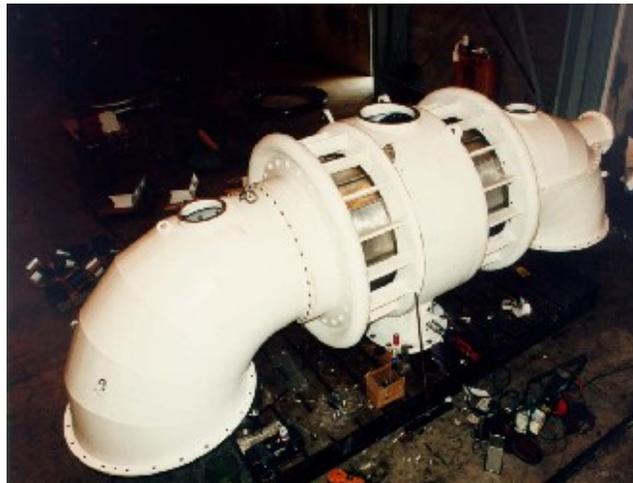


Seagull Hydroturbine

*Development Stage:
Commercially available*



American Hydro

Product Description

The American Hydro "Seagull" is a modern duplex runner hydroelectric turbine designed for high efficiency and power in an open-flume setting. Originally designed to upgrade existing antiquated quad-runner units, it also replaces "camel-back" units and is a compact, powerful unit for new low head open flume applications. Successfully operating units have been in service since 1990. The proven rugged design is self supporting on a central pedestal with a patented dry pit arrangement allowing bearing and gate mechanism service without dewatering the turbine flume. Modern hydraulic performance characteristics are guaranteed and verified ahead of time through advanced proprietary CFD design codes. The custom designed runners (Francis or propeller) as well as stay vanes, wicket gates and draft tube configuration assure optimum performance for each individual site. Mechanical designs meet ASME and company standards based on state-of-the-art stress, deformation, vibration and life analysis technology. Each runner is fabricated from fully CNC machined blade surfaces.

Product Highlights		
Standard Unit Design Capacity	1,000 kW	Design Working Environment <input checked="" type="checkbox"/> Natural waterways <input type="checkbox"/> Water transmission systems <input type="checkbox"/> Effluent streams <input type="checkbox"/> Tidal estuaries <input type="checkbox"/> Near shore ocean <input type="checkbox"/> Off-shore ocean <input type="checkbox"/> Deep ocean <input type="checkbox"/> Other
Other sizes currently available	Yes	
Characteristic Dimension	5 ft	
Rotational Axis Orientation	Horizontal	

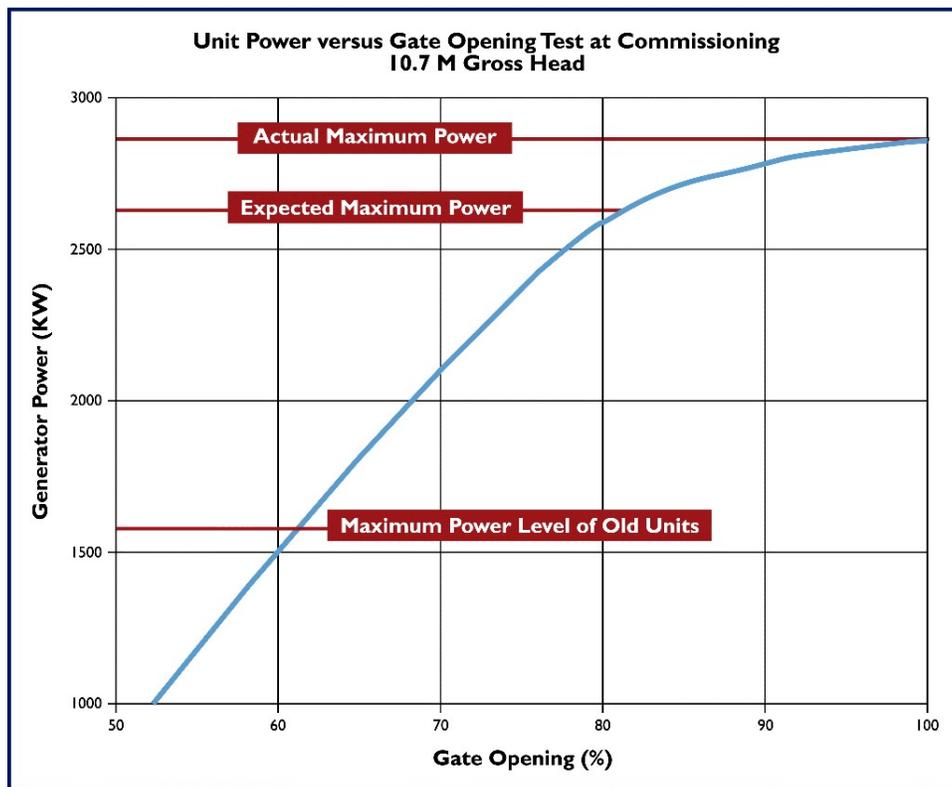
Product Specifications/Details (Standard Unit)

- **Performance Specifications:**

Category	Minimum	Maximum	Units
Flow range	400	2,000	ft ³ /sec
Hydraulic head range	15	60	ft
Power output range	500	5,000	kW
Waterway depth	—	—	ft
Waterway width	—	—	ft

- **Efficiency:** Turbine: 90% Total System: 87%

- **Operating Curve/Envelope:**



Design Capacity Tested:	2,800 kW
Test Date:	2002
Test Location:	Bishop's Falls Hydro Project

Product Specifications/Details (Standard Unit) continued

- **Deployment Locations:**
 - Gaston Shoals, SC: Duke Power
 - Cross Power, NH: James River Paper
 - Glen Falls, NY: Finch, Pruyn
 - Bishops Falls, Newfoundland: Exploits River Co.
- **Operating History:**
 - 10 units in commercial operation
 - Cross: (1) 450 kW propeller type unit @ 19 ft head operating since 1990
 - Gaston Shoals: (2) 2,100 kW Francis type units @ 47 ft head operating since 1992
 - Glens Falls: (1) Francis type 3,000 kW type unit @ 46 ft head operating since 1995
 - Bishops Falls: (6) Francis type 2,800 kW type unit @ 35 ft head operating since 2002/2003
- **System Dimensions (feet):** 20 (L) × 8 (W) × 10 (D)

Company Contact Information

Company Name	American Hydro Corporation
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Company Profile

Years in Business	15-20 years
Number of Employees	51 or more employees
Annual Equipment Sales	greater than \$1,000,000

Affiliations/Alliances/Credentials/References/Publications

- References available upon request from owners and operators familiar with one or more of the more than 375 hydroturbine units built or upgraded by American Hydro.