



Thermo Scientific

Dionex Integrion HPIC System

Installation Instructions

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Thermo
SCIENTIFIC

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For Research Use Only. Not for use in diagnostic procedures.

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Preface

This manual provides instructions for the initial installation of the Thermo Scientific™ Dionex™ Integrion™ HPIC™ System. This is an integrated HPIC (high-pressure ion chromatography) system that provides the components and electronics required for performing a wide range of ion analysis applications. The system is available in two models: the Dionex Integrion and the Dionex Integrion RFIC. For convenience, the Dionex Integrion name is used throughout this manual. Unless otherwise specified, all references apply to both models.

Follow the installation instructions in the order presented here. These instructions have been carefully developed to ensure that the system installation is successful.

Contents

- [Related Documentation](#)
- [Safety Information](#)
- [Regulatory Compliance](#)
- [Deionized Water Requirements for IC](#)
- [Fitting and Tube Connection Guidelines](#)
- [System Control](#)
- [Standard System Configurations](#)

Related Documentation

In addition to this manual, the following documents are available on the Thermo Scientific website or by contacting your local office.

- *Dionex Integrion HPIC System Operator's Manual* (Document No. 22153-97003)
- *Dionex AS-AP Autosampler Operator's Manual* (Document No. 065361)
- *Dionex AS-DV Autosampler Operator's Manual* (Document No. 065259)
- Manuals for Dionex consumable products (columns, suppressors, Dionex EGC, Dionex CR-TC 600, Dionex CRD)
- *Chromeleon 7 Installation Guide* (Document No. 7729.0003)

- *Chromeleon 7 Quick Start Guide* (Document No. 7729.0004)

Safety Information

Safety and Special Notices

Always follow the precautionary statements presented in this manual. The safety and other special notices appear in boxes. These notices include the following:



CAUTION Highlights hazards to humans, property, or the environment. Each CAUTION notice is accompanied by an appropriate CAUTION symbol.

IMPORTANT Highlights information necessary to prevent damage to the system or software, loss of data, or invalid test results; or might contain information that is critical for optimal performance of the system.

Note Highlights information of general interest.

Tip Highlights helpful information that can make a task easier.

Safety Symbols

These symbols appear on the Dionex Integrion HPIC System or on labels affixed to the system:

	Alternating current.
	Primary protective conductor terminal.
	Secondary protective conductor terminal.
	Power supply is on.
	Power supply is off.
	Indicates a potential hazard. Refer to the operator's manual for an explanation of the hazard and how to proceed.

Regulatory Compliance

Thermo Fisher Scientific performs complete testing and evaluation of its products to ensure full compliance with applicable domestic and international regulations. When the system is delivered to you, it meets all pertinent electromagnetic compatibility (EMC) and safety standards.

Changes that you make to your system may void compliance with one or more of these EMC and safety standards. Changes to your system include replacing a part or adding components, options, or peripherals not specifically authorized and qualified by Thermo Fisher Scientific. To ensure continued compliance with EMC and safety standards, replacement parts and additional components, options, and peripherals must be ordered from Thermo Fisher Scientific or one of its authorized representatives.

The regulatory symbols on the model/data label of the Dionex Integrion HPIC System indicate that the system is in compliance with the following Safety and EMC standards:

- UL 61010-1:2012
- UL 61010-2-010:2015
- CAN/CSA-C22.2 No. 61010-1-12
- CAN/CSA-C22.2 No. 61010-2-010:15
- FCC Part 15 Subpart B (per ANSI C63.4: 2009) and Industry Canada ICES-003 Issue 5, August 2012 for a Class B Device
- Standards of countries other than Canada and the United States, as applicable (see [“International Compliance”](#) on page vii)

The CE mark on the model/data label of the Dionex Integrion HPIC System indicates that the system is in compliance with the following European Union Directives as is evidenced by compliance to the associated standard where appropriate:

- LVD Directive: 2014/35/EU by conforming to IEC/EN 61010-1:2010 (3rd edition) and IEC/EN 61010-2-010:2014 (3rd edition)
- EMC Directive: 2014/30/EU by conforming to EN 61326-1:2013, EN 61326-2-6:2006
- RED Directive: 2014/53/EU conforming to ETSI EN 301 489-1 V1.9.2:2011

FCC/IC Notices

This product may contain:

	Wi-Fi module	RFID module
FCC ID:	YOPGS2011MIZ	WZ4-NOVA001
IC:	9154A-GS2011MIZ	5893A-NOVA2011

These devices comply with Part 15 of the FCC rules and Industry Canada license-exempt RSS standards. Operation of this device is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Any modifications could void the user's authority to operate the equipment.

Refer to the Wi-Fi or RFID module data sheets for additional module information.

AVIS FCC/IC

Ce produit peut contenir:

	Wi-Fi module	RFID module
FCC ID:	YOPGS2011MIZ	WZ4-NOVA001
IC:	9154A-GS2011MIZ	5893A-NOVA2011

Cet appareil est conforme à la partie 15 des règles de la FCC et d'Industrie Canada RSS normes exemptes de licence. Le fonctionnement de cet appareil est soumis à la deux conditions suivantes:

1. Ce dispositif ne doit pas causer d'interférences nuisibles, et
2. Cet appareil doit accepter toute interférence reçue, y compris les interférences qui peuvent causer un mauvais fonctionnement.

Cet équipement a été testé et déclaré conforme aux limites d'un appareil numérique de classe B, conformément à la partie 15 des règles de la FCC. Ces limites sont conçues pour fournir une protection raisonnable contre les interférences nuisibles dans une installation résidentielle. Cet équipement génère, utilise et peut émettre de l'énergie radiofréquence et, se il ne est pas installé et utilisé conformément aux instructions, peut causer des interférences nuisibles aux communications radio. Cependant, il ne est pas garanti que des interférences ne se produiront pas dans une installation particulière. Si cet équipement provoque des interférences nuisibles à

la réception radio ou de télévision, ce qui peut être déterminé en mettant l'équipement hors et sous tension, l'utilisateur est encouragé à essayer de corriger l'interférence par une ou plusieurs des mesures suivantes:

- Réorienter ou déplacer l'antenne de réception.
- Augmentez la distance entre l'équipement et le récepteur.
- Branchez l'appareil dans une prise sur un circuit différent de celui sur lequel le récepteur est branché.
- Consulter le revendeur ou un technicien radio / TV expérimenté.

Toute modification peut annuler le droit de l'utilisateur à utiliser l'équipement.

Pour plus d'information sur les modules Wi-Fi et RFID, veuillez-vous référer à leurs fiches techniques.

International Compliance

Argentina

System

Dionex Integrion



Dionex Integrion RFIC



Australia and New Zealand

System

Dionex Integrion

Dionex Integrion RFIC



Bolivia

System	Wi-Fi module	RFID module
Dionex Integrion	Gainspan GS2011M	JADAK/SkyeTek SM-NV
Dionex Integrion RFIC	ATT-DJ-RA TL LP 712/2016	ATT-DJ-RA TL LP 575/2016

Brazil

System	Wi-Fi module	RFID module
Dionex Integrion Dionex Integrion RFIC	Gainspan GS2011M  1219-16-3693	JADAK/SkyeTek SM-NV  1431-16-2716

Chile

System	Wi-Fi module	RFID module
Dionex Integrion Dionex Integrion RFIC	Gainspan GS2011M 6242/DO No 32271/F26	JADAK/SkyeTek SM-NV 6245/DO No 32282/F26

China

System	
Dionex Integrion	CMITT ID: 2016DJ2503
Dionex Integrion RFIC	CMITT ID: 2016DJ2502

Costa Rica

System	Wi-Fi module	RFID module
Dionex Integrion Dionex Integrion RFIC	Gainspan GS2011M  04456-SUTEL-DGC-2016	JADAK/SkyeTek SM-NV  04723-SUTEL-DGC-2016

Egypt

System	Wi-Fi module
Dionex Integrion	N/A
Dionex Integrion RFIC	Gainspan GS2011MIZ TAC.01031612184.WIR



India

System	Wi-Fi module	RFID module
Dionex Integrion Dionex Integrion RFIC	Gainspan GS2011M ETA-824/216/ERLO	JADAK/SkyeTek SM-NV ETA-876/216/ERLO

Indonesia

System	
Dionex Integrion	44698/SDPPI/2016
Dionex Integrion RFIC	44699/SDPPI/2016

Japan

System	Wi-Fi module	RFID module
Dionex Integrion	Gainspan GS2011MIZ	JADAK/SkyeTek SM-NV
Dionex Integrion RFIC	 R 211-140401	 R 211-101231

Kuwait

System	
Dionex Integrion	MOC/TA-2716
Dionex Integrion RFIC	MOC/TA-2717

Malaysia

System	Wi-Fi module	RFID module
Dionex Integrion	Gainspan GS2011MIZ	JADAK/SkyeTek SM-NV
Dionex Integrion RFIC	RCCN/88A/0616/S (16-2161)	RCCV/19A/0616/S (16-2016)

Mexico

System	Wi-Fi module	RFID module
Dionex Integrion	Gainspan GS2011M	JADAK/SkyeTek SM-NV
Dionex Integrion RFIC	IFETEL: RCPGAGS16-0551	IFETEL: RCPSKSM16-0940



Peru

System

Dionex Integrion	TRSS36010
Dionex Integrion RFIC	TRSS26024

Philippines

System

Dionex Integrion



Dionex Integrion RFIC



Russia

System

Wi-Fi module

RFID module

Dionex Integrion	Gainspan GS2011M	JADAK/SkyeTek SM-NV
Dionex Integrion RFIC	77-16/1022/3790	E0203



Saudi Arabia

System

Wi-Fi module

RFID module

Dionex Integrion	N/A	TA 04022016-04022017-14143
Dionex Integrion RFIC	TA 13032016-13032017-15054	TA 08022016-08022017-14188





Singapore

System	Wi-Fi module	RFID module
Dionex Integrion	N/A	Complies with IDA Standards Dealer's Licence No. N0373-16
Dionex Integrion RFIC	Complies with IDA Standards Dealer's Licence No. N0374-16	Complies with IDA Standards Dealer's Licence No. N0375-16

South Africa

System	
Dionex Integrion	
Dionex Integrion RFIC	

Taiwan

System	Wi-Fi module	RFID module
Dionex Integrion	Gainspan GS2011MIZ  CCAH16LP1550T8	JADAK/SkyeTek SM-NV  CCAH16LP1660T2
Dionex Integrion RFIC	Gainspan GS2011MIZ  CCAH16LP1550T8	JADAK/SkyeTek SM-NV  CCAH16LP1660T2

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前項合法通信，指依電信法規定作業之無線電通信。

低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

Type: Ion Chromatography–Analytical Instrument

The Dionex Integrion/Dionex Integrion RFIC instrument is designed for indoor operation only.

Thailand

System

เครื่องโทรคมนาคมและอุปกรณ์นี้ มีความสอดคล้องตามข้อกำหนดของ กทท.

This telecommunication equipment is in compliance with NTC requirements.

Turkey

System

Dionex Integrion 32423510-254.01/E.21892
 Dionex Integrion RFIC

UAE

System

Dionex Integrion

TRA
 REGISTERED No:
 DA48560/16
 DEALER No:
 ER44279/16

Dionex Integrion RFIC

TRA
 REGISTERED No:
 DA48560/16
 DEALER No:
 ER44266/16

Vietnam

System

Dionex Integrion



Dionex Integrion RFIC



Notice on Lifting and Handling of Thermo Scientific Instruments

For your safety, and in compliance with international regulations, the physical handling of this Thermo Fisher Scientific instrument *requires a team effort* to lift and/or move the instrument. This instrument is too heavy and/or bulky for one person alone to handle safely.

Notice on the Proper Use of Thermo Scientific Instruments

In compliance with international regulations: Use of this instrument in a manner not specified by Thermo Fisher Scientific could impair any protection provided by the instrument.

WEEE Compliance

This product is required to comply with the European Union's Waste Electrical & Electronic Equipment (WEEE) Directive 2002/96/EC. It is marked with the following symbol:



Thermo Fisher Scientific has contracted with one or more recycling or disposal companies in each European Union (EU) Member State, and these companies should dispose of or recycle this product. See www.thermoscientific.rohs for further information on Thermo Fisher Scientific's compliance with these Directives and the recyclers in your country.

Conformité DEEE

Ce produit est conforme avec la directive européenne (2002/96/EC) des Déchets d'Equipements Electriques et Electroniques (DEEE). Il est marqué par le symbole suivant:



Thermo Fisher Scientific s'est associé avec une ou plusieurs sociétés de recyclage dans chaque état membre de l'Union Européenne et ce produit devrait être collecté ou recyclé par celle(s)-ci. Pour davantage d'informations, rendez-vous sur la page www.thermoscientific.fr/rohs.

WEEE Konformität

Dieses Produkt entspricht der EU Waste Electrical & Electronic Equipment (WEEE) Richtlinie 2002/96/EC. Es ist mit dem folgenden Symbol gekennzeichnet:



Thermo Fisher Scientific hat Vereinbarungen mit Verwertungs-/Entsorgungsfirmen in allen EU-Mitgliedsstaaten getroffen, damit dieses Produkt durch diese Firmen wiederverwertet

oder entsorgt werden kann. Weitere Informationen finden Sie unter www.thermoscientific.de/rohs.

Contacting Us

❖ For Technical Support for Dionex products

In the U.S. and Canada, call 1-800-532-4752.

Outside the U.S. and Canada, call the nearest Thermo Fisher Scientific office.

❖ For additional contact information

Go to www.thermofisher.com/us/en/home/technical-resources/contact-us.html.

Deionized Water Requirements for IC

For eluent generation, or for manual preparation of eluent and regenerant, use ASTM Type I (18 megohm-cm) filtered and deionized water that meets the specifications listed in [Table 1](#).

Table 1. ASTM filtered, Type I deionized water specifications for ion chromatography

Contaminant	Specification
Ions–Resistivity	>18.0 (megohm-cm)
Organics–TOC	<10 ppb
Iron/Transition Metals*	<1 ppb
Pyrogens	<0.03 (Eu/mL)
Particulates > 0.2 µm	<1 (units/mL)
Colloids–Silica	<10 ppb
Bacteria	<1 (cfu/mL)
* Iron/transition metal content not specified for ASTM Type I Water	

Fitting and Tube Connection Guidelines

Two types of high-pressure fittings are used in the Dionex Integriion: Thermo Scientific™ Dionex™ IC PEEK™ Viper™ fittings and 10-32 fitting bolts (P/N 22000-98001) with 10-32 double-cone ferrules (P/N 043276).

Installation and tightening requirements are different for each fitting type. To ensure a correct seal and avoid damage to fittings and tubing, be sure to carefully follow the installation and tightening instructions in this section.

Installing and Tightening Ferrule Fittings

Follow these guidelines to install and tighten a 10-32 fitting bolt (P/N 22000-98001) and 10-32 double-cone ferrule (P/N 043276).

❖ To install a 10-32 double-cone ferrule fitting

1. Install the fitting bolt and ferrule onto the tubing. Position the ferrule 1 to 2 mm (0.04 to 0.08 in) from the end of the tubing.
2. Insert the tubing into the port until it stops.
3. While maintaining pressure on the tubing to keep it in place in the port, tighten the fitting bolt fingertight and then tighten the fitting further by following the instructions below.

❖ To tighten 10-32 double-cone ferrule fittings

1. Use your fingers to tighten the fitting bolt as tight as you can. Then, use a wrench to tighten the fitting an additional three-quarter turn (270 degrees).
2. If leaks occur, replace the fitting bolt, ferrule, and tubing.

Installing and Tightening IC PEEK Viper Fittings

IC PEEK Viper fittings are used for tubing connections throughout the system. For ease of use, the fittings are shipped from the factory already installed on precut tubing, with each length of tubing labeled to indicate the intended installation site. The ferrule-free IC PEEK Viper design reduces the dead volume of any fluidic connection to virtually zero by sealing at the tip of the tubing.

IC PEEK Viper fittings require much less torque to tighten than other types of PEEK fittings (although they may look similar to other fittings). The effort required to create a seal for 34 MPa (5000 psi) of pressure is similar to the effort needed to turn a dial on a combination lock. **Overtightening will damage the fitting and the port.** To avoid damaging the fitting and port, please follow the tightening procedure provided below.



IMPORTANT DO NOT OVERTIGHTEN THE FITTING. Do not use any tools to tighten the fitting. IC PEEK Viper fittings require very little torque to seal.

To extend the life of IC PEEK Viper fittings, do not connect or disconnect a fitting under pressure.

When using IC PEEK Viper fittings with columns, ensure that the columns have the **Viper Fittings Ready** label.

The Dionex Viper Fitting and Tubing Kit, included in the Dionex Integrion Ship Kit (P/N 22153-62002; RFIC Ship Kit, P/N 22153-62003), contains tubing of various lengths, on which Viper fittings are preinstalled. The kit contents vary slightly, depending on your system.

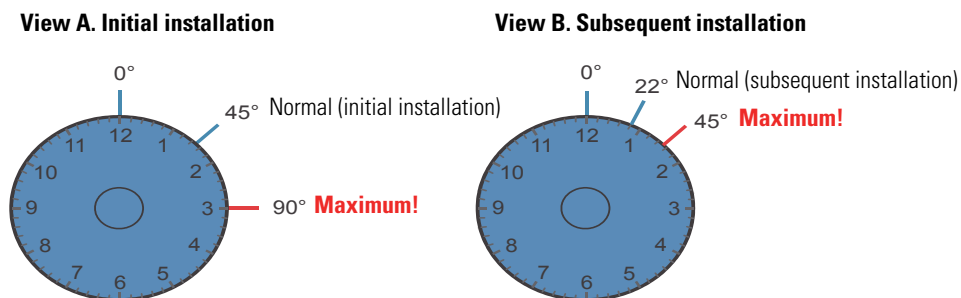
❖ To install an IC PEEK Viper fitting

1. IC PEEK Viper fittings are preinstalled on tubing. Specific tubing assemblies are required for the various system plumbing connections. Make sure you have the correct tubing and fitting assembly for the connection (see [Table 1](#) on [page 32](#)).
2. Insert the tubing and fitting into the port until it stops.
3. Tighten the fitting by following the instructions below.

❖ To tighten an IC PEEK Viper fitting

1. If the pump is on, stop the pump and allow the system to reach zero pressure.
2. Slide the Viper fitting into the port and use your fingers to gently tighten the bolt until you feel the first contact or resistance. This is the “0” mark. Then, tighten the bolt according to the following guidelines:
 - For the initial installation of the fitting: Use your fingers to tighten the bolt **1/8th** of a turn from the “0” mark (45° or between 1 and 2 on a clock face) (see [Figure 1](#), View A).
 - For subsequent installations: Use your fingers to tighten the bolt **1/16th** of a turn from the “0” mark (22° or 4 minutes past 12 on a clock face) (see [Figure 1](#), View B).

Figure 1. IC PEEK Viper fitting installation



3. Turn on the pump and begin operating the system at the regular operating pressure.
4. Check for leaks. If a leak is present, follow the steps below.

❖ To fix a leaking IC PEEK Viper fitting

1. Gently tighten the fitting a little more:
 - For the initial installation of the fitting: Fingertighten the bolt another **1/8th** turn only.
 - For subsequent installations: Fingertighten the bolt another **1/16th** turn only.
2. If the leak continues, stop the pump and wait for the system to reach zero pressure before continuing.

3. Remove the fitting and clean it thoroughly with deionized water. Also, clean the port with deionized water and inspect it for any foreign objects or damage to the bottom of the port (for example, deformations or scratches).
4. Reinstall the fitting. If the leak continues, replace the fitting.

Cutting Tubing

❖ To cut tubing that uses 10-32 double-cone ferrule fittings

Use a tubing cutter to cut tubing to the required length. Make sure the cut is at a right angle to the length of the tubing and there are no nicks or burrs on the end. If necessary, order a tubing cutter (P/N 049584) from Thermo Fisher Scientific.

Note Do not cut tubing on which IC PEEK Viper fittings are installed.

System Control

Two types of control are available for the Dionex Integrion:

- The Thermo Scientific™ Dionex™ Chromeleon™ 7 Chromatography Data System provides complete instrument control, data acquisition, and data processing functions. Communication between the system and Chromeleon is through connection to a USB (Universal Serial Bus) port on the personal computer on which Chromeleon is installed or to a USB hub.

Note Chromeleon 7.2 SR4 (or later) is required for support of the Dionex Integrion.

- When a mobile device is installed, the Thermo Scientific™ Dionex™ Integrion™ HPIC™ Mobile App can be used to control basic instrument functions and display system status information. The Integrion HPIC Mobile App can display a real-time plot of detector output, but cannot store data or provide data processing functions.

Standard System Configurations

All standard Dionex Integrion configurations include the following features:

- Eluent area and reservoir
- System status LEDs
- Pump compartment with analytical pump installed
- Column compartment with 6-port injection valve installed

- Detector compartment with either a Thermo Scientific™ Dionex™ Integrion Conductivity Detector (CD) or Thermo Scientific™ Dionex™ Integrion Electrochemical Detector (ED) installed

Table 2 shows the additional components included in three standard system configurations.

