Stay Safe Around Gas Cylinders

The lethal potential of compressed gas cylinders should never be underestimated. Their high-pressure contents can turn them into bombs, projectiles and sources of toxic fumes. Even when gas cylinders are empty, they pose possible danger if improperly handled or stored.

These cylinders have numerous applications, from breathing and welding to sample testing. The gases commonly found in them include oxygen, nitrogen, acetylene, chlorine and liquid propane (LPG).

Many cylinders contain high pressure and will hurtle through the air at deadly speed if the valve is broken off. Some contain material that might be incompatible with certain metals or hydrocarbons (oxygen, for example, will ignite spontaneously when reacting with hydrocarbons). Other cylinders contain substances which are flammable or poisonous. Hazards also are created when equipment and fittings are over-pressurized.

Here are some guidelines for compressed gas cylinder safety:

- Use a basket or similar device when moving a cylinder by crane or derrick (slings, ropes or electromagnets must not be used to lift cylinders).
- Do not allow cylinders to strike each other.
- Do not use cylinders for rollers, supports or any purpose other than to contain gas.
- Do not drag, slide or drop cylinders. They can be rolled on their base for short distances.
- Never use a cylinder of compressed gas without a pressure-reducing regulator attached to the cylinder valve, except where the total system is specifically designed to handle maximum cylinder pressure.
- Use regulators and pressure gauges only with gases and pressure ratings for which they are designed and intended.
- Never use oil or grease as a lubricant on valves or attachments to oxygen cylinders because they might catch fire or explode.
- Do not try to thaw a frozen valve with a flame or boiling water. Valves or cylinders may contain fusible plugs that can melt at temperatures below the boiling point of water.
- Do not fasten cylinders onto a work table or structure where they could become part of an electrical circuit.
- Do not strike an arc on a cylinder.
- Use proper wrenches to tighten connections; do not hammer or otherwise force them.

And remember, as much as you'd like to be helpful or save time, do not refill, ship or maintain compressed gas cylinders unless you are qualified and trained to do so.

QUIZ

1. Compressed gas cylinders often are not treated with the respect they deserve.
   - True
   - False

2. If mishandled they can turn into:
   a. projectiles
   b. bombs
   c. toxic fume sources
   d. all of the above

3. Gases commonly found in such cylinders include oxygen, nitrogen and acetylene.
   - True
   - False

4. It's perfectly safe to use a rope or sling to move a cylinder by crane or derrick.
   - True
   - False

5. Problems often develop if loose cylinders bang into each other.
   - True
   - False

6. It's safe to use compressed gas cylinders as rollers or supports.
   - True
   - False

7. Using oil or grease as a lubricant on valves or attachments to oxygen cylinders has caused numerous fires and explosions.
   - True
   - False

8. Cylinders can become airborne missiles if their valves are broken off.
   - True
   - False

9. It's okay to use a hammer to force or tighten connections on gas cylinders.
   - True
   - False

10. Only qualified staff should be refilling, shipping or maintaining compressed gas cylinders.
    - True
    - False

BEFORE THE TALK - TIPS

Refer to the "Tips For Safety Talks!" for ideas on planning this safety meeting. Read through the article ahead of time to help you with your presentation. Add further questions to those we have provided at the end of this talk.

- Ask for any additional comments and questions.
- Ask participants what safety problems they have observed on their jobs since the last meeting:
- Determine what action should be taken to fix these safety problems. Write them here and take action before the next meeting

AFTER THE TALK- *CHECKLIST*

PROVIDED FOLLOW-UP TO WORKERS THAT DID

POORLY ON THE QUIZ
NAME: _____
_____
DATE: _____

OBSERVED WORKERS
TASK(S): _____
_____
DATE: _____

REFRESHER TRAINING
TOPIC(S): _____
_____
DATE: _____

OTHER (DESCRIBE): _____
MEETING DATE: _____
LOCATION: _____

NOTES

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ANSWERS:

1. True 2. D 3. True 4. False 5. True 6. False 7. True

8. True 9. False 10. True

ATTENDANCE

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INSTRUCTOR: _____ **DATE:** _____

SAFETY TALK: _____