

Components and Functions

1. HOPPER / RESERVOIR:

This is where the fresh liquid soft serve is poured. It is refrigerated at between 2 and 4°C. The hopper must be covered with its' proper lid at all times. From the hopper, soft serve drains down into the barrel where it is frozen - via gravity, hence the name 'gravity machine'.

2. LOW MIX PROBE:

Each hopper has a 'LOW MIX' probe that senses when the level of liquid in the hopper drops down to a point where refilling is required. When the sensor detects this a light starts flashing on the Control Panel (5.)

3. MIX-FEED TUBE:

Only gravity machines have mix-feed tubes (pump machines have pumps). When soft serve is extracted from the machine, the mix-feed tube allows both liquid soft serve and air to enter the barrel where the mix is frozen and air is incorporated into the soft serve giving it a light, fluffy texture. Some operators fail to put a mix-feed tube in resulting in a more solid soft serve with no air. The cost per serve will then obviously be more expensive as you will only sell soft serve - no air!

PUMP MACHINES:

The hoppers of pump machines are different to those in gravity machines in that they don't have mix-feed tubes - but pumps. The pump forces air into the liquid soft serve before it enters the barrel where it is frozen down. This process is much more effective than in gravity machines and a lot more air is trapped in the soft serve creating a much lighter, fluffier product - where the cost per serve is also cheaper. The above picture shows the pump at the back of the hopper and also an agitator that constantly stirs the soft serve.

4. DRAINAGE HOLE:

The mix-feed tube fits into the drainage hole connecting the hopper and barrel. A tight fit is required and o-rings need to be replaced every 3 months.

5. AIR ORIFICE:

This fits into the top of the mix-feed tube. Different sizes are available and they determine the amount of air that is incorporated into the mix. Frozen yoghurt would, for instance, use a smaller air orifice as a more solid texture is preferred. A creamy vanilla would require a larger air orifice for a light and fluffy texture.

6. CONTROL PANEL:

This panel usually has functions like ON/OFF, STAND-BY (for overnight stand-by or slow sale periods) and WASH (used during washing and sanitizing the machine). Some newer and bigger models have more intricate control panels which can be used to change different settings on the machine like cycle run times, etc.

7. FREEZER DOOR:

The freezer door sits in front of the barrel/s where the soft serve is frozen. A single barrel machine has only one draw handle while a twin-barrel (double barrel) machine has 3 draw handles. Let's assume you have vanilla in the left side hopper & barrel and chocolate in the right side. The left side handle will then dispense vanilla when pulled down, the right side handle will dispense chocolate when pulled down, and the middle handle will dispense a combination of vanilla and chocolate - called a twin-twist - when pulled down.

8. DRAW VALVE:

This valve is opened by the draw handle allowing soft serve to flow from the barrel onto a cone or into a cup held under the spout.

9. DRAW HANDLE:

As above.

10. ADJUSTMENT SCREW:

This controls the speed at which the soft serve flows from the machine. When a machine operator is still learning it is recommended the flow be set to a slower speed until they get used to pouring the perfectly swirled soft serve cone. The normal rate should be set at 5 to 7.5 ounces in 10 seconds (150 - 220 ml).

11. NUT STUD:

This holds the freezer door in place. There are 4 of them and they should be tightened equally for a snug fit.

12. DRIP TRAY:

Catches drips from the spouts.

THE FREEZER DOOR IN 3D:

WHAT IS BEHIND THE FREEZER DOOR?

This is just one example of a beater assembly outlining some of the most common features. An electric motor drives the drive shaft via a gear box. The drive shaft fits into the beater and turns the beater. The beater holds the blades (plastic or metal in different shapes and sizes) that scrape off the hard frozen soft serve from the sides of the barrel; which is frozen to around minus 20°C.

When the blades are sharp, they scrape off hard frozen soft serve at the ideal temperature. When they are blunt, they glide over the hard frozen soft serve and scrape off semi-frozen soft serve a fraction of a millimetre away from the barrel. This results in wet, sloppy cones. It is most important to replace blades at regular intervals as scheduled.