Table 2. Dionex Integrion standard system configurations

Model	Eluent generator	Degas ^a	Detector	TEC ^b	Column heater ^c	Device monitoring ^d	Mobile device ^d
Dionex Integrion	✗	✗	✓ CD	✗	✗	✗	✗
Dionex Integrion RFIC	✓	✓	✓ ED	✗	✓	✓	✓
Dionex Integrion RFIC	✓	✓	✓ CD	✓	✓	✓	✓

^a Online eluent degas system

^b Temperature-controlled detector compartment (optional)

^c Heated column compartment (optional)

^d The wireless transmitter devices may not be authorized as required by the laws of your country. These features will not be offered for sale or lease, or sold or leased, until proper authorization is obtained. Please consult your local sales representative for details.

System Options

Many of the options described below are included in one or more of the standard system configurations (see Table 2). In addition, if an option was not installed at the factory, most can be ordered at any time and installed on-site either by the user or by Thermo Fisher Scientific field service personnel. However, the temperature-controlled detector compartment must be ordered with the system and installed at the factory.

Factory-Only Installable Options

The following option must be ordered with the system and installed at the factory before it is shipped:

- Temperature-controlled detector compartment

Field Service-Installable Options

The following items can be ordered at any time and installed on-site by Thermo Fisher Scientific field service personnel:

- Eluent generator (EG) for generating high purity acid or base eluents online from deionized water

- Eluent degas system for continuous, online eluent degassing
- RFID (radio-frequency identification device) for identifying and tracking usage of various consumable devices (for example, columns)
- Heated column compartment
- Power supplies for controlling electrolytic devices. Depending on the devices required, 1-channel, 3-channel, or 5-channel options are available.

Electrolytic devices include the suppressor, eluent generator cartridge (Thermo Scientific Dionex EGC), continuously-regenerated trap column (Thermo Scientific Dionex CR-TC 600), electrolytic pH modifier (Thermo Scientific Dionex EPM), and electrolytic water polisher.

User-Installable Options

The following options can be ordered any time and installed on-site by either the user or by Thermo Fisher Scientific field service personnel:

- Mobile device for monitoring system status and controlling basic operating functions
- Detectors
 - CD
 - ED

The system can also be configured without a detector and connected to an external detector (for example, a UV-Vis detector or mass spectrometer).

- Dionex EGC, Dionex CR-TC 600, and Dionex EPM (if the optional 3-channel electrolytic power supply is installed)
- Pump seal wash system
- Auxiliary high-pressure valve
- Up to two auxiliary low-pressure valves for controlling or directing low-pressure flow streams
- Pressure regulator, gauge assembly, and mounting bracket for pressurization of eluent reservoirs

CAUTION Symbol	CAUTION	VORSICHT	PRECAUCIÓN	MISE EN GARDE
	Risk electric shock: This instrument uses voltages that can cause electric shock and/or personal injury. Before servicing, shut down the instrument and disconnect it from line power. While operating the instrument, keep covers on. Do not remove the protective covers from the printed circuit board assemblies (PCBAs).	Stromschlaggefahr: Dieses Gerät arbeitet mit Spannungen, die Stromschläge und/oder Personenverletzungen verursachen können. Vor Wartungsarbeiten muss das Gerät abgeschaltet und vom Netz getrennt werden. Betreiben Sie das Gerät nicht mit abgenommenen Abdeckungen. Nehmen Sie die Schutzabdeckungen von Leiterplatten nicht ab.	Riesgo de descargas eléctricas: Este instrumento utiliza voltajes que pueden causar descargas eléctricas y/o lesiones personales. Antes de revisar o reparar el instrumento, apáguelo y desconéctelo de la red eléctrica. Mantenga colocadas las cubiertas mientras se utiliza el instrumento. No retire las cubiertas protectoras del circuito impreso completo (PCBA).	Risque de choc électrique : l'instrument utilise des tensions susceptibles de provoquer une électrocution et/ou des blessures corporelles. Il doit être arrêté et débranché de la source de courant avant toute intervention. Ne pas utiliser l'instrument sans ses couvercles. Ne pas enlever les capots de protection des cartes à circuit imprimé (PCBA).
	Chemical hazard: Wear gloves and other protective equipment, as appropriate, when handling toxic, carcinogenic, mutagenic, corrosive, or irritant chemicals. Use approved containers and proper procedures to dispose of waste oil and when handling wetted parts of the instrument.	Gefahr durch Chemikalien: Tragen Sie beim Umgang mit toxischen, karzinogenen, mutagenen, ätzenden oder reizenden Chemikalien Schutzhandschuhe und weitere geeignete Schutzausrüstung. Verwenden Sie bei der Entsorgung von verbrauchtem Öl und beim Umgang mit medienberührenden Komponenten die vorgeschriebenen Behälter, und wenden Sie ordnungsgemäße Verfahren an.	Peligro por sustancias químicas: Cuando manipule sustancias químicas, tóxicas, carcinogénicas, mutágenas, corrosivas o irritantes, utilice guantes y otro equipo de protección. Utilice siempre recipientes homologados y siga los procedimientos adecuados cuando deseche aceite residual o manipule partes mojadas del instrumento.	Danger lié aux produits chimiques : porter des gants et d'autres équipements de protection appropriés pour manipuler les produits chimiques toxiques, cancérogènes, mutagènes, corrosifs ou irritants. Utiliser des récipients homologués et des procédures adéquates pour la mise au rebut des huiles usagées et lors de la manipulation des pièces de l'instrument en contact avec l'eau.
	Hot surface: Before touching, allow any heated components to cool.	Heiße Oberflächen: Lassen Sie heiße Komponenten vor der Berührung abkühlen.	Superficies calientes: Antes de tocar los componentes calientes, espere a que se enfríen.	Surface chaude : laisser refroidir les composants chauffés avant toute manipulation.
	Flammable substances hazard: Use care when operating the system in the presence of flammable substances.	Gefahr durch entzündbare Substanzen: Beachten Sie die einschlägigen Vorsichtsmaßnahmen, wenn Sie das System in Gegenwart von entzündbaren Substanzen betreiben.	Peligro por sustancias inflamables: Tenga mucho cuidado cuando utilice el sistema cerca de sustancias inflamables.	Danger lié aux substances inflammables : agir avec précaution lors de l'utilisation du système en présence de substances inflammables.
	Risk of eye injury: Eye injury could occur from splattered chemicals, airborne particles, or sharp objects. (Sharp objects that customers might install in the instrument include fused-silica tubing, the autosampler needle, and so on.) Wear safety glasses when handling chemicals or servicing the instrument.	Augenverletzungsrisiko: Verspritzte Chemikalien, Schwebstoffpartikel oder scharfe Objekte können Augenverletzungen verursachen. (Scharfe Objekte, die Kunden möglicherweise im Gerät installieren, sind z. B. Quarzglas-Kapillaren, die Nadel des Autosamplers, usw.) Tragen Sie beim Umgang mit Chemikalien oder bei der Wartung des Gerätes eine Schutzbrille.	Riesgo de lesiones oculares: Las salpicaduras de sustancias químicas, las partículas flotantes en el aire y los objetos afilados pueden causar lesiones oculares. (Entre los objetos afilados que los clientes pueden instalar en el instrumento se encuentran tubos de sílice fundida, agujas del muestreador automático, etc.). Para manipular sustancias químicas o realizar tareas de mantenimiento, utilice gafas de seguridad.	Risque de lésion oculaire : les projections chimiques, les particules en suspension dans l'air et les objets tranchants peuvent entraîner des lésions oculaires. (Les objets tranchants pouvant être installés par les clients dans l'instrument comprennent les tubes en silice fondue, les aiguilles du passeur automatique, etc.). Porter des lunettes de protection lors de toute manipulation de produit chimique ou intervention sur l'instrument.
	General hazard: A hazard is present that is not included in the other categories. This symbol also appears on the instrument. For details about the hazard, refer to the instrument manual. When the safety of a procedure is questionable, contact Technical Support for Thermo Scientific Sunnyvale products.	Allgemeine Gefahr: Es besteht eine weitere Gefahr, die nicht in den vorstehenden Kategorien beschrieben ist. Dieses Symbol wird auch auf dem Gerät angebracht. Einzelheiten zu dieser Gefahr finden Sie in den Gerätehandbüchern. Wenn Sie sich über die Sicherheit eines Verfahrens im Unklaren sind, setzen Sie sich, bevor Sie fortfahren, mit dem technischen Support für Thermo Scientific Sunnyvale Produkte in Verbindung.	Peligro general: Existen peligros que no se incluyen en las otras categorías. Este símbolo también aparece en el instrumento. Si desea obtener más información sobre estos peligros, consulte el manual del instrumento. En caso de duda sobre la seguridad de un procedimiento, póngase en contacto con el personal de servicio técnico de los productos Thermo Scientific Sunnyvale.	Danger d'ordre général : indique la présence d'un risque n'appartenant pas aux catégories citées plus haut. Ce symbole figure également sur l'instrument. Pour plus de détails sur ce danger potentiel, se reporter au manuel de l'instrument. Si la sûreté d'une procédure est incertaine, contacter l'assistance technique pour les produits Thermo Scientific Sunnyvale.

CAUTION Symbol	CAUTION	VORSICHT	PRECAUCIÓN	MISE EN GARDE
	Laser hazard: This instrument uses a laser that is capable of causing personal injury. This symbol also appears on the instrument. For details about the hazard, refer to the instrument manual.	Gefahr durch Laserstrahlen: Der in diesem Gerät verwendete Laser kann zu Verletzungen führen. Dieses Symbol wird auch auf dem Gerät angebracht. Einzelheiten zu dieser Gefahr finden Sie in den Gerätehandbüchern.	Peligro por láser: Este instrumento utiliza un láser que puede producir lesiones personales. Este símbolo también aparece en el instrumento. Si desea obtener más información sobre el peligro, consulte el manual del instrumento.	Danger lié au laser : l'instrument utilise un laser susceptible de provoquer des blessures corporelles. Ce symbole figure également sur l'instrument. Pour plus de détails sur ce danger potentiel, se reporter au manuel de l'instrument.
	Ultra violet light hazard: Do not look directly at the ultra-violet (UV) light or into the UV source. Exposure can cause eye damage. Wear UV eye protection.	Gefahr durch UV-Licht: Richten Sie Ihren Blick nicht direkt auf ultraviolettes Licht (UV-Licht) oder in die UV-Quelle. Dies kann zu Augenschäden führen. Tragen Sie eine UV-Schutzbrille.	Peligro por luz ultravioleta: No mire directamente a una luz ultravioleta (UV) ni a una fuente UV. La exposición puede causar daños oculares. Lleve protección ocular para UV.	Danger lié aux rayons ultraviolets : ne jamais regarder directement la lumière ultraviolette (UV) ou la source d'UV. Une exposition peut entraîner des lésions oculaires. Porter des protections oculaires anti-UV.
	Sharp object: Avoid physical contact with the object.	Scharfes Objekt: Vermeiden Sie den physischen Kontakt mit dem Objekt.	Objeto puntiagudo: Evite el contacto físico con el objeto.	Objet tranchant : éviter tout contact physique avec l'objet.
	Pinch point: Keep hands away from this area.	Quetschgefahr: Halten Sie Ihre Hände von diesem Bereich fern.	Puntos de pinzamiento: Mantenga las manos apartadas de esta área.	Risque de pincement : éloigner les mains de cette zone.
	Heavy objects: Never lift or move the instrument by yourself; you can suffer personal injury or damage the equipment. For specific lifting instructions, refer to the instrument manual.	Schweres Objekt: Bewegen und heben Sie das Gerät niemals allein an; dies kann zu Verletzungen oder zur Beschädigung des Geräts führen. Spezifische Anweisungen zum Anheben finden Sie im Gerätehandbuch.	Objeto pesado: Nunca levante ni mueva el instrumento por su cuenta, podría sufrir lesiones personales o dañar el equipo. Para obtener instrucciones específicas sobre levantamiento, consulte el manual del instrumento.	Objet lourd : ne jamais soulever ou déplacer l'instrument seul sous peine de blessure corporelle ou d'endommagement de l'instrument. Pour obtenir des instructions de levage spécifiques, se reporter au manuel de l'instrument.
	Trip obstacle: Be aware of cords, hoses, or other objects located on the floor.	Stolpergefahr: Achten Sie auf Kabel, Schläuche und andere Objekte auf dem Fußboden.	Tropiezo con obstáculos: Tenga en cuenta los cables, mangueras u otros objetos colocados en el suelo.	Risque de trébuchement : faire attention aux câbles, tuyaux et autres objets situés sur le sol.
	When the safety of a procedure is questionable, contact Technical Support for Thermo Scientific Sunnyvale products.	Wenn Sie sich über die Sicherheit eines Verfahrens im unklaren sind, setzen Sie sich, bevor Sie fortfahren, mit Ihrer lokalen technischen Unterstützungsorganisation für Thermo Scientific Sunnyvale Produkte in Verbindung.	En caso de duda sobre la seguridad de un procedimiento, póngase en contacto con el personal de servicio técnico de los productos Thermo Scientific Sunnyvale.	Si la sûreté d'une procédure est incertaine, contacter l'assistance technique pour les produits Thermo Scientific Sunnyvale.

CAUTION Symbol

CAUTION

警告

危険警告



Risk electric shock: This instrument uses voltages that can cause electric shock and/or personal injury. Before servicing, shut down the instrument and disconnect it from line power. While operating the instrument, keep covers on. Do not remove the protective covers from the printed circuit board assemblies (PCBAs).

感電の危険性: この機器では、感電および/または身体傷害を引き起こすおそれのある電圧を使用しています。整備点検の前には、機器の電源を切り、電源コードを抜いてください。機器の作動中は、カバーを付けたままにしてください。プリント基板アセンブリ (PCBA) から保護カバーを取り外さないでください。

触电危险: 本仪器所用电压可能导致电击或人身伤害。进行维修服务前, 务必关闭仪器电源并断开其电源连接。操作此仪器时, 不要卸下顶盖。勿卸下印刷电路板组件 (PCBA) 的保护盖。



Chemical hazard: Wear gloves and other protective equipment, as appropriate, when handling toxic, carcinogenic, mutagenic, corrosive, or irritant chemicals. Use approved containers and proper procedures to dispose of waste oil and when handling wetted parts of the instrument.

化学的危険性: 毒性、発癌性、変異原性、腐食性、または刺激性のある化学薬品を取り扱うときは、必要に応じて手袋などの保護具を着用します。廃油を処分したり、機器の接液部品を取り扱うときは、認可された容器を使用し、適切な手順に従います。

化学品危险: 当处理毒性、致癌性、致突变性、腐蚀性或者刺激性化学品时, 佩戴手套和其他保护性设备。当处理浸湿的仪器部件以及废油时, 使用认可的容器和合适的步骤。



Hot surface: Before touching, allow any heated components to cool.

高温面: 触れる前に、加熱した部品を冷ましてください。

热表面: 待高温部件冷却之后再行维修。



Flammable substances hazard: Use care when operating the system in the presence of flammable substances.

可燃性物質の危険性: 可燃性物質があるところでシステムを作動させる場合は十分注意してください。

易燃物危险: 在有易燃物质的场地操作该系统时, 务必小心谨慎。



Risk of eye injury: Eye injury could occur from splattered chemicals, airborne particles, or sharp objects. (Sharp objects that customers might install in the instrument include fused-silica tubing, the autosampler needle, and so on.) Wear safety glasses when handling chemicals or servicing the instrument.

眼外傷の危険性: 飛散した化学薬品、浮遊粒子、または鋭利な物体によって眼外傷を負うおそれがあります (機器に取り付けられる可能性がある鋭利な物体は、ヒューズドシリカ、オートサンプラーニードルなどです)。化学薬品を取り扱ったり、機器を整備点検するときは、保護メガネを着用します。







眼睛伤害风险: 眼睛受伤可能源自飞溅的化学品、空气中的颗粒, 或者锋利的物体。(安装在仪器内的锋利物体包括熔融石英管、自动进样器的进样针等。) 处理化学品或对仪器进行维修服务时, 务必戴上防护眼镜。



General hazard: A hazard is present that is not included in the other categories. This symbol also appears on the instrument. For details about the hazard, refer to the instrument manual. When the safety of a procedure is questionable, contact Technical Support for Thermo Scientific Sunnyvale products.

一般的な危険性: それぞれのカテゴリーに当てはまらない危険があります。この標識記号は機器にも表示されています。この危険の詳細については、機器のマニュアルを参照してください。手順の安全性にご不明な点がある場合は、Thermo Scientific Sunnyvale 製品のテクニカルサポートまでお問い合わせください。

普通危険: 未归入其他类别的危险。此符号也会在仪器上出现。有关此危险的详细信息, 参阅适当的仪器手册。若对任何步骤的安全事项有疑问, 联系 Thermo Scientific Sunnyvale 产品的技术支持中心。

CAUTION Symbol	CAUTION	警告	危険警告
	Laser hazard: This instrument uses a laser that is capable of causing personal injury. This symbol also appears on the instrument. For details about the hazard, refer to the instrument manual.	レーザー光線の危険性: この機器では、身体傷害を引き起こすおそれのあるレーザーを使用しています。この標識記号は機器にも表示されています。この危険の詳細については、機器のマニュアルを参照してください。	激光危険: 本仪器所用激光会导致人身伤害。此符号也会在仪器上出现。有关此危险的详细信息，参阅适当的仪器手册。
	Ultra violet light hazard: Do not look directly at the ultra-violet (UV) light or into the UV source. Exposure can cause eye damage. Wear UV eye protection.	紫外光の危険性: 紫外 (UV) 光または UV 光源を直接見ないでください。照射によって眼損傷を引き起こすおそれがあります。UV 保護メガネを着用します。	紫外光危険: 不要直视紫外 (UV) 光或者紫外光源。直视可能导致眼睛伤害。佩戴紫外线防护眼镜。
	Sharp object: Avoid physical contact with the object.	鋭利な物体: 物体との身体的接触を避けてください。	鋒利物体: 避免直接接触锋利的物体。
	Pinch point: Keep hands away from this area.	ピンチポイント: この部分には手を挟まれないようにしてください。	夹点: 勿将手放在此部位。
	Heavy objects: Never lift or move the instrument by yourself; you can suffer personal injury or damage the equipment. For specific lifting instructions, refer to the instrument manual.	重量物: 1人で機器を持ち上げたり移動しないでください。身体傷害を負ったり、機器を損傷するおそれがあります。具体的な持ち上げ方法については、機器のマニュアルを参照してください。	重物: 切勿独自提起或移动本仪器；可能遭受人身伤害或损坏仪器。有关具体的提起说明，参阅仪器手册。
	Trip obstacle: Be aware of cords, hoses, or other objects located on the floor.	作業の障害物: 床にあるコード、ホース、その他の物体に注意してください。	绊倒危険: 注意地面上的线、管或其他物品。
	When the safety of a procedure is questionable, contact Technical Support for Thermo Scientific Sunnyvale products.	手順の安全性にご不明な点がある場合は、Thermo Scientific Sunnyvale 製品のテクニカルサポートまでお問い合わせください。	如对安全程序有疑问，联系 Thermo Scientific Sunnyvale 产品的技术支持中心。

Unpacking Instructions

This section provides instructions for unpacking the Dionex Integrion HPIC System, an autosampler (if included), a detector module (if included), the computer, a mobile device (if included), and the consumable devices shipped with the system.



CAUTION Two or more persons must lift the Dionex Integrion, which weighs more than 23 kg (50 lb). Lift the Dionex Integrion only from each side of the cabinet bottom. Lifting from the front door will damage the door hinges.



MISE EN GARDE Au moins deux personnes doivent soulever le Dionex Integrion, qui pèse plus de 32 kg (50 lb). Ne soulevez le Dionex Integrion que par chaque côté du fond de l'appareil. Son soulèvement par la porte du panneau avant endommagera les charnières de la porte.



VORSICHT Der Dionex Integrion wiegt über 23 kg. Daher darf das Gerät nur von zwei oder mehr Personen angehoben werden. Greifen Sie dazu an beiden Seiten unter das Gerät. Wenn Sie den Dionex Integrion an der Vordertür anheben, werden die Scharniere der Tür beschädigt.

Note Check the shipping container for any external signs of damage. If the container shows signs of damage, contact Thermo Fisher Scientific immediately.

❖ To unpack the Dionex Integrion

1. Follow the instructions printed on the shipping container to turn the container on its side, open the bottom flaps, and turn it right-side up again.
2. Lift up the shipping container to remove it and set the container aside. Remove the top foam packing insert.
3. Remove the ship kit box from the top of the module and remove the foam packing cage.
4. With two or more persons, grasp each side of the Dionex Integrion cabinet bottom, lift up the module, and then place it on the bench.
5. Remove the polyethylene bag the module is shipped in.

6. Check that the main power switch on the rear panel is turned off.

Tip If you plan to install the Dionex Integrion HPIC Mobile App, check the model data label on the Dionex Integrion rear panel now and make a note of the serial number. You must be able to identify the system serial number the first time you connect to the mobile app.

❖ To unpack an autosampler

1. If you are installing an autosampler, follow the unpacking instructions in the autosampler manual.
2. Place the autosampler to the left of the Dionex Integrion on the workbench.

❖ To unpack a detector module

1. If you are installing an external detector module (for example, a Thermo Scientific™ Dionex™ ICS Series Variable Wavelength Detector), follow the unpacking instructions in the detector manual.
2. Place the detector to the right of the Dionex Integrion on the workbench. Allow adequate clearance behind the detector for ventilation; for example, allow at least 6 cm (2.4 in) of clearance behind the Dionex VWD.

