

Amatrol HVAC Lab



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HVAC Core Skill



AC/DC Electrical (T7017A / 990-ACDC1)

– Approx. 30 hours

- o BASIC ELECTRICAL CIRCUITS
- o ELECTRICAL MEASUREMENTS
- o CIRCUIT ANALYSIS
- o INDUCTANCE AND CAPACITANCE
- o COMBINATION CIRCUITS
- o TRANSFORMERS

Electric Relay Control with Troubleshooting (990-EC1F)

– Approx. 20 Hours

- o CONTROL LOGIC
- o SEQUENCING CONTROL
- o TIMERS AND ADVANCED SYSTEMS
- o INTRODUCTION TO TROUBLESHOOTING



Thermal Science (T7081) – Approx. 25 hours

- o INTRODUCTION TO THERMAL SYSTEMS
- o THERMAL ENERGY AND HEAT TRANSFER
- o THERMODYNAMIC LAWS AND PROPERTIES
- o REFRIGERATION THERMODYNAMICS
- o REFRIGERATION/HEAT PUMP OPERATION



HVAC Core Skill

Air Conditioning / Heat Pump w/ Troubleshooting (T7082-A) – Approx. 50 Hours

- o INTRODUCTION TO REFRIGERATION
- o COMPRESSORS
- o CONDENSERS
- o METERING DEVICES AND EVAPORATORS
- o TEMPERATURE AND PRESSURE CONTROL DEVICES
- o REVERSING VALVES AND REFRIGERANTS
- o THERMAL TROUBLESHOOTING MEASUREMENTS
- o COMPONENT LEVEL TROUBLESHOOTING 1
- o COMPONENT LEVEL TROUBLESHOOTING 2
- o SYSTEM LEVEL TROUBLESHOOTING



Environmental Applications (T7083) – Approx. 20 hours

- o THERMAL SYSTEM PERFORMANCE
- o INSULATION
- o PSYCHROMETRICS
- o RESIDENTIAL HEATING AND COOLING



HVAC Technician Lab



Motor Control and Drives (85-MT5)

– Approx. 40 hours



- Introduction to Electric Motor Control
- Manual Motor Control and Overload Protection
- Control Transformers
- Control Ladder Logic
- Control Relays and Motor Starters
- Introduction to Troubleshooting
- Systems Troubleshooting
- Reversing Motor Control
- Automatic Input Devices 1
- Basic Timer Control: On-Delay and Off-Delay

Variable Frequency Drives (85-MT5-C)

– Approx. 12 hours

- Introduction to Variable Frequency AC Drives
- Variable Frequency AC Drives - Speed and Torque Control
- Variable Frequency AC Drives - Accel./Decel. and Braking
- Variable Frequency AC Drives - Fault Diagnostics and Troubleshooting



Refrigerant Charging and Recovery System (T7031) – R-134a Refrigerant

– Approx. 25 hours

- REFRIGERANT FUNDAMENTALS
- LEAK DETECTION
- PRESSURE and TEMPERATURE MEASUREMENT
- REFRIGERANT RECOVERY AND RECYCLING
- REFRIGERANT CHARGING

Refrigerant Charging and Recovery System (T7032) - R-410a Refrigerant

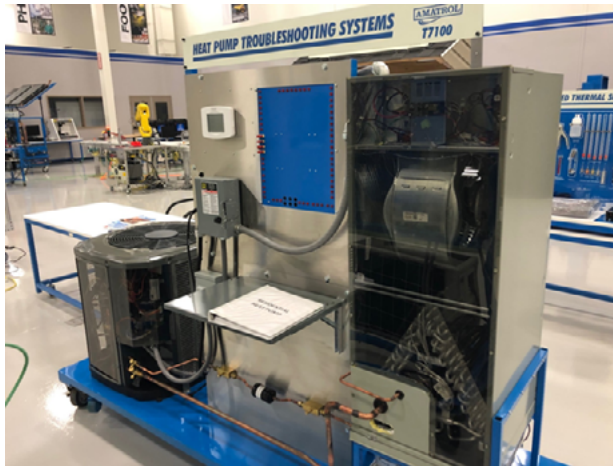
– Approx. 25 hours

- REFRIGERANT FUNDAMENTALS
- LEAK DETECTION
- PRESSURE and TEMPERATURE MEASUREMENT
- REFRIGERANT RECOVERY AND RECYCLING
- REFRIGERANT CHARGING





