

## ZHA048 Refrigerant Charge and Check

**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 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).

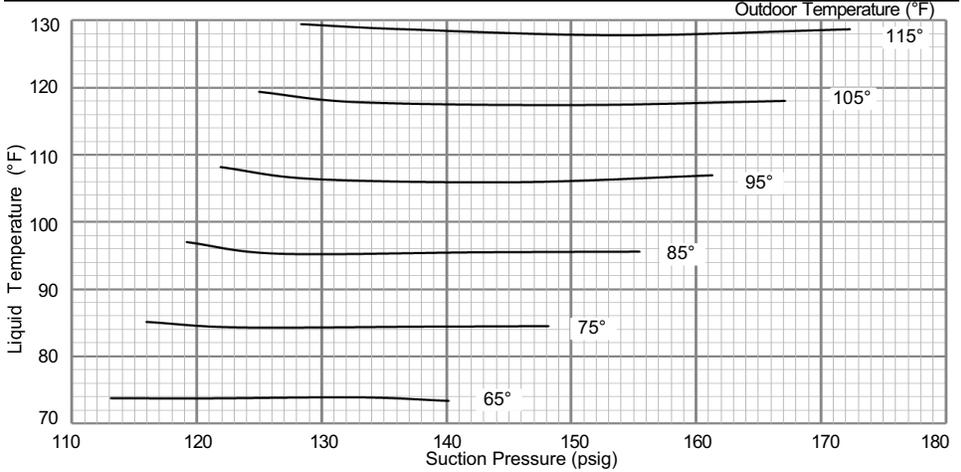
- If measured liquid temperature is higher than the target liquid temperature, add refrigerant to the system.
- If measured liquid temperature is lower than the target liquid temperature, recover some refrigerant from the system.

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 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 106°F. For a measured liquid temperature of 107°F, add charge in increments until measured liquid temperature agrees with the target liquid temperature.

Normal Operating Pressures											
Outdoor Coil Entering Air Temperature											
65 °F		75 °F		85 °F		95 °F		105 °F		115 °F	
Suc psig	Disc psig	Suct psig	Disc psig	Suct psig	Disc psig	Suct psig	Disc psig	Suct psig	Disc psig	Suct psig	Disc psig
113	253	116	293	119	336	122	383	125	435	128	492
121	258	123	297	126	341	129	387	133	440	137	498
133	267	138	308	143	354	146	401	151	459	154	516
140	273	148	317	155	366	161	418	167	475	172	536



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