

Overview

A relatively new coffee machine from Germany, designed by the Italians and Germans with production moved to Germany

The Mechanika arrives well packed (ECM use heavy grade packaging and Bella Barista also double box the machines). The build quality is good with high quality (industry standard) components. It has a mirror finish stainless steel exterior case and a black painted internal steel frame. The quality is noticeable when lifting the machine as the Mechanika is a heavy machine at approximately 23Kg.

This type of heat Exchanger (HX) machine internally, is slightly more complex than cheaper non HX machines, but much simpler to operate. There are fewer controls and no need to do anything special (apart from filling the water tank occasionally) to draw steam, hot water or espresso at any time. The Mechanika automatically maintains the water level in the boiler as required and if run low on water in the tank the Mechanika switches off the heating element and pump as a safety precaution, **but has no low water alarm.**

The machine is attractive and fits comfortably under standard height kitchen cabinets. The Mechanika compares favourably with other similar prosumer machines that have a heritage and reputation for looking good.

Some coffee enthusiasts buy second hand commercial machines that are very large and heavy, plumbed into the mains and with 3–6kw heating elements in 5 litre or larger boilers to

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make quality beverages at home. The Mechanika can make the same high quality drinks), without the hassle.



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)

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ECM Mechanika closer look v1.doc

Overview – cont.

The Mechanika has been described as the Rolls Royce of espresso machines with a price that reflects this. This review as usual will judge the machine not only on function, but on what would be expected for the price

It is a great machine both for the customer to use and the reseller to support and should provide years of reliable service with the minimum of maintenance. Once in position on the counter the machine looks nice and does not dominate on a standard sized work surface. The height of the machine is very convenient and gives plenty of room under standard height kitchen cupboards. It has a nice large cup warming tray. Placing the Mechanika in a corner is ideal, especially when located near the sink.

The Mechanika comes well packed, in a tough box and with comprehensive documentation covering all aspects of operation, routine maintenance and production of espresso based drinks. A valuable addition to the Italian manufacturer's written User guide that comes free with the Mechanika.



Very well packed inner box, protected by double packing in an air-cell filled outer by Bella Barista

Unusually the manufacturers' user guide is actually quite good, although all the procedures may not have been tried by the manufacturer, as one didn't work as described on my machine!

Even if you are completely new to coffee making and this type of machine, you will have no problem making all those great coffee drinks in a very short time. The Mechanika is easy to keep clean, a quick wipe with a damp cloth and a buff with a micro fibre cloth is all that's required to keep it looking great. The more complex tasks such as backflushing and descaling are easy to do and the supplied Bella Barista user guide explains how to do them in detail.

