Environment requirements

Safety recommendations

Warning: To avoid risk of asphyxiation or exposure to toxic solvent vapors, ensure that the laboratory is adequately ventilated.

Due to the operation of atmospheric pressure sources, the user must be aware of potential chemical hazards. In particular, the user must assess the risks associated with nitrogen gas (oxygen deficiency) and solvents vented into the laboratory. Note that due to the fluidic nature of the sample inlet, ionization and exhaust system, there is a potential for gas/liquid leaks to occur. The user must give due consideration to the laboratory environment (including volume and air changes) before installation and during operation of the system.

Positioning

It is recommended that the instrument is installed in an air conditioned laboratory, in a draft-free position, away from excessive amounts of dust. Air conditioning units must not be positioned directly above the mass spectrometer. To avoid adverse operation, do not locate the instrument in direct sunlight.

Ventilation

Refer to Table 5 for the maximum overall heat dissipation into the room from the instrument, data system, and pumps. Air conditioning systems may have to be installed or upgraded to accommodate additional heat load into the room when these systems are installed.

There must be sufficient space around the pumps to allow for the free flow of air to cool the pumps.

Table 5: Typical system heat dissipation

System	Heat dissipation
Xevo TQ-S system with Ebara pump option	1.4 to 2.3 kW * (application dependant)
Xevo TQ-S system with Sogevac pump option	2.7 to 3.6 kW * (application dependant)

***Use the upper figure to assess air-conditioning requirements.

Temperature

The ambient temperature range required for normal operation is 15 to 28 °C (59 to 82 °F).

Temperature stability must be better than 2 °C or 3.5 °F peak-to-peak in 1.5 hours.

Humidity

The relative humidity in which the instrument and pumps are to operate must be in the range of 20% to 80%, non-condensing.

Altitude

The instrument is designed and tested to operate below 2000 m (6562 ft).

Vibration

The instrument must not be placed close to heavy machinery such as compressors and generators, which may generate excessive floor vibration.

Magnetic fields

The instrument must be positioned away from magnetic fields of greater than 10 Gauss, such as those generated by NMR spectrometers and magnetic sector mass spectrometers.

Radio emissions

The instrument must not be placed within a Radio Frequency (RF) field of greater than 1.0 V/m.

Possible sources of RF emission include RF-linked alarm systems, Local Area Networks (LANs), mobile telephones, and hand-held transmitters.

Gases and regulators

Nitrogen gas

Caution: Where the APGC source is supplied, nitrogen purity must be >95.0%.

Refer to the *APGC Site Preparation Guide* (715002164) for specific external nitrogen gas supply and connection requirements.

The Xevo TQ-S requires a supply of dry, oil-free nitrogen with a purity of at least 95%.
The nitrogen must be regulated at 6.75 ±0.25 bar (98 ±4 psi) outlet pressure, using a two-stage gas regulator with an appropriate outlet range, for example, 0 to 11 bar (0 to 160 psi).

Note: It is the customer's responsibility to provide a two-stage regulator fitted with an adapter to connect to a 6-mm push-in fitting, see Table 6.

The nitrogen must be connected using the full 5 m (16 ft) of 6-mm OD FEP tubing supplied. Do not cut the tubing to size. The nitrogen line must be checked for leaks under pressure.

Piping material: general requirements

Avoid threaded joints where possible. Avoid the use of Teflon tape where possible and do not apply pipe thread compound to any threaded joints where Teflon tape is used. Pressure-test and purge all piping before use and leave it capped and charged with inert gas such as nitrogen until it is used.

Piping material: stainless steel

Use stainless steel tubing type 316L with either compression fittings or orbital welded joints. Piping should be medical grade and either chemically cleaned and passivated or electropolished. All piping should be shipped with capped ends and charged with nitrogen.

Piping material: copper

Absolutely no soldered joints should be used and no fluxes of any kind should be applied. Refrigerant grade or medical-grade copper tubing should have brazed joints. Copper tubing should be internally cleaned, degreased, and dried to ASTM standard B280 for refrigeration service or medical-grade copper. All piping should be shipped with capped ends and charged with nitrogen. Brazing should be done using a flux-free copper-phosphorous-silver brazing rod under a constant flow of oil-free dry nitrogen until cooled.

API operation

During API operation, typical nitrogen usage varies from 600 to 1400 L/hr (at atmospheric pressure). This equates approximately to the consumption of a large cylinder of compressed nitrogen each day. You may prefer to use a liquid nitrogen Dewar, which will last for several weeks, consult your local gas supplier for an ideal gas supply configuration.

