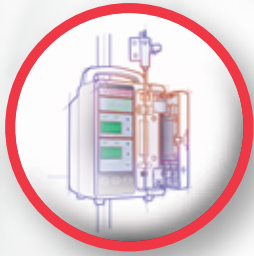


Portescap



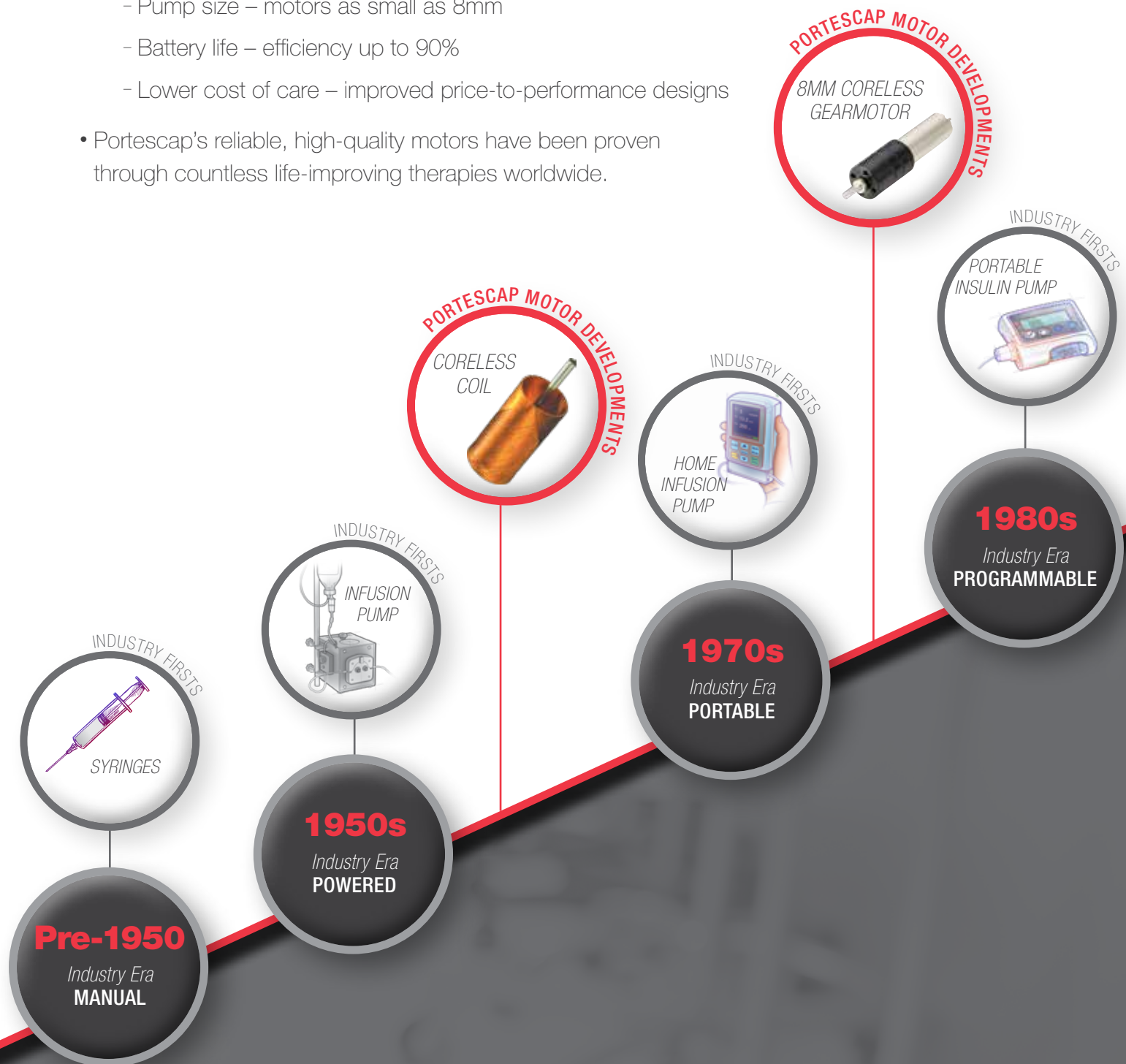
Precision Motors for Infusion Systems

