

WRITTEN SCHEME OF EXAMINATION

In Accordance with the Pressure Systems Safety Regulations 2000

This document has been issued in compliance with the Pressure Systems Safety Regulations 2000. All PU manufactured pressurisation sets are designed, manufactured, and tested in accordance with the regulations. All are issued with a written scheme of examination, to be read in conjunction with the set operation and maintenance manual.

This written scheme of examination is written and certified as suitable for the equipment listed only, and does not in any way certify the system as a whole. The responsibility for ensuring that the examination is carried out at the due times rests with the owner / user of equipment.

EQUIPMENT DETAILS

The standard written scheme of examination is for new installations and is recommended to be carried out every six months. A thorough examination is recommended to be carried out every twenty four months.

The following pressure equipment is inspected and tested, as part of the assembly (where applicable):

Vessels (System vessels and pump set control vessels)

Piping (Pump set manifolds, and on site to isolation valves)

Safety accessories (Pressure regulating valves, pressure relief valves)

Pressure accessories (Pressure control switches, Transducers)

VESSELS

A housing designed and built to contain fluids under pressure.

PIPING

All piping components intended for the transportation of fluids under pressure including pipes, tubing, fittings, joints, hoses etc.

SAFETY ACCESSORIES

Devices designed to protect pressure equipment against the allowable limits being exceeded.

PRESSURE ACCESSORIES

Devices with an operational function and having pressure bearing housings.

Approval:



Date: Jan 2010

STANDARD TESTING PROCEDURE (New Sets)

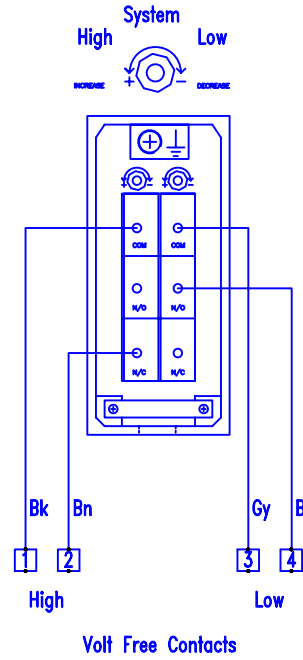
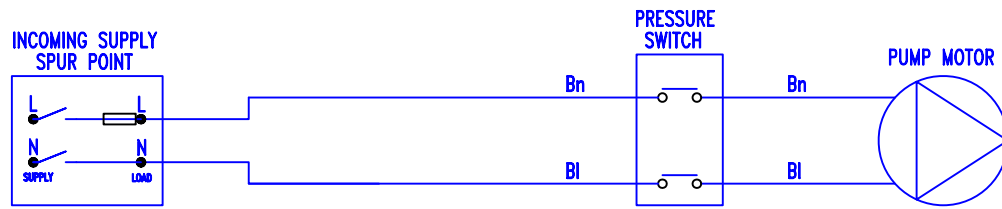
- i) Visual inspection of the system and vessel for damage.
- ii) Ensure pumps are disabled, isolate vessel(s) and drain any water from vessel.
- iii) Bleed any air from vessel.
- iv) Check that there is no pressure on either the water or the air side of the vessel.
- v) Remove the flange or inspection hatch retaining bolts.
- vi) Push diaphragm bag up into vessel and refit the flange.
- vii) Attach 'Bucket Pump' and pressurize the vessel to 1¹/₂ times the Maximum Working pressure.
- viii) Allow to soak for a minimum of 15 minutes.
- ix) Check for leaks.
- x) Exhaust pressure, remove 'Bucket Pump', remove flange and refit bladder and reassemble.
- xi) Isolate vessel and any pressure sensitive equipment from the system.
- xii) Attach 'Bucket Pump' and pressurize the system to 1¹/₂ times closed valve pressure.
- xiii) Allow to soak for a minimum of 15 minutes.
- xiv) Check for leaks.
- xv) Exhaust pressure from the system and re-establish vessel and sensitive equipment.
- xvi) Charge the air pressure in the vessel to the required value.
- xvii) Using 'Bucket Pump' set pressure switches to the required values.
- xviii) Remove 'Bucket Pump', connect to main water supply and fill the system.
- xix) Bleed each pump, individually, ensuring all air is exhausted.
- xx) Spin pumps to check for direction.
- xxi) Under take full running test of the system to closed valve pressure, checking the operation of the pumps and controls.
- xxii) Inspect for any leaks.
- xxiii) Record all tests and observations onto the test sheet together with any settings.
- xxiv) Fill in label details and attach.

TESTING of an EXISTING SYSTEM

- i) Visual inspection for damage or deterioration.
- ii) Ensure pumps are disabled, isolate vessel(s) and drain any water from vessel.
- iii) Bleed any air from vessel.
- iv) Check that there is no pressure on either the water or the air side of the vessel.
- v) Remove the flange or inspection hatch retaining bolts.
- vi) Remove the flange or inspection hatch and inspect the diaphragm bag and hatch gasket for any damage. (If a significant volume of water is found in the vessel, but outside the bag, it could indicate a ruptured bladder.)
- vii) Visually inspect the interior of the vessel for corrosion (if corrosion is present it must be assessed by a Competent Person regarding the measures required to repair or treat the area or to replace the vessel).

