Cornelius IDC PRO 255
Training module

Dimensions and Weight Specifications

- Dimensions (in): . . . . 35 x 30 x 39 (D x W x H)
  – Height is measured to top of bin.

- Shipping Weight (lb): 545

- Counter Support (lb): . . . . Capable of supporting 1000 lbs.
  – IDC Pro + Ice in the hopper + top mounted ice maker (if applicable)

- Counter weight (lb): . . . . 440 (dry)
  – **Unit is very heavy!! Take proper safety precautions when lifting and moving.**
  – **Unit is front heavy!! Take proper safety precautions when lifting and moving.**
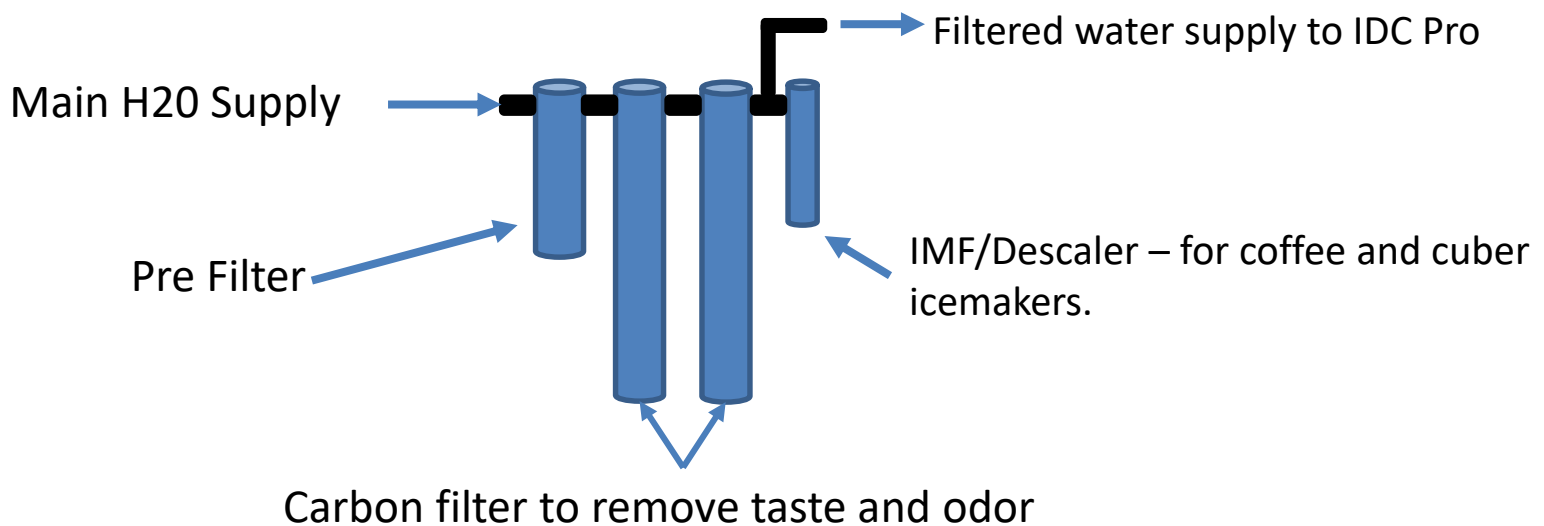 – **Table Lift is recommended to properly lift and move the IDC Pro.**

Equipment Specifications

- Ice Capacity: .255 lb ice bin capacity

- Electrical Rating: . . . . 120 Volts, 60Hz, 9 Amps
  - **15 amp dedicated circuit**

- Water supply pressure: . . . . ½" supply line regulated at 65 psi prior to pump deck

- Water volume: . . . . 125 gph

- CO_2: . . . . 3/8" supply line set at 90-110 psi directly from Co2 supply
  - The pump deck has a pre set non adjustable 75Psi secondary regulator

- Syrup (Brands): . . . . 65 - 75 psi

- Syrup (Flavor): . . . . 50 psi in back room, 35-45psi up front

- Brand Syrup and Co2 supply lines: . . . 3/8" ID tubing

Water Filtration

- Filtration system should consist of pre-filter to removed large sediment, followed by carbon filters to remove taste and odor.

- DO NOT USE IMF / DESCALER – These filters remove too many minerals from the water and will prevent carbonation.

- Hardness = ~50-100ppm   Total Mineral Solid = ~350ppm

Filtered water supply to IDC Pro

Main H20 Supply

Pre Filter

IMF/Descaler – for coffee and cuber icemakers.

Carbon filter to remove taste and odor

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IDC Pro Key Install Points

- The IDC Pro utilizes cold carbonation (internal carbonator) and an external pump deck. The pump deck needs to be located within 6 feet of the unit and receives power from the level control board located in the IDC Pro E-box. The power cord will be behind the splash panel on top of the cold plate.

- The IDC Pro requires a ½" ambient water line regulated to 65 psi before pump deck. The WPR should be located 12"- 18" before the inlet of pump deck.
  - **65Psi WPR PN: 620055952**

- The IDC Pro requires a 3/8" CO_2 line supplied at 90-110 psi to pump deck. The pump deck contains a secondary Co_2 regulator that is preset to 75 psi and the outlet of the regulator must be connected to carbonator tank inlet.
  - **Note: Use bulk Co_2 pressure to supply Co_2 to the pump deck**

- Note: The secondary Co_2 regulator for the flavor shots is not supplied.

IDC Pro Ice Dispense Features

- No ice maker adapter needed, the hopper cover has perforated cutouts for the most popular ice maker drop zones. Manual fill door in the front to be used as needed.

  - **Ice support bars are sent with the IDC Pro and must be used to support the ice maker. The Hopper lid / ice maker adapter will not support the ice maker without the ice maker support bars.**

- Interlock safety switch on touch screen door and activation magnet on lid to prevent agitation with door open

- Mechanical ice chute mechanism, with encapsulated magnet on the upper / outer ice chute and proximity switch / sensor on the unit.

