SOR-100 Solvent Racks

Operating Instructions

Revision: 1.0

Date: April 2004

Doc.: Solvent_Rack_OI_E_V1.doc

DIONEX

CE

Declaration of Conformity

Product:	**Solvent Racks**
Type:	**SOR-100, SOR-100A-2, SOR-100A-4, SOR-100A-6**

Dionex GmbH herewith declares conformity of the above products with the respective requirements of the following regulations:

- Low-Voltage Equipment Directive 73/23/EEC
  changed by 93/68/EEC
- EMC Directive 89/336/EEC
  changed by 91/263/EEC; 92/31/EEC; 93/68/EEC

The electrical safety of the products was evaluated based on the following standard:

- EN 61010-1: 1993
  Safety requirements for electrical equipment for measurement, control and laboratory use
  Part 1: General Requirements

The Electromagnetic Compatibility (EMC) of the products was evaluated based on the following standards:

- EN 50081-1: 1992:
  Electromagnetic Compatibility (EMC) - Generic emissions standard
  Part 1: Residential, commercial and light industry
- EN 50082-1: 1992:
  Electromagnetic Compatibility (EMC) - Generic immunity standard
  Part 1: Residential, commercial and light industry
- EN 61000-3-2: 1998
  Electromagnetic Compatibility (EMC)
  Part 3 / Section 2: Limits for harmonic current emissions

This declaration is issued for the manufacturer

Dionex GmbH
Dornierstrasse 4
D-82110 Germering

by the President, Dr. Peter Jochum.
March 3, 2004

Table of Contents

1 Introduction

1.1 How to Use This Manual

The layout of this manual is designed to provide quick reference to the sections of interest to the user. However, in order to obtain a full understanding of the SOR-100 Solvent Racks, we recommend that you review the manual thoroughly before beginning operation.

We assume that the person using this manual is sufficiently trained in the use of analytical instrumentation and is aware of the potential hazards when using chemical solvents.

Almost all descriptions in the manual apply to all SOR-100 Solvent Racks. Therefore, the term "the Solvent Rack" or "the rack" is used throughout the manual. If some detail applies to only one rack type, the type is identified by name.

Please note: The device configuration may vary; therefore, not all descriptions necessarily apply to your particular instrument.

At various points throughout the manual, messages of particular importance are indicated by certain symbols:

Please note: Indicates general information intended to optimize the performance of the instrument.

Important: Indicates that failure to take note of the accompanying information may result in damage to the instrument.

Warning: Indicates that failure to take note of the accompanying information may result in personal injury.

This manual is provided "as is." Every effort has been made to supply complete and accurate information and all technical specifications have been developed with the utmost care. However, Dionex assumes no responsibility and cannot be held liable for any errors, omissions, damage, or loss that might result from any use of this manual or the information contained therein. We appreciate your help in eliminating any errors that may appear in this document.

The information contained in this document is subject to change without notice.

1.2 Unpacking

All electrical and mechanical components of the Solvent Rack are carefully tested before the instrument is shipped from the factory. After unpacking, please inspect the rack for any signs of mechanical damage that may have occurred during transit.

Please note: Immediately report any shipping damage to both, the incoming carrier and Dionex. Shipping insurance will compensate for the damage only if reported immediately.

Please note: Keep the original shipping container and the packing material. They will provide excellent protection for the instrument in case of future transit. Shipping the unit in any other packaging automatically voids the product warranty.

To unpack the Solvent Rack:

- Place the shipping container on the floor. Remove the accessories.
- Grasp the Solvent Rack by the sides. Slowly and carefully, pull the rack out of the shipping container and place it on a stable surface.

  Important: To prevent the rack from falling, lift the unit itself from the sides. Do not lift the unit by the packaging material or the front panel.

- Remove the foam inserts, and then remove the polythene packaging.
- Check off the contents of the accessory pack against the list (→ page 25).

Caution: When lifting or moving the Solvent Rack, lift only from the bottom or sides of the unit. Lifting the Solvent Rack by the front panel may damage the hinges.

1.3 Intended Use

The Solvent Racks are designed for use in analytical HPLC systems, especially with the Dionex P680 HPLC pumps. They can be controlled by either the pump firmware or the Chromeleon Chromatography Management System. The racks can be operated in stand-alone mode, also.

