



Tasmania

# Certificate of Accreditation

## On-Site Waste Water Management System

*This Certificate of Accreditation is hereby issued by the Minister for Justice and Workplace Relations pursuant to Section 59(2) of the Building Act 2000 and Part G2 of the Tasmanian Plumbing Code 2006.*

**System:** Sun-Mar Centrex Water Free Composting Toilet System  
Models 2000 AF and 3000 AF

**Manufacturer:** Sun-Mar Corporation, Canada

**Supplier:** Australasian Connections Pty Ltd ACN 077 267 862 - Trading as: Ecoflo Water Management.

**Of:** 4/62 McPhail Road, Narangba, QLD, 4504

*This is to certify that the **Sun-Mar Centrex AF (Water Free) Composting Toilet System**, (the 'system') described in Schedule 1, is accredited as an on-site waste water management system for use in a single dwelling in Tasmania. This accreditation is subject to the conditions of accreditation and permitted uses specified in Schedule 2, and in accordance with the Tasmanian Plumbing Code 2006.*

**Director, Building Control**

*Delegate of the Minister for Justice and Workplace Relations*

**Date of Issue: 20 May 2010**

**Certificate No: BSR0561- 2010**

**This Certificate of Accreditation is in force until 19 May 2015**

## Schedule 1: Specification

### Sun-Mar Centrex AF (Water Free) composting toilet system models: 2000 AF and 3000 AF

#### General Description

The Sun-Mar Centrex AF (Water Free - Electric) composting toilet system is designed to receive and treat human waste from one toilet pedestal in a domestic situation. Organic material (peat moss mixed with wood shavings) may be added to the composting wastes as a bulking agent at the intervals specified by the *supplier*. The *system* is designed to reduce such wastes, after minimum composting period, into an innocuous relatively dry waste that is capable of being disposed of in the ground within the premises where it has been generated without nuisance or risk to health or the environment.

The Sun-mar Centrex AF (Water Free) composting toilet systems feature a pedestal directly above the composting chamber without pipework to convey waste to the chamber. The system is placed directly below the pedestal in a basement or sub-floor area. The Centrex AF water free system is available as the Centrex 2000 AF and 3000 AF series which are electric models. The 3000 AF series is a larger capacity model.

The Sun-Mar Centrex system consists of three storage chambers.


- Chamber 1 consists of a composting chamber where faeces, urine and toilet paper are deposited through the toilet pedestal. Organic matter is added to the chamber by way of the access port. When the toilet is in use the composted material is aerated and mixed three times per week by rotating the handle of the Bio-Drum. While the Bio-Drum is being rotated the drum doors on the input and output openings, located on the drum, close automatically so that the compost remains in the drum.
- Chamber 2 consists of the compost finishing drawer. When the Bio-drum is approximately two thirds full, a small amount of compost is removed from the Bio-drum onto the drawer. This is achieved by rotating the drum while the output door on the drum remains open. The frequency of removal of the compost depends on usage and will vary between 1 to 4 times per year. The manufacturer recommends that the compost be left in the drawer for a minimum of 4 weeks or until the drum needs emptying again, whichever is the longer.
- Chamber 3 consists of an evaporation chamber/tray. Liquid waste in the form of urine entering the system is controlled by absorption, evaporation and drainage. Liquid waste is absorbed by the compost pile, which helps to maintain the form of vapour from the pile while excess moisture is removed in the form of vapour from the pile. Any excess free liquid percolates through the pile and drains onto the evaporation chamber/tray where it is evaporated by means of a 250 Watt heating pad mounted underneath the evaporation tray. Whilst no liquid output is expected from this model, a safety drain should be installed in accordance with the owner's manual using the hose provided.

A 30 Watt fan draws air through intake holes at the rear of the unit, over the evaporating chamber and up a vent stack which exits from the front of the composting unit.

The composting capacity and usage of the Sun-Mar Centrex AF (Water Free - Electric) systems are shown in the following table:

Model	Description	Residential use Adults	Power
Centrex 2000 AF	Water Free toilet	5 adults or family of 6	Electric
Centrex 3000 AF	Water Free toilet	5 adults or family of 7	Electric

For identification purposes illustrations and working drawings of the systems are provided in appendices A to D, below. For further details refer to the appropriate Owner's Manuals.