- Two piece motor and gear box, ease of replacement

Ice Hopper Lid / Icemaker Adapter
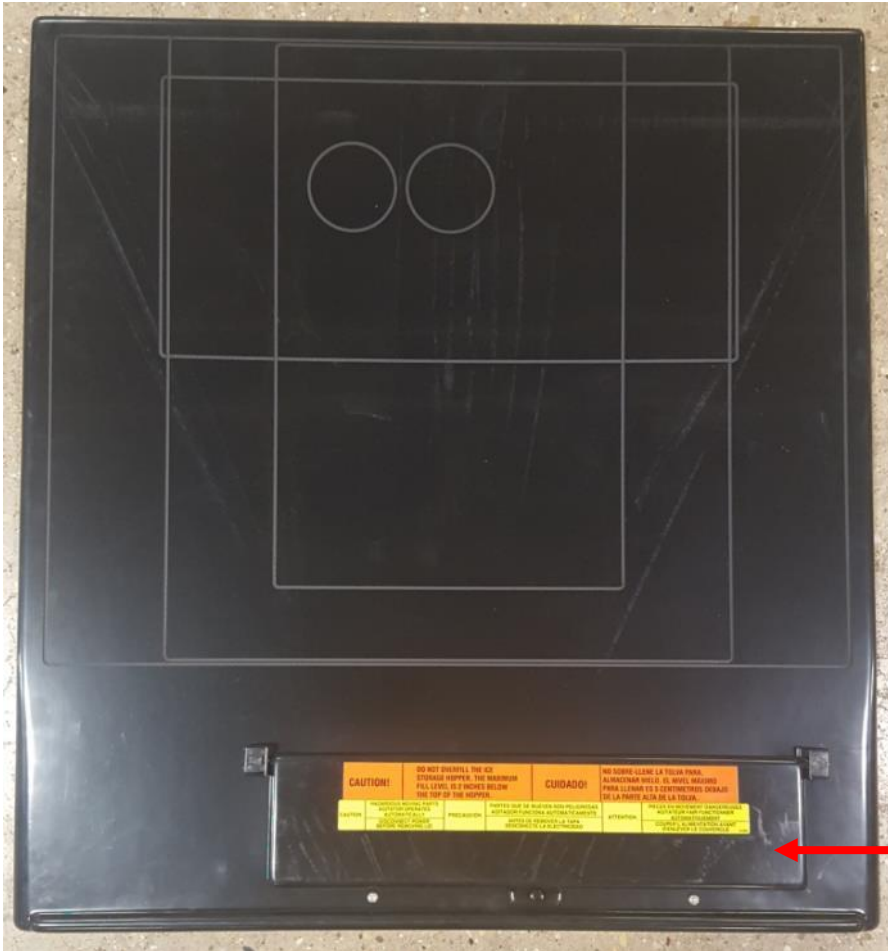
- Identify and measure the drop zone of the ice maker that will be mounted on the IDC Pro. Carefully cut along the perforated lines to remove the proper drop zone.

- NOTE: You can cut outside the lines if needed but be sure to only cut within the drop zone of the ice maker to avoid leaving openings along the sides of the ice maker. Remember that the ice hopper is a food zone.

- Manual fill lid if needed

Ice Hopper Lid / Icemaker Adapter and Support Bars
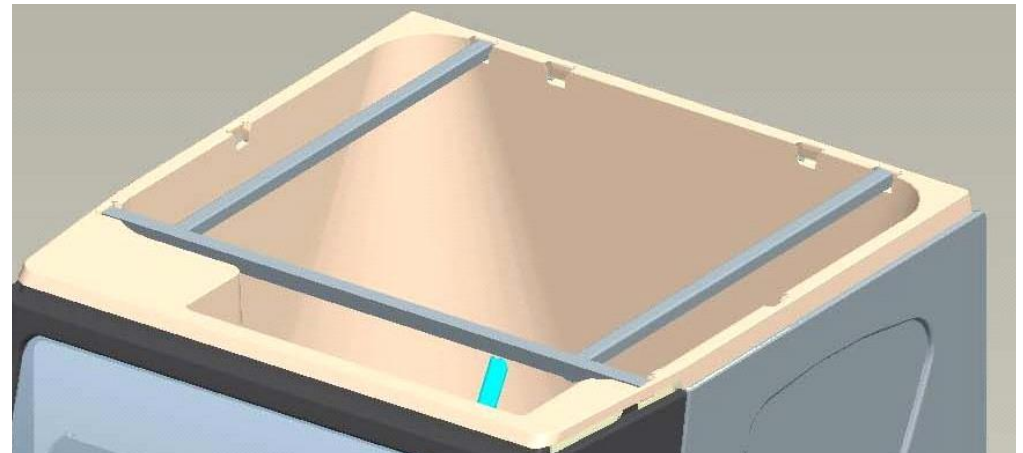
- You will receive 3 ice maker support bars; 1 long and 2 short.

- The long bar will span side to side and will be placed in the center or front of the hopper depending on the ice maker.

- The short bars will only be used if the long bar is used in the front position.
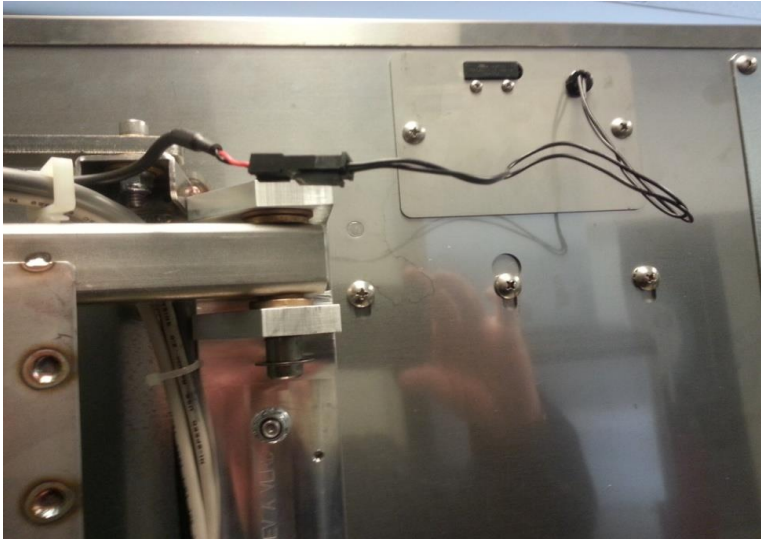
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Hopper lid magnet

- The hopper lid must be on the hopper and in the proper orientation for agitation to take place.

- Agitation will not take place if the hoper lid is not installed properly.

Safety Interlock Switch

- The safety interlock switch is a safety device that is located on the top center back of the touch screen. (12 o'clock position)

- This switch prevents agitation when the touch screen door is open or if the hopper lid is not in place.

- The activation magnet is attached to the hopper lid (shown in previous slide).

- **Bypassing the safety interlock switch is for TROUBLESHOOTING ONLY and SHOULD NOT BE LEFT BYPASSED.**

- The agitator should agitate every time the touch screen is closed properly.
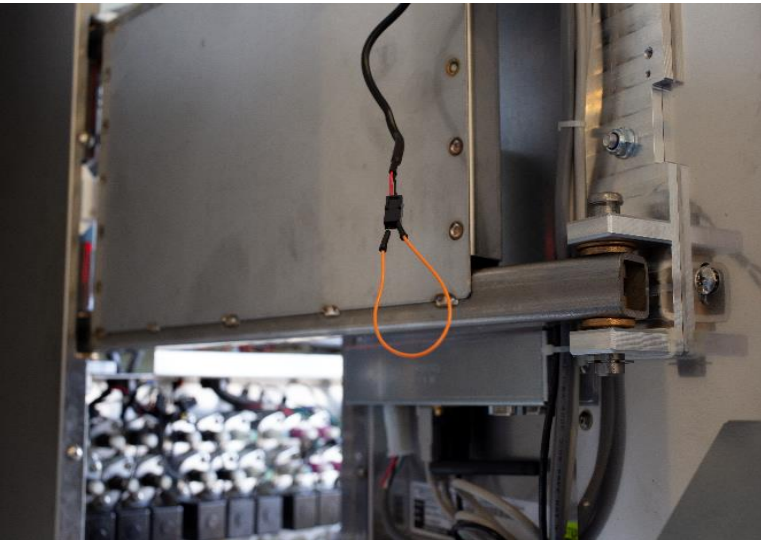
Ice Chute Agitation Safety

- There is a magnet located at the top of the ice chute that must come within certain proximity of a sensor located above the ice chute assembly to initiate agitation. This is achieved when a customer actuates the ice dispense lever.

