

UltraFlow Manual



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Introduction

IMI Cornelius, the world's leading supplier of complete solutions to the drinks dispense and food service markets, present our innovative beverage dispensing and cooling system, UltraFlow.

UltraFlow is a high through-put beer dispensing system that offers retailers

- ❖ Reduced bar congestion
- ❖ Rapid filling of glasses / jugs.
- ❖ Increased turnover
- ❖ Staff endorsement
- ❖ Reduced labour costs
- ❖ Independent stand alone system

The UltraFlow dispense system is capable of dispensing products in accurate pre-determined quantities of 1 pint glasses and / or up to 4 pint jugs with optional product measure facilitated by adjustment to an in-line turbine. Faster dispense speed operation (< 5 seconds per pint @ 15m python) means that UltraFlow is the ideal choice for dispensing Stouts, Cider, Lagers and Beers during peak periods.

System Operation

Product is dispensed from a keg through an in-line 1 pint beer monitor using a 230 volt ac electric pump. The pump is controlled by a pump control unit.

Two product supply lines are connected through two spare long cooling coils in the remote python cooler.

The product temperature is then maintained at between 6 & 8°C up to the bar area via the python.

To dispense product at 2°C the two product lines are double cooled through cooling coils situated in an under-bar Concord cooler sited near to the point of dispense.

If product is required to be dispensed at between 6 & 8 °C the two product lines need only be run on the chilled water circulation pipes in the UltraFlow python

The product temperature is maintained to the point of dispense via the UltraFlow python circulating chilled water through cooling ports in the manifold block situated in the Font assembly.

Product is dispensed through two solenoid valves and ports also situated in the manifold block

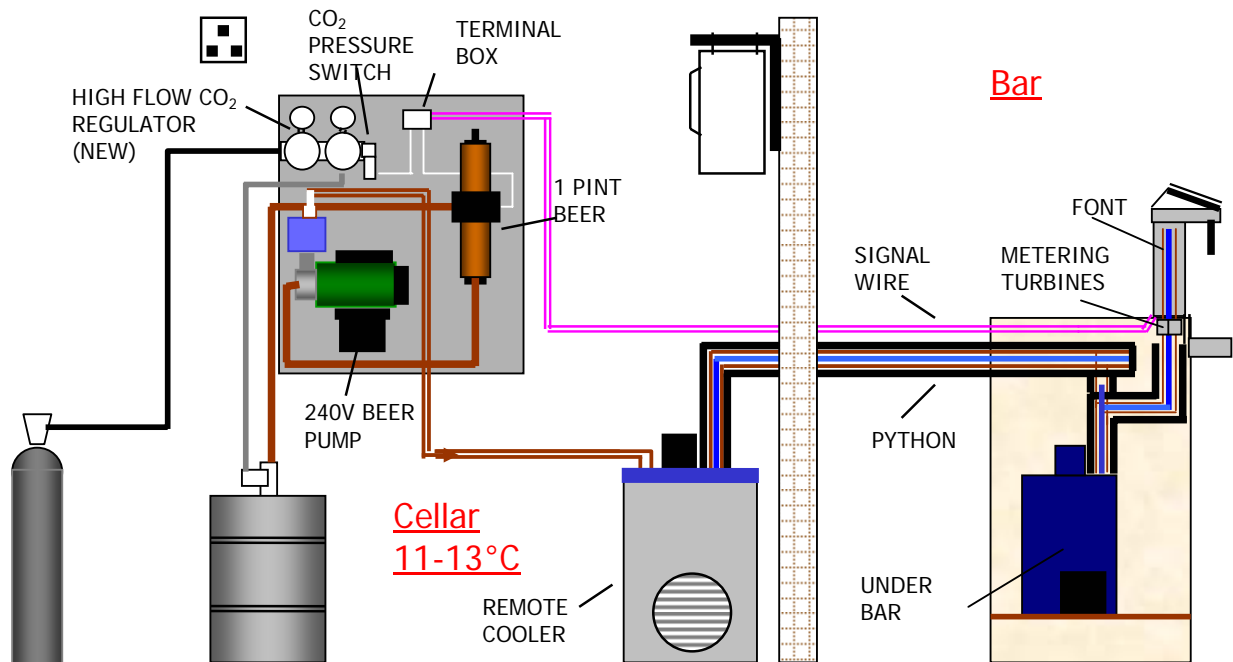
A Vent Solenoid operates allowing the nozzle to drain more efficiently enabling completion of the measured dispense.

