# Electronic dynamometers Marte and Jupiter

The electronic Dynamometer is an item of equipment that uses the most recent technology in order to carry out tests in a reliable manner that is comfortable for the operator.

The fact that this item of equipment is sophisticated does not mean that is complicated to use. In fact the opposite is true, ease of all aspects of use was one of the targets that we set for ourselves when developing this equipment, in order to facilitate its use by a wide range of operators. The ability to be operated using several languages, plus the fact that remote access to the test database can be gained through the internet, enables real time operations hitherto unthinkable for this type of equipment.

The main purpose of the electronic dynamometer is to measure loads and displacements and related these in a suitable way, given that a certain displacement will logically correspond to a specific force and vice-versa.
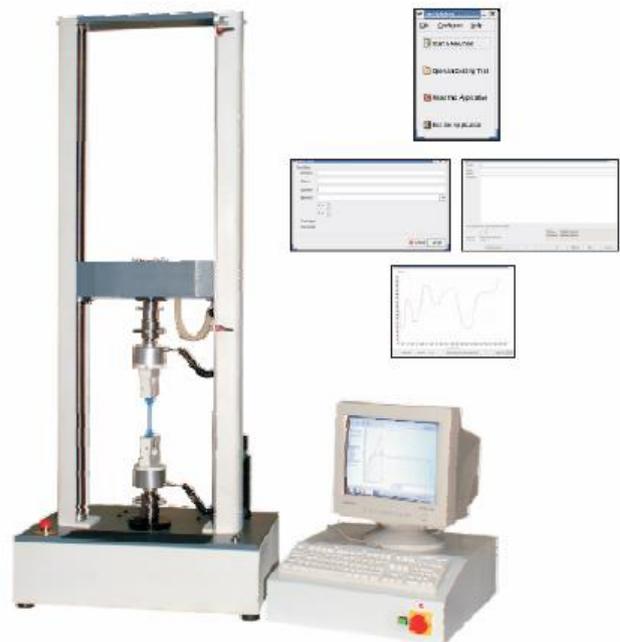
Description

The machine is composed of three main units, the dynamometer itself, the computer hardware and the software.

Dynamometer: has two jog buttons that are used to move the bridge manually in order to allow the fitting of tools and to put them at the desired distance. Bridge movement with these buttons is done with ramps to get better sensitivity regarding the approximation to the objective.

The movement limiters on the right hand side of the column are to limit the bridge displacement, acting as emergency protectors to prevent damage to the tools and load cells. The jaws are fixed to the dynamometer by fixing bolts on the upper and lower adaptors. The main switch on the control console is the dynamometer power system switch. The enable button is the button is the button that activates the displacement and force reading system. This button should always be activated when the dynamometer power is switched on or after an emergency situation has occurred.

Computer system: this is a conventional last generation system with a basic configuration of a PC, a monitor, a keyboard, a mouse and a color printer.

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Software: the software for this application runs under the LINUX operating system and is divided into two components: Inolabdyn -the dynamometer management software and Mozilla – Internet browser and database access.

The Inolabdyn software has been developed specifically to work with the dynamometer. Its functions are to act as an interface between the operator and the machine so that all tests and procedures involved in this operation are carried out.

This software also manages the communications between the computer and the dynamometer so that data exchange occurs in an organized and correct way without any deterioration or loss of information. During a test the computer coordinates the functioning of the load cell and the motor and in exchange receives the respective load and displacement figures for a given sample in accordance with the method chosen. These data are processed instantaneously and handled in the appropriate way.

The results of each test, as well as the test methods, standards are respective calculations are stored in the database of Mozilla.

Mozilla is an Internet browser that allows external access to system, enabling authorized external entitles to have access to the past test database and also allowing remote technical assistance.

Through Mozilla it is possible to create users, defining the permitted degree of access and the working language of each user. The language function allows different operators to use different languages.

Irrespective of the language used for the test the respective report can be consulted and printed out in a different language as long as this one in the database. New languages can be introduced when requested. All database of the standards, test methods and calculations necessary for the execution of the tests are also created through Mozilla.

The dynamometers are supplied with the minimum databases already created. Users can introduced new data at a later stage. If necessary, full support will be provided for preparing new test method and respective calculations. This support can be provided remotely, taking advantage of the function made available by Mozilla.

Conversion table Newton / Kg

1 N	=	0,1 KG		
1 KG	=	10 N		
500 N	=	50 KG		
1000 N	=	100 KG		
5000 N	=	500 KG		
10000 N	=	1000 KG		
20000 N	=	2000 KG		
1 kN	=	1000 N	=	100 KG
20 kN	=	20000 N	=	2000 KG

Available models : MARTE e JUPITER

Specifications	Marte	Jupiter
Maximum capacity	10 kN (1000 kg)	20 kN (2000 kg)
Test displacement velocity	From 1 to 850 mm/min	From 1 to 850 mm/min
Return displacement velocity	500 mm/min	500 mm/min
Useful test width	320 mm	380 mm
Maximum displacement	800 mm	1100 mm
Work temperature	From 5 to 40° C	From 5 to 40° C
Environment temperature	20 - 80% (without condensation)	20 - 80% (without condensation)
Dimensions mm	605 x 530 x 1320	700 x 550 x 1700
Approx.net weight	250 kg	280 kg

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Standard Equipment:

1 x 1 kN load cell

1 x pair of screw action grips (IUP 6/ISO 3376 + IUP 40/ISO 3377-1) + cotton dye

1 x computer with LED monitor

1 x color inkjet printer

1 x software package

Available load cells:

200 N (20 kg), 500 N (50 kg), 1 kN (100 kg), 5 kN (500 kg), 10 kN (1000 kg), 20 kN (2000 kg).

Optional Accessories

- DP07 pincer type jaw for sole/upper/interlayer bond strength
  (ISO 20344:5.2; SATRA TM411).
  The peel strength of footwear sole bonds according to SATRA TM411 is performed with a 1 kN (100 Kg) load cell.
  Note: top grip for attachment of the sole section, the upper/interlayer section should be attached on the Customer universal flat faces grip.
- DP 08 clamps for heel attachment strength test - thin heels
  (SATRA TM 113; EN 12785:2000), suggested load cell 1000 N (100 kg)
- DP 09 clamps for heel attachment strength test - large heels
  (SATRA TM113; EN 12785:2000), suggested load cell 1000 N (100 kg)
- DP 11 clamps for seam strength test
  (EN 13572:2002 METOD A – ISO 17697 METOD A)
- DP 13 grips type "Baumann" for determining the double edge tear strength of leather
  (IUP 8/ISO 3377-2)
- DP 15 accessory for adhesion test
  (IUF 470/ISO 11644) with 200N minimum load cell
- DP 65 accessory for determining the stitch tear resistance of leather
  (IUP 44/ISO 23910 – UNI 10606)
- DP 35 accessory for toe cap compression resistance
  (EN ISO 20344:5.5; EN 12568) to be installed on Jupiter dynamometer with 2000 N minimum load cell.
- DP 25 - EN ISO 20344:5.8.2 accessory for determination of penetration resistance of the sole. To be installed on Jupiter dynamometer with 2000 N minimum load cell.
- DP 68 puncture resistance device for protective gloves. (EN 388:6.5)
- GPU pneumatic clamps (IUP 6/ISO 3376 + IUP 40/ISO 3377-1)

Supplied with: conformity/calibration certificate

Power consumption: 2500 W

Noise: 60 dB/70 dB for Jupiter

Power Supply: 400 AC - 50/60 Hz – 230 AC for pc and printer