



## 2018 Pipefitting Competition

### FACT SHEET

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#### **Project Manager**

For questions related specifically to the pipefitting competition, contact Ronnie Balentine, 2018 NCC acting pipefitting project manager, (713) 845-7947 or rdbalentine@sbec.com. For all event questions, contact Lisa Nardone, National Craft Championships director, (202) 595-1789 or nardone@abc.org.

#### **Specific Competition Eligibility**

The pipefitting competition has no competition-specific eligibility requirements. Please refer to overall eligibility requirements listed on page 3 of the guidebook.

#### **Written Exam**

Every competitor should have a thorough understanding of 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 Contren® Learning Series Core Curriculum modules. A non-programmable calculator and a copy of Grave's Pipefitter Blue Book will be provided for the written exam.

#### **Practical Performance Test Description**

Competitors will perform three tasks utilizing various skills within the Pipefitting NCCER Contren® Learning Series curriculum. The tasks will be in the areas of threaded pipe fabrication, welded pipe fabrication and flanged pipe make-up.

##### **Pipefitting Task: Threaded Pipe Fabrication**

Each competitor will be given an isometric drawing from which to work and be required to calculate material take offs and cut lengths of pipe. The pipe will then be cut, threaded and fabricated to the drawing. They will utilize pipe threading skills, math calculating skills and threaded pipe make-up skills to complete this project. Each project will have a time limit in which it must be completed.

##### **Pipefitting Task: Welded Pipe Fabrication**

Each competitor will be given an isometric drawing from which to work and be required to use their math skills to calculate material take offs and cut lengths of pipe. There will be various types of fittings involved, such as welded fittings, socket weld fittings and slip-on fittings. The pipe will then be cut, cleaned and fabricated to the drawing specifications. Various hand tools and power tools will be used for this project. The project will be tacked together utilizing a provided tack welder. Each project will have a time limit in which it must be completed.

##### **Pipefitting Task: Flanged Make-Up**

Each competitor will bolt their fabricated pipe spools into a fixture per the fabrication iso provided so that flange alignment and bolt up skills can be assessed. Each project will have a time limit in which it must be completed.

#### **Knowledge and Skills Required**

The knowledge and skills for this competition are based on all levels of the NCCER Contren® Learning Series Pipefitting curriculum, with particular emphasis on the following modules:

- Pipefitting Hand Tools;
- Pipefitting Power Tools;
- Ladders and Scaffolds;
- Piping Systems;
- Drawings and Detail Sheets;
- Identifying and Installing Valves;
- Pipefitting Trade Math;

- Threaded Pipe Fabrication;
- Underground Pipe Installation;
- Rigging Equipment;
- Rigging Practices;
- Standards and Specifications;
- Advanced Trade Math;
- Introduction to Above-Ground Pipe Installation;
- Field Routing and Vessel Trim;
- Pipe Hangers and Supports;
- Testing Piping Systems and Equipment;
- Planning Work Activities;
- Advanced Pipe Fabrication;
- Stress Relieving and Aligning;
- Stream Traps;
- In-Line Specialties;
- Special Piping;
- Hot Taps;
- Maintaining Valves.

### **Tools Competitors Are Required to Bring**

Each competitor should bring **only the items listed below** to the competition. Items will be examined prior to the Practical Performance Test and additional tools will be stored until the competition has concluded. If a tool necessary to complete the Practical Performance Test is not listed, the National Craft Championships Committee will provide it:

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|---|--|
| ▪ Pencil  | ▪ Channel Locks  |
| ▪ Minimum of 12' measuring tape (25' is acceptable) | ▪ Long-sleeve work shirt (for grinding and tacking)  |
| ▪ Leather work gloves                               | ▪ Non-programmable construction calculator (such as Calculated Industries available at Lowes or Home Depot. Note: No Texas Instruments calculators will be allowed.) |
| ▪ 2 hole pins                                       |  |
| ▪ Torpedo level                                     |  |
| ▪ Speed square                                      |  |
| ▪ 7/8" combo wrench                                 |  |
| ▪ 1-1/16" combo wrench                              |  |

### **Tools that will be supplied by the National Craft Championship Committee**

#### **Welded Pipe Fabrication Project**

- 24" level
- 24" framing square
- Wrap around
- Soap stone
- 4" grinder w/ 1/4" disc
- Bandsaw
- Face shield
- Ball peen hammer
- Tri-pod stand w/ chain vise
- Jack stand
- Welding leads/ground
- Tack welders to be shared by all competitors

#### **Threaded Pipe Fabrication**

- 14" Pipe wrench
- 14" chain wrench
- Tri-pod w/ yoke vise
- Jack stand
- Threading machine

## 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.**

### ABC National Craft Championships Pipefitting Sample Score Sheet

Judging Criteria	Competitor Identification Numbers				
	Maximum Points				
Flange Alignment					
Proper bolt-up					
Configuration					
Threaded engagement					
Dimension tolerance					
Mock-up bolt-up fit					
Butt-hole orientation					
Pipe end preparation					
Butt-weld alignment					
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					
Safety Task Analysis					
PPE usage					
Use of hand tools					
Use of power tools					
<b>SUBTOTAL:</b>	<b>40</b>				
<b>GRAND TOTAL:</b>	<b>200</b>				
Tie Breaker #1					
Tie Breaker #2					
Tie Breaker #3					
Tie Breaker #4					