SpringActive, Inc. specializes in providing innovative solutions to powered human assistance. Our mission is to improve the quality of life for people with mobility disorders. We will accomplish our mission by utilizing more than 20 years of experience in engineering fields such as electronics, mechanics, computer science and biomechanics to develop a new generation of robotic prosthetic and orthotic devices. Being part of the original group of researchers that helped pioneer the concept of compliant actuation allows us to create optimized devices that are safe, lightweight and responsive.

Learn more at:
SpringActive.com

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MEDICAL SYSTEMS

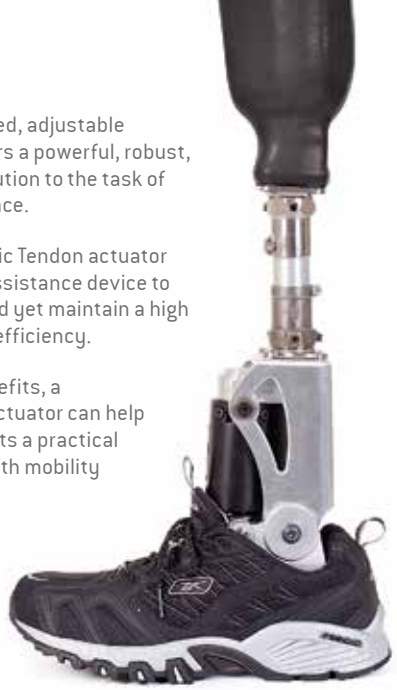
ODYSSEY

+ An ankle replacement system that stores and releases energy in a motor-spring complex during gait. The motor-spring is a compliant actuator that allows Odyssey to provide a fully-powered (able-bodied) gait step.
+ Putting the user-specific spring in parallel with the motor increases system efficiency by taking advantage of the body's natural loading abilities during the gait cycle. This allows for a small, lightweight motor to add the remaining energy to the step.
+ Utilizes a continuous control approach which never needs to switch states or modes; relies on only two sensors (a rate gyro and motor position sensor) to determine the proper output for any condition.
+ Microprocessor-controlled robotic ankle interprets user's behavior 1,000 times each second to ensure it follows their every move.

RUNNING LEG

+ A computer-controlled, powered, running prosthesis for transtibial Military amputees.
+ Allows simple removal of active devices for occasions when a passive device provides sufficient performance.
+ The final version is intended to be a robust walk-run, all terrain, all-weather, quiet device.

JACKSPRING™



+ The JackSpring-based, adjustable Robotic Tendon offers a powerful, robust, energy efficient solution to the task of human gait assistance.
+ An adjustable Robotic Tendon actuator allows a wearable assistance device to perform robustly and yet maintain a high level of operational efficiency.
+ With significant benefits, a JackSpring-based actuator can help make wearable robots a practical solution for those with mobility assistance needs.

SOLDIER SYSTEMS

SPaRK

+ Provides the dismounted soldier a power generation capability that can augment and extend traditional power sources, such as batteries.
+ Serves as an emergency backup power supply when battery power is depleted.
+ Has shown negligible metabolic cost associated with harvesting ankle energy at slow walking speeds.
+ Achieves a continuous 3–6 Watts of power output per leg.

ROLLE

(RObotic Lightweight Load Carrying Exoskeleton)

+ Assists in offloading some of the soldier-carried load.
+ Features two externally mounted robotic legs that couple a modified vest and backpack system to mounts on a soldier's specialized boot.
+ The legs utilize SpringActive's JackSpring compliant actuator technology to support the load down to the ground through the grounded leg (when the leg is not in the swing phase).

Right: ROLLE supports load during soldier stance and gait.

Below: ROLLE can accommodate a wide range of positions.