

SUN-MAR

Composting Toilets

2004 - 2005 Catalog

- Cottages, Cabins, Summer Homes
- Residential
- Light Commercial
- Boats, RV's
- Barns, Workshops



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No Septic System • No Pollution • No Odor

SUN-MAR

OVER THIRTY FIVE YEARS AGO IN 1966...

Hardy Sundberg, SUN-MAR founder, and father of a present day SUN-MAR partner, developed an *incinerating toilet* for cottage use in Sweden. It was good, but not environmentally friendly enough for Hardy, who in 1971 went on to invent the **first ever self-contained composting toilet**. This toilet was very successful and won a gold medal at the International Inventor's Exhibition in Geneva, Switzerland.

In 1977, Hardy's second generation composting unit, the TROPIC, was born. This toilet was still being produced in North America as late as 1996.

The big performance breakthrough came in 1979 with the arrival of the first **three chamber SUN-MAR**. This unique North American design had *three isolated chambers*, so that for the first time the very different conditions for *composting*, for *evaporation*, and for *compost finishing* could now be **optimized**. This dramatically increased capacity, ease of operation, and the effectiveness of SUN-MAR units.

TODAY...


SUN-MAR remains the **world leader** in composting toilets, and dominates the North American market with its unparalleled range of 22 models from 6 different product families.

Each model is distinguished by innovative design, superior technology, and SUN-MAR's *legendary quality*. Each carries an **amazing 25 year warranty** on the body.

The high quality materials used in a SUN-MAR are largely fiberglass and marine grade stainless steel. The quality of construction at our QS-9000/ISO 9002 certified fiberglass plant ensures that your SUN-MAR will be part of your family for generations.

The unique three chamber system and the patented **Bio-drum™** designed into all SUN-MAR units, are just two examples of SUN-MAR's *original and effective* approach to composting. The way a SUN-MAR works may be *unique*, but it is also **elegantly simple**. No one else in the world puts a composting drum inside a toilet!

If you still have questions after reviewing this catalog, we encourage you to **phone** and discuss your particular situation. At SUN-MAR we pride ourselves on our *friendly and helpful attitude* with customers and our **outstanding** after-sales service.



Mike Wilkinson
President

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COVER PICTURE: F. Carrick (1890-1945)
A Northern Silver Mine
Oil on canvas,
101.5 x 121.2 cm
Gift of Mrs. A. J. Latner
McMichael Canadian Art Collection
1971.9

COMPOSTING IS NATURE'S WAY

Every living organism consumes nutrients and creates waste. To transform waste back to nutrients and complete this cycle, nature uses the processes of **decomposition** and **evaporation**. As is often the case, nature seems to be doing things in the best way possible.

That's why SUN-MAR toilets are designed to not only harness these natural processes, but to **optimize** and **accelerate** them.

Toilet waste is over 90% water content. This can be evaporated and carried back to the atmosphere through the vent system. The small amount of remaining material is *recycled* into a useful fertilizing soil.



WHEN TO USE A SUN-MAR

Wherever there is a **poorly working septic system**, a SUN-MAR can take care of the toilet waste; where there is an **outhouse** we offer the luxury of an indoor facility; and where there is **no toilet** at all, a SUN-MAR provides the right environmental choice. SUN-MAR units are economical, quick to install and easy to use.

Because **no chemicals** and **no septic systems** are used, fragile environments can be protected. A SUN-MAR composting unit is an environmentally healthy choice for *recycling human waste*.

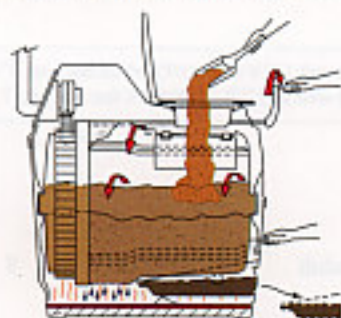
The SUN-MAR system produces *no pollutants*, and saves huge amounts of water, while **collecting nutrients** for reuse.

With a SUN-MAR, recycling is made easy!

