ACCA Certified Manual J Load Calculation, Manual S HVAC Sizing & Manual D Duct Design

**If Form in “Protected Mode”, click “Enable Editing” button**



**Need Help with this Form? Watch** [**“How to Complete Manual J, S & D Project Design Form”**](https://youtu.be/g1nCbfaTdVw) **Video**

  

**Savoy Engineering Group**

[www.load-calculations.com](http://www.load-calculations.com)

Telephone: (801) 949-5337

E-mail: projects@load-calculations.com

Open: 9 AM – 3 PM Mountain Time, M, T, TH, and F

|  |  |
| --- | --- |
| **Type of Service:** | **Select Services** |
| ACCA Manual J Load Calculation |[ ]
| ACCA Manual S HVAC Sizing – **Required by ALL Permit Offices** |[ ]
| ACCA Manual D Duct Design |[ ]
| **STANDARD** Service: **10 Day** Turnaround **$75/hour** |[ ]
| **EXPRESS** Service: **5 Day** Turnaround **< 5,000 sq. ft** **$125/hour** |[ ]

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| **Submitter: Contact Information** |
| Name: | Enter Name Here |
| Company: | Enter Company Here |
| E-mail: | Enter E-mail Here. |
| Telephone: | Enter Telephone Here |

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| **Size of Home (sq ft)** | < 2,000 sq. ft | 2,000-3,499 | 3,500-4,999 | 5,000-6,499 | 6,500-7,999 | 8,000-12,000 | >12,000 sq. ft |
| Conditioned Space |[ ] [ ] [ ] [ ] [ ] [ ] [ ]

**BEFORE** beginning any project, please send:

1. Completed Manual J, S & D Project Design Form – NO EXCEPTIONS
2. Floor plans, section cuts, elevations, window & door schedules

Once items 1 & 2 above are received, an invoice will be sent to the email entered above

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| **Project Information:** |
|  Project Name (ex: Smith Residence) | Enter Name Here |
|  Project Address: | Enter Address Here |
|  Project City: | Enter City Here |
|  Project State & Zip code: | Enter State & Zip code Here |

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| **Zoning & Duct Losses** |
| HVAC System | **HVAC 1** | **HVAC 2** | **HVAC 3** | **HVAC 4** |
| Duct Location | Choose Menu Item | Choose Menu Item | Choose Menu Item | Choose Menu Item |
| Area HVAC Services | Choose Menu Item | Choose Menu Item | Choose Menu Item | Choose Menu Item |
| Other Zoning Info | Enter Zoning Info  | Enter Zoning Info | Enter Zoning Info | Enter Zoning Info |

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| **Direction: Building Front**  | **Direction: Front Door**  |
| Choose Direction | Choose Direction |

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| **# of Bedrooms** | **# of Stories** | **# of wood burning fireplaces** **exclude gas** |
| Choose # Bedrooms | Choose # Stories | Choose # wood fireplaces |

If attic, crawlspace or basement is **conditioned,** please **include floor plans**

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| Crawlspace | Bsmt/Cellar | 1st FL | 2nd FL | 3rd FL | Attic |
| Choose Menu Item | Choose Menu Item | Choose Menu Item | Choose Menu Item | Choose Menu Item | Choose Menu Item |

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| **Outdoor Fresh Air Ventilation Source (per local code)** |
| Select One | Choose Air Ventilation Source |

**Construction Materials Questions:**

S**ection Cut Page #:** Enter Section Cut Page # Here (ex: A.3.1 or page 7 of 14)

If available, also send **REScheck, California Title 24 or REM/Rate report** with your project submission. If the **Section Cut R-values** are different than these reports, **the Section Cut will be followed**

If **Section Cut** page # is entered above or accurate REScheck, Title 24 or REM/Rate included:

**Skip to p 4**

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| **Roof:** | Flat or Sloped | Vented or unvented attic | Roof Material | Roof Color | Roofline or Cavity Ins. | Insulation R-Value | Vaulted Ceilings | Vault Ins. R-Value |
| Select Options | Choose an item. | Choose an item. | Choose Material | Choose Color | Choose an item. | Choose R-Value | Choose an item. | Choose R-Value |

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| Ceiling Heights(include cathedral ceilings) | Basement | 1st Floor | 2nd Floor | 3rd Floor | Attic | Other |
|  | Enter Ceiling Height | Enter Ceiling Height | Enter Ceiling Height | Enter Ceiling Height | Enter Ceiling Height | Enter Ceiling Height |

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| **Roof:** Other Info | Enter Other Roof Info Here |

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| **Above Grade Walls:** | Framing | Exterior | InsulationR-Value | Other Info |
| New Walls | Choose Framing | Choose Exterior | Choose R-Value | Enter Other New Wall Info Here |
| Existing Walls | Choose Framing | Choose Exterior | Choose R-Value | Enter Other Existing Wall Info Here |