Please note that the Solvent Racks may be operated only using the accessories shipped with the unit (→ page 25) and within their technical specifications (→ page 23).

If there is any question regarding appropriate usage, contact Dionex before proceeding.

Dionex is not liable for any damage, material or otherwise, resulting from inappropriate or improper use of the instrument.

1.4 Federal Communications Commission (FCC) Note

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the U.S. FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at his expense.

2 Overview

2.1 Unit Description

The Solvent Racks are high-quality instruments designed for HPLC analysis as part of a Dionex Summit HPLC System. They are primarily designed for use with the Dionex P680 HPLC pumps. The racks provide a secure location for installation of the solvent reservoirs and, when mounted on top of the HPLC system, save valuable bench space. They are available in various configurations (→ Supported Configurations) and can thus be used in numerous laboratory environments.

All Solvent Racks include a reservoir tray, solvent reservoirs, and appropriate tubing. The SOR-100, the only rack that does not contain a vacuum degasser, is intended for use as a solvent organizer. In the other racks, an integrated analytical vacuum degasser (2-channel, 4-channel, or 6-channel) continuously degasses solvents via special polymer membranes that are permeable to gas, but not to liquids. Degassing solvents guarantees reproducibility and reduces pulsation in the connected pump.

All parts in the flow path are made of Teflon® AF, PEEK, or Tefzel® to provide optimum resistance to the most commonly used solvents and buffer solutions.

2.2 Supported Configurations

For an overview of the currently available models, refer to the list below. If you have any questions, do not hesitate to contact the Dionex Sales Department or your Dionex distributor.

Model	Part No.	Description
SOR-100	5030.9200	Solvent Rack without degasser e.g., for P680A LPG-4 pumps
SOR-100A-2	5030.9210	Solvent Rack with 2-channel degasser (analytical) e.g., for P680A ISO and P680A HPG-2 pumps
SOR-100A-4	5030.9220	Solvent Rack with 4-channel degasser (analytical) e.g., for P680A HPG-4 pumps
SOR-100A-6	5030.9230	Solvent Rack with 6-channel degasser (analytical) e.g., for P680A DGP-6 pumps

2.3 Front Panel Display and Controls

Fig. 1: Solvent Rack front panel

No.	Front Panel LEDs	Description
1	**Power**	The LED is blue when the Solvent Rack power is on.
2	**Vacuum**	The LED is green if the degasser is working properly. The LED is red if the degasser vacuum is insufficient for proper degassing. In this case, the Status LED is red, also.
3	**Status**	The LED is green if the degasser and the leak sensor are working properly. The LED is red if the leak sensor detected a leak. The LED is red if the degasser vacuum is insufficient for proper degassing. In this case, the Vaccum LED is red, also.

2.4 System Wellness

The Solvent Rack supports several System Wellness and reliability features that can help you detect small problems before they turn into big ones.

If an error is found, an error message is displayed on the front panel of the connected P680 pump. If the pump is controlled by Chromeleon, the error is logged in the Chromeleon Audit Trail.

Feature	Description
Leak detection (**Status** LED on the rack's front panel.)	Reliable operation
Degasser vacuum level monitoring (**Vacuum** and **Status** LEDs on the rack's front panel.)	Reliable operation

2.5 Safety Precautions

Please observe the following general safety precautions when operating the instrument or carrying out any maintenance work:

Warning: Keep in mind that the fluid components of the system may be filled with toxic solvents. Before starting maintenance, rinse toxic solvents from the instrument. Avoid inhaling any vapors. Always wear gloves and goggles.

Important: When lifting or moving the Solvent Rack, lift only from the bottom or sides of the unit. The front panel of the rack tilts upward. Lifting the rack by the front panel may damage the hinges.

Important: When operating the HPLC system,set the low presure limit for the pump. This prevents damage resulting from leakage or from running the pump dry.

Please note: Before interrupting operation for an extended period (i.e, several days), observe the precautions in Shutting Down the Instrument (→ page 22).

3 Installation

3.1 Location

After unpacking the Solvent Rack, allow the rack to warm up for approximately 4 hours before connecting it to the power supply. This delay allows any condensation that might have occurred during shipping to evaporate. After 4 hours, check the Solvent Rack; if condensation is still there, allow the instrument to continue to warm up until the condensation is completely gone.

