



CAT 5000 WiFi Retro Fit Kit

Wireless Retrofit for CAT 5000 Water Quality Controllers

Owner's Manual

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RFK-C5000-WIFI

IMPORTANT SAFETY INSTRUCTIONS

Basic safety precautions should always be followed, including the following: Failure to follow instructions can cause severe injury and/or death.

⚠ This is the safety-alert symbol. When you see this symbol on your equipment or in this manual, look for one of the following signal words and be alert to the potential for personal injury.

⚠ WARNING warns about hazards that could cause serious personal injury, death or major property damage and if ignored presents a potential hazard.

⚠ CAUTION warns about hazards that will or can cause minor or moderate personal injury and/or property damage and if ignored presents a potential hazard. It can also make consumers aware of actions that are unpredictable and unsafe.

Hayward Commercial Pool Products
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Rockville, MD 20850
www.haywardcommercialpool.com

Introduction

The RFK-C5000-WIFI is a retrofit kit used to replace the pager communication components in the CAT 5000 Controller with WiFi components. The RFK-C5000-WIFI uses WiFi/Internet communication to connect with the PoolCom.

Before You Begin

Write down the following information BEFORE installing the retrofit kit. The numbers below are necessary for activation and will not be accessible after the retrofit kit is installed.

WiFi Transceiver Serial Number _____

WiFi Transceiver Model Number _____

WiFi Transceiver Node ID _____



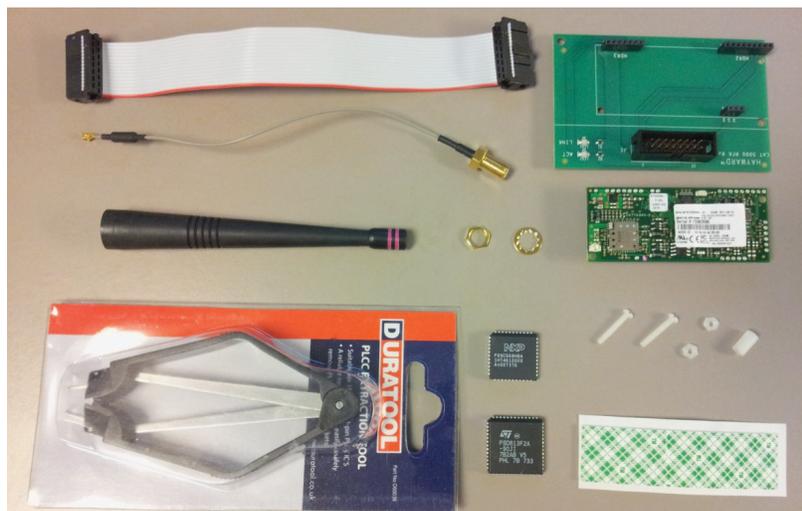
WiFi Transceiver Serial Number



WiFi Transceiver Model Number



WiFi Transceiver Node ID



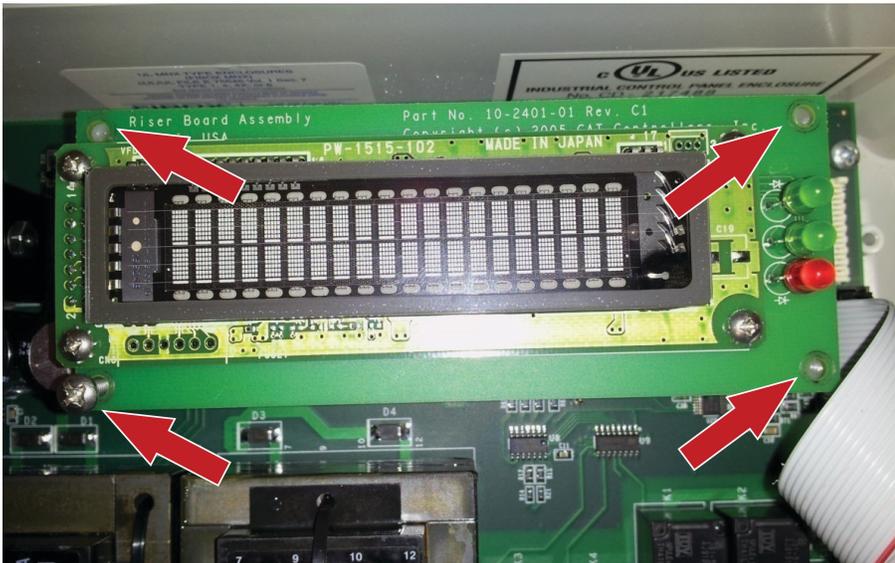
Retrofit Kit Components, (Clockwise from top left): Ribbon Cable, Motherboard, Transceiver, Mounting Hardware, Double-sided Tape, Chips, Chip Puller, Antenna & Hardware, and Antenna Cable. Communications and Assembly Instructions not shown.

