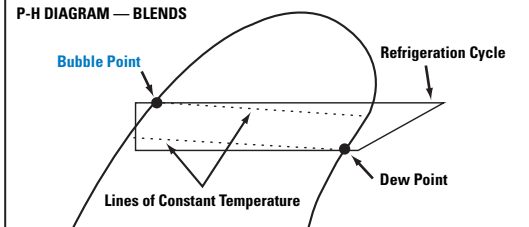
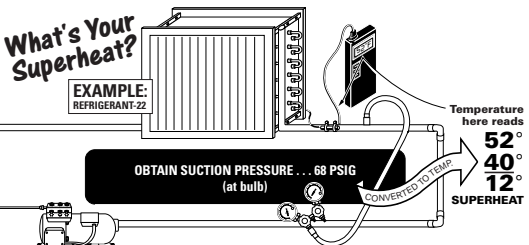


PSIG	TEMPERATURE °F					
	PINK	SAND	ORANGE	GREEN	REDDISH PURPLE	BROWN
	REFRIGERANT - (SPORLAN CODE)					
	MP39 or 401A (X)	HP80 or 402A (L)	HP62 or 404A (S)	KLEA 60 or 407A	FX-10 or 408A	FX-56 or 409A
5*	-23	-59	-57	-45	-54	-22
4*	-22	-58	-56	-43	-52	-20
3*	-20	-56	-54	-42	-51	-19
2*	-19	-55	-53	-41	-49	-17
1*	-17	-54	-52	-39	-48	-16
0	-16	-53	-50	-38	-47	-15
1	-13	-50	-48	-36	-44	-12
2	-11	-48	-46	-33	-42	-9
3	-9	-45	-43	-31	-39	-7
4	-6	-43	-41	-29	-37	-5
5	-4	-41	-39	-27	-35	-2
6	-2	-39	-37	-25	-33	0
7	0	-37	-35	-23	-31	2
8	2	-36	-33	-21	-29	4
9	4	-34	-32	-20	-27	6
10	6	-32	-30	-18	-26	8
11	8	-30	-28	-16	-24	9
12	9	-29	-27	-15	-22	11
13	11	-27	-25	-13	-21	13
14	13	-26	-23	-12	-19	14
15	14	-24	-22	-10	-18	16
16	16	-23	-20	-9	-16	17
17	17	-21	-19	-8	-15	19
18	19	-20	-18	-6	-13	20
19	20	-19	-16	-5	-12	22
20	21	-17	-15	-4	-11	23
21	23	-16	-14	-2	-9	25
22	24	-15	-12	-1	-8	26
23	25	-14	-11	0	-7	27
24	27	-12	-10	1	-5	29
25	28	-11	-9	2	-4	30
26	29	-10	-8	4	-3	31
27	30	-9	-7	5	-2	32
28	32	-8	-5	6	-1	34
29	33	-7	-4	7	0	35
30	34	-6	-3	8	1	36
31	35	-5	-2	9	3	37
32	36	-4	-1	10	4	38
33	37	-2	0	11	5	39
34	38	-1	1	12	6	40
35	39	0	2	13	7	41
36	40	0	3	14	8	43
37	42	1	4	15	9	44
38	43	2	5	16	10	45
39	44	3	6	17	11	46
40	45	4	7	18	12	47
42	46	6	9	19	13	48
44	48	8	10	21	15	50
46	50	10	12	23	17	52
48	52	11	14	24	19	54
50	54	13	15	26	20	56
52	56	14	17	28	22	58
54	58	16	19	29	24	60
56	60	18	20	31	25	62
58	62	19	22	32	27	64
60	64	20	23	33	28	66
62	66	22	25	35	30	68
64	68	23	26	36	31	70
66	70	25	27	38	32	72
68	72	26	29	39	34	74
70	74	27	30	40	35	76
72	76	29	31	41	37	78
74	78	30	33	43	38	80
76	80	31	34	44	39	82
78	82	32	35	45	40	84
80	84	34	36	46	42	86
85	89	37	39	49	45	91
90	94	40	42	52	48	96
95	99	42	45	55	50	101
100	104	45	48	58	53	106
105	109	48	50	61	55	111
110	114	50	52	63	57	116
115	119	53	55	65	60	121
120	124	55	57	67	62	126
125	129	57	59	69	65	131
130	134	59	61	71	67	136
135	139	60	64	73	69	141
140	144	62	66	75	71	146
145	149	64	68	77	73	151
150	154	66	70	79	76	156
155	159	68	72	81	78	161
160	164	70	74	83	80	166
165	169	72	76	85	81	171
170	174	74	78	87	83	176
175	179	75	80	89	85	181
180	184	77	81	91	87	186
185	189	79	83	93	89	191
190	194	81	85	95	91	196
195	199	82	87	97	92	201
200	204	84	88	99	94	206
205	209	86	90	101	96	211
210	214	87	92	103	97	216
220	224	91	95	107	100	226
230	234	94	98	111	104	236
240	244	97	101	115	107	246
250	254	99	104	119	109	256
260	264	102	107	123	112	266
275	279	106	111	127	116	281
290	294	110	114	131	120	296
305	309	114	118	135	124	306
320	324	118	122	139	128	316
335	339	121	125	143	131	326
350	354	125	129	147	135	336
365	369	128	132	151	138	346