Note: The use of nitrogen cylinders is not recommended. Due to high consumption, a cylinder is likely to empty during long sample runs. The supply must be constant in case venting occurs.

Collision gas

Argon is required for the collision cell. The argon must be dry, high purity (99.997%) and regulated at a pressure of 0.5 bar (7.3 psi), using a two-stage high purity gas regulator with an appropriate outlet range, for example, 0 to 2 bar (0 to 29 psi).

Important: It is the customer's responsibility to provide a two-stage regulator fitted with an adapter to connect to a 1/8-inch Swagelok type fitting, see Table 6.

The gas supply must be connected using the clean, 1/8-inch OD, medical-grade stainless steel tubing supplied and checked for leaks under pressure.

Exhaust outlets

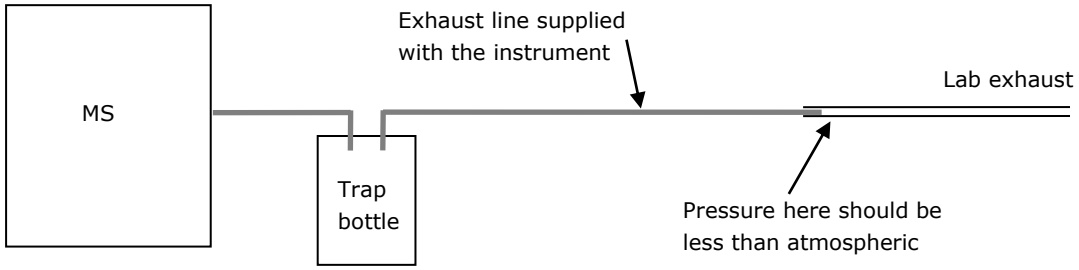
Laboratory exhaust

Warning: Exhaust venting must comply with all local safety and environmental regulations. The ANSI/AIHA Z9.2-2001 standard for "Fundamentals governing the design and operation of local exhaust ventilation systems" provides guidance on compliant exhaust systems.

Source exhaust

You must either feed the exhaust line supplied with the system into a ducted laboratory fume hood or connect it to a laboratory exhaust system.

To ensure the correct functioning of the API source pressure monitoring system, vent the exhaust line in such a way that the pressure at the outlet never exceeds atmospheric pressure.



Caution: To avoid contamination of the instrument, do not connect the source exhaust line to the backing pump exhaust. Damage can occur as a result of the backing pump exhaust being drawn into the source exhaust line.

The laboratory exhaust system must be capable of supporting a gas load of 2000 L/hour. The pressure within the laboratory exhaust must be less than atmospheric pressure, but not less than -10 mbar gauge, while under gas load.

Caution: When running an LC with a high aqueous flow (≥60% water at ≥0.5 mL/min), liquid solvent may condense and accumulate in the laboratory exhaust system. To prevent this happening, Waters recommends that the exhaust system be capable of draining any solvent accumulation, or be designed to prevent condensation, such as an open system that can maintain a gas flow of at least 5000 L/h.

Caution: You must install the source exhaust waste tube with a downward slope from the MS to the bottle waste trap.

Three meters (9.8 ft) of 12-mm OD FEP tubing is supplied for connecting the source exhaust to the laboratory vent. If this length is insufficient, the user must supply an adapter and tubing with an ID of at least 16 mm (5/8 inch) for the extra distance to the vent point.

You can configure the instrument software to power-down the LC system if it detects that the nitrogen gas supply has failed. In the event that the nitrogen gas is powered-down (or runs out) and the LC system continues to operate, excess solvent is drained through the source exhaust.

Backing pump exhaust

You must vent the backing pump exhaust to the atmosphere outside the laboratory using a user-supplied fume hood or industrial vent.

Five meters (16 ft) of 12-mm ID PVC tubing is supplied. If this length is insufficient, the user must supply an adapter and tubing with an internal diameter of at least 19 mm (0.75 inch) for the extra distance to the vent point.

Caution: The fume hood/industrial vent must be equipped with an extraction fan system to enable adequate displacement of the exhaust gases.

Solvent delivery system

The instrument has an inbuilt fluidics system for sample infusion and tuning.

For ESI/ESCi™ and APCI, or a combined APPI/APCI source, a UPLC™/HPLC pump delivering a stable, pulse-free flow of between 50 to 1000 µL/min is required.

For instruments purchased with the NanoFlow ESI source option a syringe pump capable of delivering a stable, pulse-free flow of between 200 to 1000 nL/min is required.

