Daikin Learning Institute
2020 Training Catalog

The Industry Source for Advanced HVAC

Daikin Learning Institute delivers training essential to the success of your business and employees. Join us for top-quality, product-specific programs designed to provide proficiency in the operation, maintance, and service of today's advanced HVAC technology.

IACET Accredited. IACET CEU Authorized.

Daikin Applied is accredited by the International Association for Continuing Education and Training (IACET) and is authorized to issue the IACET CEU. We comply with IACET standards for courses awarding Continuing Education Units (CEUs).

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Welcome to Daikin Applied

Part of the largest HVAC company in the world

Daikin Applied delivers engineered, flexible solutions for commercial, industrial and institutional HVAC requirements. We offer reliable products, knowledgeable applications expertise and responsive support.

Daikin Applied is part of Daikin Industries, a Fortune 1000 company and the largest air conditioning, heating, ventilating and refrigeration company in the world. The company has earned a worldwide reputation for providing a full line of quality products and expertise to meet the demands of our customers.

Safety. Knowledge. Proficiency. Success

Daikin Learning Institute

Once you have made the investment in efficient, flexible Daikin HVAC equipment, taking care of your investment should be a top priority. Daikin Learning Institute offers technical service training courses to learn first hand, from the manufacturer, what it takes to get the most out of your mechanical system.

Daikin Learning Institute offers industry-leading training programs for:

- heating, ventilating, and air conditioning (HVAC) professionals
- owner/operators
- contractors and service technicians
- designers, distributors, and sales reps
- internal employees

Daikin Learning Institute Safety Statement

The goal of Daikin Learning Institute is to provide product specific training, safe work procedures, and the information needed to be proficient in operating and servicing Daikin products.

Knowledge and formal training of an applicable safe working culture, competency, practices and procedures for working in the HVAC field is the obligation of the employer and individual prior to attending Daikin Applied equipment training.

Enrollment

Payment, Scheduling, Registration, Logistics

First-registered. First-attend.

Class size is limited and is offered on a first-registered, first-attend basis.

Matching students to courses

Training is most effective when students are matched with the appropriate courses. Use the course content descriptions and learning outcomes to determine if the course matches the learning need.

Two ways to enroll

You can enroll by completing the print or electronic enrollment form.

- Complete a printed registration form and mail to:
  Daikin Applied/Attn: Daikin Learning Institute
  13600 Industrial Park Blvd. Plymouth, MN 55441
  Email to: daikinlearning@daikinapplied.com
- Complete the online enrollment form at www.DaikinApplied.com and submit electronically.

Confirmation

Confirmation of enrollment

- Confirmation of enrollment will be sent to the student within five business days after receipt of a paid registration. In the unlikely instance that a confirmation is not received within the specificed time, contact the Training Administrator, as we may not have received your application.
- When received, verify that all information listed on your confirmation is correct. Should changes need to be made, contact the Training Administrator at daikinlearning@daikinapplied.com. **Registrations received without tuition paid in full, will not reserve your space.**
- If a class is full, we will contact the enrollee for standby or provide an alternate class date.

Payment

Payment must be received in advance of the training course.

Daikin Learning Institute will transition to a credit card only payment option in early 2020. Payment will be required in advance to process your enrollment.

Course Scheduling

Most classes are 8:00 am - 5:00 pm

Classes begin at 8:00 AM and end at 5:00 PM (unless noted otherwise). Half days noted on the schedule are completed by noon of the last class date shown on the calendar. Travel arrangements should be made to accommo-date this schedule.

Cancellation Policy

Cancellations, substitions, and schedule changes

Within 10 working days. Registrations cancelled within 10 working days prior to the course start date will be charged the full course fee.

Less than four weeks. Cancellations made less than four weeks prior to the course start date will be charged 50% of the course fee.

Substituting attendees. An alternate person may use a confirmed space without penalty and substitutions may be made up until the start of class. It is the student's responsibility to cancel hotel reservations.

Daikin Learning Institute reserves the right to make changes or alterations to the course content or schedule. Daikin Learning Institute is not responsible for airline fees associated with changing dates or cancellation of classes. In the unlikely event of a schedule change or cancellation, every effort will be made to notify all registrants in a timely manner.

Training Materials

Training materials included in price of course.

Materials may include books, printed PowerPoints, flash drives and other re-sources. Please plan accordingly for transporting materials back to your location.

Continuing Education Units (CEU's)

Awarding CEUs.

Students will review, discuss and be tested on learning outcomes at the conclu-sion of the courses where CEUs are awarded, Sucessful completion requires a passing score.

Hotel Information

Hotel reservations are student responsibility.

Students are responsible for making their own hotel arrangements.

Transportation

Transportation to training center is student responsibility.

Students are responsible for their own transportation to and from the training center. Hotels may not provide shuttle service, so check with them when making your reservations.

