presston™ 1000

Positive Pressure Manifold User Guide

Part Number: AH1-7033

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www.phenomenex.com/Presston

Table of Contents for Presston™ 1000

If you have any questions while working with your Presston 1000, please email **sampleprepspecialist@phenomenex.com** or reach out to your technical consultant.

Specifications of Presston 1000

96-Well Plate Positive Pressure Manifold

Part No.:	AH1-7033
Weight:	15 kg (33.1 lbs)
Number of Samples Processed:	96 Samples
Dimensions:	301 x 382 x 377 mm 11.8 x 15 x 14.8 in.
Flow Control:	Adjustable flow control (total flow and individual flow)
Gas:	Nitrogen or compressed air (43-145 psi)
Gas Supply Pressure:	Dependent on gas system
Gas Regulator Pressure:	0.3-1 MegaPascal (MPa) 3-10 Bar 43 -145 psi
Low Pressure Regulator:	0-0.1 MPa 0-1 Bar 0-14.5 psi
High Pressure Regulator:	0-0.4 MPa 0-4 Bar 0-60 psi
Gas Flow Meter:	3-12 L/min
Operating Temperature:	Room Temperature

Safety Precautions

Before installation and operation of the device, please read the safety precautions carefully. Presston 1000 is designed for laboratory use only and for trained personnel.

- **IMPORTANT** - do not insert hand between the manifold shield and the manifold spacers or 96-well plate product.

- Always handle corrosives in a well-ventilated environment.

- Always wear personal protective equipment.

Overview

Easily streamline your 96-sample processing using Presston™ 1000 Positive Pressure Manifold.

Fig. 1 Overview of Front

Manifold Shield
Holds the manifold in place and pneumatically moves up and down

Low Pressure Gauge
Displays the low pressure flow

Gas Flow Meter
Fine tune low pressure adjustment

Low Pressure Regulator
Used for load, condition, equilibrate, wash, elution steps of SPE

Locator Plate
Holds manifold spacers, 96-well plate products and is moveable, for ease of tube or plate preparation and cleaning

Locator Plate Holder
Allows movement of locator plate to convenient plate preparation and cleaning

High Pressure Gauge
Displays the high pressure flow

SPE Procedure Indicator
Track the SPE steps to stay on track

High Pressure Regulator
Used for very viscous sample processing or to dry the SPE plate

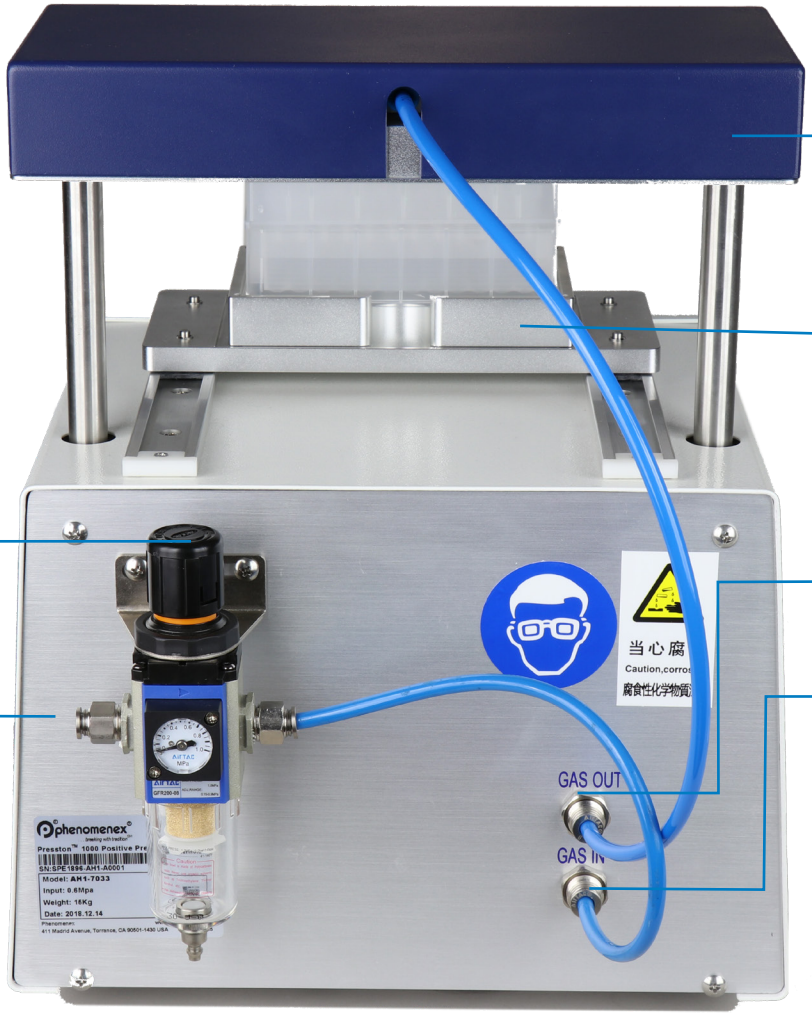
Flow Path Switcher
Move between low and high flow