- The ice chute sensor is located directly above the ice chute. *May be difficult to see*

- The ice gate pin must be inserted into the ice chute properly to help guide the magnet into place while at the same time opening the ice gate to allow ice to dispense.

- If the ice gate is not installed properly the magnet will fall forward not allowing agitation.
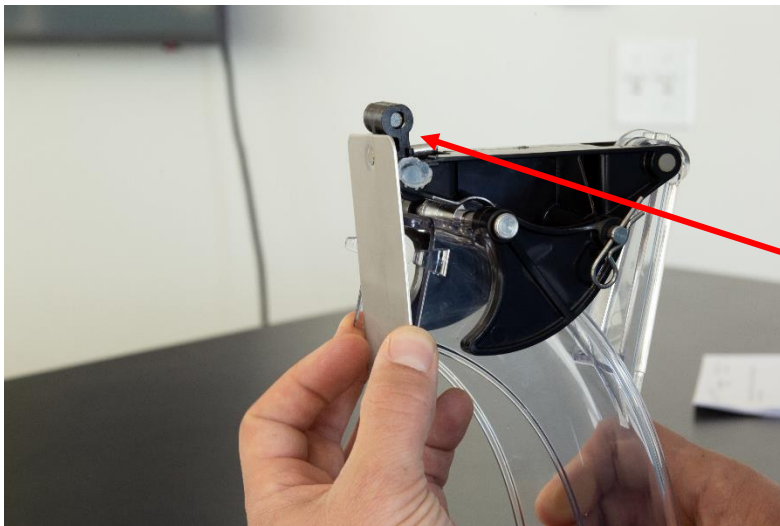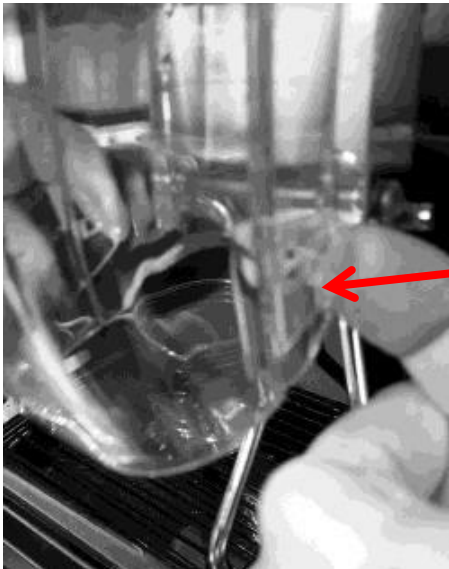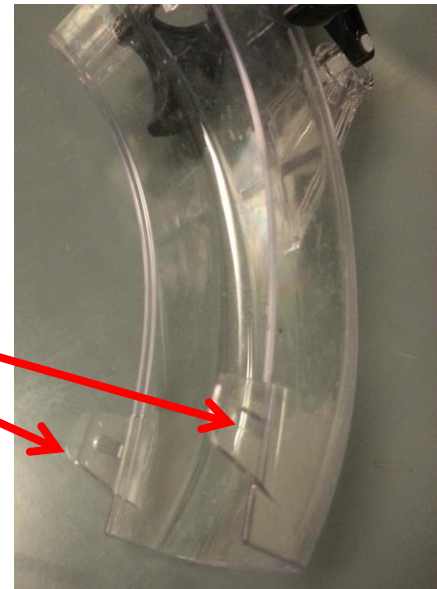

Magnet
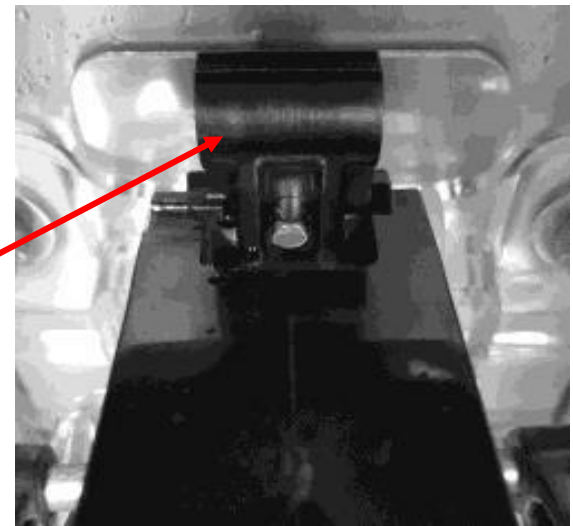
Ice chute removal

- Optional: Open the door and remove thumb screw and upper nozzle cover
  - **NOTE:** The outer ice chute can also be removed without removing the upper nozzle cover
- Carefully spread both tabs at bottom of outer ice chute. Remove outer chute mechanism by pulling upwards and forward sliding barrel magnet off of ice gate

Tabs at bottom of outer chute

Ice chute re-installation

- Slide encapsulated magnet over ice gate pin
- Before snapping outer ice chute back into place make sure **tab on outer chute is placed below top of inner chute**
- Push bottom of chute to snap locking tabs in place
- **Note: Improperly installed ice chute will prevent ice agitation / dispense**
- If ice dispense rate is too fast or slow, restrictor plate can be adjusted up or down or removed by loosening inner chute screws

