

MBAA Safety Toolbox Talk



Keg and Valve Maintenance

Overview

A stainless steel keg is a very robust package that should last 20-30 years if properly maintained. Qualified keg and valve repair mitigates safety risks, extends the life of a brewery's keg float, and eliminates costly returns of defective kegs from wholesalers and retailers. Before attempting to establish any keg maintenance program, brewers should have a strategy, be aware of a few guidelines, and possess the proper tools and training.

Strategy

There are two facts that every brewery should be aware of when creating a maintenance program: over 70% of keg failures are valve-related, and it is cheaper to ship a valve than an entire keg. If a brewery's staff has the tools and training to properly remove and reinstall valves, a brewery should keep a small number of functional valves in stock and replace damaged valves when they fail. Damaged valves can be repaired by experts- the valve suppliers themselves are a good resource- and sent back to the brewery when they are functional again.

Kege with more substantial structural damage can be sent to a facility where they can be repaired by experts to their original specification.

Safety First

Never attempt to remove a valve unless you have been properly trained, and always depressurize the keg before attempting to remove the valve. If a keg is not depressurized before the valve is removed, the valve will become a dangerous projectile which can cause substantial bodily harm. When reinstalling a valve, always use a new lock ring provided by an OEM. Failure to

use a new lock ring, or improperly installing a lock ring, is the greatest keg-related risk to employee and consumer health. A new lock ring costs less than \$1, and valve removal and installation training is free, so there is no excuse for cutting corners.

Valve Removal Tools, Equipment, and Training

Valve removal and replacement can be challenging, and doing the job improperly can be hazardous. The best way to remove and install a valve is by using a specially designed tool that depresses the valve into the neck and holds the valve body down while the lock ring is removed or inserted. When repairing or replacing a valve, never use parts that have not been supplied by the correct valve manufacturer.

The most common valve part that requires replacement is the CO2 valve. This is the black rubber seal that surrounds a steel ball in the center of the valve. Like many EPDM (rubber) seals, these parts will usually require replacement every 5-7 years.

A new rubber o-ring should also be used each time a valve is installed in a keg. This is not a safety issue like the lock ring, but the o-ring maintains the seal between the valve and keg neck. Failure to use a new part will result in leaks between the neck and the valve.

Common Failure Modes

In addition to valve failure, many kegs fail due to body damage. The most common cause of failure is neck damage, especially with high-speed automated racking lines. Neck damage is usually defined in one of two ways- the neck is bent more than 2 degrees out of perpendicular, or the keg has been

frozen and top of the neck is no longer 0.33" from the top of the chimb. Both measurements are standard specs used by all keg manufacturers, and the racking lines are designed with these specs in mind.

Other common defects which can cause a keg to fail are bent chimbs, dents, and holes.

How To Determine If Structural Damage Can Be Repaired

Most structural damage is easy to identify, but determining if a keg can be saved requires some knowledge. It doesn't make financial sense to ship a keg to a repair facility if the keg cannot be repaired. Some basic guidelines are:

- Any hole other than a pinhole in the weld should not be repaired.
- Any keg that has expanded in any way - most commonly due to freezing- should not be repaired.
- If a chimb is bent to the point where it is touching or almost touching the dome of the keg, then it is not worth repairing.
- Any dent larger than the average hand is probably not worth repairing.

These defects are rare and will represent a very small percentage of keg failure.

If you have any questions regarding this, please see your supervisor or manager or a member of the Safety Committee.

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<http://www.mbaa.com/brewresources/brewsafety>