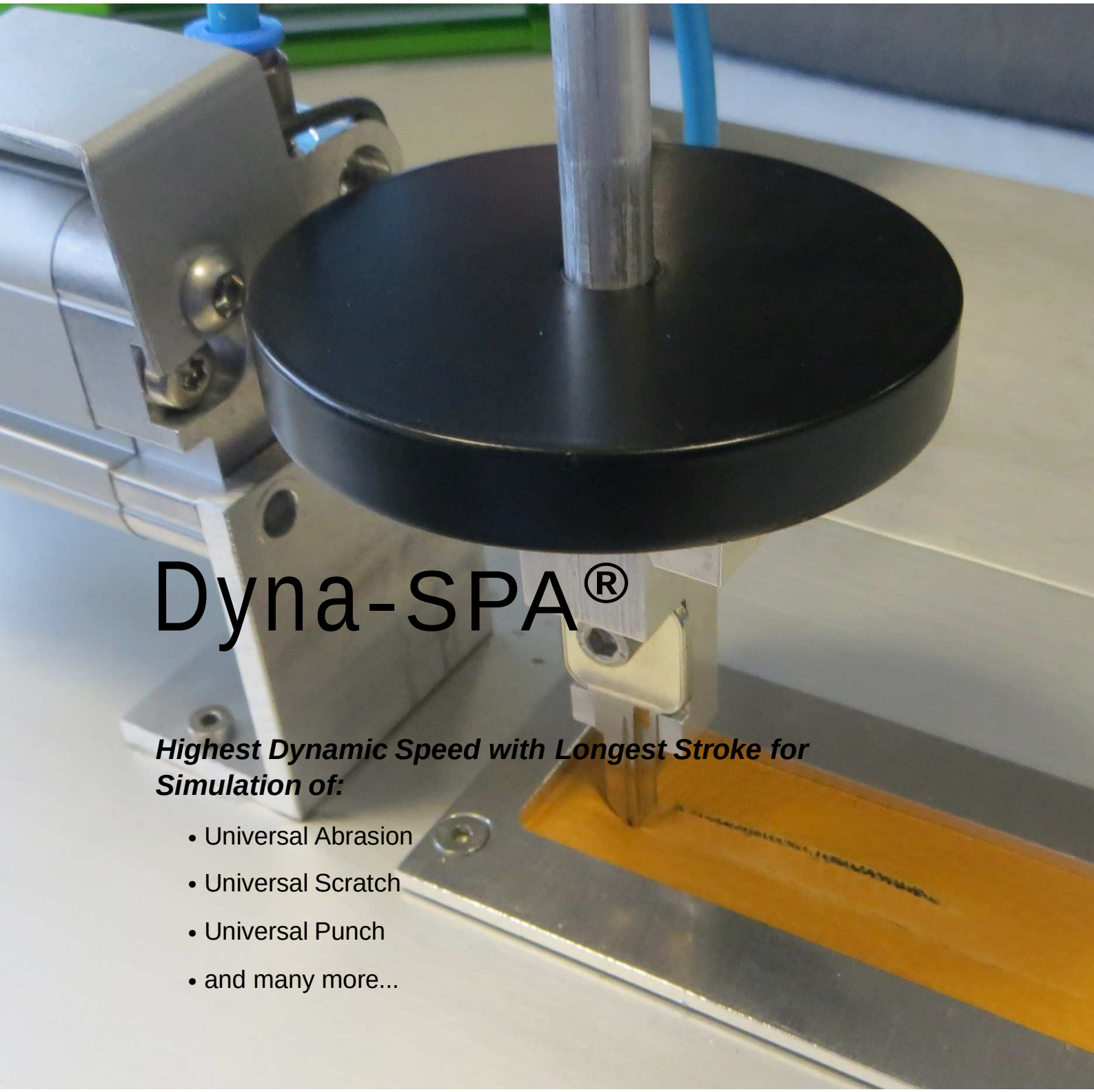
BRANT
Matériels pour le Laboratoire et l'Industrie
INDUSTRIE

INNOWEP GmbH
MEASURING & TESTING



Dyna-SPA®

Highest Dynamic Speed with Longest Stroke for Simulation of:

- Universal Abrasion
- Universal Scratch
- Universal Punch
- and many more...

14 bis Place de la République 59260 HELLEMMES – TEL : 03 20 50 45 53 – infos@brant-industrie.fr
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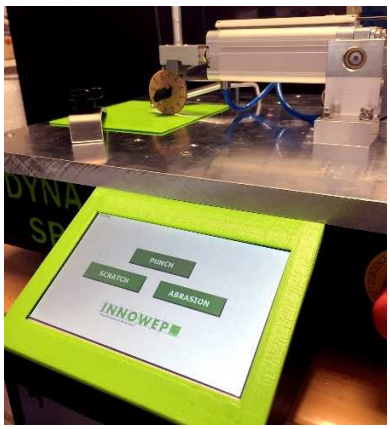
Basic Function

Damage to a surface due to abrasion, scratch and punch is one of the main reasons for the disturbance of a product's quality. In many real applications, deep scratch or severe abrasion occurs during a fast and high dynamic motion, e.g. a deep long scratch by a key on the exterior paint of a car, and this high dynamic scratch occurs at a high speed up to 100 cm/s.

