

GETTING STARTED WITH AQUAFLAME – SET UP INSTRUCTIONS

Thank you for purchasing an Aquaflame.

If set up correctly your Aquaflame will give many years trouble free operation. Before starting work it is necessary to fill the cell and the booster, connect the torch and perform a leak test.

The document below lays out the procedure.

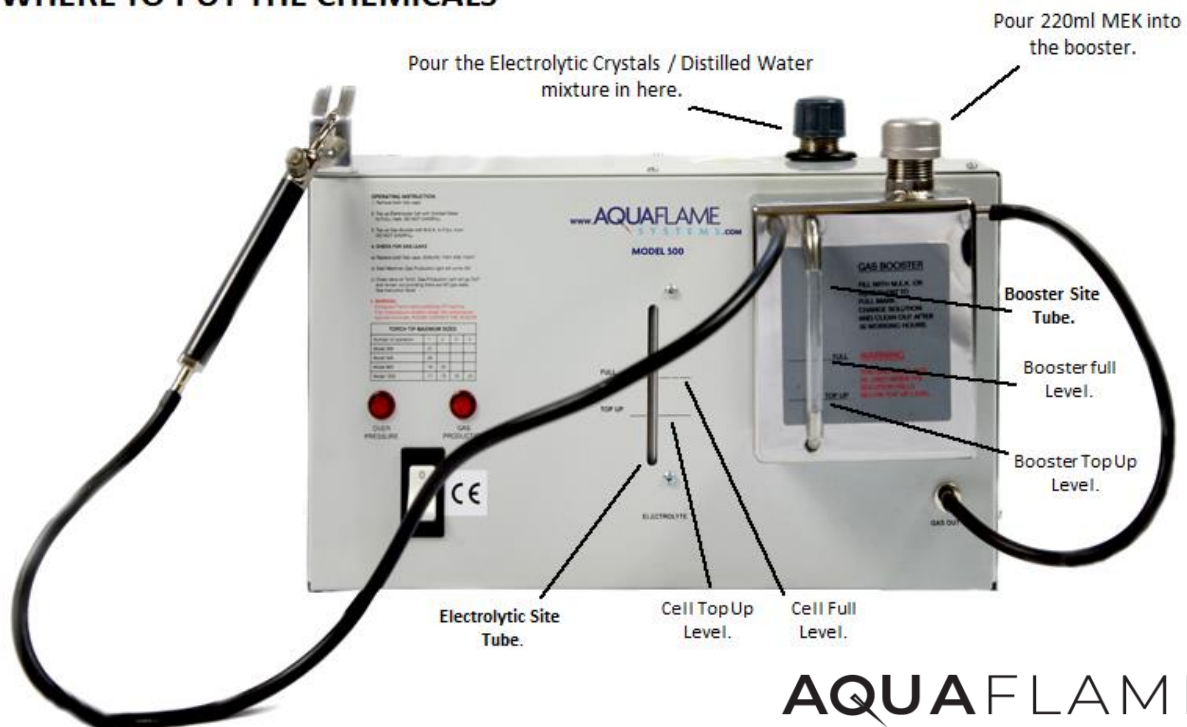
Please read the MSDS information relating to the Electrolytes (KOH) and Methyl Ethyl Ketone, MEK – this can also be found on the Aquaflame website in the support, safety data sheet section.

Both materials should be handled with care.

The electrolyte flakes, POTASSIUM HYDROXIDE is highly corrosive and the Methyl Ethyl Ketone, MEK is flammable. Please handle both materials with care.

To ensure the best results please follow these instructions with care.

WHERE TO PUT THE CHEMICALS



AQUAFLAME[®]
SYSTEMS

PRECISION | POWER | PROTECTION

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Filling your Aquaflame

To fill the cell, you will need Electrolyte flakes, Potassium Hydroxide (KOH). If in the UK, the Crystals in the correct quantity are provided under dangerous goods (DG).

If outside the UK, you will need to source industrial-grade KOH at 90-95% pure. The KOH is then dissolved in De-ionised water.

PLEASE NOTE THAT IT IS VERY IMPORTANT **NOT** TO OVERFILL THE CELL WHEN FILLING OR TOPPING UP.

NOTE: ONCE THE INITIAL MIX IS IN 'SOLUTION' THE TEMPERATURE OF THE MIXTURE WILL RISE AND AN ACRID VAPOUR WILL BE GIVEN OFF. DO NOT BREATHE IN THE FUMES.

