



## TECHNICAL BULLETIN

### SUBJECT: SYSTEM LOCATION

#### *Introduction*

Installation of a Galiso Hydrostatic Test System is straightforward. The systems have been designed for many years of trouble free operation to accuracies meeting and exceeding the minima set out by DOT regulations.

However, for correct and accurate operation it is essential that the system is installed in a suitable environment and correctly commissioned.

#### *Supply Services*

The following table lists services for specific machines in standard configuration. They are intended as guidelines only.

<b>Machine</b>	<b>Air, 1/2 supply</b>	<b>Water, 1/2 supply</b>	<b>Electrical</b>
RecIII	15CFM @ 110-120 psi	25lpm @ 60 psi (4 bar)	3A @ 220VAC
RecOpen	10CFM @ 110-120 psi	25lpm @ 60 psi (4 bar)	3A @ 220VAC
GTC	10CFM @ 110-120 psi	25lpm @ 60 psi (4 bar)	1A @ 220VAC
GVM	15CFM @ 110-120 psi		
PCT-122 ADW	20CFM @ 100 psi	45lpm @ 60 psi (4 bar) plus 45lpm @ 60 psi (4 bar) at 90°C	3A @ 220VAC
ISB	60CFM @ 120 psi		13A @ 220VAC

Supplies need to be positioned within 1 metre from the rig location

#### *Location and environmental-Temperature*

By far the biggest cause of system inaccuracy is caused by local temperature differences. A difference in temperature causes either the steel jacket, or the cylinder within it to expand (or contract). It is the resulting volume change that gives rise to expansion changes that are unrelated to the hydrostatic test. Temperature differences of only 2°C between the cylinder, the jacket, the incoming water and ambient air temperature can cause erroneous readings, depending on cylinder and jacket sizes. In some cases, even smaller differences will give errors. The following are the common factors to consider when locating a test system.

- ***Room temperature***

Variation in room temperature will cause the jacket to change temperature to match.

- Heating coming on (after the weekend or in the morning?)
- Heater blowing on the jacket
- Sunlight coming through a window (after a specific time such as midday? South facing windows worst!)

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- ***Drafts***  
A gust of cold or warm air will affect the jacket causing reading changes.
  - An open door or window
  - Other machinery blowing onto the jacket / rig
  
- ***Incoming Water***  
Jacket fill water temperature may be different from jacket temperature. Pumped high-pressure water will have a similar effect by altering the cylinder temperature, which will need time to stabilise.
  - Adjust incoming water to room temperature by use of a separate tank in the room or fitting a temperature compensating valve into the supply line
  - If batch testing, test smaller cylinders first and work up to larger sizes. This will reduce the need to use make-up water between tests
  
- ***Cylinder temperature***  
Cylinders under test may have just come in from outside or been filled with cold water. Batch-fill cylinders in advance of test and allow to stabilise to room temperature – increase size of holding pens to accommodate

## ***Location and environmental- other***

Other factors for consideration include:

- Vibration - from machinery, traffic etc. Location on a solid ground floor is preferable
- Electricity supply – stable supply essential, fit a filter and /or battery backup if supply unstable
- Lightning – in areas of frequent storm, fit a lightning protector or disconnecting isolating switch
- Water disposal – remember any water filled into the cylinders will need to be disposed of.  
Water will not run uphill!
- The burst discs will discharge a LOT of water if the rupture!.
- Overhead – sufficient height required for the lifting equipment, including the winch itself and any associated chain, hooks etc. It is important that the jackets are located directly underneath.
- Layout - give consideration to maintenance, pipe runs and services. Expansion lines will need to run up to the expansion bowl to allow air bubbles to escape
- Give thought to sufficient area for cylinders to stand before and after the test, especially in the fill area.

## ***Finally...***

It is impossible to cover every circumstance in a short bulletin.

Thought and attention given to the above points will remove or reduce most difficulties, your Galiso technician will advise on any other issues at installation.

Follow the above guidelines and if a specific item gives a problem, discuss the matter with the installation engineer BEFORE installation to gain further advice.