OPERATING A SUN-MAR

Operating a SUN-MAR is easy. Begin by adding some peat mix (Compost Sure) and some SUN-MAR "Microbe Mix" to the Bio-drum™. (Both "Compost Sure" and "Microbe Mix" are included with all units).

Now use your SUN-MAR like a regular toilet. **Toilet paper** is easily decomposed in a SUN-MAR.



For ongoing maintenance add a cupful of **peat mix** at the rate of one cupful per person per day of use. When in use, **rotate the Bio-drum™** 4-6 full revolutions every 2-3 days. For weekend use, just rotate the drum when you leave at the

end of the weekend.

To **remove compost**, release the drum locker and rotate the drum backwards. Now, the drum door *remains open* and compost *drops automatically* into the finishing drawer. The entire process takes under 2 minutes and you **never** have to touch fresh material. In cottage use, some composted material is usually *only* taken out in the **Spring** to make room for next year's operation. In heavy, or residential use, some compost will need to be *dropped down* more often into the drawer **for finishing**.

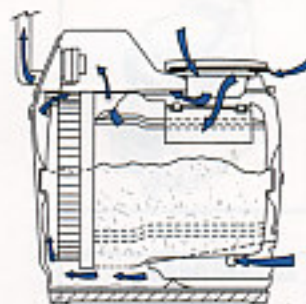
Excess moisture in the drum **drains automatically** through a screen in the rear of the drum into the evaporating chamber. This chamber forms the *entire floor* of the unit.

The *superb aeration* in the Bio-drum™ ensures an **aerobic** and therefore **odorless** breakdown of the compost.

ODOR FREE

As well as ensuring an aerobic breakdown in the Bio-drum™, SUN-MAR ensures an **odor free** environment by engineering the air flow within the unit to maintain a **partial vacuum** at all times.

Air is *drawn in* by a fan, or on non-electric units by the vent chimney, over the evaporating chamber and up the vent stack. Not only does this **evaporate excess liquid**, but, by continuously pulling air in, we ensure **no smell escapes** from the unit.



Airflow within an EXCEL self contained unit.

Evaporation is assisted on electric units by a thermostatically controlled heater in a sealed compartment underneath the evaporating chamber.

Model Overview

SELF CONTAINED TOILETS Regular and Mobile Units

Description	Composting Capacity Weekend & Vacation • Residential & Continuous	Voltage
-------------	----------------------------------------------------------------------	---------



EXCEL

High Capacity
Electric Unit

6 adults or
families* of 8

3 adults or
family of 5

115 V



EXCEL NE

Non-electric Unit

5 adults or
families of 7

2 adults or
family of 3

Optional
12 V fan

An AC/DC version of the EXCEL is also available. This is a dual voltage unit, (12 V and 115 V), which has both 2" and 4" vent stacks, and can operate either as a standard electric unit or with a 12 Volt 1.4 Watt DC fan. See page 7.



ECOLET® Mobile

Dual Voltage Unit

3 adults or
family of 4

1 adult

12 V & 115 V
(Use Optional)



ECOLET® Mobile (Hull Shape)

Dual Voltage Unit

3 adults or
family of 4

1 adult

12 V & 115 V
(Use Optional)

The Excel Mobile, a marinized Excel, is available where space exists and the Ecolet has insufficient capacity.

*Family numbers include adults and small children.

Self Contained Toilets

Why Self-Contained?

Self-contained units are installed **directly in the bathroom**. They are available in both *electric* and *non-electric* versions.

Electric units plug into a regular three(3) pin outlet to power a fan and a thermostatically controlled heating element in the base of the unit. The unit is normally unplugged if it is not going to be used for a few days.

Composting capacity varies with the size of the Bio-drum™. Electric units normally have more capacity than non-electric units because they have extra warmth and air movement.

Although advertised composting capacities can be **doubled** for short periods, SUN-MAR has found that wherever possible it is always better to have a good margin of safety. So, pick a unit with **more capacity** than you really need.

