

1.2 GENERAL DESCRIPTION

a. Compressor Section

NOTE

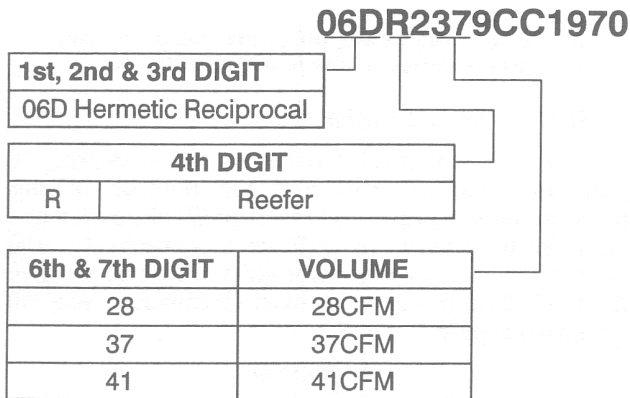
Check the compressor Serial/Model Number plate for CFM displacement, refer to Table 1-2.

The compressor section includes the compressor (with high pressure switch), power cable storage compartment, and an optional power transformer which is located to the left of the compressor.

This section also contains the modulating solenoid valve, suction solenoid valve (Model 69NT40 only), quench valve, moisture-liquid indicator, manual liquid line valve, filter-drier, pressure relief valves, compressor suction sensor (CPSS) and compressor discharge sensor (CPDS).

The supply air temperature sensor (STS), supply recorder sensor (SRS) and ambient sensor (AMBS) are located at the right side of the compressor.

Table 1-2 Compressor Model Number Significance Chart



b. Condenser Section

The condensing section consists of a condenser fan motor, condenser fan, condenser saturation sensor (CSAS), and an air-cooled condenser coil. When the unit is operating with air-cooled condenser operation, air is pulled in the bottom of the coil and discharges horizontally through the center of the unit.

Some units are equipped with an optional water-cooled condenser (condenser/receiver) and a water pressure switch or condenser fan switch (CFS). (See Figure 1-3)

c. Evaporator Section

The evaporator section contains the temperature recorder bulb, return recorder sensor (RRS) and thermistor, return temperature sensors (RTS), thermostatic expansion valve, evaporator fan motors and fans (2), evaporator coil and heaters, drain pan and heaters, defrost and heat termination switches. See Figure 1-2 and Figure 1-3 for sensor location.

The evaporator fans circulate air throughout the container by pulling air in the top of the refrigeration unit and directing the air through the evaporator coil where it is either heated or cooled, and then discharged out the bottom of the refrigeration unit into the container.

Some units are equipped with two-speed evaporator fan motors. Refer to Table 1-1. When transporting perishable commodities, the fan motors will be in high speed (above -10°C = + 14°F).

The evaporator coil heaters are accessible by removing the front, lower access panel. The defrost termination switch (DTT) is located on the coil center tube-sheet and may be serviced by removing the upper rear, panel or by removing the left front, upper access panel and reaching through the evaporator fan venturi **AFTER POWER IS TURNED OFF AND POWER PLUG DISCONNECTED.**

d. Control Box

The control box and door include the manual switches, circuit breaker(s), relays, transformers (potential and control) and fuses. (See Figure 1-4).

1.3 REFRIGERATION SYSTEM DATA

a. Compressor — Motor Assembly

No. of Cylinders: 6
 Model: 06DR
 Weight (Dry): 260 lb (118 kg)

b. Approved Compressor Oil

Petroleum Specialties Inc. - Cryol 150
 Witco - Suniso 3GS
 Texaco - Capella WF32

c. Compressor Oil Charge

4.0 liters (8.5 U.S. Pints)

d. Compressor Oil Sight Glass

Oil level should be between ¼ to ½ of sight glass with the compressor in operation.

