



Design Considerations Part 2

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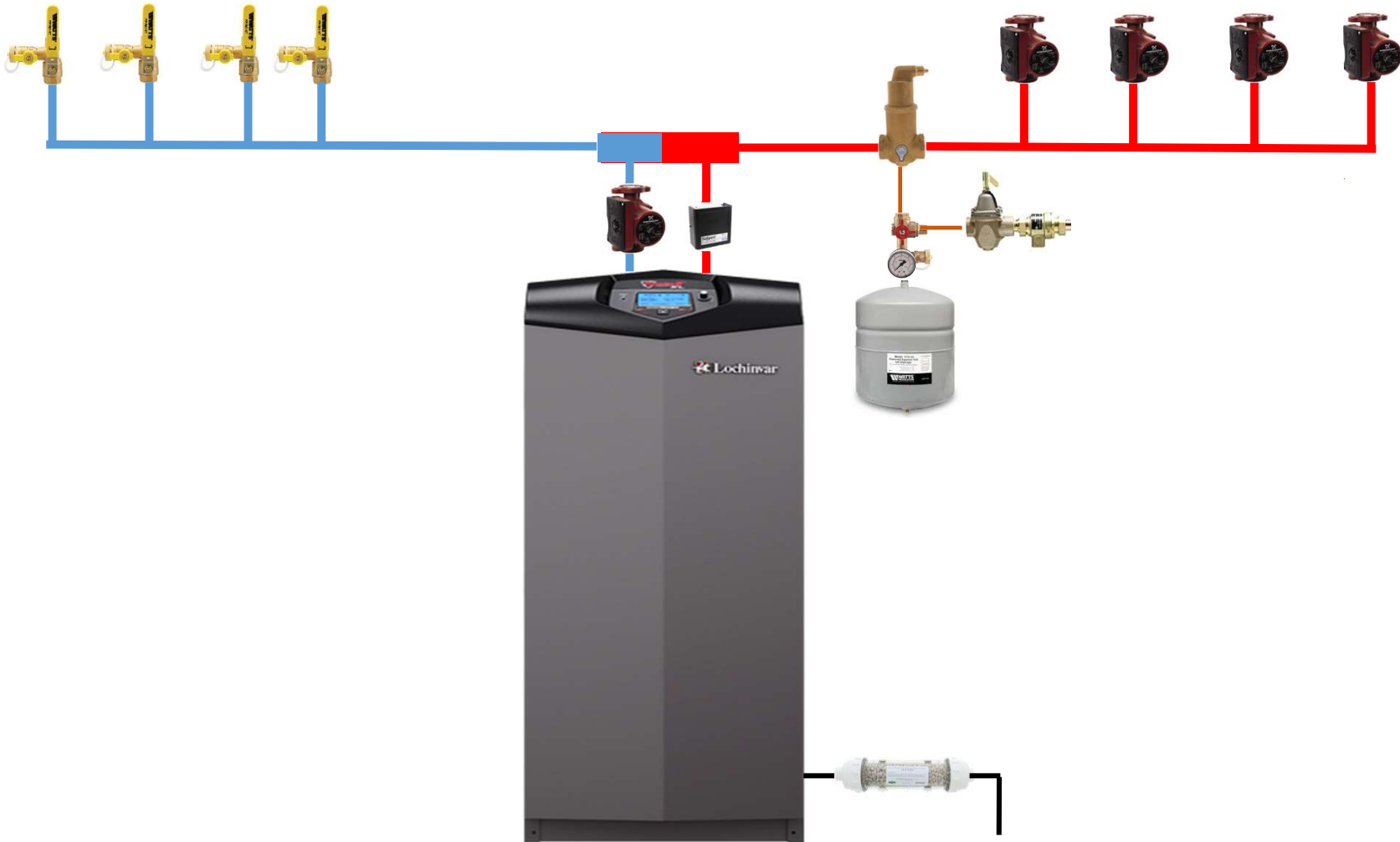
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## **Welcome to WMS Design Considerations Part**

### **What will be covered**

- Piping options**
- Conventional Boilers**
- Condensing Boilers**
- Two Pipe reverse return**
- Working different  $\Delta T$**
- Primary Secondary Piping design**
- Multiple boiler piping**
- Mixing Valves**
- Injection Pumping**

