

## PSS Shaft Seal Cuts Maintenance, Lifts Uptime

In a major theme park fleet, the PSS Type A Seal boosts uptime and cuts maintenance.

### Introduction

A major theme park operator runs a fleet of continuously operating freshwater passenger vessels designed to carry guests through an immersive scenic environment. These boats operate for long hours, require high reliability, and must maintain strict environmental and aesthetic standards. To support these demands, the operator selected the PSS Type A Shaft Seal (Part #02-35M-300), designed for a 35mm shaft and 3" stern tube.

### Vessel Specifications

#### Passenger Capacity

Each vessel supports 32 passengers, enabling high throughput guest movement throughout the attraction.

#### Fleet Size & Configuration

The attraction utilizes a standardized fleet consisting of 13 vessels, with up to 12 operating simultaneously to meet visitor demand.

#### Propulsion System

- Forward speed: ~3 mph
- Reverse speed: ~2 mph
- Guidance: Track-based steering control beneath the waterline

### Challenge

The attraction's operating environment presents several challenges:

- High daily runtime, from open to close
- Frequent loading cycles with limited downtime
- Strict cleanliness and environmental demands, with zero tolerance for bilge leakage
- Overnight maintenance constraints, limiting repair opportunities

Traditional stuffing box systems used in similar boats struggle with maintenance frequency and bilge intrusion.

## The Solution

To address these challenges, this major theme park operator integrated PSS Type A Shaft Seals into their fleet.

- Uses nitrile rubber bellows with a 6-year maintenance interval.
- Prevents shaft wear, thanks to non-contact rotational design.
- Ensures dripless operation, ideal for vessels where clean bilges and environmental containment are critical.

## Results

The adoption of PSS Type A Shaft Seals delivered significant benefits to the theme park operator, including:

- **Maintenance Reduction:** The long service interval and elimination of packing adjustments significantly lowered labor hours. Staff reported easier scheduling and fewer emergency interventions.
- **Environmentally Responsible Operation:** With no contaminated bilge water discharge, the system supports environmentally responsible operations, an essential requirement for large, high visibility attractions.
- **Strong Uptime and Reliability:** Under continuous operation, seals maintained stable performance, contributing to consistent vessel availability and predictable throughput.

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|-------------------------|---|
| <b>Industry:</b>        | Marine                                    |
| <b>Product:</b>         | PSS Type A Shaft Seal<br>Part #02-35M-300 |
| <b>Shaft Dia.:</b>      | 35mm                                      |
| <b>Stern Tube Dia.:</b> | 3"  |
| <b>Application:</b>     | Passenger Vessel                          |

