

AMPHIBIOUS VEHICLE TURNTABLE

Case Study



A restored Amphicar staged nose-out on the Carousel-USA 35LRI turntable, ready to re-launch

Deployment: The Boathouse at Disney Springs, Orlando, FL

Product: Carousel-USA Model 35LRI Stainless-Steel Turntable

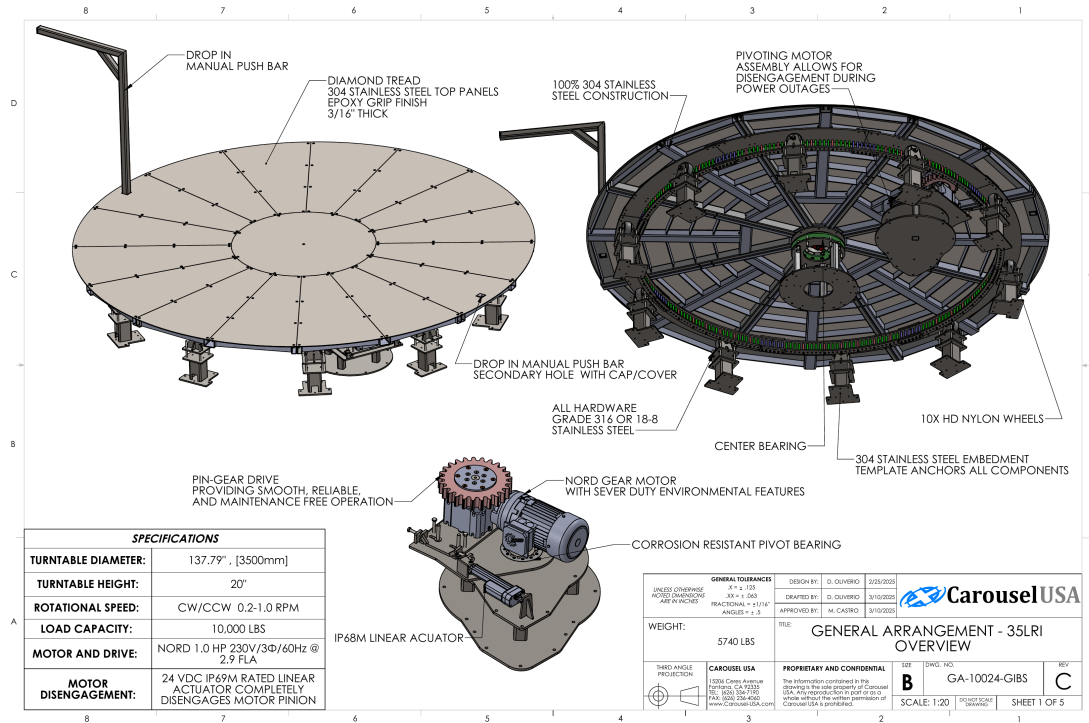
Application: Outdoor waterfront dock, top of Amphicar launch ramp

Client: The Boathouse

TURNTABLE – PROJECT OVERVIEW:

The Boathouse at Disney Springs runs guided tours aboard fully restored Amphicars — classic amphibious vehicles that drive down a ramp and cruise directly onto the water. Between trips, each Amphicar must be turned 180° at the top of the launch ramp so it is staged nose-out and ready to re-launch, without a slow, space-consuming three-point turn on a busy waterfront dock.

Carousel-USA engineered and delivered a fully customized Model 35LRI stainless-steel turntable designed to meet the structural, environmental, electrical, and operational demands of a live, guest-facing attraction. Installed outdoors in continuous contact with brackish water, the turntable rotates each Amphicar in place, cycle after cycle — and keeps operating when shore power does not.



Model 35LRI general arrangement — designed and engineered in Fontana, CA

THE CHALLENGE: CORROSION AT THE WATERLINE

The turntable sits on an open-air marine dock, exposed around the clock to brackish water and high humidity. In that environment, unprotected steel oxidizes quickly, and rust that starts at the surface works its way into structural members and moving parts.

- Continuous exposure to corrosive brackish water and high humidity
- Accelerated oxidation at the waterline that destroys unprotected metals
- Constant washdown conditions around the rotating surface and drive

PROTECTING THE DRIVE AND CONTROLS

A turntable is only as reliable as its drivetrain and electronics. Motors, actuators, and controllers had to be sealed against water intrusion or built from corrosion-resistant materials, without complicating service access.

TURNTABLE – POWER CONTINUITY:

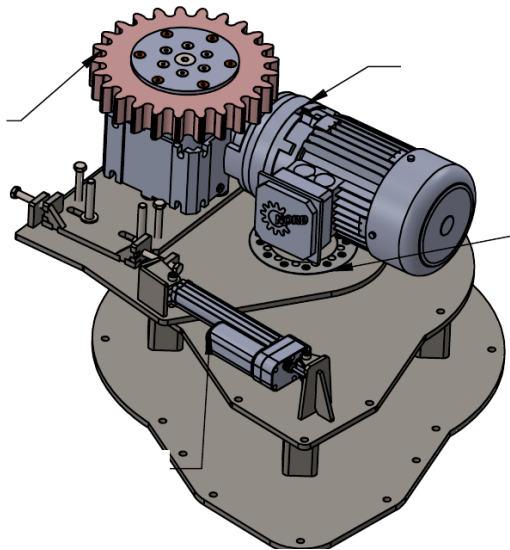
The tours run on a schedule. A loss of shore power could not be allowed to strand an Amphicar mid-rotation or halt operations at the ramp. The system needed a dependable way to keep turning vehicles through an outage.

