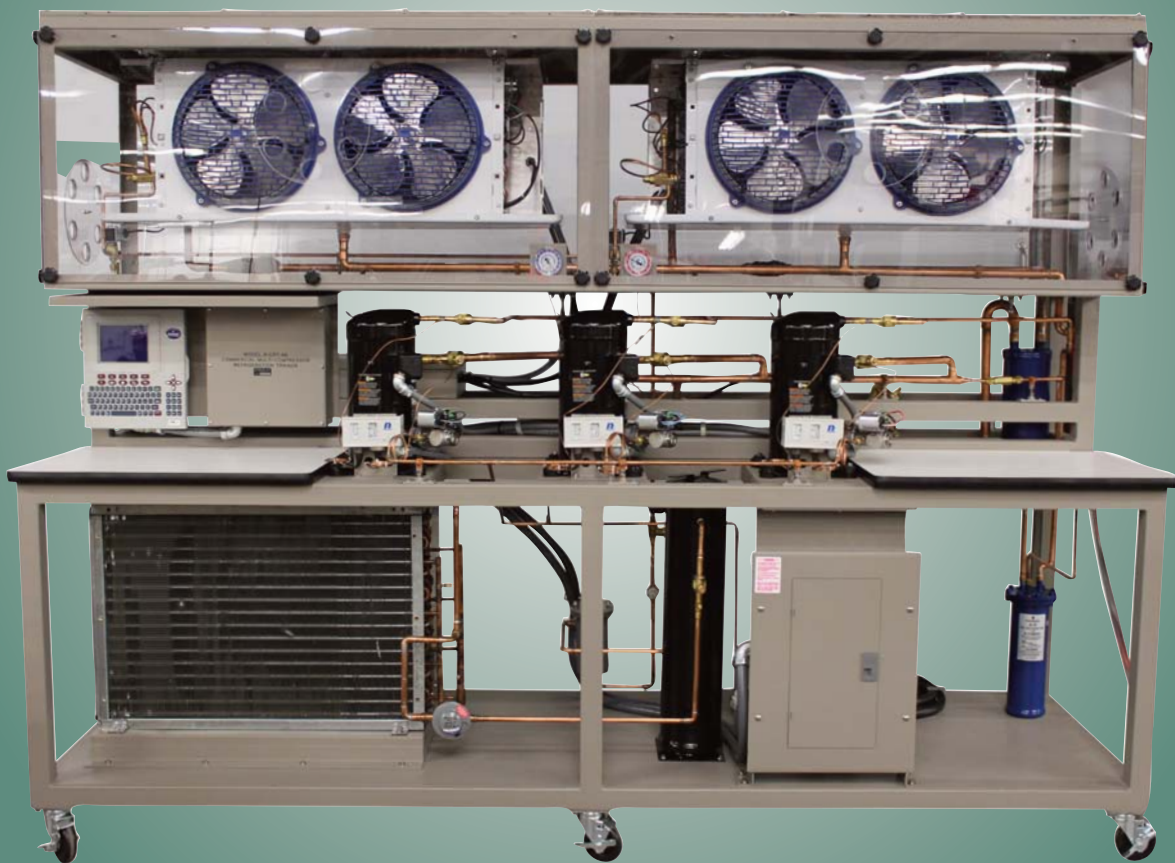


**MOST
ADVANCED
UNIT IN THE
MARKETPLACE**

**NEWEST
CONTROLS!**

COMMERCIAL MULTI-COMPRESSOR RACK REFRIGERATION SYSTEM TRAINER