The most important advantages of self-contained units are:

- **Being waterless**, they need *no plumbing* or water connection. This means they are quick and easy to install since the only task is to assemble the vent stack which comes with the unit.
- They are **more economical** than central units because there is no separate toilet.
- They are more suited to **winter operations** than central units, because it is often easier to keep the bathroom warm.
- Most units **evaporate all liquids** in seasonal operation. Since the whole waste stream is recycled, approvals are not normally required.
- **Cleaning is simple**. All self-contained units have a bowl liner beneath the seat, which can be removed for cleaning whenever necessary.
- The high quality, high gloss **fiberglass finish** is perfect for indoor installations.



EXCEL

Long considered **the standard** in composting toilet performance, the EXCEL is the preferred self-contained electric model for heavy or residential use. Composting speed and capacity on this model is *outstanding!* The large Bio-drum™ designed into the EXCEL gives it twice the capacity of the COMPACT.

The EXCEL was first introduced in 1977, and has been continuously improved ever since. The current model is the fourth generation EXCEL.

The EXCEL has been successfully tested by the National Sanitation Foundation for six months continuously at its maximum residential **capacity of 4 adults**. Key criteria were that the unit operated **odorlessly**, and produced clean dry compost. The EXCEL is presently the **only** self contained unit in the world to have been tested, certified, and listed by NSF.

The 2" vent is attached at the top rear of the unit and can be installed invisibly by running it through the wall and up the outside wall. For comfort the EXCEL has a detachable footrest which can be removed to pull out the finishing drawer.

Although the EXCEL can normally evaporate all liquids, a 1/2" I.D. emergency drain is fitted at the rear and this should be connected if heavy or residential use, or prolonged power outages are expected.





EXCEL NE (Non-electric)

The success of the EXCEL design meant that a three chamber unit could be specifically designed for those with no continuous 110 Volt supply. First launched in 1981, the EXCEL NE has long been the **standard toilet** for those living *off the grid*.

The EXCEL NE has no fan or heater. Odorless operation is achieved by a **4" vent** mounted at the top rear of the unit which acts like a chimney on a wood stove. For good air movement the vent should be as close to vertical as possible.

If the EXCEL NE is used residentially or heavily, or is in a place which is subject to downdraft, an **optional 12 Volt fan** should be installed in the vent stack. This fan draws 1.4 Watts and can be powered by a solar panel and/or 12 Volt battery. The 1" drains at the rear should be connected.

Like the EXCEL, all components have been continuously redesigned and improved over the years.

Composting Capacity: Residential & Continuous 2/3, Weekend & Vacation 5/7

EXCEL AC/DC

The EXCEL AC/DC is a standard 115 Volt EXCEL unit, but with 1" safety drains and **dual (2" & 4") vent stacks**. The unit uses the regular 2" vent when 115 Volt power is available and defaults to the 4" NE vent when it is not. A 12 Volt 1.4 Watt fan is included with the unit for use in the 4" vent stack.

The EXCEL AC/DC is for those with generators operating over 8 hours per day, or for people that expect to have continuous 110 Volt power available in the future.

Self Contained Toilets



Ecolet® Mobile Toilets (Dual voltage)

The US Coast Guard certified **ECOLET® MOBILE** was first conceived as a mobile unit for use in **boats** and **RV's**. It was designed so that it is only slightly wider and longer than a regular sized toilet seat, so it will *fit almost anywhere*.

This means that for the first time people can go where they want without having to worry about "pump outs". Now travellers can *recycle their own waste* without polluting the waters.

ECOLET® MOBILE toilets are produced either with a *sloped back* (known as "**Hull Shape**") or in the standard *straight back* version. This rear profile is the only difference between the two units.

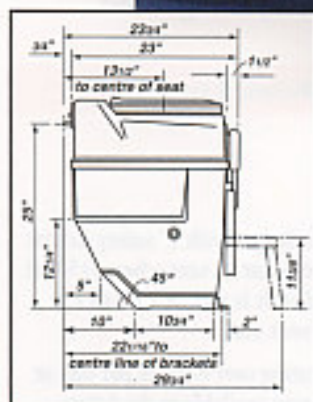
Both are **marinized** to accommodate violent motion, with mounting brackets, a finishing drawer that is gasketed in, air intakes that ensure no liquid can escape, and a composting drum that is locked at all times. A fold up footrest minimizes the space required, and can be easily removed to access the finishing drawer.