Before returning the checklist at the end of this document, ensure that any locally supplied solvent delivery system is either already commissioned, or that a commissioning date is scheduled.

Note: If a solvent delivery system suitable for running performance specifications will not be available at the time of installation (for example, in the case of instruments supplied with an ACQUITY M-Class) inform the local Waters service agent so that special arrangements can be made.

Test samples

Test samples are required for verifying the performance of instruments at the time of installation. They are also used for routine operations such as tuning and mass calibration.

Note: A test sample kit is supplied with the instrument for the installation setup. It is the customer's responsibility, in conjunction with the local Waters sales representative, to ensure that any additional samples required for customer-specific tests and post-installation testing are available.

Note: The Waters engineer will not carry test samples to the installation. If the Waters engineer is unable to complete the installation due to a lack of facilities, travel costs will be charged. The installation will be rescheduled when the chemicals are available.

Important: Storage instructions provided with the test samples must be adhered to. The use of inferior quality test chemicals caused by adverse storage conditions could impair the instrument installation.

Note: If your laboratory practices require full sample certification documentation, Waters Analytical Standards and Reagents provide ready-to-use reference materials and reagents that are fully traceable and certified (www.waters.com).

Solvents and reagents

Caution: Clean, high-purity solvents and reagents and clean glassware must be used to ensure the optimum performance of the LC-MS system. Significant delays to the installation may occur if clean solvents and glassware are not provided by the customer prior to commencing the installation.

High-purity solvents (LC-MS grade or better) are required. These are used for making up standard solutions for performance tests and for cleaning instrument components. For detail on controlling contamination, and information on solvent brands, refer to *Controlling Contamination in LC/MS Systems Best Practices* (715001307), located in the Support area of the Waters website (www.waters.com).

Caution: If using a water purification system, maintain it regularly in accordance with the manufacturer's guidelines.

Note: A list of solvents and additives compatible with the Xevo TQ-S is available in the *Xevo TQ-S Overview and Maintenance Guide* (715002212), located in the Support area of the Waters website (www.waters.com).

Sample preparation equipment

Facilities for making up test samples must be available at site. Typical equipment required for sample preparation includes (but is not limited to):

- Calibrated syringes - Eppendorf (or equivalent), spanning range 1 µL to 1 mL
- Measuring cylinders, spanning range 100 mL to 1 L
- Volumetric flasks - 10 mL and 50 mL
- Calibrated analytical balance
- Nitrile gloves
- Lint-free tissue

Cleaning test sample glassware

For detailed information on properly cleaning laboratory glassware, refer to *Controlling Contamination in LC/MS Systems Best Practices* (715001307).

Cleaning equipment

An ultrasonic bath is required for the routine cleaning of instrument parts. The bath must be at least 300 mm x 150 mm x 100 mm deep (12 inch x 6 inch x 4 inch).

Caution: Surfactants must not be used for cleaning glassware or other components. Refer to *Controlling Contamination in LC/MS Systems Best Practices* (715001307), located in the Support area of the Waters website (www.waters.com).

Surfactant-free glass vessels are required in which to place instrument components for cleaning. These vessels must be made available for use at the time of installation. The vessels must have a diameter of at least 120 mm (5 inch) and be approximately 120-mm (5-inch) high.

Summary of fittings

Table 6 shows a summary of the waste and gas connections for the installation of the Xevo TQ-S.

Table 6: Summary of instrument fittings required

	Fittings on system	Items supplied with the instrument	Items to be supplied by the customer
Backing pump exhaust	12-mm OD barbed fitting	5-m (16-ft) PVC tube, 12-mm ID	Industrial vent or fume hood
Source exhaust (nitrogen)	12-mm push-in fitting	3-m (9.8-ft) FEP tube, 12-mm OD	Industrial vent or fume hood
Liquid waste	1/4-inch barbed fitting	2-m (6.6-ft) Tygon tubing, 1/4-inch ID	Waste bottle, 1 L (minimum)
Nitrogen supply (API)	6-mm (1/4-inch) push-in fitting	5-m (16-ft) FEP tube, 6-mm OD	Nitrogen supply, regulated to 6.75 ±0.25 bar (98 ±4 psi) via a 6-mm adapter
Collision gas supply	1/8-inch fitting (Swagelok type)	3-m (9.8-ft) stainless steel tubing, 1/8-inch OD	Argon supply, regulated to 0.5 bar (7.3 psi), via an 1/8-inch adapter (Swagelok recommended)

Xevo TQ-S site preparation checklist

This checklist must be completed and returned to Waters when all the amenities are available.

