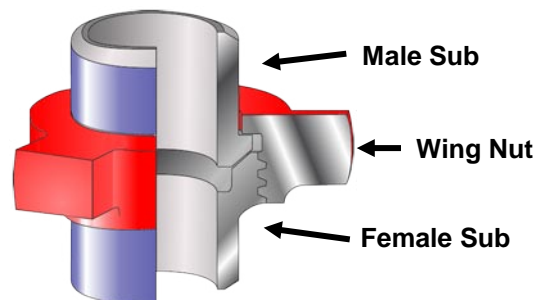


## *TECH TIDBITS, vol. 24*

### Hammer Unions

A recent survey of a newbuild rig found 10,000 psi hammer union components forming part of a 15,000 psi test line. Fortunately, an equipment surveyor found this situation before the test line was pressurized.



### Description of Issue

Hammer unions are commonly used in medium and high-pressure piping for a variety of applications. Several manufacturers now offer this equipment. The hammered connections allow temporary piping to be readily made up or taken apart.

Often referred to as 'Chiksan'<sup>®</sup>, a genericized trademark for a common brand of this equipment\*, hammer union components come in standard sizes and thread styles for different pressure ratings. Problems sometimes occur because union components of the same nominal size but with different pressure ratings (commonly referred to as 'figures') often look similar with similar threads, but have minor differences in size. Workers will mistakenly make them up together, but the threads will not fully engage under these circumstances. This means that the situation described above on the newbuild rig is even more precarious than just having components with two different working pressures in the same system. While the 10,000 psi female sub will screw into a 15,000 psi wing nut and will even hold some pressure when used together, they are different sizes and not meant to work together. Such a connection will fail explosively under pressure that is well below even the maximum 10,000 psi of the lower-rated components.

### Solution

Despite a number of published alerts and guidelines, these dangerous situations are still occurring. The situation described above was found on a newbuild rig.

Various industry players have or are making an initiative to change potentially confusing union designs, to make it harder or impossible to mismatch components. Until this happens, care is needed to avoid problems.

There are a number of possible steps you can take. Readily available safety alerts from manufacturers and the IADC\*\* describe a number of these. WEST recommends two in particular.

For a given union size, WEST recommends that the rig provide and use only components from a single figure and from a single manufacturer. While these components come from the manufacturer with labels, the labels are often quickly rendered illegible by wear or by layers of paint. It is much safer to remove the potential for problems by limiting the variety of components. Research on the subject seems to show that the compatibility problems between components of the same manufacturer and different figures are usually limited to certain pipe sizes. Consult your manufacturer or vendor for their recommendations.

WEST also recommends that components be clearly tagged and entered in the rig's preventive maintenance system. This will allow regular maintenance, inventory and safety checks per the manufacturer's recommendations and industry guidelines.

For more information or technical questions, please contact WEST Engineering, [west@westengineer.com](mailto:west@westengineer.com), or call 281-375-5515, or visit our website at [www.westengineer.com](http://www.westengineer.com).

\* Chiksan<sup>®</sup> is a registered trademark of FMC Technologies, Inc.

\*\* Some applicable IADC Safety Alerts include alert numbers 98-1, 99-13, 00-15, 03-16.