

The following guide will give you the information on troubleshooting, common service issues, service procedures, service issues, and charging. **(The schematic can be downloaded from the user manuals available on our website. \* NOTE YOU WILL NEED TO KNOW THE VOLTAGE & WHICH CONTROL THE UNIT HAS. THE CONTROL WILL HAVE ON THE FRONT WHICH VERSION IT IS. FDC4000, C-42, 4100, 1160)**

When we have a faulty compressor, we also change out the capillary tube assembly, You will find the capillary tube assembly behind the small backplate on the back of the unit.

Be sure the unit is at room temperature and recover all the refrigerant. No special recovery equipment is necessary. Once the refrigerant is recovered, and all the parts removed, flush the system thoroughly. We recommend Rx-11 flush.

Once this is accomplished, installation of the new parts may proceed. When completed, we charge the system with 300 PSI of dry Nitrogen and check the pressure readings for leaks no less than 24 hours. After 24 hours has passed and no leaks are present, evacuation of the system may proceed. We recommend a Micro reading of 50 mics but anything 200 mics or less should suffice. Charging the system may proceed after 12 hours of no vacuum leak. If you have any questions call or email the service department with the model and serial number of the unit you are working on.

Call or email the service department between  
8:00 am & 4:30 pm E.S.T. Monday – Friday

Service Phone: (513) 326-2052

Email: [service@so-low.com](mailto:service@so-low.com)

Parts: [parts@so-low.com](mailto:parts@so-low.com)

## A) Service Procedure

- 1) In case of a compressor replacement, the capillary line assembly is **always** replaced.
- 2) A High stage rebuild includes the compressor and the capillary line assembly.
  - Flushing the system is only needed in case of a compressor burnout, or if oil is found in the system.



**Service Hint:** The capillary line assemblies are found behind the small back plate at the rear of the freezer. The drier for the Hi-Stage system is usually located next to the Hi-Stage compressor.

The preferred flushing agent that we use is **Rx11-flush**.

## B) SINGLE STAGE UNITS ( 0°C to -40°C )

- 1) **Unit is not cooling, and compressor is off:**
  - Usually a faulty compressor control relay (Refer to schematic. **The schematic can be downloaded from the user manuals section on our website.**)
  - Rarely a temperature control but may be defective.
- 2) **Unit warming and compressor is running:**
  - Checking running pressures. There could be a leak or restriction.
  - High Stage system failure due to leak or restriction.



**Service Hint:** It happens far too often that the condenser is not cleaned regularly.

## Refrigeration System Type: Single Stage

### Compressors: **Tecumseh AJB Series**

115 Volts, 60 Cycle, 1 Phase

208/220/230 Volts, 60 Cycle, 1 Phase

200/220/230 Volts, 50 Cycle, 1 Phase

### Refrigerants: Single Stage System: R290 R404A

#### **SINGLE STAGE SYSTEM: R290 / R404A**

**Recharging the single stage system:** If the single stage system has been evacuated and is being recharged, then weigh in the appropriate amount of [R290](#).

#### **ALL MODELS - 30" to 0 PSI WITH R290**

**Recharging the single stage system:** If the single stage system has been evacuated and is being recharged, then weigh in the appropriate amount of [R404A](#)

#### Chest Models:

C40-3, PH40-3 - 12 oz.  
C40-5, PH40-5 - 14 oz.  
C40-9, PH40-9 - 15 oz.  
C40-12, PH40-12 - 16 oz.  
C40-14, PH40-14 - 16 oz.  
C40-17, PH40-17 - 16 oz.  
C40-22, PH40-22 - 19 oz.  
C40-27, PH40-27 - 21 oz.

#### Upright Models:

U40-13, PV40-13 - 14 oz.  
U40-18, PV40-18 - 15.5 oz.  
U40-22, PV40-22 - 15 oz.  
U40-25, PV40-25 - 17 oz.  
U40-30, PV40-30 - 22 oz.

# ULTRA LOW OPERATING PRESSURE CHART

## “N”

### SINGLE STAGE:

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Compressor: **1 HP Tecumseh**

Soak Pressure: 120 – 130 psi

Refrigerant: R-404A

R-290

AMBIENT +75°F

| CABINET TEMPERATURE             | 20°C<br>68°F | 0°C<br>32°F | -10°C<br>14°F | -25°C<br>-13°F | -40°C<br>-40°F | MAX       |
|---------------------------------|--------------|-------------|---------------|----------------|----------------|-----------|
| HIGH STAGE PSI                  | 220          | 220         | 190           | 180            | 170            | 170       |
| HEAD PRESSURE                   | To<br>240    | To<br>240   | To<br>210     | To<br>210      | To<br>190      | To<br>190 |
| SUCTION PRESSURE<br>134A / HP62 | 1-2 psi      | 1-2 psi     | 1 psi         | 0-1 psi        | 0-2"           | 3-5"      |