Installation

CAUTION: Disconnect power to the C5000 before attempting to install the RFK-C5000-WIFI retrofit kit.



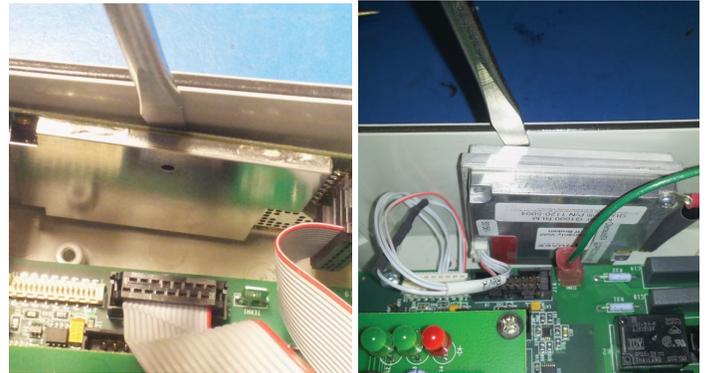
- 1) Unscrew and slowly remove the C5000 face plate. Take care not to stress the ribbon cable attached. Unplug the ribbon cable where shown, and set aside.



- 2) Remove (4) screws holding the "Riser Board Assembly" (Display screen). Be sure to remove the screws on the larger board, NOT the smaller one.



3) Remove board completely from unit by wiggling and pulling straight up.



4) Remove old transceiver by disconnecting all cables and carefully prying away from side of enclosure (2 configurations shown). This unit must be return-shipped to Hayward along with both chips.



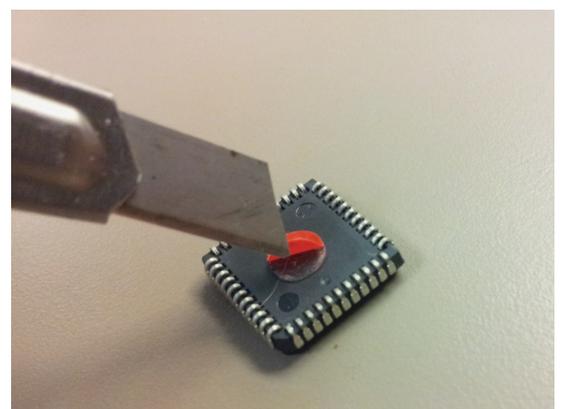
5) Remove old antenna cable from housing.



6) NOTE: BEFORE PULLING BOTH CHIPS, NOTE TEXT ORIENTATION ON EACH CHIP. (One chip shown removed). Using the chip puller supplied, remove old processor chips. (These must also be return-shipped to Hayward in supplied anti-static case).



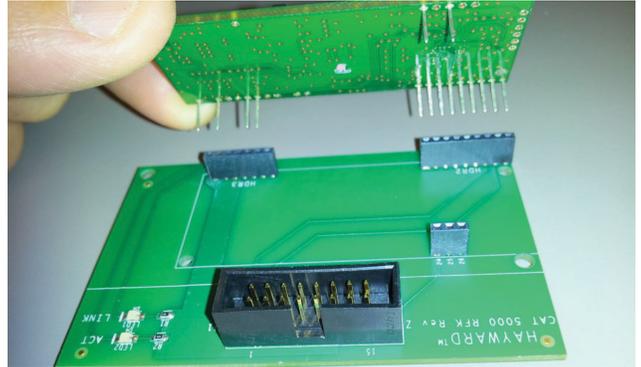
7) Place old chips in the anti-static case provided for shipment.



8) Carefully remove the red backing from the adhesive dot on the bottom of the new chip.



9) Press chips into sockets with same text orientation as old ones.



10) Connect transceiver to motherboard making sure all pins align with their sockets.