❖ To unpack a mass spectrometer

1. If you are installing a mass spectrometer (MS), follow the unpacking instructions in the MS manual.
2. Place the MS to the right of the Dionex Integrion on the workbench.

❖ To unpack the computer

IMPORTANT Chromeleon 7.2 SR4 (or later) is required for support of the Dionex Integrion. Chromeleon runs under the Microsoft® Windows® 8.1 or Windows 7 operating system.

- When you purchase Chromeleon and a PC from Thermo Fisher Scientific, the chromatography software and computer hardware are installed at the factory.
- If you purchased a PC outside of North America, verify that it meets current system specifications. Refer to <http://www.thermoscientific.com/dionex>.

1. Remove the computer and all documentation from the computer box and place them on the workbench.
2. Chromeleon 7.2 SR4 (or later) is required for support of the Dionex Integrion. Follow the instructions in the computer installation guide to hook up the PC components.

❖ To unpack the mobile device

1. Remove the mobile device and all documentation from the mobile device box and place them on the workbench.
2. Follow the instructions in the mobile device installation guide to charge the device.

❖ To unpack consumable devices

Remove consumable devices (Dionex EGC, Dionex CR-TC 600, Dionex ERS, Dionex CRD) from their shipping boxes. Save the Dionex EGC shipping container; it may be required for storage or disposal of the cartridge.



CAUTION The Dionex EGC contains one of the following: a corrosive base (KOH, LiOH, or NaOH), a corrosive acid (MSA), or a concentrated K_2CO_3 solution. Wear protective eyewear and gloves when handling the cartridge.



MISE EN GARDE La cartouche de Dionex EGC contient un de ce qui suit: une base corrosive (KOH, LiOH, ou NaOH), un acide corrosif (MSA), ou une solution concentrée de K_2CO_3 . Porter des lunettes et des gants protectives en manipulant la cartouche.



VORSICHT Die Dionex EGC-Kartusche enthält eine korrosive Base (KOH, LiOH oder NaOH), eine korrosive Säure (MSA) oder eine konzentrierte K_2CO_3 -Lösung. Tragen Sie daher beim Umgang mit der Kartusche eine Schutzbrille und Handschuhe.

1 Unpacking Instructions

System Setup Instructions

This section provides instructions for setting up the system hardware, Chromeleon software, and Integriion HPIC Mobile App. These instructions apply to all system configurations. After completing the setup steps, go on to the plumbing instructions for your detection type.

Contents

- [Connecting the Dionex Integriion Power Cord](#)
- [Installing the Detector](#)
- [Plugging In the Electrolytic Devices](#)
- [Connecting an Autosampler](#)
- [Connecting to the Computer](#)
- [Setting Up the Chromatography Software](#)
- [Installing the Mobile Device](#)
- [Installing the Mobile App](#)
- [Connecting the Drain, Waste, and Vent Lines](#)
- [Degassing the Water](#)
- [Setting Up the Reservoir](#)
- [Priming the Pump](#)
- [Checking the Conductivity of the Water](#)

Notes on RFID

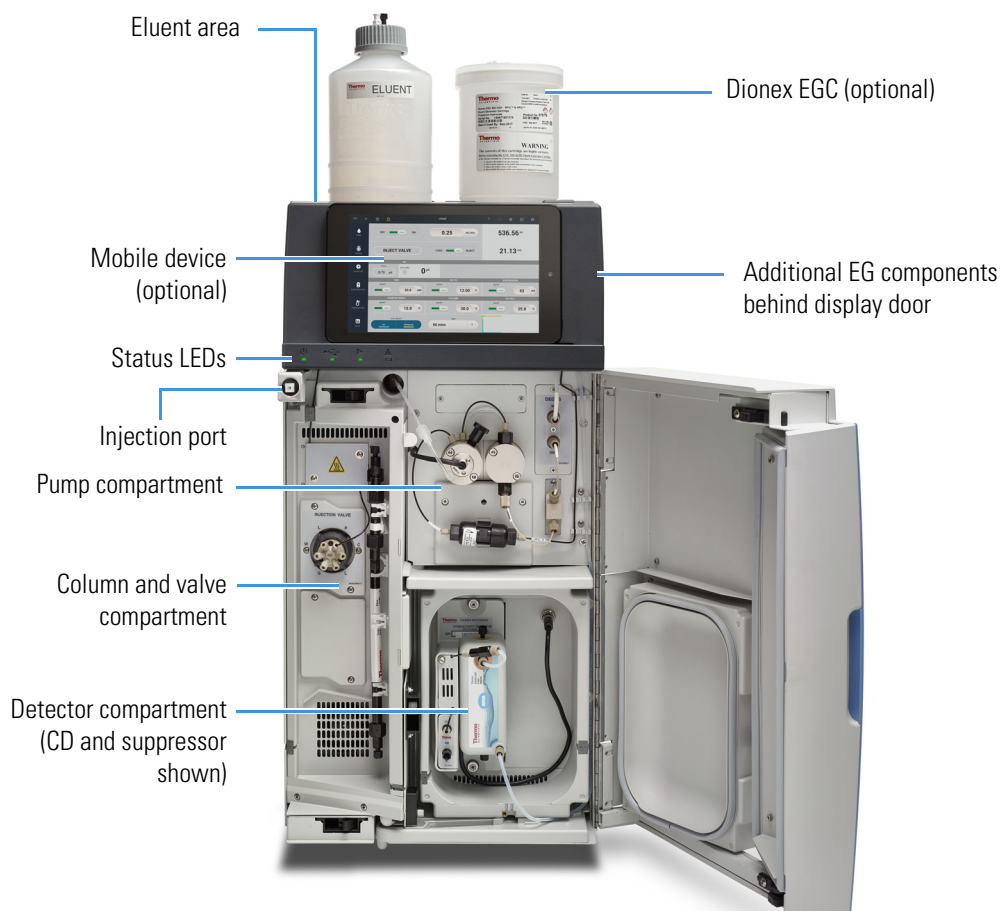
To ensure reliable communication with RFID-enabled consumables, observe the following guidelines:

- RFID labels should be free in the air (for example, a label must not be wrapped around a column). Make sure labels are not caught in the compartment door and do not touch bare metal.
- RFID labels on the separator and guard columns must not be parallel to each other.
- Columns must be installed in column clips.

System Overview

Figure 1 shows the principal operating components of a Dionex Integrion configured for conductivity detection.

Figure 1. Example interior components of a Dionex Integrion



Connecting the Dionex Integrion Power Cord

❖ To connect the power cord

1. If the system power is on, flip the power switch on the Dionex Integrion rear panel to turn off the power. (The power switch may be turned on accidentally when the system is unpacked.)
2. Connect the power cord (IEC 320 C13) (ordered separately) from the main power receptacle on the rear panel to a grounded power source. The IC system power supply is auto-sensing; therefore, no adjustment is required to select the line voltage.



WARNING SHOCK HAZARD—To avoid electrical shock, use a grounded receptacle. Do not operate the IC system or connect it to AC power mains without an earthed ground connection.



CAUTION The power supply cord is used as the main disconnect device. Make sure the socket-outlet is located near the IC system and is easily accessible.



CAUTION Operation at AC input levels outside of the specified operating voltage range may damage the IC system.



AVERTISSEMENT DANGER D'ÉLECTROCUTION—Pour éviter toute électrocution, il faut utiliser une prise de courant avec prise de terre. Ne l'utilisez pas et ne le branchez pas au secteur C.A. sans utiliser de branchement mis à la terre.



MISE EN GARDE Le cordon d'alimentation principal est utilisé comme dispositif principal de débranchement. Veillez à ce que la prise de base soit située/installée près du module et facilement accessible.



WARNUNG STROMSCHLAGGEFAHR—Zur Vermeidung von elektrischen Schlägen ist eine geerdete Steckdose zu verwenden. Das Gerät darf nicht ohne Erdung betrieben bzw. an Wechselstrom angeschlossen werden.



VORSICHT Das Netzkabel ist das wichtigste Mittel zur Stromunterbrechung. Stellen Sie sicher, daß sich die Steckdose nahe am Gerät befindet und leicht zugänglich ist.

3. If you are installing an autosampler or an external detector module, connect the power cord for each module now.

Installing the Detector

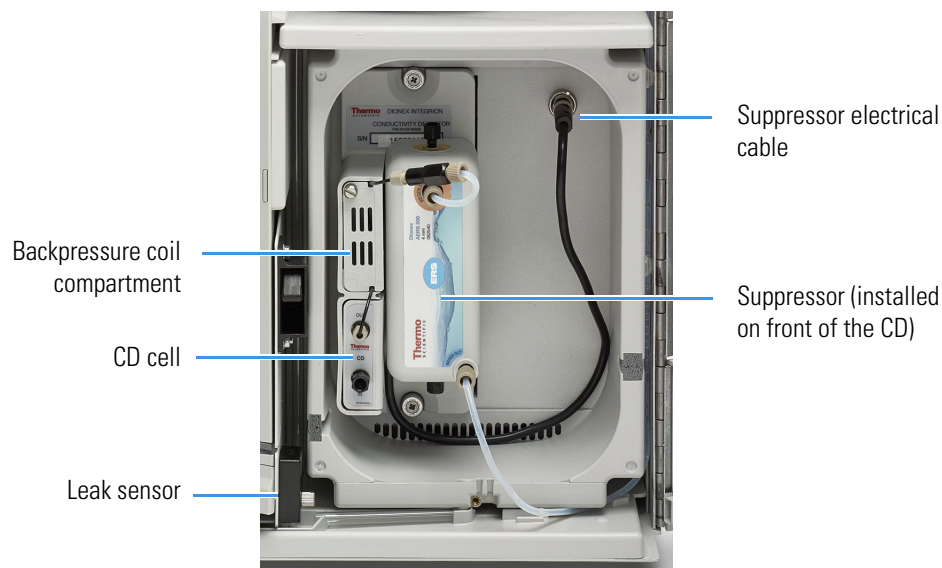
Follow the instructions here to install a Thermo Scientific™ Dionex™ Integriion™ HPIC Conductivity Detector (CD) (P/N 22153-60036) or Thermo Scientific™ Dionex™ Integriion™ HPIC Electrochemical Detector (ED) (P/N 22153-60037).

Note In a conductivity detection system, the CD cell is built into the detector and does not need to be plugged in separately.

❖ **To install the detector**

1. Note the electrical plug on the back of the detector and the receptacle inside the detector compartment.
2. Push the detector into the opening and press firmly to ensure that the electrical connection is secure. Tighten the two thumbscrews on the detector (see [Figure 2](#)).

Figure 2. CD installed in detector compartment



3. Close the detector compartment door and go to [“Connecting an Autosampler”](#) on [page 11](#).

Plugging In the Electrolytic Devices

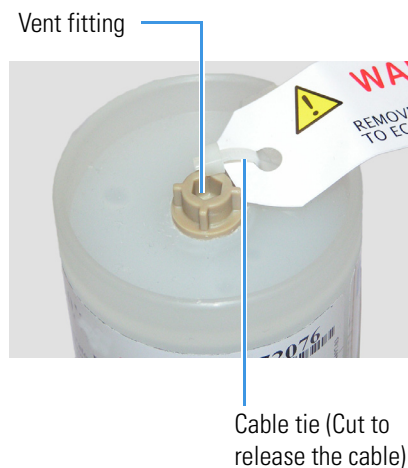
If included with your system, plug in the electrolytic devices (Dionex EGC, Dionex CR-TC 600, and suppressor) now.

Note Do not install a Dionex CR-TC 600 if a Dionex EGC 500 K_2CO_3 or a Dionex EPM 500 Electrolytic pH Modifier is installed. All products used must be compatible with the Dionex CR-TC 600.

❖ **To plug in the Dionex EGC and Dionex CR-TC 600**

1. Pull open the display door (see [Figure 1](#)).
2. The Dionex EGC cable is attached to a vent fitting (high-pressure Dionex EGC) or 10-32 fitting plug (standard-pressure Dionex EGC) on the top of the cartridge with a cable tie (see [Figure 3](#)). Cut the cable tie to release the cable.

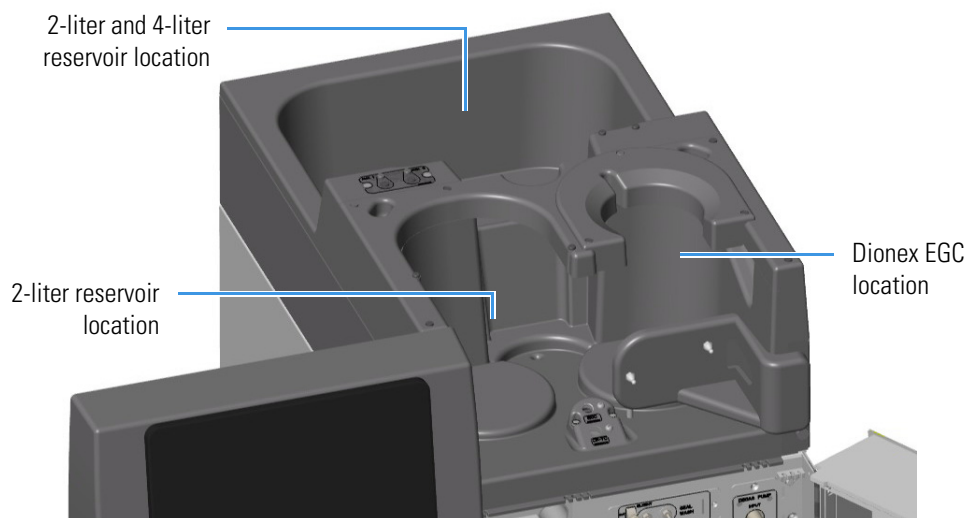
Figure 3. High-pressure Dionex EGC with cable attached to fitting



3. Verify that the vent fitting or 10-32 fitting plug is tightened. This prevents leaks during installation.
4. Remove the fitting plugs from the inlet and outlet ports on the Dionex EGC.
5. While holding the Dionex EGC with the ports on the bottom, tap the cartridge with the palm of your hand 10 to 15 times. This dislodges any air bubbles that are trapped in the electrolysis chamber.
6. Hold the Dionex EGC with the ports on the bottom and slide it into one of the Dionex EGC holders in the front of the reservoir tray (see [Figure 4](#)).

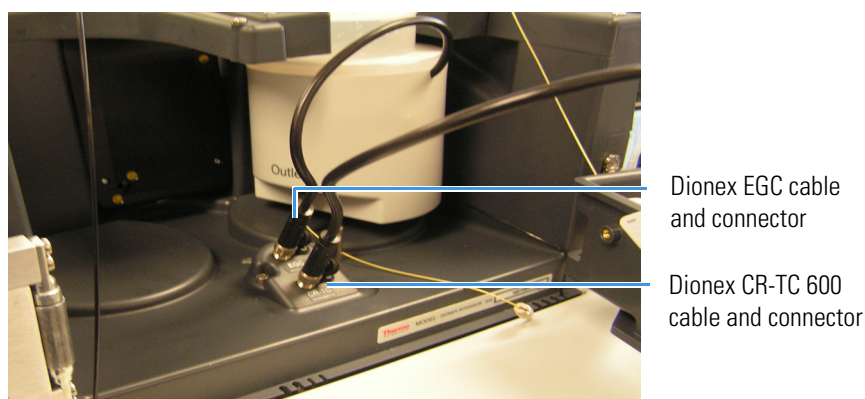
Note When installing only one Dionex EGC, place it in the holder on the right side of the reservoir tray. When installing two Dionex EGCs, place the second cartridge in the holder on the left side of the tray.

Figure 4. Eluent reservoir tray



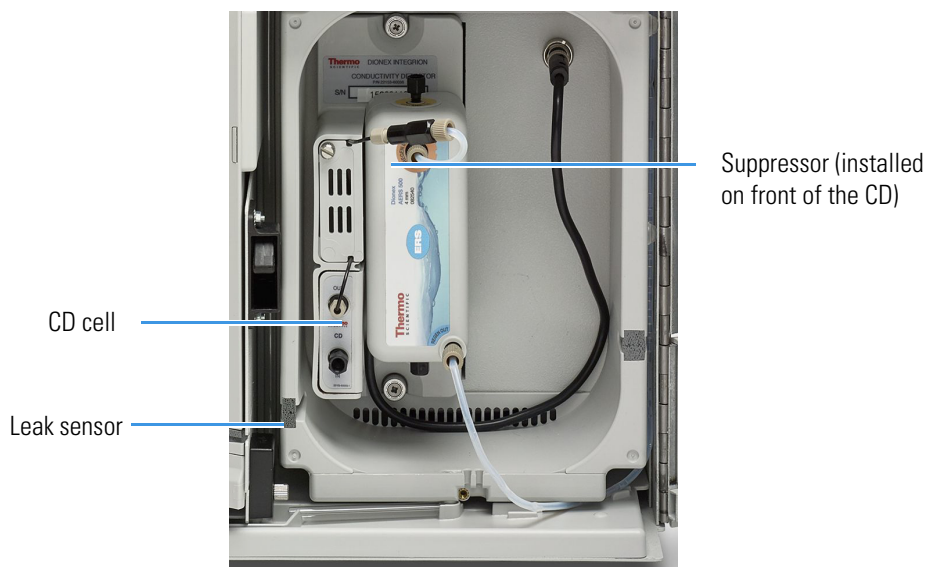
7. Hold the Dionex CR-TC 600 with the **ELUENT IN** port (red label) on the left. Align the two mounting holes on the Dionex CR-TC 600 back plate with the ball studs on the mounting plate in the system, and then push the Dionex CR-TC 600 firmly onto the mounting ball studs. The Dionex CR-TC 600 clicks into place when properly installed.
8. Connect the Dionex EGC and Dionex CR-TC 600 electrical cables:
 - a. Remove the cap over each connector.
 - b. Align the four pins inside the cable connector with the holes in the corresponding connector on the front tray (see [Figure 5](#)).
 - c. Push the cable firmly onto the front tray connector to secure it.

Figure 5. Front tray with Dionex EGC and Dionex CR-TC 600 connected



9. Close the display door.
- ❖ **To plug in the suppressor**
1. Open the detector compartment door.
 2. Orient the new suppressor with the **ELUENT OUT** port on the top and press it onto the mounting tabs in the detector compartment. Slide the suppressor down to secure it onto the tabs.
 3. Pull slightly on the suppressor to verify that it is securely fastened.
 4. Plug the suppressor cable into the connector on the right side of the detector compartment (see [Figure 6](#)).

Figure 6. Detector compartment with suppressor installed



Connecting an Autosampler

This section provides brief instructions for connecting an autosampler to the Dionex Integrion injection valve. For detailed instructions on how to install an autosampler, refer to the operator's manual for the autosampler. The manuals are provided on the Thermo Scientific Reference Library DVD (P/N 60-053891).

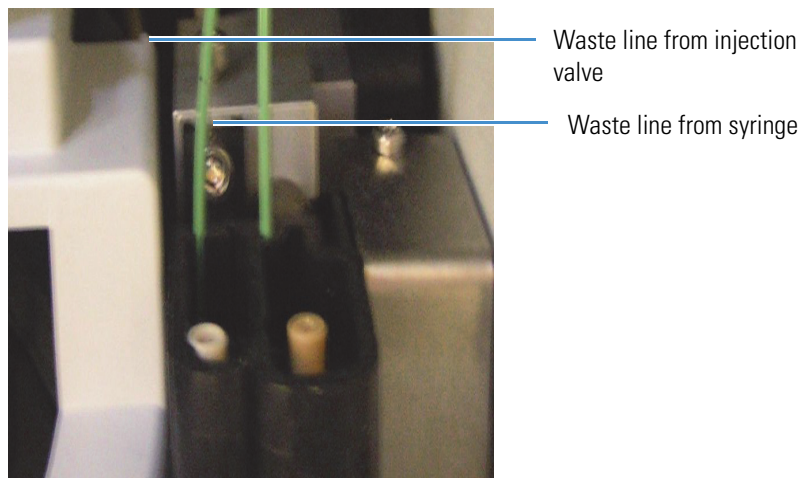
❖ To connect the autosampler sample transfer line

1. Place the autosampler to the left of the Dionex Integrion on the workbench.
2. Route the sample transfer line from the autosampler through the side slot on the lower left side of the Dionex Integrion.
3. Connect the line to the **S** port on the injection valve.

❖ To connect a waste line

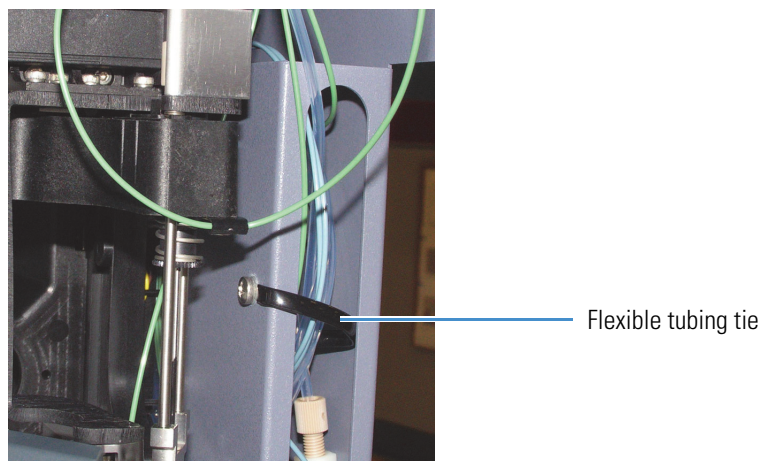
1. Cut a length of 0.762 mm (0.030 in) ID green PEEK tubing (P/N 044777) long enough to reach from the injection valve to the waste container.
2. Connect one end of the line to the **W** port on the injection valve.
3. For a Thermo Scientific™ Dionex™ AS-DV Autosampler: Route the other end of the line to waste.
4. For a Thermo Scientific™ Dionex™ AS-AP Autosampler:
 - a. Route the line to the Dionex AS-AP waste port and insert the line into one of the round openings in the waste port (see [Figure 7](#)).

