KOMOS

KRYO

IN-LINE•FLASH•CHILLER

DOUBLE TAP • GLYCOL

INSTRUCTION MANUAL

CONTENTS:

⚠ WARNING

Read entire manual for important safety information before using your KRYO. Failure to follow warnings could result in injury & void warranty.

IMPORTANT SAFETY INFORMATION

Please read this entire instruction manual for important safety information prior to the use of your KRYO.

⚠ WARNING Failure to follow these instructions may result in injury and/or product damage and will void the product warranty.

GENERAL PRECAUTIONS:

- *If the KRYO has just been moved, do not turn on unless the KRYO has been standing upright for 24 hours. Failure to do so will void warranty. Stand the KRYO in the upright position for 24 hours before plugging into the power socket.*
- *Ensure that there is always at least 4" of clearance on each side of the KRYO to allow adequate airflow. Not allowing adequate ventilation will reduce performance, increase power consumption and void warranty.*
- *Perform a pressure test on all product lines prior to use.*
- *Do not run the pump dry. Ensure the pump is always submerged when in operation. Running dry can damage the pump.*
- *Only clean product lines with cold to warm water. Do not use hot water to clean the product lines.*

INITIAL START-UP & TESTING

⚠ WARNING

- *Let the KRYO sit for at least 24 hours after delivery or after sitting on its side before turning the unit on.*
- *Whenever the KRYO is operating and cooling the reservoir, the agitator pump needs to be operating to keep the liquid in the reservoir agitated and avoid ice formation. The pump is wired into the temperature controller and hence should always be running when the unit is turned on.*

Assemble The Sight Tube:

Firmly push the two 3/8" Duotight tee pieces (DUO109) onto the push fit tubes on the front of the KRYO and push your sight tube into each of the Duotight tee pieces as shown on the diagram on Page 5. Confirm this is held in place securely by pulling on the Duotight fittings and ensuring they are locked in place. Then, push a 3/8" plug (DUO119) into each of the Duotight tee pieces.

To remove the plug/tube from the Duotight tee piece, push the collar on the tee piece in towards the fitting as you pull the plug/tube out of the tee piece.

Attaching A Keg:

1. On the back side of the KRYO you will find two 5/8" threaded shanks. Screw a Duotight Beer Thread Adapter (DUO104) onto each of the threaded shanks (ensuring the washer is in place internally on the Duotight).
2. Push 8mm OD EVABarrier hose into the Duotight fitting on the shank on the back side of the KRYO.
3. Connect this 8mm OD EVABarrier hose to your coupler or disconnect on your keg.

LEAK TESTING PRODUCT LINES

It is essential to pressure test both product lines prior to running any liquid through them for dispensing.

The product lines need to be pressure tested to a pressure that is at least 1.5 times the pressure that will be used for dispensing to a maximum of 50 psi. For example, if your dispensing pressure is 20 psi then your product lines should be pressure tested at 30 psi and your testing pressure shouldn't exceed 50 psi.

The product lines can be leak tested via multiple methods which are outlined below. It is a good idea to test the system using multiple methods to be certain the system is holding pressure:

PRESSURE DECAY TEST:

1. Screw a Duotight Beer Thread Adapter onto each all thread shank on the side of the KRYO.
2. Push 8mm EVABarrier hosing connected to a regulated pressure source into one of the Duotight fittings.
3. Set the pressure on the regulator to 1.5 times the dispensing pressure up to a maximum of 50 psi.
4. Turn the gas cylinder off and leave to sit for a few hours. Then check if the pressure on the regulator has decreased from the set pressure.

If the pressure has dropped, double check that the leak isn't occurring externally from the KRYO. Check all Duotight connections and connections to your gas cylinder or regulator with a soapy solution to check for the formation of bubbles indicating a leak.

If the pressure remains stable then this product line has passed the leak test.

Perform the above steps on the other product line.

