

Nature's Head™ Composting Toilet

Congratulations on your acquisition of a Nature's Head! Although the concept of a composting head (toilet) is not a new one, the unit which you have purchased is the freshest of the new generation of this kind of product. Nature's Head™ designers and their wives, all sailors with many years of boating experience, having used earlier versions of composting toilets on their boats, saw a need for a better designed more user friendly product. The concept has been refined and reworked to provide you with a more user friendly product which is aesthetically pleasing, more space-efficient, and a more affordable alternative to previously offered models. While designed to withstand the rigors of the boating environment, the Nature's Head™ is well suited for many other applications.

Wherever you choose to install your new Nature's Head, it is sure to provide you with years of worry-free sanitation solutions without the hassles, inconvenience, and odors of traditional sanitation systems.

WHAT'S IN THE BOX?

- 1) Your new Nature's Head™ composting toilet
- 2) Basic installation kit:
 - 5 feet of 1½ inch inside diameter hose with ends
 - inside vent flange
 - agitator handle
 - 2 mounting brackets and knobs
 - 4 mounting bolts (for wood floor installations)
 - 6 feet wiring for internal fan hook-up required for 12 volt system
 - fuse holder and fuse for direct battery attachment
 - Allen wrench for installation of spider handle
 - liquids tank cap
- 3) Instruction manual

Note: The exhaust fan for the head has been installed before shipment.

ITEMS YOU MAY NEED TO COMPLETE YOUR INSTALLATION

Your Nature's Head™ comes with most of the items necessary for completion of your installation. The outside vent is not included because each application is different and many will require a different vent. Please see the venting section of our instructions for additional tips and suggestions. Feel free to contact us by email or phone with any questions you have concerning your installation.

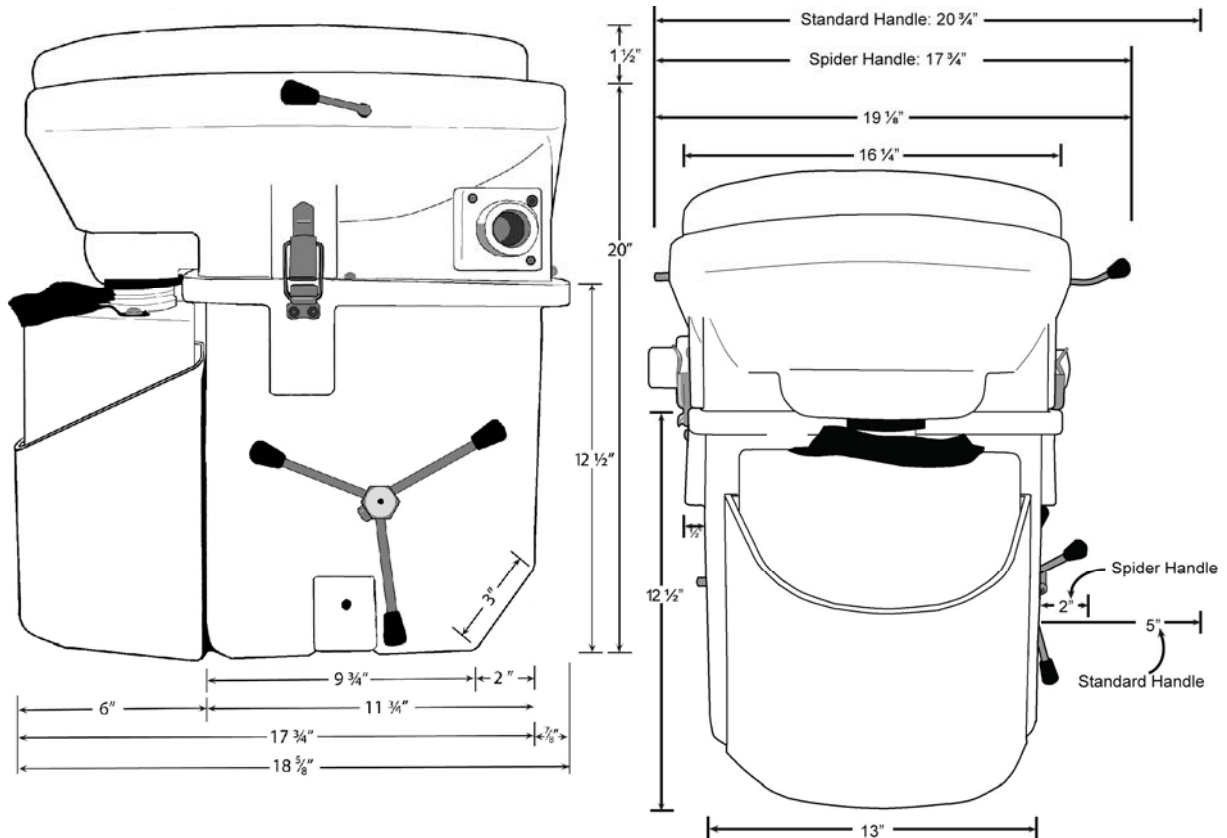
Some installations may require increased hose lengths which are supplied on a per foot basis. PVC pipe which may be obtained at most home improvement stores may also be substituted for longer hose sections.