Install the instrument in the laboratory on a stable surface that is free of vibrations. Make sure that the surface is resistant to solvents. Avoid locations with extreme changes in temperature (such as direct sunlight or drafts) and high air humidity. Allow sufficient clearance behind the rack for electrical connections and ventilation.

If the rack is part of a Summit HPLC system, we recommend that you stack the individual modules as shown below. This arrangement optimizes the flow path and ensures a low dead volume.

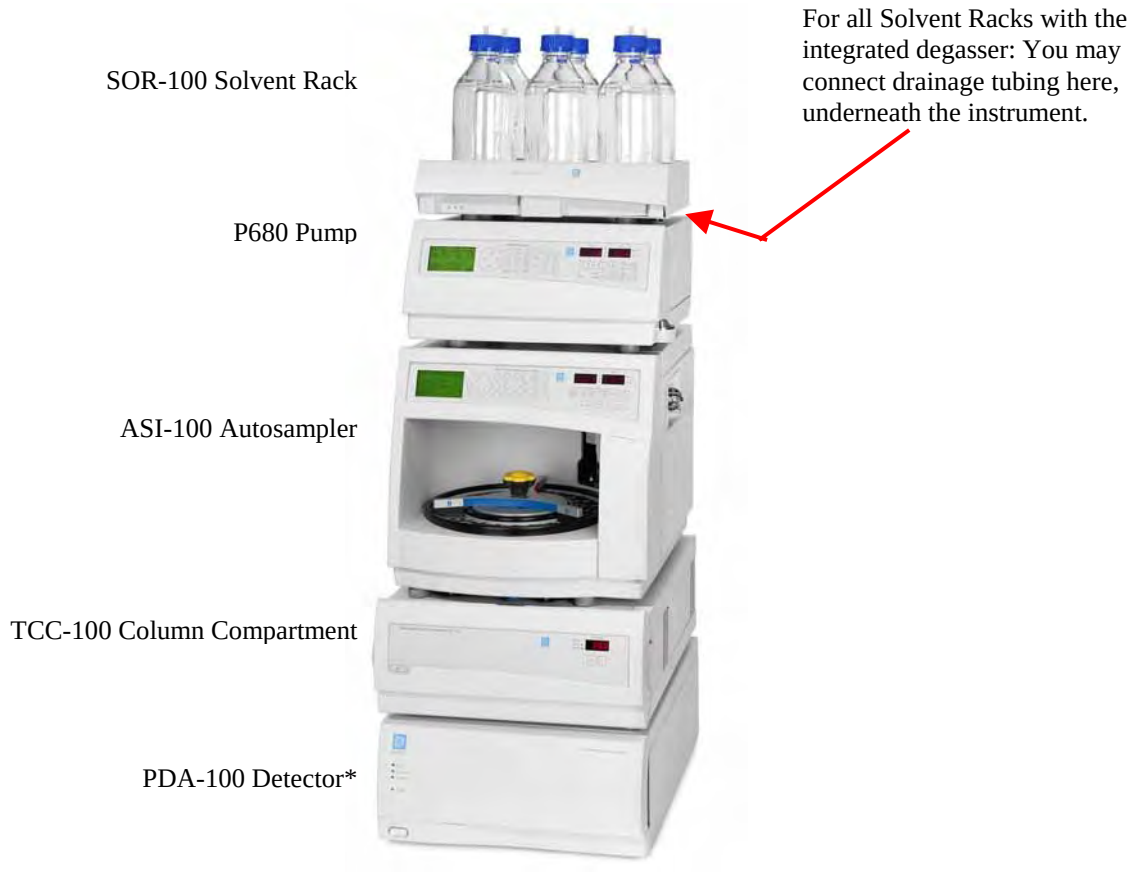

Fig. 2: Summit HPLC system with Solvent Rack

(* As an alternative, the Summit HPLC system may include a UVD 170U or UVD 340U Detector.)

Please note: If the Solvent Rack contains an integrated degasser, drainage tubing can be connected at the bottom right to direct liquid leaks to the waste (→ Fig. 2). To prevent damage to the rack, make sure that no part of the tubing is placed higher than the connection port.