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# SUN-MAR CENTREX AF (WATER FREE - ELECTRIC) COMPOSTING TOILET SYSTEM MODELS: 2000 AF and 3000 AF

## Schedule 2: Conditions of Accreditation

### 1. Definitions

In this schedule:

**AS/NZS 3000** means Australian/New Zealand Standard "AS/NZS 3000:2000 Wiring rules";

**Council** means "the Municipal Council having jurisdiction";

**Designer** means "a person who has a specialty in the area of designing on-site waste water management systems and may include, but not be restricted to, appropriately trained professional engineers, soil scientists, land surveyors and plumbers";

**Director** means the Director of Building Control;

**E. coli** means *Escherichia coli* of the family Enterobacteriaceae which is a bacterium used in public health as an indicator of faecal pollution;

**Manufacturer** means Sun Mar Corporation, Canada

**NATA** means "National Association of Testing Authorities";

**Permit** means "a Permit issued by the permit authority pursuant to section 82 of the *Building Act 2000*";

**Permit authority** means a person or body authorised for that purpose by the *council* of the municipal area in which the *system* is installed;

**Supplier:** The party that is responsible for ensuring that products meet and, if applicable, continue to meet, the requirements on which the certification is based.

**System** means Sun-Mar Centrex AF (Water Free - Electric) composting toilet system models 2000 AF and 3000 AF;

**TPC** means the "Tasmanian Plumbing Code 2006".

### 2.0 General

- 2.1 For each installation the owner/occupier of the premises must make an application for a *permit* to a *permit authority* to install a *system* as a waste water management system in accordance with Section 79 of the *Building Act 2000* and Part 3 of the *Plumbing Regulations 2004*.
- 2.2 For each installation the application to the *permit authority* must include:
- (a) Plans and specification of the nominated *system*.
  - (b) Where applicable, a site plan drawn to scale showing the location and type of any proposed waste water management system for the premises and state the method of managing greywater generated on-site;
  - (c) A statement detailing the proposed method of disposal of the composted end product, the frequency of such disposal and the estimated volume of composted end product to be removed.

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- (d) A statement on whether the *system* is likely to produce a liquid component and how it is proposed to dispose of the liquid. The statement shall be supported by detailed plans of any necessary liquid disposal system.
- 2.3 When issuing a *permit* the *permit authority* is to satisfy itself that, the designer's choice of the *system* configuration is optimal for the proposed site conditions and use.
- 2.4 All plumbing work carried out in connection with the *system* must satisfy the requirements of the *Building Act 2000*, *TPC* and the *Tasmanian Plumbing Regulations* and be carried out by a registered plumber with appropriate training and qualifications.
- 2.5 All electrical work must be carried out by a licensed electrician and in accordance with relevant provisions of *AS/NZS 3000*.
- 2.6 The Certificate of Accreditation is valid for five (5) years from the date of issue or until withdrawn by the *Director*.
- 2.7 Any proposed modifications to the *system's* specified processes, equipment, materials, fittings or manuals must be authorised by the *Director* and may be subject to additional verification and/or testing.

### 3.0 Installation and Commissioning

- 3.1. Each *system* installation must be inspected and checked by the *designer* or the *designer's* agent. The *designer* on completion is to certify that the *system* has been constructed, installed and *commissioned* in accordance with its design, the conditions of accreditation and any additional requirements set out in the *permit*.

**Note:** Where the *designer* is not available to supervise the installation the *designer* should obtain signed certification from the installing plumber stating that the installation has been constructed/installed and commissioned in accordance with its design, the conditions of accreditation and any additional requirements of the council/permit authority.

- 3.2. Unless otherwise directed by the *permit authority*, the composted end product is to be disposed of by burial within the confines of the premises in soil, which is not intended to be used for cultivation of food for human consumption. The minimum cover of soil over deposited end product (humus) must be 100 mm
- 3.3. Alternatively the composted end product may be retained for an additional period of three months in a lidded compost bin. At the completion of this period the humus may be used as a soil conditioner without any further treatment.

