



<http://www.bellabarista.co.uk>

EXPOBAR BREWTUS II

A Closer Look



The details were correct at the time of writing, but the manufacturer and Bella Barista reserve the right to change the technical specification of the packaging, machines and any accessories supplied with the machine (including quantity and type of accessories supplied)

Overview

The Expobar Brewtus II arrived well packed in a very sturdy cardboard box that has a little space for accessories to be added. Nice to see the use of shaped polystyrene as a packing material and this machine is unlikely to get damaged in transit.

Externally the machine is well finished, uses high quality components and has a solid and quality feel. The warmer tray is reasonably well sized but not as large as a Vivi, the machine is quite tall, there is sufficient clearance under normal height kitchen wall cupboards (non-standard height cupboards would almost certainly cause a problem) and when under standard height cupboards, there is not much clearance to place items on the cup warmer tray. The Expobar Brewtus II has a few rattles from the drip tray and cup tray area, but these are easily remedied and the vibe pump is reasonably quiet when operating, certainly it is not obtrusive.

The drip tray is very large and in complete contrast to some machines is properly finished at the front. The lower part curves to follow the bodywork underneath and has an extra front plate to clean up any exposed edges, very similar to the Zaffiro. The drip tray has been cold formed and although this leaves it thinner than a steel plate welded drip tray, it gives it a much neater look inside with rounded corners which makes cleaning much easier. It is also not too heavy when full of water, important when it can hold nearly 2.5 litres.

As with some other machines the portafilter basket comes assembled and the spouts in the right place. The standard equipment is a double portafilter (2 spouts) and a single and double basket plus a rubber disk to insert when backflushing.

The boilers are a good size at 1.5 litres each and because it is a twin boiler machine (one for steam and hot water, the other for Brew water) there is no problem with steaming, brew water stability, or brewing and steaming at the same time. 1200w heating elements are more than sufficient to maintain temperatures and give fast recovery times. It is a very strong steamer and the single hole steam tip works very well, the recovery time after drawing water for an americano is fast and of course has no real impact on brew water temperature.

Some of the things I loved were:

- The simple lever on the bottom of the case that operated a valve which meant you could switch from the internal tank to mains water operation. Just a fabulous idea that would come into its own if you needed to descale a machine that is plumbed into the mains water supply.
- The water and steam wands are well placed, mounted on ball joints and the knobs are a really nice size.
- The digital temperature controller was great (it comes from a refrigeration application, but is a very neat size), the look of it suits the machine and it functions impeccably.
- Just how well it was put together on the inside, the Spanish have certainly done a nice job on this machine, with a lot of attention to detail and a very clever and well thought through design.

As always, there are a few minor changes that I would like to see, even for this machine (which I love), but no quality issues. The changes are mostly design related so may be difficult to resolve.

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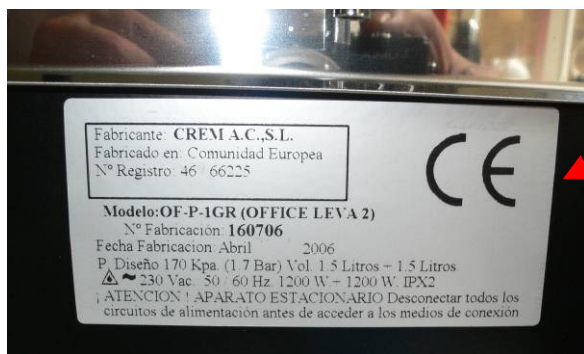
Servicing this machine will be easy as all components are quite accessible, case removal is 5 screws, and the water tank platform (which may also need to be removed) has two screws and a couple of hex screws (puzzling why they decided to use 2 hex screws?). There is little potential for an inexperienced service engineer to damage the machine when removing the case, the pump is quite accessible and pump replacement looks straightforward. The water sensitive control board is mounted in the area least likely to be exposed to water during filling the tank, or venting, as is the digital temperature controller.