* Inches mercury below one atmosphere



To determine superheat, use Dew Point values. To determine subcooling, use Bubble Point values.





PRESSURE-TEMPERATURE CHART

PSIG	TEMPERATURE °F						
	YELLOW	GREEN	GREEN	BLUE	PURPLE	TEAL	WHITE
	REFRIGERANT - (SPORLAN CODE)						
	12 (F)	22 (V)	124 (M)	134a (J)	502 (R)	AZ50 or 507 (P)	717 (A)
5*	-29	-48	3	-22	-57	-60	-34
4*	-28	-47	4	-21	-55	-58	-33
3*	-26	-45	6	-19	-54	-57	-32
2*	-25	-44	7	-18	-52	-55	-30
1*	-23	-43	9	-16	-51	-54	-29
0	-22	-41	10	-15	-50	-53	-28
1	-19	-39	13	-12	-47	-50	-26
2	-16	-37	16	-10	-45	-48	-23
3	-14	-34	18	-8	-42	-46	-21
4	-11	-32	21	-5	-40	-44	-19
5	-9	-30	23	-3	-38	-41	-17
6	-7	-28	26	-1	-36	-39	-15
7	-4	-26	28	1	-34	-38	-13
8	-2	-24	30	3	-32	-36	-12
9	0	-22	32	5	-30	-34	-10
10	2	-20	34	7	-29	-32	-8
11	4	-19	36	8	-27	-31	-7
12	5	-17	38	10	-25	-29	-5
13	7	-15	40	12	-24	-27	-4
14	9	-14	41	13	-22	-26	-2
15	11	-12	43	15	-20	-24	-1
16	12	-11	45	16	-19	-23	1
17	14	-9	46	18	-18	-21	2
18	15	-8	48	19	-16	-20	3
19	17	-7	49	21	-15	-19	4
20	18	-5	51	22	-13	-17	6
21	20	-4	52	24	-12	-16	7
22	21	-3	54	25	-11	-15	8
23	23	-1	55	26	-9	-14	9
24	24	0	57	27	-8	-12	11
25	25	1	58	29	-7	-11	12
26	27	2	59	30	-6	-10	13
27	28	4	61	31	-5	-9	14
28	29	5	62	32	-3	-8	15
29	31	6	63	33	-2	-7	16
30	32	7	65	35	-1	-6	17
31	33	8	66	36	0	-4	18
32	34	9	67	37	1	-3	19
33	35	10	68	38	2	-2	19
34	37	11	69	39	3	-1	20
35	38	12	71	40	4	0	21
36	39	13	72	41	5	1	22
37	40	14	73	42	6	2	23
38	41	15	74	43	7	3	24
39	42	16	75	44	8	4	25
40	43	17	76	45	9	4	26
42	45	19	78	47	11	6	28
44	47	21	80	49	13	8	29
46	49	23	82	51	15	10	31
48	51	24	84	52	16	11	32
50	53	26	86	54	18	13	34
52	55	28	88	56	20	15	35
54	57	29	90	57	21	16	37
56	58	31	91	59	23	18	38
58	60	32	93	60	24	19	40
60	62	34	95	62	26	21	41
62	64	35	97	64	27	22	42
64	65	37	98	65	29	24	44
66	67	38	100	66	30	25	45
68	68	40	101	68	32	26	46
70	70	41	103	69	33	28	47
72	71	42	104	71	34	29	49
74	73	44	106	72	36	30	50
76	74	45	107	73	37	32	51
78	76	46	109	75	38	33	52
80	77	48	110	76	40	34	53
85	81	51	114	79	43	37	56
90	84	54	117	82	46	40	58
95	87	56	120	85	49	43	61
100	90	59	123	88	51	45	63
105	93	62	126	90	54	48	66
110	96	64	129	93	57	51	68
115	99	67	132	96	59	53	70
120	102	69	135	98	62	55	73
125	104	72	138	100	64	58	75
130	107	74	140	103	67	60	77
135	109	76	143	105	69	62	79
140	112	78	145	107	71	64	81
145	114	81	148	109	73	66	82
150	117	83	150	112	75	68	84
155	119	85	152	114	77	70	86
160	121	87	154	116	80	72	88
165	123	89	157	118	82	74	90
170	126	91	159	120	83	76	91
175	128	92	161	122	85	78	93
180	130	94	163	123	87	80	95
185	132	96	165	125	89	82	96
190	134	98	167	127	91	83	98
195	136	100	169	129	93	85	99
200	138	101	171	131	95	87	101
205	140	103	173	132	96	88	102
210	142	105	175	134	98	90	104
220	145	108	178	137	101	93	107
230	149	111	182	140	105	96	109
240	152	114	185	143	108	99	112
250	156	117	188	146	111	102	115
260	159	120	192	149	114	105	117
275	163	124	196	153	118	109	121
290	168	128	201	157	122	113	124
305	172	132	205	161	126	117	128
320	177	136	209	165	130	120	131
335	181	139	213	169	133	124	134
350	185	143	217	172	137	127	137
365	188	146	221	176	140	130	140

