



MANAGING PRESSURE

Building Capacity to Manage Pressure
Toolbox Talk



BUILDING CAPACITY TO MANAGE PRESSURE

- » Pressure is a common hazard, but are we always setup for success in the management of pressure?

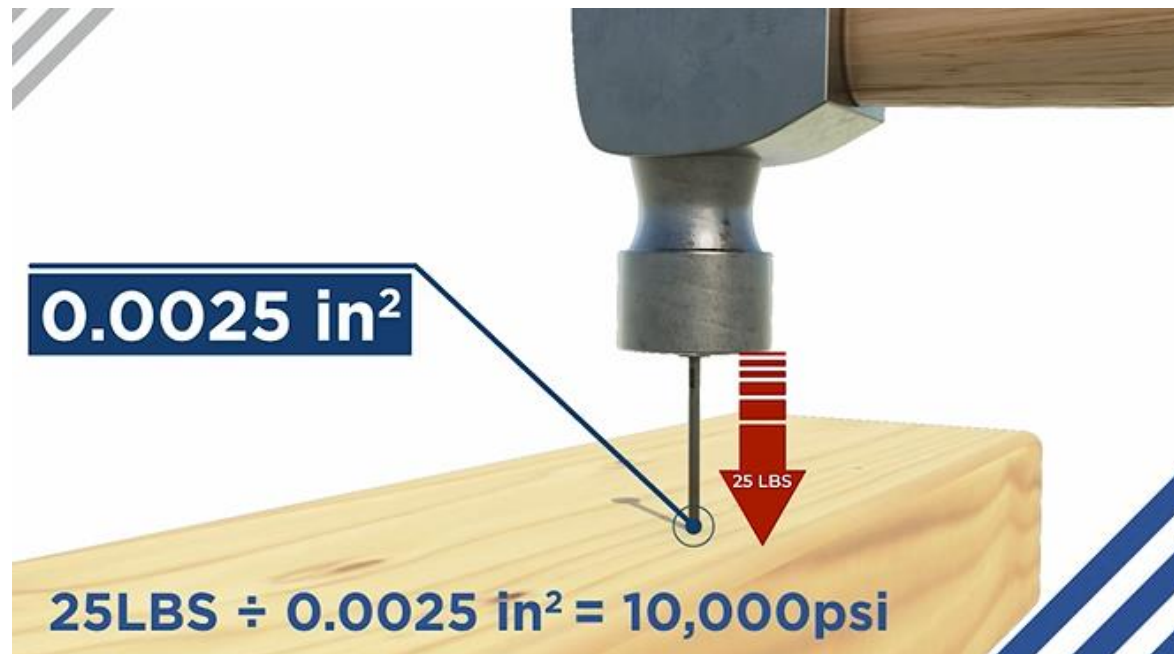
- » The Building Capacity to Manage Pressure program is an online course with three modules:
 1. Incident Review (video re-creation)
 2. Understanding Pressure
 3. Understanding Human and Organizational Performance (HOP)

- » The goal is to build industry's capacity to manage pressure by exploring new ways of thinking about safety performance.



DEFINITION OF PRESSURE

- » Pressure is defined as the force exerted by an object per unit area. Therefore, both the force and surface area are critical in determining pressure.



PRESSURE TYPES

- » There are two types of pressure:
 - Pneumatic pressure - Pressure that is exerted by a gas. Gases expand to fill a space.
 - Hydraulic pressure - Pressure that is exerted by a liquid. Liquids fill space based on their volume and exert pressure based on the height and density of the liquid.



