

3.3 CYLINDER ATTACHMENT

3.3.1 Restraints

Cylinders shall be restrained by attachments designed, constructed and secured in place so they shall withstand a load equal to 4 times the weight of the full cylinder and fittings in all directions. The method of attachment shall not cause undue stresses to the cylinder.

NOTE: A typical installation is shown in Figure 3.3. Other methods of installation are acceptable provided they comply with the intent of this Clause.

3.3.2 Structures

The structure to which the cylinder is attached shall be capable of withstanding the forces specified and reinforcement shall be added where necessary to ensure compliance with Clause 3.3.1.

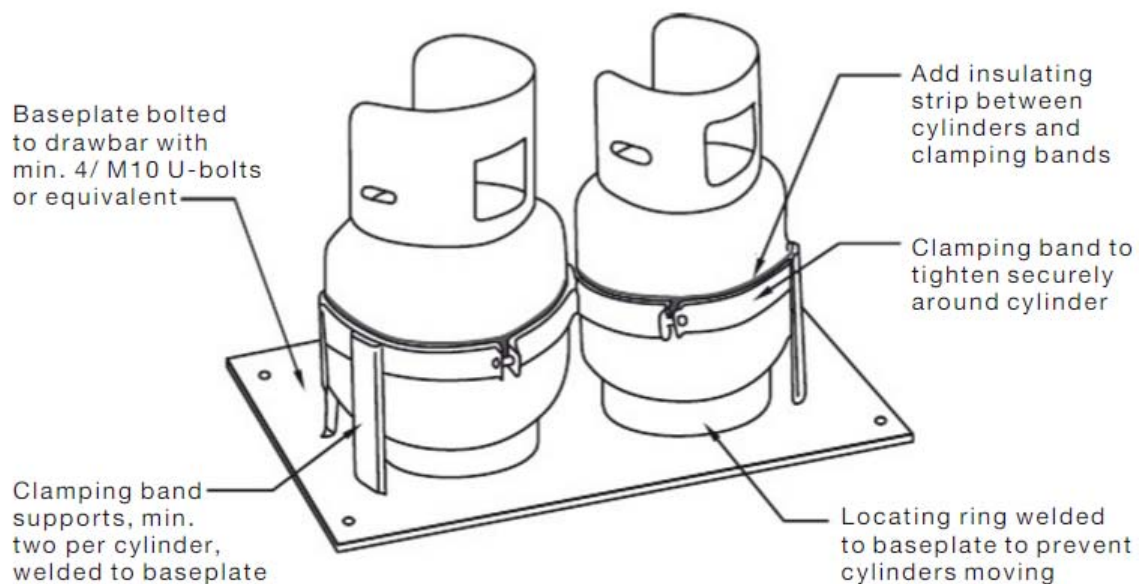


FIGURE 3.3 TYPICAL DOUBLE CYLINDER MOUNTING ARRANGEMENT FOR A CARAVAN

3.4 CYLINDER COMPARTMENTS AND LP GAS LOCKERS

3.4.1 Caravans

A cylinder compartment or LP Gas locker shall comply with the following as appropriate:

- (a) Be designed to—
 - (i) House cylinder (s) and their associated equipment only;
 - (ii) allow the cylinder (s) to be positioned in the compartment without obstructing the drain in Item (f) below;
 - (iii) not have access from the inside of a caravan to a cylinder installed in a compartment except as provided under Clause 3.4.5.1; and

- (iv) permit easy removal of the cylinder (s) and the operation of the cylinder valve(s) where required for exchange purposes.

NOTE: Consideration should be given to the location of the associated equipment when determining the compartment size.

(b) Be constructed of material that is water and corrosion resistant.

(c) Be capable of securing the filled cylinder(s).

NOTE: For requirements of securing method see Clause 3.3.1.

(d) Be sealed to prevent gas vapour from entering the caravan.

(e) The access door or opening shall be openable without the use of tools.

NOTE: A key is not regarded as a tool.