Factory Tours

Personal protection provided for tours.

The appropriate personal protection equipment will be provided if your course includes a facility tour.

Students are required to wear steel toe shoes during the plant tour, at all times when passing through the production areas, to and from the cafeteria through the plant and when partidipating in the hands-on teardown and assembly of the compressors. Safety glasses will be availabe for plant tours. Safety shoes are mandatory during compressor service courses.

Dress Code

Dress Code and safety

Our dress code is business casuel. No open toe shoes or shorts please. Safety shoes are required when entering the production facility and for specific courses as noted.

Off-Campus Training Technical Service

Off-Campus training in your area

Daikin Learning Institute offers commercial HVAC equipment operation and maintenance training programs at your location.

Note: Course scheduling based on trainer availability. Course fees based on number of courses attendees and travel required. A minimum number of students is required.

Off-campus training can be scheduled for these courses:

- Principles of Air System Design
- Principles of Chiller Plant Design
- Principles of HVAC
- Principles of Refrigeration
- Installing and Configuring Intelligent Solutions®
- Scroll Chiller Maintenance, Operation and Service
- Air and Water-Cooled Screw Compressor Chiller Maintenance, Operation and Service for Legacy equipment
- Air and Water-Cooled Screw Compressor Chiller Maintenance, Operation and Service for Pathfinder® equipment
- Centrifugal Chiller Maintenance & Operation
- Magnitude WMC® Magnetic Bearing Model Chiller Maintenance & Operation
- Magnitude WME® Magnetic Bearing Model Chiller Maintenance & Operation
- MicroTech III Controls Module 5 for Applied Air Systems (Modules 1-4 are online courses in the Daikin LMS and arerequired in advance to attend the one day instructor-led course)
- Rooftop Packaged Unit, Rebel and Self-Contained Unit Operation & Maintenance (MT III Modules 1-4 online and Module 5, instructor led, are prerequisites for the product training
- VFD Installation & Operation

Contact the Daikin Learning Institute to schdule off-campus training at your location at email: daikinlearning@daikinapplied.com

Visit the Daikin Applied website for current schedules: www.daikinapplied.com

Off-Campus Training Terms & Conditions

Off-Campus Training Terms & Conditions

Training at customer facilities complies with the following terms and conditions.

Recording of classes: Audio or video recording of training sessions may be made only with Daikin's prior express written permission. Any permitted recordings are subject to these terms and conditions.

- Content rights: All materials relating to training remain the property of Daikin Applied. Copies or distribution of such material may be made only with Daikin's express prior written consent.
- Payments: All training sessions will be billed upon order. Payments will be subject to Daikin's standard terms and conditions. If payment is past due at the scheduled start date of the training, the instructor will perform training at the sole discretion of Daikin Applied.
- Responsibilities: The customer is responsible for facilities, meals and logistics related to the training unless prior arrangements have been made with Daikin Applied. Daikin Applied assumes no responsibility for these items. Daikin will provide training and materials for the number of registered participants. There will be an added charge for additional students, based on the original price per student.
- Scheduling: Training is by appointment only. Availability of instructors is at the sole discretion of Daikin Applied.
- Content: The purpose of training is to provide customers with information valuable to the operation or maintenance of their equipment. Daikin retains the right to determine appropriate content for the agreed-upon topic.

Warranty and Disclaimer

Training information will be materially similar to that used by Daikin Applied in training its own technicians. In the event it is not, Daikin will provide corrected, updated, or additional information, or, at its option, refund a pro rata portion of the price. THIS IS THE ONLY WARRANTY AND THE CUSTOMER'S ONLY REMEDY WITH REGARD TO TRAINING. THERE ARE NO OTHER WARRANTIES, EXPRESS OR IMPLIED. WITHOUT LIMITING THE FOREGOING, THERE ARE NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. UNDER NO CIRCUMSTANCES WILL DAIKIN BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. Because of the variation among participants' experience, prior training, and learning abilities, Daikin does not warrant that any particular student will attain any particular level of expertise or competence and does not warrant any particular results of the training. The customer must satisfy itself as to the applicability and sufficiency of the training for its facility and resources. The customer will defend, indemnify, and hold Daikin harmless against any claim arising out of or related to training, and will waive subrogation of any such claim. Daikin may modify these terms and conditions at any time, in its sole discretion, and such modifications shall be effective immediately upon posting.

Two types of training. Endless benefits.

HVAC Theory and Design / Technical Service Training

Daikin Learning Institute offers two types of training: HVAC Theory & Design and Technical Service Training.

