



PLASTIC AND RUBBER TESTING

PHYSICAL AND MECHANICAL
TESTING

SPECIMEN PREPARATION AND
CONDITIONING

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02

ENGLISH

noselab* *ats
ADVANCED TESTING SOLUTIONS

Computerized milling system. The MDX model is used for the preparation of specimens of any profile starting from plastic material or sheet rubber.

The movements on the three axes (x, y, z,) are controlled by PC.

The supplied CAM software accepts files in IGES, DXF and STL format exported from the most common 3D CAD. SRP Player can be used to generate 3D proportional models.

Noselab Ats supplies the die profiles of the most widespread ASTM, ISO, DIN standards for performing physical and mechanical tests.

40401010 MILLING MACHINE CNC



Dimensions: 669x760x554 h mm

Weight: 65 Kg

Power supply: 230V, 50Hz, 2.1A

- Working area 305x305 mm
- Advancement
- XY axes: from 7 to 3000 mm/sec.
- Z axis: from 7 to 1800 mm/sec.
- * 2 mm/min step from 7 to 601 mm/min
- * 60 mm/min step from 60 to 3000 mm/min
- Spindle rotation from 4500 to 15000 rpm

The die-cutting machines are used in tests where it is necessary to obtain samples from plastic sheets, rubbers, leathers, foams, paper, technical fabrics, whose characteristics of hardness and thickness allow the use of appropriate shaped blades (Die cutters /punches). Pneumatic or manual operated model available.

NOSELAB ATS offers the selection in a wide range of high quality dies.

- 10019000 Pneumatic DIE CUTTER 55kN
- 10020000 Manual DIE CUTTER 5kN



10019000

Dimensions: 500x370x510 h mm

Weight: 130 Kg



10020000

Dimensions: 220x400x780 h mm

Weight: 35 Kg

Technical features:

- The pneumatic model: load force 5000 kg, dimension of the worktable 320 x 200 mm, has double acting piston, adjustable die head support suitable for 25 mm dia. connections, micrometric adjustment on axis equipped with ball bearings. Safety, cutting operations are possible only by simultaneously pressing the two side push-buttons.
- The manual model: load force 500 kg, dimension of the supporting surface 200 x 200 mm, cast iron structure, working stroke 25 mm. diam.

The Lab Press equipped with heating plates is designed for the preparation of plastic or rubber sheets from which it is possible to obtain standardized specimens for both mechanical physical tests and quality controls of vulcanized compounds, printed samples, sintered powders, tests on expanded materials, laminating tests. A pneumatic system allows to move the plates and increase the speed, so as to decrease the closing time. The working pressure is read directly from the pressure gauge on the panel. Accurate devices for control and safety of operator. The version with programmable cycles allows you to automatically adjust the heating and cooling phases. Standard thickness molds are available or according to specific requirements.

- 10026120 LAB PRESS 10T
- 10026100 LAB PRESS 25T
- 10026110 LAB PRESS 25T programmable cycles
- 10026150 Mould 270x270 (thickness 4 mm)

Technical features:

- Control panel with digital display (temperature range 0 - 300 ° C), for independent thermoregulation of the plates
- Set of 300x300 mm heating plates in special aluminium alloy on a metal support, each equipped with 4 0.8 kVA resistors and a hole diam. 6 mm and depth 150 mm foresight of the insertion of a further thermal control probe
- Air cooling inside each plate, the plates are also equipped with a safety thermostat to avoid overheating
- The lower plate is moved by the hydraulic piston, while the upper plate is fixed.
- The area of work is protected with a box and safety glass to avoid burns owing to the high temperatures; this safety system does not allow movement if it is left open
- Opening between the plates: 150 mm



10T

Pressure range: da 10 a 100 kN

Dimensions: 900x750x1550 h mm

Weigh: 250 Kg

Air pressure for cooling: 3 bar

25T

Pressure range: da 10 a 240 kN

Dimensions: 900x750x1750 h mm

Weigh: 320 Kg

Air pressure for cooling: 6 bar

NOTCHER



The quality of the mono-axial impact tests depends, to a large extent, on the accuracy of the notch performed on the specimen.

