



The new Excel 5™ kit is a powerhouse of vacuum and a testament to simplicity. With its wide range of uses, you'll find it a versatile and practical addition to your arsenal of tools. This system is designed for vacuum bags up to 4' x 15'. We have completely redesigned this system, updated several parts, and added several new features.

The Excel 5 system is designed for woodworkers looking for a simple and affordable method of veneering wood panels and clamping wood projects for routing, sanding and carving. With an integrated bleeder valve, the system is fully adjustable and can create more than 1,925 lbs of pressure per square foot at sea level. At the heart of the system is a very powerful 5.5 CFM vacuum pump designed to ensure many years of trouble-free operation.

You will find the assembly process to be very easy and this guide will help you get your vacuum press put together as quickly as possible. Feel free to contact us through our website at VeneerSupplies.com if you have any questions.

Assembly Time: 20 - 25 minutes

Assembly Tools:

- Wrenches: 1/2", 9/16", 5/8", 11/16", 3/4"
- Pliers or Vise Grips
- Scissors or Razor Knife
- Cross-Tip Screw Driver
- 1/4" Allen Wrench
- Marking Pen

Excel 5™ Parts List



5.5 CFM Heavy-Duty Vacuum Pump

- Run Amps: 3.7
- Port size: 1/4 NPT
- Sound Rating: 63 dB
- Air Evacuation: 5.5 CFM
- Cylinder: Wetted Aluminum Alloy
- Design: Oil-less Double Rocking Piston
- Maximum Bag Pressure: 1,925 lbs/sqr ft
- Maximum Vacuum: 27.5" Hg at Sea Level



Thread-Sealing
Tape



Brass Cross
Fitting



Lock-On
Connector



Vacuum
Gauge



Vacuum
Filter



Vacuum
Bleeder



Brass
Elbow



Brass Barbed
Elbow



Vacuum Valve
Type I



Long Brass
Pipe Nipple



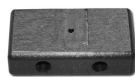
Short Brass
Pipe Nipple



Coarse Thread
Screw



Composite
Handle



Composite
Manifold



Vacuum
Tube
(Length: 6" & 10')



Rubber
Feet
(Qty: 4)



Straight Brass
Barbed Fitting
(Qty: 3)



1/4" Brass
Hex Plug
(Qty: 2)

Extended Valve Kit

This additional parts kit allows the pressing of 3 vacuum bags at the same time. This optional kit must be selected when your order on our website.



Straight Brass
Barbed Fitting
(Qty: 2)



Vacuum Valve
Type II
(Qty: 2)



Lock-On
Connector
(Qty: 2)



Vacuum
Tube
(Qty: 2)

Assembly Instructions

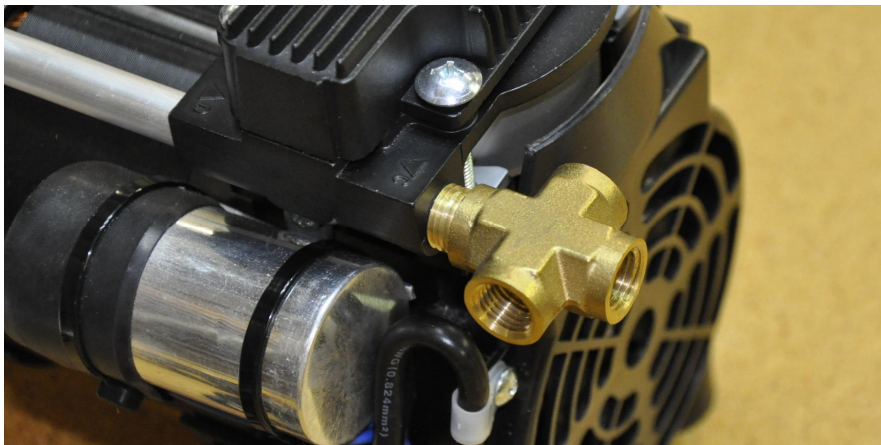
Before you begin, please keep in mind that there is no need to apply excessive force when tightening any of the fittings since this is a continuous-run vacuum press.

