

# Supersonic Air Knife®

PNEUMATIC SOIL EXCAVATION **LT**

## USER MANUAL



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# Supersonic Air Knife – LT Standard

400-11 : LT Standard

400-11-01 : LT Standard Kit

(includes travel case, 30' hose, & safety glasses)



Stainless Steel  
Ergonomic Trigger

Streamlined Body  
and Gauge Sleeve

Aircraft Aluminum  
Barrel (42.5")

Adjustable  
Barrel Handle

Lightweight Hose  
with 2 Prong  
Chicago Couplings

Protective Dirt Shield

Stainless Steel  
Nozzle and Wear Tip



# Equipment Safety Information

- Recommended Personal Protective Equipment
  - Ear Protection
  - Safety Goggles
  - Face Shield
  - Hard Hat/ Climbing Helmet
  - Construction Boots
  - Work Gloves
  - Durable Clothing
  - Air Hose whip check
- Do not point the Air Knife in the direction of yourself or others.
- Do not tie or lock the trigger in the 'engaged' position.
- Keep away from exposed or uninsulated electrical conductors
  - Specialty Air Knife Nozzles are available which can provide spark resistance for these conditions. (P/N: 450-402-25)
- Do not drop the Air Knife on a hard surface.
  - A more durable and heavier, Stainless Steel Model is available which can handle more rugged conditions and abuse. (P/N: 402-11)
- Do not perform any maintenance while connected to an air source.
- Always use Cotter Pins on air hose connections.
- Make sure Air Hose is untangled and a safe distance from anyone nearby when activating compressor to fill with air.

# Air Knife – Hose – Compressor Compatibility

- The optimal air pressure for soil excavation using the Supersonic Air Knife is 125psi.
  - The Air Knife is effective as low as 90psi and as high as 250psi
- It's critical to ensure that the Compressor being used has an equal or higher CFM rating as the Nozzle on the tool.
  - The LT Standard utilizes a nozzle designed to be compatible with a 185CFM compressor, but it is even more effective when hooked up to a compressor with a higher CFM rating.
  - Connecting the LT Standard to a compressor with a PSI rating lower than 125 and CFM lower than 185 will render the tool ineffective.
- It is recommended to use a 1" diameter hose with the LT Standard.
  - 1" Forestry Air Hoses are available for purchase at 50' + 100' lengths
  - 1" Air Hoses come standard with 2-prong Chicago Couplings
  - When using the Air Knife for extended periods of time, friction from the moving air can cause wear and tear on the hose material. Make sure to monitor this, especially in hot conditions, or when using a compressor with a higher CFM rating than the Air Knife.



# Equipment Operation

1. Before connecting to an air source, verify that the equipment is in good working condition, and free of any damage.
2. Make sure all operators and persons nearby are wearing appropriate PPE or have them standing at least 20' away from the excavation area.
3. Ensure that the air hose connections are secure, untangled, and fastened with Cotter Pins, then activate the Compressor.
4. Check the Pressure Gauge on the Air Knife and make sure it is reading at least 90psi to achieve Supersonic Air Speed.
  - If the gauge is reading below 90psi, the tool will not work as intended, and you may need to use a more powerful compressor.
  - The tool can function effectively up to 250psi but take care to make sure the hose does not overheat as a result of extended use.
5. Aim the Air Knife at the excavation site at a sharp angle, keeping the nozzle tip close to the ground at a maximum distance of 3 inches from the surface.
  - When vertical mulching, remove the pulverized soil after digging a distance of one foot before continuing to excavate deeper.
6. Activate the Air Knife by depressing the spring action Trigger.
7. The Air Flow will stop as soon as the Trigger is released.

# Troubleshooting Tips

- ❑ Pressure Gauge is reading < 90psi
  - Increase pressure on the compressor if possible
  - Check for leaks in the hose connections and tool fittings
  - Upgrade to a larger compressor
- ❑ Air is flowing while valve is in closed position
  - Replace Valve Cap O-Ring
- ❑ Ground is too dry and compacted
  - Soak the area with water ahead of time to loosen the soil
  - Submerge the nozzle tip and pulverize the soil from below
- ❑ Trigger Handle is loose
  - The valve spring may have failed or the trigger axel pin is bent or snapped. Disassemble the valve body to investigate.
  - Valve assembly video available on Arborjet YouTube Channel
- ❑ Trigger is sluggish, not retracting, not smooth
  - Apply lubricant to the valve assembly such as Parker O-Lube.





# Contacting Arborjet

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