



Pool Inspection Report for [REDACTED]

[REDACTED], Gloucester, Virginia, 23061

Inspection Dates: May 7, 2026 (Visual), May 11, 2026 (Leak Survey)

Inspector: Darren [REDACTED]

Table of Contents

Scope of Work.....	2
Limitations and Disclaimer.....	4
Inspection Conditions.....	7
Area Descriptions.....	9
Executive Summary.....	14
Equipment Observations.....	19
General Plumbing Observations.....	30
General Electrical Observations.....	39
General Pool Observations.....	47
Pool Deck Observations.....	53
Safety Barrier Observations.....	56
Code References.....	58

Scope of Work

The scope of this pool inspection was to document the observed condition of the swimming pool located at [REDACTED], Gloucester, Virginia. The inspection included visible and accessible components associated with the pool structure, pool interior, pool equipment, exposed plumbing, visible electrical components, pool fittings, deck areas, pool accessories, and safety barrier components present at the time of inspection.

The inspection was a visual, non-invasive inspection unless specifically stated otherwise in this report. The inspection was based on conditions observed during the site visit and on the limited testing specifically identified in this report. Accessible pool-related components were visually evaluated and photographed. Observed conditions were documented for inclusion in this report.

The pool circulation and filtration system was visually evaluated. This included the circulation pump, filter, visible valves, exposed piping, unions, fittings, and related equipment components. Equipment was operated from normal user controls where accessible and where site conditions allowed. Equipment operation was observed during the inspection, but internal equipment components were not disassembled or fully evaluated unless specifically stated.

The pool sanitation equipment was visually evaluated. This included the Hayward AquaRite salt chlorine generator, visible salt cell, flow switch, control enclosure, display readings, visible operating indicators, and visible associated wiring and plumbing connections. Chlorine production and water chemistry were not independently verified by water testing as part of this inspection.

Visible plumbing components were evaluated where accessible. This included exposed suction and return piping, visible valves, unions, fittings, pipe connections, filter connections, pump connections, salt cell connections, and visible backwash/waste discharge piping. Concealed, buried, submerged, or inaccessible plumbing was not visually evaluated except as specifically addressed through the pressure testing described in the Leak Detection Report section.

Visible electrical components associated with the pool equipment area were observed. This included visible disconnects, timer/control equipment, conduit, raceways, wiring methods, receptacles, equipment grounding and bonding components, and visible electrical enclosures. Electrical observations were limited to visible and accessible components present at the time of inspection. Circuit tracing, conductor sizing, conductor insulation verification, load calculations, grounding continuity testing, bonding continuity testing, and concealed wiring evaluation were not performed unless specifically stated.

The pool interior was visually evaluated from the deck and through the underwater inspection performed as part of the leak survey. Observed interior components included the vinyl liner, visible floor and wall surfaces, steps, skimmers, return fittings, main drain area, coping, and other visible pool fittings. The liner was not removed, fittings were not removed, and concealed

conditions behind the liner, steps, fittings, faceplates, or pool walls were not evaluated unless specifically stated.

The pool deck and surrounding pool area were visually evaluated. This included visible deck surfaces, deck cracking, deck drains, coping-adjacent areas, skimmer lids, safety cover anchors, walking surfaces, and visible deck-related conditions around the pool. The inspection did not include excavation, removal of deck materials, subsurface evaluation, structural engineering analysis, or drainage engineering analysis.

Pool safety barrier components were visually observed. This included visible fencing, gates, gate hardware, barrier openings, and other barrier components present around the pool area at the time of inspection. Full barrier code compliance was not certified. Fence height, all picket spacing, all bottom clearances, latch-release heights, door/window alarm compliance, and all possible barrier conditions were not fully verified unless specifically stated in this report.

In addition to the visual inspection, a leak survey was conducted by Neff Pool Leak Detection. The leak survey included underwater inspection of the pool and pressure testing of pool plumbing lines identified in the leak detection report. Plumbing pressure testing was limited to the pool plumbing lines tested by Neff Pool Leak Detection, at the test pressure and duration identified in the subcontractor's report.

The leak detection subcontractor's report has been incorporated into this inspection report. Findings, test results, measurements, or conclusions provided by Neff Pool Leak Detection are identified as subcontractor-provided information. The Pool Store, Inc. did not independently perform separate pressure testing beyond the subcontractor's testing.

This report may reference applicable codes, standards, regulations, and manufacturer instructions where relevant to observed conditions. Referenced sources may include the Virginia Uniform Statewide Building Code, Virginia Residential Code, Virginia Maintenance Code, National Electrical Code, International Swimming Pool and Spa Code, Virginia Plumbing Code, Virginia Graeme Baker Pool and Spa Safety Act, CPSC drain-cover requirements, Virginia stormwater/MS4 regulations, manufacturer installation instructions, and applicable ANSI/PHTA/ASTM standards.

Code, standard, regulatory, and manufacturer references are used in this report as informational benchmarks for evaluating observed conditions. This inspection was not a permit review, engineering evaluation, electrical certification, plumbing certification, barrier certification, suction-entrapment certification, or full code-compliance inspection. Where code-related concerns are identified, further evaluation by the applicable qualified professional or authority having jurisdiction may be required.

Limitations and Disclaimer

This pool inspection report documents conditions observed at the time of inspection. The report reflects the condition of visible, accessible, and specifically tested components only as of the inspection date and time. Conditions may change after the inspection due to use, weather, water chemistry, maintenance, repairs, equipment operation, seasonal conditions, freeze/thaw movement, ground movement, deterioration, damage, or other factors.

This report is not a warranty, guarantee, insurance policy, or certification of the present or future condition of the swimming pool, pool structure, liner, steps, coping, deck, equipment, plumbing, electrical systems, bonding components, accessories, safety barriers, gates, covers, or related components. This report does not guarantee continued operation, future performance, remaining service life, water-tightness, safety, or code compliance.

The inspection was limited to components that were visible and accessible at the time of inspection. Concealed, buried, submerged, covered, obstructed, inaccessible, enclosed, or hidden components were not fully evaluated unless specifically stated in this report. Components located behind walls, under decking, below grade, inside equipment, inside plumbing lines, inside electrical enclosures, behind liner material, behind fittings, behind faceplates, or otherwise outside the visible inspection area were not fully evaluated unless specifically stated.

No destructive testing was performed unless specifically stated. The inspection did not include excavation, removal of concrete, removal of decking, removal of coping, removal of the liner, removal of liner track, removal of fittings, removal of pool fixtures, removal of equipment, disassembly of concealed plumbing, disassembly of electrical systems, or opening of concealed building components unless specifically stated.

Pool equipment was operated only from normal user controls where accessible and where site conditions allowed. Operation of equipment during the inspection reflects observed operation at that time only. Equipment that operated during the inspection may fail, leak, malfunction, or perform differently after the inspection.

The inspection did not include a complete internal evaluation of pool equipment unless specifically stated. Internal pump components, filter internals, salt cell internals, heater components, valves, underground plumbing, underground electrical components, concealed wiring, and other enclosed components were not disassembled or fully evaluated unless specifically stated.

This inspection was not a code-compliance inspection or code-compliance certification. References to codes, standards, regulations, manufacturer instructions, or industry practices are included where relevant to specific observed conditions. This report does not certify that the pool, equipment, plumbing, electrical systems, bonding, deck, barriers, gates, covers, accessories, or other components comply with all applicable laws, codes, ordinances, standards, regulations, or manufacturer requirements.

Code and standard references in this report may include, but are not limited to, the Virginia Uniform Statewide Building Code, Virginia Residential Code, Virginia Maintenance Code, National Electrical Code, International Swimming Pool and Spa Code, Virginia Plumbing Code, Virginia Graeme Baker Pool and Spa Safety Act, CPSC drain-cover requirements, Virginia stormwater/MS4 regulations, manufacturer installation instructions, and applicable ANSI/PHTA/ASTM standards. These references are used as informational benchmarks for observed conditions and do not constitute an approval, certification, or enforcement determination.

This report is not a substitute for review by the authority having jurisdiction. The inspection did not include verification of permits, approved plans, inspection records, certificates of approval, equipment listings, product approvals, drain-cover documentation, barrier approvals, electrical permits, plumbing permits, or other governmental records unless specifically stated.

Electrical observations were limited to visible and accessible electrical components associated with the pool and equipment area. The inspection did not include a complete electrical system evaluation, load calculation, circuit tracing, verification of all conductor types, verification of all conductor sizes, verification of all conductor insulation ratings, verification of all concealed wiring methods, confirmation of all equipment grounding paths, or confirmation of all bonding connections beyond what was visible and accessible at the time of inspection.

Bonding observations were limited to visible bonding conductors and visible bonding connections. Bonding continuity was not tested. The inspection did not verify the presence, continuity, completeness, or effectiveness of the pool equipotential bonding grid, pool water bonding, bonding of all metallic components, bonding of fixed metal parts near the pool, or bonding of concealed components.

Plumbing observations were limited to visible and accessible plumbing components and the plumbing pressure testing specifically performed during the leak evaluation. Concealed or buried plumbing was not visually inspected. Plumbing line routing, pipe condition below grade, fitting condition below grade, underground valve condition, and concealed leaks were not fully evaluated except to the extent reflected by pressure testing results.

A leak survey was performed as part of this inspection by Neff Pool Leak Detection. The leak survey included underwater inspection of the pool and pressure testing of pool plumbing lines identified in the leak detection report. Leak testing results reflect conditions present at the time of testing. Leak conditions may vary based on water level, pump operation, temperature, groundwater conditions, soil conditions, pressure, flow, structural movement, and other site conditions.

Pressure testing was limited to the specific plumbing lines tested, the test method used, the test pressure applied, and the test duration recorded by Neff Pool Leak Detection. A passing pressure test means the tested line held pressure within the parameters of that test at that time. A passing pressure test does not guarantee that the line will not leak in the future, under different operating conditions, under different soil or groundwater conditions, or at pressures or durations not included in the test.

The leak detection subcontractor's report has been incorporated into this report. Findings, measurements, test results, and conclusions provided by the subcontractor are based on the subcontractor's testing, observations, equipment, methods, and documentation. The Pool Store, Inc. did not independently perform separate pressure testing beyond the subcontractor's testing.

The pool cover was not inspected unless specifically stated in this report. If a safety cover, automatic cover, solar cover, winter cover, or other cover was not installed, operated, laid out, measured, or fully accessible at the time of inspection, its condition, fit, anchoring, operation, safety performance, and compliance were not evaluated.

Safety barrier observations were limited to visible and accessible barrier components present at the time of inspection. Full barrier compliance was not certified. Fence height, all picket spacing, all bottom clearances, latch-release height, gate swing direction, door alarms, window alarms, house-wall barrier conditions, and all possible access points were not fully evaluated unless specifically stated.

Pool deck and surrounding area observations were limited to visible surface conditions. The inspection did not include structural engineering evaluation, geotechnical evaluation, subsurface evaluation, deck-core sampling, drainage engineering, or determination of the cause of deck cracking, settlement, displacement, or drainage conditions.

Water chemistry testing was not included unless specifically stated. Water clarity was observed only as it affected visibility during the inspection. This report does not certify that the pool water was chemically balanced, sanitary, safe for swimming, or compliant with any water quality standard.

Water discharge and drainage observations were limited to visible conditions. The final discharge location of any backwash, waste, overflow, deck drain, or other drainage line was not fully verified unless specifically stated. This report does not determine whether any discharge complies with all applicable stormwater, MS4, environmental, utility, local, state, or federal requirements.

This report does not include an engineering evaluation, structural certification, geotechnical evaluation, survey, property boundary evaluation, drainage study, environmental compliance determination, permit history review, or complete building-code review. Further evaluation by qualified professionals may be required for electrical, plumbing, structural, leak detection, deck, drainage, barrier, suction-entrapment, equipment, or code-related concerns identified in this report.

This report should not be interpreted as an exhaustive list of every defect, unsafe condition, maintenance need, code issue, installation issue, hidden condition, or future repair. The report documents observed conditions and testing performed during the inspection, within the limitations stated above.

Inspection Conditions

The visual portion of the pool inspection was performed on May 7, 2026, from approximately 10:00 a.m. to 11:22 a.m. The inspection was performed by Darren [REDACTED], the buyer's realtor, was present during the inspection.

A separate leak survey and plumbing pressure test were performed by Neff Pool Leak Detection on May 11, 2026. The leak survey and pressure testing results are addressed separately in the Leak Detection Report section of this report. Unless specifically stated otherwise, the site conditions described in this section refer to the visual inspection performed on May 7, 2026.

Access was provided to the pool area, equipment area, pool deck, visible pool components, and other pool-related areas available for inspection at the time. The inspection was limited to areas and components that were visible and accessible during the inspection.

At the time of the visual inspection, weather conditions were overcast. The approximate outdoor temperature was 63°F. Minor rain/barely sprinkling conditions were present during the inspection. Rain had occurred prior to the inspection.

The ground was wet at the time of inspection. The pool deck was also wet, with minimal standing water observed on the deck surface. No standing water was observed around the equipment area, pool deck, or surrounding yard that prevented access to the inspected components. Weather and site conditions did not prevent the inspection from being performed.

Because the equipment area, pool deck, and surrounding surfaces were wet at the time of inspection due to prior/current weather conditions, minor leaks, seepage, or moisture at equipment connections, plumbing fittings, valves, unions, pump components, filter components, or related pool plumbing may not have been visually distinguishable from rainwater or site moisture during the visual inspection.

The pool was filled at the time of inspection. The observed water level was approximately midway up the skimmer throat. This water level was sufficient for general pool circulation system operation and visual observation of the skimmers, pool interior, and visible submerged components.

The pool water was clear enough to allow visual observation of the pool floor, main drain area, liner surface, steps, fittings, and other visible submerged components. Debris was present on the pool bottom and liner surface at the time of inspection. The debris did not prevent general visual observation of the pool interior, but it limited evaluation of minor liner surface defects, small punctures, staining, discoloration, and other subtle surface conditions.

The pool circulation system was operating upon arrival. Pool equipment was operated from normal user controls where accessible and where conditions allowed. Equipment operation observed during the inspection reflects operation only under the conditions present at that time.

The pool cover was not installed on the pool at the time of inspection. The cover was reported/observed to have been removed and stored. The pool cover was not laid out, installed, operated, measured, or otherwise inspected as part of this inspection.

SAMPLE POOL INSPECTION REPORT

Area Descriptions

Description of Pool

The subject pool is an inground residential swimming pool located at [REDACTED], Gloucester, Virginia. The pool is constructed with steel wall panels and a vinyl liner interior. The pool includes a molded step assembly located in the center of the shallow end. The step assembly appeared to be fiberglass or thermoplastic.

The Pool Store, Inc. provided the liner drawing used for this report. The liner drawing was prepared in 2017 by the liner manufacturer when the currently installed vinyl liner was made. According to that liner drawing, the pool is approximately 16 feet by 32 feet. The pool has a rectangular configuration with radius corners. The liner drawing identifies a 40-inch wall and an approximate deep-end depth of 5 feet 10 inches.

The pool has a defined shallow end and transitions by slope to a hopper-style deep end. No swim-outs, benches, seats, sun shelf, water features, attached spa, slide, diving board, diving platform, starting block, or other diving equipment were present at the time of inspection. No underwater pool light was present.

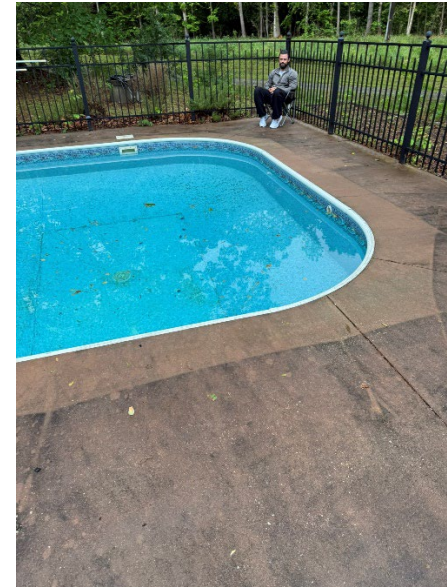
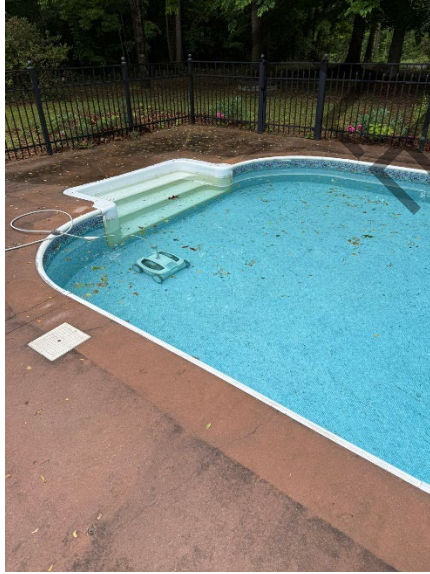
This pool is a nondiving residential pool. Based on the International Swimming Pool and Spa Code residential pool type definitions, this pool is classified as a Type O pool, which is a nondiving residential pool. The pool is not classified as a Type I, Type II, Type III, Type IV, or Type V residential pool suitable for the installation of diving equipment.

No diving equipment was present, and no diving equipment should be installed on this pool. No diving envelope evaluation, diving-depth verification, slope verification, or diving compliance evaluation was performed as part of this inspection. Diving should not be permitted in this pool.

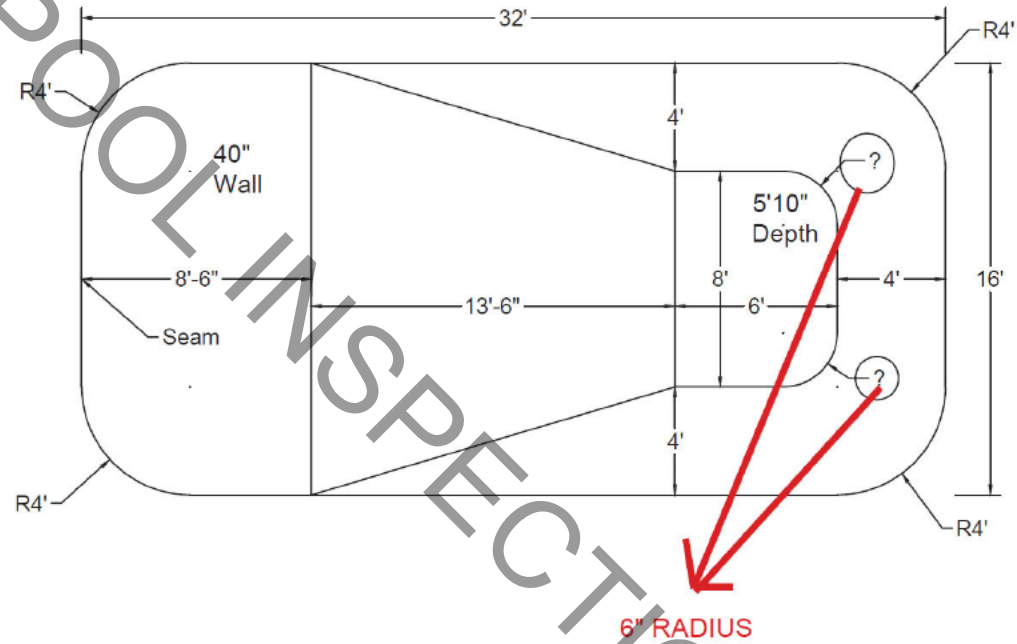
Visible pool fittings include two skimmers, three wall return fittings, one step return fitting, and one main drain sump. The pool is also equipped with a gravity overflow fitting near the upper portion of the pool wall to allow excess water to drain from the pool when the water level rises above the overflow opening.

The pool has a deck-anchor style safety cover system, with safety cover anchors installed in the surrounding concrete deck. The safety cover was not installed on the pool at the time of inspection. The cover was reported/observed to have been removed and stored; therefore, the safety cover itself was not inspected, measured, operated, or evaluated as part of this inspection.

The age of the pool structure is unknown. The currently installed vinyl liner was manufactured and installed in 2017.



CUSTOMER:	The Pool Store	PERIMETER:	0"	DATE:	05/05/2026	REVISION#:	1
JOB NAME:		PATTERN:	Sinclair	Approval Signature			
SERIAL:	257023	STEP ATTACHMENT:					
FILE NAME:	\\m1-app01\MBL\Orders\257023\257023	DESIGNER:	Chris				



Description of Pool Deck and Surrounding Area

The pool is surrounded by a dyed concrete deck with a broom-finished/textured surface. The concrete deck fully surrounds the pool perimeter and provides walking access around the pool.

The overall deck footprint is approximately 35 feet by 47 feet. This measurement includes the pool area within the deck perimeter. After subtracting the area occupied by the pool and step assembly, the approximate exposed concrete deck surface area is 1,100 square feet.

A linear/channel deck drain is present within the pool deck. The deck drain is located along a portion of the deck near the house-side area of the pool enclosure. The drain was visually observed, but it was not disassembled or flow-tested. The final discharge location of the deck drain was not determined during the inspection.

Two skimmer lids are located within the concrete deck surface. The skimmer lids provide access to the two pool skimmers located along the pool perimeter.

Safety cover anchors are installed in the concrete deck around the pool perimeter. These anchors are associated with a deck-anchor style safety cover system. The safety cover was not installed on the pool at the time of inspection and was not inspected, measured, or evaluated.

The pool area is enclosed by a fence that surrounds the pool area. The fence is primarily metal and includes one wood gate and two metal gates. The fence separates the pool area from the surrounding yard and provides controlled access points into the pool enclosure. Barrier compliance observations are addressed separately in the Safety Barrier Observations section of this report.

The house forms part of the surrounding pool-area context, with the pool deck and equipment area located adjacent to the house. Conditions involving the fence-to-house interface, gates, openings, and other barrier-related items are addressed separately in the Safety Barrier Observations section.

Deck/fence lights are installed around portions of the pool enclosure and appear to be intended to provide lighting for the pool deck area. The deck/fence lighting and related wiring conditions are addressed separately in the General Electrical Observations section of this report.

Access was available around the pool perimeter at the time of inspection. Access was also available around the outside of the fenced pool area.

Description of Equipment Area

The pool equipment area is located adjacent to the house on the concrete pool deck. The equipment is positioned behind an interior fence section within the pool area. The equipment area is outdoors and is exposed to weather. The equipment is not located under a roof, shed, cabinet, or separate equipment enclosure.

The main pool equipment consists of a Hayward Super Pump circulation pump, a Hayward Perflex D.E. filter, and a Hayward AquaRite salt chlorine generator. These components are installed together in the same equipment area and are connected by visible PVC circulation plumbing.

The circulation pump and D.E. filter are positioned on a shared plastic equipment base set directly on the concrete pool deck. The Hayward AquaRite control box is mounted near the equipment area, with the salt cell and flow switch installed in the visible return-side plumbing.

Visible plumbing in the equipment area includes suction-side piping to the circulation pump, return-side piping from the filter, a suction-side three-port valve, a return-side ball valve, unions, fittings, and exposed PVC pipe connections. The visible circulation plumbing connects the pool suction system, pump, filter, salt chlorine generator, and return system.

The visible suction-side piping enters the pump from the suction valve assembly. The visible return-side piping exits the filter and continues through the salt chlorine generator cell and flow switch before returning water to the pool. The full underground suction and return piping layout was not visible from the equipment area.

Electrical controls and enclosures associated with the pool equipment are mounted on or near the exterior wall of the house adjacent to the equipment area. Visible electrical components include the Intermatic mechanical timer, exterior breaker/disconnect enclosures, conduit/raceway, receptacle, and related pool equipment wiring components.

Because the equipment area is located outdoors and exposed to weather, visible electrical components in this area are subject to outdoor wet/damp location conditions and the pool equipment environment. Electrical observations, including GFCI protection, bonding, conduit/raceway condition, wiring methods, receptacle cover condition, and enclosure condition, are addressed separately in the General Electrical Observations section of this report.

The equipment area is located within the pool deck walking area and is accessible from the pool deck. Access was available to the pump, filter, salt chlorine generator, valves, timer, and visible electrical enclosures at the time of inspection.

The filter waste/backwash discharge was connected to a pool vacuum hose attached to the filter discharge fitting. The vacuum hose was being used as the backwash/waste discharge line. The final discharge location of the backwash/waste line was not determined during the inspection. Pool water discharge and drainage observations are addressed separately in the General Plumbing Observations section of this report.

Leaves and organic debris were present around portions of the equipment area at the time of inspection. Organic debris was present near equipment, plumbing, and electrical components. The equipment area should be maintained clear enough to allow access, inspection, operation, and service of pool equipment and electrical controls.



Executive Summary

The Pool Store, Inc. performed a visual pool inspection on May 7, 2026, for the inground residential swimming pool located at [REDACTED], Gloucester, Virginia. A separate leak survey and plumbing pressure test were performed by Neff Pool Leak Detection on May 11, 2026. This executive summary identifies the primary observed conditions and recommended areas for further evaluation or correction. It is not a substitute for the full report.

The subject pool is an inground vinyl-liner residential swimming pool with steel wall panels, molded shallow-end steps, two skimmers, three wall returns, one step return, one visible main drain sump, and a gravity overflow fitting. Based on the liner drawing provided for the inspection, the pool is approximately 16 feet by 32 feet, with a 40-inch wall and an approximate deep-end depth of 5 feet 10 inches. The pool is a nondiving residential pool and is classified as a Type O pool under the International Swimming Pool and Spa Code residential pool type definitions. No diving equipment was present, and diving should not be permitted.

The pool circulation equipment was operating at the time of inspection. The Hayward Super Pump started, ran, maintained prime, and moved water through the circulation system. The Hayward Perflex D.E. filter was operating at approximately 19 PSI, and the pressure gauge returned to 0 PSI when the pump was turned off. No visible active leaks were observed at the accessible pump, filter, valves, unions, or visible plumbing connections during operation; however, weather and site conditions were wet, which limited the ability to distinguish minor seepage from surrounding moisture.