There are no instructions regarding lifting the Expobar Brewtus II from the box and it is a bit awkward. The best method is to lay the box on its side, slide the machine out in its polystyrene shells and then flip it upright. It's heavy and solid, but easily handled by one person.

In summary; The Expobar Brewtus II is very nice machine for the domestic consumer to use, easy for the reseller to support and maintain. It should provide years of reliable service with the minimum of maintenance.

This is a machine that I expected a lot from and it did not disappoint. I can only say to Expobar, well done you have done a great job on this machine (and I don't praise these companies lightly). I think for the competition to displace this machine or attack it's market would be extremely difficult. Expobar have the price right, the design right and it works really well!

I even feel this machine is very good value for money, it's not a cheap machine and for a change I do think you are getting what you pay for. This is a subjective statement, but the Expobar Brewtus II stands out amongst the crowd of prosumer machines.



The machine carries its electrical rating sticker and serial number behind the drip tray.

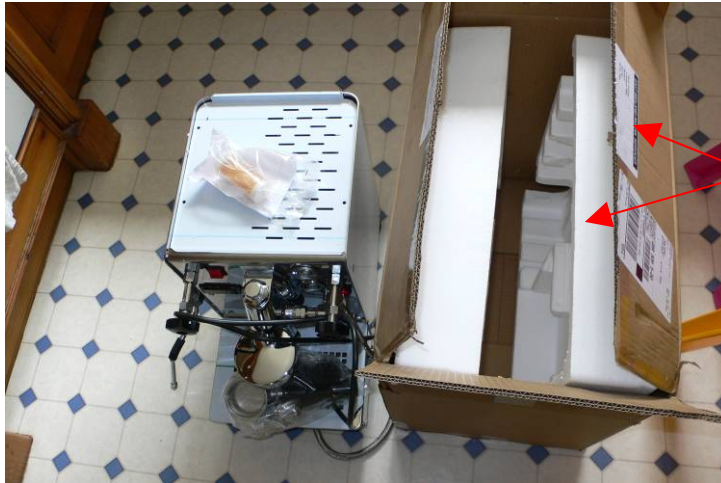
The vital statistics for this machine are quite conflicting (and in some cases inaccurate) when reading various websites and supplied information, my most accurate view from measurement, rating plate information and internal examination, is as follows:

- Dimensions all approx. (not including steam/water wands) W = 260mm, D =460mm H=420mm
- Heating elements are 1200W one in each boiler (but only one can be on at any one time)
- Each boiler has a capacity of approximately 1.5 litres.
- Boilers are copper with brass ends
- Weight is approximately 20kg
- Pump in the test machine was an Ulka EX5 48W
- Group is an E61 type group

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How it arrived and unpacking



Sturdy box and good use of polystyrene packaging obviously specifically designed for the machine. It is not easy to get the machine out of the box as there is limited room at the sides to reach down and get a good grip. Box needs to be placed on it's side and the machine slid out.

The manufacturer's manual is quite poor (and wrong in places), but the machine is easy to use. It only covers the basics of machine operation and a very brief description of how to make coffee. The UK Bella Barista guide will prove to be of significant help to the novice user.



A corner positioning of the Expobar Brewtus II is ideal, especially when located near a sink. Once in position on the counter the machine looks nice and does not dominate on standard sized work surface. It is a very tall machine as you can see, and there is not a lot of room under standard height kitchen cupboards. The "tall" feet, I seem to remember, are put on there to meet the regulations in some

countries (which state a certain clearance below the machine. They certainly are substantial and good quality.

Lower feet are available at £9.95 per set as an option and Bella Barista are investigating the possibility of making them a standard item on the Bella Barista Brewtus (and other Expobar) machines. I think this will enhance the look of the machine (although I still think it looks rather good as beauty is more than skin deep)

Refilling the water tank can't be done without pulling the machine from under the cupboards and is annoying with those grippy little rubber feet!. This problem is easily solved with the addition of 4 felt furniture pads (as used on wooden floors).

