GLOBAL LIFT EQUIPMENT

Generators, Light Towers, Compressors, and Heaters

Used Compressors Antioch - Air compressors are valuable equipment that transfers power into potential energy which is stored in pressurized air. 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. Once the kinetic energy in the air tank is used up, the tank undergoes depressurization. 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. Vane Compressors, Rotary Screw Compressors, and Piston-Type are popular kinds of positive-displacement compressors. Dynamic Displacement Air Compressors Axial compressors and centrifugal air compressors fall under the dynamic displacement air compressors. These units rely on a rotating component to discharge the kinetic energy and transform it 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. Compressor cooling also relies on atmospheric changes. 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 Numerous industries rely on air compressors. Supplying clean air with moderate pressure to a submerged diver is one use. Providing clean air with high-pressurization to fill gas cylinders to supply pneumatic HVAC controls and powering items such as jackhammers or filling vehicle tires are other popular uses. Moderate pressurized air is used in large capacities for a variety of industrial jobs. 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 is more expensive compared to oil-lubed systems and they last less time. Overall, the oil-less system is considered to deliver higher quality. Power Sources Air compressors can be utilized with many different power sources. 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 popular air compressors available is the rotary-screw model. 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. 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. Compressors use rotors to create gas compression in the rotary-screw compressor. Dry-running rotary-screw models use timing gears. These items ensure the perfect alignment of the male and female rotors. There are oil-flooded rotary-screw compressors that rely on lubricating oils to fill the gaps between the rotors. This serves as a hydraulic seal while simultaneously transferring mechanical energy between the rotors. 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. 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. 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. 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 Compressing air or refrigerant is made possible with a scroll compressor. It is common in vacuum pumps, to supercharge vehicles and in air conditioning equipment. 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. As one of the scrolls is often fixed, the other scroll eccentrically orbits with zero 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. Acting like a peristaltic pump, the Archimedean spiral is contained within flexible tubing variations’ similar to a tube of toothpaste. Lubricant-rich casings stop exterior abrasion from occurring. The lubricant diverts heat. Since there are no moving parts coming into contact with the fluid, this pump is an affordable option. Having no seals, glands or valves keeps this equipment easy to operate and quite inexpensive in maintenance. Compared to many other pump models, this tube or hose feature is relatively low cost.