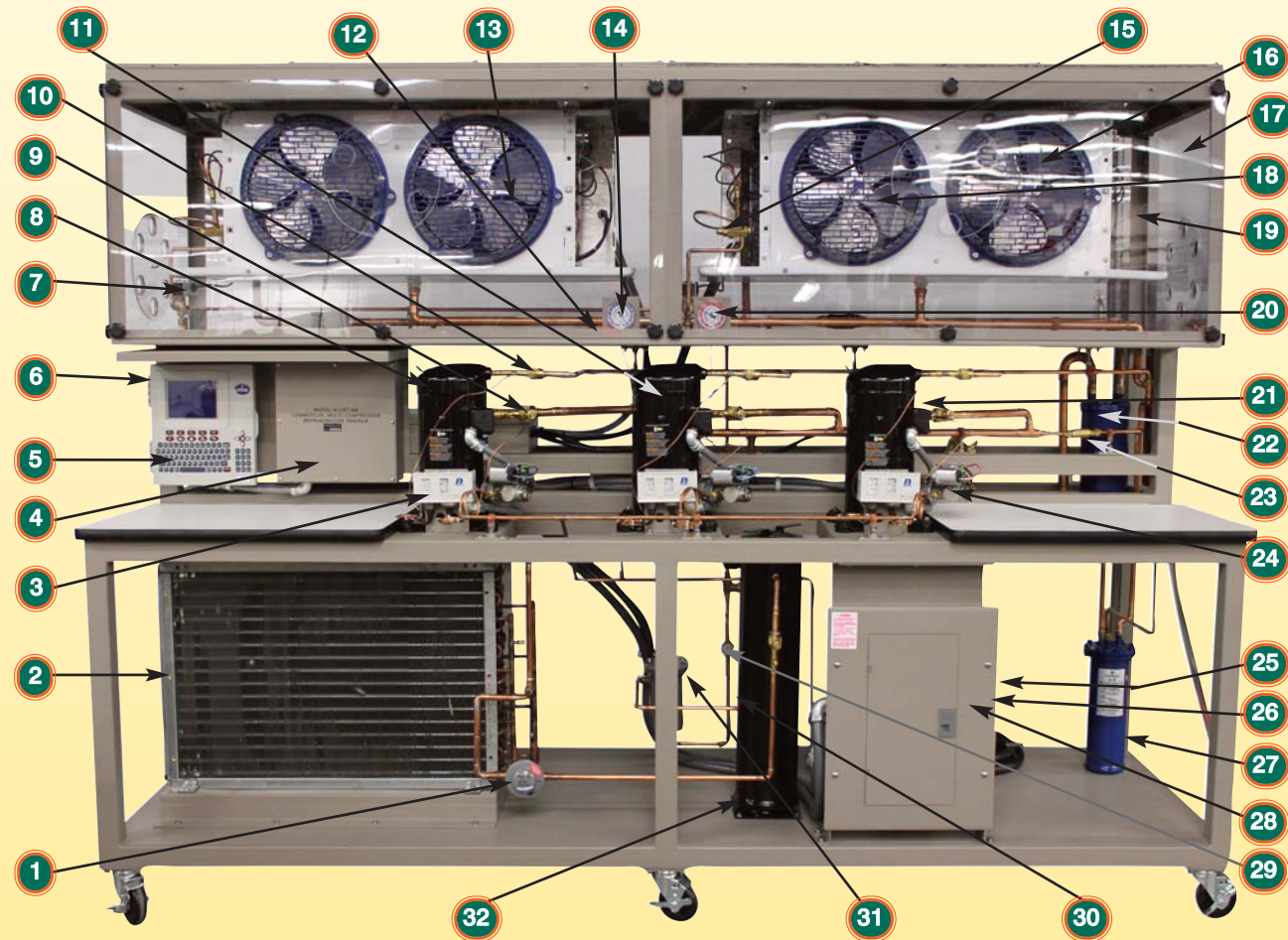


Hampden[®]
ENGINEERING CORPORATION

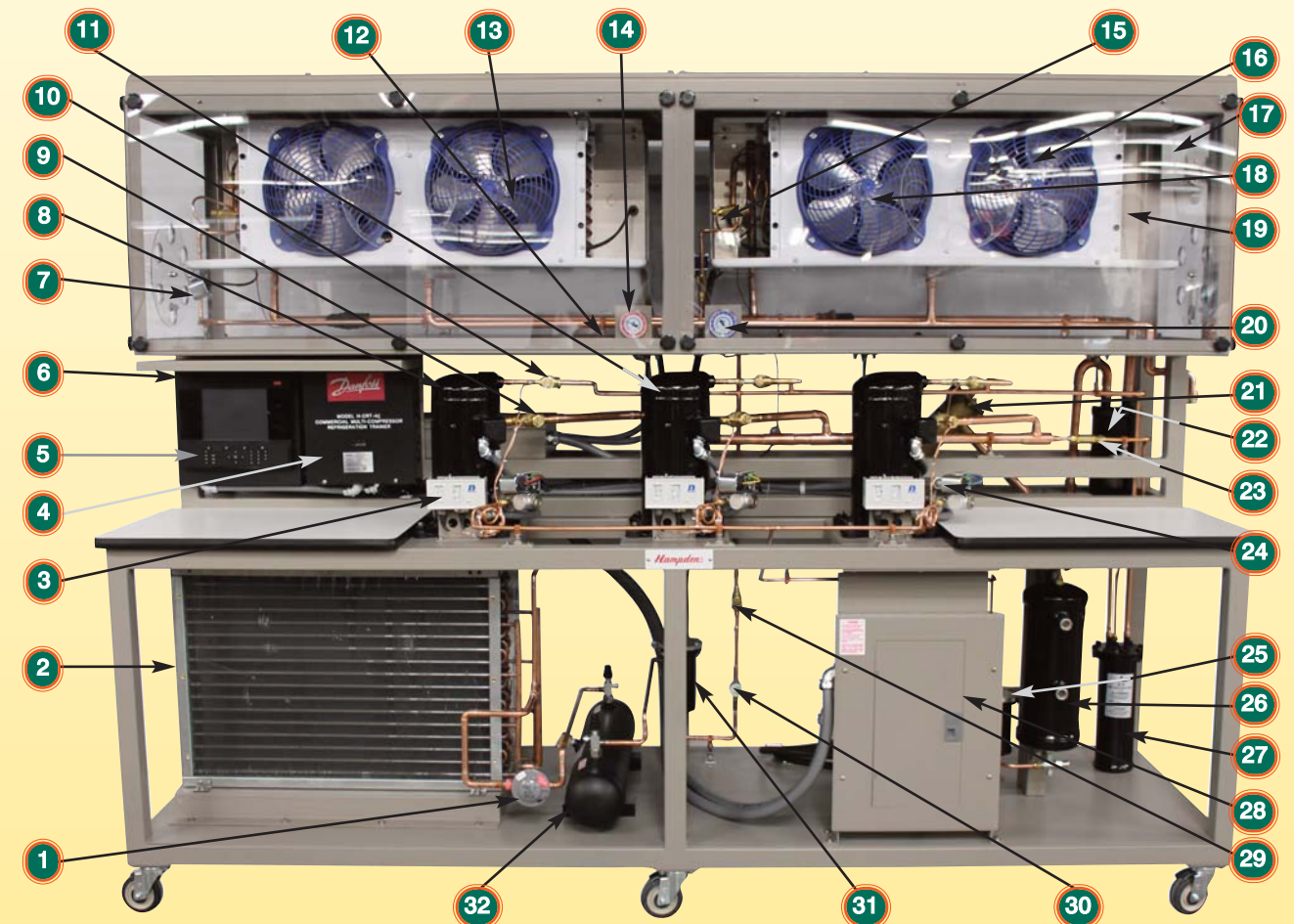


HAMPDEN WILL TAKE YOU INTO THE FUTURE WITH THE COMMERCIAL MULTI-COMPRESSOR RACK REFRIGERATION SYSTEM

H-CRT-4B Commercial Multi-Compressor Rack Refrigeration System Trainer with Emerson Controls and with Electrical Fault Package



