



**WELBILT®**

*Bringing innovation to the table*



# R-448A Scroll Series Refrigeration System

## Condensing Units



## Refrigerant

### General Information

Item	Specification
ASHRAE #	R-448A
Class	HFC / HFO
Refrigerant Type	Zeotropic blend
Typical Lubricant	POE (polyol ester) Oil
Replaces	R-22, R-404A

## Compressors

### Scroll Compressors

- 3/4 – 13 H.P.
- Air cooled/water cooled applications
- 3 models – PR, PC, and PCL
  - ✓ PR – Preassembled Remote; nitrogen charge
  - ✓ PC – Pre-Charged for use up to 50' line set
  - ✓ PCL – Pre-Charged for use with provided line set



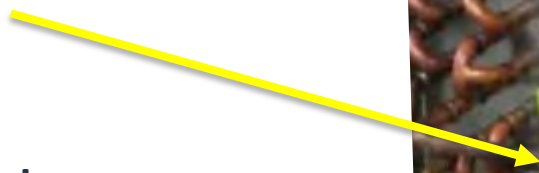
## Condenser Coils



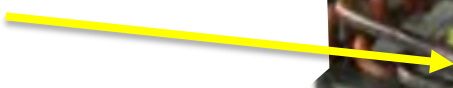
Condenser Inlet



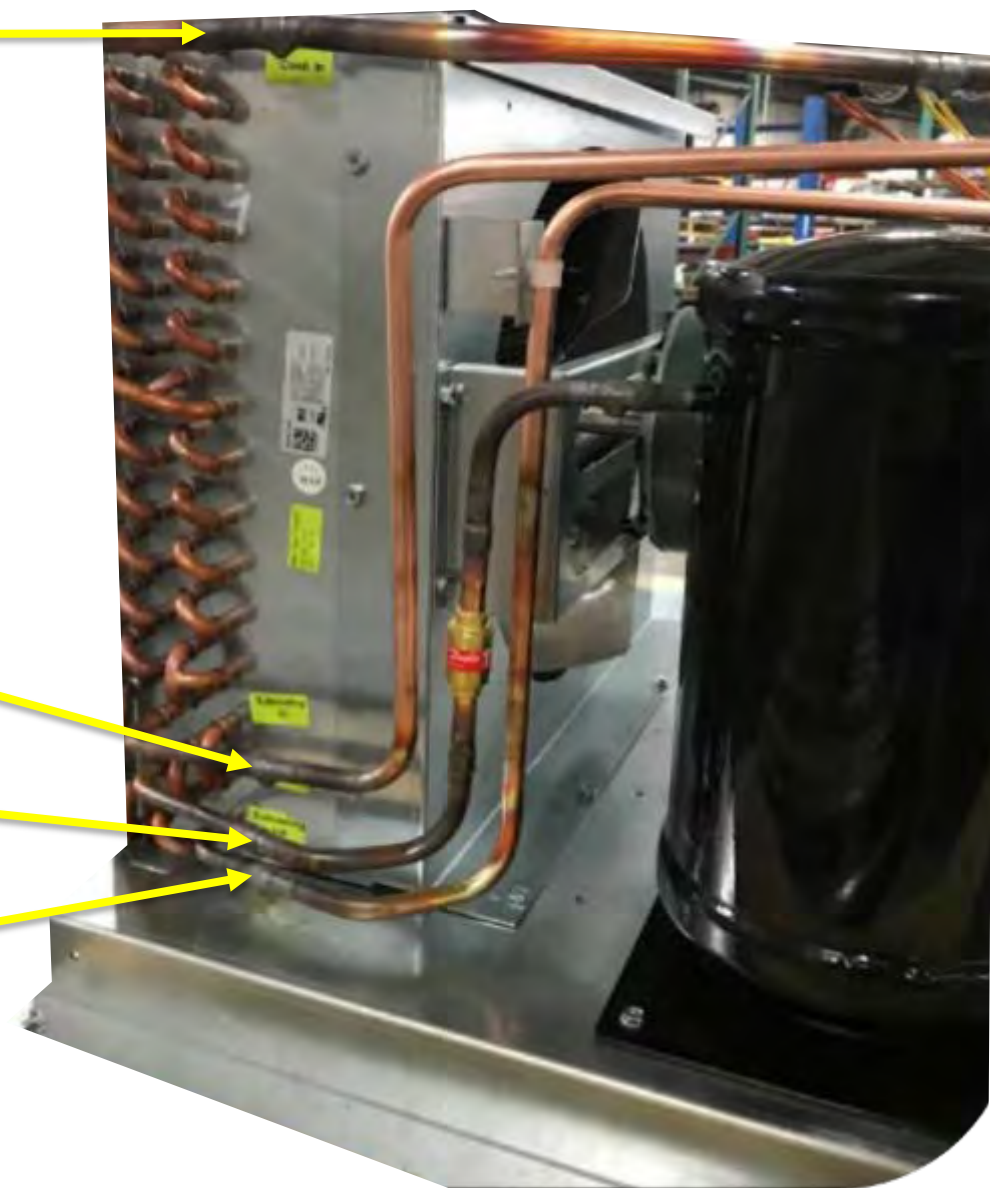
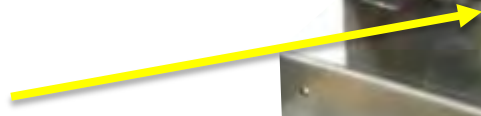
Subcooling Inlet