HVAC Theory and Design includes:

- Principles of Air System Design
- Principles of Chiller Plant Design
- Principles of HVAC
- Principles of Refrigeration

Technical Service training includes:

Screw and Scroll Chillers

- Scroll Chiller Maintenance, Operation and Service
- Air and Water Cooled Screw Compressor Chiller Maintenance, Operation and Service for Legacy equipment
- Air and Water Cooled Screw Compressor Chiller Maintenance, Operation and Service for Daikin Pathfinder® equipment

Centrifugal Chillers

- Centrifugal Chiller Maintenance and Operation
- Centrifugal Chiller Service
- Centrifugal Chiller Compressor Service and Repair
- Magnitude® WMC Magnetic Bearing Chiller Service and Repair
- Magnitude® WME Generation-I Magnetic Bearing Chiller Service and Repair

Applied Air

- MicroTech® III Controls Course for Applied Air Products
- Rebel® Rooftop Service
- Rooftop Service (Maverick® and Roofpack®)
- Installing and Configuring Intelligent Solutions®
- Self-contained Units Service
- Water Source Heat Pump
- VFD Installation and Operation

Note: We may add or remove courses in either track (HVAC Theory and Design or Technical Service Training) based on customer need. Click here for fees, locations, course dates, and prerequisites.

2020 Training Calendar

2020 Daikin Learning Training Calendar

Course Title	Models	Tuition	Length	Location	2020 Dates
Principles of Air Systems Designs	General	$1200	4 days	Plymouth, MN Plymouth, MN	Apr 6-9 Nov 9-12
Principles of Chiller Plant Design	General	$1500	5 days	Plymouth, MN Plymouth, MN	Apr 20-24 Dec 7-11
Principles of HVAC	General	$1200	4 days	Plymouth, MN Plymouth, MN	Mar 9-12 Oct 5-8
Principles of Refrigeration	General	$900	3 days	Plymouth, MN Plymouth, MN	Mar 31-Apr 2 Nov 3-5
Scroll Chiller Maintenance, Operation and Service	AGZ, WGZ	$1750	4-5 days	Staunton, VA Staunton, VA	Apr 13-17 Aug 10-14
Air & Water-Cooled Screw Chiller Maintenance, Operation & Service for Legacy Equipment	AGS, WGS	$1750	4 days	Staunton, VA	Feb 24-27
Air & Water-Cooled Screw Chiller Maintenance, Operation & Service for Pathfinder® Equipment	AWS, AWV, WWV	$1750	4 days	Staunton, VA	Apr 20-23 Aug 17-20
Centrifugal Chiller Service	WSC, WDC, WCC	$1600	4.5 days	Staunton, VA	May 4-8 Dec 7-11
Centrifugal Chiller Compressor Service & Repair	WSC, WDC, WCC	$3200	3.5 days	Staunton, VA	May 11-14 Dec 14-17
Magnitude® WMC Magnetic Bearing Centrifugal Chiller Service & Repair	WMC	$2600	4.5 days	Staunton, VA Staunton, VA Staunton, VA Staunton, VA	Mar 23-27 Apr 27-May 1 Sep 14-18 Nov 9-13
Magnitude® WME Generation-I Magnetic Bearing Centrifugal Chiller Service & Repair	WME	$2600	4.5 days	Staunton, VA	Nov 16-20
Installing and Configuring Intelligent Solutions	General				

2020 Daikin Learning Training Calendar (continued)

Course Title	Models	Tuition	Length	Location	2020 Dates
MicroTech® III Service - Applied Air (Modules 1-5) prerequisite for Rooftop, Rebel and Self-Contained Courses (Modules 1-4 are assigned on Daikin LMS online and is required prior to attending Module 5 instructor-led)	MT III	$550	1 day	Atlanta, GA Plymouth, MN Plymouth, MN Plymouth, MN Plymouth, MN Irvine, CA Davie, FL	Feb 4 Mar 24 Apr 14 Sep 1 Sep 29 Oct 20 Nov 10
Rebel Service *MicroTech® III Modules 1-5 (prerequisite)*	DPS	$550	2 days	Plymouth, MN Plymouth, MN Davie, FL	Apr 15-16 Sep 2-3 Nov 11-12
Rooftop Service *MicroTech® III Modules 1-5 (prerequisite)*	Maverick® Roofpak®	$550	2 days	Feb 5-6 Mar 25-26 Oct 21-22	Feb 5-6 Mar 25-26 Oct 21-22
Self-Contained Service *MicroTech® III Modules 1-5 (prerequisite)*	SWP	$550			*Available only upon special request and 10 minimum*
Water Source Heat Pump	Enfinity, Console, Vertical, Horizontal	$550			*Available only upon special request and 10 minimum*

HVAC Theory & Design Training

Principles of Air System Design

Course Name

Principles of Air System Design

Course Description

Learn everything from basic theory and fundamentals of heat transfer, fluid dynamics and psychrometrics to air-side application theory, fan and coil selection, duct design, and air-side controls.

Several building types will be used in simulated interactions between design engineers and sales engineers regarding hypothetical new construction and renovation projects.