1. Thread sealing tape will be applied only where there will be a metal-to-metal connection. Apply the thread sealing tape to male threads on the following items.
 - a. Short Brass Pipe Nipple
 - b. Brass Elbow
 - c. Vacuum Valve (Type I)
 - d. Vacuum Bleeder
 - e. Vacuum Gauge
 - f. Long Brass Pipe Nipple (*apply to one side only*)
 - g. Brass Barbed Straight Fitting (*apply only to one of the three fittings included*)

Two or three layers of tape should be applied to the fitting in the direction of the threads. Hold the fitting in your right hand. Apply the starting end of the tape to the top threaded portion of the fitting and rotate the fitting away from you. The fitting should be rotating in the same direction as if it were being inserted into another fitting.

Thread sealing tape is not shown in the assembly pictures below for the sake of clarity.

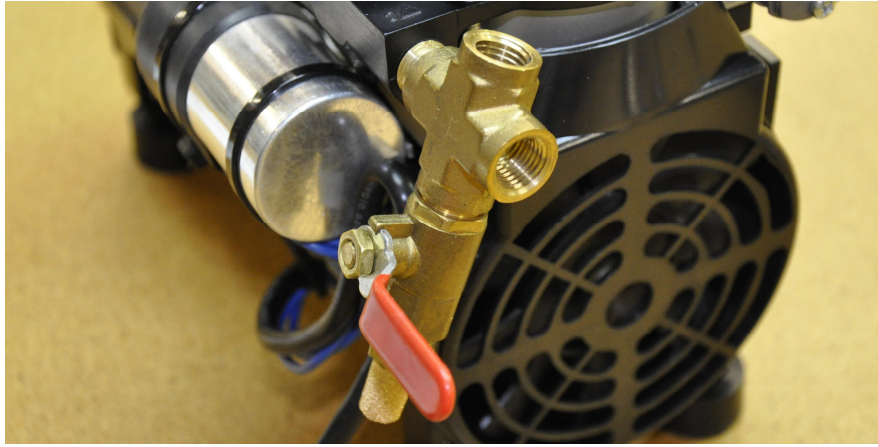
2. Remove and discard the nut from each of the four rubber "feet". Leave the small washer in place on each of the feet. Attach the four rubber feet to the bottom of the vacuum pump.
3. Loosely attach the short brass pipe nipple to the vacuum port (marked with a "C") on the vacuum pump.
4. Attach the brass cross to the brass nipple. Tighten the cross with an 11/16" wrench. This will also tighten the brass nipple. When finished, the cross should be horizontal as shown in the picture below. This positioning is temporary and will be changed in a few moments.



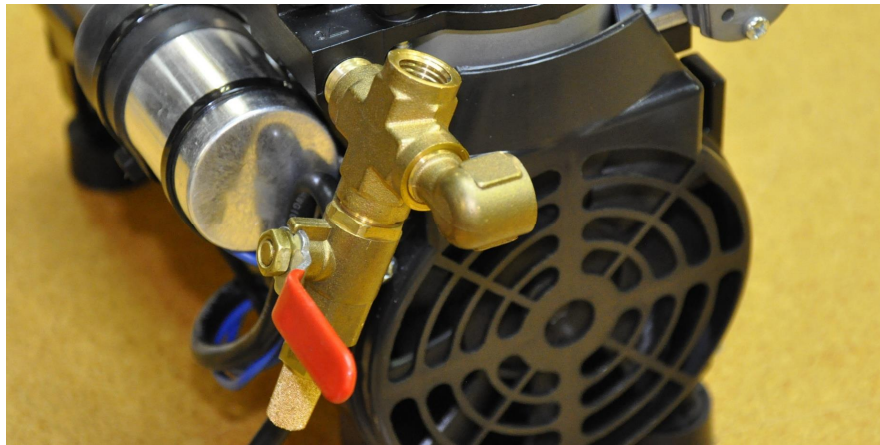
5. Attach the vacuum bleeder fitting to the vacuum valve (type I) using 9/16" and 11/16" wrenches.

The vacuum valve allows the user to quickly and easily adjust the amount of vacuum being applied to the project. The fitting which we call a "bleeder" can be used for many purposes. For this kit, the bleeder simply allows filtered air back into the system.

6. Attach the vacuum valve to the lower opening on the brass cross and tighten it with an 11/16" wrench. The valve should be oriented so the handle is facing forward when it is fully tightened.
7. Rotate the cross back to the almost-upright position leaving this part of the assembly tilted as shown in the picture below.



8. Next, use a 3/4" wrench to attach the brass elbow to the side opening on the brass cross. An 11/16" wrench can be used to prevent the brass cross from rotating. When tight, the brass elbow should be pointing toward the back side of the pump as shown below.