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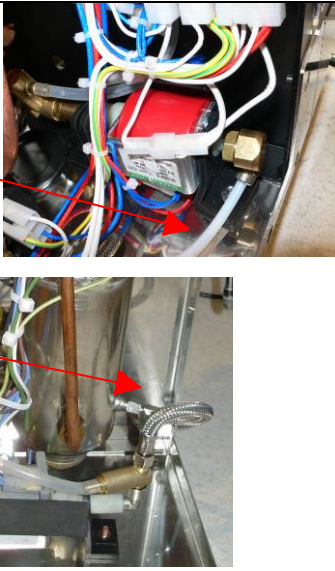
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Preparing the machine for use

Peel off any protective film, ensure the water source lever (tank or mains) is in the correct position (for the test machine this was the opposite way to that stated in the Expobar manual), lift the machine onto the counter, wash the cold water tank, fill it with filtered water. Don't forget to snip the little cable tied at the bottom far edge of the water tank platform (unless you have plumbed it in), you have to remove the tank to do this. If you don't the machine will not switch off when the water runs low




I never like the idea of using a machine without thoroughly flushing it through, especially considering that the machine may have stale water from factory testing (many months old), or manufacturing residues, Because of the design, I was inclined to put about 3 tankfulls of water through it.


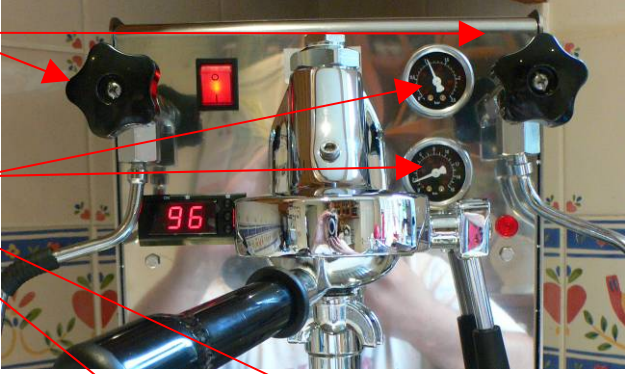
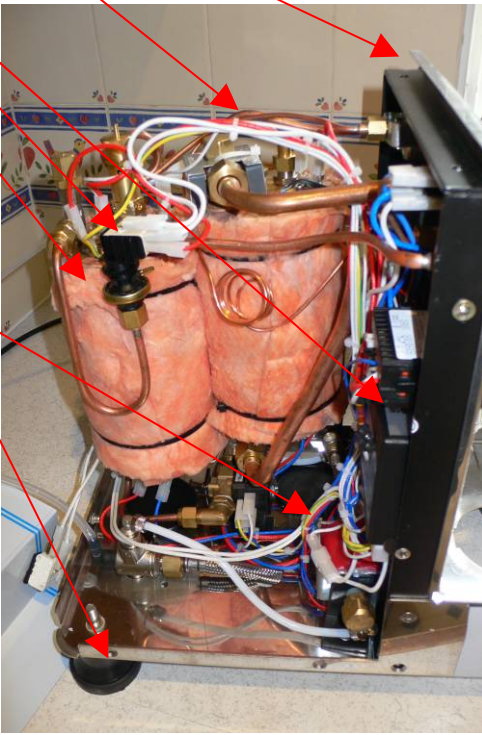
Key features

