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installation instructions

Installing the Day/Night PLUS



Day/Night PLUS Components:

- Cover with Solar Array, Motor Housing & On-Off Switch
- Base Plate with Shut-Off Damper
- Rechargeable Battery (installed under solar array)
- 1 Intake Fan & 1 Exhaust Fan (installed)
- Optional Insect Screen
- Interior Trim Ring
- 1 Gasket and Mounting Hardware Kit

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

PRECAUTIONS

The Day/Night PLUS is designed to fit directly to the deck or hatch surface of your boat. The vent unit mounts onto a base plate that must be installed correctly to insure proper operation. There are three (3) important factors that must be addressed to insure a good base plate installation:

1. Make sure the base 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. The sealing gasket (included) may also be used if the vent is being mounted on a flat surface without curvature.
2. The installation hole must be cut to 4-3/4" (121mm) in diameter for a 4" vent or 3-3/4" (95mm) in diameter for a 3" vent, so that the surface around the base plate is not distorted and the interior trim ring will fit properly. Measure carefully to cut the properly sized hole.

NOTE: For your convenience, this vent has been designed to fit the same size hole cut-outs as older model 3" and 4" snap-in Micro Day&Night 2000 vents. Simply remove the 3" or 4" snap-in deck plate from your older vent unit and replace it with the 3" or 4" base plate from the new unit.

3. When installing the vent on a cambered surface, make sure you do not tighten the fasteners too much; this will distort the base plate and may cause the vent to leak.

VERY CRITICAL: DECK CAMBER (or deck curvature)

When installing the Day/Night PLUS Vent on a cambered, or curved, surface, it is critical to check to make sure there is no more than 1/2" (12mm) of camber over a 12" (300mm) length of deck surface. Too much camber will distort the unit's base plate, causing the cover to be raised off the deck. This creates the potential for water to get under the cover and may also prevent the damper from closing properly.

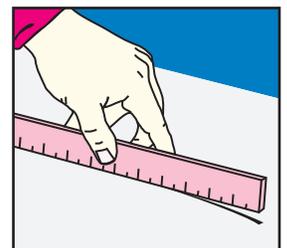
To check for camber, place a 12" (300mm) straight edge on the deck location for the vent and try to rock it. Then rotate it 90 degrees and repeat.

PROBLEM AREAS TO AVOID

Cut the hole for your Day/Night PLUS 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 PLUS 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 base 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 PLUS VENT 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.

The Day/Night PLUS comes fully assembled. The first step is to remove the cover from the base plate. To do so, simply remove the 3 stainless steel screws at the edges of the solar array and lift the cover off from the base plate. Be careful not to lose the sealing O-rings around each of the screws. When lifting off the cover, please note that the same 3 screws also hold the solar array onto the cover—**so, be careful that the solar array does not fall off from the cover and damage or disconnect the internal wiring.**

Carefully choose the installation location that will receive good sunlight. 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.

NOTE: The 4" vent requires a 4-3/4" (121mm) diameter hole, and the 3" vent requires a 3-3/4" (95mm) diameter hole.

TIP: If you are installing the Day/Night PLUS 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

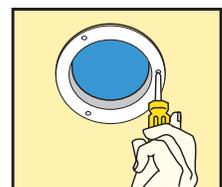
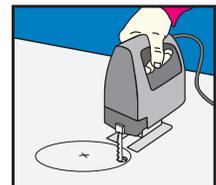
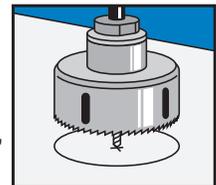
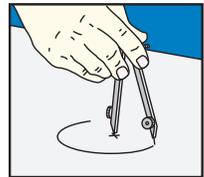
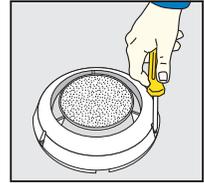
Sand the edge of the hole smooth so that the trim ring and base plate fit properly. Test fit the entire unit. If the deck is cored with wood or foam, seal the exposed edge of the material with epoxy to prevent moisture from penetrating into the core.

NOTES: 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

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 3 fastener holes. Make sure the holes do not lie directly beneath the



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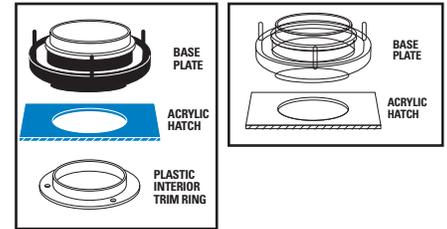
Installing the Day/Night PLUS

holes to be drilled for the base 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 insure correct alignment. Fasten the trim ring into place with three #10 x 3/4" flat head screws provided.