Main components

The UltraFlow dispense system comprises:

- ❖ UltraFlow dispense Font
- ❖ Under bar ice bank cooler with chilled water circulation
- ❖ Cellar dispense panel
- ❖ Product Pythons
- ❖ Remote python cooler
- ❖ Stand alone CO₂ bottle
- ❖ Fittings Kit

Main components layout



Main component use



Remote cooler

Two Spare product coils are required in the remote cooler to achieve the correct product temperature (6 - 8°C) to the bar cooler.

Pythons

The UltraFlow System uses a conventional python configuration for beer lines and circulated water cooling. This maintains the correct product temperature between the cooler and the bar via two 3/8"OD product lines within the python.
(i.e. Higher flow rates through two parallel lines)



Self contained board

Designed for ease of installation (install 1 metre from floor) Cleaning socket in fittings kit.
Space required to fit the panel (543mm high x 513mm wide).



240 volt electric motor with Pump control

Electric centrifugal pump boosts pressure through the dispense system
Maintains down stream pressure in the system under high flow conditions
Avoids excessive gas pressure to achieve high dispense rates
The pump control reacts to pressure variance within the system.



One pint Beer Monitor

A combined beer monitor and shut-off device with signal output Signals
'Out of beer' to the bar valve control board via the reed switch
Prevents gas pockets passing into dispense system
Removes the need for purging product lines after a keg change

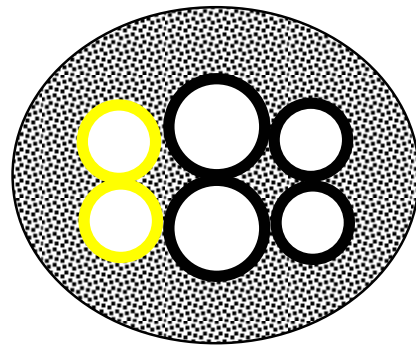


Fast flow CO₂ Gas dual Regulator Assembly

Combined primary/secondary gauge with integral low gas pressure cut out switch set @19psi (Site adjustable if required) provides a signal to the bar valve control board to alert user if CO₂ supply requires replacing. Maintains system pressure under high flow conditions. Prevents regulator icing.
Prevents CO₂ break out in lines in out of gas conditions
Adjust to Equilibrium top pressures + 5psi
Primary relief valves pre set @ 180psi
Inline pressure relief valves pre set @ 45psi

UltraFlow bar python

Conventional python specification comprising of:
2 x chilled water circulation pipes
(9.5mm x12.7mm MDP)
2 x product pipes (6.35mm x 9.5mm MDP) or
4 product lines if trace cooling down to under bar
cooler inlet coils is required.
Armaflex 13mm thick insulation food quality barrier
film.



UltraFlow python assemblies with two extra 3/8" trace cooling pipes

Concord Cooler



Positioned close to the point of dispense to trim the product dispense temperatures.
Provides cooling water circulation for the UltraFlow tap up to the point of dispense
One product coil per line for reduced pressure drop and more effective cooling
(For product temperature requirement of 6°C to 8°C use only the PolarFlow long
product coils)
For extra cool product temperature requirement of approximately 2°C pass the
product through the product cooling coils in the Concord cooler.
The Concord refrigeration system is controlled via a mechanical ice bank thermostat.

