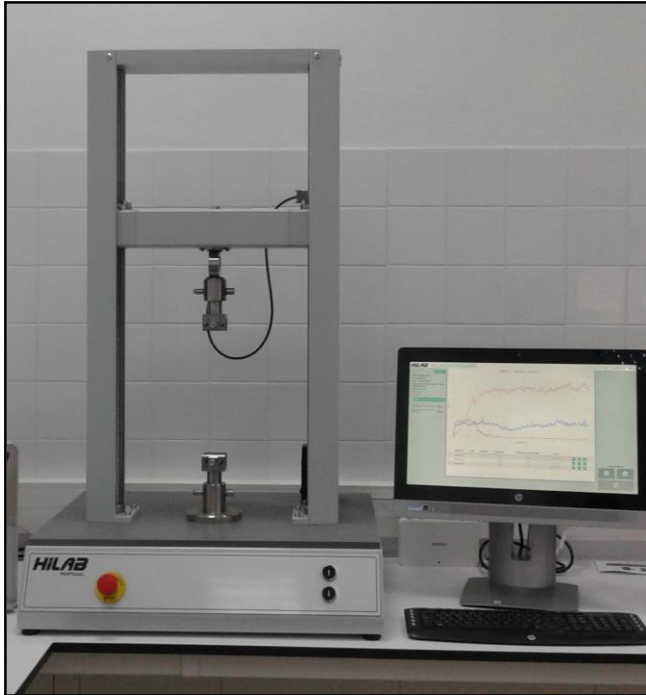


Electronic Dynamometer 05 – 10 - 20 KN



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

Standard dynamometer is supplied complete 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 the communications with dynamometer to guarantee that data exchange is made quick and without deterioration of dates.

The database contains the standards and 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.

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 clamps, manual or pneumatic 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 graphic 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 create 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 5 KN to 10 or even to 20 KN, without any mechanical.

HILAB – Test Equipments & Consulting

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SPECIFICATIONS					
Characteristics	Unit	HED05	HED10	HED20	Standard Supply
Maximum Force capacity	(KN)	05	10	20	<ul style="list-style-type: none"> - One load cell; - One PC w/ monitor <p>As extra accessories could be supplied:</p> <ul style="list-style-type: none"> - other load cell capacities; - Extensometer; - mechanical grips; - pneumatic grips; - a wide range tools to perform all kind of tests.
Force accuracy	%	± 1	± 1	± 1	
Test speed	(mm/min)	0,1 to 800	0,1 to 800	0,1 to 800	
Test speed accuracy	%	± 1	± 1	± 1	
Return speed	(mm/min)	500	500	500	
Useful test width	(mm)	400	400	400	
Max. useful displacement	(mm)	1000 (*)	1000 (*)	1000 (*)	
Voltage	(VAC)	230 ± 10	230 ± 10	230 ± 10	
Power	(W)	850	850	850	
Compressed air	(bar)	(**)	(**)	(**)	
Dimensions (W x D x H)	(mm)	680x620x1800			
Net Weight	(Kg)	145			

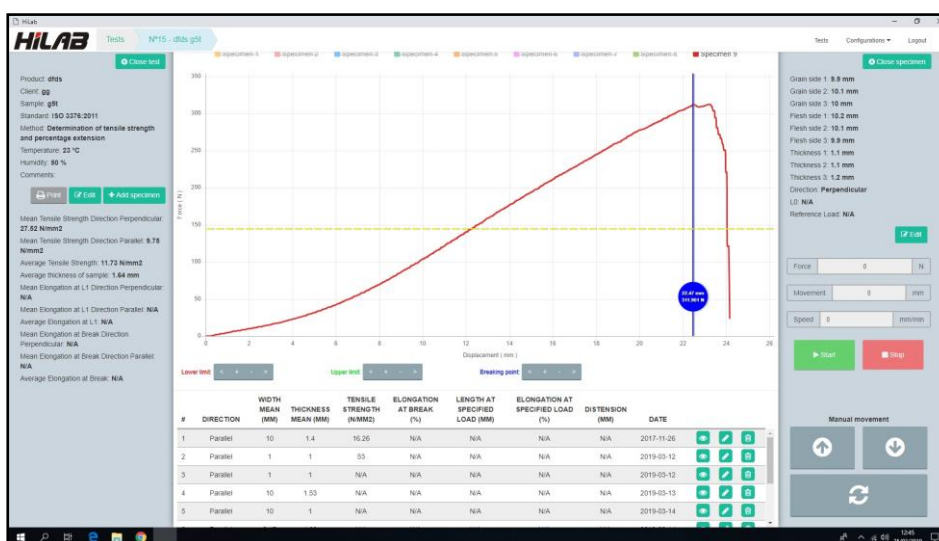
Notes:

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

(*) – Depending on initial grips distance

(**) – only in case of pneumatic grips

Some test and program windows



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



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

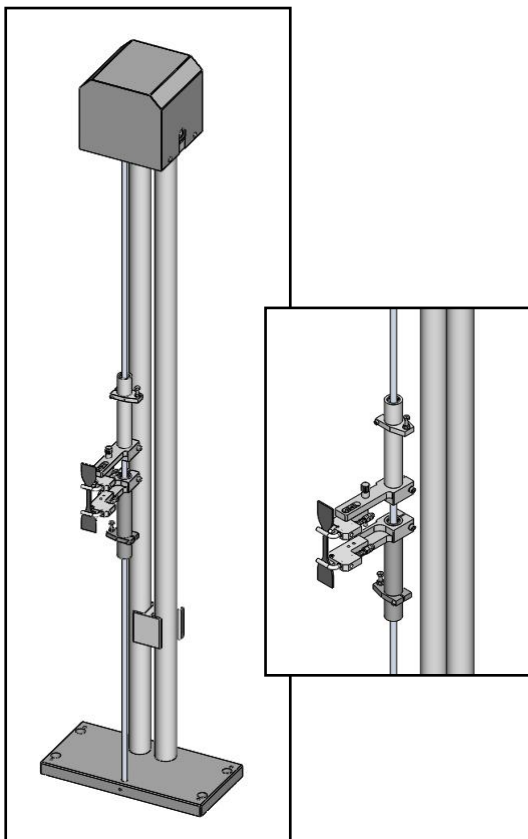
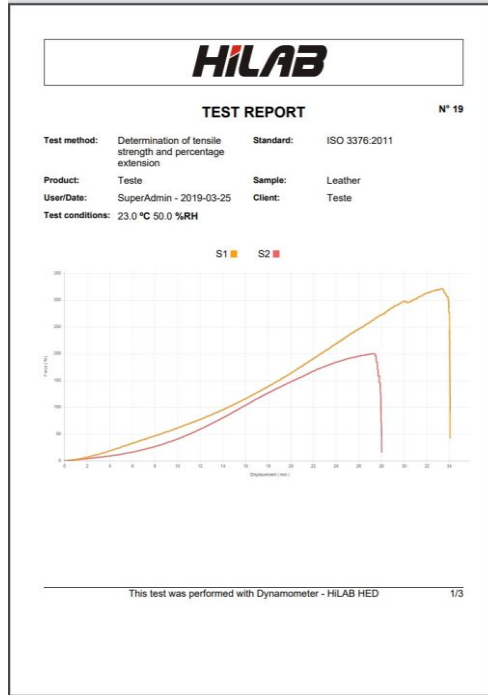
TEST #	PRODUCT #	CLIENT #	SAMPLE #	STANDARD #	METHOD #	OPERATOR #	DATE #
18	TE	TE	TE	ISO 3377-2:2016	Determination of tear load - Double edge tear	SuperAdmin	2018-01-15
17	tes	tes	tes	ISO 3377-2:2016	Determination of tear load - Double edge tear	SuperAdmin	2018-01-15
16	teste	teste	teste	ISO 11644:2009	Test for adhesion of flesh	SuperAdmin	2018-01-15
15	g00	g0	g01	ISO 3376:2011	Determination of tensile strength and percentage extension	SuperAdmin	2017-11-26
14	Leather	teste	Sport shoe	ISO 11644:2009	Test for adhesion of flesh	FPCCIA	2017-10-17
13	Leather	teste	normal	ISO 3376:2011	Determination of tensile strength and percentage extension	FPCCIA	2017-10-07
12	Leather	test	normal	ISO 3376:2011	Determination of tensile strength and percentage extension	FPCCIA	2017-10-07
11	Leather	lab	normal	ISO 3376:2011	Determination of tensile strength and percentage extension	FPCCIA	2017-10-07
10	A	A	A	ISO 11644:2009	Test for adhesion of flesh	SuperAdmin	2017-04-13
9	Sandalo	FPCCIA	Sandalo	SATRA TM1118:1992	Strength of sandal toes posts	SuperAdmin	2017-04-13
8	Eyelet	FPCCIA	Sport shoe	SATRA TM1118:1992	Strength of sandal toes posts	SuperAdmin	2017-04-13
7	Shoe	FPCCIA	Sandalo	ISO 22650:2002	Test methods for whole shoe - Heel attachment	SuperAdmin	2017-04-13
6	Leather	FPCCIA	Camel lady shoe, N° 36	ISO 17897:2016	Steam Strength - Method A	FPCCIA	2017-04-13

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.

