

Water Blade Installation Instructions

- ⚠ WARNING** - Read and follow all instructions in this owner's manual and on the equipment. Failure to follow instructions may result in severe injury and/or death.
- ⚠ WARNING – Suction Entrapment Hazard:**
Suction inlets/outlets and/or suction inlet/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 inlet/outlet sump or suction inlet/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 inlet/outlet sump or suction inlet/outlet cover which is, damaged, broken, cracked, missing, or unsecured can result in evisceration/disembowelment.
Mechanical Entrapment - Jewelry, swim-wear, hair decorations, finger, toe or knuckle can be caught in an opening of a suction inlet/outlet cover resulting in mechanical entrapment.
- ⚠ WARNING** - To Reduce the risk of Entrapment Hazards:
- When inlets/outlets are small enough to be blocked by a person, a minimum of two functioning suction outlets per pump must be installed. Suction inlets/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.
 - Dual suction fittings must be placed in such locations and distances to avoid "dual blockage" by a user.
 - Dual suction fittings must not be located on seating areas or on the backrest for such seating areas.
 - The maximum system flow rate shall not exceed 6 ft/sec in the return main line.
 - Never use Pool or Spa if any suction inlet/outlet component is damaged, broken, cracked, missing, or not securely attached.
 - Replace damaged, broken, cracked, missing, or not securely attached suction outlet components immediately.
 - 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.
 - 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.
- ⚠ WARNING** – Risk of Electric Shock. All electrical wiring MUST be in conformance with applicable local codes, regulations, and the Canadian Electrical Code, ANSI/NFPA70). 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.

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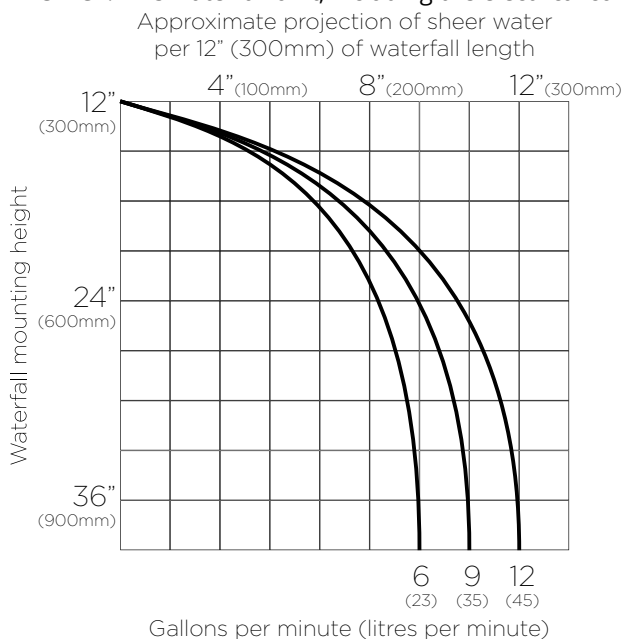
- WARNING – Risk of Electric Shock** Failure to bond all electrical equipment to pool structure will increase risk for electrocution and could result in injury or death. To reduce the risk of electric shock, see installation instructions and consult a professional electrician on how to bond all electrical equipment. Also, contact a licensed electrician for information on local electrical codes for bonding requirements.
- Notes to electrician:** Use a solid copper conductor, size 6 or larger. Run a continuous wire from external bonding lug to reinforcing rod or mesh. Connect a No. 6 AWG (13.3 mm²) 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 Canadian Electrical Code, ANSI/NFPA70 codes for all wiring standards including, but not limited to, grounding, bonding and other general wiring procedures.
- 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.
- WARNING** –Risk of Electrical Shock, Opening the LED light section will increase risk for electrocution and could result in injury or death. To reduce the risk of electric shock, do not open the LED light section. The light has no user serviceable parts inside.
- 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 professional before using.
- WARNING** –Risk of Electrical Shock, Use of any transformer other than the original model supplied with this unit will increase risk for electrocution and could result in injury or death. To reduce the risk of electric shock, do not use anything other than the OEM transformer.
- WARNING** –Risk of Electrical Shock, Use of any extension cord will increase risk for electrocution and could result in injury or death. Do not use extension cords on this unit.

Water Blade Installation Instructions

INSTALLATION INSTRUCTIONS:

Read through the instructions entirely, before beginning installation. The Waterblade® is available in standard widths from 300cm to 2.4 metres. This unit must be installed according to these instructions; otherwise the warranty may be void. Read and save these instructions. Check the illustrations to identify each individual part of the Waterblade® and use this manual to guide you through a trouble-free installation. It was developed with the aid of experienced installation contractors to ensure consistent and hassle-free installation.