AIR-LEAK TEST:

1. Fill the reservoir with water.
2. Screw a Duotight Beer Thread Adapter onto each all thread shank on the side of the KRYO.

3. Push 8mm EVABarrier hosing connected to a regulated pressure source into one of the Duotight fittings.
4. Set the pressure on the regulator to 1.5 times the dispensing pressure up to a maximum of 50 psi.
5. Look for the formation of bubbles in reservoir indicating a leak.

Repeat the above steps on the other product line.

HYDROSTATIC LEAK TEST:

1. Empty the reservoir.
2. Screw a Duotight Beer Thread Adapter onto each all thread shank on the side of the KRYO.
3. Push 8mm EVABarrier hosing connected to a regulated water source into one of the Duotight fittings. The pressure of the water source can be regulated using an in-line regulator for example (D1047) or by connecting a keg full of water pressurized at 1.5 times the dispensing pressure up to a maximum of 50 psi.
4. Look for any leaks in the reservoir from the product line.

Repeat the above steps on the other product line.

TESTING THE AGITATOR PUMP AND COMPRESSOR

1. With the KRYO unplugged, fill the reservoir with water until all the cooling coils are submerged and the impeller of the agitator pump is submerged.
2. Plug the KRYO in using the provided IEC cable and turn the red power switch on.
3. Set the temperature on the temperature controller on the front of the KRYO to 1.6°C (35°F).

To change any settings on the temperature controller for the reservoir such as temperature hysteresis or calibration refer to the "Temperature Controller Settings" section on page 9.

4. Leave the KRYO for 12 hours to ensure that it drops the temperature of the reservoir to the set temperature on the temperature controller.

The system has now been tested for cooling and leaks and is ready to be used to dispense from a keg.

FILLING THE RESERVOIR

⚠WARNING

- *The pumps are not designed to be run with a glycol concentration higher than 30% hence it is not advised to exceed this glycol concentration. Doing so may damage the pumps.*

The KRYO can be operated with either just water in the reservoir or both water and glycol to reduce the freezing point of water. IMPORTANT: If you are only using water in the reservoir and not glycol then do not set the temperature of the reservoir below 1.6°C (35°F).

Fill the reservoir until the copper cooling coils are completely submerged. If filling with water only, set the reservoir to 1.6°C (35°F). If using a water/glycol solution, see the chart below for a quick reference of freezing points based on the concentration of water to glycol. **PEASE NOTE** that the reservoir temp should never be set below -2.2°C (28°F), or you may risk freezing your product lines between pours. The amount of glycol required to be added to the reservoir depends on the desired set temperature of the reservoir which is dependent on a number of factors including heat ingress into the entire system, insulation of the glycol lines, ambient temperature, the number of kegs being cooled and the temperature of the kegs. Use the table below to determine what percentage of glycol you require.

Glycol Volume %	Freezing Point	Specific Gravity at 21°C
0	32°F (0°C)	1.000
10	26°F (-3.3°C)	1.006
20	18°F (-7.8°C)	1.015
30	8°F (-13.3°C)	1.024

You can measure the glycol percentage using a calibrated refractometer and comparing to the specific gravity at 32°F in the above table.

We would advise running a 20% glycol solution, as this will be sufficient to lower the reservoir temp to the lowest recommended setting of -2.2°C (28°F), and will give you some runway to top up the reservoir using only distilled water when needed.