### 4.0 On-going Management

- 4.1 At the end of the second anniversary of the accreditation date and each anniversary thereafter, the supplier shall provide a list of all their installed *systems* by anniversary year of installation to the *Director*. The *Director* may randomly select up to 5 (five) or 10% of the installed *systems* (which ever is the greater) from each year of installation. The supplier, at its own cost, shall arrange sampling to be organised by an independent body accepted by the *Director*. Samples for faecal coliforms and salmonella are to be determined by a NATA registered laboratory or laboratory accepted by the *Director*. The results are to be reported to the *Director* by:

- (a) Address of premises;
- (b) Date sampled;
- (c) Sample identification;
- (d) Faecal coliforms;
- (e) Salmonella;

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- (f) Service history; and
- (g) Graphs of accumulative data for faecal coliforms and salmonella results for each anniversary group.

## 5.0 WINTER USE

5.1 The *systems* are suitable for continuous or periodic use during the cold winter months.

**Note:** The *systems* are made of fibreglass and marine grade stainless steel however, in non heated or insulated enclosures the compost may freeze in the drum.

### 5.2 Limited Winter Use

5.2.1 For limited winter use (i.e. only a couple of weekends a month) in cold temperatures, the *system* can be used as a holding tank. However, adequate space must be provided in the Bio-drum. If the drum contains frozen compost it should not be rotated. Electric *systems* must be plugged in to eliminate odours even though no composting is taking place.

Note: These requirements are only applicable to limited use e.g. planning on using the *system* once a month or so during the winter months. If the *system* is used more frequently during the winter months, the extended winter use conditions apply.

### 5.3 Extended Winter Use

5.3.1 For continuous use or extended use during winter (i.e. every weekend, or residential use), the *system* must be kept warm (at least 15°C) to maintain the composting activity.

5.3.2 *Systems* must be plugged in at all times if located in an unheated space to maintain proper composting temperature.

5.3.3 *Systems* installed in locations subject to low temperatures (e.g. Lake St. Clair, Cradle Mountain or locations above 900m Australian Height Datum (AHD)), must install R1 value insulation around the 50mm vent pipe.

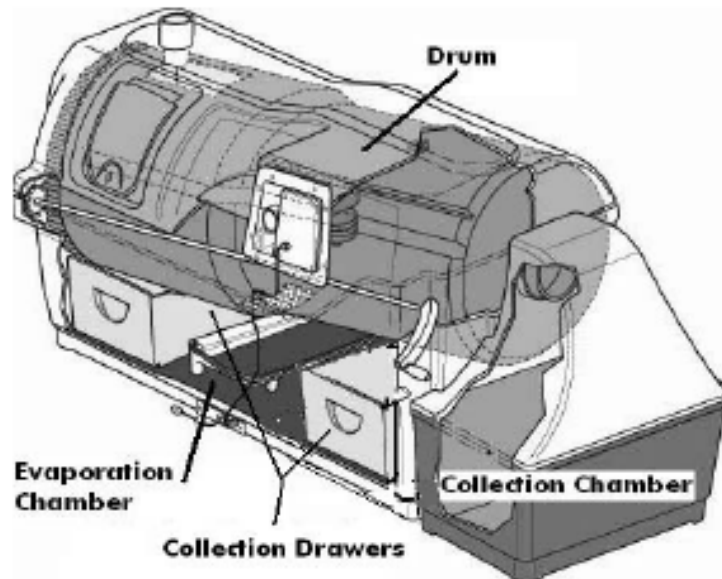
## APPENDIX: A – CENTREX 2000AF (Vent not shown)



