

*Dyna-*  
**SPA<sup>®</sup>**



Highest Dynamic Speed with Longest Stroke for Simulation of:  
Universal Abrasion  
Universal Scratch  
Universal Punch and many more...



## HIGHLIGHTS

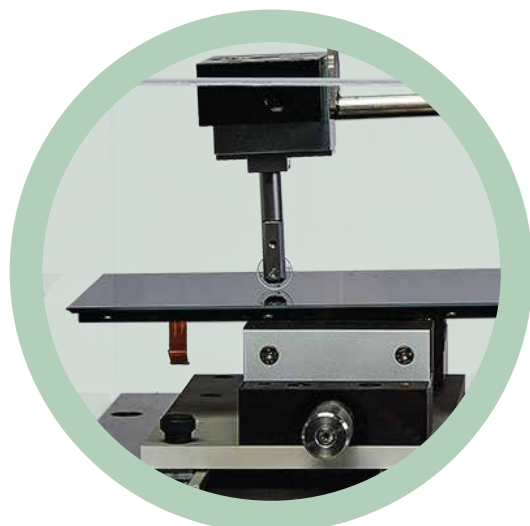
- Fastest system for performing scratch/abrasion/punch tests
- Highest dynamic linear motion up to 150 cm/s driven by pneumatic force
- One machine for all tests
- Perform one-direction test which simulates real application
- Compliance with over 50 standards: ASTM/ISO/DIN/EN
- Universal functionality due to modular design
- Reproducible results due to standardized test standards

## STANDARD LIST

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 150 cm/s and a stroke up to 120 mm. It complies with over 50 international standards (ASTM/DIN/ ISO) for the following applications:

BMW GS 97034-8	Determination of the scratch inclination
BMW GS 97034-9	Scratch test
DIN 9211-4	Optics and photonics - Optical coatings
ISO 1518-1	Paints and varnishes -- determination of scratch resistance -- Part 1: Constant-loading method
ISO 1518-2	Paints and varnishes -- determination of scratch resistance -- Part 2: Variable-loading method
BS 3900:E2	Methods of test for paints. Methods of test for paints. Scratch test
BS 7069	Specification for cookware
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

## STANDARD LIST



BI 108-10 (Ford)	Crockmeter scuff test
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
G M 9 0 3 3 P (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/cablesrapetest
ISO 10373-2	magnetic stripe abrasion test

## STANDARD LIST

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 3943-2003	Scratch and mar resistance of plastics, five arm test
GMW 14698-A	Scratch resistance of organic coatings and self-adhesive foils
NES M0159	Testing method of the scratch resistance of interior polypropylene resin parts
ANSI INCITS 322	magnetic stripe abrasion test
ASTM F2496	Standard practice for determining the scratch hardness and scrape adhesion of prints and coatings
GME 60248	Scraping of coatings on elastomers and textile interior materials
D 44 1221	crockmeter
D14 1055-2004	
D42 1775-03-2001	
GB/T 2918	Plastics standard atmospheres conditioning testing
GB/T 6151	
GB/T 8424.3	



## STANDARD LIST

PV 3952	Plastic interior components. Testing of scratch resistance
FLTM BN 108-13	Resistance to scratching
Volvo STD 1024-3113	Scratch resistance
GMW 14688	Scratch and mar resistance
ASTM D 5178	Standard test method for mar resistance of organic coatings
ASTM D2197	Standard test method for adhesion of organic coatings by scrape adhesion
BS EN ISO 12137-1:2006	Paints and varnishes. Determination of mar resistance. Method using a curved stylus
BS 3900: E17	
BS EN ISO 2409:2007	Paints and varnishes. Cross-cuttest
BS 3900-E6:2007	
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
ASTM D6279	Standard test method for rub abrasion mar resistance of high gloss coatings

