

SERVICE LIFE FACTORS

Hose and hose assemblies have a finite life. There are a number of factors that will reduce hose life. Consideration should be given to the following factors.

- 1)** Operating Pressure – The maximum operating pressure within the hose should not exceed the recommended working pressure as specified by Goodyear and shown in the catalog specifications. Hose selection must be made so that the recommended maximum operating pressure is equal to or greater than the system pressure. Burst pressure, which is four times the working pressure, should not be used as the operating pressure of the hose. Exposing the hose to pressures higher than the working pressure is dangerous and will shorten hose life.
- 2)** Exposing the hose to a surge pressure, above the working pressure of the hose, will shorten hose life. If surges are severe, select a hose with a higher recommended working pressure.
- 3)** Burst Pressure – The burst pressure should never be considered in a hydraulic system design. The burst pressure is for test purposes only. Burst pressure is detrimental to the hose.
- 4)** Operating Temperatures – High heat conditions may have an adverse affect on hose due to the degradation of the rubber and the affect on fitting retention. Continuous use at or above the maximum operating temperature of the hose will cause deterioration of the tube, cover and reinforcement, reducing the hose life. Care should be taken to insure that fluid and ambient temperatures, both static and transient, do not exceed the limitations of the hose. It is important to operate a hose assembly within the specified temperature range of the specific hose.
- 5)** Bend Radius – Flexing the hose to less than its recommended minimum bend radius will decrease hose life. Optimize routing to minimize inherent problems.
- 6)** Excessive external forces such as flexing, twisting, or kinking will reduce hose life. Use the correct fitting or adapter to prevent any unnecessary external force.
- 7)** Chemical Resistance – Consider the chemical resistance of the tube, cover, and the fitting, including the o-ring, to maximize hose performance and life. Hose selection must assure compatibility of the hose, tube, cover, and fittings with the fluid used.
- 8)** The size of the hose assembly components must be adequate to keep pressure losses to a minimum and avoid damage to the hose due to heat generation or excessive turbulence.
- 9)** Extend hose assembly life by making sure hose and fittings are compatible with the environment or sufficiently protected from the elements, such as ultraviolet light, ozone, salt water, or chemicals that can cause degradation of assembly components and shorten hose life.
- 10)** A hose is designed with a certain level of abrasion resistance, but care should be taken to avoid excessive abrasion, which can damage the hose cover, accelerating hose failure.
- 11)** Use the proper end fittings and crimp or install to the proper crimp specification to insure a safe and proper hose assembly. Make sure that hose fittings are compatible with the hose.