



# Safety Alert

From the International Association of Drilling Contractors

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ALERT 02 – 47

## AIR COMPRESSOR LINE RUPTURE RESULTS IN AN LTI

### WHAT HAPPENED:

After the compressor unit arrived on location, the employee had connected the #2 compressor to start the crane. Shortly after starting the compressor, the low-pressure relief valve popped off. When the employee climbed onto the frame to check the relief valve, the 1-1/2" stainless steel supply line from the compressor to the volume tank ruptured, striking employee in the face and left leg. The incident resulted in multiple sutures to the face.

### WHAT CAUSED IT:

While in the yard the air compressor receiver tank was hooked to the yard supply air line and was used as a volume tank. Both compressor isolation valves on the 1-1/2" supply line from the compressor to the receiver tank were closed during that period. This compressor system had three relief valves in the system with each designated for a different purpose. While used in the yard, the line for the one pressure relief valve line was connected to the receiver tank. With the isolation valves between the compressor and receiver in the closed position, the pressure relief valve could not detect the pressure being delivered and therefore could not open to divert pressure through the intake causing over pressurization and rupture of the 1-1/2" supply line.

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

- If the discharge line is equipped with an isolation valve or check valve, it must have a spring loaded relief safety valve (pop off) in place between the shut off valve and the compressor as well as the one on the tank.
- The total relieving capacity of the safety valves shall be rated to prevent pressure in the line or receiver from exceeding the maximum allowable working pressure by no more than 10 percent.)
- **At no time shall a valve of any type be placed between the air receiver and its safety valve or valves.** During rig up of any equipment the proper inspection and start up procedures should always be followed. Pre-job meetings should be held and written JSAs should be completed or existing ones reviewed and updated before proceeding.
- Developed procedures to be used when inspecting and hooking up compressor systems.
- **Supervisory personnel must approve all modifications to equipment and the company's equipment modification process form must be used.**

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**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.**