

Generators, Light Towers, Compressors, and Heaters

Used Compressors Salinas - 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. Once the tank reaches its' upper limit, the air compressor turns off, as the compressed air is held into the tank until needed. Compressed air is used for many applications. The tank depressurizes as the kinetic energy of the air is used. 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 different ways to compress air. These methods are divided into positive-displacement or roto-dynamic 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. Popular types of positive-displacement compressors include Piston-Type, Rotary Screw Compressors and Vane Compressors.

Dynamic Displacement Air Compressors Centrifugal air compressors, along with axial compressors fall under the dynamic displacement air compressor category. These units rely on a rotating component to discharge the kinetic energy and transform it into pressure energy. There is a spinning impeller to generate centrifugal force. This mechanism accelerates and decelerates the contained air to produce pressurization. Air compressors generate heat and require a method for heat disposal; usually with some type of air cooling or water. Changes in the atmosphere play a role in compressor cooling. 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 There are many uses for air compressors and they are used frequently in a variety of industries. 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. There are many industrial applications that rely on moderate air pressure.

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-injected and oil-less are two specific types 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. Better quality is provided by oil-free systems.

Power Sources There are numerous power sources that are compatible with air compressors. Gas, electric and diesel-powered air compressors are among the most popular types. There are other models that have been created to rely on power-take-off, hydraulic ports or vehicle engines that are commonly used for mobile systems. Isolated work sites with limited electricity commonly use diesel and gas-powered machines. Gas and diesel models are noisy and emit exhaust. Interior locations such as workshops, warehouses, garages and production facilities have power and can rely on quieter, electric-powered models.

Rotary-Screw Compressor The rotary-screw compressor is one of the most popular kinds on the market. A rotary-type, positive-displacement mechanism is what this type of gas compressor relies on. 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. Gas compression of a rotary-screw compressor offers a sweeping motion. This creates less pulsation compared to piston model compressors which can result in a less productive flow. Rotors are used by the rotary-screw compressors to make gas compression possible. Timing gears come into play with dry-running rotary-screw compressor models. These components are responsible to make sure the female and male rotors operate in perfect alignment. There are oil-flooded rotary-screw compressors that rely on lubricating oils to fill the gaps between the rotors. 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. 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. Besides fixed units, there are mobile versions in tow-behind trailers that are powered with small 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 A scroll compressor is used to compress refrigerant. The scroll compressors are popular in air-conditioning equipment, supercharging vehicles and vacuum pumps. Scroll compressors are used in many automotive air-conditioning units, residential heat pumps and air-conditioning systems to replace wobble-plate traditional and reciprocating 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. Compression motion may be achieved by co-rotating the scrolls synchronously with their centers of rotation offset to create a similar motion to orbiting. Acting like a peristaltic pump, the Archimedean spiral is contained within flexible tubing variations’ similar to a tube of toothpaste. Casings contain a lubricant to prevent exterior abrasion of the pump. The lubricant additionally helps to dispel heat. With zero moving items coming into contact with the fluid, the peristaltic pump is an inexpensive solution. 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.