For floor construction other than wood a different type mounting bolts may be required. If the installation is in a basement or other concrete floor, many customers have found it convenient to mount the toilet to a section of plywood rather than trying to drill masonry. The plywood can be placed on the concrete floor and painted or varnished for appearance.

If regular household current is available (110 volts), the head can be powered by a 12 volt transformer or wall adapter. These are available from Nature's Head.

Some type of composting material will be required. The most commonly used material is peat moss which is available at most garden stores or home improvement stores such as Lowes and Home Depot. It is usually available in a shrink-wrapped 3 ft cubic bale for \$8 to \$10. This quantity of peat moss will sustain use of the head for a year or longer.

Coconut fiber (also referred to as coir brick) is also an acceptable composting medium. However, it is more costly and less readily available. It may be obtained at hydroponic gardening outlets.



Note:

Dimensions can vary up to 4% due to the rotational molding of polyethylene plastic.

Please note as stated in our instructions the following.

- Allow 2 inches behind toilet if against a bulkhead or wall for the bowl to tilt for servicing.
- To disengage the bowl from the base the bowl as facing the toilet, the bowl slides to the left 2 inches to disconnect from the slip hinge
- Handle and agitator can be switched as well as the fan housing to either side

INSTALLATION

LOCATION When locating your new Nature's Head, be certain to allow enough room for the toilet to function and be serviced. Be sure that the lid will open fully. You must also be certain that the bowl has enough room to tilt rearward to allow for its removal and for the removal of the liquid tank. If mounted against a wall or bulkhead allow a minimum of 2 inches between the back of the toilet and the wall. **Figure 1.**



Figure 1

It is necessary to allow adequate room for the hose connection and agitator handle. Both of these may be re-located to the opposite side of the unit if needed. In some space-restricted areas it may be necessary to offset the toilet to one side or even turn the toilet slightly to one side to allow for extra clearance. With the standard handle attached the width of the unit is 20 $\frac{3}{4}$ inches. For more confined spaces, the optional spider handle decreases the width to 17 $\frac{3}{4}$ inches. Two inches to the left side of the head (as you face it) is required to slide the bowl off the slip hinge for servicing the base. **Figure 2.** In severely confined spaces removing the mounting knobs and sliding the toilet away from the mounting location may be a more desirable method of servicing the unit.



Figure 2

MOUNTING After choosing the location for your toilet, it is necessary to secure it to the floor of your boat, cabin, or RV using the two L-brackets. The brackets may be positioned to the inside or outside of the base of the unit as you desire. (The normal mounting is to position the L-brackets under the base in the recesses in the toilet.) **Figure 3.** Mounting screws are included for mounting to a wooden floor. If you choose to mount your unit with the L-brackets facing inward in the recesses provided in the base, counter-sunk screws or bolts are required.



Figure 3

To mount the L-brackets to the floor, position the base of the toilet in the previously selected location. Attach the L-brackets to the toilet with the knobs provided. If you choose to mount the L-brackets facing out (not under the toilet) simply mark the holes in the brackets with a pencil for drill locations. If you choose to mount them under the toilet, carefully trace around as much of the outline of the bracket as possible. Make note of the distance between the bracket and the lines you drew. Now remove the brackets from the toilet and move the toilet out of the way. Carefully position the L-brackets inside of the lines that you drew and mark the holes for drilling. **BEFORE DRILLING ANY HOLES IN YOUR FLOOR OR WALLS BE SURE YOU KNOW WHAT IS BEHIND THEM!** The holes in the brackets are for #12 countersunk bolts or screws. If you are using the screws provided you will need to drill a 1/8 inch pilot hole in the drill marks you made on the floor. If you are uncertain if your brackets are positioned correctly, drill and mount just one bracket. Then reposition the toilet and mount to the one attached bracket. Check the positioning of your other bracket and marks. If all looks good proceed with drilling and mounting the other bracket. If your markings are off, adjust your lines and proceed with mounting the second bracket. If mounting the toilet to a floor that will get wet frequently a small amount of caulk should be placed in the holes before installing your screws. Attach your toilet and check to be sure everything works and fits as you intended.

