

Operation, Maintenance, Inspection and Cleaning Manual

Nutrient Separating Baffle Box



DATE: _____

NSBB MODEL: _____

JOB LOCATION: _____



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READ THE FOLLOWING INFORMATION, WARNINGS AND INSTRUCTIONS BEFORE INSPECTING, PERFORMING MAINTENANCE OR CLEANING THIS STORMWATER TREATMENT DEVICE

This manual is intended to explain the specifics of the Suntree Technologies Inc® Nutrient Separating Baffle Box®, and to review the common aspects of the existing regulations and safety procedures. It is the responsibility of all personnel to familiarize themselves with, understand, and comply with all applicable local, state and federal laws, **BEFORE** attempting to inspect or service this unit.

All precautions and procedures in this manual are current at the time of printing this manual and are subject to change based on new processes and procedures. Suntree Technologies, Inc. assumes no responsibility and will be held harmless for any injuries, fines, penalties or losses that occur involving any procedure in this manual or other non-addressed actions taken. The Nutrient Separating Baffle Box performance is based on the procedures being followed in this manual. Non-Compliance with these measures will be the responsibility of the owner.

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Section 1

GENERAL INFORMATION

The Nutrient Separating Baffle Box is a key component of your stormwater management program. To maintain proper operation, maintenance of these units is important. The Nutrient Separating Baffle Box manufactured by Suntree Technologies, Inc. contains patented and patent pending technologies to effectively treat stormwater. The NSBB is highly effective in capturing total suspended solids (TSS), total phosphorus (TP), total nitrogen (TN), organics, trash, litter, oils and grease. Independent testing has shown the NSBB is capable of capturing up to 95% trash and litter, up to 95% of TSS, up to 90% Organics and up to 60% TP.

Local and State regulations may require inspections and cleanings every 90 days for any BMP (Best Management Practice). Suntree Technologies, Inc. recommends inspections be conducted four (4) times a year. This will allow the NSBB to obtain the best pollutant removal efficiency.

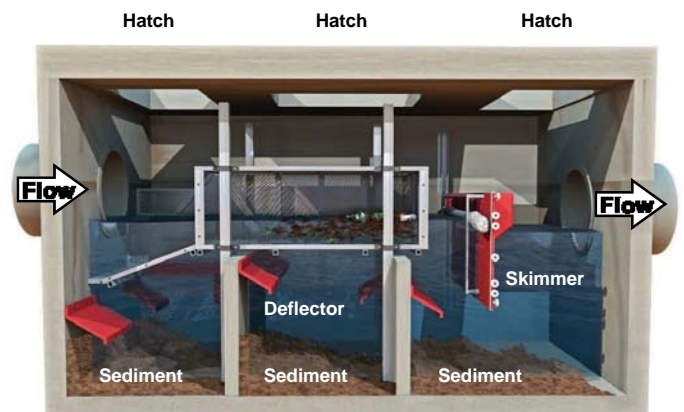
Functional Description

DURING THE STORM EVENT

The inflow pipe is recommended to be the same size as the outflow pipe.

Turbulence deflectors prevent captured sediment from re-suspending.

Hydrocarbons collect in front of skimmer and



Nutrient rich vegetation and litter are captured in filtration screen system.

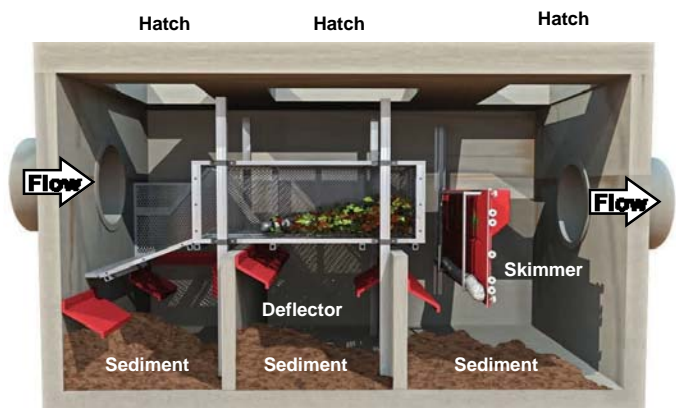
THE SYSTEM

STAYS HEALTHY!