The Hayward Super Pump appeared to have been manufactured in July 2017, based on the visible serial number and commonly published Hayward serial-number decoding format. The pump motor has been replaced with an aftermarket Century Centurion Pro HST110 motor. The Hayward Perflex D.E. filter appeared to have been manufactured in June 2018. The Hayward AquaRite control box and T-CELL-9 appeared to have been manufactured in August 2021. These date determinations were based on serial-number decoding and were not independently confirmed by Hayward.

Several equipment installation concerns were observed. The circulation pump did not appear to be mechanically fastened to the equipment base as specified by the Hayward Super Pump manual. The suction-side plumbing immediately before the pump inlet provided approximately 1.5 inches of straight pipe before the pump inlet, which is substantially less than the manufacturer's stated minimum of five pipe diameters. The pump remained operational during the inspection, but the visible suction-side piping layout does not match the manufacturer's installation guidance.

The Hayward AquaRite salt chlorine generator was powered on and indicated chlorine generation upon arrival. The displayed salt level was initially approximately 2,600 ppm and changed to approximately 2,200 ppm after recalibration. The manufacturer's stated ideal salt range

is 2,700 ppm to 3,400 ppm, with 3,200 ppm being optimal. The recalibrated salt level was below the manufacturer's recommended operating range. Chlorine production and water chemistry were not independently verified by water testing during this inspection.

A leak survey and plumbing pressure test were performed by Neff Pool Leak Detection. According to the leak detection report, the pool and liner appeared to be in fair condition. The report states that the two skimmers, main drain, three wall returns, and step return were pressure-tested at 15 PSI, with each line monitored for three minutes. The leak detection report did not identify a failed pressure test or active plumbing leak in the tested plumbing lines. The Pool Store, Inc. did not independently perform separate pressure testing beyond the subcontractor's testing.

The pool has one visible main drain sump located in the deep end. The main drain is separately plumbed to the equipment area and can be isolated from the skimmers by the suction-side three-port valve. Because the main drain can potentially operate as the only active submerged suction outlet, suction-entrapment compliance could not be confirmed from visible conditions alone. The main drain cover was reportedly installed in 2017 when the current liner was installed, but the cover manufacturer, model number, flow rating, VGB/ANSI marking, listed service life, fastener condition, sump configuration, and cover-to-sump compatibility were not verified. No secondary anti-entrapment device or system was confirmed.

Significant electrical deficiencies and conditions requiring further evaluation were observed. GFCI protection was not present for the pool pump/AquaRite circuit. The 2020 National Electrical Code requires Class A GFCI protection for qualifying pool pump motor circuits. NM-type cable, commonly referred to as Romex, was observed in outdoor pool equipment wiring, which is not suitable for wet or damp locations. Damaged conduit/raceway was observed. A 15-amp duplex receptacle near the equipment area lacked a while-in-use weatherproof cover while a cord-and-plug timer was connected. A loose junction box cover associated with pool-area lighting wiring was also observed.

Bonding concerns were also noted. A bonding conductor was observed at the circulation pump motor, but bonding continuity was not tested. A bonding conductor was not observed connected to the Hayward AquaRite control box, although the AquaRite manufacturer's instructions require the control box to be bonded to the pool bonding system. No intentional pool water bonding fitting or other intentional pool water bonding connection was observed. The pool bonding system, pool water bonding, fixed metal parts near the pool, fence-related metal components, and concealed equipotential bonding grid should be evaluated by a licensed electrician familiar with swimming pool electrical requirements.

The pool's visible plumbing appeared generally serviceable at the equipment area. The two skimmers are tied together underground and share one suction line to the equipment area. The main drain is separately plumbed and can be controlled by the suction-side three-port valve. The return system leaves the equipment area through one visible return line and supplies the three wall returns

and step return through underground piping. The visible plumbing lines were not permanently labeled.

The filter waste/backwash discharge from the Hayward Perflex D.E. filter was connected to a pool vacuum hose. The final discharge location of that hose was not determined. Because the pool is operated as a saltwater pool and uses a D.E. filter, discharge may contain saltwater, chlorine, other pool-treatment chemicals, D.E. powder, and filter solids. The discharge location should be traced and evaluated to confirm that pool water, D.E. waste, and filter solids are not being discharged to an unapproved location.

The pool is equipped with a gravity overflow drain. The overflow appeared to discharge into the ground near a retaining wall area. The final drainage path was not determined. Discharge near a retaining wall may contribute to localized moisture accumulation and should be further evaluated and redirected away from the retaining wall if necessary.

The vinyl liner appeared generally intact from visible observation. No visible tears, holes, patches, or significant wrinkling were observed. Debris on the pool floor and liner surface limited evaluation of small punctures, staining, discoloration, and subtle defects. One area of the liner was not fully secured near the step/coping/liner-track transition, and another area was partially pulled out of the liner track. No liner lock was observed.

The molded shallow-end steps were visibly stained and discolored. Raised bubble-like areas were observed on the step surface and felt solid when physically checked, but the cause, depth, internal condition, moisture content, bond condition, and long-term significance of these raised areas were not determined. Two step strip covers were missing, leaving underlying fasteners exposed. The watertightness of the step assembly, step gasket, step return fitting, and step-to-liner transition was not determined from visual inspection alone.

The pool has an approximate deep-end depth of 5 feet 10 inches. No installed ladder, handrail, recessed tread, deep-end step, deep-end bench, swimout, or other installed deep-end means of entry or exit was observed. Because the deep end exceeds 5 feet, and no installed deep-end means of entry or exit was observed, the pool does not appear to satisfy the deep-area entry/exit provision of 2021 ISPCS Section 809.3 based on visible conditions at the time of inspection.

The pool deck showed multiple cracks, open separations, vegetation growth, staining, weathering, settlement, and vertical displacement. Two trip hazards near the shallow-end step area were measured at greater than 0.75 inches of vertical displacement. These areas are located within normal walking paths around the pool and should be corrected. The linear/channel deck drain was clogged with vegetation and organic debris, was not flow-tested, and its final discharge location was not determined.

Safety barrier deficiencies were observed. The wood gate providing access to the pool area was not self-closing and was not self-latching. The metal gate near the front of the house was not self-latching. A gap of approximately 6 inches was observed between the fence and the house. The

2021 International Swimming Pool and Spa Code requires pool barrier openings to prevent passage of a 4-inch diameter sphere, and pedestrian access gates are required to be self-closing and self-latching. These barrier conditions should be corrected before continued use of the pool.

A deck-anchor style safety cover system was present, and safety cover anchors were observed in the concrete deck. The safety cover was not installed on the pool at the time of inspection and was not inspected, measured, operated, or evaluated. The presence of a stored safety cover does not eliminate the need for a compliant and properly maintained pool barrier where a barrier is required.

Equipment Observations

Filtration Pump

The pool circulation pump is a Hayward Super Pump, model SP2607X10, serial number 21121707001527020. The pump motor has been replaced with an aftermarket Century Centurion Pro HST110 motor. The original factory pump motor was not present at the time of inspection.

Based on the visible Hayward serial number and commonly published Hayward pump/filter serial-number decoding format, the pump housing/wet-end assembly appears to have been manufactured in July 2017. As of the May 7, 2026 visual inspection, the pump housing/wet-end assembly was approximately 8 years and 10 months old. Because the original motor has been replaced, the age of the currently installed aftermarket Century motor was not determined from the Hayward pump serial number.

Typical useful life for a residential pool pump is commonly estimated at approximately 8 to 12 years, depending on installation quality, operating hours, water chemistry, maintenance, weather exposure, freeze protection, seal condition, bearing condition, and electrical conditions. The pump was operational at the time of inspection; however, based on the apparent July 2017 manufacture date of the Hayward pump housing/wet end, the pump assembly should be considered within or near the typical expected service-life range. Remaining service life cannot be predicted.

The pump is installed in the outdoor equipment area adjacent to the house. The pump is part of the main pool circulation system and is connected to the suction-side plumbing, discharge-side plumbing, filter, salt chlorine generator, and return system.

At the time of inspection, the pump was operational. The pump started, ran, and moved water through the circulation system. The pump appeared to run normally during the inspection, with no unusual operating noise observed. Water flow appeared normal during operation.

The pump maintained a full prime while operating. No significant air accumulation was observed in the pump strainer basket. Little to no air bubbles were observed returning to the pool during pump operation.

No visible water leaks were observed at the pump housing, pump lid, pump strainer pot, unions, or immediately adjacent fittings while the pump was operating. Site conditions were wet at the time of inspection due to recent weather, which limited the ability to distinguish minor seepage from surrounding rainwater or site moisture.

The pump is mounted on a plastic equipment base that also supports the filter. The pump appeared level and stable at the time of inspection. The pump did not appear to be mechanically fastened to the equipment base.

The Hayward Super Pump manual specifies that the pump is to be installed on a firm, level base or pad and fastened to the base or pad with screws or bolts to reduce vibration and stress on pipe or hose joints. The manual further states that the base must be solid, level, rigid, and vibration free. The observed pump installation was level and stable, but the pump did not appear to be fastened to the base as specified by the manufacturer.

Manufacturer installation instructions are relevant because electrical and pool equipment are required to be installed and used in accordance with their listing, labeling, and manufacturer instructions where applicable. The lack of visible mechanical fastening should be corrected when the pump or equipment base is serviced, repaired, or replaced.

The suction-side plumbing entering the pump does not provide the straight-pipe length specified by the manufacturer. The visible suction piping immediately elbows down into the pump inlet, with approximately 1.5 inches of straight pipe before the pump inlet. The visible suction-side pipe size is approximately 1.5 inches.

Based on the visible pipe size, a straight-pipe length of five pipe diameters would be approximately 7.5 inches. The observed straight-pipe section before the pump inlet was substantially shorter than that. The Hayward Super Pump manual states that the pump mount must incorporate a straight portion of pipe before the pump inlet of not less than five pipe diameters. The manual also recommends a minimum length of piping equivalent to 10 pipe diameters between the pump suction inlet and any plumbing fittings. The observed suction piping does not match this manufacturer installation guidance.

The suction piping includes an elbow immediately before the pump inlet. This configuration can affect the hydraulic approach to the pump and may contribute to turbulence, reduced hydraulic efficiency, or increased stress on the suction-side plumbing. During the inspection, the pump maintained prime and no significant air intrusion was observed; however, the visible suction-side piping layout does not match the manufacturer's straight-pipe installation guidance.

The Hayward Super Pump manual also states to use two or more suction outlets per pump installed in accordance with applicable ASME/APSP standards, CPSC guidelines, and applicable national, state, and local codes. This pool has two skimmers and one visible main drain sump. The two skimmers are tied together underground, and the main drain is separately plumbed to the equipment area. The main drain line can be isolated at the suction-side valve.

Because only one submerged main drain sump was observed, and because the main drain cover listing, flow rating, service life, sump compatibility, fastener condition, and entrapment-protection configuration were not verified as part of the pump inspection, compliance with the manufacturer's suction-outlet instruction could not be confirmed from visible conditions alone. This item is further addressed in the Virginia Graeme Baker Pool and Spa Safety Act / Suction Entrapment section of this report.

A bonding conductor was observed at the pump motor and appeared to be connected to the motor bonding lug. The Hayward Super Pump manual requires the motor to be bonded to the pool structure using a solid copper conductor, size #8 AWG or larger. The 2020 National Electrical Code, as incorporated into the 2021 Virginia Residential Code, also requires metal parts of electrical equipment associated with the pool water circulating system, including pump motors, to be bonded as part of the pool equipotential bonding system. Bonding continuity was not tested as part of this inspection.

The pump was operated through an Intermatic mechanical timer. The pump and AquaRite salt chlorine generator were supplied by the same timed circuit. Time switches or other automatic controls are generally required for pool pump motors under the Virginia Residential Code energy provisions; however, the presence of a timer does not address the separate requirements for proper wiring methods, bonding, grounding, GFCI protection, and equipment installation.

GFCI protection for the pump/AquaRite circuit was not present at the time of inspection. Under the 2020 National Electrical Code, as incorporated into the 2021 Virginia Residential Code, outlets supplying pool pump motors on branch circuits rated 150 volts or less to ground and 60 amperes or less are required to be provided with Class A GFCI protection. The observed pump/AquaRite circuit was not GFCI protected and should be corrected by a licensed electrician.

The electrical conduit or raceway serving the pump motor was visibly cracked/damaged. Pool motor branch-circuit wiring methods are required to be suitable for the pool equipment environment, including outdoor wet/damp and corrosive conditions where applicable. Damaged conduit or raceway can compromise conductor protection, weather resistance, and electrical safety.

The Hayward Super Pump manual states that damaged wiring should be replaced immediately and that conduit should be located to prevent damage. The cracked/damaged conduit or raceway serving the pump motor should be evaluated and corrected by a licensed electrician using wiring methods, fittings, conductors, grounding, bonding, and GFCI protection suitable for the outdoor pool equipment environment.



Filter

The pool filter is a Hayward Perflex D.E. filter, model EC75A, serial number 211218060052460004. The filter is part of the main pool circulation system and is installed downstream of the circulation pump.

Based on the visible Hayward serial number and commonly published Hayward pump/filter serial-number decoding format, the filter appears to have been manufactured in June 2018. As of the May 7, 2026 visual inspection, the filter was approximately 7 years and 11 months old.

Typical useful life for a residential pool filter tank is commonly estimated at approximately 10 to 15 years, depending on installation quality, operating pressure, water chemistry, maintenance, weather exposure, freeze protection, cleaning practices, and physical damage. Internal filter components, including D.E. fingers, seals, gaskets, O-rings, clamps, gauges, and drain components, may require repair or replacement before the filter tank reaches the end of its service life. Remaining service life cannot be predicted.

The Hayward EC75A is a D.E. filter using internal filter fingers and D.E. filter media. Published product information identifies the EC75A/W3EC75A as a 40-square-foot Perflex extended-cycle D.E. filter. The filter was not internally disassembled during this inspection, and the condition of the internal filter fingers, internal filter assembly, D.E. media condition, internal seals, internal gaskets, and other internal components was not evaluated.

The filter is installed on the same plastic equipment base as the circulation pump. The filter appeared level and stable on the equipment base at the time of inspection. The equipment base is located directly on the concrete pool deck in the outdoor equipment area.

At the time of inspection, the filter was operating while the circulation pump was running. The observed filter pressure was approximately 19 PSI. Flow through the circulation system appeared normal during operation.

The filter pressure gauge appeared functional during the inspection. The gauge displayed operating pressure while the pump was running and returned to 0 PSI when the pump was turned off. Because the clean starting pressure for this filter was not established during the inspection, the observed operating pressure of approximately 19 PSI could not be used to determine whether the filter was clean, partially loaded, or due for cleaning.

No visible leaks were observed at the filter body, lid area, tank clamp area, pressure gauge, drain area, inlet connection, outlet connection, or adjacent fittings during operation. Site conditions were wet at the time of inspection due to recent weather, which limited the ability to distinguish minor seepage from surrounding rainwater or site moisture.

No visible D.E. residue was observed around the filter at the time of inspection. The surrounding equipment area contained leaves and organic debris.

The visible exterior filter components appeared intact at the time of inspection. The filter tank, lid area, clamp assembly, bump handle, pressure gauge, drain area, inlet connection, and outlet connection were visually observed.

The filter bump handle was operated during the inspection and felt normal. The filter was not opened during the inspection. The internal filter fingers, internal filter assembly, D.E. media condition, internal seals, internal gaskets, and other internal components were not inspected.

The filter is a pressure vessel within the pool circulation system. Pool filters should be operated, opened, cleaned, serviced, and reassembled only in accordance with the manufacturer's instructions. Before opening or servicing the filter, the pump should be turned off, system pressure should be relieved, and the filter clamp, lid, O-rings, seals, and related components should be properly inspected and secured before the system is restarted.

The filter waste/backwash discharge was connected to a pool vacuum hose attached to the filter discharge fitting. The hose was being used as the filter waste/backwash discharge line. The final discharge location of the hose was not determined during the inspection. Because this is a D.E. filter, filter waste may contain D.E. powder, filter solids, chemically treated pool water, and saltwater pool water. Discharge location and disposal concerns are addressed separately in the General Plumbing Observations section of this report.

Access around the filter was somewhat limited due to the equipment layout and surrounding conditions; however, access remained available for general service and visual inspection of the exterior filter components. The equipment area should be maintained clear enough to allow safe access for operation, pressure monitoring, cleaning, winterization, and service of the filter and related circulation equipment.



Saltwater Chlorination System

The pool sanitation system includes a Hayward AquaRite salt chlorine generator, model W3AQR9, serial number 3A21238-703894. The system is paired with a Hayward TurboCell T-CELL-9, serial number E321237-706473.

Based on the visible serial numbers and commonly published Hayward/Goldline serial-number decoding formats, the AquaRite control box appears to have been manufactured on or about the 238th day of 2021, which corresponds to approximately August 26, 2021. The T-CELL-9 serial number appears to indicate manufacture on or about the 237th day of 2021, which corresponds to approximately August 25, 2021. As of the May 7, 2026 visual inspection, the AquaRite control box and T-CELL-9 were approximately 4 years and 8 months old. These manufacture-date determinations are based on serial-number decoding and were not independently confirmed by Hayward.

The AquaRite control box is installed in the equipment area near the circulation pump, filter, and related electrical controls. The TurboCell and flow switch are installed in the visible return-side plumbing downstream of the filter.

Based on the 2017 liner drawing provided for this inspection, the pool is approximately 16 feet by 32 feet, with a 40-inch wall and an approximate deep-end depth of 5 feet 10 inches. Using the dimensions shown on the liner drawing, the pool volume is estimated at approximately 15,000 to 16,000 gallons, with 15,500 gallons used as a practical estimate for equipment-sizing and chemical-dosing purposes.

The Hayward AquaRite manual identifies the T-CELL-9 as being intended for pools up to 25,000 gallons. Based on the estimated pool volume of approximately 15,500 gallons, the T-CELL-9 appears appropriately sized from a pool-volume standpoint. Actual chlorine production adequacy depends on pump run time, output percentage, bather load, sunlight exposure, stabilizer level, water temperature, salt level, and overall water chemistry.

Typical useful life for a residential salt chlorine generator cell is commonly estimated at approximately 3 to 7 years, or approximately 10,000 operating hours, depending on run time, output percentage, water chemistry, calcium scaling, cleaning practices, water temperature, and maintenance. Based on the apparent August 2021 manufacture date, the T-CELL-9 should be considered within the typical service-life range for a salt cell. Remaining service life cannot be predicted.

The AquaRite control box generally has a longer expected service life than the salt cell, but it remains an outdoor electronic control subject to weather exposure, electrical conditions, heat, moisture, component aging, and surge damage. The control box was operational at the time of inspection; however, remaining service life cannot be predicted.

At the time of inspection, the AquaRite control panel was powered on and the display was readable. The controller was set to metric measurements when initially observed. Readings were converted to standard/imperial measurements for reporting purposes.

Upon arrival, the AquaRite indicated that it was generating chlorine. The displayed salt level at that time was approximately 2,600 ppm. After the salt reading was recalibrated, the displayed salt level changed to approximately 2,200 ppm.

The AquaRite manual identifies the ideal salt level as 2,700 ppm to 3,400 ppm, with 3,200 ppm being optimal. The manual also states that low salt reduces AquaRite efficiency and results in low chlorine production. The recalibrated salt reading of approximately 2,200 ppm was below the manufacturer's stated ideal operating range.

Because the recalibrated salt reading was below the manufacturer's stated ideal operating range, the AquaRite system may not produce chlorine efficiently or consistently until the salt level is corrected and the system is rechecked. The pool volume estimate of approximately 15,500 gallons should be used when calculating the amount of salt needed to bring the pool into the manufacturer's recommended range, subject to confirmation by reliable water testing before adding salt.

Chlorine generation was not independently verified by water testing during this inspection. The report documents the controller status and displayed readings observed at the time of inspection only. The actual free chlorine level, stabilizer level, pH, calcium hardness, total alkalinity, salt level, and overall water balance were not independently tested as part of this inspection.

The AquaRite manual identifies recommended water-chemistry levels for proper operation, including free chlorine, pH, alkalinity, salt, stabilizer, calcium hardness, metals, and saturation index. Improper water chemistry can affect chlorine production, scaling, corrosion, staining, cell performance, and cell life. This inspection did not include a full water-chemistry analysis.

The flow switch was observed during pump operation and pump shutdown/startup. When the circulation pump was turned off and then turned back on, the flow switch responded accordingly. No visible damage was observed on the flow switch cord at the time of inspection.

The AquaRite manual states that the flow switch must have at least 12 inches of straight pipe upstream. The manual also states that if the flow switch is installed after the cell, the cell can count as the required straight pipe. The manual requires the flow-switch arrow to point in the direction of water flow. The flow switch and TurboCell were visually observed in the return-side plumbing; however, exact straight-pipe measurement, internal flow-switch operation, calibration, and electrical signal were not independently verified beyond the observed response to pump operation.

The TurboCell was not disassembled during the inspection. The interior of the cell was not inspected for calcium buildup, scale, debris, coating condition, plate condition, or other internal conditions. The AquaRite manual recommends visually inspecting the cell periodically and cleaning it if scale or debris is present. If the cell remains scaled after cleaning or if the system continues to indicate reduced cell efficiency, the cell may be worn and may require replacement.

No visible leaks were observed at the TurboCell unions during operation. Site conditions were wet at the time of inspection due to recent weather, which limited the ability to distinguish minor seepage from surrounding rainwater or site moisture.

The AquaRite operated on the same circuit as the circulation pump through an Intermatic mechanical timer. The AquaRite powered on and off with the pump circuit through the timer during the inspection.

The AquaRite manual states that, for stand-alone operation, the AquaRite should be wired to the load side of the filter pump timer so that the AquaRite is powered only when the pump is running. The manual also states that the pump should be wired directly to the timeclock and that the AquaRite should not be used as a junction box. Internal wiring configuration was not verified during this inspection.

Manufacturer installation instructions are relevant because listed electrical equipment is required to be installed and used in accordance with its listing, labeling, and manufacturer instructions where applicable. The AquaRite wiring configuration should be verified by a licensed electrician to confirm that the control box is powered only when the circulation pump is operating and that the AquaRite is not being used as a junction box.

GFCI protection was not present for the pump/AquaRite circuit at the time of inspection. The pump and AquaRite were supplied by the same timed circuit. Under the 2020 National Electrical Code, as incorporated into the 2021 Virginia Residential Code, outlets supplying pool pump motors on qualifying branch circuits are required to be provided with Class A GFCI protection. Because the AquaRite is supplied with the circulation pump circuit, the circuit should be evaluated and corrected by a licensed electrician to provide required GFCI protection and proper wiring methods.

A bonding conductor was not observed attached to the AquaRite control box at the time of inspection. The AquaRite manual states that the AquaRite must be bonded to the pool bonding system with an 8 AWG copper wire. The 2020 National Electrical Code, as incorporated into the 2021 Virginia Residential Code, also requires metal parts of electrical equipment associated with the pool water circulating system to be bonded as part of the pool equipotential bonding system. The observed AquaRite control box installation did not include a visible bonding conductor connected to the control box bonding lug.

Bonding continuity was not tested as part of this inspection. The AquaRite control box, circulation pump, pool water bonding, metallic components, fixed metal parts near the pool, and

concealed equipotential bonding grid should be evaluated by a licensed electrician familiar with swimming pool bonding requirements.



Mechanical Time Clock

The pool circulation pump and Hayward AquaRite salt chlorine generator are controlled by an Intermatic T104P3 mechanical timer. The installed timer uses an Intermatic T104 24-hour dial time switch mounted in a plastic NEMA 3R-rated enclosure.

The timer enclosure is mounted outdoors on a board attached to the exterior of the house, adjacent to the pool equipment area. The timer is located in a weather-exposed pool equipment environment.

The timer was accessible at the time of inspection. The timer enclosure, dial, manual operating lever, and timer trippers were visually observed.

At the time of inspection, the timer appeared operational. The manual switch operated correctly. The timer trippers operated as intended when tested. The circulation pump and Hayward AquaRite salt chlorine generator turned on and off through the timer.

The timer controls both the circulation pump and the AquaRite salt chlorine generator. The AquaRite powered on and off with the pump circuit during timer operation. This observed operating sequence is consistent with the AquaRite manufacturer's instruction that, for stand-alone operation, the AquaRite should be wired to the load side of the filter pump timer so that the AquaRite is powered only when the pump is running. Internal wiring configuration was not fully verified during this inspection.

The Intermatic T104 manual states that wiring to the switch must use solid or stranded copper conductors with insulation suitable for the installation. The internal conductor size, conductor insulation type, complete circuit routing, and all upstream and downstream wiring methods were not fully verified during this inspection.

The timer was supplied by a circuit breaker. GFCI protection was not present for the pump/AquaRite circuit at the time of inspection. Under the 2020 National Electrical Code, as incorporated into the 2021 Virginia Residential Code, outlets supplying pool pump motors on qualifying branch circuits are required to be provided with Class A GFCI protection. The absence of GFCI protection for the pump/AquaRite circuit is addressed further in the General Electrical Observations section of this report.

NM-type cable, commonly referred to as Romex, was observed inside the outdoor timer enclosure. Type NM cable is not permitted in wet or damp locations under NEC 334.12(B)(4). The timer is installed outdoors in a weather-exposed pool equipment area, and pool equipment wiring methods must be suitable for the location and environment.

The presence of a NEMA 3R enclosure does not, by itself, make Type NM cable suitable for exterior pool equipment wiring. Exterior raceways and enclosures associated with outdoor

equipment may be subject to wet-location conditions, moisture intrusion, condensation, and corrosive pool-equipment exposure. Under NEC 300.9, the interior of raceways installed in wet locations above grade is considered a wet location.

Pool motor branch-circuit wiring methods must comply with NEC 680.21(A), and electrical equipment in pool equipment areas must also be evaluated for suitability under the pool equipment environment provisions of NEC 680.14. The observed NM cable and related wiring methods should be evaluated and corrected by a licensed electrician using conductors, raceways, fittings, equipment grounding, and enclosures suitable for an outdoor pool equipment environment.