UltraFlow Dispense Font:



The UltraFlow dispense system font is a multiple solenoid high flow unit incorporating electronic control with the following advanced features:
Manual top-off
Two button operation for jug dispensing
Drink cancel button
Chilled manifold body for temperature and fob control
Unique draining nozzle

Portion control:



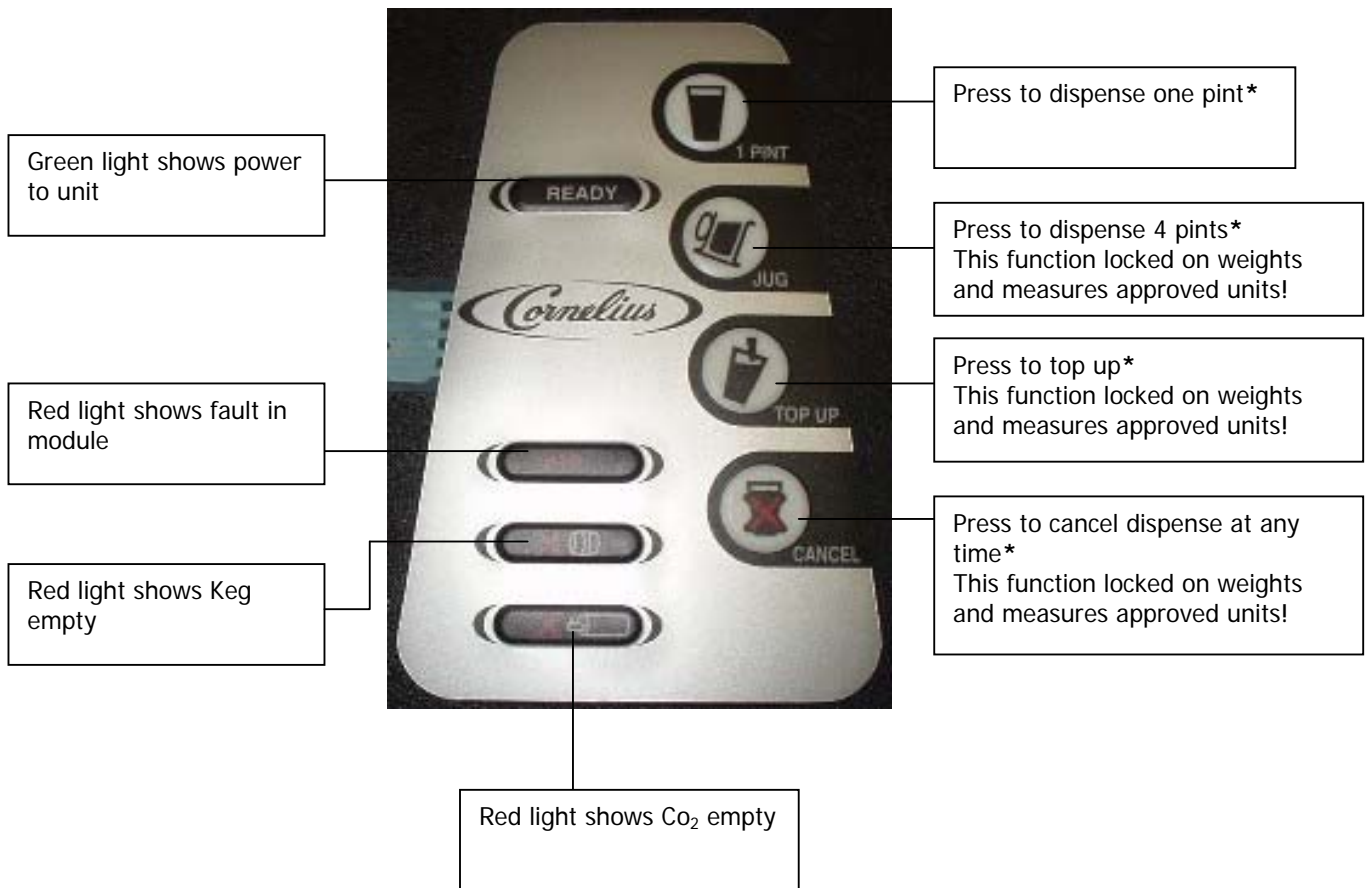
Two stage solenoid control operation plus a Vent solenoid to drain the dispense nozzle
Out of CO₂ gas dispense lock-out and Out of beer dispense lock-out via a 2 – core cable installed between
the font and the cellar dispense panel.

