

510 - Drying Time Test

# COATMASTER 510 / 510 XL

**with integrated  
ejector**

*(vacuum function to fix  
the substrates using by  
vacuum suction plates)*

**heatable  
vacuum suction plates**



testing equipment for quality management



## Technical Description

**variety of  
accessories**

***reliable  
accurate  
reproducible***

**Combined Film Applicator  
and  
Drying Time Recorder**

## Purpose and Application

A motorised film applicator is used in cases where

- a surface has to be covered with an absolutely uniform film,
- reliable information is needed on the relationship between the wet and the dry film thickness,
- a large number of exactly identical samples has to be produced.

All kinds of inevitable inaccuracies when applying films manually, are avoided by using the **automatic drawing method**.

If extra-long applications are required, the **XL variant** with a double working distance (80 cm) has proven itself.

Often, the particularly accurate and repeatable specification of the **COATMASTER 510/510 XL** confirms its cross-industry potential of usability for demanding and sensitive application requirements; e.g. application of slurries in the production of anode foils in battery research, preparation of transdermal patches in pharmacy R & D, application of thin semiconductor layers in photovoltaic R & D, etc.



### Typical users are:

The lacquer and paint industry, especially for the research / development / quality control of many different products.

Generally universities / academies as well as institutes studying high sensitive facts within the scope of their research and development projects requiring an optimally controlled film application, i.e. in the research of solar cells, fuel cells and accumulators as well as in the medical technology and research.

The **parallel drying time test** allows objective comparisons of the drying properties of different coating materials.

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The lacquer and paint industry, especially for the research / development / quality control of many different products.

## Design and Function

### BASIC UNIT

The Film Applicator and Drying Time Recorder **COATMASTER 510/510 XL**, enhanced successor of the worldwide established COATMASTER 509 MC, is a compact combined film application and testing instrument equipped with a foil keyboard, and performing two basic functions if the appropriate accessories are selected:

- the use as a high-precision film applicator,
- the determination of the degree of dryness in accordance with DIN 53 150 and the performance of comparative drying tests.

The microprocessor-controlled, precisely graded step motor drive engineering guarantees an extremely uniform accomplishment as well as an excellent repeatability of all processes set.

- Variable application path up to approx. 400 / 800 mm.
- Individually programmable start position.
- Freely selectable drawn down speed in the range of 0.1 – 19.9 / 20 - 100 mm/s.
- Automatic quick return by key press.
- Film applicator symmetrically working in both directions.
- Freely adjustable drying times in the range of 0.1 - 19.9 / 20 - 108 min/cm.

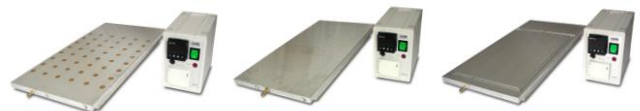
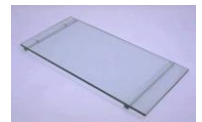
For fixing the substrates, an **ejector attachment** (vacuum generator to be operated with compressed air) for connection to all vacuum suction plates available for Model 510/510 XL, is already integrated into the basic unit.

### ACCESSORIES

The user can equip the Film Applicator **COATMASTER 510/510 XL** with the accessories which comply with the special application requirements and test purposes. In this respect the following accessories are available:

#### Exchangeable Specimen Platforms

- Glass plate as specimen carrier or direct film substrate.
- Vacuum suction plates for foils, papers and cards, in different versions - also electrically heatable, adjustable for temperatures up to 140°C (upon request up to 150 °C).



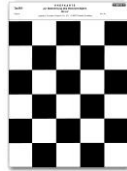
- Upon request also heatable platforms without vacuum function are available.

### Assembly Attachments

To mount the film applicators to the COAT-MASTER appropriate supports are required, except for Models 288/230 mm, 411/220 mm and 421/I and 421/II. For more details please refer to our Price List No. 510.

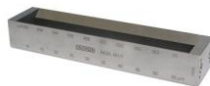
### Foils and Charts:

- Plastic foils, system Leneta®
- Contrast charts with chess board pattern or large black/white fields, as well as several other designs (Mod. 451).