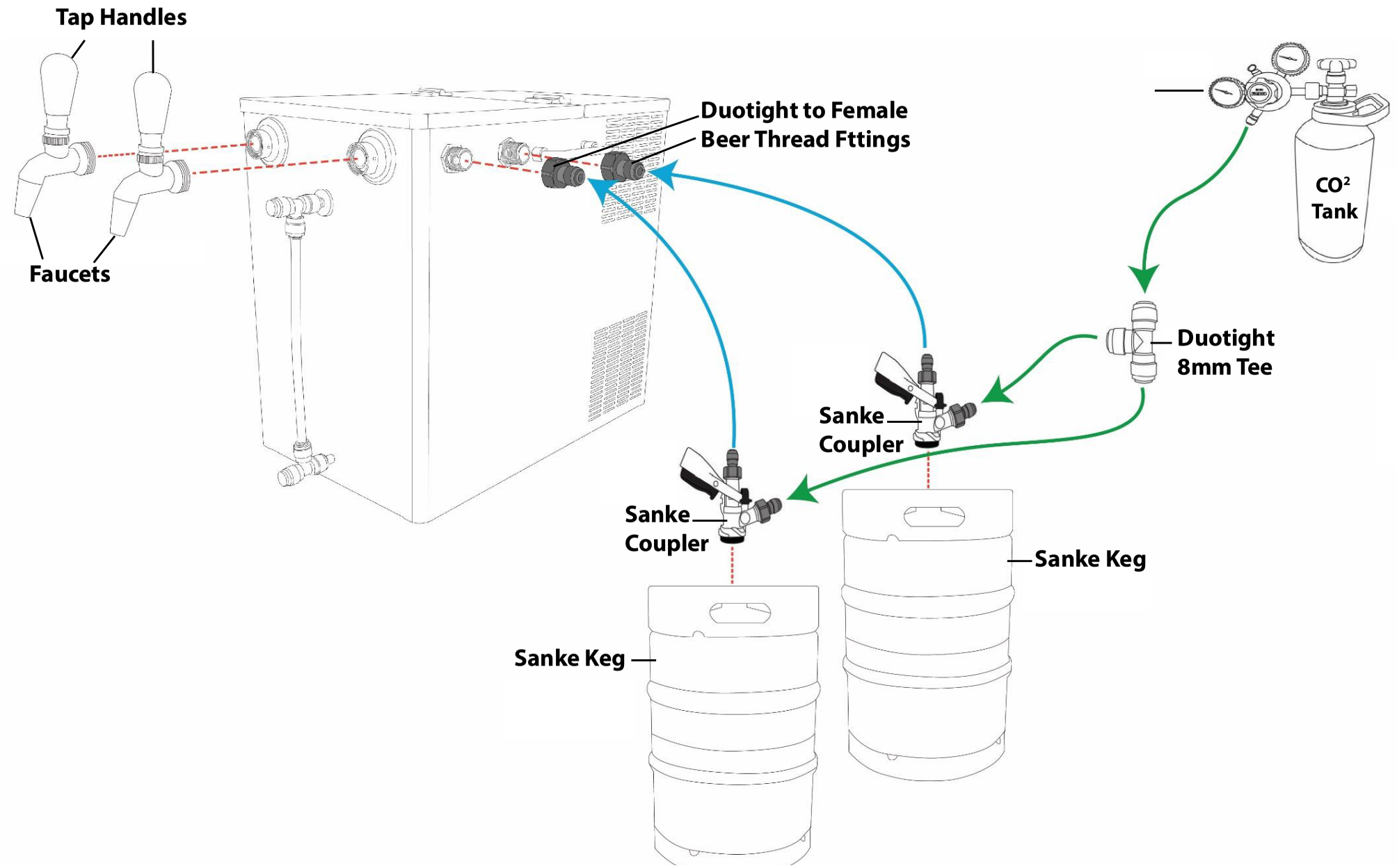
Use the diagrams on the following pages determine how to dispense beverages. **PLEASE NOTE** that the diagrams are for demonstration purposes only. You may have a different style coupler or tap and shank setup to what is shown in the below diagrams. Fittings other than Duotight fittings can be screwed onto the 5/8" BSP shanks for the product lines such as:

- Liquid Ball Lock Post with 5/8" Thread (D1745)
- K-lok female to 5/8" Female (D1931)
- Duotight Female Beer Thread adapter 8mm (DUO117)
- Tailpiece Hex Nut (D1740) and any of the below barbs:
- Elbow Tailpiece 1/4" (D1721)
- Straight Tailpiece 1/4" (D1725)

