AQUAFLAME FLAME POLISHER FAQ'S

This frequently asked question section aims to provide support and guidance to our customers. If you have any further question or queries please do not hesitate to contact us.

HOW DOES IT WORK?

Aquaflame produces gas from water and works on the principle of electrolysis. Electricity is passed through an electrolyte solution resulting in the production of hydrogen and oxygen. The gas is then passed through a MEK (Methyl Ethyl Ketone) solution that gives a flame with the optimum working temperature of 1850°C. (3365°F). This produces a highly efficient and low cost high energy heat source. The only by product other than energy is water. The flame is clean and safe with no toxic effects.

WHAT ARE THE ADVANTAGES OF THE AQUAFLAME SYSTEM?

1. Aquaflame equipment is very safe because it does not require pressurized gas cylinders.
2. Aquaflame has a low capital cost and low running costs. Once the machine is filled it only needs topping up from time to time with deionised water and methyl ethyl ketone (MEK). If you run the machine for 40 hours in a week it might use 20ml of MEK (approx. $7.00). It is not necessary to re-fill the electrolyte between services – only top off with deionised water.
3. Aquaflame is used for polishing curved edges, intricate areas, internal sections (e.g. holes in sheets) and organic shapes. It is also useful for smoothing off sharp edges polished with a diamond polisher, polishing herring bone finishes left after laser cutting and polishing routed edges. In general it can be used for cleaning up any general blemishes on the edges of acrylic.
4. Aquaflame is easy to use – simply switch the power on and start work. Once you finish working simply close down the torch valve and switch the power off.
5. Aquaflame is completely safe because it produces gas on demand and there is no stored gas. In addition it is lightweight and portable – there is no heavy lifting as with gas bottles and no H&S issues to deal with internally.
6. Aquaflame gives a clean flame because it is burning hydrogen and oxygen so there is no discoloration of the acrylic material.
7. Aquaflame is manufactured in UK and has full CE mark approval. The equipment is pre–tested before shipment with quality, efficiency, safety and reliability all built in as standard. Many machines that were built 25 years ago are still running today.

WHAT IS SUPPLIED WITH A NEW MACHINE?

A: The following tips are supplied with the Aquaflame
Model 500: 6 x No 20 & 2 x No 21
Model 800: 4 x No 18, 2 x No 19, 4 x No 20, & 4 x No 21
Model 1200: 2 x No 17, 4 x No 18, 2 x No 19, 4 x No 20 & 2 x No.21

WHAT THICKNESS OF ACRYLIC WILL THE MACHINE POLISH?

The Aquaflame Model 800 can polish up to 10mm in one pass with No. 18 tip when used by one operator or up to 5mm when used by two operators.

WHAT CHEMICALS ARE USED IN THE MACHINE AND ARE THEY READILY AVAILABLE?

The Aquaflame Model 800 requires a mixture of 600gms Potassium Hydroxide Reagent grade crystals and 1.75 liters of deionized water added to the cell plus 1 liter of MEK (Methyl Ethyl Ketone) for its external booster. See getting started instructions for chemical mixture of other models. To obtain the chemicals for the Aquaflame machine, an internet search will likely provide a chemical supplier in your area or you can contact Del Amo Chemical Co, of Gardena, CA for their chemicals kit (310-532-9214).

SINGLE OR DUAL USE

Q. How many users can operate each machine?
1. The Model 500 is designed for one operator and is not widely used in flame polishing. The Model 800 can be used in one or two operator mode, the Model 1200 can be used in one, two or four operator mode.
2. Please note that if you use an 800 with two operators or a 1200 in two or four operator mode the power output per torch will reduce. In simple terms an 800 in two operator mode will become 2 x 500 machines, a 1200 in two operator mode will become 2 x 800 machines or in four operator mode 4 x 500 machines.
3. Our best selling machine for flame polishing is the Model 800 used in one operator mode. Customers purchase a Model 1200 if they wish to run two operators.
4. Please note that for every additional operator a “Second Man Operator Kit” will need to be purchased

SAFETY & ENVIRONMENT

Q. How safe is my Aquaflame?
1. Aquaflame machines are completely safe.
2. The machine only produces gas at low pressure and when the machine is running, so there are no safety issues as there are with bottled gas.
3. Once the machine is switched off gas production stops.
4. The amount of gas produced is very small so there is no danger of explosion.
5. The Aquaflame machine is fitted with all the necessary safety features including flash backs both to the torch & to the machine.
6. The only product apart from energy produced by the Aquaflame is water. The machine is therefore very environmentally friendly.

SERVICE & MAINTENANCE

Q. What daily maintenance will my Aquaflame require?
1. As good practice the Electrolyte Crystals and MEK levels should be checked daily.
2. These will **not** need to be filled every day. Do not add extra crystals to the cell
– only add deionised water. Top off the electrolyzer cell only to full mark – do not overfill.
3. Top up the Gas Booster with MEK to full mark – again do not overfill.
4. No other daily maintenance is required.

Day to day maintenance instructions are screen printed on front of the machines.

Q. Do I need to change the MEK?
A. If the MEK becomes discolored it will need to be changed. Disconnect the neoprene tubes and empty the Booster through the outlet marked “Torch”. Then swill inside the booster with some fresh MEK. Next top up with 220mls of fresh MEK. Take care all the way through the procedure and protect your eyes from spillages by wearing safety goggles. The MEK should be replaced every 36 working hours.
Q. Will I need to replace the electrolyte crystals with my Aquaflame as time goes by?
A. They will only require replacement when your machine is serviced.

Q. When will my Aquaflame machine need servicing?
A. This depends on your usage but normally after 4000 working hours. In general terms we would say that this would be every 18 months.

Q. How do I check for gas leaks?
A. To check for gas leaks close the valve on the torch and switch on the machine.
The red gas production light should remain off. If the gas production light is flashing slowly there is a leak. Check first that the torch valve is completely closed. If the light is still flashing, check that the cell and booster caps are tightly closed. If the light continues to flash, check that there are no micro holes or torn sections on the neoprene tubes. If the gas light continues to flash contact Aquaflame Service Centre.
There are instructions on the machines on how to check for gas leaks. Please also see our Getting Started guide.

GUARANTEE

Q. Is the Aquaflame machine guaranteed?
A. Yes it comes complete with a 3 year warranty.

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