

Generators, Light Towers, Compressors, and Heaters

Used Compressors Santa Clara - Power is transferred into potential energy and stored as pressurized air inside of an air compressor. These units use electric, diesel or gas motors to force air into a storing tank to increase the pressure. Eventually, the tank reaches its limit and the air compressor turns off, holding the air in the tank until it can be used. Compressed air is utilized in a variety of industries. Once the kinetic energy in the air tank is used up, the tank undergoes depressurization. After the lower limit has been attained, the air compressor roars back to life to begin the process of pressurization. Positive Displacement Air Compressors There are a variety of air compression methods. They are divided into roto-dynamic or positive-displacement categories. In the positive-displacement method, air compressors force the air into a space with decreased volume and this compresses the air. After maximum pressure is attained, a valve or port opens and the air is discharged into the outlet system from the compression chamber. There are different kinds of positive-displacement compressors including Vane Compressors, Piston-Type and Rotary Screw Compressors. Dynamic Displacement Air Compressors Centrifugal air compressors, along with axial compressors fall under the dynamic displacement air compressor category. A rotating component discharges its' kinetic energy and it eventually converts into pressure energy. A spinning impeller generates centrifugal force, accelerating and decelerating contained air, creating pressurization. Air compressors create heat and need a method to dispose of the heat, typically with some kind of water or air cooling mechanism. Atmospheric changes are also taken into consideration during compressor cooling. Many factors need to be considered for this kind of equipment including the power available from the compressor, inlet temperature, the location of application and ambient temperature. Air Compressor Applications Air compressors are used in many different industries. Supplying clean air with moderate pressure to a submerged diver is one use. Providing clean air with high-pressurization to fill gas cylinders to supply pneumatic HVAC controls and powering items such as jackhammers or filling vehicle tires are other popular uses. Copious amounts of moderate pressure air are generated for numerous industrial applications. Types of Air Compressors The vast majority of air compressors are either the rotary screw kind, the rotary vane type or the reciprocating piston model. These air compressor models are utilized for portable and smaller applications. Air Compressor Pumps Oil-less and oil-injected are the two main kinds of air-compressor pumps. The oil-free system relies on more technical components; however, it lasts for less time in comparison to oil-lubed pumps and is more expensive. The system that functions without oil has been recognized with delivering better quality. Power Sources There are a variety of power sources that can be used alongside air compressors. The most popular models are diesel-powered, gas and electric air compressors. Additional models are available on the market that have been built to use hydraulic ports or engines that are commonly utilized by mobile units and rely on power-take-off. Often, gas and diesel-powered models are used in remote places that do not have great electricity access. These models are quite loud and require proper ventilation for their exhaust. Electric-powered air compressors are common in workshops, garages, production facilities and warehouses where electricity is abundant. Rotary-Screw Compressor One of the most popular air compressors available is the rotary-screw model. This gas compressor requires a rotary type positive-displacement mechanism. These units are commonly used in industrial settings to replace piston compressors for jobs that require high-pressure air. Impact wrenches and high-power air tools are common. Gas compression of a rotary-screw model features a sweeping, continuous motion, allowing minimal pulsation which is common in piston model compressors and may cause a less desirable flow surge. Rotors are used by the rotary-screw compressors to make gas compression possible. Dry-running rotary-screw models use timing gears. These components are responsible to make sure the female and male rotors operate in perfect alignment. Lubricating oil fills the space between the rotors in oil flooded rotary-screw models. A hydraulic seal is created which transforms the mechanical energy in between the rotors at the same time. Beginning at the

suction location, as the screws rotate, gas traverses through the threads, causing the gas to pass through the compressor and leave via the screws ends. Success and overall effectiveness rely on specific clearances being achieved between the sealing chamber of the compression cavities, the rotors and the helical rotors. Fast speed and rotation are behind minimizing the ratio of a leaky flow rate or an effective flow rate. Many applications including food processing plants, automated manufacturing facilities and other industrial job sites rely on rotary-screw compressors. Other than fixed models, there are mobile units in tow behind trailers that run on diesel engines. Commonly called “construction compressors,” these portable compression units are useful for road construction, pneumatic pumps, riveting tools, industrial paint systems and sandblasting jobs. Scroll Compressor Compressing air or refrigerant is made possible with a scroll compressor. The scroll compressors are popular in air-conditioning equipment, supercharging vehicles and vacuum pumps. A variety of air conditioning systems, residential heat pumps and a variety of automotive air conditioner utilize a scroll compressor in place of wobble-plate, reciprocating and traditional rotary compressors. This machine has dual inter-leaving scrolls that complete the pumping, compressing and pressurizing fluids such as liquids and gases. Usually, one of the scrolls is fixed, while the second scroll is capable of orbiting with zero rotation. This action traps and pumps or compresses fluid between the two scrolls. The compression movement occurs when the scrolls co-rotate with their rotation centers offset to create a motion akin to orbiting. Acting like a peristaltic pump, the Archimedean spiral is contained within flexible tubing variations’ similar to a tube of toothpaste. Lubricant-rich casings stop exterior abrasion from occurring. The lubricant additionally helps to dispel heat. With zero moving items coming into contact with the fluid, the peristaltic pump is an inexpensive solution. Having no seals, glands or valves keeps this equipment easy to operate and quite inexpensive in maintenance. In comparison to other pump units, the hose or tube feature is very inexpensive.