

SAFETY

Only trained technical personnel in a laboratory environment may use the instrument for non-medical, liquid handling purposes. For safe and correct use of the instrument, operating and service personnel must follow all instructions contained in the user's guide when installing, cleaning, and maintaining the instrument. All safety precautions must be observed during all phases of operation, service, and repair of the instrument. Read all documentation and safety information for accessories, peripherals, and other instruments that may be used with this system before operating it.

Observe safe laboratory practices when handling solvents. If working with hazardous solvents or flammable liquids, ensure that there is proper ventilation and that adequate personal protective equipment (PPE) such as safety glasses, gloves, protective clothing are used.

Unless specifically instructed, do not remove any protective covers. Ensure that the rear panel is accessible. Detach all sources of voltage from the instrument before service, repair, or exchange of parts. Use only the grounded AC cord provided. Ungrounded power cords can result in electrical shock and serious personal injury. Faulty or frayed power cords must be immediately replaced with one of the same type and rating.

NOTICE

Use only approved fuses with the specified current rating. The instrument must be operated within the voltage specified on the rear panel of the instrument.

TECHNICAL SPECIFICATIONS

SPECIFICATION	DESCRIPTION
Electrical	<p>Line Voltage 110–120 V-(Single-Phase, ±10%) (P/N 21144001, 21144002, and 21144003) or 220–240 V-(Single-Phase, ±10%) (P/N 21144004, 21144005, and 21144006)</p> <p>Line Frequency 50 or 60 Hz</p> <p>Power Consumption 220 W max.</p> <p>Overvoltage Category CAT II</p> <p>Electrical Protection Required at customer facility: differential circuit breaker 30 mA General: delayed action fuses 3.15A H 250V-, T-type 24VDC: delayed action fuses with different ratings, L 250V-, T-type</p>
Environmental	<p>Indoor use only</p> <p>Operating Temperature 5°C to 40°C (41°F to 104°F)</p> <p>Operating Relative Humidity Up to 80% for temperatures up to 31°C, decreasing linearly to 50% at 40°C</p> <p>Operating Altitude Up to 2000 m</p> <p>Temperature of Liquid Pumped 5°C to 40°C (41°F to 104°F)</p> <p>Pollution Degree Degree 2 (normally only nonconductive pollution occurs, temporary conductivity caused by condensation is to be expected)</p>
Liquid Contact Materials	316 / 316L / 316 Ti Stainless Steel, PEEK, PFA, PTFE, ETFE, PCTFE, Ketron® CA30 PEEK, FFKM (Kalrez®, Perlast®), Inconel®, Ruby, Sapphire, Zirconium Oxide, GFP

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QUICK START GUIDE

The full user's guide and French, German, and Chinese translations are available on the USB drive provided with the pump.

PUMP DESCRIPTION

The VERITY® 3240 High Pressure Binary Gradient Pump is a high-pressure and multi-solvent pump for preparative high performance liquid chromatography (HPLC). Composed of two reciprocating piston pumps, it accommodates flow rates from 3 mL/min up to 150 mL/min and pressure up to 420 bar (6090 psi), and allows users to perform a binary gradient with pulse-free stable solvent flow for a wide variety of liquids, including high-viscosity solvents.

The VERITY 3240 Pump is controlled by TRILUTION® LC Software as part of an HPLC system.

UNPACKING

WARNING



Do not plug in the equipment if any damage is detected. Powering the instrument in a damaged state may result in serious injury and may damage internal components of the instrument.

Carefully unpack the pump and its accessories from the carton. Verify that all parts are included and undamaged. Place the pump at suitable location, such as a lab bench or cart, and always on a flat, level surface. Do not place the PC too close to the pump in case of leakage. The pump must be installed in an environment complying with the technical specifications.

CAUTION



It is necessary for two people to lift the VERITY 3240 Pump out of the box. The VERITY 3240 Pump weighs approximately 30 kg (66 lbs.) and an additional 5 kg (11 lbs.) with packaging. Casing includes two recesses on both sides for a better grip. To avoid personal injury and for general safety, if moving or lifting the instrument, always get another person to assist you. Always follow local health and safety regulations.

Wear appropriate personal protection equipment (PPE) when unloading the pump (safety shoes). Do not wear loose clothing or accessories when moving the pump.

NOTICE

It is recommended to operate the VERITY 3240 Pump inside a fume hood to ensure proper ventilation. Allow sufficient spacing around the pump for proper cooling and for the different connections. Free spaces of at least 20 cm must be kept around the instrument at all times to allow for proper tubing and cable connections and to provide adequate ventilation during operation.

ELECTRICAL CONNECTIONS

USB CONNECTION

The pump communicates with a PC via USB and is controlled by TRILUTION LC.