9. Use a 9/16" wrench to attach the vacuum gauge to the brass cross.
10. Find the long brass pipe nipple and attach the side the with the thread sealing tape to the brass elbow.

Use vice-grips for this step of the assembly. To prevent the tool from marring the soft brass surface of the pipe, consider wrapping the pipe with a few layers of masking tape.

11. Unscrew the clear filter bowl from the black plastic filter head. Attach the filter head to the brass pipe. There is an arrow stamped the side of the filter head. Be sure the directional arrow is pointing in the direction of vacuum flow (toward the brass elbow and cross).

Do not over-tighten the filter head. The plastic is soft and so it will easily seal against the threads on the brass fitting.

12. The filter bowl can now be re-attached to the filter head. Gently snug is perfect.

13. Attach the brass barbed elbow to the filter using a 1/2" wrench. It will be necessary to hold the filter in place while this elbow is tightened. Do not over-tighten this part. When finished, the fitting should be pointed in the direction shown in the picture below.



14. The composite plastic manifold can now be assembled. With a 9/16" wrench, attach a straight brass barbed fitting to each of the two end ports on the manifold. No thread sealing tape is needed on these fittings. Remember that the composite material is soft so be sure to avoid cross-threading as the fittings are attached. It may take a couple of tries to get the threading started accurately. Be sure to avoid over-tightening the fittings.

- If you opted for the standard single-hose version of the Excel 5 system, you will find two brass plugs included with the parts bag. Insert a brass plug into each of the side ports on the black composite manifold using a 1/4" Allen wrench. See figure A below. No thread sealing tape is needed on these fittings.
- If you ordered your Excel kit with extra hoses, the brass plugs mentioned above will not be used. Instead, find the two (type II vacuum valves) and attach each to the side ports on the black composite manifold. See figure B below.

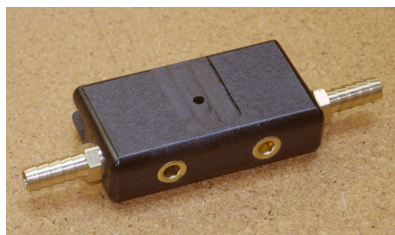


Figure A

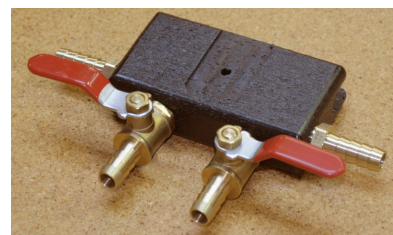
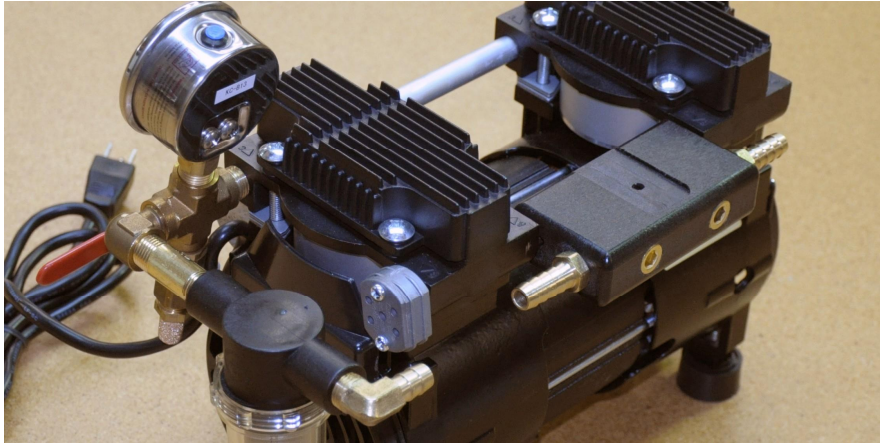
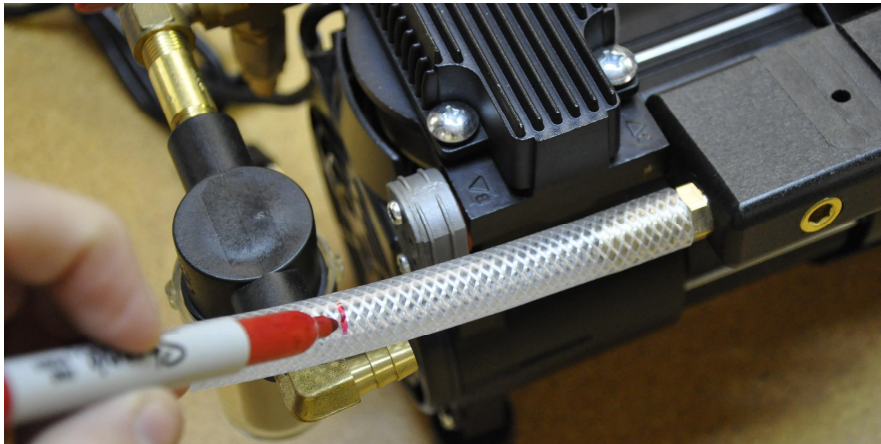


