



NY - G E O 2024



APRIL 8-9 | ALBANY NY

New IGSHPA Installation and Service Technician Certifications

- Speakers:**
- Jeff Hammond / [IGSHPA](#)
 - John Thomas / [WaterFurnace International](#)
 - Ed Davis / [Enertech Global](#)
 - Mike Hammond / [ClimateMaster](#)

New IGSHPA Installation & Service Technician Certifications



Jeff Hammond

Executive Director, International Ground Source Heat Pump Association

John Thomas

President & CEO, WaterFurnace

Ed Davis

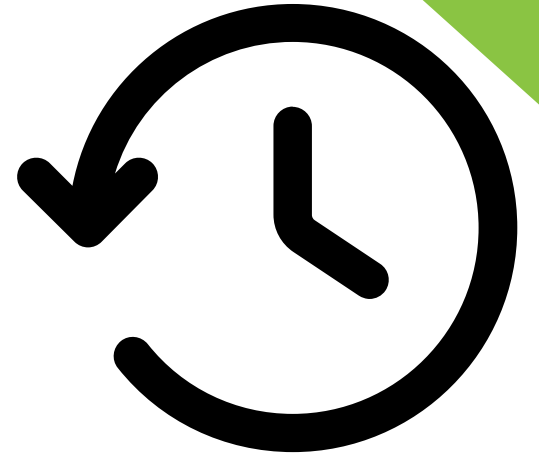
Vice President of Sales, Enertech Global

Mike Hammond

Regional Sales Manager, ClimateMaster

& Subcommittee Chair, IGSHPA Service & Installation Modules

Some Background ...



- Accredited Installer (AI)
 - Developed by Oklahoma State University in the late 1980s
 - Residential/Light Commercial GHEX Design and HVAC System Integration
 - Created for installers, contractors, dealers, manufacturers, distributors, architects, mechanical engineers, trenching/drilling contractors
 - Provides NATE (North American Technician Excellence) and IGSHPA certification
 - Currently our most popular course

Why Change?

- As the industry grows, we need more ...
 - Driller technicians/excavators
 - HVAC technicians
 - Pipefitters
 - Designers
 - Inspectors
- Accredited Installer is “start to finish” (design, installation, start-up)
 - Need to break into modules to allow specialization by job

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Modularization

- New training modules based upon DOE job descriptions
 - 2013 report (GHPC, IGSHPA, ORNL, NGWA, & others)
 - 14 jobs related to the geothermal heat pump industry
- Increases accessibility to training
- Lowers cost of training
- Allows specialization (by job function)
- Provides pathway to career growth

Modularization

- Accredited Installer (AI) course broken up into ...
 - Installation Technician (inside equipment)
 - Installation Technician (outside the building)
 - Driller Technician / Grouter
 - Service Technician
 - Fusion Technician / Tie-in Crew
 - Residential/Light Commercial Designer
- Other courses (Commercial Designer, Inspector) in the process of being updated for the latest technology /applications



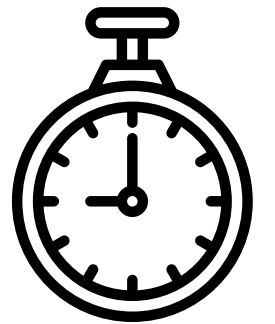
First 3 Modules

- Installation Technician (Inside/HVAC)
- Service Technician
- Residential Designer



Installation Technician (Inside/HVAC)

- Part 1: Setting the Indoor Packaged Unit
- Part 2: Indoor Piping
- Part 3: Loop Air Purge, Debris Flush and Fill
- Part 4: Heat Transfer Fluid Overview
- Part 5: Heat Transfer Fluid Tools & Testing
- Part 6: Open Loop/Well Water Applications
- Part 7: Equipment High/Low Voltage Wiring & Controls
- Part 8: Condensate Drain and Optional: Domestic Water Heating
- Part 9: Split System Units
- Part 10: Unit Pre-Start Up Review
- Part 11: Unit Start Up & Performance Verification



*1 day
course*

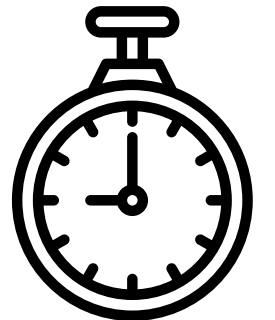
Learning Outcomes – Install Tech

- Upon completion of this training program, each participant should be able to:
 - Properly install indoor equipment
 - Understand the importance of good duct work for the indoor unit
 - Properly pipe the indoor unit and water side accessories
 - Understand antifreeze solutions and requirements
 - Use the proper tools to fill and purge debris/air from the closed loop system
 - Properly pipe Open Loop unit applications
 - Properly pipe Hot Water Generator (Desuperheater) to Domestic Water Tanks
 - Properly install indoor Split Systems
 - Complete a proper Pre-Startup, Startup and Final Checkout of the equipment



