

# **S&N SAFE**™

S&N ENVIRONMENTALLY SENSITIVE ANTI-FOULING EQUIPMENT



**S&N PUMP CO.**®  
[www.snpump.com](http://www.snpump.com)

## ANTI-FOULING PRODUCTS

The accumulation of various types of fouling organisms in a pump caisson or pump suction cause a reduction in output, cavitation, and over-heating; resulting in premature pump failures. The **SNSAFE™** (S&N Environmentally Sensitive Anti-Fouling Equipment) is designed to reliably and safely inhibit marine growth fouling in seawater pump systems on ocean going vessels, offshore platforms, offshore drilling rigs, and shoreline installations.

Marine growth fouling in seawater pumping systems is the cause of many operational problems:

- Reduced pump life due to clogged intake areas
- Accelerated corrosion on metal surfaces after barnacles attach
- Compromised downstream equipment due to restricted piping manifolds
- Frequent cleaning of caissons, piping, and strainers

### SNSAFE™ SYSTEM ADVANTAGES:

- Minimal Maintenance
- Superb Fouling Prevention
- Pre-calculated Anode Life
- Environmentally Safe
- Low Operating Costs
- Replaceable Anodes



**Typical Barnacle Growth in Seawater Piping**



**Pump Mounted Cage SNSAFE™ System**



**Strainer Mounted Cage SNSAFE™ System**



**FROM TOP TO BOTTOM:**  
SNSAFE™ Electrolysis Tank System; SNSAFE™ Inline System

## SNSAFE™ CASE HISTORY

### PUMP MOUNTED CAGE SYSTEM

The Pump Mounted Cage System is attached directly to the submersible motor. It treats seawater from the anode assembly up through the pump, riser pipe and all topside piping. This is the most economical system for complete protection.

The SNSAFE™ Pump Mounted Cage System was designed to prevent bio-fouling on a 40HP 250GPM S&N Electric Submersible Firewater Pump System. The firewater pump with SNSAFE™ system was inspected six months and eleven months after installation with no visible signs of marine growth.



**New Cage Mounted System**



**No Marine Growth After 6 Months**



**No Marine Growth 11 Months Later**



**Results without SNSAFE™ in 25 days**

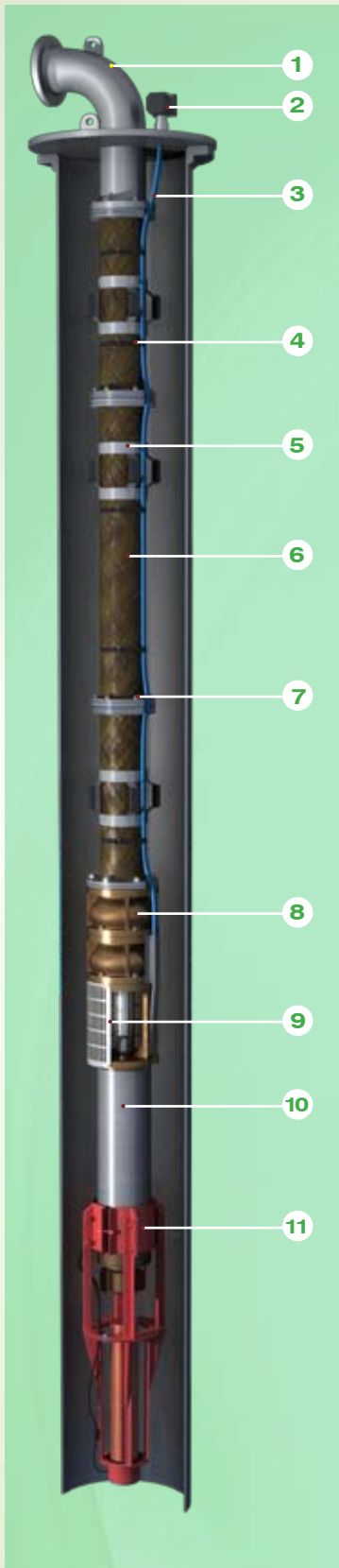
### STRAINER MOUNTED SYSTEM

The Strainer Mounted System is ideal for seawater pump systems that draw suction through sea chest strainers. Special adapters fit the anodes to the strainer lids for easy replacement.