Manifold Positioning Up and Down Switches
Place both hands on the switches to move the manifold shield up and down

Presston 1000 is compatible with standard 96-well plates and collection plates, including microelution plates and can even be used with a tabless tube holder (Phenomenex Part No.: AH0-9055) for tabless 1 mL tubes. Simply change the manifold spacers to fit correctly.

Fig. 2 Overview of Back

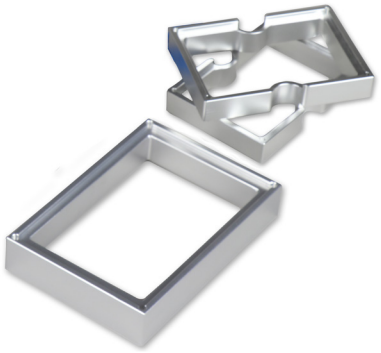
Gas Regulator with Filter (equipped with gas regulating valve and pressure gauge) Ensures that the maximum pressure capacity is not met



Accessories

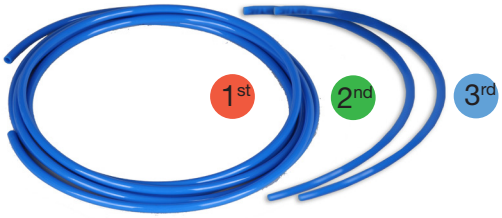
All items below are required for set-up.
Starter Kit includes:

Screwdriver, Screws, and Gas Regulator



Manifold Spacer Small (2x)
Manifold Spacer Large (1x)

Waste Collection Trough



Tubing (6 mm)

Converter Kits
to accommodate different sizes of tubing.

Straight Diameter Joint (6 mm - 4 mm)
Straight Diameter Joint (8 mm - 6 mm)
Straight Diameter Joint (10 mm - 6 mm)
Bent Diameter Joint Regulator Valve
Quick-Fitting Straight Joint Plug C
Quick-Fitting Straight Joint Plug D
Barbed to Male Tube Fitting (¼ in.)
Tubing (10 mm)

Need additional accessories?

Contact your technical consultant for any requests.

Set-Up

View a Presston 1000 Set-Up Video at www.phenomenex.com/Presstonsetup

Unpacking

1. Open the instrument package carefully by removing the molded foam around the unit and removing the accessories and converter kits.
2. Remove the manifold by lifting from the bottom and place on flat horizontal surface. Do not lift the instrument by the **MANIFOLD SHIELD**.

Gas Regulator Installation

1. Take out **GAS REGULATOR** from the accessories kit and carefully unpack. Turn the Presston 1000 around (Fig. 2).
2. Position the **GAS REGULATOR** so the clear part is on the bottom and the black knob is facing upwards and screw into this position (Fig. 3).
3. Take the tubing from the accessories kit which will be cut into 3 pieces to be attached to the **GAS SOURCE, GAS REGULATOR**, and to the back of the **MANIFOLD SHIELD** (Fig. 4).
4. For the 1st piece (longest piece of tubing), insert one side into **GAS SOURCE** and the other end into the left side of the **GAS REGULATOR**. If the gas source inlet tubing size is different than 6 mm, use converter kit to connect or contact your technical consultant with questions.
5. Proceed to insert the 2nd piece into the right side of the **GAS REGULATOR** and then proceed to insert the other end into the "**GAS IN**" port.
6. For the 3rd piece of tubing, insert into "**GAS OUT**" port and insert the other end into the **MANIFOLD SHIELD**.
7. Additional tubing and converter inlets are provided in the accessories kit for diverse sizes of tubing.