### Various Film Applicators:

- Film Applicator System Wasag, Model 288, width: 80, 120, 180 or 230 mm
- Spiral Film Applicator, Model 358, width: 80, 150 or 220 mm
- Quadruple Film Applicator, Model 360, width: 13, 40, 60 or 90 mm
- Film Applicator MULTICATOR 411, width: 80, 150 or 220 mm
- Levelling Test Blade and Sag Tester, Model 419
- Staggered-Gap Film Applicator, Model 421/I, 10 films each 20 mm wide
- Staggered-Gap Film Applicator, Model 421/II, 6 films each 35 mm wide

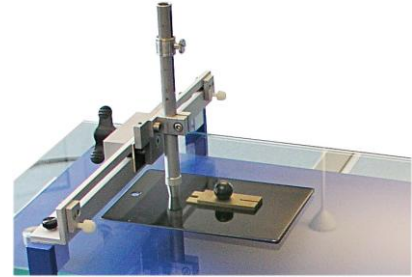


For more detailed information on the film applicators please refer to the individual leaflets 284/286/288/358/360/411/421/E as well as 419/E.

### Attachment for Scratch Hardness Tests

Adapter for swivelling and sliding mounting of models 318 and 435 on one of the attachment assemblies.

(Please refer to our Technical Descriptions 318 and 435)



### Drying Time Test

The COATMASTER 510/510 XL is designed to allow seven identical or different paint specimens to be applied simultaneously onto glass strips and subsequently be tested regarding their drying behaviour.

### Principle of Test

For the drying time test the test tools are drawn at a pre-selected speed across the applied film and the various drying criteria are established in relation to the distance covered in the time period of the measurement. The measuring time (in minutes) is calculated by multiplying the corresponding distance (in cm) by the preset (reciprocal) speed (min/cm).

Further details concerning the various drying time tests are given in the Operating Instructions 510/E which is included in the scope of supply.

### Design and Function

#### ACCESSORIES

In addition to the application of films the combined test instrument has to be equipped with the necessary test tools, supports etc. for drying time tests.

#### Test Tools

##### Test Tool No. 1

for the evaluation of surface drying time (wool thread to be laid onto the film).



##### Test Tool No. 2

for determining „no pick-up“ time (wool thread to be pressed into the film).



**Test Tool No. 3**  
for the evaluation of surface  
drying time acc. to DIN 53 150  
(ballotini).



**Test Tool No. 4**  
for the evaluation of the grip  
dryness (sprocket wheel).



**Test Tool No. 5**  
for the evaluation of the “open” time  
and of the relation-ship between  
surface dryness and through-  
dryness (ball point).



**Test Tool No. 6**  
for the evaluation of the “open”  
time and of the relationship  
between surface dryness and  
through-dryness (wire loop).



**Test Tool No. 7**  
for determining the drying time  
of printing inks (serrated-edge  
wheel).

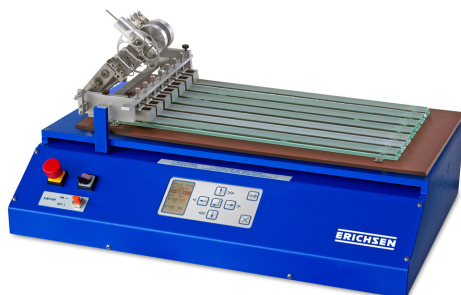


### Attachment Assembly

The attachment assembly is needed to mount up  
to 7 identical or different test tools.

### Plate Glass Strips

There are plate glass strips available which can be  
used in connection with the appropriate support.



## Technical Data

### Model 510 (Basic unit)

Dimensions: L 610 mm  
W 425 mm  
H 210 mm

### Model 510 XL (Basic unit)

Dimensions: L 1060 mm  
W 425 mm  
H 210 mm

Net weight: (Mod. 510) approx. 23 kg  
(Mod. 510 XL) approx. 60 kg

Power supply: 100 - 240 V, 50 - 60 Hz  
via wide-range power supply unit

Drawn-down speeds: Freely adjustable in the  
range of 0.1 – 19.9 /  
20 - 100 mm/s

Dryness test times: Freely adjustable in the  
range of 0.1 – 19.9 /  
20 - 108 min/cm

Order Information	
Ord.-No.	Product-Description
02810131	Film Applicator and Drying Time Recorder <b>COATMASTER 510</b> microprocessor controlled (application path 400 mm)
17800131	Film Applicator and Drying Time Recorder <b>COATMASTER 510 XL</b> microprocessor controlled (application path 800 mm)
<i>The scope of supply includes:</i> <ul style="list-style-type: none"> <li>- basic unit</li> <li>- wide-range power supply unit</li> <li>- integrated ejector</li> <li>- paint collection trough</li> <li>- operating manual</li> </ul>	

For further details as well as the **necessary accessories** please refer to our current price list no. 510.

### ATTENTION:

The basic unit is not functional without the appropriate accessories. It is therefore **necessary to order the appropriate accessories** (glass plate, applicator, test tools etc.) with the basic unit in order to carry out the required tests

Subject to technical modifications.  
Gr. 8 + 9 - TBE 510 – X/2018