The Mechanika, positioned in the corner of my kitchen



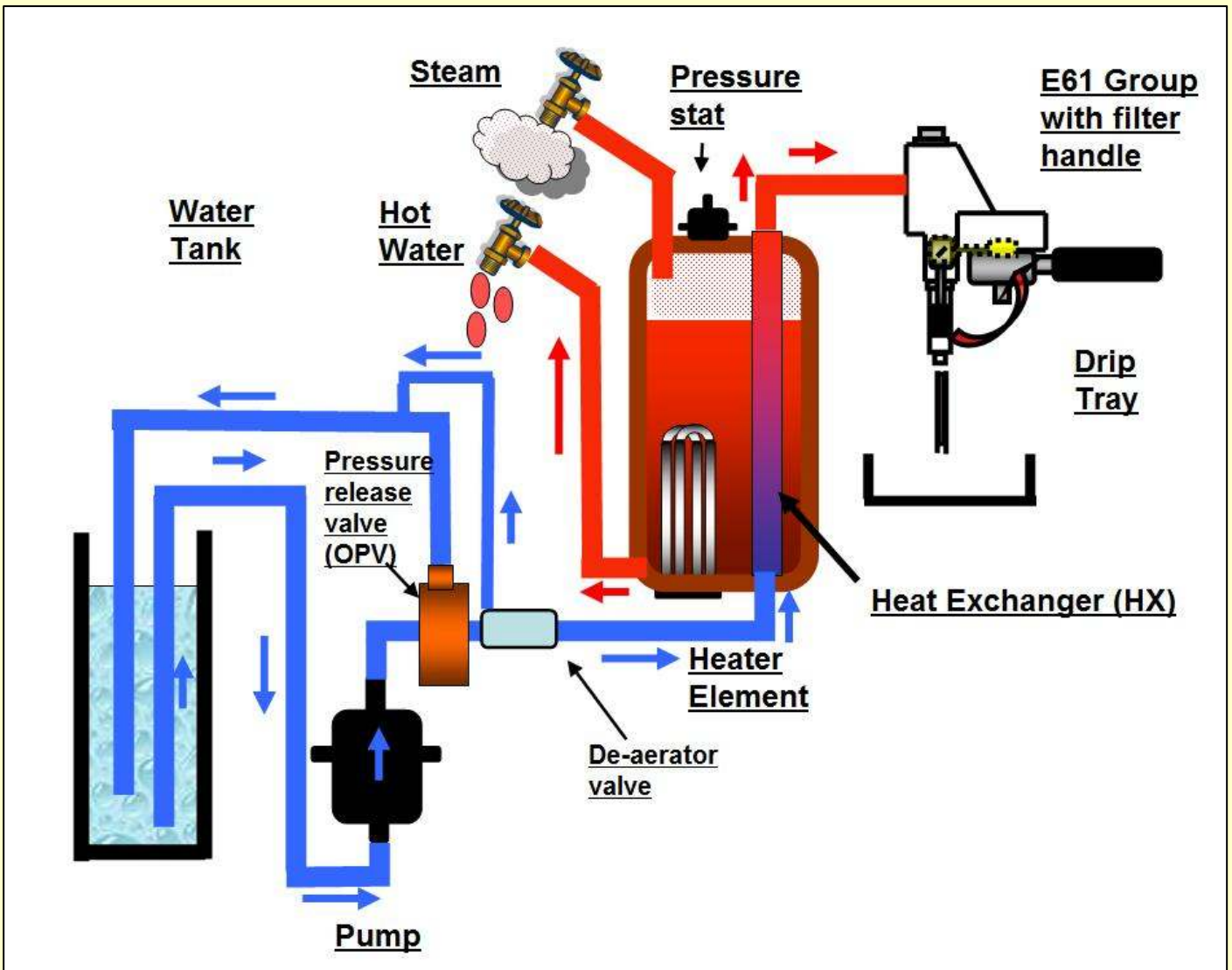
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How it works



The diagram shows a simplified diagram of the Mechanika. The pump keeps the boiler about 60% filled with water that is heated and kept at a pressure of 1.2 bar (about 22 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 submerged below the waterline in 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 does not actually come from the water in the boiler, but is pumped directly from the tank through a "heat exchanger" (essentially, a big copper tube) that passes through the hot boiler. As the cold water from the water tank passes through this tube it is heated to the correct temperature for brewing coffee.

Lifting the lever starts the pumping of brew water, lowering the lever stops the pump and additionally releases the pressure (all 140 psi of it) from the group, so you can remove the filter handle safely, (the excess water goes into the drip tray when pressure is released)

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Inside the Mechanika

A close inspection of the Mechanika shows a machine that has all the usual refinements internally that one would expect. Internal build quality is good, with great attention to detail. Components are well positioned, neatly assembled; all cables are well away from hot spots and comprehensively tied to avoid movement. Some internal shots:



The powerhouse of the machine accessible from the top, with the removal of only 4 screws



The vibe pump tucked under the boiler



Brew water path, with de-aerator, solenoid valve and OPV assembly, all easy to reach



Removal of the outer case, gives easy access to all components, e.g. heating element.