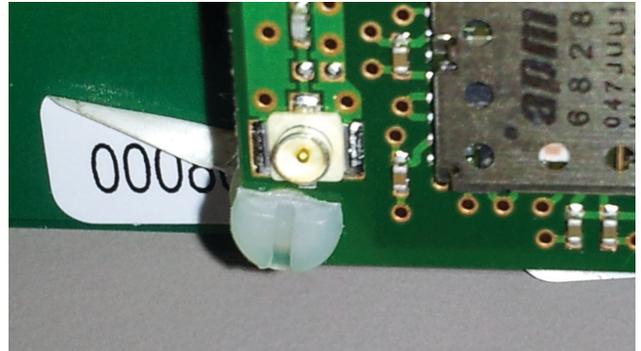
11) Transceiver and motherboard assembled.



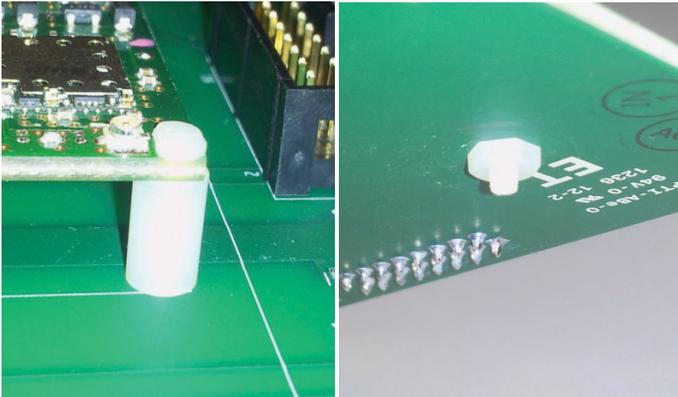
12) Gather nylon screws, nuts and spacer for fastening transceiver to motherboard.



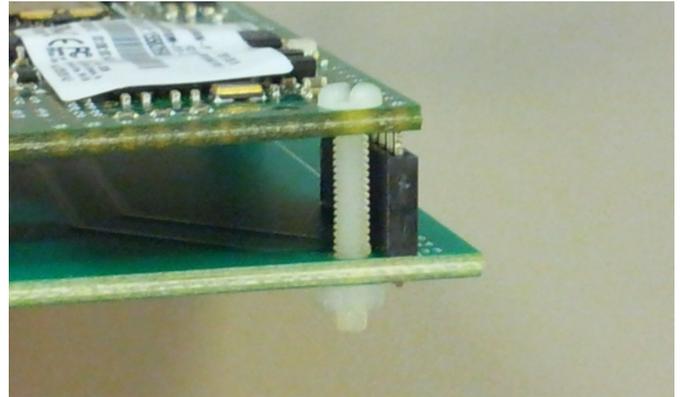
13) On ONE screw only, cut off one edge of screw head as shown. This prevents interference with antenna cable socket when assembled.



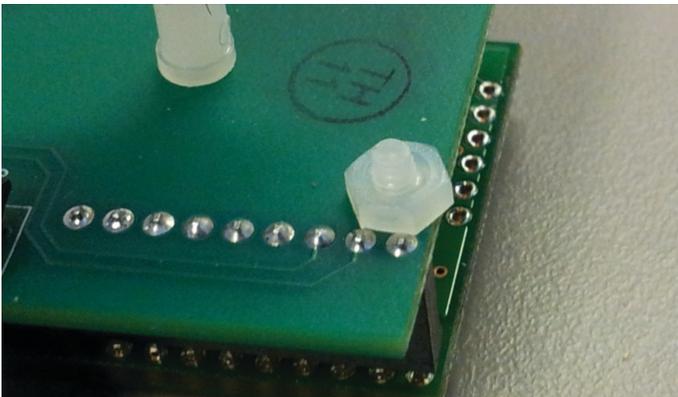
14) Insert cut screw through transceiver board, spacer and motherboard as shown.



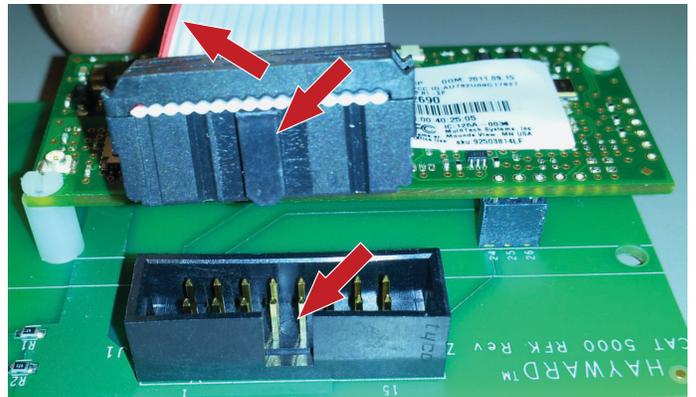
15) Thread on nut and tighten assembly, by hand if possible, just snug. Do not overtighten.



