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installation instructions

Installing the Day&Night 2000



Day&Night 2000 Components:

- Day&Night Solar Vent
- Ni-Cad Battery
- Deck Plate & Deck Plate Cover
- 1 Intake & 1 Exhaust Fan (installed)
- Interior Trim Ring
- 9 #10x3/4" Flat Head Screws

To ensure that you successfully complete your Day&Night 2000 installation, carefully follow these instructions. Make sure to review the following Precautions and Problem Areas to Avoid before you begin.

PRECAUTIONS

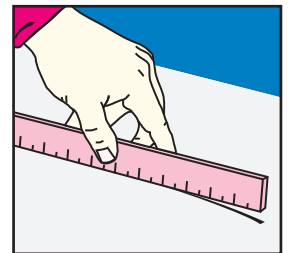
The Day&Night 2000 is designed to be installed on the deck or hatch surface of your boat by means of a deck plate. There are three (3) important factors that must be addressed to insure a good deck plate installation:

1. Make sure the deck plate is properly caulked when fastening it to the deck or hatch. We recommend using a 1/4" to 1/2" (7mm-12mm) wide bead of silicone sealant.
2. The installation hole must be cut to 4-3/4" (121mm) in diameter for a 4" vent, 4-3/8" (111mm) for the threaded brass deck plate or 3-3/4" (95mm) in diameter for a 3" vent. This will insure that the opening of the deck plate is not distorted. Measure carefully to cut the proper sized hole.
3. When installing the deck plate on a cambered surface, make sure you do not tighten the fasteners too much; this will distort the deck plate and may result in leakage.

VERY CRITICAL: DECK CAMBER (or deck curvature)

When installing the deck plate where deck camber exists, it is critical that a polyurethane caulking compound be used such as Sikaflex® or 3M 5200® to insure a good water tight seal.

To check for camber, place a 12" (300mm) straight edge on the deck location for the vent and try to rock it. Then rotate it 90° and repeat.



Do not install the vent in an area with more than 1/2" (12mm) of camber over 12" (300mm) length of deck surface. Too much camber will distort the unit's deck plate and may result in leakage. To fasten the deck plate on a cambered surface, line up two of the six screw holes perpendicular to the camber and drill all six pilot holes. After bedding the deck plate with a polyurethane caulking compound, tighten up the two screws and leave the other four snug but not tight. Place the straight edge across the deck plate and be sure that it lies flat on both outside flanges. Let the polyurethane bedding compound dry thoroughly before installing the vent.

PROBLEM AREAS TO AVOID

Cut the hole for your Day&Night 2000 only after carefully considering the location and the correct sizing of the hole. We recommend that you MEASURE TWICE AND CUT ONCE!

DO NOT install the Day&Night 2000 in an area with more than 1/2" of camber over a 12" length of deck surface.

Be careful that the location you select for the through-deck hole does not go through any electrical wiring, plumbing or other obstructions. Be sure that power tools are properly grounded.

Take the time to bed the deck plate and fasteners properly with sealant. Silicone seal or Boat LIFE Life Seal® are good for flat installations on wood or fiberglass. Polyurethane bedding compound such as 3M 5200® or Sikaflex® are recommended on cambered surfaces or hatch installations where fasteners will not be used. CAUTION: Do not use polysulfide compounds, as they will melt the plastic.

INSTALLING The Day&Night 2000 IN A HATCH OR THROUGH THE DECK

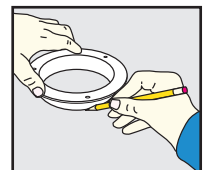
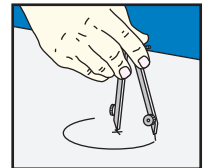
STEP ONE: MARKING THE HOLE

When mounting on a deck, make sure to check the camber of the deck. See Precautions.