Listed electrical equipment is required to be installed and used in accordance with its listing, labeling, and manufacturer instructions where applicable. The timer enclosure, wiring methods, conductor insulation, grounding, bonding, fittings, penetrations, and enclosure mounting should be evaluated for compliance with the applicable installation instructions and electrical code requirements.

The timer function was observed only under the conditions present at the time of inspection. Long-term timer accuracy, full 24-hour dial operation, enclosure weather resistance, conductor condition, internal terminations, grounding continuity, bonding continuity, and concealed wiring conditions were not verified.



General Plumbing Observations

Layout, Piping Materials, and Line Identification

The visible circulation plumbing at the equipment area consists of rigid white PVC piping. The visible piping appeared to be Schedule 40 PVC. The visible pressurized circulation plumbing included PVC pipe, fittings, unions, valves, and equipment connections.

No flexible PVC, electrical conduit, rubber couplings, corrugated hose, or other non-pressure piping materials were observed in the visible pressurized circulation plumbing. The visible circulation plumbing appeared to be permanently plumbed with solvent-welded PVC fittings and threaded or union-style equipment connections.

The suction side of the system has two visible suction lines entering a three-port valve before the circulation pump. The three-port valve controls suction flow to the pump. One side of the valve was verified as serving the main drain line only. The other side of the valve was verified as serving the two skimmers.

The two skimmers are tied together underground and return to the equipment area through a shared suction line. Because the skimmers are tied together below grade, the individual underground piping from each skimmer to the shared line was not visible and was not directly inspected.

The skimmers can be adjusted or trimmed at the skimmer bodies by use of the internal trim plates. No separate above-ground valve was observed at the equipment area for independently isolating each skimmer.

The main drain line is separately plumbed to the equipment area and can be controlled at the suction-side three-port valve. The main drain line can be isolated from the skimmer suction line at that valve.

The return side of the system has one visible return line leaving the equipment area. Based on the pool configuration and the leak detection report, the three wall returns and the step return are tied together underground and are supplied by the shared return line. The underground return piping layout was not visible and was not directly inspected.

The plumbing lines were not labeled at the time of inspection. The function of the visible suction-side lines was verified through valve operation and system observation; however, permanent labeling was not present on the visible plumbing.

The visible PVC piping and fittings appeared to be in serviceable condition at the time of inspection. No excessive repairs, temporary patches, rubber repair couplings, or visibly excessive

solvent cement were observed on the accessible circulation plumbing. The visible glue joints appeared generally clean.

No visible active leaks were observed at the accessible piping, fittings, valves, unions, or equipment connections during operation. Site conditions were wet at the time of inspection due to recent weather, which limited the ability to distinguish minor seepage from surrounding rainwater or site moisture.

The 2021 International Swimming Pool and Spa Code addresses pool water velocity in circulation piping. For residential pools and spas, ISPSA Section 311.3.2 limits water velocity in suction and return piping to 8 feet per second. Pipe size, flow rate, underground pipe layout, and actual system velocity were not calculated or verified during this inspection. The visible piping appeared serviceable from a visual inspection standpoint, but hydraulic design compliance could not be confirmed from visible conditions alone.

Valves

A three-port valve is installed on the suction side of the circulation pump. The valve is located immediately upstream of the pump and controls suction flow between the main drain line and the shared skimmer suction line.

One side of the three-port valve was verified as serving the main drain line. The other side of the three-port valve was verified as serving the shared skimmer suction line for the two skimmers. The valve allows suction flow to be adjusted between the main drain and skimmer suction sources.

The three-port valve was operated during the inspection. The valve handle moved, and the valve changed suction flow as expected during operation. The valve showed visible signs of age and exterior wear but remained operational at the time of inspection.

The internal condition of the three-port valve was not inspected. The valve lid, diverter, seals, O-rings, and internal components were not removed or disassembled.

A ball valve is installed on the return side of the circulation system. Based on its location, the ball valve appears to be used to stop water flow from the effluent side of the filter when servicing the salt cell or other return-side components. The ball valve was present and accessible at the time of inspection.

The internal condition of the ball valve was not inspected. The valve was not disassembled, and the internal seals or ball mechanism were not evaluated.

No visible leaks were observed at the three-port valve, ball valve, or immediately adjacent fittings during system operation. Site conditions were wet at the time of inspection due to recent weather, which limited the ability to distinguish minor seepage from surrounding rainwater or site moisture.



Pool Water Discharge and Drainage Observations

The pool has two separate observed water discharge/drainage conditions: the filter waste/backwash discharge from the Hayward Perflex D.E. filter and the gravity overflow drain from the pool wall.

The Hayward Perflex D.E. filter waste/backwash discharge was connected to a pool vacuum hose clamped onto the filter discharge nipple. The vacuum hose was being used as the filter waste/backwash discharge line. The final discharge location of the vacuum hose was not determined during the inspection.

The pool is equipped with a Hayward AquaRite salt chlorine generator and is operated as a saltwater pool. Water discharged from the pool system may contain salt, chlorine, stabilizer, pH-adjusting chemicals, algacides, clarifiers, metals, dissolved solids, D.E. powder, organic debris, and other pool-treatment materials depending on water chemistry, recent maintenance, and filter condition.

Because the final discharge location of the filter waste/backwash hose was not verified, it could not be confirmed whether filter waste, backwash water, D.E. powder, and saltwater pool water are being discharged to an appropriate disposal location.

Virginia's MS4 regulation identifies certain nonstormwater discharges that may be authorized into regulated municipal separate storm sewer systems when specific conditions are met. The listed swimming-pool discharge category refers to dechlorinated freshwater swimming pool discharges managed in a manner to avoid instream impact. That listed category does not expressly identify saltwater pool discharge, D.E. filter backwash, or filter waste containing solids as part of the authorized swimming-pool discharge category.

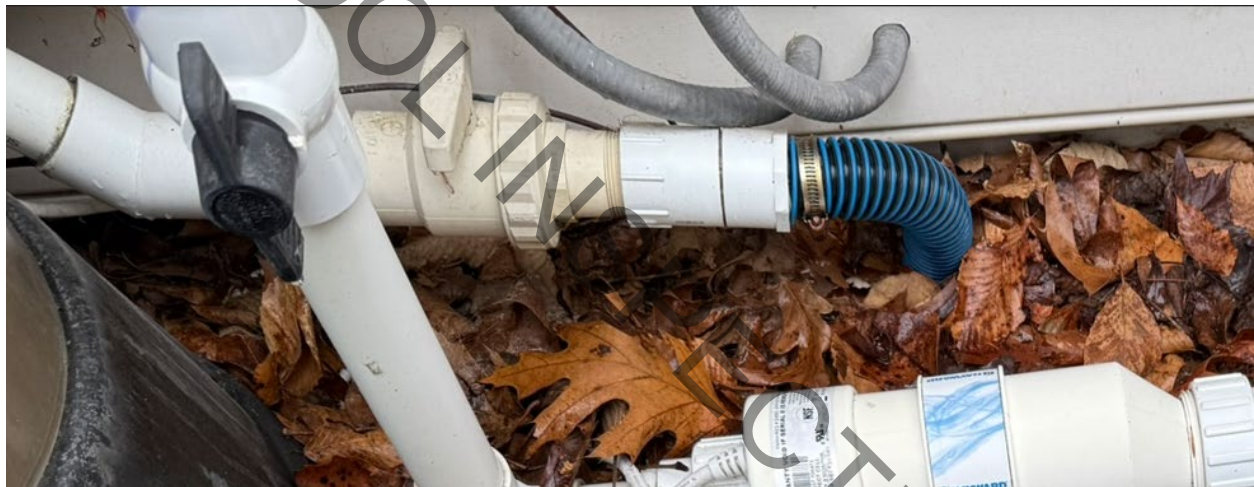
Filter waste/backwash discharge from a D.E. filter should be routed and managed so that D.E. powder, filter solids, saltwater pool water, chlorinated water, and other chemically treated pool water do not discharge directly to storm drains, drainage conveyances, wetlands, streams, surface waters, or off-site areas unless such discharge is specifically allowed by applicable law, permit, utility policy, or local authority.

A buildup of D.E. powder or filter waste at the final discharge area is possible; however, the final discharge location was not visible and could not be verified during the inspection. The discharge hose should be traced to determine where filter waste/backwash water is being discharged.

The pool is also equipped with a gravity overflow drain. The overflow consists of a standard wall fitting connected to approximately 1.5-inch PVC piping sloped away from the pool.

The gravity overflow drain was observed discharging into the ground near the retaining wall area. The piping appeared to terminate at or near grade, and the overflow water was not observed to be connected to a dedicated drainage outlet, stormwater system, or other visible discharge point. The final drainage path after entering the ground was not determined during the inspection.

Because the overflow discharge enters the ground near the retaining wall area, this condition should be evaluated separately from the filter waste/backwash discharge. Subsurface discharge in this location may contribute to localized moisture accumulation near the retaining wall. The overflow discharge should be further evaluated and redirected away from the retaining wall if necessary.



Main Drain and Suction Entrapment Safety

&

Virginia Graeme Baker Pool and Spa Safety Act

The pool has one visible main drain sump located in the deep end and two skimmers. The two skimmers are tied together underground and return to the equipment area through one shared suction line. The main drain is separately plumbed to the equipment area and can be isolated by the suction-side three-port valve.

Because the main drain can be isolated from the skimmers, the main drain can potentially operate as the only active submerged suction outlet. This configuration could not be verified as compliant with current suction-entrapment safety standards based on visible inspection alone.

The 2021 International Swimming Pool and Spa Code addresses suction-entrapment avoidance in Section 310.1 by requiring suction-entrapment avoidance for pools and spas to be provided in accordance with ANSI/PHTA/ICC-7. ANSI/PHTA/ICC-7 addresses suction-entrapment avoidance for circulation systems with skimmers, submerged suction outlet fitting assemblies, and vacuum fittings.

The main drain cover was reportedly installed by The Pool Store, Inc. in 2017 when the current vinyl liner was installed. No documentation was provided indicating that the main drain cover has been replaced since that installation. Based on the available information, the installed drain cover should be treated as a 2017-installed cover unless replacement documentation is provided.

The main drain cover was not removed during the inspection. The drain cover manufacturer, model number, flow rating, VGB/ANSI marking, listed service life, fastener condition, sump depth, sump configuration, and compatibility between the cover and sump were not verified.

Drain cover service life is manufacturer-specific and is commonly marked on or associated with the listed drain cover. Because the cover model and listed service life were not verified, it could not be determined whether the installed main drain cover remains within its manufacturer-listed service life. The cover should be verified and replaced if it is expired, damaged, improperly secured, not properly rated, not compatible with the sump, or otherwise not compliant with applicable requirements.

No secondary anti-entrapment device or system was verified during the inspection. No safety vacuum release system, suction-limiting vent system, gravity drainage system, automatic pump shutoff system, disabled drain configuration, or other secondary anti-entrapment system was confirmed.

The Virginia Graeme Baker Pool and Spa Safety Act applies operational requirements to public pools and spas. CPSC guidance states that public pools and spas must be equipped with anti-entrapment drain covers complying with 16 CFR Part 1450, and that a public pool or spa using a single blockable drain, or multiple drains on the same plane less than three feet apart, requires a secondary device or system to prevent entrapment.

CPSC's mandatory drain-cover standard, 16 CFR Part 1450, incorporates ANSI/APSP/ICC-16 2017 requirements for suction outlet fitting assemblies, subject to stated exclusions in the federal regulation. ANSI/APSP/ICC-16 establishes requirements for bather-accessible suction outlet fitting assemblies, including drain covers used in pools and spas.

This inspection involved a residential pool, and this report is not a VGBA certification, suction-entrapment certification, or drain-cover compliance certification. However, the pool has one visible main drain sump that can be isolated from the skimmers, an unverified drain cover listing, an unverified drain cover service life, unverified cover-to-sump compatibility, unverified fastener condition, and no verified secondary anti-entrapment system. These conditions should be further evaluated by a qualified pool professional before continued reliance on the main drain during pool operation.



Leak Detection Report

As part of this pool inspection, a leak survey and plumbing pressure test were performed by Neff Pool Leak Detection on May 11, 2026, for the pool located at [REDACTED], Gloucester, Virginia.

According to the leak detection report, Neff Pool Leak Detection performed a pool dive/leak survey and pressure-tested the pool plumbing. The report states that the pool and liner appeared to be in fair condition.

The leak detection report states that the following pool plumbing lines were pressure-tested: two skimmers, main drain, three wall returns, and step return. During testing, the pool plumbing was pressurized to 15 PSI, and each line was monitored for three minutes.

The leak detection report did not identify a failed pressure test or active plumbing leak in the tested plumbing lines. The findings in this section are based on the subcontractor's written report. The Pool Store, Inc. did not independently perform separate pressure testing beyond the leak detection contractor's testing.

The pressure testing described in the leak detection report was limited to the lines tested, the test pressure used, the test duration used, the test method used, and the conditions present at the time of testing. A pressure test that does not identify a leak at the time of testing does not guarantee that the plumbing will not leak in the future, under different operating pressures, different water levels, different soil conditions, different groundwater conditions, different temperature conditions, or after additional movement or deterioration.

The leak survey and pressure testing did not include excavation, removal of decking, removal of fittings, removal of the liner, removal of the main drain cover, removal of skimmer components, or visual inspection of concealed underground plumbing. Underground pipe routing, underground fitting condition, pipe bedding, soil support, exterior pipe condition, and concealed structural conditions were not directly inspected.

This section is not a plumbing code-compliance certification, suction-entrapment certification, or warranty of watertightness. Code-related concerns involving the main drain, suction entrapment, drain-cover listing, drain-cover service life, sump compatibility, and secondary anti-entrapment protection are addressed separately in the Main Drain and Suction Entrapment Safety section of this report.

The leak detection report is included in this inspection report as an attachment/photo for reference.

NEFF POOL LEAK DETECTION
1208 Wickford Landing
Virginia Beach, VA 23464 US
Sean@NeffPools.com



[REDACTED]
Gloucester VA 23061

DATE 05/11/2026

DATE	ACTIVITY	DESCRIPTION	QTY
05/11/2026	Dove Pool		1
05/11/2026	Pressure Test	Pressure test pool plumbing.	1

Dove pool and liner appear to be in fair condition. We pressure-tested the two skimmers, main drain, three wall returns, and step return. During testing, the pool plumbing was pressurized to 15 PSI, and each line was monitored for three minutes.

General Electrical Observations

Scope of Electrical Review

The electrical review was limited to visible and accessible pool-related electrical components present at the time of inspection. Circuit routing, conductor sizing, conductor type, splice conditions, grounding continuity, bonding continuity, breaker sizing, load calculations, underground wiring, concealed junction boxes, and full code compliance were not verified. No destructive evaluation or disassembly of concealed electrical systems was performed.

Several electrical deficiencies and conditions requiring further evaluation were observed. The pool-related electrical system should be evaluated and corrected by a licensed electrician familiar with swimming pool electrical requirements.

For this report, electrical code references are based on the 2020 National Electrical Code, as incorporated into the 2021 Virginia Residential Code / 2021 Virginia Uniform Statewide Building Code applicable in Virginia at the time of inspection.

240-Volt Pool Pump / AquaRite Circuit

The circulation pump and Hayward AquaRite salt chlorine generator appeared to be supplied from a 30-amp standard-trip two-pole breaker in the main house electrical panel. This circuit fed a 30-amp standard-trip two-pole breaker located in an exterior disconnect enclosure. From the exterior disconnect, the circuit continued to the Intermatic mechanical time clock, which controlled power to both the circulation pump and the AquaRite salt chlorine generator.

The pump and AquaRite operated through the timer during the inspection. The timer appeared functional, and the manual switch and timer trippers operated the connected equipment.

GFCI protection was not present on the pool pump/AquaRite circuit. Under 2020 NEC 680.21(C), outlets supplying pool pump motors on branch circuits rated 150 volts or less to ground and 60 amperes or less, single-phase or 3-phase, are required to have Class A GFCI protection. The observed pump circuit was not GFCI protected and should be corrected.

The pool pump motor has been replaced with an aftermarket motor. Under 2020 NEC 680.21(D), where a pool pump motor covered by NEC 680.21(C) is replaced for maintenance or

repair, the replacement pump motor is required to be provided with GFCI protection. The absence of GFCI protection is therefore a significant electrical safety deficiency.

The branch-circuit overcurrent protection, conductor size, conductor insulation type, equipment grounding conductor, and full wiring method were not fully verified against the equipment nameplates, manufacturer instructions, and applicable NEC requirements. The 30-amp circuit serving the pump/AquaRite should be evaluated by a licensed electrician for proper breaker sizing, conductor sizing, equipment grounding, GFCI protection, and suitability for the pool equipment environment.

Pool pump motor branch-circuit wiring methods are subject to 2020 NEC 680.21(A). Where wiring is installed in an outdoor pool equipment environment, wiring methods, fittings, raceways, conductor insulation, and equipment grounding conductors must be suitable for the location and exposure. Electrical equipment in pool equipment environments should also be evaluated under 2020 NEC 680.14, which addresses corrosive pool environments.

The pump and AquaRite are listed electrical equipment and should be installed in accordance with their listing, labeling, and manufacturer installation instructions as required by 2020 NEC 110.3(B).



120-Volt GFCI / Receptacle / Deck-Light Timer Circuit

A separate 120-volt, 20-amp GFCI-protected circuit was identified. The circuit appeared to originate from a 20-amp single-pole GFCI breaker in the main house electrical panel and feed a 20-amp tandem breaker in a separate exterior enclosure. The left side of the tandem breaker was identified as feeding the nearby 15-amp duplex receptacle. The right side of the tandem breaker was not fully identified during the inspection.

The GFCI trip function for this 120-volt circuit was noted as operational during the inspection.

A 120-volt Intermatic/NEMA outdoor timer was cord-and-plug connected to the 15-amp duplex receptacle. This timer appeared to serve the deck/fence lighting. A black wire or cable was observed entering conduit/raceway from or near the timer. The conductor type, wiring method, raceway termination, fittings, strain relief, listing, and suitability of this arrangement for permanent outdoor pool-area lighting were not verified.

Five deck/fence lights were noted, with three not operating at the time of inspection. The deck/fence lighting circuit should be evaluated by a licensed electrician to determine whether the timer, receptacle, wiring method, conduit, junction boxes, lights, grounding, bonding, GFCI protection, and weatherproofing are code-compliant and suitable for the pool environment.

Receptacles located within the applicable distance of the pool are subject to the GFCI requirements of 2020 NEC 680.22(A)(4). Lighting outlets and luminaires located near the pool should also be evaluated for compliance with the location and installation requirements of 2020 NEC 680.22(B). Exact distances from the inside wall of the pool to all receptacles, lighting outlets, luminaires, and electrical components were not fully measured during this inspection.

If any cord, cable, or plug-connected timer arrangement is being used as a substitute for permanent fixed wiring to supply fixed deck/fence lighting, the installation should be evaluated under 2020 NEC Article 400, including NEC 400.12, which restricts uses of flexible cords and flexible cables. Fixed outdoor lighting should be supplied through approved permanent wiring methods, boxes, fittings, grounding, and weatherproof enclosures suitable for the location.



Receptacle and Weatherproof Cover

The 15-amp duplex receptacle near the pool equipment area did not have a while-in-use weatherproof cover. Because the 120-volt Intermatic/NEMA outdoor timer was plugged into this receptacle, the receptacle cover would need to remain weatherproof while a plug is inserted.

Under 2020 NEC 406.9(B)(1), 15- and 20-ampere receptacles installed in wet locations are required to have an enclosure that is weatherproof whether or not an attachment plug is inserted. For this type of outdoor pool-area installation, a listed while-in-use weatherproof cover is required.

The receptacle box also appeared to require remounting or securement. Receptacles and boxes are required to be properly installed and secured. The receptacle, box, cover, mounting, wiring method, cord-and-plug connected timer, and GFCI protection should be evaluated and corrected by a licensed electrician.



Junction Boxes and Lighting Wiring

One junction box cover associated with the light wiring was observed missing a fastener and was loose. Loose or unsecured junction box covers can allow moisture intrusion, expose wiring to weather, and reduce the integrity of the electrical enclosure.

Under 2020 NEC 314.25, electrical boxes are required to have covers, faceplates, lampholder canopies, or similar protective closures. Under 2020 NEC 314.15, boxes, conduit bodies, and fittings installed in damp or wet locations must be placed or equipped so as to prevent moisture from entering or accumulating within the box, conduit body, or fitting.

All pool-area lighting junction boxes should be inspected and corrected by a licensed electrician. Covers should be properly secured with approved fasteners, and all boxes, covers, fittings, gaskets, and wiring methods should be suitable for the outdoor/wet pool-area environment.



NM Cable / Romex Observed in Outdoor Pool Equipment Wiring

NM-type cable, commonly referred to as Romex, was observed in portions of the pool-related electrical wiring. Type NM cable is not permitted in wet or damp locations. 2020 NEC 334.12(B)(4) prohibits Type NM cable from being used in wet or damp locations.

Because the pool equipment, exterior disconnects, timers, receptacle, and related wiring are located outdoors and exposed to weather, any NM cable in these locations is not suitable for the environment. The wiring should be evaluated and replaced as needed using approved conductors, raceways, fittings, and enclosures rated for the location.

The presence of a weather-resistant enclosure or raceway does not automatically make NM cable suitable for outdoor pool equipment wiring. Under 2020 NEC 300.9, the interior of raceways installed in wet locations above grade is considered a wet location. Conductors and cables installed in wet locations must be listed and suitable for wet-location use.



Conduit and Raceway Conditions

Electrical conduit and raceway issues were observed in multiple locations. Observed conditions included damaged or deteriorated conduit, questionable raceway transitions, and wiring/raceway arrangements requiring further evaluation.

Damaged conduit can compromise conductor protection, weather resistance, equipment grounding reliability, and electrical safety. Outdoor raceways and fittings serving pool equipment are subject to wet-location conditions and should be suitable for the pool equipment environment.

Under 2020 NEC 300.9, the interior of raceways installed in wet locations above grade is considered a wet location. Under 2020 NEC 300.6, raceways, fittings, and supporting materials exposed to corrosion must be protected against corrosion and suitable for the environment. Pool equipment areas may also involve corrosive conditions addressed by 2020 NEC 680.14.

All conduit, fittings, raceways, boxes, and terminations serving the pool equipment and pool-area lighting should be evaluated and corrected by a licensed electrician using wiring methods approved for outdoor, wet, and pool-equipment environments.



Bonding Observations

A bonding conductor was observed at the circulation pump motor and appeared to be connected. Bonding continuity was not tested.

A bonding conductor was not observed connected to the Hayward AquaRite control box. The AquaRite manual requires the AquaRite enclosure to be bonded to the pool bonding system with an 8 AWG copper conductor. The observed condition does not conform to the manufacturer's bonding requirement.

Under 2020 NEC 680.26, pool bonding is required to reduce voltage gradients in the pool area by establishing an equipotential bonding system. NEC 680.26(B)(6) addresses bonding of electrical equipment associated with the pool water circulating system, including pump motors and metal parts of equipment. The AquaRite control box and all associated pool equipment bonding should be evaluated by a licensed electrician.

No intentional pool water bonding fitting or other intentional pool water bonding connection was observed during the inspection. Under 2020 NEC 680.26(C), pool water is required to be intentionally bonded by contact with an approved corrosion-resistant conductive surface. The bonding system should be evaluated by a licensed electrician to verify proper bonding of the pool water, pump motor, electrical equipment, metallic components, and other required conductive parts.

Metal fencing, metal gate components, fence-mounted lights, and other fixed metal parts located within the applicable distance of the pool should also be evaluated. 2020 NEC 680.26(B)(7) addresses bonding of fixed metal parts within 5 feet horizontally of the inside walls of the pool, subject to specific exceptions. Exact distances, continuity, and applicability of exceptions were not verified during this inspection.

Bonding observations were limited to visible bonding conductors and visible bonding connections. The inspection did not verify the presence, continuity, completeness, or effectiveness of the equipotential bonding grid, pool water bonding, bonding of fixed metal parts, bonding of all metallic components, or bonding of concealed components. The bonding system should be fully evaluated by a licensed electrician familiar with swimming pool bonding requirements.

General Swimming Pool Observations

Vinyl Liner

The pool is equipped with a vinyl liner that was manufactured and installed in 2017. The liner drawing used for this report was provided by The Pool Store, Inc. and was prepared by the liner manufacturer when the currently installed liner was made.

At the time of inspection, the liner appeared generally intact from visible observation. No visible tears, holes, patches, or significant wrinkling were observed. The pool water clarity was sufficient to view the liner surface, pool floor, wall/floor transitions, liner seams, main drain area, steps, skimmers, and return fittings.

Debris was present on the pool floor, along liner seams, at wall/floor transitions, and on portions of the liner surface. The debris limited the ability to fully evaluate staining, discoloration, small punctures, minor surface defects, and other subtle liner conditions. No large liner failure was observed from visible inspection.

One area was observed where the liner was not fully secured at the transition between the step assembly and coping/liner track. This appeared to be related to the alignment between the step assembly and the coping/liner track in that area. No practical minor repair was identified for this condition at the time of inspection.

One additional area of the liner was observed to be partially pulled out of the liner track. This type of condition can often be corrected by tucking the liner bead back into the track, depending on liner flexibility, water temperature, air temperature, and liner track condition.

No liner lock was observed. The liner showed fading consistent with age, sun exposure, and possible chemical exposure. The liner was not removed, and conditions behind the liner were not evaluated.

The watertightness of the liner, liner seams, liner bead, liner track, wall fittings, faceplates, gaskets, skimmers, step gasket, and main drain assembly was not determined from visual inspection alone. Leak survey and pressure testing observations are addressed separately in the Leak Detection Report section of this report.



Entry Steps and Deep End Entry / Exit

The pool has a white molded step assembly located in the center of the shallow end. The step assembly measures approximately 4 feet by 8 feet. The step assembly appeared to be fiberglass or thermoplastic, with fiberglass considered more likely based on visible appearance.