Service Technician

- Part 1: Waterside Service and Diagnostics
- Part 2: Open Loop/Well Water Diagnostics and Service
- Part 3: Unit Troubleshooting
- Part 4: Troubleshooting – ECM Blowers
- Part 5: Best Practices – Refrigeration
- Part 6: Refrigeration Principles
- Part 7: Servicing Beyond The Unit



*1 day
course*

Learning Outcomes - Service Tech

- Upon completion of this training program, each participant should be able to:
 - Use and understand the essential service procedures to provide routine maintenance and diagnostic tests.
 - Explain how to properly diagnose and replace a Flow Center Pump.
 - Understand Pressurization and Diagnose Air on a Closed Loop system.
 - Use the proper tools to fill and purge debris/air from a closed loop system.
 - Understand ECM blower motor troubleshooting procedures.
 - Explain and understand the components used in the refrigeration circuit.
 - Properly diagnose Subcooling and Superheat on the refrigeration system.
 - Measure and Verify proper performance of the equipment.

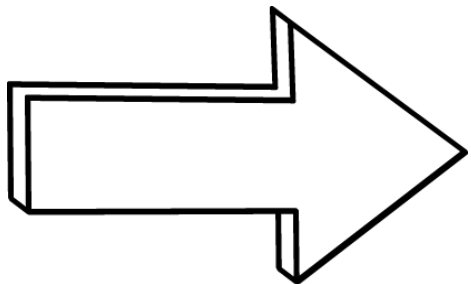


In the works: Advanced Service Tech



Industry Agreement

- Meetings with Bosch, ClimateMaster, Enertech, and WaterFurnace late 2021 to early 2022
- These 4 manufacturers agreed to teach the new install tech and service tech in place of their current installation & service training
 - Add in brand specific information (e.g., controls, specific equipment types)



One-stop shop!

1. IGSHPA Certificate
2. Manufacturer's training

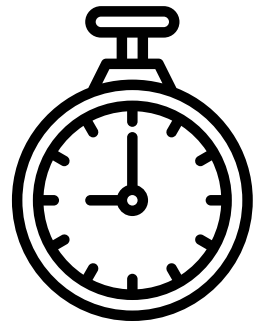
Development of Install & Service Tech Modules (Inside the Building – HVAC)

- Trainers on committee* and training material from...
 - Bosch
 - ClimateMaster
 - Enertech
 - WaterFurnace
- Agreement on materials to be taught by all 4 manufacturers
- Trial run was at Iowa Geothermal Conference in February 2024
- Slides, student materials, trainer materials finalized April 3, 2024
- Training may be scheduled starting late April 2024!

*Training subcommittee chair: Mike Hammond, ClimateMaster

Residential Designer

- Unit 1: Introduction and Overview
- Unit 2: Pre-course and Standards Overview
- Unit 3: Review Building Loads
- Unit 4: Heat Pump
- Unit 5: Source Heat Exchanger
- Unit 6: Heat Exchanger Design
- Unit 7: Pumping and Interior piping
- Unit 8: Interior Load Distribution System
- Unit 9: Controls System Requirements
- Unit 10: Multi Unit System
- Unit 11: Design Document



*2 day
course*

Learning Outcomes – Resid. Designer



- Upon completion of this training program, each participant should be able to:
 - Design a system from start to finish, given a simplified set of plans for a small residential system (single unit)
 - Design a system from start to finish, given a simplified set of plans for a large residential system (three units)

Modularization Progress

- Installation Technician (Inside Equipment)
- Service Technician
- Residential/Light Commercial Designer
- Commercial Designer
- Geothermal Inspector
- Other modules

- Driller training / apprenticeship programs

COMPLETE (April 2024)

COMPLETE (April 2024)

Fall 2024

Summer 2025

Summer 2025

End of 2025

Working with
community colleges,
labor unions,
other organizations

What Will Happen to AI?

- Accredited Installer (AI) won't go away any time soon
 - Required by some incentive/state programs
- Eventually, when modules are complete:
 - AI will be equivalent to: module 1 + module 2 + module 3 + ...
 - Matrix of paths to various certifications will help determine career paths
 - AI can be “retired”
- AI recertification will continue to be available

WaterFurnace Perspective

John Thomas , President & CEO

WaterFurnace®

Smarter from the Ground Up™



Enertech Perspective

Ed Davis, Vice President of Sales



ENERTECH[®]

ENERGY + TECHNOLOGY

ClimateMaster Perspective

Mike Hammond, Regional Sales Manager

➤ Subcommittee Chair, Service & Installation Modules



CLIMATEMASTER®



Questions



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