



What is a Rotary Union?

A rotary union, or rotating union, is a device used to conduct fluids and gases from one point to another, often under high pressure. Additionally, a rotating union is designed to lock onto an input valve while rotating or swiveling to meet an outlet. Many rotary unions incorporate multiple ports, some of which are designed to handle different types of material simultaneously.

A rotary union with a straight port transfers the substance directly through the rotary union. Other designs include an elbow port, which causes the material to flow out at an angle, and multiple ports. A multiple port rotary union looks like a perforated cylinder. At the end of the cylinder is a threaded screw with seals that locks on to the output. The material being transferred flows into the cylinder and out of the input holes.

In the case of a rotary union with multiple inputs, chambers separated by seals keep the materials from inadvertently mixing. This type of rotary union is often used in the manufacture of plastics and other petroleum products, for which multiple inputs may need to be streamlined, but kept separate.

The rotary union is designed to withstand large amounts of pressure and heat. Often, rotary unions are constructed from stainless steel to resist corrosion. They also often incorporate ball bearings to keep the motion of the rotary union smooth. Seals are made from rubber and plastic and may need to be changed periodically depending upon the type of material being transferred.

The rotary union works by tapping into an input valve and locking onto another device, such as a manufacturing machine. Because the rotating union is designed to move, most frequently turning around on an axis, the machinery it is connected to can move and the rotary union will rotate with it, meaning that a moving connection can be maintained.

Many assembly lines incorporate multiple rotary unions, because they are highly versatile and take up less space than other devices designed for a similar purpose. Rotary unions also appear in automobiles and other machines that require constant supplies of lubrication, air, or other liquids in order for moving parts to run smoothly. Brakes, for example, use rotary unions to maintain a constant supply of pressurized brake fluid. Rotary unions are also heavily used in crude oil processing, the chemical industry, and commercial food