The steps provide the observed entry and exit point for the shallow end of the pool. The 2021 International Swimming Pool and Spa Code requires a means of entry and exit in the shallow area where the water depth exceeds 24 inches at the shallowest point. The observed shallow-end step assembly appears to serve that function; however, step dimensions, tread dimensions, riser heights, slip resistance, structural attachment, and full compliance with applicable entry/exit requirements were not fully verified.

The steps were visibly stained and discolored. The staining appeared consistent with possible iron or metal staining; however, the exact cause of staining was not confirmed during the inspection. Debris was also present on portions of the step surface and along the step-to-liner transition.

The step return fitting had been previously repaired or sealed with a black material. The repair/sealant material was not identified. The condition of the fitting behind the visible repair material was not determined.

Raised “bubble” areas were observed on the step surface. These areas were physically checked during the inspection and appeared to feel solid at the time of inspection. No step cracking, flexing, soft spots, or structural movement was confirmed from visible and tactile inspection.

The raised bubble-like areas were not destructively tested, cut open, probed, sanded, removed, or internally evaluated. Conditions of this type on molded fiberglass or thermoplastic pool steps can be associated with surface blistering, coating or gelcoat irregularities, trapped air or voids below a surface layer, osmotic blistering, localized delamination, prior coating or repair material, manufacturing irregularities, or surface deposits. No determination was made as to the cause, depth, internal condition, moisture content, bond condition, or long-term significance of the raised areas.

Two step strip covers were missing, leaving the underlying fasteners exposed. Sealant or patching material was observed between the step assembly and the adjacent concrete/coping area. Portions of the step-to-deck and step-to-coping transition showed visible wear, staining, debris accumulation, and irregular gaps/open joints.

The watertightness of the step assembly, step gasket, step faceplate, step return fitting, and step-to-liner transition was not determined from visual inspection alone. Leak testing observations are addressed separately in the Leak Detection Report section of this report.

Based on the liner drawing provided for this inspection, the pool has an approximate deep-end depth of 5 feet 10 inches. The pool is therefore deeper than 5 feet in the deep area.

The 2021 International Swimming Pool and Spa Code requires a secondary means of entry and exit in the deep area where the water depth in the deep area exceeds 5 feet. Acceptable entry/exit components can include steps, stairs, ladders, treads, ramps, beach entries, underwater seats, benches, swimouts, or other approved designs.

No installed ladder, handrail, recessed tread, deep-end step, deep-end bench, swimout, or other installed deep-end means of entry or exit was observed at the time of inspection. A removable handrail was present in the shed, but it was not installed in the deck anchors and was not available for use.

Because the pool's deep end exceeds 5 feet and no installed deep-end means of entry or exit was observed, the pool does not appear to satisfy the deep-area entry/exit provision of 2021 ISPCS Section 809.3 based on visible conditions at the time of inspection. This condition should be further evaluated and corrected before continued use of the pool.



Coping

The pool has aluminum coping with an integrated liner track. The coping and liner track showed fading, worn paint, rubbed areas, discoloration, oxidation, and age-related surface wear. Coping joints were visible around portions of the pool perimeter.

No visibly loose or displaced coping sections were observed at the time of inspection. The coping was not removed, and concealed fasteners, anchors, and underlying conditions were not evaluated.

At the step area, the coping/liner track and step assembly did not align cleanly in one location, leaving a gap/transition area where the liner was not fully secured. This condition is also noted above under the Vinyl Liner observations.



Skimmers

The pool has two skimmers. No visible cracks were observed in the skimmer bodies or visible skimmer throat areas at the time of inspection.

The skimmer lids were present in the deck surface. The skimmer lids were not secured with screws at the time of inspection.

The skimmer baskets were accessible and removable. Organic debris was present in the skimmer basket areas at the time of inspection. Accumulated debris in skimmers can restrict flow if not removed as part of routine maintenance.

The two skimmers are tied together underground and return to the equipment area through one shared suction line. No separate above-ground valve was present at the equipment area to independently isolate each skimmer.

The skimmers had internal trim plates for skimmer flow adjustment. The skimmer farthest from the house had the trim plate positioned almost fully closed at the time of inspection. That skimmer was still drawing water and debris with the trim plate in that position.

The far skimmer trim plate was not opened during the inspection to evaluate the hydraulic balance between the two skimmers with both skimmers fully open. Because the skimmers are tied together underground and the far skimmer trim plate was nearly closed, the relative flow distribution between the two skimmers was not determined.

The skimmer faceplates, gaskets, concealed skimmer body condition, underground skimmer piping, and exterior/backside of the skimmer bodies were not fully evaluated beyond visible inspection.

Handrail

A removable pool handrail was present in the shed at the time of inspection. The handrail was not installed in the pool deck anchor sockets and was not in its normal use position at the time of inspection.

Because the handrail was not installed, the handrail could not be evaluated for fit, stability, tightness, movement, proper engagement in the deck anchors, or safe use under load. The deck anchor sockets and handrail installation hardware were not function-tested with the handrail installed.

From a limited visual review of the handrail while stored, the handrail showed visible signs of corrosion. The extent of corrosion, remaining structural integrity, and suitability for continued use were not determined.

The handrail should be fully inspected, cleaned, installed, and tested for stability before use. If corrosion has compromised the handrail or mounting hardware, replacement is recommended.

If the handrail is intended to serve as part of an entry/exit system, it should be evaluated for proper location, installation, stability, corrosion condition, bonding requirements, and compliance with applicable entry/exit requirements before use. Because it was not installed at the time of inspection, it was not considered an available means of entry or exit for this report.



General Pool Deck and Surrounding Area Observations

Pool Deck

The pool is surrounded by a dyed concrete deck with a textured/broom-finished surface. The deck fully surrounds the pool perimeter and provides walking access around the pool. The deck surface was wet at the time of inspection due to recent weather conditions.

Multiple cracks were observed in the concrete pool deck. Cracking was observed in several areas, including near the step area, near the pool perimeter, near skimmer lid areas, near the house-side portion of the deck, and along deck control joints. Some cracks extended through deck sections, and some cracks intersected or followed existing deck joints.

Several cracks and joints had vegetation growth present. Organic debris, leaves, seed pods, and dirt were also present in cracks, joints, and open separations. These conditions indicate that cracks and joints have allowed debris and vegetation to collect over time.

Portions of the concrete deck showed discoloration, dark staining, surface wear, weathering, and wet/darkened surface areas. Because the deck was wet at the time of inspection, some staining and discoloration could not be fully distinguished from temporary moisture.

Settlement, separation, and vertical displacement were observed in portions of the deck. These conditions were most notable near the shallow-end step area and along some deck joints. Two trip hazards near the step area were measured at greater than 0.75 inches of vertical displacement. These areas are located within normal walking paths around the pool.

The 2021 International Swimming Pool and Spa Code, Section 306.2, requires decks, ramps, coping, and similar step surfaces to be slip resistant and cleanable. Section 306.4 addresses deck slope and drainage, including prevention of excessive standing water. Section 306.5.1 limits the open gap between pool decks and adjoining decks or walkways to not greater than 3/4 inch and limits the difference in vertical elevation between the pool deck and adjoining sidewalk to not greater than 1/4 inch. Section 306.6 requires isolation joints where the pool coping meets the concrete deck to be watertight.

The observed vertical displacement greater than 0.75 inches, open separations, cracking, vegetation growth, and debris accumulation are conditions requiring correction or further evaluation. The areas of vertical displacement near the shallow-end step area present a trip hazard in a normal walking path around the pool.

The 2021 Virginia Property Maintenance Code, Section 302.3, requires sidewalks, walkways, stairs, driveways, parking spaces, and similar spaces regulated under the Virginia Construction Code to be kept in a proper state of repair and maintained free from hazardous

conditions. The observed trip hazards, displacement, and open separations are inconsistent with maintaining the walking surface free from hazardous conditions.

Open separation was observed at a concrete deck joint near the step area. Organic debris was present within the open joint. This condition may allow water and debris to collect below or between deck sections and may contribute to continued deterioration, settlement, or movement in that area.

A gap/separation was observed between the pool/step area and the adjacent concrete deck. Debris was present within the gap. This condition may allow water and debris to collect at the pool/deck interface and may contribute to continued deterioration, movement, or moisture-related damage in that area. The watertightness and condition of the joint between the coping/step area and the concrete deck were not fully verified.

A linear/channel deck drain is installed in the concrete pool deck. The visible drain sections appeared to be present. Vegetation, leaves, and organic debris were observed in portions of the drain grate openings. The drain was not disassembled or flow-tested, and the final discharge location was not determined during the inspection.

Because the deck drain was clogged with vegetation and organic debris, its drainage performance could not be confirmed. The drain should be cleaned and maintained so that deck drainage is not obstructed. After cleaning, the drain should be flow-tested or otherwise evaluated to confirm drainage path, discharge location, and function.

The 2021 Virginia Property Maintenance Code, Section 302.2, addresses grading and drainage and requires premises to be graded and maintained to protect structures from accumulation and drainage of surface or stagnant water in accordance with the applicable building code. The clogged deck drain, open separations, and unknown drain discharge location should be evaluated because uncontrolled or obstructed drainage can contribute to surface water accumulation, settlement, and deterioration.

Leaves, seed pods, weeds, and other organic debris were present on the deck and around the pool perimeter. Vegetation was observed growing through cracks and joints in the concrete deck and near portions of the fence line. Continued vegetation growth in cracks and joints can contribute to widening of cracks, displacement of deck sections, and drainage obstruction.

Safety cover anchors were observed in the concrete deck. No safety cover anchors were observed missing or stuck in the raised position at the time of inspection. The safety cover itself was not installed on the pool and was not inspected, measured, or evaluated.

This inspection did not include a structural engineering evaluation, geotechnical evaluation, deck-core sampling, subsurface evaluation, drainage engineering analysis, slip-resistance testing, or determination of the cause of the cracking, settlement, displacement, or

drainage conditions. The deck should be further evaluated and repaired by qualified professionals as needed.



Safety Barrier Observations

The pool area is enclosed by a barrier consisting primarily of black metal fencing with vertical pickets. A wood gate and metal gate sections were also present as part of the pool-area access system. The barrier was visually inspected, and selected gate operation and accessible barrier openings were checked.

The 2021 International Swimming Pool and Spa Code, Section 305.1, applies to the design of barriers for restricting entry into areas having pools and spas. Section 305.2 requires outdoor pools and spas to be surrounded by a barrier complying with the applicable barrier provisions. Section 305.2.1 addresses barrier height and bottom clearance requirements. Section 305.2.2 limits openings in the barrier so that they do not allow passage of a 4-inch diameter sphere. Section 305.3 requires pedestrian access gates to open outward away from the pool or spa, be self-closing, and have a self-latching device.

The wood gate providing access to the pool area was not self-closing and was not self-latching at the time of inspection. The metal gate near the front of the house was not self-latching at the time of inspection.

Because pedestrian access gates in pool barriers are required by 2021 ISPSC Section 305.3 to open outward away from the pool, be self-closing, and have a self-latching device, the observed wood gate and metal gate conditions do not conform to the gate self-closing/self-latching requirements based on visible operation at the time of inspection.

A gap of approximately 6 inches was observed between the fence and the house. Openings in a pool barrier are not permitted to allow passage of a 4-inch diameter sphere under 2021 ISPSC Section 305.2.2. Because the observed gap exceeds 4 inches, this condition does not appear to comply with the pool-barrier opening limitation.

Vegetation, leaves, and organic debris were present along portions of the fence line. Vegetation and debris were present near the bottom of the barrier in some areas. These conditions limited full visibility of some bottom clearances and should be cleared so that the fence bottom, picket spacing, gate clearances, and adjacent grade remain visible and maintainable.

The 2021 Virginia Property Maintenance Code, Section 303.2, requires swimming pool, hot tub, and spa barriers to be maintained in accordance with the applicable building code or ordinance under which such barriers were constructed. The observed non-self-closing/non-self-latching gate conditions, non-self-latching gate condition, and approximately 6-inch opening between the fence and house are barrier conditions requiring correction or further evaluation.

Fence height, vertical picket spacing, latch-release height, gate swing direction, gate hardware height, all bottom clearances, all barrier openings, and house-wall barrier conditions

were not fully measured as part of this inspection. Therefore, full barrier code compliance could not be certified.

The observed barrier deficiencies include the non-self-closing/non-self-latching wood gate, the non-self-latching metal gate, and the approximately 6-inch gap between the fence and house. These conditions should be corrected before continued use of the pool.

The safety cover was not installed on the pool at the time of inspection and was not evaluated as a safety barrier. The pool appeared to have a deck-anchor style safety cover system, not a powered automatic safety cover. Under 2021 ISPSC Section 305.1, the swimming-pool cover exception is tied to a powered safety cover complying with ASTM F1346. The observed safety cover system was not installed, was not operated, and was not evaluated for compliance with ASTM F1346. The presence of a stored safety cover does not eliminate the need for a compliant and properly maintained pool barrier where a barrier is required.

Barrier corrections should be performed by qualified personnel, and final acceptance of barrier compliance should be determined by the authority having jurisdiction where required.



Code References

The following codes, standards, regulations, and manufacturer instructions were referenced in this inspection report as informational benchmarks for observed conditions. These references are not intended to certify full code compliance, approve the installation, or substitute for review by the authority having jurisdiction.

2021 Virginia Uniform Statewide Building Code

The 2021 Virginia Uniform Statewide Building Code (USBC) is the statewide building-code framework adopted in Virginia. It establishes the legal structure for enforcement of the Virginia Construction Code, Virginia Residential Code, Virginia Maintenance Code, and related referenced standards. This report references the USBC as the applicable Virginia code framework in effect at the time of inspection.

2021 Virginia Residential Code

The 2021 Virginia Residential Code (VRC) applies to one- and two-family dwellings and townhouses in Virginia. It includes residential provisions for swimming pools, spas, and hot tubs, and incorporates electrical requirements based on the 2020 National Electrical Code. This report references the VRC where residential pool electrical and safety provisions are discussed.

2020 National Electrical Code / NFPA 70

The 2020 National Electrical Code (NEC), NFPA 70, is the electrical code edition referenced for this inspection. This report references the NEC for swimming pool wiring, grounding, bonding, GFCI protection, receptacles, wet-location wiring methods, conduit/raceway conditions, junction boxes, and listed-equipment installation requirements.

Specific NEC sections referenced in this report include:

NEC 110.3(B) — Requires listed or labeled equipment to be installed and used in accordance with the instructions included in the listing or labeling.

NEC 300.6 — Addresses protection of raceways, fittings, and equipment against corrosion and deterioration.

NEC 300.9 — Treats the interior of raceways installed in wet locations above grade as a wet location.

NEC 314.15 — Addresses boxes, conduit bodies, and fittings installed in damp or wet locations and the need to prevent moisture entry or accumulation.

NEC 314.25 — Requires boxes to have covers, faceplates, lampholder canopies, or similar protective closures.

NEC 334.12(B)(4) — Prohibits Type NM cable from being used in wet or damp locations.

NEC Article 400 / NEC 400.12 — Addresses flexible cords and cables, including uses not permitted. Referenced in connection with the cord-and-plug timer arrangement serving fixed deck/fence lighting.

NEC 406.9(B)(1) — Requires 15- and 20-amp receptacles installed in wet locations to have enclosures that remain weatherproof whether or not an attachment plug is inserted.

NEC 680.14 — Addresses electrical equipment installed in corrosive pool environments.

NEC 680.21(A) — Addresses wiring methods for pool pump motor branch circuits.

NEC 680.21(C) — Requires Class A GFCI protection for outlets supplying qualifying pool pump motors.

NEC 680.21(D) — Addresses GFCI protection when pool pump motors covered by 680.21(C) are replaced for maintenance or repair.

NEC 680.22(A)(4) — Addresses GFCI protection for receptacles located within the applicable distance of a pool.

NEC 680.22(B) — Addresses lighting outlets and luminaires in relation to pools.

NEC 680.26 — Establishes swimming pool equipotential bonding requirements.

NEC 680.26(B)(6) — Addresses bonding of electrical equipment associated with the pool water circulating system, including pump motors and metal parts of equipment.

NEC 680.26(B)(7) — Addresses bonding of fixed metal parts located within the applicable distance of the inside walls of the pool, subject to exceptions.

NEC 680.26(C) — Requires intentional bonding of pool water by contact with an approved conductive surface.

2021 International Swimming Pool and Spa Code

The 2021 International Swimming Pool and Spa Code (ISPSC) is referenced as the primary swimming pool and spa model code for pool-specific safety, barrier, deck, circulation, suction-entrapment, and entry/exit provisions.

Specific ISPSC sections referenced in this report include:

ISPSC Residential Pool Type Definitions / Type O — Identifies Type O pools as nondiving residential pools. This report classifies the subject pool as a nondiving Type O residential pool.

ISPSC Section 305.1 — Addresses the general applicability of pool and spa barrier requirements.

ISPSC Section 305.2 — Addresses barrier requirements for outdoor pools and spas.

ISPSC Section 305.2.1 — Addresses pool barrier height and bottom clearance requirements.

ISPSC Section 305.2.2 — Limits openings in pool barriers so that they do not allow passage of a 4-inch diameter sphere.

ISPSC Section 305.3 — Addresses pedestrian access gates, including outward swing, self-closing, and self-latching requirements.

ISPSC Section 306.2 — Addresses slip-resistant and cleanable deck, ramp, coping, and similar walking surfaces.

ISPSC Section 306.4 — Addresses deck slope and drainage.

ISPSC Section 306.5.1 — Addresses gaps and vertical elevation differences between pool decks and adjoining decks or walkways.

ISPSC Section 306.6 — Addresses isolation joints where pool coping meets concrete deck surfaces.

ISPSC Section 310.1 — Addresses suction-entrapment avoidance and references ANSI/PHTA/ICC-7.

ISPSC Section 311.3.2 — Addresses residential pool and spa water velocity limits in suction and return piping.

ISPSC Section 809.3 — Addresses secondary means of entry and exit in the deep area where water depth exceeds 5 feet.

2021 Virginia Maintenance Code / Virginia Property Maintenance Code

The 2021 Virginia Maintenance Code is referenced for maintenance-related conditions involving walking surfaces, drainage, and pool barriers. This report uses these provisions as maintenance benchmarks for existing conditions observed at the pool deck and barrier.

Specific sections referenced in this report include:

Section 302.2 — Addresses grading and drainage and the need to maintain premises to protect structures from surface or stagnant water accumulation.

Section 302.3 — Addresses sidewalks, walkways, stairs, driveways, parking areas, and similar regulated surfaces, including maintenance free from hazardous conditions.

Section 303.2 — Addresses swimming pool, hot tub, and spa barriers and requires such barriers to be maintained in accordance with the applicable building code or ordinance under which they were constructed.

Virginia MS4 Regulation

9VAC25-890-20 is referenced for Virginia's MS4 stormwater regulation language. The regulation identifies certain nonstormwater discharges that may be authorized under specified conditions, including dechlorinated freshwater swimming pool discharges managed in a manner to avoid instream impact. This report references that language because the inspected pool is a saltwater pool with a D.E. filter, and the final discharge location of the filter waste/backwash hose was not determined.

Virginia Graeme Baker Pool and Spa Safety Act

The Virginia Graeme Baker Pool and Spa Safety Act is referenced for suction-entrapment and drain-cover safety context. The Act applies operational requirements to public pools and spas. This inspection involved a residential pool, and the report does not certify VGBA compliance. The Act is referenced because the pool has one visible main drain sump that can be isolated from the skimmers, and the drain cover listing, service life, fastener condition, sump compatibility, and secondary anti-entrapment configuration were not verified.

16 CFR Part 1450

16 CFR Part 1450 is the federal mandatory drain-cover standard administered by the U.S. Consumer Product Safety Commission. It incorporates requirements for suction outlet fitting assemblies, including drain covers. This report references 16 CFR Part 1450 in connection with the main drain cover, drain-cover listing, drain-cover service life, sump compatibility, and suction-entrapment safety review.

ANSI/PHTA/ICC-7

ANSI/PHTA/ICC-7 is the suction-entrapment avoidance standard referenced by the ISPSC. It addresses suction-entrapment avoidance for pools and spas, including systems with skimmers, submerged suction outlet fitting assemblies, and vacuum fittings. This report references ANSI/PHTA/ICC-7 because the pool has one visible main drain sump that can be isolated from the skimmer suction line.

ANSI/APSP/ICC-16 2017

ANSI/APSP/ICC-16 2017 is the suction outlet fitting assembly standard referenced by the federal drain-cover regulation. It addresses bather-accessible suction outlet fitting assemblies, including drain covers. This report references ANSI/APSP/ICC-16 2017 in connection with the unverified main drain cover listing, flow rating, service life, fastener condition, and cover-to-sump compatibility.

ASTM F1346

ASTM F1346 is the standard performance specification for safety covers and labeling requirements for swimming pools, spas, and hot tubs. This report references ASTM F1346 because a deck-anchor style safety cover system was present, but the safety cover was not installed, measured, operated, or evaluated during the inspection.

Manufacturer Installation Instructions

Manufacturer installation instructions are referenced where applicable because listed equipment is required to be installed and used in accordance with its listing, labeling, and instructions. Manufacturer references in this report include:

Hayward Super Pump Manual — Referenced for pump mounting, mechanical fastening, suction-side straight-pipe requirements, bonding, GFCI language, damaged wiring/conduit warnings, and suction outlet safety instructions.

Hayward AquaRite Manual — Referenced for salt level range, T-CELL-9 sizing, flow-switch installation, timer/load-side wiring, cell inspection/cleaning, and AquaRite bonding requirements.

Hayward Perflex D.E. Filter Manual / Product Information — Referenced for filter identification, D.E. filter type, service considerations, pressure-vessel safety, and maintenance-related limitations.

Intermatic T104 / T104P3 Instructions — Referenced for the mechanical timer, copper conductor requirements, and suitability of wiring insulation for the installation.

SAMPLE POOL INSPECTION REPORT


HAYWARD®

Super Pump® Series

Owner's Manual



Contents

Product Specific Warnings.....	2
Introduction.....	4
Installation.....	7
Shaft Seal Replacement.....	8
Replacement Parts.....	9
Trouble Shooting.....	10
Warranty.....	11
Registration	12

IMPORTANT SAFETY INSTRUCTIONS

The Hayward Super Pump® is specifically engineered for the demanding requirements of today's in-ground swimming pool/spa that is equipped with large capacity filters, heaters, and pool cleaning equipment. The Super Pump® is a self-priming pump that incorporates a seal and impeller design that will provide many years of efficient, dependable, corrosion-free service. The advanced design provides superior performance while reducing maintenance requirements.

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.

The **NOTICE** label indicates special instructions that are important but not related to hazards.

Hayward Pool Products
620 Division Street, Elizabeth, NJ 07207
Phone: (908) 355-7995
www.hayward.com



HAYWARD®



▲ WARNING – Read, understand, 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 seven 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. Do not purge the system with compressed air.** Purging the system with compressed air can cause components to explode, with risk of severe injury or death to anyone nearby. Use only a low pressure (below 5 PSI), high volume blower when air purging the pump, filter, or piping.



HAYWARD®



▲ 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.

▲ WARNING – Risk of Hyperthermia. To avoid hyperthermia the following “Safety Rules for Hot Tubs” are recommended by the U.S. Consumer Product Safety Commission.

1. Spa or hot tub water temperatures should never exceed 104°F [40°C]. A temperature of 100°F [38°C] is considered safe for a healthy adult. Special caution is suggested for young children. Prolonged immersion in hot water can induce hyperthermia.
2. Drinking of alcoholic beverages before or during spa or hot tub use can cause drowsiness, which could lead to unconsciousness and subsequently result in drowning.
3. Pregnant women beware! Soaking in water above 100°F [38°C] can cause fetal damage during the first three months of pregnancy (resulting in the birth of a brain-damaged or deformed child). Pregnant women should adhere to the 100°F [38°C] maximum rule.
4. Before entering the spa or hot tub, users should check the water temperature with an accurate thermometer; spa or hot tub thermostats may err in regulating water temperatures by as much as 4°F (2.2°C).
5. Persons taking medications, which induce drowsiness, such as tranquilizers, antihistamines or anti-coagulants, should not use spas or hot tubs.
6. If the pool/spa is used for therapy, it should be done with the advice of a physician. Always stir pool/ spa water before entering the pool/spa to mix in any hot surface layer of water that might exceed healthful temperature limits and cause injury. Do not tamper with controls, because scalding can result if safety controls are not in proper working order.
7. Persons with a medical history of heart disease, circulatory problems, diabetes or blood pressure problems should obtain a physician's advice before using spas or hot tubs.
8. Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above normal body temperature of 98.6°F [37°C]. The symptoms of Hyperthermia include: drowsiness, lethargy, dizziness, fainting, and an increase in the internal temperature of the body.

The effects of Hyperthermia include:

1. Unawareness of impending danger.
2. Failure to perceive heat.
3. Failure to recognize the need to leave the spa.
4. Physical inability to exit the spa.
5. Fetal damage in pregnant women.
6. Unconsciousness resulting in danger of drowning.

SAVE THESE INSTRUCTIONS



HAYWARD®

General Information



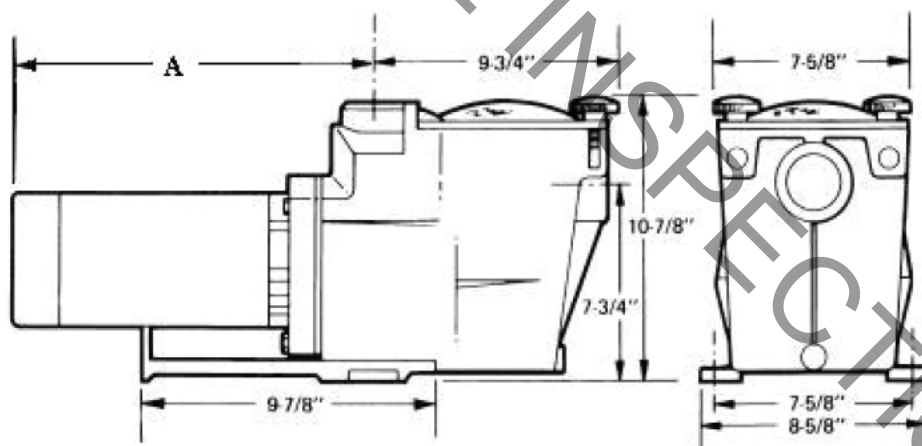
Introduction

This manual contains information for the proper installation and operation of the Hayward Super Pump® Series. The instructions in this manual **MUST** be followed precisely. **Failure to install according to defined instructions will void warranty.**

Product Benefits

- Super-sized 110 cubic-inch basket has extra leaf-holding capacity and extends time between cleanings. Rigid construction with load extender ribbing assures free flowing operation even with heavy debris loads.
- Exclusive swing-aside hand knobs make strainer cover removal simple and easy.
- See-thru strainer cover lets you see when the basket needs cleaning.
- All components molded of corrosion-proof reinforced thermoplastic for extra durability and long life.
- Uni-bracket mounting base provides stable, stress-free support, plus versatility for any installation requirement. Adapts to 48 and 56 frame motors.
- Heat resistant, industrial size ceramic seal.
- Rugged, one-piece housing, with full-flow ports, assures rapid priming and continuous operation.
- Service-ease design gives simple access to all internal parts. By disengaging just four (4) bolts, motor and entire drive group assembly can be removed, without disturbing pipe or mounting connections.