The 12 Volt **4.0 Watt fan** is incorporated in an external fan box which is mounted in the 3" vent stack, so it is *easily accessible* for service. This fan is on a separate circuit and should be on when the unit is in operation. If the vent exits at deck level, it may be necessary to "polish" the vented air by passing it through some filter material in the fan box.

If and when power is available the **ECOLET® MOBILE** has a 110 Volt 120 Watt heating element in the heater base to improve evaporation. (A second 12 volt 120 Watt heater is also available as an option). Mobile units have a 1" drain, and this should be hooked up so that any liquid which is not evaporated may be drained periodically into a holding tank, small removable container, or other approved facility.

An **EXCEL Mobile** is also available where a higher capacity is needed.

Composting Capacity: Residential & Continuous 1, Weekend & Vacation 3/4



Specifications

Composting Capacity

	EXCEL	EXCEL NE	ECOLET® Mobile	ECO
Residential & Continuous use (Adults/families*)	3/5	2/3	1/2	1/2
Weekend & Vacation use (Adults/families)	6/8	5/7	3/4	3/4

Electrical

Max. Amps (with heater on)	2.4	NA	1.2	1.2
Fan Watts (Required or Optional Hook-up)	30 Req.	Opt.	4.0 (12V) Req.	4.0 (12V) Req.
Heater Watts (When thermostat switches it on)	250	NA	120**	120**
Average Power Use in Watts (heater on 1/2 time)	150	NA	63	63

Unit Dimensions (inches)

Height (Unit only)	32	31	28	28
Depth (Unit only)	33	33	21	21
Width (Unit only)	22 1/2	22 1/2	19	19
Height Footrest (when in use)	10 1/2	10 1/2	11 1/4	11 1/4
Height (Footrest to Seat)	18	17	17	17
Footprint (Width x Depth)			16 1/2 x 17 1/2	10 1/2 x 15 1/4

Vent & Drains

Vent Pipe (2" Cent. Vac. Tubing; 3" & 4" Sewer)	2	4	3	3
Drains (Required or optional hook-up)	1/2" Opt.	1" Req.	1" Req.	1" Req.

Weights (Lbs.)

Product Weight / Shipping Weight	60/100	50/95	45/80	45/80
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Shipping Carton Dimensions (inches)

Width	28	28	22	28
Length	36	36	29	29
Height	36	36	37	37

Rough-in Measurements (inches)

Depth required to remove drawer	48	48	31	31
Vent outlet center distance from right side	10	11 1/4		
Height to center of vent	28 1/2	NA	NA	NA
Height to top of vent outlet assembly	NA	35	31 1/2	31 1/2

*Family numbers include adults and small children

**Additional 12V 120Watt heater available as option

Do-It-Yourself Installation

SUN-MAR units are designed for *easy* **Do-it-Yourself** installation.

Shipping cartons include (at no extra cost) everything needed to install and operate the unit. The only exception is the 3" plumbing pipe and fittings needed to connect a 1 pint flush toilet to a central composting unit.

Contents of Shipping Carton

The shipping carton on all units include:

- An Owner's Manual (specific to each unit)
- Warranty card
- Peat Mix (30L bag) and dried bacteria for starting off the unit
- Rake for periodic clearing of the evaporating chamber
- "Compost Quick" enzyme for speeding up composting
- Complete vent kit including all pipe, fittings and vent intake assembly.

Vent Stack

The table below shows vent pipe sizes and lengths included with each unit. All units excluding mobile units include a roof flashing and diffuser for 2", 3" or 4" pipe as appropriate.

	Electric	Non-Electric	Ecolet
Self-Contained	2" x 10ft.	4" x 8ft.	3" x 10ft.
Ecolet (Mobile)	-	-	3" x 2½ft.

