95.12.19

KREEPY KLEAR(TM)

Automatic Pool-Chlorinating System

DOMESTIC

Controls bacteria and algae in swimmng pool waters. Maximum output 2 kg c
available chlorine or 19 L of sodium hypochlorite (10.8%) per week. READ
THE LABEL AND OWNER’S MANUAL BEFORE USING.

REGISTRATION NO. 24184 P.C.P. ACT

Model KKL-1:
230 VAC, .7 Amp, 60 Hz; Output 20 VDC 5 Amps
Output Class 2; CSA enclosure Type 3R
This unit must be installed according to the installation instructions provided with the unit.
Warning: Risk of electrical shock. De-energize branch circuit before servicing. Motor disconnect does not disconnect this product.

Kreepy Klear
13801 N.W. 4th Street, Sunrise, Florida, USA 33325

EPA EST. #65582-FL-001

OWNER'S MANUAL

KREEPY KLEAR

Automatic Pool-Chlorinating System

Kreepy Klear 3-Year Limited Warranty

The purchaser (“Customer”) has purchased “Kreepy Klear" automatic pool chlorinator (“Unit”) for use in Customer's swimming pool. The Unit manufacturer Kreepy Klear, Sunrise, Florida USA (“Manufacturer”), hereby

provides a limited warranty to Customer as follows: THREE (3) YEARS FROM THE DATE OF PURCHASE ON DEFECTS IN MATERIALS AND WORKMANSHIP ON ALL PARTS ONLY SIX (6) MONTHS FROM THE DATE OF PURCHASE FOR LABOUR CHARGES ASSOCIAT WITH THE REPLACEMENT OF ANY DEFECTIVE PARTS. AFTER THE EXPIRATION OF THE 6-MONTH PERIOD, CUSTOMER SHALL BE RESPONSIBLE FOR ANY LABOUR CHARGES INCLUDING, BUT NOT LIMITED TO, CHARGES INCURRED FOR THE INSTALLATION OF REPLACEMENT PARTS OR ANY ADDITIONAL FEES WHICH MAY BE IMPOSED BY WARRANTY CENTRE OR SERVICING AGENT.

IN ADDITION, MANUFACTURER'S LIMITED WARRANTY IS FURTHER SUBJECT TO THE FOLLOWING CONDITIONS AND EXCLUSIONS:

CONDITIONS & EXCLUSIONS

1. This limited warranty is for the replacement of defective parts. Manufacturer reserves the right to replace defective parts with new refurbished parts at its sole discretion. All warranty replacement parts are under warranty from the date of purchase of the original unit, and not from the date of replacement.

2. This limited warranty is applicable only if the Unit is installed by Kreepy Klear dealer or its designee, by a licensed electrician or by Customer in accordance with the installation procedures outlined in the accompanying Installation Manual.

3. Pool water must be tested regularly in order to properly maintain it chemical balance. Overchlorination is known to cause corrosion in pool metals. Failure of Customer to properly monitor the pool water balance can create a situation which could negatively affect the performance of the Unit and thus void the limited warranty. Failure comply with the guidelines set forth in the Owner's Manual will void the warranty. Customer releases and holds Manufacturer harmless fro any and all claims stemming from their failure to comply with there set guidelines.

4. Deterioration, discolouration or brittleness of pool plaster and vin liners can be caused by age, improper pool chemistry, improper installation, or other factors. Customer hereby disclaims any and al claims, and releases Manufacturer from any and all claims for damage to any pool plaster or vinyl liner in Customer's pool by reason of t use and/or operation of the Cleaner. Customer represents and agrees that any claims which it may assert against Manufacturer shall be limited to those which may be asserted under the foregoing limited warranty.

5. Under no circumstances shall Manufacturer be liable for any loss or damage, whether direct, consequential or incidental, arising out of the use or inability to use the Unit in Customer's pool.

6. This limited warranty does not apply to any injury, loss, damage, defect, or malfunction of the Unit or failure to function resulting from any failure to operate or maintain the Unit in accordance with the directions contained in the Owner's Manual or operating instructions provided by the Manufacturer, or any injury, loss, damage, defect, or malfunction, or failure to function resulting fro any accident, acts of God, alterations in the Unit by anyone other than Manufacturer, or misuse, unreasonable use, tampering, abuse, acts, omissions, failure or negligence by anyone other than Manufacturer including but not limited to such damages or injuries t parts resulting from improper installation, or damage, defect or malfunction resulting from defects in, failure or malfunction of, or negligence, abuse, or misuse with respect to equipment other than th Unit; or any damage or loss of any nature whatsoever and personal injury caused due to the presence of a foreign object in or about th pool.

7. This limited warranty is valid and enforceable only on Units assembled, manufactured and purchased in the United States of Americ

8. This limited warranty is applicable only if the Unit is purchased fr a Kreepy Klear dealer. If Customer is uncertain as to whether the seller of the Unit is a Kreepy Klear dealer, Customer should call (305) 846-8300 immediately after purchase for verification.

9. This limited warranty shall apply only to Customer as an original purchaser of the Unit from a Kreepy Klear dealer and shall not apply to any subsequent purchaser, assignee or other recipient of the Cleaner from Customer.

10. No dealer, distributor or other similar person has any authority to make any warranties or representations concerning Manufacturer's products, its Unit or to extend this warranty beyond the express ter contained herein. Manufacturer assumes no responsibility for any warranties beyond the express terms contained in this Limited Warranty. This limited warranty and Customer releases and holds Manufacturer harmless from any claim stemming from any unauthorized representations.

11. This limited warranty shall be void if Customer modifies the Unit in any respect including but not limited to the use of parts other than genuine Kreepy Klear parts.

12. This limited warranty does not apply unless the Registration Card is signed, completed and returned within fourteen (14) days from the da of purchase. Manufacturer reserves the right to dispose of Registration Card once it is received.

13. The foregoing limited warranty gives Customer specific legal rights which may vary from state to state, and accordingly, some of the listed conditions and exclusions may not apply to Customers living i certain states.

14. These warranties set forth herein are in lieu of any other warrantie expressed or implied, including the warranties of merchantability or fitness. Any such implied warranty imposed by state consumer law is limited in duration to one (1) year from date of purchase.

15. Customer represents and agrees that nay claims which it may assert against Manufacturer shall be limited to those which may be asserted under the foregoing limited warranty.

16. Any dispute between Customer and Manufacturer will be settled by binding arbitration, conducted in Broward County, Florida, under the rules of the American Arbitration Association, and an award of attorney's fees and costs will go to the prevailing party.

Congratulations!

You've purchased the "best pool-chlorinating system in the world." Your Kreepy Klear will make all the chlorine your pool needs and eliminate the hassle of having to buy, handle and store ordinary pool chlorine.

While Kreepy Klear automatically chlorinates your pool, you'll continue t test and balance the pool water the same way as before. Occasionally, yo may adjust Kreepy Klear for changes in chlorine demand. Even though thes responsibilities are minimal, they are essential to keeping your pool properly sanitized and ready to enjoy, anytime.

Watching the video included with your Kreepy Klear is probably the best w to familiarize yourself with Kreepy Klear's operation. This owner's manu can also help. For instance, there's a "Quick Reference Guide" on page 5 which you should complete and save as a reminder for any seasonal adjustments that are needed.