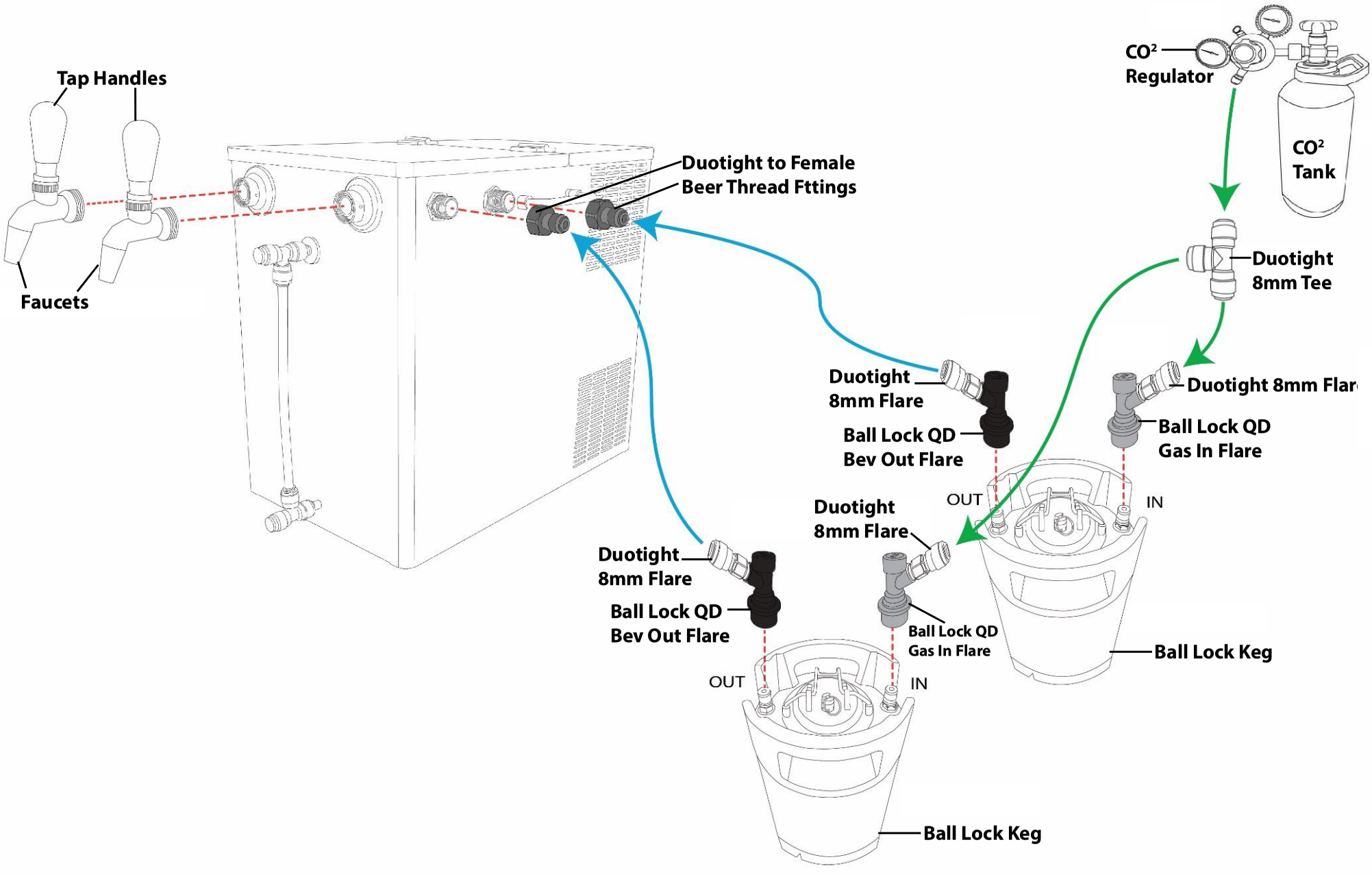
DISPENSING BEVERAGES

- Straight Tailpiece 3/8" (D1735)
- Straight Tailpiece 5/16" (D1730)
- Straight Tailpiece 1/2" (D1734)

