



# Heating Check Chart

HEAT PUMP CHARGING INSTRUCTIONS																
For use with units using R-410A refrigerant																
FIELD OPERATING PRESSURE CHARGING TABLE FIXED RESTRICTOR (HIGH PRESSURE @ VAPOR VALVE, SUCTION PRESSURE @ SUCTION SERVICE PORT)					REQUIRED LIQUID LINE TEMPERATURE											
FIELD OPERATING PRESSURE CHARGING TABLE FIXED RESTRICTOR (HIGH PRESSURE @ VAPOR VALVE, SUCTION PRESSURE @ SUCTION SERVICE PORT)					Liquid (PSIG) Pressure at Service Valve	Required Subcooling Temperature (°F)										
UNIT	INDOOR DRY BULB	OUTDOOR TEMP. °F DRY BULB/WET BULB							6	8	10	12	14	16		
018	60°	HIGH	309	294	279	262	245	232	218	251	78	76	74	72	70	68
		SUCT	118	108	97	83	68	55	42	259	80	78	76	74	72	70
	70°	HIGH	356	336	316	298	279	264	249	266	82	80	78	76	74	72
		SUCT	125	111	97	83	68	56	43	274	84	82	80	78	76	74
	80°	HIGH	401	379	357	337	317	300	283	283	86	84	82	80	78	76
		SUCT	130	115	99	84	69	56	43	291	88	86	84	82	80	78
024	60°	HIGH	365	326	287	266	245	231	217	299	90	88	86	84	82	80
		SUCT	130	111	92	77	62	51	40	308	92	90	88	86	84	82
	70°	HIGH	409	369	329	305	280	265	249	317	94	92	90	88	86	84
		SUCT	134	115	95	79	63	52	41	326	96	94	92	90	88	86
	80°	HIGH	450	408	366	342	318	301	283	335	98	96	94	92	90	88
		SUCT	134	115	96	80	64	53	42	345	100	98	96	94	92	90
030	60°	HIGH	316	302	288	269	250	237	223	354	102	100	98	96	94	92
		SUCT	113	104	94	81	68	57	45	364	104	102	100	98	96	94
	70°	HIGH	365	347	328	307	286	271	256	374	106	104	102	100	98	96
		SUCT	121	109	97	83	69	58	47	384	108	106	104	102	100	98
	80°	HIGH	410	388	365	344	322	307	291	395	110	108	106	104	102	100
		SUCT	124	111	98	84	69	59	48	406	112	110	108	106	104	102
036	60°	HIGH	321	301	280	261	241	227	212	416	114	112	110	108	106	104
		SUCT	122	108	94	79	63	51	38	427	116	114	112	110	108	106
	70°	HIGH	363	339	314	296	278	263	247	439	118	116	114	112	110	108
		SUCT	126	111	95	80	64	53	41	450	120	118	116	114	112	110
	80°	HIGH	408	381	353	334	315	299	283	462	122	120	118	116	114	112
		SUCT	130	113	96	81	65	55	44	474	124	122	120	118	116	114
042	60°	HIGH	350	327	304	280	255	242	229	439	118	116	114	112	110	108
		SUCT	113	101	89	74	59	49	38	450	120	118	116	114	112	110
	70°	HIGH	396	369	342	316	289	275	260	462	122	120	118	116	114	112
		SUCT	118	104	90	75	59	49	39	474	124	122	120	118	116	114
	80°	HIGH	443	412	380	355	329	312	295							
		SUCT	122	107	91	76	61	51	40							
048	60°	HIGH	304	293	282	265	248	237	226							
		SUCT	102	96	89	77	64	55	45							
	70°	HIGH	345	331	317	298	279	269	259							
		SUCT	107	100	92	78	64	56	47							
	80°	HIGH	392	376	359	339	318	306	294							
		SUCT	112	104	96	81	65	57	49							
060	60°	HIGH	342	313	284	268	251	237	223							
		SUCT	120	104	88	75	61	50	38							
	70°	HIGH	384	352	320	303	285	270	255							
		SUCT	124	107	89	75	61	50	38							
	80°	HIGH	427	394	361	343	324	308	291							
		SUCT	126	109	91	77	62	51	39							

  