Condenser Outlet



Subcooling Outlet



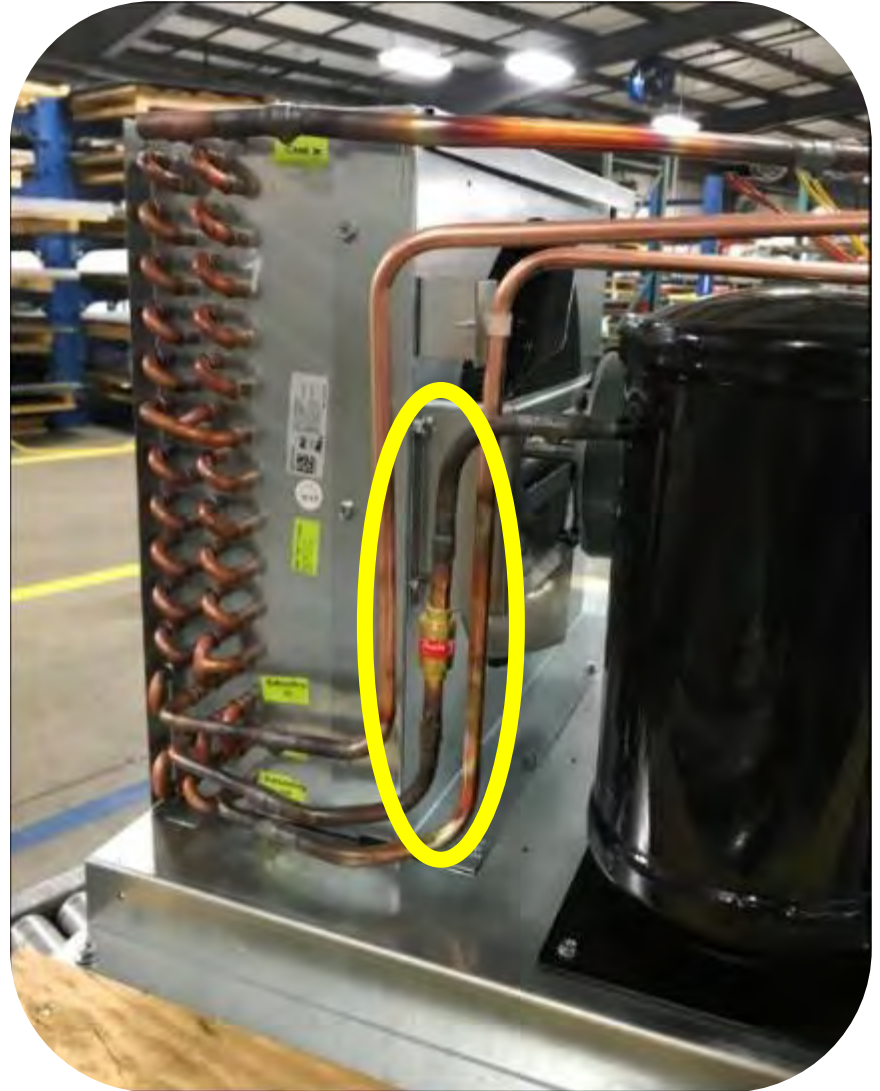
## Check Valve



## Check Valve

### Non Return Check Valve

- Prevents reversal flow
- Prevents condenser flooding
- Directional flow with refrigerant





## Pressure Controls



## Pressure Controls

### Low Pressure Safety Control

- Low temp – freezer
- Adjustable
- Braze in cap tube
- Cut-in 15 psi
- Cut-out 1 psi
- Blue wires



## Pressure Controls

### Low Pressure Safety Control

- Medium temp – cooler
- Non adjustable
- Braze in cap tube
- Cut-in 24 psi
- Cut-out 12 psi
- Red wires



## Pressure Controls

### Low Pressure Safety Control

- Medium temp – cooler
- Non adjustable
- Braze in
- Cut-in 24 psi
- Cut-out 12 psi
- Red wires



## Pressure Controls

### Low Pressure Safety Control

- Medium temp – cooler
- Non adjustable
- Braze in
- Cut-in 24 psi
- Cut-out 12 psi
- Red wires