Figure 7. Injection valve waste line installed in Dionex AS-AP waste port



- b. Secure the excess tubing with the flexible tubing tie in the slotted compartment next to the needle (see [Figure 8](#)). This ensures that the waste line does not interfere with the needle arm movement.

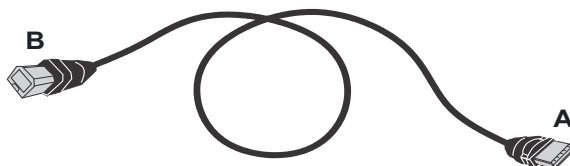
Figure 8. Flexible tubing tie in Dionex AS-AP slotted compartment



Connecting to the Computer

All USB connections described here require standard A-to-B cables.

Figure 9. USB A-to-B cable



IMPORTANT

- The USB standard limits the USB cable length to 5 meters (5.5 yds). Each USB device can be separated from the computer by no more than five hubs. Thus, each USB device can be located no more than 30 m (32 yds) from the PC.
- Before connecting the USB cables, verify that Chromeleon was installed on the computer and the license code was entered. If the chromatography software is not installed first, Windows will be unable to identify the new USB device when the power is turned on. See [page 14](#) for software installation information.
- Do not turn on the power to the Dionex Integrion or other USB device until after you connect the USB cable.

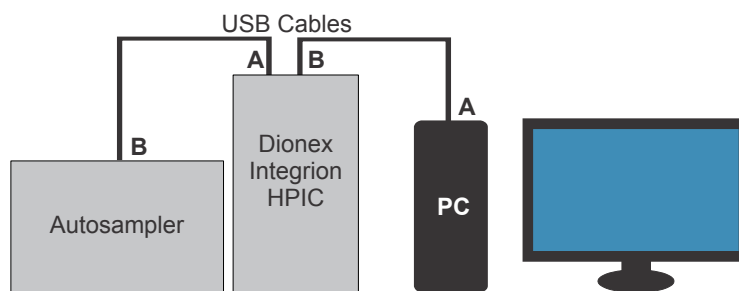
You can connect the system directly to a USB port on either the Chromeleon computer or a USB 2.0 external hub that is connected to the computer. Use an external hub when:

- The number of USB devices in the system exceeds the number of available USB ports.
- The Dionex Integrion is more than 5 meters (5.5 yds) from the PC.

❖ To connect the Dionex Integrion to the computer

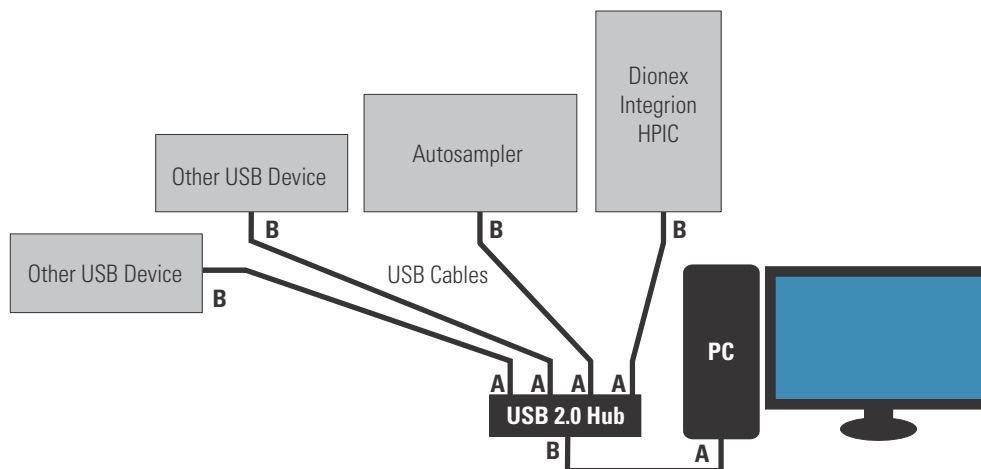
1. Locate the USB cable (P/N 960777) in the Dionex Integrion Ship Kit (RFIC, P/N 22153-62003; non-RFIC, P/N 22153-62002).
2. To connect directly to the computer, connect the USB cable between the USB connector on the Dionex Integrion rear panel and a USB port on the Chromeleon computer.

Figure 10. Example USB connections: System connected directly to the computer



To connect using an external hub, connect the USB cable to the hub and connect the hub to the computer. For installation details, refer to the manual provided by the hub vendor.

Figure 11. Example USB connections: System connected to an external hub



3. If you are installing an autosampler, locate the USB cable supplied with the autosampler and connect the cable between the USB connector on the autosampler and a USB port on either the Dionex Integration or an external hub.

IMPORTANT Carefully secure all USB cables, the external hub (if used), and the hub power cable so that they cannot be accidentally disconnected.

Setting Up the Chromatography Software

Software setup consists of installing Chromeleon software and the software license on the computer, starting the Chromeleon Instrument Controller Service, installing the USB device driver, and configuring the system in Chromeleon.

Note If the system includes a mobile device, you can either set up Chromeleon software now or wait until later in the installation procedure. The hardware installation procedure can be completed using the mobile device only.




❖ To install the Chromeleon software and license

For instructions on how to install the Chromeleon software and license (if this was not done at the factory), refer to *Chromeleon 7 Installation Guide*. The guide is provided on both the Chromeleon DVD and the Thermo Scientific Reference Library DVD (P/N 60-053891).

❖ To start the Chromeleon Instrument Controller Service

If you have not already done so, turn on the computer power and log on to Windows as a user with local computer administrator privileges.

❖ To start the Instrument Controller Service

On the Windows taskbar, right-click the Chromeleon icon  in the system tray and click **Start Chromeleon Instrument Controller**. The icon changes to  to indicate that the Instrument Controller Service is starting. When the Instrument Controller Service is running (idle), the icon changes to gray .

–or–

If the Chromeleon tray icon is not on the Windows taskbar, click **Start > All Programs > Chromeleon > Services Manager** and then click **Start Instrument Controller**.

❖ To enable automatic server start

1. Right-click the Chromeleon tray icon and click **Show Chromeleon Services Manager**. The Chromeleon Services Manager dialog box appears.
2. Select the **Start service on system start** check box.

Note To enhance system performance, Thermo Fisher Scientific recommends having Chromeleon automatically start the Instrument Controller every time the computer is turned on.

❖ To install the USB device driver

IMPORTANT

Before proceeding, verify that these tasks have been completed:

- Chromeleon was installed on the computer and the software license code was entered.
- The electrolytic devices (suppressor, Dionex EGC, and Dionex CR-TC 600) and detector (ED) included with the system are plugged in (see “[Plugging In the Electrolytic Devices](#)” on page 8).

1. Flip the power switch on the Dionex Integrion rear panel to turn on the power.
2. If the system includes an autosampler, turn on the autosampler power.
3. Windows automatically detects the new USB devices. A message is displayed briefly to inform you that new hardware was found.

❖ To select USB controller properties

1. On the Windows taskbar, click **Start > Control Panel > Device Manager**.
2. Click the right arrow beside **Universal Serial bus controllers** to expand the view. For each controller listed, complete the following steps:
 - a. Right-click the controller name, and then click **Properties**. The USB Root Hub Properties dialog box appears.

- b. Click the **Power Management** tab. (If the dialog box does not include a **Power Management** tab, click **Cancel** and go on to the next controller in the list.)
- c. Clear the **Allow the computer to turn off this device to save power** check box.
- d. Click **OK**.

Configuring the Dionex Integrion in Chromeleon

When you add the Dionex Integrion to a Chromeleon instrument, Chromeleon assigns default configuration properties. Follow the instructions below to review the default properties and edit them, if necessary. For complete instructions, refer to the Chromeleon Help or *Chromeleon 7 Installation Guide*. The installation guide is provided on both the Chromeleon DVD and the Thermo Scientific Reference Library DVD (P/N 60-053891).

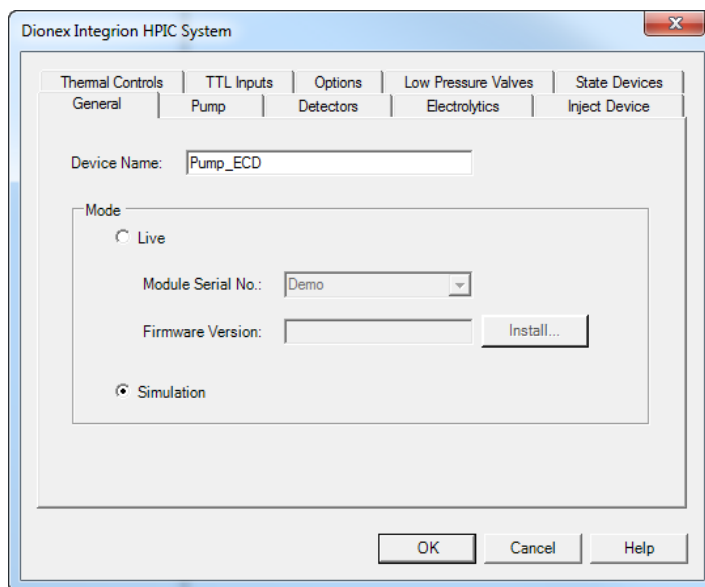
❖ To create a new instrument

1. On the Windows taskbar, click **Start > All Programs > Thermo Chromeleon 7 > Instrument Configuration Manager**.
2. Right-click the name of the PC on which Chromeleon is installed, and then click **Add Instrument**. The New Instrument dialog box appears.
3. (Optional) Edit the default instrument name.

❖ To select configuration properties for the system

1. Right-click the instrument, and then click **Add Module**.
2. In the **Manufacturers** list, select **IC: Dionex Integrated Systems**. In the **Modules** list, select **Integrion HPIC System** and click **OK**.
3. Under the instrument, right-click **Integrion HPIC System** and click **Properties**.

4. On the **General** page, click **Live** and select the serial number of the Dionex Integrion in the list.



5. On each of the remaining tab pages, verify that the devices installed in your system (detector, electrolytic devices, valves, and so on) are enabled. Select the appropriate settings for each device. For details about the options on each tab page, click **Help**. In most cases, you can accept the default options selected by Chromeleon.

❖ **To select configuration properties for the pump**

If you want to monitor all changes related to the Dionex Integrion pump (including pump pressure changes) in the Chromeleon audit trail, configure the pump driver in the same instrument as the Dionex Integrion system.

1. Right-click the instrument that includes the Dionex Integrion, and then click **Add Module**.
2. In the **Manufacturers** list, select **IC: Dionex Integrated Systems**. In the **Modules** list, select **Integrion HPIC Pump (Wellness)** and click **OK**.
3. Under the instrument, right-click **Integrion HPIC Pump (Wellness)** and click **Properties**. Select the preferred pump parameters on the tab pages in the **Properties** dialog box.

Note If you are running the system in Live mode, configure the pump in Live mode, also.

Installing the Mobile Device

Note If you purchase a mobile device separately from the Dionex Integrion, be sure the device meets current system specifications. For the latest specifications, refer to <http://www.thermoscientific.com/dionex>.

❖ To install the mobile device

The mobile device is mounted (in landscape orientation) on a magnet plate on the upper door of the Dionex Integrion (see [Figure 1](#)).

1. If you purchased the mobile device from Thermo Fisher Scientific, a magnet is already attached to the rear of the mobile device. Align the mobile device with the magnet plate on the system and press gently into place.

If you purchased the mobile device separately from the system, a magnet (P/N 22153-40107) is required for installation of the device:

- a. Remove the paper backing from the adhesive on the magnet. Align the magnet against the rear of the mobile device and press firmly into place.
 - b. Align the mobile device with the magnet plate and press gently into place.
2. Complete the installation by connecting the mobile device to the instrument. The procedure varies slightly, depending on the type of network connection. For instructions, see the appropriate section below.

❖ To set up a wireless network connection (Android device)

1. Open the Settings for the device. On the Settings menu, verify that Wi-Fi is turned on.
2. Tap the Wi-Fi menu to display the available networks. Select your network.
3. In the list of devices connected to the network, tap the entry for the Dionex Integrion. The format is **Integrion_XXXXXXXX**, where **XXXXXXXX** is the serial number of your system.
4. If asked for a password, enter **sept1975**. After entering the password, it may take a moment for the device to connect to the network.

❖ To set up a wireless network connection (iOS device)

1. Open the Settings for the device.
2. Tap the Wi-Fi menu and verify that Wi-Fi is connected.
3. Under Choose a Network, tap the entry for the Dionex Integrion. The format is **Integrion_XXXXXXXX**, where **XXXXXXXX** is the serial number of your system.
4. If asked for a password, enter **sept1975**. After entering the password, it may take a moment for the device to connect to the network.

Installing the Mobile App

When you purchase the mobile device from Thermo Fisher Scientific, the Dionex Integrion HPIC Mobile App is preloaded on the device. If you purchase the mobile device separately from the Dionex Integrion, follow the instructions below to install the app.

Note The Integrion HPIC Mobile App is optimized for display in the landscape orientation.

❖ To install the mobile app (Android version)

1. If you have not already done so, install the free Dionex Integrion HPIC Mobile App from the Google Play Store or your corporate enterprise app store. (It is also available directly as a signed Application Package File (APK).)
2. Follow the on-screen instructions to download the app to the mobile device.

❖ To install the mobile app (iOS version)

1. If you have not already done so, install the free Dionex Integrion HPIC Mobile App from iTunes or your corporate enterprise app store. (It is also available directly as a signed Application Package File (APK).)
2. Follow the on-screen instructions to download the app to the mobile device.

At startup, the Dionex Integrion performs an initialization procedure. If the mobile app is configured, a startup screen is displayed during the initialization process. When initialization is complete, the Home page is displayed.

The Home page of the mobile app displays the current status and operation settings for the most commonly used system functions. You can also select basic operating parameters from this page, as well as navigate to detailed status and control pages for system components. [Figure 12](#) is an example Home page for a system that includes a conductivity detector, an eluent generator, and three temperature control zones.

2 System Setup Instructions

Connecting the Drain, Waste, and Vent Lines

Figure 12. Dionex Integrion HPIC Mobile App example Home page



Note If you temporarily connect your mobile device to a Wi-Fi access point that includes a Dionex Integrion other than the one required, be sure to remove or “forget” the profile for the alternate access point (on the Settings->Wi-Fi menu for the mobile device) when you are finished. Otherwise, the required Dionex Integrion will not be able to auto-connect to the correct access point.

Connecting the Drain, Waste, and Vent Lines

Any leaks or condensation that may occur in the system are routed to the drain port on the Dionex Integrion rear panel. Waste lines from the pump and eluent generator exit the rear of the system.

A vent line to the EG degas cartridge also exits the rear of the system. If the system includes a CD, direct the EG degas vent line to a waste container. If the system includes an ED, connect the EG degas vent line to the vacuum port on the rear panel.

❖ To connect the leak and condensation drain line

1. Locate the corrugated drain line (P/N 055075) in the Dionex Integrion Ship Kit (RFIC, P/N 22153-62003; non-RFIC, P/N 22153-62002).

2. Push the line onto the drain port (see [Figure 13](#)) and place the open end of the line into a waste container or appropriate drain. Verify that the line lays flat on the bench; this ensures that liquid drains over the edge of the bench.

Figure 13. Drain port on Dionex Integrion rear panel



❖ **To connect the waste lines**

1. Locate the gas separator waste tube assembly (P/N 045460) in the Dionex Integrion Ship Kit (RFIC, P/N 22153-62003; non-RFIC, P/N 22153-62002).
2. Untape the two coiled waste lines from the rear panel and connect the ends to the unions on the 3 mm (1/8 in) ID white PTFE tubing extending out of the gas separator waste tube assembly.

IMPORTANT The tubing braided with metal is the main waste line (see [Figure 14](#)).

Figure 14. Dionex Integrion main waste line



3. Place the end of the gas separator waste tube into a waste container or appropriate drain. Make sure the tube and the waste container are open to the atmosphere.

IMPORTANT For correct drainage, make sure the drain and waste lines are not bent, pinched, or elevated at any point. Do not allow the ends of the lines to be submerged in waste liquid.

2 System Setup Instructions

Connecting the Drain, Waste, and Vent Lines



CAUTION DO NOT CAP THE WASTE CONTAINER: The EG and the electrolytic suppressor use an electrolytic process that results in the production of small amounts of oxygen or hydrogen gas. To ensure that the gas is not trapped in a closed container and allowed to concentrate, install a 1.3 cm (0.52 in) ID black gas separator waste tube (P/N 045460) in an uncapped waste container. Connect the WASTE, GAS SEPARATOR line to the waste tube (see [Figure 13](#)).



MISE EN GARDE NE PAS FERMER LE CONTENEUR DE GAZ RÉSIDUEL: Le EG et le electrolytic suppressor fonctionnent par un procédé d'électrolyse qui génèrent de petites quantité d'oxygène ou d'hydrogène à l'état gazeux. Afin d'éviter que ce gaz ne soit pris au piège et se concentre dans un conteneur clos, veuillez connecter le tube à gaz résiduel noir (1,3cm de diamètre intérieur; n° de commande 045460) entre le conteneur de gaz résiduel, restant ouvert, et les différents tubes "WASTE, GAS SEPARATOR" comme indiqué sur la [Figure 13](#).



VORSICHT VERSCHLIESSEN SIE DEN ABFALLBEHÄLTER NICHT: Der EG und electrolytic suppressor verwenden einen Elektrolyseprozess, durch welchen kleine Mengen an Sauerstoff und Wasserstoff gebildet werden. Führen Sie einen schwarzen Gasabschiderschlauch (ID = 1,3 cm; Bestell-Nr. 045460) in einen offenen (unverschlossenen) Abfallbehälter, damit sich das Gas nicht in einem geschlossenen Behälter sammeln kann und aufkonzentriert. Verbinden Sie die mit Waste, Gas Separator bezeichnete Leitung mit dem Abfallschlauch. Siehe [Figure 13](#).

❖ To connect the EG degas vent line to the vacuum port

The use of a vacuum with the EG degas vent can improve analyte response and baseline stability for IPAD (integrated pulsed amperometric detection) applications.

Note This section is required for an ED, and optional for a CD. For any installation, confirm that the vent connection or port plug on the top of the Dionex EGC is tight. This ensures that the vacuum degas functions correctly for eluent.

1. Locate the vacuum port, near the left-hand side of the Dionex Integrion rear panel (see [Figure 15](#)).

Figure 15. Vacuum port on Dionex Integrion rear panel



Vacuum port with fitting plug installed

2. Remove the fitting plug from the vacuum port and connect the green EG degas vent line to the vacuum port.

Selecting the Eluent Drain Valve Setting

The eluent drain valve has two settings:

- When the valve is open, liquid drains from the tray through internal tubing to the drain port and then out to waste.
- When the valve is closed, any liquid that has spilled or leaked into the reservoir tray is contained in the tray. The tray can hold up to 4 L of fluid.

❖ To open or close the drain valve

Rotate the **ELUENT DRAIN** handle on the Dionex Integrion rear panel to the preferred setting (see [Figure 16](#)):

Figure 16. Eluent drain valve settings



Degassing the Water

Degas the deionized water that will be used to fill the eluent reservoir. For water specifications, see [“Deionized Water Requirements for IC”](#) on [page viii](#).

Note If you have not yet set up the computer and Chromeleon, you can do this while waiting for water degassing to finish. Follow the instructions presented earlier in this chapter.

Setting Up the Reservoir

The following reservoirs are available for use with the Dionex Integrion:

- 2-liter reservoir (P/N 062510)
- 4-liter reservoir (P/N 063292)



CAUTION Do not use the reservoirs for offline vacuum degassing of eluents. The reservoirs were not designed for this purpose.



MISE EN GARDE N'utilisez pas le réservoir en plastique pour le dégazage à vide hors ligne d'éluants. Le réservoir n'a pas été conçu à cette fin.



