Venture Court: How to Bleed the Radiators and Top-up the Radiator-loop

For the Central Heating part of the HIU system (Heat Interface Unit) to work effectively, the water pressure within your apartment radiator-loop needs to be at least 1.5bar. If the water level, and hence the water pressure, are very low, or there is too much air in the radiator-loop, then the radiators won't get hot, or they will get hot at the bottom only.

Under your HIU, just poking out of the bottom, are four meters – three small ones at the back and a larger one at the front. The larger one shows the water pressure within your radiator-loop. There is a green range marked between 1.5bar and 2.5bar, the black needle should be somewhere in the middle of the green range to work properly. The pressure increases when the pump is running and the temperature is hot. The smaller dials are for your Domestic Hot Water and the Radiator-loop flow and return temperatures – but for now, the pressure is the important one. There is also a red needle on the meter which you can move to give you an indication of what your "normal" pressure is. It may have already been set by the original installers.

It is difficult to be specific as to how low the pressure can be before the radiators no longer get hot, but suffice to say, if they are not getting hot and the pressure is below 1.5bar, then topping the water up and bleeding the radiators is a good place to start. If the radiators are bled – to free the air from them – then the water pressure is likely to drop. The red canister within the HIU keeps the water pressure up, but only if enough water is in the loop. Thus, if the radiators are bled of air, you will probably have to top the radiator-loop back up, too.

Assuming the radiator-loop pressure is sufficient, the Central Heating system should work properly, provided the incoming Hot Water Loop temperature is in the range of 70°C to 80°C. You can check the incoming Hot Water Loop temperature by pressing the 'white triangle button' on the HIU meter 5 times. It will alternate between two readings, the higher one will be the incoming temperature (in °C), and the lower one is the return flow back to the communal boilers. If the incoming temperature is very low, report it to PMUK.

These notes are written in good faith to help you, if you are an owner, or your landlord, if you are a tenant. They are only written from my personal experience and not written by a professional heating engineer. Also, please bear in mind that the HIU system could be faulty and that this procedure will not fix faults. You should also be aware that the HIU should be serviced once every year, and the engineer could be asked to bleed the radiators and top them up at the time of a service. Please do not just get a "plumber" to service the HIU, but please check that you get a company who are knowledgeable and experienced with them. Two such companies are listed on the VCRA website under "Useful Information".

If your Central Heating radiators are still not working properly after doing this procedure, then please get some professional help:

What to do:

1. If you are a tenant, confirm with your landlord that they are happy for you to bleed the radiators and top the water levels up. If not, then they must do it, or arrange for it to be done
2. If you are going to do this, it is not hard, but you should be confident and competent, plus having the right tools for bleeding a radiator and connecting the filling-loop is essential. If you are not confident, you should ask a professional to do it. I am going to assume you are competent, confident, have the correct tools and the correct permission
3. In case of any problems, you should know where your main incoming water stop tap is - it should be labelled with a white tag. In 1st and 2nd floor apartments it is probably above the HIU, coming down from the ceiling. In 3rd floor apartments it probably comes up from the floor. Test it to make sure you can shut off the water if necessary
4. Is the flexible filling-loop connected? A flexible, silver-coloured hose was supplied by the developer to each apartment and left tethered to the HIU pipework. If it is not fitted to the filling-loop valves,

fit the hose between the two valves on the cold water feed and the radiator-loop, below the HIU. Most people leave the hose connected after this job has been finished, but do ensure both filling-loop valves are off

5. Ensure the Central Heating is not supposed to be on, or running
6. Ensure all radiator TRVs are open to 5. If you have the TRVs set to specific numbers, you might want to keep a record of the settings, so you can reset them when you have finished. There should not be a TRV on one radiator (probably the hall one) and the manual valve on the incoming side should be at least a little bit open, as well
7. Please be careful the first time the filling-loop valves are used, they may be stuck and the black plastic handles might be brittle. So operate them firmly, but gently. You don't want to break the handle off the filling-loop valve and not be able to turn it off! (the black handles should be "across" the pipe when closed and "in line" with the pipe when open). They only operate a ¼ turn from fully closed to fully open
8. Turn the water-feed filling-loop valve on fully (1/4 turn only), and then slowly turn the radiator-loop valve on. Don't rush, just gently let the water into the radiator-loop. Watch the large dial at the same time – let the water go up to about 2.0bar (midway in the green range) and then shut off the radiator-loop valve again.
9. Go around each radiator and using the correct **radiator key**, slowly bleed the air out of them – use the **top** bleed valve only. Do not turn the fixed nut at all, do not touch it. The valve may be very stiff, or even painted over or stuck. Do not risk breaking the valve or shearing the stem off. If you are unsure, get professional help. Slowly loosen the central square shaft inside the nut until air or water starts to escape. Have a cloth handy as the water will probably be dirty, and maybe hot. Do not touch the small isolating valve at the bottom of the radiators at all. Note that double-panel radiators have two valves, one on one panel at one end, and one on the other panel at the other end. You need to do them both, as if they were two single radiators. Keep letting the air out until water or a mixture of air and water bubbles start to escape. Then turn the bleed valve off
10. Go back to the HIU and check the water pressure on the large dial. Assuming it has dropped, open the radiator-loop valve slowly to let water more in and top it up to about 2.0bar again. If the pressure hadn't dropped, then you can probably stop at this point and try the heating
11. If the pressure has dropped, do another round of bleeding air from the radiators – you may have to keep going with this once or twice more, until only water and no air is escaping from the bleed valves when you release them – but in my experience once, or twice, is enough
12. Ensure all radiator bleed valves are closed as you finish each one
13. When the water pressure has settled on about 2.0bar and there's no more air in the radiators, then ensure **both** valves on the filling loop are closed (the black handles should be "across" the pipe and not "in line" with the pipe)
14. Turn the Central Heating on and check the radiators are warming up. Further bleeding of air may be necessary, but if so, it shouldn't be much, and probably not enough to let the water level drop too low. Reset the TRVs to your choice of temperature (see the temperature guide below, from the TRV user manual)
15. Generally speaking, the larger meter's black needle would normally be at the higher end of the green range when the central heating part of the system is running hot, and at the lower end of the green range when it is not running, or when the system is cold
16. If you have got "too much" water pressure in the radiator-loop, it can be released by using the red knob on the 'automatic pressure release valve' (hidden near to the water pump). This would not normally be necessary, though, and I have previously been warned that if you operate the knob manually they can get stuck, and then you will lose all your water for the radiators. Again, if in doubt, get professional help

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0: TRV is off ❄: 7°C 1: 11-13°C
2: 15-17°C 3: 19-21°C 4: 23-25°C 5: 27-29°C