DISPENSING FROM COMMERCIAL KEGS



DISPENSING FROM BALL LOCK CORNELIUS KEGS



CARBONATION

The pressure to be set on your regulator differs according to the temperature that the keg is stored at. If the product is stored at a higher temperature it will require a higher pressure to maintain the desired level of carbonation. Refer to a carbonation chart to determine what pressure you should be setting your regulator at to reach your desired level of carbonation based on the ambient temperature the keg is stored in.

For most styles of beer, you should be aiming for a carbonation level of between 2.3–2.8 volumes of carbonation with the average carbonation level being 2.6 volumes (if you are unsure of the carbonation level of the beer i.e. if it is a commercial keg then assume it is at 2.6 volumes of carbonation). To achieve a specific carbonation level during carbonation or priming refer to the table below and correlate the temperature of the keg with the desired carbonation level.

NOTE: Do not try to fix a slow or fast pour rate by adjusting the dispensing pressure. This will result in your beer either going flat or over carbonated. It is best to adjust the beverage line length and diameter. If the pour is too fast and foamy increase the length of the beverage line between the KRYO and the keg. If the pour is too slow decrease the length of the beverage line between the KRYO and the keg.

How To Read the Carbonation Chart

First, choose the average temperature of the beer on the left side of the chart, and then find the level of carbonation you want in the center of the chart. Once you have determined the carbonation level, follow the column up to the top of the chart to find your PSI setting.

See Carbonation Cart on Page 8

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CARBONATION CHART

How To Read the Carbonation Chart

First, choose the average temperature of the beer on the left side of the chart, and then find the level of carbonation you want in the center of the chart. Once you have determined the carbonation level, follow the column up to the top of the chart to find your PSI setting.