H-CRT-4C Commercial Multi-Compressor Rack Refrigeration System Trainer with Danfoss Controls and with Electrical Fault Package



- | | | |
|--|--------------------------------------|--|
| 1. Head Pressure Control Valve | 12. High Pressure Transducer | 23. Suction Accumulator |
| 2. Air Cooled Condenser | 13. Temperature Sensor | 24. Oil Level Solenoid (3) |
| 3. High / Low Pressure Switch (3) | 14. Suction Pressure Gauge | 25. Oil Filter (behind load center) |
| 4. O/I Board Box | 15. Thermostatic Expansion Valve (2) | 26. Oil Reservoir (behind load center) |
| 5. Controller | 16. Heat Load Shutters (4) | 27. Oil Separator |
| 6. Fault Box (On Side of Unit) | 17. Lexan® Enclosed Cold Box | 28. Load Center |
| 7. Liquid Line Solenoid (2) | 18. Temperature Sensor | 29. 1/2" Ball Valve |
| 8. Scroll Compressor (3) | 19. Evaporator (2) | 30. Sight Glass |
| 9. 3/4" Ball Valve (3) | 20. Discharge Pressure Gauge | 31. Filter Drier |
| 10. 1/2" Ball Valve (3) | 21. Suction Shell (not visible) | 32. Liquid Receiver |
| 11. Low Pressure Transducer (in back of Scroll Compressor) | 22. Check Valve | |

← See Key on Previous Page.

The Hampden Models **H-CRT-4B** and **H-CRT-4C** Commercial Multi-Compressor Rack Refrigeration System Trainers with Emerson and Danfoss Controls respectively were designed to provide students with a thorough understanding of the refrigeration cycle, including measurement of pressure, vacuum, flow rate, and temperature. The system components are panel mounted to provide easy access for testing and troubleshooting. The Hampden Model **H-CRT-4B** and **H-CRT-4C** are supplied with an integral Fault Package, comprised of preset electrical faults mounted in a locking box on the side of the trainer.

DDC CONTROLS SYSTEM

The Hampden **MODEL H-MZBM-J2A** Multi-Zone Building Energy Management Trainer with Johnson Controls provides a means for training students in the installation, operation, and troubleshooting of a variable air volume unit and a constant volume air handler.

The control system allows on-screen menu prompting displays and operator responses. The controller is used to permit the operator to control every phase of the Energy Management process.

Features

- State-of-the-art Johnson Controls
- Remote Computer Communications
- Programmable
- Simulated Fault Conditions - Five Selectable
- Logic Displays
- Selectable Loads and Environments
- Safety - Access to 24V AC only
- Courseware - Student & Instructor
- Facility Explorer Software

PC Specifications (minimum requirements)

- Windows® XP OS/Vista/7 (32 bit)
- USB Port
- 10' straight through cable



Actual Components

- Johnson Controls Facility Explorer Controllers (2)
- Johnson Controls Sensor Temperature
- Johnson Controls Actuator Electric Spring Return
- Johnson Controls 3-way Control Valve
- Johnson Controls BACnet/IP to MS/TP Router
- Johnson Controls Facility Explorer Software
- Johnson Controls Expansion I/O Module
- Johnson Controls DC Power Supply
- Digital Multimeter
- Test Points
- H-LTCS Laptop Computer

Simulated Components:

- Smoke Detector
- Fan on Indicators
- DX Cooling Coils
- Static Pressure Control
- Supply Air Temperature Control
- Air Flow Switches
- Freezestat Switches
- Mixed Air Temperature Controls
- Outdoor Air Temperature Control
- Supply Air Humidity Control
- Room Relative Humidity Control
- Occupied/Unoccupied Mode Switches
- Damper/Valve Position Indicators



Hampden is committed to providing industry-leading technology.

For the latest from Hampden, visit our home page at <http://www.hampden.com> or e-mail us at sales@hampden.com

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