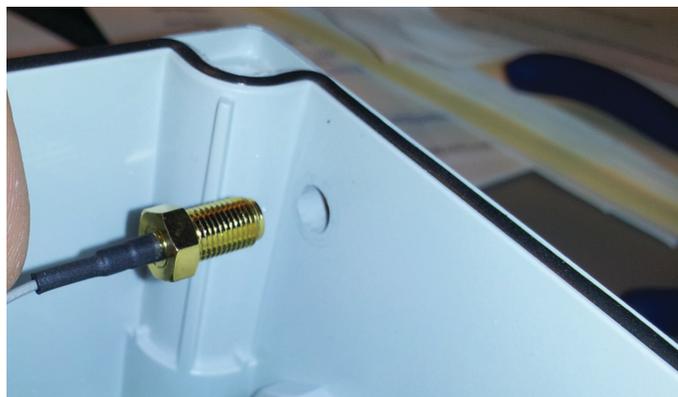
16) Repeat at opposite corner of transceiver using uncut screw, and without spacer.



17) Align nut on back to NOT interfere with solder joints as shown.



18) Apply ribbon cable to motherboard. Note orientation of red wire and notch/tab in connector.



19) Insert cable antenna through hole in bottom of housing.



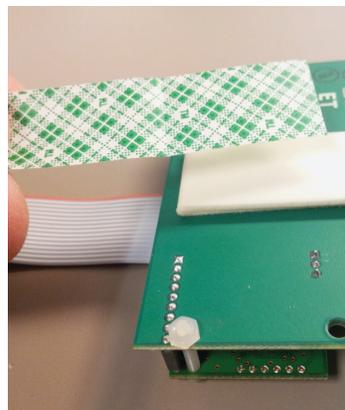
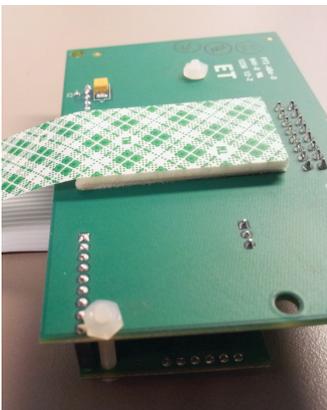
20) Install lock washer and nut and tighten with pliers.



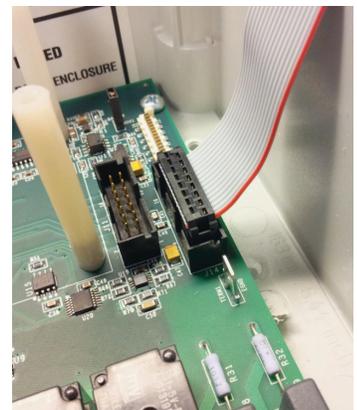
21) Hand-tighten the rubber antenna in place. (Note that washer and nut will remain visible).



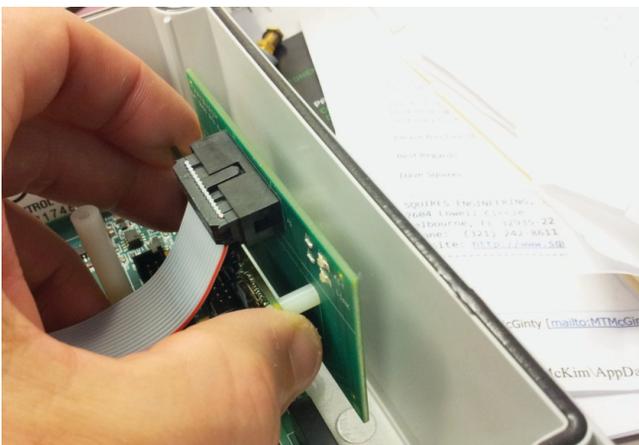
22) Remove backing from one side of double-stick tape, and fold tape in half.



