

Generators, Light Towers, Compressors, and Heaters

Used Compressors Visalia - Air compressors are popular equipment that stores pressurized air by transferring power into potential energy. These machines rely on gasoline, diesel or electric motors to force air into a special storage tank, subsequently increasing the pressure. After the tank reaches a certain limit, it is turned off and the compressed air is held in the tank until it needs to be used. Compressed air is utilized in a variety of industries. As the kinetic energy in the air is used, the tank depressurizes. The pressurization restarts after the air compressor turns on again, which is triggered after the lower limit is reached.

Positive Displacement Air Compressors There are multiple methods for air compression. These methods are divided into positive-displacement or roto-dynamic categories. The air is forced into a chamber with decreased volume in the positive-displacement model and this is how the air becomes compressed. 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 The dynamic air compressors consist of centrifugal air compressors and axial compressors. Pressure energy is transformed via discharged kinetic energy with a rotating component. Pressurization is attained from a spinning impeller that creates centrifugal force to accelerate and decelerate contained air. Air compressors create heat and need a method to dispose of the heat, typically with some kind of water or air cooling mechanism. Compressor cooling also relies on atmospheric changes. Certain equipment factors need to be considered including the available compressor power, inlet temperature, ambient temperature and the location of the application.

Air Compressor Applications Numerous industries rely on air compressors. Air compressors are used to provide pneumatic power to equipment such as air tools and jackhammers, to fill tires with air, to supply clean air with moderate pressure to divers and much more. 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 compressors are chosen for smaller and more portable jobs.

Air Compressor Pumps Two of the main kinds of air-compressor pumps include oil-injected and oil-less kinds. 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 Air compressors can be utilized with many different power sources. 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 sought after compressors is the rotary-screw compressor. This model of gas compressor relies on a positive-displacement mechanism of the rotary type. These models are often used to replace piston compressors in vast industrial applications where large volumes of high-pressure air are required. High-power air tools and impact wrenches are popular. The rotary-screw gas compression unit has a continuous rhythm; featuring minimum pulsation which is a hallmark of piston model units. Pulsation can contribute to 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 items ensure the perfect alignment of the male and female rotors. Lubricating oil fills the space between the rotors in oil flooded rotary-screw models. This design creates a hydraulic seal and transfers mechanical energy in between the rotors simultaneously. 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. Effectiveness and success are obtained when certain clearances are achieved with the sealing chamber of the helical rotors, the rotors and the compression cavities. Rotation at high speeds minimizes the ratio of a leaky flow rate versus an effective flow rate. Rotary-screw compressors are used in industrial locations that need constant air, food processing plants and automated manufacturing facilities. Besides fixed units, there are mobile versions in tow-behind trailers that are powered with small diesel engines. Also known as “construction compressors,” portable compression systems are popular for sandblasting, industrial paint systems, construction crews, pneumatic pumps, riveting tools and more. Scroll Compressor This type of popular air compressor specializes in compressing refrigerant or air. It is common in vacuum pumps, to supercharge vehicles and in air conditioning equipment. 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. Fluids including gases and liquids are pumped, compressed and pressurized with the dual interleaving scrolls on this compressor. As one of the scrolls is often fixed, the other scroll eccentrically orbits 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 diverts heat. Since there are no moving parts coming into contact with the fluid, this pump is an affordable option. The lack of glands, seals and valves keeps them simple to operate and fairly inexpensive in terms of maintenance. In comparison to other pump units, the hose or tube feature is very inexpensive.