KOMOS

KOMOS CO_2 Carbonation Chart

		Grams Per Liter Used																													
		3.0	3.2	3.4	3.6	3.8	4.0	4.2	4.4	4.6	4.8	5.0	5.2	5.4	5.6	5.8	6.0	6.2	6.4	6.6	6.8	7.0	7.2	7.4	7.6	7.8	8.0	8.2	8.4	8.6	8.8	9.0
Temp °F	Temp °C	1.5	1.6	1.7	1.8	1.9	2.0	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	3.0	3.1	3.2	3.3	3.4	3.5	3.6	3.7	3.8	3.9	4.0	4.1	4.2	4.3	4.4	4.5
24	-4						0.3	1.1	1.9	2.7	3.5	4.3	5.1	5.9	6.7	7.5	8.3	9.1	9.9	10.7	11.5	12.3	13.1	13.9	14.7	15.5	16.2	17.0	17.8	18.6	19.4	20.2
26	-3					0.2	1.1	1.9	2.7	3.6	4.4	5.3	6.1	7.0	7.8	8.6	9.5	10.3	11.1	12.0	12.8	13.6	14.4	15.3	16.1	16.9	17.7	18.5	19.4	20.2	21.0	21.8
28	-2				0.1	1.0	1.9	2.7	3.6	4.5	5.4	6.2	7.1	8.0	8.9	9.7	10.6	11.5	12.3	13.2	14.1	14.9	15.8	16.7	17.5	18.4	19.2	20.1	20.9	21.8	22.6	23.5
30	-1				0.8	1.7	2.7	3.6	4.5	5.4	6.3	7.2	8.1	9.0	10.0	10.9	11.8	12.7	13.6	14.5	15.4	16.3	17.2	18.0	18.9	19.8	20.7	21.6	22.5	23.4	24.3	25.2
32	0			0.6	1.6	2.5	3.5	4.4	5.4	6.3	7.3	8.2	9.2	10.1	11.0	12.0	12.9	13.9	14.8	15.7	16.7	17.6	18.5	19.5	20.4	21.3	22.2	23.2	24.1	25.0	25.9	26.8
34	1		0.3	1.3	2.3	3.3	4.3	5.3	6.3	7.3	8.2	9.2	10.2	11.2	12.1	13.1	14.1	15.1	16.0	17.0	18.0	18.9	19.9	20.9	21.8	22.8	23.8	24.7	25.7	26.6	27.6	28.5
36	2	0.0	1.0	2.1	3.1	4.1	5.1	6.2	7.2	8.2	9.2	10.2	11.2	12.3	13.3	14.3	15.3	16.3	17.3	18.3	19.3	20.3	21.3	22.3	23.3	24.3	25.8	26.3	27.3	28.3	29.2	30.2
38	3	0.7	1.8	2.8	3.9	4.9	6.0	7.0	8.1	9.1	10.2	11.2	12.3	13.3	14.4	15.4	16.5	17.5	18.6	19.6	20.6	21.7	22.7	23.7	24.8	25.8	26.8	27.9	28.9	29.9	30.9	31.9
40	4	1.4	2.5	3.6	4.7	5.7	6.8	7.9	9.0	10.1	11.2	12.3	13.4	14.4	15.5	16.6	17.7	18.8	19.8	20.9	22.0	23.0	24.1	25.2	26.2	27.3	28.4	29.4	30.5	31.6	32.6	33.7
42	5	2.1	3.2	4.3	5.5	6.6	7.7	8.8	10.0	11.1	12.2	13.3	14.4	15.5	16.7	17.8	18.9	20.0	21.1	22.2	23.3	24.4	25.5	26.6	27.7	28.8	29.9	31.0	32.1	33.2	34.3	35.4
44	6	2.8	3.9	5.1	6.3	7.4	8.6	9.7	10.9	12.1	13.2	14.4	15.5	16.7	17.8	19.0	20.1	21.3	22.4	23.5	24.7	25.8	27.0	28.1	29.2	30.4	31.5	32.6	33.8	34.9	36.0	37.1
46	7	3.5	4.7	5.9	7.1	8.3	9.5	10.7	11.8	13.0	14.2	15.4	16.6	17.8	19.0	20.2	21.3	22.5	23.7	24.9	26.0	27.2	28.4	29.6	30.7	31.9	33.1	34.2	35.4	36.6	37.7	38.9
48	8	4.2	5.4	6.7	7.9	9.1	10.4	11.6	12.8	14.0	15.3	16.5	17.7	18.9	20.1	21.4	22.6	23.8	25.0	26.2	27.4	28.6	29.8	31.0	32.3	33.5	34.7	35.9	37.1	38.3	39.5	40.7
50	9	4.9	6.2	7.5	8.7	10.0	11.3	12.5	13.8	15.0	16.3	17.6	18.8	20.1	21.3	22.6	23.8	25.1	26.3	27.6	28.8	30.1	31.3	32.5	33.8	35.0	36.3	37.5	38.7	40.0	41.2	42.4
