



Innovative Refrigeration Systems
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IN CASE OF A REFRIGERATION EMERGENCY

If you have an **EMERGENCY** with your refrigeration system, please call: **540-941-1999 ext. 301**
 During business hours, one of our trained staff members will handle your problem immediately. If you experience problems after hours, the voice mail will pick up. Please listen to this message. It will explain what constitutes an emergency and what steps you should take. This system works promptly and efficiently when complete information is given. If you have any questions about how to handle emergency situations, please call our office during business hours.

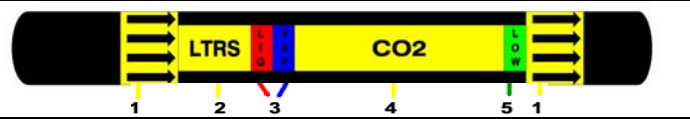
CARBON DIOXIDE TEMPERATURE PRESSURE CHART

Temp. deg. °F	Press Psig	Temp. deg. °F	Press Psig	Temp. deg. °F	Press Psig
-40	131.0	-7	256.6	26	447.6
-39	134.0	-6	261.3	27	454.6
-38	137.0	-5	266.1	28	461.7
-37	140.1	-4	271.0	29	468.8
-36	143.3	-3	275.9	30	476.1
-35	146.5	-2	280.9	31	483.4
-34	149.7	-1	285.9	32	490.8
-33	153.0	0	291.0	33	498.2
-32	156.3	1	296.2	34	505.8
-31	159.7	2	301.4	35	513.4
-30	163.1	3	306.7	36	521.2
-29	166.6	4	312.1	37	529.0
-28	170.1	5	317.5	38	536.8
-27	173.7	6	323.0	39	544.8
-26	177.3	7	328.6	40	552.9
-25	181.0	8	334.2	41	561.0
-24	184.8	9	339.9	42	569.2
-23	188.5	10	345.7	43	577.6
-22	192.4	11	351.5	44	586.0
-21	196.3	12	357.4	45	594.5
-20	200.2	13	363.4	46	603.0
-19	204.2	14	369.5	47	611.7
-18	208.3	15	375.6	48	620.5
-17	212.4	16	381.7	49	629.3
-16	216.5	17	388.0	50	638.3
-15	220.7	18	394.3	51	647.3
-14	225.0	19	400.7	52	656.5
-13	229.4	20	407.2	53	665.7
-12	233.7	21	413.7	54	675.0
-11	238.2	22	420.4	55	684.4
-10	242.7	23	427.1	56	694.0
-9	247.3	24	433.8	57	703.6
-8	251.9	25	440.7	58	713.3

R22 TEMPERATURE PRESSURE CHART

Temp. deg. °F	Press Psig	Temp. deg. °F	Press Psig	Temp. deg. °F	Press Psig
-10	16.5	23	46.5	56	94.3
-9	17.2	24	47.6	57	96.1
-8	17.9	25	48.8	58	97.9
-7	18.6	26	50.0	59	99.8
-6	19.4	27	51.2	60	101.6
-5	20.1	28	52.4	61	103.5
-4	20.9	29	53.7	62	105.4
-3	21.6	30	54.9	63	107.3
-2	22.4	31	56.2	64	109.3
-1	23.2	32	57.5	65	111.2
0	24.0	33	58.8	66	113.2
1	24.8	34	60.2	67	115.2
2	25.7	35	61.5	68	117.3
3	26.5	36	62.9	69	119.3
4	27.4	37	64.3	70	121.4
5	28.3	38	65.7	71	123.5
6	29.1	39	67.1	72	125.7
7	30.0	40	68.5	73	127.8
8	31.0	41	70.0	74	130.0
9	31.9	42	71.5	75	132.2
10	32.8	43	73.0	76	134.4
11	33.8	44	74.5	77	136.7
12	34.8	45	76.1	78	139.0
13	35.7	46	77.6	79	141.3
14	36.8	47	79.2	80	143.6
15	37.8	48	80.8	81	146.0
16	38.8	49	82.4	82	148.4
17	39.9	50	84.1	83	150.8
18	40.9	51	85.7	84	153.2
19	42.0	52	87.4	85	155.7
20	43.1	53	89.1	86	158.1
21	44.2	54	90.8	87	160.7
22	45.3	55	92.6	88	163.2

CARBON DIOXIDE REFRIGERATION PIPING IDENTIFICATION GUIDE

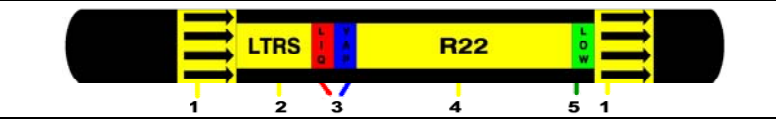


- Use arrows to indicate the direction of flow in the pipe.
- Use the following abbreviations to properly identify system components.