Fig. 3 Gas Regulator Position on back side

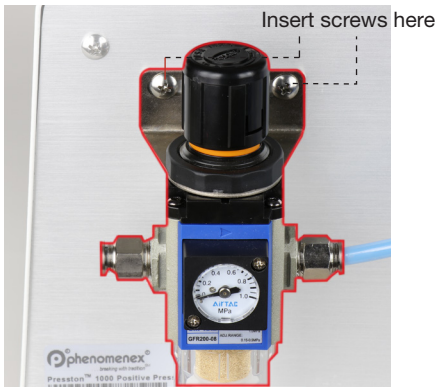
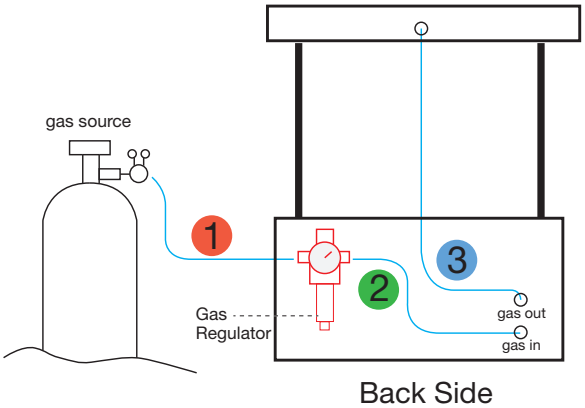


Fig. 4 Gas Flow Path Set-Up/Tubing



Back Side

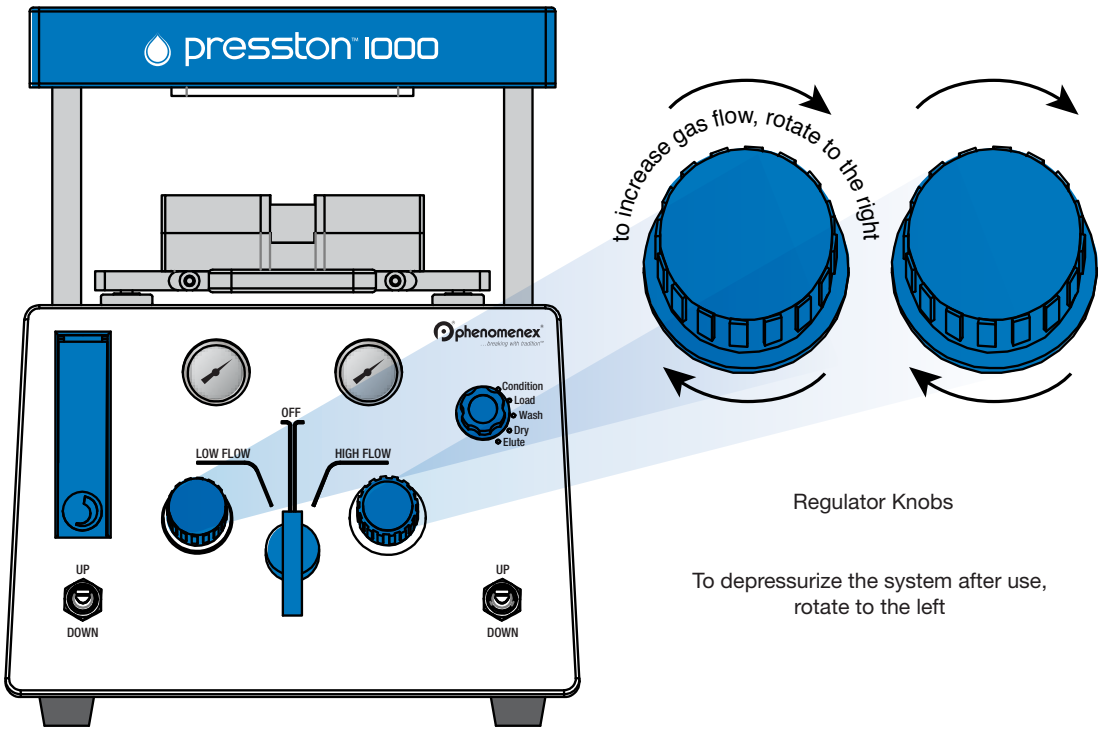
Set-Up (continued)

Gas Flow Control

1. **HIGH PRESSURE REGULATOR** is used to **dry the SPE well or for very viscous samples** and maxes out at 0.4 MPa (60 psi). Rotating clockwise increases pressure and rotating counterclockwise decreases pressure. The **HIGH PRESSURE GAUGE** can be read in MPa, Bar, or psi.
2. **LOW PRESSURE REGULATOR** adjusts the flow rate of gas during **normal sample preparation steps**, such as load, condition, equilibrate, etc. The max pressure output is 0.1 MPa (14.5 psi). Rotating clockwise increases pressure and rotating counterclockwise decreases pressure. The **LOW PRESSURE GAUGE** can be read in MPa, Bar, or psi.
3. The **GAS FLOW METER** is used as an additional feature in conjunction with the Low Pressure Regulator to ensure accurate and precise low pressure monitoring. The pressure should be adjusted slowly to avoid a surge of high pressure. The range of the **GAS FLOW METER** is from 3-12 L/min and the pressure increases clockwise and decrease counterclockwise.