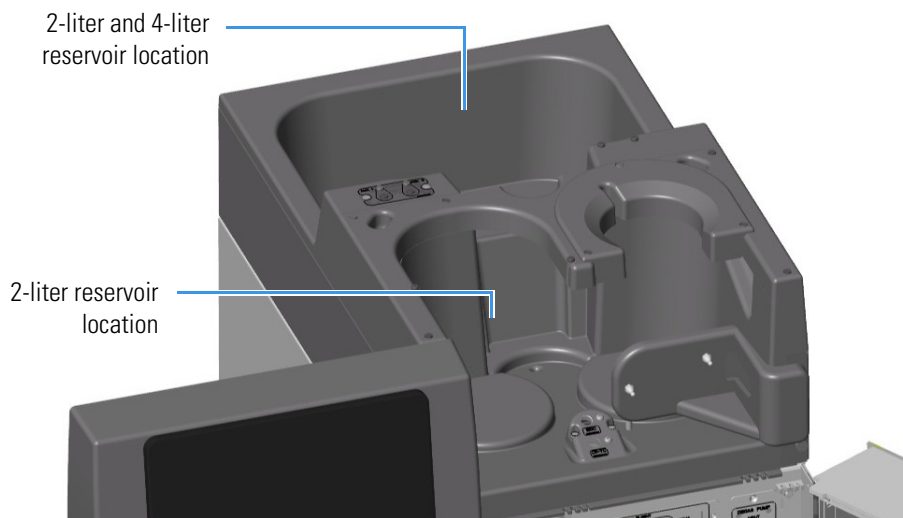
VORSICHT Verwenden Sie den Plastikbehälter zum Offline Vakuum-Entgasen von Eluenten. Die Behälter sind dafür nicht ausgelegt.

IMPORTANT Always use ASTM filtered, Type I (or better) (18 megohm-cm) deionized water that meets the specifications in [Table 1 on page viii](#) to rinse reservoirs, fill reservoirs used for eluent generation or seal washing, or manually prepare eluent.

❖ To set up the reservoir

1. Rinse the eluent reservoir with deionized water and then fill it with degassed deionized water. This water will be used to:
 - Flush the system
 - Condition and hydrate consumable devices (Dionex EGC, Dionex CR-TC 600, Dionex ERS, Dionex CRD)
 - Generate eluent
2. Place the reservoir in the reservoir tray on top of the Dionex Integrion (see [Figure 17](#)). The tray can hold up to two 2-liter reservoirs and one 4-liter reservoir:
 - A 2-liter reservoir is typically installed in the front section of the tray, on the left side (with a Dionex EGC installed on the right side).
 - An additional 2-liter reservoir and a 4-liter reservoir can be installed in the back section of the tray.
 - If two Dionex EGCs are installed in the system, the left front section is used for the second cartridge.

Figure 17. Eluent reservoir tray



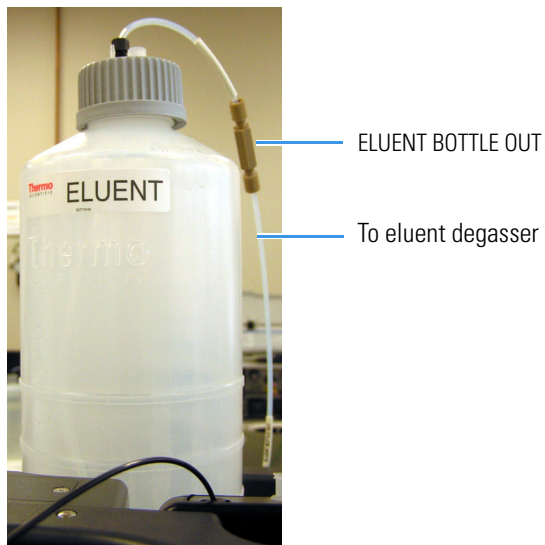
3. If an end-line filter is not installed, locate the filter (P/N 045987) provided in the Dionex Integrion Ship Kit (RFIC, P/N 22153-62003; non-RFIC, P/N 22153-62002) and install it on the end of the reservoir's eluent line.
4. Thoroughly rinse the end-line filter with deionized water.
5. Install the reservoir cap, making sure the end of the line extends to the bottom of the reservoir, and that the filter is submerged in liquid. This prevents air from being drawn through the eluent lines. Hand-tighten the cap.

Note A Thermo Scientific™ Dionex™ High-Pressure Inline Filter (P/N 044105) can be installed to remove microparticulate matter from eluent. Connect the inline filter between the pump outlet and the eluent inlet port on the injection valve. For details, see the instructions provided with the inline filter.

6. Locate the 10 mL syringe (P/N 079803) and luer adapter (P/N 024305) in the Dionex Integrion Ship Kit (RFIC, P/N 22153-62003; non-RFIC, P/N 22153-62002).
7. Using the syringe and luer adapter, draw water through the reservoir **ELUENT BOTTLE OUT** line to flush the line.

8. Connect the liquid line from the pump eluent degasser to the **ELUENT BOTTLE OUT** line (see [Figure 18](#)).

Figure 18. Completed eluent reservoir connections



If you are not using an EG: You can either prepare the eluent for your application now or wait until after completing the system installation and the Installation Qualification (IQ). For eluent preparation instructions, refer to the manual for the column that will be installed. Column manuals are provided on the Thermo Scientific Reference Library DVD (P/N 60-053891).

Online Degassing of Liquids (Optional)

Thermo Fisher Scientific offers an optional low-pressure Eluent Vacuum Degas Kit (P/N 22153-62010) that provides continuous, online eluent degassing. When the option is installed, deionized water or eluent from the eluent reservoir passes through the degasser before it enters the pump.

If a Dionex AS-AP will be used with the Dionex Integrion, you may want to install a separate vacuum degasser in order to degas the flush fluid used with the autosampler. The Dionex AS-AP Degas Kit (P/N 079883) includes the degas module, tubing, and fittings needed to install the degasser in the autosampler and connect it to the Dionex Integrion. Installation instructions are provided in the kit.

Pressurizing Reservoirs

The eluent reservoirs available for use with the Dionex Integrion can be pressurized, if necessary. Pressurizable reservoirs allow eluents to be stored under a specific atmosphere. Thermo Fisher Scientific recommends pressurizing reservoirs with helium or nitrogen under the following circumstances:

- When using eluents that are sensitive to contamination.

- When combining aqueous and nonaqueous components (for example, water and acetonitrile).

For instructions, see “[Pressurizing Eluent Reservoirs](#)” on page 61.

Setting Up the Pump Seal Wash System

If the Dionex Integriion will be equipped with a pump seal wash system, install the system now. For instructions, see “[Setting Up the Piston Seal Wash System](#)” on page 67.

Priming the Pump

Before priming the pump, verify that the following tasks have been done:

- The eluent reservoir is filled.
- The reservoir cap is installed and hand-tightened.
- The liquid line from the pump to the reservoir cap is connected.
- (Optional) The piston seal wash system is set up.
- (Optional) Reservoirs are pressurized.

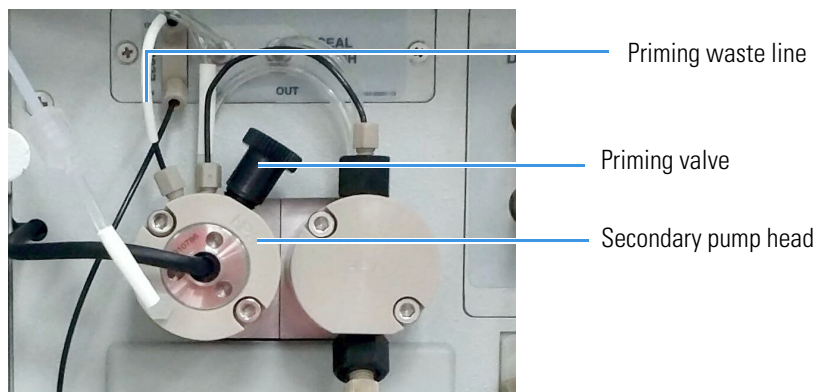
❖ To prime the pump

1. You can prime the pump from either Chromeleon or the mobile app.
 - For Chromeleon operation: On the ePanel Set, click the **Pump_ECD** tab.
 - For mobile app operation: Tap the **PUMP** button on the Home page to open the Pump page.
2. Verify that the system pressure is less than 0.7 MPa (100 psi). Then, open the priming valve on the secondary pump head (see [Figure 19](#)) by turning the knob one-half turn counterclockwise.

IMPORTANT Open or close the priming valve only when the system pressure is less than 0.7 MPa (100 psi).

Note If the priming valve is opened too much, air is drawn through the valve and air bubbles can be seen exiting the waste line.

Figure 19. Pump components



3. Select the priming flow rate.
4. Start the priming flow.
 - For Chromeleon operation: Click **Prime** on the ePanel. A warning message asks you to verify that the priming valve is open. After doing so, click **Execute despite warnings**.
 - For mobile app operation: On the Pump page, in the PRIME group, tap **ON**.
5. Prime the pump until all air is purged and no air bubbles can be seen exiting the priming waste line (see [Figure 19](#)). Stop the pump flow.
6. Check that the system pressure is less than 0.7 MPa (100 psi) and then close the priming valve by turning the knob clockwise. Tighten no more than fingertight.

IMPORTANT Open or close the priming valve only when the system pressure is less than 0.7 MPa (100 psi). Do not use any tools to tighten the priming valve! Overtightening may destroy the cap seal.

7. Enter the flow rate required for your application.
 - For Chromeleon operation: On the ePanel, enter the flow rate and click **On** to turn on the pump flow.
 - For mobile app operation: On the Pump page, in the FLOW group, tap the down arrow beside the flow rate button until the required flow rate is displayed. Tap **ON** to turn on the pump flow.
8. After starting the pump, wait at least 5 minutes (longer for flow rates below 1.0 mL/min) before beginning an analysis. This allows the pump to stabilize the flow rate.

Checking the Conductivity of the Water

If the system is configured for conductivity detection, check the background conductivity of the water that you plan to use for eluent generation through the cell.

IMPORTANT Always use ASTM filtered, Type I (or better) (18 megohm-cm) deionized water that meets the specifications in [Table 1](#) on [page viii](#) to rinse reservoirs, fill reservoirs used for eluent generation or seal washing, or manually prepare eluent.

❖ To check the conductivity of the water

1. Connect a short piece of tubing to the CD cell inlet port.
2. Connect a luer adapter to the tubing and use a 1 mL syringe to flush a fresh sample of the water that you plan to use for eluent generation through the cell.

Note A luer adapter is shipped with the Dionex EGC.

3. Verify that the conductivity is 1 μ S or below.
4. If the conductivity is greater than 1 μ S, refill the syringe with fresh water (or use water from a different source) and then recheck the conductivity.

2 System Setup Instructions

Checking the Conductivity of the Water

System Plumbing Instructions

This section provides instructions for plumbing the Dionex Integrion, including setup and installation of electrolytic devices and columns, and system equilibration.

Contents

- Tubing and Fitting Requirements
- System Plumbing Checklists
- Plumbing the Static Mixer or Trap Column
- Completing the IQ and System Function Test
- Completing the OQ
- Flushing and Conditioning the Electrolytic Devices
- Flushing and Installing the Columns
- Completing the Plumbing for Conductivity Detection
- Completing the Plumbing for Electrochemical Detection
- Verifying the Compatibility of Consumables
- Equilibrating the System

Tubing and Fitting Requirements

The Dionex Integrion Ship Kit (RFIC, P/N 22153-62003; non-RFIC, P/N 22153-62002) includes all of the tubing and fittings required to plumb the system (see [Table 1](#)).

Table 1. Tubing and fittings for the Dionex Integrion

Part	Part Number	Used to connect...
1.58 mm (0.062 in) ID PTFE tubing	014157 (1 in length)	<ul style="list-style-type: none"> • Eluent reservoir to shutoff valve or degas inlet • (CD systems) Suppressor regen ports • (RFIC systems) Dionex CR-TC 600 regen ports • (ED systems) Cell outlet to Dionex CR-TC 600 regen inlet
Pre-bent, 0.25 mm (0.010 in) ID black PEEK tubing	22153-40111	(Non-RFIC systems) Static mixer to column compartment
Pre-bent, 0.25 mm (0.010 in) ID black PEEK tubing	22153-40110	(RFIC-EG systems) Static mixer to Dionex EGC inlet
0.25 mm (0.010 in) ID black PEEK tubing	042690 (4 in length)	<ul style="list-style-type: none"> • Primary and secondary pump heads • Injection valve port P (in systems without a heated column compartment)
1.02 mm (0.040 in) ID tan PEEK tubing	054410 (4.81 in length)	<ul style="list-style-type: none"> • Shutoff valve outlet to primary pump inlet check valve • (RFIC-EG systems) Degas to shutoff valve
Prime/waste tubing assembly	063598	Secondary pump head to waste
Backpressure coil for 4 mm suppressor	045877	(CD systems) Backpressure coil to suppressor regen inlet
IC PEEK Viper™ assembly, 0.18 mm (0.007 in), 102 mm (4.0 in)	088805	Guard column outlet to separator column
Viper assembly, 0.18 mm (0.007 in) ID, 140 mm (5.5 in)	088806	Injection valve port C to guard column
Viper assembly, 0.18 mm (0.007 in), 165 mm (6.5 in)	088807	(RFIC systems) Dionex EGC eluent outlet to Dionex CR-TC 600 eluent inlet
Viper assembly, 0.18 mm (0.007 in), 114 mm (4.5 in)	088813	(RFIC systems) Dionex EGC eluent outlet to Dionex CRD eluent inlet
Viper assembly, 0.18 mm (0.007 in), 178 mm (7.0 in)	088808	(CD systems) Separator column to suppressor eluent inlet

Table 1. Tubing and fittings for the Dionex Integrion, continued

Part	Part Number	Used to connect...
Viper assembly, 0.18 mm (0.007 in), 178 mm (7.0 in)	088809	(RFIC systems) Separator column to cell inlet
Viper assembly, 0.18 mm (0.007 in), 229 mm (9.0 in)	088810	(CD systems) Suppressor eluent outlet to CD cell inlet
Viper assembly, 0.18 mm (0.007 in), 241 mm (9.5 in)	088811	(RFIC systems) Dionex CR-TC 600 eluent outlet to Dionex RFIC Eluent Degasser inlet
1/8 in ferrule 1/8 in flangeless fitting nut	048949 052276	1.58 mm (0.062 in) ID PTFE tubing
10-32 double-cone ferrule 10-32 fitting bolt	043276 22000-98001	0.25 mm (0.010 in) ID black PEEK tubing
Two-piece ferrule 1/16 in flangeless fitting nut	062511 052230	Degas out to shutoff valve in
1/8 in ferrule 1/8 in flangeless fitting nut (short)	048949 057934	<ul style="list-style-type: none"> • (CD systems) Suppressor regen ports • Cell/regen out to waste line
1/4-28 coupler	039056	Waste line
10-32 coupler	042627	<ul style="list-style-type: none"> • (Non-RFIC systems) Static mixer to column compartment • (RFIC systems) Dionex CR-TC 600 eluent outlet to Dionex RFIC Eluent Degasser inlet
1/4-28 to 10-32 coupler	042806	<ul style="list-style-type: none"> • (CD systems) Backpressure coil to suppressor regen inlet • (ED systems) Cell outlet to Dionex CR-TC 600 regen inlet

System Plumbing Checklists

The system plumbing steps and the order in which they are performed vary slightly, depending on the detector to be installed. The following checklists summarize the steps for each detection type.

CD system plumbing checklist

- Plumb the static mixer or trap column
- Complete the IQ and system function test
- Complete the OQ (optional)
- Flush and condition the electrolytic devices
- Flush and install the columns
- Complete the plumbing
- Equilibrate the system

ED system plumbing checklist

- Install the ED amperometry cell
- Fill and flush the liquid path
- Flush and condition the electrolytic devices
- Complete the IQ and system function test
- Complete the OQ (optional)
- Flush and install the columns
- Complete the plumbing
- Equilibrate the system

Plumbing the Static Mixer or Trap Column

When shipped from the factory, a GM-4 static mixer is installed in the pump compartment and the inlet of the static mixer is pre-plumbed to the pump outlet. If the system does not include a continuously-regenerated trap column (Dionex CR-TC 600), you may wish to install a high-pressure trap column in its place. In this case, the trap column will function as the pulse damper.

[Table 2](#) lists the high-pressure trap columns available for use with the Dionex Integrion.

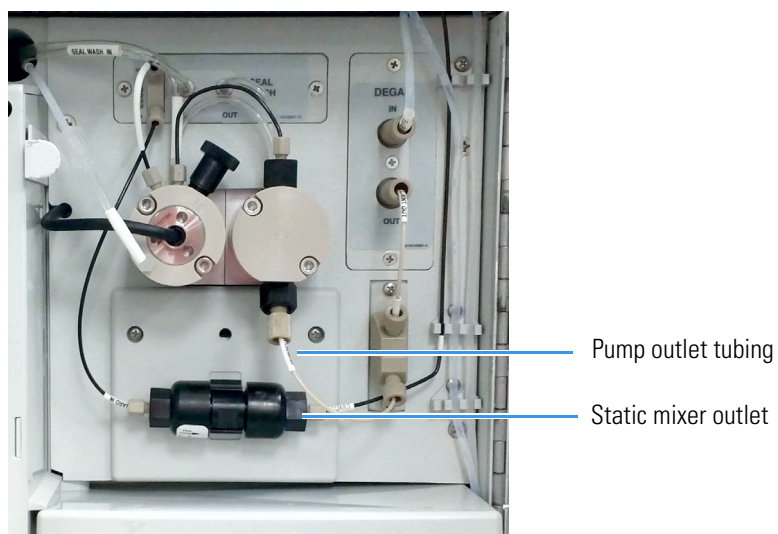
Table 2. High-pressure trap columns

Thermo Scientific high-pressure trap column	Part number
Dionex MFC 500	079017
Dionex ATC 500, 2 mm	079018
Dionex CTC 500, 2 mm	079019
Dionex ATC 500, 4 mm	075976
Dionex CTC 500, 4 mm	075977
Dionex ATC-HC 500	075978
Dionex ATC-HC 500 Borate	075979

❖ **To plumb a static mixer**

1. Open the door of the pump compartment.
2. Connect the pre-bent, 0.25 mm (0.010 in) ID black PEEK tubing to the static mixer outlet (see [Figure 20](#)).

Figure 20. Pump outlet connection



❖ **To install a trap column**

Before installing a trap column, refer to the column manual for the conditioning, equilibration, or plumbing details required for your application. The column manuals are provided on the Thermo Scientific Reference Library DVD (P/N 60-053891).

1. Open the door of the pump compartment.
2. Remove the static mixer from the mounting clip (P/N 064552) on the component panel (see [Figure 20](#)).

3 System Plumbing Instructions

Completing the IQ and System Function Test

3. Remove the plugs from the trap column inlet and outlet. Install the plugs in the inlet and outlet of the static mixer. Set the mixer aside.
4. For a Dionex MFC 500 (P/N 079017): Connect the tubing from the secondary pump head to the trap column inlet and press the trap column into the mounting clip on the component panel.
5. For a Dionex ATC 500, ATC-HC 500, ATC-HC Borate, or CTC 500:
 - a. Locate the mounting clip required for your column in the Dionex Integrion Ship Kit (RFIC, P/N 22153-62003; non-RFIC, P/N 22153-62002).

Thermo Scientific high-pressure trap column	Use this mounting clip...
Dionex ATC 500, 2 mm (P/N 079018) Dionex CTC 500, 2 mm (P/N 079019)	Dual-component clip (P/N 074010)
Dionex ATC 500, 4 mm (P/N 075976) Dionex CTC 500, 4 mm (P/N 075977)	Component clip (P/N 075985)
Dionex ATC-HC 500 (P/N 075978) Dionex ATC-HC 500 Borate (P/N 075979)	Component clip (P/N 075985)

- b. Remove the screw and mounting clip used to secure the static mixer to the component panel. Attach the mounting clip for the trap column to the component panel, using the screw from the mixer clip.

Note When using a dual-component clip, you can install the trap column in either set of clips.

- c. Connect the tubing from the secondary pump head to the trap column inlet, and then press the trap column into the mounting clip.
6. Connect the pre-bent, 86 cm (34 in) piece of 0.25 mm (0.010 in) ID black PEEK tubing to the trap column outlet.
7. Store the static mixer (and its mounting clip, if removed) for future use.

Completing the IQ and System Function Test

Complete the appropriate Installation Qualification (IQ) checklist, as well as the system function test, to verify that the Dionex Integrion is correctly installed and that basic system components (injection valve, pump, and detector) are functioning correctly.

Note If you are installing an ED, set up the eluent generator (see [page 37](#)) before completing the IQ checklist and performing the system function test. The system function test for an ED requires KOH eluent. The test for a CD requires deionized water only.

Completing the OQ

If purchased for your system, complete the Operational Qualification (OQ) procedure.

Note For an ED, complete the OQ after performing the EDsystem function test.

Flushing and Conditioning the Electrolytic Devices

Electrolytic devices include products such as the Dionex EGC, Dionex CR-TC 600, and some suppressors (for example, the Thermo Scientific™ Dionex™ ERS™ 500 Electrolytically Regenerated Suppressor).

The Dionex EGC and Dionex CR-TC 600 are installed in the eluent area of the Dionex Integriion. Suppressors are installed in the detector compartment.

❖ To prepare the Dionex EGC

1. Pull open the display door to access the EG components.
2. Locate the yellow 0.5 mL/min, 7 MPa (1000 psi) backpressure coil (P/N 053765) in the Dionex Integriion Ship Kit (RFIC, P/N 22153-62003).
3. Connect one end of the backpressure coil to the Dionex EGC outlet port. (This is a temporary connection.) Direct the other end of the backpressure coil to a small waste container. A minimum of 14 MPa (2000 psi) of backpressure is required.
4. On the top of the Dionex EGC, unscrew the vent fitting (on a high-pressure cartridge) or 10-32 fitting plug (on a standard-pressure cartridge) and install the luer fitting shipped with the cartridge. Save the vent fitting or 10-32 fitting plug.
5. Connect the vent line to the vent opening.

