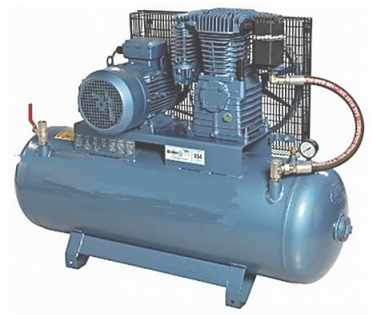
# Managing air-compressors / receivers in schools

Like other items of plant, all air compressors need to be managed to ensure they are safe and well maintained.

Some larger pressure vessels (air receivers) may require **registration** with the Office of Industrial Relations (Workplace Health and Safety Queensland). The larger, registered air-compressors (tanks) will also require additional inspections by a competent person – refer to the department's **Service maintenance program.**

In schools, air compressors can be found in a range of areas, such as:

- ITD workshops (portable units and larger plumbed, stationary units)
- Grounds maintenance areas
- Agricultural Science workspaces
- Art workspaces
- Physical Education areas



## Basic checks/inspections for all air-compressors

Regular checks and maintenance are essential and are to be conducted in accordance with the manufacturer's recommendations. Checks by school staff may include:

- ☐ Inspecting for air leaks or oil leaks and electrical components for damage etc.
- ☐ Checking the drive mechanism is securely guarded to prevent unintended access.
- ☐ Checking the air receiver/tank for excessive external corrosion, particularly evidence of corrosion under the tacked-on manufacturer's data plate (e.g. rust-coloured stains).
- ☐ Checking the air pressure gauge is operational.
- ☐ Managing condensation - water must be drained from air receiver at least weekly – more often in humid weather. Expect clear or milky coloured drain water, if rust coloured, discuss with the competent person who inspects the units.
- ☐ If fitted with an automatic drain (larger units) – confirm it is operating. It will periodically dump any moisture build-up.

- ☐ Check the compressor pump's oil level (where applicable) by viewing the sight glass. Refer to the manufacturer's manual for top up oil that may be required.
- ☐ Record inspections and maintenance using an equipment maintenance register (EMR) or similar for all air compressors irrespective of their size or hazard level.
- ☐ Periodically check the safety valve to verify that it's operating freely.
    - Prior to the test put on medium impact safety glasses and hearing protection (dust and noise)
    - While the air receiver tank is pressurised (motor will cut out at working pressure), pull the ring on the safety valve, and allow it to snap back to its normal position. If it is difficult to lift and/or return to the set position it likely needs servicing by a competent person.

Smaller air compressor / receivers

Typical safety valve for smaller units showing the ring pull and the seal applied by the manufacturer after the relief pressure was set.

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Typical arrangement for larger standalone air compressor / receivers:

- The same guidance applies as for small air compressors/receivers.
- For taller units, safe access to the safety valve is to be provided.
- Alternatively, the unit can be provided with a chain or pulley system to enable the safety valve testing from the ground
- The safety valve shown at right is arranged to lift the lever. This requires an additional pulley arrangement.
- Alternatively, this type of safety valve is available with reverse activation movement (pull down).

## Does our air-compressor need plant registration?

Some larger units may require registration with the relevant statutory authority.

- Pressure equipment is categorised into 'hazard levels' according to certain criteria. Air compressors categorised as hazard level A, B or C require registration.
- The information provided on the manufacturer's data plate attached to the air receiver (vessel) may indicate the hazard level of the air compressor. (see page 4). This information should also be available from the supplier.
- Refer to Work Health and Safety Regulation 2011 – Schedule 5, Part 2, 3.2 states
    - *Items of plant requiring registration - 3.2 Pressure vessels categorised as hazard level A, B or C according to the criteria in section 2.1 of AS 4343:2014 (Pressure equipment—Hazard levels)*
- How to register plant? Go to Workplace Health and Safety Queensland - online plant registration form

## Purchasing air compressor/receiver units

Schools purchasing equipment for ITD facilities are to refer to the Department's relevant supply arrangement.

If purchasing a smaller air compressor/receiver unit outside the department's arrangement, consider the following:

- Is the guard surrounding the compressor drive mechanism robust?
- Is there a drain located at the lowest point of the receiver tank?
- Is the safety valve provided with a means for testing it (usually a ring pull)?
- The safety valve must be directly connected to the air receiver (no valve or isolation point).
- The pressure gauge must be easily viewed.
- Do the electrical components appear fit for purpose?

The assessment prior to purchase needs to determine if the unit is designed and manufactured to be fit for purpose, safe and robust. Part of this process is to inspect the manufacturer's data plate attached to the air receiver (vessel). Keep in mind these vessels can be designed to various technical standards, both Australian and international, therefore unfortunately there is little consistency in layout of the data plate.

The data plate must be legible and *should* include the following:

1. **Manufacturer's identifier (Name or number)**
2. **Design temperature max/min**
3. **Design or working pressure** usually in kPa or Bar
4. **Test pressure** usually in kPa or Bar
5. **Hazard level –** as defined in AS4343
6. **Design Registration Number** – should be at least one Australian Regulator.
7. **Date of manufacture**
8. **Vessel serial number**
9. **Technical standard** for its design and manufacture e.g.;

- AS/NZS 1200:2000
- AS1210
- AS2971
- EN 286-1 or BS EN 286-1
- EN 13445
- ASME

Example manufacturer's data plate

## Further information

Equipment and maintenance resources – SOP, PERA and EMR

Plant registration - Queensland

Safe Work Australia – compressed air and air receiver information sheet