Electrical layout
Descriptions and locations on index slide

Note: this picture correlates with the break down on the next slide.
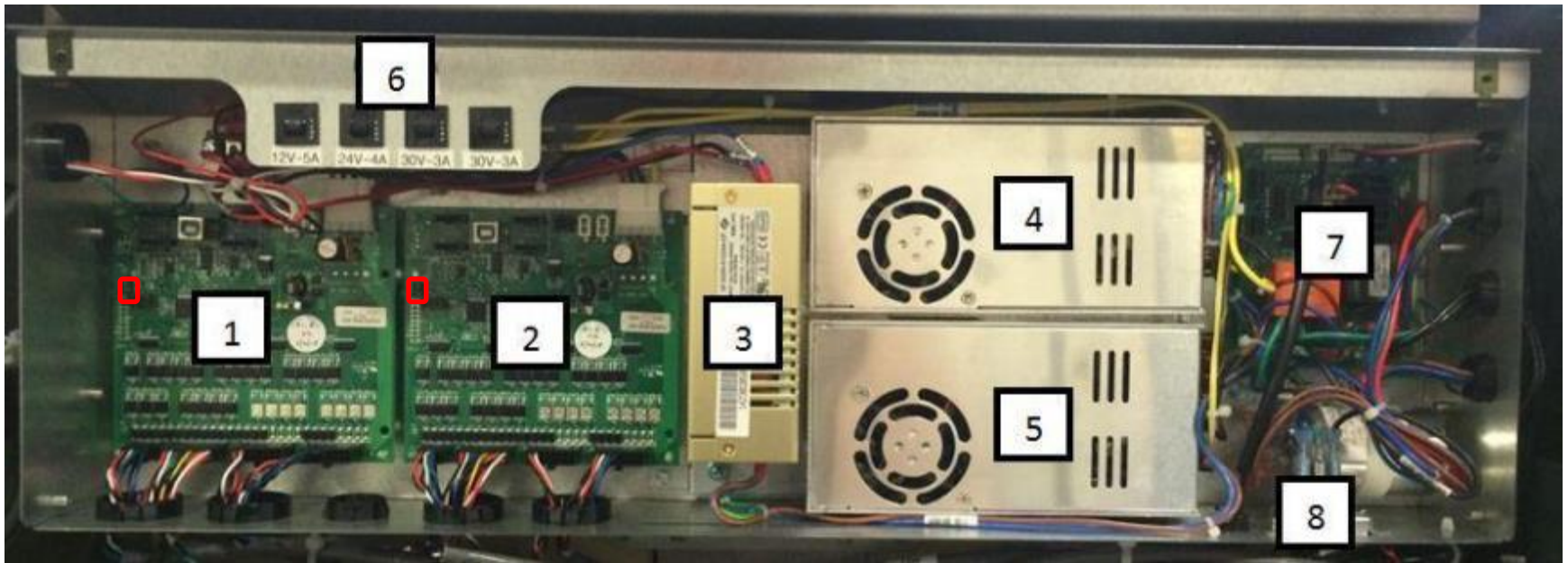
□=Dip Switches that dictate what side the MFV board controls
Left MFV – both switches to the right
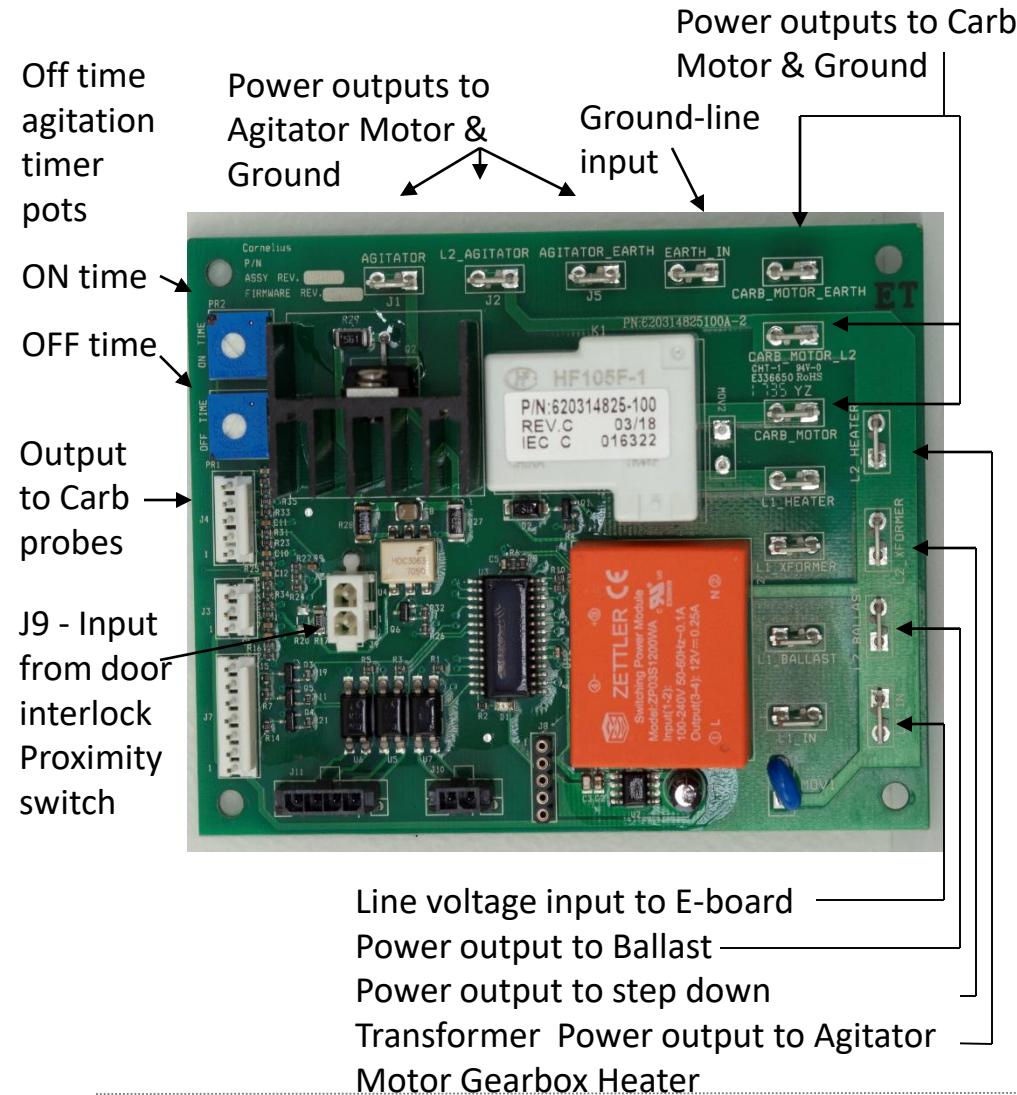Right MFV – both switches the to left

Electrical Box Layout

1. Left hand valve bank MFV board
2. Right hand valve bank MFV board
3. 12VDC/24VDC Power Supply
   - 12VDC – Control voltage for MFV boards and computer
   - 24VDC – Powers display and touch screen
4. 30VDC Power supply for RH Valve Bank
5. 30VDC Power supply for LH Valve Bank

6. Circuit Breakers as follows: placed between power supply and boards
   - 5A – 12VDC
   - 4A – 24VDC
   - 3A – 30VDC
   - 3A – 30VDC
7. Agitation Timer / Liquid Level Control Board
8. AC Power Inlet

IDC Pro Liquid Level / Agitation Board

Power outputs to Agitator Motor & Ground

Power outputs to Carb Motor & Ground

Ground-line input

Off time agitation timer pots

ON time

OFF time

Output to Carb probes

J9 - Input from door interlock Proximity switch

Line voltage input to E-board
Power output to Ballast
Power output to step down
Transformer Power output to Agitator
Motor Gearbox Heater

- Dispenser control allows "process of elimination" troubleshooting of most electrical components.

- Utilizing a multi-meter to verify e-board output voltages to suspect component eliminates guess work.