IMPORTANT To ensure proper ventilation, always connect the luer fitting and vent line to the Dionex EGC before operation. If you need to remove the Dionex EGC from the system, reinstall the vent fitting or 10-32 fitting plug to prevent leaks.

❖ To flush and condition the Dionex EGC

1. Select the pump flow rate.

For Chromeleon operation: On the ePanel, set the flow rate to 1.0 mL/min. Click **On** to turn on the pump.

For mobile app operation: On the Home page, set the flow rate to 1.0 mL/min and then tap the **ON** button.
2. Set the EG concentration to the value required for the cartridge type:
 - For a Dionex EGC 500 K₂CO₃, set the concentration to 9 mM.

3 System Plumbing Instructions

Flushing and Conditioning the Electrolytic Devices

- For all other cartridge types, set the concentration to 50 mM.
3. Turn on the Dionex EGC power.
 4. Condition the Dionex EGC for 30 minutes and then turn off the Dionex EGC and the pump flow.

❖ To complete the Dionex EGC plumbing

1. Disconnect the backpressure coil from the Dionex EGC outlet port.
2. Reconnect the Dionex CR-TC 600 eluent inlet line to the Dionex EGC outlet port and connect the other end to the Dionex CR-TC 600 eluent inlet port.
3. Align the four pins inside the Dionex CR-TC 600 cable connector with the holes in the **CR-TC** connector on the front tray. Push the cable firmly onto the front tray connector to secure it.

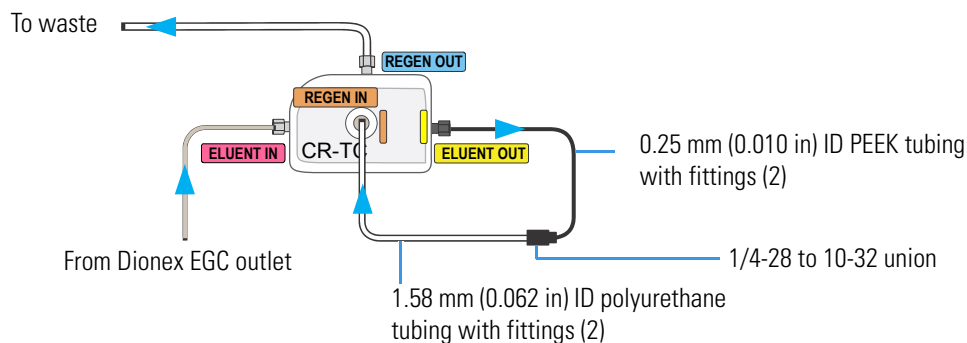
❖ To flush the Dionex CR-TC 600

1. Remove the plugs from the four ports on the Dionex CR-TC 600.
2. Connect the Dionex EGC eluent outlet line to the Dionex CR-TC 600 **ELUENT IN** port (see Figure 21).
3. Locate the tubing and fittings for Dionex CR-TC 600 hydration provided in the Dionex Integriion Ship Kit (RFIC, P/N 22153-62003).
4. Connect the hydration tubing between the Dionex CR-TC 600 **ELUENT OUT** port and the **REGEN IN** port as shown in Figure 21.
5. Connect the **REGEN OUT** waste line to the Dionex CR-TC 600 **REGEN OUT** port and direct the tubing to waste.

Figure 21. Flow schematic for flushing the Dionex CR-TC 600

Dionex CR-TC 600 flushing:

Pump flow at application rate for 10 min



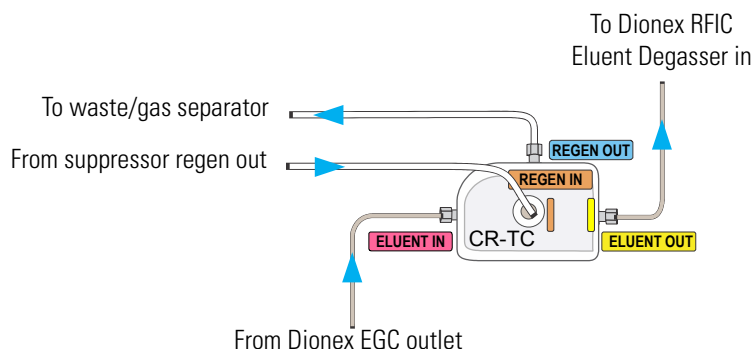
6. Verify that the Dionex EGC current and Dionex CR-TC 600 voltage are off.
7. Set the pump flow rate to 1 mL/min and turn on the pump flow.

8. Flush the Dionex CR-TC 600 for 10 minutes.
9. Turn off the pump.

❖ **To complete the Dionex CR-TC 600 plumbing**

1. Disconnect the lines from the Dionex CR-TC 600 **ELUENT OUT**, **REGEN OUT**, and **REGEN IN** ports.
2. Align the two mounting holes on the Dionex CR-TC 600 back plate with the ball studs on the mounting plate, verify that no liquid lines are caught under the Dionex CR-TC 600, and then push the Dionex CR-TC 600 firmly onto the mounting ball studs. The Dionex CR-TC clicks into place when properly installed.
3. Reconnect the liquid lines to the Dionex CR-TC 600 **ELUENT OUT**, **REGEN OUT**, and **REGEN IN** ports (see Figure 22).

Figure 22. Flow schematic for operating the Dionex CR-TC 600



4. Align the four pins inside the cable connector with the holes in the **CR-TC** connector on the front tray. Push the cable firmly onto the front tray connector to secure it.



Installing the Suppressor

Note For a list of compatible suppressors, refer to *Dionex Integriion HPIC System Operator's Manual*. The manual is provided on the Thermo Scientific Reference Library DVD (P/N 60-053891).

❖ **To prepare the suppressor**

All new suppressors require hydration or other preparation steps before initial use. For instructions, refer to the manual for your suppressor type. The suppressor manuals are provided on the Thermo Scientific Reference Library DVD (P/N 60-053891).

❖ To install the suppressor

1. Open the door of the detector compartment.
2. Orient the new suppressor with the **ELUENT OUT** port on the top, and then press it onto the mounting tabs. Slide the suppressor down to secure it onto the tabs.
3. Pull slightly on the suppressor to verify that it is securely fastened.
4. Connect the liquid lines to the suppressor and the CD cell.
5. Plug in the suppressor cable.

Flushing and Installing the Columns

IMPORTANT For detailed information about a column, refer to the column manual, provided on the Thermo Scientific Reference Library DVD (P/N 60-053891).

❖ To flush the columns

1. Locate the Dionex Viper Fitting and Tubing Kit in the Dionex Integrion HPIC System Ship Kit (RFIC, P/N 22153-62003; non-RFIC, P/N 22153-62002).

The Dionex Viper Fitting and Tubing Kit contains tubing of various lengths, on which Viper fittings are preinstalled. For details, see [“Tubing and Fitting Requirements”](#) on [page 32](#).

2. To flush the guard column (if included):
 - a. Connect the 0.18 mm (0.007 in) ID Viper tubing assembly (P/N 088806) to the **ELUENT OUT** port (C) of the injection valve. Connect the other end to the guard column.
 - b. Select the flow rate specified in the Quality Assurance Report (QAR) shipped with the column and turn on the pump.
 - c. Set the Dionex EGC current to the setting specified in the QAR and turn on the Dionex EGC current. Verify that the Dionex CR-TC 600 is off.
 - d. Flush the guard column to waste for 10 minutes.
 - e. Connect the analytical column inlet to the guard column outlet, using the 0.18 mm (0.007 in) ID Viper tubing assembly (P/N 088805).
3. To flush the analytical column:
 - a. If you did not install a guard column, connect the 0.18 mm (0.007 in) ID Viper tubing assembly (P/N 088806), to the **ELUENT OUT** port (C) to the **ELUENT OUT** port (C) of the injection valve. Connect the other end to the analytical column.
 - b. Verify that the Dionex CR-TC 600 is off and the pump flow and Dionex EGC are set to the conditions specified in the QAR.

- c. Flush the analytical column to waste for 20 minutes.

❖ **To install the columns**

1. Temporarily disconnect the column inlet tubing from the **ELUENT OUT** port (C) of the injection valve.
2. Open the door of the column compartment. Note the column mounting clips on the side wall of the column compartment. The separator column will be installed behind the guard column.
3. To install the separator column:
 - a. Remove the coupler connecting the **COL IN** and **COL OUT** lines.
 - b. Connect **COL IN** to the separator column inlet. Connect **COL OUT** to the separator column outlet. Check the arrow on the column label; it should point down (flow toward the cell).
 - c. Push the separator column onto the back column clips.
4. To install the guard column:
 - a. Remove the coupler connecting the lines labeled **GUARD IN** and **GUARD OUT**.
 - b. Connect the **GUARD IN** line to the guard column inlet. Check the arrow on the guard column label; it should point up (flow away from the injection valve).
 - c. Connect the **GUARD OUT** line to the guard column outlet.
 - d. Push the guard column onto the front column clip.
5. Close the column compartment door.

Completing the Plumbing for Conductivity Detection

1. Connect the Dionex ERS 500 **ELUENT IN** line to the column **ELUENT OUT** port.
2. If a Dionex CRD is installed: Connect the Dionex ERS 500 **ELUENT OUT** line to the Dionex CRD **ELUENT IN** port and connect the Dionex CRD **ELUENT OUT** line to the **CD IN** port.

If a Dionex CRD is *not* installed: Connect the Dionex ERS 500 **ELUENT OUT** line to the **CD IN** port.

Go on to [“Verifying the Compatibility of Consumables”](#) on page 43.

Completing the Plumbing for Electrochemical Detection

1. Connect the cell inlet line (P/N 082618) to the column **ELUENT OUT** port.
2. Connect the Suppressor Bypass **REGEN IN** line to the ED cell **OUT** port.
3. If a PdH reference electrode is installed: Follow the instructions in the next section to condition the electrode before initial use.

If a PdH reference electrode is *not* installed: Go on to [“Equilibrating the System”](#) on page 44.

Conditioning the PdH Reference Electrode

Condition the PdH reference electrode after plumbing the cell.

❖ To condition the PdH reference electrode

1. Verify that the pump flow rate is set to 0.01 mL/min and the motor is on.
2. Set the Dionex EGC concentration to 100 mM and turn on the power to the Dionex EGC and Dionex CR-TC 600.
3. Verify that eluent is exiting the cell.
4. Select the required settings.

For Chromeleon operation:

- a. On the ePanel, set the ED reference electrode type to **PdH** and turn on the PdH power.
- b. Select **DC Amperometry** mode, set the DC voltage to **0.000 V**, and turn on the cell voltage.
- c. Switch to **Integrated Amperometry** mode, click **Set Integrated Amperometry**, and select the **Gold, PdH RE, Carbo, Quad** waveform.

For mobile app operation:

- a. Go to the Detector page. In the REFERENCE ELECTRODE group, tap **PdH** to select the ED reference electrode type.
- b. In the ELECTRODE CONTROL group, drag the PdH ELECTRODE POWER slider to the on position.
- c. In the MODE group, tap **DC AMP** to select the DC amperometry mode.
- d. In the DC VOLTAGE group, tap the down arrow until the displayed voltage is **0.000 V**, and turn on the cell voltage.
- e. In the MODE group, tap **INT AMP** to switch to integrated amperometry mode.
- f. In the WAVEFORM SELECTION group, tap the down arrow until **Gold, PdH RE, Carbo, Quad** is displayed.

5. Condition the electrode for 1 hour at these settings.
6. Turn off the pump flow. (This also turns off the power to the Dionex EGC, the cell, and the PdH reference electrode.)

Verifying the Compatibility of Consumables

When at least one device capable of tracking consumables is installed in the Dionex Integrion, Chromeleon automatically checks that all trackable consumables are compatible with each other, as well as with the Dionex Integrion. Before beginning operation, review the results and make any changes needed.

Note If the RFID option is not installed in the Dionex Integrion, only devices equipped with wired communication are tracked.

❖ To view the compatibility check results

1. On the Instrument toolbar above the Chromeleon ePanel, click the down arrow on the **Consumables** button.
2. Click **Inventory**. The Consumables Inventory window opens.
3. Review the list of installed consumables and take the required action:
 - If a consumable that does not belong to the instrument is being tracked, clear the corresponding **Tracked** check box.
 - If a consumable is missing from the list, check all connections, verify that all RFID labels are correctly oriented (see “Notes on RFID” on page 5), and then click **Rescan**.
4. Check the Compatibility Check Results pane for messages and select the preferred option:
 - To track and approve all consumables in the list, click **Track & Approve**. (This option is available only if the list includes one or more consumables that are not selected for tracking.)
 - or–
 - To approve only those consumables that are currently selected for tracking, click **Approve**. (If necessary, click the down arrow on the **Track & Approve** button to display the **Approve** option.)
5. Click **Close**.

Equilibrating the System

This section is an overview of the steps needed to set initial system operating parameters and to equilibrate the system before beginning operation.

Note You can use the Smart Startup feature in Chromeleon to automate system startup and equilibration. Refer to the ChromeleonHelp for details.

Setting Operating Parameters

Before beginning operation, set the following system component parameters and start each component:

- Pump flow rate
- Dionex EGC concentration (if installed)
- Suppressor current (if installed)
- Temperature of each temperature device installed in the system

The value to set for each operating parameter depends on the application to be run. For the required settings for your application, refer to the column manual or other application documentation.

Note The Chromeleon Virtual Column Separation Simulator can help you determine the best operating parameters (including the column, eluent, flow rate, and temperature) for a particular analysis. Refer to the Chromeleon Help for details.

You can set operating parameters in either Chromeleon or the mobile app.

Equilibrating the System and Verifying Operational Readiness

❖ To equilibrate the system

1. Set operating parameters and turn on devices as described in “[Setting Operating Parameters](#).”
2. In Chromeleon, click **Monitor Baseline** on the Instrument toolbar above the ePanel Set and select the channels (detector signals, pump pressure) to be monitored. Chromeleon begins plotting the selected channels.
3. Monitor the detector signals and pump pressure readings on the Chromeleon ePanel or on the mobile app Plot page.
4. Offset the detector background and zero the reading by clicking **Autozero** on the detector ePanel in Chromeleon or on the mobile app Detector page.

5. Verify that the detector baseline is at the expected reading for your application and is stable. Refer to the column manual for the appropriate background for your application. The column manuals are provided on the Thermo Scientific Reference Library DVD (P/N 60-053891).
 - If the reading is too high, refer to the Dionex Integrion operator's manual for troubleshooting information for high system backpressure.
 - If the baseline is drifting or is excessively "noisy" (there are large fluctuations in readings), refer to the Dionex Integrion operator's manual for troubleshooting information for baseline noise.
6. Monitor the pump pressure to be sure it is at the expected reading for the installed column and is stable.
7. Verify that all installed temperature control devices are at their set temperatures and are stable.

Note Equilibration time varies, and it may take some time to reach the expected values.

This completes the Dionex Integrion installation procedure. For operating instructions, refer to the operator's manual for the system. The manual is provided on the Thermo Scientific Reference Library DVD (P/N 60-053891).

3 System Plumbing Instructions

Equilibrating the System

Installing the ED Amperometry Cell

This appendix provides instructions for installing the ED amperometry cell. Complete these instructions before plumbing the cell in the system.

IMPORTANT Always wear standard disposable laboratory gloves (powder-free, particle-free, and oil-free) when handling the ED cell. Never touch the electrode surface.

Contents

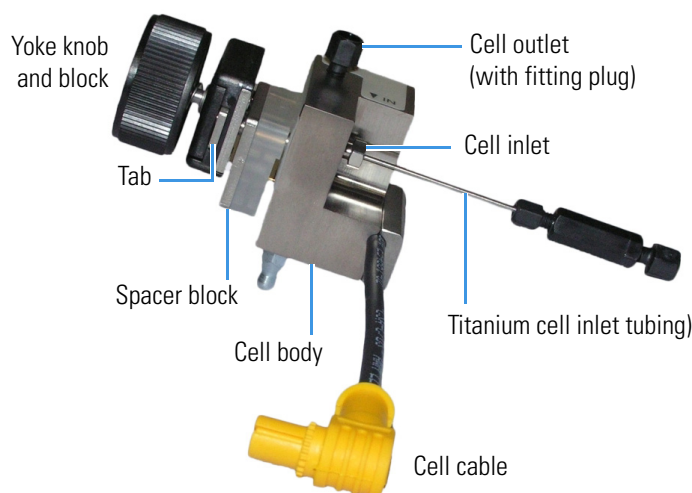
- [Unpacking and Disassembling the Cell](#)
- [Installing the Working Electrode](#)
- [Installing the pH-Ag/AgCl Reference Electrode](#)
- [Installing the PdH Reference Electrode](#)

Unpacking and Disassembling the Cell

❖ To unpack and disassemble the cell

1. Remove the ED cell from the box. Refer to [Figure 23](#) to identify the cell parts.

Figure 23. EDcell components



A Installing the ED Amperometry Cell

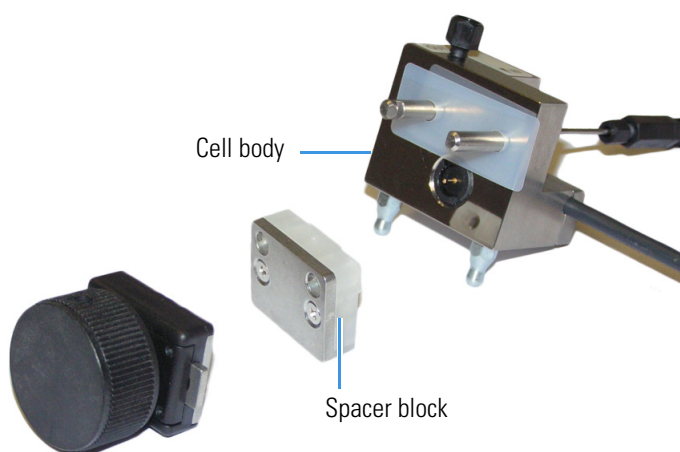
Unpacking and Disassembling the Cell

2. Loosen the yoke knob that holds the spacer block to the cell body by unscrewing it two to three turns.
3. Squeeze the tabs on the sides of the yoke block and pull the knob with yoke block off the spacer block.

Note Handle the inside surfaces of the cell carefully to prevent scratches, which may subsequently cause leaks.

4. Slide the spacer block off the alignment pins on the cell body (see [Figure 24](#)). The spacer block is for use only with disposable working electrodes. If you plan to install a conventional working electrode, you can remove the spacer block and save it for possible future use.

Figure 24. EDcell disassembled



5. Remove the protective film from the alignment pins on the cell body (see [Figure 25](#)).

Figure 25. EDcell body with protective film



6. Rinse the surface of the cell with ASTM Type I (18 megohm-cm) filtered and deionized water.
7. Clean the polished surface of the cell with a damp, clean, lint-free tissue.

Installing the Working Electrode

You can install either a disposable working electrode or a conventional working electrode.

Note To complete the functionality test performed during the initial system installation, install a disposable gold working electrode and a pH-Ag/AgCl reference electrode (see “Flushing and Installing the Columns” on page 40). After completing the functionality test, install the electrodes required for your application.

Installing a Disposable Working Electrode

For installation instructions for disposable working electrodes, refer to the installation guide shipped with the electrodes (see below) or to *Product Manual for Disposable Electrodes* (Document No. 065040), provided on the Thermo Scientific Reference Library DVD (P/N 60-053891).

- *Disposable Silver Electrode Installation Guide for ED* (Document No. 065137)
- *Disposable Platinum Electrode Installation Guide for ED* (Document No. 065139)
- *Disposable Gold Electrode Installation Guide* (Document No. 065191)

IMPORTANT When installing a disposable working electrode, be sure to select the correct gasket for your system. Use a 0.001 in PTFE gasket (P/N 072117, Pkg. of 2) with the Dionex Integrion.

After installing a disposable working electrode, install the reference electrode:

- To install a pH-Ag/AgCl reference electrode, go to [page 51](#).
- To install a PdH reference electrode, go to [page 53](#).

Installing a Conventional Working Electrode

Notes on Polishing Conventional (Nondisposable) Working Electrodes

- Do not polish new conventional working electrodes before installation.
- After an electrode has been in use for a period of time, a layer of contamination may build up. When this occurs, the electrode must be polished. For details, refer to *Polishing Gold Working Electrodes* (Document No. 031154).

Items Needed for Installing a Conventional Working Electrode

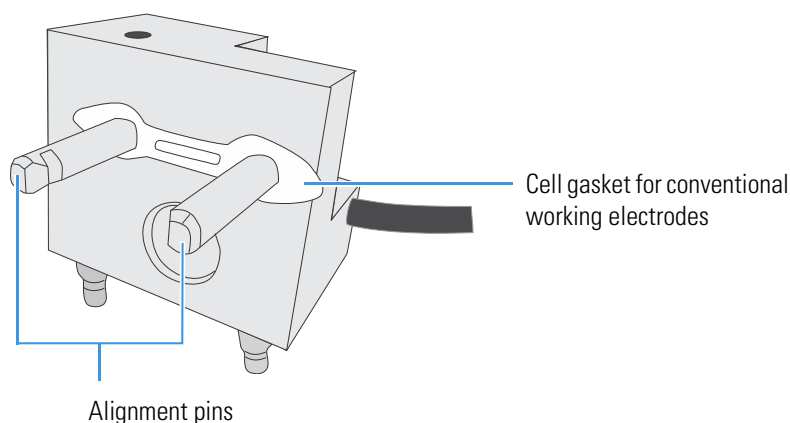
- ED cell gasket for conventional working electrodes (P/N 045972)
- Blunt-end tweezers

Note Install the working electrode before connecting the cell to the ED.

