Chapter 1

Valve Maintenance Overview

Experience has proven that periodic maintenance will make valves operate easier and seal properly. A small amount of the correct lubricant into the body or seat rings, fresh grease into the stem bearings, checking the stem packing and replenishing as necessary will add years, even decades to the service life of the valve.

Product loss because of stem leaks can be greatly reduced by simply tightening the gland packing or injecting a small amount of sealant. Cycling the valve, even partially, a few times a year will keep it from seizing in one position.

Practice valve sealing techniques by learning how to test valve seals through Block and Bleed and Double Block and Bleed procedures.

Before experimenting with dangerous on-line maintenance procedures, practice the routines on valves on the work bench. Get a good understanding of the capabilities of your equipment and the limitations of the valve you are working on.

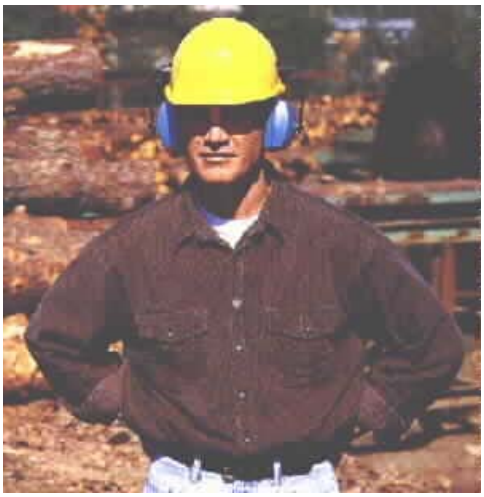
Understand how to read a high-pressure injection gauge. Practice will teach you how to relate the gauge reading to what is physically happening inside the valve.

Always wear safety glasses when operating or servicing pressure-generating equipment.

The products and techniques presented have been developed by Sealweld Corporation over almost forty (40) years of practicing on-line valve maintenance. We strive to make the valve technicians job more productive through the development of effective products. We are constantly upgrading our sealant delivery systems by improving our pumps and adapters. Just as fuels such as gasoline have evolved over the years, so must our lubricant / sealants to remain insoluble. New products are constantly being developed to meet the demanding needs of pipelines around the world. As valve seals erode, heavier sealants must be injected in order to effect a seal. With the down-sizing of maintenance departments, valves are not topped-up as frequently; hence lubricant / sealants are expected to last longer before washing out or breaking down.

The Valve Care Products referred to in this handbook have been developed to meet the specific needs of valve maintenance technicians. Similar products from other manufacturers may, or may not, be as effective. A common set of test standards is currently under development in order to more accurately compare the many brands of valve lubricants and sealants currently available. Copies of the technical papers presented at the 1990 and 1991 Offshore Technology Conferences can be obtained by contacting your nearest Sealweld® office.

ALWAYS consult the valve manufacturers owner's manual prior to commencing work on any valve. Keep injection pressures below 4,000 PSI on cast iron and semi-steel valves. NEVER EXCEED the working pressure of the valve you are servicing when filling the body cavity with grease.



Use EXTREME CAUTION before opening a valve body vent fitting. Know what product is in the valve. In cases of sour gas, wear emergency breathing apparatus and notify your fellow workers. ALWAYS turn off your vehicle and work well down wind of all sources of spark or ignition.

When working around pressurized valves and pipelines, use extreme care and DO NOT take chances. Be prepared for equipment failure and have contingency plans. ALWAYS have a properly sized stabbing valve available in case of fitting failure. When working around valves containing sour gas, ALWAYS have your emergency breathing apparatus within arms reach as high-pressure injection may cause a damaged fitting to leak or break when you least expect it. Hydraulic pressure created inside the valve with a high-pressure grease gun can stretch bolts on bolted plug valves and cause leakage. Should this occur, simply release the pressure in the gun and hose assembly; the flange should sit back down and the leaking should stop.

ALWAYS use hearing protection when venting high-pressure gas valves.