Product Specifications

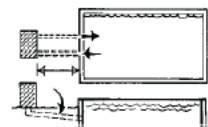


PUMP PART NUMBER	LENGTH "A"
SP2600X5	13 3/8"
SP2605X7	14"
SP2607X10	14 3/8"
SP2610X15	15 1/2"
SP2615X20	16 1/2"
SP2621X25	16 1/2"
SP2607X102S	17"
SP2610X152S	17 1/2"
SP2615X202S	18 1/2"

Installation Instructions

NOTICE – This product should be installed and serviced only by a qualified professional.

Pump Location



Locate pump as close to pool as practical and run suction lines as direct as possible to reduce friction loss. Suction lines should have continuous slope upward from lowest point in line. Joints must be tight (but not over-tightened). Suction line diameter must equal or be larger than the discharge line diameter.

Though the pump is designed for outdoor use, it is strongly advised to protect the electrical components from the weather. Select a well-drained area, one that will not flood when it rains. **Do NOT install pump in a damp or non-ventilated location.** Keep motor clean. Pump motors require free circulation of air for cooling.



HAYWARD®

Pump Mounting

Install pump on a firm, level base or pad to meet all local and national codes. Fasten pump to base or pad with screws or bolts to reduce vibration and stress on pipe or hose joints. The base **MUST** be solid, level, rigid, and vibration free.

Pump mount must:

- Allow pump inlet height to be as close to water level as possible.
- Allow use of short, direct suction pipe (to reduce friction losses).
- Allow for ball valves in suction and discharge piping.
- Be protected from excess moisture and flooding.
- Allow adequate access for servicing pump and piping.
- Incorporate a straight portion of pipe prior to pump inlet no less than (5) pipe diameters in length.

Pipe Sizing Chart

MAXIMUM RECOMMENDED SYSTEM FLOW RATE BY PIPE SIZE					
Pipe Size	Flow rate	Water Velocity	Pipe Size	Flow rate	Water Velocity
inches [mm]	GPM [Liter/Min]	ft/sec [meters/sec]	inches [mm]	GPM [Liter/Min]	ft/sec [meters/sec]
1 ½"	50.76	8	2 ½"	119	8
[50]	[192]	[2.44]	[75]	[452]	[2.44]
2"	84	8	3"	184	8
[63]	[317]	[2.44]	[90]	[698]	[2.44]

NOTE – System design should allow a maximum of 8-ft/sec [2.44 meters/sec] water velocity in residential pool or spa piping. It is recommended that a minimum length of piping, equivalent to 10 pipe diameters, be used between the pump suction inlet and any plumbing fittings.

Plumbing

Use **Teflon tape** to seal threaded connections on molded plastic components. All plastic fittings must be new or thoroughly cleaned before use. **NOTE - Do NOT use Plumber's Pipe Dope as it may cause cracking of the plastic components.**

When applying **Teflon tape** to plastic threads, wrap the entire threaded portion of the male fitting with one to two layers of tape. Wind the tape clockwise as you face the open end of the fitting, beginning at the end of the fitting. The pump suction and outlet ports have molded-in thread stops. **Do NOT attempt to force hose connector fitting past this stop.** It is only necessary to tighten fittings enough to prevent leakage. Tighten fitting by hand and then use a tool to engage fitting an additional 1 ½ turns. Use care when using Teflon tape as friction is reduced considerably; **do NOT over-tighten fitting or you may cause damage.** If leaks occur, remove connector, clean off old Teflon tape, re-wrap with one to two additional layers of Teflon tape, and re-install connector.

Fittings

Fittings restrict flow. For better efficiency, use the fewest possible fittings. Avoid fittings that could cause an air trap. Use 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.

Electrical

NOTICE – All wiring must be done by a licensed electrician and must conform to all local and national codes and regulations.

▲ **WARNING – Risk of Electric Shock.** Before working on any electrical equipment, turn **off** power supply to the equipment.

▲ **WARNING – Fire Hazard.** Match supply voltage to motor nameplate voltage.

Insure that the electrical supply available agrees with the motor's voltage, phase, and cycle, and that the wire size is adequate for the HP (kW) rating and distance from the power source. **NOTE - All electrical wiring MUST be performed by a licensed electrician, and MUST conform to local codes and NEC regulations.**



HAYWARD®

Use copper conductors only.

ELECTRICAL GUIDE – 60 CYCLE MOTORS – SINGLE PHASE					
MOTOR		VOLTS	CIRCUIT BREAKER RATINGS-AMPS	BRANCH FUSE/TRON RATINGS-AMPS	RECOMMENDED WIRE SIZE 0-50'
KW	HP				
.37	1/2	115	15	15	No. 14
.55	3/4	115	15	15	No. 14
		230	10	6.25	No. 14
.75	1	115	20	20	No. 12
		230	10	9	No. 14
1.1	1-1/2	115	30	30	No. 10
		230	15	15	No. 14
1.55	2	115	30	30	No. 10
		230	15	12	No. 14
1.88	2-1/2	230	20	20	No. 12

Voltage

Voltage at motor **MUST NOT** be more than 10% above or below motor name plate rated voltage, or motor may overheat, causing overload tripping and reduced component life. If voltage is less than 90% or more than 110% of rated voltage when motor is running at full load, consult Power Company.

Grounding And Bonding

Install, ground, bond, and wire motor in accordance with local or national electrical code requirements. Permanently ground motor. Use green ground terminal provided under motor canopy or access plate; use size and type wire required by code. Connect motor ground terminal to electrical service ground.

Bond motor to pool structure. Bonding will connect all metal parts within and around the pool with a continuous wire. Bonding reduces the risk of a current passing between bonded metal objects, which could potentially cause electrical shock if grounded or shorted. **Reference NEC codes for all wiring standards including, but not limited to, grounding, bonding and general wiring procedures.**

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

Wiring



NOTICE – A licensed electrician must do all wiring.

Pump **MUST** be permanently connected to circuit. If other lights or appliances are also on the same circuit, be sure to add their amp loads before calculating wire and circuit breaker sizes. Use the load circuit breaker as the Master On-Off switch.

Install a Ground Fault Circuit Interrupter (GFCI) in circuit; it will sense a short-circuit to ground and disconnect power before it becomes dangerous to pool users. For size of GFCI required and test procedures for GFCI, see manufacturer's instructions. Pump **MUST** be permanently connected to GFCI. In case of a power outage, check GFCI for tripping, which will prevent normal pump operation. Reset if necessary.

Start-Up & Operation



▲ WARNING – Separation Hazard – Failure to Open all suction and discharge valves could result in severe personal injury. To avoid **OPEN** all suction and discharge valves, as well as filter air relief valve (if available) on filter, when starting the circulating pump system.

Starting/Priming the Pump:

Pumps with single speed motors are self priming to 10 ft. and pumps with 2 speed motors are self priming to 10 ft. on high speed only. Fill strainer housing with water to suction pipe level. If water leakage occurs from anywhere on the pump or filter, **DO NOT** start the pump. If no leakage occurs, stand at least 10 feet from pump and/or filter and proceed with starting the pump.

▲ WARNING – Separation Hazard - Failure to do wait to close filter manual air relief valve until a steady stream of water (not air or air and water) is discharged from valve could result in severe personal injury. To avoid wait for a steady stream of water.



HAYWARD®

NOTICE — NEVER OPERATE THE PUMP WITHOUT WATER. Water acts as a coolant and lubricant for the mechanical shaft seal. NEVER run pump dry. Running pump dry may damage seals, causing leakage, flooding, and voids warranty. Fill strainer housing with water before starting motor.

NOTICE — Do NOT add chemicals to pool/spa system directly in front of pump suction. Adding undiluted chemicals may damage pump and voids warranty.

NOTICE — Before removing strainer cover:

1. **STOP PUMP** before proceeding.
2. **CLOSE VALVES** in suction and outlet pipes.
3. **RELEASE ALL PRESSURE** from pump and piping system using filter manual air relief valve. **See filter owner's manual for more details.**
4. If water source is higher than the pump, pump will prime itself when suction and outlet valves are opened. If water source is lower than the pump, unscrew and remove strainer cover; fill strainer housing with water.
5. Clean and lubricate strainer cover O-ring with "Jack's 327" each time it is removed. Inspect O-ring and re-install on strainer cover.
6. Replace strainer cover on strainer housing; turn strainer cover hand knobs clockwise to tighten cover.
NOTE - Tighten strainer cover knobs by hand only (no wrenches).
7. **OPEN VALVES** in suction and outlet pipes.

Before re-starting pump, see **"Starting/Priming the Pump"** instructions.

NOTICE — Wait five (5) seconds before re-starting pump. Failure to do so may cause reverse rotation of motor and consequent serious pump damage.

Turn on power and wait for pump to prime, which may take up to five (5) minutes. Priming time will depend on vertical length of suction lift and horizontal length of suction pipe. If pump does NOT prime within five minutes, stop motor and determine cause. Be sure all suction and discharge valves are open when pump is running. See Troubleshooting Guide.

Maintenance

- Clean strainer basket regularly. Do NOT strike basket to clean. Inspect strainer cover gasket regularly and replace as necessary.
- Hayward pumps have self-lubricating motor bearings and shaft seals. No lubrication is necessary.
- Keep motor clean. Insure air vents are free from obstruction to avoid damage. Do NOT use water to hose off motor.
- Occasionally, shaft seals must be replaced, due to wear or damage. Replace with genuine Hayward seal assembly kit. See "Shaft Seal Change Instructions" in this manual.

Storage/Winterization



⚠ WARNING — Separation Hazard. Purging the system with compressed air can cause components to explode, with risk of severe injury or death. To avoid, do not purge the system with compressed air. Use only a low pressure (below 5 PSI), high volume blower when air purging the pump, filter, or piping.

NOTICE — Allowing the pump to freeze will void the warranty.

NOTICE — Use ONLY propylene glycol as antifreeze in your pool/spa system. Propylene glycol is non-toxic and will not damage plastic system components; other anti-freezes are highly toxic and may damage plastic components in the system.

Drain all water from pump and piping when expecting freezing temperatures or when storing pump for a long time (see instructions below).

Keep motor dry and covered during storage. To avoid condensation/corrosion problems, do NOT cover or wrap pump with plastic film or bags.

Storing Pump for Winterization



⚠ WARNING — Electrical Hazard - Failure to disconnect power may result in serious personal injury or death. To avoid, turn OFF power to motor before draining pump.

1. Drain water level below all inlets to the pool.
2. Remove drain plugs from bottom of strainer body, and remove strainer cover from strainer housing.
3. Disconnect pump from mounting pad, wiring system (after power has been turned OFF), and piping system.
4. Once the pump is drained of water, re-install the strainer cover and drain plugs. Store pump in a dry area.



Shaft Seal Change Instructions



IMPORTANT SAFETY INSTRUCTIONS PLEASE READ AND FOLLOW ALL INSTRUCTIONS



⚠ WARNING – Electrical Hazard - Failure to disconnect power may result in serious personal injury or death. To avoid, turn OFF power to motor before servicing pump.

NOTICE- Only qualified personnel should attempt rotary seal replacement. Contact your local authorized Hayward Dealer or service center if you have any questions.

Exercise extreme care in handling both the rotating and the stationary sections of the two-part replacement seal. Foreign matter or improper handling will easily scratch the graphite and ceramic sealing surfaces.

Removing the Motor Assembly (See Parts Diagram on page 9 of this manual for pump component locations.)

1. Remove the four (4) 3/8" x 2" **housing cap screws** which hold the motor assembly to the **pump/strainer housing**.
2. Slide the motor assembly out of the **pump/strainer housing**, exposing the **diffuser**. Pull the **diffuser** off of the **seal plate**, exposing the **impeller**. (The **diffuser** may remain in the **pump/strainer housing**. To remove, pull it straight out of the **pump/strainer housing**.)

Removing the Impeller (See Parts Diagram on page 9 of this manual for pump component locations.)

3. Remove the motor end cover by removing the two (2) screws or pry off the cap covering the motor shaft. Hex shaped caps must be twisted off.
4. To prevent motor shaft from turning, carefully slide a 7/16" open-end wrench between the capacitor and the centrifugal switch (the wrench fits over the two (2) flats on the motor shaft). Some motors may require a larger wrench be placed in slot at end of shaft to keep motor shaft from turning.
5. Rotate the **impeller** counterclockwise and remove. The spring portion of the **seal assembly** is now exposed. Note carefully the position of the spring seal, and remove it. **NOTE** - Replace motor cover to protect delicate motor parts.

Removing the Ceramic Seat (See Parts Diagram on page 9 of this manual for pump component locations.)

6. Remove the **seal plate**. Note the tabs on the sides of the plate and the mating grooves on the front of the **motor mounting plate**.
7. Press the ceramic seat with rubber cup out of the **seal plate**. If tight, use a small screwdriver to tap seal out.

STOP - Clean all recesses & parts to be reassembled. Inspect gaskets & replace if necessary.

Seal Installation (See Parts Diagram on page 9 of this manual for pump component locations.)

8. Clean and lightly lubricate the impeller hub and seal recess in the seal plate with a dilute solution of non-granulated liquid-type soap.
9. Gently wipe the black, polished surface of the spring seal assembly with a clean, soft, cotton cloth. Press the spring seal assembly onto the **impeller** hub – black polished surface facing away from the impeller.
10. Gently wipe the polished surface of the ceramic seal with a clean, soft, cotton cloth. Lubricate the rubber cup on the ceramic seat and press it firmly and evenly into the recess of the **seal plate** – polished side facing out.

Replacing the Impeller and Diffuser (See Parts Diagram on page 9 of this manual for pump component locations.)

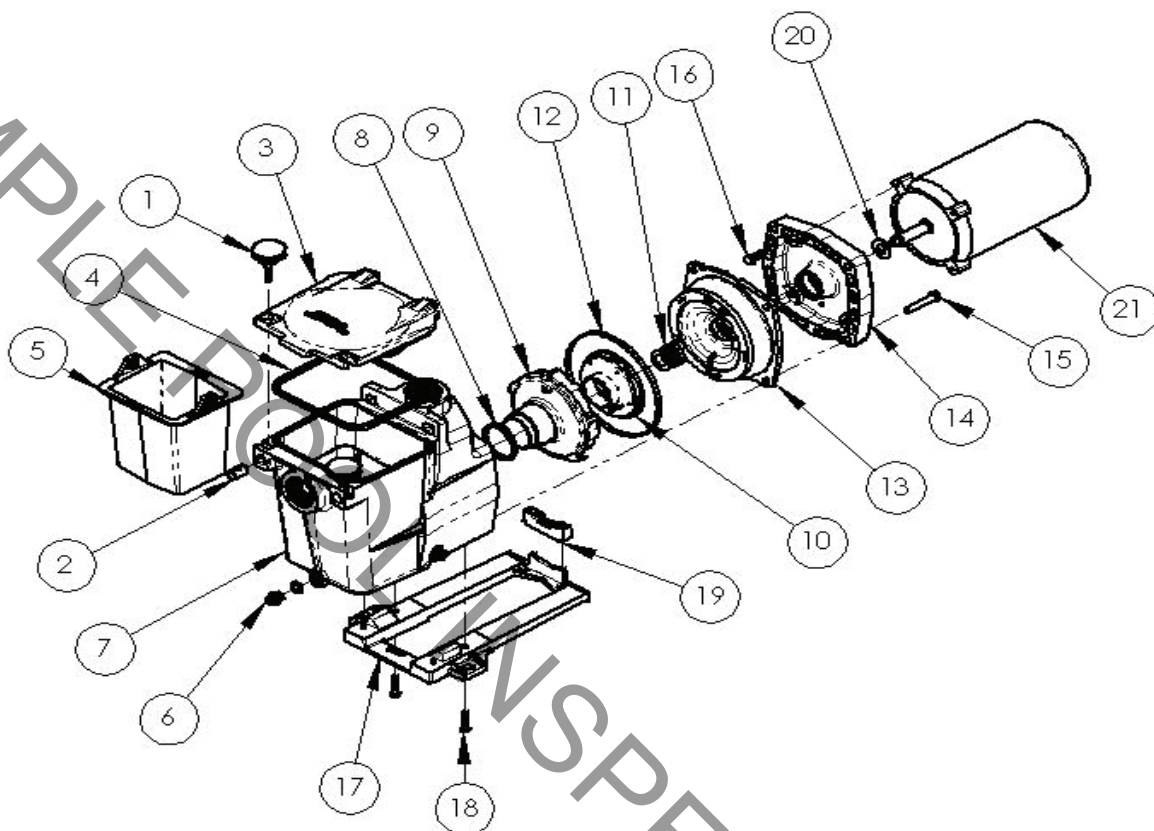
11. Place the **seal plate** onto the **motor mounting plate**, aligning the tabs on the **seal plate** with the grooves on the **motor mounting plate**.
12. Screw the **impeller** onto the motor shaft in a clockwise direction. Tighten snugly by holding motor shaft with wrench as noted in step #4.
13. Place the **diffuser** over the **impeller** onto the **seal plate** fitting positioning lug between the two (2) guides.

Replacing the Motor Assembly (See Parts Diagram on page 9 of this manual for pump component locations.)

14. Fasten motor end cover by using the two (2) hex shaped screws. Slide the motor assembly with the **diffuser** in place, into **pump/strainer housing**, being careful not to disturb the **diffuser gasket**.
15. Fasten assembly to **pump/strainer housing** using the four (4) 3/8" x 2" **housing cap screws**. (Be sure **housing gasket** is in place, and replace if damaged). Tighten alternately and evenly.

Replacement Parts

Parts Diagram



Parts Listing

REFERENCE NUMBER	DESCRIPTION	NUMBER REQUIRED	PART NUMBER					
			MODEL SP2600X5	MODEL SP2605X7	MODEL SP2607X10	MODEL SP2610X15	MODEL SP2615X20	MODEL SP2621X25
1	HAND KNOB	2	SPX1600P	SPX1600P	SPX1600P	SPX1600P	SPX1600P	SPX1600P
2	SWIVEL NUT	2	SPX1600N	SPX1600N	SPX1600N	SPX1600N	SPX1600N	SPX1600N
3	STRAINER COVER	1	SPX1600D	SPX1600D	SPX1600D	SPX1600D	SPX1600D	SPX1600D
4	STRAINER COVER GASKET	1	SPX1600S	SPX1600S	SPX1600S	SPX1600S	SPX1600S	SPX1600S
5	BASKET	1	SPX1600M	SPX1600M	SPX1600M	SPX1600M	SPX1600M	SPX1600M
6	DRAIN PLUG W/ GASKET	2	SPX1700FG	SPX1700FG	SPX1700FG	SPX1700FG	SPX1700FG	SPX1700FG
7	PUMP/STRAINER HOUSING	1	SPX1600AA	SPX1600AA	SPX1600AA	SPX1600AA	SPX1600AA	SPX1620AA
8	DIFFUSER GASKET	1	SPX1600R	SPX1600R	SPX1600R	SPX1600R	SPX1600R	SPX1600R
9	DIFFUSER	1	SPX2600B	SPX2600B	SPX2600B	SPX2600B	SPX2600B	SPX1616B
10	IMPELLER	1	SPX2600C	SPX2605C	SPX2607C	SPX2610C	SPX2615C	SPX1621C
11	SEAL ASSEMBLY	1	SPX1600Z2	SPX1600Z2	SPX1600Z2	SPX1600Z2	SPX1600Z2	SPX1600Z2
12	HOUSING GASKET	1	SPX1600T	SPX1600T	SPX1600T	SPX1600T	SPX1600T	SPX1600T
13	SEAL PLATE	1	SPX2600E5	SPX2600E5	SPX2600E5	SPX2600E5	SPX2600E5	SPX1611E5
14	MOTOR MOUNTING PLATE	1	SPX1600F5	SPX1600F5	SPX1600F5	SPX1600F5	SPX1600F5	SPX1600F5
15	HOUSING CAP SCREW	4	SPX1600Z4	SPX1600Z4	SPX1600Z4	SPX1600Z4	SPX1600Z4	SPX1600Z4
16	MOTOR CAP SCREW	4	SPX125Z4	SPX125Z4	SPX125Z4	SPX125Z4	SPX125Z4	SPX125Z4
17	MOUNTING FOOT [WILL INCLUDE ADAPTER (19) AND SCREWS(18)]	1	SPX2600G1	SPX2600G1	SPX2600G1	SPX2600G1	SPX2600G1	SPX2600G1
18	MOUNTING FOOT CAP SCREW	2	SPX1600Z5	SPX1600J	SPX1600J	SPX1600J	SPX1600J	SPX1600J
19	MOUNTING FOOT ADAPTER	1	SPX2600Q	SPX2600Q	SPX2600Q	SPX2600Q	SPX2600Q	SPX2600Q
20	SLINGER	1	SPX0125F	SPX0125F	SPX0125F	SPX0125F	SPX0125F	SPX0125F
21	MOTOR-60 CYCLE SINGLE PHASE [WILL INCLUDE SLINGER(20)]	1	SPX1600Z1M	SPX1605Z1M	SPX1607Z1M	SPX1610Z1M	SPX1615Z1M	SPX1620Z1M



Troubleshooting

Motor Will NOT Start – Check For:



Make sure the terminal board connections agree with the wiring diagram on motor data plate label. Be sure motor is wired for available field supply voltage.

1. Improper or loose wiring connections; open switches or relays; tripped circuit breakers, GFCI's, or blown fuses.

Solution: Check all connections, circuit breakers, and fuses. Reset tripped breakers or replace blown fuses.

2. Manually check rotation of motor shaft for free movement and lack of obstruction.

Solution: Refer to Steps 4 & 5 of "Shaft Seal Change Instructions" in this manual.

3. If you have a timer, be certain it is working properly. Bypass it if necessary.

Motor Shuts OFF – Check For:

1. Low voltage at motor or power drop (frequently caused by undersized wiring or extension cord use).

Solution: Contact qualified professional to check that the wiring gauge is heavy enough.

NOTE - Your Hayward pump motor is equipped with an "automatic thermal overload protector." The motor will automatically shut off if power supply drops before heat damage can build up causing windings to burn out. The "thermal overload protector" will allow the motor to automatically restart once the motor has cooled. It will continue to cut On/Off until the problem is corrected. **Be sure to correct cause of overheating.**

Motor Hums, But Does NOT Start – Check For:

1. Impeller jammed with debris.

Solution: Have a qualified repair professional open the pump and remove the debris.

Pump Won't Prime, Check For:

1. Empty pump/strainer housing.

Solution: Make sure pump/strainer housing is filled with water and cover o-ring is clean. Ensure o-ring is properly seated in the cover o-ring groove. Ensure o-ring is lubricated with "Jack's 327" and that strainer cover is locked firmly in position. Lubricant will help to create a tighter seal.

2. Loose connections on suction side.

Solution: Tighten pipe/union connections.

NOTE - Any self-priming pump will not prime if there are suction air leaks. Leaks will result in bubbles emanating from return fittings on pool wall.

3. Leaking O-ring or packing glands on valves.

Solution: Tighten, repair, or replace valves.

4. Strainer basket or skimmer basket loaded with debris.

Solution: Remove strainer housing cover or skimmer cover, clean basket, and refill strainer housing with water. Tighten cover.

5. Suction side clogged.

Solution: Contact a qualified repair professional.

Block off to determine if pump will develop a vacuum. You should have 5"-6" of vacuum at the strainer cover (**Only your pool dealer can confirm this with a vacuum gauge**). You may be able to check by removing the skimmer basket and holding your hand over the bottom port with skimmer full and pump running. If no suction is felt, check for line blockage.

- a. If pump develops a vacuum, check for blocked suction line or dirty strainer basket. An air leak in the suction piping may be the cause.

- b. If pump does not develop a vacuum and pump has sufficient "priming water":

- i. Re-check strainer housing cover and all threaded connections for suction leaks. Check if all system hose clamps are tight.

- ii. Check voltage to ensure that the motor is rotating at full RPM's.

- iii. Open housing cover and check for clogging or obstruction in suction. Check impeller for debris.

- iv. Remove and replace shaft seal only if it is leaking.



HAYWARD®

Low Flow – Generally, Check For:

1. Clogged or restricted strainer or suction line.

Solution: Contact a qualified repair professional.

2. Undersized pool piping.

Solution: Correct piping size.

3. Plugged or restricted discharge line of filter, valve partially closed (high gauge reading).

Solution: Sand filters – backwash as per manufacturer's instructions; D.E. filters – backwash as per manufacturer's instructions; Cartridge filters – clean or replace cartridge.

4. Air leak in suction (bubbles issuing from return fittings).

Solution: Re-tighten using Teflon tape.

5. Plugged, restricted, or damaged impeller.

Solution: Replace including new seal assembly.

Noisy Pump – Check For:

1. Air leak in suction piping, cavitation caused by restricted or undersized suction line or leak at any joint, low water level in pool, and unrestricted discharge return lines.

Solution: Correct suction condition or throttle return lines, if practical. Holding hand over return fitting will sometimes prove this point or putting in a smaller eyeball fitting.