❖ To install a conventional working electrode

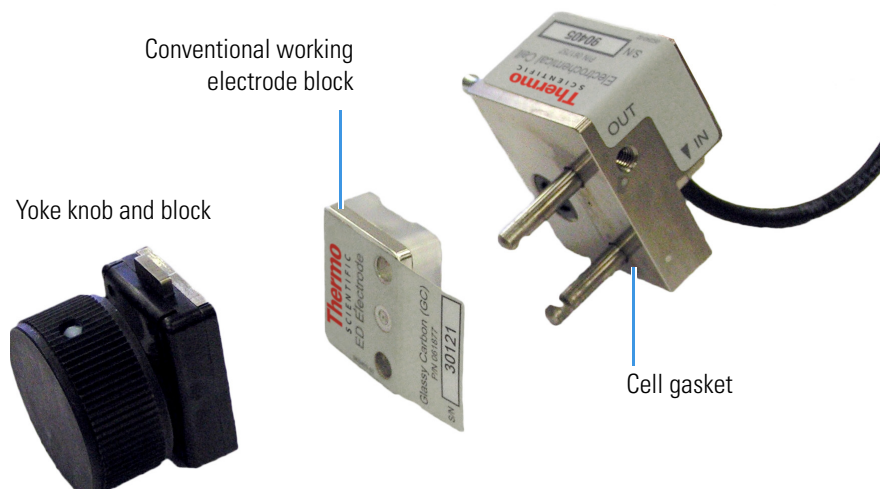
1. Use tweezers to install the gasket over the alignment pins on the cell body (see [Figure 26](#)). When correctly installed, one end of the gasket extends beyond the cell body; this facilitates gasket installation and removal.

Figure 26. ED cell gasket for conventional working electrode



2. Verify that the gasket is flat against the cell body and is not wrinkled.
3. Orient the working electrode block as shown in [Figure 27](#) and then slide it onto the alignment pins.

Figure 27. ED cell with conventional working electrode



4. Install the yoke knob on the alignment pins and fingertighten the knob by turning it a full 360 degrees.

Note It is not possible to overtighten the yoke knob. After the knob clicks into place, it cannot be tightened any further. The yoke knob ensures that constant pressure is applied to the cell.

5. Install the reference electrode:
 - If you are installing a pH-Ag/AgCl reference electrode, go to [page 51](#).
 - If you are installing a PdH reference electrode, go to [page 53](#).

Installing the pH-Ag/AgCl Reference Electrode

❖ To prepare the pH-Ag/AgCl reference electrode

1. Remove the pH-Ag/AgCl reference electrode (P/N 061879) from its box (see [Figure 28](#)).

Figure 28. pH-Ag/AgCl reference electrode in storage cap



IMPORTANT The pH-Ag/AgCl reference electrode (P/N 061879) for the Dionex Integriion is similar in appearance to the pH electrode (P/N 075529) for the Dionex AS-AP. However, the two electrodes are not interchangeable. Before continuing, check the label on the electrode to verify that you have the correct type.


2. Hold the electrode vertically, with the cable up and the storage cap down, to prevent spilling the storage fluid in the cap. Unscrew the storage cap from the electrode. Be careful not to spill the contents. Save the cap.

IMPORTANT Always store the pH-Ag/AgCl reference electrode in the storage cap filled with saturated KCl solution when the cell is not in use. This prevents the pH-Ag/AgCl reference electrode membrane from drying out and damaging the electrode.

3. Rinse the pH-Ag/AgCl reference electrode thoroughly in ASTM Type I (18 megohm-cm) filtered and deionized water to remove any precipitated salt.

Go to the next section to calibrate the pH-Ag/AgCl reference electrode.

❖ **To calibrate the pH-Ag/AgCl reference electrode**

1. Connect the cell and electrode electrical cables to the detector. Do not install the electrode in the cell yet.
2. For Chromeleon operation: Click the **ED** tab in the ePanel Set and click **pH Calibration**.
For mobile app operation: First, disconnect the Dionex Integrion from Chromeleon. On the quick access toolbar, tap the Service  icon and then tap **CALIBRATION** on the menu.
3. Follow the instructions on the screen to complete the calibration.
4. After calibration, disconnect the electrode cable and the cell cable.
5. Grasp the cell body and pull straight out to remove the cell from the detector.

❖ **To install the pH-Ag/AgCl reference electrode in the cell**

1. To avoid any hydraulic pressure buildup when inserting the reference electrode into the cell, verify that fitting plugs are not installed on the cell inlet and outlet fittings.
2. Verify that the O-ring is present on the pH-Ag/AgCl reference electrode (see [Figure 29](#)).

Figure 29. pH-Ag/AgCl reference electrode O-ring



3. Screw the pH-Ag/AgCl reference electrode into the reference electrode well and tighten it fingertight (see [Figure 30](#)).

Figure 30. Installation of the pH-Ag/AgCl reference electrode in the reference electrode well



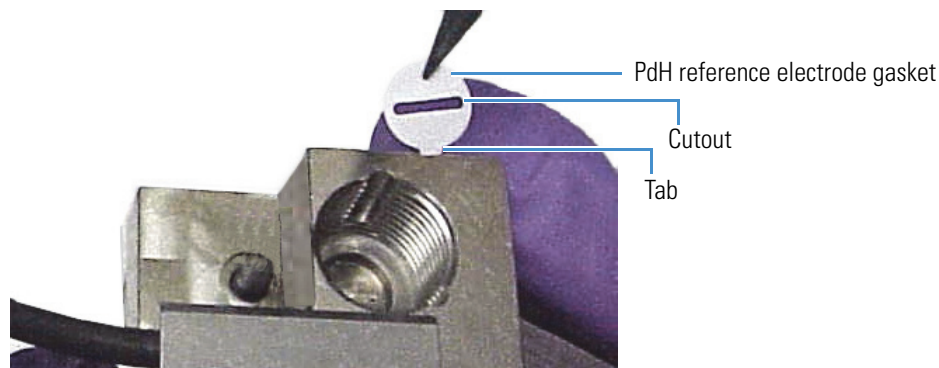
4. Orient the cell assembly with the yoke knob on the left and then push the cell onto its mounting location on the ED.
5. Reconnect the cell inlet and outlet ports and reconnect the two electrical cables.
6. Start the pump flow and turn on the Dionex Integrion power.
7. Wait until the pump pressure has stabilized (30 to 60 seconds) and then turn on the cell voltage.

Installing the PdH Reference Electrode

❖ To install a PdH reference electrode

1. To avoid any hydraulic pressure buildup when inserting the reference electrode into the cell, verify that fitting plugs are not installed on the cell inlet and outlet fittings.
2. Using tweezers, grasp the new PdH reference electrode gasket (P/N 072214) on its edge (see [Figure 31](#)). To avoid deforming the gasket cutout, do not place the tweezer tips on the cutout.

Figure 31. PdH reference electrode gasket

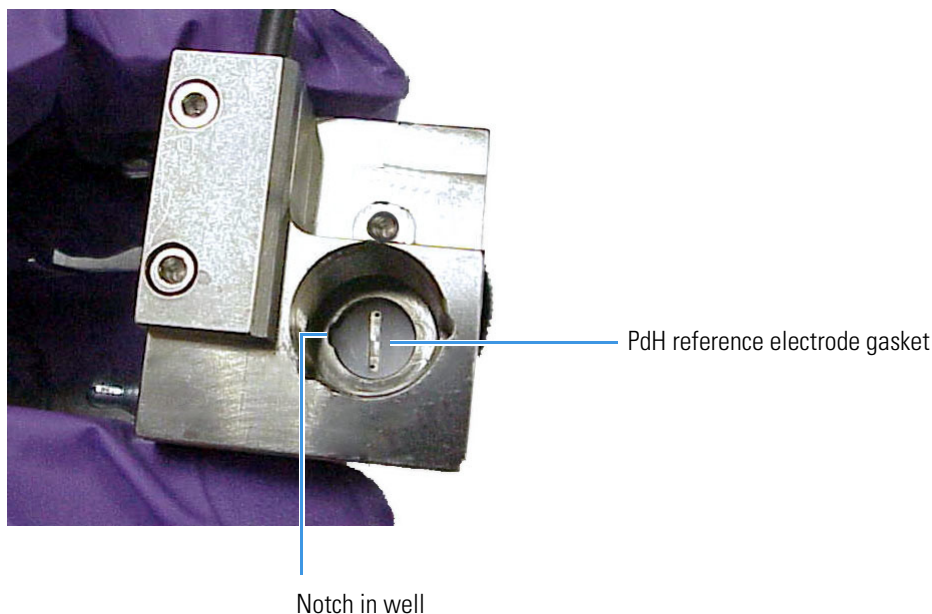


3. Align the gasket so that the tabbed edge of the gasket aligns with the corresponding notch in the reference electrode well. Then, press the gasket into the well (see [Figure 32](#)).

A Installing the ED Amperometry Cell

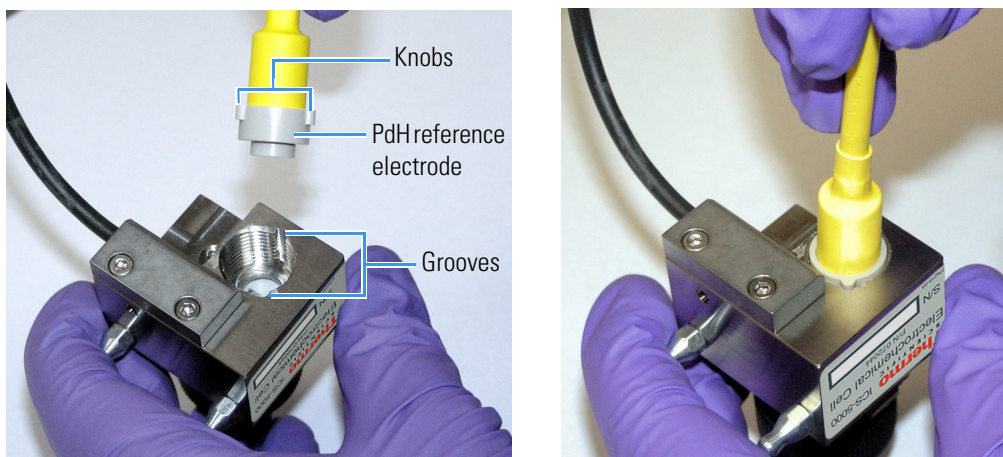
Installing the PdH Reference Electrode

Figure 32. Reference electrode gasket well with PdH reference electrode gasket installed



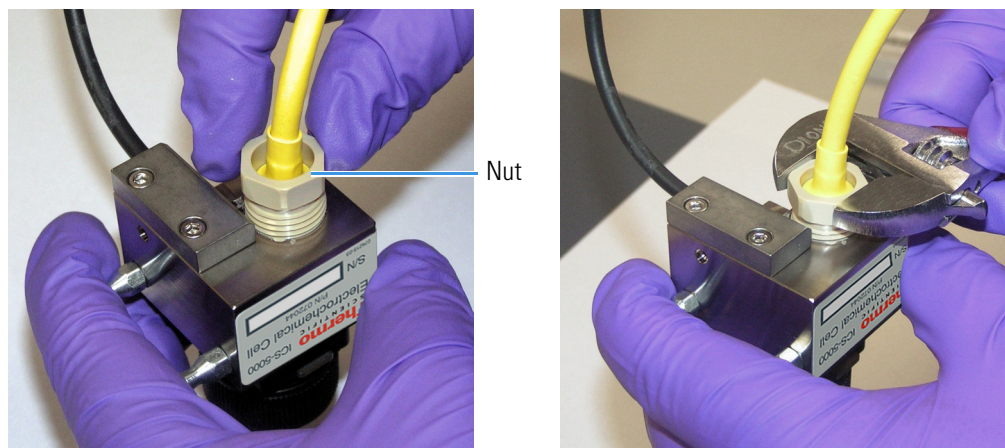
4. Install the O-ring (P/N 030839) on the end of the PdH reference electrode.
5. Align the fitting on the end of the PdH reference electrode so that the knobs on the fitting align with the grooves in the reference electrode well (see [Figure 33](#)).
6. Insert the fitting into the well.

Figure 33. PdH reference electrode fitting installation



7. Screw the nut on the PdH reference electrode into the reference electrode well and tighten it fingertight. After tightening with your fingers, use a wrench to tighten the nut an additional 20 to 30 degrees (see [Figure 34](#)).

Figure 34. PdH reference electrode nut installation



8. Orient the cell assembly with the yoke knob on the left and then push the cell onto its mounting location on the ED.
9. To continue the system installation, go to [“Completing the Plumbing for Electrochemical Detection”](#) on [page 42](#).

A Installing the ED Amperometry Cell

Installing the PdH Reference Electrode

Pressurizing Eluent Reservoirs

The Dionex Integrion does not require pressurized eluent reservoirs. However, Thermo Fisher Scientific recommends pressurizing reservoirs with helium or nitrogen under the following circumstances:

- When using eluents that are sensitive to contamination.
- When combining aqueous and nonaqueous components (for example, water and acetonitrile). Pressurizable reservoirs allow eluents to be stored under a specific atmosphere.

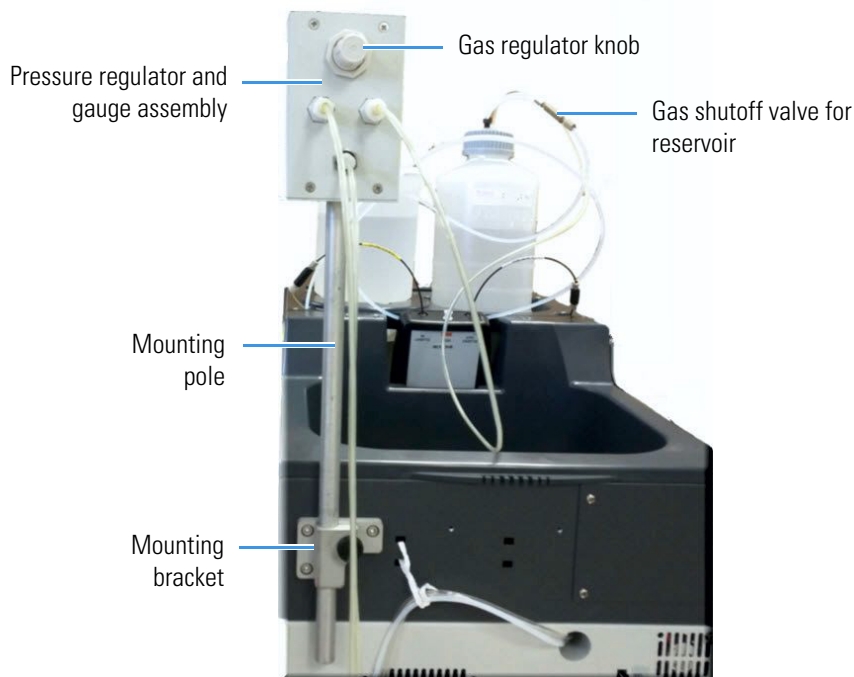
All eluent reservoirs available for use with the Dionex Integrion can be pressurized to <0.07 MPa (10 psi). To pressurize the eluent reservoirs, a Dionex Integrion Regulator Kit (P/N 078520) is required. The kit includes the following parts:

- Pressure regulator and gauge assembly
- Mounting bracket with mounting screws and washers
- Tubing and fittings for connecting to the gas source

❖ To mount the assembly on the Dionex Integrion rear panel

1. Position the mounting bracket over the three screw holes on the upper-left side of the rear panel (see [Figure 35](#)).
2. Use the screws and 3 mm Allen wrench provided in the Regulator Kit to attach the bracket to the rear panel.
3. Slide the mounting pole into the mounting bracket until the pressure regulator and gauge assembly is 15 to 20 cm (6 to 8 in) above the bracket. Tighten the knob to secure the pole to the bracket (see [Figure 35](#)).

Figure 35. Pressure regulator and gauge assembly mounted on Dionex Integrion rear panel



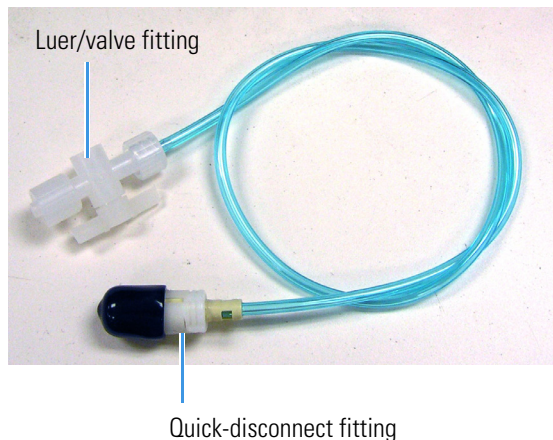
❖ **To connect the gas source**

1. Locate the 1/4 in NPT to 1/8 in adapter (P/N 063505) and the orange, 3 mm (1/8 in) OD air line tubing (P/N 052297) provided in the Regulator Kit.
2. Push one end of the orange tubing into the **GAS IN** fitting on the regulator (see [Figure 37](#)).
3. Connect the other end of the orange tubing to a clean helium or nitrogen source regulated to between approximately 170 and 340 kPa (25 and 50 psi). If needed for your gas source, use the adapter to connect the tubing to the gas source.

❖ **To connect the reservoir**

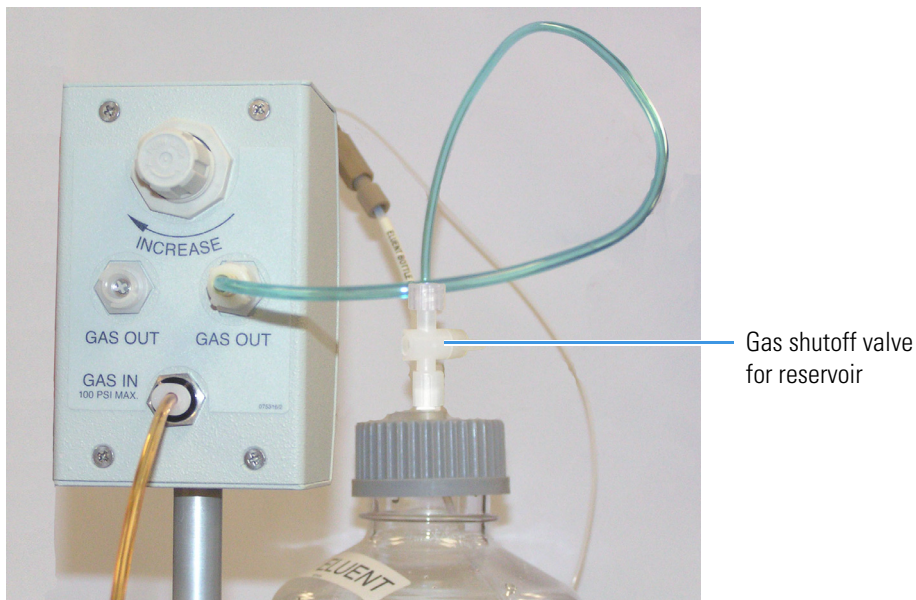
1. Locate a gas source tubing assembly (P/N 063942) in the Regulator Kit. Each assembly consists of a length of blue, 3 mm (1/8 in) OD air line tubing with a quick-disconnect fitting on one end and a luer/valve fitting on the other end (see [Figure 36](#)).

Figure 36. Gas source tubing assembly



2. Remove the black cap from the quick-disconnect fitting on the blue tubing and twist off the bottom half of the quick-disconnect fitting. This half of the fitting is not needed.
3. Push the fitting onto a **GAS OUT** fitting on the regulator (see [Figure 37](#)) and twist to complete the connection.

Figure 37. Gas connections to the regulator and reservoir



4. Push the luer/valve fitting onto the luer fitting on the reservoir cap. This is the gas shutoff valve for the reservoir.

❖ To pressurize the reservoir

IMPORTANT Before pressurizing the reservoir, connect the liquid line from the pump to the reservoir and fill the reservoir. For instructions, see “[Setting Up the Reservoir](#)” on [page 24](#).

1. Turn the gas regulator knob fully counterclockwise to ensure that there is no pressure to the reservoir when the gas source is turned on.
2. Close the gas shutoff valve on the reservoir cap.
3. Turn on the gas source to between 170 and 340 kPa (25 and 50 psi).
4. Turn the gas regulator knob clockwise and adjust the pressure to between 30 and 40 kPa (5 and 6 psi).



CAUTION Never pressurize eluent reservoirs above 70 kPa (10 psi). Pressurizing an eluent reservoir above this limit can cause the reservoir to explode.



MISE EN GARDE Ne mettez jamais les réservoirs d'éluants sous une pression supérieure à 0,07 MPa (10 lb/po²).



VORSICHT Setzen Sie den Eluentbehälter auf keinen Fall einem Druck über 0,07 MPa aus.