52	10	5.7	7.0	8.3	9.6	10.9	12.2	13.5	14.8	16.1	17.3	18.6	19.9	21.2	22.5	23.8	25.1	26.4	27.6	28.9	30.2	31.5	32.8	34.0	35.3	36.6	37.9	39.1	40.4	41.7	42.9	44.2
54	11	6.4	7.7	9.1	10.4	11.8	13.1	14.4	15.7	17.1	18.4	19.7	21.1	22.4	23.7	25.0	26.3	27.7	29.0	30.3	31.6	32.9	34.2	35.5	36.9	38.2	39.5	40.8	42.1	43.4	44.7	
56	12	7.2	8.5	9.9	11.3	12.6	14.0	15.4	16.7	18.1	19.5	20.8	22.2	23.6	24.9	26.3	27.6	29.0	30.3	31.7	33.0	34.4	35.7	37.1	38.4	39.8	41.1	42.4	43.8			
58	13	7.9	9.3	10.7	12.1	13.6	15.0	16.4	17.8	19.2	20.6	21.9	23.3	24.7	26.1	27.5	28.9	30.3	31.7	33.1	34.5	35.8	37.2	38.6	40.0	41.4	42.7	44.1				
60	14	8.7	10.1	11.6	13.0	14.5	15.9	17.3	18.8	20.2	21.6	23.1	24.5	25.9	27.4	28.8	30.2	31.6	33.0	34.5	35.9	37.3	38.7	40.1	41.5	43.0	44.4					
62	15	9.5	11.0	12.4	13.9	15.4	16.9	18.3	19.8	21.3	22.7	24.2	25.7	27.1	28.6	30.0	31.5	33.0	34.4	35.9	37.3	38.8	40.2	41.7	43.1	44.6						
64	16	10.3	11.8	13.3	14.8	16.3	17.8	19.3	20.8	22.3	23.8	25.3	26.8	28.3	29.8	31.3	32.8	34.3	35.8	37.3	38.8	40.3	41.8	43.2	44.7							
66	17	11.1	12.6	14.2	15.7	17.3	18.8	20.3	21.9	23.4	25.0	26.5	28.0	29.6	31.1	32.6	34.1	35.7	37.2	38.7	40.2	41.8	43.3	44.8								
68	18	11.9	13.5	15.1	16.6	18.2	19.8	21.4	22.9	24.5	26.1	27.6	29.2	30.8	32.4	33.9	35.5	37.0	38.6	40.2	41.7	43.3	44.8									
70	19	12.7	14.3	15.9	17.6	19.2	20.8	22.4	24.0	25.6	27.2	28.8	30.4	32.0	33.6	35.2	36.8	38.4	40.0	41.6	43.2	44.8										
72	20	13.5	15.2	16.8	18.5	20.1	21.8	23.4	25.1	26.7	28.4	30.0	31.6	33.3	34.9	36.5	38.2	39.8	41.4	43.1	44.7											
74	21	14.4	16.1	17.8	19.4	21.1	22.8	24.5	26.2	27.8	29.5	31.2	32.9	34.5	36.2	37.9	39.5	41.2	42.9	44.5												
76	22	15.2	17.0	18.7	20.4	22.1	23.8	25.5	27.2	29.0	30.7	32.4	34.1	35.8	37.5	39.2	40.9	42.6	44.3													
78	23	16.1	17.8	19.6	21.4	23.1	24.9	26.6	28.4	30.1	31.8	33.6	35.3	37.1	38.8	40.5	42.3	44.0														
80	24	17.0	18.8	20.5	22.3	24.1	25.9	27.7	29.5	31.2	33.0	34.8	36.6	38.3	40.1	41.9	43.7															
82	25	17.8	19.7	21.5	23.3	25.1	26.9	28.8	30.6	32.4	34.2	36.0	37.8	39.6	41.5	43.3																
84	26	18.7	20.6	22.4	24.3	26.2	28.0	29.9	31.7	33.6	35.4	37.3	39.1	40.9	42.8	44.6																
86	27	19.6	21.5	23.4	25.3	27.2	29.1	31.0	32.8	34.7	36.6	38.5	40.4	42.3	44.1																	
88	28	20.5	22.5	24.4	26.3	28.2	30.2	32.1	34.0	35.9	37.8	39.8	41.7	43.6																		
90	29	21.4	23.4	25.4	27.3	29.3	31.2	33.2	35.2	37.1	39.1	41.0	43.0	44.9																		
92	30	22.4	24.4	26.4	28.4	30.3	32.3	34.3	36.3	38.3	40.3	42.3	44.3																			