NAME	DATE
Mean Tensile Strength	2017-01-31 11:17
Average Tensile Strength	2017-01-31 11:17
Average thickness of sample	2017-01-31 11:17
Mean Elongation at L1	2017-01-31 11:17
Average Elongation at L1	2017-01-31 11:17
Mean Elongation at Break	2017-01-31 11:17
Average Elongation at Break	2017-01-31 11:17

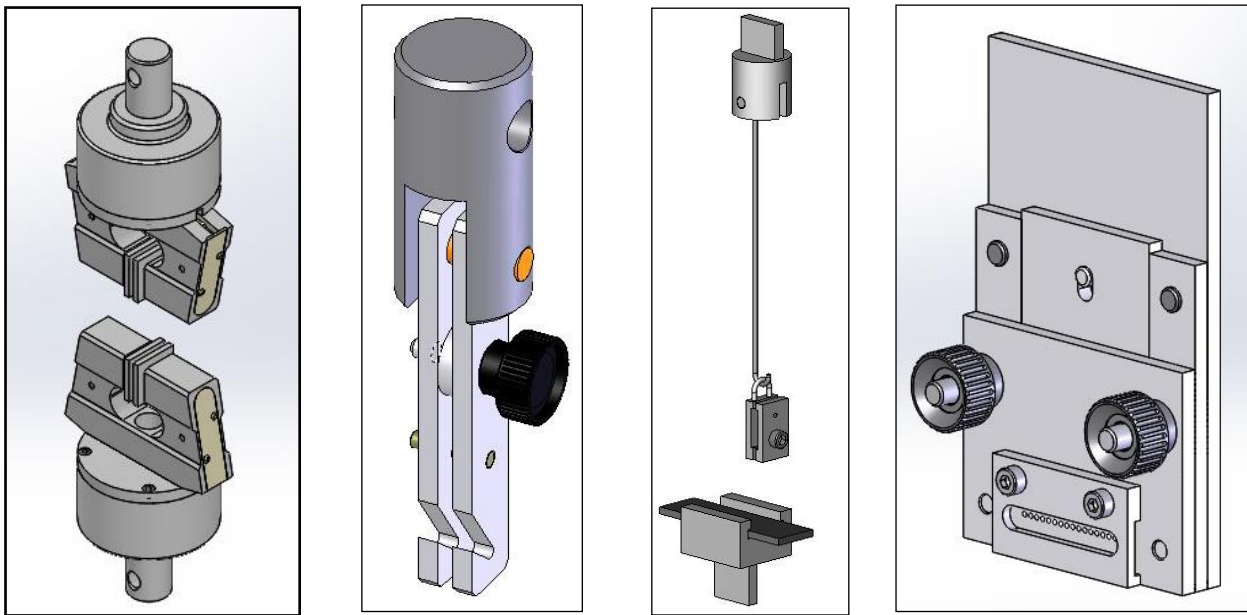
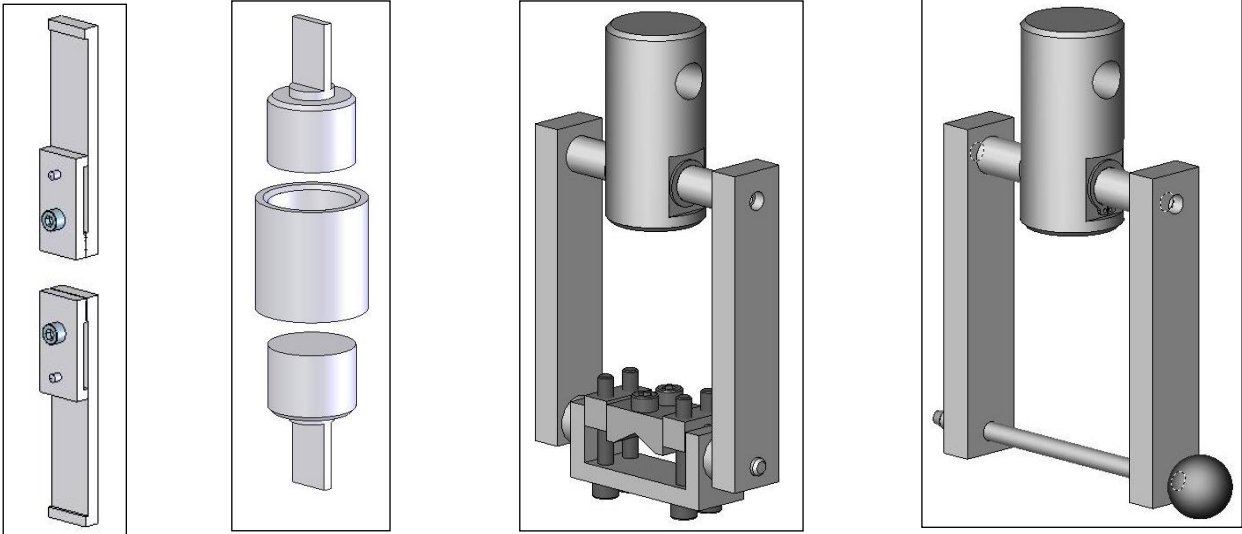
Calculations and Variables

Test report



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 configured to assume the measurements of distension, made by extensometer.

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.

<p><u>This equipment fulfils CE safety standards.</u> A conformity certificate is issued</p>	<p><u>This equipment fulfils the standards EN 10002-2; ISO 7500-1.</u> Certificate of conformity with test standards and a Workshop certificate are issued</p>
<p><u>The origin of this equipment is PORTUGAL.</u> A certificate will be is issued at dispatch time</p>	<p>Operation manual is delivered with equipment</p>