To make the USB connection between the pump and the controlling device (PC), use the USB cable supplied in the accessory kit.

POWER CONNECTION

The VERITY 3240 Pump is supplied with appropriate fuses and is ready to operate at the line voltage of the destination country.

To make the power connection, plug the AC power cord supplied into the socket of the power receptacle (standard 3-pin connector) located on the rear panel of the pump, and then make the connection between the pump and the AC power source.

CAUTION



When operating the pump, it must be possible to disconnect it from the mains supply at any time. In the event of an emergency, the power connector of the pump must be easily accessible and removable.

The pump must never be operated from a power source that has no ground connection. The absence of a ground connection can lead to electric shock or short circuit.

The pump is designed for use with liquids; however, liquid contact with external equipment may lead to the risk of electric shock or short circuit. Ensure that fluid connections are not close to ancillary equipment and are checked for leaks prior to use. In the event of a leak, any ancillary equipment not designed for use with liquids must be turned off until the liquid is removed.

PLUMBING CONNECTIONS

DRIP TRAY, DRAIN TUBING 1, AND SOLVENT INLET LINES 2

Install the drip tray and connect the drain tubing and solvent inlet lines, as described in the VERITY® 3240 High Pressure Binary Gradient Pump User's Guide.

A removable drip tray designed to collect and evacuate leakages is supplied, it fits to the bottom of the pump. An optional leak sensor can be installed on the drip tray to stop the pump in case of leakage.

The accessory package contains inlet lines, each fitted with a protective spring on one end and an SS ballast on the other end. If optional 20 µm inlet filters are provided, replace the ballasts by the filters.

- 1 Connect the inlet lines to the inlet tees or to the inlet ports of the solvent selectors.
- 2 Thread the solvent lines through the side of the pump before placing the ballasts or inlet filters in the appropriate solvent bottles.

PURGE VALVE OUTLET 5

The accessory package contains a purge valve outlet tubing assembly with an SS fitting on one end and an SS ballast on the other end. The purge outlet port is on the PPMM.

Make sure that all fittings are correctly seated and properly tightened, and take care not to kink the tubing.

- 1 Connect the PTFE tubing to the purge valve outlet and tighten the SS nut with a 3/8" spanner.
- 2 Thread the purge valve outlet tubing through the side of the pump before placing the ballast in the appropriate waste receptacle.



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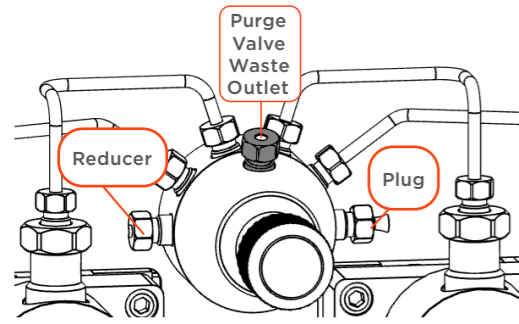
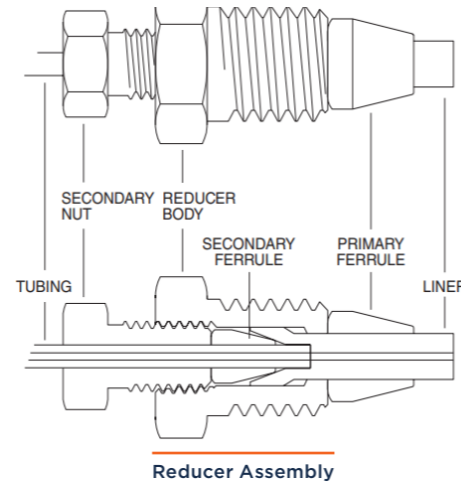
PLUMBING CONNECTIONS (CONTINUED)

PUMP OUTLET TUBING 3, 4

The accessory package contains an outlet tubing kit composed of 1/16" SS tubing, reducer, and fittings. The outlet port is on the pressure, purge and mixing module (PPMM).

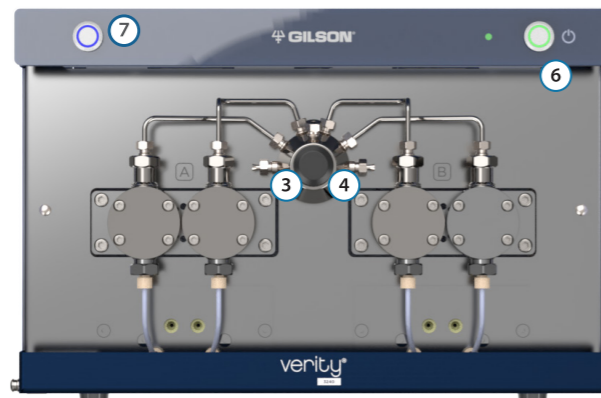
Make sure that all fittings are correctly seated and properly tightened, and take care not to kink the tubing. The SS reducer is shipped pre-assembled to make sure that all the necessary components are included. Follow these instructions to establish leak-free performance:

- 1 Choose a connection of the outlet line to the left or to the right port of the PPMM.
- 2 Remove the SS plug from the chosen outlet port with a 3/8" spanner.
- 3 Remove the secondary nut and ferrule from the reducer body.



