

Generators, Light Towers, Compressors, and Heaters

Used Compressors Connecticut - Air compressors are valuable equipment that transfers power into potential energy which is stored in pressurized air. These machines rely on gasoline, diesel or electric motors to force air into a special storage tank, subsequently increasing 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. There are many applications that require compressed air. The tank depressurizes as the kinetic energy of the air is used. 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 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. Once the ultimate pressure is found, a port or valve opens to discharge the air from the compression chamber into the outlet system. Popular types of positive-displacement compressors include Piston-Type, Rotary Screw Compressors and Vane Compressors.

Dynamic Displacement Air Compressors The dynamic air compressors consist of centrifugal air compressors and axial compressors. These units rely on a rotating component to discharge the kinetic energy and transform it into pressure energy. A spinning impeller generates centrifugal force, accelerating and decelerating contained air, creating pressurization. Heat is generated by air compressors and these machines need a heat disposal method, generally with some form of air or water cooling component. 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 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 majority of air compressors are either the rotary screw type, the rotary vane model or the reciprocating piston type. 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 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 a variety of power sources that can be used alongside air compressors. Electric, gas and diesel-powered models are the most popular; although, other models have been engineered to use hydraulic ports, power-take-off or vehicle engines that are often utilized in mobile applications. Isolated work sites with limited electricity commonly use diesel and gas-powered machines. 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 gas compressor requires a rotary type positive-displacement mechanism. These compressors are often used in industrial applications in place of piston compressors. They are popular for jobs that depend on high-pressure air. Impact wrenches and high-power air tools are common. 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. In the rotary-screw model, compressors rely on rotors to compress the gas. 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. 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. Starting at the suction area, gas moves through the threads as the screws rotate. This makes the gas pass through the compressor and leaves through

the ends of the screws. Success and overall effectiveness rely on specific clearances being achieved between 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. Food processing plants, industrial applications requiring constant air and automated manufacturing facilities use 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 This type of popular air compressor specializes in compressing refrigerant or air. It is popular with supercharging vehicles, in vacuum pumps and commonly used in air-conditioning. These compressors are used in a variety of places to replace reciprocating and traditional wobble-plate compressors. They are used in residential heat pumps, automotive air-conditioning units and other air-conditioning systems. Fluids including gases and liquids are pumped, compressed and pressurized with the dual interleaving scrolls on this compressor. One of the scrolls is usually in a fixed position and the other scroll orbits extensively with no rotation. This dynamic action traps and compresses or pumps fluid between both scrolls. The compression movement occurs when the scrolls co-rotate with their rotation centers offset to create a motion akin to orbiting. Flexible tubing variations contain the Archimedean spiral that operates similar to a tube of toothpaste and acts like a peristaltic pump. There is a lubricant on the casings to stop exterior pump abrasion. 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.