Who Should Attend

Sales and application engineers and technicians

Prerequisites

Mechanical engineering degree or other engineering discipline with experience in building systems. Completion of Principles of HVAC strongly recommended.

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Define air distribution methods and their pros and cons
- Analyze psychrometrics and its use in HVAC design
- Identify heating and cooling coil design and application
- Assess fan types and their use in various applications
- Distinguish the two most common methods of duct design
- Learn fundamental acoustics in air-side systems
- Understand DOAS and heat recovery system
- Distinguish common codes and standards used in air-side design

HVAC Theory & Design Training

Principles of Chiller Plant Design

Course Name

Principles of Chiller Plant Design

Course Description

Learn hydronics, pump design, condenser water systems, building loads and diversity, terminal devices, constant and variable-flow systems, chiller plant variations and optimization, energy recovery, thermal storage, process applications, district cooling and mechanical room safety.

The course includes industry examples utilizing plans and specifications as homework assignments.

Who Should Attend

Sales and application engineers and technicians

Prerequisites

Engineering degree or strong technical background. Completion of the Principles of Refrigeration is strongly recommended.

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Demonstrate knowledge of pump design and selection
- Assess how building load profiles affect chiller plant design
- Learn all forms of chiller plant design including constant and variable-flow systems, how they work, and how they are controlled
- Identify low temperature differential (ΔT) issues across the evaporator and how to resolve thenm
- Analyze chiller plant optimization for energy efficiency
- Distringuish what systems work best within different applications

HVAC Theory & Design Training

Principles of HVAC

Course Name

Principles of HVAC

Course Description

Learn the foundation and principles of heating, ventilation and air conditioning. Students will be introduced to plans and specs, psychrometrics, space and building loads, acoustics, motors and VFDs, indoor air quality, electrical power distribution, hydronics and pumps, controls theory and components, and the BAS industry. Workshops and homework assignments allow students to practice skills learned in the class.

Who Should Attend

Sales and application engineers and technicians

Prerequisites

Engineering degree or strong technical background with 0-5 years of field experience.

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Interpret the construction industry, the design process, and plans and specs
- Apply psychometrics, thermal comfort
- Analyze controls theory and basic control components
- Demonstrate knowledge of acoustics for HVAC equipment
- Define controls integration and electrical power distribution
- Assess motor and variable frequency drive operation and theory

HVAC Theory & Design Training

Principles of Refrigeration

Course Name	**Principles of Refrigeration**
Course Description	Learn the foundation and get a thorough understanding of the refrigeration circuit, the heart of the HVAC system. Students will be introduced to the fundamentals of thermodynamics and heat transfer, PH diagrams, ideal refrigeration circuits, heat exchanger and compressor design, refrigerants and refrigerant piping. Hands-on application and homework assignments allow students to proactice skills they learn in class.
Who Should Attend	Sales and application engineers and technicians
Prerequisites	Engineering degree or strong technical background with 0-5 years of field experience.
Learning Outcomes	Upon successful completion of this course, students will be able to: • Understand refrigeration system design including single and multi-stage-systems • Assess refrigeration modification including sub-cooling, hot-gas reheat and hot-gas bypass • Distinquish the strengths and weaknesses of different compressor types as well as appropriate situations to apply them • Analyze how refrigeration systems should be applied to deliver efficient and reliable performance • Identify advanced technology, such as magnetic bearing compressors, and how it benefits building owners and their customers • Define current types, polikcies and environmental issues surrounding refrigerants

Technical Service Training

Scroll Chiller Maintenance, Operation & Service

Course Name

Scroll Chiller Maintenance, Operation & Service

Course Description

Learn the AGZ and WGZ product features, installation requirements, and service procedures for Daikin commercial Reciprocating and Scroll compressor products.

Who Should Attend

Maintenance and service technicians

Prerequisites

None

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Analyze
  - Chilled-water systems
  - Operational data using log sheets and fault history
  - Define AGZ & WGZ unit components and chiller cycle review
- Identify different types of chillers and their manufacturing processes during a plant tour and product review
- Interpret wiring diagrams, legends, symbols and notes
- Evaluate split systems and field piping
- Troubleshoot motor protection and semi-hermetic & scroll compressors
- Operate
  - MicroTech® controls using hands-on lab session
  - Program MicroTec® chiller controllers and capacity controls systems
- Describe
  - Operation and design of Scroll compressors
  - Refrigerant safety practices
- Perform general maintenance & service

Technical Support

Upon completion of this training course, students will be provided access to the Daikin Applied Chiller Technical Response Center for a period of three years. Technical assistance is limited to products(s) where the student successfully completed training.