Dyna -SPA® , is the only machine which can simulate the fastest and dynamic scratch, punch and abrasion tests within one machine with freely programmable speed and stroke. **Any linear Scratch or Abrasion test with a speed up to 100cm/s and a stroke up to 120mm.** It complies with over 30 international standards (ASTM/DIN/ISO) for the following applications:

Highlights

- Fastest system for performing scratch/abrasion/punch tests
- High dynamic linear motion up to 100 cm/s
- One machine for all tests
- Compliance with over 30 standards:ASTM/ISO/DIN/EN
- Real industrial application simulation of abrasion, punch and scratch
- Universal functionality due to modular design
- Reproducible results due to standardized test standards



SCRATCH:
- Universal Scratch Test
- Nail Scratch Test
- Pencil Test
- Key Scratch Test

PUNCH:
- Universal Punch Test
- Fingertip Punch Test

ABRASION:
- Universal Abrasion Test
- Shoe Sole Test
- Crockmeter Test
- Wire/Cable Abrasion Test
- Film/Packaging Material Abrasion Test
- Magnetic Stripe Abrasion Test
- Cleaning/Scouring Pad Abrasion Test
- Tooth Abrasion Test
- Scuffing Abrasion Test

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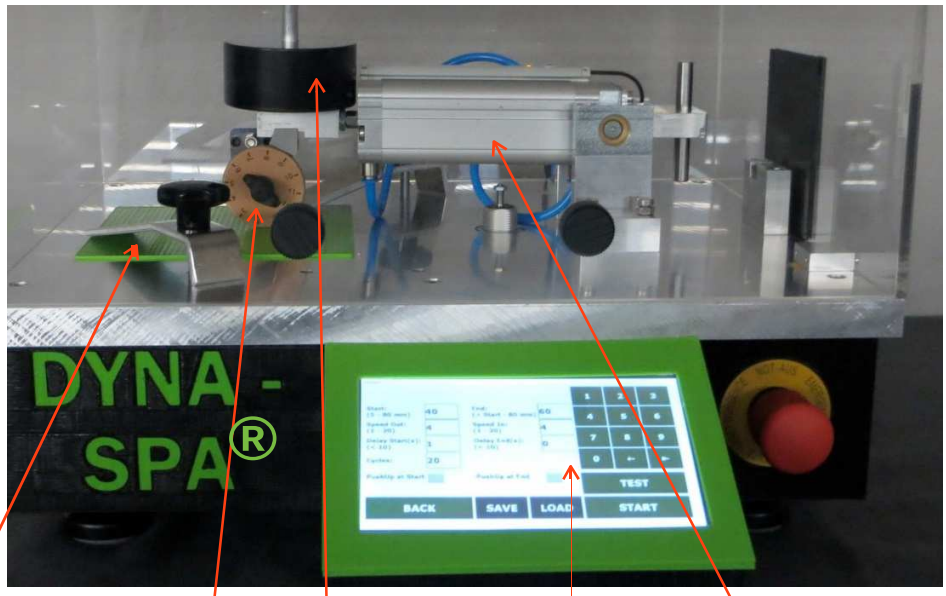
Dyna-SPA® Configuration



Sample Mounting Fixture
- dry test or under wet environment

Abradant Fixture
- A selection of all types of abrasion/scratch tips

Loading System

Computer Control

Pneumatic Cylinder
- Provide dynamic speed: up to 100cm/s
- Provide motion: one direction or reciprocating

Dyna -SPA® tester is used to test the resistance property of material and surface against scratch, abrasion and punch. The samples can be lab samples or finished products either flat or with curvature. Dyna -SPA® is widely used as a standard for many industries:

- automotive components
- painted/coated parts
- printed graphics/images
- optical products
- leather
- textile
- medical products
- packaging materials
- flexible films
- wires and cables
- magnetic stripes
- telecommunication
- rubber
- white goods
- floor
- ceramics
- furniture
- coating and color

