EQUIPMENT DATA SHEET	HED

Electronic Dynamometer 05 – 10 - 20 KN

Purpose: Perform tensile, compression, flexure, bend, shear, and cyclic tests.

Standard dynamometer is supplied with one load cell. All grips or specific tools to perform the tests are supplied as extra.

Machine is controlled by a PC through a program that controls the force and displacement systems and contains the database where are store all dates and test procedures necessary to perform all types of tensile and compression tests.

This program also manages communications with dynamometer to guarantee that data exchange is made quick and without deterioration of dates.

The database contains standards, test methods, calculations, variables, and units, needed for each test method and the performed tests. This feature allows editing and reanalyzing of the stored tests and eventually addition of new calculations, or new test specimens.

Other feature is the possibility to create several operators that, depending on the permission level, allow different possibilities, such as:

- **User** – Just have the permission to perform the tests according test methods created by other operator with high permission level;
- **Admin** – This permission level allows create new tests methods, manage the calculations and other features;
- **Super Admin** – Is the highest level of permission that beyond the possibilities of lower-level users has the permission to access to the calibration procedure.

During each test, and in real time, a graphic is plotted showing the development of the test and allowing the intervention of the operator to mark some points or stop the test. Tests can be configured to stop manually or automatically.

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In end of each test the system generates a test report that is stored in database and, if connected to a printer, can be printed.

The system is prepared to be connected to the internet to remote assistance. We recommend this connection that, at your request and authorization, will allow our remote support to solve any question or eventually to help with the creation of a new test method.

Dynamometers fulfil all relevant international safety standards. An additional safety guard is available at request.

Main machine features

- Overload security system to avoid load cell damage;
- Security system to prevent over-travel;
- Alignment system based in precision ball screws;
- Crosshead control assured by AC servo drive;
- The possibility to install load cells with different load capacity, according to test requirements;
- Different type of manual and pneumatic grips, can be used;
- Extensometer can be installed at request.

Main Software features

- Intuitive and user-friendly software;
- Dynamometer runs under operative system “Windows”;
- Testing program covers all type of tests (tensile, compression, peel, shear, tear, cyclic, etc.);
- Automatic storage of all test data, that can be exported, edited, printed, etc;
- Test report is generated automatically and can be printed or sent by email;
- Automatic recognition and calibration of load cells;
- Test screen contains real time graphics and many informations about test procedure as force, displacement, test speed, load cell capacity, etc;
- Each test can be configurated according to several standards or internal test methods, allowing creation of very complex test procedures;
- Test stop can be configurated as manual or automatic.

Our dynamometer is the only one on the market that allows to be upgraded from 10 KN to 20 KN, without any mechanical change.

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SPECIFICATIONS					
Characteristics	***Unit***	***HED05***	***HED10***	***HED20***	***Standard Supply***
Maximum Force capacity	**(KN)**	05	10	20	- One load cell; - One PC w/ monitor **As extra accessories could be supplied:** **- other load cell capacities;** **- Extensometer for HED10 – HED20;** **- mechanical grips;** **- pneumatic grips;** **- a wide range of tools to perform all kind of tests.**
Accuracy class	**%**	1	1	1	
Test speed (min. – max.)	**(mm/min)**	0,1 to 800	0,1 to 800	0,1 to 800	
Return speed	**(mm/min)**	500	500	500	
Useful test width	**(mm)**	380	380	380	
Max. useful displacement	**(mm)**	700 (*)	1100 (*)	1100 (*)	
Voltage	**(VAC)**	230 ± 10	230 ± 10	230 ± 10	
Power	**(W)**	750	850	850	
Compressed air	**(bar)**	(**)	(**)	(**)	
Dimensions (W x D x H)	**(mm)**	680x620x1200	680x620x1600		
Net Weight	**(Kg)**	120	135		