Item/Description	Picture	Comments
<p>The little pipe behind the group vent. This is for venting water from the pump OPV valve (over pressure valve) when pulling a shot. As the machines only form of pressure regulation a little water comes out on every shot. It unfortunately isn't long enough to be over the hole in the drain rack over the drip tray so you get a pool of water forming on the top drain rack. Solved by cutting about 30 mm off water inlet pipe in the tank (of which there is plenty), placing that on the pipe and routing it into the drip tray as shown</p>		<p>This really should be fixed, it cannot be that hard to do and Expobar should address this.</p> <p>You have two solutions, either do as I have done in the picture or purchase a piece of Teflon pipe and route it back into the water tank, from behind the panel (most other coffee machines vent OPV runoff back to the tank).</p>
<p>Some minor rattles from the drain rack and cup tray</p>	<p>This could easily be solved by the addition of some spring tabs on the drain rack which would press on the inner walls of the drip tray. Rattles are fairly easy to solve with a little foam tape.</p>	
<p>High pressure pump lines were simple high pressure plastic tubing not the steel braided pipes seen in some machines</p> <p>The steel braided high pressure line on the Zaffiro</p>		<p>I don't expect it will cause a problem, It is just an observation. No doubt braided pipe would have added to the cost, with little if any impact on reliability.</p>

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<p>Water tank platform and shield has a protective film on the inside surface. Personally I decided to remove this</p>		<p>Expobar should remove this prior to assembly, although to be honest I don't think it will cause a problem, melt or fall off.</p>
<p>Small hole in water tank a blessing and a curse. The tank is well made and good quality</p>		<p>Means that crud doesn't fall easily into the tank and water doesn't slop over the sides when moving it (in fact you can fill it right up). The small hole however does make it more difficult to fill and much more difficult to clean (so don't go on holiday for 2 weeks with it full of water!)</p>
<p>When low on water machine just switches off.</p>	<p>A warning bleeper like the Vivi which starts beeping even though the machine switches off.</p>	
<p>I hate it when the espresso shot just stops.</p>	<p>Second Micro switch to illuminate a low water buzzer or light a few oz before the machine will switch off due to low water level. Or a dual pole/position micro switch to replace existing one</p>	
<p>The badge looked great, not all metal, but looked the right size and quality for the machine</p>		<p>One of my pet hates, are these cheap looking labels some manufacturers use. This badge looked nice on the machine!</p>
<p>Removing the outer case was easy</p>	<p>There are 5 screws, and the water tank platform (which may also need to be removed) has two screws and a couple of hex screws (puzzling why they decided to use 2 hex screws?).</p>	
<p>Wiring all braided and high quality</p>	<p>It's good, not as neat as an Izzo, but then so far no machine has come close to the neatness of Izzo wiring</p>	

Brew Pressure (factory preset is a little high)	With the blind filter in place, it was a little above 12 bar.	
Plumbed in or tanked operation switched via a simple lever and valve, a great idea and so easy. You don't have to remove the case, just reach underneath the machine		Possibly the right design model for all domestic prosumer machines. It's great to have a choice that can be so easily made! And great at decaling time if you have plumbed it in!
The rubber feet are nice quality, but do grip well.	A bit annoying when pulling it in and out to fill it with water. Fortunately these feet can easily have a "glide pad" or felt furniture pads fitted or even the use of castor cups with "glide pads" fitted. Moving the machine then becomes easy	
Water & steam valves had a nice feel, the knobs were a good size and the wands being mounted on ball joints is a real bonus.		
Separate brew pressure and boiler pressure gauges. They look smart too		
Nice quality steel case & frame		
Wiring routed neatly		
Giemme control Unit		
Accessible pressure stat		
Insulation on the boilers is a great idea it certainly will prevent heat loss and helps keep the components cool.		
OPV valve adjuster		
Pump quite accessible and easy to change. Ulka EX5 48W.		
Nice sturdy feet easy to adjust to level machine		
Pump replacement should be a straightforward job		
All components very accessible. This should make servicing quick and easy.		

