2018 SkillsUSA Championships
RESIDENTIAL PLUMBING

This information has been produced, compiled, with the guidance of the SkillsUSA Residential Plumbing Technical Committee.

This is a sample Project and may need to be modified by the Tech Committee based on time resources and materials.
SkillsUSA Championships – Plumbing Competition
2018 Contestant Book

Instruction Sheet DWV Plumbing System

Following are the instructions for the installation of the DWV plumbing system in the SkillsUSA Championships – Plumbing Competition. Refer also to the floor plan, rough-in sheets, and isometric drawings.

1. Drain and vent lines must be installed at no less than ¼” or more than ½” per foot fall.
2. All rough-in measurements shall be within ½” plus or minus.
3. All vertical vent lines shall be installed plumb and all horizontal vent lines shall be installed graded and be of PVC, with the exception of the 3” cast iron vent stack.
4. Cast iron piping (soil, waste and vent) shall be supported and anchored from the bottom of the platform using clevis hangers and all-thread rod. Use riser clamps on the cast iron risers above the platform.
5. The 3” vent stack shall terminate above the top of the wall to a point 8 ¾” to the center of the vent fitting where vents connect.
6. The top of the plywood platform shall be considered the finished floor for all fixture rough-ins.
7. The transition from cast iron to PVC will be made using PVC no-hub adapters and no-hub couplings at 7” above the finished floor.
8. The water closet, lavatory, utility tray and floor drain shall conform to the floor plan and rough-in sheets to within ⅛”.
9. Fixture location shall conform to the floor plan.
10. The water closet flange shall be secured to the floor with the appropriate screws.
11. The lavatory wall bracket shall be attached with wood screws so that the lavatory will be at the location and height specified on the rough-in sheet.
12. The trap arm for the utility tray will terminate at a height of 16” above the finished floor and will be centered on the short wall.
13. The floor drain shall be located 39” from the end of the table with the rim to sit on the finished floor.
14. The 3” cast iron horizontal branch will terminate with a 3” cast iron ¼ bend connected to a short piece of 3” PVC pipe into the effluent pit or basin. The PVC pipe will be properly attached to a 4” x 3” PVC bushing. DO NOT GLUE THE PVC Bushing INTO THE BASIN CONNECTOR!
15. The 2” PVC effluent waste discharge pipe will be piped per the Effluent Pump and Pit diagram beginning at the base of the basin.
16. The 1 ½” PVC vent pipe will be piped per the Waste and Vent drawing starting at the threaded fitting on basin top to the platform vent piping maintaining proper pitch.
17. The judges may require the system to be tested and their decision is final.

18. THINK SAFETY AT ALL TIMES THROUGHOUT THE CONTEST!
Instruction Sheet
Water Supply Plumbing System

Following are the instructions for the installation of the domestic hot and cold water supply piping system for the SkillsUSA Championships – Plumbing Competition. Refer also to the floor plan, rough-in sheets, and isometric drawings.

1. The hot and cold water supply system shall be installed in accordance with the isometric drawing. The cold water line shall be on bottom and extend \(12\)” from the center of the fittings to the end of the platform.
2. Both the hot and cold lines will be tied together with 90° ells as shown on isometric.
3. A \(\frac{3}{4}\)” x c x c tee will be installed on the hot water line that extends beyond the platform wall. Install a 5” piece of \(\frac{3}{4}\)” copper tubing pointing up at this branch location to be used for testing the system.
4. All rough-in dimensions shall be within \(\frac{1}{8}\)” plus or minus.
5. The utility tray shall be located centered on the short front wall as per drawing.
6. The lavatory, water closet and utility tray supply lines shall be installed according to the floor plan and rough-in sheets.
7. All water piping must be true to the workstation with piping level and plumb.
8. Branch supplies shall extend beyond the wall of the platform with sufficient length to receive the fixture trim. The supply lines are to be connected to the lavatory faucet.
9. Piping must be neat and securely fastened using accepted industry standards for workmanship.
10. Completed projects will be tested. Provisions for testing are to be made at the \(\frac{3}{4}\)” x c x c tee with a 5” leg up, which is to be considered the water main.
EFFLUENT PUMP AND PIT
DRAWING NOT TO SCALE

1 3/4" VENT PIPING
TO PLATFORM VENT SYSTEM

2" DISCHARGE PIPE
TO EXISTING SANITARY
DRAINAGE SYSTEM

SPLIT RING SUPPORTS

CHECK VALVE

BASIN COVER

NORMAL
FLOOR LEVEL

3" HORIZONTAL
DRAIN LINE

CENTERLINE
OF HUB

4" INLET HUB

BASIN

CONFERENCE FLOOR
JACKEL, INC.
UNIVERSAL COMBO HUB (PATENT PENDING)
ASSEMBLY INSTRUCTIONS

1. From outside tank, set hub body (1) with gasket (2) through basin inlet hole (stop marked with ▲ and "TOP") radius seal facing as shown.

2. Place seal washer (3) and back ring (4) over body (1) from inside basin (align on key for location, top marked directly over key location).

3. Screw on nut (5) and hand tighten.

4. Solvent weld DWV SCH. 40 pipe into socket.

JACKEL PART # 20001F © JACKEL, INC. 1998

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CLOSET ROUGH-IN
SkillsUSA Plumbing Contest

Lavatory Rough-In Sheet

Technical Information
All product dimensions are nominal.
Bowl configuration: Single
Installation: Wall-mount
Bowl area (Only) Length: 16" (457 mm)
Width: 12" (305 mm)
Water depth: 4" (102 mm)
Number of deck holes: 3
Faucet hole(s): 1-1/4" (32 mm)
Drain hole: 1-3/4" (44 mm)
UTILITY TRAY
ROUGH-IN

Diagram of a utility tray with dimensions: 4" x 4" x 15" x 23"