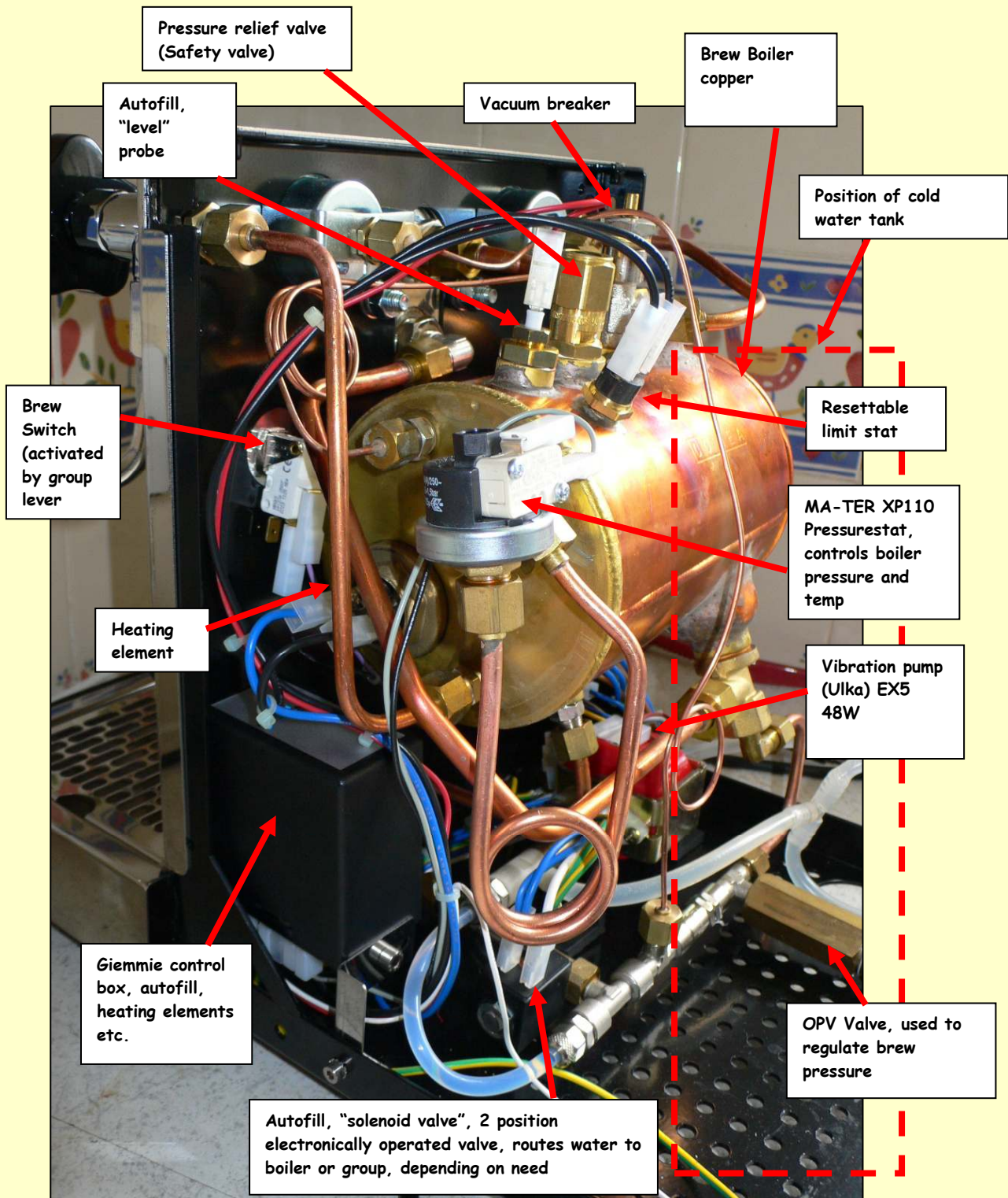
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A detailed Tour



The picture above identifies the major components of the machine, once the case is removed accessibility for maintenance is good. removal/refitting of the case is moderately time consuming

This machine would be fairly simple to work on for most of the major components requiring replacement over time.

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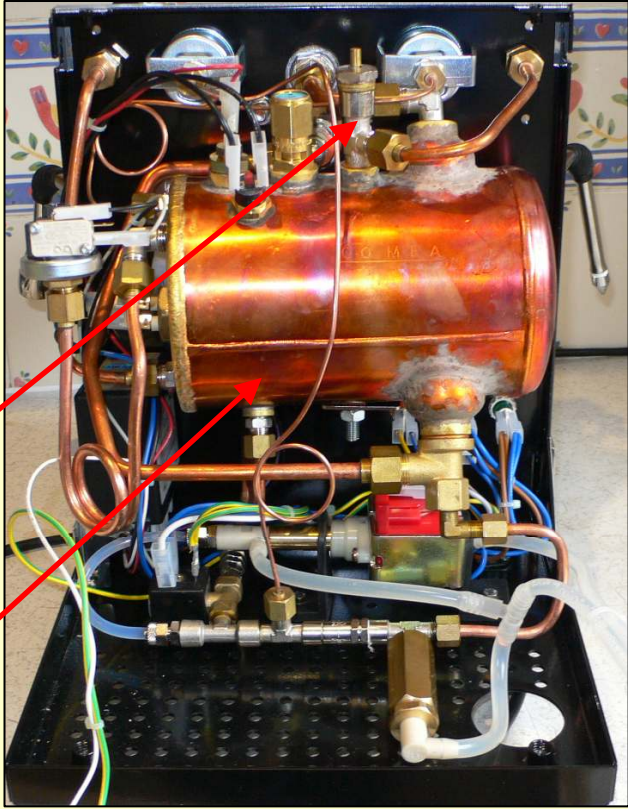


