

UL 103XA Serial

Precision Hybrid Bearing for p-VAD



p-VAD Technology Overview

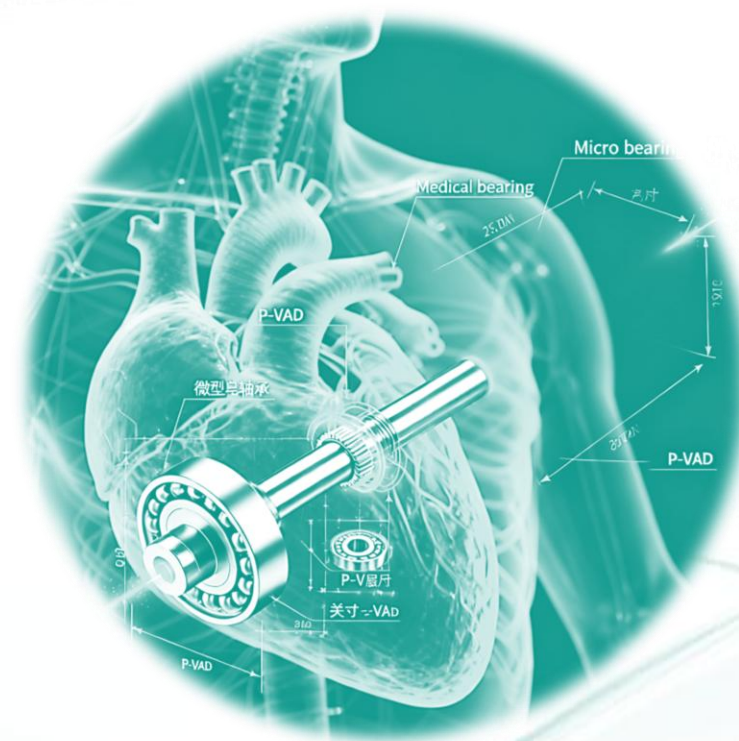
Percutaneous Ventricular Assist Devices (p-VAD)

What is p-VAD?

- Minimally invasive mechanical circulatory support device
- Provides temporary cardiac assistance through small incisions
- Supports patients with cardiogenic shock or during high-risk PCI procedures

The Challenge in p-VAD Design for p-VAD Bearings:

- Blood Contact Compatibility: Must minimize hemolysis and thrombosis
- High-Speed Operation: Up to 40,000 RPM in blood environment
- Miniaturization: Ultra-compact design for minimally invasive delivery
- Reliability: Life-critical applications demand zero failure tolerance
- Biocompatibility: Materials must resist thrombus formation



UL 103XA-D-480

Precision Hybrid Bearing

Innovation for Life-Saving p-VAD

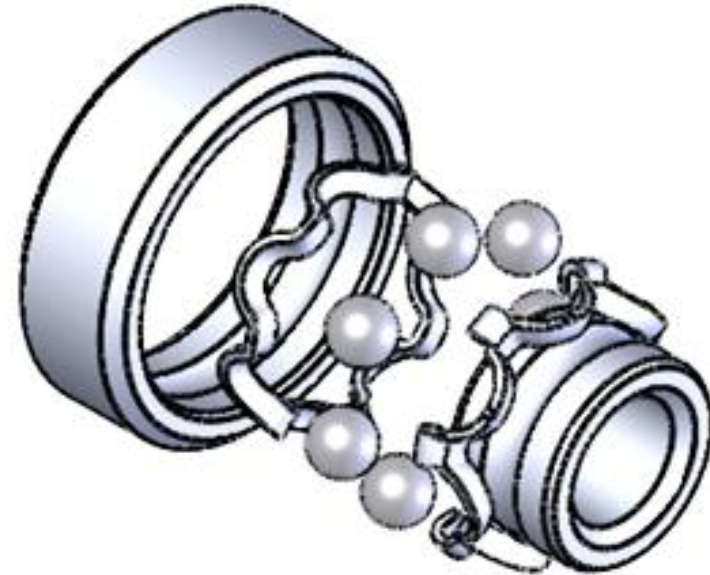


The UL 103XA-D-480 Precision Hybrid Bearing is engineered to revolutionize percutaneous ventricular assist devices (p-VAD), offering ultra-precision and reliability for next-generation cardiac support. This innovative solution enables minimally invasive procedures, enhancing patient outcomes and clinical applications.

UL 103XA-D-480 Performance Data

Predyne

Parameter	Value
Dynamic Load Rating (C)	38 N
Static Load Rating (C ₀)	6 N
Precision Grade	P5P (Ultra-Precision)
Radial Play	6-15 µm
Materials	Rings: XA-D-4108, Balls: Si ₃ N ₄ Ceramic
Weight	0.032 g
Maximum Speed	Up to 40,000 RPM
Outer Ring / Inter Ring	3mm / 1mm



Key Features & p-VAD Benefits

Predyne



Feature	Specification	p-VAD Benefit
Hybrid Design	XA-D-4108 + Si ₃ N ₄	Reduced hemolysis, enhanced biocompatibility
Ultra-High Precision	P5P Grade	Smooth operation, minimal vibration
Optimized Radial Play	6-15 µm	Precise rotor alignment, improved efficiency
Two-Piece Ribbon Cage	Type 480	Superior lubrication management
Minimal Weight	0.032 g	Enables compact p-VAD design
Dry Lubrication Ready	DRY Configuration	Compatible with blood-safe lubricants

Clinical Value & Patient Benefits

Improving Patient Outcomes with Advanced Bearing Technology

For Patients:

- Reduced Risk: Lower hemolysis and thrombosis complications
- Faster Recovery: Minimally invasive design enables quicker healing
- Enhanced Safety: Reliable cardiac support during critical procedures

For Clinicians:

- Confidence: Proven reliability in life-critical applications
- Precision: Stable pump performance during interventions
- Flexibility: Compatible with various p-VAD designs

Subminiature Bearings: Core of p-VAD Rotor

Primary Applications:

- Axial p-VAD pumps
- Centrifugal p-VAD systems
- Short-to-medium term cardiac support
- Bridge-to-recovery procedures
- Pediatric and adult p-VAD devices



Ready to Integrate UL 103XA-D-480?

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