2. Vibration due to improper mounting, etc.

Solution: Mount the pump on a level surface and secure the pump to the equipment pad.

3. Foreign matter in pump housing. Loose stones/debris hitting impeller could be cause.

Solution: Clean the pump housing.

4. Motor bearings noisy from normal wear, rust, overheating, or concentration of chemicals causing seal damage which will allow chlorinated water to seep into bearings wiping out the grease causing bearing to whine.

Solution: All seal leaks should be replaced at once.

HAYWARD® Pool Products Limited Warranty

To original purchasers of this equipment, Hayward Pool Products, Inc. warrants its products to be free from defects in materials and workmanship for a period of ONE (1) year from the date of purchase, when used in single family residential applications.

The limited warranty excludes damage from freezing, negligence, improper installation, improper use or care or any Acts of God. Parts that fail or become defective during the warranty period shall be repaired or replaced, at our option, within 90 days of the receipt of defective product, barring unforeseen delays, without charge.

Proof of purchase is required for warranty service. In the event proof of purchase is not available, the manufacturing date of the product will be the sole determination of the purchase date.

To obtain warranty service, please contact the place of purchase or the nearest Hayward Authorized Service Center. For assistance on your nearest Hayward Authorized Service Center please visit us at www.haywardpool.com.

Hayward shall not be responsible for cartage, removal, repair or installation labor or any other such costs incurred in obtaining warranty replacements or repair.

The Hayward Pool products warranty does not apply to components manufactured by others. For such products, the warranty established by the respective manufacturer will apply.

The express limited warranty above constitutes the entire warranty of Hayward Pool Products with respect to its' pool products and is in lieu of all other warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose. In no event shall Hayward Pool products be responsible for any consequential, special or incidental damages of any nature.

Some states do not allow a limitation on how long an implied warranty lasts, or the exclusion of incidental or consequential damages, so the above limitation may not apply to you. This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

*Supersedes all previous publications.

Hayward Pool Products
620 Division Street
Elizabeth, NJ 07207



HAYWARD®

PRODUCT REGISTRATION

(Retain For Your Records)

DATE OF INSTALLATION _____

INITIAL PRESSURE GAUGE READING (CLEAN FILTER) _____

PUMP MODEL _____ HORSEPOWER _____

FILTER MODEL _____ SERIAL NUMBER _____



DETACH HERE: Fill out bottom portion completely and mail within 10 days of purchase/installation or register online.

Super Pump® Series

Warranty Card Registration

Register online at www.hayward.com

Please Print Clearly:

First Name _____ Last Name _____

Street Address _____

City _____ State _____ Zip _____

Phone Number _____ Purchase Date _____

E-Mail Address _____

Serial Number

--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Model Number _____

Pool Capacity _____ (U.S. Gallons)

If your product contains components that have individual serial numbers, it is not necessary to complete warranty registration for those individual components. Instead, complete warranty registration only for the overall product, using the serial number that is located on the outside of the product packaging.

Please include me in all e-mail communications regarding Hayward® Equipment or promotions.

Mail to: Hayward Pool Products, 620 Division Street, Elizabeth, NJ 07207

Attn: Warranty Dept

Or REGISTER YOUR WARRANTY ON-LINE AT WWW.HAYWARD.COM

Years Pool has been in service

☐ 1 year ☐ 1-3 ☐ 4-5 ☐ 6-10 ☐ 11-15 ☐ 15

Purchased from _____

☐ Builder ☐ Retailer ☐ Pool Service ☐ Internet/Catalog

Company Name _____

Address _____

City _____ State _____ Zip _____

Phone _____

Type of Pool:

☐ Concrete/Gunite ☐ Vinyl ☐ Fiberglass

☐ Other _____

☐ New Installation

☐ Replacement

Installation for:

☐ In Ground ☐ Above Ground ☐ Spa



Hayward and Super Pump are registered trademarks of Hayward Industries, Inc.
© 2016 Hayward Industries, Inc.



Perflex® Series

Extended Cycle Filtration Systems

Owner's Manual



Contents

Warnings.....	2
Introduction.....	4
Installation.....	4
Replacement Parts.....	6
Warranty	6
Warranty Registration	8

Models: EC65A, and EC75A Series Filters

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.

The **NOTICE** label indicates special instructions that are important but not related to hazards.

Hayward Pool Products
620 Division Street, Elizabeth, NJ 07207
Phone: (908) 355-7995
www.hayward.com



HAYWARD®



⚠ 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.

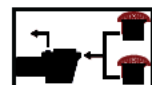


Body Suction Entrapment- A negative pressure applied to a large portion of the body or limbs can result in an entrapment.

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 6 ft/sec in the suction return line
- 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. Do not purge the system with compressed air.** Purging the system with compressed air can cause components to explode, with risk of severe injury or death to anyone nearby. Use only a low pressure (below 5 PSI), high volume blower when air purging the pump, filter, or piping.



HAYWARD®



⚠ 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.

⚠ WARNING – Risk of Hyperthermia. To avoid hyperthermia the following “Safety Rules for Hot Tubs” are recommended by the U.S. Consumer Product Safety Commission.

1. Spa or hot tub water temperatures should never exceed 104°F [40°C]. A temperature of 100°F [38°C] is considered safe for a healthy adult. Special caution is suggested for young children. Prolonged immersion in hot water can induce hyperthermia.
2. Drinking of alcoholic beverages before or during spa or hot tub use can cause drowsiness, which could lead to unconsciousness and subsequently result in drowning.
3. Pregnant women beware! Soaking in water above 100°F [38°C] can cause fetal damage during the first three months of pregnancy (resulting in the birth of a brain-damaged or deformed child). Pregnant women should adhere to the 100°F [38°C] maximum rule.
4. Before entering the spa or hot tub, users should check the water temperature with an accurate thermometer; spa or hot tub thermostats may err in regulating water temperatures by as much as 4°F (2.2°C).
5. Persons taking medications, which induce drowsiness, such as tranquilizers, antihistamines or anti-coagulants, should not use spas or hot tubs.
6. If the pool/spa is used for therapy, it should be done with the advice of a physician. Always stir pool/ spa water before entering the pool/spa to mix in any hot surface layer of water that might exceed healthful temperature limits and cause injury. Do not tamper with controls, because scalding can result if safety controls are not in proper working order.
7. Persons with a medical history of heart disease, circulatory problems, diabetes or blood pressure problems should obtain a physicians advice before using spas or hot tubs.
8. Hyperthermia occurs when the internal temperature of the body reaches a level several degrees above normal body temperature of 98.6°F [37°C]. The symptoms of Hyperthermia include: drowsiness, lethargy, dizziness, fainting, and an increase in the internal temperature of the body.

The effects of Hyperthermia include:

1. Unawareness of impending danger.
2. Failure to perceive heat.
3. Failure to recognize the need to leave the spa.
4. Physical inability to exit the spa.
5. Fetal damage in pregnant women.
6. Unconsciousness resulting in danger of drowning.

SAVE THESE INSTRUCTIONS



The Hayward-Perflex filters are high performance swimming pool filters. As a system the EC65A has an output rating of 3,240 gallons (12.2 Kl) per hour, while the EC75A has an output rating of 4800 gallons (18.0 Kl) per hour. Manufactured from durable, corrosion-proof materials, the filter can be combined with a pump and combined on a strong, molded mounting base. The systems are designed for continuous operation, for installation below, the pool water line and up to 2 feet above the water line. They may be used on fresh or salt water swimming pools.

The Perflex filter uses diatomite filter powder (commonly called D.E.). D.E. is the most efficient dirt remover known. It is normally fed into the system through the skimmer when the filter is initially started; then drained from the filter when it can no longer efficiently remove dirt from the water. Through the Perflex's exclusive "BUMP" action, the D.E. is periodically regenerated and the filter cycle extended without changing the powder. When the filter powder is totally used, the "BUMP" action makes it possible to drain the used diatomite without backwashing or dismantling the filter.

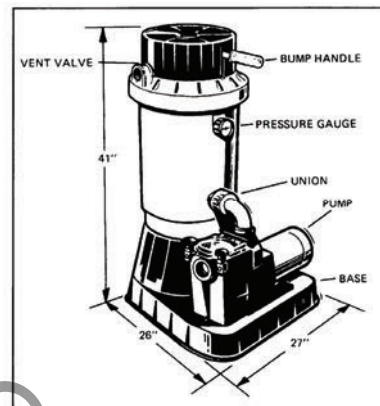
Hayward Pool Pumps are non-corrosive, centrifugal pumps with pressure, flow, and safety features specifically designed for swimming pool service. They are driven by a heavy duty motors, which are electrically isolated and insulated from the pool water. Output pressure and flow are tuned to the filter, resulting in a perfectly balanced, non-corrosive system. Select a pump with an output rating between 30 and 100 GPM (115 to 380 LPM).

SYSTEM LOCATION

1. Though the system is designed for outdoor use, it is advisable to protect electrical components from the weather. Select a well-drained area, one that will not flood when it rains.
2. For best pump performance, the system should be located below the swimming pool water line or up to 2 feet above the water line. If located above the water line make sure to select a self-priming pump such as a Super Pump®, Super II™, MaxFlo or TriStar™. Set the mounting platform level. Keep the filter bump handle, drain outlet, and pressure gauge accessible for convenient operation. There is an alternate bump handle location on the other side of the filter outlet. Instructions for changing the handle position are covered later.
3. Position the system so that the filter tank can drain by gravity.

PLUMBING & INSTALLATION

1. To facilitate servicing of the filter system and to allow for indoor storage during the winter months, installing union connections at the suction and outlet ports is recommended.
2. Use 1-1/4" or 1-1/2" I.D. flexible plastic pipe, or hose, joined with insert fittings and stainless steel clamps.
3. All plumbing connections on the system are 1-1/2" N.P.T. When making connections, use plastic male-end adapters. Apply three turns of Teflon tape or plastic pipe sealant compatible with ABS to the male threads. Screw the fitting into the thread hand tight; then, using a wrench, tighten one more full turn. Additional tightening is unnecessary-and-could result in damage to components.
4. Refer to the diagram for suggested valving. Ball-type valves are recommended where needed.
5. Tighten pump base mounting bolts, if loose.
6. Securely *hand tighten* the union nut between the filter and pump.
7. Connect the pool suction plumbing between the skimmer, pool outlet, and the pump.
8. Connect the pool return (inlet) plumbing
9. If the pressure gauge is not installed, apply Teflon tape to the gauge threads, and *carefully* screw the gauge into the threaded hole in the side of the filter body.
10. A filter drain plug, with gasket, is furnished with each filter and is all that is needed for complete filter draining. If desired however, drain piping may be extended from the filter by using the optional Drain Valve Kit (Model SP0723) and an appropriate length of 1-1/2" pipe. Piping must slope away from the filter so the tank can drain by gravity.
11. All electrical connections should be made in accordance with applicable electrical codes.
12. Check for joint leaks before operating system.
13. Refer to pump instruction booklet for pump information.



BEFORE STARTING THE FILTER

1. Obtain a supply of operating chemicals, D.E., and a pool test kit.
Use only the swimming pool grades of D.E., such as:

CELATOM®	A trademark of EP Minerals
DICALITE®	A trademark of EP Minerals
DE Filter media	Local Pool Supply

2. Superchlorinate the pool water by adding unstabilized granular or liquid chlorine. Stabilized forms of chlorine are recommended for normal daily use after the initial clean-up of the water. Follow chemical manufacturer's recommendations for superchlorination and daily use.



STARTING THE FILTER

Close the filter drain and the vent valve.

CAUTION: Separation Hazard. Failure to open all suction and discharge valves when starting the pump could cause severe personal injury and/or property damage. To avoid open all suction and discharge valves.



Prime and start the pump following the manufacturer's instructions. Air trapped in the system will automatically vent to the pool. When there is a steady flow of water returning to the pool, the filter is ready for precoat. *DO NOT* operate the filter for more than one minute without the precoat charge.

PRECOATING

For the EC65A Scoop 6 lbs. (2.7 kgs.) of diatomite into the system through the skimmer as fast as the plumbing will take it.

For the EC75A Scoop 7 lbs. (3.2 kgs.) of diatomite into the system through the skimmer as fast as the plumbing will take it.

Note and record the pressure gauge reading after the diatomite has been added. This is the "precoat pressure."

FILTERING

Filtration starts as soon as the filter has been precoat. As the filter removes dirt from the pool water, the accumulated dirt causes a resistance to flow. As a result, the gauge pressure will rise and the flow will decrease. When the pressure rises 7-10 psi (.49-.70 Bar) above the precoat pressure, regenerate the filter.

REGENERATION (Extending the Cycle)

Stop the pump. Move the bump handle down slowly, then up briskly. Repeat 3 times. Restart the pump and filtration will resume at near the original flow and pressure.

After each regeneration, and until the filter is cleaned, there may be a slight increase in the starting pressure. This is the result of dirt accumulating within the filter and is completely normal.

CLEANING

Cleaning is recommended when the gauge pressure rises more than 10 psi (.70 Bar) in less than a 24 hour period or when cloudy water returns to the pool for more than 30 seconds after regeneration. To clean, first stop the pump; then move the bump handle down slowly, then up briskly. Repeat 8 times. Open the vent valve (under bump cover), open the filter drain (Note: if the filter is installed below the pool water line, close the suction and return valves) and allow water and dirt-to-empty completely.

After the filter has drained, and with the drain still open, run the pump for a few seconds to flush out any dirt remaining in the bottom of the filter. (Note: If the filter is installed below the pool water line, opening the *suction* valve for a few seconds with the pump off will adequately flush the unit.)

Close the filter drain and the vent valve. Open the suction and return valves (when used). Start the pump and let the filter fill with water and repeat the CLEANING procedure. This completes the cleaning phase. The filter is now ready for recharging. Proceed as in STARTING THE FILTER and PRECOATING.

VACUUMING

Vacuuming can be performed directly into the filter whenever needed. For fastest results, regenerate the filter before and after each vacuuming operation.

TO CHANGE BUMP HANDLE POSITION

1. Remove the bump handle grip. Push in tab at base of handle. Carefully pry the bump cover from the retaining groove and slide the cover off the handle.
2. Using a drift (or 10 penny nail), tap the pivot pin out of the filter head anchor point, freeing the end of the handle. Rotate the bump handle to the alternate position and align the handle and the head anchor holes. Tap the pivot pin in place.
3. Reinstall the bump cover and grip.

PREVENTIVE MAINTENANCE

While Perflex filters are basically resistant to the difficulties often encountered as a result of chemical build-up in swimming pools, it is important to keep in mind that the mineral content in a pool increases every day as a result of the chemicals and the normal water evaporation process. If the concentration of minerals is allowed to get too high, the minerals will form deposits on the Flex-Tubes inside the filter, and will eventually result in shortened filter cycles. To guard against this, a yearly chemical cleaning (soaking) of the Flex-Tube assembly is suggested. Use commercially available 20% muriatic acid added to water in 1 to 1 ratio; or use other commercial filter element cleaner mixed according to the package instructions. Use a plastic container.



CAUTION: Chemical Hazard –Chemicals can cause personal or property damage, to avoid use personal protective gear when handling.



After cleaning, thoroughly flush all affected parts with cold water. Always wear gloves and eye protection when handling cleaning agents.

WINTERIZING

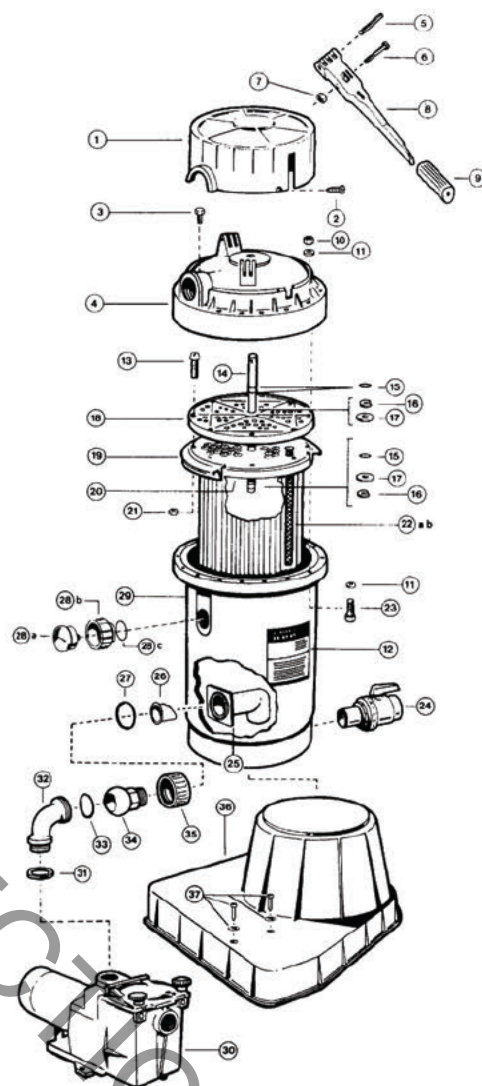
In areas where sub-freezing temperatures can be expected, the filter should be drained and removed from its operating location and stored indoors. Prior to removal, cycle the filter as described under CLEANING.



HAYWARD®

REPLACEMENT PARTS

REF. NO.	PART NO.	DESCRIPTION	NO. REQ'D.
1	ECX11206	Bump Mechanism Cover	1
2	ECX1019	Cover Screw (1981 and Prior)	2
3	ECX1322A	Vent Valve With O-Ring	1
4	ECX11194AT	Filter Head with Vent Valve	1
5	ECX100Z9	Roll Pin	1
6	ECX4236A	Bump Shoulder bolt and Nut Kit	1
7		Nut in bolt Kit	
8	ECX1040	Bump Handle Assy w/pins, bolt & nut	1
9	ECX1037B	Bump Handle Grip	1
10	ECX1642A	Tank Bolt Set (Screw and Nut)	15
11	ECX1077	1/4" x 1 1/16" OD Flat washer	30
12	ECX1230	Decal-Operation Instructions	1
13	SPX1500N1	Tube Sheet Screw	16
14	ECX1110	Bump Shaft	1
15	ECX9611246PAK3	Shaft O-ring (Set of 3)	3
16	ECX1014PAK2	Retainer Clip (Set of 2)	2
17	ECX1011	Thrust Washer	2
	ECX1014A	Shaft kit (Includes 15,16,17)	2
18	ECX1104	Tube Sheet Top	1
19	ECX1105	Diaphragm Gasket	1
20	ECX1103	Tube Sheet Bottom	1
21	SPX1500Y1	Tube Sheet Nut	16
22a	ECX1031PAK5	Flex-Tube Assembly 13 3/8" (EC65) (Set of 5)	120
22b	ECX1032PAK10	Flex-Tube Assembly 16 1/4" (EC75) (Set of 10)	120
23	ECX1642215	1/4"-20 x 1 3/4" Hex head Bolt (Set of 15)	15
24	SP0723	Ball-Type Drain Valve with Nipple	1
25	ECX4220A	Elbow Assy w/ Check Valve	1
26	ECX4201CA	Inlet Fitting with Check Valve	1
27	SPX1500W	O-ring	1
28a	ECX27091	Pressure Gauge	1
28b	ECX12866	Gauge Port Adapter	1
28c	ECX1287	Adapter O-ring	1
29	ECX11184AT	Filter Body w/Internal Elbow	1
30		Super, Super II™, or Tri-Star™ pump	1
31	SPX1485C	Gasket	1
32	SPX1485B	Pump Discharge Elbow	1
33	SPX1425Z6	O-Ring	1
34	SPX1485A	Union Ball End	1
35	SPX1480C	Union Nut	1
36	ECX1263	Platform Base	1
37	ECX1161Z2	Pump Mounting Screw& Washer Set of 2	2
	ECX12515	Flex-Tube Nest (EC65)	
	ECX125175	Flex Tube Nest (EC75) (Includes. 13thru 22)	1



HAYWARD® Pool Products Limited Warranty

To original purchasers of this equipment, Hayward Pool Products, Inc. warrants its FILTERS to be free from defects in materials and workmanship for a period of ONE (1) year from the date of purchase, when used in single family residential applications.

The limited warranty excludes damage from freezing, negligence, improper installation, improper use or care or any Acts of God. Parts that fail or become defective during the warranty period shall be repaired or replaced, at our option, within 90 days of the receipt of defective product, barring unforeseen delays, without charge.

Proof of purchase is required for warranty service. In the event proof of purchase is not available, the manufacturing date of the product will be the sole determination of the purchase date.

To obtain warranty service, please contact the place of purchase or the nearest Hayward Authorized Service Center. For assistance on your nearest Hayward Authorized Service Center please visit us at www.hayward.com.

Hayward shall not be responsible for cartage, removal, repair or installation labor or any other such costs incurred in obtaining warranty replacements or repair.

The Hayward Pool products warranty does not apply to components manufactured by others. For such products, the warranty established by the respective manufacturer will apply.

The express limited warranty above constitutes the entire warranty of Hayward Pool Products with respect to its' pool products and is in lieu of all other warranties expressed or implied, including warranties of merchantability or fitness for a particular purpose. In no event shall Hayward Pool products be responsible for any consequential, special or incidental damages of any nature.

Some states do not allow a limitation on how long an implied warranty lasts, or the exclusion of incidental or consequential damages, so the above limitation may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from state to state.

*Supersedes all previous publications.

Hayward Pool Products
620 Division Street
Elizabeth, NJ 07207



SERVICE & REPAIRS

Consult your local authorized *Hayward-Perflex* dealer or service center. No returns may be made directly to the factory without the expressed written authorization of Hayward Pool Products, Inc.

ALGAE CONTROL

Algae is a form of plant life which can vary in size from a few thousandths of an inch to the size of a small tree. Of the many forms of algae, those most frequently found in swimming pool water are microscopic in size and green in color.

Algae readily grows in sunlight and can, under favorable conditions, quickly overgrow a swimming pool turning it completely green in just a few hours. On the other hand, swimming pool water can be kept unfavorable to algae growth simply by maintaining a chlorine level of at least 0.5 ppm in the water at all times. The chlorine level should be checked at least once a day using a suitable test kit.

If an algae condition develops and the pool water "blooms" green, superchlorination of the pool will be necessary to clear it. Add unstabilized granular chlorine, or liquid chlorine.

Follow chemical manufacturer's recommendation for superchlorination. The algae will quickly become inactive and can then be removed by the filter. Live algae, on the other hand, multiplies so fast that the filter cannot keep up with its growth rate. In an active algae situation, it may be necessary to regenerate the Perflex filter as frequently as every 2 to 3 hours.

When correctly used, commercial algaecides are effective against algae, though algaecides should be used in conjunction with, and not as a substitute for, regular chlorination or superchlorination.

Maintaining a chlorine level of at least 0.5 ppm in the pool water at all times is the most effective way to prevent algae growth in swimming pools

SUGGESTED POOL CHEMISTRY LEVELS		ACTION REQUIRED TO CORRECT POOL CHEMISTRY	
		TO RAISE	TO LOWER
pH	7.2 to 7.6	Add Soda Ash	Add Muriatic Acid or Sodium Bisulphate
TOTAL ALKALINITY	100 to 130 ppm	Add Sodium Bicarbonate	Add Muriatic Acid
CHLORINE (UNSTABILIZED)	0.3 to 1.0 ppm	Add Chlorine Chemical	No action - chlorine will naturally dissipate
CHLORINE (STABILIZED)	1.0 to 3.0 ppm	Add Chlorine Chemical	No action - chlorine will naturally dissipate
CHLORINE STABILIZER (Cyanuric Acid)	40 to 70 ppm	Add Stabilizer	Dilution - partially drain & refill pool with water that has not been treated with Cyanuric Acid.

PROBLEM	PROBABLE CAUSE	REMEDY
Running at high pressures.	1. D.E. coated with normal accumulation of pool dirt, algae, etc. 2. Overcharge of D.E. 3. Restriction in return line caused by small eyeball fitting. 4. Partially closed valve on return line.	1. Bump. 2. Bump-Drain-Recharge. 3. Change to larger size fitting. 4. Open valve.
Drop off of return flow.	1. D.E. coated with normal accumulation of pool dirt, algae, etc. 2. Pump strainer basket clogged. 3. Skimmer basket clogged. 4. Pump impeller vanes clogged. 5. Air leak on suction side of pump. 6. Electric motor running less than maximum R.P.M. (under speed)	1. Bump. Clean. 2. Clean. 3. Cleaning with a stiff wire thru the pump strainer opening will usually work. Alternate would be to disassemble and clean. 4. Check cover gasket, hand knobs, hose, clamps, etc. Replace or tighten as necessary. 5. Consult pump and motor trouble shooting guide. NOTE: Most motor problems are due to: a) Undersized or improper wiring. b) Power cut-backs or a combination of both.
Short cycles.	1. D.E. loaded to capacity with pool dirt, algae, etc. 2. Bumping incorrectly. 3. Bump handle bent. 4. Pump output exceeds design flow rate of filter. 5. Presence of algae.	1. Bump-Drain-Recharge. 2. Slow down stroke - brisk upstroke. Repeat 6 times. 3. Check and straighten or replace. 4. Check GPM/LPM output. Regulate pump GPM/LPM output to max. filter GPM/LPM rating. 5. Super-chlorinate; Bump-Drain-Recharge as needed.
Short cycles -- even after proper bumping, draining, and recharging	Contaminated (clogged) Flex-Tube braids caused by: a. Natural accumulation of chemical deposits (accelerated if chemicals are fed thru skimmer). b. Running D.E. charge too long with excessive amount of live algae present in pool. c. Operating filter without D.E. d. Operating too long without D.E. after starting pump. D.E. must be added as soon as filter is full of water and pump is putting out a steady stream. IMPORTANT — Testing a new pool plumbing system without adding D.E. will cause this type of clogging.	Clean Tube Nest a) Detergent Cleaning: Remove tube nest and hose down with forceful stream of clean water. Soak tube nest in strong solution of laundry detergent (such as <i>Cheer</i>) and warm water. Hose down again. b) Chemical Cleaning: This requires use of water and muriatic acid solution (or filter cleaner-type preparations) to chemically dissolve contaminants. Consult your pool dealer for chemical cleaning instructions.