Four Strainer Mounted Systems were purchased to replace the Sodium Hypochlorite Systems in place. Each SNSAFE™ system treated 3800 gpm of sea water supply from the sea chests with a designed anode consumption life of three months in each system.



# ELECTRIC SUBMERSIBLE PUMP SYSTEM



## 1. DISCHARGE HEAD ASSEMBLY

- Carbon Steel
- Stainless Steel
- Duplex Stainless Steel

## 2. JUNCTION BOX

- NEMA 4X
- Explosion Proof

## 3. SUBMERSIBLE POWER CABLE

Heavy-duty Seawater Rated

- Round
- Flat
- Armored
- Single-Core

## 4. CABLE BAND

Rubber bands with Stainless Steel Clips

## 5. COLUMN CENTRALIZER

- Stainless Steel Spring Centralizer with Polyurethane Pads
- Steel Integrated Centralizers

## 6. COLUMN PIPE

- Carbon Steel
- Fiberglass
- Stainless Steel
- Duplex Stainless Steel
- Copper Nickel

## 7. HARDWARE

- Stainless Steel with Teflon Coating
- K-500 Monel

## 8. PUMP BOWL ASSEMBLY

- Zinc-Free-Bronze with Nickel-Aluminum Impellers and Stainless Steel Shafting
- All Stainless Steel Construction
- All Duplex Stainless Steel Construction

## 9. INTAKE SCREEN

316 Stainless Steel

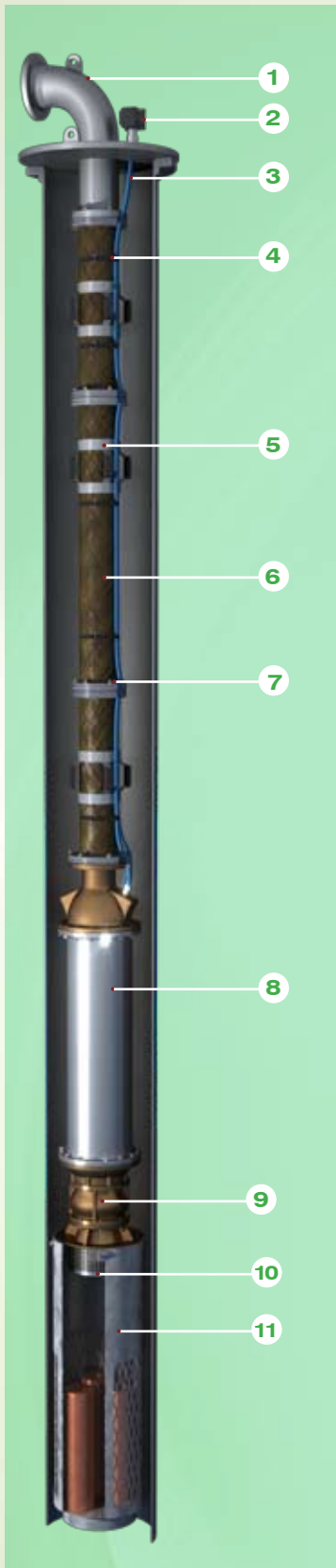
## 10. MOTOR SHROUD

- Zinc-Free Bronze
- Stainless Steel

## 11. SNSAFE™ SYSTEM

- Pump Mounted Clamp-on
- Suction Screen Mounted
- Inline System
- Multiple Port Tank System

# ELECTRIC SUBMERSIBLE BOTTOM INTAKE PUMP SYSTEM



## 1. DISCHARGE HEAD ASSEMBLY

- Carbon Steel
- Stainless Steel
- Duplex Stainless Steel

## 2. JUNCTION BOX

- NEMA 4X
- Explosion Proof

## 3. SUBMERSIBLE POWER CABLE

Heavy-duty Seawater Rated

- Round
- Flat
- Armored
- Single-Core

## 4. CABLE BAND

Rubber bands with Stainless Steel Clips

## 5. COLUMN CENTRALIZER

- Stainless Steel Spring Centralizer with Polyurethane Pads
- Steel Integrated Centralizers

