Installing the flow meters

1. Remove the keg coupler and open the faucet to decompress the product line.
2. Select the tailpieces corresponding to the internal diameter of the tubing.
3. Install the tailpieces as shown in pictures 1 to 4.
4. Use stainless steel tailpieces for carbonated water, syrups and wine. Use chrome plated tailpieces for draft beer.
5. Hands tighten the plastic nuts at room temperature. When the washers are cold, sealing the adaptors may be difficult. Grab the two plastic nuts and twist as shown on picture No. 5.The amount of pressure required to seal the tailpieces on the washers is directly proportional to the pressure of the gas used to push the liquid. If the gas pressure is high, you will need to tighten the nuts more firmly. DO NOT GRAB THE FLOW METER BY THE CENTER TO TIGHTEN THE ADAPTORS (you could damage the coil).
6. Using a sharp utility knife cut the tubing where the flow meter will be installed. Leave enough line to be able to move the keg easily.

Caution: Install the flow meter at least 30 cm (12 inches) from transformers, blowing fans or motors. These devices emit a magnetic field (60Hz), which can be picked up by the flow meter. If the counter moves without any liquid being dispensed, move the flow meter away from the source.

7. Slide a hose clamp on each side, check the flow direction and insert the flow meter.
8. Tighten both clamps and secure your flow meter to the wall using the bracket.
9. Re-install the keg coupler and check for leaks.
10. The insertion of the flow meter has created an air pocket in the beverage line. You must evacuate the air pocket before proceeding with the calibration of the system. Leave the faucet open until the air pocket has passed. Let the beverage rest for a few minutes.

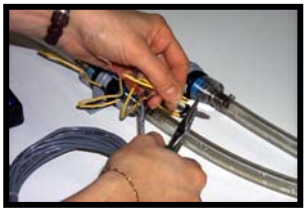
Connecting the flow meters to the 2FM

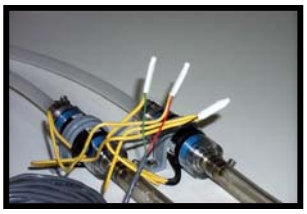
There are 3 wires in the 2FM cable: Red, green and black.

- **Red & black** = Flow meter 1
- **Green & black** = Flow meter 2

When 2 flow meters are wired to the 2FM, one wire from each flow meter is connected to the black wire of the 2FM cable. If only one flow meter is connected to the 2FM, connect the unused wire (green) to the black wire. Electrical connections are secured using B type connectors.

1. Pass your 2FM cable into the cooler or where the flow meter(s) are installed.
2. Secure your cable with cable ties and cut it near the flow meter(s).
3. Strip the insulation of the wires. Twist the red wire with one of the yellow wires of the flow meter and the black wire with the other yellow wire.
4. For a second flow meter, twist one of the yellow lead with the green wire and the other lead with the black wire (already wired to the other yellow wire from the first flow meter) of the 2FM cable.
5. Slide the B type connectors on top of each connection. Crimp the connectors using pliers.
6. Secure your wires to the tubing using cable ties.





Calibration

The calibration procedure insures the accuracy of the measurements of the flow meter system. Each flow meter must be calibrated with the product it is measuring. The flow meter should be re-calibrated if the product is changed or if the dispensing flow rate was changed by a factor of 30 % or more. Calibrating an Auper flow meter system requires you to pour a measured amount of product at each faucet in a graduated cylinder. In the calibration mode, the system calculates how much liquid flows through each flow meter for one turbine impulse.

1. Insert two AAA batteries in the 2FM. Use alkaline batteries only.
2. The 2FM will ask you if you want to calibrate: **Calib ?**
   - ❑ Press **Line** to answer yes if you are installing the system.
   - ❑ Press **Light** to answer no if you are changing the batteries.

The 2FM can be programmed to measure ounces, liters, gallons, glasses, etc...
- ❑ *To calibrate to count ounces select the "USE 20" mode.*
- ❑ *For all other measuring units select the "USE 1" mode.*

3. Press **Line** to alternate to select **USE 20** and **USE 1**.
4. Press **Light** to start calibrating.
5. If you selected "USE 20" to calibrate to measure ounces: Pour and measure exactly 20 ounces of product at both faucets using a graduated cylinder.
6. If you selected "USE 1", pour exactly one unit (1 Liter, 1 gallon, 1 glass or the amount of product corresponding to 1 dollar) at both faucets using a graduated cylinder.

Tip: For Draft beer, before you calibrate, spray some WD 40 oil in the graduated cylinder to kill the foam. You can stop to let the foam settle when you calibrate.

*The display will show the corresponding flow meter pulses on line 1**. Line 2 is not displayed but is still being calibrated**.* *For example:* ***CA 0302***

7. Press **Line** to calibrate. The display will show the result of the calculation (For ex: 20/300 = 0.066666 or 1/502 = 0.001992)
   If you are not satisfied with the measure and wish to re-calibrate either one, or both lines, press **Light**.
   Press **Light** until the display shows: **CA 0000.**
   The dot at the lower right corner of the display indicates line No 2 is on display. Go back to step 4.

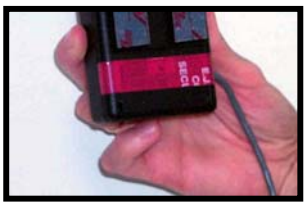
9. Press **Line** again. The 2FM will ask you **"quit?"**

10. Press **Line** to exit.

Check the accuracy of the meter by pouring the amount used to calibrate in the same graduated container. Compare the amount on display with the amount in the graduated cylinder. If you are not satisfied, remove one battery to cut the power and start again.