3.2 Electrical Connections

Connect the Solvent Rack to the mains, using either a Dionex P680 HPLC pump or an external power supply unit (part no. 1510.0004) (→ page 25). Please note: The P680 HPLC pump must have a Solvent Rack port on its rear panel. If the pump does not have this port, the Solvent Rack cannot be connected to the pump.

The external power supply unit is a primary clocked standard power unit providing a "wide range" input (auto-sensing). Thus, no adjustment is required to adapt the line voltage to the local voltage requirements.

For more information about how to connect the Solvent Rack, refer to Operation (→ page 15).

3.3 Rear Panel Connectors

Fig. 3: Solvent Rack rear panel

No.	Description
1	Exhaust air outlet Optional: Connect tubing here to vent vapors leaving the degassing chambers to waste (→Fig. 4, page 11).
2	DC Input (Power): If the Solvent Rack is not controlled by a P680 pump, connect an external power supply unit (part no. 1510.0004) from here to the mains (→ section 3.3.2, page 11).
3	15-pin D-Sub port Connects the Solvent Rack to the pump (→ section 3.3.3, page 11).

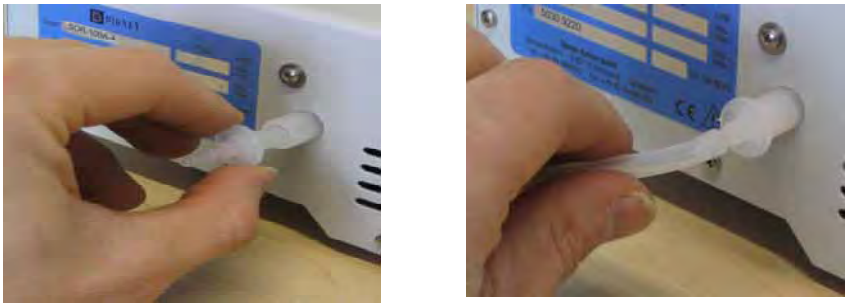

Fig. 4: Connect tubing here to vent any vapors leaving the degassing chambers to waste

3.3.1 Interfaces for Device Control

⚠ **Important:** To ensure trouble-free operation, only use the cables provided in the accessories kit.

3.3.2 DC Input (Power)

To connect the Solvent Rack directly to the mains, connect the external power supply unit (part no. 1510.0004). The external power unit is an optional part.

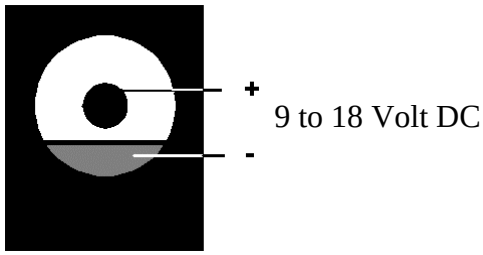

Fig. 5: DC Input

Please note: The external power unit is required only if you do not want the P680 pump to control the Solvent Rack. Please note: It is only possible for a P680 pump to control the Solvent Rack if a Solvent Rack port is provided on the pump's rear panel.

3.3.3 15-Pin D-Sub Port

Connect the Solvent Rack to the pump, using the appropriate cable from the accessories kit. For more information about how to connect the rack to the pump, refer to Operation, page 15.

For information about the pinout for this 15-pin D-Sub connector, refer to the Technical Appendix (→ page 27).

3.4 Fluid Connections

To access to the fluid connections in the Solvent Rack, tilt the front panel upward and pull the tray with the degassing chambers forward. It is not necessary to lock the open panel in place.

⚠ **Important:** When lifting or moving the Solvent Rack, lift only from the bottom or sides of the unit. The front panel tilts upward. Lifting the unit by the front panel may damage the hinges.

Please note: Do not connect a Solvent Rack with analytical degasser to a semi-preparative P680P HPG-2 pump.

3.4.1 Connecting the Solvent Reservoirs to the Degasser

All Solvent Racks are shipped with solvent reservoirs and appropriate tubing. The bottle caps have file holes. Four of the holes are capped (white caps) and one is open. The solvent line is installed in the open hole. A retaining guide holds the tubing in place.

