



Safety Alert

From the International Association of Drilling Contractors

ALERT 03 – 16

MISMATCHED HAMMER UNIONS STILL BEING FOUND

WHAT HAPPENED:

Reports continue to come in involving pressurized lines and the unions used on these lines. Employees have been observed mis-matching unions. In addition, employees have been observed hammering on lines while still under pressure. Several accidents within the industry, including a fatality, have occurred due to pressurized lines being improperly connected or being hammered on while under pressure.

WHAT CAUSED IT:

The thread (or male half) of a 2" 602 and 1002 hammer union will make-up to the wing nut (or female half) of a 2" 1502 hammer union leading an oilfield worker to believe he has mated two compatible components that will withstand fluid pressures up to 6,000 psi. As the threads on the two halves are of the same pitch and design, they will actually screw together. However, because there is a 5/16" difference between the diameters of the thread and wing-nut halves described above, the two mismatched components will NOT actually hold high pressures very long. The hammer unions will eventually separate. When the union halves blow apart three immediate hazards are created:

1. The wing-nut becomes an 8 lb. Projectile that moves in an undetermined direction, maybe at personnel.
2. Uncontrolled release of high-pressure fluids that may or may not strike an employee in its path.
3. Uncontrolled release of potential toxic fluids (acids, oils, fuels, diesel base mud) that may cause harm to persons or the environment.

CORRECTIVE ACTIONS: To address this incident, this company did the following:

- This company decided that where 2 inch hammer unions are needed on their drilling rigs, only Fig 1502 hammer unions will be used.
- This company decided that workover rigs may use Fig 602 hammer unions.
 - On workover rigs ensure that any service company connecting to our equipment (hammer unions) uses the correct size union.
 - Supervisors are to visually inspect the service company's connection(s) prior to work being performed.
 - Supervisors were instructed that if 602 hammer unions are in use on their rig, they are to fill out an engineering request form stating that the rig has 602 hammer unions. The completed form is to be sent to the company HSE department.
 - Minimize types of unions on location to only company specified types.
 - Ensure all employees understand the difference between union types.
- Instructed all employees:
 - Ensure all pressure is bled off lines prior to breaking lines.
 - Use LockOut/TagOut and Work Permit Systems when working on pressurized lines.
- The company decided to work with industry leaders in an attempt to change thread designs for certain types of unions.

IADC Note: Refer to Safety Alerts 98 – 01, 99 – 13, and 00 – 15. Also refer to the IADC HSE Meeting notes on Hammer Union Meeting.

The Corrective Actions stated in this alert are one company's attempts to address the incident, and do not necessarily reflect the position of IADC or the IADC HSE Committee.