NOTICE: This waterfall unit, including the electrical components, includes no serviceable parts. In the event of a product failure, the entire unit must be removed and replaced.



IMPORTANT: Lay waterfall on flat surface in the original packaging until ready to install. Take care not to damage the Waterblade® during installation. It is best to keep it in its original packaging until you are ready to begin the actual installation. The Waterblade® is shipped complete with grout guard fitted in the opening of the waterfall to keep the spillway opening clean and to prevent damage. Do not remove the protective guard until you are ready to start up the pool equipment. Leave it in place throughout the installation, or damage may occur which will affect the ability of the Waterblade® to perform fully. Protect the unit from direct sunlight until unit is installed.

See chart for approximate projection of the waterfall. Use this chart in planning the layout of your waterfall.



PREPARATION AND BOND BEAM

NOTCHING:

FOR CONCRETE INSTALLATIONS: During the rebar (100mm) below the top of the frame that extends the Notch the beam 4" (100mm) below the top surface for the width plus 2" (25mm) of the waterfall.

installation, allow an offset of 4" length plus 2" (50mm) of the waterfall.

FOR VINYL/FIBERGLASS INSTALLATIONS: Construct block to allow 4" (100mm) below the top surface for the width plus 1" (25mm) of the waterfall.

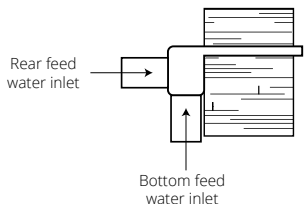
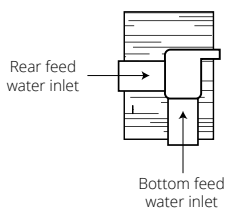
WATERFALL INSTALLATION: Use bender board, or similar material, to create a level surface to rest the lip on. Tack bender board in place approximately 16mm below the coping.

Prior to placement of waterfall, ensure that the orientation of the waterfall is correct. Do not point lip downwards. Refer to diagram.

Create cement mortar bed in the bottom of the notch as a base for the waterfall. Set the waterfall in the bed while maintaining a minimum of 1" (25mm) extending beyond the unfinished pool wall. Note: lip must extend a minimum of 3/8" (10mm) beyond the finished pool wall. Press into place and level.

Apply a minimum of 1/2" (12mm) of cement mortar to the top and sides of the waterfall. Remove any excess cement on the pool side of the waterfall. Remove bender board after installing coping. After final installation, including all plastering, remove the grout guard.

If waterfall flow rate exceeds more than 40% of the filtered flow, a separate pump and filter system are recommended. 2" Plumbing or larger is recommended from the pump and filter to the waterfalls, if more than 1500mm of waterfall length is installed.



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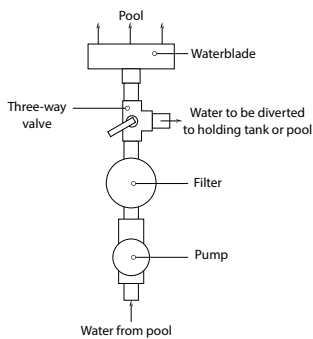
PUMP SIZING:

Refer to the table for approximate flow rates and pump sizing.

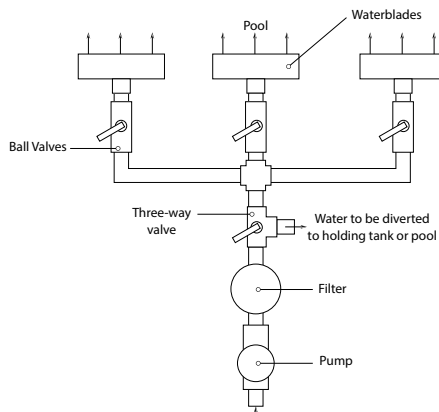
Waterblade Size (Imperial/Metric)	Waterblade Model Number	Flow Rate (GalPM/LPM)
1'0" / 300mm	64-EFWBL-1-6N-R/B	12-14 / 45-53
1'6" / 450mm	64-EFWBL-1B-6N-R/B	18-21 / 67-80
2'0" / 600mm	64-EFWBL-2-6N-R/B	24-28 / 90-106
3'0" / 900mm	64-EFWBL-3-6N-R/B	36-42 / 135-159
4'0" / 1200mm	64-EFWBL-4-6N-R/B	48-56 / 180-212
5'0" / 1500mm	64-EFWBL-5-6N-R/B	60-70 / 225-265