Do not over tighten the hold down knobs as you will damage the threads in the base!

VENTING The unit must be vented to the outside of your cabin whether it is a boat, RV, truck, or vacation property. This helps keep your bathroom smelling fresh, and allows for proper growth of beneficial bacteria which facilitates the composting process.

Installing the venting system will be the most difficult portion of the installation. The average do-it-yourselfer should be able to easily accomplish this if one is familiar with and has the proper tools. Depending on the type and placement of your vent you may be required to cut holes in the wall, ceiling, or the floor. If you are unsure if you are qualified to complete this portion, it may be wise to hire a contractor or handyman to do this for you.

Due to the variety of ventilation choices available, the external vent has not been provided. Mushroom vents, solar vents, and clamshell type vents are commonly used for venting to the exterior. The unit may be vented horizontally or vertically through the roof, wall, or the floor. Rubber hose adapters which connect directly to your toilet and the outside vent flange are provided. For installations in homes, cabins, and other permanent structures the venting can be placed horizontally through the wall with 1 ¼ inch PVC pipe. The outside vent can be as simple as a PVC pipe with a 90 degree elbow pointing down to prevent wind and water entering into the toilet. Attaching screen over the opening is recommended. This will prevent the entry of insects into the system. Any mesh fabric such as window screen or nylon netting will provide an adequate insect barrier. A mushroom vent may be used in place of the PVC elbow and has a built in screen.

If a sharp 90 degree turn from the fan housing is needed, a 1¼ inch PVC street elbow may be used to achieve a proper configuration. **Figure 4.** Installations on boats and RV's are easily managed with the stainless steel mushroom vent with the built in screen and adjustable top which is self-sealing. The hose adapter provided with the toilet would be placed inside under the vent. On many boats the pump-out fitting can be removed and the mushroom vent mounted over the existing hole. The venting hose provided with the unit will attach directly to the adapter.



Figure 4

Clamping is not necessary on the connection for the head, and normally not necessary on the exterior connector. With an overhead connection, you may find it necessary to clamp this end depending on the amount of support provided for the vent hose. If the hose is supported properly, you will probably not need a clamp. The vent hose must be attached to the housing which has the fan inside it. The unit is designed to pull fresh air through the head and ventilate it outside. If you disassemble the fan housing, always check to be certain that the fan is blowing out of the vent before re-attaching the vent hose.

POWER CONNECTION A simple 12 volt computer muffin fan drawing less than 2 amp hours (12 volt power) in 24 hours is the only power required for this unit. The power plug, a single pin attachment with a wire length of 6 feet, is also included. The “single pin” power supply will plug into the receptacle on the FAN housing. **Figure 5.** It may be necessary to extend the length of the connecting wire.

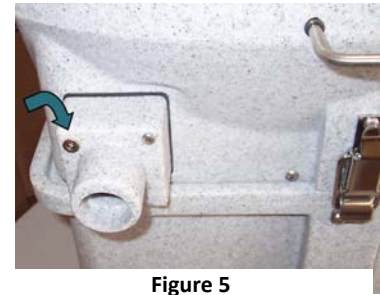


Figure 5

As with all electrical connections, be sure your head is on a fused circuit. The fuse should be no less than 2 amps and no more than 5 amps (12 volts). A fuse holder and fuse are provided for use in a non-protected 12 volt system such as direct attachment to a battery.

The fan may also be powered by a 110 volt source with an appropriate power adapter that reduces the power to 12 volts. If the system is being powered by the 110 volt power adapter disregard the fuse, fuse holder and single pin cable as they are intended for use **ONLY** with a 12 volt power source. No fuse is required when using the wall transformer. These power adapters are available through Nature's Head.

If you are unsure about your wiring system or requirements, please consult an electrician.

This unit may be converted to a powerless installation by using a solar vent on the roof or cabin top and attaching the vent hose underneath. Depending on the fan chosen and the type of roof in your application, some form of adapter may be necessary. Be sure and use the solar vent with battery back-up so your head will vent continuously. The internal fan in the toilet can be left in the unit if you choose this option.