Technical Service Training

Air & Water-Cooled Screw Chiller Maintenance, Operation & Service Course for Legacy Equipment

Course Name

Air & Water-Cooled Screw Chiller Maintenance, Operation & Service Course for Legacy Equipment

Course Description

Learn the product features, operation, maintenance and service requirements for Daikin Screw chiller products. Products covered include AGS and WGS air-cooled Screw chillers

Who Should Attend

Maintenance technicians and building engineers

Prerequisites

None

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Define and analyze the basic cycle of air and water-cooled chillers
- Distinguish:
  - Difference between DX and flooded evaporators
  - Between the different software versions for specific Daikin Applied products
- Describe Screw compressor and chiller design and components
- Identify
  - And operate MicroTech® Microprocessor controls for AGS and WGS during hands-on lab sessions
  - Chilled-water and condenser-water systems
- Assess Electronic Expansion Valve (EXV) operation
- Diagnose and maintain Solid-State, Wye Delta & VFD Starters
- Perform general maintenance and service, evacuation, refrigerant and oil charging procedures
- Analyze operational data using log sheets and fault history

Technical Support

Upon completion of this training course, students will be provided access to the Daikin Applied Chiller Technical Response Center for a period of three years. Technical assistance is limited to products(s) where the student successfully completed training.

Technical Service Training

Air & Water-Cooled Screw Chiller Maintenance, Operation & Service Course for Daikin Pathfinder® Equipment

Course Name

Air & Water-Cooled Screw Chiller Maintenance, Operation & Service Course for Daikin Pathfinder® Equipment

Course Description

Learn the product features, operation, maintenance and service requirements for Daikin Screw chiller products. Products covered include AWS, AWV and WWV air-cooled Screw chillers

Who Should Attend

Maintenance technicians and building engineers

Prerequisites

None

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Define and analyze the basic cycle of air and water-cooled chillers
- Distinguish:
  - Difference between DX and flooded evaporators
  - Between the different software versions for specific Daikin Applied products
- Describe Screw compressor and chiller design and components
- Identify
  - And operate MicroTech® Microprocessor controls for AWS, AWV and WWV during hands-on lab sessions
  - Chilled-water and condenser-water systems
- Assess Electronic Expansion Valve (EXV) operation
- Diagnose and maintain Solid-State, Wye Delta & VFD Starters
- Perform general maintenance and service, evacuation, refrigerant and oil charging procedures
- Analyze operational data using log sheets and fault history
- Secure removal and replacement of compressors and compressor drives

Technical Support

Upon completion of this training course, students will be provided access to the Daikin Applied Chiller Technical Response Center for a period of three years. Technical assistance is limited to products(s) where the student successfully completed training.

Technical Service Training

Centrifugal Chiller Service

Course Name

Centrifugal Chiller Service

Course Description

Learn to troubleshoot and service the Daikin Centrifugal Chiller.

Note: Many students choose to combine Centrifugal Chiller Service and Centrifugal Chiller Service and Compressor Repair. They are offered back-to-back for convenience.

Who Should Attend

Students should have a minimum of 5 years' experience with Centrifugal chill-ers to maximize the benefit of this course.

A mechanical contractor doing installation, maintenance and repairs of centrifu-gal chillers is eligible to send qualified technicians to this course. The techni-cian should have a good working knowledge of the refrigerant cycle, power and control circuitry, and be skilled in the use of standard service tools and electri-cal meters.

Prerequisites

This course is a prerequisite for *Centrifugal Chiller Compressor Service and Repair.*

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Define and analyze the basic cycle of water-cooled chillers
- Identify:
  - Centrifugal compressor components and describe operation
  - Different types of chillers and their manufacturing processes during a plant tour and product review
  - Components of compressor starters, solid-state and VFD starters
- Troubleshoot:
  - Compressor lubrication circuit
  - Adjust inlet guide vane control system
- Describe:
  - MicroTech 200 and MicroTech II control system components and func-tion and interpret wiring diagrams, legends, symbols and notes
  - Describe MicroTech® system software and operation
- Analyze:
  - Flooded evaporator with EXV control
  - Interpret operational data using MT III trends and log sheets
- Operate MicroTech® controls during hands-on lab sessions
- Assess and operate cooling tower operation and maintenance
- Optimize performance with compressor VFD controls
- Perform Centrifugal chiller maintenance

Technical Support

Upon completion of this training course, students will be provided access to the Daikin Applied Chiller Technical Response Center for a period of three years. Technical assistance is limited to products(s) where the student successfully completed training.

Technical Service Training

Centrifugal Chiller Compressor Service and Repair

Course Name

Centrifugal Chiller Compressor Service and Repair

Course Description

Learn to dissassemble and reassemble Daikin compressors, to fit and adjust internal operation parts, and to understand normal compressor functions that allow technicians to diagnose the cause of deviations from the norm.

Who Should Attend

Students should have a minimum of 5 years' experience with Centrifugal chill-ers to maximize the benefit of this course.

