



1. Set your air compressor regulator to 32-38 psi, 40 Max.
2. Connect end of air hose to quick release on air compressor.
3. Connect other end of air hose to Vortex carver.
4. Insert bur into Vortex carver.
5. Depress foot pedal all the way down or open Variable Speed Air Valve all the way.
6. Check air compressor regulator is between 32-38 psi.
7. Following Carving Guidelines (back page).

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## Work Area Safety

1. Keep the work area clean and well lighted. Cluttered benches and dark areas increase the risks of electric shock, fire, and injury to persons.
2. Do not operate the carver in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust. The carver is able to create sparks resulting in the ignition of the dust or fumes.
3. Keep bystanders, children, and visitors away while operating the carver. Distractions are able to result in the loss of control of the carver.

## Personal Safety

1. Stay alert. Watch what you are doing and use common sense when operating the carver. Do not use the carver while tired or under the influence of drugs, alcohol, or medication. A moment of inattention while operating the carver increases the risk of injury to persons.
2. Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep hair, clothing, and gloves away from moving parts. Loose clothes, jewelry, or long hair increases the risk of injury to persons as a result of being caught in moving parts.
3. Avoid unintentional starting. Be sure the power is off before connecting to the air supply. Do not carry the carver with your finger on the power or connect the carver to the air supply with the power on.
4. Do not overreach. Keep proper footing and balance at all times. Proper footing and balance enables better control of the carver in unexpected situations.
5. Always wear a dust mask.
6. Always wear eye protection.
7. Always wear hearing protection.

## Specific Safety Instructions

1. The warnings and precautions discussed in this manual cannot cover all possible conditions and situations that may occur. It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.
2. **WARNING:** Some dust created by power sanding, sawing, grinding, drilling, and other construction activities, contains chemicals known to cause cancer, birth defects or other reproductive harm. Your risk from exposure varies, depending on how often you do this type of work. To reduce your exposure to chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.
3. Only use burs rated to handle the forces exerted by this carver during operation. Other burs not designed for the forces generated may break and forcefully launch pieces.
4. Attach all accessories properly to the carver before connecting the air supply. A loose bur may detach or break during operation.
5. Obey the manual for the air compressor used to power this carver.
6. 7. Install an in-line shutoff valve to allow immediate control over the air supply in an emergency, even if a hose is ruptured.
7. 8. Do not lay the carver down until it has come to a complete stop. Moving parts can grab the surface and pull the carver out of your control.

# Vortex F5 & EAK & Air Compressors



## Vortex F5 Specifications

<b>RPM</b>	400,000min <sup>-1</sup> (minimum)	<b>Torque</b>	12 Watts	<b>SCFM</b>	1.42
<b>Pressure</b>	32-38 PSI, 40 max PSI	<b>Size</b>	½" by 4½"	<b>Ounces</b>	1.8

# Vortex Carving Guidelines

## PLEASE READ

**Failure to follow the guidelines will void your warranty!**

1. The Vortex F5 uses two integral shielded ceramic bearings. Shielding blocks debris from entering the bearings as does the air blowing out the front of the nosecone. At the factory, the bearings are permanently lubricated. Extended periods of carving can lead to bearing lubrication starvation. The carver generates centrifugal force bleeding out lubrication from the inner bearing race to the outer race. This means the ball bearings may begin to slide instead of rolling. This can lead to turbine bearing failure. To prevent this, **let the carver rest for several minutes for every 30 minutes of carving.** This allows the lubrication to flow back into the inner bearing race.
2. Never add oil or cleaner into the carver. This will cause the lubrication to be washed out of the bearings. Over time, this will result in bearing failure.
3. Maximum air pressure is 40 PSI, typical running pressure is 32-38 PSI measured at the carver. Clean dry air is highly recommended. Higher pressures spin the bur faster, but the risk of catastrophic bur or bearing failure is likely. It is recommended you keep the air pressure low enough so the burs are spinning below their rated RPM. Most burs are rated at 400,000 RPM.
4. Never insert your burs into the tool by pushing them down on a hard surface. Only use your fingers or needle nose pliers to insert or extract burs from your Vortex F5 carver. Video: <https://tinyurl.com/burchange>
5. Don't use the Vortex F5 carver for bulk material removal. Using the Vortex F5 carver in this manner will place undue stress on the bearings leading to failure. Use an inexpensive electric carver for bulk reductions.
6. Make a habit of rotating the Vortex F5 ¼ turn in your hand for every 30 minutes of carving. This will prevent excessive wear on the bearing retainer clips. Doing this can provide up to 400% more bearing life.
7. Pressing too hard while carving can cause bur failure and bearing failure as well. **This abuse is the most common cause of carver failure.** It goes without saying, let the bur do the carving. So, how hard can you press down on the bur? About the same as a Dentist drilling on your teeth.