

HSW4 SERIES UNITS

I - INTRODUCTION

The HSW4 has been in production since 1971. The unit can be installed recessed, flush or projected through an exterior wall. The HSW4 is an RFC system only and must be mated to the correct line set. See Engineering Handbook. If a hard start kit is necessary, refer to the "Cross Reference Section" of the Lennox Repair Parts Handbook. The refrigerant connections are flare fitting.

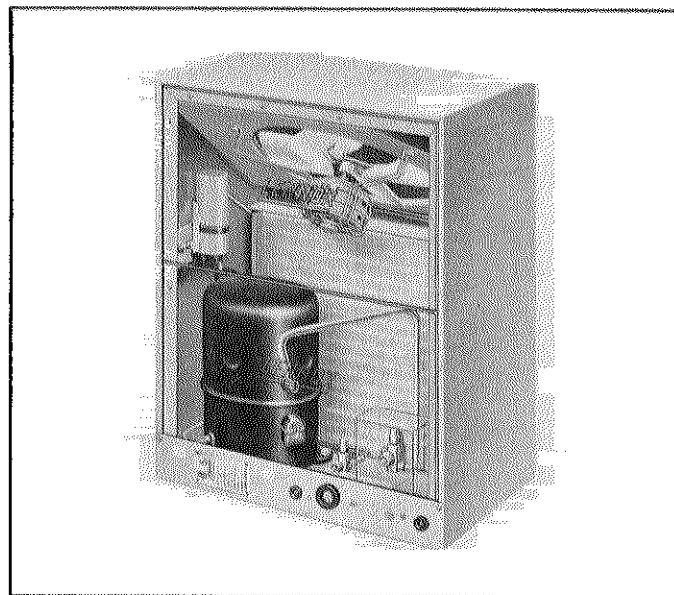


FIGURE 1

II - UNIT INFORMATION

A - Specifications

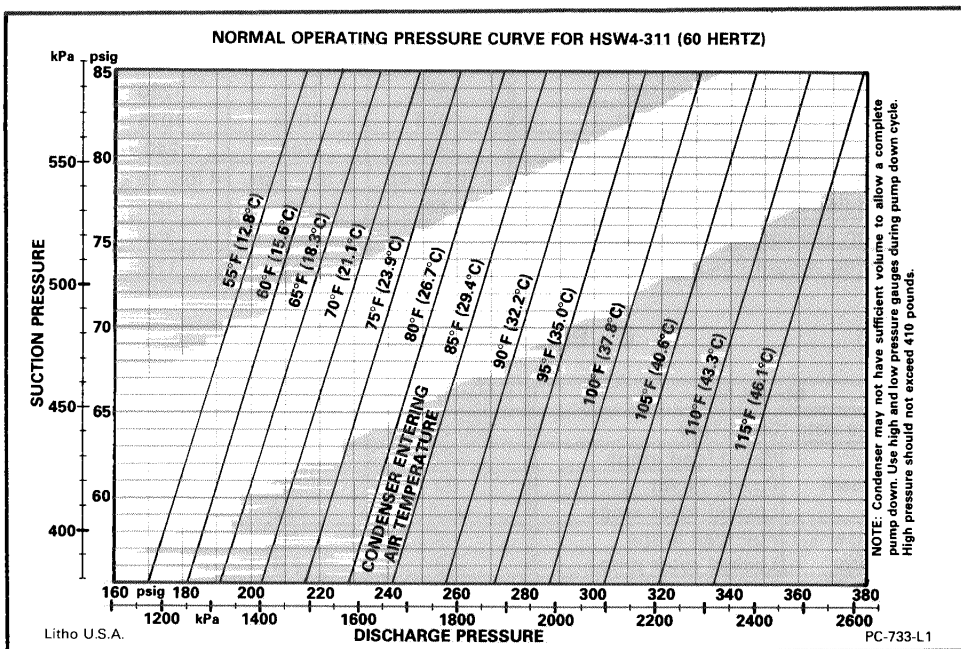
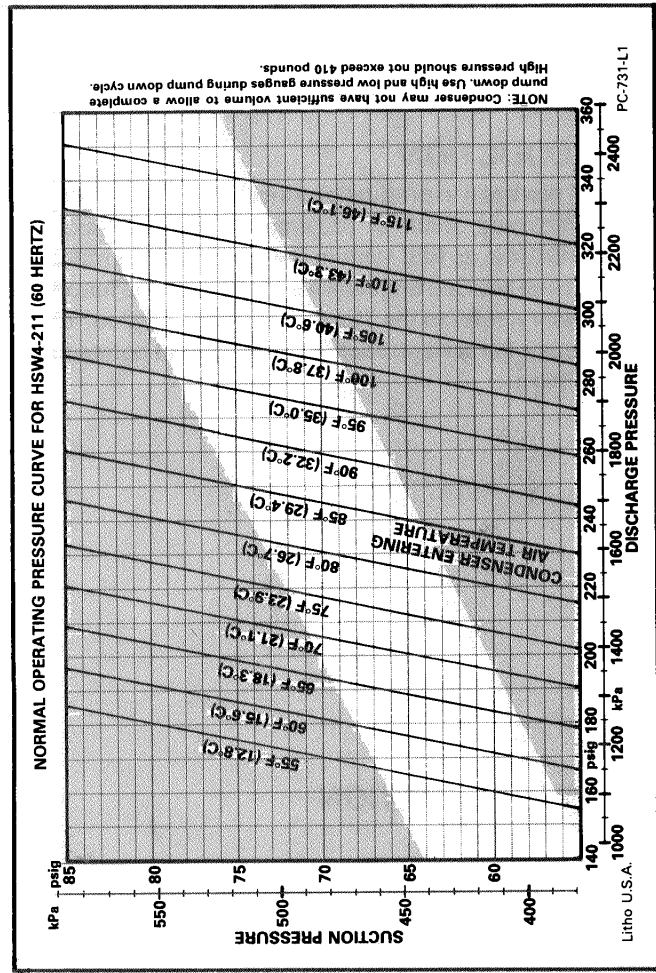
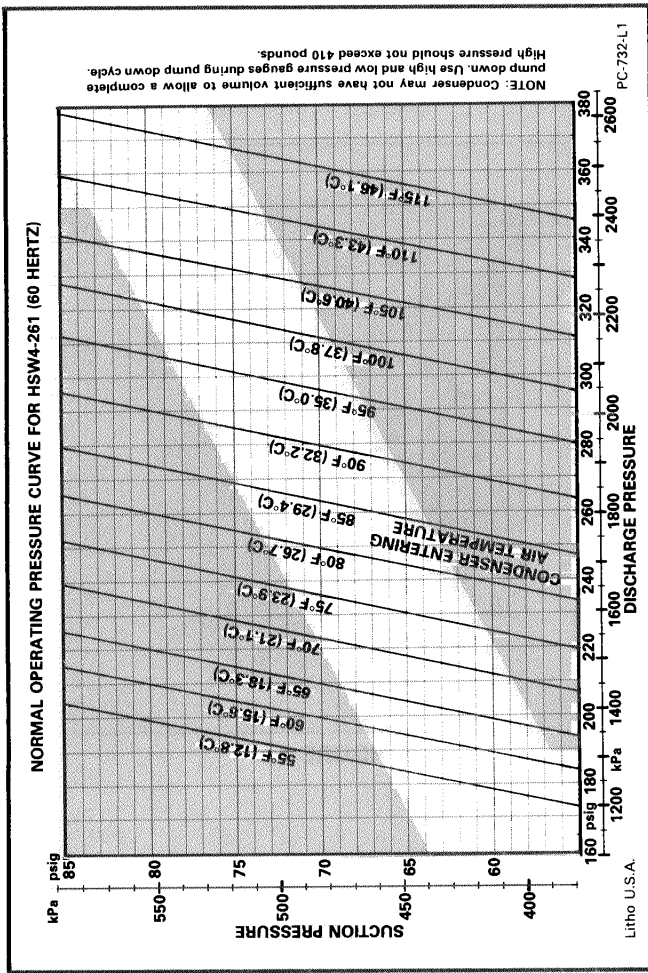
| Model No. | | HSW4-211FF | HSW4-261FF | HSW4-311FF |
|-------------------------------------|-----------------------------|--------------|--------------|---------------|
| Condenser Coil | Net face area (sq. ft.) | 3.47 | 3.47 | 3.47 |
| | Tube diameter (in.) | 3/8 | 3/8 | 3/8 |
| | Number of rows | 2 | 3 | 4 |
| | Fins per inch | 15 | 15 | 16 |
| Condenser Fan | Diam. (in.) & No. of blades | 16 — 4 | 16 — 4 | 16 — 4 |
| | Motor hp | 1/6 | 1/6 | 1/6 |
| | Cfm (factory set) | 1500 | 1370 | 1280 |
| | Rpm (factory set) | 1075 | 1075 | 1075 |
| | Watts (factory set) | 240 | 240 | 240 |
| | Refrigerant-22 (furnished) | 2 lbs. 6 oz. | 3 lbs. 2 oz. | 4 lbs. 15 oz. |
| Liquid line conn. (o.d. in.) flare | | 3/8 | 3/8 | 1/2 |
| Suction line conn. (o.d. in.) flare | | 5/8 | 5/8 | 3/4 |
| Shipping weight (lbs.) 1 Package | | 146 | 168 | 178 |