- Control is common to both models

- Error LED indicator

- Common board for all IDC platform units

- Most common Error on IDC is a solid LED indicator. Carbonator pump run time error,

- Requires soft shut down of Touch screen and Power to be cycled on dispenser to reset

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Control board Error Codes/Troubleshooting Guide

DIAGNOSTICS GUIDE FOR THE MAIN CONTROL BOARD

| State	Observed State of Red LED	Sensor Input	Control Response	Service Remedy
0	Flash rate 3 seconds	Both probes read "wet"	Standby mode. Pump = OFF	No service required
1	Flash rate 1/2 second	Pump is OFF and HIGH probe reads "dry" and LOW probe reads "wet"	Waiting for level to drop below LOW probe. Pump = OFF	No service required
2	Flash rate 1/2 second	Both HIGH and LOW probes read "dry"	Normal mode. Pump = ON	No service required
3	Flash rate 1/2 second	Entered when HIGH probe does not detect liquid, and LOW probe does detect liquid, and pump is ON	Normal mode. Pump = ON	No service required
4	Flash rate 1 second	Entered when HIGH probe reads "wet" and LOW probe reads "dry"	**THIS IS AN ERROR CONDITION.**	- Check electrical connections at the carbonator tank, and at connector J4 on the main control board - Black wire should be connected to the LOW probe and also to Pin 4 of Connector J4 - Reverse the connections if incorrect - Replace harness if necessary
5	ON continuously, but "flickers" every 3 seconds	Poor signal connection to the carbonator tank. May result in short cycling of the carbonator pump.	Able to continue to function but carbonator pump short-cycles. Pump will come on each time a drink is drawn. **THIS SITUATION SHOULD BE CORRECTED.**	Check the harness connections of the red signal wire at both ends: 1) at the carbonator ring terminal and 2) at Pin 5 of the J4 connector at the main control board
6	ON continuously	Entered when pump has run continuously for 5 minutes	**THIS IS AN ERROR CONDITION.**	Unplug the unit and plug it back in. This will reset the unit's main control board and restart the carbonator pump.

Agitation Timing

- Automatic ice agitation timing is factory set for cubed ice and will agitate 4 sec / 1 hour

- You **MUST** adjust agitation timing when you are dispensing soft ice to .5sec / 3 hours.
    - **ON Timing**– Rotate all the way to the left (min). **OFF Timing** – Rotate all the way to right (max)

- Cornelius does not provide a bin stat for ice makers not manufactured by Cornelius. You **MUST** install a bin tat to control proper ice level to 4-6" below the top of the hopper
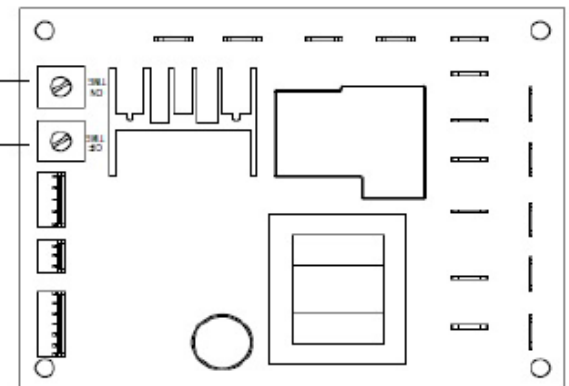
MOTOR ON TIME

FULL CCW - 0.5 SECONDS
FULL CW - 5 SECONDS

OFF TIME

FULL CCW - 10 MINUTES
FULL CW - 3 HOURS
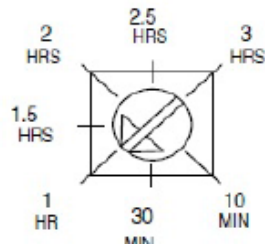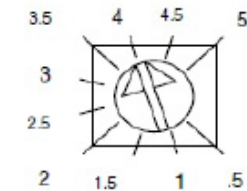
E-BOARD AGITATION TIMER

ON TIME

OFF TIME

Touch Screen Access panels

- You have 2 access panels on the back of the touch screen. The SBC panel and the Touch Controller panel.

Intake and Exhaust Fan – powered by the pwr dist. board

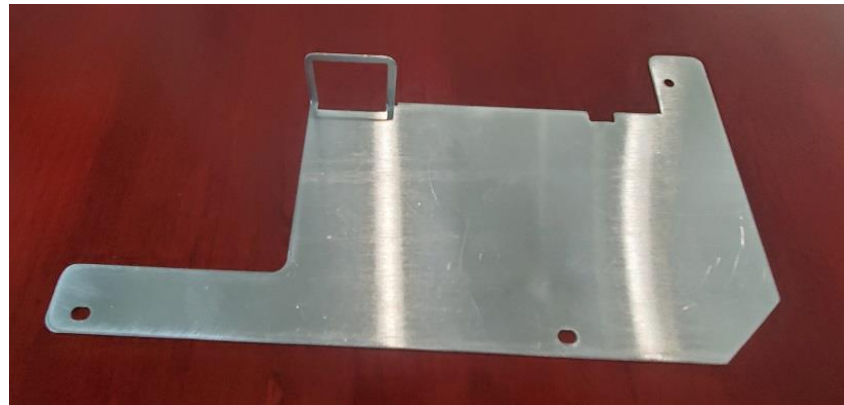SBC Board Access Panel

Screen mounting bracket

Cover Panel

Touch Control Board Access Panel

IDC Pro SBC Access Security Cover

- The SBC Access Security Cover is installed to mitigate the risk of unauthorized personnel gaining ease of access to USB and Ethernet ports.
- Secured by (3) 8-32 Torx screws (T15)
- PN: 6200728
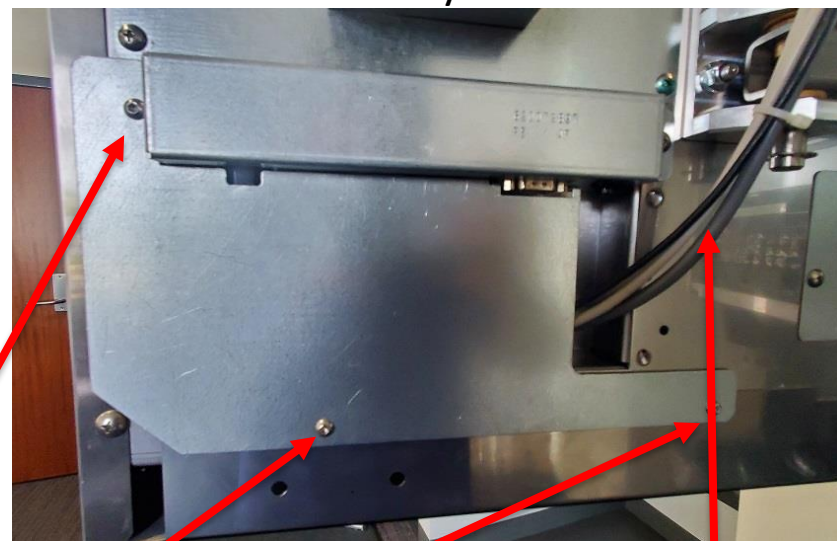- Specific to 7-Eleven but available to all

IDC Pro SBC Access Security Cover

Without Security Bracket

With Security Bracket

Parts & Tools needed
1. New Cover
2. Phillips Screw drive
3. T15 Torx Driver or Bit
4. (3) 8-32 Torx Head Screw

Note: Make sure wires aren't pinched before installing screw.

