

# 0700G1F1

# OPERATING INSTRUCTIONS

0700G1F1 Manifold with 1000 Pressure Extractors

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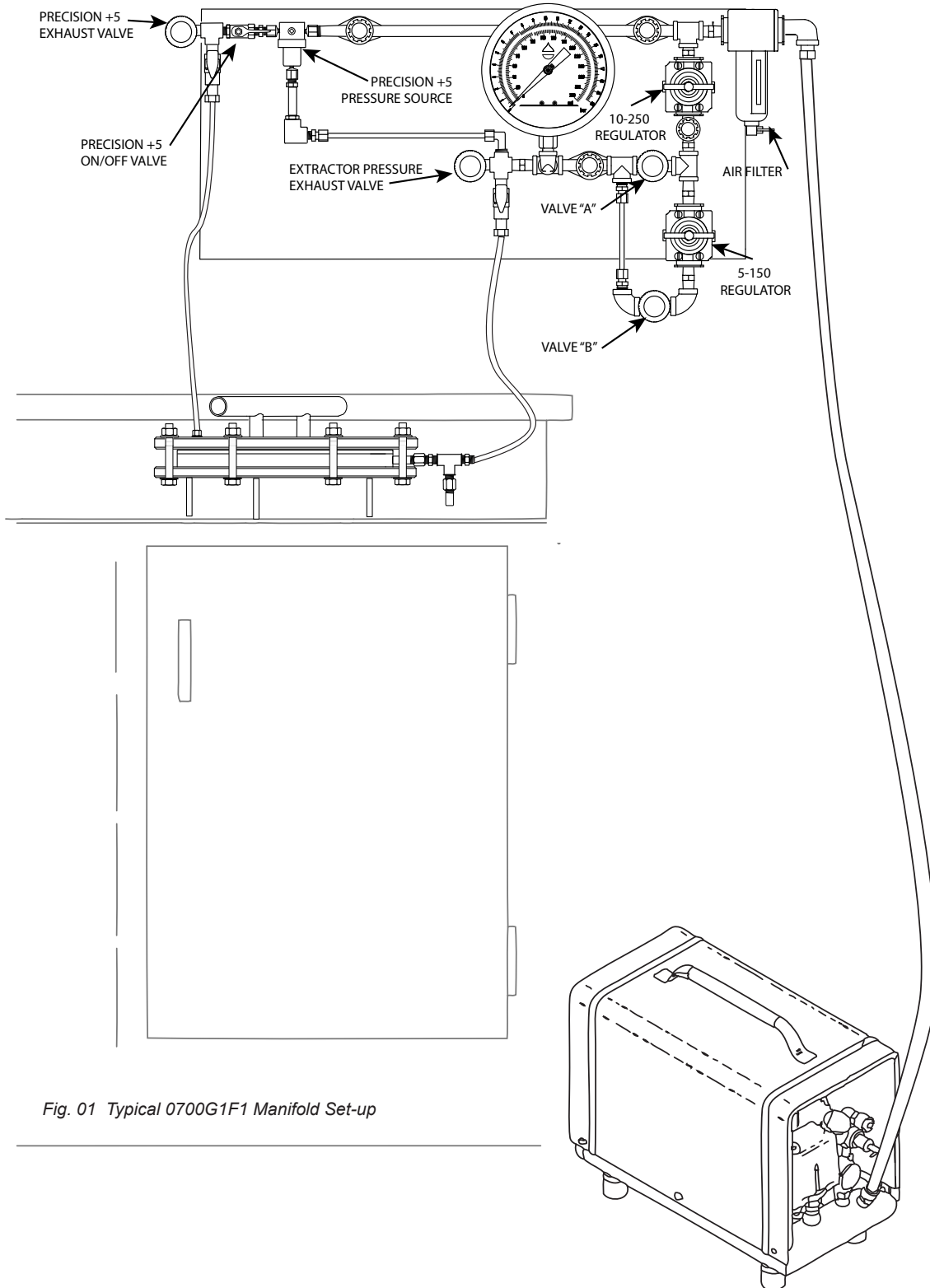


Fig. 01 Typical 0700G1F1 Manifold Set-up

Your 0700G1F1 Manifold is completely assembled, tested, and ready for mounting on your laboratory wall. The 3/4-inch thick formica covered base, which supports the various components, can be drilled at any convenient location for mounting with wood screws or bolts to the laboratory wall.

Normally, the Laboratory Compressor (Model 0505V#) is set adjacent to the laboratory bench and the Pressure Control Manifold. As indicated in (Fig.01), a Connecting Hose Combination (Model 0505-2000) is used for pressure connection between the Compressor and Manifold, and is included in the 0505V#. The Connecting Hose Combination has an quick connect fitting which snaps into the back pressure outlet on the compressor tank. The flexible rubber hose connects the compressor with the inlet fitting on the Manifold. The thread size of this Connecting Hose, as well as the Connecting Hose used to connect the various extractors to the Manifold, is 9/16-18 "B" or CGA-022.. A pressure seal at the hose connection is made when the round "nose" of the brass stem inside the hose nut is pressed against the recessed conical surface of the pressure fittings. This is a metal-to-metal seal and is very effective. The screw threads on the fitting and the hose nut only serve as a means of holding the parts in contact. The threads themselves do not make a seal. Only a small amount of torque should be used to connect the hoses.