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They remembered to place access ports in the frame below the heating element of each boiler	This means you won't have to remove the boilers to change the heating element	
Two protective thermostats, one on each boiler. I am almost 90% certain they can be reset once tripped, but obviously couldn't try it out!	Having high limit thermostats should reduce the incidence of failure due to fill and level problems. A small detail, but one that could save an expensive repair bill	
Strong Steamer with a nice single tip steam wand.	Steamed 400ml of water from 5c to 60 c in around 70 seconds (similar to an Isomac Millennium) and easy to steam small or large quantities of milk and micro-foam successfully. Wand is good for beginners or more experienced users	
The double portafilter holder comes ready assembled and spouts in the right place. Heavy and of good quality.	It is unusual to only have one on a machine of this level, but single and double filter baskets are included as is a rubber disk to seal the portafilter basket for backflushing. Bella Barista are considering offering two as standard	
The water feed tube has a water softening filter already attached	One already fitted to the pipe and a second bonus one in the box (maybe they made a mistake, but I was pleased to have two)	
Drawing water is good, nice and smooth	Wand is sufficiently long and with a good range of movement, so that steam does not burn your hand when drawing water like some machines	
The review Expobar Brewtus II was running at average of 1.0 bar. Nice to see both a boiler pressure and brew pressure gauge		Because the steam boiler is separate the modest 1.0 bar is ample for your steaming needs
Reasonably sized cup warming tray, but because the machine is so tall, becomes fairly useless under kitchen cupboards.	A shorter foot would help.	
Drip tray is nicely finished and blends well at the front		In addition it's a very generous size, the largest of any machine reviewed so far. It actually holds a massive 2.5 litres!
The water tank platform and switch is hinged at one end and only uses a single spring.	This design seems to eliminate the rattles and the simplicity of design appears to be reliable and efficient. I certainly preferred it to the more usual 4 spring design seen on other prosumer espresso machines	

Photo gallery



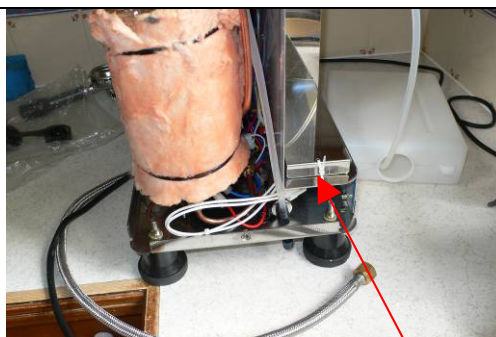
Top of the boilers with hi limit stats, vacuum breakers and safety valves



The twin boilers and water tank (removed)



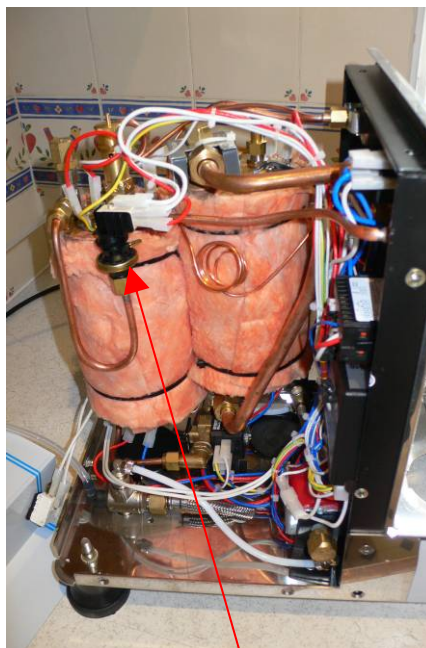
The digital temperature control unit



The braided mains water hose and switch for tanked or plumbed operation (note the cable tie mentioned earlier)



A shot with its clothes on! Warmed up and ready to go.



