



## Walkex 3035 Dual Channel/1035 Single Channel FES

### Wired/Wireless rechargeable Heel and EMG sensor

The Walnut Medical Walkex is an advanced neuroprostheses designed to help patients with neurological conditions accelerate their rehabilitation process and walk with improved balance and gait.

Clinical evidence suggests that the Walnut Medical Walkex may significantly improve gait speed, symmetry and stride, and reduce falls. The Walkex accelerates recovery time to knee locking and reduces the overall rehabilitation time period of a hemiparetic patient.

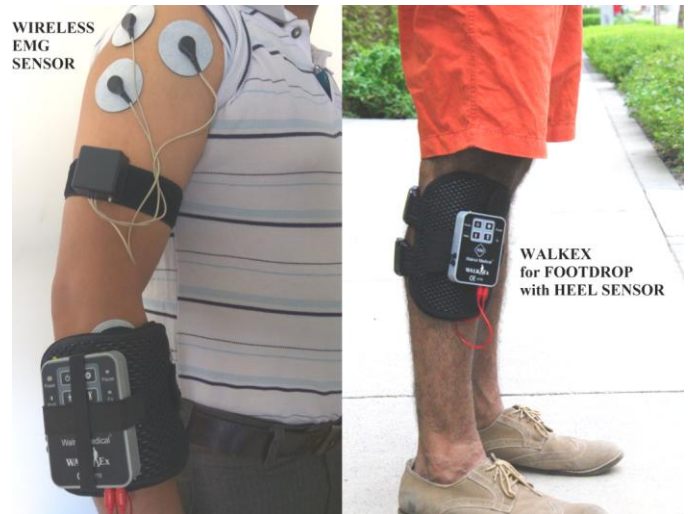
Delivering low-level electronic stimulation to the nerve to enable foot dorsiflexion and accelerate motor recovery in addition to stimulation provided for quadriceps and hamstring, the system is small in size and easy to use.

Unlike a rigid, uncomfortable ankle-foot orthosis (AFO), patients can wear the Walnut Medical Walkex under most clothing and with most shoes.

The Walnut Medical Walkex may help your patients regain natural function for foot drop associated with:

- Traumatic brain injury
- Stroke
- Spinal cord injury
- Multiple sclerosis
- Cerebral Palsy

*"Extreme weakness, muscular atrophy and spasticity are the biggest challenges hemiparetic patients experience in the recovery process, Walkex shall prove to be very beneficial for them"* Dr Shamsheer Dwivedi, Director Neurology Fortis, Gurgaon



### Features of Walkex:

- Reduces atrophy:** Neuro-muscular electrical stimulation for Thigh, lower leg muscles and arms.
- Prevents Footdrop:** The Walkex proprietary electronic control system provides precise Functional Electrical Stimulation to control the dorsiflexion.
- Neuroplasticity:** The Walkex exercise mode, with the capability to be programmed precisely for individual patient needs, the brain can relearn walking patterns and other movements which otherwise takes a very long time.
- Reduces the changes of a fall:** 70% of neuro disorder patients with foot drop experience a fall in the first 6 months which leads to greater disability. The Walkex reduces chances of a fall by over 50%.
- Accelerated Recovery:** The Walkex accelerates the recovery for acute stroke patients and enables knee locking in a much reduced time frame which enables the patient to live an independent life again.
- Reduces Spasticity:** Unlike AFO's which doesn't allow foot ankle movement leading to spasticity, the Walkex enables repetitive ankle muscle movements which reduces spasticity.

## Specifications:

Walkex Master Size	110mm x 80mm x 25mm
Walkex Controller Size	90mm x 64mm x 17mm
Weight	60 g
Power Source	One 3.7 volt Li ion rechargeable battery
Maximum Current	300 mA at 500 ohm; 150 mA at 1 K ohm
Maximum Voltage	150 V
Number of Modes	<b>Upper Limb:</b> Arm extension simultaneous, wrist open close alternate, overlapping EMG Trigger CH1 CH2 <b>Lower Limb:</b> Mode 1: Channel 1 and 2 activate of heel off Mode 2: Channel 1 and 2 activate of heel strike Mode 3: Channel 1 ON heel off, Channel 2 ON heel strike Mode 4: Channel 1 ON heel strike and Channel 2 ON heel off
Additional Ex Modes	<b>Simultaneous</b> <b>Alternate</b> <b>Overlapping</b>
Number of Channels	2
Duration of Ex. mode	10 mins with auto switch off
Idle time	3 minutes auto shutdown
Pulse Type	Asymmetrical Biphasic, adjustable
Pulse Width	300 -700 microseconds (Adjustable)
Ramp up	100 - 2000 ms
Frequency Range	10 – 120 Pulses Per Second (Adjustable)
Maximum Stimulation Period in FES	20 seconds and adjustable
Stimulation Trigger Source	Coiled Wire Heel Sensor Wireless Heel Sensor (with Rechargeable battery) EMG wireless rechargeable sensor
Controls and Indicators	- ON/OFF; Walk, Ex, Pause - Power LED blinking for low battery
Shipping and Storage Conditions:	Device (Long Term) Temperature: -4° – 140°F (-20° – +60° C)

## FOOT and WRIST DROP

Footdrop is a common symptom in hemiplegia and hemiparesis characterized by a lack of dorsiflexion during the swing phase of gait, resulting in short, shuffling strides. It has been shown that FES can be used to effectively compensate for the drop foot during the swing phase of the gait. The Walkex monitors muscle movement and leg movement in realtime, and delivers a stimulus to the common peroneal nerve, which results in contraction of the muscles responsible for dorsiflexion. There are currently a number of drop foot stimulators that use surface and implanted FES technologies. Drop foot stimulators have been used successfully with various patient populations, such as stroke, spinal cord injury and multiple sclerosis.

The term "orthotic effect" can be used to describe the immediate improvement in function observed when the individual switches on their FES device compared to unassisted walking. This improvement disappears as soon as the person switches off their FES device. In contrast, a "training" or "therapeutic effect" is used to describe a long term improvement or restoration of function following a period of using the device which is still present even when the device is switched off. It has been hypothesized that this temporary improvement in function may be linked to a long term training or therapeutic effect.

### Treatment Protocols:

- 10 minute exercise and walking sessions twice or thrice a day as programmed by the medical professional.
- For Stroke rehabilitation, treatment may be taken for 3 months to a year for best results.

### Accessories