Important Notice To Kreepy Klear Owners

Chlorination is a safe and effective way to disinfect and sanitize your pool, when used according to manufacturer's directions. The chlorine tha your new Kreepy Klear makes in your pool uses the same active ingredient found in liquid, tabular or granular chlorine. As such, it is most effective when used as part of a regular water maintenance program that monitors overall water chemistry on an on-going basis.

Toll-free Customer Helpline

If you have questions about your Kreepy Klear, check with your Kreepy Kle dealer or review the instructions in this Owner's Guide. (NOTE: This Owner's Guide is not intended for use as an installation manual.) If you still have a question, call our Customer Helpline at 1-800-443-5711. (Pre one (1) at the prompt for customer assistance.) Expert help is available you 24 hours a day, 7 days a week.

Kreepy Klear Components

The cell is located at the return line to the pool. This is where the chlorine generating process takes place, as the cell converts salt (which is dissolved in the pool water) into sodium and chlorine. The controller is usually mounted on the wall near the pool's filtration equipment. It governs how much chlorine is made by the cell. Setting th dial on the controller to a higher number produces more chlorine, while a lower number setting produces less chlorine.

Three indicator lights keep you informed about the system's operation:

1. Power On. Kreepy Klear is receiving electrical power.

2. Cell On. Kreepy Klear is making chlorine. It is normal for this lig to switch on and off during Kreepy Klear's chlorine-generating cycle

3. Service. Kreepy Klear may require service. Turn the dial to "OFF" and then all the way to "MAX." If the service light goes off and stays off, return the dial to its proper setting. If the service light comes back on, turn the dial to "OFF" and call the Kreepy Klea Customer Helpline at 1-800-443-5711.

Kreepy Klear Operation

The controller activates the cell to make chlorine in your pool according to the dial setting on the chlorine adjustment control. A higher dial setting causes the cell to operate longer, producing more chlorine. Kreepy Klear operates independently of your pool pump and is controlled b the dial setting. Operating when the pump is on helps to prevent scale within the cell. Your Kreepy Klear has a special "pump sense" feature th enables the controller to know when the pump is on. Make sure your pump operates at least once every day.

Pool Water Testing

When your Kreepy Klear is first installed, you should test pool water daily. A water sample bottle for this purpose is provided with your Kree Klear. Ideally, you should have your Kreepy Klear dealer check all nine the pool water values and water balance listed below. Note: Kreepy Klear

requites 2500 ppm of salt to operate properly. When these values stabili within normal ranges, testing every two weeks should be adequate. Any ti you notice some other problem such as pool water appearing cloudy, algae, or other problem, have all these pool water values tested immediately.

Here are chlorine adjustment dial settings that can be used as a guide fo establishing the dial settings that are right for your pool.

Test The Pool Water For:	Plaster Pools Chemical Ranges	Vinyl Fiber-glass	Comments
Total Chlorine	0.0-0.5 1.0-2.0-3.04.0-5.0-6.0	Same	Formula: TAC=Total Available Chlorine FAC=Free Available Chlorine (TAC)-(FAC)= Combined Chlorine
Combined Chlorine	- Zero -	Same	
Free Chlorine	0.0-0.5 1.0-2.0-3.04.0-5.0-6.0	Same	
pH	2.0-3.0-4.0-5.0-6.0-7.0-7.4-7.6-7.8-8.0	Same	
Total Alkalinity	50-60-70-80-90-100-110-120-130-140	Per Manu-facture	100 Is Ideal
Calcium Hardness	100-200-300-400-500-600-700-800	Per Manu-facture	250-275 Is Ideal In Plaster Pools
Cyanuric Acid (Stabilier)	10-20-30-40-50-60-70-80-90-100	Same	
Metals	- Zero -	Same	
Salt	1000-1500-2000-2500-3000-3500-4000	Same	2500 Is Ideal

IMPORTANT: It is the pool owner's responsibility to follow the guidelines in this manual in order for Kreepy Klear to operate properly and maintain an effective level of chlorine production.

When Kreepy Klear is used to chlorinate a swimming pool:

- DO

1. Test pool water values regularly

2. Keep water balanced

3. Change dial setting for varying chlorine demand, so that water is nc over or under chlorinated. We recommend 1 - 3 ppm of free available chlorine.

NOTE: high chlorine levels are known to cause corrosion to pool metals.

4. Maintain salt level at 2500 ppm. Salt is only lost through backwashing, dilution, splash-out, etc. and should be adjusted 1 - 2 times per year under normal conditions.

5. Maintain stabilizer at 50 to 80 ppm. It is required to maintain chlorine levels.

NOTE: Salt and stabilizer are lost at about the same rate and they are bc equally important.

- DO NOT

1. Use monopersulfate shock treatments

2. Use copper-based algaecide

3. Add sulfuric acid

4. Add calcium carbonate directly into skimmer basket while unit is operating.

Chlorine Adjustment Dial Settings

When your Kreepy Klear was installed, your Kreepy Klear dealer may have provided recommended dial settings based on the size of your pool, averag seasonal temperatures and other factors. A plastic card with these recommended settings should be attached to your controller.

Pool Size In Litres	Spring 13°C to 26°C	Summer 26°C-30°C	+30°C	Fall 13°C to 26°C	Winter 4°C to 13°C
40,000	0.7 to 1.0	0.7 to 1.0	5.0-6.0	0.7 to 1.0	0.5 to 0.7
60,000	1.0 to 1.5	1.0 to 1.5	6.0-7.0	1.0 to 1.5	0.7 to 1.0
80,000	1.5 to 2.0	1.5 to 2.0	7.0-8.0	1.5 to 2.0	1.0 to 1.5

100,000	2.0 to 2.5	2.0 to 2.5	8.0-9.0	2.0 to 2.5	1.5 to 2.0
120,000	2.5 to 3.0	2.5 to 3.0	9.0-9.0	2.5 to 3.0	2.0 to 2.5
140,000	3.0 to 3.5	3.0 to 3.5	10.0-10.0	3.0 to 3.5	2.5 to 3.0
160,000	3.5 to 4.0	3.5 to 4.0	10.0-10.0	3.5 to 4.0	3.0 to 4.0

Remember these are only a guide - other factors can influence chlorine demand to a considerable degree. For instance, indoor pools and screened-in pools are shielded from the sun, so they will use less chlorine. (The dial can be set to a lower number.)

Changes In Chlorine Demand

Your pool needs more chlorine (set the dial to a higher number) when thes situations occur:

- Sunny days
- Warmer water
- More swimmers
- Leaves, grass in pool
- Increase in water level from rain
- Appearance of algae
- Low stabilizer

Don't forget to turn the dial down when these situations change. Especially in cooler water temperatures, during the Fall and Winter, chlorine demand decreases dramatically.

NOTE: To prevent damage, do not operate Kreepy Klear when the pool water temperature is at or below 4EC. Air temperature does not affect Kreepy Klear's operation.

Quick Reference Guide

Keep this information handy by recording it here.

- Kreepy Klear Serial Number
- Date Purchased/Installed
- Kreepy Klear Dealer
- Address
- Telephone
- Volume Of Pool In Litres

Seasonal Chlorine Adjustment Dial Settings

- Spring - when pool water temperature is 13E - 26EC
- Summer - when pool water temperatures are 26E - 30EC
- Summer - when pool water temperatures are +30EC
- Fall - when pool water temperature is 13E - 26EC

- Winter - when pool water temperatures are 4E - 13EC

Maintenance

Your Kreepy Klear has no user-serviceable components. If there ever appears to be a malfunction, do not attempt repairs yourself. Call your Kreepy Klear dealer.