Outlet Tubing Connections

- 4 Screw the reducer body with the liner and primary ferrule into the outlet port, and finger-tighten it.
- 5 Insert the 1/16" tubing (that will later pass through the secondary nut and ferrule) into the reducer body, and push firmly to make sure that the liner is seated in the bottom of the port.
- 6 While continuing to push firmly to keep the liner seated, use a 3/8" spanner to tighten the reducer 1/3 turn, causing the primary ferrule to make up on the liner.
- 7 Remove the tubing and slide the secondary nut and ferrule onto the tubing as oriented in the figure.
- 8 Insert the tubing/nut/ferrule assembly into the reducer body and screw it in finger-tight.
- 9 While pushing firmly on the tubing to make sure that it is bottomed out in the detail of the liner, tighten the secondary nut 1/3 turn.
- 10 Thread the outlet tubing through the side of the pump before connecting the other end to the rest of the system with the additional SS fitting supplied.



FINALIZE SETUP

FRONT DOOR INSTALLATION

The removable door is part of the accessory package. The front wall is made of transparent glass and has a large hole in the center to allow an access to the purge valve knob.

Place the door carefully on the front of the pump. The door is held in place by magnets on the sides.

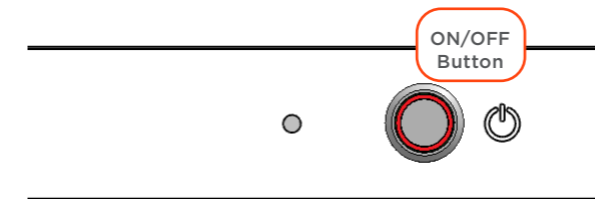
START UP

POWER ON 6

The pump has two ON/OFF switches: one on the power receptacle on the rear panel and the other on the upper right side of the front panel.

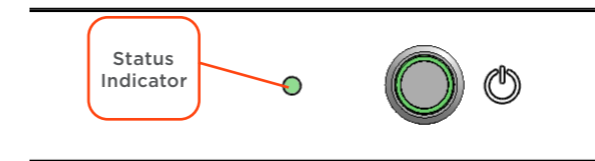
WARNING Do not switch on the instrument if the casing is removed. Starting the pump without protection may result in serious injury.

- 1 Press the switch on the power receptacle to the 'I' position; the light of the front power button illuminates red.



Pump in Sleep Mode

- 2 Press the ON/OFF button (power symbol) on the front panel; the light of the front power button illuminates green. The fans start and the pump initializes.
- 3 Wait for 15 seconds for the pump to be ready; the status indicator light illuminates green.



Pump Ready to Use

- 4 Turn on the PC and start TRILUTION LC.

PRIMING 7

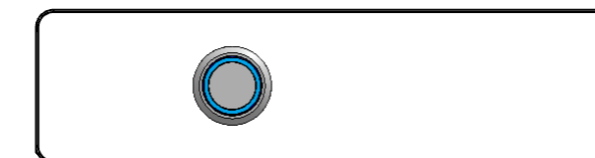
Priming helps prevent the introduction of air bubbles into the system. It is recommended to prime the pump before using it for the first time, or if it has not been used for some time. This is an essential step, which must be carried out manually or via TRILUTION LC before operating the pump.

NOTICE

Operating the pump dry, even for a short time, can damage the equipment. Use a syringe to prime the pump if the pump does not self-prime within two minutes.

Open the purge valve by turning the black knob one turn counterclockwise to direct the flow to the atmospheric purge-outlet. Make sure the purge line is connected to the purge valve and directed to an appropriate waste receptacle.

When the pump is run by TRILUTION LC, the light of the PRIMING/PURGE button illuminates blue. When the priming is done via the PRIMING/PURGE button, its light flashes blue.



PRIMING/PURGE Button

NOTE

The pre-configured conditions of priming via the PRIMING/PURGE button are: 75 mL/min, 50%A-50%B, inlet 1 for each pump (max. pressure = 5 bar).

When priming is complete, turn the knob on the purge valve all the way to the right (clockwise) to close the outlet to waste.