Note: Adjust the pressure knobs and flow meter slowly to ensure steady increase or decrease in flow rate. Do not rotate the regulating knob too fast because this may cause harm to the regulating valve.

Fig. 5 Gas Control



Operation

Getting Started

Refer to Figure 6 for images to help with the operation of Presston 1000

1. Ensure that the **FLOW PATH SWITCHER** is in the off position.

2. Turn on the gas and adjust the pressure from the **GAS SOURCE** to 0.5 MPa (72 psi) and adjust the black knob on top of the **GAS REGULATOR** so that the pressure is between 0.3-0.5 MPa (43-72 psi). If the **GAS REGULATOR** shows no change in pressure, continue to turn the black knob until the regulator pathway is opened. The **GAS REGULATOR** ensures that the pressure inside the Presston 1000 does not exceed the pressure capacity of the manifold. Note: If the sample is viscous and needs more pressure, adjust the gas supply pressure to 0.7 MPa (101 psi) and adjust the **GAS REGULATOR** to 0.5-0.7 MPa (72-101 psi).

3. Place both hands on the **MANIFOLD POSITIONING SWITCHES** and move into the UP position. The **MANIFOLD SHIELD** will move up. Note: both switches must be flipped up at the same time and the gas source must be flowing in order to move the manifold shield (Figure 6.1).

4. Once the **MANIFOLD SHIELD** has stopped moving, pull out the **LOCATOR PLATE** and set the appropriate number of manifold spacers (1 or 2 depending on the height of 96-well plates and waste trough) onto the locator plate. Set the waste container trough on top of the manifold spacer(s) and then proceed to place the 96-well plate that will be used for the extraction on top of the waste collection trough (Figure 6.2).

5. Add samples or solvents into the wells of the plate (Figure 6.3) and push the locator plate back under the **MANIFOLD SHIELD** (Figure 6.4).

6. Place both hands on the **MANIFOLD POSITIONING SWITCHES** and move into the DOWN position. The **MANIFOLD SHIELD** will move down. Note: both switches must be flipped down at the same time and the gas source must be flowing in order to move the manifold shield.

7. Turn the **FLOW PATH SWITCHER** to either **LOW PRESSURE REGULATOR** or **HIGH-PRESSURE REGULATOR** (Figure 6.5) and adjust to the desired pressure (Figure 6.6). Note: Use low flow rate for condition, equilibrate, load, wash, dry, and elution steps; high flow rate for dry down steps and very viscous samples.

8. If neccessary, use the **GAS FLOW METER** as a fine tune flow adjustment feature and slowly adjust to the proper pressure (Figure 6.7).

9. Once liquid has cleared the sorbent, proceed to turn the **FLOW PATH SWITCHER** into the OFF position and repeat steps 3-8 for the next step in the SPE protocol.

10. Before the elution step, take out the waste container and replace with a collection plate and proceed to start with steps 5-8 again (Figure 6.8).

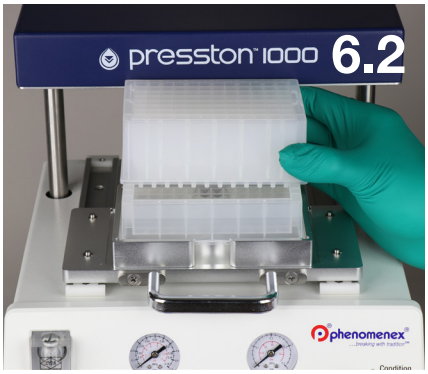
11. Don't forget to switch the **SPE PROCEDURE INDICATOR** after performing each step.

12. When extractions are complete, ensure that the system is depressurized by turning the **GAS REGULATOR VALVES** to the left (counterclockwise).

Fig. 6 Operation Instructions for Presston 1000

Use both hands to move manifold shield up or down.

Place the 96-well plate product on top of the waste trough or collection plate, which sits on the manifold spacers.