- **Vent kits for 2" pipe** include two 45° and one 90° elbow in addition to the necessary connectors. 6 ft of 2" pipe insulation is contained in EXCEL and COMPACT kits.
- **AC/DC units** have a complete 4" vent kit in addition to a 2" kit.
- **3" and 4" vent kits** include only connectors, except that the 4" kits for A/F NE and AC/DC units have two 45° elbows and a 1.4 Watt 12V fan (2000 series) or 2.4 Watt 12V fan (3000 series) for installation in the vent stack.
- **Mobile units** include 6ft. of 3" flexible tubing, and a fan box with a 12 Volt 4.0 Watt fan. The installer should select a suitable deck vent for the particular installation.



Items included in EXCEL



Items included in EXCEL NE carton

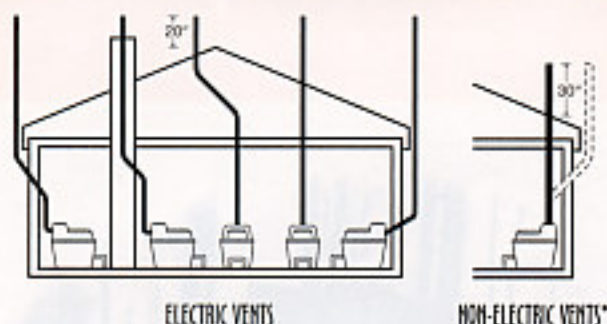


Items included in ECOLET MOBILE and ECOLET MOBILE (Hull Shape) carton

Also Included:

- 10 ft of 1" diameter drain hose for all units except EXCEL

SOME TYPICAL VENTING CONFIGURATIONS



*With a non-electric vent, where two 45° angles are used (as shown with dotted line), a 12Volt fan will normally be required to assist air movement.

Installing the Vent Stack

The vent kits included in the shipping carton are sufficient for installation in most single story buildings. If more is needed they are normally easy to find. 2" pipe is PVC Central vacuum tubing, and 3" and 4" pipe is ABS sewer pipe.

- **Electric units** with 2" stacks should have the minimum number of bends, should use 45° elbows wherever possible, and should not have bends totaling more than 360°. No pipe run should be horizontal.
- **3" ECOLET® and Spacesaver vents** and especially **4" Non-electric vent stacks** should be installed as straight as possible. If 45° elbows are needed in a 4" vent stack then a 12 Volt fan should be included in the installation.
- **Merging a SUN-MAR vent** with other existing vents risks interference and is not advised.
- **The diffuser** included with all but mobile units is a simple but effective device originally patented by SUN-MAR principals to *aid* updraft, *avoid* winter freeze up, and *protect* the vent from downdraft and weather.
- As shown in the drawing they should ideally be installed 20' or more above the peak, although depending on prevailing winds, lower installations may be possible.



Installing a 12Volt fan

Electrical Installation

All electric units are supplied with a power cord and pre-molded plug which connects to a standard three(3) pin 115 Volt outlet and powers both the **fan** and **heating element**.

Winter Use & Handling Excess Liquid

Winter Use

SUN-MAR units serve as a reliable year-round facility when prepared for continuous or periodic use during the cold winter months.

All units are made of **fiberglass and marine grade stainless steel**; so even if the compost freezes in the drum, sub-zero temperatures will cause no damage.

Seasonal Winter Use

For **limited use** in cold temperatures, the unit can be used simply as a holding tank. For this, sufficient space must be available in the Bio-drum™ and the drum should not be rotated if it contains frozen compost. Electric units should be **plugged in** when in use, so that the fan eliminates all odors even though no composting is taking place.

If you have a 1 pint flush toilet, and freezing is expected, turn off the water supply to the flush toilet, and drain any water either by removing the drain plug and loosening the brass nut on the water valve, or removing the water valve.

Residential Winter Use

For continuous or extended use in winter, the composting unit will have to be **kept warm** (at least 55°-60° F) so composting does not stop.

- **Insulate** all piping to avoid ice blockage including vent stacks (on all units), and waste inlet and drain piping where appropriate.
- While the composting unit is not in use, energy costs can be reduced by installing a **speed control** on the fan so that very little cold air is being pulled in and the heater is operating less frequently.
- Keep self contained electric units **plugged in** if they are in a cold place. If a self-contained unit is being operated in an unheated space, consider putting a blanket over the unit to keep the unit insulated and further reduce heating costs.
- Keep central units plugged in, either in a warm place or in an **insulated enclosure** with two 60 Watt light bulbs for warmth. This provides a back-up if one bulb burns out. To allow for adequate ventilation do not seal the enclosure.