A mechanical contractor doing installation, maintenance and repairs of centrifu-gal chillers is eligible to send qualified technicians to this course. The techni-cian should have a good working knowledge of the refrigerant cycle, power and control circuitry, and be skilled in the use of standard service tools and electri-cal meters.

Prerequisites

Centrifugal Chiller Service is required prior to attending *Compressor Repair*. Courses are offered back-to-back for convenience.

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Perform centrifugal compressor repair procedures and processes
- Disassemble and reassemble compressors. The class rotates between the following 3 groups: CE050 and CE079, CE063 and CE087, and CE100 and CE126 and Oil loss analysis and testing
- Troubleshoot and solve oil-loss issues

Technical Support

Upon completion of this training course, students will be provided access to the Daikin Applied Chiller Technical Response Center for a period of three years. Technical assistance is limited to products(s) where the student successfully completed training.

Technical Service Training

Magnitude® WMC Magnetic Bearing Centrifugal Chiller Service & Repair

Course Name

Magnitude® WMC Magnetic Bearing Centrifugal Chiller Service & Repair

Course Description

Learn how to maintain, operate, troubleshoot, and repair Magnitude® WMC Magnetic Bearing Chillers. Compressor monitor software is provided.

Who Should Attend

Maintenance and service technicians

Prerequisites

Students should have a minimum of 5 years' experience with Centrifugal chillers to maximize the benefit of this course. The Magnitude chiller uses a centrifugal compressor that has advanced technology.

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Define and analyze the basic refrigeration cycle of water chillers
- Distinguish the three different vintages of WMC chillers
- Describe
  - Magnetic bearing with VFD compressor design and operation
  - Purpose and function of WMC part-load-balance valves
- Identify
  - Different types of chillers and their manufacturing processes during a plant tour and product review
  - Describe the hardware & software of MicroTech® II for the WMC control system
- Operate
  - Compressor monitor software interface (computers recommended with Windows XP or later)
  - MicroTech® II controls usinbg hands-on lab sessions
- Analyze
  - Flooded evaporator with EXV control
  - Operational data using MT II trends and log sheets
- Perform
  - Compressor repair & diagnostics
  - WMC chiller maintenance
- Utilize compressor test harness (provided) for safe testing

Technical Support

Upon completion of this training course, students will be provided access to the Daikin Applied Chiller Technical Response Center for a period of three years. Technical assistance is limited to products(s) where the student successfully completed training.

Technical Service Training

Magnitude® WME Generation-I Magnetic Bearing Centrifugal Chiller Service & Repair

Course Name

Magnitude® WME Generation-I Magnetic Bearing Centrifugal

Chiller Service & Repair

Course Description

Learn how to maintain, operate, troubleshoot, and repair the Magnitude® WME magnetic bearing chillers. Compressor service software is provided. This course includes an introduction to WME Generation II.

Who Should Attend

Maintenance and service technicians

Prerequisites

Students should have a minimum of 5 years' experience with Centrifugal chillers to maximize the benefit of this course. The Magnitude chiller uses a centrifugal compressor that has advanced technology.

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Define and analyze the basic refrigeration cycle of water chillers
- Identify
  - Different types of chillers and their manufacturing processes during a plant tour and product review
  - MicroTech E® control system components
- Navigate MictoTech E® for Magnitude WME software
- Analyze flooded evaporator with EXV control
- Describe
  - Magnetic bearing centrifugfal chiller & compressor design & operation
  - Purpose and function of WME REV/part-load-balance valves
  - Variable speed drive components and operation
- Optimize operation of cooling tower controls with Magnitude WME chillers
- Use trend analysis software
- Perform general maintenance procedures

Technical Support

Upon completion of this training course, students will be provided access to the Daikin Applied Chiller Technical Response Center for a period of three years. Technical assistance is limited to products(s) where the student successfully completed training.

Technical Service Training

MicroTech® III Controls for Applied Air Products (Module 5)

Course Name

MicroTech® III Controls for Applied Air Products (Module 5)

Course Description

MicroTech® III Controls Course is structured to provide classroom instruc-tion, demonstrations and exercises designed to familiarize the student with components, features, programming, set-up and serive of Daikin MicroTech® III controllers. The session is one-day instructor-led training focused on the application of skills learned via MicroTech III eLearning modules and the micro-videos. Registration includes access to the Daikin Applied Learning Manage-ment System (LMS) to complete Modules 1-4

Who Should Attend

Maintenance and service technicians

Prerequisites

Prior to attendance of Module 5 - Service and Troubleshooting, participants must have completed the Daikin Applied MicroTech III online Modules 1-4.