AFTER THE STORM EVENT

Nutrient pollutant load is not lost to static water and flushed out during the next storm event.

Separating organic matter from the static water prevents bacterial buildup.



Vegetation and litter is stored above the static water and dries out between storm events.

With the organic pollutant load separated from the water, the system does not go septic.

* During servicing, the screen system has hinged doors to give easy access to the sediment collected in the lower chambers.

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Section 2

INSPECTION INFORMATION

Suntree Technologies recommends the following inspection guidelines: After installation and the site has stabilized inspections should be conducted after every runoff event for the first Thirty (30) days. To insure that the Nutrient Separating Baffle Box obtains optimal pollutant removal efficiencies, subsequent inspections of sediment accumulation should be conducted a minimal of four (4) times per year. In the event the sediment accumulation equals or exceeds 50% of the Minimum Sediment Storage Volume (fig 2.1) then all accumulated sediment must be removed. All inspections must be documented (fig 2.2).

Typical Inspection Procedures:

- 1: Visually inspect the unit from the surface for broken or missing hinges or handles.
- 2: Open access points (i.e. Manhole Covers or Hatches) and secure properly.
- 3: A visual inspection should be made of the basket screen system to determine the capacity of debris, cracks or damages.
- 4: A visual inspection should be made of the stormboom. Check for missing or broken parts.
- 5: A visual inspection should be done of the sediment chambers. This may require opening the bottom doors of the screen system (if possible).
- 6: A visual inspection should be made of the overall condition of the vault. Typically joint areas as well as inflow and outflow pipe grout areas.

Section 2

2.1 Approximate Dimensions and Characteristics of common NSBB Models

NSBB Model #	Inside Width, ft.	Inside Length, ft.	Baffle Height, In.	Baffle Thickness, in.	Plan Area ft ²	Maximum Treatment Flowrate, cfs	Maximum Sediment Storage Volume, ft ³	50% Sediment Storage Volume, ft ³	Distance From Top of Baffle to Sediment for any Chamber, in.
2-4	2	4	24	1	8	0.58	15.33	7.67	18
3-6	3	6	36	4	18	1.30	51.75	25.88	27
3-8	3	8	36	4	24	1.73	69.75	34.88	27
4-8	4	8	42	4	32	2.31	107.33	53.67	31.5
5-10	5	10.5	42	4	52.5	3.61	163.82	81.91	31.5
6-12	6	12	42	4	72	5.20	228.59	114.30	31.8
6-15	6	15	48	4	90	6.50	332.10	166.05	36
7-14	7	14	48	4	98	7.08	359.47	179.74	36
7-15	7	15	48	4	105	7.58	386.43	193.22	36
8-14	8	14	48	4	112	8.09	43.33	201.67	36
8-16	8	16	60	6	128	9.24	573.75	286.88	45
9-18	9	18	60	6	162	11.70	725.39	362.70	45
10-16	10	16	60	6	160	11.55	709.95	354.98	45
10-20	10	20	60	6	200	14.44	899.27	449.64	45
12-20	12	20	72	6	240	17.30	1303.88	651.94	54
12-24	12	24	72	6	288	20.8	1578.38	789.19	54

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Section 2

2.2 Inspection Checklist and Maintenance Guidance

Nutrient Separating Baffle Box

(To be completed at time of inspection or maintenance)

Location: _____

Owner Name: _____

Address: _____

Phone: _____

Date _____ **Time** _____ **Site Conditions** _____

Inspection Items	Condition	Recommended Interval	Comments
1. Access Openings		Quarterly	
2. Screen System		Quarterly	
3. Rear Skimmer and Storm Boom		Quarterly	
4. Sediment Chambers		Quarterly	
5. Vault Condition		Quarterly	

1. Inspection items are to determine accessibility into Nutrient Separating Baffle Box.
2. Visually inspect screen system for volume of debris and broken or missing parts.
3. Visually inspect skimmer for missing or broken parts & storm boom for discoloration.
4. Visually inspect sediment chambers for estimated quantity.
5. Visually inspect general condition of vault for any clogged areas.