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Key Features

- Ball Joint steam and water arms
- Nice quality internal water tank
- Low water sensor uses simple, but nice quality roller pressure switch and tanked water supply mechanism
- “non compression” commercial type steam & water valves
- Brew & Boiler Pressure Gauges
- Adjustable pressure stat MATER XP110.
- 2 portafilter holders and 2 filter baskets as standard
- Large 2.0 litre boiler

Item/Description	Picture	Comments	
<p>Polished Steel external case with plenty of room for internal components to stay cool. The case is a good fit, but does require care during removal and refitting. Access to some components is quickly achieved from the top via removal of 4 screws. More involved maintenance requires case removal, which is moderately time consuming. One or two areas need a little care and may pose difficulties for the inexperienced; a couple of awkward hex head bolts at the top of the case and angled drivers are required</p>			
<p>Vacuum Breaker mounted on an extension tube, something I have said should be done for some time. This should give a lot less leakage problems, than those mounted directly on the boiler, as less splash on seals</p>			
<p>Nice quality copper boiler with good brazing</p>			
<p>High quality internal components</p>			
<p>Good routing of internal cables and pipes, avoiding hot spots and areas of vibration scuffing. All components quite accessible. This makes servicing easy</p>		 	
<p>Very accessible pressurestat that is not too sensitive to adjust. This makes pressure adjustment extremely easy and can be adjusted without removing the entire case, just the water tank carrier needs to be removed (4 screws)</p> <p>I would have liked to see a hole added in the top plate, above the pressurestat, to enable adjustment without having to remove the water tank carrier</p>			

A nice quality metal badge. For a change a machine with a badge that actually is in keeping with it's value.

It is even riveted in place, which means it won't fall off...something that occasionally happens on some espresso machines with constant exposure to heat and steam.

Readers of past reviews will know that I am not a fan of cheap badges, especially when stuck on, or even worse, not level.


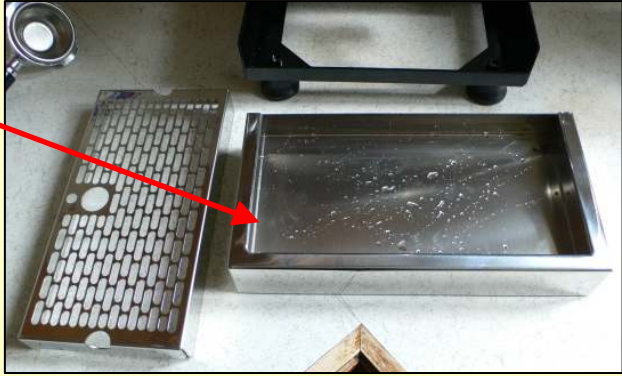
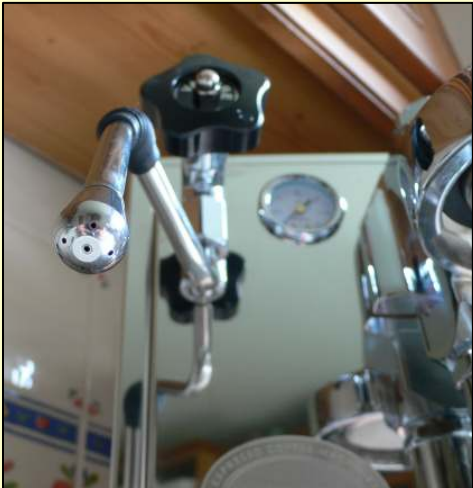


Nice quality cold water tank, accessed by removing the cup warmer tray. It holds 3 litres and simply slides in and out of the Mechanika for easy cleaning. Refilling can be done with the tank in or out of the machine.