Carefully choose the location on the hatch or deck where the Day&Night 2000 will be installed. If a hole saw is to be used simply mark the center of the installation spot with an "X" for the pilot bit to penetrate. If a saber saw is to be used, scribe the circumference of the hole with a compass, or trace the outline of the outside edge of the trim ring (not available for 4" threaded deck plate models). A 3" deck plate requires a 3-3/4" (95mm) hole and a 4" deck plate requires a 4-3/4" (121mm) hole. Do not use the deck plate as a template, as it measures a 1/4" (6mm) less than the required cutout diameter for the installation hole.

NOTE: For 4" threaded deck plate models, a 4-3/8" (111mm) diameter hole is required.

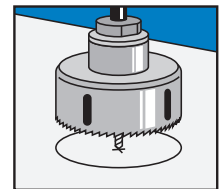
TIP: If you are installing the Day&Night 2000 using the saber saw method and are concerned about scratching the deck or hatch with the base plate of the saw follow this tip: Select your installation location and, before scribing the circumference, cover the entire area with wide masking tape. Scribe the circumference on top of the tape. The tape will protect the installation surface while you are cutting the hole.



STEP TWO: CUTTING THE HOLE

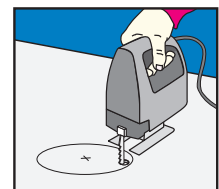
Using a Hole Saw

If you are cutting the hole with a hole saw, we recommend the use of a variable speed drill. Cutting the hole at a lower RPM will ensure that the hole is not cut too quickly, which can melt the plastic on a hatch. Follow the directions for the drill motor itself and be sure it is properly grounded. A slow, steady speed is preferred. Be sure to stop and clean out the hole and the hole saw periodically.



Using a Saber Saw

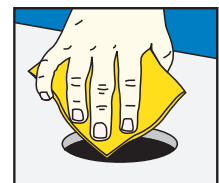
To cut the hole with a saber saw, select a blade that is compatible with the material you are cutting (fiberglass, wood, acrylic etc.). Be sure the saw is properly grounded. Drill a pilot hole near the inside edge of the scribed circumference that is big enough to insert the saw blade into. Insert the saw blade into the hole and slowly start cutting out to the scribed circumference. Cut carefully to avoid mistakes, breaking the blade, or melting the plastic on a hatch. Always cut right on your line or just outside of it.



Finishing the Hole

Sand the edge of the hole smooth so that the trim ring and deck plate fit properly. Test fit the entire unit. If the deck is cored with wood or foam, seal the exposed edge of the material with epoxy to prevent moisture from penetrating into the core.

NOTE: Most hatches are made of acrylic which is very durable. Even older acrylic is easy to cut and will not chip or crack as long as the proper tools and methods are used.

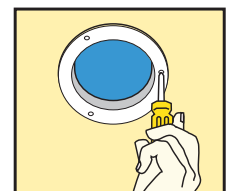


STEP THREE: INSTALLING INTERIOR TRIM RING

The trim ring is NOT available for 4" threaded deck plate models.

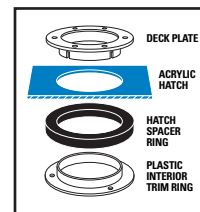
Deck Mount

For decks having a thickness of 1" (25mm) or more, place the trim ring into the hole from the interior side and mark the three fastener holes. Make sure the holes do not lie directly beneath



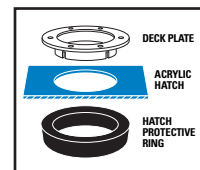
installation instructions
Installing the Day&Night 2000

the holes to be drilled for the deck plate installation in Step 4. Remove trim ring and drill out the holes with a 5/32" bit. Place trim ring back into hole to ensure correct alignment. Fasten the trim ring into place with three #10x3/4" flat head screws provided. For decks having a thickness less than 1", the Nicro spacer ring is required (#N10863SP for a 3" vent, or #N10864SP for a 4" vent) or the trim ring can be left off. If desired, the Nicro soft vinyl protective ring (#N10863PR for a 3" vent, or #N10864PR for a 4" vent) can be installed with contact cement to cover the protruding portion of the deck plate.



