



MESURFLO® AUTOMATIC FLOW CONTROLS ELIMINATE PIPE NOISE AT NORTHWEST COMMUNITY HOSPITAL



Northwest Community Hospital, Arlington Heights IL
Phase 3 South Tower Patient Comfort Initiative

Preface:

Johnson Controls has been working with Northwest Community Hospital for over 20 years providing temperature controls and service. Recently, the relationship expanded beyond the traditional into a solution based offering. There have been three of these Prime retrofit projects over the last five years. The most recent, Phase 3, involved a complete replacement of the South Patient Tower HVAC system on all three patient floors as well as the basement mechanical room. The previous HVAC system consisted of dual duct boxes on the interior spaces and induction units in all patient rooms.

The Phase 3 project replaced the dual duct boxes with fan coil units and replaced the Induction units with radiant heating and cooling ceiling panels with ventilation air ducted in over the entry.

Situation:

The radiant ceiling panels (RCP) have both hot and chilled water lines and each line was installed with a traditional manual balancing valve. Prior to the system being commissioned it was apparent to both the occupants and the project team that there was pipe noise similar to a running faucet or shower line. Some panels made no noise, others were noisy in either the cooling or heating cycle and some panels were noisy in both cycles.

Response:

First, the copper supply piping to the radiant ceiling panel units was checked for kinks or excessively tight radius bends. Second, air was vented & air troughs were installed.

These measures helped but did not eliminate the noise problem. Finally Johnson Controls recommended the use of Hays Mesurflo® automatic flow control valves as a possible solution. A few Hays valves were secured and installed as a test. A single Mesurflo® valve was installed in one of the noisier rooms in place of the traditional balancing valve on the chilled water line and another on the hot water line. After the Mesurflo® valves were installed the noise was eliminated, even when system pump speeds were increased beyond the system differential pressure demand setpoint.



Patients experience a quiet environment because Mesurflo® valves eliminated pipe noise.



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Outcomes:

The decision was made to install the Mesurflo® devices on all 2nd floor rooms, those closest to the pumps and in any rooms on the 3rd and 4th floor that had noise issues.

Benefit Summary:

⇒ Prime Contractor, Johnson Controls: A 3rd consecutive successful Prime retrofit project, and a happy customer.

Project Manager: Tom Burke, Johnson Controls Inc.

⇒ Mechanical Contractor, Hill Mechanical: The Mesurflo® eliminated the need to proportionally balance the traditional manual balancing valves on this phased project. It reduced the need for multiple rebalancing in this phased project. That meant limited return trips to climb ladders, access each unit and rebalance valves in this occupied facility.

Mechanical Contractor Project Engineer: Dan Schmidt, Hill Mechanical

⇒ Owner Representative: Northwest Community Hospital
Chief Engineer: Mike Bayless



Mesurflo® valves eliminate the need to proportionally balance traditional manual balancing valves.

These graphs quantify the sound performance of competitors' automatic balancing valves, a straight length of pipe and the Mesurflo®.