PLUMBING CONNECTIONS

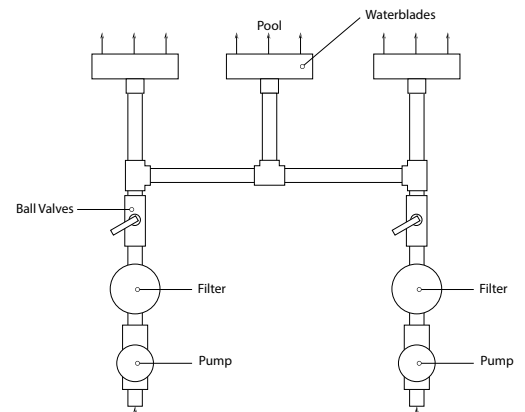
Single Pump, Single Waterblade



Single Pump, Multiple Waterblades



Multiple Pumps, Multiple Waterblades



The back of the Waterfall fitting is a 1 1/2" US standard pipe socket. The most common installation of the waterfall is utilizing the main pool pump. A three way valve is installed as illustrated above.

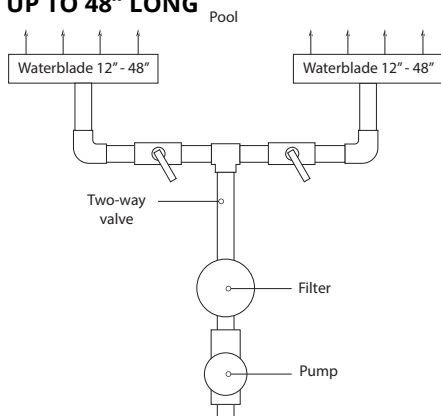
Two pumps can be connected to multiple waterfall fittings: This is the recommended installation when more than 800mm of waterfall is installed.

NOTICE: Only filtered water should be used with this product. Clogging within the product can occur if the water is not properly filtered. For multiple waterfalls it is recommended that individual valves be installed to allow balance the flow.

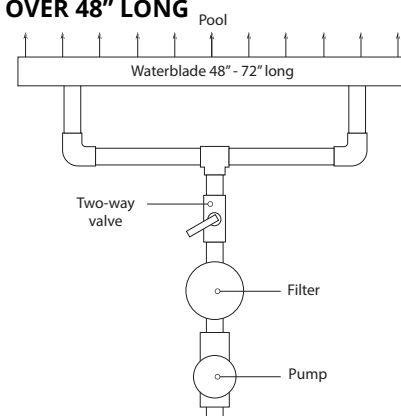
NOTICE: Only filtered water should be used with this product. As noted in the figures above when a separate pump is installed an additional properly sized filter is required between the pump and the waterfall.

RECOMMENDED PIPE CONFIGURATIONS

WATERFALLS UP TO 48" LONG

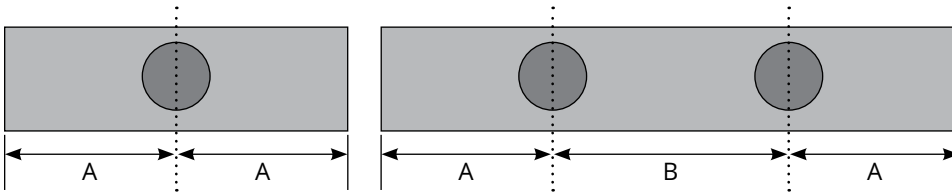


WATERFALLS OVER 48" LONG



Water Blade Installation Instructions

INLET SPACING GUIDE



	A	B
12"	6-5/16"	-
18"	9-1/4"	-
24"	11-31/32"	-
36"	17-27/32"	-
48"	23-27/32"	-
60"	14-13/16"	29-21/32"