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SBC Board

- The SBC board access panel is located on the lower left side of the back of the touch screen. The **S**ingle **B**oard **C**omputer processes all input and outputs. It also contains the SSD card otherwise known as a hard drive.
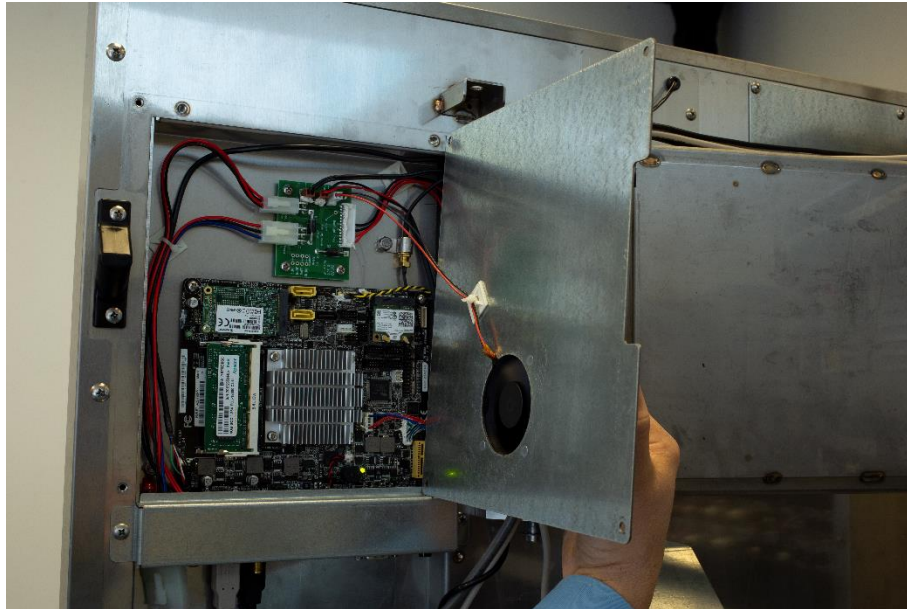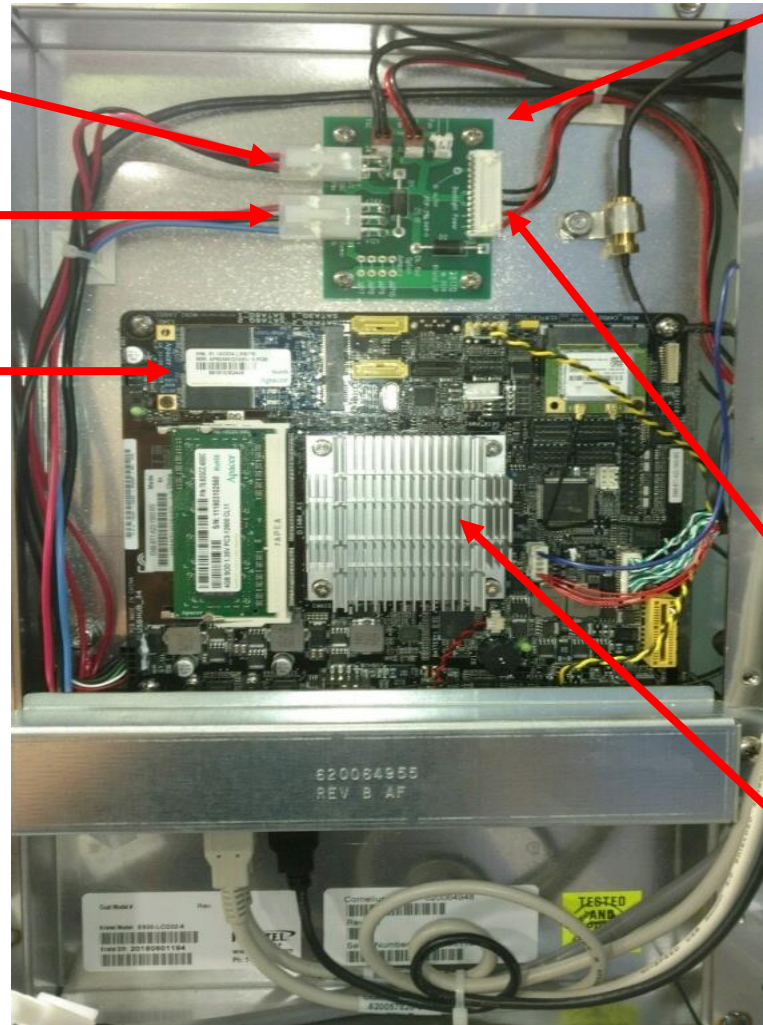
SBC Board Cont.

12VDC pwr to SBC

Main pwr of 12/24VDC

SSD card: contains the logic, also referenced as the hard drive.

Pwr Dist Board: Receives power from power supplies and distributes 12VDC and 24VDC to the SBC board and screen.

24VDC pwr to backlight/screen. Check top black to top red and bottom black to bottom red

SBC Board

Connections on Back of IDC Pro Interactive Touch Screen

Main Power –
12 & 24 VDC
Blk / Red = 12Vdc
Blk / Wht = 24Vdc

USB Port
ADA

Pwr/Reset
Button

USB Ports –
Left and Right
MFV Board

Ethernet
connection

NOTE: These connections are part of the SBC board.

Touch Controller Board

- The Touch Controller Board is located in the upper right hand corner on the back of the touch screen. It senses all touch interaction on the screen. It then reports back to the SBC to compete the intended task.
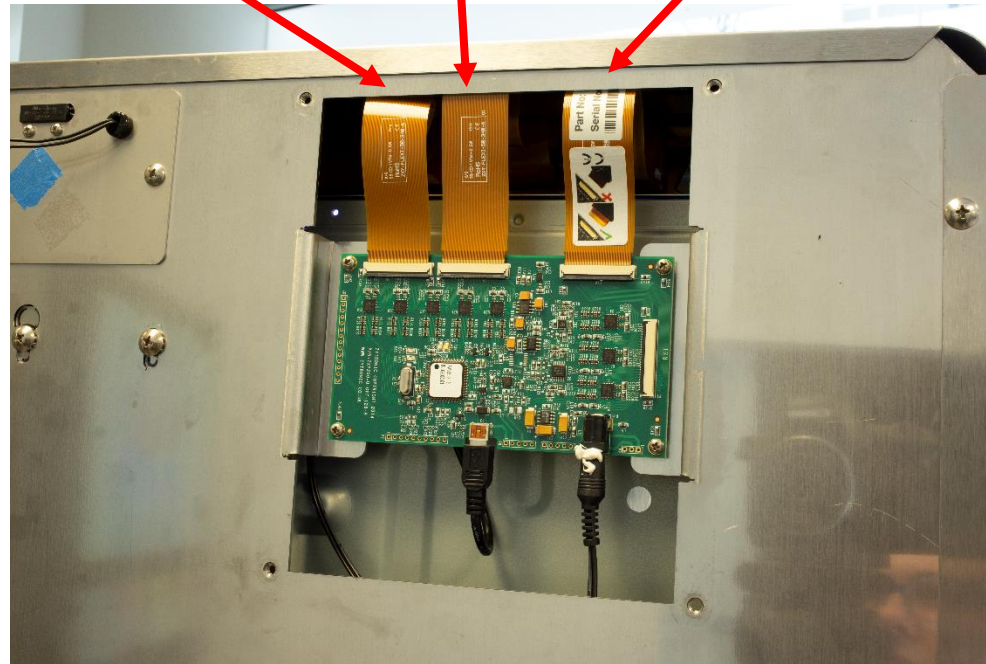
Touch Controller Board Ribbon Cables