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 #N1864PR for a 4" vent) can be press fit on the protruding portion of the base plate. To install the interior trim ring on a hatch which is less than 1" (25mm) thick, the NICRO spacer ring (#N10863SP for 3" vent, or # N10864SP for 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 a hatch to crack.



STEP FOUR: INSTALLING THE BASE PLATE

It is important to rough up the bonding surfaces between the base 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 base plate.

Deck Installation

Place the base plate into the hole from the outside and mark the three (3) fastener holes. Make sure the three fastener holes do not interfere with the trim ring screw holes from step 3. Remove base plate and drill 5/32" holes. Do not penetrate all the way through the deck. Place base



plate back into hole to insure correct alignment. Apply a 1/4" (7mm) bead of silicone sealant around the outside edge of the installation hole and around the fan housing (flange) where it meets the base. Place the gasket over the flange on the bottom of the base plate, while aligning the screw holes then press gently into the sealant. Turn the unit over and place into the hole making sure the screw holes are lined up. The gasket alone should not be used on a cambered deck as it may not seal properly. Fasten the base plate into place with the three #10 x 1" long pan head fastener screws provided. **CAUTION: Use shorter screws if your deck is less than 1" (25mm) thick. DO NOT over-tighten the three mounting screws. Install the trim ring first (Step 3), then the base plate, using only a hand-held screwdriver.**

Hatch Installation

The gasket is optional for hatch installations. Fastener holes are not required for hatch installations if the base 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 base plate as a template to mark the center location of the holes.

To glue the base plate to a hatch, apply a 1/4" (7mm) bead of polyurethane bedding compound around the outside edge of the installation hole. Be sure to seal the three (3) mounting holes on the base plate. Place the base plate into the hole and press gently until seated. Allow polyurethane to dry completely.

If you choose to use fasteners (not provided) to install the base plate, #10 machine screws with a nylock nut and washer or barrel nut can be used for a full cosmetic finish. **CAUTION: Do not use the #10 sheet metal screws provided with this unit on a hatch installation as they may crack the hatch. It is important to use an adequate amount of silicone sealant on the base and on the fasteners to keep water from "weeping" down the threads. DO NOT over-tighten the mounting screws. Install the trim ring (and optional spacer) first, then the base plate, using only a HAND-HELD screwdriver.**

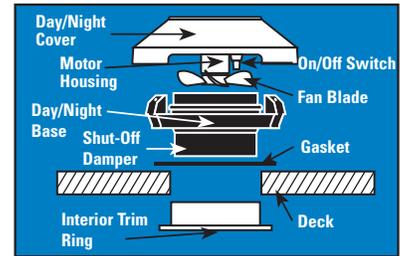
STEP FIVE: INSTALLING COVER TO BASE PLATE

There are 3 plastic mounting bosses for the cover spaced evenly around the base plate. Place the cover over the base plate and thread the 3 cover screws with sealing O-rings carefully into the plastic bosses on the base plate. Make sure the cover is properly aligned with the base plate so that the fan blade spins freely. It is important to get all three cover screws started before you tighten them down completely. **DO NOT over-tighten the screws, or you may strip the plastic bosses.**

FEATURES & OPERATION

On-Off Switch

The Day/Night PLUS comes with an on-off switch which is located inside the fan housing. To operate, gently place your finger on the hub of the fan until it stops rotating, then just press the rubber covered switch on or off. Setting the switch to the off position cuts all current from the solar array and battery to the fan motor. All the current produced by the solar array is therefore used to charge the battery.



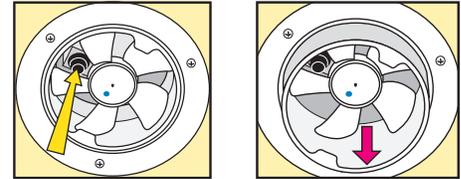
Shut-Off Damper

The Day/Night PLUS is equipped with a green water shut-off damper which can be operated from below. There are two ears on the inside edge of the fan housing.

To open and allow outside air flow, pull the damper down about a 1/2" (13mm). To close, push it up until it rests and seals against the vent cover.

The damper slide may need lubrication occasionally if it is hard to open and close. To lubricate, remove the cover and apply a small amount of silicone grease around the top of the damper tube.

To prevent unnecessary wear on the motor, switch the vent to the off position when the shut-off damper is in the closed position.



