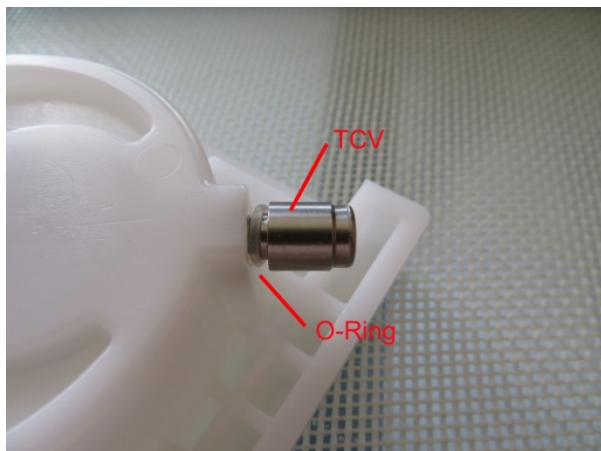


Using the Nomad with and without the True Crema Valve (TCV)

The TCV is a small metal nozzle threaded into the bottom of the brew chamber. It is only finger tight and can be removed by unscrewing from the brew chamber, or replaced by screwing back into the brew chamber. Be careful not to lose the small silicone O-Ring.



Flow, pressure, and restriction - All espresso machines create the espresso beverage by applying hot water at a certain pressure (9 bars or 130 psi) and flow rate (60cc or 2 oz. in 30-60 seconds) to the coffee grounds. In order for this pressure to exist there must be a restriction of the fluid flow. If there is no restriction then the pressure will not rise sufficiently.

In a classic espresso machine this restriction is created by the coffee grounds themselves. This requires that the coffee grounds be ground and tamped very specifically and matched to the espresso machine being used. When the Nomad is used without the TCV it functions like any classic espresso machine and relies on this proper grinding and tamping of the coffee grounds. This is accomplished with a trial and error technique referred to as "tuning" the grind. To do so the operator starts with a medium fine grind, loads and tamps the coffee into the machine, and makes a shot of espresso. If the pressure during brewing is too low (below 8 bars) then they adjust the grinder to a slightly finer setting and make another shot. This process is repeated until the grind setting is found that produces around 9 bars of pressure and a double shot of espresso (60 cc or 2 oz.) in 30 - 60 seconds. If the grind is too coarse the pressure will be too low. If the grind is too fine the machine will be blocked and little or no flow will occur. The difference between these two can be as little as one grinder step setting on either side of the optimal setting. The finest grind that does not block the machine will produce the best result.

This process can be a bit tedious to those unfamiliar with it and generally requires a good quality burr grinder. A burr grinder is preferred because it produces consistent results, unlike a blade grinder which produces random particle sizes and variations from one trial to the next. A burr grinder allows you to increase the fineness setting one notch setting at a time with repeatable results and produces a more consistent particle size. Home burr grinders range in price from \$50 to \$350.

The True Crema Valve was created in order to make all this easier and to obviate the need for expensive grinding equipment. It creates the restriction to flow on the downstream side of the coffee grounds so the coffee grounds don't have to do it. As a result the coffee grounds do not have to be perfectly ground since the TCV will provide the necessary flow restriction and allow the necessary pressure to be achieved. It is still the case that finer grinds will produce the best results but the grind is not nearly as critical since the pressure is no longer dependent on them. When using the TCV a grind setting one or two steps coarser than espresso grind is recommended to prevent plugging.

In summary when using the Nomad without the TCV the grind and tamping have to be very precise and adjusted with trial and error to get the correct pressure and flow characteristics. With the TCV the grind requirement is much less critical and it is much easier to make high quality espresso. Finer grinds will produce better results as long as they don't block the machine. If you use the Nomad with the TCV and find that it plugs often try using a slightly coarser grind. This will greatly reduce the frequency of TCV plugging.

Frequent TCV Plugging

If the machine is clean and the grind is correct (a step or two coarser than a normal espresso grind) then it is normal to make 50, 100 or more shots without having the TCV become plugged. Occasional plugging does happen but should be rare. If you experience frequent TCV plugging then it is likely that the TCV flow path has become contaminated with coffee grounds. When this happens even though you clean out the TCV each time you use the machine these grounds in the flow path get pumped into the TCV and cause plugging. Cleaning the flow path is easy and usually corrects this problem.

At the bottom of the brew chamber is a small metal filter disk. The purpose of this disk is to prevent coffee particles from reaching the TCV however after much use small particles get through the disk and accumulate in the flow path channel.



During normal operation it is a good idea to always wipe off this disk and wash out all coffee grounds after each use. It is also a good idea about once a week to remove the TCV, put the drawer in place and pump a tank or two of clean water through the Nomad. This will help to flush out the TCV flow path channel.



If you still have frequent TCV plugging please clean out the flow path as follows. Remove the TCV, be careful not to lose the O-Ring. Remove the filter disk center screw and remove the filter disk. Be careful not to lose the small screw. Wipe and clean both sides of the filter disk. Wash and flush all coffee grounds out of the brew chamber and the recessed area under the filter disk. Also flush water through the small opening at the bottom of the recessed area that goes out to the TCV. Using a can of compressed air to blow this out is helpful. Get this entire area as clean as possible.

Now do the same washing and cleaning at the threaded opening where the TCV threads into the brew chamber. Using a small pipe cleaner type brush will help to clean coffee particles out of the threads and again a can of compressed air will help to clean out the area.



Once everything is very clean replace the TCV and the filter disk. Be careful when putting back in the filter disk screw not to strip the threads, it only needs to be snug, not dead tight. Now make some coffee and you should no longer have TCV plugging problems.

One further note. If you switch back and forth from using the TCV to not using the TCV you will always need to clean this pathway when switching from Non TCV use back to TCV use. The reason is that when you use the machine without the TCV you must use a very fine grind to make good espresso. This will leave fine particles in the TCV flow path channel and so it must be cleaned out before going back to TCV use. The filter disk must always be in place and clean for TCV use.