



# LTV Low Temperature Valves

## Non-Condensing Boiler Protection for Low Temperature Systems

**Ideal for use with Copper-Fin, Copper-Fin II,  
Power-Fin and Solution Boilers**

When designing a boiler system with return water temperatures below 130°F it is necessary to protect the boiler from flue gas condensation. All non-condensing boilers will develop operational problems if they are continually exposed to system return water temperatures below 130°F. Typical systems that require this protection are water source heat pump systems, in-floor radiant heat systems, greenhouse heating, soil heating, process operations and manufacturing operations. Additionally, heating systems that utilize nighttime setback, night/weekend shutdown or outdoor reset control strategies should incorporate low water temperature protection.

To prevent low return water temperatures to the boiler and combat operational problems, the system should be piped in a primary secondary piping arrangement with a low temperature bypass. Manual bypass systems however are not the ideal solution due to varying flow rates and firing rate of the boiler. A better alternative is Lochinvar's Low Temperature Valve, which is a self-contained automatic thermostatic 3-way valve that ensures temperatures entering the boiler remain above 130°F.



*The Lochinvar LTV Low Temperature Valve is shipped separately and can easily be incorporated into the field installed primary/secondary boiler piping. (2" LTV Valve shown installed on CHN751)*

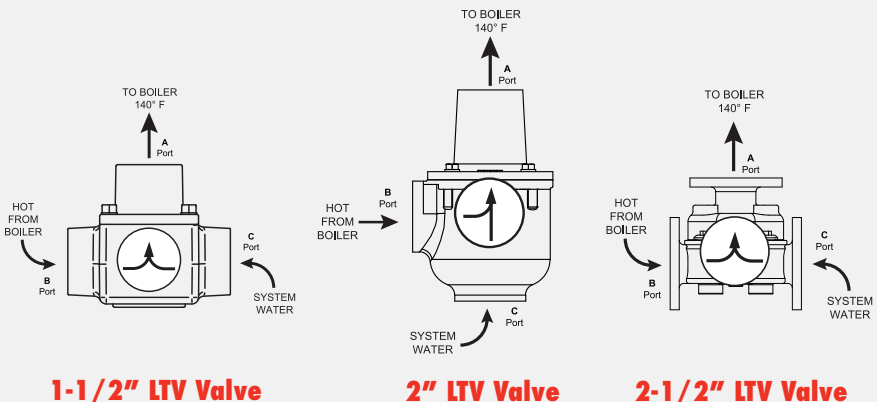
### Standard Features

- Low Return Water Temperature Boiler Protection
- Non-Adjustable and Automatic
- Heavy Duty Construction
- Replaceable Thermostatic Element(s)

### How it Works

*The LTV Valve "modulates" to maintain 140°F as a minimum return temperature to the boiler.*

- Hot water from the boiler enters "B" port.
- Cooler water from the system enters "C" port.
- "B" and "C" water mix to meet the desired 140°F.
- Water exits "A" port back to the boiler return.



