



COMPRESSED GAS ASSOCIATION, INC.

SAFETY BULLETIN

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PORTABLE CYLINDER BANKS

This bulletin provides guidance on the safe handling of portable cylinder banks using sound industry practices.

Portable cylinder banks means a grouping of two or more cylinders connected by a manifold. They are filled, transported, and used without disassembly and are supported by a structural support system (see Figure 1).



Figure 1—Portable cylinder bank

Portable cylinder banks are used in many industrial applications and have been in service for a number of years in a wide variety of designs. Although the structural support systems of banks vary, banks can be classified as wheeled or nonwheeled.

Portable cylinder banks typically contain 6 or more cylinders that are manifolded together, authorized for a wide variety of gas services, and distributed under U.S. Department of Transportation (DOT) regulations [1]. Depending on the design of the structural support system and number of cylinders in a bank, the aggregate weight (empty) could exceed 1800 lb (816 kg). A portable cylinder bank by its weight alone demands extra caution when moving it.

The following points should be considered whenever fabricating or handling portable cylinder banks:

NOTE—A nonwheeled bank eliminates some of these concerns but requires a mechanical means of handling such as a forklift truck or boom.

- Wheels on banks affect the stability of the device presenting the greatest risk for a mishap. Wheels can make the portable cylinder bank difficult to handle;

- Whenever possible, two people should move a wheeled bank, one pushing from the rear and the other guiding from either front corner on the side of the bank ensuring a clear travel route. Personnel should not be in front of any wheeled bank when it is being moved;
- Travel routes (in plant or at customer sites) shall be maintained clear and unobstructed. A slight change in elevation of the floor surface, a crack in the floor, or an object on the floor could cause the bank to stop abruptly and tip over;
- Never attempt to move a wheeled bank on an incline without mechanical means. Examples but not limited to:
 - A forklift truck
 - A pallet truck with brake
 - A crane truck;
- Fill plants can minimize in-plant movement of wheeled banks by locating fill lines specifically for banks at docks or truck staging areas;
- Precautions shall be taken to prevent portable cylinder banks from falling or rolling off dock plates, elevated docks and stairways;
- Procedures should be in place and drivers trained to perform loading and unloading of banks safely. Consider the following points:
 - Set the brake and chock truck wheel;
 - Ensure dock plates are the adequate width, are equipped with side rails, and are secured to either the dock or truck; and
 - Ensure lift gates are functioning correctly and banks are secured against the lift gate prior to operating;
- Due to the mobility of wheeled banks, a means of securing the bank to the delivery vehicle is necessary to prevent tipping during transport and motion of the bank relative to the vehicle;
- In situations where a wheeled bank is located on a surface that is sloped, not level, or in high traffic areas, the wheels should be chocked or secured to prevent rolling;
- Whenever possible, use a forklift or overhead boom to load or unload wheeled banks from trucks;
- Before each fill, inspect the structural support system of banks for cracks, the condition of welded and mechanical joints on the manifold and supports, and the condition and operability of the wheels; and
- Ensure adequate personal protective equipment is used when handling banks (e.g., safety shoes, gloves, eye protection) and always watch the position of hands during movement.

Regardless of the type of bank used, ensure an inspection and maintenance program is in place for the entire structural support system including the wheels. The maintenance frequency should not exceed the frequency of retesting as defined by DOT. Additional considerations include marking (i.e., by stenciling or similar means) the next requalification date and ensuring that the product is clearly identified. Cylinders within a portable cylinder bank should all have the same requalification date.

References

Unless otherwise specified, the latest edition shall apply.

[1] *Code of Federal Regulations*, Title 49 (Transportation) Part 173.301, Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. www.gpoaccess.gov