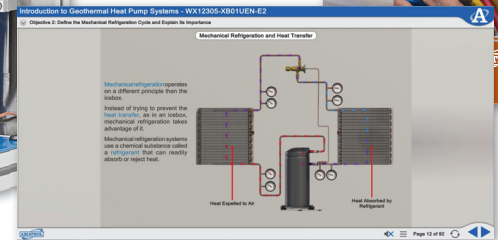
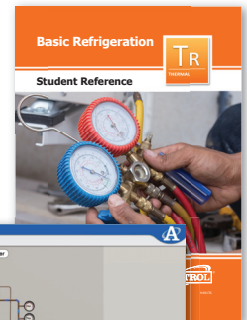


# Basic Refrigeration Learning System

T7045



T7045



Interactive Multimedia & Student Reference Guide

## Learning Topics:

- Temperature and Pressure Measurement
- Refrigeration Energy
- Compressors
- Heat Transfer
- Phase Change Effects
- Condensers and Evaporators
- Metering Devices
- Temperature and Pressure Control Devices
- Auxiliary Refrigeration Components
- Refrigeration System Performance

Amatrol's Basic Refrigeration Learning System (T7045) offers hands-on learning of a working refrigeration system in a compact tabletop unit. Skills delivered through this trainer are used by technicians in industrial, residential and commercial HVAC/R settings, preparing learners for a continuously growing industry. This system is a fantastic starting point for future HVAC/R technicians as it covers both hands-on maintenance skills and technical refrigeration concepts and calculations.

The T7045 covers topics including temperature and pressure measurement, heat transfer, & phase change. Transparent sections in the refrigerant lines allow students to observe the refrigerant as it changes from gas to liquid as it travels through various components. Temperature and pressure gauges are installed in multiple locations providing students a better understanding of how the refrigeration cycle works. Industry-standard components ensure learners gain experience with operating, monitoring and adjusting refrigeration cycles on systems that they'll see in the field.



## Technical Data

Complete technical specifications available upon request.

### Tabletop Workstation

Hermetic Compressor  
Condenser  
Evaporator  
Suction Compressor  
Dual Pressure Control  
Temperature Controller  
Filter Drier  
Moisture Indicator  
Automatic Expansion Valve

### Interactive Multimedia Curriculum (M19176)

#### Instructor's Guide (C19176)

#### Installation Guide (D19176)

#### Student Reference Guide (H19176)

#### Additional Recommendation:

Mobile Technology Workstation (82-610)

#### Utilities:

Electrical (120V/60Hz/1ph)

#### Additional Requirements:

R134a refrigerant  
Computer (Visit [www.amatrol.com/support/computer-requirements/](http://www.amatrol.com/support/computer-requirements/))

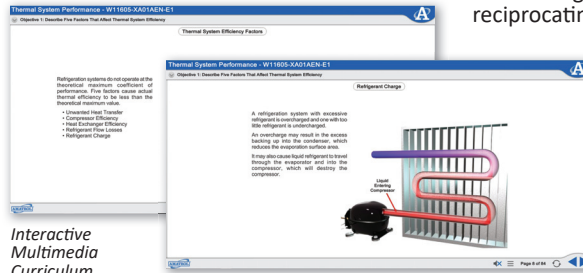
## Study Cooling and Refrigeration Components While Learning on Industry-Standard Equipment

Amatrol's T7045 features equipment your learners will encounter in their careers, including R134a Refrigerant, evaporator and condenser coils, variable speed fan controls, a hermetic compressor, pressure and temperature gauges, a dual high-pressure cutout switch, and much more. From these real-world components, learners will practice hands-on, skill-building tasks such as measuring condenser inlet and outlet temperature and pressure; setting the pressures on a dual-pressure control device; calculating a change in enthalpy due to temperature changes; and operating a thermal system using forced and free convection heat transfer.



## In-Depth Curriculum and eLearning

The T7045's in-depth, interactive eLearning curriculum covers major refrigeration topics like the operation of a bimetallic thermometers, thermistors, and thermocouples; the significance of the combined gas law; the operation of rotary vane, scroll, reciprocating piston, and hermetic compressors; how to set a thermostatic expansion valve using the superheat method; how to calculate heat duty of a heat exchanger; and more.



Interactive Multimedia Curriculum

## More HVAC Learning Systems from Amatrol

The Basic Refrigeration Learning System (T7045) is one of many learning systems that Amatrol offers for preparing future HVAC/R technicians. Learners can also study more advanced systems such as Residential Heat Pump Troubleshooting (T7100), Residential Mini-Split Heat Pump (T7130), Refrigerant Recovery and Charging for R134a/R410a (T7031/T7032), and many more.



T7130 and T7100

## Student Reference Guides

A sample copy of the Basic Refrigeration Student Reference Guide is also included with the system for your consideration. The entire series' technical content, contained in the learning objectives, is combined and included in one perfectly-bound book. Student Reference Guides supplement this course by providing a condensed, inexpensive reference tool that learners will find invaluable once they finish their training, making it the perfect course takeaway.