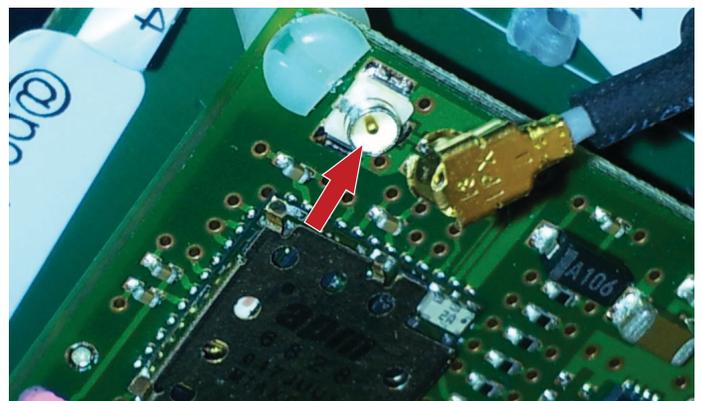
23) Apply tape where shown and remove backing completely.



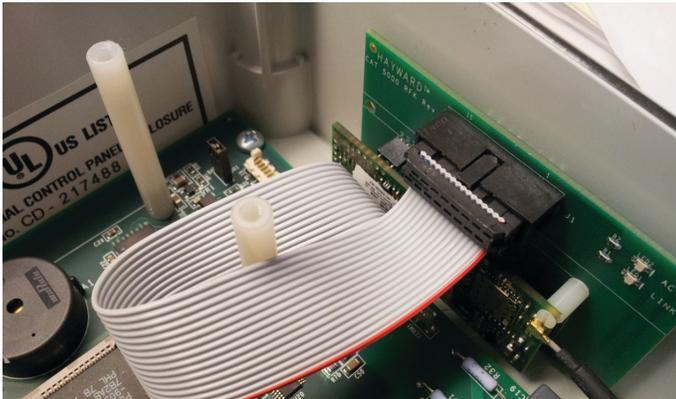
24) Motherboard assembly with adhesive feet, ready for installation.



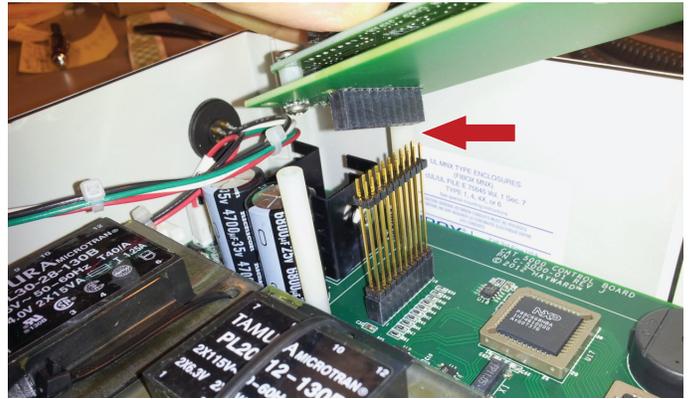
25) Adhere the motherboard assembly to the inside of the enclosure.



26) Attach antenna cable to transceiver by pushing cable connector onto pc board socket where shown.



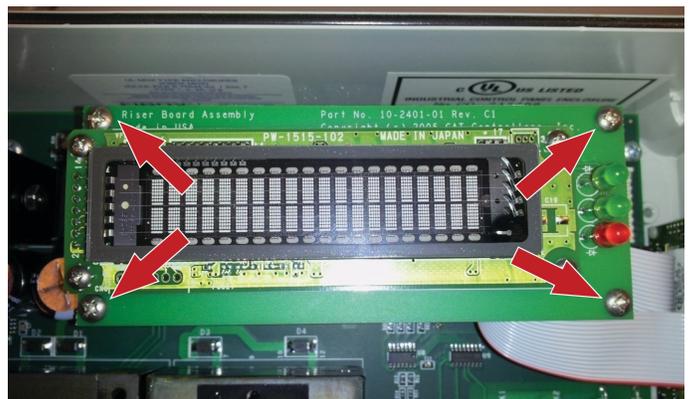
27) Approximate location shown here.



28) Thread nut on to antenna cable completely. Then insert cable fitting through mounting hole.



29) Re-fasten with (4) screws.



30) Plug in faceplate ribbon cable.



31) Re-attach faceplate.



Activation

After installing the RFK-C5000-WIFI retrofit kit, contact Hayward for activation.

