

SCOPE

All elastomeric parts deteriorate with age. Deterioration is most rapid in a hot, humid climate. Southwest uses two basic types of elastomers in pistons, valves, seals, and packing; polyurethane and rubber (nitrile and HNBR). The maximum storage life of these elastomers in ideal conditions is as follows:

Polyurethane – 5 years

Rubber (Nitrile and HNBR) – 15 years

Ideal conditions include temperatures below 85 degrees F, humidity less than 75%, and protected from exposure to direct sunlight or bright artificial lights.

Elastomeric parts should be visually inspected after storage and prior to use. If the elastomer portion of the part is discolored or cracked in appearance, or if there is any other visible damage, the part should not be used.

PISTONS & VALVES

Handle new pistons carefully. Lip damage can be prevented by keeping new pistons in their original boxes until ready for use. Southwest pistons are shipped in vacuum-sealed bags with a desiccant package placed inside to absorb moisture. Keeping the piston in the original packaging will protect the piston from harmful UV rays from sunlight.

Do not store a piston lying on its side, as the weight of the piston itself can cause permanent distortion of the sealing lips. Whenever pistons are stored already mounted on the piston rods, it is good practice to construct a special rack to support the rods so that they do not distort the elastomer portion of the piston.

SEALS AND PACKING

Storage recommendations for valves and pistons also apply to O-rings, seals and packing. Seals should be stored lying flat in their original packaging, labeled with part number and cure date. Do not hang seals on pegs, because this can distort them.

REFERENCE

There is not a clear-cut shelf life of elastomers that applies in all situations, although there are guidelines for storage in ideal conditions. The Society of Aerospace engineers issued Aerospace Recommended Practice ARP5316. It is the industry standard for determining the maximum shelf life of aerospace elastomeric seals and has been used to recommend the storage life of other parts that utilize elastomeric elements such as pistons, valves, seals, and packing for mud pumps.