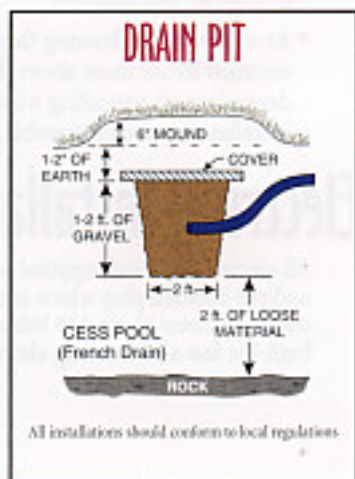


Handling Excess liquid

- The electric EXCEL, COMPACT, CENTREX 2000 A/F, CENTREX 3000 A/F and in some cases the SPACESAVER, will *evaporate all liquids*, depending on use and climate. However other than the CENTREX 2000 A/F and 3000 A/F where it is optional, all Central units, the EXCEL NE, ECOLET® and SPACESAVER *should* have the security drain connected.
- A 10ft. 1" drain hose and clamp is supplied with all Central units and the ECOLET®. Collect and/or treat excess liquid in an **approved facility** such as a recycling bed, old septic system, holding tank or drain pit.
- To make a recycling bed to evaporate and transpire the liquid without touching the environment, simply **dig a bed 18" deep**, and line it with plastic sheet. Bed size - normally 3 - 25 sq. ft. - varies with geographic area and season. Fill it with 6" of gravel then 12" of sand and plant with grass and shrubs. Contact SUN-MAR for more information.
- **Drain pits for excess liquid** should be installed in accordance with local regulations. In many areas, this is about 1ft. deep and 2ft. in diameter. Place sturdy cover (plastic, tin or wood) and a 6" mound of earth over the drain to prevent soil and surface water from settling into the gravel.



1" Drain exits either left or right



SUN-MAR's Three-Chamber System

A composting toilet system must complete three separate tasks.

These three tasks are:

- 1) Compost waste and toilet paper quickly and odorlessly
- 2) Evaporate the liquid
- 3) Ensure that the finished compost is safe and easy to handle

Each of these tasks need a **different set of conditions** to work *optimally*.

Realizing this, SUN-MAR engineers set themselves a challenge: how to create three **ideal environments** in one single composting unit?

The answer:

SUN-MAR's unique **Three-Chamber System**.

This concept of building a **separate chamber** tailored to each *specific task* proved to be incredibly effective. It is the philosophy behind every SUN-MAR toilet designed since 1979.

COMPOSTING

Benefits of patented Bio-drum™

- Tumbling optimizes mixing, oxygenation and moisture distribution
- Automatically removes excess liquid to evaporating chamber
- Keeps compost moist by avoiding direct heat and drying air

HASSLE FREE operation

- No mechanical mixing parts to jam, stick or break
- Compost moved to finishing drawer simply by rotating drum backwards

EVAPORATING

Benefits of a Separate Chamber for evaporating liquid

- Large surface area
- Heated evaporating surface (Electric units)
- Thermostat preset for peak performance
- Air flow engineered for best evaporation

