

**Plié<sup>®</sup> 2.0**  
MPC KNEE



**Natural** by Design

 **FREEDOM**  
INNOVATIONS

# Reliability by Design

Before Freedom Innovations began development of the next generation Plié 2.0 MPC Knee, it was only natural to turn to prosthetists and patients for their insights. In response, the Plié 2.0 is designed to incorporate an array of innovative new technologies and design enhancements that further increase durability and reliability in order to meet or exceed the real world needs of a wide range of amputees.



## Clinical Application

After the safety and performance criteria for the Plié 2.0 was defined, the Clinical Services team validated every step of its development with prosthetists and patients to ensure performance and ease-of-use objectives were met.



## Software and Electronics

The Plié 2.0's microprocessor control of swing and stance required the development of proprietary electrical components and software that would sense and analyze information, and then react faster than any MPC knee has ever responded before.



## Advanced Hydraulics

Developing a MPC knee with an unprecedented level of response required identifying new ways to make hydraulic systems work smarter and faster.



## Ergonomic Design

To maximize the spectrum of users appropriate for the product, the Plié 2.0 was designed to be low profile, lightweight and highly resistant to damage.



# Responsive by Design

## The World's Most Responsive MPC Knee

To provide individuals with a more natural experience of mobility, Freedom Innovations examined biological norms to establish performance criteria for the new Plié 2.0 with microprocessor-controlled swing and stance. By integrating high-performance processing capabilities and a cutting-edge hydraulic system, the Plié 2.0 is the most responsive MPC knee ever developed.



### Rapid Reaction to Gait Changes

A finely tuned control system enables the Plié 2.0 to respond to ambulatory stimuli within 10 milliseconds. This is the fastest control cycle time of any MPC knee. Consequently, users can stay in stance phase longer, take smaller steps and change walking speeds more fluidly.



### Advanced Stumble Recovery Capabilities

A proprietary position sensor and patent-pending load cell built into the frame of the Plié 2.0 provide input to advanced algorithms utilized by the microprocessor to control stance and swing, and stumble recovery parameters. These parameters are customized for each user's unique gait patterns, providing confidence that stance resistance will be there over a broad spectrum of activities.



### Optimized Swing Flexion Resistance

The hydraulic cylinder changes resistance in response to a highly reactive, solenoid-activated spool valve that opens and closes in 10 milliseconds. Resistance is controlled by pressure and position rather than speed. As a result, the effort to initiate swing flexion is consistent across varied cadences which mimics biological norms, feels natural for the user, and requires less energy to sustain over the course of a day.



### Low-Profile and Ultra-Lightweight Design

The distance between the lever arm and joint center is minimized and the hydraulic cylinder is inverted, bringing its center of gravity closer to the knee. This results in not only the lowest profile MPC knee available with 9.25" of clearance, but the lightest feeling MPC knee as well at only 2.7 lbs.



### Durable and Reliable

Featuring a high-performance aluminum frame, the Plié 2.0 knee exceeds ISO standards for structural integrity. In addition, its electronic components are sealed for water resistance so users can engage in a wider range of activities with greater confidence and fewer concerns.



## Profile of the Ideal User

Appropriate for K3 and K4 level amputees, the Plié 2.0 knee provides the perfect balance of performance and safety for users who:

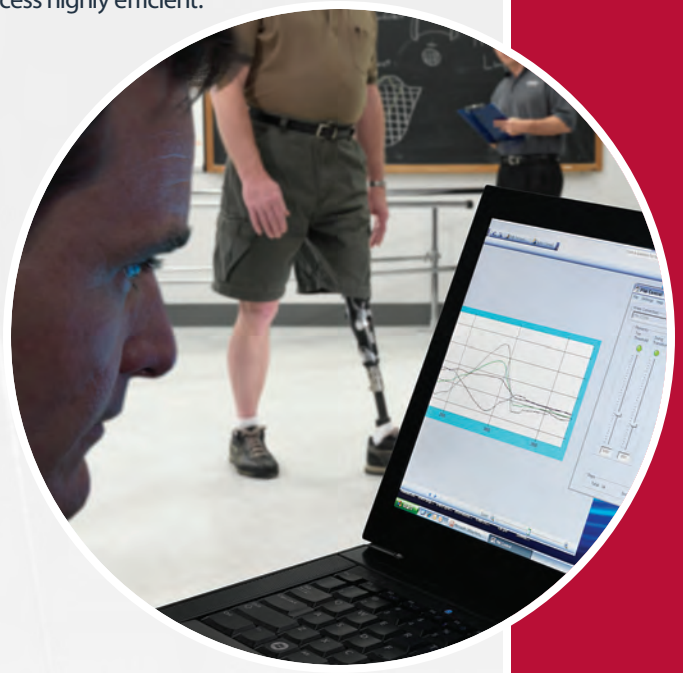
- Have unilateral or bilateral amputations at the knee disarticulation or transfemoral level (higher levels require the supervision of Clinical Services)
- Weigh less than 275 pounds (high impact users under 220 pounds)
- Ambulate with variable cadence on uneven terrain
- Have adequate hip strength in flexion and extension
- Require frequent and quick changes in speed or direction
- Occasionally come into contact with wet environments



## Plié 2.0 Setup Wizard

An intuitive and easy-to-use Plié 2.0 Setup Wizard assesses each user's unique gait dynamics to ensure optimum performance. Typically requiring less than 20 minutes for a complete setup, the Wizard guides the process and automates the settings, making the fitting process highly efficient.

- Integrated Bluetooth technology eliminates the need for cables
- Three easily accessed manual adjustments complete the Plié setup process
- Data from 12 gait parameters is analyzed



## Unique by Design

### Water Resistant

With its electronic components securely sealed against moisture, Plié 2.0 is the only MPC knee guaranteed to be water resistant and protected from occasional contact with water.

### Interchangeable Batteries

Two rechargeable batteries that are simple to swap out, plus a car charger, are included for convenience.

### Integrated Kneeling Pad

A built-in pad provides safe and comfortable support for users when kneeling on uneven surfaces while also protecting the battery compartment.

### Replaceable Cover

An organically shaped cover safeguards the high wear surfaces on the knee and is easy to replace.

### Protective Finish

Visible damage to the aluminum frame is minimized by a highly durable, clear-coat finish.

### Open System Compatibility

With its lower build height, the Plié 2.0 MPC Knee can accept virtually any type of prosthetic foot.



# Focused Solutions

Freedom Innovations is solely focused on developing world-class lower limb solutions in close collaboration with amputees and prosthetists. These solutions encompass technological innovations, service, training and educational resources, together with consultative support, to help ensure user satisfaction.



## Plié® 2.0 MPC Knee Technical Specifications

**Amputee Selection Criteria:** Community and workplace ambulators with the ability or potential for varied cadence and ramp/stair descent; K3/4 amputees

**User Weight Rating:** 275 lbs (125 kg) moderate activity; 220 lbs (100 kg) high activity

**Clearance:** Male pyramid adapter 9.25" (235 mm); Threaded adapter reduces proximal build height above the knee by 0.50" (12.5 mm) compared to the pyramid adapter

**Product Weight:** 2.7 lbs (1,235 g)

**Battery Life:** Greater than 24 hours depending on individual activity and storage practices

**Proximal Adapter Options:** Male pyramid or threaded top

**Knee Flexion Available:** Pyramid adapter 125°; Threaded top 117°

## Warranty and Service

The Plié 2.0 MPC Knee is covered by a 36-month warranty which remains in effect as long as the knee is submitted for service at 12- and 24-month intervals. Service within the warranty period is provided at no charge and includes the use of a loaner unit.

## Carbon Fiber Feet

As today's leader in carbon fiber foot technology, Freedom Innovations manufactures an extensive line of world-class lightweight, energy storage and return prosthetic foot devices that have exceptional flexibility and durability. Suggested foot products for the Plié 2.0 are the Renegade, Highlander, Runway and Silhouette VS.



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