There's a VACMASTERS Air System* designed to do your jobs, big or small.

SYSTEM 4000
Our largest and most powerful, digs in all soil conditions

SYSTEM 3000
Powerful, compact and maneuverable

SYSTEM 1000
Affordable, trailer, truck, or skid mounted

**All have water on board as a backup*

To see VACMASTERS air in action, view our demo at www.vacmasters.com or for more information, call 1-800-466-7825 or e-mail us.

VACMASTERS

The Leader in Air-Vacuum Excavation

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www.vacmasters.com

You found it...

...but look what you did to it!

Potholing with water cuts both ways—through the soil and also into the cable. The same utility or cable that you are supposed to locate often becomes a casualty of your technology—water.

Potholing With Air Vs. Water

VACMASTERS designs and manufactures both water and air-vacuum excavation systems. We have done extensive research and field testing of potholing with air versus water for our own benefit and at the request of a major utility. Even though VACMASTERS Air-Vacuum Excavation Systems all have water on board for those infrequent times when you can't pothole with air, our tests revealed that water is far more destructive than previously thought. The results are surprising, conclusive, and damning. What's more, we discovered that water is most dangerous at distances further away from the cable than anyone anticipated.

Damage Caused by Water

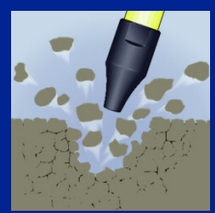
The chart below tells the story. You'll notice that a 15-year-old underground high-voltage feeder cable, when hit with low-pressure water from 10–12 inches away at 1000 psi for only six seconds, starts to sustain damage. The situation becomes even more hazardous with a power cable because, unlike air, the water is conductive. In the case of fiber-optic cables, telecommunication lines, or other utilities being damaged, liability could be assessed as well.

How VACMASTERS Air-Vacuum Excavation Systems Work.

The basic difference between air and water is that even though both are fluids, one is a gas and compressible while the other is a liquid and non-compressible. When air hits something solid like a buried cable, it compresses and flows around it. Conversely, water, being non-compressible will try to slice through the cable. In fact, high-pressure water is used in manufacturing to cut steel plate.

All soils contain minute cracks and fissures.

VACMASTERS supersonic air stream, delivered through its Air-Tec™ nozzle at 150–220 psi, is forced into these microscopic pockets.



The crevices explode from the energy built-up from the forced compressed air, crumbling the soil and leaving it dry for easy vacuuming and backfilling.

As the cable or utility is exposed, the air stream hits its non-porous shielding, compresses, and harmlessly dissipates in the soil that surrounds the cable.

Unseen Damage

Even when no *apparent* damage can be seen from above, there is often latent damage. Water abrades the shielding on cables, opening pores and cracks allowing moisture and temperature extremes to deteriorate what you are trying to protect.

Don't Be Misled by the Lower Initial Cost of a Water System

It takes less horsepower to dig with a hard fluid *(water)* than with a soft fluid *(air)* so a water system can be manufactured and sold at a lower price. Over time, however, air more than pays for the differential because every hole that you dig with air costs less. Here's why:

- *In most soils, air digs much faster than water.*
- *Spoils stay dry for use as backfill.*
- *Mud disposal costs and problems are eliminated.*
- *Air won't damage the roadbase,*
- *Air is much safer for utilities and operators (no damage claims or injuries).*

	HIGH-PRESSURE WATER											HIGH-PRESSURE AIR
	800 psi	1000 psi	1200 psi	1400 psi	1600 psi	1800 psi	2000 psi	2200 psi	2400 psi	2600 psi	2800 psi	220 psi
2–4" distance from nozzle to cable	No sign of damage	No sign of damage	No sign of damage	No sign of damage	No sign of damage	No sign of damage	Cut coating/ shredded white after 15 sec.	Cut coating/ shredded white after 15 sec.	Cut coating/ shredded white after 12 sec.	Cut coating/ shredded white after 10 sec.	Cut coating/ shredded white after 8 sec.	***No sign of damage***
10–12" distance from nozzle to cable	No sign of damage	Roughened surface after 6 sec.	Roughened surface after 6 sec.	Cut coating/ shredded white after 6 sec.	Cut coating/ shredded white after 5 sec.	Cut coating/ shredded white after 5 sec.	Cut coating/ shredded white after 4 sec.	Cut coating/ shredded white after 4 sec.	Cut coating/ shredded white after 4 sec.	Cut coating/ shredded white after 3 sec.	Cut coating/ shredded white after 3 sec.	***No sign of damage***

Water can begin to damage utilities even when used at a lower pressure.

Air digs faster than water in almost all soils and at a much lower pressure than required for water. Continual exposure to maximum air pressure of 220 psi causes no damage to utilities!

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