How to connect the solvent lines to the solvent reservoir (→ Fig. 6):

- First, feed the solvent line through the retaining guide and then into the open hole in the reservoir cap.
- Slide the filter frit (from the accessories kit of your P680 pump) onto the end of the line.
- Fill the solvent reservoir and then, place the complete assembly in the reservoir.
- Tighten the reservoir cap hand-tight, by holding the cap and turning the bottle.

Fig. 6: Connecting the solvent lines to the reservoir

⚠ **Important:** Always install filter frits on the solvent lines. This prevents contaminants from reaching the HPLC system.

Please note: When replacing a solvent line, remove the frit frist, then the solvent line and then, the retaining guide.

Please note: Regularly check the suction frits for permeability. Especially when working with aqueous solvents, algae and other microorganisms can grow and be deposited on the filter frits. Therefore, replace the solvents at regular intervals. Rinse the reservoirs thoroughly before refilling them. Replace the suction frits as necessary.

- Connect the lines to the appropriate connection ports on the degassing module. Route the solvent lines through the associated openings in the rack's cover. Remove the dummy fitting from the degasser inlet and connect the solvent lines with the corresponding label (→ Fig. 7).

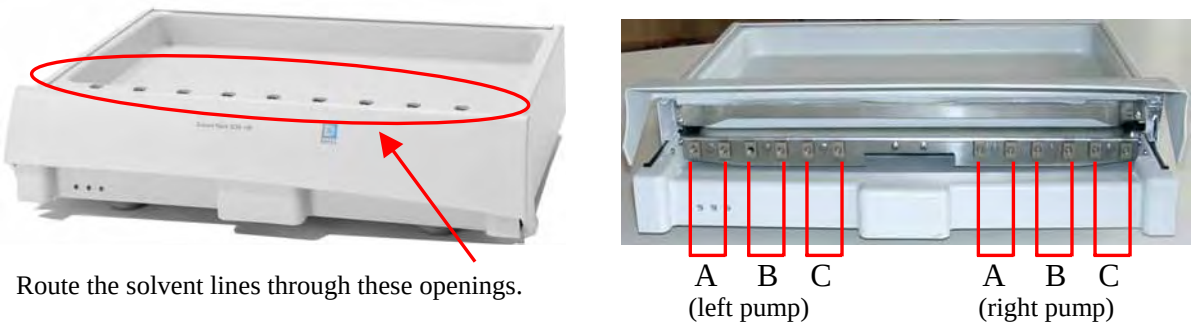

Fig. 7: Connecting the solvent reservoir (here: SOR-100A-6)

Please note: Before connecting the solvent lines, make sure that the connectors are free of contaminants. Even minute particles can allow air to enter the degasser, and thus reduce the unit's effectiveness.

Please note: When replacing solvents, make sure that the solvents are miscible. Mix immiscible solvents with an intermediate solvent to replace them step-by-step.

3.4.2 Connecting the Degasser to the Pump

In the P680A ISO, P680A HPG-2, P680A HPG-4, and P680A DGP-6 pumps, the appropriate solvent lines are connected at the factory and routed through an opening in the pump's top cover (→ Fig. 8).

Fig. 8: Opening in the pump's top cover

Remove the corresponding dummy fitting from the degaser outlet (→ Fig. 7) and connect the solvent line with the corresponding label.

Please note:

- On a **P680A ISO** or **P680A HPG-2** pump, connect the solvent lines directly to the working pump head.
- On a **P680A DPG-6** pump, connect the solvent lines to the 3-channel proportioning valve.
- On a **P680A HPG-4** pump, connect the solvent lines to the 2/3-way valves of the solvent selector.

For more information about tubing connections to these pumps, refer to the *Operating Instructions for the P680 HPLC Pumps*.

4 Operation

4.1 Stand-alone Operation

Make sure that the installation site meets the facility requirements (→ page 9). Connect the Solvent Rack to the mains, using the optional external power supply unit (part no. 1510.0004). Connect the external power supply to the DC Input port on the rack's rear panel (→ Fig. 3, page 10) and to the power source. The degasser reaches the appropriate operating vacuum after a short time. When the Vacuum and Status LEDs are green, the degasser is ready for operation.

4.2 Operation with a Dionex P680 HPLC Pump

Please note: If you plan to have a P680 pump control the Solvent Rack degassser, verify that the **Degaser** option on the pump's **Hardware** menu (a submenu of the **Configuration** menu) is set to **External** (→ *Operating Instructions for the P680 HPLC Pumps*). If the setting is not External, contact Dionex Service before proceeding.