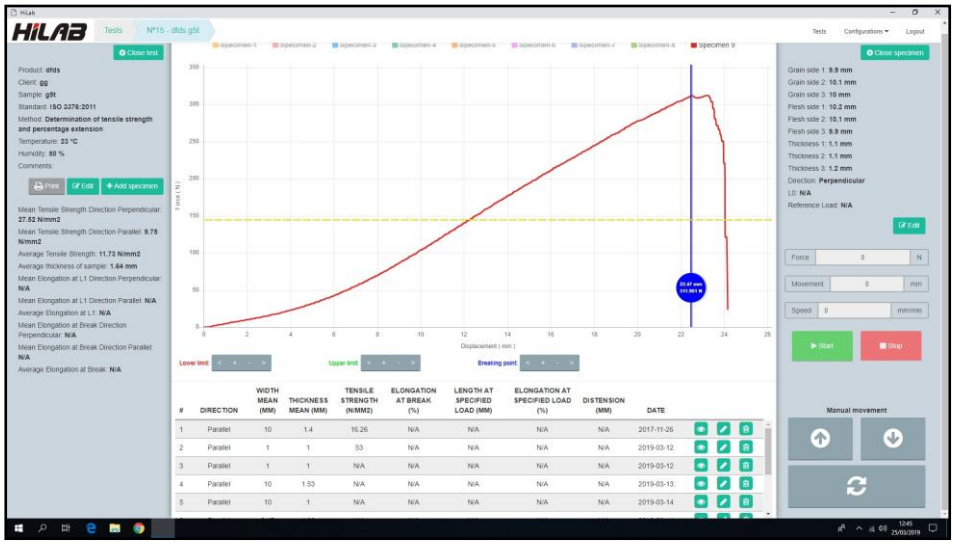
Notes:

The machine should be installed on a strong, rigid, and level bench.

(*) – Depending on type of grips or devices

(**) – only in case of pneumatic grips

Some test and program windows



During test, a graphic is generated showing in real time the behavior of the sample.
All dates of the test are showing in the test screen.

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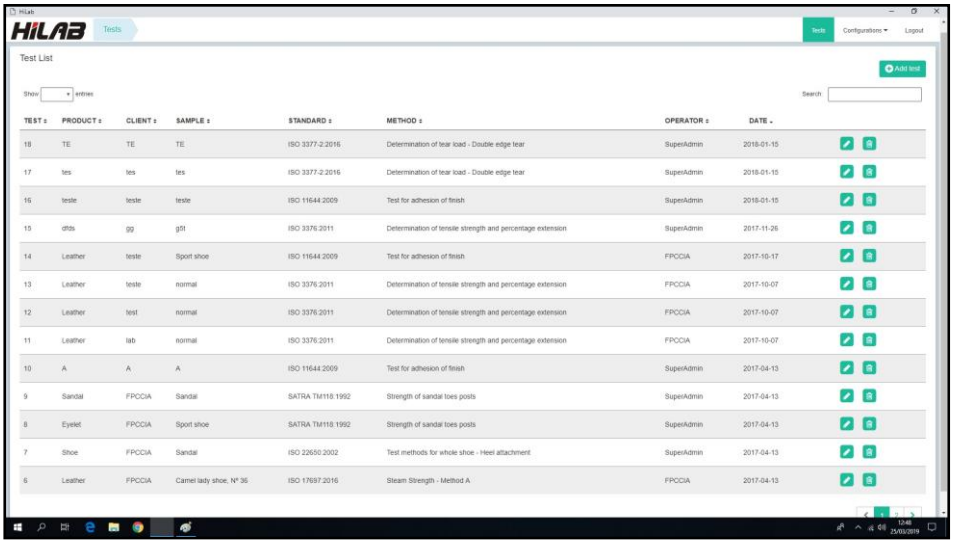
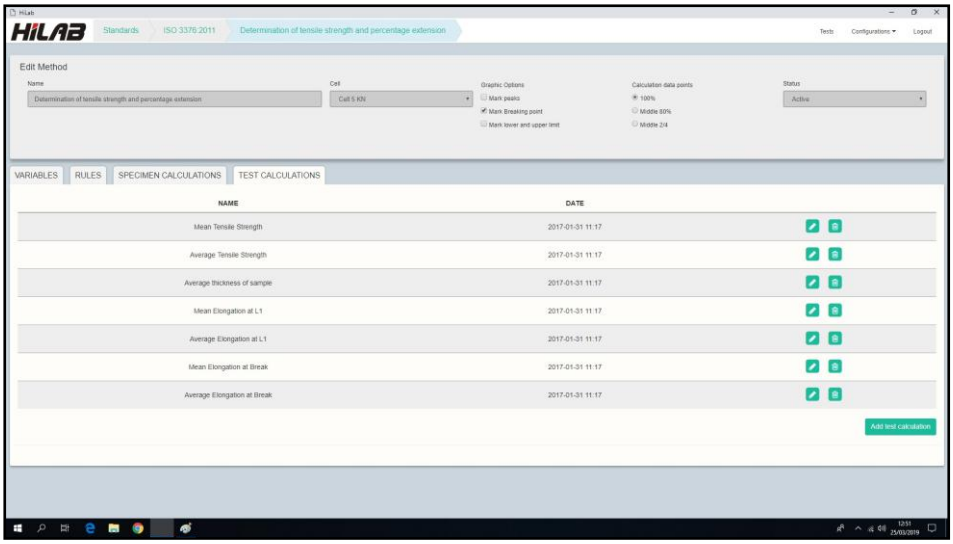
The graphic can show all plotted lines to allow compare test results between several samples or one by one to analyse individually.



