

COMPRESSED AIR SAFETY

ABOUT COMPRESSED AIR:

Compressed air is an energy source, used throughout industry for various purposes.

As an energy source it must be treated with the same respect as electricity, if it is not used correctly it can be fatal.

Compressed air may be stored in cylinders and air receivers or generated by compressors. Air under pressure is delivered via a regulator, airline and air hoses to air tools and equipment. The tool or equipment is driven by the energy contained in the compressed air.

Air compressors are a type of pump which takes in atmospheric air and compresses to a set pressure. They do not store compressed air, however, are usually connected to a pressure vessel that stores the compressed air. The pressure vessel that stores compressed air is commonly referred to as an air receiver figure 1 and figure 2. This type of air compressor includes a system that will stop the compressor when the maximum working pressure, suitable to the processes serviced by the air receiver, is reached and restart the compressor when the lower limit for the working pressure is reached. Figure 1 air compressor.

A relief valve activates and releases air from the air receiver if the pressure reaches the design pressure of the air receiver. This reduces the risk of a failure of the air receiver due to high pressure.

MAINTENANCE AND WARNINGS ABOUT COMPRESSED AIR:

Figure 1 Air compressor mounted on an air receiver



Ensure compressors and air receivers are regularly maintained and inspected by a competent person. Air receivers require both external and internal inspections at suitable intervals. Seek advice from the manufacturer or a competent pressure vessel inspector. An example of an air compressor mounted on an air receiver (the air tank) is in figure 1, an example of standalone receivers is in figure 2.

Figure 2 Two vertical air receivers



Never tamper with the relief valve. An example of an air relief valve is in figure 3.

Unless fitted with an automatic drain valve, drain water condensate daily by opening the drain valve, typically when switching off the compressor at the end of the day.

Figure 3 Relief valve that incorporates a lever to test it



Regularly inspect automatic drain valves as recommended by the manufacturer.

Periodically test that the relief valve release mechanism can move freely (e.G. Monthly).

Always disconnect the compressor and decompress the entire system before doing any maintenance on any part of the system.

When changing any compressed air fittings always make sure the system is not pressurized.

Always use teflon tape or a sealing glue to make sure joints are sealed correctly.

Safety devices such as a compressed air safety valve, should be used in case of a break or leak in an airline. <LINK>

BEFORE USING COMPRESSED AIR:

- Always follow pressure ratings and limitations.
- Always check the tool requirements and pressures before commencing any work.
- Always check the condition of hoses and lines before use

WHEN USING COMPRESSED AIR:

- Never use compressed air to pressurize or clean parts such as bearings.
- Never use compressed air to clean your workplace as flying particles can cause injury.
- Never point it at yourself or another person, as the air can penetrate the skin and cause significant health issues.
- Never use it to clean clothing or hair, for the same reason as above.
- Always wear proper ppe, proper ppe includes
 - EYES
 - Wear goggles when using compressed air. •
 - Wear a face shield where there is a risk of flying particles. Safety glasses worn beneath a face shield do not provide adequate eye protection goggles must be worn.
 - HANDS
 - Wear gloves that the compressed air cannot penetrate, such as rubber or leather.
 - BODY
 - Use leather or pvc or similar aprons where there is a risk of contact with compressed air.

ALWAYS REMEMBER COMPRESSED AIR IS AN ENERGY SOURCE, RESPECT THAT ENERGY AND USE IT SAFELY.