Optimized performance for reliability, versatility and patient comfort

Precision Motors for Infusion Systems
Motor designs validated by decades of success in the field.

• For over 40 years, Portescap has provided breakthrough motion solutions that have fueled Infusion Systems innovations.

• From the first ambulatory insulin pumps to today’s smart pumps, Portescap has helped designers reduce pump size, improve battery life and lower cost of care.
  - Pump size – motors as small as 8mm
  - Battery life – efficiency up to 90%
  - Lower cost of care – improved price-to-performance designs

• Portescap’s reliable, high-quality motors have been proven through countless life-improving therapies worldwide.
We help pump designers address patient needs.

**PATIENT REQUIREMENTS**
- **MOBILITY** – small and lightweight pumps
- **CONFIDENCE** – trustworthy device that never fails to perform
- **FREEDOM** – independence from outlet power
- **AFFORDABILITY** – insurance coverage or low out-of-pocket fees
- **COMFORT** – reduced noise disturbances

**PUMP DESIGN CHALLENGES**
- **SIZE** – maintain performance in a smaller package
- **RELIABILITY & DURABILITY** – ensure consistent/dependable deliveries and continued performance in extreme use
- **BATTERY LIFE** – increase time between charges
- **COST** – reduce cost of care
- **QUIET** – avoid disturbance of the patient

**PORTESCAP MINIATURE MOTORS PROVIDE**
- **POWER DENSITY** – superior capability in a smaller footprint
- **DEPENDABILITY** – high-quality components and manufacturing processes
- **EFFICIENCY** – lower current consumption for the same output
- **COST EFFECTIVE** – optimized price-to-performance ratio
- **LOW NOISE** – smooth running motors and reduced noise gearheads
Collaborative innovation. Dedicated resources.

Committed resources from day one to help you achieve an optimal design with reduced time to market.

Early engagement with Portescap’s Infusion Systems Motor Design Engineers accelerates your design process and opens doors for unique motion concepts.

Our Design Engineers are available for on-site consultations as early as your ideation stage, when they can deliver the most value for a successful final design.

THE BENEFITS OF EARLY ENGAGEMENT WITH PORTESCAP

TRUE COLLABORATIVE INNOVATION BENEFITS

- Push industry boundaries
- Differentiated & patentable concepts
- Design simplification & cost reduction
- Flexibility to use readily-available components
- Design for manufacturability

- Leverage 40+ years of infusion pump motor experience
- Rapid POC samples
The Fortive Business System

- As part of the Fortive Corporation, Portescap utilizes the Fortive Business System which enforces a culture of excellence, innovation, quality, on-time delivery and cost-effectiveness.
- Continuous improvement is our way of life and the engine that constantly drives our performance.
- All global Fortive manufacturing sites follow these principles and aggressive targets to ensure consistent superior results.

R&D

- Design & optimization of motors, gearheads and encoders
- In-house design team of 20+ electrical and mechanical engineers
- FEA Analysis – electromagnetic and gear
- Tool & process-based design (including DFMEA & PFMEA)
- Rapid prototyping

Validation & Verification

- Life analysis software (PLM, Weibull++, Reliasoft)
- Life testing lab (dynamic torque test bench)
- Motor performance measurement – speed, torque, current, BEMF
- Vibration analyzer
- Acoustic test chamber (30dB ambient, FFT)
- Environmental chamber (-40°C to +180°C)

Manufacturing

- On-site machine shop, winding and molding
- High customization and product design integration
- Low to high volume
- Lean manufacturing, visual management and process controls
- ESD safe assembly room
- Automated 100% final inspection on all products
- Traceability, clean room and ISO 13485 available upon request
Superior pump designs begin with a superior motor.

SUCCESSFUL INFUSION SYSTEMS DESIGNS

- Portable
- Discreet
- Reliable
- Cost Effective

Coreless DC Motors
- high efficiency and long brush life

Stepper Motors
- cost-effective and simple control

Brushless DC Motors
- patented Ultra EC™ Coil for longer life

Encoders
- integrated feedback

Gearheads
- low noise designs

CHOOSE THE RIGHT TECHNOLOGY FOR YOUR APPLICATION

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Customization:  
From minor modifications to complete motor designs.

Need something special?
With our iterative design capabilities and flexible manufacturing processes, Portescap can quickly develop the right motor configuration for your specific application requirements. Motor customization not only helps shorten your assembly time, but also helps reduce the total cost of ownership.

- Adaptation of mounting plates
- Custom output shafts to integrate with your pump mechanism
- Custom feedback and connections to interface with your controls
- Custom windings to match your drive voltage
- Custom gear ratios to optimize speed & torque performance
- Clean sheet designs

Rely on Portescap for turn-key custom solutions.
More than just motors.

Originated in Switzerland and driven by a passion for precision, customer-centric innovation, technical excellence and best-quality service since 1931, Portescap has become a recognized leading expert in miniature motors and precision motion control solutions for the infusion systems market.

Motion solutions for better battery-powered devices.

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To speak with a Design Engineer, please call us today. Or use the email address below to request a return call.

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