PERFORM-MAX[™] POOL SANITIZER

Models 920, 940 & 980 (In-line) Model 960 (Off-line)



In Ground Model 940



Above Model 920

Instruction Manual

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For information on all King Technology products, visit our website at www.kingtechnology.com

Introduction

Thank you for choosing the Perform-Max Pool Sanitizer for your pool. Perform-Max precisely meters chlorine or bromine at a consistent rate so you are ensured of a properly sanitized pool with less work and more time to enjoy.







¥ For Above Ground Pools

Benefits

- ¥ Sanitizes with Chlorine or Bromine.
- ¥ Large capacity with a wide mouth for easier refilling.
- ¥ Bi-flow design means unit can be installed in either direction.
- ¥ Wide range of control dial settings to meet the precise needs of each pool.
- ¥ Erosion design offers better efficiency so chemicals last longer.
- ¥ Pressure relief valve offers safety feature against built-up pressure.

Pool Balancing

Water Balance Guidelines

Free Chlorine: 1 — 3 ppm Free Bromine: 2 — 5 ppm pH: 7.2 - 7.8

Total Alkalinity: 60 — 120 ppm Calcium Hardness: 150 — 300

Total Dissolved Solids: <2000

Stabilizer: 20 — 50 ppm

1. Before using your Perform-Max Sanitizer, you must first balance your pool water. Take a water sample to your local pool professional or use a complete test kit that will test for the following important elements.



- 2. If your fill water is high in metals, check with your pool professional on how to maintain proper levels. It may require shocking the pool and cleaning the filter.
- 3. After your pool is up and running smoothly, continue to test your water for pH, total alkalinity and chlorine and maintain its balance by adding any necessary adjustment products (see your dealer for details).



4. To achieve an initial free chlorine reading at the beginning of the season, add a chlorine shock. Follow manufacturer's directions carefully.



5. Do not add shock in or near the skimmer or into the Perform-Max as it could damage equipment, risk potential explosion or discolor your pool surface.



6. Finally, at the beginning of the season, add a stabilizer or conditioner to the pool to prevent chlorine burn off. Follow manufacturer's directions carefully.

Perform-Max™ Installation

The Perform-Max comes in several different models. Please review this list, determine which model you have and follow the appropriate installation instructions for that model only.

IN GROUND POOLS



Model #940

In-line for in ground pools. Sanitizes up to 50,000 gallons using chlorine and up to 25,000 gallons using bromine. See page 8. DO NOT INSTALL OFF-LINE



Models #980

In-line for in ground pools using 1 1/2" plumbing. See page 11. DO NOT INSTALL OFF-LINE.



Model #960

Off-line for in ground pools. Sanitizes up to 40,000 gallons using chlorine and up to 20,000 gallons using bromine. See pages 9 & 10. DO NOT INSTALL IN-LINE.

Installation Tips

¥ Do not plumb into copper pipe as corrosion will occur.

¥ By installing a flow indicating device on the inlet line, you can monitor the gallons per minute.

¥ Follow manufacturers directions for installation of the flow indicating device.

ABOVE GROUND POOLS



Model #920

In-line for above ground pools. Sanitizes up to 20,000 gallons using chlorine and up to 15,000 gallons using bromine. See pages 6 and 7. DO NOT INSTALL OFF-LINE.

Before installing the Perform-Max, make sure that:



¥ You have all the supplies.

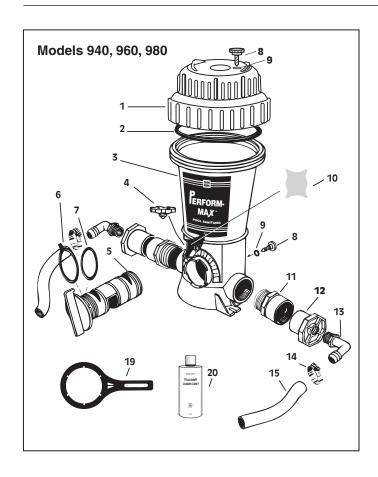


¥ The pump is turned off.



