CHANGES
MUST Be Approved Prior
To Performing Work

Reviewed for code compliance
with IRC 2015
Kitsap County Building Department
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06/08/2020

Simple Heating System Size: Washington State

This heating system sizing calculator is based on the Prescriptive Requirements of the 2015 Washington State Energy Code (WSEC) and ACCA Manuals J and S. This calculator will calculate heating loads only. ACCA procedures for sizing cooling systems should be used to determine cooling loads.

Please fill out all of the green drop-downs and boxes that are applicable to your project. As you make selections in the drop-downs for each section, some values will be calculated for you. If you do not see the selection you need in the drop-down options, please call the WSU Energy Extension Program at (360) 956-2042 for assistance.

Project Information	*Contact Information*
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Heating System Type: ◉ All Other Systems ○ Heat Pump

To see detailed instructions for each section, place your cursor on the word "Instructions".

Design Temperature

Instructions — Bremerton

Design Temperature Difference (ΔT) 41
ΔT = Indoor (70 degrees) - Outdoor Design Temp

Area of Building

Conditioned Floor Area

Instructions — Conditioned Floor Area (sq ft): 2,680

Average Ceiling Height

Instructions — Average Ceiling Height (ft): 8.0 — Conditioned Volume 21,440

	U-Factor	X	Area	=	UA
Glazing and Doors (Instructions — U-0.28)	0.280		319		89.18
Skylights (Instructions)	0.50		0		---
Insulation					
Attic (Instructions — R-49)	0.026		1,840		47.84
Single Rafter or Joist Vaulted Ceilings (Instructions — No Vaulted Ceilings in this project.)	---		0		
Above Grade Walls *(see Figure 1)* (Instructions — R-21 Intermediate)	0.056		3,116		174.50
Floors (Instructions — R-30)	0.029		1,430		41.47
Below Grade Walls *(see Figure 1)* (Instructions — No Below Grade Walls in this project.)	0.028		0		
Slab Below Grade *(see Figure 1)* (Instructions — No Slab Below Grade in this project.)	F-Factor 0.303		Length 0		---
Slab on Grade *(see Figure 1)* (Instructions — No Slab on Grade in this project.)	F-Factor ---		Length 0		

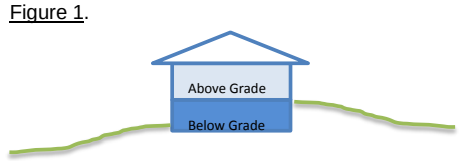
Location of Ducts

Instructions — Unconditioned Space

Duct Leakage Coefficient 1.10

Sum of UA	352.99	
Envelope Heat Load *Sum of UA X ΔT*	14,472	Btu / Hour
Air Leakage Heat Load *Volume X 0.6 X ΔT X .018*	9,494	Btu / Hour
Building Design Heat Load *Air Leakage + Envelope Heat Loss*	23,966	Btu / Hour
Building and Duct Heat Load *Ducts in unconditioned space: Sum of Building Heat Loss X 1.10* *Ducts in conditioned space: Sum of Building Heat Loss X 1*	26,363	Btu / Hour
Maximum Heat Equipment Output *Building and Duct Heat Loss X 1.40 for Forced Air Furnace* *Building and Duct Heat Loss X 1.25 for Heat Pump*	36,908	Btu / Hour

Figure 1.



Established Basic Permit #
19-01655

Permit Number: 20-02212

(07/01/13)