HVAC Technician Lab



Residential Forced Air Heat Pump w/ Troubleshooting (T7100) **- Approx. 25 hours**

- INTRODUCTION TO RESIDENTIAL HEAT PUMP SYSTEMS
- HEAT PUMP THERMOSTAT OPERATION
- HVAC PRESSURE AND TEMPERATURE MEASUREMENTS
- HEAT PUMP COMPONENT TESTS
- TROUBLESHOOTING RESIDENTIAL HEAT PUMP SYSTEMS



Residential Mini Split Heat Pump w/ Troubleshooting (T7130) **- Approx. 25 hours**

- INTRODUCTION TO RESIDENTIAL MINI SPLIT SYSTEMS
- MINI SPLIT THERMOSTAT OPERATION
- MINI SPLIT PRESSURE AND TEMPERATURE MEASUREMENTS
- MINI SPLIT COMPONENT TESTS
- TROUBLESHOOTING MINI SPLIT SYSTEMS



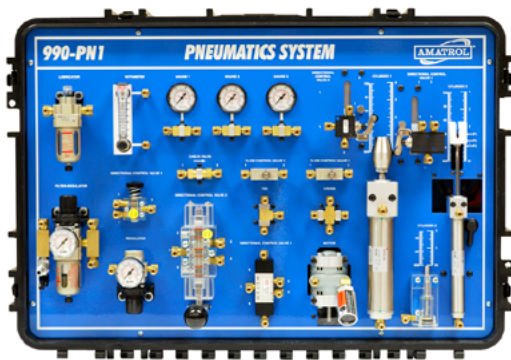
Program Enhancements Equipment



950-GEO1 – Geothermal System



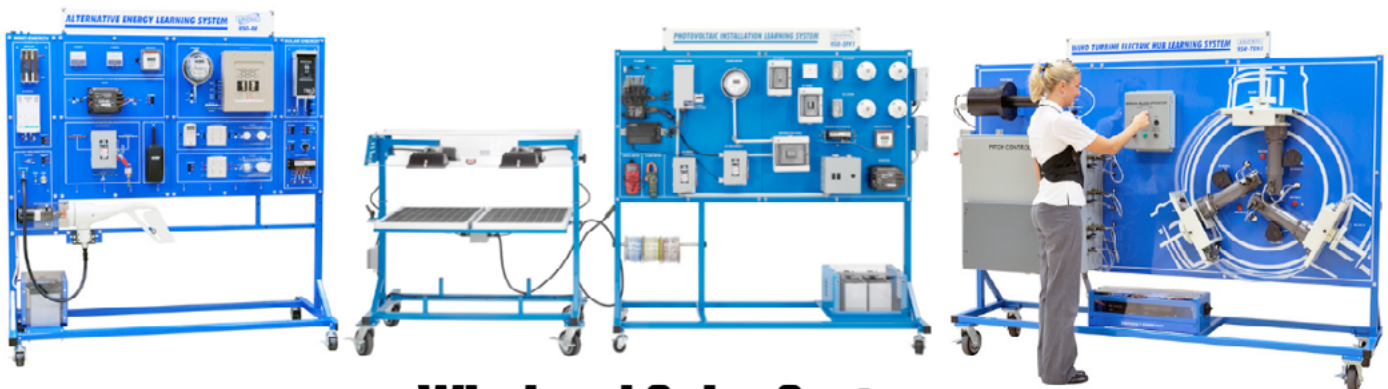
950-SH1 – Steam Systems



990-PN1 – Pneumatics



Electrical Systems – 950-ELF1



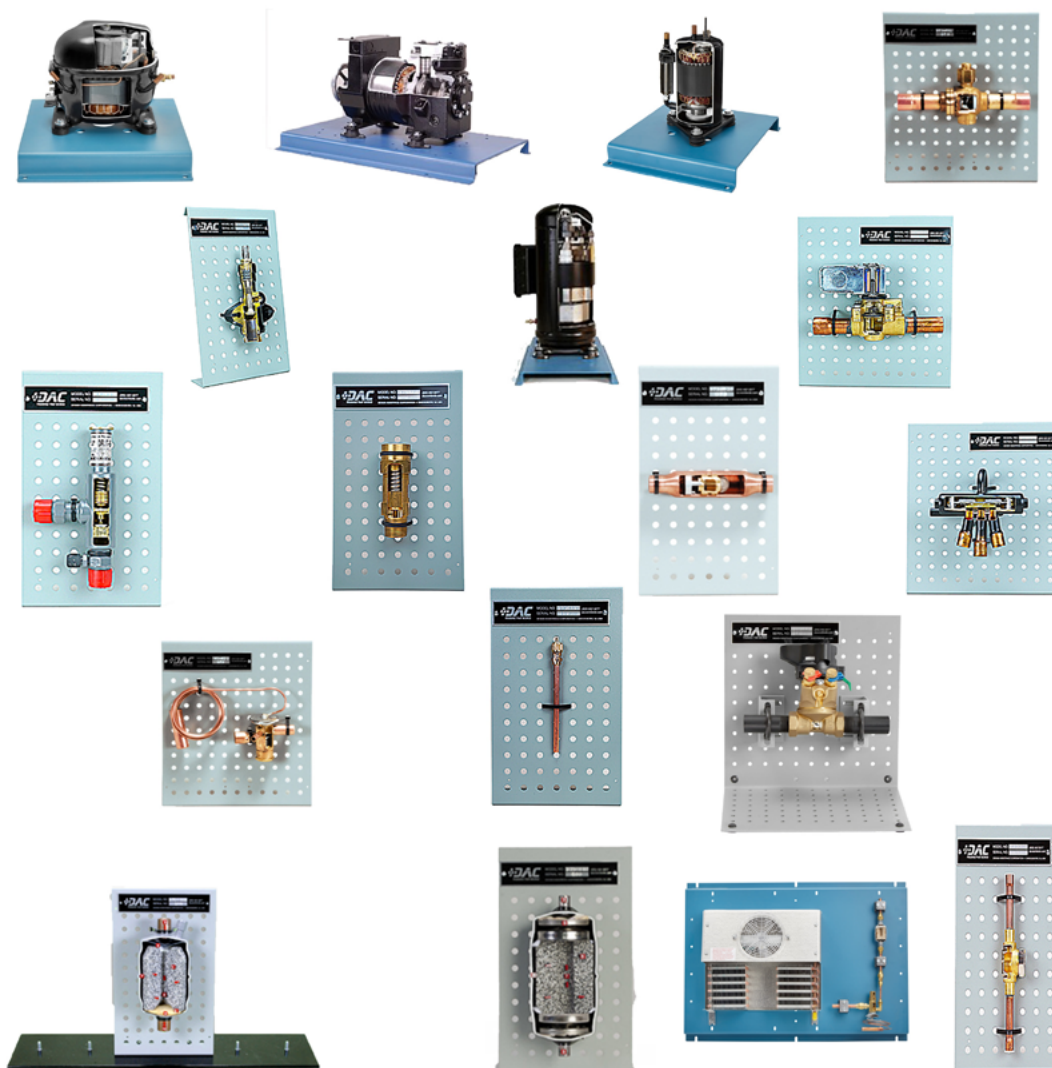
Wind and Solar Systems **GREEN TECHNOLOGY**

Supplemental Equipment



Program Enhancements

Cut-a-Ways



- 373-110 - Hermetic Compressor Cutaway
