

E - C L E A R **ON**
TECHNOLOGIES OXYGEN



*Healthy **Water**. Healthy **Earth**. Healthy **You**!*



OPERATION MANUAL E-CLEAR 2024



Daily operation guide for all E-Clear Systems

After having followed the Installation guide, balanced the water and connected to the app, either for free or for the Air Connect Service.

Your E-Clear device faceplate should look like this- All percentages should be on 100%. Your pool pump should be running according to the following times.



4. Filtration

- Pool Volume
- 5 - 40m³ - 4 hours
- 40 - 50m³ (40 000L- 50 000L)- 6 hours
- 55-75m³- 8 hours
- 80-100m³- 10 hours (12 in very hot weather)
- 105-125m³- 12 hours (15 in very hot weather)
- 130-150m³- 15 hours (18 in very hot weather)

-Above indicates the length of time necessary to operate the e-clear system. (oxidation always on when e-clear unit on and ionization as necessary.

- If the swimming pool is heated and is circulating 24 hours a day, it is necessary to install a separate timer controlling the eClear system, in order to operate the e-clear system only, for the periods shown above CAUTION- too much oxidation will cause the pool water to appear hazy. Too much copper may stain pool walls. These must be maintained correctly.

Besides these pump and ECLEAR system run times, the pump, after taking into account loss of head pressure etc, must still be powerful enough to push the entire pool volume through the filter in 4 hours or less.

The first week of operation:

If any of the ECLEAR power percentages on the faceplate is showing less than 100%, then your pool water is not conductive enough for the electrodes to function optimally. You need to raise the conductivity, safely, by adding CALCIUM CHLORIDE FLAKES- ONLY!! This may need to be done at startup and thereafter once or twice per year

When adding any chemical to the pool, it is necessary to switch the ECLEAR power of before adding the chemical and then waiting 20 minutes before switching the ECLEAR power on again. Please note the pool pump should continue running while the ECLEAR is off. This is to protect the coating on the titanium electrodes. Failure to follow this procedure will cause damage to the titanium electrodes coating and render your warranty invalid.

Copper/SILVER

It will take a week or two for the copper and/or silver residuals to get up to the necessary level so as to kill microorganisms. Leave the copper and/or silver electrodes on maximum until the copper residual is 0.5ppm according to your copper test kit. The silver power is linked to the copper, receiving 10% of the copper's current. This means that when the copper residual tests at 0.5ppm the silver residual will be at 50ppb.

Please note there is no silver test kit.. in the time it takes for the residual killing power of the ionization electrodes to get to the level needed. You may need to combat algae by adding small amounts of hydrogen peroxide shock, with the ECLEAR off. Once the copper reaches 0.5ppm you no longer need to add peroxide.

Your ECLEAR system will now operate as a chemical free Sanitizer.

Pump And Filter sizes needed for optimal ECLEAR Operation:

10m³ – 50m³ Pool

1. Pool pump 0,75 kw/1 hp – 2m head - 20m³/h
6m head - 16m³/h
12 head - 10m³/h
2. 3 or4 bag glass media filter
3. Recycled glass media 75% fine and 25% coarse.
4. Suction 50 mm min
Return 2 x 40 mm or 2 x 50mm
5. 4-hour total water volume through filter and total volume twice through the filter every 24

50m³ – 75m³ Pool

1. 1.1 kw pool pump/ 1.5 hp - 2m head – 30m³/h
6m head – 26m³/h
12m head – 18m³/h
2. 5 bag glass media filter
3. Recycled glass media 75% fine and 25% coarse.
4. Suction 63mm
Return 2 x 50mm or 2 x 63mm

75m³ – 120m³ Pool volume

1. 1.5 kw/2hp Pool pump - 2m head – 40m³/h
6m head – 32m³/h
12m head – 20m³/h
2. 7 bag glass media filter
3. Recycled glass media 75% fine and 25% coarse.
4. Suction 63m/75m

Ideal Water Parameters

pH **6.8-7.2** (preferably **7.0**)
ALKALINITY **80-120 PPM**
CALCIUM HARDNESS **250-400 PPM**
COPPER RESIDUAL **0.5PPM**
PHOSPHATES **0 PPB**
CYANURIC ACID **0 PPM**
WATER TEMPERATURE UP TO **38°C**

pH

A pH of 6.8 results in more stable water parameters. Never allow pH to rise above 7.2 as this renders the e-Clear's hydrolysis and ionization ineffective.

Prolonged high pH levels or low pH levels may damage your plates and also allow calcium deposits to build up on your plates which will then require removal and manual cleaning in an acid solution. High alkalinity causes the pH to drift upwards quickly.