If hydraulic testing is required, the following procedures would also be carried out:

- a) Ensure pumps are disabled, isolate vessel(s) and drain any water from vessel.
 - b) Bleed any air from vessel.
 - c) Check that there is no pressure on either the water or the air side of the vessel.
 - d) Remove the flange or inspection hatch retaining bolts.
 - e) Push diaphragm bag up into vessel and refit the flange.
 - f) Attach 'Bucket Pump' and pressurize the vessel to 1¹/₂ times the Maximum Working pressure.
 - g) Allow to soak for a minimum of 15 minutes.
 - h) Check for leaks.
 - i) Exhaust pressure, remove 'Bucket Pump', remove flange and refit bladder and reassemble.
 - j) Isolate vessel and any pressure sensitive equipment from the system.
 - k) Attach 'Bucket Pump' and pressurize the system to 1¹/₂ times closed valve pressure.
 - l) Allow to soak for a minimum of 15 minutes.
 - m) Check for leaks.
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- viii) Replace the hatch, ensuring that the bolts are tightened in the correct sequence, as recommended by the manufacturer.
 - ix) Recharge the air pressure in the vessel to the required value and leave to stand for 15 minutes.
 - x) Check the air pressure in the vessel, and check for leaks.
 - xi) Close the Drain valve and slowly open the isolating valve to allow water to return to the vessel and leave to stand for 15 minutes.
 - xii) Check for any leaks.
 - xiii) Re-enable the pumps to put the system back on line, still checking for leaks.
 - xiv) Record all tests and observations onto the test sheet together with any settings.



IF IN DOUBT ASK
DO NOT SCALE, ALL DIMENSIONS IN MM UNLESS INDICATED OTHERWISE.

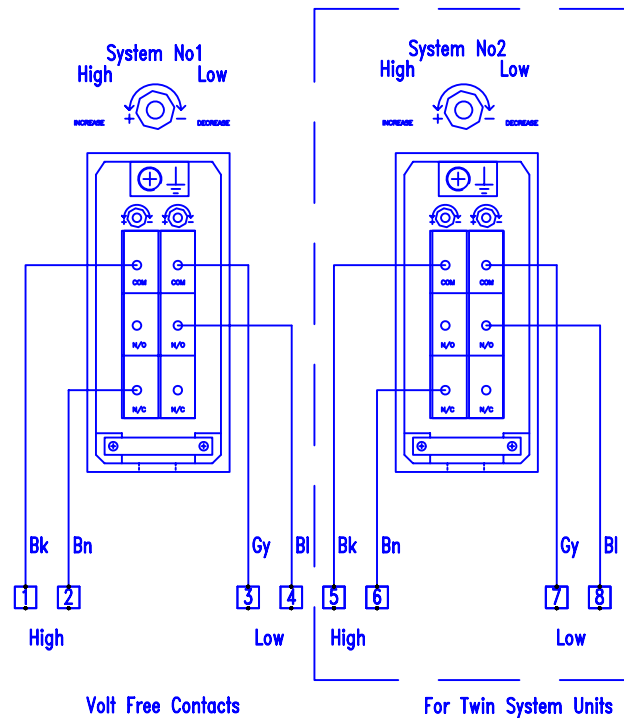
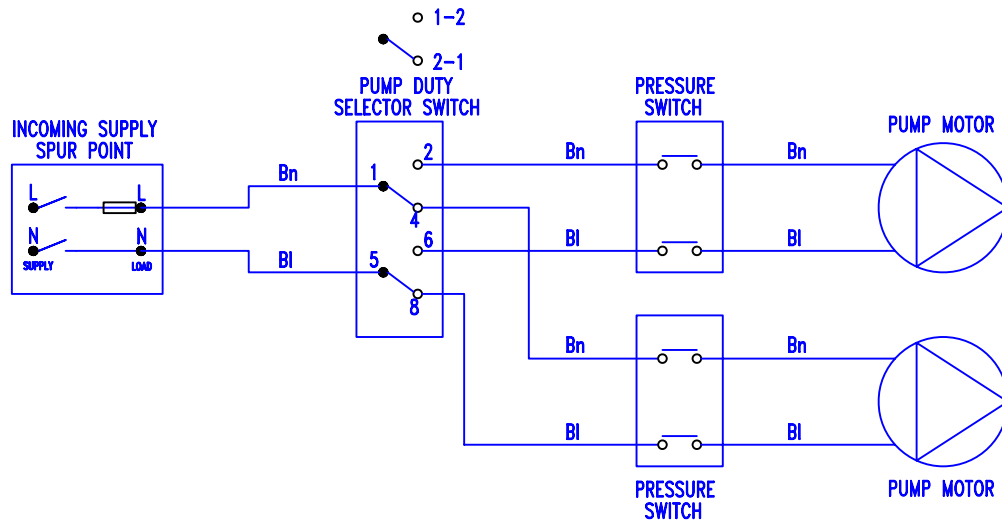
NOTES

P131 / 231
Pumps = Lowara PABM15
FLC = 2.1 amp

P151 / 251
Pumps = Lowara PSAM70
FLC = 3.41 amp

Old Colours

1=Bn, 2=Bk, 3=Gy 4=Bl



B Details Updated 4/11/10
A FIRST ISSUE

ISSUE			
DRAWN	DATE	CHECKED	DATE
DJP	18/1/06		
SCALE 1:10			
JOB No. P			

CONNECTION DIAGRAM
PU 131 & PU 231
Pressurisation Set

STOKVIS
ENERGY SYSTEMS

96R Walton Road
East Molesey
Surrey KT8 0DL