

Generators, Light Towers, Compressors, and Heaters

Used Compressors Nova Scotia - Power is transferred into potential energy and stored as pressurized air inside of an air compressor. These units use electric, diesel or gas motors to force air into a storing tank to increase 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. Compressed air is used for many applications. Once the kinetic energy in the air tank is used up, the tank undergoes depressurization. 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. 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. 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. Pressure energy is transformed via discharged kinetic energy with a rotating component. Pressurization is attained from a spinning impeller that creates centrifugal force to accelerate and decelerate contained air. Air compressors generate heat and require a method for heat disposal; usually with some type of air cooling or water. 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 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 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 Two of the main kinds of air-compressor pumps include oil-injected and oil-less kinds. The oil-free system is more expensive compared to oil-lubed systems and they last less time. 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. 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. Diesel and gas-powered models are often chosen for remote locations that offer limited access to electricity. Gas and diesel models are noisy and emit exhaust. Interior locations such as workshops, warehouses, garages and production facilities have power and can rely on quieter, electric-powered models.

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 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 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. 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. In oil-flooded rotary-screw compressors, the space between the rotors is lubricated. 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. 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. Rotary-screw compressors are used in industrial locations that need constant air, food processing plants and automated manufacturing facilities. 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. 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. 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 happens when the scrolls synchronously rotate with their rotation centers misaligned to create an orbiting motion. The Archimedean spiral is found in flexible tubing variations. It functions similarly to a tube of toothpaste and resembles 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. Compared to additional pump items, this tube or hose piece is fairly low cost.