INSTALLATION TIPS If installation of the ventilating hose is better suited to placement on one side of the unit than the other, the fan/filter housing is interchangeable with the filter-only housing. This is accomplished by swapping sides with the components and their respective housings. The toilet is shipped with the agitator handle unattached and must be installed before use. The standard handle is attached with a collar and hairpin clip, while the spider handle attaches with an allen set screw and locknut. In the event that the handle must be moved to the opposite site of the base, the agitator must be manually removed, reversed, and reinstalled. **Figures 6 and 7.**



Figure 6



Figure 7

USAGE

Before use it is necessary to add compost material to the base of the unit. Gallon size “Ziploc” type bags are an inexpensive manner for storing the medium. To fill your toilet or refill it after emptying pour two one-gallon bags of pre-moistened peat moss or coconut fiber into the base of the toilet. The peat moss should rise to the level of the agitator bar in a horizontal position or the centerline of the agitator crank. **Figure 8.**



Figure 8

The peat moss should be damp and crumbly, never wet or soupy. If your peat moss or coconut fiber is dry, add a small amount of water. When not in use, the lid of the toilet should be in the closed position, preventing the entry of insects and allowing proper ventilation.

The primary concept of our composting toilet is the separation of liquids and solid wastes!! Be sure to inform your guests as to the proper use of your head. This will allow proper composting action and assist your guests in feeling comfortable with a new piece of equipment.

Allowing the entry of urine into the composting chamber will cause unpleasant odor and prevent proper compost action.

Seated usage is recommended. While seated the unit may be used with the trap door in the open or closed position. Male or female, the liquids and solids will be directed to the correct locations from this position. With any bowel movement the trap door must be open. Male stand-up usage is less acceptable as splatter may result. In the event that the unit is used in a standing position, the trapdoor must remain closed in order to prevent mingling of liquid and solid wastes.

Toilet paper is typically placed in the toilet. Since paper products do not decompose as quickly as solid wastes, they will be visible long after the solid matter has broken down. Any type of toilet paper is acceptable; less substantial brands (such as marine or RV paper) will compost the quickest.

Most users keep a small spray bottle filled with water near the head to spray off the bowl in the event that some solid waste adheres to the bowl. Spritzing of the bowl also assists in cleansing the urine passages.

All urine has an odor. It will not be noticed with normal use. It will be present when the storage container is open to the air for emptying. For persistent urine odors to the container the addition of 1 tablespoon of raw sugar to the tank will reduce this odor.

After solid waste addition, the peat moss or coconut fiber must be agitated 2-3 revolutions in order to mix the waste into the compost and promote the composting process. Contents of the solid waste container must be kept moist, not wet, and remain separated from the liquid waste. If the toilet is functioning correctly the composted matter will have a musty or soil-like odor and the visual appearance will be very similar to that of the original peat moss. If the compost is staying wet and you have odor problems, the solids tank is becoming contaminated with urine and steps must be taken to prevent this. This is not normal for the toilet. If this problem persists, and you are unable to determine how it is becoming contaminated, please contact us for help.

Vomiting and diarrhea, if not persistent, are unlikely to affect the head function. If increased wetness of the compost results, the situation may be corrected with the addition of a small amount of dry compost medium.

EMPTYING

The liquid waste vessel will contain approximately 2.2 gallons of urine. The translucent material of the container allows easy visualization of the liquid level.

To empty the liquid waste container: 1) Release the latches located at both front sides of the unit which secure the bowl to the base. 2) Raise the bowl to an angle of approximately 45 degrees, install the cap, and remove the bottle. 3) Dispose of the contents in an appropriate manner. The urine bottle maybe emptied into a conventional toilet or other appropriate facility. Many books and articles have been written on the benefits of using diluted urine as a fertilizer. This may also be part of your environmental plan for disposing of wastes in a cabin situation.

Should overflow of the liquid waste container occur the liquid will remain confined to the container base so long as the overflow is not excessive. The liquid tank should be emptied frequently and rinsed with clear water. Allowing urine to remain in the storage container for extended periods is unwise as this will result in increased odor production. If the toilet is used in combined bath/shower, you may wish to drill a drain hole in the urine tank holder if water accumulation becomes a problem.

Solid wastes should be removed from the storage base when the tank appears to be 3/4 full. One of the benefits of a composting toilet (unlike other toilet systems) is that the longer you wait before emptying the more pleasant the job will be. The solid wastes will be fully decomposed and will look and smell like dirt. There may still be some paper remnants depending on the amount of time that was allowed for composting. Paper products take considerably more time to decompose than the solid wastes.

