Article Side
Understanding the Characteristics of Fluid Power Systems by Ritter

Article published on June 26th 2012 | Technology

Fluid power is a highly versatile and adaptable for the transmission of power. The use of hydraulics and pneumatics has become widespread due to the advantages a properly constructed fluid power system has in the transmission of power. Fluid power is energy transmitted by means of a pressurized fluid. The term fluid power applies to both hydraulics, as well as pneumatics. Hydraulics use pressurized liquids while pneumatics use compressed air or other natural gasses. Used in a range of applications, understanding the characteristics of a fluid power system ensures that the outcome will be effective and efficient. No one system is suitable for all applications, so characteristics that are desirable for one application may become disadvantages in another.

One factor to consider is the weight of the component, as the structure of the component is affected by the systemâ€™s operating pressure. For operation at higher pressures, a hydraulic system is ideal. Hydraulic systems require the use of stronger materials and a larger design to withstand the pressure. On the other hand, pneumatic systems operate at a much lower pressure. Because of this, pneumatic systems can be manufactured using lightweight materials in smaller designs.Generally, hydraulic systems involve equipment meant to handle heavier weights. This requires more physical strength as well as higher operating pressure for the system. Comparatively, pneumatic systems generally involve applications where ease of handling lightweight materials is a priority. In order to ensure effective operation, the proper fluid power system must be utilized. This not only ensures efficiency, but also a loner operating life for the system.Both hydraulic and pneumatic systems share the characteristic of transferring energy by means of fluid pressure however; there are significant differences among the systems.

One thing to consider is the compressibility of the fluid. This is the inherent characteristic that differentiates hydraulic and pneumatic systems. While gas is completely compressible, a liquid can only be slightly compressed. This means, hydraulic systems can produce more accurate, easily controlled movements of motors and cylinders than a pneumatic system. Other considerations include the operating pressure and operating speed of the system. Hydraulic system operating pressure ranges from a few hundred pounds per square inch (psi) to several thousand psi. Pneumatic systems, in contrast, normally operate between 80 to 120 psi. While hydraulic systems are better for handling more pressure, when it comes to speed, pneumatic systems are best. Rotation speeds of over 20,000 revolutions per minute (rpm) are possible with pneumatic systems. Rapid-response cylinder operation is also possible with pneumatic systems.

Article Source:
http://www.articleside.com/technology-articles/understanding-the-characteristics-of-fluid-power-systems.htm - Article Side

Ritter - About Author:
This article is provided by a Ritter Technology - A power fluidengineering company that specializes in a Hydraulic Design Services.

Article Keywords:
Pneumatic System Company, Pneumatic Training Class, Parker Hydraulic Parts, Parker Hannifin Pneumatics, Hydraulic Design Services, Ritter Technology

You can find more free articles on Article Side. Sign up today and share your knowledge to the community! It is completely FREE!