

Kistler MARS

Type 2875A

Measurement, Analysis and Reporting Software

Kistler MARS is innovative, comprehensive and user-friendly software for the complete analysis of force plate measurements. It supports routine diagnostics and research work in biomechanics, performance analysis, motor control behavior, rehabilitation medicine and other related fields.

- Complete analysis of force measurements
- User-friendly and intuitive
- 18 different analysis modules
- Supports Kistler USB data acquisition systems
- Pre-triggering option for easy acquisition

Description

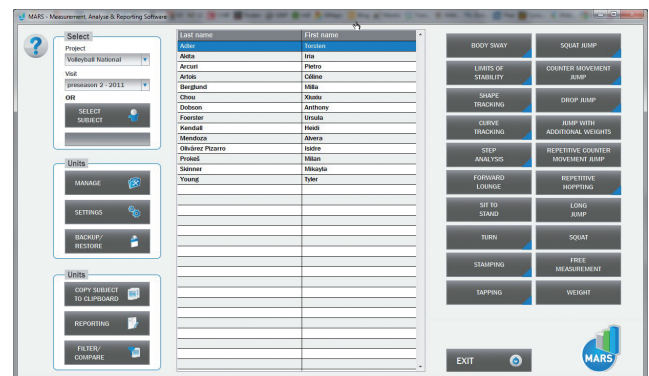
Kistler MARS is a routine diagnostics and research software for Kistler force plates. The "Measurement, Analysis and Reporting Software" (MARS) supports Kistler data acquisition systems Types 5691A... and 5695A... .

It analyzes the acquired force plate signals, calculates a large range of significant parameters, and provides graphical presentations of the measurements.

The software is based on a management unit that provides operational functions (add, edit, delete, assign, search, filter) to structure the data (projects, visits and subjects). The data is stored and managed in a database where it is accessible for comparison and reporting.

In each of the 18 different measurement modules the data is analysed for relevant output parameters. The input parameters and acquisition setup can be edited for each test separately.

The individual software functions are arranged intuitively and easy-to-use. All functions are well supported with extensive help information including how-to examples and with online video trainings on the MARS website.



Application

Kistler MARS can be used for the evaluation of human movement such as static balance (Body Sway), dynamic balance (Tracking Shapes, Limits of Stability, etc.) locomotion and body transfer (Step Analysis, Forward Lunge, etc.), fast alternating movements (Tapping, Stamping, etc.) and strength and power (all vertical jumps, etc.). MARS additionally enables the user to carry out a free acquisition of signals coming out of the force plate, perform analysis and export data in different formats (raw signal, signal graph and parameters values).

Besides the standard parameters, the software calculates many other evidence-based parameters for all single tests to provide most detailed information instantly.

Kistler MARS includes 18 modules to evaluate physical performance in the fields of power, anaerobic endurance, coordination and balance (see table page 2).

Name of the Test Module	Short Description	Calculated Parameters
Squat Jump	Vertical jump test of concentric power for the lower extremities.	16 general parameters, 9 time parameters and 8 force impulse parameters.
Counter Movement Jump	Vertical jump test of eccentric-concentric power for the lower extremities.	16 general parameters, 10 time parameters and 11 force impulse parameters.
Drop Jump	Vertical drop jump test of eccentric-concentric power for lower legs. Testing is performed using progressively higher drop heights.	17 general parameters, 11 time parameters and 8 force impulse parameters.
Jumps with Additional Weights	3 consecutive vertical concentric and eccentric-concentric jumps. The test is performed using progressive loading with weights.	16 general parameters, 9 time parameters and 8 force impulse parameters for Squat Jump. 16 general parameters, 10 time parameters and 8 force impulse parameters for Counter Movement Jump.
Repetitive Counter Movement Jumps	Vertical jump test of endurance in eccentric-concentric conditions for lower extremities.	25 general parameters, 10 time parameters and 11 force impulse parameters.
Repetitive Hopping	Vertical jump test of endurance in eccentric-concentric conditions for lower legs.	26 general parameters, 10 time parameters and 8 force impulse parameters.
Long Jump	Situational horizontal jump test of eccentric-concentric power for lower extremities.	21 general parameters, 8 time parameters and 13 force impulse parameters.
Tapping	Test of maximal frequency, endurance and accuracy of tapping for lower and upper extremities.	24 parameters of speed and 16 parameters of accuracy and dispersion.
Stamping	Test of maximal frequency and endurance of stamping for lower and upper extremities.	11 general parameters.
Forward Lunge	Test for strength, good range of motion, balance and coordination.	4 general parameters.
Squat	Vertical movement test of concentric power for the lower extremities.	12 general parameters, 9 time parameters and 9 force impulse parameters.
Sit-To-Stand	Clinical test where the subject needs to rise from a seated to a standing position.	4 general parameters.
Turn	Clinical test, where the subject has to make two forward steps and then quickly turn for 180°.	2 general parameters.
Step Analysis	Situational test of vertical, anterior-posterior and medio-lateral load of the lower extremity during locomotion.	3 time parameters, 19 vertical component parameters, 18 anterior-posterior component parameters, 17 medio-lateral component parameters and 10 COP and resultant force parameters.
Body Sway	Test of body sway during sustaining static posture (quiet stance or any other).	31 general parameters, 35 interval specific parameters, 12 diffusion plots, 5 density plots, 12 recurrence quantification analyses and 2 sample entropy parameters.
Tracking Shapes	A set of tests which involve precise active tracking of the centre of pressure way defined by a matrix shape that is displayed on a screen as a feed back to the subject.	8 general parameters.
Tracking Curves	A set of tests which involve precise active tracking of the centre of pressure way defined by a matrix curve that is displayed on a screen as a feed back to the subject.	19 general parameters.
Limits of Stability	A test of maximal range of voluntary body leaning in different directions.	31 general parameters, 35 interval specific parameters, 12 diffusion plots, 5 density plots, 12 recurrence quantification analyses and 2 sample entropy parameters.

