

SmartVac II Workholding System Instructions

I. Installation

1. Mounting the Components

1. Starting with a clean machine table place the SmartVac II 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.
2. Mount the Vacuum Control Unit (VCU) to the machine table away from the machine's cutting area.
3. Place the Air Regulator on the outside of the machine using the included magnetic bracket.
4. Use the included grommets if air lines are run through the machine's sheet metal enclosure.

2. Air Connections – The SmartVac II requires a minimum of 80 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.

1. Connect a section of tubing from the inlet of the Base to the upper-left side port on the VCU.
2. Connect a section of tubing from the right side port on the Vacuum Control Unit to the outlet of the air regulator (look for the indented arrow in the regulator body which marks the airflow direction).
3. Connect a section of tubing from the inlet of the air regulator to the air source.
4. With the VCU in the ON position (knob pressed down) set the regulator to 85 psi. Setting the pressure higher than 90 psi will only DECREASE vacuum holding power!

II. Operation

1. Using the SmartVac II

1. Gluing the ends of the gasket together is NOT required however always cut the ends square and NEVER tear the gasket by hand.
2. 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 gap will open when the material settles. Always finish gasketing by butting both ends together squarely (Fig. 2).
3. Between cycles, momentarily turn on the VCU without a part to flush out any coolant or particles.
4. At full vacuum, the red indicator cap on the top of the VCU will be drawn in flush with the top of the unit.

2. Using Blank Top Plates

1. Gasket the outer slot of the Base to seal off the Top Plate and insert alignment bolts in the corners.
2. Using a .118" dia endmill (3mm) machine a slot .095" deep within the perimeter of the part. (Fig. 3-B)
3. Drill a .160" dia thru-hole to allow the vacuum to flow through the Top Plate (Fig. 3-C). The hole can be located to break thru to the pocketed areas of the bottom of the Top Plate or above a port in the Base.
4. 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)
5. 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)
6. Insert the gasket material in the slots you've created and follow the instructions in section II-1,2 above.

III. Maintenance – The SmartVac II is designed to pass small particles and coolant through the VCU with no adverse affects, however buildup from dried coolant can accumulate over time and cause a degradation in performance. Follow these practices to keep the system fully functional.

1. After each use, disconnect the vacuum line on the left side of the VCU and allow the system to run for at least one minute to clear out any coolant that has entered the system.
2. 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 VCU. Cover the exhaust port with your finger and turn on the system. This will force air backwards through the VCU to clear any particles.
3. If swarf or coolant buildup is suspected, turn on the system and intermittently place the VCU's vacuum line in a mild degreaser. This will circulate fluid and air through the system to break up any buildup.

Included in Starter Package

Included in Connection Kit

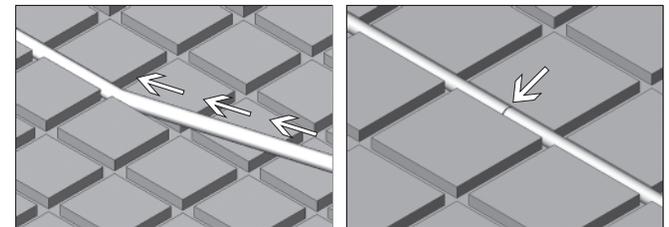
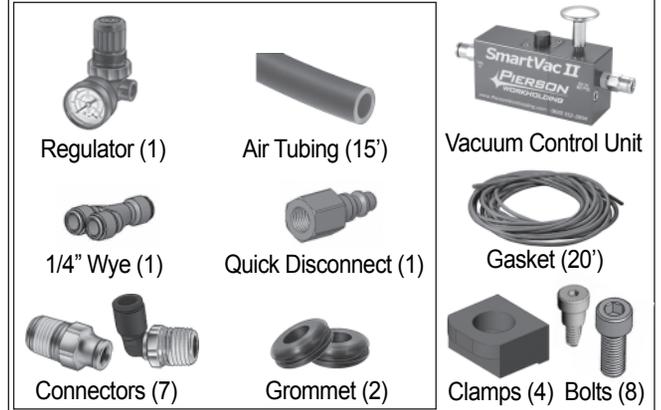


Fig.1

Fig. 2

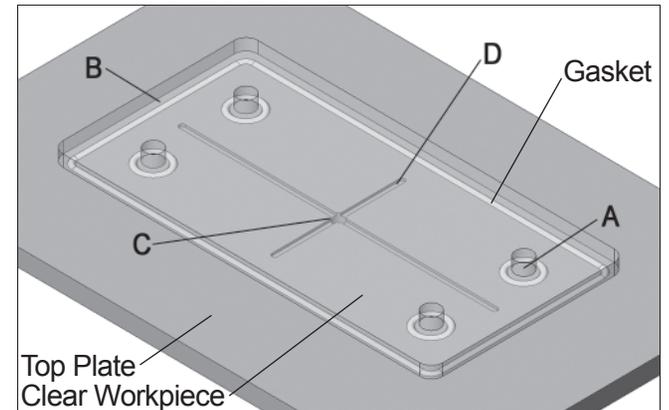


Fig. 3