

AQP Hose Assemblies

Service Life Factors of Hose Assemblies

Service Life Factors

Hose assemblies, like other products, have a finite service life. The actual service life of a given hose assembly in a given application is dependent on many variable factors, including the following:

Operating Pressure

Eaton's Aeroquip Performance Products hose assemblies are rated for continuous operation at the maximum operating pressure specified for the hose. Generally, the operating pressure is one fourth the hose minimum burst pressure.

Pressure Surges

Almost all hydraulic systems develop pressure surges which may exceed relief valve settings. Exposing the hose to surge pressure above the maximum operating pressure will shorten hose life and must be considered. A surge (rapid and transient rise in pressure) will not be indicated on many common pressure gauges but can be measured using electronic measuring devices. In systems where surges are severe, select a hose with a higher maximum operating pressure.

Burst Pressure

These are test values only and apply to hose assemblies that have not been used and have been assembled for less than 30 days.

High Pressure

High pressure gaseous systems especially over 250 psi are very hazardous and should be adequately protected from external shock and mechanical or chemical damage. They should also be suitably protected to prevent whiplash action in the event of failure.

Bend Radius

Recommended minimum bend radii are based on maximum operating pressures with no flexing of the hose. Safe operating pressure decreases when bend radius is reduced below the recommended minimum. Flexing the hose to less than the specified minimum bend radius will reduce hose life.

Chemical Resistance

Consider the chemical resistance of the fitting, O-ring, hose cover and tube stock. Covers are resistant to mildew, cleaning solvents, oils and fuels.

Operating Temperatures

Operating temperatures specified refer to the maximum temperature of the fluid or gas being conveyed. High heat conditions may have an adverse effect on hoses due to degradation of the rubber which will limit hose usefulness and reduce fitting retention. In some cases, the fluid being conveyed will slow down this degradation, whereas other fluids may accelerate it. Therefore, the maximum temperature of each hose does not apply to all fluids or gases. Continuous use at maximum temperatures together with maximum pressures should always be avoided. Continuous use at or near the maximum temperature rating will cause a deterioration of physical properties of the tube and cover of most hose. This deterioration will reduce the service life of the hose.

Ambient Temperatures

Very high or low ambient (outside of hose) temperatures will affect cover and reinforcement materials, thus reducing the life of the hose.

Ambient temperatures in conjunction with internal temperatures are also an important factor. For specific recommendations, please consult Eaton.

Vacuum Service

Maximum negative pressures shown for hose -16 and larger are suitable only for hose that has suffered no external damage or kinking. If greater negative pressures are required for -16 and larger hose, the use of an internal support coil is recommended.

IMPORTANT

Hose Assembly Inspection

Hose assemblies in service should be inspected frequently for leakage, kinking, corrosion, abrasion or any other signs of wear or damage. Hose assemblies that are worn or damaged should be removed from service and replaced immediately.

A Caution about Fuel Injection

All hose listed in the AQP Performance Products catalog are suitable for use with leaded and unleaded fuels. However, caution must be used in fuel injection systems that recirculate fuel. This causes fuel to oxidize which can attack the hose inner tube. To increase service life, keep the time of exposure to the oxidized fuel to a minimum. Drain hose line or flush with original fuel or other suitable material.

Compliments of Aeroquip Performance Product team. For more technical information please visit Aeroquipperformance.com

For more information on these and other AQP Performance Products see the catalog Aeroquip Performance Products by Eaton A-SPPE-CC001-E

Warranty For warranty information, please visit www.eaton.com/hydraulics/warranty.

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