There is also very little maintenance to be performed. However we do recommend that you:

- Keep the cell in a vertical position. It should be straight up and down, allowing bubbles to escape freely. See illustration.

- Some pool water may cause the build up of a harmless, white, flaky substance (calcium carbonate) on the bar of the cell. Wipe or brush this area regularly, with the brush provided, to prevent build up. D not insert anythinginto the cell. See illustration.

Trouble shooting

Salt Needed

Maintain salt level at 2500 parts per million. Salt is only lost through backwashing, dilution, splash-out, etc. and should be adjusted 1 - 2 time per year under normal conditions. After the chlorine acts on organic (dirt & debris) material, it converts back into salt which can be reused again and again. Use a granulated, evaporated sodium chloride (table salt, non iodized, NaCl) never use salt with anti-caking additives. Water conditioning pellets (no additives) can be used but take longer to dissolve.

To find the amount of salt needed if under 2500 ppm, use this calculation

- One kilogram of salt will raise the salt level 1,000 parts-per-million per 1,000 litres.

- If you start with 1,000 ppm of salt in a 60,000 litre pool, you woul need to increase it another 1,500 ppm to reach your desired goal of 2,500 ppm. You would accomplish this by adding 90 kg of salt. 1500 ppm needed, divided by 1,000 ppm per 1,000 litres which equals 1.5. Then take your answer of 1.5 and multiply it by the first two digits of the pool volume, which in this case is 60. 1.5 multiplied by 60 equals 90.

Pump Sense

The start of the "Cell On" cycle occurs when the pool pump is energized. A sensor is attached to the pump motor and plugged into the controller. It "senses" the start of the pool pump by detecting a magnetic field and starts the chlorination cycle. Determine if the pump sense microphone is working properly by:

1. Turn the chlorine adjustment dial to “Off” then to position number "5".

2. Turn the pool motor “Off”, then "On" the "Cell On" light should illuminate, this indicates that there is sufficient "field" to activate the pump sense feature.

If the "Cell On" light flashes, this indicates that the "field" is weakly present. Move the sensor until the "Cell On" light stops flashing.

Chlorine Production

The Kreepy Klear System can produce chlorine 24 hours a day if necessary, without the pool pump running, (if set to “MAX”.). This is a significant advantage over other electrolytic chlorination systems which only run with the pool pump.

If "Service" Light Flashes After 22 Second Delay

1. Salt content is too low in pool. Maintain salt level at 2500 parts per million.

2. Cell has excessive scale, bridging of the electrodes with scale will cause the chlorine production to drop dramatically and will severely shorten the lifetime of the electrodes. This condition is usually due to low water pressure at the cell, you must have a minimum of 21 kpa.

Winterizing Kreepy Klear

If you live in an area where swimming pools are routinely "winterized" to prevent damage from freezing temperatures, then your Kreepy Klear should be winterized. The cell must be removed from the pool wall and the return line plugged to prevent damage to the cell from frozen water. Contact your Kreepy Klear dealer for a winterizing kit.

Customer Service

This Owner's Guide and the video included with your Kreepy Klear cover a wide range of information to help you get the best performance possible from your new Kreepy Klear. If you still need help, call your Kreepy Klear dealer or call our toll-free Customer Helpline at 1-800-4-HELP-11

(1-800-443-5711) and press #1 at the prompt for customer assistance. Thi special toll-free number is available to you 7 days a week, 24 hours a day. Please have your Kreepy Klear serial number ready when you call.

Disclaimer - About your pool and Kreepy Klear.

Pool water must be tested weekly in order to properly maintain its chemical balance. Overchlorination is known to cause corrosion in pool metals. Failure of Customer to properly monitor the pool water's balance can create a situation which could negatively affect the performance of the Unit and thus void the limited warranty. Failure to comply with the guidelines set forth in the Owner's Manual will void the warranty. Customer releases and holds Manufacturer harmless from any and all claims stemming from their failure to comply with there set guidelines. Deterioration, discolouration or brittleness of pool plaster and vinyl liners can be caused by age, improper pool chemistry, improper installation, or other factors. Customer hereby disclaims any and all claims, and releases Manufacturer from any and all claims for damages to any pool plaster or vinyl liner in Customer's pool by reason of the use and/or operation of the Cleaner.

KREEPY KLEAR

INSTALLATION AND START-UP INSTRUCTIONS

FOR MODEL KKL-1

115\230 VAC 60Hz

IMPORTANT SAFETY INSTRUCTIONS

1. READ AND FOLLOW ALL INSTRUCTIONS

2. Warning: to reduce the risk of injury, do not permit children t use this product unless they are closely supervised at all times.

3. Warning: risk of electric shock. Connect only to a grounding type receptacle protected by a ground fault circuit interrupter, (GFCI). Contact a qualified electrician if you cannot verify that the receptacle is protected by a GFCI.

4. Warning: to reduce the risk of electric shock, do not use an extension cord to connect unit to electric supply; provide a properly located outlet.

5. Warning: to reduce the risk of electric shock, the cell wire must be installed in a pvc pipe discharge line only.

6. Warning: Do not bury cord. Locate cord to minimize abuse from lawn mowers, hedge trimmers, and other equipment.

7. SAVE THESE INSTRUCTIONS!

FCC USER INSTRUCTIONS

This devise complies with part 15 of the FCC rules. Operation is subject to the following two conditions.

1. This devise may not cause harmful interference, and

2. This devise must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a class "B " digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmfu interference in a residential
installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, if this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment of and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from tha to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Table of Contents

1.0 HOW KREEPY KLEAR WORKS

The Kreepy Klear Chlorination System produces an almost pure, ph stable, hypochlorous acid. This weak acid is the active ingredient in all types c chlorine products and is made from a dilute solution of salt (2,500 ppm) in the pool water. After the chlorine acts on organic (dirt & debris) material, it converts back into salt which can be reused again and again.

The Kreepy Klear System consists of three components: the Controller, the Cell and the Cell Wire.

1.1 THE CONTROLLER

The controller is considered Class II and never delivers more than 100 VA and delivers a maximum of 20 volts DC @ 5 amps with less than .1% ripple in accordance with NEC article 725; table
725-31 (b), (see also note 5). Under short circuit conditions, the controller never delivers more than five amps. The enclosure is a NEMA 3 style and access is not allowed to the secondary side of the supply. The temperature rise is 4.4E C (Celsius) {40EF} over ambient. Open circuit i less than 20 volts per NEC article 725, which allows 30 VDC. Ripple frequency is higher than 200 Hz, NEC 725, (160 kHz). The controller is solid state and is designed to last many years. Its modular constructior

allows easy access and serviceability if necessary.

1.2 CHLORINE ADJUSTMENT

The controller operates on a twenty-four hour cycle. The "Chlorine Adjust Dial", controls the length of time that the system operates during this twenty-four hour cycle. If the "Chlorine Adjust Dial" is set at "5" it will operate for 50% of the 24 hour cycle (12 hours). The "Chlorine Adjus Dial" is adjusted based on the bather load and the chlorine reading as determined by a test kit.