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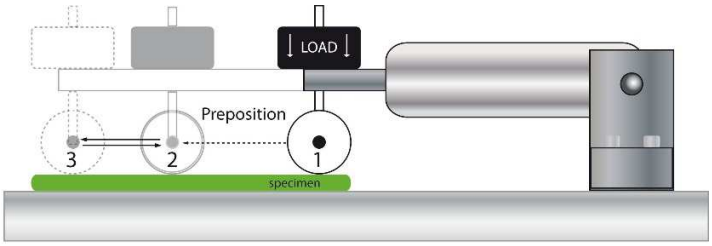
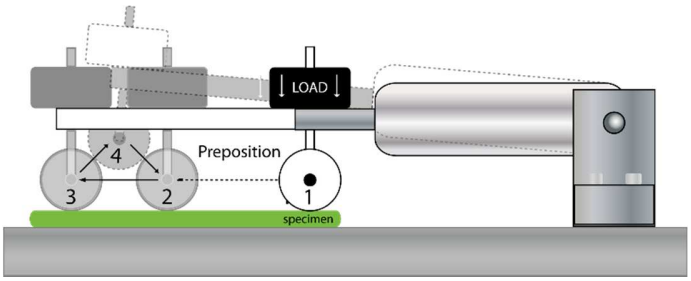
Dyna-SPA® Test Principle



Reciprocating Mode

- Pneumatic system drives the tip wheel to the prepositioning point “2” to ensure the right velocity for the test;
- Then the tip is moving back and forth between point “2” and “3” at pre-defined speed, the inward and outward speeds can be different.



One-Direction Mode

- Pneumatic system drives the tip wheel to the prepositioning point “2” to ensure the right velocity for the test;
- Then the tip is moving from point “2” with a certain stroke to point “3” at pre-defined speed;
- A pushup rod will lift the pneumatic cylinder to position “4” and reside back at the position “2” for the next cyclic linear motion.

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Technical Specification

Model	Dyna-SPA®		
Static Load	1-30 N		
Stroke Length	max. 120 mm (programmable)		
Linear speed	max. 100 cm/s		
Cycles	1-10,000,000		
Features	Scratch	Abrasion	Punch
Measurement delay (s)	programmable		
Speed in & out	programmable		
Power supply	230V / 50 Hz ; 110V / 60 Hz		
Compressed air	6 bar, external, oil free, water free		
Accessories included with the base unit	3 different loads; 2 scratch tips 1 punch tip (metal) 1 universal clamp for abrasion test 1 set of sample holding plate * All the above accessories will be packed in one box; the base unit will be packed in a wooden box acc. to international shipment.		

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Standarts

STANDARD NUMBER	DESCRIPTION
ISO 1518	
BS 7069	
AATCC Test Method 165	Colorfastness to Crocking: Textile Floor Coverings
AATCC Test Method 8	Colorfastness to Crocking
ASTM D2054	Standard Test Method for Colorfastness of Zipper Tapes to Crocking
ASTM D5053	Standard Test Method for Colorfastness of Crocking of Leather
ASTM D6279	Standard Test Method for Rub Abrasion Mar Resistance of High Gloss Coatings
ASTM F1319	Standard Test Method for Determination of Abrasion and Smudge Resistance of Images Produced from Business Copy Products (Crockmeter Method)
BI 161-01 (Ford)	Mar Resistance Determination for Automotive Coatings
BN 107-01 (Ford)	Crocking Test
BN 107-02 (Ford)	Crocking - Instrumental Evaluation
BI 108-10 (Ford)	Crockmeter Scuff Test
LP-463DD-18-01	Scratch and Mar Resistance of Automotive Plastics
PF-10938	Scratch and Mar - Resistance of Molded-In-Color Plastic Components
BN 108-13	Resistance to Scratching
BO 162-01	Resistance to Scratch and Mar
GMN 3943	Scratch and Mar Resistance of Plastics, Five Arm Test
GMW 14698	Scratch Resistance of Organic Coatings and Self-Adhesive Foils
NES M0159	Testing Method of the Scratch Resistance of Interior Polypropylene Resin Parts

STANDARD NUMBER	DESCRIPTION
BS 1006	Methods of Test for Colour Fastness of Textiles and Leather
CFFA-7	Standard Test Methods - Chemical Coated Fabrics and Film
DIN 54012	Tests for Colour Fastness of Textiles
GM 9033P (General Motors)	Colorfastness to Crocking (Rubbing)
ISO 105-D02	Textiles - Tests for Colour Fastness
ISO 105-X12	Textiles - Tests for Colour Fastness
JIS K6404-16	Testing Method for Rubber or Plastics Coated Fabrics
JIS K6547	Testing Method for Colour Fastness to Rubbing of Leathers
JIS L0849	Test Methods for Colour Fastness to Rubbing
LP-463PB-54-01	Crock Mar Resistance
SAE J 861	Method of Testing Resistance to Crocking of Organic Trim Materials
ISO 6722	wire/cable scrape test
IEC 60791-1-2	wire/cable scrape test
MIL-STO-2223 method 6004	wire/cable scrape test
ISO 10373-2	magnetic stripe abrasion test
ANSI INCITS 322	magnetic stripe abrasion test