COOLING ONLY CHARGING PROCEDURE									
<ol style="list-style-type: none"> <li>1. Only use subcooling charging method when OD ambient is greater than 70°F and less than 100°F, indoor temp is greater than 70°F and less than 80°F, and line set is less than 80 ft.</li> <li>2. Operate unit a minimum of 15 minutes before checking the charge.</li> <li>3. Measure liquid service valve pressure by attaching an accurate gauge to the service port.</li> <li>4. Measure the liquid line temperature by attaching an accurate thermistor type or electronic thermometer to the liquid line near the outdoor coil.</li> <li>5. Refer to unit rating plate for required subcooling temperature.</li> <li>6. Find the point where the required subcooling temperature intersects the measured liquid service valve pressure.</li> <li>7. To obtain the required subcooling temperature at specific liquid line pressure, add refrigerant if liquid line temperature is higher than indicated. When adding refrigerant, charge in liquid form using a flow restricting device into suction service port. Recover refrigerant if temperature is lower. Allow a tolerance of +/- 3°F.</li> </ol>									

  

CAUTION									
<ol style="list-style-type: none"> <li>1. Compressor damage may occur if system is over-charged.</li> <li>2. Carefully recover refrigerant from this unit before final disposal or when servicing.</li> <li>3. Never vent refrigerant to atmosphere. Use approved recovery equipment.</li> </ol>									

  

OPERATION									
<p>To check system operation during Heating or Cooling cycle use the appropriate table. Table indicates whether a correct relationship exists between system operating pressure and air temperature entering indoor and outdoor units. If pressure and temperature do not match on chart, system refrigerant charge may not be correct or other system abnormalities may exist. Do not use table to adjust refrigerant charge. When charging is necessary during heating season, weigh in total charge as indicated on unit rating plate. Rating plate charge is for systems with 15 ft. of line-set. Adjust charge 0.6 oz of refrigerant per foot of 3/8" liquid connecting tubing. Remove any refrigerant remaining in system before recharging if the system has lost complete charge, evacuate and recharge by weight.</p>									

Fig. 1 – 215BNA018, 24, 30, 36, 42, 480, 60



337835-101 REV. A

# HEAT PUMP CHARGING INSTRUCTIONS

For use with units using R-410A refrigerant

FIELD OPERATING PRESSURE CHARGING TABLE (HIGH PRESSURE @ VAPOR VALVE, SUCTION PRESSURE @ SUCTION SERVICE PORT)										REQUIRED LIQUID LINE TEMPERATURE						
UNIT	INDOOR DRY BULB, °F	OUTDOOR TEMP. °F DRY BULB/WET BULB								Liquid Pressure at Service Valve (PSIG)	Required Subcooling Temperature (°F)					
		60/57	50/47	40/38	30/28	20/28	10/9	0/-1	6		8	10	12	14	16	
018	60°	HIGH	363	338	313	297	281	259	238	251	78	76	74	72	70	68
		SUCT	136	116	97	79	62	49	37		80	78	76	74	72	70
	70°	HIGH	410	381	353	338	323	293	263	266	82	80	78	76	74	72
		SUCT	139	119	98	80	63	50	38		84	82	80	78	76	74
024	60°	HIGH	454	430	406	388	371	347	323	283	86	84	82	80	78	76
		SUCT	141	120	98	82	65	51	38		88	86	84	82	80	78
	70°	HIGH	342	322	302	285	267	250	232	299	90	88	86	84	82	80
		SUCT	137	118	99	83	66	54	42		92	90	88	86	84	82
030	60°	HIGH	386	362	338	322	306	287	268	317	94	92	90	88	86	84
		SUCT	138	119	99	83	66	54	42		96	94	92	90	88	86
	70°	HIGH	434	414	394	370	346	328	310	326	98	96	94	92	90	88
		SUCT	140	120	100	84	67	55	43		98	96	94	92	90	88
036/ 037	60°	HIGH	343	328	312	290	267	249	230	335	100	98	96	94	92	90
		SUCT	133	115	96	78	60	49	37		100	98	96	94	92	90
	70°	HIGH	386	373	360	332	304	281	258	354	102	100	98	96	94	92
		SUCT	134	116	97	80	62	50	38		104	102	100	98	96	94
042	60°	HIGH	440	415	390	368	346	327	308	374	106	104	102	100	98	96
		SUCT	136	116	96	80	63	50	37		108	106	104	102	100	98
	70°	HIGH	363	333	304	272	240	226	212	395	110	108	106	104	102	100
		SUCT	121	106	92	75	58	48	37		112	110	108	106	104	102
048	60°	HIGH	409	375	340	308	276	260	245	406	114	112	110	108	106	104
		SUCT	125	110	94	78	62	50	38		114	112	110	108	106	104
	70°	HIGH	451	415	379	345	312	295	278	427	116	114	112	110	108	106
		SUCT	129	112	96	79	63	50	38		116	114	112	110	108	106
060/ 061	60°	HIGH	351	327	303	280	257	238	220	439	118	116	114	112	110	108
		SUCT	116	103	89	75	62	50	37		120	118	116	114	112	110
	70°	HIGH	401	372	344	317	289	271	254	462	122	120	118	116	114	112
		SUCT	121	107	92	77	62	50	38		124	122	120	118	116	114
061	60°	HIGH	448	417	387	358	328	310	292	474	124	122	120	118	116	114
		SUCT	125	110	94	79	63	51	39							
	70°	HIGH	339	320	300	282	264	249	234							
		SUCT	129	110	92	75	59	46	34							
061	60°	HIGH	384	361	338	320	302	287	272							
		SUCT	131	111	91	75	59	47	35							
	70°	HIGH	434	411	388	367	346	330	313							
		SUCT	133	113	92	76	60	48	36							
061	60°	HIGH	365	339	313	291	268	248	227							
		SUCT	108	97	86	74	62	51	39							
	70°	HIGH	417	387	356	330	304	285	265							
		SUCT	113	101	88	76	63	52	40							
80°	HIGH	466	434	402	373	343	325	306								
	SUCT	117	104	91	78	65	53	41								