Hatch Mount

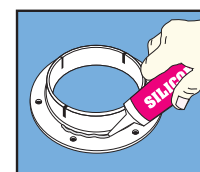
The interior trim ring can be left off for a hatch mount, or the Nicro soft vinyl protective ring (#N10863PR for a 3" vent, or #N10864PR for a 4" vent) can be installed to cover the protruding portion of the deck plate. To install the interior trim ring on a hatch which is less than 1" (25mm) thick, the Nicro spacer ring (#N10863SP for a 3" vent, or #N10864SP for a 4" vent) is required.



CAUTION: Do not use the #10 sheet metal screws to install the trim ring in an acrylic hatch as this may cause the hatch to crack.

STEP FOUR: INSTALLING THE DECK PLATE

It is important to rough up the bonding surfaces between the deck plate and hatch or deck to get a good water-tight seal. Use 100-grit sandpaper around the edge of the installation hole and around the bottom of the flange on the deck plate.



Deck Installation

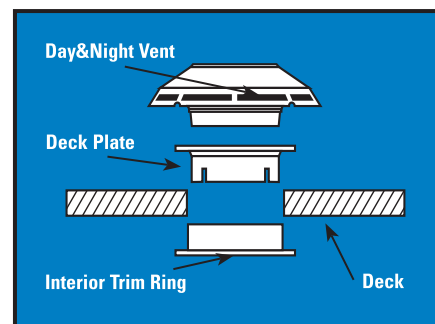
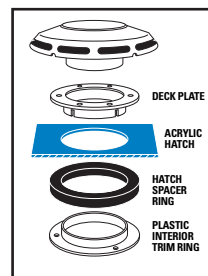
Place the deck plate into the hole from the outside to mark the six (6) fastener holes. Mark the fasteners holes making sure they do not interfere with the trim ring holes in step three. Remove the deck plate and drill 5/32" holes. Do not penetrate all the way through the deck. Place deck plate back into hole to insure correct alignment. Bed the deck plate and the #10x3/4" flat head screws provided with silicone or polyurethane sealant (polyurethane for a cambered deck). Caution: Use shorter length screws if your deck is less than 3/4" (19mm) thick. DO NOT over-tighten the screws. Install the trim ring first, then the deck plate, using only a HAND-HELD screwdriver.

Hatch Installation

Fastener holes are not required for hatch installations if the deck plate is to be glued to the hatch. If machine screws (not provided) are to be used, drill 7/32" clearance holes completely through the material using the deck plate as a template to mark the center location of the holes.

To glue the deck plate to a hatch, apply a 1/4" (7mm) bead of polyurethane bedding compound around the bottom of the flange on the deck plate. Rotate the deck plate into the hole as you are pressing it into place. This will insure a proper seat. Polyurethane needs to cure thoroughly for maximum strength; depending on the brand, this can take up to a few days.

If you choose to use fasteners to install the deck plate, use #10 machine screws with a Nylock nut and washer (not provided). Insert the machine screws all the way through the 7/32" holes. Be sure to apply silicone sealant to the deck plate and also to the machine screws so that the threads do not "weep" water below during wash down, rain or heavy spray. Tighten the screws by hand (not a power-driver), and make them snug but not tight enough to crack the deck ring. Allow silicone sealant to cure thoroughly to insure a watertight seal. Install the trim ring (and optional spacer) first (Step 3), then the deck plate, using only a HAND-HELD screwdriver.



CAUTION: Do not use the #10 sheet metal screws provided with this unit on a hatch installation as they may crack the hatch. Machine screws with clearance holes are required.