Activation Phone Number: 301-838-4001

Be prepared to provide the following information:

Name

Company Name

Contact Information

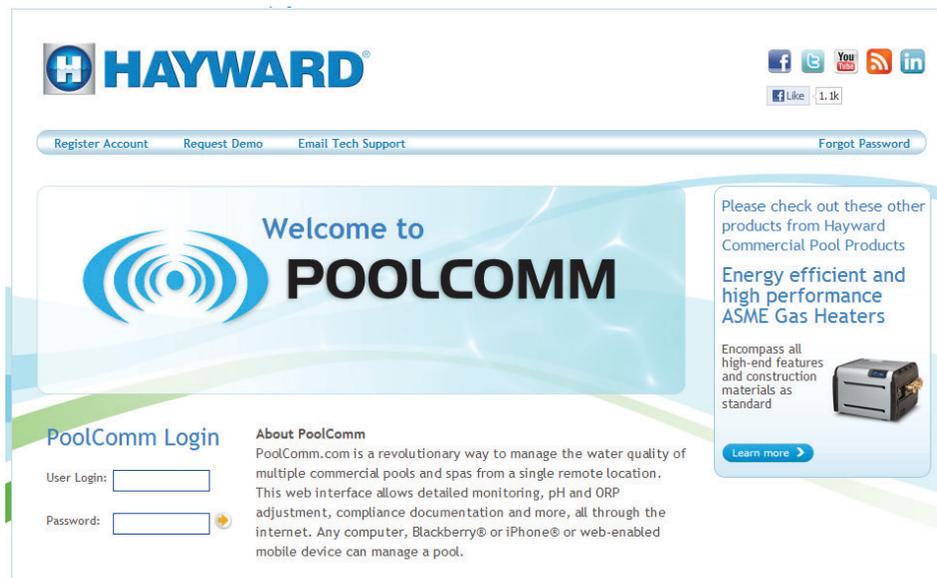
Facility Name

Cat Serial Number

Wifi Transceiver Serial Number (refer to page 1)

Wifi Transceiver Model Number (refer to page 1)

Wifi Transceiver Node ID (refer to page 1)



1) Register Controller to your Poolcomm.com account. (You may do this before or after set up of unit).



WiFi Connectivity Checklist

Specific information about your wireless network is required to configure the CAT 5000 Controller for wireless operation. To aid in installation, fill out the information below and then proceed to the following steps.

- 1) Wireless Network ID/Name _____
- 2) Network Security Type (Check one of the following)*
 - a. WPA _____
 - b. WPA2 _____
 - c. WEP-64 _____
 - d. WEP-128 _____
- 3) Network Security Password _____
- 4) Does your wireless connection have MAC filtering? _____

*If network is unsecured and does not have a password, you may skip steps 2 thru 3.

Additional CAT-4000/5000 Wireless LAN Technical Information

Router Information: Supports 802.11b/g.

Communication supports the following wireless LAN security specifications:

- No Encryption, 64 bit WEP, 128 bit WEP, WPA-PSK, WPA2-PSK
- Passwords for 64 bit WEP are entered as 10 hexadecimal characters (0-9, a-f or A-F)
- Passwords for 128 bit WEP are entered as 26 hexadecimal characters (0-9, a-f or A-F)
- Passwords for WPA/WPA2 are 8 to 64 characters in length, and can include any character.

Unit can be configured through menu to use DHCP or manual IP configuration (requiring entry of IP Address, Gateway IP Address, Subnet Mask, DNS Servers).

If access point is set up with MAC filtering enabled, the MAC address from module, displayed as "NODE ID" on white sticker near antenna cable connection, should be used.

The CAT-4000/5000 Wireless LAN model communicates using the following protocol/ports. Firewalls/rules that block any of these protocols/ports will inhibit CAT-4000/5000 from working:

- Outbound UDP port 123
- Outbound TCP/IP port 110
- Outbound TCP/IP port 25

Access Point must broadcast SSID for CAT-4000/5000 to display the name in Network list menu.



2) Plug in controller and wait at least 5 minutes after powering up. Press MENU. Scroll up to "Configuration Setup" and press ENTER.



3) Scroll up to "WLAN Setup" and press ENTER.



4) Press ENTER under the "Network" selection.



5) Scroll down to find your wireless network. Press ENTER to select. If display shows "None", then please allow an additional 5 minutes for unit to try to find networks.



6) Scroll down to "Security Mode" and select using the ENTER button.