(f) Have a drain in, or within, 25 mm of the base, as per option 1 or 2 of Figure 3.4, with a minimum clear area of 500 mm². The drain outlet—

- (i) shall not face the direction of travel and shall face away from any opening into the caravan which is less than 1 m away unless that opening is more than 150 mm above drain outlet; and

- (ii) shall be at least 1.5 m from any source of ignition unless the ignition source is at least 500 mm above the drain outlet.

Alternatively, provide vents in the compartment/locker door at both high and low levels. Each opening shall provide a minimum of 5000 mm² of free area for every cylinder enclosed and shall meet the clearances specified in Items (i) and (ii) above. The bottom edge of the lower vent shall be within 25 mm of the base.

(g) Not contain any electrical equipment other than a non-sparking shut-off device.

NOTE: See Figure 3.4.

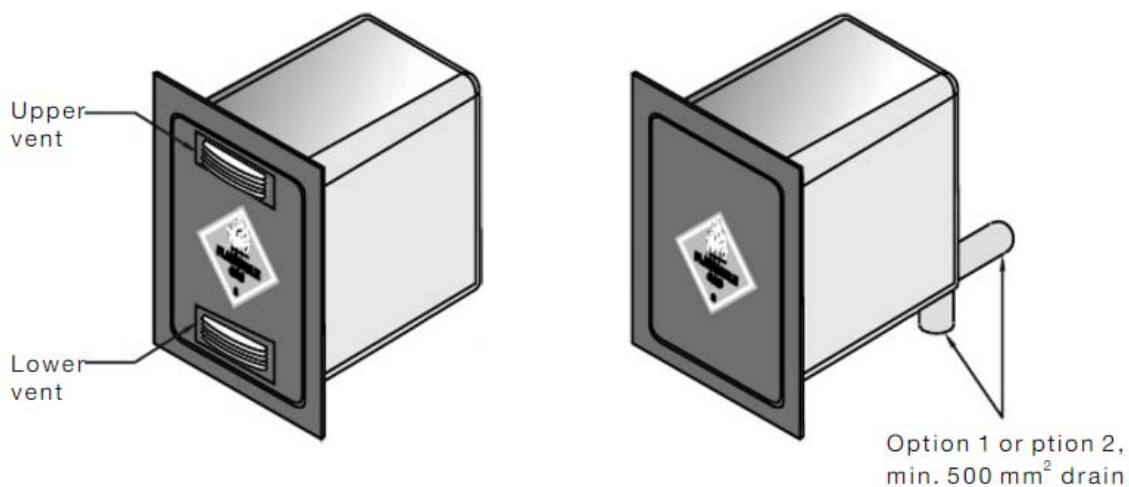


FIGURE 3.4 TYPICAL LP GAS LOCKERS AND CYLINDER COMPARTMENTS SHOWING VENT AND DRAIN ALTERNATIVES

(h) Have a sign clearly indicating that only cylinders and their associated equipment are permitted in the cylinder compartment. The following wording shall be used

WARNING: ONLY CYLINDERS AND THEIR ASSOCIATED EQUIPMENT ARE PERMITTED IN THE CYLINDER COMPARTMENT. ELECTRICAL EQUIPMENT, BATTERIES, OR IGNITION SOURCES MUST NOT BE INSTALLED IN THE CYLINDER (AND/OR STORAGE) COMPARTMENT.

NOTES:

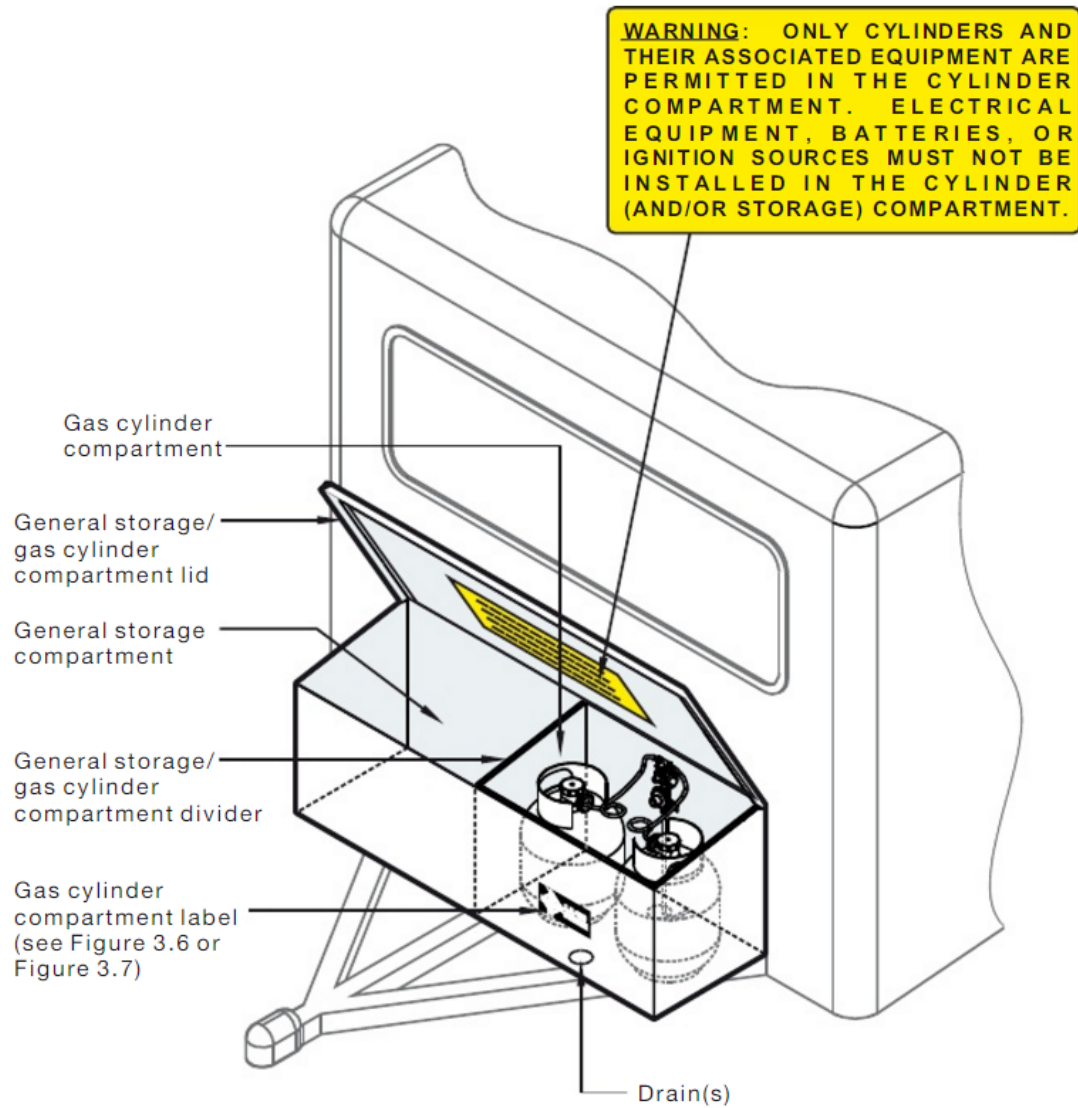
1. The font size in warning sign should be a minimum of 10 mm in height.
2. See Figure 3.5 for an example of the warning sign and its location in the compartment

3.4.2 Cylinders located in a combined storage compartment/locker

Where cylinder(s) are located in a combined external compartment also used for general storage, the cylinder compartment shall be separated from the general storage area by a vertical divider sealed to the sides and floor of the compartment and extending to the compartment lid. The

cylinder compartment space shall contain the cylinder(s) and associated gas equipment only and be vented at the base as described in Clause 3.4.1(f) and shown in Figure 3.5.

NOTE: Refer to [Appendix H](#) for the recommended location for the regulator to mitigate possible fouling of diaphragm by condensate.



NOTE: The font size in warning sign should be a minimum of 10 mm in height.

FIGURE 3.5 COMBINED CYLINDER COMPARTMENT/LP GAS LOCKER