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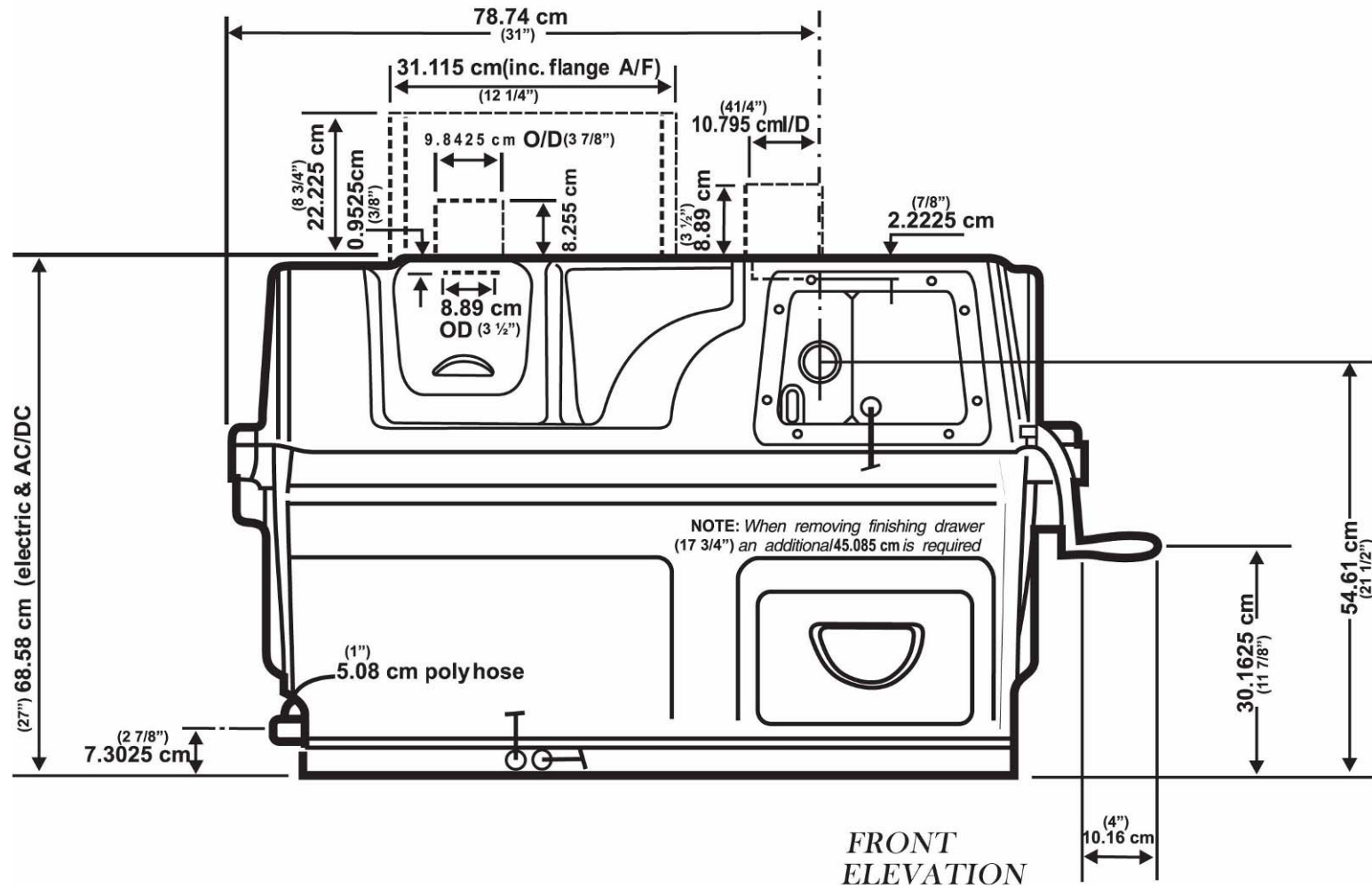
## APPENDIX: B – CENTREX 3000AF



