



FLOW TECH

OPERATIN AND MAINTANACE MANUAL

FOR MORE INFROMATION PLEASE CONTACT

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Operation & Maintenance Guidelines For Your Swimming Pool

We are providing this 'OPERATION MANUAL' to acquaint you on the functioning of the filtration & other related system. Kindly go through this in detail.

Water body requires two types of maintenance:

- **Physical**

- **Chemical**

Maintenance is an important function and is a responsibility.

Hence, our first duty is to appoint a Pool caretaker. A Pool caretaker should be trained to perform his duties required for a good maintenance. He should be a responsible person and it always advisable that we provide him a suitable Assistant.

PHYSICAL MAINTENANCE

The terms Physical Maintenance means cleaning the pool by Brushes, Suction Sweepers and Leaf-rakes on one part and circulation of water through filter system on the other. This means that the Pool caretaker and his assistant should be trained to know the operation of filter and the cleaning methods thoroughly.

CHEMICAL MAINTENANCE

The term's Chemical Maintenance means treating the water by adding chemicals to ensure clarity of water at a desired pH value.

Following chemicals are used for the treatment.

1. Chlorine - Daily basis
2. Alum - Once a fortnight
3. Soda Ash/ Acid - Once in a while to correct the pH if required

1. Chlorine:

Use Chlorine in the form of granules or tablets. As per international Standards, the allowable levels of free chlorine is from 1 ppm to 3 ppm and this can be checked with the test kit provided to you in our system. The recommended dosage of chlorine is as follows:

Chlorine Granules:

_ Monthly Requirement – 10 kg – Depend on the Pool Volume.

Alternatively, use Chlorine in the form of Sodium Hypochlorite at a normal concentration of 5%. Chlorine being an oxidizing agent is used to destroy all bacteria and other organic materials. The quantity of Sodium Hypochlorite to be used daily will depend on.

- a. Quantity of water
- b. No. of people using the pool
- c. pH of water
- d. Surrounding temperature
- e. Wind velocity
- f. Dust clouding

It is not possible to exactly estimate how much chlorine shall be required for a particular pool. However, it is possible to check free chlorine available in the pool water.

In case there is a shortage of sodium hypochlorite solution, you can use a bleaching powder solution.

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It should be noted that the bleaching powder should not be thrown into the pool in powder form but what you need to do is:

1. Make a solution of bleaching powder in a bucket.
2. Allow the powder to settle, if any.
3. Decant the clear liquid, sieve through a fine cloth and then use.

Note: Any powder that goes into the pool will irritate skin, eyes and nose.

2. Alum :

Alum is only a flocculator and brings together all the dispersed dust particles in the water and makes them settle down and easier to vacuum. Only non-ferric alum is to be used in the pool. About 1 kg of alum for 2 Lac litres of water is generally recommended. The alum has to be dissolved completely in water before being poured into the pool and then stirred to spread it evenly.

The water should not be disturbed thereafter for at least 12 hours. The settled dust, which accumulates on the bottom of the pool, should be very slowly and carefully vacuumed, so as not to disturb the rest of it. The periodicity of Alum dosing has to be figured out depending on the dust loading of your pool.

We would say that you would probably require to Alum dose your pool once in 15 days. This should be done on an evening the day after which is a holiday for the pool.

_ Approximate Monthly Requirement – 10 kg

3. Soda Ash/Acid :

Due to use of various chemicals the pH of water varies quite often. pH is the concentration of Hydrogen ions in the water which defines the acidity or alkalinity of water.

pH below 7 will define the water as acidic, which above 7 as basic.

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14

Acidic Neutral Basic

-ve +ve

For effective use of chlorine as well as swimmers comfort, the pH of the water should be between 7.2 and 7.6.

If the pH is less than or more than the above specifications, the effectiveness of chlorine drops down drastically.

_ Acid Monthly Requirement for your pool – 10-15 kg

_ Soda Ash Monthly Requirement for your pool – 5 kg

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WATER CIRCULATION SYSTEM:

The maintenance person must principally know, how the water circulation system works.

The flow diagram attached will simplify the circulation system.

Water is sucked from the pool by pumps through balancing tank and floor drain and then enters the filter through Multi-port Valve (MPV), gets filtered and is released to the pool, through Multi-port Valve again from inlets. Strainer before the pump will trap the floating debris in line.

FILLING OF THE POOL:

Filling of the pool should be done gradually by providing tapping to the inlet line in the Filter Room or separate arrangement can be made to fill the pool from the available water source.