(Retain For Your Records)

8

Aqua Rite®



Electronic Chlorine Generator

Operation and Installation Manual

AQR

IMPORTANT SAFETY INSTRUCTIONS

When using this electrical equipment, basic safety precautions should always be followed, including the following:

• READ AND FOLLOW ALL INSTRUCTIONS

- Use Copper Conductors Only
- Disconnect all AC power during installation.
- Warning - To reduce the risk of injury, do not permit children to use this product unless they are closely supervised at all times.
- A green colored terminal marked "Earth Ground" is located inside the wiring compartment. To reduce the risk of electric shock, this terminal must be connected to the grounding means provided in the electric supply service panel with a continuous copper wire equivalent in size to the circuit conductors supplying the equipment.
- One bonding lug for US models (two for Canadian models) is provided on the external surface. To reduce the risk of electric shock, connect the local common bonding grid in the area of the swimming pool, spa, or hot tub to these terminals with an insulated or bare copper conductor not smaller than 8 AWG US / 6 AWG Canada.
- All field installed metal components such as rails, ladders, drains, or other similar hardware within 3 meters of the pool, spa or hot tub shall be bonded to the equipment grounding bus with copper conductors not smaller than 8 AWG US / 6 AWG Canada.
- NOTICE TO USERS: This control product is to be used only in accordance with the directions of this label. It is an offense under the Pest Control Products Act to use a control product under unsafe conditions.
- **SAVE THESE INSTRUCTIONS**

Table of Contents

OPERATION

General.....	1
Water Chemistry.....	2
Controls.....	6
Maintenance.....	8

INSTALLATION

Mounting.....	10
Plumbing.....	11
Wiring.....	12

TROUBLESHOOTING

Troubleshooting.....	14
----------------------	----

WARRANTY

Warranty.....	16
---------------	----

OPERATION

The Aqua Rite® is an automatic chlorine generation system for pool or spa sanitation. The operation requires a low concentration of salt (sodium chloride) in the pool water. These levels are low enough that it normally will not be tasted. The Aqua Rite automatically sanitizes your pool by converting the salt into free chlorine which kills bacteria and algae in the pool. Chlorine will revert back to sodium chloride after killing bacteria. These reactions will continuously recycle virtually eliminating the need to add sanitizing chemicals to your pool. The only time you may need to add more salt to the pool is when water is replenished due to backwashing, draining, or splashing (not evaporation).

The Aqua Rite is designed to handle the purification needs of most residential swimming pools up to 40,000 gallons (150,000 liters), or the needs of most commercial pools up to 25,000 gallons (95,000 liters). Check local codes for other restrictions. The actual amount of chlorination required to properly sanitize a pool varies due to bather load, rainfall, temperature, and the pool's cleanliness.

NOTE: Hayward does not recommend using the Aqua Rite to generate bromine.

Aqua Rite chlorine generators operating with software version 1.50 or later are designed to use one of 3 different chlorinator cells that are available from your authorized Hayward dealer. These cells are not included with the Aqua Rite and must be purchased before installation. Choose the appropriate cell based on the size of your pool. The models are shown below:

T-CELL-15 - for pools up to 40,000 gallons

T-CELL-9 - for pools up to 25,000 gallons

T-CELL-3 - for pools up to 15,000 gallons

Note that the installation and mounting requirements are the same for all models.

NOTE: Before installing this product as part of a saline water purification system in a pool or spa using natural stone for coping or for immediately adjacent patios/decking, a qualified stone installation specialist should be consulted regarding the appropriate type, installation, sealant (if any) and maintenance of stone used around a saline pool with electronic chlorine generator in your particular location and circumstances.

NOTE: The use of dry acid (sodium bisulfate) to adjust pool pH is discouraged especially in arid regions where pool water is subject to excessive evaporation and is not commonly diluted with fresh water. Dry acid can cause a buildup of by-products that can damage your chlorinator cell.

Water Chemistry

The table below summarizes the levels that are recommended by The Association of Pool and Spa Professionals (APSP). The only special requirements for the Aqua Rite are the salt level and stabilizer. It is important to maintain these levels in order to prevent corrosion or scaling and to ensure maximum enjoyment of the pool. Test your water periodically. Your Authorized Aqua Rite Dealer (AARD) or most pool stores can provide you with the chemicals and procedures to adjust the water chemistry. Be sure to tell the pool store that you are using an Aqua Rite chlorine generator.

CHEMICAL	IDEAL LEVELS
Salt	2700 to 3400 ppm
Free Chlorine	1.0 to 3.0 ppm
pH	7.2 to 7.8
Cyanuric Acid (Stabilizer)	60 to 80 ppm (80 ppm best)
Total Alkalinity	80 to 120 ppm
Calcium Hardness	200 to 400 ppm
Metals	0 ppm
Saturation Index	-2 to .2 (0 best)

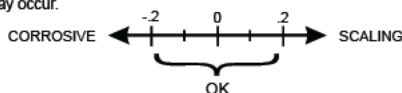
Saturation index

The saturation index (Si) relates to the calcium and alkalinity in the water and is an indicator of the pool water "balance". Your water is properly balanced if the Si is $0 \pm .2$. If the Si is below -0.2 , the water is corrosive and plaster pool walls will be dissolved into the water. If the Si is above $+0.2$, scaling and staining will occur. Use the chart below to determine the saturation index.

$$Si = pH + Ti + Ci + Ai - 12.1$$

°C	°F	Ti	Calcium Hardness	Ci	Total Alkalinity	Ai
12	53	.3	75	1.5	75	1.9
			100	1.6	100	2.0
16	60	.4	125	1.7	125	2.1
			150	1.8	150	2.2
19	66	.5	200	1.9	200	2.3
			250	2.0	250	2.4
24	76	.6	300	2.1	300	2.5
			400	2.2	400	2.6
29	84	.7	600	2.4	600	2.8
			800	2.5	800	2.9
34	94	.8				
39	103	.9				

How to use: Measure pool pH, temperature, calcium hardness, and total alkalinity. Use the chart above to determine Ti, Ci, and Ai from your measurements. Insert values of pH, Ti, Ci and Ai into the above equation. If Si equals .2 or more, scaling and staining may occur. If Si equals -2 or less corrosion or irritation may occur.



Salt Level

Use the chart on page 4 to determine how much salt in pounds or (Kgs) need to be added to reach the recommended levels. Use the equations below (measurements are in feet/gallons and meters/liters) if pool size is unknown.

	Gallons (pool size in feet)	Liters (pool size in meters)
Rectangular	Length x Width x Average Depth x 7.5	Length x Width x Average Depth x 1000
Round	Diameter x Diameter x Average Depth x 5.9	Diameter x Diameter x Average Depth x 785
Oval	Length x Width x Average Depth x 6.7	Length x Width x Average Depth x 893

The ideal salt level is between 2700-3400 ppm (parts per million) with 3200 ppm being optimal. If the level is low, determine the number of gallons in the pool and add salt according to the chart on page 4. A low salt level will reduce the efficiency of the Aqua Rite® and result in low chlorine production. A high salt level can cause the Aqua Rite® to shutdown and may begin to give a salty taste to your pool (generally, the salt will begin to be tasted at a level of about 3500-4000 ppm). The salt in your pool/spa is constantly recycled and the loss of salt throughout the swimming season should be small. This loss is due primarily to the addition of water because of splashing, backwashing, or draining (because of rain). Salt is not lost due to evaporation.

Type of Salt to Use

It is important to use only sodium chloride (NaCl) salt that is greater than 99% pure. This is common food quality or water softener salt and is usually available in 40-80 lb. bags labeled "Coarse Solar Salt". It is also acceptable to use water conditioning salt pellets, however, it will take longer for them to dissolve. Do not use rock salt, salt with yellow prussiate of soda, salt with anti-caking additives, or iodized salt.

How to Add or Remove Salt

For new plaster pools, wait 10-14 days before adding salt to allow the plaster to cure. Turn the circulating pump on and add salt directly into the pool. Brush the salt around to speed up the dissolving process--do not allow salt to pile up on the bottom of the pool. Run the filter pump for 24 hours with the suction coming from the main drain (use pool vac if there is no main drain) to allow the salt to evenly disperse throughout the pool. The salt display may take 24 hours to respond to the change in salt concentration.

The only way to lower the salt concentration is to partially drain the pool and refill with fresh water.

Always check stabilizer (cyanuric acid), when checking salt. These levels will most likely decline together. Use the chart on page 5 to determine how much stabilizer must be added to raise the level to 80 ppm.

POUNDS and (Kg) OF SALT NEEDED FOR 3200 PPM

Current salt level ppm	Gallons and (Liters) of Pool/Spa water															
	8,000 (30,000)	10,000 (37,500)	12,000 (45,000)	14,000 (52,500)	16,000 (60,000)	18,000 (67,500)	20,000 (75,000)	22,000 (82,500)	24,000 (90,000)	26,000 (97,500)	28,000 (105,000)	30,000 (112,500)	32,000 (120,000)	34,000 (127,500)	36,000 (135,000)	40,000 (150,000)
0	213 (97)	267 (121)	320 (145)	373 (169)	427 (194)	480 (218)	533 (242)	587 (267)	640 (291)	693 (315)	747 (339)	800 (364)	854 (388)	907 (412)	960 (436)	1067 (484)
200	200 (91)	250 (114)	300 (136)	350 (159)	400 (182)	450 (205)	500 (227)	550 (250)	600 (273)	650 (295)	700 (318)	750 (341)	800 (364)	850 (388)	900 (412)	1000 (450)
400	187 (85)	233 (106)	280 (127)	327 (148)	373 (170)	420 (191)	467 (212)	513 (233)	560 (255)	607 (276)	653 (297)	700 (318)	747 (339)	793 (360)	840 (382)	933 (424)
600	173 (79)	217 (98)	260 (118)	303 (138)	347 (158)	390 (177)	433 (197)	477 (217)	520 (236)	563 (256)	607 (276)	650 (297)	693 (317)	737 (337)	780 (358)	867 (398)
800	160 (73)	200 (91)	240 (109)	280 (127)	320 (145)	360 (164)	400 (182)	440 (200)	480 (218)	520 (236)	560 (255)	600 (273)	640 (291)	680 (310)	720 (328)	800 (364)
1000	147 (67)	183 (83)	220 (100)	257 (117)	293 (133)	330 (150)	367 (167)	403 (183)	440 (200)	477 (217)	513 (233)	550 (250)	587 (267)	623 (283)	660 (300)	733 (333)
1200	133 (61)	167 (76)	200 (91)	233 (106)	267 (121)	300 (136)	333 (152)	367 (167)	400 (182)	433 (197)	467 (212)	500 (227)	533 (243)	567 (258)	600 (274)	667 (304)
1400	120 (55)	150 (68)	180 (82)	210 (95)	240 (109)	270 (123)	300 (136)	330 (150)	360 (164)	390 (177)	420 (191)	450 (205)	480 (218)	510 (232)	540 (246)	600 (283)
1600	107 (48)	133 (61)	160 (73)	187 (85)	213 (97)	240 (109)	267 (121)	293 (133)	320 (145)	347 (158)	373 (170)	400 (182)	427 (195)	453 (207)	480 (219)	533 (243)
1800	93 (42)	117 (53)	140 (64)	163 (74)	187 (85)	210 (95)	233 (106)	257 (117)	280 (127)	303 (138)	327 (148)	350 (159)	373 (169)	397 (180)	420 (190)	467 (211)
2000	80 (36)	100 (45)	120 (55)	140 (64)	160 (73)	180 (82)	200 (91)	220 (100)	240 (109)	260 (118)	280 (127)	300 (136)	320 (145)	340 (154)	360 (163)	400 (181)
2200	67 (30)	83 (38)	100 (45)	117 (53)	133 (61)	150 (68)	167 (76)	183 (83)	200 (91)	217 (98)	233 (108)	250 (114)	267 (121)	283 (129)	300 (137)	333 (144)
2400	53 (24)	67 (30)	83 (36)	100 (42)	117 (48)	133 (55)	150 (61)	167 (67)	183 (73)	200 (79)	217 (85)	233 (91)	250 (98)	267 (104)	283 (110)	317 (123)
2600	40 (18)	50 (23)	60 (27)	70 (32)	80 (36)	90 (41)	100 (45)	110 (50)	120 (55)	130 (59)	140 (64)	150 (68)	160 (73)	170 (77)	180 (81)	200 (90)
2800	27 (12)	33 (15)	40 (18)	47 (21)	53 (24)	60 (27)	67 (30)	73 (33)	80 (36)	87 (39)	93 (42)	100 (45)	107 (48)	113 (51)	120 (54)	133 (60)
3000	13 (6)	17 (8)	20 (9)	23 (11)	27 (12)	30 (14)	33 (15)	37 (17)	40 (18)	43 (20)	47 (21)	50 (23)	53 (24)	57 (26)	60 (27)	67 (30)
3200	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal	Ideal
3400	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK	OK
3600+	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute	Dilute

POUNDS and (Kg) OF STABILIZER (CYANURIC ACID) NEEDED FOR 80 PPM

Current Stabilizer Level (ppm)	Gallons and (Liters) of Pool/Spa water																
	8,000 (30000)	10,000 (37500)	12,000 (45000)	14,000 (52500)	16,000 (60000)	18,000 (67500)	20,000 (75000)	22,000 (82500)	24,000 (90000)	26,000 (97500)	28,000 (105000)	30,000 (112500)	32,000 (120000)	34,000 (127500)	36,000 (135000)	38,000 (142500)	40,000 (150000)
0 ppm	5.3 (3.6)	6.7 (4.3)	8.0 (3.6)	9.4 (4.3)	10.7 (4.9)	12.0 (5.4)	13.4 (6.1)	14.7 (6.7)	16.0 (7.3)	17.3 (7.9)	18.7 (8.5)	20.0 (9.1)	21.3 (9.7)	22.7 (10.3)	24.0 (10.9)	25.3 (11.5)	26.7 (12.0)
10 ppm	4.7 (3.2)	5.8 (3.7)	7.0 (3.2)	8.2 (3.7)	9.4 (4.3)	10.5 (4.8)	11.7 (5.3)	12.9 (5.9)	14.0 (6.4)	15.2 (6.9)	16.4 (7.4)	17.2 (8.0)	18.7 (8.5)	19.8 (9.0)	21.0 (9.5)	22.2 (10.0)	23.3 (10.5)
20 ppm	4.0 (2.7)	5.0 (3.2)	6.0 (2.7)	7.0 (3.2)	8.0 (3.6)	9.0 (2.2)	10.0 (4.5)	11.0 (5.0)	12.0 (5.4)	13.0 (5.9)	14.0 (6.4)	15.0 (6.8)	16.0 (7.2)	17.0 (7.7)	18.0 (8.1)	19.0 (8.6)	20.0 (9.0)
30 ppm	3.3 (2.3)	4.2 (2.7)	5.0 (2.3)	5.9 (2.7)	6.7 (3.0)	7.5 (3.4)	8.4 (3.8)	9.2 (4.2)	10.0 (4.5)	10.8 (4.9)	11.7 (5.2)	12.5 (5.6)	13.3 (6.0)	14.2 (6.3)	15.0 (6.7)	15.8 (7.1)	16.7 (7.5)
40 ppm	2.7 (1.8)	3.3 (2.1)	4.0 (1.8)	4.7 (2.1)	5.4 (2.4)	6.0 (2.7)	6.7 (3.0)	7.4 (3.3)	8.0 (3.6)	8.7 (3.9)	9.3 (4.2)	10.0 (4.5)	10.7 (4.8)	11.3 (5.1)	12.0 (5.4)	12.7 (5.7)	13.3 (6.0)
50 ppm	2.0 (1.4)	2.5 (1.6)	3.0 (1.4)	3.5 (1.6)	4.0 (1.8)	4.5 (2.0)	5.0 (2.3)	5.5 (2.5)	6.0 (2.7)	6.5 (2.9)	7.0 (3.2)	7.5 (3.4)	8.0 (3.6)	8.5 (3.9)	9.0 (4.1)	9.5 (4.3)	10.0 (4.5)
60 ppm	1.3 (.91)	1.7 (1.1)	2.0 (.91)	2.3 (1.1)	2.7 (1.2)	3.0 (1.4)	3.3 (1.5)	3.7 (1.7)	4.0 (1.8)	4.3 (2.0)	4.7 (2.1)	5.0 (2.3)	5.3 (2.4)	5.7 (2.6)	6.0 (2.7)	6.3 (2.8)	6.7 (3.0)
70 ppm	0.7 (.45)	0.8 (.54)	1.0 (.45)	1.2 (.54)	1.4 (.64)	1.5 (.68)	1.7 (.77)	1.8 (.82)	2.0 (.91)	2.2 (1.0)	2.3 (1.1)	2.5 (1.2)	2.7 (1.2)	2.8 (1.3)	3.0 (1.3)	3.2 (1.4)	3.3 (1.5)
80 ppm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Controls

Main Switch

AUTO: For normal operation, the Main Switch should be left in the AUTO position. In this position the Aqua Rite will produce chlorine according to the "Desired Output %" adjustment setting for the entire filtering/pumping cycle.

SUPER CHLORINATE: When you have an abnormally high bather load, a large amount of rain, a cloudy water condition, or any other condition which needs a large amount of purification to be introduced, put the Main Switch in the SUPER CHLORINATE position. This electronically "super chlorinates" (shocks) the water for 24 hours (filter pump must be on during this time) or until the power has been turned off, whichever comes first. At the end of the super chlorinate time, be sure to put the switch back into the AUTO position.

OFF: The OFF position prevents the Aqua Rite from energizing the electrolytic cell. In this position there is no chlorine generation. NOTE: To service any of the pool equipment or the Aqua Rite, turn the power off at the circuit breaker.

Indicator LED's

POWER When illuminated, the Aqua Rite has input power.

GENERATING This LED is on steady during normal operation. When flashing, the pool water is too hot or cold to operate.

SUPER CHLORINATE Illuminates during super-chlorination. See description above.

REMOTELY CONTROLLED When illuminated, indicates that a remote pool automation control (Hayward/Goldline Pro Logic, Pentair Intellitouch, Polaris Eos, etc.) is controlling the Aqua Rite--the main switch and "Desired Output %" adjustment are inactive. When flashing, the Pro Logic, Intellitouch or Eos is in SERVICE or TIME-OUT mode and the Main Switch and "Desired Output %" adjustment are active.

NO FLOW When illuminated, the flow switch has detected no water flowing and the Aqua Rite has stopped generating chlorine. A flashing LED indicates a 15-60 second time delay period.

CHECK SALT When flashing, the salt level is low (below 2700 ppm) and Aqua Rite is generating at low efficiency. When illuminated steady, the salt level is too low and Aqua Rite has shut down. Before adding large quantities of salt, it is advisable to have your salt level professionally checked.

HIGH SALT When illuminated, the salt level is too high and Aqua Rite has shut down.

INSPECT CELL A flashing indicator signifies that either the cell efficiency is reduced or that it is time for regularly scheduled cell inspection. In either case, inspect cell and clean if necessary. When illuminated steady, cell efficiency is greatly reduced and the Aqua Rite has stopped producing chlorine. Inspect, clean or replace if necessary.

To Set Turbo Cell Type

Before operation, the Aqua Rite must be configured for the chlorinator cell that will be used. Refer to the following information and steps below to set the Turbo cell type.

"t-3" = T-CELL-3, GLX-CELL-3-W
"t-5" = GLX-CELL-5, GLX-CELL-5-W
"t-9" = T-CELL-9, GLX-CELL-9-W
"t-15" = T-CELL-15, GLX-CELL-15-W

1. Slide the Main Switch to the "Auto" position.
2. Push the Diagnostic button repeatedly until "t-xx" appears on the display ("t-15" is the factory default). If the desired cell type is displayed skip to step 4.
3. To change to a different cell type, slide the Main Switch from "Auto" to "Super Chlorinate" and back to "Auto". Repeat this process until the desired cell type is displayed.
4. Push the Diagnostic button to exit.

Desired Output %" adjustment knob

The "Desired Output %" adjustment knob is located in the lower center of the Aqua Rite control panel. This setting is used to control the amount of chlorine the Aqua Rite generates. Raise this setting to increase chlorine level and lower it to decrease chlorine level. Note: The "Desired Output %" adjustment will not function when the Aqua Rite is being controlled by a remote pool automation control.

Salt Display

Refer to the Water Chemistry section for recommended salt levels as well as how to add/remove salt. The Salt Display shows the average salt level of the pool water. The factory default display is in English units (ppm). If Metric units (grams per liter) are preferred, follow the procedure under Temperature Display.

Temperature Display

The Temperature Display shows the current temperature of the pool water. The factory default display is in °F. Both the Temperature Display and the Salt Display can be programmed to display in Metric units. To display temperature in °C and salt level in g/l, perform the following steps:

1. Slide the Main Switch to the "Auto" position.
2. Push the Diagnostic button repeatedly until "°F" appears on the display.
3. Slide the Main Switch from "Auto" to "Super Chlorinate" and back to "Auto".
4. Push the Diagnostic button to exit.

Instant Salinity

The Instant Salinity display is the measured salt level of the pool water at that moment. If salt has recently been added, the Instant Salinity may show the change while the Salt Display (average salt level) may take some time before the changes can be seen. Under these circumstances, you may want to "update" the Salt Display to the new Instant Salinity value. This action will clear the Salt Display and substitute the Instant Salinity value. To do this, follow the steps below.

1. Slide the Main Switch to the "Auto" position.
2. Push the Diagnostic button repeatedly until "-xxxx ppm" appears on the display.
3. Slide the Main Switch from "Auto" to "Super Chlorinate" and back to "Auto".
4. Push the Diagnostic button to exit.

Operation

Assuming that the water chemical levels are in the recommended range, there are three factors that you can control which directly contribute to the amount of chlorine the Aqua Rite will generate:

1. filter time each day (hours)
2. the "Desired Output %" setting
3. the amount of salt in the pool

The filter pump timer should be set so that all of the water in the pool passes through the filter each day. For pools with high chlorine demand, the timer may have to be set longer to generate enough chlorine.

To find the optimum "Desired Output %" setting, start at approximately 50%. Test the chlorine level every few days and adjust the dial up or down accordingly. It usually takes 2-3 adjustments to find the ideal setting for your pool/spa and after that, it should only take minor, infrequent adjustments. Because the chlorine demand of the pool increases with temperature, most people find they have to adjust the dial up at the peak of the summer and down during the colder periods. The Aqua Rite automatically stops generating when the pool water temperatures drops below 50°F. This is usually not a problem because bacteria and algae stop growing at this temperature. You can override this low temperature cutoff by switching to SUPER CHLORINATE for a day.

NOTE: After the ideal "Desired Output %" setting has been found, you may need to raise the setting when the pool water temperature increases significantly, when there is higher than normal bather load or when your chlorinator cell ages. You may need to lower the setting when the pool water temperature decreases significantly or there are long periods of inactivity.

Prevent over-chlorination during cold weather: Check chlorine levels periodically. Most pools require less chlorine during cold weather and the "Desired Output %" should be lowered accordingly.

When connected to a pool automation control (Hayward/Goldline Pro Logic, Pentair Intellitouch or Polaris Eos):

The Aqua Rite is designed to operate with all pool automation controls. The Pro Logic, Intellitouch or Eos can fully control the function of the Aqua Rite chlorinator in addition to the other pool equipment. The "Remotely Controlled" LED on the Aqua Rite chlorinator will be illuminated when the automation control is activated. Adjustment of the Aqua Rite "Desired Output %" and also Superchlorination can be controlled from the pool automation display/keypad. Refer to the pool automation control instructions for more information. The Aqua Rite salt display and LED indicators operate as normal, but the main switch and "Desired Output %" dial are disabled.

Maintaining the Aqua Rite System

To maintain maximum performance, it is recommended that you open and visually inspect the cell every 3 months or after cleaning your filter. The Aqua Rite® will remind you to do this by flashing the "Inspect Cell" LED after approximately 500 hours of operation. After you inspect the cell (and clean, if necessary) press the small "diagnostic" button next to the display for 3 seconds to stop the flashing "Inspect Cell" LED and start the timer for the next 500 hours.

The Aqua Rite electrolytic cell has a self cleaning feature incorporated into the electronic control's logic. In most cases this self cleaning action will keep the cell working at optimum efficiency. In areas where water is hard (high mineral content) and in pools where the water chemistry has been allowed to get "out of balance", the cell may require periodic cleaning. The "Inspect Cell" LED will indicate if cell efficiency is decreased and servicing is necessary. If the "Inspect Cell" LED remains on after a thorough cleaning, the cell may be worn and require replacement.

Servicing and Cleaning the Aqua Rite cell

Turn off power to the Aqua Rite before removing the electrolytic cell. Once removed, look inside the cell and inspect for scale formation (light colored crusty or flaky deposits) on the plates and for any debris which has passed through the filter and caught on the plates. If no deposits are visible, reinstall. If deposits are seen, use a high pressure garden hose and try to flush the scale off. If this is not successful, use a plastic or wood tool (do not use metal as this will scratch the coating off the plates) and scrape deposits off of plates. Note that a buildup on the cell indicates that there is an unusually high calcium level in the pool (old pool water is usually the cause). If this is not corrected, you may have to periodically clean the cell. The simplest way to avoid this is to bring the pool chemistry to the recommended levels as specified.

Mild Acid Washing: Use only in severe cases where flushing and scraping will not remove the majority of deposits. To acid wash, turn off power to Aqua Rite. Remove cell from piping. In a clean plastic container, mix a 4:1 solution of water to muriatic acid (one gallon of water to one quart of muriatic acid). ALWAYS ADD ACID TO WATER - NEVER ADD WATER TO ACID. Be sure to wear rubber gloves and appropriate eye protection. The level of the solution in the container should just reach the top of the cell so that the wire harness compartment is NOT submerged. It may be helpful to coil the wiring before immersing the cell. The cell should soak for a few minutes and then rinse with a high pressure garden hose. If any deposits are still visible, repeat soaking and rinsing. Replace cell and inspect again periodically.