Note: If any items are on order, please indicate this on the checklist and include the anticipated arrival date.

Note: It is the customer's responsibility to ensure that all the correct laboratory supplies are present. If you need any additional information or have difficulties acquiring parts or samples, please contact your local Waters Sales representative.

Access (see page 5)
The instrument is located on the ground floor/basement/___ floor (delete as appropriate) ..... ❑

All elevators, staircases, corridors and doorways through which the instrument must pass are adequate to allow easy access to the laboratory ..... ❑

Lifting equipment (see page 7)
Suitable equipment is available to lift the instrument onto the laboratory bench ..... ❑

Bench/floor space (see page 8)
Adequate bench or floor space is available for the system ..... ❑

Power supply (see page 11)
An appropriate number of outlets with earth connections are available and they meet the stipulated power requirements ..... ❑

Positioning/ventilation (see page 16)
The laboratory ventilation is present and there is no direct air conditioning flow onto the instrument ❑

Temperature (see page 17)
The room temperature is as specified in this document ..... ❑

Humidity (see page 17)
The humidity is as specified in this document ..... ❑

Altitude (see page 17)
The instrument will be operated below 2000 m (6562 ft) ..... ❑

Vibration (see page 17)
The site is free from known vibration ..... ❑

Magnetic fields (see page 17)
The site is free from magnetic fields of greater than 10 Gauss ..... ❑

Radio emissions (see page 17)
The RF field strength is less than 1 V/m ..... ❑

Gases and regulators (see page 18)

Dry, oil-free, ≥95% purity nitrogen gas is available, regulated at 6.75 ±0.25 bar (98 ±4 psi) with a 6-mm adapter ..... ❑

High purity ≥95.0% nitrogen gas is available when APGC source is supplied ..... ❑

High purity ≥99.997% argon gas is available, regulated at 0.5 bar (7.3 psi) with a 1/8-inch adapter ❑

Source exhaust (see page 20)

A suitable outlet is available for the source exhaust..... ❑

Backing pump exhaust (see page 21)

A suitable outlet is available for the backing pump exhaust ..... ❑

Solvent delivery system (see page 21)

Make and model of system to be used:

Make _____

Model _____

Flow rate capability of the system _____

Delivery system is already on site and commissioned ..... ❑

or

Delivery system is scheduled to be commissioned on: _____

A second (customer-supplied) syringe pump is available ..... ❑

Ancillary equipment

If you plan to use any other equipment with the system (for example, Gilson Autosampler; UV Detector), please give details below.

Make / type	Model	Already commissioned	To be commissioned on

Test samples (see page 21)
All samples required for the installation are available ..... ❑

Solvents/reagents (see page 22)
Solvents are available ..... ❑

Sample preparation equipment (see page 22)
Sample preparation equipment, as specified in this document, is available ..... ❑

Cleaning (see page 23)
An ultrasonic bath is available ..... ❑
Vessels for cleaning components are available ..... ❑

I confirm all supplies are now available and all specified environmental conditions were met*.

During the installation, the user intends to be available for demonstration and training by the Waters engineer:

At all times ..... ❑

Approximately _____% of the time ..... ❑

Not at all ..... ❑

During the likely period of installation, the following dates are NOT convenient:

_____

Signed: _____

***Important:** If an authorized Waters service engineer arrives on site to begin installation work and cannot complete the installation due to lack of facilities (for example, lifting equipment, power, water, test samples, laboratory readiness), costs incurred will be charged to the customer.

Please complete the following sections in block letters:

Name _____

Position _____

Organization _____

Street _____

City _____

ZIP/Postcode _____

Country _____

Telephone _____

Fax _____

Email _____

Important: The installation of your system cannot begin until pages 24 through 26 of this document are fully completed and returned to the Mass Spectrometer Sales Support Representative at your local Waters office.

Applications survey

As part of our commitment to provide greater customer service, we have found it necessary to obtain a little more information concerning our user base.

We would be grateful if you could take the time to complete the following questions to provide us with some information about how the instrument will be used.

This information will enable us to inform you of relevant current application notes and seminars and allows us to identify common interest groups so that we can promote cross transfer of information between customers.

What is your scientific field?
(for example, pharmaceutical, environmental, general)

_____

_____

Which classes of compounds will be analyzed?
(for example, carbohydrate, peptides, pesticides)

_____

_____

What is your application area?
(for example, quantitation, purity analysis, structural determination)

_____

_____

Our sales team often requires reference sites for specific applications.
Would you be willing to be used as a contact reference site for prospective customers?

_____

_____