¥ The plumbing lines are dry.

Parts List

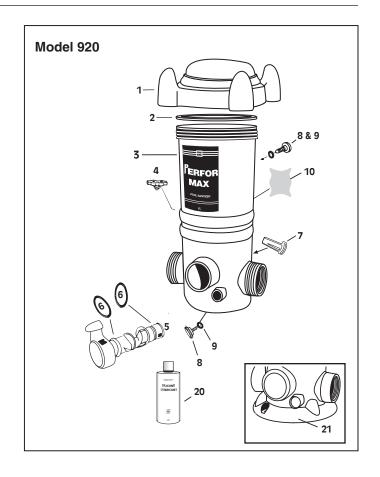


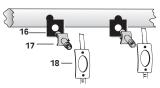
DIAGRAM/PARTS LIST ¥ In Ground Models 940, 960, 980

REF.#	PART #	DESCRIPTION	QTY. REQ.		
1 & 2	01-22-9411	Cap w/O-Ring	1		
2	01-22-9920	Cap O-Ring	1		
3	N/A	Body	1		
4	01-22-9480	Pressure Relief Valve	1		
5, 6, 7	01-22-9440	Control Dial			
		with Assembly Kit	1		
6 & 7	01-22-9450	Control Dial O-Ring h	Kit 1		
8 & 9	01-22-9940	Knob with O-Ring	2		
10	01-22-9660	Screen	1		
19	01-22-8870	Cap/Control Dial Tool	' 1		
20	01-22-9970	Silicone Lubricant	1		
For Model 980					
	01-22-9820	Reducer Bushing/980) 2		

DIAGRAM/PARTS LIST ¥ Above Ground Model 920

REF.#	PART #	DESCRIPTION	QTY. REQ.
1 & 2	01-22-1411	Cap w/O-Ring	1
2	01-22-1920	Cap O-Ring	1
3	N/A	Body	1
4	01-22-9480	Pressure Relief Valve	1
5, 6, 7	01-22-1440	Control Dial	
		with Assembly Kit	1
6	01-22-1450	Control Dial O-Ring Se	et 1
7	01-22-1460	Control Dial Locking P	in 1
8 & 9	01-22-9940	Knob with O-Ring	2
10	01-22-9660	Screen	1
20	01-22-9970	Silicone Lubricant	1
21	??-??-????	Base	1





OFF-LINE PARTS included with Model 960

OFF-LINE PARTS Included with series 960

REF. # 11 12 13	PART # 01-22-9490 01-22-8620 01-22-7800	DESCRIPTION 2" Male Adaptor 2" X 1/2" Bushing 90 Degree Elbow	QTY. REQ. 2 2 2
14	01-22-7690	Small Clamp	4
15	01-22-7700	6' PVC Tubing	2
16	01-22-7850	Scoop Gasket	2
17	01-22-7790	Venturi Scoop	2
18	01-22-7910	Scoop Clamp	2

TOOLS NEEDED





Pipe Wrench

MATERIALS NEEDED

Teflon Tape



Two Hose Adapters 1 1/2" X 1 1/2" X 1 1/4"



Two Sections of of 1 1/2" Flex Hose (one provided with filter)



Two Hose Clamps



RECOMMENDED

Corrosion Resistant Check Valve

#10 X 1 1/4" Phillips Pan Head Screws with Washers

OPTION

Half Union



or



1 1/2" Male Adapter (slip x MPT)

When installing with hard PVC pipe, use either a half union on the outside port threads or a bushing on the inside port threads.

Above Ground, Base Installation — Model 920



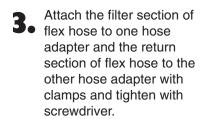
The Perform-Max should always be installed between the filter and pool (or between heater and pool if applicable).

