

Generators, Light Towers, Compressors, and Heaters

Used Compressors Texas - Power is transferred into potential energy and stored as pressurized air inside of an air compressor. Air compressors use diesel, gasoline or electric motors, forcing air into a storage tank to pressurize it. Once the tank reaches its' upper limit, the air compressor turns off, as the compressed air is held into the tank until needed. There are many applications that require compressed air. 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. With positive-displacement models, compressors force air into a chamber that has decreased volume in order to compress the air. Once the ultimate pressure is found, a port or valve opens to discharge the air from the compression chamber into the outlet system. 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. 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. 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 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 types of air compressors are favored for portable and smaller applications.

Air Compressor Pumps Two of the main kinds of air-compressor pumps include oil-injected and oil-less kinds. The oil-free model depends on technical items; however, it costs more and lasts less than oil-lubed models. The system that functions without oil has been recognized with delivering better quality.

Power Sources There are numerous power sources that are compatible with 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. They need adequate ventilation for their gas exhaust and are quite noisy.

Indoor applications including warehouses, production facilities, garages and workshops that offer easy access to electricity typically rely on electric-powered air compressors.

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. Impact wrenches and high-power air tools are common. 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. There are timing gears affixed on the dry-running rotary-screw compressors. 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. This serves as a hydraulic seal while simultaneously transferring mechanical energy between the rotors. Entering at the suction portion, gas travels through the threads while the screws rotate; forcing the gas to pass through the compressor and exit through

the screws ends. Overall success is effective when particular clearances are achieved regarding the sealing chamber of the compression cavities, the rotors and the helical rotors. Rotation at high speeds minimizes the ratio of a leaky flow rate versus 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 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. 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. The compression movement happens when the scrolls synchronously rotate with their rotation centers misaligned to create an orbiting motion. Flexible tubing variations contain the Archimedean spiral that operates similar to a tube of toothpaste and acts like a peristaltic pump. Casings contain a lubricant to prevent exterior abrasion of the pump. The lubricant also dispels heat. The peristaltic pump is a great solution since there are no moving items contacting the fluid. Having no seals, glands or valves keeps this equipment easy to operate and quite inexpensive in maintenance. Compared to additional pump items, this tube or hose piece is fairly low cost.