Metering Turbines:



Each beer supply pipe has its own inline turbine with the portion size being
determined by a cumulative count
The turbines are located at the rear of the bar valve and are accurate to within
'metering' limits (automatic compensation of flow imbalance)

Button pad functions



* Buttons with multi functions

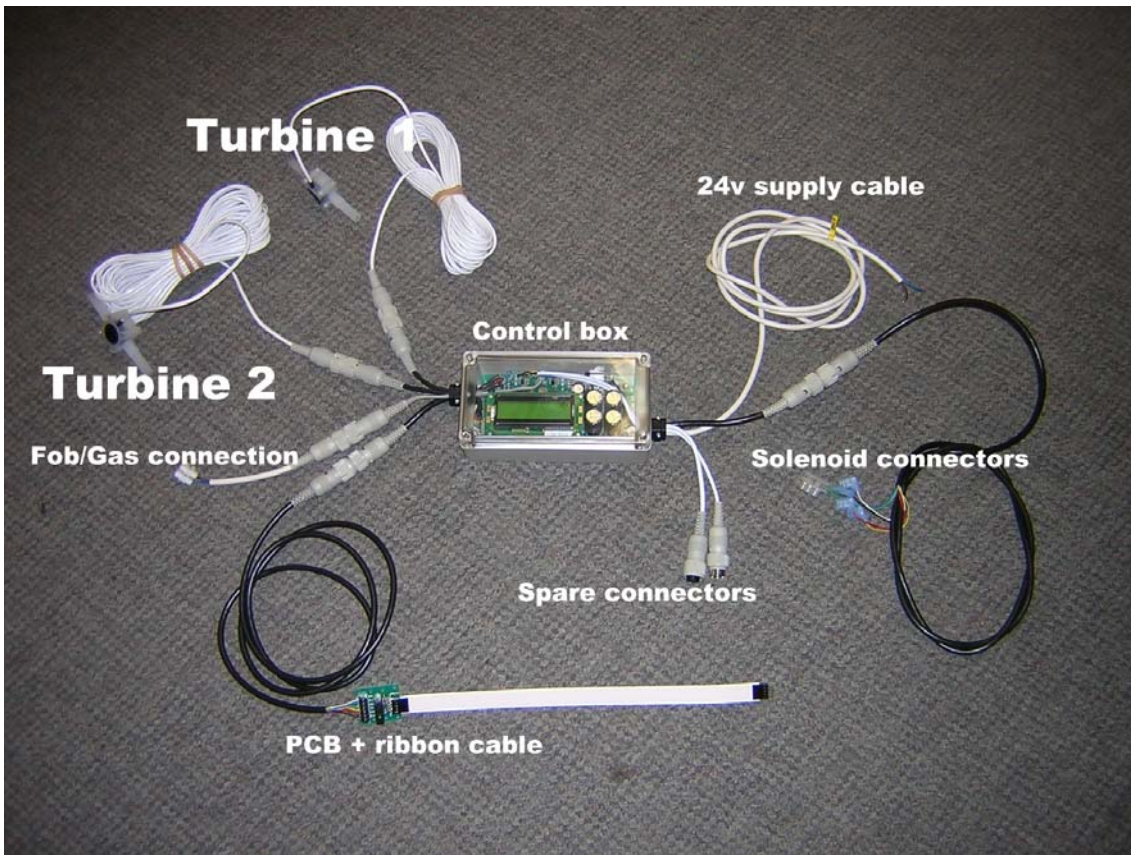
Cancel button – Press for four seconds to enter the menu. Once in menu mode press once to exit the menu.

Jug button – Scrolls up through functions in menu mode.

Pint button – Increases a value in menu mode.

Top up button – Decreases a value in menu mode.