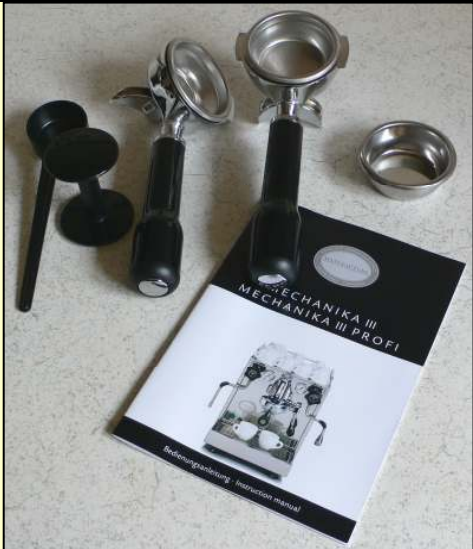
Nice large cup warming tray. You can get plenty of cups on there, definitely no lack of space.



<p>The Mechanika is heavy, because the internal frame is rigid and constructed with a quality (thick) steel</p> <p>The feet are only marginally height adjustable and the machine is difficult to slide around. You will want to slide it around to refill it if it is under cupboards.</p>		<p>I strongly recommend the use of felt bottomed (or Teflon faced) castor cups for a few pounds, to make it easy to move and protect your worktop.</p>
<p>The drip tray is of average size and holds around 600-700ml before it needs emptying (it can hold more but you will spill liquid whilst trying to empty it).</p> <p>It is all steel and nice quality.</p>		
<p>The Mechanika is a powerful steamer, with nice ball joint steam and water wands. To microfoam smaller quantities of milk, to the texture I like (aprox 100-120ml) I would also buy a single hole steam tip with this machine for foaming small quantities of milk easily but more slowly.</p> <p>The thread is a standard size, but to stop leaks around the thread, some PTFE tape is required when using the Expobar single hole steam tip.</p> <p>Professional quality no compression steam valve and ball joint “no burn” steam wand, with attractive large tactile knobs. The steam wand was long enough to reach to the bottom of all my small and medium pitchers.</p> <p><i>“non compression” valves - use a spring and seal to seat. Opening the valve typically “pushes” the sprung seal open, closing simply allows the spring to close the valve, there is no “compression” of a washer as in some taps. Commonly found in the commercial environment, because the seals cannot be damaged by “ham-fisted” operators closing them too tightly.</i></p>		<p>The 5 hole steam tip took a little practice, but actually worked very well indeed and I could even steam small volumes of milk for a single 4oz latte. This was a big surprise to me as I did not expect it to work very well!</p>

The equipment supplied with the Mechanika: The review machine had 2 portafilter holders (good quality) with single and double baskets, the usual plastic tamper (usless), measuring scoop and blind filter for backflushing.

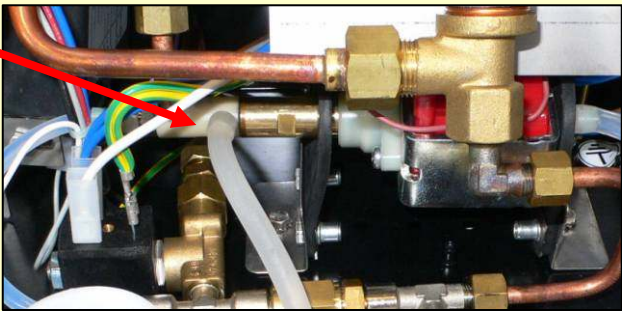
The portafilters have the chrome “button” in the end that finishes them off nicely, rather than just leaving a hole.



The machine switches off the heating element when low on water, the boiler then goes cold and the pump will not run. However, there is NO low water alarm and the only visible indication that the machine is off apart from the slowly decending boiler pressure gauge, is the orange(water OK) lamp (usually on all the time) switches off. Also the green power light stays on,so it is not apparent from a distance, or from a casual glance that the machine has switched off the heating element. **I really think that in a machine of this value, an audible alarm should be added. It can be very irritating to go to make a coffee only to find that the machine switched off the heating element an hour ago and then have to wait 20 minutes or more for it to warm up.**

The De-Aereator fitted to a machine!. This device simply bleeds air from the outlet side of the pump, this prevents air in the system causing the OPV valve to screech and makes for easier priming when hot.