With EASY 28 the notch is obtained by the combination of the reciprocating movement of the knife (electronically adjustable) and the linear translation of the vice.

- 10013100 NOTCHER EASY 28
- 10013101 "V" SHAPED COBALT STEEL KNIFE (TYPE A)

Dimensions: 400x200x400 h mm

Weight: 10 Kg

Technical features:

- Alternate vertical displacement of the knife: 30 mm
- Linear speed of the notch: 0 ± 18 m/min with electronic control
- Height of the sample support: 25 mm
- Width of the sample support: 15 mm
- Notching area is suitable to locate up to 8 specimens/3 mm thick or up to 6 specimens/4 mm thick
- Adjustment of the depth of the notch with reference to the residual section of the specimen (ISO 2818)

Standard

ASTM	D 256, D 6110
ISO	179, 180

CUTTING DIES



The DIES suitable for the production of the specimens are made of high quality steel, according to the shapes and dimensions prescribed by the international standards: ASTM-DIN-ISO-BS-AFNOR-UNI.

The dies can be equipped without or with automatic ejectors to facilitate the detachment of the material.

The specimens thus obtained can have a different shape: rectangular, round, "butterfly" generally for tensile tests.

- 10019XXX CUTTING DIE with ejector
- 10019XXX CUTTING die without ejector

Instrument for determining the average force necessary to propagate a specific length tear on paper, plastic films or non-rigid sheets. The reduction to the minimum of the number of masses has been considered, the different forces for the propagation of the tear are obtained by modifying the position of the applied masses. The management of the various functions is obtained through a 7" touch screen colour display; it is also possible to transfer test results and parameters by USB output with dedicated software for archiving and printing data is supplied.

- 16040001 TEAR ATS 200 Elmendorf
- 00100100 Software Tear 200



Dimensions: 580x510x630 h mm
Weight: 80 Kg (circa)

Standard	
ASTM	D 1424, D 1922
ISO	1974
UNI EN	21974

The standard configuration includes:
Pendular mass system complete with 6 masses. The different positioning of the masses on the pendular system allows to stress the specimen with the following tearing forces:
50 – 100 N
2000–4000–8000–16000–32000–64000 mN (ISO 1974 – UNI EN 21974)
1690–3920–7840–15600–31360–62720 mN (ASTM D 1424 – ASTM D 1922)

Technical features:

- Maximum force: 100 N
- Units of measurement: mN or gf
- Force reading accuracy: ± 1%
- Calibration of the force applied with a kit of certified weights
- Motorized positioning of the pendulum mass
- Safety devices with a protective plastic screen transparent and braking system for the pendulum mass after the test has been completed

ABRASION TESTER

It allows to evaluate the abrasion behaviour of a specimen having 16 mm diameter and thickness of about 6 mm, obtainable with the dedicated die cutter. The determination is made by checking the volume change after contact with an abrasive surface, for a path length of 40 meters and a pressure on the specimen of 10 N. The abrasive paper support roller has a speed of 40 rpm.

- 10075000 ABRASION TESTER for rubbers and elastomers

Standard	
DIN ISO	4649
ASTM	D 5963

Technical features:

- Device for rotation of the specimen during lateral progress
- Counterweight of 5 N
- Calibrating device for abrading paper
- Sheet of abrasive paper (to be calibrated)

Accessories	
Sheet of standard compound 180 x 115 mm	Code 10075010
Abrasive paper 400 x 474 mm DIN, ISO	Code 10075005
Rotative die cutter 16 mm (to insert in a drilling machine)	Code 10019445



Dimensions: 600x300x400 h mm
Weight: 20 Kg about



SHORE DUROMETER A e D DIGITAL

The SHD Shore PosiTector is a digital instrument with a colour display that measures the hardness of non-metallic materials. There are two configurations STD(Standard) and ADV(Advanced) and two probes for different level of hardness:

- Shore A (soft materials, elastomers)
- Shore D (hard materials, rubber, PVC)



Dimensions Stand: 150x230x430 h mm
Dimensions Gage: 137x61x28 h mm

Technical features:

- Continuous reading functionality with instant calculation, standard deviation, min / max hardness and number of readings, instant RESET function
- Auto-Ignore Auto mode for readings of less than 20 and above 90 according to international standards
- HI-RES function for readings with decimal precision (0.1)
- Calibration plate and NIST traceable certificate
- Power supply: AAA batteries
- The Advanced model also allows to store 100,000 readings up to 1,000 batches and - Sub-Batch Real-time graphics of measurement data, Batch / Read annotation-added notes and change batch names with on-screen QWERTY keyboard
- Synchronized WiFi technology with PosiSoft.net and Data transfer by USB to a PC or wireless technology

- 40220050 DUROMETER SHORE A Standard
- 40220051 DUROMETER SHORE A Advanced
- 40220052 Only probe SHORE A
- 40220053 DUROMETER SHORE D Standard
- 40220054 DUROMETER SHORE D Advanced
- 40220055 Only probe SHORE D
- 40220058 Stand for SHORE A (Kg 1)
- 40220059 Stand for SHORE D (Kg 5)
- 40220056 Calibration Blocks SHORE A 30 - 50 - 75
- 40220057 Calibration Blocks SHORE D 25 - 46 - 75

SHORE HARDNESS METER A AND D

To measure the hardness of soft and natural rubbers, elastomers, neoprene, polyester, resins, soft PVC, leathers.

- 40220100 HARDNESS METER SHORE A
- 40220103 HARDNESS METER SHORE D



Standard	
DIN	53505
ISO	868, 7619
ASTM	D 2240

Technical features:

- It offers the highest possible accuracy for analog instrument: better than ½ point
- Ergonomic design
- 360° dial
- Hardened steel rod 1.1 mm – 1.4 mm diameter, with a truncated 35° cone, Type A
- Hardened steel rod 1.1 mm – 1.4 mm diameter, with a 30° conical point, Type D

Optional
OS-2 SUPPORT ideal for accurate measurements that guarantee repeatability. Avoid errors due to different loads or not perfectly vertical application on the sample.

Technical features:

- The support acts on the constant load principle
- The sample is positioned, the manual lever for moving eliminates a crash between durometer and support table.
- Extension: 115 mm
- Base: 98 mm
- Maximum test piece thickness: 180 mm
- Weight 19.8 Kg



Stand OS2 for Shore D	Code 40221101
Additional weight 4000 g for use with support	Code 40221102
Calibration certificate for Shore A or D	Code 40220131

TEMPERATURE BURST TEST

Apparatus for testing the internal pressure on specific pipes for high pressures, the test allows to continue to increase the pressure until the explosion occurs.
Test station with pneumatic pressure generator, designed and built to guarantee temperature control up to 180° C.
Management and setup of the test through the easy to use double touch screen (temperature/pressure).

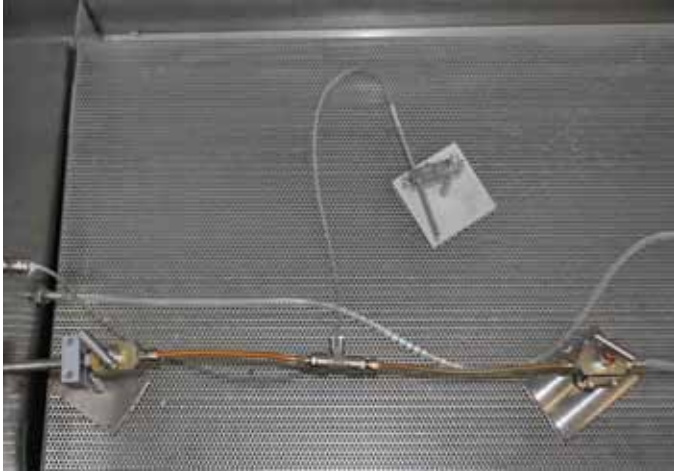
- 10024020 TEMPERATURE Burst test 230V
- 10024021 TEMPERATURE Burst test 115V