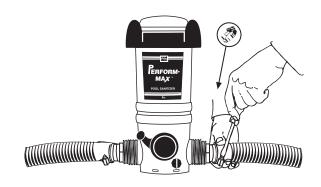


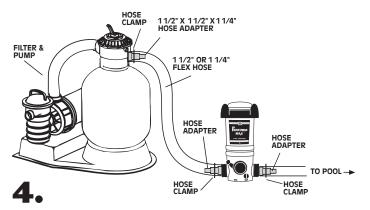
Apply teflon tape to the threaded end of both hose adapters.



2. Screw adapters into each end of Perform-Max. Tighten turning 1 to 2 revolutions with wrench. DO NOT OVER TIGHTEN.







Installing a corrosion resistant check valve is recommended for the protection of pool equipment especially a heater, from chemical corrosion.



If you prefer to mount this unit there is an additional base part available PN#???. Mount using Phillips pan had screws.

TOOLS NEEDED

Screwdriver



Pipe Wrench



MATERIALS NEEDED

Teflon Tape



One 6" X 1 1/2" TBE PVC Nipple



One Hose Adapter 1 1/2" X 1 1/2" X 1 1/4"



One Section of 1 1/2" Flex Hose (provided with filter)



One Hose Clamp



RECOMMENDED

Corrosion Resistant Check Valve

Above Ground, Filter Installation - Model 920



Apply teflon tape to each threaded end of nipple.



Screw one end of nipple into the filter return.





nipple end until upright and secure.



Apply teflon tape to threaded end of hose adapter.

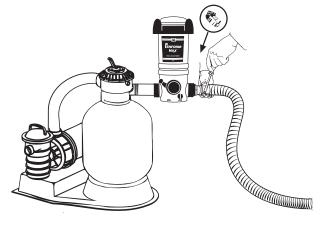
Screw adapter into open end of Perform-Max. Tighten turning

1 to 2 revolutions with wrench. DO NOT **OVER TIGHTEN.**

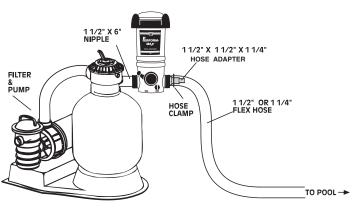




direction.



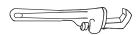
Attach return section of hose to the adapter with clamp. Tighten clamp with screwdriver.



Installing a corrosion resistant check valve is recommended.

TOOLS NEEDED

Pipe Wrench



Hacksaw



MATERIALS NEEDED

Pipe Thread Sealant



PVC Cement



Two 2" Threaded X 2" or 1 1/2" Slip PVC Bushings (not included)

RECOMMENDED

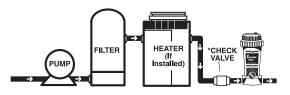
Corrosion Resistant Check Valve

#10 X 1 1/4" Phillips Pan Head Screws with Washers



Use Phillips pan head screws through the mounting holes at the Perform-Max base to secure the Perform-Max into a treated wood base.

In Ground, In-line Installation — Model 940



Install after all equipment and as far as possible from heater.



Do NOT install in copper pipe as chemical corrosion occurs.



Do NOT install an in-line Perform-Max off-line as this Perform-Max is different than an off-line unit.



Can be installed with the water flow in either direction due to its bi-flow control dial.



Leave 12" to 15" above and around Perform-Max to allow room for easy refilling.



Following pipe thread sealant directions, brush sealant onto Perform-Max threads in both ports.



Brush sealant on the threads of both bushings.

DO NOT USE TEFLON TAPE as the threads on these units are not suitable for this use and leaking or bushing failure could result.



Screw a bushing into each port of Perform-Max and hand tighten.

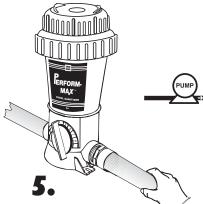
Completely tighten turning 1 to 2 revolutions with wrench.

DO NOT

OVER TIGHTEN.



Following PVC cement directions, brush PVC cement on to ends of pipe and the inside of bushings.



Insert PVC pipe into bushings. Hold in place 5 to 10 seconds to bond.

Isolating the Perform-Max by installing a corrosion resistant check valve or creating a plumbing loop is recommended to protect the equipment and prevent possible discoloration of pool surface.

