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OptoJump

Optical acquisition system

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MICRO  GATE

Timing & Sport

EASY TO USE AND PRECISE.

The valuable experience gained over many years in the field of professional timing equipment, and the extensive knowledge in electronic design, including aerospace applications, allowed Microgate to develop and produce Optojump.

Optojump is a "smart" system, extremely easy to use. Its high technology standards meet all requirements for a correct evaluation of athletic performances.

Optojump is an effective working and analysis tool, that helps to achieve better results in all major sports.



THREE ANSWERS: BLACK ON WHITE!

»» WHAT IS OPTOJUMP?

An optical acquisition system, developed to measure with 1/1000th sec. precision all flying and ground-contact times while performing a sequence of jumps. Optojump consists of two bars of instruments (size: 39.4 x 1.2 x 1.6 in.), one containing the reception and control unit, the other embedding the transmission electronics.

Several elements can be connected together in order to change the length of the track as the need occurs.



»» WHICH DATA ARE COLLECTED AND PROCESSED? ««

The developed software permits an easy input of all necessary data for the evaluation of the elastic and reactive strength, including the measurement of the reaction times to an optical and/or acoustical stimulus. In case of longer instrumented tracks (lengths of up to more than 300 ft. can be easily installed), Optojump is the only instrument featuring a precise acquisition of all run-related data, like the step position and length, as well as the speed and acceleration profile.



»» HOW TO INSTALL IT?

Optojump can be easily installed by placing the two bars on the ground, one in front of the other (a green led confirms the correct alignment), and connecting the device to the serial port of any PC (there is no need of any interface card).

The bars can be positioned at a distance of up to 13 ft., and eventually several units can be connected together to increase the length of the measurement base.



RESULTS CLEAR AND SURE.



Extremely easy to use, Optojump "single unit" can be successfully employed in high-performance professional sports, as well as in fitness centers, gyms and rehabilitation centers.

Optojump allows to:

- *monitor fitness of athletes and patients,*
- *optimize training programs,*
- *check the achievement of the best shape,*
- *spot talented athletes among people practicing the same sport,*
- *verify physical condition and progress of patients during rehabilitation.*



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THE "SINGLE UNIT".

When installed as single device, Optojump acquires all flying and ground-contact times while performing a sequence of jumps. By processing this raw data, and without the need of more complicated and "obtrusive" tests, the software program elaborates many parameters necessary for the correct characterization of the athlete. Particularly useful data can be analyzed, like dynamic power, elastic strength and resistance, peak and average power, dissipated energy, reaction time to an optical and/or acoustical stimulus.

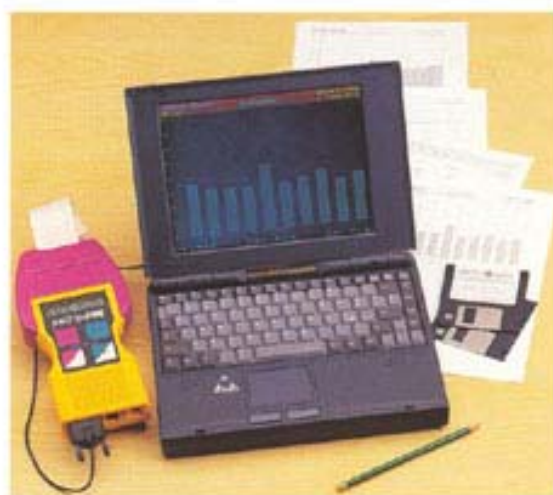
The "field application" of the single unit is extremely easy:

- the built-in rechargeable batteries guarantee more than 4 hours of stand-alone operation,
- Optojump can operate also in connection with the RACETIME by Microgate hand-held Timing System. In this way the acquisition of all data is possible even under extreme conditions and without needing a PC. All tests can be printed and stored by Microgate RACETIME; the data can be transferred subsequently to a PC through the serial port for further elaboration.