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| **Below Grade Walls** – **if conditioned** | Framing | Exterior | Wall Thickness | Insulation R-Value | Other Info |
| Select Options | Choose Framing | Choose Exterior | Choose Thickness | Choose R-Value | Enter Other Below Grade Wall Info Here |

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| **Slab Floor** | Insulation Type | Insulation R-value | On Grade or Below Grade |
| Select Options | Choose Insulation | Choose R-Value | On/Below Grade? |

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| **Framed Floor over Unconditioned Space** | Room Unconditioned Floor Over | Structure Thickness | Insulation R-Value |
| Select Options | Choose Menu Item | Choose Thickness | Choose R-Value |

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| **Floor:** Other Info | Enter Other Floor Info Here |

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| **Windows: Please send with project submission (if available)** | Included or Not Included | Page # in Architectural Plans |
| Window Schedule with U/SHGC factors included? | Yes/No? | Enter Page # |
| Window Price Quote with U/SHGC factors included? | Yes/No? | Enter Page # |

**If Window Schedule or Window Price Quote included, Skip to p 5**

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| **Windows:** | # of window panes | Frames | U-Factor | SHGC | Low-e | Air/Argon |
| Select Options | Choose # Panes | Choose Frame | Enter U-Factor | Enter SHGC | Yes/No? | Choose Air/Argon |

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| **Windows:** Other Info including existing windows | Enter Other Window Info Here |

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| **Doors: INCLUDE SCHEDULE** | Door Material |
| Select Door Type | Choose Door Type |

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| **VIDEO: What is a Manual J load calculation?** This Old House Season 40 Episode 3: This Old House Expert Richard Trethewey demonstrates heat loss and gain to design a balanced HVAC system. With a model of the new project house, he shows what sun exposure and ventilation can do to a building.[**HVAC of the Future | The Jamestown Net-Zero House**](https://www.thisoldhouse.com/watch/hvac-future-jamestown-net-zero-house)**Click on “This Old House” picture above & watch video from 6:40-14:10 minutes** |

**Manual S Equipment Verification Questions**

1. If known, provide below the make/model of indoor coil(s), outdoor condenser(s) or heat pump(s), furnace(s), boiler(s) & electric strip(s) and we can size accurately. Attach OEM data for coil(s), condenser(s) & furnace(s)
2. If the HVAC make/model is unknown: The Manual J will be sent to you for equipment selection. ***We cannot select equipment!*** – Please have your HVAC contractor provide any “placeholder” make/models necessary to obtain HVAC permitting

 **Mechanical Page #:** Enter Mechanical Page # Here (ex: M.1-3 or page 7 of 14)

If **Mechanical** page # entered above WITH equipment make/model included: **Skip to p 6**

HVAC Equipment Already Installed? Yes/No? If YES: **call 801-949-5337 before submitting**

Ok To Upsize or Downsize HVAC to Pass ACCA Manual S?  Yes/No?

Type of Ductwork?  Choose Duct Type

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| **Type of Conditioning:** | Choose Comfort Type  |
| INCLUDE: Manufacturer & Model of indoor Coil(s), outdoor Condenser(s), Furnace(s)/Boiler(s) & AHRI Certificate for Manual S Equipment Selection |
| **Cooling:** | Manufacturer/Make | Coil Model | Condenser/Packaged Unit Model | AHRI # |
| **HVAC 1** | Enter Manufacturer | Enter Coil Model | Enter Condenser Model | Enter AHRI # |
| **HVAC 2** | Enter Manufacturer | Enter Coil Model | Enter Condenser Model | Enter AHRI # |
| **HVAC 3** | Enter Manufacturer | Enter Coil Model | Enter Condenser Model | Enter AHRI # |
| **HVAC 4** | Enter Manufacturer | Enter Coil Model | Enter Condenser Model | Enter AHRI # |
| **Heating** | Manufacturer/Make | Furnace/Boiler Model | kW Strip Model | AHRI # |
| **HVAC 1** | Enter Manufacturer | Enter Furnace/Boiler | Enter kW Model | Enter AHRI # |
| **HVAC 2** | Enter Manufacturer | Enter Furnace/Boiler | Enter kW Model | Enter AHRI # |
| **HVAC 3** | Enter Manufacturer | Enter Furnace/Boiler | Enter kW Model | Enter AHRI # |
| **HVAC 4** | Enter Manufacturer | Enter Furnace/Boiler | Enter kW Model | Enter AHRI # |

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| **VIDEOS: Why we can’t select equipment for you**

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| **[Manual S](https://youtu.be/ow89RC29TKY)****[Video 1:](https://youtu.be/ow89RC29TKY)**Click on picture |  | **[Manual S](https://youtu.be/3joOrGpinLs)****[Video 2:](https://youtu.be/3joOrGpinLs)**Click on picture |  |  |

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**Manual D Duct Design Questions**

Complete this page only if our Manual D duct design service was purchased. Otherwise leave blank.