Off-line Installation — Model 960

TOOLS NEEDED

Pipe Wrench



Screwdriver



Battery Operated Drill with 5/8" or 19/32" Bit.

MATERIALS NEEDED

Pipe Thread Sealant



PVC Cement



OFF-LINE KIT

¥ Included with 960

Two Male Adapters



Two Reducer **Bushings**



Two 90 Degree Elbows



Four Hose Clamps



6' of Tubing



Two Scoops



Two Scoop Gaskets



Two Scoop Clamps

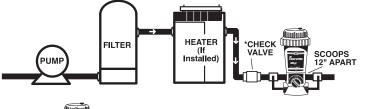


RECOMMENDED

Corrosion Resistant Check Valve

#10 X 1 1/4" Phillips Pan Head Screws with Washers





Install off-line when insufficient room for an inline application. Install as far from heater as possible.



Do NOT install an off-line Perform-Max in-line as this Perform-Max is different than an in-line unit.





Can be installed with the water flow in either direction due to its bi-flow control dial.



Following pipe thread sealant directions, brush sealant onto Perform-Max threads in both ports.



Brush sealant on threads of both male adapters.

DO NOT USE TEFLON TAPE as the threads on these units are not suitable for this use and leaking or bushing failure could result.



adapter into each port of Perform-Max and hand tighten.

Completely tighter turning 1 to 2 revolutions with a wrench. DO NOT



Following PVC cement directions, brush PVC cement on reducer bushings and inside of male adapters.



Insert reducer bushing into male adapter on both sides. sealant directions, brush Hold in place 5 to 10 seconds sealant onto elbow threads. to bond.



Following pipe thread







Cut tubing to size for each Perform-Max connection and attach one to each elbow with clamps.

9.



10.

When pipe is totally dry, drill two 19/32" or 5/8" holes 12" apart on the return line. Be careful not to go through other side of pipe.

Tighten clamps with a screwdriver.

Screw elbow into reducer bushings on both sides.





Attach a gasket to each scoop.

12.

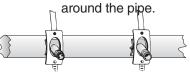
Place scoops inside holes so the inlet scoop faces the water flow and the outlet scoop faces away from the water flow.



Arrows on scoops must face each other.



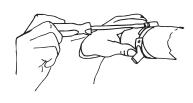
Attach scoop clamps over the scoops and around the pipe



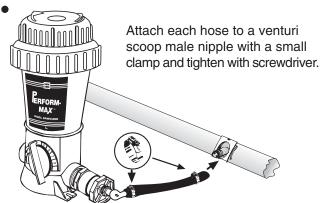


14.

Tighten scoop clamps with a screwdriver.



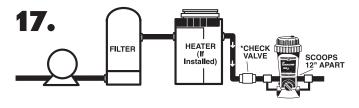
15.



16.



For best results use Phillips pan head screws through the mounting holes at the Perform-Max base to secure the Perform-Max into a treated wood base.



Isolating the Perform-Max by installing a corrosion resistant check valve is recommended to protect the equipment and prevent discoloration of pool surface.

For Proper Performance

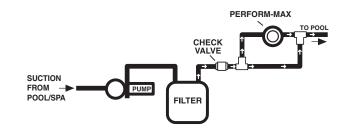
1) Make sure back pressure Is between 3 and 8 psi.

Higher back pressures result in over chlorination. Lower back pressures result in under chlorination. Adjust eye ball fittings in the return jets to a larger size to decrease back pressure or smaller size to increase back pressure.

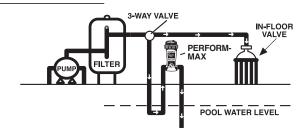
- 2) Recommended flow rates for in ground unit is 20-80 gpm and for above ground unit is 20-60 gpm.
- 3) Determine possible high-flow situations that require a special installation such as:
- A. Water flow is higher than 80 gpm.
- B. In-floor cleaner is included with pool.
- C. Pool and spa combination with common equipment.