PCB control module



Programming

- Normal display will read "Ready"
- Press and hold "Cancel" button (red lights will alternate on Keg and gas empty)
- Display will show pint and jugs dispensed. (these readings cannot be altered).

- **Press "Portion 2" button to scroll through the menu:**

- Press "Portion 2" display will read "pint set up"
- Press "Portion 2" display will read "Jug set up"
- Use the "Portion 1" and "Top up" buttons to alter value (this applies to all settings)
- Press "Portion 2" display will read "Hit (ms)" 100 – **Do not alter this value**
- Press "Portion 2" display will read "Hold (%)" 020 – **Do not alter this value**
- Press "Portion 2" display will read "Pint Timeout" – **Do not alter this value**
- Press "Portion 2" display will read "Jug timeout" 40.0 – **Do not alter this value**
- Press "Portion 2" display will read "Drain Time" 03.0 – **Do not alter this value**
- Press "Portion 2" display will read "Drain delay" 100 - **Do not alter this value**
- Press "Portion 2" display will read "Beer saver" 3500 - **Do not alter this value**
- Press "Portion 2" display will read "Top up valves 2. Alter between 1 valve or two valves. 1 is for foam, 2 is for clear beer.
- To exit the program press "Cancel"

If settings are lost or forgotten, press and hold "Cancel", whilst holding "Cancel" press "Portion 2" button and hold for approx 5 seconds. The unit will default to factory settings.

- **Cleaning mode:**

To set cleaning mode press and hold "cancel", whilst holding "cancel" press "Portion 1" button, hold both buttons for 5 seconds. This will open the solenoids for approximately 20 minutes to allow fluid to freeflow. To stop cleaning press the "Cancel" button.

- **Glass activated dispense:**

If the glass activated dispense button is used, it must be held on for ½ a second before dispense will start. This is to prevent the possibility of "nuisance" tripping of the system, for example, when cleaning the font.

Surveys

Cellar area requirement:

- ❖ Storage temperature 11-13°C
 - Store Product for a minimum of 48 hrs prior to use.
- ❖ Space required on wall to mount Dispense panel
 - (543mm high x 513mm wide - min 1mtr from floor)
- ❖ 13 amp - 230v supply
 - maximum 1.5mtrs from dispense panel
- ❖ Dedicated CO2 bottle supply
 - To be sited in an upright position next to dispense panel and secured to the wall
- ❖ Connection of cleaning head to ring main (if required)

- ❖ Access to Install a 2 core signal cable
 - Wired in series between the Dispense Panel junction box and the Font.

- ❖ Remote cooler checks.
 - Sited in ambient temperatures between 10°C and 35°C
 - Outside the chilled cellar (if air cooled)
 - Good Ice bank formation
 - Water bath temperature
 - Correct Water bath level
 - Top Mounted water pump - (minimum flow rate 6 litres/min)
 - Glycol coolant (minimum flow rate 4.5 L/min (water cooled)
 - 2 x spare long cooling coils per font available on the remote cooler
 - 2 x spare 3/8"O/D product lines per font in existing product python

Bar area checks:

- ❖ Space on and around bar to site font
 - (Mk2 dimensions – 620mm high 90mm, 170mm inc drip tray wide and 170mm, 230mm inc drip tray deep)

- ❖ 2 x 13 amp / 230v socket outlets
 - for the under bar cooler and the 24volt transformer – (no more than 1.5 mtrs away)

- ❖ Maximum 2 x fonts per bar cooler

- ❖ Space under bar for a Concord cooler
 - (Dimensions - Height 650mm x Width 375mm x Depth 450mm)
 - 2 or 4 x 3/8" product coils
 - Total python run including vertical Lift 8 metres
 - Vertical Lift 3 metres
 - Ambient operating temperature 5°C to 35°

UltraFlow Technical Survey

Name of account Address Postcode Contact Phone number Survey date Bar to survey	
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Bar area Checks