When you have finished calibrating the 2FM, use it to measure the amount of beer contained in your glasses, mugs and pitchers. Record these amounts on your sales control work sheet.

The 2FM is supplied with 3 security tapes. Install a tape onto the battery cover after you have finished setting up the system. The tape is designed to leave marks to warn you if it has been tempered with.



Meter readings

Press **Line** to alternate from line 1 to line 2.
Line 2 is identified by the dot on the bottom right of the display.

Reset key option

If you have ordered your 2FM with the reset key option, you can reset your meters by turning the key to the Reset position and back to the counting position.

Batteries

The 2 FM requires very little current. It goes in a sleep mode when product is not poured thus extending battery life.
The battery life will vary according to the volume of product dispensed and the number of times the light is used.
New and fully charged alkaline batteries should last between one and two years.

Low batteries

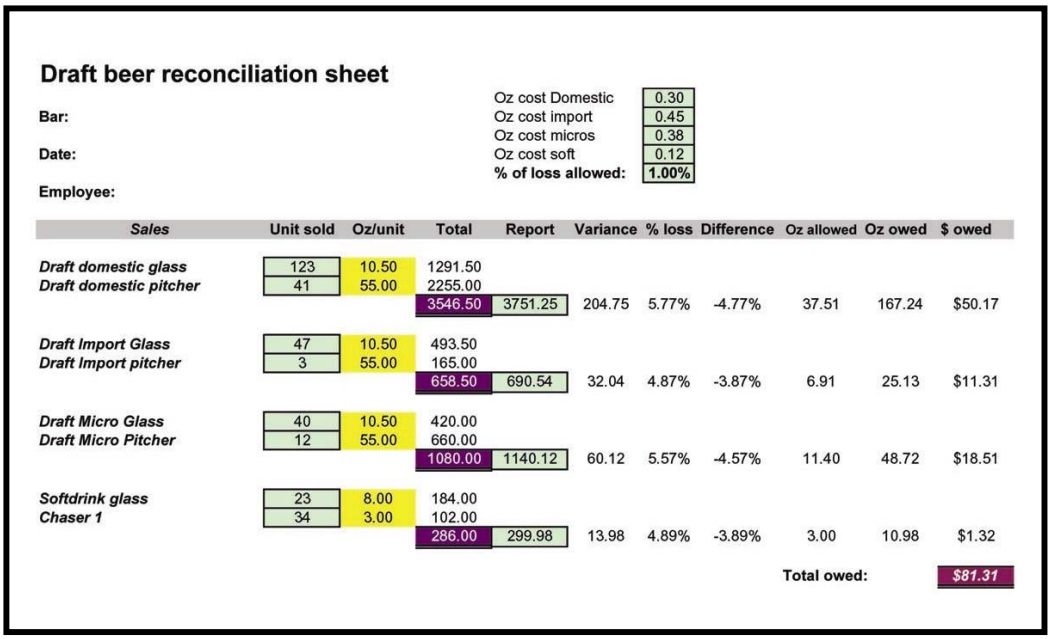
When the batteries are low, the display will start flashing after you have pressed one of the two buttons.
Considering the very low energy consumption of the 2FM, you have several days to change the batteries.
When batteries are changed, the 2FM will reset to zero. The calibrations however, have been saved and will remain unchanged.

Trouble shooting foamy beer

1. If the beer turns white after a few seconds: Increase the gas pressure two Psi (14 kPa) at a time until the beer retains its golden color when pouring at the faucet.
2. Beer contains too much CO2 (over carbonated). Change to beer gas.
3. Temperature of the beer at the faucet is above 42 F (5 C). Have your refrigeration system checked.
4. You may have a defective keg or keg coupler.
5. Have a professional check your draft beer dispenser if you cannot solve the problem.

Trouble shooting a variance between sales and the meter readings:

1. Measure the amount of beer contained in your glasses. Are all your glasses the same size?
2. Install a tube to collect the beer poured in the drain into a graduated container.
3. Observe your bartenders. Draft beer pours at 2 oz/sec. Wrong dispensing techniques may be costly.
4. Verify accuracy of the flow meters. Compare the amount measured by pouring into a graduated cylinder.



Draft beer reconciliation sheet

Bar:

Date:

Employee:

Oz cost Domestic	0.30
Oz cost import	0.45
Oz cost micros	0.38
Oz cost soft	0.12
% of loss allowed:	**1.00%**

Sales	Unit sold	Oz/unit	Total	Report	Variance	% loss	Difference	Oz allowed	Oz owed	$ owed
Draft domestic glass	123	10.50	1291.50							
Draft domestic pitcher	41	55.00	2255.00							
			3546.50	3751.25	204.75	5.77%	-4.77%	37.51	167.24	$50.17
Draft Import Glass	47	10.50	493.50							
Draft Import pitcher	3	55.00	165.00							
			658.50	690.54	32.04	4.87%	-3.87%	6.91	25.13	$11.31
Draft Micro Glass	40	10.50	420.00							
Draft Micro Pitcher	12	55.00	660.00							
			1080.00	1140.12	60.12	5.57%	-4.57%	11.40	48.72	$18.51
Softdrink glass	23	8.00	184.00							
Chaser 1	34	3.00	102.00							
			286.00	299.98	13.98	4.89%	-3.89%	3.00	10.98	$1.32
								Total owed:		*$81.31*