Make sure that the installation site meets the facility requirements (→ page 9) and then, follow the steps below to connect the Solvent Rack to a Dionex P680 pump:

- For pumps **with** a **Solvent Rack** port on the rear panel
  Connect the 15-pin D-Sub port (→ Fig. 3, page 10) on the rack's rear panel to the **Solvent Rack** port on the pump, using the appropriate cable from the accessories kit. The Solvent Rack is powered via the pump.

  The degasser is ready for operation and can now be controlled by either the pump firmware (→ section 4.2.1, page 16) or Chromeleon (→ section 4.2.2, page 16).

  Please note: Turning off the pump, automatically turns off the degasser, too.

- For pumps **without** a **Solvent Rack** port on the rear panel
  The Solvent Rack cannot be connected to these pumps. In this case, operate the degasser in stand-alone mode as described in section 4.1.

4.2.1 Operating the Degasser with the Pump Firmware

If the pump is operated in stand-alone mode, follow the steps below to turn the degasser on or off:

- On the pump's **Main** menu, select the **Configuration** menu. Use the cursor keys to select to select the **Options** menu and confirm you're your selection by pressing the ↵ (Enter) key.
- Set the **Degasser** option to **Yes**. If the setting is **No**, the degasser is turned off.

Please note: Dionex recommends always leaving the degasser on.

4.2.2 Operation with Chromeleon

If the pump is controlled by Chromeleon, follow the steps below to turn the degasser on and off:

- Open a Chromeleon control panel.
- Select **Command...** on the **Control** menu to open the **Commands** dialog box. (You can also open this dialog box, by pressing the **F8** key.)
- Click the "+" character beside **Pump** to display the items underneath.
- Set the **Degasser** option to **On** to turn on the degasser.

Please note: Dionex recommends always leaving the degasser on.

For information about the commands and properties available for the P680 pumps, refer to the *Operating Instructions for the P680 Pumps* or to the *Chromeleon online Help*.

4.3 Operation after a Power Failure

After a power failure, instruments operating in the stand-alone mode return to a reliable condition; all functions in progress when the power loss occurred are aborted. For example, the pump flow is stopped. As soon as the power returns, the instrument performs a self-test. The test results appear on the front panel display of the pump.

However, if the HPLC system is controlled by Chromeleon, the program file (PGM File) can include a command that automatically restarts operation as desired after a power failure. For more details, refer to the *Chromeleon online Help*.

5 Troubleshooting

5.1 List of the Most Frequently Observed Error Messages

The following table contains a summary of the most frequently observed error messages, lists possible causes, and suggests appropriate remedial actions.

Note: If the Solvent Rack is controlled by a P680 pump, any error messages related to the rack will appear on the front panel display of the pump. To clear an error message, press Esc. If several error messages appear, press Esc repeatedly to clear them one by one.

Problem	Cause	Remedial action
Degasser malfunction.	The vacuum level monitoring function of the Solvent Rack degasser has responded.	Turn the rack off and on again. Ti do so, either turn the pump off and on again or turn the degasser off and on again, using the **Degasser** option on the pump's **Options** menu (→ *Operating Instructions for the P680 HPLC Pumps*). Contact Dionex Service if the message appears again.
Solvent Rack leak detected.	There is a leak in the system. A fitting connection is loose.	Find and eliminate the leak and dry the leak sensor (→ section 6.3, page 21). Tighten the fitting connection and dry the leak sensor (→ section 6.3, page 21).

Please note: For information about the error messages that might appear during operation of your pump, refer to the *Operating Instructions for the P680 HPLC Pumps*. If a message that is not listed in the manual appears, please note the exact wording of the message and contact Dionex Service.

5.2 Chromeleon Error Messages

If the Solvent Rack is operated with a P680 pump and controlled by Chromeleon, any error messages referring to the degasser are logged in the Chromeleon Audit Trail.

For a list of all Chromeleon error messages, refer to the Chromeleon installation program (= **Server Configuration**). Double-click the pump in the left window section and select the **Error Levels** tab page in the dialog box. You can also open the dialog box by clicking the pump on the left pane and then selecting the **Properties** on either the **Edit** menu or context menu.

