

## **DESIGN REVIEW, TESTING AND VERIFICATION OF FLOAT VALVE PROTOTYPE FOR ACHIEVING PRESSURE DROP ACROSS HEAT GENERATORS IN A VAM**

**P. BABU<sup>1</sup>, K. C. ZENDE<sup>2</sup>, MIHIR AGSHIKAR<sup>3</sup>, SHUBHAM RAMUKA<sup>4</sup>, AKSHAY BHATTAD<sup>5</sup> & SAGAR  
KARWA<sup>6</sup>**

<sup>1</sup>Head of Innovations, Cooling, C&H Division, Thermax Ltd., Chinchwad 411019, Pune, Maharashtra, India

<sup>2</sup>Assistant Professor, Department of Mechanical Engineering, Smt. Kashibai Navale College of Engineering 411041 Pune,  
Maharashtra, India

<sup>3,4,5,6</sup>Department of Mechanical Engineering, Students, Smt. Kashibai Navale College of Engineering, 411041 Pune,  
Maharashtra, India

### **ABSTRACT**

The High Temperature Generator and the Low Temperature Generator of a typical Vapour Absorption machine needs to achieve a considerable pressure drop while keeping the flow rate of the refrigerant (Li-Br) constant. In order to achieve this pressure drop before the refrigerant could enter the High temperature heat exchanger, a float valve needs to be installed which would help with the pressure drop, while compensating slight variations in the pressure and also maintaining the flow rate constant. This new design of a float valve is primarily meant for a Triple Effect Chiller where the Pressure drop is measure across HTG to MTG to LTG. The following prototype has been designed analytically along with its meshing in Hypermesh and Max velocity Flow analysis in Flo-express. The prototype is then tested using a water test bay by maintaining a constant flow for a particular pressure drop. Slight adjustments have also been made to the final design so as to match the theoretical and practical values of pressure drop achieved.

**KEYWORDS:** Float Valve, Vapour Absorption Machine, High Temperature Generator (HTG), Low Temperature Generator (LTG), Triple Effect Chiller