

We are not aware of any simulations to date that do not always converge. However, since the program is still in the development and testing phase, we are very interested in learning about any input configurations that result in stability problems. For this reason, we ask that all users include the following statement in their input:

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PLANT-REPORT
  VERIFICATION      = ( PV-A )
  SUMMARY           = ( PS-B, PS-E, PS-F, PS-H, BEPS, BEPU )
  DUMP-OPTIONS     = ( SIMULATION, DEBUG )
  . .

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The DEBUG switch will cause the program to dump listings of convergence errors. These errors will be listed immediately before the first SV-A report. You should always check to see if there are any convergence failures, and if so, e-mail your input and weather file to:

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Input Order and Example Input

The program enforces an input hierarchy in order to prevent circularities. (For example, to prevent two liquid circuits from attaching to each other, so that they feed refrigerant to each other in a continuous loop.) This order is most obvious when using a graphical user interface such as eQUEST. The general rule is that you must first define a component before referencing (attaching to) that component in another component.

Hierarchy Rules:

1. In general, you must define a component before allowing another component to reference it. The following rules reflect this order.
2. The first component that must be defined is the refrigeration system. If refrigeration systems will cross-connect via subcoolers or desuperheaters, you should first define the warmest system and/or suction-group, together with its liquid and suction lines, prior to defining the system that will utilize the subcooler or desuperheater.
3. Define and attach one or more condensers to the refrigeration system.
4. Define and attach a discharge circuit to the refrigeration system. You may attach any number of discharge circuits to a refrigeration system. You may create networks of discharge circuits by attaching one or more discharge circuits to a previously defined discharge circuit.
5. Define and attach a suction group to a discharge circuit. You may attach any number of suction groups to a discharge circuit.
6. Define and attach one or more compressors to the suction group. A suction group may have any number of compressors. By default the compressors will attach to the discharge circuit defined for the suction group, but you may specify different discharge circuits for different compressors (useful when only a subset of the compressors are to be used for heat-reclaim).
7. If the suction-group uses a desuperheater, define and attach the desuperheater to the suction group. You may attach any number of desuperheaters to the suction group. Also attach the desuperheater to its liquid line, and if needed, its suction line (Refer to Rule #2 above regarding the input hierarchy of refg systems running at different suction temperatures). Refer to the desuperheater component for alternative attachment configurations.

8. Define and attach a suction circuit to the suction group or to one of its desuperheaters. You may attach any number of suction circuits to either the suction group and/or its desuperheaters. You may create networks of suction circuits by attaching one or more suction circuits to a previously defined suction circuit.
9. If the refig system uses a subcooler, define and attach the subcooler to the refig system. You may attach any number of subcoolers to a refig system. Also attach the subcooler to its suction line, and if needed, its liquid line (See Rule #2 regarding the input heirarchy of refig systems operating at different suction temperatures). Refer to the subcooler component for alternative attachment configurations.
10. Define and attach a liquid circuit to the refrigeration system or to one of its subcoolers. You may attach any number of liquid circuits to either the refig system and/or the system's subcoolers. You may create networks of liquid circuits by attaching one or more liquid circuits to a previously defined liquid circuit.
11. Define and attach a refrigerated fixtures to a liquid and suction circuit, and to a zone. You may attach any number of fixtures to the same or different liquid and suction circuits, and zones.
12. If an HVAC system uses either DX cooling provided by a refrigeration system, or heat reclaim from the compressor discharge, you must define the refrigeration system prior to defining the HVAC system.

Example 1: Refrigeration Input

In this example, components are grouped by refrigeration system