Generators, Light Towers, Compressors, and Heaters

Used Compressors Oceanside - 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. 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 used for many applications. 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. They are divided into roto-dynamic or positive-displacement 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. 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. Pressure energy is transformed via discharged kinetic energy with a rotating component. 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. 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 Air compressors are used in many different 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. Copious amounts of moderate pressure air are generated for numerous industrial applications. Types of Air Compressors Most air compressors are the reciprocating piston style, the rotary vane model or the rotary screw kind. 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. 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. Diesel and gas-powered models are often chosen for remote locations that offer limited access to electricity. 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 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. Some common tools that rely on air compressors include impact wrenches and high-power air tools. 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. In the rotary-screw model, compressors rely on rotors to compress the gas. 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. 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. Effectiveness and success are obtained when certain clearances are achieved with the sealing

chamber of the helical rotors, the rotors and the compression cavities. High speeds and rotation are utilized to achieve harmony and minimize the ratio of leaky flow rate vs. effective flow rate. Rotary-screw compressors are used in industrial locations that need constant air, food processing plants and automated manufacturing facilities. 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 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. 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. 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 motion traps and pumps the fluid between the scrolls. The compression movement happens when the scrolls synchronously rotate with their rotation centers misaligned to create an orbiting motion. Acting like a peristaltic pump, the Archimedean spiral is contained within flexible tubing variations’ similar to a tube of toothpaste. There is a lubricant on the casings to stop exterior pump abrasion. 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.