B - Electrical Data

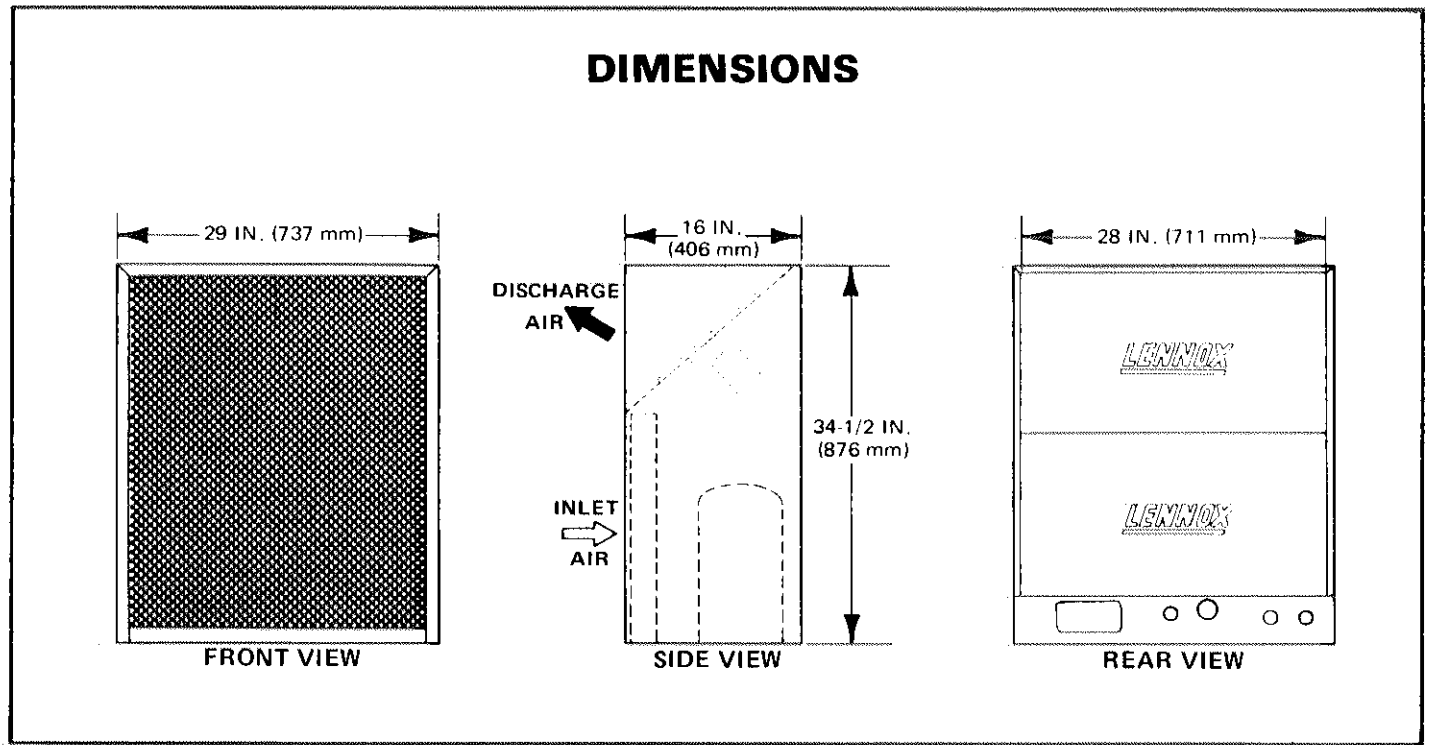
| Model No. | | HSW4-211FF | HSW4-261FF | HSW4-311FF |
|-------------------------------|-------------------|------------|------------|------------|
| Line voltage data (60 hz/1ph) | | 208-230v | 208-230v | 208-230v |
| Compressor | Rated load amps | 11.7 | 15.9 | 17.5 |
| | Power factor | .92 | .92 | .92 |
| | Locked rotor amps | 53.0 | 74.0 | 85.0 |
| Condenser fan motor | Full load amps | 1.4 | 1.4 | 1.4 |
| | Locked rotor amps | 2.9 | 2.9 | 2.9 |
| *Minimum circuit ampacity | | 16.3 | 21.3 | 23.8 |

