

I was just forwarded a document that is published on a product website which praises the attributes of HPA (High Pressure Air) and bashes the use of CO2 as an energy source for air tools.

Every claim in this document is false or misleading. Some even gave me a chuckle. It is nothing more than a desperate attempt to use fear to gain market share from a viable and effective energy source (CO2) that threatens their future. Read on.

“If you can’t breathe it – then it’s not safe.”

Their slogan was a tip off from the start of the kind of propaganda I was about to read.

Their claim:

Compressed air is environmentally safe
CO2 contributes to global warming

Power Tank’s response:

Irrelevant. Whether global warming is true or not, it has nothing to do with industries that use “processed CO2”. Power Tanks use processed CO2. Processed CO2 is CO2 that is captured and processed from industrial combustion waste and is sold as a purified by-product. This is where the CO2 that is sold at your CO2 supplier comes from. Therefore, the CO2 from a Power Tank, the CO2 that your local fire extinguisher shop and welding gas supplier sells, contributes no additional CO2 to the environment.

Compressed air has no harmful emissions
CO2 releases harmful atmospheric gases

Misleading. CO2 does not release anything. CO2 is an atmospheric trace gas that is a critical component to sustaining life on earth.

Compressed air can be used in confined spaces
CO2 can only be used in a well ventilated area

Misleading. CO2 is not harmful to breath at levels above normal. Remember, our bodies are producing CO2. And the amount of ventilation is a direct correlation to the amount of CO2 that is being emitted. The amount of CO2 emitted through an air tool from a Power Tank is very minute. If you trimmed a small bathroom (door, window) with a finish nail gun you probably emitted as much CO2 with your Power Tank as what your body produced through breathing in that time (~1.5 oz.).

Compressed air has no toxic fumes
CO2 is a toxic gas and a known asphyxiate

Misleading. Saying CO2 is toxic is like saying nitrogen or oxygen is toxic; if you breathe any of these gases in high concentrations for a prolonged period it can affect body functions and eventually kill you. However, this doesn’t mean that these gases are dangerous at normal levels. We breathe these gases everyday. The concentration of CO2 in the air when emitted through an air tool from a Power Tank will never get to “toxic” levels when used normally. Most construction workers ingest more CO2 after work at the bar than they do nailing up trim all day with a Power Tank.

What about CO2 as an asphyxiate? To achieve a high enough CO2 concentration in the air from a Power Tank to cause suffocation is highly remote. That would be like trying to commit suicide by locking yourself in an outhouse and popping open soda cans.

Compressed air is not harmful to the skin

Direct contact with CO2 will cause burn-like injury

This is true. If your skin comes in contact with “liquid” or “solid” CO2 it can burn your skin. Therefore, handling CO2 equipment requires a mindful person; almost as mindful as you would need to be when handling 4500 PSI equipment (their equipment pressures).

Compressed air is optimal for all pneumatic tools

CO2 dries up the seals and o-rings

False. CO2 has been used in pneumatic tools like nail guns for decades with no known history or proof of seal degradation. Power Tank has a 12 year history of using CO2 for nail guns and various air tools with no history of tool failures of any kind.

Manufacturers warranty tools only used with compressed air

Mfgs do not warranty tools used with CO2

This is very misleading. Here it should be pointed out that the reference to compressed air is “non-bottled” compressed air which is not the same as high pressure “bottled” compressed air as used with their system. The concern for the manufacturers is not the gas but the pressure as there have been cases where people have blown up nail guns using bottled high pressure gases improperly. We were told by Hitachi that CO2 was compatible with their nail guns.

Compressed air can be used and stored in heat

CO2 cannot be used or stored in heat

What temperature is heat? No bottled gas is to be stored in extreme heat above normal ambient temperatures. I would believe this applies to their high pressure bottles too as they are no different than HPA paintball bottles. All gas bottles are supposed to have pressure release valves to dump pressure in instances where safe bottle pressures are exceeded. All Power Tank bottles have this feature. And actually Power Tanks work very well in heat (up to 120°F).

Compressed air can be used and stored in cold

CO2 cannot be used or stored in cold

This is somewhat true. CO2 likes a minimum of 40°F to provide high flow air for extended periods, however, depending on the CFM requirement, CO2 can function at sub 40°F temperatures. I.e. CO2 bottles that push beer from kegs are stored next to the chilled kegs in temperatures just above freezing.

Compressed air bottles need no danger signs

CO2 bottles are required to have danger signs

CO2 bottles do not have “danger signs” however all compressed gas bottles governed by the CGA (compressed gas association) and the DOT (dept. of transportation) need “caution/warning” labels. If they are claiming that their HPA (high pressure air) bottles are exempt from any caution/warning labeling then they must not be certified under CGA or DOT.

Air bottles have 13 threads making it impossible

To remove the regulator under pressure

CO2 bottles have 4 threads making it possible to remove the regulator under pressure, becoming a projectile, potentially causing serious bodily injury or death

False. Although it is true that CO2 valves are “engineered” to be removable under pressure, the 323 CO2 valves on our small bottles have built-in flow restrictors to keep them from becoming self-

propelled projectiles in the event of a valve malfunction or operator error. In addition, CO2 goes through a phase change from “liquid” to vapor pressure which further slows the pressure release rate. On the other hand, their HPA bottle may hold 4500 PSI with the potential for instant and complete release of this energy like a balloon. I would argue that the “projectile” potential is much greater with their HPA bottle in the event of an accident (bottle being dropped) than any CO2 bottle.

Here is some additional information about their HPA equipment:

Their HPA bottles are fiber wound thin wall aluminum. Although these bottles are very light weight there is a very high dependence on the condition of the fiber wrap to the integrity of the bottle. Any small nick in the surface and the bottle must be taken out of service. Add to this the fragile nature of the fiber surface and you have a bottle that must be cared for like a glass vase. Aluminum CO2 bottles, on the other hand, are tough and can take much more abuse. For this reason fiber wrapped bottles need to be re-hydro tested every 3-5 years while aluminum CO2 bottles are every 5 years. And all fiber wrapped bottles must be taken out of service 15 years from born-on-date while aluminum CO2 bottles can stay in service long after that as long as they continue to pass their hydro testing.

All handling of high pressure equipment like HPA (high pressure air) and CO2 is potentially dangerous. But because of the much higher energy level of the HPA systems the liability exposure is far greater. Normal pressures of CO2 equipment is around 800 psi. HPA systems are as high as 4500 PSI. Even in an emergency rescue environment with trained operators this kind of equipment must be handled with extra care. On a construction site the durability of Power Tank equipment is much more appropriate.

Compressed air (HPA) is a constantly decreasing pressure source. This affects the outlet pressure stability. As a regulator’s inlet pressure decreases, its outlet pressure also decreases. Therefore, pressure must always be monitored to achieve a consistent nail shot. CO2 maintains a steadier head pressure due to its phase change nature allowing a more consistent outlet pressure and more consistent nail shots.

Conclusion:

Power Tank does not need to create a list of irrelevant and untrue facts about our competition to try to scare their customers our way. Our product stands on its own performance and design. It’s been that way since 1997.