

Transporting Gas Cylinders Safely

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Restraining gas cylinders for transport in commercial or passenger vehicles under 2.5 tonne.

General guidelines

Precautions

The safest and recommended method for transporting cylinders (e.g. gas cylinders and cryogenic receptacles) is by using the transport services provided by BOC. Occasionally, there may be a need to use other transport methods in which case it is then essential to follow safety instructions for full and empty cylinders:

- Restrain all cylinders from moving during transport (consider the forces generated in a traffic accident)
- Limit the number of cylinders to be transported.
- Use open vehicles or trailers in preference to any enclosed vehicles or trailers. DO NOT cover the gas cylinders with a tarpaulin.
- Ensure that the contents label on the cylinder can be clearly read.
- NEVER drop cylinders or submit them to shock. This is an extremely hazardous practice which may result in serious injury.
- Where possible, use mechanical lifting devices and trolleys to move cylinders.
- Wear safety shoes or boots, safety glasses or goggles, and leather protective gloves when handling cylinders.
- Smoking is strictly forbidden when loading, transporting, and unloading any gas cylinder.

The above information is sourced from the brochure *Transporting gas cylinders or cryogenic liquid receptacles in vehicles* and is reproduced with the permission of ANZIGA.



Example of the potential consequences of transporting a gas cylinder within an enclosed vehicle

For non-flammable, non-toxic gas loads:

- An open vehicle with sides is preferable.
- Panel vans and pantechs may be used provided the driver's cab is separate from the load carrying area. **This means that the driver's cab and load carrying areas are separately ventilated.**

For flammable or toxic gases:

- The vehicle must have a flat bed with sides, a tailboard, and a cab which is separately ventilated from the load carrying area. Flammable gases may be carried in closed compartments separated from the driver provided there is sufficient ventilation to prevent the build-up of a dangerous atmosphere. In Australia, curtain sided vehicles are deemed to be closed compartments.
- Toxic gas cylinders should always be restrained in a well-ventilated compartment separated from the driver.
- When transporting toxic gas cylinders, ensure that the valve outlet cap and protective cap are securely fitted.
- NEVER remove any valve protection device (if fitted) during transport.
- Flat bed vehicles without sides must not be used, except where the cylinders are conveyed in approved pallets.
- Vehicles conveying drums over 300 kg need not have sides provided the drums are chocked, roped and sheeted.
- NEVER transport flammable gas cylinders lying down.



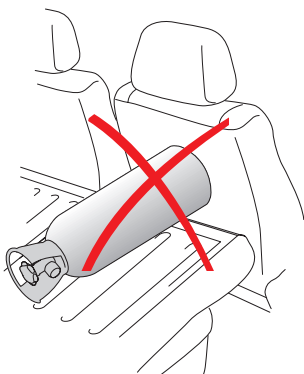
Purpose built sealed compartment

Ventilation is the key to reducing the risk of a fire or explosion. An open vehicle such as a utility provides the best ventilation and avoids the risks of gas accumulation.

Enclosed Vehicles

Ventilation is the key to reducing the risk of a fire or explosion.

- Use an open vehicle such as a utility as this provides the best ventilation and avoids the risks of gas accumulation.
- If you are transporting the gas cylinder inside an enclosed vehicle (such as ambulances, trade vehicles etc):
 - Keep the gas cylinder in a purpose-built sealed compartment or cabinet that provides adequate ventilation of any leaking gas to the outside of the vehicle;
 - A side-mounted sealed compartment with its own door, ventilated externally is best practice.
- DO close the gas cylinder valve and disconnect the regulator, hoses and torch prior to transport;
- DO regularly check for leaks from valves. DO NOT transport a cylinder if a leak has been detected during loading;
- DO secure gas cylinders and keep them upright. DO NOT carry loose gas cylinders in the rear load compartment of a van;
- DO ensure the vehicle is well ventilated;
- DO unload the cylinder from inside the vehicle immediately on reaching your destination, unless the vehicle has a purpose built sealed compartment vented externally.



DO NOT carry loose gas cylinders in the rear



DO NOT place cylinders on seats

Passenger Compartments

DO NOT transport gas cylinders in the passenger compartment of any vehicle due to the difficulty of providing appropriate load restraint.