Controls left side of screen (looking at it)

Controls touch from top to bottom side to side
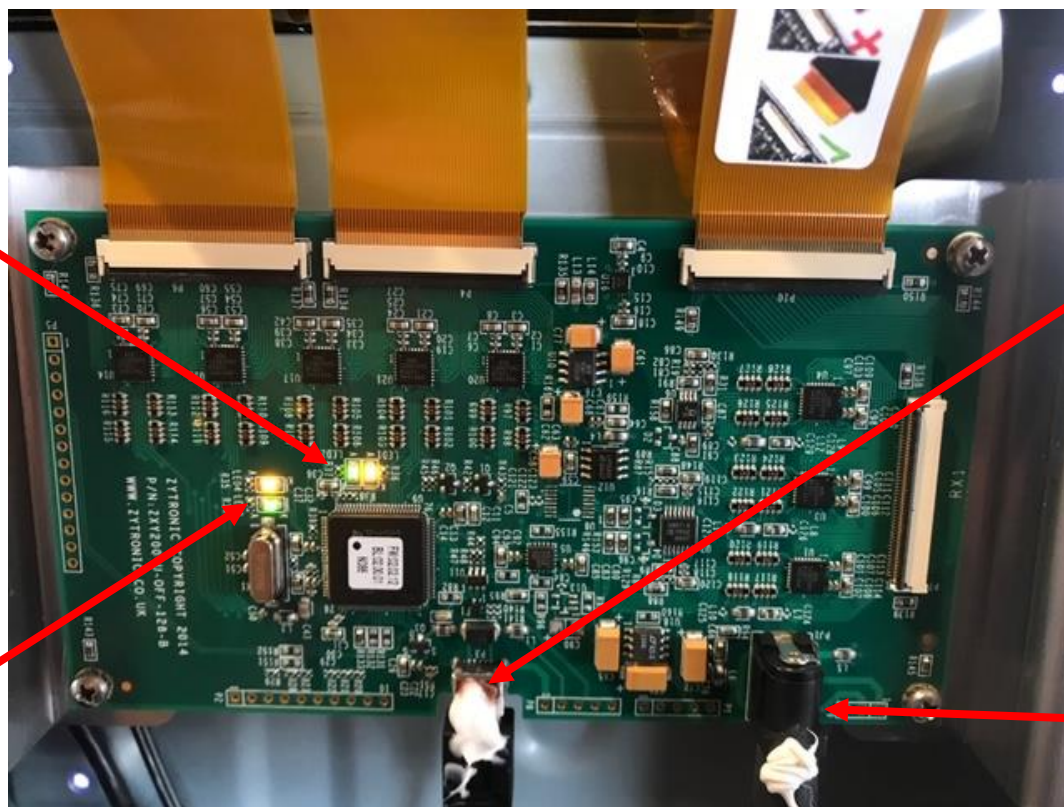
Controls right side of screen (looking at it)

Touch Controller Board Cont.

Normal Mode: Led 1 will pulse an amber light continuously. LED 2 will turn green when you make contact with the screen.

Error Mode: LED 1, LED 2, LED 3, LED 4 lit up indicates that the board is in a error mode.

Micro USB

Barrel Connector

Resetting the error mode: Properly shut down the screen using the NCUI or the reset button and unplug from the wall. Unplug the micro USB on the touch controller, plug micro USB back in, plug the unit back in and test for touch response.

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ADA Touch pad

**The ADA is powered by the black USB Connector on touch screen. New units will have piece of yellow heat shrink around it to identify.
Note: Unplug, wait 30 seconds and plug in to start self calibration

- ADA Activation – select left or right side of dispenser

- Move Drink Selection to the Left

- First press gives option of flavors, second press and hold to dispense drink

- Move Drink Selection to the Right

- Return to Previous Setting
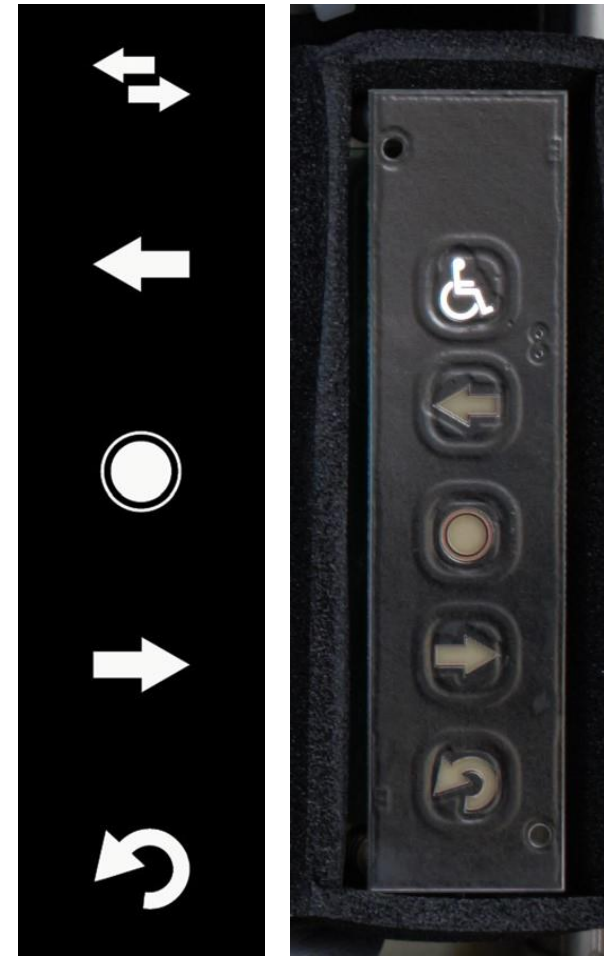
Agitator Assy

- Single piece design used from Jan 1, 2015
- Two piece design cut in on the 6th week of 2020
  - Provides better serviceability and reliability.
  - Can be removed without removing top mounted ice maker
  - Backwards compatible

620042766 – Single Piece
(no longer used)

620065218 – Top Piece

620065220 – Bottom Piece

ML Kit PN: 2619408 – Top and Bottom

IDC Pro Cold Carbonation

- Internal carbonator tank located and foamed in to place on the right side behind the splash panel

- Two probes, High and Low level
  - White wire on top and black wire on the bottom
  - Red wire is reference to ground

- Front access to probes and relief valve located behind the splash panel.

- Utilizes remote carbonator pump platform that needs to be located within 6 feet of the dispenser.

- Power to the pump deck is supplied directly from agitation / liquid level control board

- Relief valve opens at 125Psi

Pump Deck Platform IDC Pro

- The pump deck is supplied power on demand from the IDC Pro. There is no external outlet required.