### APPENDIX C

## Sun-Mar Centrex 2000 series units (front view)

11/10/2009



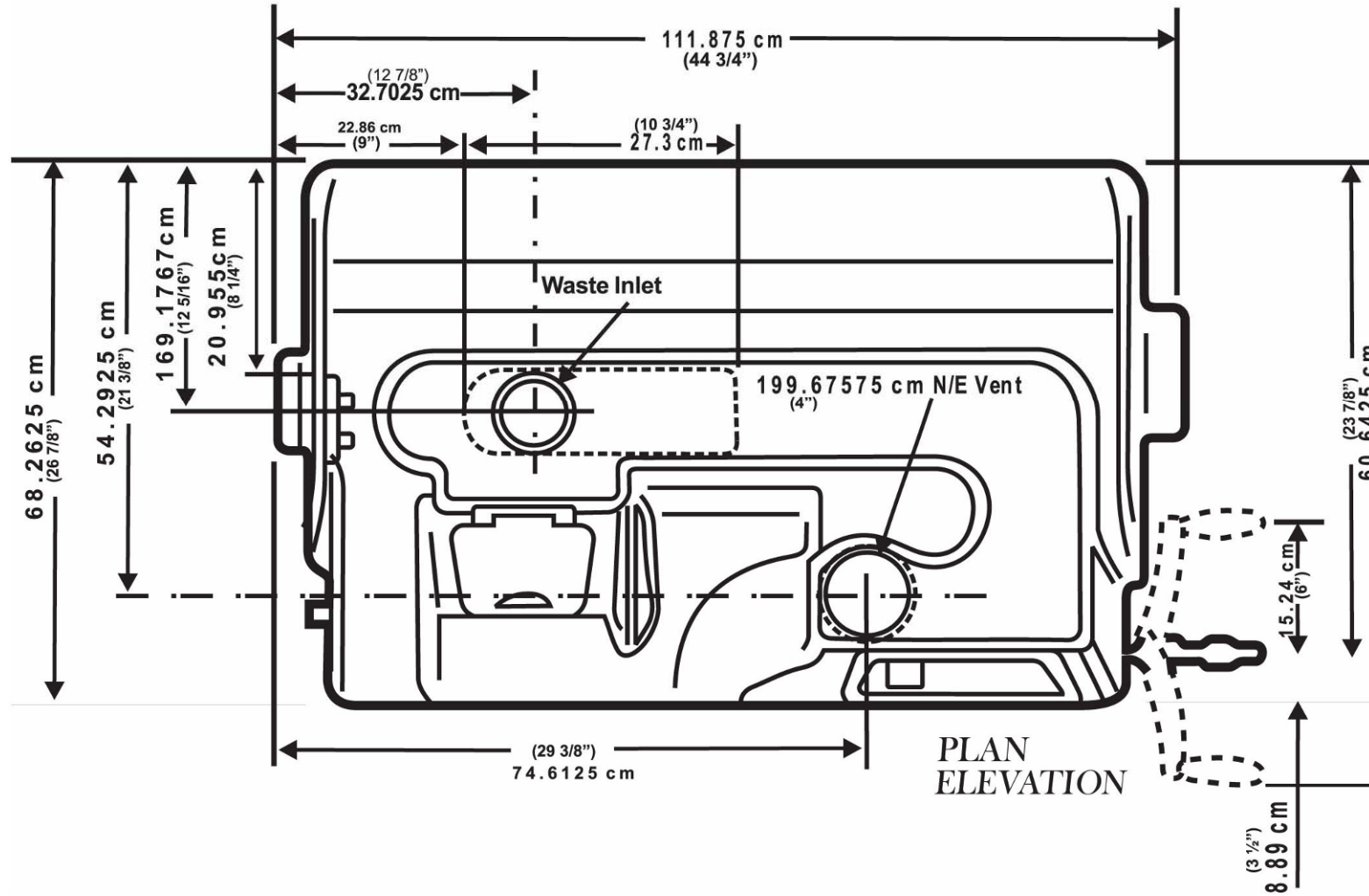
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### APPENDIX C - CONTINUED