Comments

Existing drinks temperature		°C
Two available spare lines in existing python		Yes /No
Space for Font on the bar		Yes /No
Space for the font control box		Yes /No
Is a display to be fitted to the font		Yes /No
Space for Concord or Maxi 310 cooler		Yes /No
Sockets for Cooler and Transformer		Yes /No
Python length from font to cooler		mtrs
Access bar/cellar for 2 core signal cable		Yes /No
Cable length bar/cellar		mtrs

Cellar area Checks

Cellar temperature		
Space for dispense panel		Yes /No
Space for keg		Yes /No
CO ₂ or mixed gas		
Space for Gas bottle near dispense panel		Yes /No
Cleaning ring main		Yes /No
Socket for dispense panel		Yes /No

Remote cooler Checks

Water bath temperature		°C
Two spare coils available per tap		Yes /No
Is water bath full		Yes /No
Is ice bank formed		Yes /No
Is Condenser/Heat Dump clean		Yes /No
Is Re circ pump working correctly		Yes /No
How many product coils In use.		
Python length		- Mtrs
Python vertical lift		- Mtrs

Install date to be confirmed: _____ For completion on or before: _____
 CO₂ top pressure on this product is normally _____ psi + 5psi

Installation and Commissioning

Bar area

- ❖ Site under bar cooler and fill the water bath till the drain begins to overflow
- ❖ Loop the water recirculation pump pipe connections
- ❖ Connect the cooler to the mains electrics to allow the unit to make a full ice bank whilst the installation is being carried out.
- ❖ Run a 2 core cable from the UltraFlow font position on the bar to be connected to the signal cable junction box situated on the dispense panel in the cellar.
- ❖ Provide access through the bar shelving for the UltraFlow font product python connections.
- ❖ The UltraFlow product python, the two core signal cable and a two core 24volt supply cable should be connected to the font prior to it being fixed to the bar top
- ❖ Locate the two nominated 3/8" product supply pipes on the customers existing python and trace cool them, if required, to the under bar cooler. These will then require connecting to the 3/8" product inlet coils.
- ❖ Trace cooling can be achieved by including two extra 3/8" product pipes within the UltraFlow python.
- ❖ Connect the two remaining 3/8" product pipes in the UltraFlow python to the under bar cooler product out coils.
- ❖ Disconnect the under bar cooler from the mains electrics. Connect the 1/2" water re-circulation pipes in the Ultra flow product python to the flow and return connections on the under bar cooler water recirculation pump.
- ❖ Reconnect the under bar cooler to the mains electrics and check for any water leaks on both the cooler and the UltraFlow font.
- ❖ Site a 230-24volt transformer close to the UltraFlow font and within 2.5 mtrs of a 13 amp socket.
- ❖ Connect the 24volt - two core supply cable to the transformer and check the Font is displaying a red status light on the touch pad.

Cellar area

- ❖ Site the dispense panel within 2.5 metres of an electric socket in a temperature controlled product storage area, the panel should ideally be mounted at least one metre away from the floor.
- ❖ The cleaning head can be connected to the cleaning ring main if required.
- ❖ Space should be made available for the product keg to stand close to the dispense panel.
- ❖ Fix a dedicated CO₂ bottle to the storage area wall in an upright position, adjacent to the dispense panel. The CO₂ bottle should be sited close enough to the dispense panel to enable the CO₂ gauge flexible hose to be connected.
- ❖ Locate the two nominated 3/8" product pipes in the product python and connect them to the outlets of two 3/8" product coils located on the remote cooler.
- ❖ Run two 3/8" product supply pipes from the pump outlet on the dispense panel to the inlets of the two nominated 3/8" product coils on the customers existing remote cooler.
- ❖ If the remote cooler is sited outside the temperature controlled storage area the two 3/8" product supply pipes will require trace cooling to the product coil connections to prevent heat pick up.
- ❖ Remove the cover of the junction box situated on the dispense panel and connect the two core signal cable in series to the 1.5 strip connector and replace the junction box cover.

