

VP100 Rehabilitation

Training and analysis of the power developed while using a wheelchair

New since 2004 : deliver with 2 adapted software :

- Wheelsoft © well adapted for propulsion analysis
- Wheeltraining © well adapted for long training

Applications :

Rehabilitation

Training

- SWEET : Square Wave Exercise Training
- Or increasing charge step by step

Stress test protocols.

Biomechanical analysis of the locomotion.

Ergometer adapted for training and analysis of the power developed while using a wheelchair. A roll system located under the wheelchair is fit to create a braking torque (using an electromagnetic brake). An acquisition device provides the values required for the Biomechanical analysis of the locomotion using a wheelchair. An integrated calibrating system guarantees the accuracy of the torque measurement .



Delivered with Wheesoft2000© and Wheeltraining© software

Acquisition ,display & analysis of :

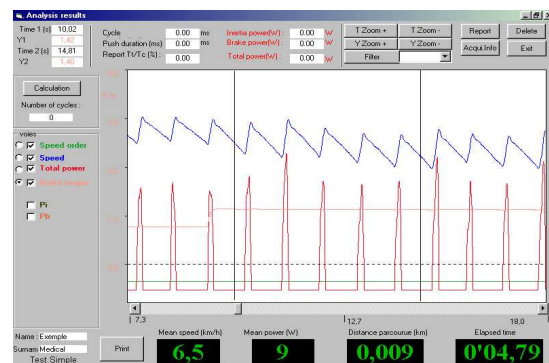
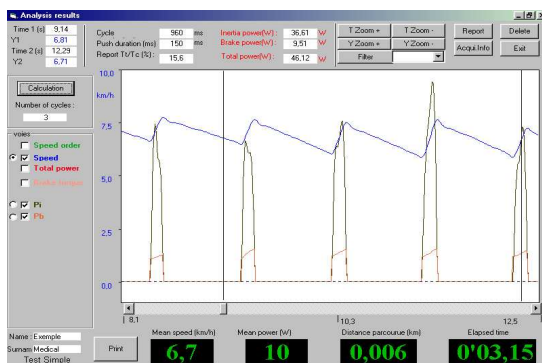
- Instantaneous speed ,
- Instantaneous power developed (including the power developed to accelerate inertia during the pushing phase)
- Brake torque
- Cadence
- Calculation of cycle period , pushing and recovery time.

User and patient files management ,

Print curve function , report

Language : French or English

- Example of curves recorded with real speed and power developed during the pushing phase



Measurement equipment :

As the propulsion on a wheelchair is not constant (pushing phase + recovery phase) the resulting speed is not constant ,the calculation of the mechanical power must include the power developed to accelerate the device inertia at each propulsion cycle.

The power calculation includes :

- Residual torque . (efficiency of the wheelchair including the subject weight , on the rollers measured by deceleration)
- Real measured electromagnetic brake torque if used (measured on a strain gauge sensor)
- Inertia effect .
- Instantaneous speed (by a speed encoder)



The ergometer VP100 Rehabilitation is delivered with :

- Rep.1
Ergometer ready to use
- Rep.2
Access ramp
- Rep.3
Interface box
- Rep.4 & 5
Data acquisition board (PCI 6024E)
- Rep.6
National Instrument drivers
- Rep.7
Adapted acquisition and analysis software
WHEELSOFT2000©
- Rep.8
User guide



Use limits :

The VP100-Rehabilitation is well adapted for the rehabilitation activities for subjects using their own standard wheelchair .

However , in case of wheels with major camber (> 5 degrees) or for sport applications, the VP100 is not well adapted and TECMACHINE suggest use of the VP-Handisport model.

(See VP-handisport documentation)