High pH over a prolonged period will also cause the copper ions in the pool water to adhere together and fall out of suspension and stain any porous or calcium based surfaces.

We strongly suggest an automated pH doser that measures and injects hydrochloric pool acid constantly, thereby maintaining a stable 7.0 pH.

ALGAE

PHOSPHATES

Phosphates are food for algae. If you have an algae problem and your copper residual is at 0.5ppm then you may have a phosphate problem. Phosphates are added by leaves, grass and other organic material as well as by people, dogs and clothing washed in certain detergents.

Test the phosphates at a pool shop and add a phosphate remover.

A non-metal based algaecide can be added.

A peroxide based shock may be necessary to kill algae blooms.

Algae blooms occur when pH is lower than 6.8 and higher than 7.2 or the copper residual is lower than 0.5ppm

If algae occurs in your pool, check phosphates, adjust pH, check copper.

Dead spots in your pool where water doesn't move freely, e.g., steps or square corners, are susceptible to algae growth, regularly brush walls in these areas.

Floating or substrate based algae can be controlled by adding non-metal based algaecide said and shocking the water using peroxide based treatments.

Also, check filter glass media, replace glass media if older than 36 months.

Fitting a larger pump and filter will solve almost all algae problems and most water quality issues.

Normal operation of the ECLEAR system

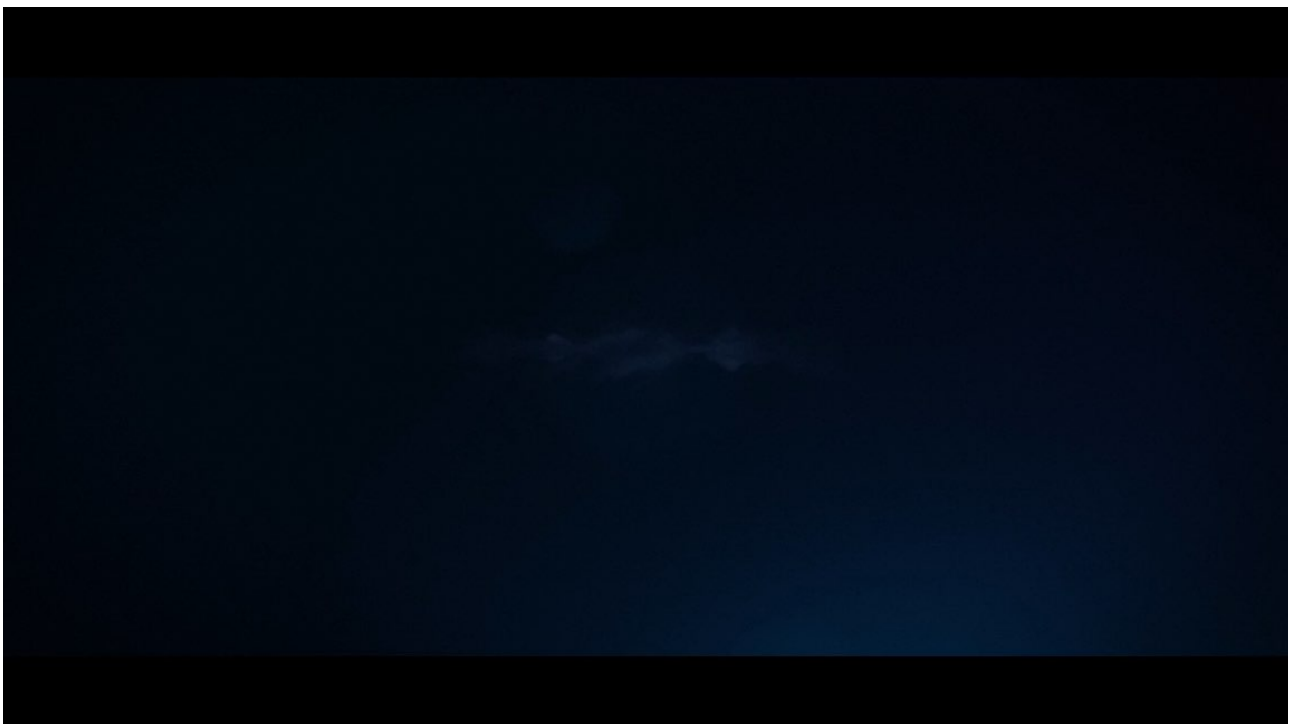
1. Check the power percentages daily, either on the app (if you have the service) or on the eclear faceplate. They should all be 100% except the Uv rundown timer which tells you what percentage of time your lamps have left before they need to be replaced.
2. Check the electrodes to make sure they are free of debris and free of calcium buildup.
3. Check your pool water, is it clear?
4. Once per week, minimum, net out the leaves, scrub the walls and vacuum up any debris on the pool floor.
5. Once per week backwash and rinse the filter thoroughly
6. At least twice per week check the ph. If it's high add a little hydrochloric acid and test thereafter to bring the pH down to 7.0. If you have an automated pH doser check the acid level and the displayed pH
7. Once the pH is between 6.8-7.2, the copper test kit will give accurate test results
8. Test the copper residual of the water using the copper test kit. It should be 0.5ppm at all times.
9. If you do not have the AIR CONNECT SERVICE connected, then adjust the copper power down or off as needed, if the copper residual, is 0.5ppm or higher
10. OR turn the copper power up or on as needed if the copper test kit result shows less than 0.5ppm
11. If you do have the AIR CONNECT service activated, enter the copper test kit result into the app, we will adjust accordingly or advise you what to do.
12. Every 6 months test the calcium hardness, if you have purchased such a kit from us. If you have not then take a water sample to Builder's Warehouse or your local pool shop to test the calcium hardness.. it should be between 200-400ppm
13. If you have AIR CONNECT we will advise when you need to add calcium chloride flakes