THE SOLUTION: 100% STAINLESS-STEEL CONSTRUCTION

Carousel-USA engineers designed the entire turntable from stainless steel. Its high chromium content reacts with oxygen to form a thin, self-repairing chromium-oxide passive layer. Unlike iron oxide (rust), which flakes away and exposes fresh metal, this film continuously blocks oxygen and corrosive liquids from reaching the underlying steel — so the structure keeps protecting itself over years of brackish-water exposure. Severe-duty protective coatings add a further layer of surface protection.

MOTOR-DRIVE DISENGAGE SYSTEM

To keep the tours running, Carousel-USA engineered a motor-drive disengage system that de-couples the pin-gear drive from the turntable so the platform can be rotated by hand. An IP69-rated linear actuator electronically disengages the drive, and a washdown-rated controller with battery-backup power keeps that function available during an outage. With the push of a button, the operator disengages the drive and rotates the Amphicar manually.

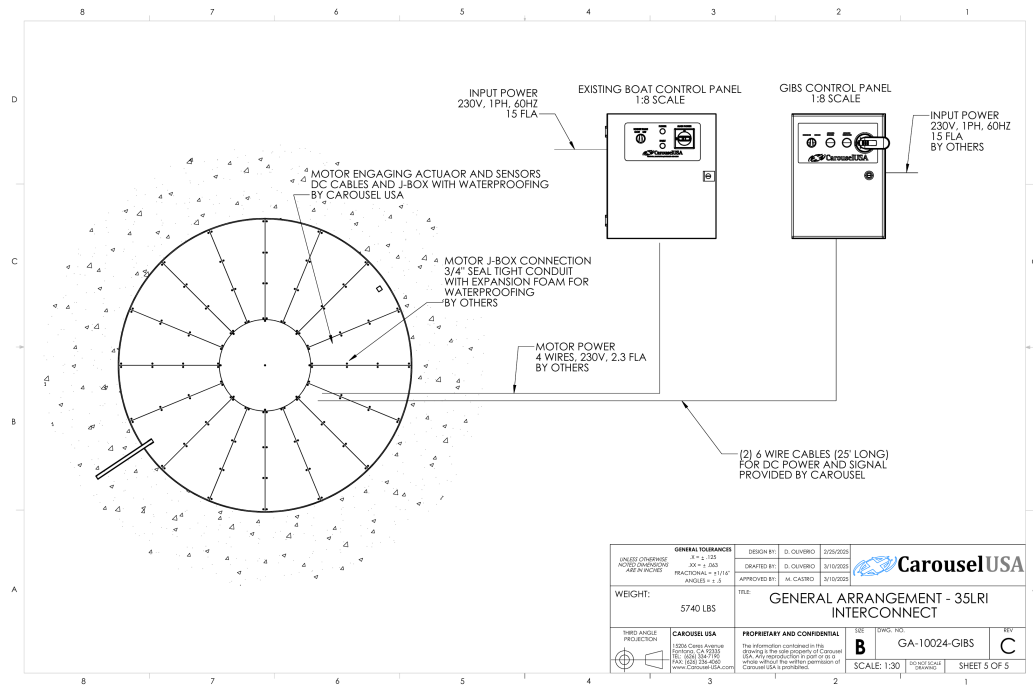


Pivoting drive assembly: pin-gear drive, NORD severe-duty gear motor, and linear actuator that disengages the motor pinion

STREAMLINED CONTROLS & MOTION SEQUENCE

The Carousel-USA controller manages the full set of input and output signals and choreographs each cycle: drive engagement, controlled 180° rotation, and release. The same controller runs the electric

disengage and hands rotation over to the operator, with battery backup keeping that transition seamless through a loss of shore power. Every control component was specified for a marine washdown environment.



Interconnect diagram: turntable, motor-engaging actuator, and control panel wiring

TURNTABLE DESIGN FEATURES

- **100% stainless-steel construction** with a self-repairing chromium-oxide passive layer
- **10,000 lb load capacity** sized to rotate fully restored Amphicar
- **Pin-gear drive** — severe-duty drivetrain with electrically operated disengage
- **IP69-rated linear actuator** to de-couple the drive for hand operation
- **Washdown-rated controller with battery backup** keeps disengage available during an outage
- **Push-button manual override** keeps tours running without shore power
- **Severe-duty protective coatings** for corrosive, high-humidity environments
- **Designed, engineered, and fabricated** in Fontana, CA

PROJECT OUTCOME

The 35LRI has integrated cleanly into daily operations at The Boathouse, staging each Amphicar nose-out for re-launch, cycle after cycle. The project demonstrates Carousel-USA's ability to:

1. Engineer an all-stainless turntable for continuous brackish-water exposure
2. Deliver repeatable 180° positioning inside a live, guest-facing operation
3. Keep a turntable operational through power loss with a battery-backed manual disengage
4. Package drive and control electronics for years of low-maintenance marine service

SEE THE AMPHICAR TURNTABLE IN ACTION

Watch a restored Amphicar rotate on the Carousel-USA 35LRI at the top of the launch ramp at The Boathouse, Disney Springs — a smooth, controlled 180° turn that stages the vehicle nose-out and ready to re-launch onto the water.



 [Watch on YouTube — Amphicar Turntable in Action at The Boathouse, Disney Springs](#)

This project reflects Carousel USA's commitment to precision engineering, durability, and American-built quality.



For additional information, visit www.carousel-usa.com