Commissioning

- ❖ Turn on the CO₂ bottle and set the pressure gauge to the required equilibrium pressure + 5 psi
- ❖ Connect the keg fitting to the cleaning head or bottle, prime the beer monitor with clean water till the float is sat at the top of the beer monitor bowl; prime the product supply pump via the priming tap.
- ❖ Connect the RCCD to the mains electric. Depress the reset button on the RCCD till two red lines are visible in the display window. The pump will run until the product pipes are full of water and up to pressure.
- ❖ If the product pump continues to cut in and out check for leaks in the system.
- ❖ Return to the bar and check the LED status on the font touch pad is showing green (standby)
- ❖ Activate the pint portion. Check correct operation and ensure the product pipes are fully primed.
- ❖ Check portions are correct using a marked container.

Cleaning procedure

- ❖ The system will require thoroughly cleaning using a recognized beer line cleaner followed by sufficient clean water to neutralize the system.
- ❖ Employ the standard procedure when cleaning the system i.e. allow the beer line cleaner to remain in the system for approximately 15 to 20 minutes drawing fresh cleaner through the system by operating the pint portion button at approximately 5 minute intervals during the 20 minute soak then thoroughly rinse with clean water using the jug portion button The system can now be connected to a product keg and primed ready for use.
- ❖ PLEASE NOTE: When the CO₂ supply becomes exhausted the CO₂ cut out switch is set to operate before the line pressure falls below product equilibrium. This will help to ensure that CO₂ breakout is kept to an absolute minimum. Once the CO₂ supply is reinstated the font will automatically resume normal operation. If the product keg empties the system will allow completion of the last portion before stopping normal dispense operation. Normal operation will automatically resume when new a product keg is connected to the system.

Fault Finding

Fault	Check
<p>❖ No dispense</p>	<p>Is there a 230v electric supply to the 24volt transformer?</p> <p>Is the 5 amp fuse in mains plug intact?</p> <p>Check for a 24v electric supply to the font. Is the transformer switched to ON.</p> <p>Are the 2-Core 24 volt supply cable connections intact?</p> <p>24v-transformer primary circuit 2 amp fuse And secondary circuit 4 amp fuse.</p> <p>The 24v-transformer (Thermally protected up to 127°C.)</p>
<p>❖ Solenoid valves do not operate when portion buttons are activated</p>	<p>Does the keg need changing Is the Co2 bottle empty?</p> <p>Is the 1pint Beer Monitor fully primed?</p> <p>Is the CO2 pressure switch set incorrectly (remove a signal cable spade connection on the CO2 pressure switch and check if the green font LED is illuminated?)</p>