**Mechanical Page #:** Enter Mechanical Page # Here (ex: M.1-3 or page 7 of 14)

If **Mechanical** page # entered above WITH suggested duct design: **Skip to p 7**

Duct Already Installed? Yes/No? If the Duct is installed: **call 801-949-5337 before submitting**

Will Dampers with Controls be installed? Yes/No?  **NOTE:** Manual J assumes dampers are fully open **but zone dampers with controls impact duct sizes**

* To avoid costly revisions: Please have your HVAC Contractor sketch on the floor plans: HVAC(s) & supply/return main plenum locations.  Otherwise we’ll apply Manual D industry standards.

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| **SUPPLY** Duct: Manual D information: **SUPPLY** Duct |
|   | Register Location | Main Plenum Material | Main Plenum | Branch Material | Branches |
| **HVAC 1** | Choose Location | Choose Material | Even/Odd? | Choose Material | Even/Odd? |
| **HVAC 2** | Choose Location | Choose Material | Even/Odd? | Choose Material | Even/Odd? |
| **HVAC 3** | Choose Location | Choose Material | Even/Odd? | Choose Material | Even/Odd? |
| **HVAC 4** | Choose Location | Choose Material | Even/Odd? | Choose Material | Even/Odd? |
| **Supply Duct Other Info:** | Enter Other Supply Duct Info Here |

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| **RETURN** Duct: Manual D duct information: **RETURN** Duct |
|  | Register Location | Main Plenum Material | Main Plenum | Branch Material | Branches |
| **HVAC 1** | Choose Location | Choose Material | Even/Odd? | Choose Material | Even/Odd? |
| **HVAC 2** | Choose Location | Choose Material | Even/Odd? | Choose Material | Even/Odd? |
| **HVAC 3** | Choose Location | Choose Material | Even/Odd? | Choose Material | Even/Odd? |
| **HVAC 4** | Choose Location | Choose Material | Even/Odd? | Choose Material | Even/Odd? |
| **Return Duct Other Info:** | Enter Other Return Duct Info Here |

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| **VIDEO: What is a Manual D Duct Design?** This Old House Season 9, Episode 12: Not familiar with ductwork? Watch This Old House as plumbing & heating expert Richard Trethewey helps a pair of homeowners reduce their utility bills by installing a new forced-air furnace and air conditioning system.[**Energy Efficient HVAC**](https://www.youtube.com/watch?v=u8jM9z3scQk)**Click on “This Old House” picture above & watch video from beginning to 10:18** **minutes** |

**Revision Policy:** Savoy Engineering Group allows **ONE FREE 2.0 HOUR** Manual J, S & Drevision.  Any revision hours after that **WILL** be billed at $75/hour.  Please ensure **ALL** parties review the Manual J, S & D report prior to submitting your FREE 2.0 HOUR revision.

All revisions:

       **MUST** be submitted in writing AND legible

       Are completed on Tuesday & Thursday afternoons in the order received

       **MUST** be submitted PRIOR to on-site duct installation

**Legal Disclaimer:**

The Manual J, S & D calculations produced are based on information provided by the client in the form of this project design form, drawings &sketches. Savoy Engineering Group does not independently verify the data provided is correct or complete. If the building is built as per the plans submitted, then the load calculations presented in the report can be assumed to be accurate

The **installing HVAC contractor** is responsible for reviewing our Manual J, S & D HVAC design **before** equipment purchase and installation. Final HVAC sizing and selection should be done by a licensed HVAC contractor. As listed by ASHRAE, many factors beyond the scope of this report must be considered by the HVAC contractor prior to final system selection and design.

If the HVAC duct layout installed on-site **DOES NOT match the Manual D duct design** prepared by Savoy Engineering Group, then we cannot and will not guarantee the performance of any altered duct design.

If any errors or omissions appear in the ACCA Manual J, S & D residential design we provide, the client or HVAC contractor must notify us in writing of such omissions or errors prior to proceeding with any HVAC work which appears in question. In the event the client or HVAC contractor fails to give such notice he shall be held responsible for the results of such errors or omissions and the cost of rectifying the same. The client or HVAC contractor must clarify any questions about the Manual J, S & D HVAC design PRIOR to installation. Any client, HVAC contractor or owner interpretations shall be final.

**Savoy Engineering Group therefore assumes no liability for final equipment selection or final HVAC system design. After reviewing Savoy Engineering Group’s report, and prior to any system purchase or installation, please inform Savoy Engineering Group in writing of any changes which may alter the assumptions and calculations contained in the Manual J, S & D calculations.**