CD	Condenser Drain	LTD	Low Temp Discharge
HGD	Hot Gas Defrost	LTRL	Low Temp Recirculated Liquid
HSD	High Stage Discharge	LTRS	Low Temp Recirculated Suction
HTL	High Temp Liquid	LTS	Low Temp Suction
HTRL	High Temp Recirculated Liquid	RV	Relief Vent
HTRS	High Temp Recirculated Suction	VENT	Vent
HTS	High Temp Suction		

- Indicates whether the refrigerant is a liquid, vapor, or both.
 Liq – Orange color band indicates liquid state.
 Vap – Blue color band indicates vapor state
 Use both color bands if both liquid and vapor may be present
- Print "CO2" in black letters on Yellow background.
- Indicates whether the internal pipe pressure is high or low.
 High – Red color band indicates high pressure.
 Low – Green color band indicates low pressure.

R22 REFRIGERATION PIPING IDENTIFICATION GUIDE



- Use arrows to indicate the direction of flow in the pipe.
- Use the following abbreviations to properly identify system components.

CD	Condenser Drain	RV	Relief Vent
EHPL	Economizer High Pressure Liquid	TSR	Thermosyphon Return
ES	Economizer Suction	TSS	Thermosyphon Supply
HSD	High Stage Discharge	VENT	Vent
HSS	High Stage Suction		
HTRL	High Temp Recirculated Liquid		
HTRS	High Temp Recirculated Suction		

- Indicates whether the refrigerant is a liquid, vapor, or both.
 Liq – Orange color band indicates liquid state.
 Vap – Blue color band indicates vapor state
 Use both color bands if both liquid and vapor may be present.
- Print "R22" in black letters on Yellow background.
- Indicates whether the internal pipe pressure is high or low.
 High – Red color band indicates high pressure.
 Low – Green color band indicates low pressure.

CARBON DIOXIDE EMERGENCY ACTION

Preparing for an CARBON DIOXIDE EMERGENCY

- Learn Carbon Dioxide FIRST AID PROCEDURES
 -Mouth/mask Resuscitation
 -Cardiopulmonary Resuscitation (CPR)
 -Treatment for shock
 -Be prepared – DELAY and INEXPERIENCE may result in more serious injury
- Make sure your emergency support is knowledgeable about Carbon Dioxide first aid and treatment
 -Local Fire Department/ Ambulance Service
 -Emergency Clinic
 -Local Hospital
- NEVER wear contact lenses when working with any chemicals

Exposure to Carbon Dioxide – Eyes

- Check for and remove any contact lenses.
- Immediately flush eyes with plenty of water for at least 15 minutes.
- Get medical attention immediately.

Exposure to Carbon Dioxide – Skin

- Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing and shoes before reuse.
- Get medical attention immediately

Exposure to Carbon Dioxide – Frostbite

- Try to warm up the frozen tissues.
- Get medical attention immediately

Exposure to Carbon Dioxide – Inhalation

- Move exposed person to fresh air.
- If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Loosen tight clothing such as a collar, tie or waistband.
- Get medical attention immediately.

Exposure to Carbon Dioxide – Ingestion

As this product is a gas, refer to the inhalation section.

R22 EMERGENCY ACTION

Preparing for an R22 EMERGENCY

- Learn R22 FIRST AID PROCEDURES
 -Mouth/mask Resuscitation
 -Cardiopulmonary Resuscitation (CPR)
 -Treatment for shock
 -Be prepared – DELAY and INEXPERIENCE may result in more serious injury
- Make sure your emergency support is knowledgeable about R22 first aid and treatment
 -Local Fire Department/Ambulance Service
 -Emergency Clinic
 -Local Hospital
- NEVER wear contact lenses when working with any chemicals

Exposure to R22 – Eyes

- Immediately flush eyes with plenty of water for at least 15 minutes (in case of frostbite, water should be lukewarm – not hot), lifting eyelids occasionally to facilitate irrigation.
- Get medical attention immediately.

Exposure to R22 – Skin

- Immediately flush skin with water until all chemical is removed.
- If there is evidence of frostbite, bathe (do not rub) with lukewarm (not hot) water.
- In the absence of water, cover with clean soft wool or similar covering.
- Get medical attention immediately

Exposure to R22 – Inhalation

- Immediately remove to fresh air.
- If breathing has stopped, give artificial respiration. Use oxygen as required, provided a qualified operator is available.
- Get medical attention immediately.
- Do not give epinephrine (adrenaline).

Exposure to R22 – Ingestion

- Ingestion is an unlikely route of exposure and is not likely to be hazardous.
- Do not induce vomiting unless instructed to do so by a physician.