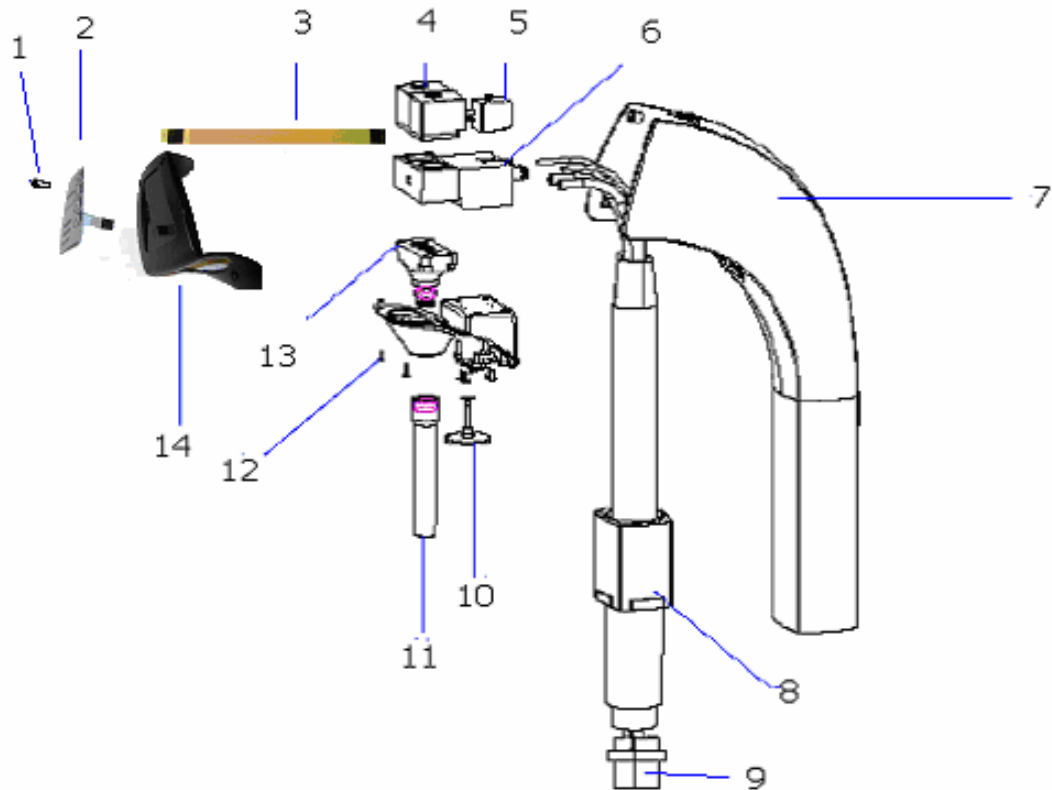
Fault	Check:
❖ Solenoid valves operate when the portion buttons are activated – no dispense occurs	<p>Check for kinked or frozen pipes</p> <p>Are all flow valves open? (if fitted in system)</p> <p>Check keg fitting is connected to the keg and RCCD is activated.</p>
❖ Incorrect Measures	<p>Are the portion counts set correctly?</p> <p>If font will not re-program portions – replace PCB control panel or infra red PCB or both. Are the both turbines operating correctly?</p> <p>Are the both turbines operating correctly? (If not replace)</p> <p>Are the turbine plugs plugged in to the PCB sockets?</p> <p>Are the turbines installed with regard to flow direction?</p> <p>Check turbine cables for damage.</p> <p>Check both solenoids are operating during dispense</p> <p>Is the 230 volt product pump on the dispense panel working?</p>

Fault	Check:
<p>❖ Poor drinks presentation</p>	<p>Are the product glasses clean? Is the product is in date?</p> <p>Is the storage temperature of the product approximately 11-13°C and has it been cooled for at least 24 hours prior to use?</p> <p>Is the product temperature correct at the point of dispense?</p> <p>Is the CO2 top pressure set relative to the storage temperature and the product CO2 volumes? <u>+ 5psi</u></p> <p>Is the CO2 NRV in the keg connector allowing gas to pass into the keg efficiently?</p> <p>Are the product lines clean, and is line cleaning performed every 7 days?</p> <p>Are the Font product solenoid fixing bolts tight?</p>

Parts List/Exploded View

UltraFlow Dispense Head

Item	Part Code	Description
1	13 5822 000	Screw
2	07 0 001868	Membrane
3	07 0 001959	Ribbon Cable
4	07 0 001381	Webber Solenoid 9W
5	38 0 31004	Solenoid 24V DC Webber
6	38 0 65619	Manifold Block
7	22 0099 633s001	Column
8	22 0099 732	Housing
9	07 0 001892	Turbine (Titan)
10	22 0099 634	Micro Switch
11	07 0 001410	Spout
12	14 3944 000	Screw
13	07 0 001409	Nozzle Block
14	07 0 001916	Front Cover
Not shown	07 0 001640	Pneumatic Valve
Not shown	14 9854 151	Drip Tray
Not shown	22 0019 704	Display Cover
Not shown	07 0 001893	Electronics Pack (located below the counter)



Ultraflow Dispense Panel

Item	Part Code	Description
1	XP110015	Pressure Switch
2	07 1 001294	Beer Monitor
3	51258KPN	Induction Pump
4	07 0 001372	Pet Cock Valve
5	54000PROTO	Pektron Flow Controller
6	55 001 022	Mixed Gas Regulator
	55 001 023	CO2 Regulator
	58 0446 185	RCD Power Breaker
	07 0 001644	Resistor
	07 0 001374	Non Return Valve