**1-1/2" LTV Valve**

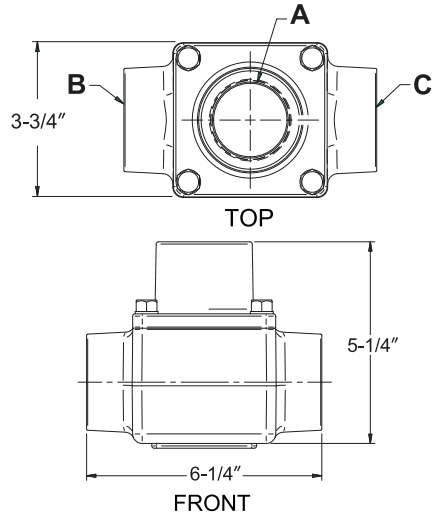
**2" LTV Valve**

**2-1/2" LTV Valve**

## LTV Valve Dimensions & Specifications

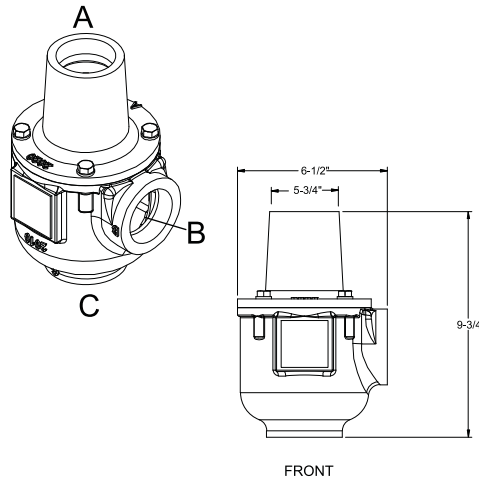
### 1-1/2" LTV Valve

Up to 55 GPM flow rate  
Part Number - VAL30000



### 2" LTV Valve

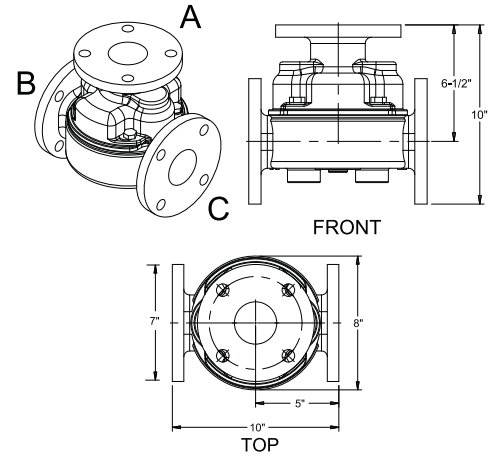
Up to 55 GPM flow rate  
Part Number - VAL3048



### 2-1/2" LTV Valve

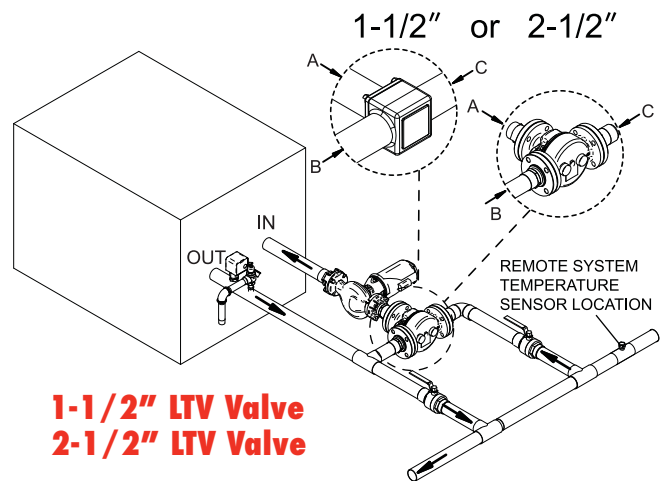
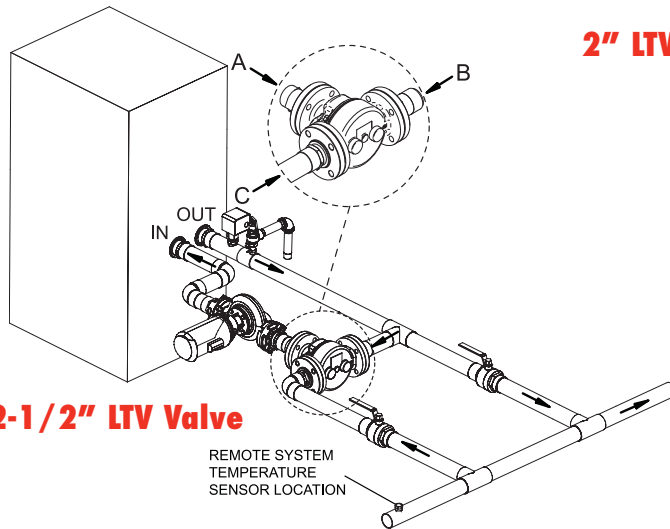
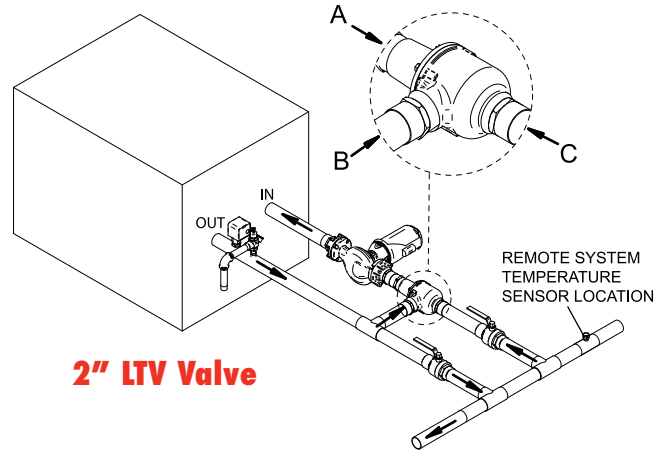
Over 55 GPM flow rate  
Part Number - VAL3047

Note: Mounting flange Included with valves.



## TYPICAL PIPING

All boilers must use optional remote sensor.  
Minimum high limit setting is 205°F.  
Pump supplied by installer.



Lochinvar Corporation • 300 Maddox Simpson Pkwy • Lebanon, TN 37090 • 615-889-8900 / Fax: 615-547-1000

[www.Lochinvar.com](http://www.Lochinvar.com)