Multi-Condensing Unit System
Multi-Condensing Unit System

- Multiple single condensing units in one enclosure
- Each compressor has its own condenser coil or shared coil circuit
- Shared condenser fans
- One electrical enclosure with single point connection
- Three to sixteen units common
Multi-Condensing Unit System
Multi-Condensing Unit Interior
Interior Pitch Pocket
Electrical Panel
System Selection Criteria

Multi-Compressor System

- Projects requiring four or more condensing units
- Centralized rooftop footprint and dunnage beneficial
- Redundant condenser fans desirable
- Reduced electrical labor and materials cost (high wage areas)
Parallel Rack System
A parallel rack attempts at any moment of operation to match as closely as possible the amount of electricity being consumed to the amount of work (BTU load) being presented.
Parallel Rack System

- Two or more compressors
- Compressors share one refrigerant circuit
- Can be MT, LT, or both
- Multiple circuits of liquid and suction lines for fixtures
- Computerized controller
- Remote condenser
- Scroll or Semi-Hermetic compressors (Digital, Fixed)
Parallel Rack Top View
Standard Parallel Rack Front
Parallel Rack Oil System
Multi-Circuit Piping Designs

• Suction Headers (MT, LT, Split)
• Single Liquid Header
• Hot Gas Defrost Header (option)
• Header System at Rack
• Header System Remote Near Fixtures
• Loop Piping System
Header System Schematic
Parallel Rack and Condenser
Parallel Rack Electrical Panel
System Selection Criteria

Parallel Rack PS System

- Multiple walk-ins and remote fixtures, large kitchen, commissary, casino
- Reduced electrical operating cost
- Redundant compressors protection
- Available heat reclaim
- Rack controller manages all refrigeration operating functions
- Full temperature alarming using E2 Controller
System Selection Criteria

Parallel Rack PS System

• Remote monitoring of all functions
• Recording and graphing of all temperatures
• MT and LT operating from one rack
• Minimum total load MT, LT 40,000 btuh
• Can provide effective heat reclaim for pre-heating domestic water
Glycol Chiller Parallel Rack

- Heat Exchanger added to chill glycol/water mix
- Electric Expansion Valve controls refrigerant to provide energy saving of "Full Floating Discharge Pressure"
- Circulating pumps, fluid reservoir, air separator added
- ABS plastic or copper supply and return connection provided
Plate-To-Plate Heat Exchanger
Balancing Valve
Fluid Solenoid
Secondary Fluid Control
System Selection Criteria

Glycol Chiller Rack

• Greatly reduced refrigerant charge
• Glycol/water mixture direct refrigerant for all medium temperature equipment (18 deg.)
• Same fluid used to supply condensers on low temperature condensing units that are direct expansion refrigeration
• Operation of "water cooled" ice machines and pre-chilling city water for optimum production
System Selection Criteria

Glycol Chiller Rack

- Will accommodate long line runs from rack to fixtures, high elevation for tall buildings
- All MT fixtures short coincidental defrost
Hybrid Rack
Direct Expansion and Glycol
Questions?