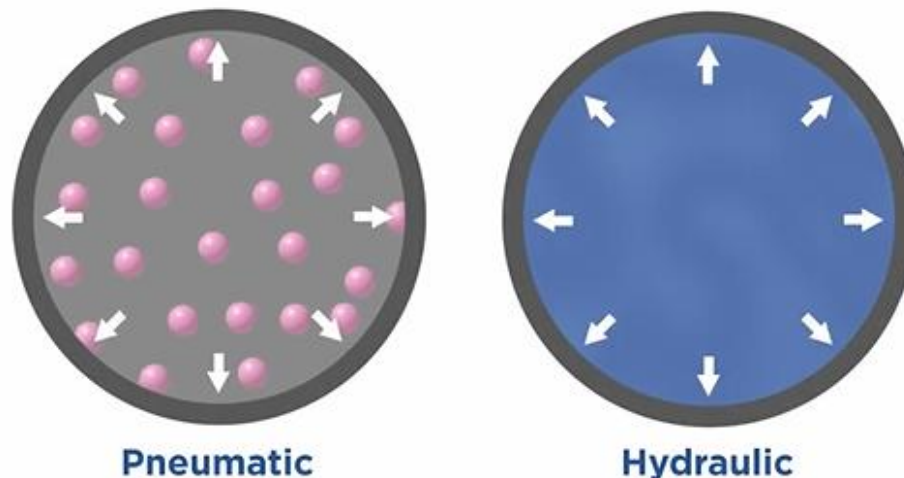
Pressure exerted
by gas



Pressure exerted
by liquid

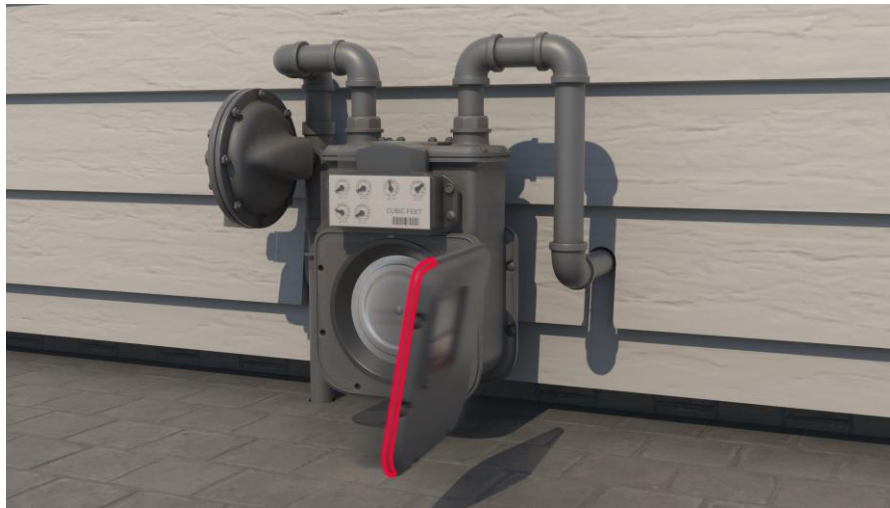
PRESSURE TYPES

- » These two types of pressure often exist together, creating hidden hazards like energized fluids, where gas has dissolved into the liquids.
- » Whether pressure is pneumatic or hydraulic, pressure is exerted equally in all directions.



LOW PRESSURE

- » Never assume you are safe because you are operating in a low-pressure environment.
- » Depending on the configuration of the equipment and the energy released, low pressure can be just as deadly as high pressure.
- » Discuss where low pressure could be deadly in your work.



- 5 psi gas line

- 400 lbs of force

STRESSING A VULNERABLE SYSTEM

- » A crucial concept related to understanding pressure is stressing a vulnerable system.
- » Pressure systems are vulnerable when they are leaking, under additional stress (such as thermal stress), or modified.



- » Adding more stress to an already vulnerable system is dangerous. Follow standard operating procedures to resolve the concern rather than introducing more risk.

SAFEGUARDS

- » A variety of safeguards are used to mitigate risk from pressure such as:
 - Life Saving Rules
 - Exclusion zones (red and yellow)
 - Managing change
 - Safe operating limits
 - Pressure relief devices
 - Pipe restraints

- » Discuss what safeguards are in use at your work and how they could fail to protect you.



QUESTIONS AND RESOURCES

- » Identify situations where pressure risk may exist and bring it up for discussion and focused action in your company.

- » Resources:
 - [Building Capacity to Manage Pressure Program](#)
 - [Life Saving Rules](#)
 - [Potentially Serious Incidents Program](#)