## Pressure Controls

### High Pressure Safety Control

- Non adjustable
- Braze in
- Cut-in 325 psi
- Cut-out 425 psi
- Orange wires



## Pressure Controls

### High Pressure Safety Control

- Non adjustable
- Braze in
- Cut-in 325 psi
- Cut-out 425 psi
- Orange wires



## Low Ambient Controls

### Headmaster Control

### Fan Cycle Control





## Low Ambient Controls

### Headmaster Control

- Three ports
- PSI rating 210
- Non adjustable



## Low Ambient Controls

### Headmaster Control

- Three ports
- PSI rating 210
- Non adjustable



## Low Ambient Controls

### Fan Cycle Control

- Non Adjustable
- Braze in
- Cut-in 235 psi
- Cut-out 150 psi
- Yellow wires



## Low Ambient Controls

### Fan Cycle Control

- Non Adjustable
- Braze in
- Cut-in 235 psi
- Cut-out 150 psi
- Yellow wires



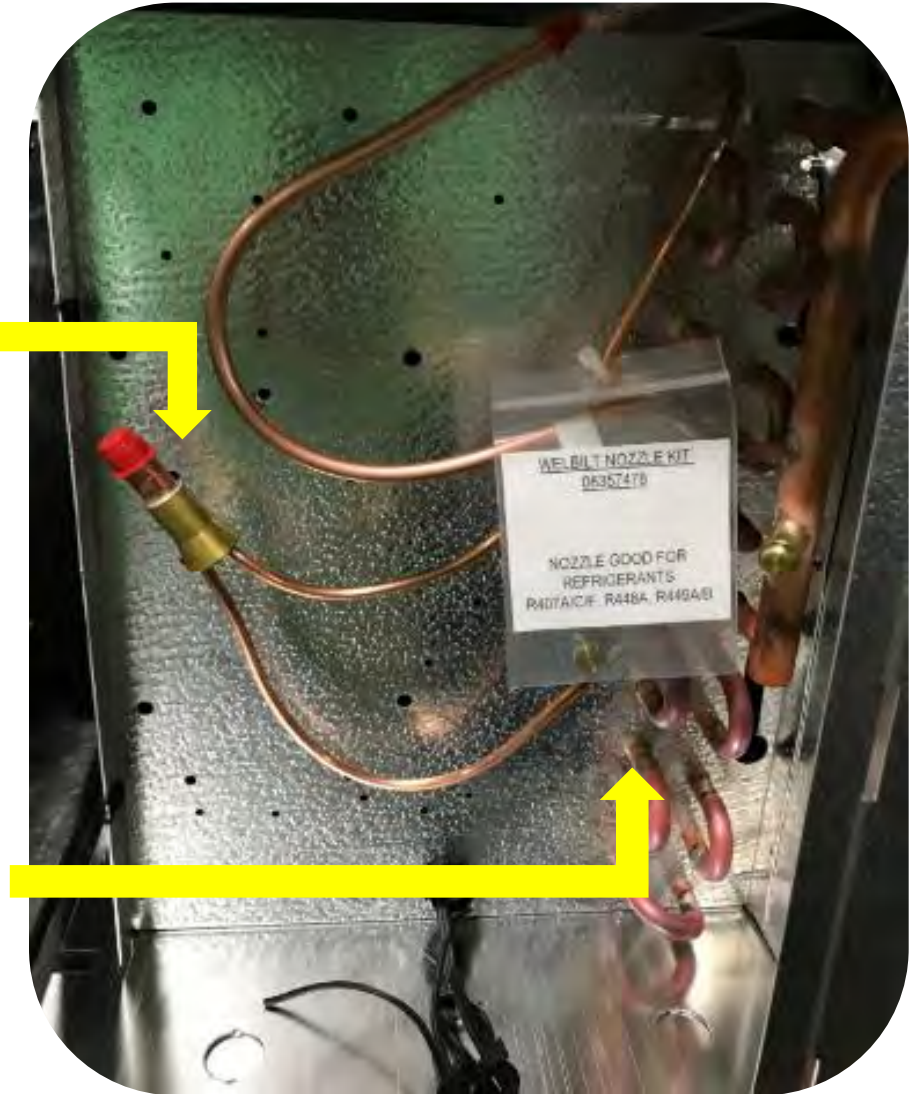
## Evaporator Coils



## Evaporator Coils

Refrigerant Distributor

Nozzle and Retainer Ring



## Evaporator Coils



## Operating Pressures





# Operating Pressures

## Medium Temp – Cooler (35 °F)

- Suction pressure 50-55 PSI
- Use PT chart for proper discharge pressures
- If applicable, reference low ambient control settings
- Recommended Superheat 6-10



## Operating Pressures

### Low Temp – Freezer (-10 °F)

- Suction pressure 10-14 PSI
- Use PT chart for proper discharge pressures
- If applicable, reference low ambient control settings
- Recommended Superheat 4-8







- Q - Is there a sub-cooling loop added to your condenser coil?
  - A – Yes.
- Q – When is that sub-cooling loop used?
  - A – Continuously.
- Q – Why did you add a sub-cooling loop?
  - A – To gain evaporator BTU capacity with R448 refrigerant.