The other side showing the pump & control units bottom right and pressurestat

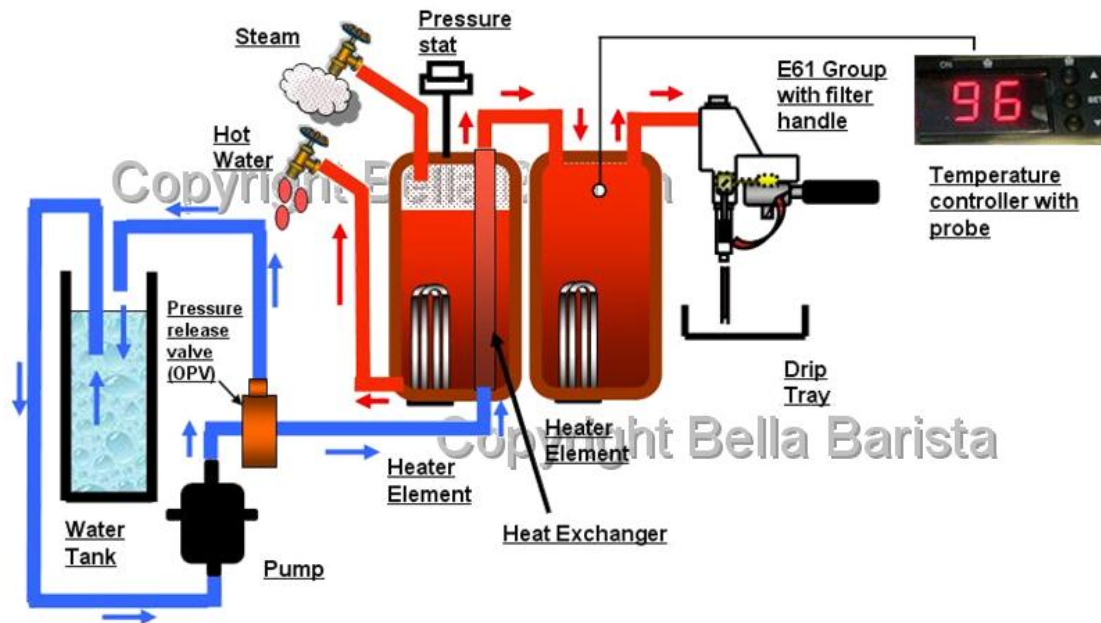
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How it works

The diagram shows a simplified (but essentially accurate) diagram of the Brewtus II twin boiler system. The pump keeps the **steam boiler (which also provides hot water)** about 80% filled with water that is heated and kept at a pressure of 1.0 bar (about 15 psi). The temperature of this water is above boiling point and has an area of steam above (similar to a pressure cooker).



Steam - The pipe for the steam wand is at the top of the boiler (in the steam area) as the steam tap is opened, steam is forced through the steam pipe and as the pressure drops more of the water instantly flashes to steam, giving a continuous supply.

Hot Water - The pipe for the hot water tap is at the bottom of the boiler. As the hot water tap is opened, steam pressure forces the hot water from the boiler through the pipe and out of the hot water outlet.

Coffee Brew Water - Coffee brew water for the group is fed from the second “**brew water boiler**”. You can see a feed to this “brew water boiler” coming from the “steam boiler”. They ingeniously pass the cold water from the tank, through a small **Heat Exchanger** in the steam boiler, to warm it up before it goes into the brew water boiler. This is clever because it prevents the brew water temperature dropping when making coffee, unlike some other machines.

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Brew Water Temperature

The Expobar Brewtus II does not run hot as is usual with HX machines, which are a tight compromise between continuously available steam, and production of brew water for espresso. The twin boilers solve that problem, the brew water boiler running at around 101c and the steam boiler at around 121c. The group is fed by the brew water boiler and has the thermosyphon from there as well, so the group acts much like those on a single boiler machine. There is no need for a big cooling flush because there is no water sitting in a heat exchanger at 125c needing to be flushed out before the brew water is cool enough to make espresso. The E61 group works well on this machine although you still need to flush!

I found that the brew water temperature rises as water is drawn from the group and at around 3 oz (90ml) reaches a plateau at a value similar to that displayed on the digital display (which I had set to 95). This is for two reasons:

1. The water warms the group (so doesn't get cooled down as much)
2. There will be some cooler water in the feed pipes to get rid of

This means that a 10-12 second flush would be recommended just prior to pulling a shot and in practice I found this to give a shot that was not sour, or with too light a crema for the coffee I was using.