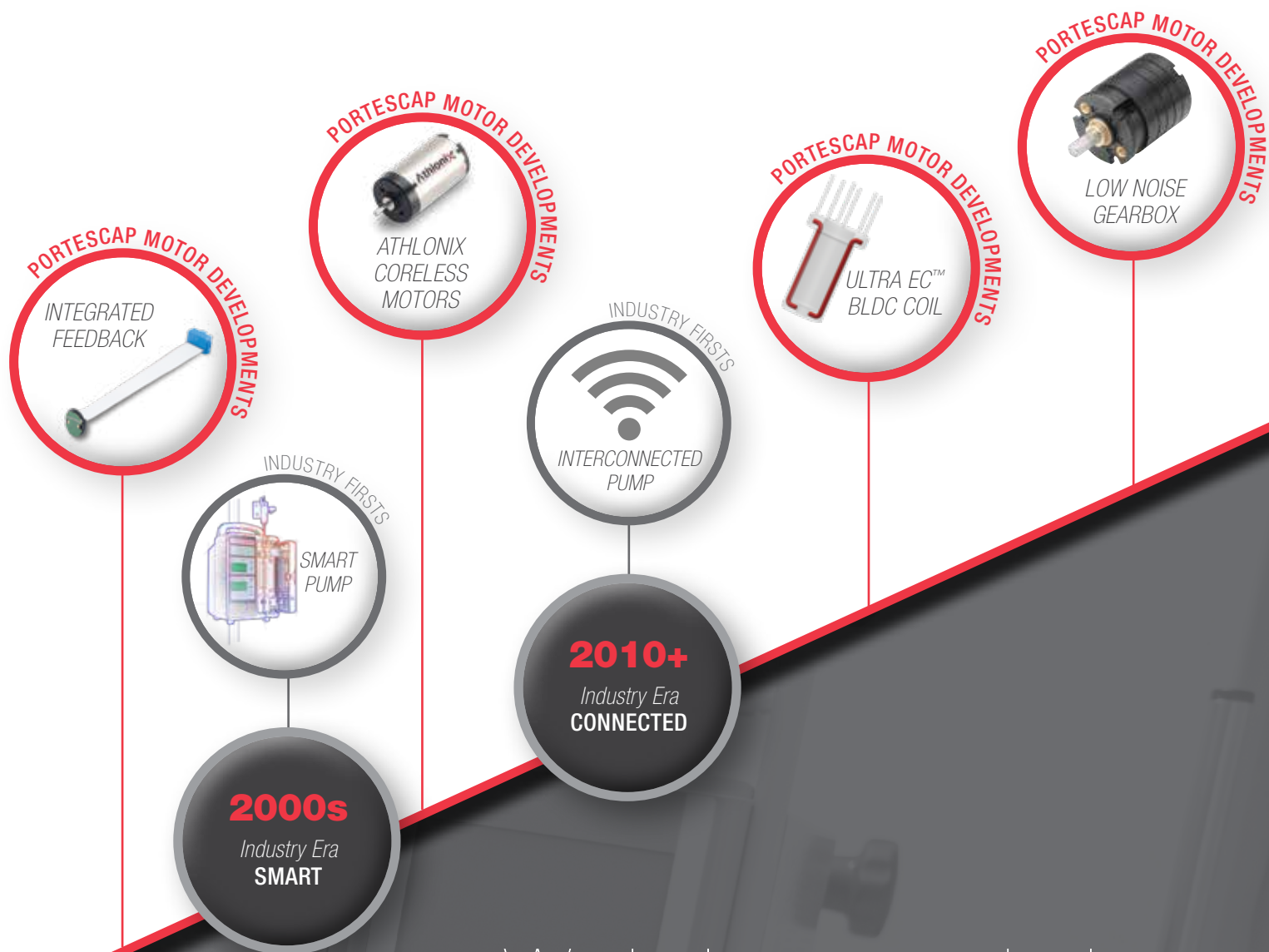
*Optimized performance for reliability,
versatility and patient comfort*