1.3 THE CELL

The cell contains five electrodes made of titanium and covered with a proprietary coating of precious metals that are catalytically active. The cell is mounted within the pool on the end of an existing directional return line fitting. Our special mounting system allows for an especially easy installation. The connection to the controller is through a low voltage waterproof cable threaded through the return line from the cell t the controller. The cell can be easily inspected without disassembly and its operation is evident by the stream of bubbles flowing out of the cell opening. The cell restricts the flow through the circulation system no more than a conventional "eyeball" fitting.

l.4 CELL CLEANING

The controller provides low voltage direct current to the cell and reverses its polarity every 4.2 hours of cell operation to clean any scal buildup on the cathode (negative) side of the electrodes. Hydrochloric acid is formed on the surface of the anode (positive) side of the electrode, which was the cathode (negative) side before polarity reversal This formation of hydrochloric acid dissolves the scale at the surface of the anode and loosens the scale into sheets. A "hydraulic assist" is provided by the water flowing through the cell mounting nipple whenever the pool filtration system is operational. Specially designed orifices in the mounting nipple create turbulent flow to help dislodge pieces of scal on the electrodes and physically expel them from the cell. The scale is removed by the filter, softening the pool water. Reductions of hardness from 900 ppm to 550 ppm have been reported. This softening does not take place below 300 ppm of total hardness, so the chances of the hardness dropping to a point where the hardness must be manually increased is minimal.

Since polarity reversal adversely affects electrode life, this process is minimized. Consequently, the controller will reverse polarity only after 4.2 hours of actual cell operation, even if this takes several days.

Other systems of this type reverse polarity shortly after coming on and are not capable of counting time longer than one cycle.

1.5 "CELL ON"PUMP SENSE CYCLE INITIATION

The start of the "Cell On" cycle occurs when the pool pump is energized. A sensor is attached to the pump motor and plugged into the controller. It "senses" the start of the pool pump by detecting a magnetic field and starts the chlorination cycle. If for some reason, the sensor does not receive a signal from the pump after twenty-four hours, it will automatically start its cycle again. So if the pump fails, the pool will still be chlorinated. If a "weak field" is present, the controller's "Cell On" light will flash instead of remaining on continuously. The advantage of synchronizing the cell and pump operations together is that the polarity reversal is more likely to occur during the pump run cycle. This results in a more efficient cleaning of scale from the cell electrodes.

1.6 THE CELL WIRE

The cell wire is a single conductor XLPE insulated wire rated at 75E C we and 600V water resistant and is completely concealed within the cell. It is run through the existing pool return line from the controller, locate by the pool equipment, to the cell.

1.7 24 HOUR OPERATION

The Kreepy Klear System can produce chlorine 24 hours a day if necessary (if set to "MAX".). This is a significant advantage over other electrolytic chlorination systems which only run with the pool pump. As result, this system can produce up to 2 kg {4.5 lbs.} of elemental chlorine per week, this is equivalent to approximately 20 L of liquid bleach, sodium hypochlorite (12% Trade; 10.8% by weight).

2.0 MODEL DESCRIPTION

2.1 85-200 - BOX CONTENTS (27 METRE WIRE) {90 Ft}

. Controller With Three Foot Power Cord With Plug
. Cell With 27 Metres {90 Ft} 18 Gauge XLPE Insulated Wire
. Backplate Shroud
. Mounting And Installation Hardware
. Water Test Bottle
. Cell Brush
. Strain Relief Sticker, Owner's Manual & Warranty Card

2.2 85-201 - BOX CONTENTS (41 METRE WIRE) {135 FT}

. Controller With Three Foot Power Cord With Plug
. Cell With 41 Metres {135 Ft} 16 Gauge XLPE Insulated Wire
. Backplate Shroud
. Mounting And Installation Hardware
. Water Test Bottle
. Cell Brush
. Strain Relief Sticker, Owner's Manual & Warranty Card

2.3 ELECTRICAL SPECIFICATIONS

Input: 115 VAC, 60 Hz, 1.3 Amps Output: 20 VDC @ 5 Amps Maximum

2.4 STEPS TO A PROPER INSTALLATION

1. Check To Ensure That The Pool Equipment Is In Good Working Condition And That Sufficient Flow Is Present At The Return Lines.
2. Install The Cell Wire.
3. Balance And Sanitize The Pool Water.
4. Install The Cell.
5. Adjust The Salt Content In The Pool Water To 2500 PPM.
6. Install The Controller And Connect The Electrical Power Service.
7. Instruct The Customer On The Proper Operation Of Kreepy Klear.

3.0 MATERIALS AND TOOLS REQUIRED

3.1 SUPPLIED BY INSTALLER

. Salt (See "Pool Water Preparation" For Required Amount)
. Kreepy Klear Installation Tool Kit. (Part #89-001)
. Voltmeter (Digital Is Recommended)
. Pool Water Test Kit (Suggest Taylor K-2005), Salt Test Strips (Provided In Install Kit)
. Drill (Battery Operated Is Recommended)
. Bonding Wire (#8 Awg)
. Plastic Cable Ties (28 cm {11 in} Minimum Length Is Recommended)
. Isopropyl Alcohol(Rubbing Alcohol)

3.2 FURNISHED WITH UNIT

1. Controller
2. Cell Cap
3. Complete Cell
4. 27 Metres {90 Ft} (18 Awg) Or 41 Metres {135 Ft} (16 Awg) Of Cell Wire (Confirm Wire Size Prior To Installing)
5. Backplate Shroud
6. Cell Retaining Nipple
7. Eyeball Retaining Ring
8. Eyeball W/Offset Hole

9. Strain Relief Fitting And Grommet For Either 16 Awg Or 18 Awg Cell Wire
10. Water Test Bottle
11. Cell Cleaning Brush
12. Pump Sensor And Cable
13. Cell Wire Output Plugs (2)
14. Not Shown - Strain Relief Sticker And Warranty Card
15. Not Shown - Owners And Installation Manuals

Illustration 1

4.0 PRE-INSTALLATION CHECKLIST

Note: After you select a return line, we require that you pressure test the pool return line of choice for adequate flow before proceeding (refer to page # 8, "pressure test").

4.1 RETURN LINE CHOICE

Choose a return line with the shortest distance to the equipment as possible that meets the following criteria:

1. Is not located above a step or swim-out.
2. Is not located in a tight radius such as a wall to wall radii(cell will not fit flush to the wall).
3. Is not less than 20 cm {8 in} but not more than 61 cm {24 in} from the pool surface. This will place the top of the cell no less than 1 cm {4 in} from the water surface.
4. The eyeball retaining ring has not been plastered over and rendered non-removable. If removal is attempted, extreme care should be used so as not to damage or crack the pool plaster.
5. Is not located in a spa.

4.2 VALVES IN THE DECK

Ensure that the cell wire enters the return line below the valve or that the valve diverter has been removed prior to fitting the wire.

4.3 REMOTE THREE-WAY VALVES NOT LOCATED AT THE POOL EQUIPMENT

Cell wire installations must be downstream of all pool equipment and the last return line valve. If you have access to the plumbing around these valves and also have electrical service with a common pool bonding grid, then install here. Refer to remote installation.

4.4 REMOTE INSTALLATION

If the equipment is farther than a 38 metres {125 ft} run, the dedicated/return line that the cell wire is pulled through should be "tee'd" underground and stubbed up at this distance. The electrical service should be run to this location (see illus. # 2).

Illustration 2

4.5 THREADED WALL FITTINGS 3.8 cm {1 ½ in} FEMALE THREADED ADAPTER

If yes, install here using the eyeball and retaining ring supplied. Certain eyeball fixtures with a four bolt retainer may require the use of the flush cut mounting kit (see illus. # 3).