* Refer to National Electrical Code manual to determine wire, fuse and disconnect size requirements.
NOTE - Extremes of operating range plus 10% and minus 5% of line voltage. 208/230V

C - Pressure Curves



D - Unit Dimensions



III - REFRIGERANT SYSTEM

The service valves and gauge ports are located inside cabinet. See Figure 2. The gauge ports on the service valves can be shut off by backseating the valves. Open valve one turn off back seat to record pressure at gauge manifold. A discharge gauge port is also provided on unit.

Each unit is furnished with a normal operating pressure curve. The curve uses suction pressure, discharge pressure and outdoor temperature comparison. To use the chart, first check suction pressure, then move over to the outdoor temperature and finally down to the discharge pressure. If the discharge pressure is within five pounds of this reading, the unit is properly charged, providing the three conditions meet in the unshaded area of the chart. If they meet in the shaded area, there is something wrong with the system and further checks are needed.

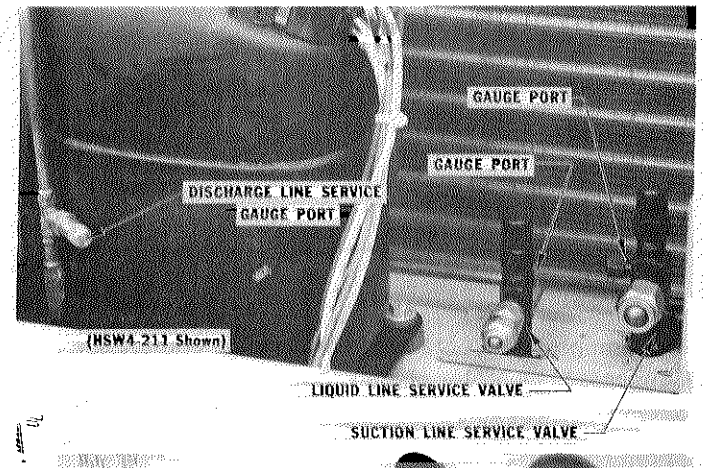


FIGURE 2

IV - COMPONENTS

Figure 3 shows an exploded view of an HSW4.