MicroTech® III Controls for Applied Air Products (Module 5) is required prior to attending the follow-ing courses: Rooftop Service, Rebel® Rooftop Service, and Self-Contained Service

MicroTech® III Modules 1-4 (online) are required prior to attending MicroTech Module 5

Module 1 - Fundamentals: Demonstrate functionality and navigation of the MicroTech III controller. Define key foundational terms. Describe where supporting resources are located and how to access them.
Module 2 - Temporary Operations: Explore field device setup and operation of the MicroTech III controller during common temporary or transient periods.
Module 3 - Startup and Commissioning: Experience a guided approach to starting up, com-missioning and setup MicroTech III equipment for reliable operation.
Module 4 - Service with the MicroTech III Controller: Demonstrate knowledge of MicroTech III software code management, network communication and service tasks that support mainte-nance, operation and troubleshooting.

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Demonstrate foundational knowledge required to operate the Daikin Micro-Tech® III controller
- Complete the steps required to start-up and commission a heating and/or cooling unit using the MicroTech III controller.
- Troubleshoot Daikin AAH units utilizing the MicroTech III controller to ad-dress isues such as:
  - Inadequate heating and cooling in a building
  - Humidity in a building that is heated and/or cooled with a Daikin unit
  - Loss of power to the Daikin unit
  - Alarms active on the Daikin unit
  - Noise from the Daikin unit
  - Loss of communication between Daikin unit and the MT III controller
  - Incorrect pressurization in an office building that is heated and/or cooled with a Daikin unit

Technical Support

Technical Support for Applied Air Products is available separate from the suc-cessful completion of the training.

Technical Service Training

Rebel® Rooftop Service

Course Name	**Rebel® Rooftop Service**
Course Description	Learn the product features, installation requirements, and service procedures for the Daikin Rebel® Rooftop units, including Rebel Inverter technology
Who Should Attend	Maintenance and service technicians
Prerequisites	Students should have an understanding of the refrigeration cycle, basic elec-tronics, and simple control circuits. The course will use these basic concepts to develop an understanding of the Daikin Rebel Rooftop products. We recom-mend that students review IM-1125 and OM-1141 prior to the start of class. *MicroTech® III Controls f(Modules 1 - 5) for Applied Air Products* is required prior to attending this course.
Learning Outcomes	Upon successful completion of this course, students will be able to: • Install and commission Daikin Rebel Rooftop units using standard methods • Identify and distinguish the purpose and function of Rebel components • Describe Rebel Inverter technology and explain unit sequence of operation in all modes and states • Navigate & modify adjustment settings and parameters in MicroTech® III (MT III) controller and operate MT III to meet job specifications • Utilize electrical meters, wiring diagrams, and MT III controller for unit diag-nostics and troubleshooting • Demonstrate preparation, set-up and operation for Daikin Rebel gas, elec-tric and hot-water heat • Prepare and report accurate commissioning data on Daikin Warranty Reg-istration Form • Perform proper preventative maintance per the Daikin Operations Manual
Technical Support	Technical Support for Applied Air Products is available separate from the suc-cessful completion of the training.

Technical Service Training

Rooftop Service

Course Name	**Rooftop Service (Maverick® and Roofpack®)**
Course Description	Identify product features, installation, operation, maintenance and service pro-cedures for Daikin Applied Rooftops
Who Should Attend	Maintenance and service technicians Students should have an understanding of the refrigeration cycle, basic elec-tronics, and simple control circuits. The course will use these basic concepts to develop an understanding of the Daikin Rebel Rooftop products. We recom-mend that students review IM-893 and IM-1058 prior to the start of class.
Prerequisites	*MicroTech® III Controls f(Modules 1 - 5) for Applied Air Products* is required prior to attending this course.
Learning Outcomes	Upon successful completion of this course, students will be able to: • Install and commission Daikin Rooftop units using standard methods • Identify and distinguish the purpose and function of Rooftop components • Describe unit sequence of operation in all modes and states • Navigate & modify adjustment settings and parameters in MicroTech® III (MT III) controller and operate MT III to meet job specifications • Utilize electrical meters, wiring diagrams, and MT III controller for unit diag-nostics and troubleshooting • Demonstrate preparation, set-up and operation for Daikin Rooftop gas, electric and hot-water heat • Prepare and report accurate commissioning data on Daikin Warranty Reg-istration Form • Perform proper preventative maintance per the Daikin Operations Manual
Technical Support	Technical Support for Applied Air Products is available separate from the suc-cessful completion of the training.

Technical Service Training

Installing and Configuring Intelligent Solutions®

Course Name	**Installing and Con iguring Intelligent Solutions®**
Course Description	ILearn about system control solutions offered by Daikin Applied Intelligent Solu-tions®, including Intellingent Systems™ (IS) and Intelligent Equipment® (IE). Focus is on installation and configuration of these solutions with an emphasis on hands-on experience throughout each session.
Who Should Attend	Technicians new to the industry and technicians with industry experience but limited knowledge of Daikin Applied system controls solutions
Prerequisites	Students should have some knowledge of Daikin Applied equipment (Applied Air, Applied Terminal, and Chillers).