NOTE: Over chlorination or damage to the Perform-Max or other equipment could result if these special installations are not used in these situations.

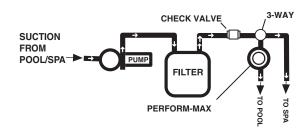
A. With High GPMS Install T- fittings as shown only.



B. With In-floor Cleaners



C. Pool and Spillover Spa Combination



In-line Installations for 1 1/2" Plumbing



Model 980

Perform-Max 980

¥ If installing a Model 980 Perform-Max, follow steps 1 through 3 on page 8 using the reducer bushing included with the Model 980.

Repeat steps 1 through 3 using a 1 1/2" threaded by 1 1/2" slip bushing (you provide).

Then follow the remaining inline directions on page 8.



¥ Two 2" Threaded by 1 1/2" Threaded Bushings (included)



¥ Two 1 1/2" Threaded by 1 1/2" Slip Bushing (you provide)

Refilling Chemicals

CAUTION Read Carefully

USE ONLY ...

Slow dissolving trichloro-striazinetrione (trichlor) tablets or pucks or bromine tablets or sticks in the Perform-Max.

NEVER MIX CHEMICALS

DO NOT USE ...

CALCIUM HYPOCHLORITE, FAST DISSOLVING TRICHLOR OR ANY GRANULAR OR LIQUID MATERIAL IN THE PERFORM-MAX.

USE OF THESE PRODUCTS COULD RESULT IN FIRE OR EXPLOSION



Turn pump off.

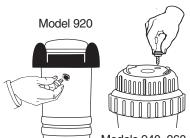


Models 940, 960, 980



Model 920

Turn dial to Minimum on In Ground Models 940, 960 and 980 or number 0 on Above Ground Model 920. This reduces the flow of water into the unit when the cap is open so isolation valves are unnecessary.



Unscrew knob in back of Model 920 or on cap of Models 940, 960 and 980 to relieve pressure.

Models 940, 960, 980



Models 940, 960, 980



Use the cap tool included with the Models 940, 960, 980 to loosen cap by hitting the handle with the flat of your hand counter clockwise.

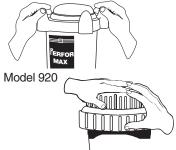
Remove cap from Model 920 with your hands.

Stand back upon removing cap to avoid inhaling fumes.



Fill unit to top with either recommended chlorine or bromine.

DO NOT MIX BROMINE AND CHLORINE. Do not put small particles in feeder. Always wear protection for eyes, skin and clothing. Avoid sparks, open flame or smoking when handling chemicals.



Replace cap by hand only. DO NOT OVER TIGHTEN.



Models 940, 960, 980

DO NOT USE CAP TOOL to tighten cap. For removal only.



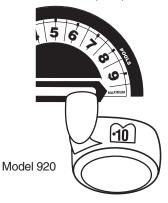


Replace knobs.

Models 940, 960, 980

Changing Chemicals

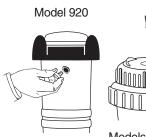
Models 940, 960, 980



1. Operate Perform-Max until empty of all chemical. When empty, set control dial to Maximum or 10 and let run empty 24 hrs.



2. Turn pump off.





3. Unscrew knob in back of Model 920 or cap of Models 940, 960 and 980 to relieve pressure.

Models 940, 960, 980



4. Remove cap. Follow safety precautions outlined in #5 of Refilling Chemicals — page 12.



Models 940, 960, 980



5. Make sure all small particles have dissolved and been flushed out of feeder. Fill unit with new chemical.



6. Replace cap by hand only. DO NOT OVER **TIGHTEN**



DO NOT USE CAP TOOL to tighten cap. For removal





7. Replace knobs.

Models 940, 960, 980

8. For proper initial setting continue to next section: Setting Control Dial.

Setting Control Dial

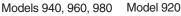
When using slow dissolving trichlor, the Perform-Max should be operated based on its normal erosion design where only the bottom layer of tablets are wetted. This provides better controllability and longer lasting sanitation per refill. When using bromine, the Perform-Max should be operated as a soaking feeder as this chemical works best when all tablets are wetted. Therefore bleeding the air by unscrewing the cap knob is recommended.