Intake & Exhaust Fan Blades

The Day/Night PLUS comes with two fan blades, one intake and one exhaust. Each blade is labeled on the hub with either a red dot for intake or a blue dot for exhaust. To exchange fan blades, simply stop fan blade by gently pressing on the hub to slow the blade down. Reach inside and switch the motor off. 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.** 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.



Insect Screen

Your new vent comes with a removable insect screen that attaches to the shut-off damper. Installation of the insect screen is optional. The screen is easy to install by grasping the fin in the center and carefully twisting it in a clockwise motion. Make sure to clean the insect screen periodically to ensure maximum air flow.



Rechargeable Battery

Each Day/Night PLUS vent is equipped with a built-in replaceable battery. The solar array keeps the battery charged during daylight hours so that it can run the fan at night and during low light situations. The Day/Night PLUS will run for up to 40 hours without sunlight on a fully charged battery. Average battery life is 3-5 years, depending on climate conditions.

NOTE: To maximize battery life, make sure it is fully charged as possible during initial use. To fully charge, expose vent to the sun, (not 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

Your Day/Night PLUS vent is a maintenance-free ventilator. However, it is very important to keep the nine drain holes around the edge of the base plate clear at all times. Failure to do so will allow water to accumulate in the base and possibly enter the cabin. It is also recommended to periodically clean the solar array with a mild cleaner to ensure the vent charges continuously and receives maximum sunlight. If after a few years of operation the battery is no

longer performing at peak performance, replace it with a rechargeable C-cell battery rated at 2800 mAh or greater.

TROUBLE SHOOTING – If the Day/Night PLUS vent stops running:

- **Check the On-Off Switch** – Make sure the switch is on.
- **Check the Solar Array** – Make sure the solar array is not covered up by shade
- **Check Fan Blade** – Make sure the fan blade has not been pushed up the motor shaft too far so that it is pressed against the motor housing. This will cause the fan to bind, reducing performance, and may also cause the vent to become “noisy”. To remedy, simply pull the fan blade away from the motor housing (aprox. 1/16”) until fan functions normally.
- **Check/Replace the Battery** –If the switch is on and the vent is not working, the battery may be dead. **A dead battery short circuits the solar array and will not deliver power to the motor.** You can replace the battery by removing the solar array in the center of the cover. Remove the three screws around the edges of the array cover. Be careful not to lose the small O-rings on the screws. Lift off the array cover, being very careful not to over extend or break the wires that attach the array to the vent. Lift off the array cover *slowly* and *carefully*. If needed, a small, flat-blade screwdriver may be used to pry up the solar array cover (there are two pry slots located at opposite ends on the edge of the array cover). Remove the rechargeable battery.

Test the vent without the battery in it by placing the array in direct sun to see if the motor turns (make sure the switch is on). If the motor turns, the battery is dead. Replace the battery with a C size rechargeable battery with a minimum rating of 2800 mAh. Make sure to observe correct battery polarity (positive and negative). Reverse charging of the battery is not acceptable. **DO NOT** use non-rechargeable batteries to run the vent. Be sure to clean the battery contacts before installing a new battery. Use the flat surface of a pencil eraser, or if heavier build-up has occurred, use either a fine emery cloth or fine grit sandpaper (especially on the positive battery contact). If needed, apply some silicone grease around the perimeter of the solar array and reattach the array to the cover with the three screws and sealing O-rings (do not over-tighten). Dispose of the old battery properly.

NOTE: The vent can work without the battery, but only during sunlight hours.

• **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.

NICRO **Limited Warranty**

Nicro warrants that the products manufactured by Nicro are free from defects in workmanship or materials for a period of 2 years from the date of purchase, excluding Ni-cad batteries. No other express warranty is given and no affirmation of Nicro, by words or action, will constitute a warranty. This warranty does not apply to any defects caused by negligence, misuse, or accidents, improper installation, or use in violation of the accompanying instructions and intended purpose.

Please contact Actuant Electrical Group

Phone: 800-307-6702

E-mail: technical@marinco.com

To request a warranty claim on the Nicro Vent.

The buyer will assume the cost of transporting the product.

The buyer must notify Nicro of any defect, malfunction, or nonconformity within thirty (30) days after discovery of such defect, malfunction, or nonconformity.

Nicro™s maximum liability shall not, in any case, exceed the contract price for the products claimed to be defective or unsuitable. Any and all implied warranties are limited to the duration of this Limited Warranty, which is 2 years from the date of the purchase, excluding Ni-cad batteries.

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