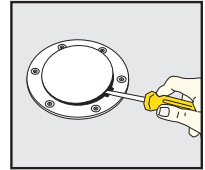
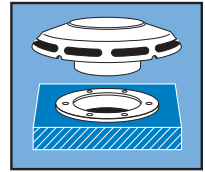
Installing the Day&Night 2000

STEP FIVE: INSTALLING VENT TO DECK PLATE

Be sure the O-ring gasket is seated on the base of the fan housing. Just press the vent firmly into the deck plate until it seats. If you have difficulty, try rotating or twisting the vent as you press it into place.

To remove the vent, grasp the outer edge with the fingertips of two hands and gently twist and pull up.

The Day&Night 2000 comes with a Snap-In watertight cover that can be pressed into the deck plate to seal the opening when the vent has been removed. To remove the cover, insert a thin blade screwdriver into one of the slots on the deck plate and gently pry up.



FEATURES & OPERATION

Intake & Exhaust Fan Blades

The Day&Night 2000 comes with two fan blades, one intake and one exhaust. The Day&Night 2000 comes with the exhaust fan already installed on the vent. Each fan blade is labeled on the hub with either a red dot for intake or a blue dot for exhaust. To install or exchange fan blades, simply stop fan blade by gently pressing on the hub to slow the fan blade down. Pull the existing fan blade off and push the new one on, making sure you have the colored dot showing.

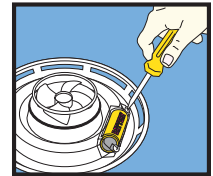
Caution: A straight pull or push of the fan blade should be exerted to ensure that you do not bend the motor shaft. When replacing the fan blade be sure that the fan blade is not pressed against the motor housing, as this will cause the fan to bind reducing performance.

On the 3" Day&Night 2000 be careful not to pull the fan blade out too far or it may rub on the damper screw bosses. If you have only one vent installed on your boat, we recommend using the exhaust fan blade; if you have multiple vents try different configurations of intake and exhaust to achieve effective cross flow ventilation.



Ni-Cad Battery

The Day&Night 2000 comes with a charged Ni-Cad battery. To install the battery, turn the vent over, remove the screws on the battery case, install the battery and replace the screws (do not over-tighten). Make sure that when re-closing the battery case that the gasket is in place to prevent water from causing battery corrosion. Allow the vent to charge in the sun (not under a light bulb) for 24 to 36 hours. This will insure a fully-charged battery. (Depending on angle to the sun, weather conditions and shadowing of the solar array, the time necessary to charge the battery may vary.)



MAINTENANCE

We recommend that you periodically clean the solar array with a mild cleaner to insure the vent charges continuously. Also, clean the electrical contacts inside the battery case, especially the positive (+) battery contact periodically. Use the flat surface of a pencil eraser, or if heavier build-up has occurred, use either a fine emery cloth or fine sandpaper. If after a few years of operation the battery is no longer performing at peak performance, replace it with a Ni-Cad C-Cell rated at 2.0 amp-hours or greater (# N20590).

TROUBLE SHOOTING / If the Day&Night 2000 stops running:

- **Check the Battery** – The battery may be dead. A dead battery short circuits the solar array and will not deliver power to the motor. Test the Day&Night 2000 without the battery in it by placing the array in direct sun to see if the motor turns. If the motor turns, the battery is dead. Replace the battery with a C size Ni-Cad battery with a minimum rating of 2.0 amp-hours (#N20590). Be sure to clean the battery contacts before installing a new battery to remove any oxidation.
- **Check the Solar Array & Fan Motor** – If the motor still did not turn when the battery was removed, either the array is damaged or the motor does not work. Contact Nicro customer service for warranty repair or replacement.
- **If the Deck Plate is Leaking Below** – When the deck plate is new and you have a leak in rain, spray or wash down, most likely the deck plate is not installed properly. We recommend that it be removed and re-installed according to the instruction guidelines. However, the use of silicone sealant or silicone grease can cure an annoying drip without having to re-install the deck plate.