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Application Examples and Screenshots

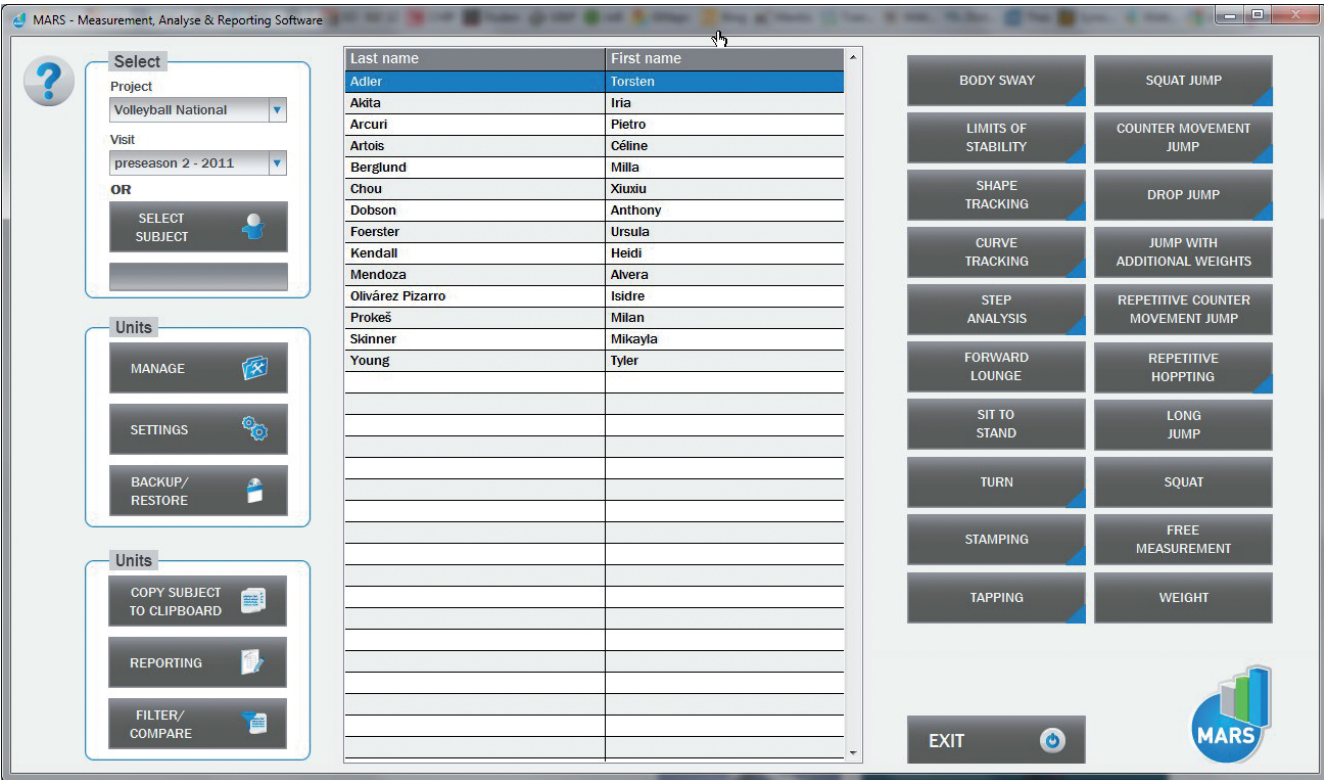


Fig. 1: Main window with management tools on the left side and module selection on the right