5.3 List of the Most Frequently Observed Problems

The following table provides a summary of the most common operating problems, lists probable causes, and suggests remedial actions:

Problem	Probable Cause	Remedial Action
No function	The Solvent Rack is not connected properly to the mains.	Check the connection of the external power supply unit and/or the connection to the pump (→ section 4, page 15).
	The degasser is turned off.	Verify that the degasser is turned on: - If the pump is operated in stand-alone mode: → section 4.2.1, page 16 - If the pump is controlled by Chromeleon: → section 4.2.2, page 16
Poor degassing	There is a leak in the system.	Inspect the capillaries and solvent lines for leakage; tighten loose fitting connections.
	The pump's flow rate is too high.	Reduce the flow rate
Reproducible ghost peaks in the chromatogram.	The degasser channels are contaminated.	Rinse the degaser channels → section 6.2, page 20

6 Maintenance

6.1 General Notes

The Dionex Solvent Racks are made of high-quality components and materials to minimize maintenance requirements. The painted surfaces are relatively resistant to weak acids, alkali, and organic solvents. Nevertheless, immediately wipe up all liquids spilled onto the rack surface, using a lint-free cloth or paper. If surfaces are exposed for longer periods, these liquids can cause damage!

The following sections describe all maintenance procedures that can be carried out by the user. Dionex personnel should perform any additional servicing, as well as annual inspections to detect contamination, excessive wear, etc. If unexpected problems occur, please contact Dionex Service.

Warning: Keep in mind that the fluid components of the system may be filled with toxic solvents. Before starting maintenance, rinse toxic solvents from the instrument and put on protective clothing.

Important: Before you return any instrument to Dionex for repair, contact Dionex Service or your local distributor. An RMA (Return Material Authorization) number is required for the return in order to properly track and account for your instrument. Always use the original packaging when shipping the Solvent Rack. Shipping the rack in anything other than the original packaging will void the warranty. Refer to the warranty statement in the terms of sale for more information.

Important: Use original Dionex spare parts only. Dionex assumes no liability for damage caused by repairs with third-party parts!

For instructions on shutting down the unit, refer to page 22.

6.2 Maintenance Intervals

To avoid contamination of the degasser:

- Prepare fresh solvents at regular intervals.
- Clean the solvent lines at regular intervals.
- Rinse the degasser channels at regular intervals:
  This is especially important for the channel that degases the acqueous solvent (for reverse-phase chromatography). Usually, it is sufficient to rinse all channels with organic solvent. (Please use a fresh bottle.) When you use water and acetonitrile or methanol, it is usually sufficient to rinse the degasser channels once a week. However, please adapt the rinsing interval to the solvents in use. In persistent cases, e.g., reproducible ghost peaks in the chromatogram, follow the steps below:
  - Replace the column with a backpressure capillary.
  - Rinse the degasser channels for 1 hour with 20% nitrid acid at the flow rate normally used for your application.
  - Rinse the degasser channels with HPLC-grade water until the pH value is neutral. (Use fresh HPLC-grade water or a new bottle.)
  - Rinse the degasser channel for two hours, using HPLC-grade acetonitrile (use a new bottle) at the flow rate normally used for your application.
  - Prepare fresh solvents for your application using new bottles, and connect them to the degasser channels.
  - Install new filters.
  - Reinstall the column and equilibrate the system.

In addition, have a Dionex Service Representative check the instrument once a year for contamination, excessive wear, etc.

6.3 Leak Sensor

Please note: Check the Solvent Rack for leaks at regular intervals and tighten leaking all tubing and capillary connections.

Fig. 9: Leak Sensor

When the leak sensor detects a leak, the red **Status** LED on the front panel lights and the error message "Solvent Rack leak detected" is displayed on the front panel of the pump.

If a leak is detected, follow these steps:

- Inspect the degasser inlets and outlets and the connected solvent lines for leaks. Tighten leaking connections.
- Put on appropriate protective clothing and dispose of any liquid in the tray. Using a lint-free cloth or paper, dry the sensor as shown in Fig. 10.

Fig. 10: Drying the leak sensor

Please note: The red **Status** LED on the front panel will remain illuminated as long as the leak sensor is exposed to moisture.