Illustration # 3

4.6 FLUSH CUT PIPE RETURN

If the selected return line does not have an aimflow fitting but instead terminates in a cutoff pipe, a flush cut adapter must be installed. Flus cut pipes with severe entry angles may not permit the cell installation. In this case, another return line or a dedicated line will be necessary (see illus. #4).

1. Straight Entry - Install the wall mounting plate (see illus. #4).
2. Angled Entry - Before installing the wall mounting plate, thread the cell nipple into the plate and position it over the return line opening. Make sure the nipple has enough clearance into the pipe opening to permit the installation. Use the flush mount plate as a template (provided in the service tool kit) to correctly position th holes in the plaster for mounting. Use a cordless drill with the drill extension and masonry bit provided to drill two 0.6 cm {1/4 in holes for the mounting anchors in the plaster (see illus. # 4).

Note: This accessory does not come with the standard unit but can be ordered separately, it is included in the service tool kit.

Illustration # 4

4.7 POOLS WITH OVER 150,000 LITRES

Either add a second unit or supplement with additional sanitiser.

4.8 POOLS WITH LESS THAN 40,000 LITRES

Pools of this small size often have a chlorine demand lower than pools of a larger size. This is especially true during cooler weather. For this

reason, position "OFF" up to "1" on the chlorine adjustment dial has an extended adjustment range to allow the break down of position # 1 into fractions of itself. This adjustment permits chlorine production for as little as 5 min. per day.

4.9 INDOOR POOLS

Adjust the same as "Pools With Less Than 40,000 Litres".

4.10 POOL SWEEP LINE

An unused pool sweep line is an ideal place to install the cell. The sweep line should be connected to water flow downstream of all pool equipment. Install a three pound spring check valve after the sweep line "tee" in the return line, as a pressure regulator. This installation will ensure that the cell always receives enough water flow to de-scale, even with a dirty filter (see illus. # 5).

Illustration 5

4.11 IS EQUIPMENT FARTHER THAN 24 METRES {80 FT} FROM POOL

If yes, you will need a cell with a 41 metre {135 ft} wire, Kreepy Klear model # 85-101.

4.12 IS THE POOL CONSTRUCTION STAINLESS STEEL

If yes, do not install. Kreepy Klear can be used in plaster, vinyl, tile fibreglass and painted pools.

4.13 IN-FLOOR CLEANING SYSTEMS

Ensure that the cell wire is installed in a dedicated line. Ensure that adequate pressure (21 - 35 kpa) {3 - 5 psi} is achieved at the return lin opening. Install a three pound spring check valve after the dedicated line "tee" in the return line to the zone valve, as a pressure regulator. This installation will ensure that the cell always receives enough water flow to de-scale, even with a dirty filter (see illus. # 5).

4.14 NEW POOL CONSTRUCTION

A 5 cm {2 in} PVC return line should be run along the shortest, most direct approach to the pool equipment. It is acceptable to either use a return line or a dedicated line. "Tee" the dedicated line into the closest return line. Use only 45 degree fittings (see illus. # 5). Do not use 90 degree fittings (unless they are sweeps), PVC flex, or install

the cell wire under a raised bond beam. Make sure that the cell location meets all of the return line criteria as listed on the "Pre-Installation Check List". Terminate this line with an 2.8 cm {1 l/2 in} "FIP" (female threaded adapter) wall fitting. Locate this fitting not less than 20 cm {8 in} but not more than 61 cm {24 in} from the pool water surface.

4.15 SPA RETURN

If yes, do not install.

4.16

4.17 POLY PIPE

If yes, do not install.

4.18 EXISTING AIM FLOW INSTALLATION

Remove the aimflow eyeball retaining ring and eyeball. Next, insert the Kreepy Klear Cell Eyeball into the aimflow socket and reinstall the retaining ring. Proceed with a standard installation.

Note: If the plastic shroud does not draw down tight against the pool wall, remove the existing aimflow fixture and install the Kreepy Klear eyeball into the "FIP" (female threaded adapter) located in the pool wall. Reinstall the cell and plastic shroud.

4.19 AIM FLOW LIST

Listed are all known manufactured airflow fixtures 3.8 cm {1 ½ in} that accommodate the cell eyeball without modification.

. Hayward 3.8 cm {1 ½ in}, model # SP-1419
. Hayward 3.8 cm {1 ½ in}, model # SP-1421
. American Products 3.8 cm {1 ½ in}, Insider

5.0 STANDARD INSTALLATION

Before installing the cell wire, make sure the return line of choice meet all of the criteria as listed in "Pre-Installation Check List", Return Line Choice. We strongly recommend that the pressure test is completed before pulling the wire. If less than 21 kpa {3 psi}, do not install.

5.1 REMOVE THE EXISTING AIMFLOW FITTING.

Remove the aimflow eyeball, retaining ring, and "MIP" fitting. Check the condition of the threads in the "FIP" (female threaded adapter) and clean if necessary using a 3.8 cm {1 ½ in} pipe tap (non-tapered). If a "FTA" was used in the wall, use an 3.8 cm {1 l/2 in} NPT tap (tapered).

5.2 PRESSURE TEST (IF LESS THAN 21 KPA {3 PSI} DO NOT INSTALL)

Before pulling the wire, temporarily install the cell eyeball. Hand threa the cell nipple into the eyeball in the return line then thread the pressure test tool (cap w/psi gauge mounted) onto the end of the nipple. Turn on the pump and adjust the other pool return valves, aimflow sizes and/or plug return(s) so that at least 21-35 kpa {3-5 psi} of water pressure is indicated at the cell nipple. After adjustments are made, turn off the pump and continue with the installation (see illus. # 6).

Illustration 6

Note: If the water pressure is excessive (over 35 kpa) {5 psi} or if ther is only one return line in the pool, a hole size of 0.6 cm {¼ in} may be drilled in the cell cap to reduce the pressure.

5.3 PREPARE TARGET RETURN LINE FOR STRING INSTALLATION

Restrict or plug all return lines except for the one targeted for the cel installation. This procedure ensures that the string exits at the return line of choice. If you are using the eyeball retaining ring, thread it into the return until it fully seats in the wall fitting FIP (female threaded adapter). This will ensure the retaining ring is installed onto the cell wire in the proper direction.

5.4 DRILL AND TAP

Locate a section of pvc pipe downstream of all pool equipment and after the last valve in the pool return line. The preferred location is in the top of an elbow so that the wire entering the pipe is vertical, if vertical is not possible, a side pipe entry is satisfactory. Drill a 1.1 cm {7/16 in} hole into the wall of the pvc fitting, then use a 0.6 cm {1/ in} NPT pipe tap to thread the hole. This hole will be used first, to pull the wire through, then to mount the strain relief fitting for the cell wire.

6.0 USE OF THE STRING TOOL

6.1 INSTALLING THE STRING

The string will be used to pull the cell wire. Never try to force the wire through the pipe. Insert the foam leader and approximately 16 cm {6 in} of string into the threaded hole, then thread the tool assembly into the hole. Turn on the pump and crack the union on the end of the tool slightly to allow water to fill the reel housing. The reel should begin to turn as the string is carried through the pipe by water flow. If the reel stops, tap it lightly to start it moving again. Turn off the pump

when the line enters the pool. If you encounter difficulty refer to page # 19, "STRING TOOL".