Maintenance Items	Approximate Volume Collected	Date	Comments
1. Screen System			
2. Sediment Chambers			
3. Skimmer Storm Boom	Replaced Y / N		

1. After opening access vacuum out screen system—estimate volume collected.
2. After cleaning screen system—open bottom doors and vacuum out sediment chambers—estimate volume collected.
3. Replace storm boom if completely blackened.

Notes

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Section 3

CAUTION!! ANY SERVICE WORK CONDUCTED IN TRAFFIC AREAS MUST MEET ALL DOT GUIDELINES FOR ROADWAY WORK AND ADDITIONAL SAFETY PROCEDURES WILL BE NECESSARY

SERVICE INFORMATION

Maintenance activities including the removal of captured sediment and debris. Maintenance can be performed from outside the NSBB through access points such as manhole covers or hatches installed in the vault surface above the sediment chambers. During maintenance, the screen system may have either SunGlide® Sliding Top Doors or Hinged Doors. These top doors open to gain access to the debris captured by the screen system. The screen system also has bottom doors that open to give access to the sediment collected in the settling chambers. A vacuum truck is required for debris removal. Although not every circumstance can be covered in this manual, a situation may arise when the structure needs to be entered.

CAUTION!! All OSHA confined space requirements should be met while cleaning NSBB structures.

TYPICAL SERVICE PROCEDURES:

Step 1: Open the access openings on top of the Baffle Box. These access openings are typically manhole covers, hatches, or grates.

Step 2: Vacuum the debris captured by the screen system to expose the sediment collection chambers.

Step 3: Open the bottom doors to the basket system to expose the sediment collection chambers. These doors are provided with eyebolts to attach a hook to lift open the doors which will hinge off to the side (fig 3.1).

Step 4: Vacuum each of the lower sediment chambers until they are empty.

Step 5: After cleaning the sediment chambers close the bottom screen doors of the screen system. Lower / Slide the top doors and assure they lock correctly (if equipped with SunGlide® Lids).

Step 6: Visually inspect the Stormboom in the skimmer system for oil accumulation. Change Stormboom if it is significantly discolored or if it is close to one (1) year of service. The Stormboom has ropes attached to each end which are fastened to eyelets adjacent to the access cover. These ropes act as a leash to prevent the bottom from washing away, and to allow the bottom to be easily pulled out of the containment bracket system on the face of the skimmer. Attach a rope on the end of the new boom to a rope on the end of the old boom. As the old boom is pulled out it will pull the new boom into position. The booms will trade places. Attach the rope ends of the new boom to the eyelets adjacent to the access cover (fig 3.2).

Step 7: When all maintenance work is completed, close the access covers or hatches.

Section 3

Minimum Equipment Requirements:

A vacuum truck is required for the servicing of the Nutrient Separating Baffle Box. Safety equipment will be determined by local, state and federal guidelines.

Structural Components:

The structural components are designed to have a life span of several decades. Structural inspections are not required unless stipulated in guidelines set by the local municipality, state, or federal agencies.

Replacement Parts:

All interior components are designed and sized to be unassembled and removed from the Nutrient Separating Baffle Box for servicing or replacement. For replacement parts and instructions please contact us at:

Suntree Technologies, Inc.®

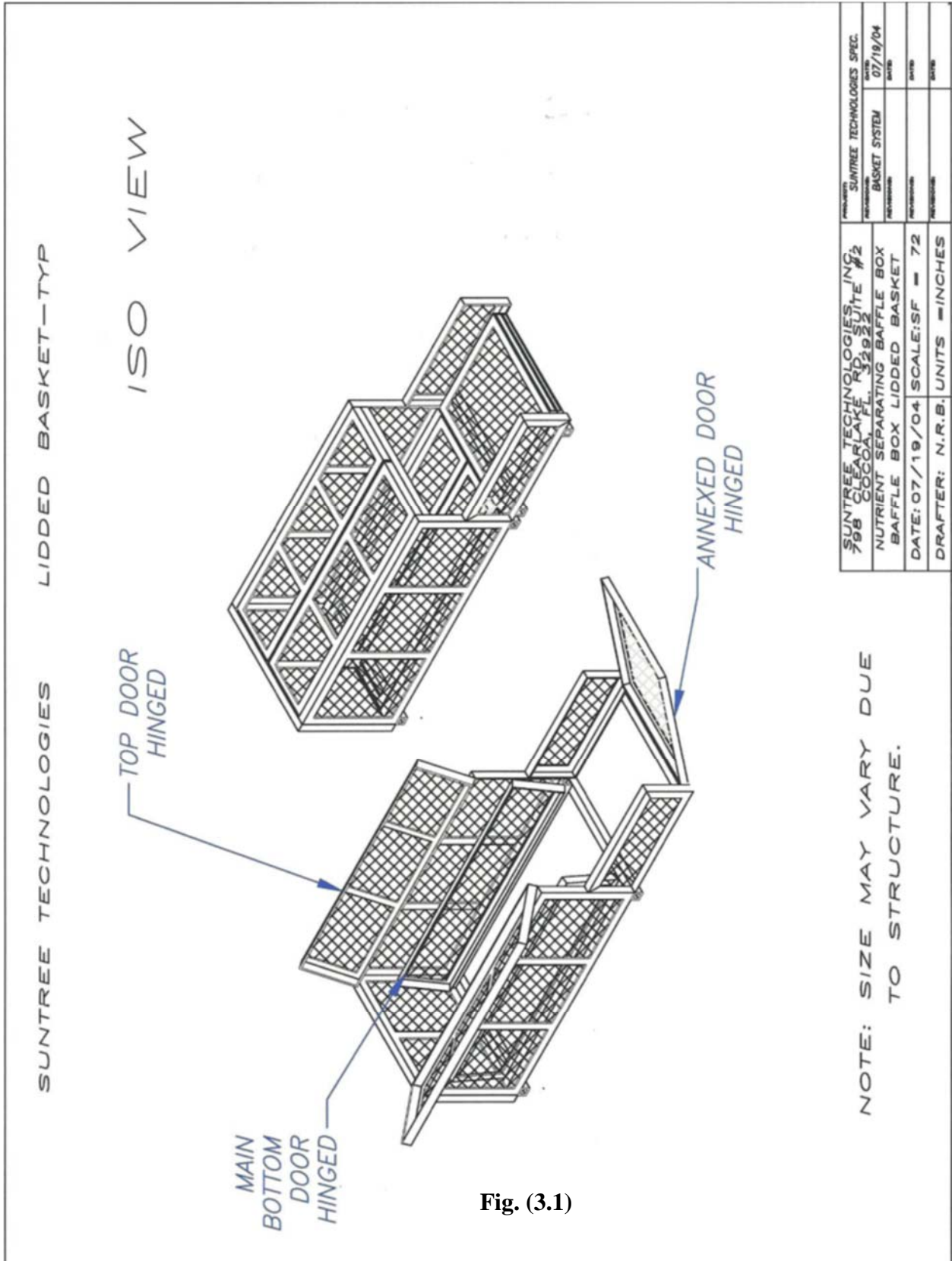
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Section 3