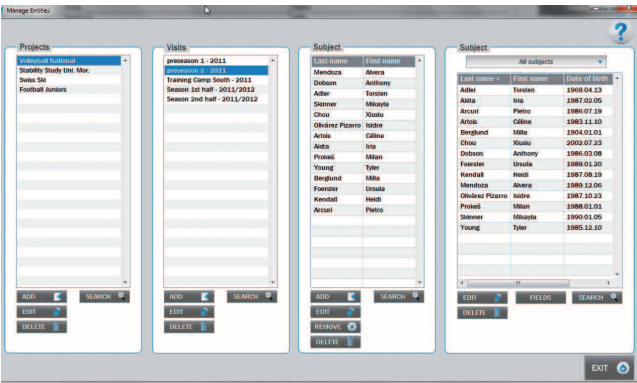


Fig. 2: Management tool to organize projects and subject

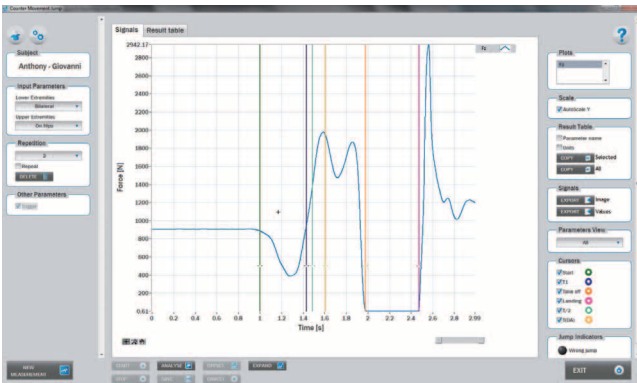


Fig. 3: Example Counter Movement Jump with automatic event detection

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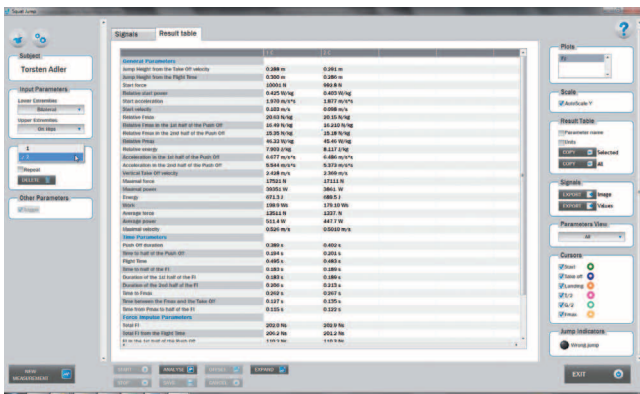


Fig. 4: Example Squat Jump result table

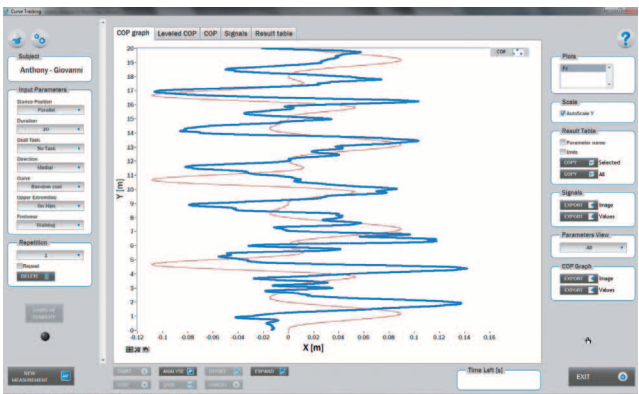


Fig. 5: Example dynamic Curve Tracking

Included Accessories

- License on USB Key

Optional Accessories

- Kistler force plates
- Kistler DAQ systems

Type/Art. No.
9260...
9286...
9281...
9287...
5691A...
5695A...

Ordering Code

- Kistler MARS
Measurement, Analysis and Reporting
Software

Type 2875A

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