- Pre-set 75 psi CO2 regulator on pump deck

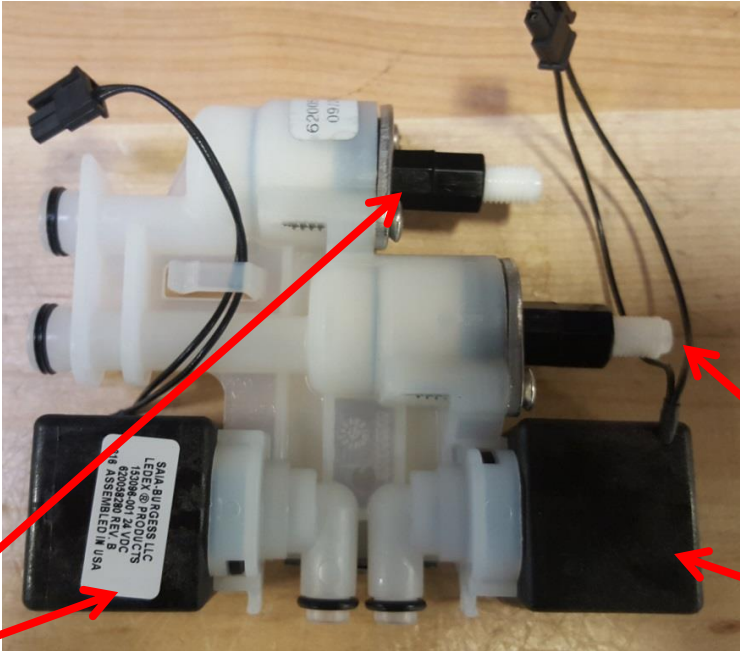- Requires water supply regulated to 65 psi prior to pump
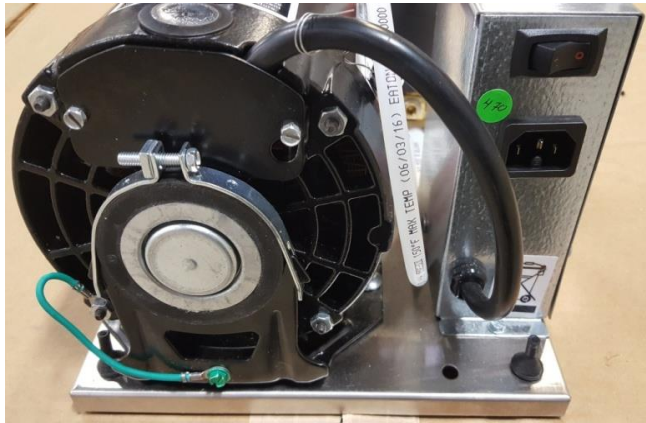
Multi Flavor Valve (MFV)

- Flow control housing color –
    - **Black = Brand – 10 flow controls per side**
    - **White = Water – 4 flow controls per side**
        - **1 high flow and 1 low flow for CW for each side**
        - **1 high flow and 1 low flow for PW for each side**
    - **Purple = Flavor – 4 flow controls per side**
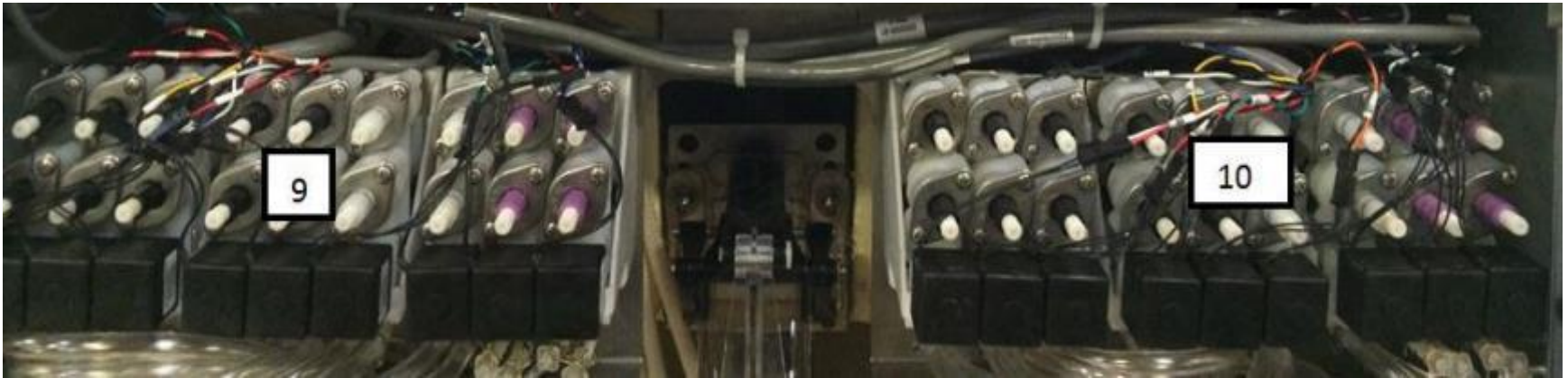
Identifying Top and Bottom Flow Controls

Rear solenoid is the top flow control

Front solenoid is bottom flow control

Solenoid coil ohm value and voltage

- 9.1 Ohms +/- 10%

- Initial Solenoid activation voltage – 30 VDC

IDC Pro Support

- **Tech Support – 800-238-3600 M-F 8;00am-5:00pm CT**

- IDC Pro Pocket Tech Portal – Used in the field to provide technical support.
  - Walks through installation, operation, troubleshooting and cleaning & maintenance.

  - Training.Cornelius.Com

  - Please place this on the home page of your phone or tablet so it is easily accessible.

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IDC Pro Service Screen Guide

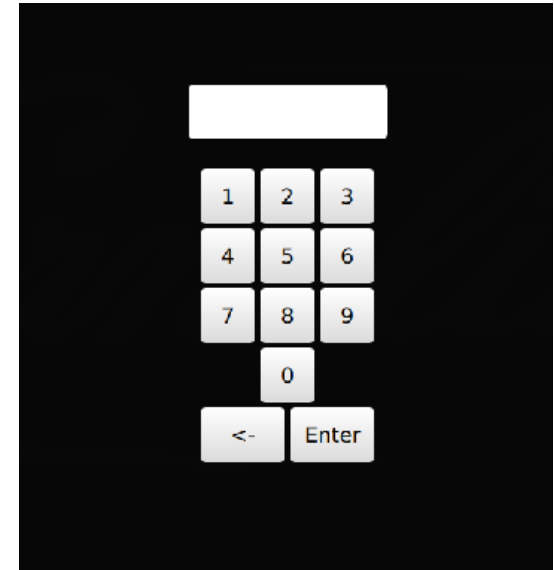*Note* When viewing make sure to read the "notes" section at the bottom for step-by-step directions

Accessing the Service Screen

1. Tap the four corners of the video portion of the screen in the order shown. Top right, top left, bottom left, bottom right.

2. Enter the correct code

Store Level Access: 1111
Manager Level Access: 2222
Technician Level Access: 3333

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