ALWAYS WEAR ADEQUATE EYE, FACE & HAND PROTECTION

You will need 2x 2000ml Chemical & heat-resistant jugs – a chemical-resistant stirring rod, De-ionised water & MEK

Getting Started

The filling of the Cell is done in three stages:

1. Mixing the electrolyte crystals (KOH) with De-ionised water.
2. The initial fill, so the liquid contents of the cell are visible at the bottom of the sight tube.
3. Topping up the contents of the cell to the correct level. Take care to add the correct quantities of De-ionised water, follow the guide below.

ALWAYS FILL THE CELL SLOWLY AND CAREFULLY. DO NOT OVERFILL THE CELL.

The above process varies slightly for each machine because the cells are different sizes for the different models. Please follow the **FILLING PROCEDURE** below for your model machine. Chemical-resistant filling kits are available separately from Aquaflame Systems.

Please ensure that all the chemical-resistant filling jugs and rods are clean and free of contaminants.

FILLING PROCEDURE – remove the black protective bung from the gas outlet - do not connect any hoses while filling.

1. Remove the top cap on the machine. Insert the funnel provided into the cell filler tube.
2. Pour all measured quantities of mixture slowly into the cell. See the amounts for each model below.

IT IS IMPORTANT TO FILL SLOWLY AND CAREFULLY TO PREVENT OVERFILLING.

3. It is important that all the dissolved electrolyte Koh is put into the cell.
4. Add the top-up de-ionised water very slowly until the level appears at the bottom of the sight tube.
5. **Do not start the machine.**
6. Gently tip the machine forward through 45 degrees to clear any air bubbles in the sight tube.
7. Add the top-up de-ionised water.
8. Refit the top cap and tighten it to hand-tight.

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MODEL 500

1. Empty the pre-measured 300gms KOH flakes into a clean chemical resistant 2000ml jug and then measure, out 900ml De-ionised water into the other chemical resistant jug. Carefully pour the 900ml of De-ionised water onto the KOH flakes and mix them together to make sure all the KOH flakes are dissolved.
2. Slowly and carefully pour all the dissolved mixture into the cell. The liquid should now be visible at the bottom of the sight tube.
3. Top-up the cell with 100ml of de-ionised water. Add a little more only if needed.

MODEL 800

1. Empty the pre-measured 600gms KOH flakes into one of the chemical resistant jugs and measure out 1250ml of de-ionised water into the other chemical resistant jug. Carefully pour the 1250ml of De-ionised water onto the KOH flakes and mix them together to make sure all the KOH flakes are dissolved.
2. Slowly and carefully pour the dissolved mixture into the cell.
3. Top up the cell with 1000ml of de-ionised water you will start to see the solution in the sight tube when topping up.

MODEL 1200 – add all solution very slowly to allow both internal cells to fill.

1. The Model 1200 requires two sets of 600gms of KOH flakes to be added.
2. Empty the first pre-measured 600gms KOH flakes into one of the chemical resistant jugs and measure out 1250ml of De-ionised water into the other chemical resistant jug. Carefully pour the 1250ml of De-ionised water onto the KOH flakes and mix them together to make sure all the KOH flakes are dissolved. Slowly and carefully pour all the mixture into the cell.
3. Repeat the above process with the other tub of 600gm KOH flakes and 1250ml of de-ionised water..
4. The cell now contains two x 600gms KOH flakes and 2 x 1250ml de-ionised water.
4. Top up the cell with 1000ml of de-ionised water and then add a further 800ml de-ionised water until the solution is just below the full level.

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FILL THE GAS BOOSTER Prior to connecting to your Aquaflame.

It is now necessary to fill the Gas Booster with MEK (Methyl Ethyl Ketone). Available from Aquaflame shipped under DG.

- PLEASE NOTE THAT IT IS VERY IMPORTANT NOT TO OVERFILL THE GAS BOOSTER: the level should never go above the MAX working level when the Aquaflame is switched on and pressurised.
- Measure out 220mls of MEK (Methyl Ethyl Ketone).
- Slowly and carefully pour the MEK into the booster. The MEK should just be Visible above the red line but slightly below the FULL LEVEL.

CONNECTING THE GAS BOOSTER & TORCH

- Connect the short length of the neoprene rubber hose provided to the gas outlet on the machine. This is marked “Gas Out” on the front right-hand bottom corner of the machine.
- Connect the other end to the “Gas In” connection on the gas booster.
- Connect the long length of the rubber hose to the “Torch” connection on the Gas Booster, and the other end to the torch.
- Position the booster on the front of the machine locating the mounting clip into the rectangular hole provided in the front panel. Keep the booster upright so the MEK does not spill.
- Fit a suitable torch tip to the end of the torch using a screw action, make sure it is locked in place. The maximum correct size to use is indicated on the front of the machine, the smaller the tip number the larger the flame size. **NB. Always increase or decrease the flame size by changing the torch tip.**
- Do not reduce the flame by closing the torch valve as this will result in flame burning back and damaging the torch tip.