Load sample or solvents into the wells that will be processed.

Slide the locator plate under the manifold shield for processing. Move the manifold shield down.

Adjust the flow to either low pressure or high pressure depending on the step.

Adjust the pressure regulator knobs to the desired pressure.

If necessary, slowly adjust the gas flow meter.

Before elution step, remove waste trough and replace with a collection plate.

Maintenance

Gas Purification

A gas source is required for Presston 1000 Positive Pressure Manifold and no additional power source is required. Nitrogen or compressed gases are usually used as the gas supply, but laboratories need to ensure that the gas is filtered, industrial sourced, and free of moisture. Not using the correct gas source will damage Presston 1000 and result in a loss of warranty.

Note: Changing 4 µm filter in the filtering regulating valve each year is recommended.

Cleaning

Clean the Presston 1000 regularly to ensure that the device is in good working condition. Use a soft cotton cloth to gently wipe down the machine when cleaning and do not wipe the front or back panel with an organic solvent. If any samples or solvent are spattered or spilled on the device, clean immediately to avoid the corrosion to the surface of the device. Clean the top gasket in between extractions with an IPA solution to ensure that no contamination occurs.

Gasket Replacement

The gasket needs to be replaced when the seal between the manifold shield and the 96-well plate product is not tight anymore. See page 12 for more information on changing the gaskets.

Manifold Shield Positioning

Turn down the manifold shield when the experiment is completed or not in use. Do not leave the manifold shield in the UP position long term.

Warranty Information

Phenomenex warrants the Presston 1000 will be free of defects in materials and workmanship under normal installation, use, and maintenance for a period of 12 months following delivery.

Please visit www.phenomenex.com/Presstonwarranty for complete warranty information.

Tips

1. If any leaking or irregular noise is occurring from the Presston 1000, remove the sealing plates from the manifold shield. Starting with the top seal plate, A, (pictured below) check that the seal is attached correctly, if this seems to be the problem, tighten the seal plate A. If the O-ring seems to be aging, replace the O-ring.

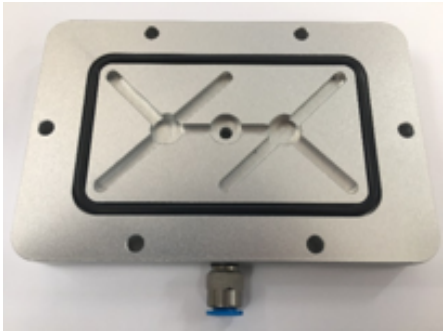


Fig. 7

2. After checking seal plate A, if the same issues occur, check seal plate B. Check that the seal is attached correctly, if this seems to be the problem, tighten the seal plate B. If the O-ring seems to be aging, replace the O-ring.

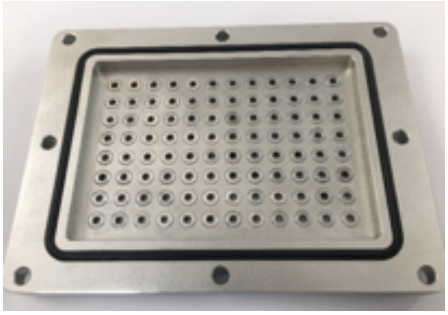


Fig. 8

3. Replace the gasket when the seal between the manifold shield and the 96-well plate product is not properly functioning. Replacement gaskets can be purchased from Phenomenex. Peel the old gasket away, starting from the corner and discard. Clean off any excess adhesive from the manifold using methanol. Locate the replacement gasket and peel away the adhesive backing on the new gasket, starting from the corner. Discard the backing material. Align the new gasket with the four corners of the manifold before attaching the gasket with the adhesive side facing down.

