



## 2025 HVAC Competition

---

### FACT SHEET

#### Project Manager

##### Sam Burnett, P&L Johnson Mechanical

For questions related specifically to the HVAC competition, contact Sam Burnett at [burnett@pljmech.com](mailto:burnett@pljmech.com). For all event questions, contact Jarrell Jackson, National Craft Championships director, at (202) 595-1789 or [jackson@abc.org](mailto:jackson@abc.org).

#### Specific Competition Eligibility

The HVAC competition has no competition-specific eligibility requirements. Please refer to overall eligibility requirements listed in the guidebook.

#### Online Exam

Competitors will have one (1) hour to complete the 50-question exam. Every competitor should thoroughly understand the craft in which he/she is registered. All exams/tests are based on the standardized craft training process. In addition to the knowledge and skills required for each competition, all competitors should have completed the NCCER Core Curriculum modules. All competitors must sit for the exam or face disqualification from the NCC. The written exam makes up 25% of one's overall competition score. ABC will provide pencils, scratch paper, and a calculator for mathematical problems (if necessary). Scientific/graphing calculators and loose notes are prohibited. No reference materials are permitted. *Please refer to the 2025 NCC Guidebook for more details.*

#### Practical Performance Test Description

The practical performance test involves the reading and interpretation of blueprints, recovery, evacuation, leak test and recharge refrigerant of air conditioning equipment. Competitors must perform soldering and brazing techniques on a specific application, wire high- and low-voltage power supplies and perform electrical troubleshooting techniques. All competitors should possess basic blueprint reading skills, air conditioning and heating systems experience, including startup and commissioning of air conditioning systems, as well as knowledge of programmable thermostats, and perform some pipe threading exercises.

#### Knowledge and Skills Required

The knowledge and skills for this competition are based on all levels of the HVAC curriculum, with particular emphasis on the following modules:

- Introduction to HVAC
- Tools of the Trade
- Copper and Plastic Piping Practices
- Soldering and Brazing
- Basic Electricity
- Introduction to Cooling
- Introduction to Heating
- Introduction to Control Circuit
- Troubleshooting
- Accessories and Optional Equipment
- Leak Detection, Evacuation, Recovery and Charging
- Troubleshooting Electric Heating
- Troubleshooting Cooling
- Troubleshooting Accessories
- Troubleshooting Electronic Controls
- System Startup and Shutdown
- Pipe Threading Process

## Tools Required

Each competitor must bring the tools listed below to the competition. Tools may be examined prior to the practical performance test below.

- Digital thermometer
- Swedging tool (3/8-inch)
- Striker
- Micron vacuum gauge with additional hoses.
- Electrical Multimeter
- Electrical tape
- Small spray bottle

## Tools and equipment supplied by ABC onsite:

- Turbo torch kit
- Manifold gauge set (410A refrigerant)
- Vacuum pump
- Flaring tool
- Recovery machine with a bottle
- Refrigerant scales
- Threading machine
- Pipe vise
- Pipe cutter
- Cordless drill gun with assorted bits
- Tubing cutter and tubing reamer
- Needle-nose pliers
- Level
- Channellock pliers
- Screwdrivers (Phillips and Straight)
- Nut runners (1/4-5/16-inch)
- Tape measure
- Allen wrenches
- Adjustable wrenches
- Wire strippers
- Utility knife

## Sample Score Sheet

The following sample score sheet is provided to give competitors an example of the criteria that may be included in the practical performance test. **However, this score sheet is only a sample and not intended to act as a study guide in preparation or to imply specific criteria that will be judged during the actual practical performance test.**

**Continued on next page**

**ABC National Craft Championships  
HVAC Sample Score Sheet**

Judging Criteria	Competitor Identification Numbers				
	Maximum Points				
Soldering and brazing					
Layout of work					
Leak check					
System components					
Diagram accuracy					
Troubleshooting					
System recovery, evacuation and recharge					
Sequence of work					
Care and use of tools					
General—ability to follow directions, quality of workmanship, neatness, best use of time and completion					
Project disassembly					
<b>SUBTOTAL:</b>	<b>160</b>				
Safety—housekeeping					
Use of hard hat					
Use of safety glasses					
Use of power tools					
Proper footwear					
<b>SUBTOTAL:</b>	<b>40</b>				
<b>GRAND TOTAL:</b>	<b>200</b>				
Tie Breaker #1					
Tie Breaker #2					

SAMPLE