

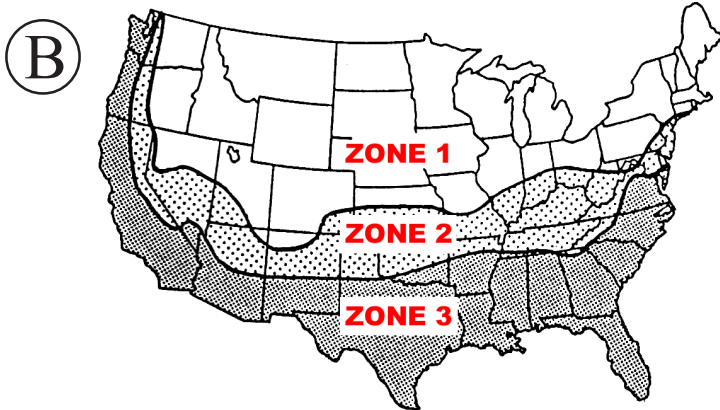


# COMBINED HYDRONIC SYSTEMS

# SIZING ESTIMATOR

## STEP 1 SIZING COMBINED HYDRONIC BTU/HR REQUIREMENTS

(A) Determine Btu/hr heating requirement using Manual J or other methodology.



For locations with altitudes over 7,000 feet, use Zone 1. Determine from the map which zone in which the building is located. Multiply the home's heat loss by the following:

- In Zone 1, multiply by 1.43
- In Zone 2, multiply by 1.30
- In Zone 3, multiply by 1.20

The resultant is the **minimum water heater Btu/hr output necessary** for adequate water heating and space heating.

## STEP 2 DETERMINE STORAGE REQUIREMENTS

(A)\*

Number of Bathrooms	Number of People			
	1-2	3-4	5-6	7-8
1 / 1 1/2	55	55	80	80
2 / 2 1/2	55	55	80	80
3 / 3 1/2	80	80	80	119
4 / 4 1/2	80	80	119	119

(B) Add 50% of total household whirlpool bath water volume (gallons) to storage requirements from (A).

Example: 60 gallon whirlpool X .50 = 30 gallon addition to storage requirements.

\* Two (2) concurrent showers (10 minute duration) at Design Heating Load conditions (max. 3 GPM each). Also one such shower concurrent with laundry.



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## STEP 3

## MODEL SELECTION USING BTU OUTPUT

Select the Phoenix model that has the Btu/hr output that exceeds the minimum Btu/hr output required in Step 1 and has a storage capacity greater than Step 2 calculations.

Model	Capacity (gal)	Max. <u>Output</u> (Btu/hr)
PH 100-55 <sup>1</sup>	55	95,000
PH 100-80 <sup>1</sup>	80	95,000
PH 100-119 <sup>1</sup>	119	95,000
PH 130-55 <sup>1</sup>	55	123,000
PH 130-80 <sup>1</sup>	80	123,000
PH 130-119 <sup>1</sup>	119	123,000
PH 199-55 <sup>2</sup>	55	184,000
PH 199-80 <sup>2</sup>	80	184,000
PH 199-119 <sup>2</sup>	119	184,000

<sup>1</sup> Available July 2006 • <sup>2</sup> Available Fall 2006

**NOTE (Air Handlers):** The air handler heating coils should be sized for maximum entering water temperature of 130°. The air handler with check valve circulator should be sized for a 20°ΔT. All lines between the Phoenix and air handler must be a minimum 3/4" insulated pipe.



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