Prepared By:	Simon Young	**Copy No.:**	1
Title:	Technical Author		
Reviewed by:	Carl Edwards	**Authorised by:**	Malcolm Coates
Title:	HSQE Advisor	**Title:**	HSQE Manager
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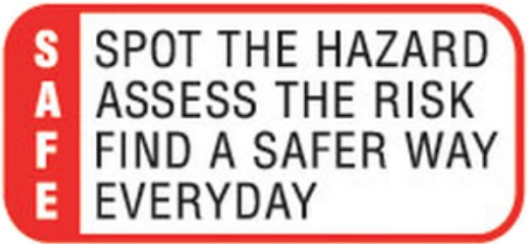

Risk Element

- Uncontrolled release of energy (explosion).

Precautions to Eliminate/Reduce Risk

- Clear all non-essential personnel from the risk area;
- Operator(s) to wear correct protective personal equipment;
- Works to be carried out in conjunction with COSHH and J & E Hall Technical information section 5;
- It is mandatory that nitrogen cylinders be properly secured to prevent them from being knocked over;
- Never use a nitrogen cylinder without a regulator and relief valve and ensure that the operating parameters of the regulator / valve meet the requirements of the test pressure values;
- When venting nitrogen / helium ensure the area well ventilated.

Action in an Emergency

- Close off cylinder(s) at isolating valve;
- Clear area;
- Isolate leak if without risk;
- Release pressure from system slowly and safely from a fixed port (not a test hose).

Safe Working Method

- Strength Pressure Test is the pressure applied to a refrigeration system for its integral strength and it is usually defined as the maximum allowable pressure Ps X factor of 1.3 (for rolled or drawn materials) and maximum allowable pressure Ps. x 1.5 (for castings);
- Leak Pressure Test is the pressure applied to a refrigeration system or part of a system to test its pressure tightness. This test pressure is defined as maximum allowable pressure of the particular system x factor of 1.1.

  Note: All pressure retaining parts shall have been subjected to a hydraulic and air (submerged) test prior to assembly
- Only oxygen free nitrogen (OFN) shall be used as the test medium. Prior to testing, sensitive gauges, controls and instruments that may be damaged, by excess pressure must be isolated from the system. Relief valves shall be removed and the openings capped and plugged. Solenoid valves, pressure regulating valves and other control valves should be opened as necessary;
- Test pressure shall not exceed that applied to the components by the manufacturer of the particular component. This may require the testing of the low-pressure side of the system separately from the high-pressure side;
- The compressor shall be located within an internal/external plant room. Pressure testing will be in accordance with Standard EN378-2 and HSE Guidance Notes GS4 (Forth Edition) The compressor record card shall be signed and dated by the fitter undertaking the test operation;
- Only competent, authorised persons are permitted to carry out test procedures.

The tester will ensure all the precautions have been complied with before the test is commenced as follows:

- Ensure test equipment has been set up in accordance with this Safe Code of Practice;
- The Person carrying out the test is supplied with the required P.P.E.;
- Warning sign, “PRESSURE TEST IN PROGRESS, KEEP AWAY” affixed to the front & rear of the plant room. The area around the plant room to be coned off and warning signs posted. Tester to keep the plant room in view when a test is being carried out.

Equipment required and to be used for pressure testing:

- A pressure regulator complete with calibrated gauges;
- A 1/4” steel braided hose complete with test certificate & a range of 1/4” flare fittings plus a pressure relief valve set at 35 bar g;
- A high-pressure test gauge range connected by 1/4” OD Copper tube at safe viewing point in the system.

  NOTE: All pressure gauges used for the test shall be identifiable to a valid calibration certificate, registered in the J & E Hall’s calibration system.

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