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

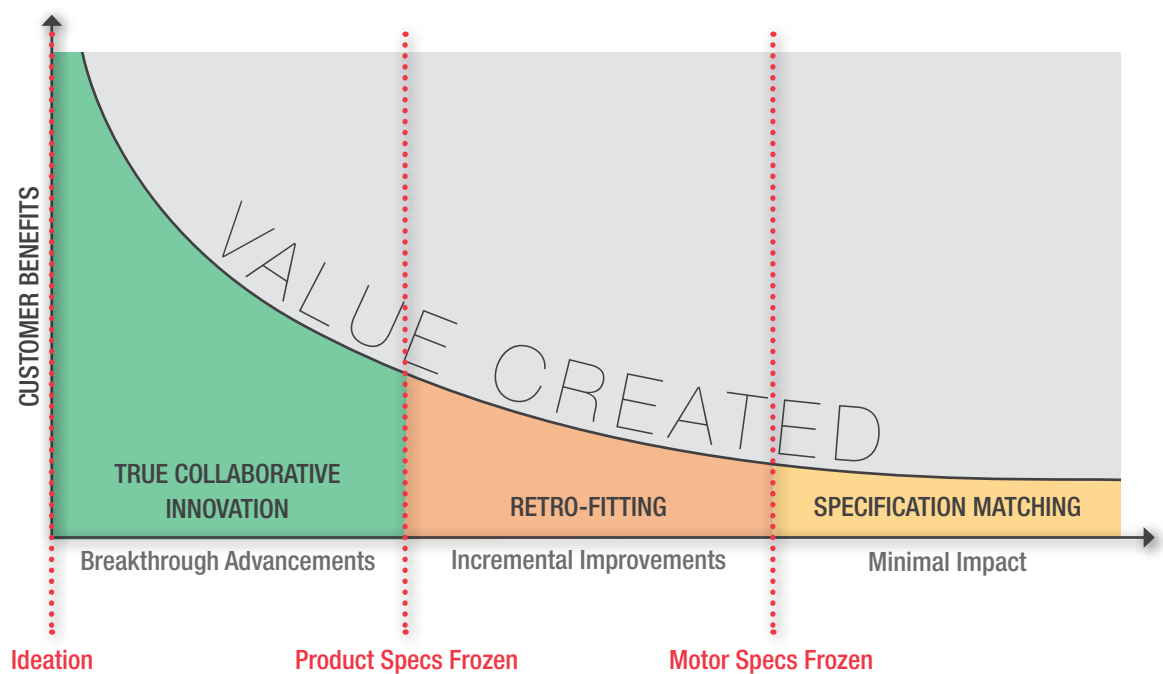
Collaborative innovation. Dedicated resources.

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

Reliable partner. Reliable motors.

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

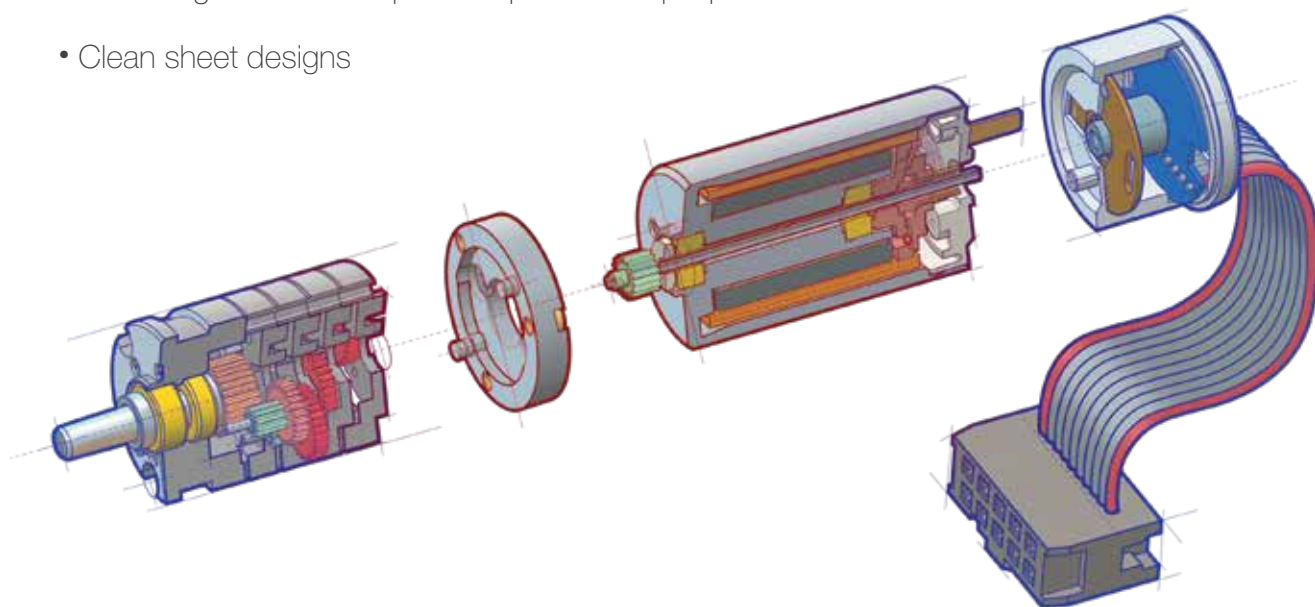
	BRUSHED DC	BLDC SLOTLESS	STEPPER
EFFICIENCY	● ● ● ●	● ●	●
LIFETIME	● ●	● ● ● ●	● ● ● ●
POWER DENSITY	● ● ● ●	● ● ● ●	●
NOISE	● ● ● ●	● ● ● ●	●
RELIABILITY	● ●	● ● ● ●	● ●

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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Portescap

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