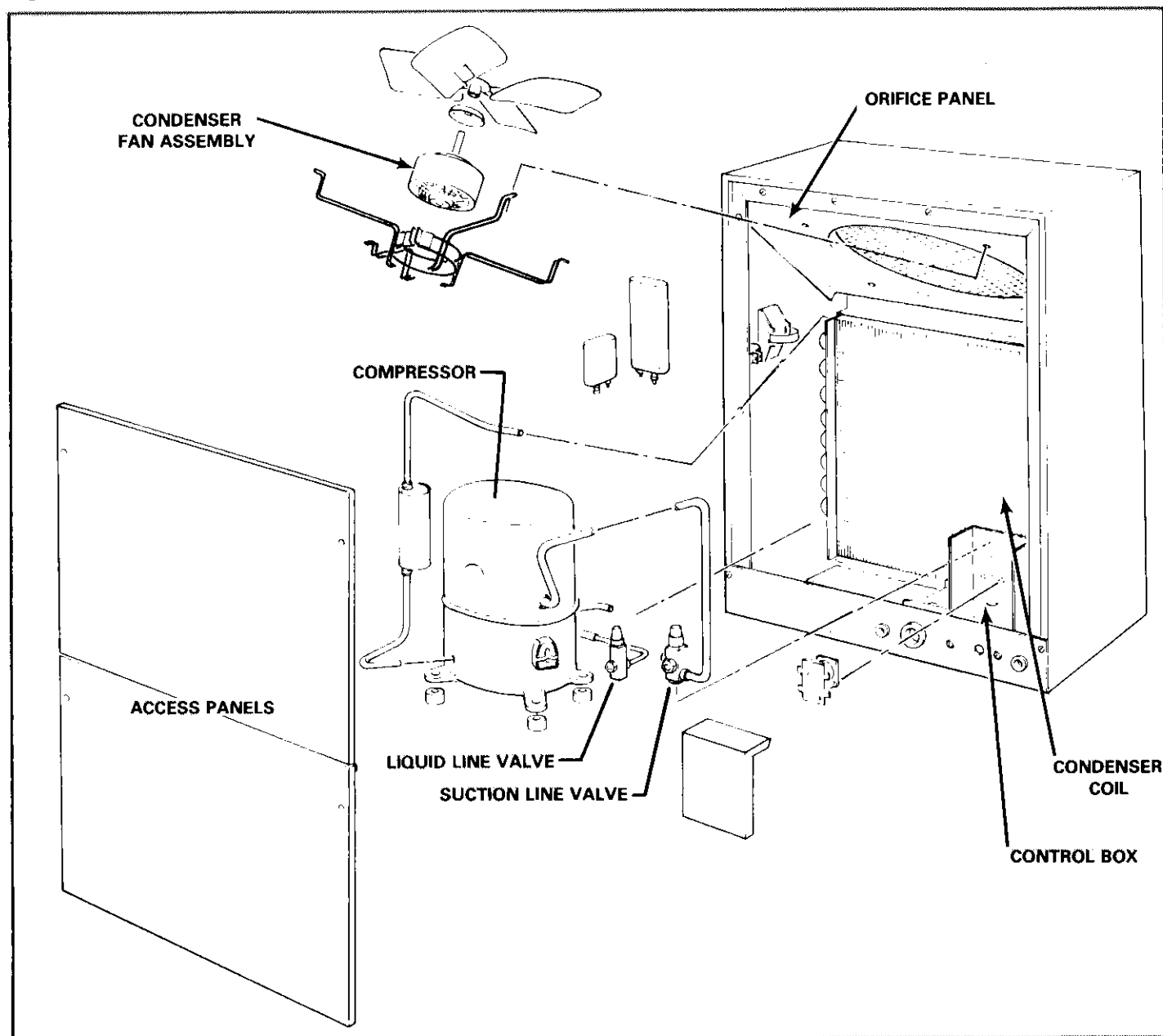


FIGURE 3

A - Control Box

The Compressor Contactor energizes the compressor and Condenser Fan Motor on demand.

B - Compressor Compartment

Compressor uses an internal overload and a pressure relief valve. The relief valve opens at a discharge and suction differential of $450 \text{ psig} \pm 50$.

C - Condenser Coil Compartment

Air draws through the condenser coil and is discharged out the same side it entered. The air is discharged up and away from entering air to prevent recirculation problems. The rear panels must be in place to draw the correct air volume through coil. For fan service access, remove the four bolts securing fan assembly. Figure 4 illustrates the condenser fan and motor assembly.

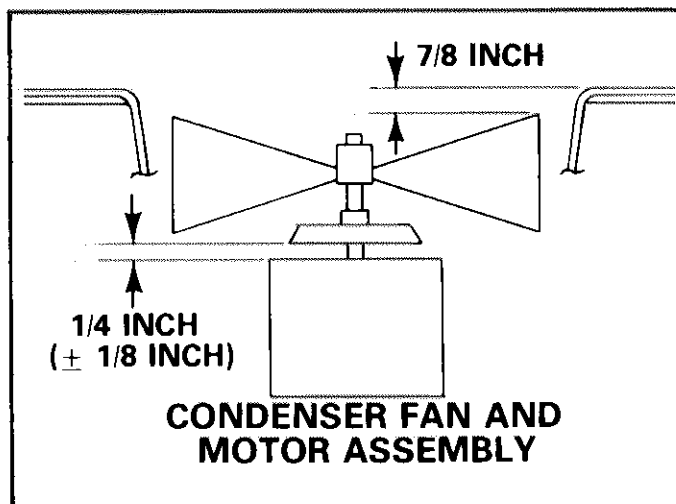


FIGURE 4

V - SCHEMATIC WIRING DIAGRAM OPERATING SEQUENCE

HSW4

- 1 - The thermostat makes on a cooling demand.
- 2 - If the thermostat is set on "Auto", the Blower Relay is energized. The Blower Relay closes its N.O. contacts to energize the Blower Motor at cooling speed.
- 3 - As the thermostat closes, it energizes the Compressor Contactor.
- 4 - The Compressor Contactor then energizes its N.O. contacts to energize the compressor. It also powers the Outdoor Fan Motor.
- 5 - As the demand is satisfied, the thermostat opens its contacts to de-energize the machine.