Figure B

15. Note the channel machined into the side of the manifold. Slide the channel of the manifold over the aluminum tube on the vacuum pump so that the shallow recess is on the top.



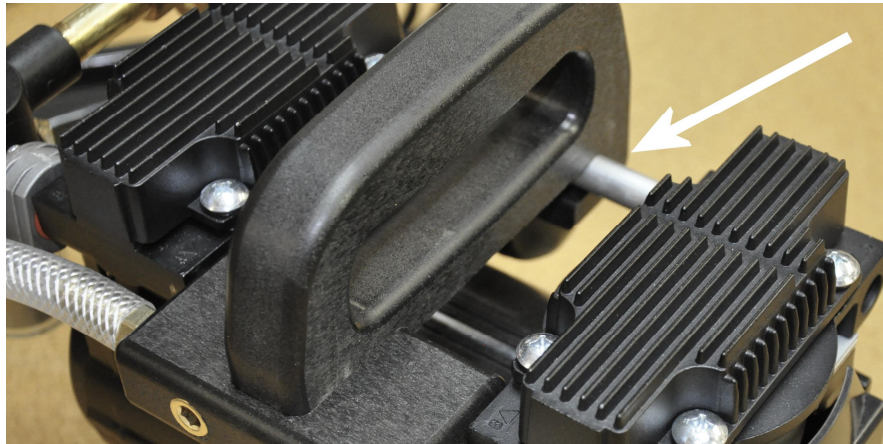
16. The kit includes a small piece of vacuum tube. Attach the tube to the straight barbed fitting on the manifold as shown in the picture below. Mark a line where it will be cut so that it fits between the brass barbed elbow and the straight barbed fitting on the manifold. Cut the tubing at the marked line with scissors or a razor knife.



17. When the tubing has been cut to the correct size, slide the manifold off the pump and attach the short piece of tubing to the brass barbed elbow. Then slide the manifold back on to the aluminum tube. The assembly should look like the picture below.



18. Note that there is a U-shaped protrusion on the composite handle part of your kit. Slide the protrusion over the other aluminum tube on the vacuum pump. Then press it down into the recessed area of the manifold as shown in the picture.



19. Using the provided coarse-thread screw, attach the handle to the manifold. The screw is inserted from under the manifold into the handle. A pilot hole has been pre-drilled into the handle to help with alignment. Do not over-tighten this screw.
20. Attach one end of the 10 foot piece of braided vacuum tube to the brass barbed straight fitting on the manifold.
21. Attach the remaining brass barbed fitting to the lock on connector using a 5/8" and 9/16" wrench. This fitting should have thread sealing tape applied to it.



22. Slide the brass barbed straight fitting (which is attached to the lock-on connector) onto the remaining open end of the braided vacuum tube.
23. If you opted for the additional vacuum hoses, these can be assembled as directed in the previous step and attached to the optional type II vacuum valves.

How to Use the Excel 5 Vacuum Press System

When the project is prepared and placed in the vacuum bag, apply the bag closure. Depress the spring clip on the lock-on connector (included with this kit) and slide it onto the brass stem* on the vacuum bag. Release the spring clip while gently pushing the downward on the lock-on connector.

Plug in the Excel 5 vacuum press and close the vacuum valve by turning the handle to the horizontal position. The gauge will show how much vacuum is being applied to the bag. The ideal vacuum level for most veneering projects is 21" of Hg. Observe the vacuum gauge as the indicator needle moves toward this ideal vacuum level. When the needle passes the 21" of Hg mark on the gauge, slowly open the vacuum valve. Doing so will allow a small amount of air to vent back into the system and the gauge needle will move backward. Adjust the position of the vacuum valve handle until the gauge needle settles at the 21" mark. No further adjustment should be needed during the pressing time for the project.