Section 3

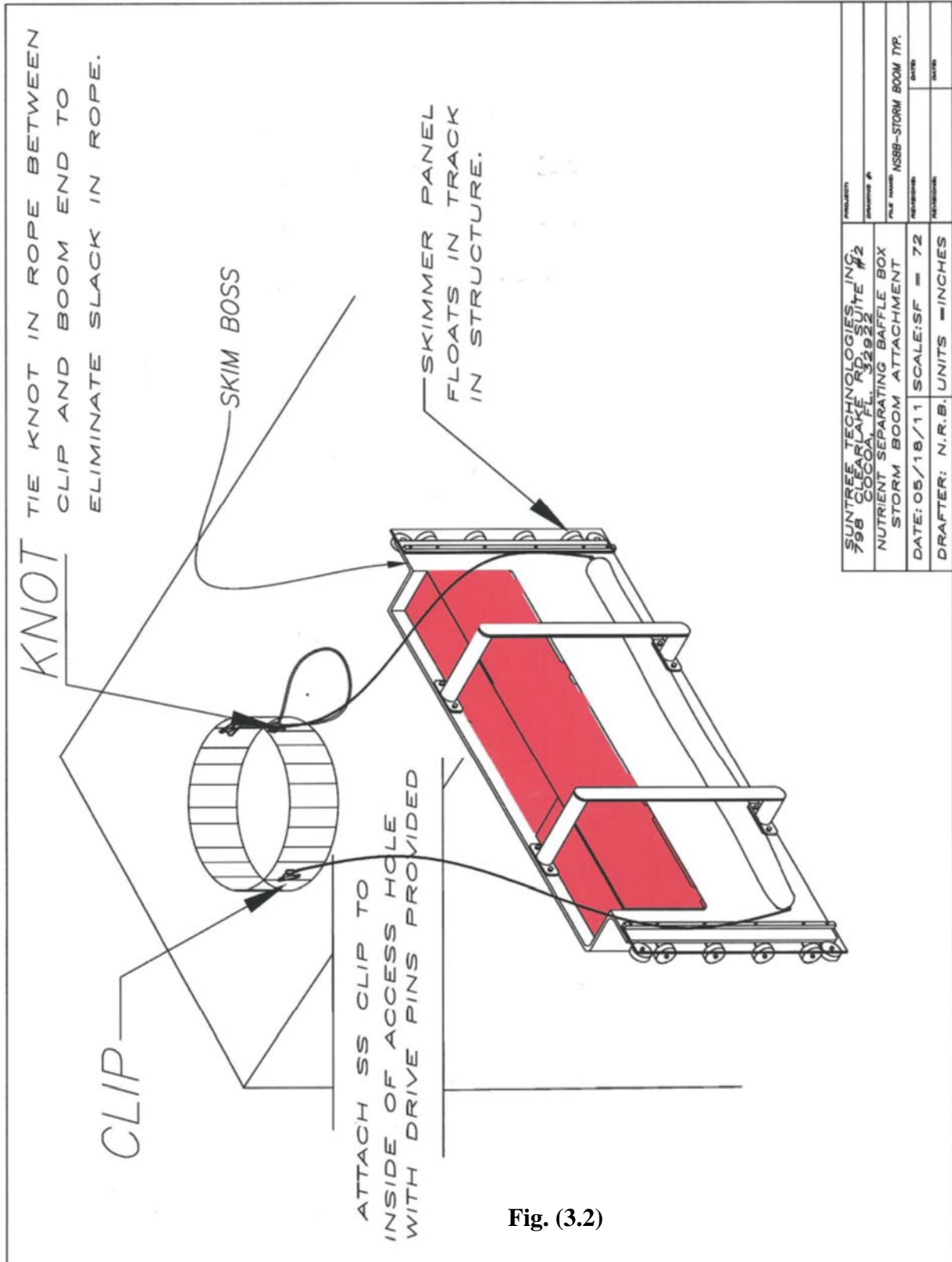


Fig. (3.2)

Section 4

PARTS INFORMATION

Job Specific Information

Section 4

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Section 4

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Job Specific Information



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PARTS INQUIRIES

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Section 5

WARRANTY INFORMATION

Suntree Technologies, Inc.® products are engineered and manufactured with the intent of being a permanent part of the infrastructure. Suntree Technologies warrants its products to be free from manufacturing defects for a period of five (5) years from the date of purchase. Suntree Technologies warrants that the materials used to manufacture its products will be able to withstand and remain durable to environmental conditions for a period of five (5) years from the date of purchase. If a warranty claim is made and determined to be valid, Suntree Technologies will replace or repair the product, at the discretion of Suntree Technologies. Warranty claims must be submitted, evaluated, and approved by Suntree Technologies for the claim to be determined to be valid. All warranty work and/or corrective actions must be authorized by Suntree Technologies prior to work beginning not covered by this warranty. There are no warranties either expressed or implied other than what is specifically specified herein. Abusive treatment, neglect, or improper use of the Nutrient Separating Baffle Box® manufactured by Suntree Technologies will not be covered by this warranty.

Below is the list of products covered by this warranty:

- Grate Inlet Skimmer Box™
- Nutrient Separating Baffle Box®
- Nutrient Separating Screen System
- Turbulence Deflector System
- Nutrient Removing Filtration System™
- Curb Inlet Basket™
- Flume Filter™
- Golf Green Filter™
- HydroSlide™ Servicing System
- Sungate™ Damper System



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WARRANTY INQUIRIES

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