All tests made are stored in a data base which allow later edition and print any test report.
With edition facility is possible re-analyse each test, clean it, add new tests in same type of sample, etc.



Calculations and Variables

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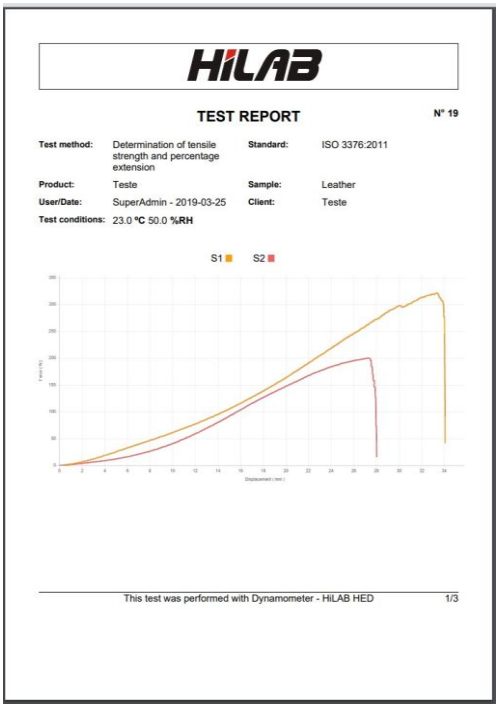
Test report



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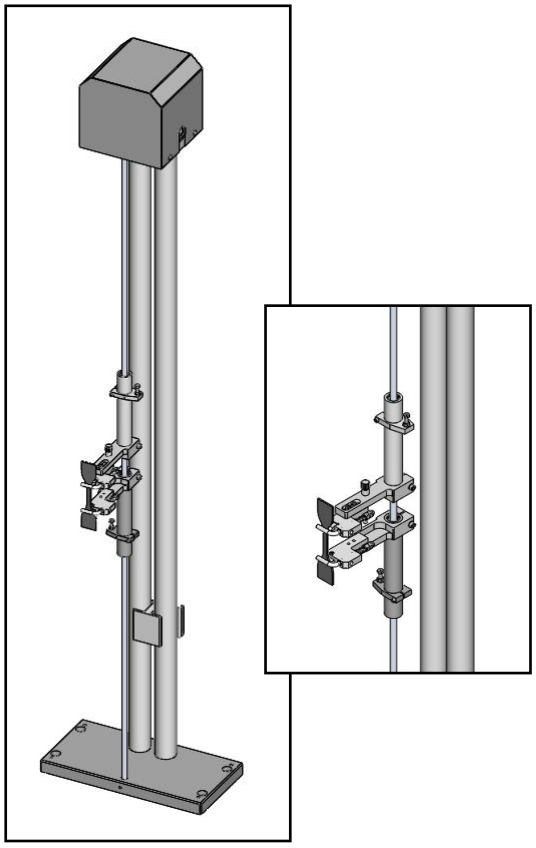
TEST REPORT N° 19

Test method:	Determination of tensile strength and percentage extension	**Standard:**	ISO 3376:2011
Product:	Teste	**Sample:**	Leather
User/Date:	SuperAdmin - 2019-03-25	**Client:**	Teste
Test conditions:	23.0 **°C** 50.0 **%RH**		

S1 S2

This test was performed with Dynamometer - HiLAB HED 1/3



An Extensometer can be installed to assure higher accuracy in distension measurements. Normally required for polymeric materials or other, according to standards requirements.
In case of use of extensometer, the test method is configurated to assume the measurements of distension, made by extensometer.

