## ZGA/ZCA048 All-Aluminum Refrigerant Charge and Check

Suct

psia

111

118

133

Disc

psia

254

259

273

Disc

psia

295

299

314

Suc

psia

108

114

128

100

65 °F

Disc

psig

254

259

273

310

Suc

psig

108

114

128

149

## WARNING-Do not exceed nameplate charge under any condition.

This unit is factory charged and should require no further adjustment. If the system requires additional refrigerant, reclaim the charge, evacuate the system, and add required nameplate charge.

NOTE - System charging is not recommended below 60°F (15°C). In temperatures below 60°F (15°C), the charge must be weighed into the system.

If weighing facilities are not available, or to check the charge, use the following procedure:

- 1- Make sure outdoor coil is clean. Attach gauge manifolds and operate unit at full CFM in cooling mode with economizer disabled until system stabilizes (approximately five minutes). Make sure all outdoor air dampers are closed
- 2-Compare the normal operating pressures to the pressures obtained from the gauges. Check unit components if there are significant dif-
- 3-Measure the outdoor ambient temperature and the suction pressure. Refer to the charging curve to determine a target liquid temperature.

Note - Pressures are listed for sea level applications.

- 4- Use the same thermometer to accurately measure the liquid temperature (in the outdoor section).
  - If measured liquid temperature is higher than the target liquid temperature, add refrigerant to the system.
  - If measured liquid temperature is lower than the target liquid temperature, recover some refrigerant from the system.
- 5-Add or remove charge in increments. Allow the system to stabilize each time refrigerant is added or removed.
- 149 310 150 342 388 158 436 163 167 556 Outdoor Temperature (°F) 130 115° 120 110 105 **£** 100 80

**Normal Operating Pressures** 

Outdoor Coil Entering Air Temperature

Suct

psia

118

125

141

Disc

psia

386

392

408

Disc

psia

338

344

358

85

Suct

psig

115

122

137

105

Disc

psia

437

445

462

474

Suct

psia

121

129

145

150

105 °F

psiq

437

445

462

474

Suct

psig

121

129

145

163

70 65

130 140 Suction Pressure (psig)

- 6- Continue the process until measured liquid temperature agrees with the target liquid temperature. Do not go below the target liquid temperature when adjusting charge. Note that suction pressure can change as charge is adjusted.
- 7- Example: At 95°F outdoor ambient and a measured suction pressure of 130psig, the target liquid temperature is 101°F. For a measured liquid temperature of 106°F, add charge in increments until measured liquid temperature agrees with the target liquid temperature.



115 °F

Disc

psig

491

502

524

556

Suct

psig

122

130

148

167

170

160

Disc

psia

491

502

524

Suct

psia

122

130

148

## ZGA/ZCA048 All-Aluminum Refrigerant Charge and Check

Suct

psig

111

118

133

150

75 °F

Disc

psig

295

299

314

342

110

120

## WARNING-Do not exceed nameplate charge under any condition.

This unit is factory charged and should require no further adjustment. If the system requires additional refrigerant, reclaim the charge, evacuate the system, and add required nameplate charge.

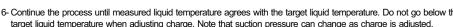
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- 2-Compare the normal operating pressures to the pressures obtained from the gauges. Check unit components if there are significant differences
- 3- Measure the outdoor ambient temperature and the suction pressure. Refer to the charging curve to determine a target liquid temperature.

Note - Pressures are listed for sea level applications.

- 4- Use the same thermometer to accurately measure the liquid temperature (in the outdoor section).
  - If measured liquid temperature is higher than the target liquid temperature, add refrigerant to the system.
  - If measured liquid temperature is lower than the target liquid temperature, recover some refrigerant from the system.
- 5-Add or remove charge in increments. Allow the system to stabilize each time refrigerant is added or removed.



6- Continue the process until measured liquid temperature agrees with the target liquid temperature. Do not	go belov
target liquid temperature when adjusting charge. Note that suction pressure can change as charge is ad	justed.

	100	110 nperature. Do not o	120	130 Suction Pre	140 essure (psig)	150	160	170
е	60							
<sub>-</sub>	70					——— 65°		
r Liquid To	80					75	0	
- Temperature	90	-					85°	
							95°	
. (J.)	110							105° -
d -	120							115°
Э	130					Outo	door Tempera	
-								

Normal Operating Pressures

Outdoor Coil Entering Air Temperature

95 °F

Disc

psig

386

392

408

436

Suct

psig

118

125

141

158

85 °F

Disc

psig

338

344

358

388

Suct

psig

115

122

137

155



7- Example: At 95°F outdoor ambient and a measured suction pressure of 130psig, the target liquid temperature is 101°F. For a measured liquid temperature of 106°F, add charge in increments until measured liquid temperature agrees with the target liquid temperature.