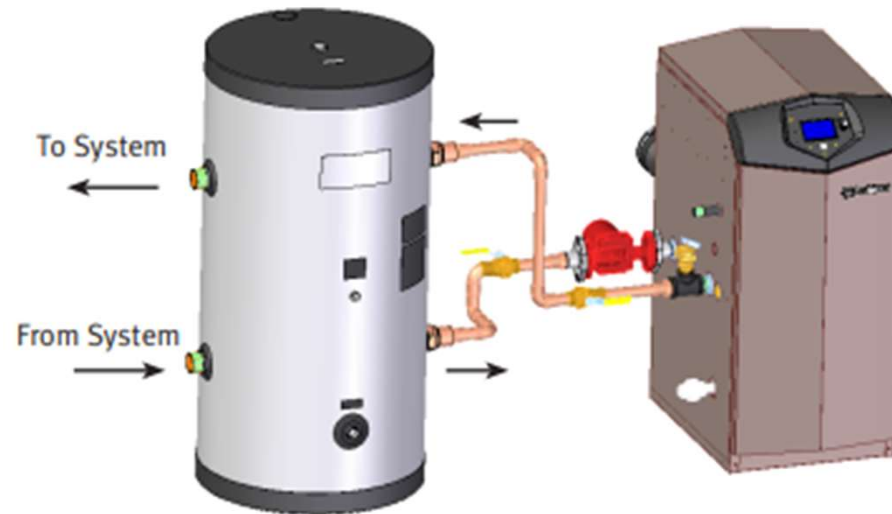


## BUFFER TANK SIZING

Boiler Input	Turndown Ratio	System Smallest Zone	Surplus BTUH	Minimum Run Time	Tank Size
100,000	10	5,000	5,000	10	5



### Typical Piping Arrangement



### Universal Hydronic Formula

Load In BTUH  $\div$   $\Delta T \times 500 = \text{GPH}$

5°  $\Delta T \times 500 = 2,500$  BTUH Per Gallon

10°  $\Delta T \times 500 = 5,000$  BTUH Per Gallon

15°  $\Delta T \times 500 = 7,500$  BTUH Per Gallon

20°  $\Delta T \times 500 = 10,000$  BTUH Per Gallon

25°  $\Delta T \times 500 = 12,500$  BTUH Per Gallon

30°  $\Delta T \times 500 = 15,000$  BTUH Per Gallon

35°  $\Delta T \times 500 = 17,500$  BTUH Per Gallon

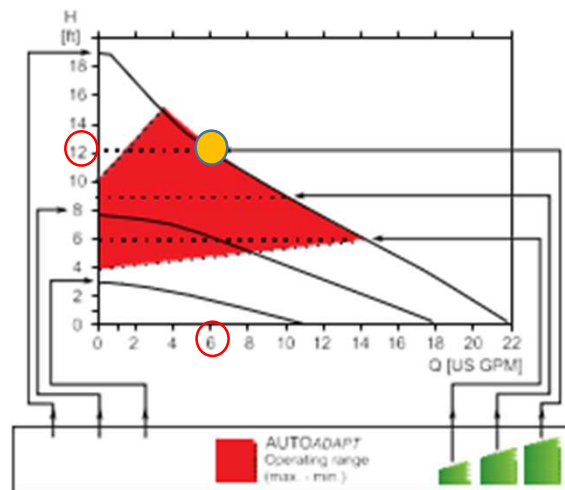
40°  $\Delta T \times 500 = 20,000$  BTUH Per Gallon

### AUTOADAPT Control Mode:

This function controls pump performance automatically within defined performance range. Ensuring lowest possible energy consumption, while maintaining maximum comfort levels.

*(Chart from ALPHA2 product Flyer)*

### Performance curves



### ALPHA APPROXIMATE POWER USAGE

Speed setting	Min.	Max.
High fixed speed	39W	45W
Medium fixed speed	15W	30W
Low fixed speed	5W	8W
Constant pressure	8W	45W
Constant pressure	14W	45W
Constant pressure	22W	45W
AUTOADAPT	5W	45W

## Design Considerations

