

- Use gauges to determine the pressure at the evaporator coil outlet, and a thermometer to get the actual temperature at the same point.
  - Get the Dew temperature from the "Dew" column
  - Superheat = Actual Temperature - Dew Temperature
- Example:** Find the superheat on a system which uses Genetron Performax<sup>®</sup> LT when the pressure at the evaporator outlet reads 45 psig and your surface thermometer reads 30°F
- ✓ 45 psig yields ~ 20°F (using dew point)
  - ✓ Degree of Superheat = 30°F - 20°F = 10°F

**Procedure:**

## SUPERHEAT



- Use gauges to determine the pressure at the condenser coil outlet, and a thermometer to get the actual temperature at the same point.
  - Use the Bubble column to get the bubble temperature
  - Subcooling = Bubble Temperature - Actual Temperature
- Example:** Find the amount of subcooling on a system using Genetron Performax<sup>®</sup> LT when the liquid line temperature reads 75°F and the liquid line pressure is 195 psig.
- ✓ 195 psig yields ~ 85°F (using Bubble temp)
  - ✓ Degree of Subcooling = 85°F - 75°F = 10°F

**Procedure:**

## SUBCOOLING



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## PT CHART FOR GENETRON PERFORMAX<sup>®</sup> LT

New Pressure-based Charts Make Calculating Glide Easier

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**GENETRON PERFORMAX<sup>®</sup> LT (R-407F)**

**PRESSURE BASED PT CHART**

Pressure (psig)	Temperature			Pressure (psig)	Temperature		
	°F				°F		
	Avg	Bubble	Dew		Avg	Bubble	Dew
0.0	-45.2	-50.9	-39.4	46.0	15.5	10.4	20.7
1.0	-42.7	-48.5	-37.0	49.0	18.0	12.8	23.1
2.0	-40.4	-46.1	-34.7	52.0	20.3	15.2	25.5
3.0	-38.2	-43.9	-32.5	55.0	22.6	17.5	27.7
4.0	-36.1	-41.8	-30.5	59.0	25.5	20.4	30.6
5.0	-34.1	-39.8	-28.5	63.0	28.3	23.2	33.3
6.0	-32.2	-37.8	-26.5	67.0	31.0	25.9	36.0
7.0	-30.3	-36.0	-24.7	83.0	40.8	35.9	45.7
8.0	-28.5	-34.1	-22.9	101.0	50.5	45.7	55.3
9.0	-26.8	-32.4	-21.2	121.0	60.0	55.3	64.7
10.0	-25.1	-30.7	-19.5	142.0	68.9	64.3	73.4
11.0	-23.5	-29.1	-17.9	154.0	73.6	69.1	78.1
12.0	-21.9	-27.5	-16.4	167.0	78.4	74.0	82.8
13.0	-20.4	-25.9	-14.8	181.0	83.3	78.9	87.6
14.0	-18.9	-24.4	-13.4	196.0	88.3	84.0	92.5
16.0	-16.0	-21.5	-10.5	212.0	93.3	89.1	97.5
18.0	-13.3	-18.8	-7.8	229.0	98.3	94.2	102.4
20.0	-10.7	-16.2	-5.3	246.0	103.1	99.1	107.1
22.0	-8.2	-13.7	-2.8	264.0	107.9	104.0	111.8
24.0	-5.8	-11.3	-0.4	284.0	113.0	109.2	116.8
26.0	-3.6	-8.9	1.8	304.0	117.8	114.1	121.5
28.0	-1.4	-6.7	4.0	325.0	122.7	119.1	126.3
29.0	-0.3	-5.6	5.1	348.0	127.7	124.2	131.2
31.0	1.8	-3.5	7.1	349.0	127.9	124.5	131.4
34.0	4.8	-0.5	10.1	372.0	132.7	129.4	136.0
37.0	7.7	2.4	12.9	397.0	137.7	134.5	140.9
40.0	10.4	5.2	15.7	423.0	142.6	139.5	145.6
43.0	13.0	7.8	18.2	450.0	147.5	144.6	150.3

## Charge Calculation

Product	ASHRAE Number	Refrigerant Type	Refrigerant Class	Lubricant Used*	Liquid Density (lbs/ft <sup>3</sup> ) <sup>†</sup> at 80°F
Genetron Performax LT	R-407F	Blend HFC	HFC	POE	69.3
Genetron <sup>®</sup> 22	R-22	Single Component	HCFC	MO	73.9
Genetron 404A	R-404A	Blend HFC	HFC	POE	64.7
Genetron AZ-50 <sup>®</sup>	R-507	Azeotrope HFC	HFC	POE	64.9
Genetron 408A	R-408A	Blend HCFC	HCFC	AB	65.7
Genetron AZ-50 <sup>®</sup>	R-507	Azeotrope HFC	HFC	POE	64.9
Genetron HP80	R-402A	Blend HCFC	HCFC	AB	71

\* POE = polyol ester, MO = mineral oil, AB = Alkylbenzene \*\* Divide by 7.48 to convert to lbs/gal.

† U.S. production stopped Dec. 31, 1995.

When retrofitting a system with a new refrigerant, use this formula to determine amount needed:  
 Pounds of new refrigerant =  $\frac{\text{Pounds of original refrigerant} \times \text{density of new refrigerant (at 80°F)}}{\text{density of original refrigerant (at 80°F)}}$

**EXAMPLE**

If you were using 1,000 pounds of R-22, you'll need about 938 pounds of R-407F, as follows:

$$\text{Pounds of R-407F} = \frac{1,000 \times 69.3}{73.9} = 938$$



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