



LEAK TESTING USING G250 VACUUM GUNS

SUMMARY

Industry: Air Conditioning

Product: G250 Vacuum Testing Guns

Plant: High Rise

Location: Sydney CBD

Summary: Identify leaking tubes on a chiller.



PROBLEM DESCRIPTION

Due to leaking tubes, the efficiency of the chiller unit dropped.

Inspection was required to get the unit back up and operating.

SOLUTION

Vacuum leak test with G250 guns to find the number of leaking tubes.

- G250 test guns were pressurized at 4 bar (58.02 psi/ 400kpa).
- A gun is plugged in at one end with plant air and a T-bar vacuum seal at the other side of the tube bundle.
- Plant air is pressurized to 60 PSI and a vacuum within the tube is created. A fail to create a vacuum would result in a leak being identified.



SOLUTION



The above images demonstrate the G250 guns detecting leaks in the bundle.

RESULTS

Leaking tubes identified.



U-Tube Bundle – Rows and Numbers to be read from Top or Bottom Left		
Row 1	Tube # 3 Tube #4	Leaks Present
Row 2		No Leaks
Row 3	Tube # 4 Tube #5 plugged up	Leak Present
Row 4		No Leaks
Row 5	Tube # 6	Leak present
Row 6	Tube # 6	Leak present
Row 7		No Leak
Total Number of leaking Tubes	5	

RESULTS

- Due to unit efficiency decrease, the customer suspected leaking tubes and Imatech was engaged to perform the required test. The G250 Vacuum guns were used to find how many tubes were leaking.
- 5 leaking tubes were identified on the 17th April 2013, and 1 tube had previously been welded shut.
- Standard practice is to plug 7% of tubes before re-tubing the bundle.
- The above bundle has 86 tubes in total * 7% = 6 tubes to be plugged.
- Hole leaks identified are 5 and the previous welded plug = 6 plugged tubes.
- As the above results indicate, it is recommended that a more permanent solution is implemented before more leaks occur.



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