7.0 INSTALLING THE CELL WIRE

7.1 INSTALLING THE THREADED RETAINING RING & PLASTIC SHROUD

Unwind the cell wire and stretch it out around the pool on the deck. The threaded retaining ring should be threaded into the return line. Slide the plastic shroud over the wire to within 1 metre {3 ft} of the cell. Leave the cell on the pool deck above the return line. See illus. # 7 fo the proper installation alignment of the threaded retaining ring and plastic shroud.

Illustration 7

7.2 REMOVE THE FOAM LEADER

Remove the foam leader from the end of the string and attach the string t the cell wire.

Note: Use care in attaching the string to the wire. Too much build-up of tape may cause the wire to lodge in a 90 degree fitting preventing the wire from being pulled. While too little tape or taping incorrectly may allow the wire to slip off the string (see illus. # 8).

Illustration # 8

7.3 PULLING THE CELL WIRE THROUGH THE PIPE

Remove the string tool from the return line and pull the wire through the pipe until all slack (except for the extra 1 metre) {3 ft} has been pulle through the pipe. Note: If the wire does not move freely, refer to page 19, "CELL WIRE WON'T PULL EASILY".

7.4 REWIND THE STRING TOOL

After the wire has been pulled through the return line, disassemble the union and remove the spool from its housing. Attach the drill chuck to th plastic shaft located on one end of the reel, with drill attached, turn the drill motor on to rewind the string. Use care in rewinding so the string lies evenly and snugly on the spool (see illus. # 9).

Illustration # 9

Note: To order spare spools with string, reference part # 86-140

7.5 THE STRAIN RELIEF FITTING

Slide the strain relief assembly down over the wire and install it into the 0.6 cm {½ in} threaded hole. Make sure to use at least 4 to 7 wraps of teflon tape around the strain relief's threads (see illus. #10).

Illustration 10

7.6 STRAIN RELIEF WARNING STICKER

Attach the sticker on the downstream side of the strain relief fitting.

8.0 POOL WATER PREPARATION

Prior to getting started, you must first determine how many total litres of water are in the pool. Calculate all waters that are circulated by the primary pump (example: attached spas, fountains, etc.). Use the chart provided for calculations (see illus. # 11).

Note: Water features isolated from the pool water or, attached spas in use, will require supplemental pool chemicals.

POOL/SPA CAPACITY

You should know the approximate number of litres of water your pool or sp holds. This is need when determining the proper chemical dosages. Here is how you can calculate the litres for pools or spas of various shapes.

RECTANGULAR: Length x Width x Average Depth x 7.5 = Litres of Water.

ROUND: Diameter x Diameter x Average Depth x 5.9 = Litres of Water.

OVAL: Maximum Length x Maximum Width x Average Depth x 5.7 = Litres of Water.

IRREGULAR: Obtain actual litres of water from your dealer or divide the overall shape into smaller forms and figure the capacity in each.

Illustration 11

8.1 BALANCE THE POOL WATER

Balance the pool water according to the Langelier index to control etchir or scaling water conditions. The pool water must be balanced and sanitized prior to starting the Kreepy Klear unit. Make sure the pool water meets the following requirements:

8.2 CHLORINE

Establish a free chlorine residual of 1.0 to 3.0 ppm.

Caution: Chlorine levels maintained above 3.0 ppm at a pH below 7.4 are known to cause corrosion of pool metals.

8.3 pH

Adjust between 7.4 and 7.6.
Caution: Do not use dry acid (sodium bi-sulfate) or liquid sulfuric acid as these will damage the cell plates and void the warranty.

8.4 TOTAL ALKALINITY

Adjust between 80 and 120 ppm.
Note: For vinyl and fibreglass pools: follow manufacturer's guidelines.
Caution: Do not use sodium bi-sulfate or liquid sulfuric acid. Do not ad sodium bi-carb directly to the skimmer.

8.5 CALCIUM HARDNESS

Adjust hardness levels where possible, between 200 and 400 ppm.

Note: For vinyl and fibreglass pools: follow manufacturer's guidelines.

Caution: Do not add calcium chloride directly to the skimmer. If hardnes is over 1200 ppm, do not install.

8.6 CYANURIC ACID. (STABILIZER)

Adjust between 50 and 80 ppm (see the chart below).

KILOGRAMS OF CYANURIC ACID NEEDED FOR 80 ppm

Cyanuric Acid Concen-tration Before Addition	Pool Volume in Litres (L)					
	5,000L	10,000L	25,000L	50,000L	100,000L	150,000L
0 ppm	0.40kg	0.80kg	2.00kg	4.00kg	8.00kg	12.00kg
10 ppm	0.35kg	0.70kg	1.75kg	3.50kg	7.00kg	10.50kg
20 ppm	0.30kg	0.60kg	1.50kg	3.00kg	6.00kg	9.00kg
30 ppm	0.25kg	0.50kg	1.25kg	2.50kg	5.00kg	7.50kg
40 ppm	0.20kg	0.40kg	1.00kg	2.00kg	4.00kg	6.00kg
50 ppm	0.15kg	0.30kg	0.75kg	1.50kg	3.00kg	4.50kg

60 ppm	0.10kg	0.20kg	0.50kg	1.00kg	2.00kg	3.00kg
70 ppm	0.05kg	0.10kg	0.25kg	0.50kg	1.00kg	1.50kg
80 ppm	0.00kg	0.00kg	0.00kg	0.00kg	0.00kg	0.00kg

8.7 METALS

Ensure that no metals are present in the pool or make-up water.

8.8 SALT

Test the water for salt content and adjust the level to 2500 ppm. Use a granulated, evaporated sodium chloride (table salt, non iodized, NaCI) never use salt with anti-caking additives. Water conditioning pellets (r additives) can be used but take longer to dissolve (see the chart on next page).

Note: We recommend that you adjust the salt level only after installing the cell wire.

8.9 HOW TO ADD SALT

1. Retrofit Pools: Pour the salt around the perimeter of the pool and brush around to ensure a quick and even distribution.

2. New Or Coloured Plaster: Only use a fine granulated salt, poured in through the skimmer very slowly. The pump should be allowed to run continuously for at least three hours afterward.

Note: Except where noted, the recommended ranges are per "NSPI Standards for Residential Pools", 1-1-89, appendix a, pg. 38.

KILOGRAMS OF SALT NEEDED FOR 2500 PPM

Sodium Chloride Concen-trations Before Addition	Pool Volume in Litres (L)					
	5,000L	10,000L	25,000L	50,000L	100,000L	150,000L
0 ppm	13.00 kg	25.00 Kg	63.00 Kg	125.00 Kg	250.00 Kg	375.00 Kg
250 ppm	11.50 kg	22.50 Kg	56.50 Kg	112.50 Kg	225.00 Kg	337.50 Kg
500 ppm	10.00 Kg	20.00 Kg	50.00 Kg	100.00 Kg	200.00 Kg	300.00 Kg
750 ppm	9.00 Kg	17.50 Kg	44.50 Kg	87.50 Kg	175.00 Kg	262.50 Kg
1,000 ppm	8.00 Kg	15.00 Kg	38.00 Kg	75.00 Kg	150.00 Kg	225.00 Kg
1,250 ppm	6.50 Kg	12.50 Kg	31.50 Kg	62.50 Kg	125.00 Kg	187.50 Kg
1,500 ppm	5.00 Kg	10.00 Kg	25.00 Kg	50.00 Kg	100.00 Kg	150.00 Kg
1,750 ppm	2.50 Kg	7.50 Kg	19.50 Kg	37.50 Kg	75.00 Kg	112.50 Kg
2,000 ppm	3.00 kg	5.00 Kg	13.00 Kg	25.00 Kg	50.00 Kg	75.00 Kg
2,250 ppm	1.50 Kg	2.50 Kg	6.50 Kg	12.50 Kg	25.00 Kg	37.50 Kg
2,500 ppm	0.00 Kg	0.00 Kg	0.00 Kg	0.00 Kg	0.00 Kg	0.00 Kg

8.10 BROMINE

For Kreepy Klear to operate properly, using bromine, the pool water must contain the recommended level of salt (sodium chloride) as specified above. When sodium bromide is used, it is in addition to the recommended levels of salt (sodium chloride). Dosage for a 50 ppm bromide bank rate is 500 grams of sodium bromide per 10,000 litres of pool water.