Winterizing

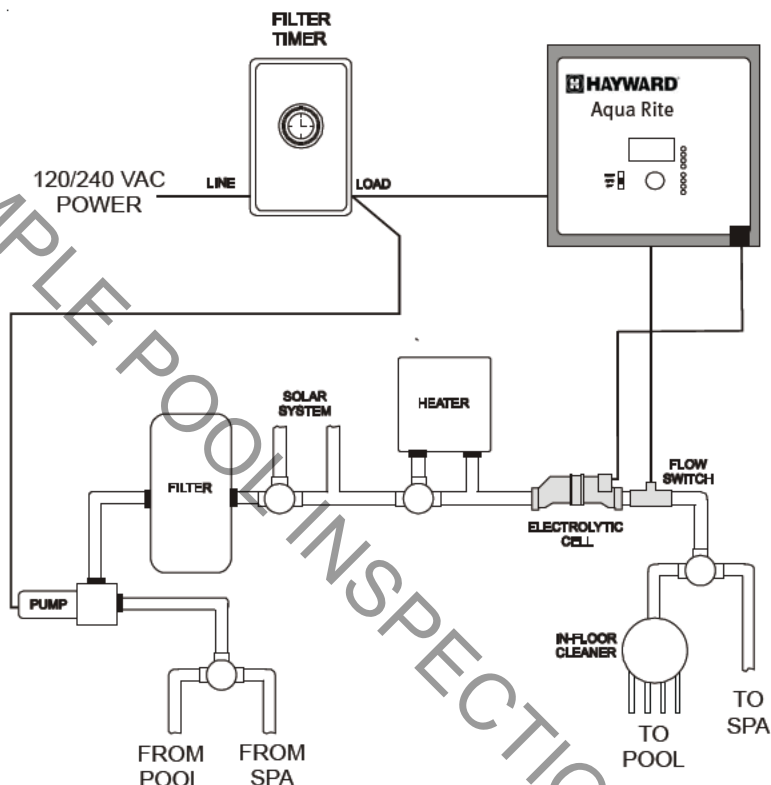
The Aqua Rite electrolytic cell and flow detection switch will be damaged by freezing water just as your pool plumbing would. In areas of the country which experience severe or extended periods of freezing temperatures, be sure to drain all water from the pump, filter, and supply and return lines before any freezing conditions occur. The electronic control is capable of withstanding any winter weather and should not be removed.

Spring Start-up

DO NOT turn the Aqua Rite on, until the pool water chemistry has been brought to the proper levels. This information can be found on page 1.

INSTALLATION

Installation must be performed in accordance with Local and NEC codes.



Preparing Pool/Spa Water

Refer to page 1 for recommended chemical levels. The pool's chemistry must be balanced BEFORE activating the Aqua Rite®. NOTE: If the pool does not have new water, add 1 quart (1 liter) of metal remover and 1 quart (1 liter) of non-copper based algaecide to the pool, per manufacturer's instructions. This ensures a quick, troublefree transfer to the Aqua Rite system.

Mounting the Aqua Rite Control

The Aqua Rite is contained in a raintight enclosure that is suitable for outdoor mounting. The control must be mounted a minimum of 5 ft. (2 meters) horizontal distance (or more, if local codes require) from the pool/spa.

The control is designed to mount vertically on a flat surface with the knockouts facing downward. Because the enclosure also acts as a heat sink (disperses heat from inside the box), it is important not to block the four sides of the control. Do not mount Aqua Rite inside a panel or tight enclosed area.

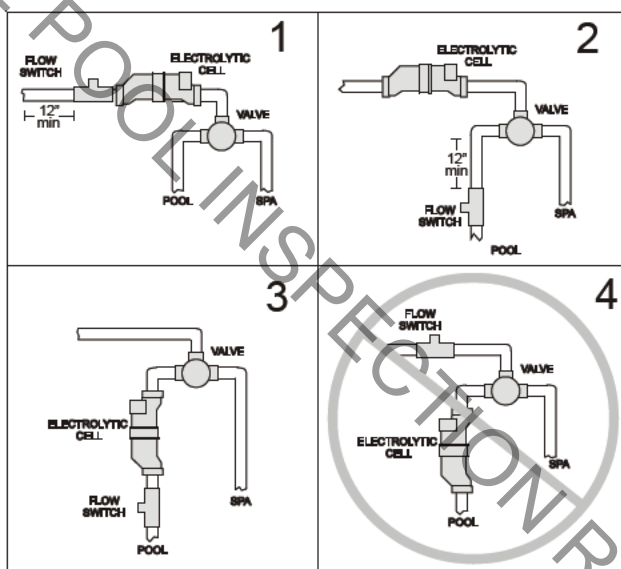
Plumbing

Ensure that the Aqua Rite® installation does not constitute a cross connection with the local potable water supply. Consult local plumbing codes.

The Aqua Rite is packaged with a flow switch and cell unions. The cell must be purchased separately. Refer to page 1 for information about available chlorinator cells.

The flow switch and cell should be plumbed in the return line to the pool/spa. The preferred installation is after (downstream) all the pool equipment (filter, heater, solar, etc.). The electrolytic cell and flow switch tee fitting are designed to be plumbed into 2" (51mm) PVC pipe. Adapters (not included) can be used for systems with 1½" (38 mm) plumbing.

For proper plumbing, refer to the overview diagram on page 9. Alternate configurations #1 shows the flow switch can also be in front of the cell. Configurations #2 and #3 allow for chlorination of both the pool and spa during spa spillover operation, but prevent overchlorination of the spa during "spa only" operation. Never use configuration #4.



Flow Switch:

IMPORTANT: There must be at least a 12" (25cm) straight pipe run before (upstream) the flow switch. If the switch is plumbed after the cell, the cell can be counted as the 12" (25cm) of straight pipe. To ensure proper operation, verify that the arrow on the flow switch (located on top of gray hex) points in the direction of water flow.

Electrolytic Cell:

Install using the unions provided. Tighten unions **BY HAND** for a watertight seal. For pool/spa combination systems with spillover, use configurations #2 or #3 above to allow chlorination of both the pool and spa during spillover but preventing overchlorination when operating the spa only.

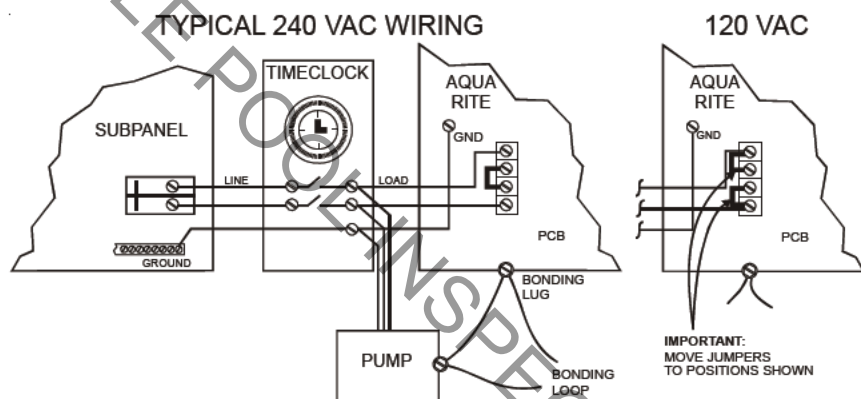
Wiring

Power must be shut off at the circuit breaker before performing any wiring. Be sure to follow Local and NEC electrical codes. To provide safe operation, the Aqua Rite® must be properly grounded and bonded.

Input Power For stand alone operation:

Wire the Aqua Rite to the **LOAD SIDE** of the filter pump timer. It is very important that the Aqua Rite is powered only when the pump is running.

Refer to the wiring label on the Aqua Rite as well as the diagram below to determine correct wiring connections. The Aqua Rite is shipped from the factory with the configuration jumpers in 240VAC position. If using 120VAC, move the jumpers as shown below. For Canadian models, the Aqua Rite shall be connected to a circuit protected by a class A ground fault interrupter. Be sure to connect the ground wire to the green ground screw terminal located on the bottom of the enclosure.



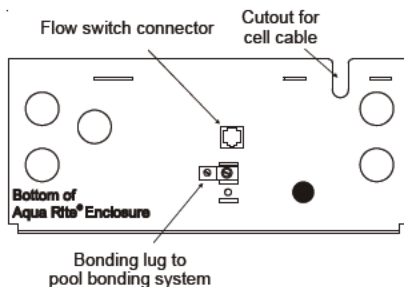
Note: Wire the pump directly to the timeclock--do not use the Aqua Rite as a junction box.

Bonding:

A lug used for bonding is attached to the bottom of the Aqua Rite enclosure (see diagram below). The Aqua Rite must be bonded with an 8 AWG copper wire (6 AWG Canada) to the pool bonding system.

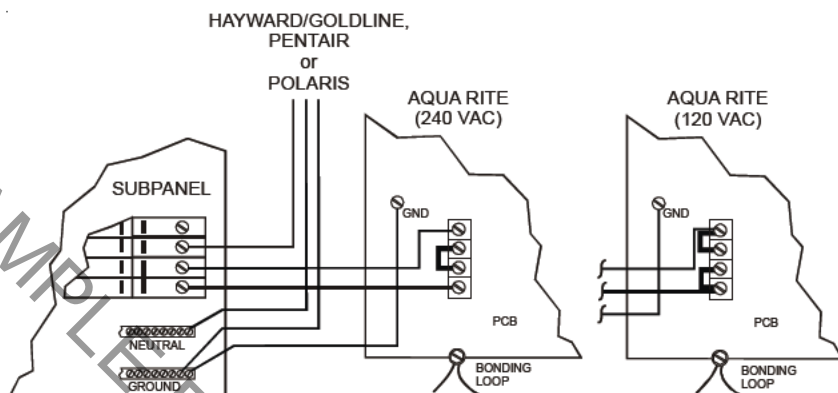
Electrolytic Cell and Flow Switch:

The electrolytic cell and flow switch cables are terminated with connectors which plug into the Aqua Rite, for easy attachment and removal. The door of the Aqua Rite must be open to access the cell cable connector. The flow switch plugs into a connector (similar to a telephone jack) located outside, on the bottom of the enclosure. Refer to the diagram below for the location of these connections.



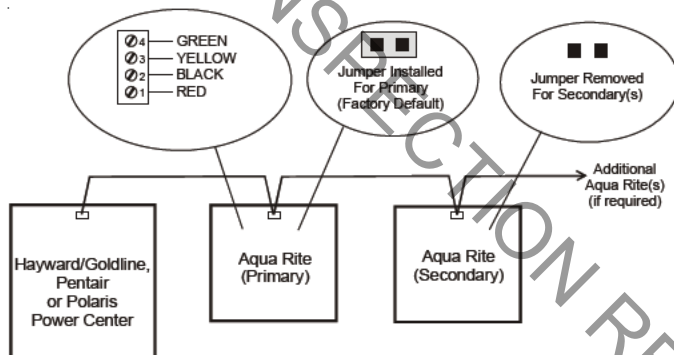
Input power for use with Hayward/Goldline, Pentair and Polaris controls

Wire the Aqua Rite® **DIRECTLY** to 120/240VAC power (not through timer or relay).

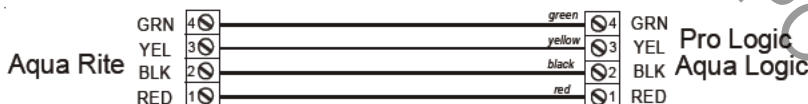


Optional Hayward/Goldline, Pentair and Polaris controls:

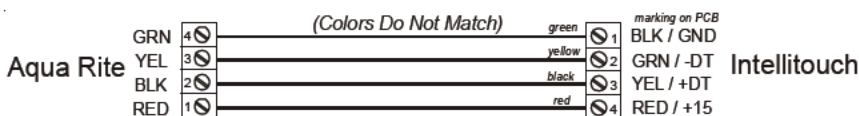
The Hayward/Goldline, Pentair and Polaris controls use a 4 wire connection to communicate to the Aqua Rite and can be wired up to 500' apart. Any outdoor rated 4 conductor cable can be used. Refer to each manufacturer's instructions and the wiring diagrams below for proper wiring connection to the Aqua Rite. NOTE: There must be only 1 "primary" unit. All other Aqua Rite units must be configured as "secondary".



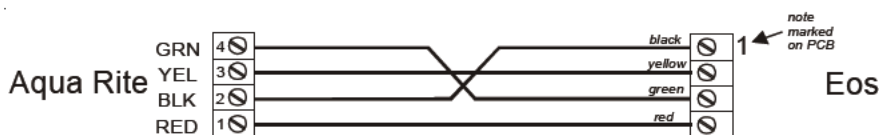
Hayward/Goldline - Attach wires to proper screw terminals as shown below.



Pentair - Attach wires to opposite numbered screw terminals as shown below. Note that the colors marked on the Pentair PCB do not match the Aqua Rite.



Polaris - Attach wires to proper screw terminals as shown below. Note that screw terminal "1" is marked on the Polaris PCB.



TROUBLESHOOTING

Visit www.goldlinecontrols.com for helpful information on operation, maintenance and troubleshooting your Aqua Rite® Electronic Chlorine Generator.

Diagnostic Displays

Sequential pushes of the small "diagnostic" button next to the LCD display will cause the Aqua Rite to display the following information:

1. Pool temperature (xx degrees Fahrenheit or Celsius)
2. Cell voltage (xx.x volts)
3. Cell current (x.xx amps)
4. Desired Output % ("0P" -- "100P" depending on knob position or input from remote pool automation controller)
5. Instant salinity (-xxxx ppm or -x.xx grams/Liter)
6. Product name sent to the pool automation control display ("AL-0" which signifies "Aqua Rite")
7. Software revision level (r1.xx)
8. Chlorinator cell type (t-3, t-5, t-9, t-15)

On the 9th push of the button the display will revert back to the default salt display. Also, if the button is not pushed for 30 seconds, the display will revert back to the standard salt display.

Common Problems and Solutions

1. "Power" LED not on

Check to make sure either 120VAC or 240VAC input power is connected to the proper screw terminals at the Aqua Rite control. Verify input voltage with a voltmeter. If there is input power, the fuse may have blown. The Aqua Rite is protected by a 20 amp mini ATO fuse located on the circuit board above the cell connector.

2. "Generating" LED flashing

The temperature of the pool water is too high or low to operate. You can override this by switching the main switch to SUPER CHLORINATE. The Aqua Rite will run at maximum output for the remainder of the current pump cycle or 24 hours, whichever comes first.

3. "No Flow" LED illuminated

The Aqua Rite has sensed a no flow condition and has stopped generating chlorine. Check that the flow switch is plugged into the connector on the bottom of the control unit and that the wire is not cut or damaged. Make sure you have at least 12" of straight pipe before the flow switch. If there is adequate flow and the LED is still on, check that the arrows on the flow switch (on top of hex) are pointing in the direction of flow.

4. "Check Salt" LED illuminated or flashing

Be sure that the correct model Turbo Cell has been selected (page 7).

Check salt level in pool/spa. If salt level is low, add salt according to chart on page 4. Before adding large quantities of salt, it is advisable to have your salt level professionally checked.

5. "High Salt" LED illuminated

Be sure that the correct model Turbo Cell has been selected (page 7).

Check salt level in pool/spa. If salt level is too high, lower salt level by draining some of the pool water out of the pool and replace with fresh water. Continue until the salt concentration is at recommended levels.

6. "Inspect Cell" LED flashing

Be sure that the correct model Turbo Cell has been selected (page 7).

Inspect and clean cell according to directions on page 8. When done, press the "diagnostic" button for 3 seconds to stop the "Inspect Cell" LED flashing.

7. "Inspect Cell" LED illuminated

Be sure that the correct model Turbo Cell has been selected (page 7).

Remove and inspect the cell for scale. If the cell is scaled, follow the directions on page 8 for cell cleaning. If the pool has the proper amount of salt and the "Inspect Cell" LED is still illuminated, the cell may be worn and need replacement.

8. Possible causes of little or no free chlorine residual

- Aqua Rite® switch in OFF position.
- Desired Output % adjustment setting is too low.
- Low stabilizer (Cyanuric Acid).
- Filter pump time too short (8 hours for average size pools, more for large pools)
- Salt level too low (below 2400 ppm, Check Salt LED on).
- Salt level too high (High Salt LED on).
- Very warm pools increase chlorine demand--increase Output %, or filter run time.
- Cold water (below 50°F) causes Aqua Rite to stop generating (Generating LED flashing).
- Excessive scaling on cell.
- High level of Nitrogen in pool water.
- "Yellow Out" or similar treatment recently used. Some yellow algae treatments will use chlorine at a very high rate and deplete the residual free chlorine. Manually shock the pool if indicated in the directions on the algae treatment. It still may be a matter of days before the pool returns to "normal" and chlorine tests will show the desired 1-3ppm free chlorine reading.

9. "-Pcb-" displayed and all 4 red/yellow LEDs are illuminated.

A possible Printed Circuit Board fault has been detected. Call for service.

LIMITED WARRANTY (effective 04/01/09) Hayward/Goldline warrants its Pro Logic and E-Command pool automation products as well as its Aqua Rite, Aqua Rite Pro, Aqua Plus and SwimPure chlorination products to be free of defects in materials and workmanship, under normal use and service, for a period of three (3) years. Hayward/Goldline also warrants its Aqua Trol chlorination products to be free of defects in materials and workmanship, under normal use and service for a period of one (1) year. These warranties are applicable from the initial date of installation on private residential swimming pools in the US and Canada.

Hayward/Goldline warrants all the above-identified pool automation and chlorination products installed on commercial swimming pools and on swimming pools outside of the US and Canada for a period of one (1) year. Likewise, Hayward/Goldline warrants all accessories and replacement parts for the above-identified pool automation and chlorination products for a period of one (1) year. Each of these warranties is not transferable and applies only to the original owner.

Proof of purchase is required for warranty service. If written proof of purchase is not provided, the manufacturing date code will be the sole determinant of the date of installation of the product. To obtain warranty service or repair, please contact the place of purchase or the nearest Hayward/Goldline authorized warranty service center. For more information on authorized service centers please contact the Hayward/Goldline Technical Service Support Center (61 Whitecap Road, North Kingstown RI, 02852) or visit the Goldline web site at www.goldlinecontrols.com or the Hayward website at www.haywardnet.com.

WARRANTY EXCLUSIONS:

1. Material supplied or workmanship performed by others in process of installation.
2. Damage resulting from improper installation including installation on pools larger than the product rating.
3. Problems resulting from failure to install, operate or maintain the product(s) in accordance with the recommendations contained in the owners manual(s).
4. Problems resulting from failure to maintain pool water chemistry in accordance with the recommendations in the owners manual(s).
5. Problems resulting from tampering, accident, abuse, negligence, unauthorized repairs or alternations, fire, flood, lightning, freezing, external water, degradation of natural stone used in or immediately adjacent to a pool or spa, war or acts of God.

DISCLAIMER. THE EXPRESS LIMITED WARRANTIES ABOVE CONSTITUTE THE ENTIRE WARRANTIES WITH RESPECT TO THE ABOVE-IDENTIFIED HAYWARD/GOLDLINE POOL AUTOMATION AND CHLORINATION PRODUCTS AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. THESE WARRANTIES GIVE YOU SPECIFIC LEGAL RIGHTS, AND YOU MAY ALSO HAVE OTHER RIGHTS OF EQUIPMENT, LOST PROFITS OR REVENUE, COSTS OF RENTING REPLACEMENTS, AND OTHER ADDITIONAL EXPENSES, EVEN IF THE SELLER HAD BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. SOME STATES DO NOT ALLOW THE EXCLUSION OF LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, SO THE ABOVE LIMITATION OR EXCLUSION MAY NOT APPLY TO YOU.

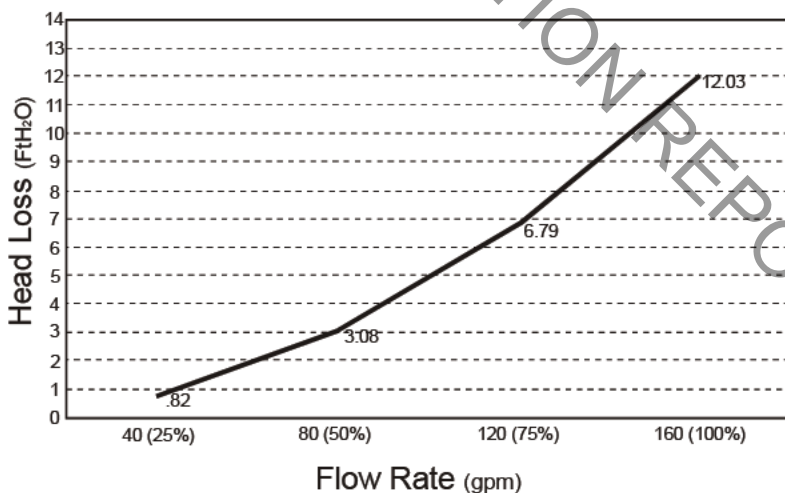
NO WHOLESALE, AGENT, DEALER, CONTRACTOR OR OTHER PERSON IS AUTHORIZED TO PROVIDE, SUPPLEMENT OR MODIFY ANY WARRANTY ON BEHALF OF HAYWARD/GOLDLINE.

THESE WARRANTIES ARE VOID IF THE PRODUCT HAS BEEN ALTERED IN ANY WAY AFTER LEAVING THE FACTORY. FOR THE ABOVE-IDENTIFIED CHLORINATION PRODUCTS, THESE WARRANTIES ALSO ARE VOID IF, DURING THE WARRANTY PERIOD, YOU USE A REPLACEMENT CHLORINATOR CELL OTHER THAN AN UNMODIFIED, NEW HAYWARD/GOLDLINE CHLORINATOR CELL PURCHASED FROM HAYWARD/GOLDLINE. IF A WARRANTY BECOMES VOID, YOU STILL MAY PURCHASE SERVICE AND/OR TELEPHONE TECHNICAL SUPPORT AT THE THEN CURRENT TIME AND MATERIAL RATES.

ELECTROLYTIC CHLORINE GENERATOR BASIC POOL MAINTENANCE REQUIREMENTS

	TEST	IDEAL RANGE	ADJUSTMENT REQUIRED
WEEKLY	Free Chlorine	1.0 - 3.0 ppm	Raise desired output % to increase, lower desired output % to decrease -OR- increase or decrease pump filtration time.
	pH	7.2 - 7.8	Too high - add muriatic acid Too low - add soda ash.
MONTHLY	Alkalinity	80 - 120 ppm	Add baking soda to increase. Add acid as required to decrease.
	Salt	2700 - 3400 ppm	Add salt as required to increase.
QUARTERLY	Stabilizer	60 - 80 ppm	Add cyanuric acid to increase.
	Calcium	200 - 400 ppm	Add calcium to increase. Drain and add water to decrease.
	Electrolytic Cell	inspect & clean	Refer to section in manual.

Head Loss Curve



620 Division St.
Elizabeth, NJ 07207

092009N RevP
Copyright © 2010 Hayward Inc.

DOUBLE POLE SINGLE THROW (DPST)

40 AMP. RESISTIVE EACH POLE 120-480 VOLT AC:

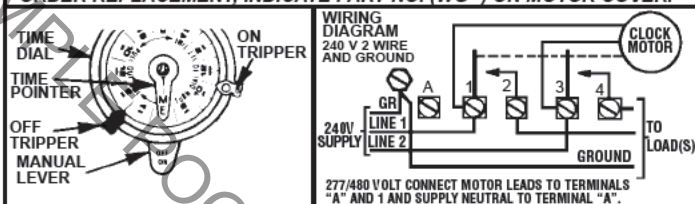
40 AMP.INDUCTIVE OR TUNGSTEN OR 1000 VA

PILOT DUTY EACH POLE 120V-277V AC:

2 HP (24 FLA)-120V AC; 5 HP (28 FLA)-240V AC.

CLOCK MOTOR: 208-277 VOLTS - 60 HZ.

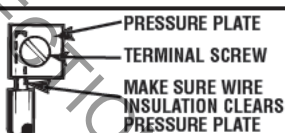
CLOCK MOTOR VOLTAGE AND CYCLE MUST BE AS SPECIFIED TO ORDER REPLACEMENT. INDICATE PART NO. (WG--) ON MOTOR COVER.



WIRING INSTRUCTIONS: To wire switch follow diagram above. Use solid or stranded **COPPER only** wire with insulation to suit installation. See gauge selection table for normal service applications. To make power connections remove 1/2 inch of insulation from wire ends. Insert bare ends of wire under the pressure plate of terminals. Use 3/16 or larger screwdriver to tighten terminal screws firmly. (25 lb-in minimum)

REPLACE INSULATOR BEFORE TURNING ON ELECTRICITY.

MINIMUM COPPER WIRE SIZE (AWG)	MAX. LOAD (AMP)	MIN. IN- STALLA- TION TEM- P (°C)	75°C INSULATION MAX. MOTOR LOAD (HP)			
			SINGLE PHASE		3 PHASE	
			120 V.	240 V.	208 V.	240 V.
14	15	60	1/2	2		
12	20	60	1	2 1/2	N/A	N/A
10	30	60	2	3		
8	40	75	-	5		



PROGRAMMING INSTRUCTIONS

1. **TO SET "ON" AND "OFF" TIMES:** Hold trippers against edge of **CLOCK-DIAL**, pointing to time (AM or PM) when **ON** and **OFF** operations are desired, tighten tripper screws firmly. For additional tripper pairs on **CLOCK-DIAL** order 156T1978A.
2. **TO SET TIME-OF-DAY:** Pull **CLOCK-DIAL** outward. Turn in either direction and align the exact time-of-day on the **CLOCK-DIAL** (the time now, when switch is being put into operation) to the pointer. **DO NOT MOVE POINTER.**

OPERATING INSTRUCTIONS

- **TO OPERATE SWITCH MANUALLY:** Move **MANUAL LEVER** below **CLOCK-DIAL** left or right as indicated by arrows. This will not effect next operation.
- **IN CASE OF POWER FAILURE,** reset **CLOCK-DIAL** to proper time-of-day. See programming instructions.

INTERMATIC INCORPORATED

SPRING GROVE, ILLINOIS 60081-9698