Learning Outcomes	Upon successful completion of this course, students will be able to:
	• Understand Intelligent Systems™ (IS) and Intelligent Equipment® (IE), including features, applications, and hardware
	• Demonstrate the installation and commissioning of IS (including System Manager)
	• Practice and perform troubleshooting of:
	  • IS and using the IS user interface
	  • IE and IE technical interface
	• Install IE retrofit kits

Technical Support	Technical Support for Intelligent Solutions is available separate from the suc-cessful completion of the training.

Technical Service Training

Self-Contained Service

Course Name

Self-Contained Service

Course Description

Learn the SWP & SWT product features, installation requirements, and service procedures

Who Should Attend

Maintenance and service technicians

Prerequisites

Students should have an understanding of the refrigeration cycle, basic elec-tronics, and simple control circuits. The course will use these basic concepts to develop an understanding of the Daikin Self-Contained product. We recom-mend that students review IM-1032 prior to the start of class.

MicroTech® III Controls f(Modules 1 - 5) for Applied Air Products is required prior to attending this course.

The Self-Contained Service Course is only available upon special request and requires a minimum number of 10 students and instructor availability.

Learning Outcomes

Upon successful completion of this course, students will be able to:

- Install and commission Daikin Self-Contained (SWP & SWT) units using standard methods
- Identify and distinguish the purpose and function of Self-Contained compo-nents
- Describe unit sequence of operation in all modes and states
- Navigate & modify adjustment settings and parameters in MicroTech® III (MT III) controller and operate MT III to meet job specifications
- Utilize electrical meters, wiring diagrams, and MT III controller for unit diag-nostics and troubleshooting
- Demonstrate preparation, set-up and operation for Daikin Self-Contained gas, electric and hot-water heat
- Prepare and report accurate commissioning data on Daikin Warranty Reg-istration Form
- Perform proper preventative maintance per the Daikin Operations Manual

Technical Support

Technical Support for Applied Air Products is available separate from the suc-cessful completion of the training.

Technical Service Training

Water Source Heat Pump

Course Name	**Water Source Heat Pump**
Course Description	Commission, maintain, operate, and troubleshoot Water Source Heat Pumps, MicroTech III and Mark IV controls. Classroom sessions include hands-on exercises using controls simulators and actual operation units.
Who Should Attend	Owners, Operators, Maintenance Personnel and Service Technicians
Prerequisites	We recommend that students read and review IM-1139 and IM-1059 prior to the start of class. **The Water Source Heat Pump Course is only available upon special request and requires a minimum number of 10 students and instructor availability.**
Learning Outcomes	Upon successful completion of this course, students will be able to: • Install and commission Daikin Self-Contained (SWP & SWT) units using standard methods • Identify and distinguish the purpose and function of Self-Contained compo-nents • Describe unit sequence of operation in all modes and states • Navigate & modify adjustment settings and parameters in MicroTech® III (MT III) controller and operate MT III to meet job specifications • Utilize electrical meters, wiring diagrams, and MT III controller for unit diag-nostics and troubleshooting • Demonstrate preparation, set-up and operation for Daikin Self-Contained gas, electric and hot-water heat • Prepare and report accurate commissioning data on Daikin Warranty Reg-istration Form • Perform proper preventative maintance per the Daikin Operations Manual
Technical Support	Technical Support for Applied Air Products is available separate from the suc-cessful completion of the training.

Daikin Learning Institute Training Registration Form

Course Title: _____

Dates: _____

Course Location: _____

Company Name: _____

Mailing Address: _____

City, State, Zip: _____

Student Name: _____ Email: _____

Phone Number: _____ Fax Number: _____

Submitted By: _____ Email: _____

Phone Number: _____ Fax Number: _____

Please Specify Payment Option Below And Complete All Information.

Company Name: _____

Contact: _____

Billing Address: _____

City, State, Zip: _____

Phone Number: _____ Fax Number: _____

Note: Daikin Learning Institute will transition to a credit card only payment option in early 2020. Payment will be required in advance to process your enrollment.

☐CREDIT CARD: ☐Master Card ☐VISA ☐American Express ☐Discover (Novus)

Card Number: _____ Expiration Date:___ ___ /___ ___ /___ ___

Cardholder Printed Name: _____ Security Code: _____

Payment is due in advance or student(s) will not be admitted.

Mail copy of application form and check to:
Daikin Applied/ Attn: Daikin Learning Institute
P.O. Box 2510
Staunton, VA 24402-2510

Fax application, copy of purchase order/check to
763-509-7663 or
E-mail:
daikinlearning@daikinapplied.com

Daikin Learning Institute reserves the right to make changes or alternations to the course content or schedule, and is not responsible for fees associated with changing dates or cancellation of classes. In the unlikely event of a schedule change or cancellation, our best effort will be made to notify all registrants in a timely manner.