7) Select relevant security setting. Security setting types are as follows, and can be found on your router or by contacting your internet service provider.*

- WPA
- WPA2
- WEP-64
- WEP-128

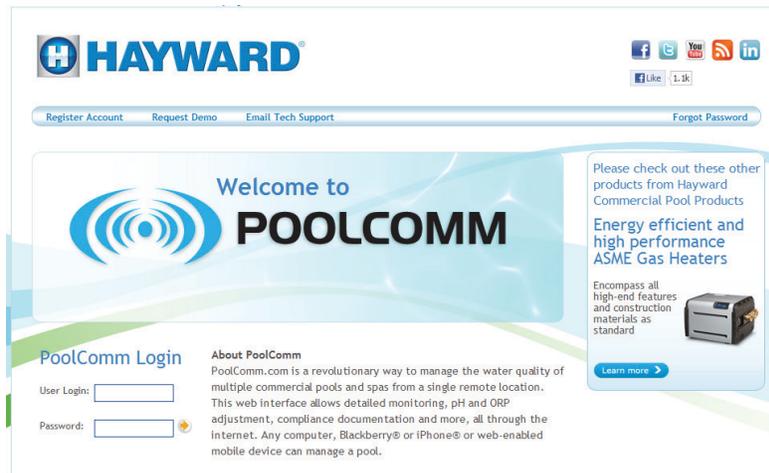
*If your network is unsecured, meaning it does not require a password, then you can skip steps 8 & 9.



8) Scroll down again to "(Selected Security) Password" then press ENTER.



9) Using the UP and DOWN buttons, input the password to your router, then press ENTER. Allow at least 5 minutes for unit to establish network connection, depending on your wireless network speed.



You may test unit to website connection by pressing the TRANSMIT button, and wait for alert to show on Poolcomm site.

Returning Original Parts

Pack the original Microprocessor chip in the provided anti-static box and the original Transceiver in the provided anti-static bag and ship to:

Hayward Industries
Attn: Patti Eads
61 Whitecap Drive
N. Kingstown, RI 02852

Note: Parts must be returned within 30 days to receive \$100.00 credit.



⚠ WARNING - Read and follow all instructions in this owner's manual and on the equipment. Failure to follow instructions can cause severe injury and/or death.

⚠ WARNING – Suction Entrapment Hazard.



Suction in suction outlets and/or suction outlet covers which are, damaged, broken, cracked, missing, or unsecured can cause severe injury and/or death due to the following entrapment hazards:



Hair Entrapment- Hair can become entangled in suction outlet cover.



Limb Entrapment- A limb inserted into an opening of a suction outlet sump or suction outlet cover that is damaged, broken, cracked, missing, or not securely attached can result in a mechanical bind or swelling of the limb.

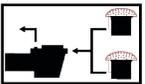


Body Suction Entrapment- A negative pressure applied to a large portion of the body or limbs can result in an entrapment.

Evisceration/ Disembowelment - A negative pressure applied directly to the intestines through an unprotected suction outlet sump or suction outlet cover which is, damaged, broken, cracked, missing, or unsecured can result in evisceration/ disembowelment.

Mechanical Entrapment- There is potential for jewelry, swimsuit, hair decorations, finger, toe or knuckle to be caught in an opening of a suction outlet cover resulting in mechanical entrapment.

⚠ WARNING - To Reduce the risk of Entrapment Hazards:



- o When outlets are small enough to be blocked by a person, a minimum of two functioning suction outlets per pump must be installed. Suction outlets in the same plane (i.e. floor or wall), must be installed a minimum of three feet (3') [1 meter] apart, as measured from near point to near point.
- o Dual suction fittings shall be placed in such locations and distances to avoid “dual blockage” by a user.
- o Dual suction fittings shall not be located on seating areas or on the backrest for such seating areas.
- o The maximum system flow rate shall not exceed the flow rating of as listed on Table 1.
- o Never use Pool or Spa if any suction outlet component is damaged, broken, cracked, missing, or not securely attached.
- o Replace damaged, broken, cracked, missing, or not securely attached suction outlet components immediately.
- o In addition two or more suction outlets per pump installed in accordance with latest ASME, APSP Standards and CPSC guidelines, follow all National, State, and Local codes applicable.
- o Installation of a vacuum release or vent system, which relieves entrapping suction, is recommended.

⚠ WARNING – Failure to remove pressure test plugs and/or plugs used in winterization of the pool/spa from the suction outlets can result in an increase potential for suction entrapment as described above.

⚠ WARNING – Failure to keep suction outlet components clear of debris, such as leaves, dirt, hair, paper and other material can result in an increase potential for suction entrapment as described above.

⚠ WARNING – Suction outlet components have a finite life, the cover/grate should be inspected frequently and replaced at least every ten years or if found to be damaged, broken, cracked, missing, or not securely attached.