- 373-120 - Semi-Hermetic Compressor Cutaway
- 373-130 - Hermetic Scroll Refrigeration Compressor Cutaway
- 373-160 - Hermetic Rotary Compressor Cutaway
- 373-195 - Compressor Service King Valve Cutaway
- 373-501 - ACR Steel Ball Valve Cutaway
- 373-502 - ACR Solenoid Valve Cutaway
- 373-503 - ACR Packless Diaphragm Line Valve Cutaway
- 373-505 - Heat Pump Reversing Valve Cutaway
- 373-506 - ACR Straight-Thru Pressure Relief Valve Cutaway
- 373-510 - ACR Magnetic Check Valve Cutaway
- 373-519 - Condenser Pressure Control Valve Cutaway (KVR)
- 373-521 - ACR Thermostatic Expansion Valve Cutaway, Fixed-Type
- 373-529 - Schrader Service Valve Cutaway
- 373-551 - ACR Manual Balancing Valve Cutaway
- 373-601 - ACR Liquid Line Filter/Drier Cutaway
- 373-602 - ACR Liquid Line Filter/Drier Cutaway, Bi-Directional
- 373-652 - Sightglass with Moisture Indicator Cutaway
- 373-991 - Ceiling Unit Cooler System Cutaway

Supplemental Equipment



CONTACT US

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