6.4 Shutting Down the Instrument

Please observe the following precautions before interrupting operation for more than one week or before shipping the Solvent Rack:

Please note: Thoroughly rinse the degasser with alcohol after operation. (The alcohol does not need to be removed afterward.)

Please note: For longer periods of inactivity and when using saliferous buffers (which may result in salt crystallization in the gas separation membrane, thereby impairing the degassing performance), rinse with de-ionized water, followed by either methanol or 2-propanol.

7 Technical Information

Solvent bottle capacity:	Up to six 1-liter solvent bottles or up to three 2-liter solvent bottles
Degassing channels:	None, 2, 4, or 6 analytical degassing channels, depending on the model
Degasser membranes:	Teflon AF
Channel volume:	670 µl
Max. flow rate per channel:	12 ml/min
Optimized flow rate per channel:*	3.6 ml/min
Pressure drop:	4.5 mmHg/ml/min
Control:	Permanent status transfer Controlled by a Dionex P680 HPLC pump (with or without Chromeleon) or stand-alone operation
Communication:	15-pin D-Sub connector (through P680 HPLC pump)
PC connection:	USB or Ethernet (RJ-45; 10 MBit)
Power supply:	15-pin D-Sub connector (through a P680 HPLC pump) or external power supply unit (option)
Additional USB ports:	Integrated USB hub with three type A USB ports for connection of other Summit HPLC modules
Safety features:	Leak detection, degasser vacuum level monitoring
User input/display:	3 LEDs (Power, Vacuum, and Status)
Wetted parts:	Stainless steel, PCTFE, PTFE, PEEK
Environmental conditions:	Range of use: Indoor use Temperature: 10°C to 35°C (50°F to 95°F) Air humidity: 40 to 85% rel. humidity, non-condensing Overvoltage Category: II Polution degree: 2
Power requirements:	Max. 30 VA
Dimensions (h x w x d):	10 x 40 x 31 cm (9.3 x 15.8 x 15.0 in.)
Weight:	2.8 kg (6.2 lb)

* Optimized flow range for isocratic or gradient mixture consisting of methanol and water (50:50)

Technical information: April 2004
All technical specifications are subject to change without notice.

8 Accessories

Accessories for the SOR-100 Solvent Racks are always maintained at the latest technical standard. Therefore, part numbers are subject to alteration. However, updated parts will always be compatible with the parts they replace.

The following accessories are shipped with the instruments:

Accessory	SOR-100	SOR-100A-2	SOR-100A-4	SOR-100 A-6
Solvent Rack -P680connection cable (Part no. 1310.2151)*	--	1	1	1
Dummy plugs	20	10	20	30
Solvent filter (Part no. 2200.0011)	1 (=10 filters)	1 (= 10 filters)	1 (= 10 filters)	1 (= 10 filters)
Solvent Rack sealing plug (Part no. 2261.0206)*	4	2	4	6
1-Liter solvent reservoir	2	1	2	6
2-Liter solvent reservoir	2	1	2	--
Solvent lines (analytical) (Part no. 5030.2548)*	--	2	4	6
Set of A-D labels (5 labels each)	1	1	1	1
Operating Instructions, English (Part no. 4820.3057)*	1	1	1	1

* The part numbers always refer to the packing unit. For more information, please contact your Dionex Sales Representative.

An external power supply unit (part no. 1510.0004) is available as an option for the following Solvent Racks: SOR-100A-2, SOR-100A-4, and SOR-100A-6.

9 Technical Appendix - Pinouts

Pin	Signal Name	Signal Level	Remarks
1			Occupied
2	Solvent Rack Error		TTL_high with Solvent Rack errors
3			Jumper to pin 9
4	Solvent Rack Leak		TTL high with Solvent Rack leaks
5			Occupied
6	V_Degas	+24V_supply	Supply for the Solvent Rack
7	GND_MOT	Ground_supply	Reference potential for VC_Degas
8	VCC	+5V	Voltage for logic devices
9			Jumper to pin 3
10	GND		Reference potential for VCC
11	GND		Reference potential for VCC
12	GND		Reference potential for VCC
13			Occupied
14	V_Degas	+24V_supply	Supply for the Solvent Rack
15	GND_MOT	Ground_supply	Reference potential for VC_Degas

Fig. 11: 15-pin D-Sub port (female)

10 Index