5. If the liquid line from the pump is connected, you may open the gas shutoff valve on the reservoir cap.

Installing the Low-Pressure Valves

This appendix describes how to mount up to two low-pressure valves on the Dionex Integrion rear panel. Instructions for configuring the valves in Chromeleon and for operating the valves from either Chromeleon or the Integrion HPIC Mobile App are also included.

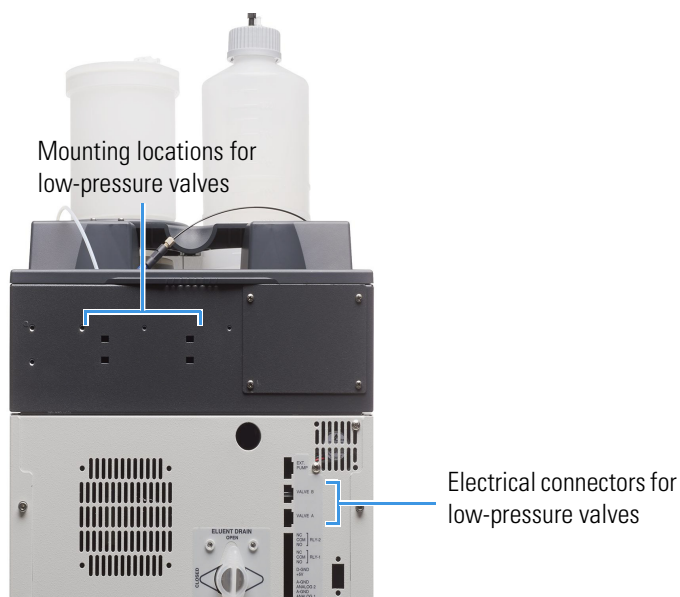
A low-pressure valve (two-way valve, P/N 079848; three-way valve, P/N 061971) can be used for on/off control of liquid flow (for example, to turn flow on and off from a reagent or external regenerant reservoir):

- Two-way valves provide on/off control of liquid flow in one direction.
- Three-way valves provide control of liquid flow in two directions.

❖ To install a low-pressure valve

1. Locate the two low-pressure valve mounting locations and the two low-pressure valve electrical connectors (**LP VALVE 1** and **LP VALVE 2**) on the Dionex Integrion rear panel (see [Figure 38](#)).

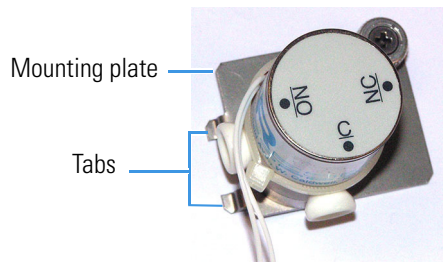
Figure 38. Dionex Integrion rear panel



C Installing the Low-Pressure Valves

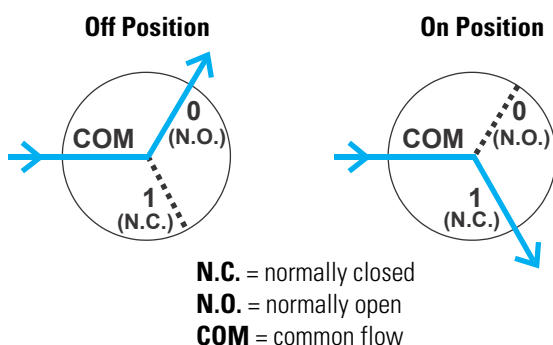
2. Insert the two tabs on the valve mounting plate (see [Figure 39](#)) into the slots on one of the valve mounting locations. Tighten the captive thumbscrew.

Figure 39. Low-pressure valve



3. Cut off the cable ties on the valve cable and then plug the cable into a valve connector (**LP VALVE 1** or **LP VALVE 2**) on the rear panel.
4. Plumb the valve as required for your application. [Figure 40](#) shows example plumbing for a three-way valve.

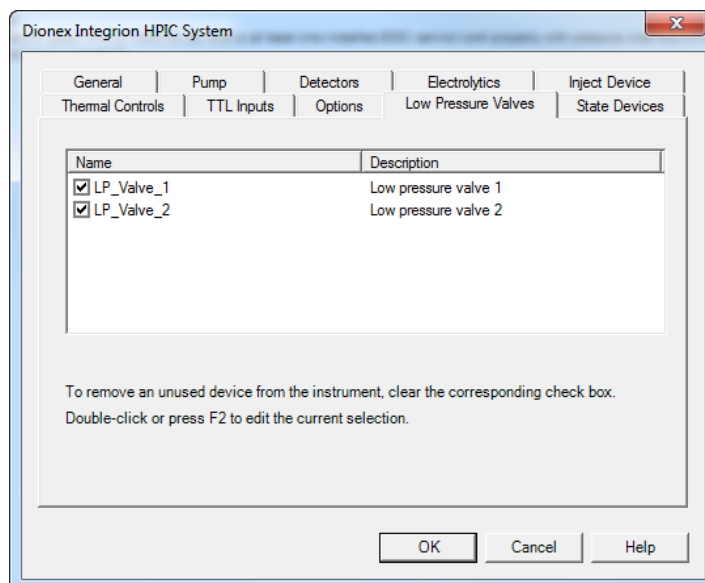
Figure 40. Three-way low-pressure valve flow schematics



Note: When the valve is off (not energized), port 0 is open (N.O.) and port 1 is closed (N.C.). Conversely, when the valve is on, port 1 is open and port 0 is closed.

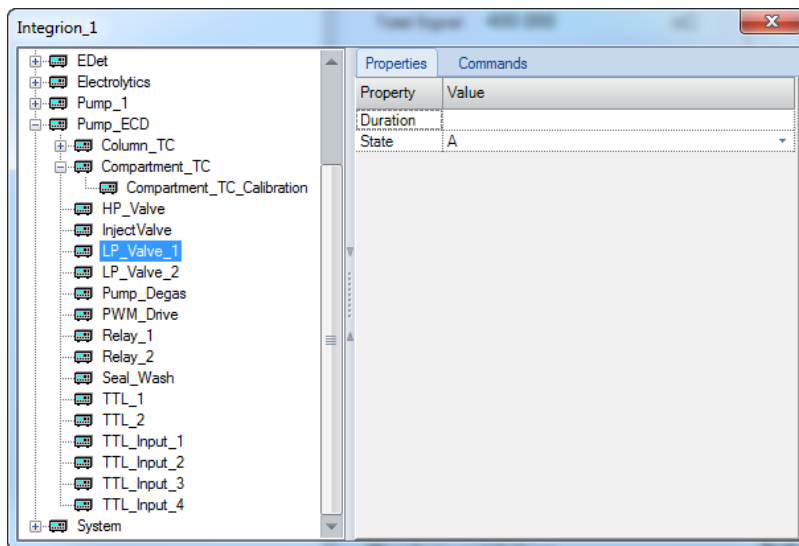
❖ To control a low-pressure valve from Chromeleon

1. Configure the valve in Chromeleon:
 - a. Open the Instrument Configuration Manager.
 - b. Under the instrument, right-click the Dionex Integrion HPIC System and click **Properties**.
 - c. Click the **Low Pressure Valves** tab and select the check box for the installed valve (see [Figure 41](#)).

Figure 41. Low Pressure Valves tab page

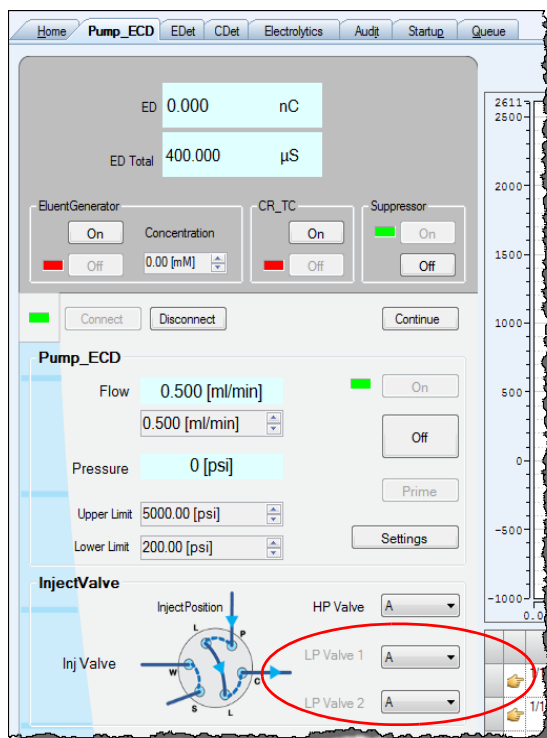
2. To control the valve in Chromeleon, use one of the following options:
 - Add commands to an instrument method.
 - Select commands in the Command window (see [Figure 42](#)).

Figure 42. Chromeleon Command window



- Select commands on the ePanel Set (see Figure 43).

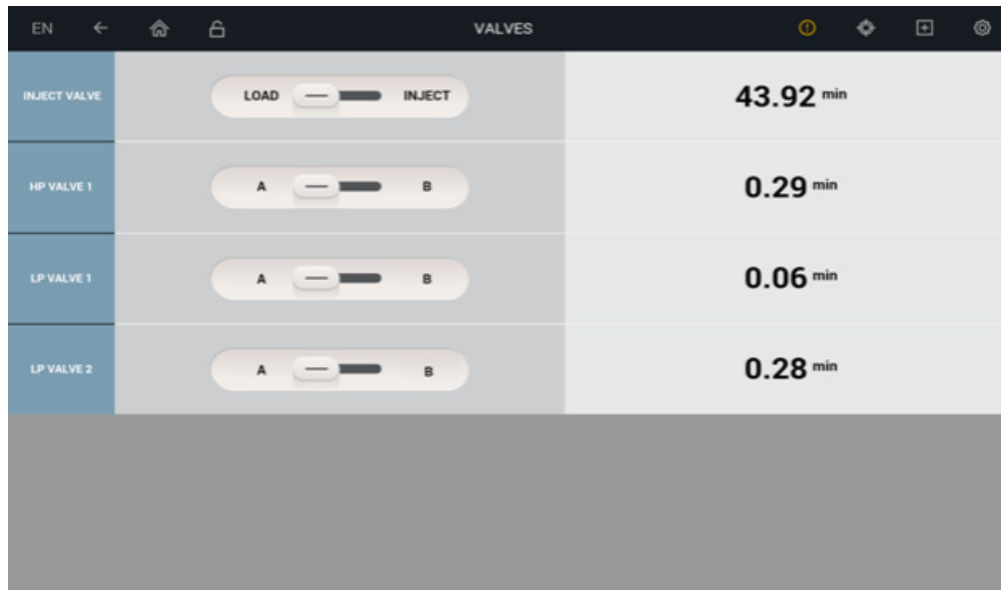
Figure 43. Low-pressure valve control on the Chromeleon ePanel



❖ **To control a low-pressure valve from the Integrion HPIC Mobile App**

1. Go to the VALVES page (see [Figure 44](#)).

Figure 44. Valves page



2. In the LP VALVE 1 or LP VALVE 2 group, tap **ON** or **OFF** to select the valve position.

The **min** field indicates how many minutes have elapsed since the valve position was last changed.

C Installing the Low-Pressure Valves

Setting Up the Piston Seal Wash System

Thermo Fisher Scientific offers a Seal Wash Kit (P/N 22153-62010) for connecting a piston seal washing system to the Dionex Integrion pump. When the seal washing option is installed, the back of the main piston seal is rinsed with wash solution (usually deionized water). This prolongs the seal lifetime by preventing eluent crystallization on the piston surfaces when using manually prepared eluent.

The Seal Wash Kit includes the following parts:

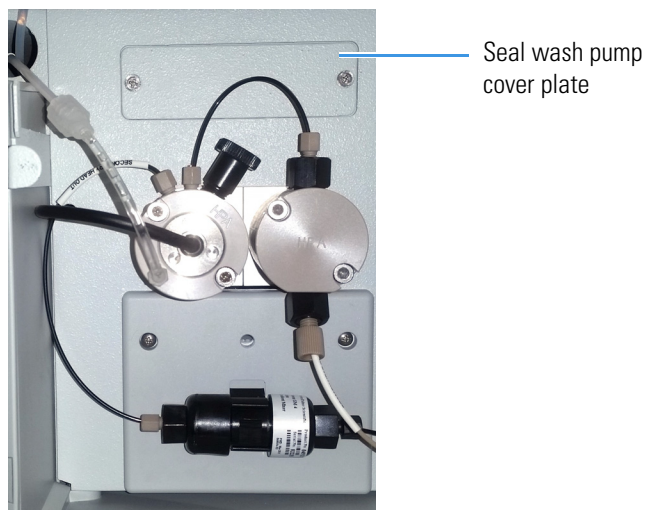
- Seal wash reservoir
- Seal wash pump module (with eluent grounding)
- Tubing and fittings required to connect the seal wash reservoir and pump

Note The piston seal washing option is not intended for use with the Dionex Integrion RFIC, which pumps deionized water only.

❖ To install the seal wash pump

1. Locate the seal wash pump cover plate above the pump heads (see [Figure 45](#)). Use a #1 Phillips head screwdriver to remove the two screws on the cover plate and then remove the plate. Save the screws.

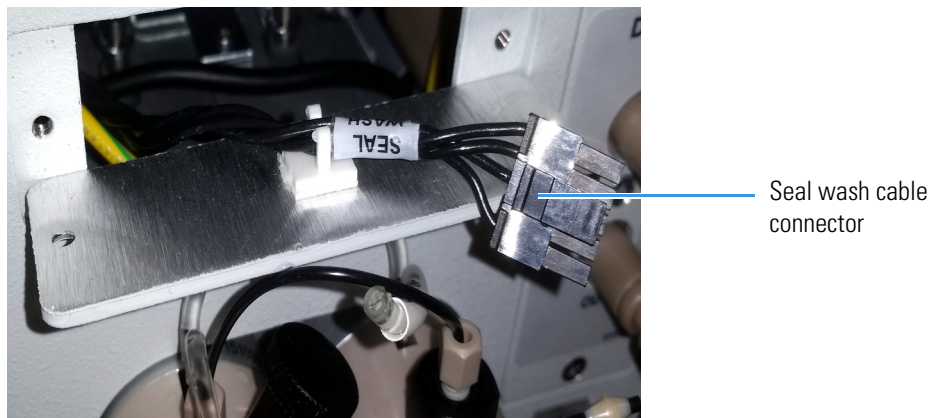
Figure 45. Pump compartment before seal wash pump installation



D Setting Up the Piston Seal Wash System

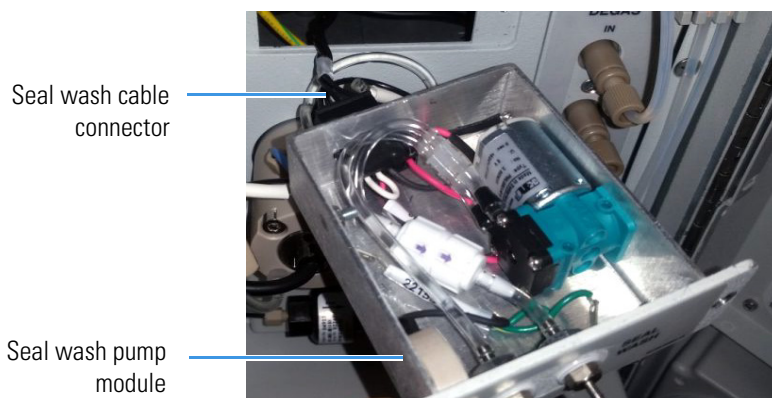
2. Locate the 5-pin seal wash cable connector on the back of the cover plate and pull the connector off its mounting clip (see [Figure 46](#)).

Figure 46. Seal wash cable connector



3. Connect the 5-pin seal wash cable connector to the rear of the seal wash pump module (see [Figure 47](#)).

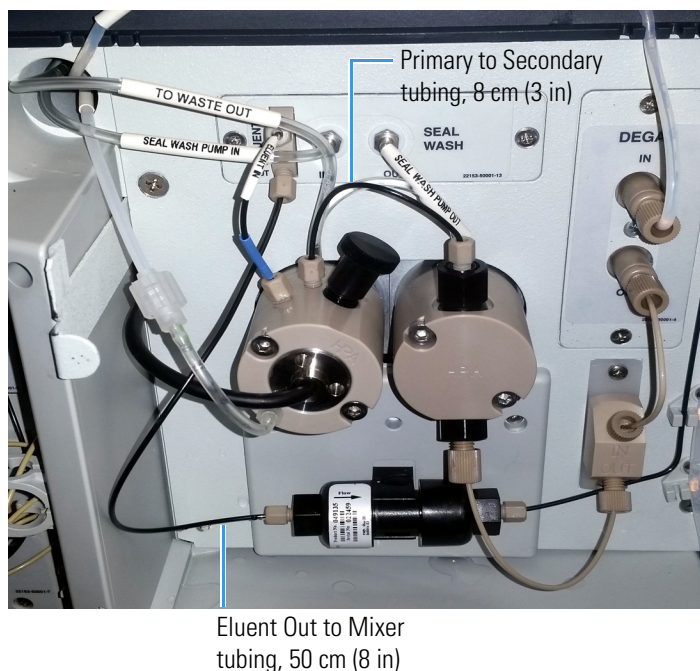
Figure 47. Seal wash pump module cable connection



4. Slide the seal wash pump module into the opening on the component panel. Secure the module in place, using the screws that were removed with the cover plate.

For reference, [Figure 48](#) shows the completed seal wash tubing connections.

Figure 48. Seal wash tubing connections



❖ To create the clear tubing assemblies

Note Use scissors or a knife to cut clear tubing to the required lengths.

1. Locate the 224 cm (88 in) piece of clear tubing in the Seal Wash Kit.
2. Cut the tubing into four pieces of the following lengths:
 - 102 cm (40 in) for the **SEAL WASH PUMP IN** tubing
 - 13 cm (5 in) for the **SEAL WASH PUMP OUT** tubing
 - 8 cm (3 in) for the **PRIMARY TO SECONDARY** tubing
 - 102 cm (40 in) for the **TO WASTE OUT** tubing
3. Slide the appropriate tube marker onto each piece of tubing.

❖ To connect the clear tubing assemblies

1. Connect the **SEAL WASH PUMP IN** tubing:
 - a. Push one end of the tubing onto the barbed fitting labeled **IN** on the seal wash pump module.
 - b. Place the seal wash reservoir in the reservoir tray on top of the Dionex Integriion.
 - c. Route the other end of the tubing through the tubing chase, out the rear panel, and connect it to the seal wash reservoir.

2. Connect the **SEAL WASH PUMP OUT** tubing:
 - a. Push one end of the tubing onto the barbed fitting labeled **OUT** on the seal wash pump module.
 - b. Push the other end of the tubing onto the metal seal wash front tube on the secondary pump head.
3. Connect the **PRIMARY TO SECONDARY** tubing:
 - a. Push one end of the tubing onto the metal seal wash back tube on the primary pump head.
 - b. Push the other end of the tubing onto the metal seal wash back tube on the secondary pump head.
4. Connect the **TO WASTE OUT** tubing:
 - a. Push one end of the tubing onto the metal seal wash front tube on the primary pump head.
 - b. Route the other end of the tubing through the tubing chase and direct it to waste.

❖ To create the PEEK tubing assembly

Note Use a PEEK tubing cutter to create the PEEK tubing assembly. If necessary, order a PEEK tubing cutter (P/N 049584) from Thermo Fisher Scientific.

1. Locate the 60 cm (12 in) piece of PEEK tubing in the Seal Wash Kit.
2. Cut a piece of tubing 10 cm (4 in) long for the **ELUENT IN** line.
3. Slide the tube marker onto the tubing assembly.
4. Install a double-cone ferrule fitting and double-cone bolt fitting on each end of the **ELUENT IN** line.

❖ To connect the PEEK tubing assembly

1. Remove the ferrule fitting on one end of the secondary head out tubing.
2. Screw one end of the **ELUENT IN** tubing onto the secondary pump head outlet fitting port.
3. Screw the other end of the tubing onto the **ELUENT IN** fitting port on the seal wash pump module.

❖ To complete the seal wash system setup

1. Fill the reservoir about three-quarters full with ASTM Type I (or better) (18 megohm-cm) filtered and deionized water.
2. Install the reservoir cap, making sure the end of the line extends to the bottom of the reservoir.

3. Start the pump.
 - For Chromeleon operation: Click **On** on the ePanel.
 - For mobile app operation: Disconnect the system from Chromeleon, if it is currently connected. On the Pump page, tap **Accessory**. On the pump Accessory page, in the SEAL WASH PUMP group, tap the **Mode** button to turn on the pump.
4. Run the pump until the input and output lines are filled and liquid enters the waste tubing.
5. Turn off the pump.
 - For Chromeleon operation: Click **Off** on the ePanel.
 - For mobile app operation: Tap **Mode** on the pump Accessory page.

❖ **To select the seal wash operating settings**

The default operating settings provide about 1.0 to 1.5 mL/min of flow to the piston seal during the “on” interval. You can adjust these settings as needed.

- For Chromeleon operation: With the ePanel Set displayed, press the **F8** key to display the Command window. Under Pump_ECD, select **Seal_Wash** and enter the preferred values.
- For mobile app operation: On the pump Accessory page, in the SEAL WASH PUMP group, tap the controls to display the preferred values and then tap **ON**.

D Setting Up the Piston Seal Wash System