STARTING UP THE MACHINE:-

Plug the machine into the mains and switch it on at the socket.

- Ensure the torch valve is closed.
- Press the on/off switch on the machine which will start up.
- The right-hand gas production light should also come “on” and then go out again after a few seconds. IT SHOULD REMAIN OUT AS LONG AS THE TORCH VALVE IS CLOSED.

The gas production light should operate as described - The right hand of the two lights the gas production light indicates that the gas is being produced and will pulse on and off when the machine is operating correctly.

- Open the torch valve.
- Allow 1-2 minutes for the gas to clear through the torch/machine and hoses before igniting the flame.

The left-hand light the over-pressure light indicates only when overpressure conditions exist. At maximum pressure, the right-hand light will go out indicating production has ceased.

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If the over-pressure light comes on – check the cell cap is tight. If it remains on – turn the torch and the machine off and contact Aquaflame on 0121 233 1088 for advice.

The understanding of this information is of paramount importance as these lights are used to detect gas leaks.

In operation, if the torch valve is closed and the machine is switched on then both lights should remain off because the gas system is sealed. If the torch valve is opened, then gas will escape from the torch tip and the gas pressure in the system will fall. At a pre-set level the right-hand gas production light will come on indicating that gas is being produced. This gas production light should pulsate all the time the machine is in use with gas coming from the torch tip.

CELL TOP UP

- Check the level of the electrolyte liquid in the Cell Sight Tube.
- Switch off the machine.
- Remove the cell cap and SLOWLY add de-ionised water until the level reaches just under the full mark.
- **DO NOT OVERFILL**
- Replace the cell top cap to hand tight.

BOOSTER TOP UP

- Check the level of the MEK in the MEK sight tube. It should sit just under the Max working level when the machine is pressurised and in use.
- The best way of making sure the booster does not get overfilled is to remove booster from the machine – disconnect all hoses.
- Empty the MEK from the booster into the beaker supplied and fill the beaker to 220ml. Refill the empty booster with the 220ml MEK. The level should be at the full level. Reattach all the hoses and turn the machine on – the level will rise to the Max working level mark.
- You can just top up the MEK very slowly using about 10ml of MEK. IMPORTANT – make sure when the booster is pressurised the MEK level does not go above the maximum working level.

BOOSTER LIQUID (MEK)

The MEK liquids used in the gas booster are very volatile and more will be used when the ambient temperature is high. For the first week of use, check the level twice daily.

Allowing the liquid level in the gas booster to fall below the RED line level mark in the sight tube can cause a “blowback” which can damage the machine. The repair would be chargeable.

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6. CHECKING FOR GAS LEAKS

The machine is designed to run with maximum-size torch tip supplied without gas leaks. Please see the front of the machine showing the maximum tip sizes for each machine. Running the machine with a gas leak or too large a torch tip will cause overheating and possible damage. This damage is not covered under guarantee as it constitutes misuse. If In doubt, ASK! – check with the factory or your distributor.

To check for gas leaks, close the valve on the torch and switch the machine on. The right hand gas production light should remain OFF. If the Right-hand gas production light starts pulsating it means, there is a gas leak. This is invariably because the caps on either booster or the cell are not tight enough to seal the system. If the caps are tight gas is probably leaking from the neoprene hoses – check these to find the leak. If the machine is still leaking after these checks contact Aquaflame direct or your local distributor.

7. INSTALLATION OF THE MACHINE

The machine should be positioned near the workbench so that the rubber tubes to the torch are not pulled tight. **All sides of the machine must be free of obstruction so that a free flow of air throughout the machine can be achieved.** The torch rubber tube can be extended to a maximum length of one and a half meters.

DAILY MAINTENANCE.

It is good practice to perform a daily check of the liquid levels in the cell and the booster. Depending on the amount of use the chemicals in the cell and the booster will need to be topped up.

ELECTROLYTE FLAKES (KOH)

Only top up the cell with de-ionised water to the cell. **NEVER AT ANY TIME ADD FRESH KOH**

FLAKES TO THE CELL. New KOH flakes are only added after a service.

OVERFILLING THE CELL

If the machine is overfilled, contact the factory or your dealer before switching on the machine.

DO NOT ATTEMPT TO SYPHON THE LIQUID FROM THE CELL BY MOUTH. IT IS HIGHLY CAUSTIC AND CAN CAUSE SERIOUS BURNS TO THE MOUTH. Syphons are available from Aquaflame.