This does beg a little more explanation of the Digital temperature controller. The digital temperature controller is not a PID (proportional-integral-derivative controller). In many respects the design of the machine makes it unimportant that this is not a PID (which is very expensive). The idea of pre warming the water feed to the brew water boiler as it passes through the steam/hot water boiler, is a great one and prevent those large variations of temperature in the brew water boiler. The controller has an error of +/- 1c and the thermal lag is only around 1c, so the temperature doesn't vary much at all. e.g. if it's set to 95 the heater cuts in at 94 and brings it back to 95. This is unlike the 4 or 6 degree difference seen on many other non heat exchanger prosumer espresso machines!

The temperature displayed is actually less than the actual boiler temperature and is meant to reflect the temperature of the brew water. So at 95c the water in the boiler will be around 100c (assuming of course the offset is at the factory default of -5c). The "offset" is what allows this to happen; the "offset" is a preprogrammed value (which can be changed) of -5c and simply means that the controller shows a temperature 5 degrees centigrade less than that actually registered by the thermocouple in the boiler. So 100c in the boiler becomes 95c on the display. This allows for the fact that by the time the water passes down the pipe and into the "cooler" E61 group it will chill down by around 5c when it hits the coffee in the portafilter basket.

It would be tempting to increase the "offset", having the brew water hotter, the group warmer and a smaller cooling flush (you may also find it advised to increase the offset on the web). This is probably not desirable for a number of reasons:

1. Your running the brew water boiler hotter than you need to (all for the sake of pulling 30cc less on the "warming" flush)
2. If you pull more than one shot, or flush too long brew water may get hotter than you expect (**with the correct offset even if you flush longer or pull a number of shots in a row, the temperature stabilizes at the expected value**). With a larger offset although the temperature will achieve the desired value, flush for too long (or pull more than one shot and it could exceed it.

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Below are some approximate values from testing (which may vary depending on a number of factors and are averaged from a large series of results)

e.g. **95 on display and offset of -5 = brew temp max of 94.5 after 90ml flushed**

95 on display and offset of -7 = brew temp max of 94.5 up to approx 50ml rising to 96.5 after 90ml flushed

Espresso shots can be pulled one after the other, but it's probably good practice to flush 1 oz between shots. Overall a very consistent and accurate brew temperature. A key thing to remember here is that it's not critical that the brew water exactly matches the display, only that the shot is consistent and that the temperature shown on the display has a fixed and constant relationship to that of the brew water. For me the great thing is if shots are sour, or a blend needs a hotter or cooler temperature a few button presses and your set for that specific coffee or taste. The only caveat is that you probably have to wait for around 10 minutes for the changes on the controller to have the desired effect on the brew water, because everything has to warm up and achieve equilibrium, especially the group.

Final Thoughts

What a great machine and what a great performer. Easy to use, easy to live with and easy to love. It makes great coffee and can be fine tuned to a blend or bean at the press of a button, unlike other prosumer machines on the market. This is a significant strength, especially for those people who can taste the difference a few degrees centigrade hotter or cooler can make to different coffees. For those who can't tell...it's still a strong performer. The design inside is innovative and to an engineer, beautiful. It also tells me that Expobar really cares about 2 things; you the customer and giving value for money. It really highlights how many of the manufacturers of domestic machines have sat back and in some cases become complacent. As always though you the consumer will finally decide who is still around in 20 years time and I feel sure Expobar will be there making great machines.

It would not be easy for a competitor to come to market and exploit the few and relatively insignificant weaknesses of the Expobar Brewtus II, it is an excellent machine and well thought through. Most surprising is that at Bella Baristas current pricing it represents excellent value for money and you won't often see me saying that!

Congratulations to Expobar on producing a great machine!

You guessed it I loved the Brewtus II, unfortunately it's got to go back!

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