Transporting gas cylinders inside the driver or passenger compartment of passenger cars is extremely dangerous and could cause an explosion, fire, exposure to toxic gas, or asphyxiation.

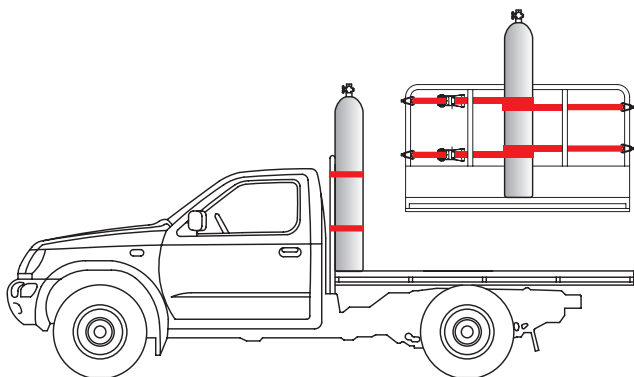
Note: For information regarding the transport of medical cylinders in use, please refer to the Home Oxygen Therapy Patient Information Booklet available from BOC, or contact BOC Healthcare on 1800 050 999.

Gas Suppliers

When loading gas cylinders at a gas supplier's site or shop, the personnel responsible for the sale and/or loading the cylinders should provide the safety instructions on loading and transport to the driver.

Gas suppliers may refuse to load certain vehicles based on their assessment of the risk associated with the product to be loaded, the particular vehicle and the method of loading and restraining the product.

The above information is sourced from the brochure *Transporting gas cylinders or cryogenic liquid receptacles in vehicles* and is reproduced with the permission of ANZIGA.



Transporting cylinders upright

Transporting cylinders in utilities and box trailers

Transporting cylinders upright

Restrain cylinders by lashing them to the vehicle body using webbing straps or containing them in a purpose-built frame

If transporting cylinders upright against a headboard:

- The total weight of the cylinders should not exceed 250 kg.
- Apply at least two horizontal webbing straps, as shown above.

Webbing straps must be at least 38 mm wide with a minimum lashing capacity of 1000 kg.

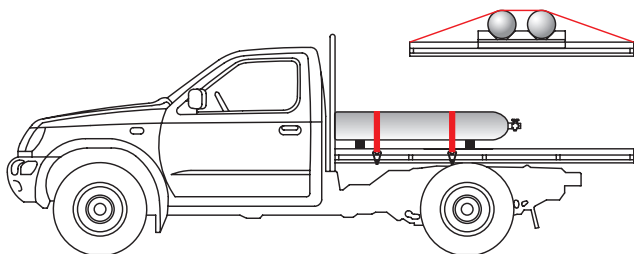
DO NOT use the following materials for restraining cylinders:

- Elastic straps
- Rope
- Duct tape

Transporting cylinders lying down

If transporting cylinders lying down:

- Place the cylinders lengthwise on the deck.
- Place the cylinders on chocks to prevent them rolling sideways and to provide more grip to stop them sliding.
- Position the cylinders with the valves facing rearwards, with the base blocked against the headboard or another strong part of the load.



Transporting cylinders lying down. (Note: NEVER transport LPG cylinders, Dissolved Acetylene cylinders or liquefied gas cylinders lying down)

- Apply at least two tie-down straps (as shown above).
- NEVER transport LPG cylinders, Dissolved Acetylene cylinders and liquefied gas cylinders such as Carbon Dioxide lying down.

The above information is sourced from ANZIGA Guideline 4 *Restraining individual gas cylinders and other gas products for transport* and is reproduced with the permission of ANZIGA.

Emergencies and accidents

- If a gas leak occurs during the transportation of gas cylinders, where practical, stop and park the vehicle as far away as possible from other vehicles or people. Leave the vehicle and call **1800 653 572 BOC Emergency Response Line** for specialist advice.
- In the event of a fire or any other emergency, call the fire brigade on **000** and advise them of the details of your load.
- Call the emergency services should the transport vehicle be involved in a road accident whilst carrying cylinders and advise them of the details of your load, and your location.

For more information, please refer to the *Guidelines for Gas Cylinder Safety* available at www.boc.com.au or www.boc.co.nz

For more information on any BOC products or service contact the
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