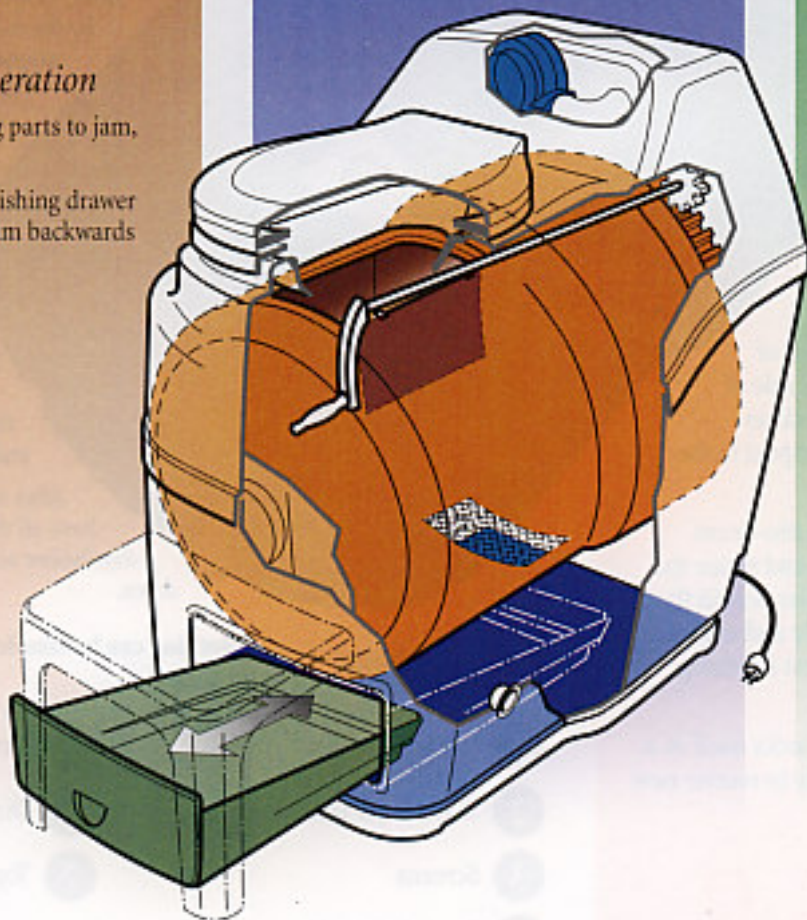
FINISHING

Benefits of Separate Chamber

- The Finishing Drawer collects compost from the Bio-drum™
- Composting continues, isolated from fresh material
- Allows composting to finish before removal

HASSLE FREE operation

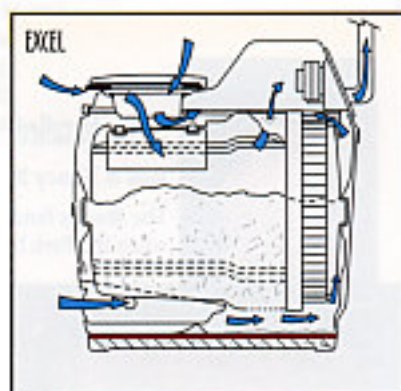
- Pull out Finishing Drawer is removed by hand with no screws to undo.
- No contact with unfinished waste.



The Evaporating Chamber

Compost must be kept **moist but not saturated**. The ideal environment for evaporating excess liquid is a **large surface area** combined with **heat** and **moving air**. SUN-MAR meets these criteria in the evaporating chamber.

- Any liquid **not absorbed** by the compost in the drum drains *through the screen* directly into the evaporating chamber.
- On all central units the liquid falls first onto an **evaporating tray** and then to the main evaporating surface. The tray not only helps oxygenate this liquid, it also traps any peat mix debris, and almost doubles the evaporating surface. Evaporating trays can be **removed and cleaned** if necessary, through the drawer opening on Centrex units, and through the second drawer opening on Centrex 3000 units.
- For optimum results **evaporation** is assisted on 110 Volt electric models by a **thermostatically controlled heating element**. Sealed in a compartment underneath the evaporating chamber, the heater **warms** the floor of the evaporating chamber *without drying out the compost*.



Air movement on EXCEL

The Finishing Drawer

The finishing drawer serves two functions: to **receive** the compost in an easily-accessible isolated container, and **complete** the composting and sanitation processes.

All Units

- Compost **drops directly** into the finishing drawer when the drum is rotated backwards.
- Composting is completed in the drawer, where it is **isolated** from fresh waste and possible contamination.
- While in the drawer, the compost is surrounded by a stream of drying air, and **gradually dries** prior to removal.
- The **pull out** finishing drawer is removed by hand (no tools or screws are needed), and the sanitized compost may be emptied whenever more compost is to be extracted from the drum.
- For seasonal units, several drawers should be removed **in the Spring**, reducing the compost level in the drum to 4-6" to make room for next year's operation.