The 0700G1F1 manifold is a single extractor manifold designed for the use with the model 1000 Pressure Membrane Extractor. This new manifold is will do the same job as the old 0700G1 manifold and is mercury-free.

There are 2 outlet valves and hoses that go from the manifold to the extractor. On the right side are 2 regulators and a test gauge plus valves and fitting to regulate 5-225 psi into the extractor itself. On the left side is another hose that goes to the lid of the 1000 extractor and ultimately into a bladder in the lid that expands to put pressure onto the sample rings against the cellulose membrane to counter any shrink swell changes in the clay sample. To accomplish this there is a precision "plus 5" psi regulator that follows the pressure readout on the gauge and adds 5 psi more. This precision "plus 5" regulator is non-relieving which means that as long as you are going up in pressure there is no need to do anything. If you need to reduce pressure you must follow the following procedure to prevent over-pressurizing the bladder.

To reduce pressure in the Model 1000 extractor the following procedure must be followed. Failure to do so will result in over-pressurizing of the bladder in the lid and possible disruption to the soil samples in the extractor. The bladder may also become dislodged from the lid.

- 1.) Close the on/off valve to the precision "plus 5" regulator valve which is red or yellow in color and will be perpendicular to the direction of air flow when closed.
- 2.) Open the exhaust valve on the precision "plus 5" side of the manifold.
- 3.) Reduce pressure as desired on the right side of the manifold (extractor pressure regulating side).
- 4.) Close the exhaust valve on the precision "plus 5" side of the manifold.
- 5.) Re-open the on/off valve to the precision "plus 5" valve – same red or yellow in color as in number one. It will now be parallel in direction to the airflow.

The right side of the manifold or the extractor pressure control side of the 0700G1F consists of a 10 to 250 psi Pressure Regulator (Model 0766P0250); a 5 to 150 psi Pressure Regulator (Model 0766P0150); a 0 to 300 psi Precision Test Gauge (Model 0780P0300); plus all the necessary valves and fittings. In setting extraction pressures in the range from 125 psi to 225 psi, valve A, referenced in fig 01, is opened (counterclockwise) and valve B is closed (clockwise). All pressure regulation is then done with the one Regulator (Model 0766P0250). The Regulator is turned clockwise for higher pressure values (or counterclockwise for lower pressure values) and the pressure is read directly on the Test Gauge. For low extraction pressures in the range from 5 to 150 psi, valve A is closed and valve B is opened. The High Pressure Regulator (Model 0766P0250) is set for a pressure value that is 10-20 psi above the planned value of setting the low pressure regulator. This High Pressure Regulator then supplies pressure to the Low Pressure Regulator (Model 0766P0150). This Low Pressure Regulator is then set for the extraction pressure desired and the pressure is read out on the test gauge.

This system for low pressure regulation is known as “double regulation” and is frequently used to provide very accurate control of pressure. All regulators reflect, in their output pressure, variations present in the pressure from the sources of supply. By placing two regulators in series, such as mentioned above, variations in the output pressure from the first regulator are considerably reduced by the second regulator so that the output pressure from the second regulator is very constant with source pressure variations reduced in the ratio of 1:100 or more.

At the end of a run when you want to exhaust the air from the extractor, first close the precision “plus 5” on/off valve and exhaust the precision “plus 5” regulator side, then you can close valves A and B, then open up the exhaust valve on the regulation side of the manifold (right side) until the extractor is emptied of air. The extractor is now safe to open.

**THE LAB 001 LABORATORY SETUP INCLUDES:**

| QUANTITY | PART #         | DESCRIPTION  |
|----------|----------------|--|
| 1        | 1000           | Extractor with 5/8" Cylinder                             |
| 1        | 1002G1/1001G1  | 5/8" Cylinder/Bolts                                      |
| 1        | 1090           | Torque Wrench and Socket Set                             |
| 1        | 1093           | Soil Sample Retaining Rings, one dozen                   |
| 1        | 1080G1         | PM Hinge, Includes 1081                                  |
| 1        | 1041D12        | Cellulose  |
| 2        | 0775L60        | Connecting Hose 60", for Compressor                      |
| 1        | 0700G1F1       | Manifold, which incorporates (as shown in illustration): |
|          |                | (1) 0760G1 Air Filter                                    |
|          |                | (1) 0766P0250 Regulator (10-250 psi)                     |
|          |                | (1) 0766P0150 Regulator (5-150 psi)                      |
|          |                | (1) 0780P0300 Test Gauge (0-300 psi)                     |
|          |                | (1) Precision +5 pressure source                         |
|          |                | All necessary valves and fittings                        |
| 1        | 1002G2/1001G2  | 1 1/4" Cylinder/Bolts                                    |
| 1        | 1002G3/1001G3  | 1 3/4" Cylinder/Bolts                                    |
| 1        | 1002G4/1001G4  | 4 1/2" Cylinder/Bolts                                    |
| 1        | 0505V1106/2206 | 110 Volts 60Hz/220                                       |



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