



High Performance Motors, Compact Design

Application Specific Permanent Magnet AC Motors (PMAC)

Powertec Performance

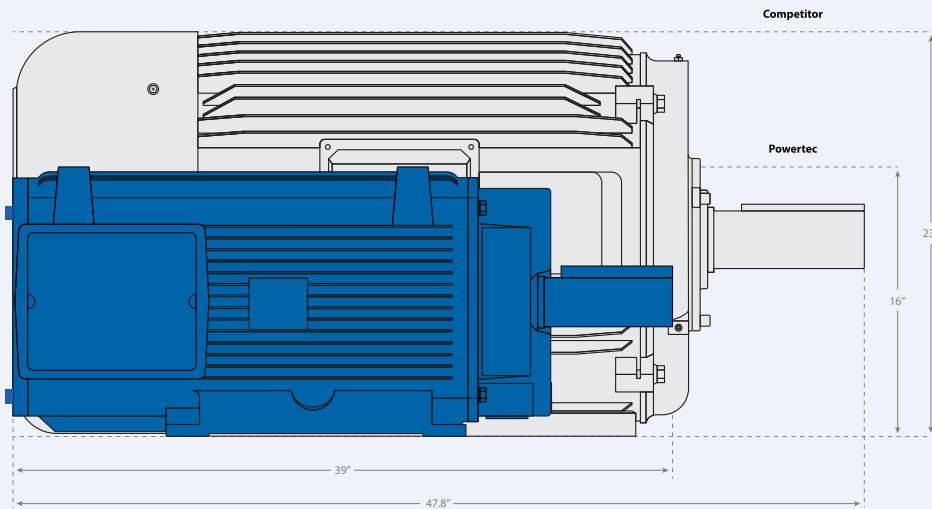
Benefits Compared to Induction Motors

- Consistent Torque Across RPM Range
- Reduced Size
- Significantly Reduced Weight
- Optimized Performance
- Reliability in Challenging Environments

	Induction Motor 150 HP	Powertec Replacement Motor
Weight (lbs)	2260	950
Power Density	9.1 W/in ³	20.7 W/in ³
Locked Rotor Torque (ft/lb)	470	800
Frame (NEMA)	447T	328T
Frame Enclosure	TEFC	TEFC

SMALLER, LIGHTER, MORE TORQUE

Size Comparison of PMAC Motor vs. Standard Induction Motor



BENEFITS

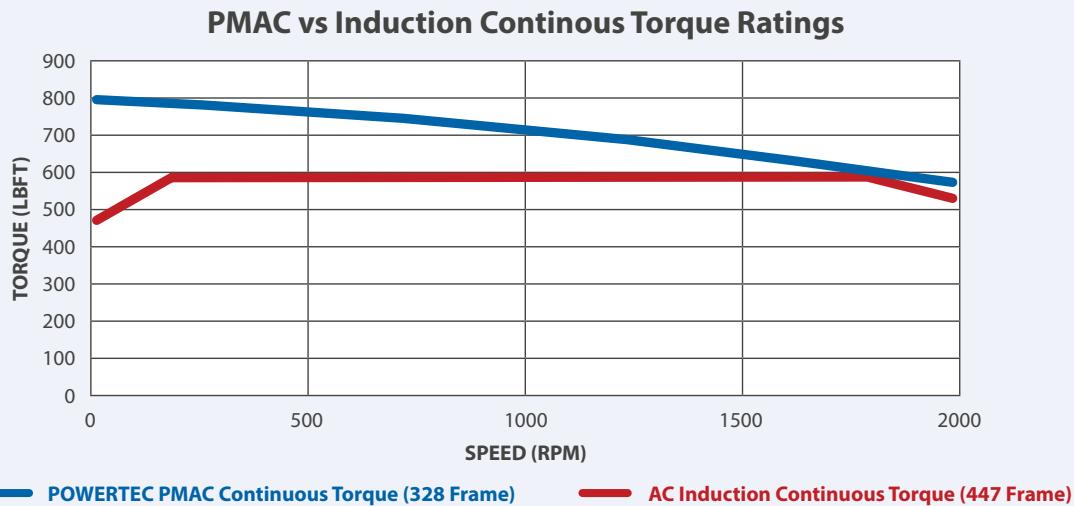
- ↑ **220% Higher Power Density**
- ↖ **190% Smaller Frame Size**
- ↓ **58% Less Weight**
- ↑ **Up to 9% Higher Efficiency**
- ↖ **Wider RPM Range**
- τ **Torque From Zero Speed**

Scale Drawing for comparison only - actual design may vary depending on customer requirements.



Common Marine Applications

- Anchor Windlass
- Winches
- Cargo Elevator
- Mooring System



- ✓ Powertec Motors offer a significant **weight reduction of 1300+lbs (over half)**.
- ✓ PMAC design can possibly **eliminate the gearbox** with increased range flexibility.
- ✓ Physical dimensions are **reduced by 190% in volume**.
- ✓ Efficiency is dramatically **improved by 3-9%** across the speed range.
- ✓ PMAC motors consistently deliver **higher torque density** and **better low-speed performance**.