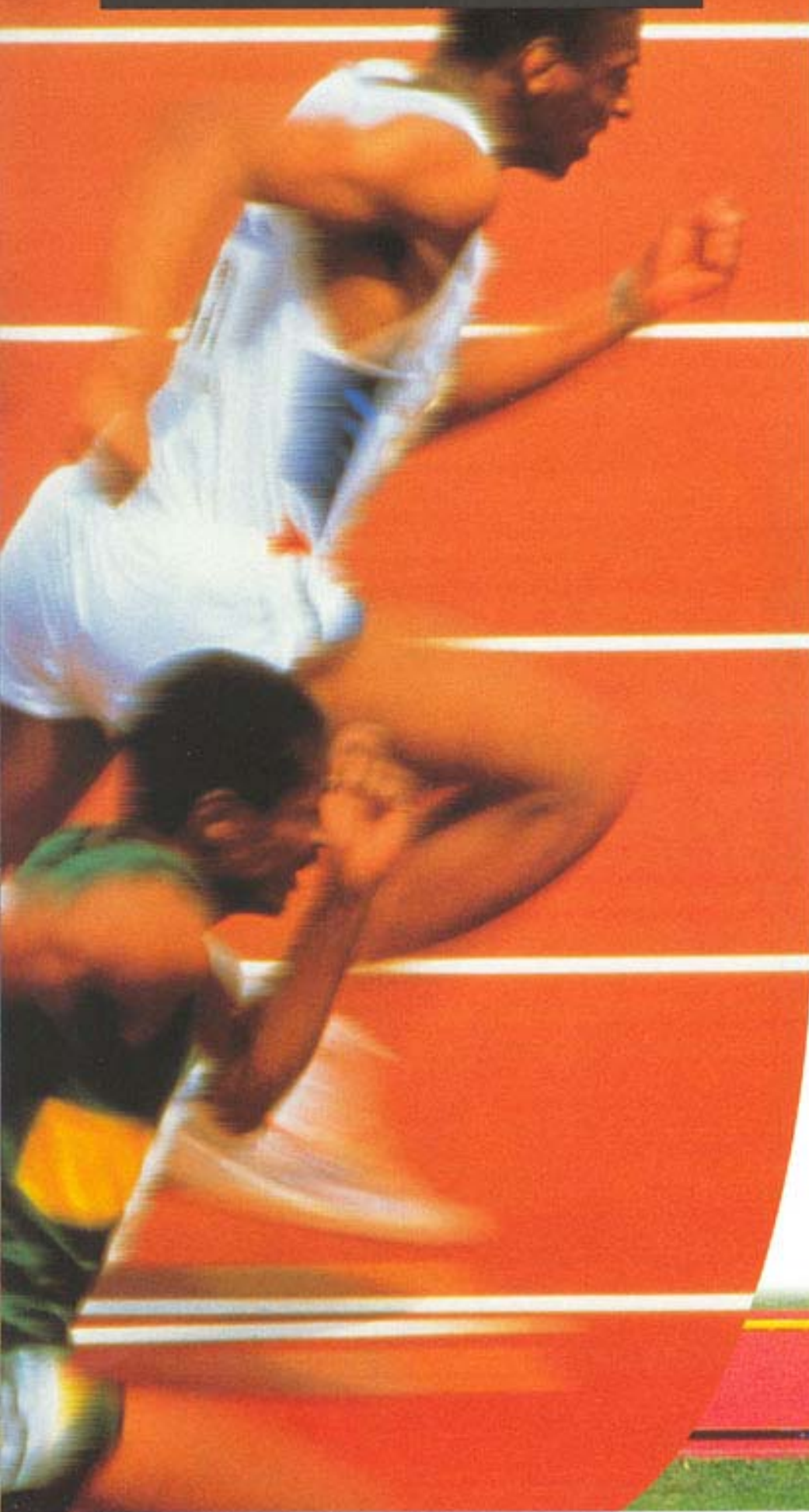


THE SOFTWARE PROGRAM.

Extremely practical and easy to use, the software program (it runs on every Dos/Windows compatible PC) displays graphically the acquired data while performing the tests. The stored data can be elaborated to get statistics about training and tests. All information can be displayed both numerically and graphically (bar-charts or linear plots), allowing an instant evaluation of the results. The management of the athletes' personal database, the possibility of printing data with reference to particular training periods, and other useful features (up to 110 different printouts can be obtained) make this software program a powerful analysis tool for every trainer, without requiring any computer skills.



UNIQUE AND WINNING.



Optojump "linear system" is the only existing device that provides a detailed real-time analysis of athletes performances during the execution of a sprint on long running tracks.