## Sun-Mar Centrex 2000 series units (top view)

11/10/2009



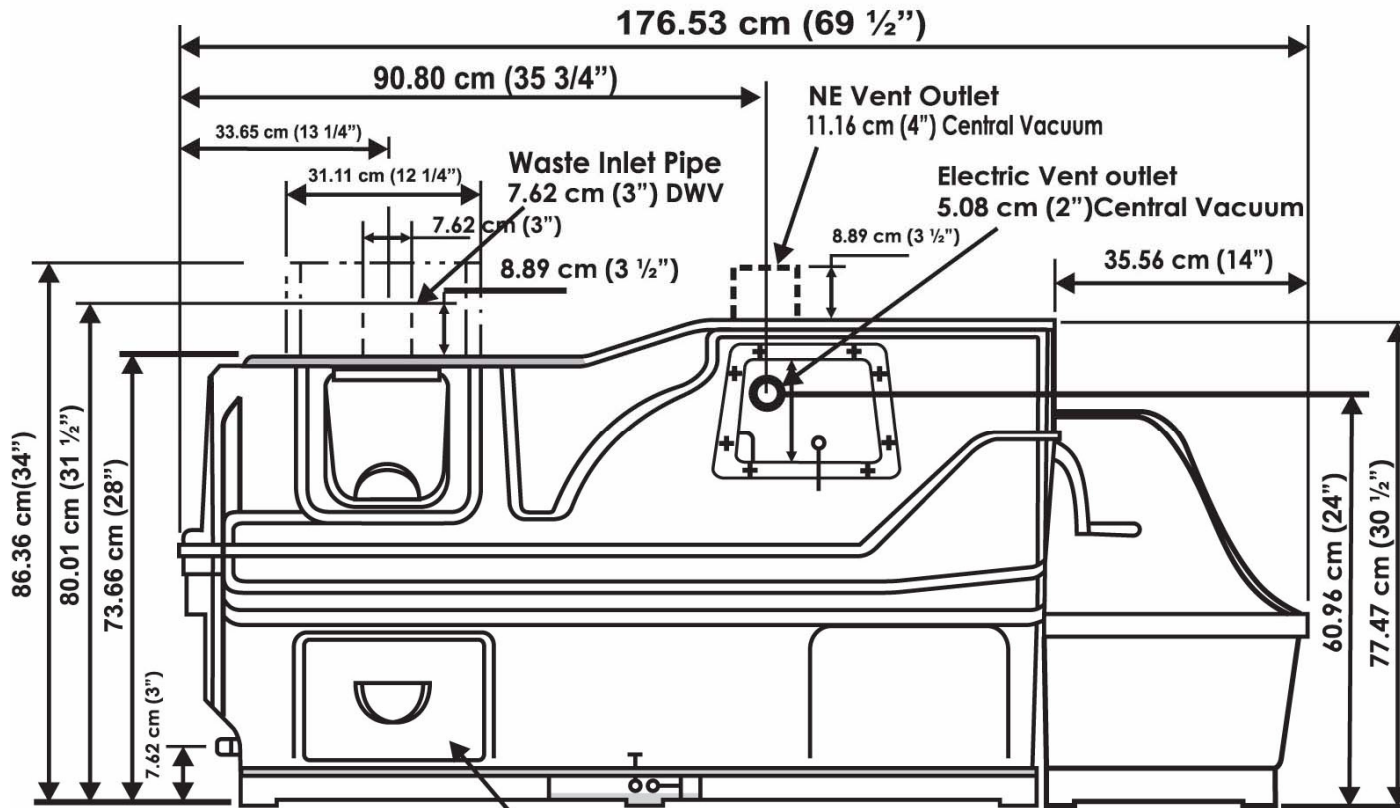
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### APPENDIX C - CONTINUED

## Sun-Mar Centrex 3000 series units (front view)

11/10/2009



**NOTE** When removing the draw an additional 45.72 cm (18") depth is required

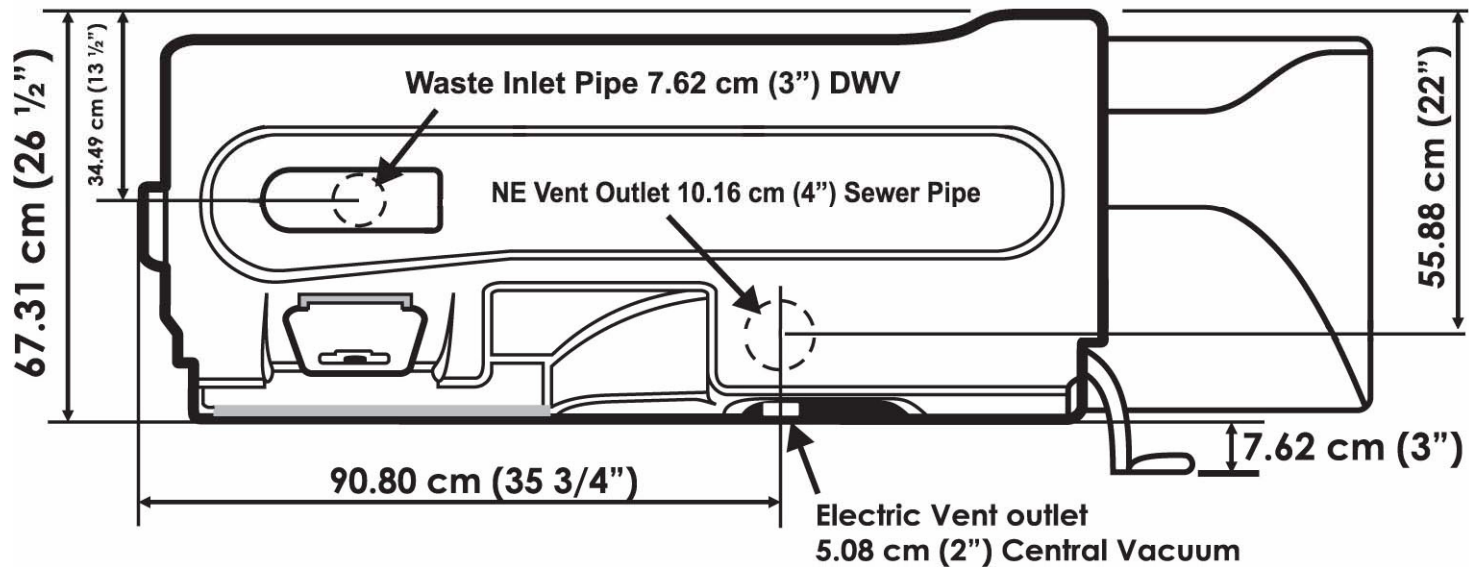
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### APPENDIX C - CONTINUED