With the bottle assembly removed, lift the seat unit several inches and slide it to the left to disengage the slip hinge. (You may need to unhook your vent hose and power supply if it is necessary to move the bowl to the side.) Remove the knobs from the mounting brackets at each side of the base and the base is now ready to empty. One of the simplest methods of emptying is to place a 13 gallon kitchen bag over the opening of the base (NOTE: the bag does NOT go in the base.) **Figure 9**. The bag should fit tightly over the rim and allow you to invert the base and empty the contents into the bag without spillage. This is especially useful when the toilet is used for boats and other mobile units, as removing the toilet is unnecessary.



Figure 9

It is unnecessary to clean the interior of the solid waste container as composting will continue from the residual matter clinging to the sides. Cleaning the base unit, especially with any chemicals, may inhibit its ability to generate the good bacteria that is breaking down the solid wastes. Simply empty, put in more peat moss, and re-assemble your toilet.

The recommended procedure for disposing of the contents of the solid waste tank is placing it in a proper composting bin to allow it to fully decompose. When traveling in a boat or RV this may not be practical. The contents of the solid waste tank may be safely placed into a conventional dumpster if it has been allowed to compost fully and is bagged and sealed. When fully composted, the solid wastes may be used to fertilize non-ingestible plantings. Placing human waste compost on edible plants or vegetables is not recommended.

Full time users have some special circumstances to deal with. Full time use does not allow enough time for the solid wastes to compost. The most recent waste, although mixed with the already composted

material, will not be decomposed. This also means that the fecal bacteria (present in fresh human wastes) may still be present. We recommend taking precautions such as the use of gloves if you may come into contact with waste material. It is advisable that you delay emptying the solid waste for 6-8 hours after the last use.

Another method for dealing with non-composted wastes (if space allows) is to purchase the “extra base” option and swap out the bases. The extra base comes complete with all the necessary hardware, agitator, and bottle holder. It also comes with a vented lid so the contents can be set aside and allowed to compost. A storage bin utilizing the trash bag method of emptying, placing the bag into a small plastic bucket, ventilating the lid, then allow it to finish composting may be constructed. In a cabin setting contents could be emptied into a traditional compost bin and allowed to finish there. **IF PLACED IN A COMPOST BIN, THAT COMPOST IS NO LONGER SUITABLE FOR USE ON INGESTIBLE PRODUCTS!!**

CLEANSING & MAINTENANCE

A quick spray of water from a squirt bottle is all that is needed to keep your Nature's Head™ fresh between uses. If necessary, a moistened paper towel (no synthetics) is excellent for cleansing the interior (as well as the exterior) of the head.

For more intensive cleansing or dried-on matter, a paper towel moistened with a 1:1 solution of vinegar and water may be used, and disposed of, in the same manner after cleaning.

Bleach, ammonia, and other commercial cleaning compounds should never be added to your composting head as they will interfere with the composting process and may lead to unpleasant odors. These cleaners maybe used to clean the exterior surfaces.

Maintenance requirements for the head are very minimal. All metal parts (bolts, hinges, latches, knobs, agitator, and trapdoor components) are either stainless steel or brass. Filters on each side of the base should be removed and cleansed yearly or when emptying the solid wastes. Each filter is secured to the housing with 2 Phillips-head bolts. Remove bolts, clean and replace. Caution should be taken that the fan is reinstalled with the airflow exiting the unit.

The full size molded in seat of the head which is designed for safety and comfort requires no special care.

Nature's Head™ Composting Toilet

LIMITED WARRANTY

This Nature's Head composting toilet and its components is warranted against defects in materials and workmanship for five (5) years from the initial purchase date. During this period any Nature's Head toilet, after inspection by Nature's Head, if deemed defective will be repaired or replaced without cost to the customer.

This warranty does not apply to any defect or damage arising from a buyer's or user's misuse of the product, negligence, failure to use the toilet in the manner recommended by Nature's Head or alterations to the toilet performed by the owner.

The warranty set forth here is exclusive and no other warranties, express or implied are made by Nature's Head or are authorized to be made with respect to the product. This includes but is not limited to charges by a third party for services requested by the owner as well as suitability of the product for a specific installation, misrepresentation of warranty terms by Nature's Head Dealers and Distributors as well as accessories including vents purchased from Nature's Head.

Warranty claims should be addressed to Nature's Head, PO Box 250, Van Buren, OH, 45889 or by telephone contact at 251-295-3043. E-mail sales@naureshead.net