DO NOT ADD

- **Chlorine** - can damage the plates and you!
- **Salt**
- **Zeolite** glass media
- Any **metal based** algaecide
- Hardly ever **soda bicarbonate** except at start up
- Soda ash
- Alkalinity-up products
- Copper powder
- Metal removers
- Gravel filter glass media larger than 2mm grit

YOU MAY USE

- Hydrogen peroxide neat or as part of a peroxide shock
- Flocculant, clarifier or gel block to clear cloudy water from suspended micro solids
- Hydrochloric, muriatic acid to reduce pH
- Calcium FLAKES only, not powder or liquid
- Soda bicarbonate to raise alkalinity initially, not more than 2kgs per day.
- Non-metal based algaecide
- Phosphate removers
- Alum treatment as a flocculant but must be carried out by a professional
- Consol glass filter glass media, grit size 0.6



REPLACEMENT PARTS FOR USE WITH E-CLEAR SYSTEMS

OXYGEN

90MM OXYGEN STACK ELECTRODE SET

To fit all MK-150, MK-250, MK-500, MK-750 and MK-1000 model E-Clear systems from 2014- present



90mm
30mm
130mm
Titanium Alloy

WEIGHT: 200g

Assembled in South Africa.

COPPER

90MM PURE COPPER ELECTRODE

To fit all MK-150, MK-250, MK-500, MK-750 and MK-1000 model E-Clear systems from 1996- present



840mm
120mm
10mm
Copper Alloy


WEIGHT: 800g

Assembled in South Africa.

SILVER

SILVER ELECTRODE

To fit all MKX model E-Clear systems



M6 threaded lug
37mm
110mm
10mm
99.99% Pure Silver
316 Stainless Steel lug

WEIGHT: 80g

Assembled in South Africa.

OXYGEN

63MM OXYGEN STACK ELECTRODE SET

To fit all MK-63 model E-Clear systems from 2014- present



63mm
25mm
150mm
Titanium Alloy

WEIGHT: 150g

Assembled in South Africa.

COPPER

63MM PURE COPPER ELECTRODE

To fit all MK-75 model E-Clear systems from 1996- present



450mm
100mm
10mm
Copper Alloy

WEIGHT: 400g

Assembled in South Africa.

POLYSHEEN BLUE
To clear cloudy water in E-CLEAR pools

CLARIFIER

Used in order to achieve maximum water clarity in E-CLEAR pools where sand filtration is inadequate



15ml treats 10 000L

VOLUME: 500ml
Shelf life 3 months once opened

Assembled in South Africa.

UV

55W ULTRAVIOLET LAMP

To fit all E-Clear systems from 1996- present



2 pins each side
10 000 lifespan
20mm
980mm
High pressure Mercury filled
T8 UVC HIGH OUTPUT ULTRAVIOLET LAMP

WEIGHT: 100g

Assembled in South Africa.

COPPER

COPPER TEST KIT

To test copper residual in E-CLEAR pools



Shelf life 2 years once opened

WEIGHT: 100g

Assembled in South Africa.

LaMotte

CALCIUM TEST KIT

To test calcium level at start-up in E-CLEAR pools



Shelf life 2 years once opened

Used in order to achieve proper conductivity at start-up of E-CLEAR pools

WEIGHT: 100g

Assembled in South Africa.