

Generators, Light Towers, Compressors, and Heaters

Used Compressors Anaheim - 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. Once the lower limit is reached, the air compressor turns on again to start the pressurization process again.

Positive Displacement Air Compressors There are different ways to compress air. There are two categories: **roto-dynamic** or **positive-displacement**. In the positive-displacement method, air compressors force the air into a space with decreased volume and this compresses the air. A port or valve opens one maximum air pressure is achieved. Next, the air is discharged from the compression chamber into the outlet system.

Vane Compressors, Rotary Screw Compressors, and Piston-Type are popular kinds of positive-displacement compressors.

Dynamic Displacement Air Compressors The dynamic air compressors consist of centrifugal air compressors and axial compressors. 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. Heat is generated by air compressors and these machines need a heat disposal method, generally with some form of air or water cooling component. Compressor cooling also relies on atmospheric changes. Inlet temperature, the area of application, the power available from the compressor and the ambient temperature are all factors the equipment must take into consideration.

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 majority of air compressors are either the rotary screw type, the rotary vane model or the reciprocating piston type. These types of air compressors are favored 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. 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. 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. 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. A rotary-type, positive-displacement mechanism is what this type of gas compressor relies on. These units are commonly used in industrial settings to replace piston compressors for jobs that require high-pressure air. High-power air tools and impact wrenches are popular. 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. There are timing gears affixed on the dry-running rotary-screw compressors. These items ensure the perfect alignment of the male and female rotors. In oil-flooded rotary-screw compressors, the space between the rotors is lubricated. A hydraulic seal is created which transforms the mechanical energy in between the rotors at the same time. 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. 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. Mobile models that rely on tow-behind trailers are another option compared to fixed models. They use compact diesel engines for power. 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. 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. 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. 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. With zero valves, seals or glands, this equipment stays simple to operate in maintenance terms. In comparison to other pump units, the hose or tube feature is very inexpensive.