e. Defrost Timer

Initiates Defrost: Refer to section 1.13.4 (Code 25)

f. Defrost Termination Thermostat

Opens: 23.9 (± 3)°C = 75 (± 5)°F
 Closes: 15.6 (± 3)°C = 60 (± 5)°F

g. Expansion Valve Superheat

Setting at 0°C (32°F) container box temperature: 4.4 to 5.5°C (8 to 10°F)

h. Heater Termination Thermostat

Opens: 54 (± 3)°C = 130 (± 5)°F
 Closes: 38 (± 3)°C = 100 (± 5)°F

i. High Pressure Switch

28 or 37 CFM Compressor:
 Cutout: 21 (± 0.7) kg/cm² = 295 (± 10) psig
 Cut-In: 13 (± 0.7) kg/cm² = 190 (± 10) psig
41 CFM Compressor:
 Cutout: 25 (± 0.7) kg/cm² = 350 (± 10) psig
 Cut-In: 18 (± 0.7) kg/cm² = 250 (± 10) psig

j. Refrigeration Charge

Refer to Table 1-1.

k. Pressure Relief Valves

Low Side:

Opens: 18.63 kg/cm² (265 psig)

High Side for R-12:

Opens: 24 kg/cm² (340 psig)

High Side with provision for R-22:

Opens: 34.10 kg/cm² (485 psig)

High Side on model 69NT40-441-25:

Opens: 35.15 kg/cm² (500 psig)

m. Unit Weight

Refer to Table 1-1.

n. Water Pressure Switch (Optional)

Cut-In: 0.5 ± 0.2 kg/cm² (7 ± 3 psig)

Cutout: 1.6 ± 0.4 kg/cm² (22 ± 5 psig)

1.4 ELECTRICAL DATA

a. Circuit Breaker

CB-1 Trips at: 29 Amps (Model 69NT40)

CB-1 Trips at: 24.2 Amps (Model 69NT20)

CB-2 Trips at: 50 Amps

b. Compressor Motor

Full Load Amps (FLA): 17.6 Amps @ 460 vac
(with current limiting set at 21 amps)
(Model 69NT40)

c. Condenser Fan Motor

Bearing Lubrication: Factory lubricated, additional grease not required.

Full Load Amps: 2.0/4.0 FLA

Nominal Horsepower: 0.43/0.75 hp

Rotation: CCW when viewed from shaft end.

Speed: 1425/1725

Voltage: 190/380/208/230/460 vac/lph/50/60 hz

d. Drain Pan Heaters

Number of Heaters: 1

Rating: 750 watts +5 /-10 % at 460 Vac

Resistance (cold): 22.7 ± 5% ohms nominal

Type: Sheath

e. Evaporator Coil Heaters

Number of Heaters: 4

Rating: 750 watts each at 230 +5/-10 volts

Resistance (cold): @ 68°F (20°C)

Ambient: 66.8 to 77.2 ohms

Type: Sheath

f. Evaporator Fan Motor(s)

Bearing Lubrication: Factory lubricated, additional grease not required

Full Load Amps

High Speed: 2.0/2.3 Amps

Low Speed: 0.4/0.6 Amps

Single Speed Motor: 2.0/4.0 Amps

Nominal Horsepower

High Speed : 0.58/1 hp

Low Speed : 0.07/0.12 hp

Single Speed Motor : 0.58/1.0 hp

Rotation

Evap. Fan Motor #1 (See Figure 1-2):

CW when viewed from shaft end

CCW when viewed from end opposite shaft end

Evap. Fan Motor #2 (See Figure 1-2):

CCW when viewed from shaft end

CW when viewed from end opposite shaft end

Speed: 2850/3450 rpm

Voltage: 380/460 vac/1 ph/50/60 hz

g. Fuses

Control Circuit: 6 Amps (F)

Microprocessor: 5 Amps (Slow Blow) (F3A)

Battery Charger: 5 Amps (Slow Blow) (F3B)