⚠ CAUTION – Components such as the filtration system, pumps and heater must be positioned so as to prevent their being used as means of access to the pool by young children. To reduce risk of injury, do not permit children to use or climb on this product. Closely supervise children at all times. Components such as the filtration system, pumps, and heaters must be positioned to prevent children from using them as a means of access to the pool.



⚠ WARNING – Hazardous Pressure. Pool and spa water circulation systems operate under hazardous pressure during start up, normal operation, and after pump shut off. Stand clear of circulation system equipment during pump start up. Failure to follow safety and operation instructions could result in violent separation of the pump housing and cover, and/or filter housing and clamp due to pressure in the system, which could cause property damage, severe personal injury, or death. Before servicing pool and spa water circulation system, all system and pump controls must be in off position and filter manual air relief valve must be in open position. Before starting system pump, all system valves must be set in a position to allow system water to return back to the pool. Do not change filter control valve position while system pump is running. Before starting system pump, fully open filter manual air relief valve. Do not close filter manual air relief valve until a steady stream of water (not air or air and water) is discharged.



⚠ WARNING – Separation Hazard. Failure to follow safety and operation instructions could result in violent separation of pump and/or filter components. Strainer cover must be properly secured to pump housing with strainer cover lock ring. Before servicing pool and spa circulation system, filters manual air relief valve must be in open position. Do not operate pool and spa circulation system if a system component is not assembled properly, damaged, or missing. Do not operate pool and spa circulation system unless filter manual air relief valve body is in locked position in filter upper body. **Never operate or test the circulation system at more than 50 PSI.**



⚠ WARNING – Risk of Electric Shock. All electrical wiring **MUST** be in conformance with applicable local codes, regulations, and the National Electric Code (NEC). Hazardous voltage can shock, burn, and cause death or serious property damage. To reduce the risk of electric shock, do **NOT** use an extension cord to connect unit to electric supply. Provide a properly located electrical receptacle. Before working on any electrical equipment, turn off power supply to the equipment. To reduce the risk of electric shock replace damaged wiring immediately. Locate conduit to prevent abuse from lawn mowers, hedge trimmers and other equipment. Do **NOT** ground to a gas supply line.

⚠ WARNING – Risk of Electric Shock Failure to ground all electrical equipment can cause serious or fatal electrical shock hazard. Electrical ground all electrical equipment before connecting to electrical power supply.

⚠ WARNING – Risk of Electric Shock Failure to bond all electrical equipment to pool structure will increase risk for electrocution and could result in injury or death. To reduce the risk of electric shock, see installation instructions and consult a professional electrician on how to bond all electrical equipment. Also, contact a licensed electrician for information on local electrical codes for bonding requirements.

Notes to electrician: Use a solid copper conductor, size 8 or larger. Run a continuous wire from external bonding lug to reinforcing rod or mesh. Connect a No. 8 AWG (8.4 mm²) [No. 6 AWG (13.3 mm²) for Canada] solid copper bonding wire to the pressure wire connector provided on the electrical equipment and to all metal parts of swimming pool, spa, or hot tub, and metal piping (except gas piping), and conduit within 5 ft. (1.5 m) of inside walls of swimming pool, spa, or hot tub.

IMPORTANT - Reference NEC codes for all wiring standards including, but not limited to, grounding, bonding and other general wiring procedures.

⚠ WARNING – Risk of Electric Shock . The electrical equipment must be connected only to a supply circuit that is protected by a ground-fault circuit-interrupter (GFCI). Such a GFCI should be provided by the installer and should be tested on a routine basis. To test the GFCI, push the test button. The GFCI should interrupt power. Push reset button. Power should be restored. If the GFCI fails to operate in this manner, the GFCI is defective. If the GFCI interrupts power to the electrical equipment without the test button being pushed, a ground current is flowing, indicating the possibility of an electrical shock. Do not use this electrical equipment. Disconnect the electrical equipment and have the problem corrected by a qualified service representative before using.

⚠ CAUTION – HAYWARD® pumps are intended for use with permanently-installed pools and may be used with hot tubs and spas if so marked. Do not use with storable pools. A permanently-installed pool is constructed in or on the ground or in a building such that it cannot be readily disassembled for storage. A storable pool is constructed so that it is capable of being readily disassembled for storage and reassembled to its original integrity.

SAVE THESE INSTRUCTIONS

For further information, visit our website at
www.haywardcommercialpool.com



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