## Sun-Mar Centrex 3000 series units (top view)

11/10/2009

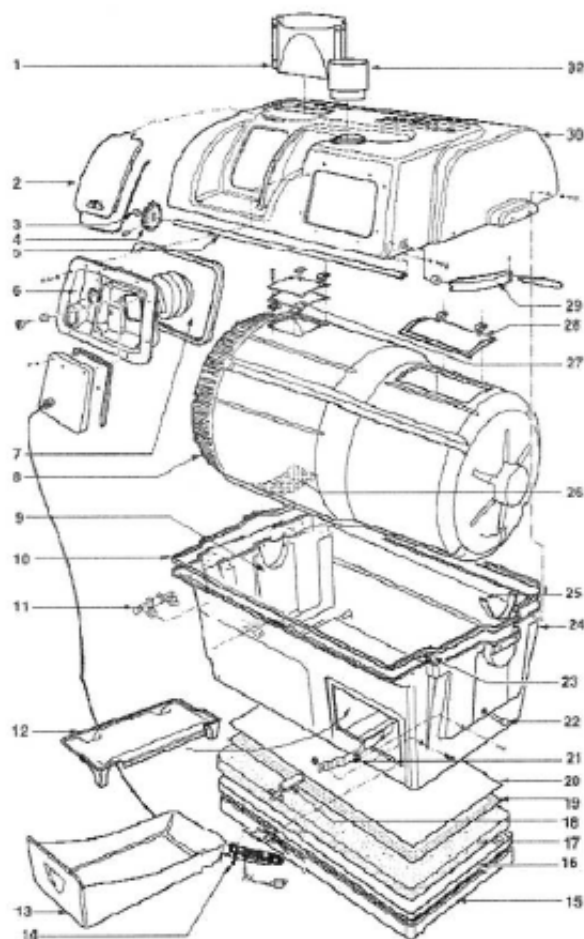


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## APPENDIX D

### CENTREX 2000 A/F PART NUMBERS & DESCRIPTIONS



#	PART	DESCRIPTION	#	PART	DESCRIPTION
1	PP-AIRFL-0005XX	AF Transition Piece	17	PP-INSU0-0187XX	Insulation (Electric & AC/DC)
2	AO-ACCEP-0481BX	Access Port	18	AO-THERA-0001BX	Thermosat Sweden
3	PM-BUSH0-0173	Bushing 1/2"(13mm) OD	18	AO-THERA-0001AX	Thermostat
4	PP-GEAR0-0173XX	Nylon Drive Gear	19	AO-HEATE-0311XX	Heating Element C9285-1
5	AO-SHAFA-0852XX	Stainless Steel Drive Shaft	20	PM-ALUMS-0811XX	Aluminum Sheet
6	AO-FAN_A-0315KX	Fan Assembly (Electric & AC/DC)	21	AO-DRUML-0469BX	Drum Locker
7	PP-FAN_a-0315DD	Rubber Gasket	22	PP-SCRE0-0827XX	Drum Lock Release Knob
8	PP-DRUM0-0800XX	Centrex 2000 Drum	23	PP-GASK0-0188BX	Rubber U Channel
9	PP-BEARP-0758RX	Bearing Plate	24	PF-TANK2-0801XX	Centrex 2000 Tank
10	PP-GASK0-0188BX	Rubber U Channel	25	PP-BEARS-0787BX	Bearing Strip
11	AP-DRAID-0306XX	25mm Drain Assembly	26	AM-DRUMS-0329XX	Drum Screen
12	PF-EVAPT-0789XX	Evaporation Tray	27	AO-DRUMD-2004XX	Drum Door
13	PF-DRAW1-0764XX	Centrex 2000 Drawer	28	AO-DRUMD-2004XX	Drum Door
14	PD-ELECB-0001AX	Electric Box Assembly(Electric and AC/DC)29	AO-HANDL-3000XX	Swivel Handle	
15	PF-HEAT2-0803XX	Heater Base (Electric & AC/DC)	30	PP-TOPC2-0802CX	Centrex 2000 AC/DC Top
16	PP-GASK0-0188BX	Rubber U Channel	30	PP-TOPC2-0802BX	Centrex 2000 Top Kit
			30	PP-TOPC2-0802DX	Centrex 2000 NE Top
			31	AO-PIPEP-0305XX	100mm Vent Inlet (NE)