1. For all pools using chlorine.....



begin at setting #2.





For all pools using bromine



begin at setting #4.

2. Bleed air from unit by unscrewing back knob on Model 920 or cap knob on Models 940, 960, 980 until water appears. Replace knob.



3. For the first week or so, test the water daily for free chlorine or bromine.

4. After day one, adjust the dial up by one increment if

the reading has dropped or

down by one increment if the

reading has risen. Continue

this process each day until the reading stabilizes at your

desired level between 1 and 3 ppm. Remember to adjust

dial by one increment only.

settings could result in over

chlorination and/or bleached

Higher than suggested

pool surfaces.



Models 940, 960, 980 Model 920



5. For Models 940, 960 and 980 use the handle end of cap tool if the dial is hard to turn.

TROUBLESHOOTING: Begin with Option 1 for each situation and continue with other options as necessary. Contact your dealer or King Technology s Customer Service Dept. at 800-222-0169, if the steps below do not solve the situation.

If under chlorinating:



OPTION 1

Increase the number of hours your pump runs per day.

OPTION 2



If reading dropped below 1 ppm, shock pool. Turn control dial to minimum or 0 when shocking and NEVER ADD SHOCK IN OR NEAR THE SKIMMER. Reset dial one setting higher than before and continue monitoring daily until desired chemical level is acheived.

OPTION 3



Switch from 3 inch pucks to 1 inch tablets.

OPTION 4

Try bleeding the air, soaking tablets for greater output.

If over chlorinating:



OPTION 1

Decrease the number of hours your pump runs per day. Water must circulate fully once a day.

Minim



Models 940, 960, 980



OPTION 2

Turn dial to minimum or 0. When reading drops to desired ppm, reset dial one setting lower than the starting dial setting and continue monitoring daily.

OPTION 3

Switch from 1 inch tablets to 3 inch pucks.



Cycler Maintenance

Replacing the Control Dial O-Rings for Above Ground Model 920



1. In the back of the Cycler depress center of locking pin with a finger and pull pin out of dial.



2. Turn control dial back and forth as you pull it out of the housing.



3. Replace both o-rings. Apply silicone lubricant that came with your Cycler on o-rings.



4. Carefully insert control dial back into housing.



5. Replace locking pin by pushing it through the slots on the dial until it locks into place.

Replacing the Control Dial O-Ring Kit for In Ground Models 940, 960 and 980



1. Using a needle nose pliers, find the snap ring tail located at approximately the five o'clock position under the control dial.



2. Pull down and out of the groove.



3. Using a large screwdriver, loosen the control dial. Carefully pry the dial until it pulls out.



4. Carefully replace the rubber oring without stretching it. Apply silicone lubricant that came with your Cycler on o-ring.



5. Push control dial completely into the housing and turn the dial to setting 2.

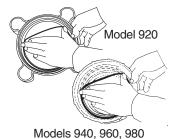


6. Insert the non-lipped end of snap ring into the groove opening beginning at the 5 o'clock position and push it up so that it threads itself around the control dial.

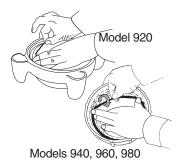


7. Using a small screwdriver or pointed tool to help guide it, make sure the snap ring stays in the groove as it is inserted.

Replacing Cap O-rings



1. Hold cap in front of you upside down with the o-ring groove facing up. Place one end of o-ring into cap groove at the point closest to you. Hold o-ring down with the thumb and forefinger of one hand.



2. Take hold of the far end of the o-ring with the thumb and index finger of the other hand. Roll o-ring slightly back towards you as you stretch the o-ring into the remainder of the cap groove.



3. Lubricate o-ring often with silicone lubricant that came with your Cycler. DO NOT USE petroleum based lubricants.

Replacing Knobs

¥ To replace, simply unscrew old knob and replace with the new one.



