



Installation Instructions

StarStones utilize a low voltage power supply, a Light Emitting Diode (LED) and fiber optics embedded in the concrete to create lighted decorative stepping stones that can be incorporated into a walkway or used independently as design features.

12v (DC) power is inherently safe to work with. An electrician should not be required to install StarStones. If one were to touch both positive and negative live leads out of the power supply at the same time, there may be some current flow, however most people would not be able to feel it. One can completely eliminate that risk by only working with bare wires when the system is unplugged. There is no need to fear working with 12v power. If you have a pace maker or other bio-electrical device, consult your physician to qualify any risk.

For maximum safety, neither StarStones nor the power supply should be located closer than 10 feet from a swimming pool, hot tub, spa, or water feature. Only special sealed lighting units with sealed connections are intended for these applications.

Please read all the installation instructions before attempting to install your StarStones.

The StarStones power supply available through Crown Hill Stone is designed exclusively for StarStone illumination. Each power supply can illuminate up to 50 StarStones miniature high intensity LED lamps. Most other low voltage lighting systems are alternating current (AC) and use inefficient incandescent lamps. For proper illumination of StarStones, use only the StarStones 12v direct current (DC) power supply available from the StarStones dealer. The power supply is designed to be operated outdoors only and should not be operated inside. It should be mounted at least one foot above ground and should be plugged directly into an outlet protected by a GFCI (ground fault circuit interrupter). Extension cords should not be used. The power supply is not designed to adequately power any other landscape lighting, except StarStones.

The 120v 60Hz house current plug connection should be kept dry by utilizing a weather cover over the socket. (Available at the local hardware store)

The LED lamps supplied with the StarStones are designed to be operated on 12v (DC) power only. Replacement Lamps are available through your local dealer or on line at www.crownhill.com. The LED that is supplied with your StarStone is designed to provide thousands of hours of illumination. Colored lamps and special effect lamps may be available through your dealer.

16 gauge low voltage direct bury wire is required to connect your StarStones miniature high intensity LED lamps to the power supply. This wire may be available through your StarStones Dealer, or through your local hardware store. 16 gauge low voltage direct bury wire is adequate for wire runs up to 100 feet, and with up to 50 StarStones lamps. An additional, separately wired power supply is required for each set of up to 50 StarStones miniature high intensity LED lamps. For wire runs 100 - 125 feet, 14 gauge low voltage direct bury wire is required. For runs up to 125 - 150 feet, 12 gauge low voltage direct bury wire is required. Although low voltage direct bury wire appears to be similar to ordinary, interior use, lamp cord or extension cord, they are NOT the same. Do not substitute lamp cord for low voltage direct bury wire. The wire nuts supplied with StarStones miniature high intensity LED lamps may not be large enough to accommodate wire heavier than 16 gauge. Larger wire nuts are available through your local hardware store.

The StarStones miniature high intensity LED lamps are to be wired in parallel, positive to positive, negative to negative. Low voltage direct bury wire is marked to differentiate positive from negative. The side of the wire with the rib or ribs is to be connected to the positive terminal of the power supply and to the positive terminal of the StarStones miniature high intensity LED lamps. If the lamp fails to light when tested, it is likely the leads were reversed. LED's are one way circuits and will not illuminate if wired backwards.

As with any electrical project, complete your wiring with the power disconnected. In order to make the connection to the power supply, turn the power supply up side down and locate two access holes marked + (positive) and - (negative). Using a small diameter flat bladed screw driver, back off these screws (turn counter-clockwise) to open the jaws that clamp the wire in place. **The screws themselves do not come out, they are designed to open and close the locking jaws only. If the screwdriver is properly seated in the screw head, eight turns will fully open or close the jaws. If the screwdriver used does not easily interface with the screw get another driver more suited to the purpose. Do not use excessive pressure seating the screwdriver in the screw head; it is possible to damage the circuit board.** The jaws can be observed by looking in the wire connection holes on the end of the power supply box where the power cord goes in. Verify visually, that the connection jaw is wide open.

Using a pocket knife, separate the two conductors of the low voltage direct bury wire two inches or so down the length.



Use the knife to cut the insulation. Take each lead separately, and roll the wire under a knife blade on a cutting board, thereby cutting the insulation all the way



around the circumference of the wire, 3/8" from the end. Pull the insulation off the end of the wire. The plastic insulation should be easily pulled off the wire conductor once the circumference has been cut.



Twist the loose wire strands to make it easier to put each conductor in the connector. Insert the bare wire into the holes on the end of the power supply box and re-tighten the connection jaw screws. One side of the wire has raised rib(s) on the insulation, and is to be connected to the + (positive) terminal. The other wire is to be connected to the - (negative) terminal. Give a light tug on each connection to verify a solid connection. If



the wire pulls out easily, then back off the screw for the affected connection and re-insert the wire re-tightening the connection. **Make sure there is no bare wire sticking out of the box and that there are no loose strands of wire.**

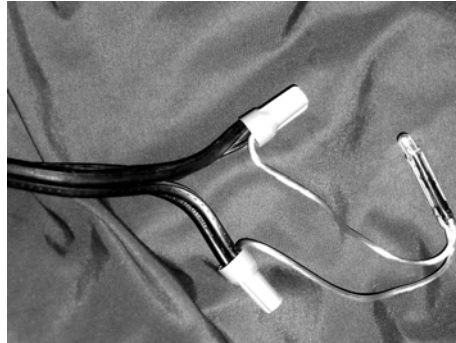
It's a good idea to lay out the placement of your StarStones in advance and calculate the distance between lamps before attempting to do any wiring. The wiring should then be completed above grade. Leave enough slack to facilitate burying the wire and having enough loose wire to facilitate future StarStones miniature high intensity LED lamp replacement, should that ever become necessary.

Once the wire has been cut to length to allow the intended placement of the stone, Separate the leads and Strip 3/8" of

insulation off all wires to be connected. (Similar to the procedure described above for preparing the wire for the power supply connection)

(Note: the wire leads from the LED are already separated and may already be prepped so that the insulation can be removed)

Apply a dab of silicone to the inside of the



wire nut prior to twisting it onto the wires. The silicone protects the wires from corrosion. Connect the ribbed positive lead from the power supply to the tagged lead from the LED and to the ribbed lead toward the next LED if any. The leads should have the same amount of bare wire exposed, if they are not equal then trim the wires to make them the same. Twist all of the leads to be connected together, with a clockwise twist and apply the wire nut with a clockwise twist. If bare wire is exposed out of the wire nut after tightening, remove the wire nut trim the wires and retighten the nut. There should be no bare wire exposed out of the tightened wire nut. After tightening, give a light tug on each wire to verify a solid connection. If a wire pulls out easily then take off the wire nut, re-twist the wires together, and re-tighten the nut. **Make sure there is no bare wire sticking out of the wire nut and that there are no loose strands of wire.**

Once you have connected all the LEDs, plug the power in to test the wiring before the wire is buried. Leave the power on while burying the wire. (When the wires are manipulated to bury and conceal them, if the wire nuts are not perfectly secured, occasionally one wire will slip out of the wire nut, causing an outage. Having the power on during this process will expedite the localization of the interruption of the

circuit). Take care not to cross the positive and negative wires should both connections come loose at the same location. Crossed wires will result in a dead short and if prolonged for more than an instant may result in a blown fuse in the power supply box. If the fuse should blow, disconnect the power supply, disassemble the power supply box, replace the fuse with a fast acting 3 amp glass tube type fuse, and re-assemble the box. If a fault is identified in your wiring, turn the power off, repair the fault, re-energize the system, and complete the installation process.

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