## 6. COLUMN PIPE

- Carbon Steel
- Fiberglass
- Stainless Steel
- Duplex Stainless Steel
- Copper Nickel

## 7. HARDWARE

- Stainless Steel with Teflon Coating
- K-500 Monel

## 8. MOTOR SHROUD

- Zinc-Free Bronze
- Stainless Steel

## 9. PUMP BOWL ASSEMBLY

- Zinc-Free-Bronze with Nickel-Aluminum Impellers and Stainless Steel Shafting
- All Stainless Steel Construction
- All Duplex Stainless Steel Construction

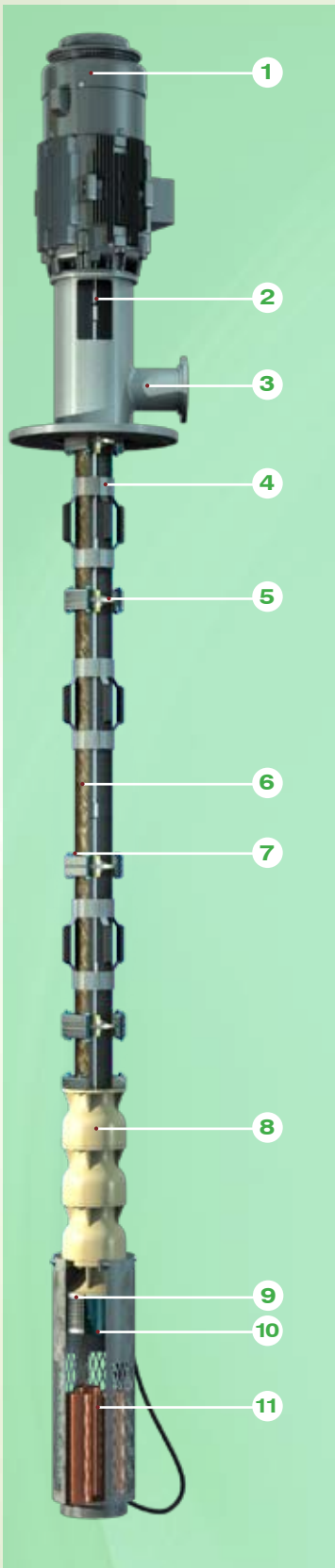
## 10. INTAKE SCREEN

316 Stainless Steel

## 11. SNSAFE™ SYSTEM

- Suction Screen Mounted
- Pump Mounted Clamp-on
- Inline System
- Multiple Port Tank System

# ELECTRIC VERTICAL TURBINE PUMP SYSTEM



## 1. ELECTRIC MOTOR

- Vertical Hollow Shaft
- Vertical Solid Shaft

## 2. SHAFT

- 316 Stainless Steel
- 17 4PH
- K-500 Monel

## 3. DISCHARGE HEAD

- Carbon Steel
- Stainless Steel

## 4. COLUMN CENTRALIZER

- Stainless Steel Spring Centralizer with Polyurethane Pads
- Steel Integrated Centralizers

## 5. RETAINER BEARING

- Bronze
- Stainless Steel

## 6. COLUMN PIPE

- Carbon Steel
- Fiberglass
- Stainless Steel
- Duplex Stainless Steel
- Copper Nickel

## 7. HARDWARE

- Stainless Steel with Teflon Coating
- K-500 Monel

## 8. PUMP BOWL ASSEMBLY

- Cast Iron
- Nickel Aluminum Bronze
- Duplex Stainless Steel

## 9. SUCTION SCREEN

- 316 Stainless Steel

## 10. SUCTION BELL

- Cast Iron
- Nickel Aluminum Bronze
- Duplex Stainless Steel

## 11. SNSAFE™ SYSTEM

- Suction Screen Mounted
- Pump Mounted Clamp-on
- Inline System
- Multiple Port Tank System