When compared to other acquisition systems - like high speed cameras - that need complex and demanding post-processing, Optojump offers many advantages:

- *prompt evaluation of the acquired data*
- *simple use*
- *easy installation (more than 300 ft. can be quickly installed by one person alone)*
- *zero maintenance costs*
- *one trainer alone can acquire, manage and print all data concerning stretches longer than 300 ft.*



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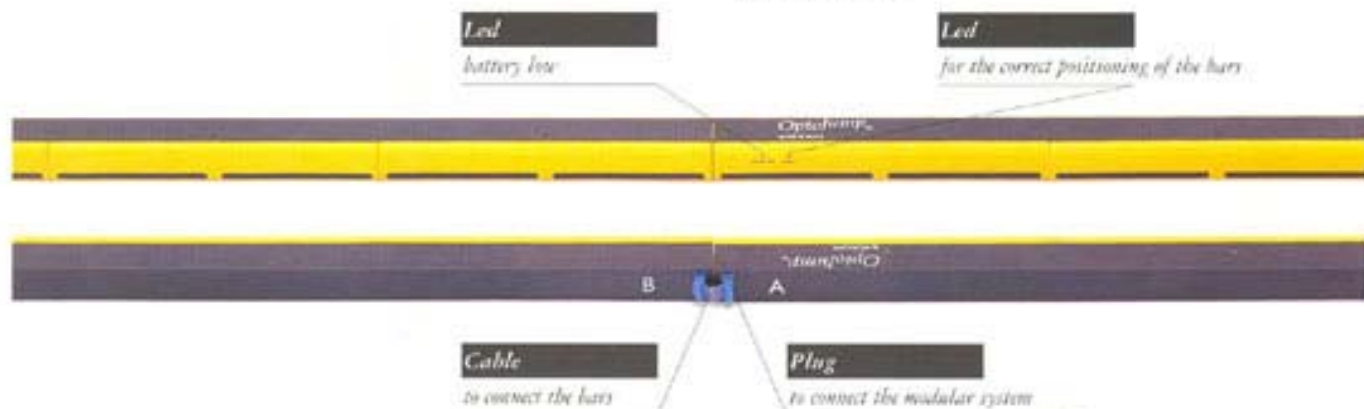
THE MODULAR SYSTEM.

Like the "single" system, also the "modular" system features simplicity and easy installation. To obtain measurement tracks of several feet it is sufficient to connect the instrumented bars by means of the special connectors. The start- and stop signals can be generated by any external trigger, like a starting gun or a photocell.

The "modular" system can measure in real time the following data:

- step length and their position along the track
- flying and ground-contact times of the foot during the run
- local and average speed and acceleration
- overall time.

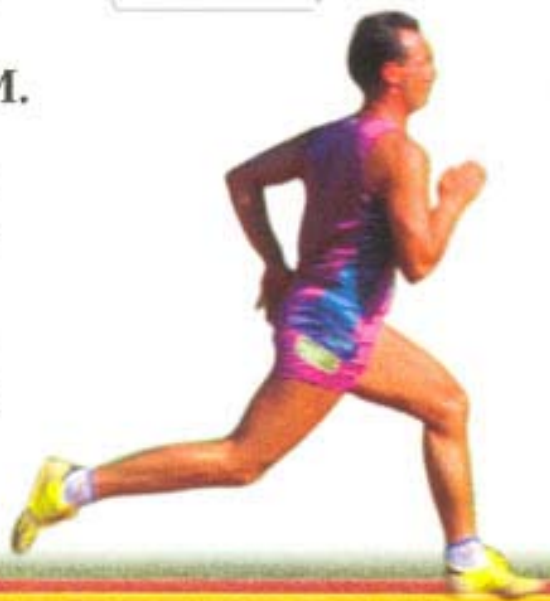
In the rehabilitation field, the modular system allows the bidimensional monitoring of the position of patient's feet while walking.



THE SOFTWARE PROGRAM.

The same software program of OptoJump "single unit" controls also the "modular" system, featuring the same versatility and user-friendly interface.

Flying and ground-contact times are acquired in real-time. Immediately after completing the tests, OptoJump sends all data concerning step position to the personal computer for all subsequent numerical and graphical elaboration.





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