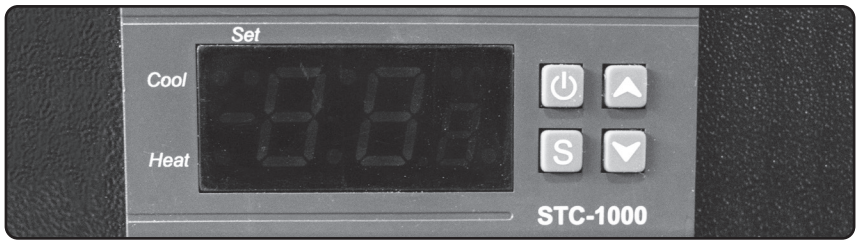
NOTE: Do not try to fix a slow or fast pour rate by adjusting the dispensing pressure. This will result in your beer either going flat or over carbonated. It is best to adjust the beverage line length and diameter. If the pour is too fast and is producing a lot of froth then increase the length of the beverage line between the KRYO and the keg. Alternatively, if the pour is too slow then decrease the length of the beverage line between the KRYO and the keg.

When adjusting your beverage line length to achieve the perfect pour it is always best to start with a longer length of beverage line as you can always trim a longer length of hose.

For minor flow adjustments, you can use the flow adjustment lever on the included flow control faucets. A flow control ball lock disconnect (KEG742) can also be used to further reduce the flow rate, although if further flow adjustment is needed a this point, we would recommend adjusting the length of your beverage lines.

TEMPERATURE CONTROLLER SETTINGS

The ice bath temperature controller (located on the back side of the unit) has several functions to help maintain ideal conditions to chill the beverage you're dispensing.



THE CONTROLLER UNIT ITSELF IS FAIRLY STRAIGHTFORWARD, BUT IT'S STILL A GOOD IDEA TO GET FAMILIAR WITH THE BUTTONS/FUNCTIONS.

CONTROLLER BASICS

- To turn on/off - hold the **POWER** button down for few seconds.
- The readout on the controller will show the temperature (Celsius) of the liquid inside the KRYO.
- To check the temperature setting - press & hold the **UP** arrow.
- To check the differential (+/- range from the set temp) - press & hold the **DOWN** arrow.

FUNCTION CHANGES

TO MAKE CHANGES TO ANY OF THE FUNCTIONS

1. Hold down the **S** button until **F1** shows on the controller, release the button.
2. Select the desired function by clicking the **UP** or **DOWN** arrows until the controller shows the correct function number.
3. Press & hold the **S** button while using the **UP/DOWN** arrows to adjust to your desired setting.
4. Release the **S** button.
5. And finally, press the **POWER** button to lock in the setting.

FUNCTION SETTINGS

F1 **THE DESIRED TEMPERATURE SETTING**

F2 **TEMPERATURE DIFFERENTIAL**
KRYO will cycle on/off to keep its temperature within the set range of the set temperature - example: if you set the temperature at 5°C and the differential to 1°C, the unit will cycle on at 6°C and chill the reservoir till the temperature cools back down to 5°C.

F3 **COMPRESSOR DELAY TIME IN MINUTES**
This feature protects the unit from turning on/off too quickly, and potentially damaging the compressor. The range is from 1-10 minutes with the default set at 3.

F4 **CALIBRATES THE KRYO AGAINST AN ACCURATE THERMOMETER**
Generally, the unit does not need any additional calibration. However, to find the correct adjustment - place an accurate thermometer in the unit and compare against the controller readout. If needed, set the calibration on the controller +/- by the number of degrees it is off. This will ensure the unit is adjusting to your desired temperature properly.

MAINTENANCE

If the glycol solution has been stored for an extended period of time then it is suggested to replace the solution, despite glycol having antimicrobial properties. It is recommended to replace the glycol if it has changed color dramatically or between 12 to 24 months of usage. To replace the glycol solution empty the reservoir using the drainage port and then refill with the required concentration of glycol using a refractometer to confirm the concentration.