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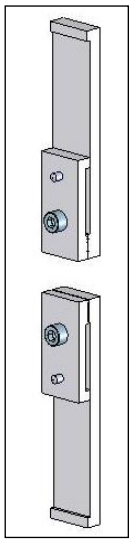
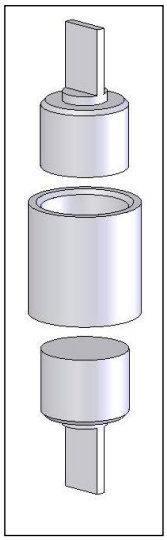
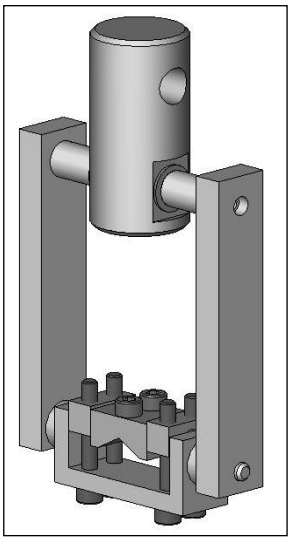
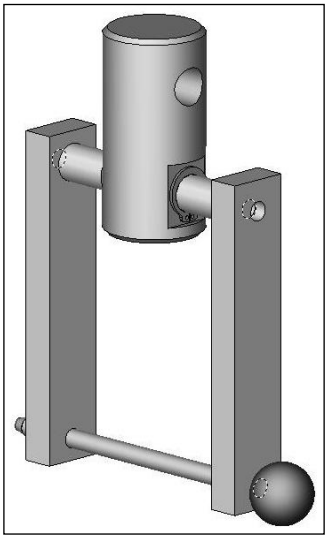
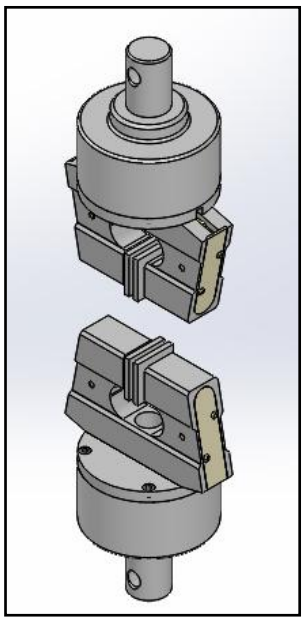
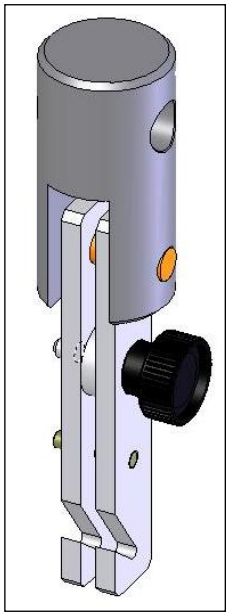
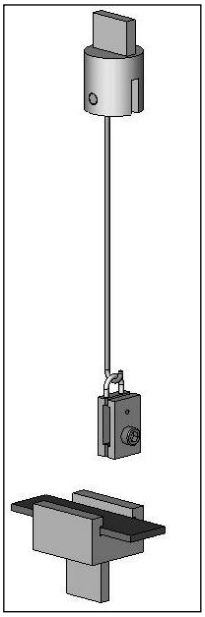
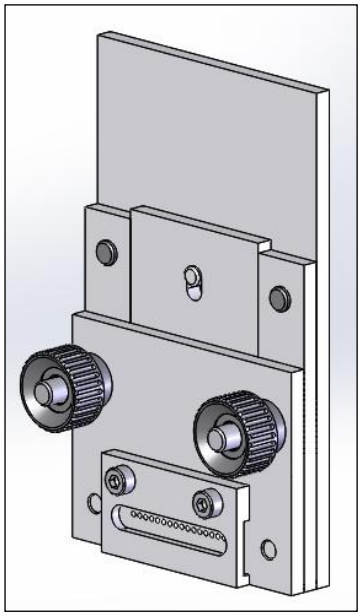
Some extra tools that can be used in the dynamometer. Many other are available

Due continuous technical developments, we reserve the right to introduce product changes, without previous notice.

<u>This equipment fulfils CE safety standards.</u> A conformity certificate is issued	**<u>This equipment fulfils the standards ISO 7500-1.</u>** Certificate of conformity with test standards and a Workshop certificate are issued
<u>The origin of this equipment is PORTUGAL.</u> A certificate will be is issued at dispatch time	**Operation manual is delivered with equipment**

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