Standard	
SAE	J 2260



Dimensions:1950x850x1350 h mm
Internal dimensions: 1300x600x300÷400 mm
Weight: 300 Kg

- Technical features:**
- Test chamber in stainless steel, inclined bottom for the recovery of the silicone oil for recycling after filtration.
 - Thermostatic control up to 180 ° C max stability> 50 ° C +/- 1 ° C, with air circulation.
 - Blind cover with oil-pneumatic lifting and interlock for safety.
 - Fluid circuit (silicone oil) to test up to 50 MPa (500 bar) with an increase rate settable max 7 +/- 1 MPa per minute.
 - Controlled by precision electronic pressure sensor the hysteresis linearity ≤ ± 0.05%
 - Collector supply to sample able to block automatically in case of breakage of the pipe under test.
 - Color Display Touch Screen mode for temperature, pressure / time and break point functions
 - USB output for data transfer to a PC



UNIVERSAL TESTING MACHINE TCS



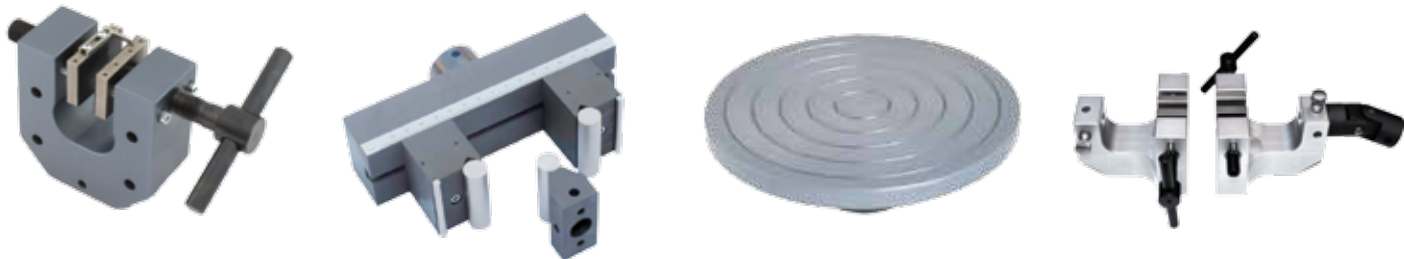
Dynamometer suitable for high precision tests of the characteristics of a wide range of plastic and composite materials.

- It allows to perform tests of:
- Tensile with and without preload
 - Compression test
 - Flexural
 - Two limits cycles
 - Peeling

The Datalink software performs the detailed analysis and the related statistical processing: it detects the sample breaking load and the maximum load, deformation run in millimeters calculated on the cross beam displacement.
Tensile tests at constant load and graphical presentation of the test with automatic scaling of the full scale (force and deformation in tension or compression).

- Technical features:**
- Load channel accuracy: + 1%
 - Selectable crosshead speed: 0.001 - 1000 mm/min under rapid loading
 - Fast return speed 2000 mm/min
 - Travel of the traverse (excluding clamps etc.): 1000/1200 mm
 - Automatic acknowledgement of the load cell

- Accessories**
- Wide availability of load cells up to 20kN
 - Pneumatic clamps
 - Traction test clamps
 - Compression plates
 - Thermostated chambers with remote temperature control between - 70 + 200° C
 - Interface contact strain gauges
 - Bending devices
 - Bending test



TCS200



TCS1000

Technical specifications	TCS - 200	TCS- 1000	TCS - 3000
Maximum load	2200 N	10000 N	30000 N
Maximum speed at maximum load (mm/min)	1000	1000	1000
Total enhanced travel of the traverse (mm)	1000	1000	1000
Space between columns (mm)	single column	400	400
Dimensions (mm)	560x430x1200 h	700x500x1350 h	700x500x1350 h
Weight (kg)	60	120	150
Code	16000200	16000210	16000215

IMPACT TEST ON FILM

Apparatus for impact resistance on plastic films with the method of free fall dart according to ASTM D 1709.

It determines the rupture of polythene films and similar materials by means of a dart that falls freely from a predetermined height; on the basis of weight, the relative energy is calculated, that takes place for breaking at least 50% of tested specimens.