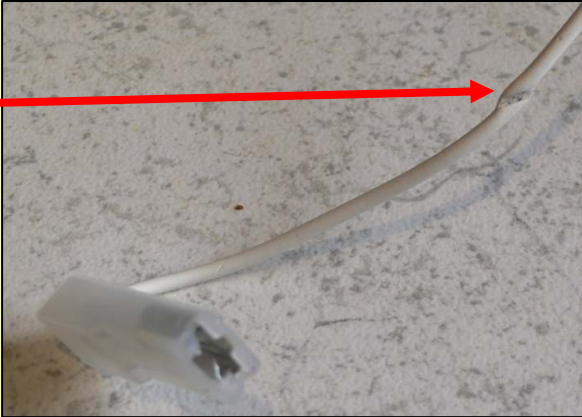

I believe the reason for OPVs screeching, is air in the brew line, this is often caused by scale (the reasons for this are beyond the scope of this review). However, the fitting of a de-aerator can only be helpful should air enter the brew line for whatever reason.



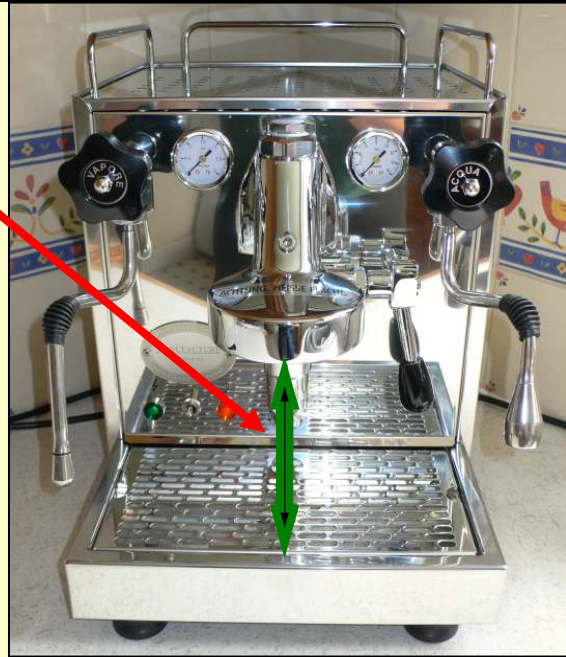
The feet don't look very nice to me and one of them was crooked, due to the stud being moulded into the plastic at a slight angle.

This is a minor quality control issue, but not expected on a machine of this price



<p>A view of the fittings holding the case on the machine (underside), there are 4 like this in sslotted holes). I didn't like the washer being so small. It needs to be larger to cover both sides of the slot in the case.</p> <p>I think there could be a risk of the case detaching from the frame at the bottom during careless lifting and strongly advise ECM to deal with this ASAP</p>	
<p>Boiler pressure guage was slightly crooked, which may seem a little petty, but on a machine of this value I would want it to be straight. It's a small job to remove the case and straighten it I suppose, but I shouldn't have to do that.</p>	
<p>The low water (cold water reservoir) microswitch switch wire, had been trapped under the sharp edge of the water carrier. When the top plate had been tightened down, it compressed and actually cut through the insulation. This was enough to earth the circuit and prevent low water detection from operating.</p> <p>Again easy enough to fix (it took me 5 minutes), but I shouldn't have to and it's another minor quality control issue. Left unfixed the machines pump/heating element could have been damaged.</p>	
<p>The rating plate, placed on frame of the machine behind the drip tray</p>	

The gap between the group and the drip tray was a nice large 146mm, that little bit of extra height really comes in quite handy



Using the Mechanika – simple and easy to use!

The Mechanika runs quite hot, which is usual with Heat Exchanger (HX) machines, because of the tight compromise between continuously available steam, and production of brew water for espresso. The pressure in the boiler is directly related to the temperature, a higher pressure gives higher temperatures. Because of the way HX machines work most require a cooling flush prior to drawing the first in a series of espressos, the Mechanika in common with other machines of this type also requires this “cooling flush”. **Because of the large boiler and efficient heat exchanger, the Mechanika required a reasonably sized cooling flush**

Pressure Settings

You can alter the pressure/temperature of the boiler if required, although I found the factory settings to be OK at around 1.25 bar, if it was my personal machine I would be tempted to try lowering this to 1.1 bar (with the caveat of reducing steaming power or fitting a different steam tip fitted).