Customer Installations

If you know a SUN-MAR user, please check with them. If not, we hope you find these snap shots and comments useful in selecting the right unit.

EXCEL - Installed 1996

Ron & Nancy Brooks - Sacheen Lake, WA

The Brooks family first heard about SUN-MAR when the Park by their cabin installed two SUN-MAR units. The Brooks family of 4 use their cabin weekends when they usually invite 2-4 guests. They also stay for two weeks during the summer.

As Nancy says "there is absolutely no odor. We've had a lot of neighbors interested in it."

EXCEL NE Installed 1997

Greg & Karen Miels, International Falls, MN

Karen writes that their experience with their NE has been "nothing but positive", and "recommends this system to anyone who needs an alternative to the conventional septic system".

Their NE is installed on a 4 acre island near Vermillion Bay, Ontario. Both the building inspector and the inspector from the local Health Unit took a look at the SUN-MAR. "To say they were happy with our choice was an understatement" said Karen. She was told by the inspectors that "It's the way of the future".

We agree.

EXCEL NE - Installed 1994 to 1997

Omagaki Wilderness Lodge, Pembroke, ON Bellefont, PA

Deidre Billes of Omagaki Wilderness Lodge was so pleased with her first EXCEL NE that she now has more than ten in operation at the camp. Omagaki entertains hundreds of visitors every season at their beautiful remote location in the Ottawa valley which runs entirely on solar energy.

Deidre is "very satisfied with the performance of the units" and likes the fact that her toilet facilities are never going to destroy her business' most precious resource-nature!

ECOLET® MOBILE (Hull Shape) - Installed 1996

Captain Magic, Ketch Inca Somewhere on the High Seas

Andrew Yellen (Capt. Magic) must be one of the most colorful characters around. He bought and installed his ECOLET® MOBILE when he was visiting Key West. He reports, "I am thrilled and delighted with our SUN-MAR Marine Sanitation Device (MSD). The ECOLET® operates cleanly, efficiently, and absolutely without the odor and messiness of standard holding tanks."

He also likes the fact that he can do without two through-the-hull fittings.

Because of the possibility that the ECOLET® will vent at deck level, there is a place for a zeolite and carbon filter in the fan box if needed. In Capt. Magic's case it wasn't. He feels that "filters in the stack are over-kill".

the history of SUN-MAR

For over a Quarter Century...

WORLD LEADER IN HOME COMPOSTING TECHNOLOGY.

The SUN-MAR Excel is the only self-contained composting toilet, tested, certified, and listed by NSF.



All 15 Centrex units are certified and listed by NSF (The National Sanitation Foundation).

For verification, check NSF listed products at <http://www.nsf.org/Certified/Wastewater/Listings.asp?TradeName=&Standard=041>



SEMCO CERTIFIED
for 220 Volt Units

Manufacturing Facility:
QS 9000 - ISO 9002
REGISTERED



Electrical features are:
CSA APPROVED
LR 55925-2



UNITED STATES
COAST GUARD
CERTIFIED

1971

The first self contained composting toilet is developed by the father of one of the SUN-MAR partners.

1977

The first Central composting unit, (forerunner of all Centrex units) is designed and launched

1979

The first three chamber composting system with Bio-drum is introduced

1981

The first non-electric self contained unit is introduced by SUN-MAR

1989

The Excel becomes the first self contained composting toilet to pass 11th National Sanitation Foundation long term composting tests. Today the Excel remains the only such unit listed.

1991

The first dual vented unit is introduced for use with a non-continuous 110 Volt power supply.

1994

Sun-Mar awarded US patent for Bio-drum™ design.

1994

Sun-Mar introduces the Ecolet Mobile, the first self-contained composting toilet designed for marine and RV markets.

1997

The first continuous flow composting unit is introduced by SUN-MAR. This high capacity unit automatically moves the compost through the unit and into a collection chamber as the drum rotates.

2000

Sun-Mar awarded US patent for double drum.

2000

Sun-Mar awarded US patent for continuous flow design for self-contained units.

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25 YEAR WARRANTY

All units carry a Comprehensive 3 Year parts replacement warranty, with a full 25 Year replacement warranty on the fiberglass body.