If you are unable to test for sodium bromide, we recommend that you add five-hundred (500) grams of sodium bromide every time you add twenty-thre

(23) kilograms of salt (sodium chloride).

8.11 KILOGRAMS OF SODIUM BROMIDE NEEDED FOR 50 PPM

Sodium Bromide Concen-trations Before Addition	Pool Volume in Litres (L)					
	5,000L	10,000L	25,000L	50,000L	100,000L	150,000L
0 ppm	0.25 kg	0.50 kg	2.50 kg	5.00 kg	10.00 kg	15.00 kg
25 ppm	0.125 kg	0.25 Kg	1.25 Kg	2.50 Kg	5.00 Kg	7.50 Kg
50 ppm	0.00 Kg	0.00 Kg	0.00 Kg	0.00 Kg	0.00 Kg	0.00 Kg

9.0 CELL INSTALLATION

9.1 INSTALL SPACER RING IF NECESSARY

Using the cell eyeball, check the depth of the FIP (female threaded adapter) to determine if the spacer ring is needed behind the cell eyeball. The spacer ring places the cell eyeball close to the return lir opening to ensure a proper installation (see illus. # 12). The spacer ring has a slot to accommodate the cell wire. Insert the wire through th slot of the spacer and slide the spacer over the wire until it seats in the bottom of the wall fitting FIP (female threaded adapter) in the retur line (see illus. # 12).

Illustration 12

9.2 INSTALL CELL EYEBALL

The eyeball has a slotted hole to accommodate the cell wire. Insert the wire through the slot down into the wire hole of the eyeball (the 41 m {135 ft} 16 AWG wire is a snug fit passing through the slot). The threaded retaining ring (no slot provided) should currently be positioned in the wall fitting FIP (female threaded adapter) in the return line. Un-thread the retaining ring from the return line and slide it back over the wire. Slide the eyeball over the wire until it fully seats in the wall fitting FIP (female threaded adapter) of the return line (see illus. # 12). Slide the retaining ring over the wire and over the edge of the eyeball. Hand tighten the retainer into the wall fitting, use the Kreepy Klear retainer wrench to tighten securely (see illus. # 12).

9.3 INSTALL CELL NIPPLE

The cell nipple has three consecutive sets of threads which have a space between each set. If the nipple is too long, cut it at any one of the spaces provided. Thread the nipple into the eyeball making sure to leave 2.5 cm {1 in} distance between the pool wall and the flange on the nipple This space is required for the plastic shroud (see illus. # 12).

9.4 PREPARE CELL AND PLASTIC SHROUD FOR INSTALLATION

While lowering the cell into the water, wrap the excess cell wire (1 metre) {3 ft} around the four cell legs located on the back plate. Position the plastic shroud over the cell wire and onto the four cell legs. For proper alignment, there are four locator holes in the plastic shroud. There is a marked "TOP" to the shroud, make sure the sides of th cell and shroud match evenly.

9.5 INSTALL THE CELL

1. Position the cell and plastic shroud for mounting onto the nipple located in the return line.
2. Insert the short end of the nipple through the cell body, taking car to align the holes in the back plate, 5 cell plates and cell cover a it is inserted.
3. Hand thread the cell cap onto the nipple end protruding through the cell cover.
4. Using the Hayward tool, carefully tighten the cell cap until the plastic shroud is firmly seated against the pool wall see illus. # 12).

Note: If the water pressure is excessive (over 35 kpa) {5 psi} or if ther is only one return line in the pool, a hole size of
0.6 cm {1/4 in.} may be drilled in the cell cap face to reduce the pressure.

10.0 115 VAC CONTROLLER INSTALLATION

Warning: Where laws apply, all electrical work, including connection of the controller and GFCI, should be performed by a licensed electrician ar must comply with all applicable local building code requirements.

Note: This unit must be installed in accordance with the Installation Instructions, the National Electrical Codes and the requirements of the authority having jurisdiction. If installed in Canada, must be installed to CEC part (1) requirements.

Warning: Risk of electrical shock. Connect only to a Ground Fault Circuit Interrupter (GFCI). Caution: To reduce the risk of electrical shock,

install the controller at least 3 metres
{10 ft} from the inside walls of a pool. Do not use an extension cord.

10.1 MOUNTING THE CONTROLLER

Mount the controller as close to the pool motor as possible. The controller should be on a wall that offers protection from direct sunlight, rain, splashing or flooding. Mount it at eye level in an accessible location.

Note: Block and stucco style homes require a suitable anchor for the mounting screw. We recommend that a weather resistant mounting screw be used to prevent rusting.

10.2 AC POWER INSTALLATION

Local codes should be checked prior to installation. The controller shoul be plugged into a 115 VAC outdoor receptacle protected by a Ground Fault Circuit Interrupter (GFCI).

Illustration 13

11.0 230 VAC CONTROLLER INSTALLATION

Warning: Where laws apply, all electrical work, including connection of the controller and GFCI, should be performed by a licensed electrician ar must comply with all applicable local building code requirements. If installed in Canada, must be installed to CEC part (1) requirements.

11.1 MOUNTING THE CONTROLLER

Mount the controller as close to the pool motor as possible. The controller should be on a wall that offers protection from direct sunlight, rain, splashing or flooding. Mount it at eye level in an accessible location.

Note: Block and stucco style homes require a suitable anchor for the mounting screw. We recommend that a weather resistant mounting screw be used to prevent rusting.

Illustration # 14

11.2 AC POWER INSTALLATION

If code allows, we recommend that a non-metallic liquid tight conduit be used terminating on both ends with liquid tight connections. A liquid tight connector is provided and is mounted to the AC junction box on the

controller chassis. Remove the AC junction box from the controller by removing the 2 screws. A ½" U.L. listed non-metallic conduit must be used to cover the AC power wires from the point where the wires exit the time clock up to the controller. The controller AC power should be wired to the line side of the time clock or pump using a minimum of 18 AWG for the power conductors and 12 AWG for the ground conductor. Attach the ground wire to the grounding lug on the controller chassis in the upper left hand corner (painted green). Do not interconnect the AC with the load side of time clock or pump. We recommend that a GFCI breaker be installed on this circuit. Mount the junction box to the controller chassis using the 2 original screws provided (see illus. # 14).

Illustration # 15

ll.3 GROUNDING EARTH

We require the use of a number 8 bonding wire to ground the controller to the common bonding grid used for the pool equipment.

ll.4 CELL WIRE

The wire exiting from the pool return line should be secured with a cable tie every I metre {3 ft}.