16020005 BALL DROP

Dimensions: 700x700x2860 h mm
Weight: 60 Kg (circa)
Air pressure: 6 bar

Standard	
ASTM	D 1709 Metodo A e B
ISO	7765-1

- Technical features:**
- Pneumatic clamping device of the specimen acting on three points (ring diameter 127 mm)
 - Electromagnetic release device, designed for fall height 660 mm or 1520 mm
 - Shield of Protection in front of the trajectory of the dart
 - Leveling feet and device for checking the verticality of the dart

Accessories

Test on film ASTM D 1709 method A
Hemispherical head dart diameter
38.1 + 0.13 mm
weights from 5 to 60 g.

Code 16020100

Test on film ASTM D 1709 method B
Hemispherical head dart diameter
50.8 + 0.13 mm
weights from 15 to 90 g.

Code 16020101



C.O.F. DS

Slip tester for determining coefficients of static and dynamic friction between two contact materials on film, leaves and sheets, paper covered with plastic and similar surfaces.

With the Peel Tester mode (90° - 180°) it is possible to test the holding strength and properties of plastic films, adhesives, labels, packaging material.

10021020 C.O.F. Slip tester



Dimensions: 730x400x250 h mm
Weight: 30 Kg about

Standard	
ASTM	D 1709 Metodo A e B
ISO	7765-1

- Technical features:**
- Movable sledge driven by a high-precision dynamometric system; dimensions: 63.5x63.5 mm; weight of the sledge: 200 g.
 - Aluminium support base 200x400 mm.
 - Measurement of the force necessary to obtain sliding through a 2000 g load cell (standard); precision ± 0.2 g.
 - Displacement of the sledge at a uniform and constant speed from 1 to 900 mm/min.
 - Stop switch and quick release system of the sledge.
 - "Colour touch screen" for a quick selection of all parameters
 - Temperature control
 - USB output

Optionals

Data Link Software with USB connection cable	Code 00100112
Heated surface from ambient temperature to 120°C	Code 10021021
180° Peel test, clamp for pressure sensitive material	Code 10021023
90° Peel test, clamp for pressure sensitive material	Code 10021024
Templates for sample preparation	Code 10021025

THICKNESS MEASURES OF RUBBERS AND PLASTIC FILMS



Contact thickness gauges for measuring and checking thickness uniformity on different films, sheets, rubbers and materials. Digital version with centesimal and millesimal resolution.

The design is modular with interchangeable supports and related weights allowing use in reference to different standards. Constant strength allows repeatable readings to be obtained.

Wide range of contact heads, sample bases, additional weights.

Powered by means of a 3V lithium battery, autonomy 4000 h
Working temperature: + 5° C + 40° C
Overall dimensions: Ø200 mm

- Technical features:**
- Measurement range: 12.5 mm
 - Resolution: 0.001/0.01 mm.
 - Repeatability: 0,002 mm.
 - Display: 5-digit liquid crystal
 - Zeroing: manual on the whole scale



1A



2B



4A



6C



8C

Code	Type	Standard	Application	Head (mm)	Mass (g)	Presson (kPa)
40307601	HTG 1 A	ISO 23529	Rubber	4,0	28,0	22,0
40307602	HTG 2 B	ISO4593 DIN 53370	Film and foils	R40,0	10...50	-
40307603	HTG 4 A	ASTM D 3767	Rubber Hardness < 35 IRHD	16,0	212,0	10,0
40307604	HTG 6 C	DIN ISO 2589	Synthetic leathers	10,0	393,0	49,1
40307605	HTG 7 C	ASTM D 1777	Others Film	6,3	546,0	172,0
40307606	HTG 8 C	ASTM D 5199	Geosynthetic	56,4	509,5	2,0



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NOSELAB ATS s.r.l.
Via Garibaldi, 144
20834 Nova Milanese - ITALY
Ph. +39 0362 367454 | +39 0362 450612
Fax +39 0362 41357
info@noselab-ats.com
www.noselab-ats.com



comim.it

WWW.NOSELAB-ATS.COM

