

# Precision Spring Products for the Medical Designer

**JOHN  
EVANS'  
SONS** Est. 1850

SPRINGS MADE BETTER™

When evaluating your medical equipment design, John Evans' Sons offers several counterbalance options to assist and/or enhance articulated instruments and assemblies.

Whether your design requires a counterbalance utilizing...

- Constant force springs
- Constant force spring motors
- Spiral torsion springs
- Spring reels

...the capabilities have significant benefits compared with traditional helical springs and gas springs.

**Constant Force Springs** provide a smooth range of motion and a constant load in either extending or retracting direction. This spring design has no inertia to overcome when considering the initial position starting forces. Constant force springs are compact and mount easily to existing hardware. Applications include counterbalancing of computer monitors in fixed and mobile applications, dental x-ray equipment articulated arms, as well as medical equipment drawer mechanisms.

#### **Constant Force Springs**

- Constant load
- Smooth range of motion
- Minimal starting force



Constant force springs, constant force spring motors and spiral torsion springs provide rotational energy to move or turn components in aerospace devices. Springs can eliminate costly and complicated motors decreasing your device size and cost.



**Spiral Torsion Springs** allow for rotation in 2 directions and a "return to center" capability. Used in pairs at right angle to each other, a wide range of motion can be achieved in two axis configuration, while still preserving the "return to center" feature. An example application of this is a dental x-ray head unit.

#### **Spiral Torsion Springs**

- Develops high torque
- Rotation in two directions
- Compact, easily mounts in many designs



Spiral torsion springs are normally used in applications requiring less than 360 degrees of rotation. They are generally used to obtain a large amount of torque through a small amount of rotation.

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**America's Spring Company**

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# Motion Control and Counterbalancing through Precision Spring Products



## Spring Powered Reels

- Wide Range of Forces, Cable Lengths, and Travel
- Mounts Quickly and Easily
- Metal and Plastic Available



## Spiral Torsion Springs

- Develops High Torque
- Rotation in Two Directions
- Compact, Easily Mounts in Many Designs



## Constant Force Springs

- Constant Load
- Smooth Range of Motion
- Minimal Starting Force



We invite you to discuss your motion control and counterbalance applications with us.

ISO 9001:2008 & ISO 13485:2003 Certified



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Spring Powered Reels (arbor mount or base mount) are available with a large range of forces, cable lengths, and travel. Spring powered reels mount easily, and with a pre-installed cables, attach quickly.

### Spring Powered Reels

- Wide range of forces, cable lengths, and travel
- Mounts quickly and easily
- Metal and plastic available



Spring sub-assemblies may call for the use of components made of a variety of materials (molded plastic, machined metal, rubber). We frequently are able not only to produce the specialty spring, but then to assemble the spring and various customer designated or customer supplied additional parts into a completed sub-assembly.

Often, it is cost-effective to consider sub-assembly at the point of spring manufacture, and in this approach, John Evans' excels.



John Evans' has a fully staffed Engineering department that is eager to discuss the design requirements and equipment counterbalancing challenges in your design and prototype phase.

In fact, many choices of counter-balances, springs and reels are stock items and can ship quickly to aid in your product evaluation.



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