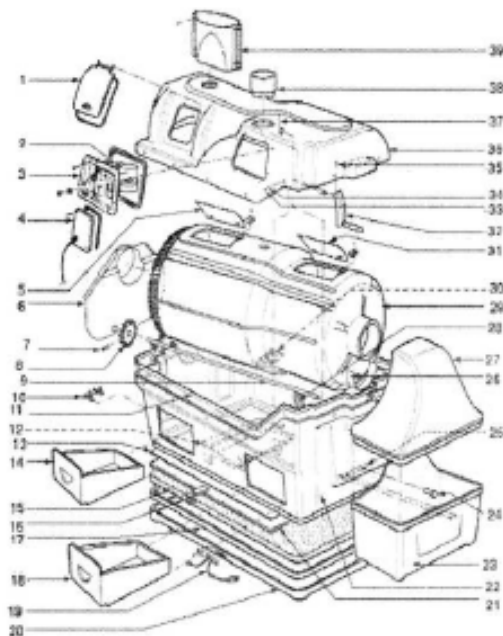
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## APPENDIX D - CONTINUED

### CENTREX 3000 A/F PART NUMBERS & DESCRIPTIONS

#	PART DESCRIPTION	#	PART DESCRIPTION
	AO-DRUMD-0481XX	22	PF-TNAK3-0831XX Centrex 3000 Tank
1	Centrex 3000 Access Door	23	PP-DOBBO-0000XX Collection Bin Bottom
2	AO-FAN_A-0315KX	24	PP-SCREO-0580XX Drum Locker Thumb Screw
3	AO-FAN_A-0315KX		PF-LOCK3-0836XX Drum Locker
4	AO-FAN_A-0315KX	25	PP-BEARS-0787CX Drum Bearing Strip
5	PP-DRUMD-0846XX	26	PP-DOGTO-0000XX Collection Bin Top
6	PP-Bearp-0758RX	27	PP-INTAV-0797XX 3" Air Intake
7	PM-ROLLP0-0216XX	28	PP-DRUM0-0837XX Centrex 3000 Drum
8	AO-SMALL-0440XX	29	PM-DRUMS-0194XX Drum Screen
9	AO-SHAFA-0853XX	30	PP-DRUMD-0846XX Centrex 3000 Drum Door
10	AP-DRAI0-0306XX	31	AO-HAND0-0307BX Handle
11	PP-GASK0-0188BX	32	PP-WASH0-0274XX Washer Pastic CSK
12	PF-EVAPT-0789XX	33	PM-SCREW-0251XX Screw #8 X 5/8" SS
13	PM-ALUMS-0811XX	34	PM-SCREW-0554XX Set Screw
14	PF-DRAW3-0746CX	35	PF-TOPC3-0832FX Centrex 3000 AF AC/DC Top
15	PP-INSU0-187XX	36	PF-TOPC3-0832DX Top Centrex 3000 AF
16	AO-THER-0310GX	36	PF-TOP00-0833XX Centrex 3000 AF NE Top
17	PP-GASK0-0188BX	37	PM-ROLLP-0216XX Roll Pin
18	PF-DRAW3-0746CX	38	AO-PIPEP-0305XX 4" Vent Inlet (AC/DC & NE)
19	PO-CORD0-0181XX	39	PP-INLEP-0207CX Centrex Waste Inlet
20	PF-HEAT3-0833XX		
21	AO-HEATE-0311XX		



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