Espresso

As long as a cooling flush is performed, the Mechanika makes consistently good espressos and easily maintains the temperature during the pour. Domestic volumes of espresso one after another will be absolutely no problem with this machine. The brew pressure at the group when tested was set to 10.5 bar (11.5 indicated on the Gauge, for some reason the gauges usually seem to read about 1 bar higher than the pressure at the group on vibe pump machines?). This could easily be adjusted lower (9.5 bar) as the good quality OPV is quite adjustable.

Hot Water

It's nice to have really hot water on tap, recovery time after drawing hot water for an Americano is very fast. Although I always say for regular hot water production a kettle is a better option in areas where lime scale is a problem and saves having to descale your machine so often.

Brew pressure can easily be adjusted as the Mechanika has good quality OPV

The E61 group

The E61 group is an industry standard (as are many of the components in the machine), so parts such as, pumps, gaskets, shower screens, filter holders, filter holder handles etc. are all a standard size and readily available from multiple suppliers. This also means that the pricing of these spares is highly competitive.

Steam Production

The Mechanika has powerful steam performance and you will not run out of steam. To steam that 500ml of milk will not take long! In fact, it takes a little while to get used to steaming, especially with smaller quantities of milk. I did not think the 5 hole steam tip would work very well, but it worked superbly, a pleasant surprise.

Final Thoughts – so what’s the bottom line!

This was an opportunity to review a high quality German manufactured machine. The Mechanika uses high quality components and build quality is good. There are a few teething problems, but I put this down to it being a relatively new machine. I have been quite touch in the review, because it is not a cheap machine, I also want ECM to read the review and take action on the very few quality control issues I found.

The Mechanika is a nice machine and definitely holds its own against other similar machines. At this level all the machines make great coffee, and the choice is often down whether you simply “like the look of it”.

It’s heavy at 23kg, but not too large. I also liked the fact that the group was slightly higher (approx 146mm) above the drip tray than normal. A commercial 1 group (which would make similar beverages), would be significantly bigger, heavier and overkill for the home user.

Anything you would change?

As a reviewer, with my 20/20 hindsight, there were a few things, especially considering the price of the machine.

- A low water alarm should be added to the machine, I do not think it’s now acceptable to not have one of these. Especially when the only indicator of low water, is a falling boiler pressure gauge and an unlit orange light neon.
- Improved quality, height adjustable feet (there was very limited adjustment on these).

But these are minor items on a machine does little to detract from its day to day operation.

Conclusions

There are people who are going to love the looks of the Mechanika and as a lifestyle choice (for some), nothing else will do. It is a fine looking machine and it makes espresso as well as other machines in the prosumer class.

Its vibration pump is not as quiet as an Izzo Vivi, but is about the same as an Andreja. The overall quality of the machine is good and towards higher end of the prosumer machine category. It does need a slightly larger cooling flush (due to the large boiler) and the water refilling is easy. It’s detection of low water level is excellent (and reliable once I fixed it). When low the machine switches off the heating element (and pump).

I did like the fact that all sensitive electronics, including the autofill solenoid were at the bottom of the machine and subject to the minimum heat. This should make the machine **much** more reliable

I would have like ECM to addressed the minor Q&A issues, include an alarm buzzer when the water runs out and supply better feet (that can be retrofitted).

The Mechanika is a great machine, with nice styling, that any owner would, and should be proud of.

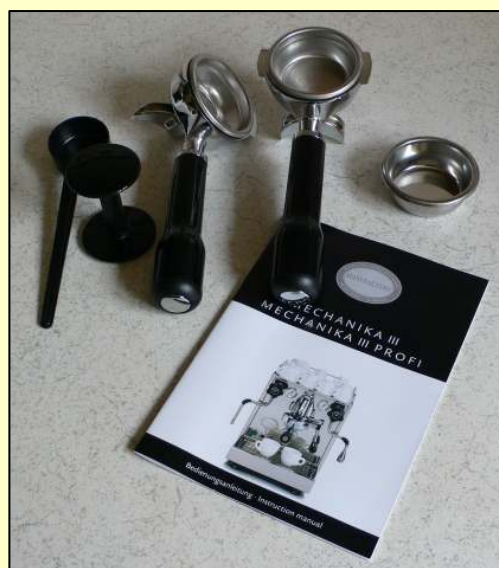
Gallery - A few pictures of the Mechanika



The beautiful lever operated E61 group, just waiting to make that espresso or latte!



Very good access for maintenance, great build quality



2 high quality group handles, with single, double and blind baskets

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