* Inches mercury below one atmosphere

APPROXIMATE PRESSURE CONTROL SETTINGS

Pressure - Pounds Per Square Inch Gauge

APPLICATION	TEMPERATURE RANGE (°F)	EVAPORATOR TD (°F)	REFRIGERANT							
			22		134a		404A		507	
			Out	In	Out	In	Out	In	Out	In
Beverage Cooler	35 to 38	15	41	66	17	33	53	82	56	86
Floral Cooler										
Produce Cooler										
Smoked Meat Cooler	32 to 35	15	38	62	15	30	49	77	52	81
Meat Reach Thru										
Service Deli										
Seafood										
Multi-Deck Fresh Meat	26 to 29	15	32	54	11	25	42	68	45	72
Frozen Glass Door	-10 to 0	10	9	24	-	-	15	33	16	35
Frozen Walk-In										
Frozen Ice Cream										
Frozen Food - Open Type	-30 to -20	10	0	10	-	-	4	16	4	18

Pressure control settings assume a suction line loss equivalent to 2°F

CARRYING CAPACITY OF REFRIGERATION LINES

Tons of Refrigeration - 100 Equivalent Feet of Pipe Length

Copper Tube Size O.D. Type L Inches	REFRIGERANT						Iron Pipe Size Inches (Schedule 80)	REFRIGERANT	
	22		134a		404A / 507			717	
	Liquid Line	Suction Line 40°F Evap.	Liquid Line	Suction Line 20°F Evap.	Liquid Line	Suction Line -20°F Evap.		Liquid Line	Suction Line 5°F Evap.
3/8	1.5	0.3	1.2	0.1	1.0	0.1	3/8	14.4	-
1/2	3.8	0.6	2.8	0.3	2.4	0.2	1/2	28.4	-
5/8	7.0	1.1	5.3	0.4	4.4	0.3	3/4	64.1	-
7/8	18.6	2.9	14.0	1.1	11.6	0.8	1	126	3.8
1-1/8	37.7	5.9	28.4	2.3	23.5	1.6	1-1/4	271	8.2
1-3/8	66.0	10.2	49.6	4.1	41.0	2.8	1-1/2	413	12.5
1-5/8	104	16.1	78.5	6.4	64.8	4.5	2	811	24.5
2-1/8	217	33.2	164	13.2	135	9.2	2-1/2	1300	39.5
2-5/8	384	58.6	289	23.4	238	16.2	3	2330	70.8
3-1/8	614	93.3	462	37.3	379	25.9	4	4820	147
3-5/8	912	139	687	55.4	562	38.4	5	8790	268
4-1/8	1290	195	970	78.2	792	54.1	6	-	429

Refrigerant 717 (Ammonia) values are based on 86°F liquid temperature. Refrigerant 22, 134a, and 404A / 507 values are based on 100°F liquid temperature. Liquid line values based on pressure drop equivalent to 1°F charge in saturation temperatures. Suction line values based on pressure drop equivalent to 2°F charge in saturation temperature.