Keep in mind that this system is designed to run continuously while the adhesive is setting up. The vacuum pump will not restart if there is any vacuum shown on the gauge. In the event that you need to turn off the system during the pressing, you will need to temporarily disconnect the lock-on connector from the vacuum bag before turning on the pump again. When the pump is running, re-attach the lock on connector to the bag.

The adhesive used on your project will determine how long the panel needs to be pressed in the bag. Follow the instructions on the adhesive bottle for clamping time. Excess clamping time for some adhesives can be problematic so avoid pressing the project for too long.

When the suggested pressing time is complete, unplug the Excel vacuum system and remove the lock-on connector from the bag by depressing the spring clip.

** The vacuum bags offered at VeneerSupplies.com include a special brass stem that mates with the lock-on connector included with this vacuum press kit.*

Vacuum Pressing Multiple Vacuum Bags

The optional multi-valve kit allows you to press up to three vacuum bags at once. Begin by closing off the two auxiliary vacuum valves that are attached to the handle/manifold assembly. Attach the first bag to the system and allow it to draw vacuum. Attach the second vacuum bag to one of the auxiliary vacuum lines. Open the corresponding vacuum valve to the bag. When the vacuum gauge indicates that adequate vacuum levels have been achieved in both bags, attach the remaining auxiliary vacuum line to the third vacuum bag and open the vacuum valve. Keep an eye on the vacuum gauge and adjust the system bleeder valve as necessary to maintain the level of vacuum required for your projects.

Your Excel 5™ Vacuum Pressing System Is Now Complete!

I've written a short but helpful article that explains what else you will need to use your vacuum press. The article also includes a step by step guide to using your system for vacuum pressing a veneered panel. Follow the guide carefully and your first veneer project will turn out perfectly.

Check it out here...

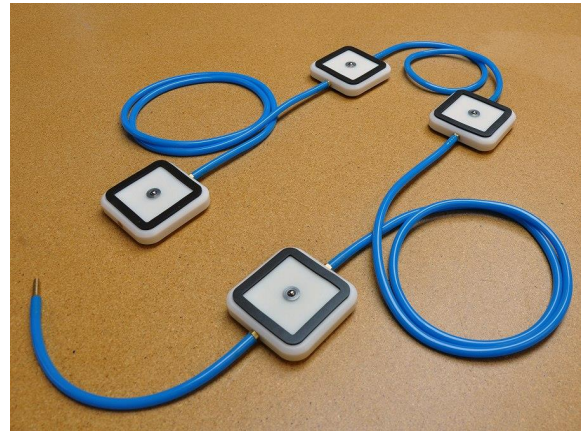
www.joewoodworker.com/veneering/getting-started.htm



Using the Excel System with Podz™ Vacuum Clamping Jigs (Optional)

If you ordered your Excel system with the optional Podz™ clamping kit, assemble the jigs using the instructions included with the kit.

Begin preparing the system and Podz jigs for use by attaching the tube adapter from the lead Podz clamping jig to the lock-on connector from the Excel 5 vacuum system. Turn the vacuum valve to the 4 o'clock position. When the system is running, this will allow a small amount of air to vent back into the system and is necessary for releasing the vacuum clamped project when the system is turned off.



Attach the power cord from the vacuum pump to the end of the power cord on the electric foot pedal that is included with the Podz clamping option for the Excel 5 system. Plug the cord assembly into a standard 120v wall socket. Press the back side of the pedal to turn the system on. To turn the system off, press the front side of the pedal.

How It Works

Turn the system on via the foot pedal and place your project panel onto the Podz jigs. Adjust the vacuum valve handle as needed to create an ideal balance of vacuum clamping force and release time. The release time is the amount of time it takes for the vacuum to bleed out of the system (when it is turned off) so that the clamped project panel can be removed from the Podz jigs. Increase the clamping force by moving the vacuum valve handle toward the horizontal or 3 o'clock position but be aware that doing so can increase the amount of time it takes for the Podz jigs to release the clamped panel.

Press the back edge of the foot pedal to turn the vacuum pump on. Place the work piece onto the vacuum jig and you should feel the vacuum pressure pull the work piece solidly onto the jig. If the clamping piece is very porous and causes inadequate vacuum, you may wish to adjust the bleeder fitting to reduce the amount of air allowed back into the system.

To release the pressure from the Podz jigs, press down on the front edge of the pedal. You may hear the flow of air from the bleeder fitting as the vacuum from the jig is unloaded and the work piece is released.

