

FIT5

 BERTEC



Bertec® Fully Instrumented Treadmill v5 (FIT5)

The Bertec Fully Instrumented Treadmill v5 (FIT5) allows gait researchers to reduce laboratory space requirements and remove the limitations inherent in a traditional force plate walkway. The unique design features result in superior dynamic characteristics and a high natural frequency making it the preferred research-grade fully instrumented treadmill. The Bertec treadmill enables walking and running research with speeds up to 11.5 m/s and six-component force data output at 1000 Hz.

Split Belt Treadmill Design

- Two independent belts, individually controllable, measuring 1.75 x 0.5 m (~ 70 x 20 in) each
- Keeps data from each foot separate for accurate data during walking
- Six-component force output from each treadmill half (Fx, Fy, Fz, Mx, My, Mz) at 1000 Hz
- Max load range of: Fx, Fy: 2,500 (550) Fz: 5,000 (1,100) N (lb) per belt
- Each treadmill half is mechanically isolated from the other to minimize crosstalk between belts

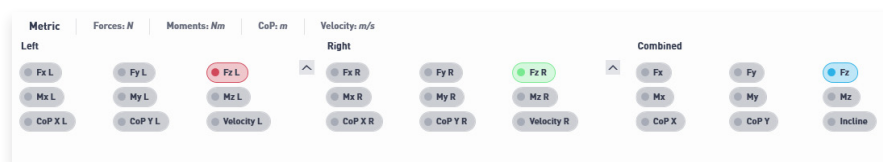




Kinamoto Software UI

Full-Featured Kinamoto Software

- Control your treadmill and capture your data in a single software
- Modern UI with user-friendly design
- Quick controls for fast, easy speed changes in increments of 0.1 m/s
- Live data view with data channel toggles for easy one-click viewing of data stream
- 2D center of pressure display to monitor subject location during trials



Data Channel Toggles

Protocol Builder

- Create custom treadmill protocols to operate your device with unique playlist-style functionality
- Offers repeatability for experiments by saving protocols and highlighting your favorite playlists
- Sync your data capture with your custom protocol for one-click operation during experiments

Protocol Configurations

Linear Conditions

CLEAR

Warmup
Start 00:00 Treadmill Control End 01:01 X

Walk
Start 01:01 Treadmill Control End 06:02 X

+ ADD CONDITION

Linear Condition Configuration

Condition Name Condition Start Delay

Walk 0.00 s

Action

Treadmill Control

| | Velocity | Accel | | Velocity | Accel | Stay For |
|---|----------|-----------|---|----------|-----------|----------|
| L | 1.20 m/s | 1.00 m/s² | R | 1.20 m/s | 1.00 m/s² | 300... s |

CANCEL SAVE

Protocol Builder

Treadmill Controls
Connected

L Belt R Belt Incline Sync Belts

L R

Current Velocity

1.20 0.80
m/s m/s

Velocity m/s

1.20 0.80

- + - +

Accel. m/s²

0.30 0.30

STOP

Treadmill Controls

Industrial Grade Servo Motors

- High precision motion control for biomechanics research applications
- 6.5 Nm/74.2 Nm Continuous/Peak Torque for smooth and consistent acceleration
- High Performance – speeds up to 11.5 m/s (25 mph), acceleration up to 25 m/s²

Improved Drive Belt and Rollers

- Reduces belt slippage under heavy load
- Updated design requires lower maintenance over time



Low Friction Wear Board

- Reduces belt sticking during high intensity applications
- Less heat generation during running so you can run longer trials
- Lower maintenance – wax-impregnated board is self-lubricating

Standalone Electronics Cabinet

- Keeps electrical noise separate from your data and away from sensitive force measuring instruments
- An internal isolation transformer provides electrical safety, and a locking cabinet door keeps the electronics that power the treadmill safe and secure

Remote Control API

- Python integration via Remote Control API for advanced programmatic control, including real-time feedback-based controls

Options

Incline Base: Used to tilt the treadmill up to 15°

One-year standard warranty included. Optional extended warranty available.

Overhead Structure and Harness ensures patient safety and prevents falls and off-track movements.

Users can be comfortable and confident during testing.

Instrumented handrails available – each handrail outputs three components of force (F_x , F_y , F_z)

Connect with an expert

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