**\*NOTE: THESE PRESSURES ARE ONLY APPROXIMATES, BASED ON A 75°F AMBIENT.**

# ***Ultra-Low Temperature Freezers***

*Refrigeration System Type: Single Stage*

*Compressors: **Danfoss SC15FTX Series***

*115 Volts, 60 Cycle, 1 Phase*

*208/220/230 Volts, 60 Cycle, 1 Phase*

*200/220/230 Volts, 50 Cycle, 1 Phase*

*Refrigerants: Single Stage System: R290*

*R404A*

## **SINGLE STAGE SYSTEM: R290 / R404A**

**Recharging the single stage system:** If the single stage system has been evacuated and is being recharged, then weigh in the appropriate amount of [R290](#)

## **ALL MODELS - 30" to 0 PSI WITH R290**

**Recharging the single stage system:** If the single stage system has been evacuated and is being recharged, then weigh in the appropriate amount of [R404A](#)

### *Chest Models:*

C40-3, PH40-3 - 9 oz.  
C40-5, PH40-5 - 9 oz.  
C40-9, PH40-9 - 11 oz.

# ULTRA LOW OPERATING PRESSURE CHART

## “N”

### SINGLE STAGE:

Compressor: 1/3 HP Danfoss

Soak Pressure: 100 – 120 psi

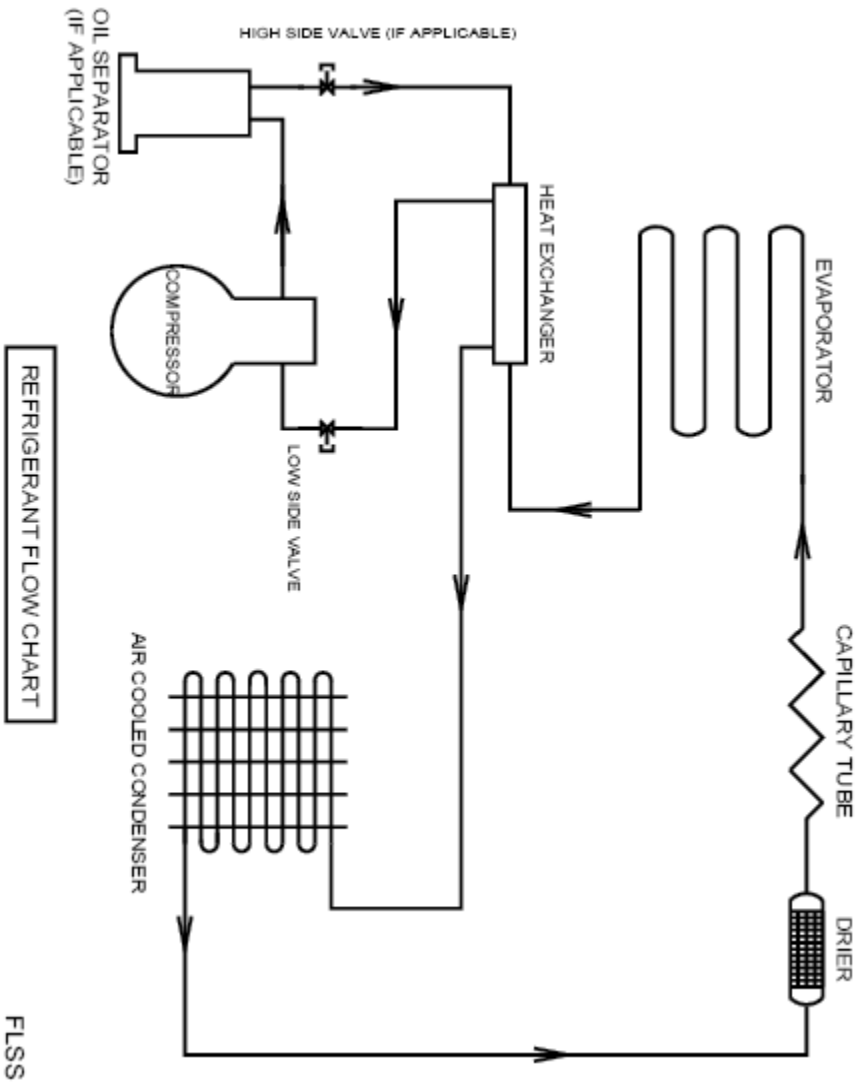
Refrigerant: R-404A

R-290

AMBIENT +75°F

| CABINET TEMPERATURE             | 20°C<br>68°F | 0°C<br>32°F | -10°C<br>14°F | -25°C<br>-13°F | -40°C<br>-40°F | MAX       |
|---------------------------------|--------------|-------------|---------------|----------------|----------------|-----------|
| HIGH STAGE PSI                  | 220          | 220         | 190           | 180            | 170            | 170       |
| HEAD PRESSURE                   | To<br>240    | To<br>240   | To<br>210     | To<br>210      | To<br>190      | To<br>190 |
| SUCTION PRESSURE<br>134A / HP62 | 1-2 psi      | 1-2 psi     | 1 psi         | 0-1 psi        | 0-2"           | 3-5"      |

**\*NOTE: THESE PRESSURES ARE ONLY APPROXIMATES, BASED ON A 75°F AMBIENT.**



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