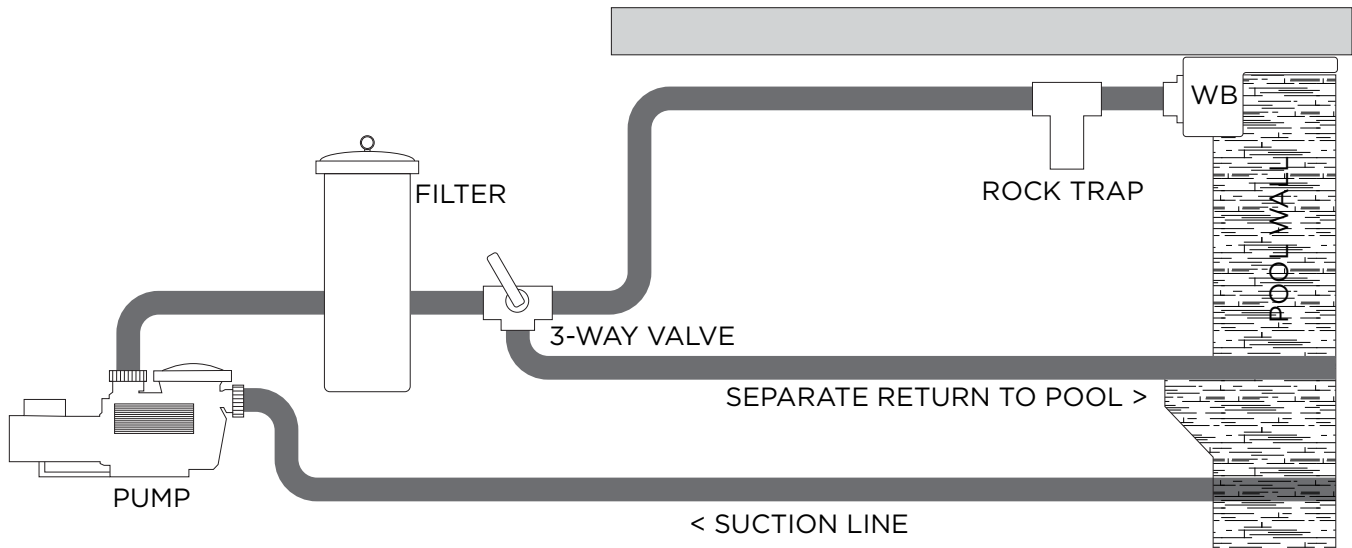
MINIMUM PIPE SIZE

Use a minimum of 1-1/2" PVC Pipe for all waterfalls. Use a minimum of 2" pipe for runs longer than 60' in length or for waterfalls over 60" long. Dedicated waterfall plumbing lines are recommended for best results.

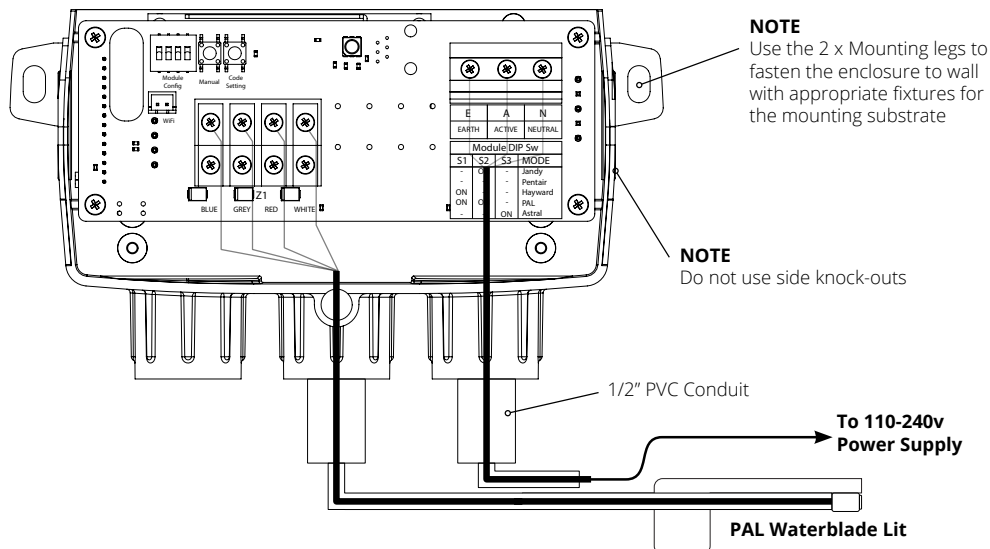
INLET QUANTITY

Waterfalls up to 48" have one inlet. Waterfalls at 60" have two inlets.

BASIC SYSTEM DIAGRAM



WATERBLADE LIT WIRING DIAGRAM



Water Blade Installation Instructions

1. Install water blade into retaining wall



2. Render wall. **NOTE:** Allow a minimum amount of 1 ¼" of the lip to protrude out of the face of the wall.



3. Tile or finish wall around waterblade lip.