\* If PressureGuard™ kit is installed, it will not allow pressures to stabilize at these conditions. To check the charge at these ambients operate in cooling or lower the indoor dry bulb temperature.

### ⚠ CAUTION

1. Compressor damage may occur if system is over-charged.
2. Carefully recover refrigerant from this unit before final disposal or when servicing.
3. Never vent refrigerant to atmosphere. Use approved recovery equipment.

### OPERATION

To check system operation during Heating or Cooling cycle use the appropriate table. Table indicates whether a correct relationship exists between system operating pressure and air temperature entering indoor and outdoor units. If pressure and temperature do not match on chart, system refrigerant charge may not be correct or other system abnormalities may exist. Do not use table to adjust refrigerant charge. When charging is necessary during heating season, weigh in total charge as indicated on unit rating plate. Rating plate charge is for systems with 15 ft. of line-set. Adjust charge 0.6 oz of refrigerant per foot of 3/8" liquid connecting tubing. Remove any refrigerant remaining in system before recharging if the system has lost complete charge, evacuate and recharge by weight.

Liquid Pressure at Service Valve (PSIG)	Required Subcooling Temperature (°F)					
	6	8	10	12	14	16
251	78	76	74	72	70	68
259	80	78	76	74	72	70
266	82	80	78	76	74	72
274	84	82	80	78	76	74
283	86	84	82	80	78	76
291	88	86	84	82	80	78
299	90	88	86	84	82	80
308	92	90	88	86	84	82
317	94	92	90	88	86	84
326	96	94	92	90	88	86
335	98	96	94	92	90	88
345	100	98	96	94	92	90
354	102	100	98	96	94	92
364	104	102	100	98	96	94
374	106	104	102	100	98	96
384	108	106	104	102	100	98
395	110	108	106	104	102	100
406	112	110	108	106	104	102
416	114	112	110	108	106	104
427	116	114	112	110	108	106
439	118	116	114	112	110	108
450	120	118	116	114	112	110
462	122	120	118	116	114	112
474	124	122	120	118	116	114

### COOLING ONLY CHARGING PROCEDURE

1. Only use subcooling charging method when OD ambient is greater than 70°F and less than 100°F, indoor temp is greater than 70°F and less than 80°F, and line set is less than 80 ft.
2. Operate unit a minimum of 15 minutes before checking the charge.
3. Measure liquid service valve pressure by attaching an accurate gauge to the service port.
4. Measure the liquid line temperature by attaching an accurate thermistor type or electronic thermometer to the liquid line near the outdoor coil.
5. Refer to unit rating plate for required subcooling temperature.
6. Find the point where the required subcooling temperature intersects the measured liquid service valve pressure.
7. To obtain the required subcooling temperature at specific liquid line pressure, add refrigerant if liquid line temperature is higher than indicated. When adding refrigerant, charge in liquid form using a flow restricting device into suction service port. Recover refrigerant if temperature is lower. Allow a tolerance of +/- 3°F.

343063-101 REV.C



**Fig. 1 – 215BNA037, 48B, 61**