Note: The cell wires should be cut and stripped back a maximum of 1 cm {3/8 in.}. Leave 8-10 cm {3-4 in.} of insulated wire to facilitate the connecting of the cell plugs. We require that no non-insulated wire come in contact with any metal of the enclosure.

Illustration # 16

11.5 INSTALL THE CELL PLUGS

The banana plugs provided should be installed on each of the cell wires. Slide the plug over the 1 cm {3/8 in.} of stripped wire and secure it with the set screw on the side of the plug (see illus. #16).

Note: After installing the banana plugs, use a small amount of silicone to seal the connection from humidity.

Illustration # 17

11.6 PUMP SENSE WIRE INSTALLATION

Connect the plug for the pump sense into the controller (see illus. # 14\17). Route the cable along a convenient path to the pool motor and secure with cable ties. Turn the pool motor on. With the AC power on and cell and pump sense wires connected to the controller, turn the chlorine

adjustment dial to "OFF" then to position number "5". Hold the sensor in your hand at a distance of 1.3 cm {½ in.} or so and slowly move it around the pool motor until the “Cell On" light illuminates, this indicates that there is sufficient "field" to activate the pump sense feature. If the "Cell On" light flashes, this indicates that the "field" is weakly present. Move the sensor until the "Cell On" light stops flashing.

Use isopropyl alcohol, (rubbing alcohol) to clean the surface where the sensor is to be mounted on the pool motor. Attach the sensor to the motor housing at the desired location by removing the paper film from the adhesive tape on the bottom side of the sensor.

Note: The adhesive on the sensor will not initially adhere below 0' C {32 F}. If temperatures are below 0'C {32'F}, you should let the motor run for a few minutes until it warms up before applying the sensor to the motor.

12.0 START UP

With the pump turned off, turn the chlorine adjustment dial to the maximum setting and check the controller lights. The "Cell On" light should illuminate, bubbles should also be present at the cell. Note: If the salt has not dissolved completely, the "Service" light may begin to flash after 22 seconds.

12.1 KREEPY KLEAR CONTROLLER LIGHTS

1. Top "Power" light indicates system has power when lit.
2. Middle "Cell On" light indicates the cell is producing chlorine when lit. If this light flashes, this indicates that the pump sense "field" is weak. The pump sensor should be relocated.
3. Bottom "Service" light indicates a fault condition. The controller continually monitors the performance of the complete system.

12.2 CHLORINE CONTROL DIAL

. "OFF" = No chlorine being produced

. "1 - 10" = Chlorine produced for a selected amount of time (ex.: position 1 = 10% of 24 hrs or 2.4 hrs per day of cell on time).

. "MAX." = Continuous chlorine production 24 hrs per day.

12.3 PUMP SENSE

Note: If the controller senses the pump start at any time, it will begin a new cycle again, even if it occurs during the same 24 hour period. It is essential that the pump be run every day to prevent the cell from scaling

Only run the pump for one cycle per each 24 hours. If the pump is run fo more than one cycle in a 24 hour period, the controller will operate on more than one cycle per day and the chlorine adjust dial must be adjusted accordingly (a lower setting to compensate).

12.4 COLD WEATHER OPERATION

For maximum cell life, run the unit no more than necessary to maintain a proper chlorine residual during winter months while also maintaining the proper level of stabilizer. Excessive operation in water temperatures below 4EC {40E F} will affect cell life adversely.

Note: Air temperature has no relevance to the Kreepy Klear operation.

12.5 WINTERIZING

If the cell must be removed for winterization, see your Dealer for a special winterizing plug and instructions.

12.6 POOL DRAINING

Remove the cell before acid washing, painting or re-plastering the pool.

13.0 POOL COVERS

13.1 FLOATING COVERS

Cut an opening in the pool cover directly above the cell to allow the bubbles generated by Kreepy Klear to escape.

13.2 TIGHTLY FITTING COVERS

Make sure to use the lowest practical setting of the chlorine adjustment dial to ensure that Kreepy Klear will only operate within pump run times This will help to ensure that chlorine concentrations are minimized in or spot under the cover.

14.0 TROUBLESHOOTING

14.1 FAULT CONDITIONS (SYSTEM SHUTDOWN)

Reset the controller by turning the chlorine adjust dial "OFF" then to "MAX." and note how long the delay is before the red light flashes.

14.2 IF "SERVICE" LIGHT FLASHES AFTER 22 SECOND DELAY

1. Salt content is too low in pool.

2. Cell has excessive scale, bridging of the electrodes with scale will cause the chlorine production to drop dramatically and will severely shorten the lifetime of the electrodes. This condition is usually due to low water pressure at the cell, you must have a minimum of 21 kpa {3 psi.}. The unit will shut down under these conditions to protect itself.

3. Cell terminals not pushed on fully causing an open circuit resulting in a fault condition.

Note: This function is temperature dependent, (more sensitive in colder water) and should not be relied upon to determine when to add salt.

14.3 IF "SERVICE" LIGHT FLASHES AFTER 2-4 SECOND DELAY

1. Short in cell wire. Check wire from the controller down to the strain relief fitting.

2. Malfunctioning controller. If the output of the controller goes below 9 volts, the fault mode will initiate.

14.4 IF "SERVICE" LIGHT FLASHES IMMEDIATELY (NO DELAY)

1. Short in cell wire. Any break in the insulation of the wire while touching metallic pipe will cause this fault condition.

Note: Also see the Kreepy Klear Diagnostic Manual

14.5 STRING TOOL (REEL WILL NOT TURN)

1. Check the water flow and clean the filter if necessary. Flow may be reduced by plugging the return lines. If so, open one or two return lines downstream of where you want the string to come out. Extreme back-pressure may interfere with the flow of the string through the pipe.

2. Be certain that the line is coiled snugly on its reel, and that the foam end is an original equipment part. Use of any other material may not work properly.

3. Make sure there are no leaks in the reel housing. Leaks will permit water to flow out of the housing which will inhibit the line from flowing through the pipe.

14.6 CELL WIRE WON'T PULL EASILY

Do not force the wire through, it may result in damage to the wire. Remove the wire and try another return line. Do not use lubricants. If

the wire goes bad, the lubricants will have been washed off and you will not be able to remove the wire.

14.7 CELL SCALING

If scale forms (not removed by polarity reversal) on the cell plates, it is most often the result of improper water pressure at the cell. You mus have a minimum of 21 kpa {3 psi.} at the cell. Use the following procedure to remove the scale build-up.

l. Turn power off. This can be done by turning the appropriate circuit breaker off, or by turning the chlorine adjustment dial to the "OFF" setting, or by disconnecting the cell wires from the controller.

2. Remove the cell from the return line and place it on the pool deck.

3. Clean the cell by using water pressure to remove the scale. This wil be adequate in most cases.

4. If scale remains, mix a 1:4 ratio of muriatic acid to water and immerse the cell into the solution. Allow the cell to remain in the solution until all foaming stops. Remove the cell and rinse thoroughly. If scale deposits remain, repeat the procedure.

14.8 PUMP SENSE

You can determine if the pump sense microphone is working properly by:

1. Turn the chlorine adjustment dial to "Off" then to position number "5".

2. Turn the pool motor “Off”, then “On” the “Cell On” light should illuminate, this indicates that there is sufficient "field" to activate the pump sense feature.

3. If the "Cell On" light flashes, this indicates that the "field" is weakly present. Move the sensor until the "Cell On" light stops flashing.

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