

# CTechP General Knowledge Assessment

## Topic List

50 Questions

### Hydraulics

15 Questions, 15 Topics

- Espresso Brewing System Components
- Steam System Components
- Steam System Safety Components
- Batch Brewers Hydraulic Components
- Water Heater Tank Safety Components
- Brew Water System in Heat Exchanger Espresso Machine
- Steam System in Espresso Machines
- Potential Risks of Water Expansion Pressure
- Potential Risks of Steam
- Potential Risks of Vacuum Generation
- Steam Boiler Pressure and Brewing Temperature Relationship
- Hydraulic Tubing & Piping
- Hydraulic Fittings
- Confirming Supply Line Pressure
- Confirming Flow Rate

### Electrical

25 Questions, 25 Topics

- Heating Elements
- Liquid Level Probes
- Heating Element Circuits
- Espresso Machine Brewing Circuits
- Espresso Machine Autofill Circuits
- Equipment Grounding
- Residual Current Devices
- Safety Interlock Switches
- Circuit Breakers and Fuses
- Thermal Cutoff Switches and Thermal Fuses
- The Electrical Circuit
- Voltage
- Electric Current
- Resistance
- Electrical Power
- Ohm's Law
- Watt's Law
- Alternating Current
- Isolating a machine from its power source

- Working on live equipment
- Safety checks after completion of service
- Digital Multimeter Functions
- Electrical Wire Ratings
- The Data Plate
- Additional Steps Before Connection

### Water & PM

10 Questions, 10 Topics

- Sanitary Quick-change Cartridge System Components
- Reverse-Osmosis System Components
- Total Hardness and Alkalinity
- Temporary and Permanent Hardness
- Total Dissolved Solids Estimation
- Effects of Water Softening
- Effects of Reverse Osmosis Filtration
- Effects of Remineralization
- Using a Drop-Count Titration Kit
- Maintaining a Cartridge System