

SmartVac 3 Workholding System Installation and Operation Instructions

I. Installation

1. Mounting the Components

- Starting with a clean machine table place the SmartVac 3 Base unit on the table and use the included bolts and toe clamps to secure the Base to the table. You will need to use your own T-slot nuts.
- Mount the Vacuum Power Unit (VPU) to the machine table away from the machine's cutting area.
- Place the Air Regulator on the outside of the machine using the included magnetic bracket.

2. Air Connections - The SmartVac 3 operates between 85-100 psi of compressed air at 0.8 CFM. Use any of the included connectors (industrial quick disconnect, 1/4" Wye, 1/4" or 1/8" NPT instant tube fittings) to tap into a compressed air source.

- Connect a section of tubing from the inlet of the Base to the left "Vac In" port on the VPU.
- Connect a section of tubing from the right side port on the Vacuum Power Unit to the outlet of the air regulator (flow direction is marked with an indented arrow under the face of the gauge).
- Connect a section of tubing from the inlet of the air regulator to the air source.
- With the VPU in the ON position (knob pressed down) set the regulator to 95 psi.

II. Operation

1. Using the SmartVac 3

- Gluing the ends of the gasket together is NOT required however always cut the ends square and NEVER tear the gasket by hand.
- When inserting the gasket into the channels, NEVER stretch the gasket. Instead, work the gasket with a backward motion so it compresses lengthwise (Fig. 1). This ensures no gaps will form when the material settles. Always finish gasketing by butting both ends together squarely (Fig. 2).
- Between cycles, momentarily turn on the VPU without a part to clear out any coolant or particles.
- At full vacuum, the red indicator cap on the top of the VPU will be drawn in flush with the top of the unit.

2. Using Custom Top Plates

- Gasket the outer slot of the Base to seal off the Top Plate and insert alignment bolts in the corners.
- Using a .118" dia endmill (3mm) machine a slot .095" deep within the perimeter of the part. (Fig. 3-B)
- Drill a .157" dia thru-hole to allow the vacuum to flow through the Top Plate (Fig. 3-C). The hole can be located anywhere within the pocketed areas of the bottom of the Top Plate or above a port in the Base.
- Machine .040" shallow slots from the thru-hole toward the perimeter of the gasket to aid the vacuum to flow across the entire surface. (Fig. 3-D)
- If there are any sections in your part that require drilling thru-holes, you'll need to isolate that section from the rest of the vacuum area. (Fig. 3-A)
- Insert the gasket material in the slots you've created and follow the instructions in section II-1-B above.

III. Maintenance – Buildup from dried coolant over time can reduce vacuum levels. Follow these steps to maintain maximum performance.

- After each use, disconnect the vacuum line on the left side of the VPU and allow the system to run for at least one minute to clear out any coolant that has entered the system.
- NEVER** blow compressed air into the chuck or vacuum lines. Damage will occur.
- The system can be reverse purged if you suspect performance is being affected due to trapped particles. Start by **disconnecting the vacuum line** from the left side of the VPU. Cover the exhaust muffler with your finger and turn on the system. This will force air backwards through the VPU to clear any particles.
- If a clog is suspected, visit <https://piersonworkholding.com/cleanvpu> or scan this QR:



Included in Starter Package

Included in Connection Kit

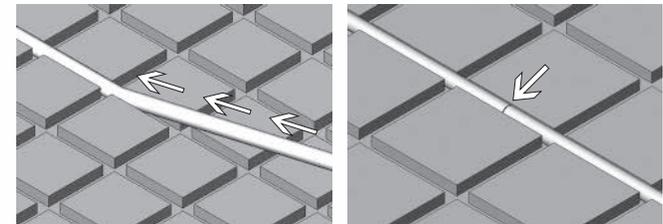
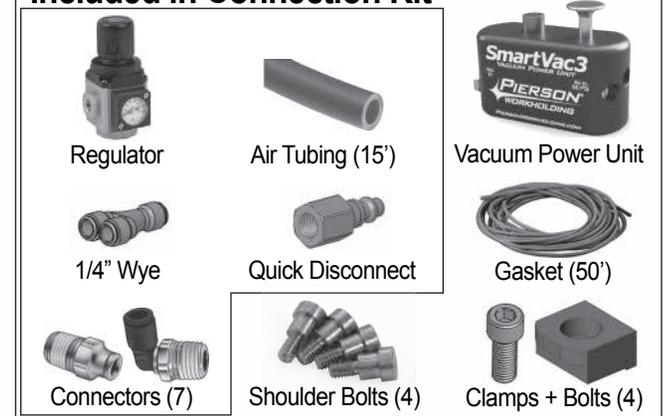


Fig.1

Fig. 2

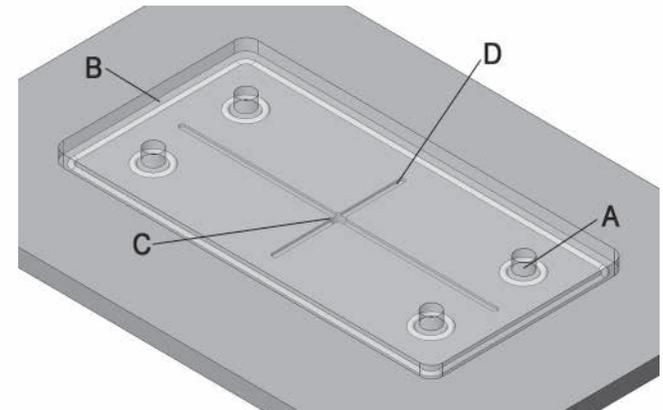


Fig. 3