¥ Front of Above Ground Model 920



¥ Back of Above Ground Model 920



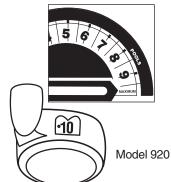
¥ Back of In Ground Models 940, 960 & 980



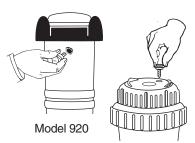
¥ Cap of In Ground Models 940, 960 & 980

Winterizing

Models 940, 960, 980



1. Operate Perform-Max until empty of all chemical. When empty, set control dial to Maximum or 10 and let run empty for 24 hours.



2. Turn pump off. Unscrew knob in back of Model 920 or cap on Models 940, 960 & 980 to relieve pressure.

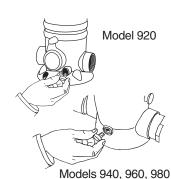
Models 940, 960, 980



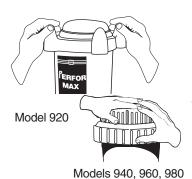
3. Remove cap.



Models 940, 960, 980



4. Unscrew knob in front on Model 920 or in back on Models 940, 960, and 980. Allow all water to drain.



5. Replace the cap and knobs loosely.

16

Limited One-Year Warranty

King Technology, Inc. will warrant this unit with a complete replacement for the original purchaser, should it prove defective by reason of improper workmanship and/or material, for a period of one (1) year from the date of original purchase. King Technology holds the option of replacing any defective part without charge if it is determined to be all that is needed to correct any situation that may arise. Parts used for replacement are warranted for the remainder of the original warranty.

- 1. To obtain warranty service, you must deliver product to King Technology or its nearest authorized dealer. Shipping expenses are the purchaser's responsibility. The name of the nearest authorized dealer can be obtained by writing or calling King Technology at the address and telephone number provided below. Proof of purchase is required when requesting warranty service. Purchaser must present the sales receipt or other document which establishes proof of purchase. To validate your warranty, complete the warranty card that came with your unit and return it to King Technology within 30 days of purchase and installation.
- 2. This warranty does not cover defects caused by: Modification, alteration, repair or service of the product contrary to the accompanying instructions; physical abuse to or misuse of the product or operation or installation in a manner contrary to the accompanying instructions. This warranty also excludes all costs arising from the warranty and any and all claims arising out of the chemicals used in the product or their characteristics.
- 3. CAUTION Read carefully Do not add shock in or near skimmer.
- A. This unit is not designed for shock treatment of spas or pools. See your spa or pool dealer or distributor for further information concerning shock treatments.

- B. Control dial settings in excess of the recommended setting levels for trichlor or bromine can result in excess sanitizers being discharged into your spa or pool. This can result in bleaching or discoloration of areas around the spa or pool inlet or, in some cases, bleaching or discoloration of the entire spa or pool liner or paint.
- C. Excess trichlor or bromine in the spa or pool can create health hazards to bathers. Consult each chemical manufacturer's warnings and cautions for specifics.
- 4. Any express warranty not provided for herein, and any remedy for breach of warranty or breach of contract which, but for this provision, might arise by implication or operation of law, is hereby expressly excluded and disclaimed. Any express warranty not provided herein, and any remedy for breach of contract but which for this provision might arise by implication or operation of law, is hereby excluded and disclaimed. The implied warranties of merchantability and of fitness for any particular purpose are expressly limited to a term of one year. Some states do not allow limitation on how long an implied warranty lasts, so the above limitation may not apply to you.
- 5. Under no circumstance shall King Technology be liable to purchaser or any other person for any damage or loss incurred because of any chemicals used in the product or their physical characteristics, or interruption of service of the product, or any special, incidental or consequential damages or losses, whether arising out of breach of warranty, breach of contract or otherwise. Some states do not allow the exclusion or limitation of incidental consequential damages, so the above limitation or exclusion may not apply to you.

Made in U.S.A.

U.S. Patent Number 4,662,387 and other U.S. and Foreign Patents Pending



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