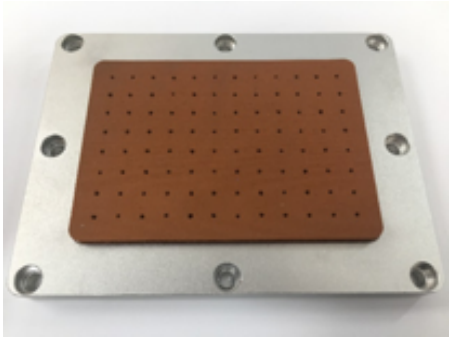


Fig. 9

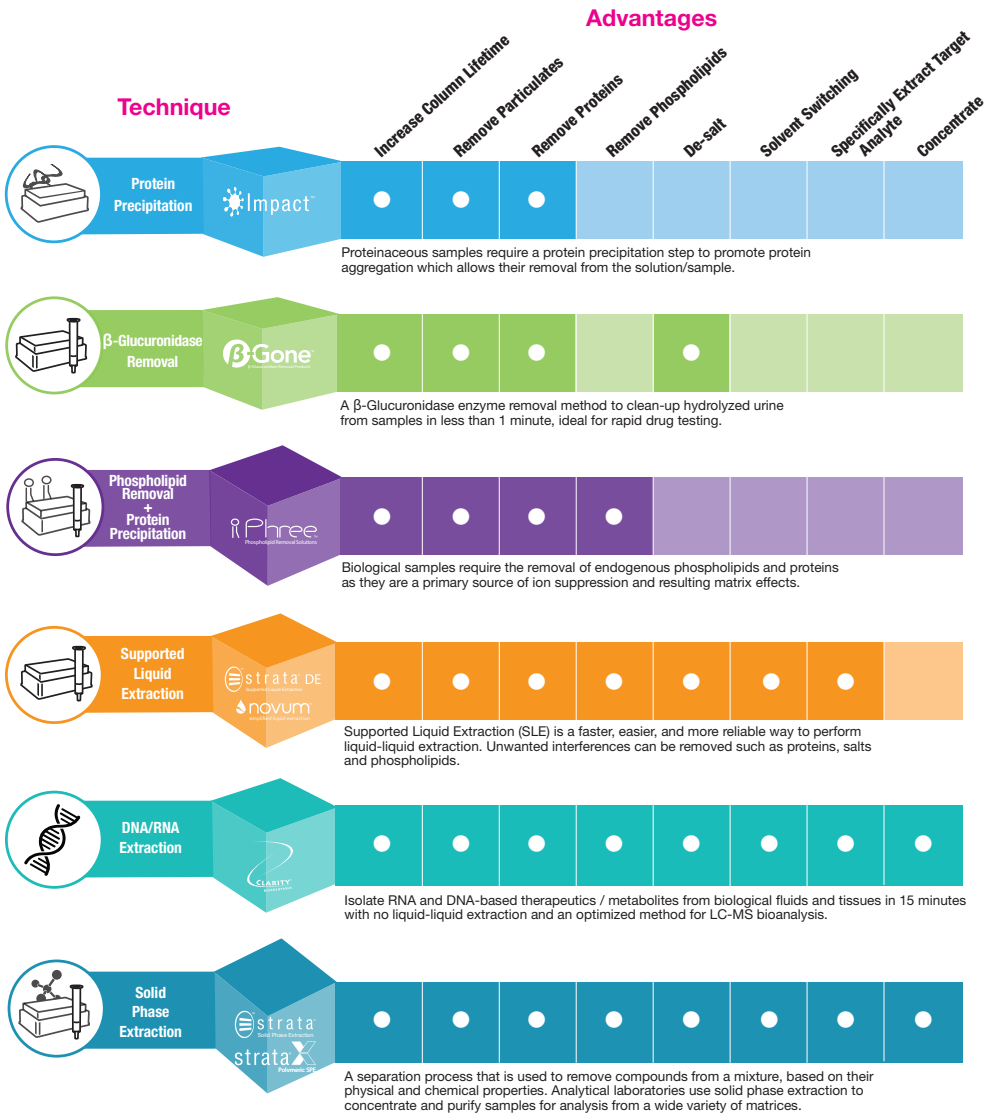
For other troubleshooting issues or to order replacement O-rings or gaskets, talk with a live technical expert.
www.phenomenex.com/chat

Frequently Asked Questions

Will I need to purchase a warranty?
A 12 month warranty is provided to you free of charge starting when Presston is received in the lab, please view all Presston 1000 terms and conditions on www.phenomenex.com/presstonwarranty.

If there is a problem and I need to fix Presston, what should I do?
Email us at support@phenomenex.com or call your Sample Preparation Technical Consultant. We will be able to make sure your Presston 1000 gets fixed and might be able to send you a replacement while you wait.

What products are compatible with Presston 1000?
All common 96-well plate sample preparation products are able to be used with Presston 1000, even microelution formats. With the addition of a tabless tube holder (Phenomenex Part No.: AH0-9055) 1 mL tabless tubes can be processed with Presston 1000. To fit correctly on the positive pressure manifold, use a manifold spacer, either small (2x) or large (1x).



To learn more about sample preparation products that Phenomenex supplies, go to www.phenomenex.com/sampleprep

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