In case the fresh water line is connected to the pool inlet line, essentially separate valve for operation is required. This line is also used as make- up water line.

EMPTYING THE POOL:

In case the swimming pool is to be emptied, the inlet and balancing tank line valves should be closed (drain valve should be open). Set the lever of Multi-port valve on 'WASTE'. Switch on the pump till the water completely drains out.

Note : The pool should never be emptied out during monsoon season.

FILTER OPERATION:

It is simple operation and works on a basic principle:

PUMP COUPLED WITH MOTOR WILL DRAW THE WATER FROM THE POOL, PASS IT THROUGH THE FILTER AND RETURN THE FILTERED WATER TO THE POOL.

The total system comprises of floor drains, hair and lint strainers, pump, multi-port valve, high rate sand filter and wall inlets.

MULTI-PORT VALVE (MPV):

Your filtration system is equipped with non-corrosive ABS Multi-port valve with the following functions listed clockwise.

- Filter
- Waste
- Closed
- Backwash
- Re-circulate
- Rinse

Explained below is the function of each setting in relation to the filtration system operation:

FILTER : With the MPV (Multi-port Valve) in this setting, water which is sucked by the pump is pumped via the MPV through the filter and returns the filtered water to the pool via the MPV again. Most pools have to be in this mode of operation.

WASTE : When the water from the pool is to be emptied by putting in the suction sweeper into the pool, it is possible to pump out all the water from the pool on to an external waste channel.

CLOSED : In this position, the MPV closes all inlets and outlets to and from the valve.

BACKWASH : Generally when the pressure gauge on the filter shows double the normal operating pressure, its time that the filter media be cleaned of all its muck. In this setting there is a reverse flow of water which relieves the filter media from it's accumulated dirt and throws it out through the waste-line. Periodic backwash should be done, based on pressure rise as explained earlier. Unnecessary backwash is not recommended as this decreases the efficiency of the filter media. Backwash is continued until bottle (view glass) indicates flow of clean water.

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Backwash is a must and if not done will reduce the efficiency of the filter and will permit the entire dirt accumulated to become hard and spoil the filtering media.

RINSE : Is a process where all the sand disturbed during the process of backwash is settled and internal of the filter is cleaned.

RECIRCULATE: In this case, the pump water will bypass the filter but circulation will be done to and from the Pool.

RUNNING THE FILTER :

1. Check that the lever of MPV is set on 'Filter' position.
2. Check that all the valves (drain, overflow and inlet) are open.
3. Switch on the pump.
4. Release entrapped air, if any, through the release valve on the filter.
5. The normal pressure gauge reading will be 0.8 to 1.0 kg. per.sq.cm.
6. Run the pump for about four hours.
7. Stop the pump for about an hour or so.
8. Again run the system for about four hours, so that the complete quantity of water gets Filtered.
9. When the pressure in the filter increases above 1.8 kg per.sq.cm. 'Back-wash' of filter media will have to be done for about 2 minutes.
10. To backwash the filter, stop the pump and change the lever of MPV to backwash position and run the pump for 2 minutes.
11. Stop the pump and change the lever to MPV 'rinse' position and run the pump for 1/2 minute only.
12. Stop the pump, bring the lever of MPV to 'filter' position and run the filtration as explained earlier.
13. Repeat the filtration procedure every day, preferably for 4 (four) hours in morning and 4 (four) hours in evening.
14. Always stop the Pump while changing the setting of MPV

POOL VACUUMING (SUCTION SWEEPING).

The heavier impurities will generally settle down on the pool floor and these will have to be removed with the help of suction sweeper. The sequence of operation is as follows:

1. Fix the suction hose to the top of the suction head.
2. Keep the suction head on the floor for the pool.
3. Fill the suction hose with water, insert hose into vacuum points.
4. Other vacuum points are to be closed using the plugs.
5. Adjust the drain valve to half closed position to get better suction in the sweeper.
6. The MPV is set of " Filter" position.
7. Start sweeping the floor in a regular pattern as directed.
8. In case the pressure in filter increases above 2 kg/sq.cm., back wash the filter only for 2 or 2.5 minutes.
9. After backwash rinse the filter for half minute.
10. After sweeping the entire floor backwash the filter for 2 or 2.5 minutes, and then rinse for half a minute.
11. Remove the suction sweeper from the floor, open up the drain valve. Set MPV to 'Filter' position, open the valve of drain and start the pump for regular filtration.
12. Always stop the pump while changing the setting of MPV.
13. After this add chemicals to the pool as per requirement.

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