

Schematic diagram, it will be based on reality if any difference.
Any change without prior notice.

ATMALINE RR5060/C

Fully Automatic Roll-to-Roll Screen Printing Line

for Biomedical Test Strips

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APPLICATION :

Dedicated to screen printing graphic literal, functional coating on various kinds of the coiled material PET/PC film, such as Blood Glucose Test Strips, Opto-electronic Sensor, Smart Card, RFID and so on.

CHARACTERISTICS :

AT-RR5060/C is equipped with visual registration system, possessed screen quick positioning, real time registration for printing and stretch stroke automatic correcting function.

Production Advantage

- Fast Production Capacity **666** pph (parameters as below)

  ★In-feed speed 1000mm/s

  ★Squeegee speed 280 mm/s, Flood coating speed 280 mm/s

  ★Printing productivity 5.4 s/pc

- Printing Real Time Registering Function

  Screen real time automatic registering to material while printing, setup initial printing to massive production within ≦5min time, initial printing can be final product less waste the coiled material and increase production efficiency, also attains high precision and high production capacity.

- Fast Screen Visual Registering Function

  Even beginner also can make quick screen registering within ≦2min time.

- Stretch Material Automatic Correcting Function

  Visual stretch material automatic compensation, no problem with accumulation of stretch length.

- Excellent Drying Effect

  Special light source is used to match hot air drying to reduce substantially 5 ~ 20 times of drying time to save energy and reduce consumption.

INTRODUCTION OF FEATURES

Unwinding + Screen Printer

- **Stable Transport** : steel structural combination of in-feed section and screen printer makes high stable transportation.
- **Quick Replacing Material** : equipped with labor saving air shaft, high convenience for staff loading and unloading material.
- **Coil Guide** : adopted Germen high precision guider to implement automatic correcting.
- **Tension Control** : digitized control tension to avoid substrate material deformation upon stretching.
- **Connecting Material Platform** : pressing and vacuum at the same time to replace material, high accuracy of flat connecting to attain supreme stable workflow.
- **Precise Retractable Screen :** substantially raise convenience of cleaning residual ink on screen mesh, high accuracy of repeatability registration. Screen can be retracted back to position for continuous printing, unnecessary to make registration again.
- **Servo Synchronous Peel-off** : follow printing stroke to raise peel-off synchronously and avoid to stick mesh. Peel-off stroke height and start point can be preset digitally.
- **Digitized Control Equalized Air Pressure :** electronic control system for squeegee / flood coater equalized air pressure to maintain full printing stroke with constant air pressure.
- **Convenient Change Production Line :** adopts edge alignment mechanism,

unnecessary to make adjustment when change substrate width, fast change production line.

CCD Visual Registration

- **Hardware Device :**
  - 2 CCD cameras (standard), optional 4 CCD cameras.
  - FOV (field of view)：13.57 * 10.18mm。

Control System

- **HMI Touch Panel :** 10.1 inch colored HMI, multi-joint movable bracket to correspond with Ergonomics, convenient operation.
- **Standardized Management :** provides 100 groups of recipe for quick process to change parameters and reduce input time.

Safety Protection

- **Error Display** : HMI display error message and records immediately to provide prompt exclusion.
- **Protective Device :** chain loop, error diagnosis, mono key automatic safety restoration loop, safety light barrier / protective shield, E-stop, Warning Lamp and so on for this machine and up/downstream various machines, comprehensive safety protection.

Drying System

- **Drying Mode** : hot air + special light source to output stable wave length and even temperature control to reduce substantially drying time.
- **Chassis Heat Insulation** : adopt top quality heat insulation foam to attain optimal effective heat insulation, chassis surface temperature is below 60℃ to save energy effectively to avoid scald.
- **Easy Maintenance :** design of lifting up the hood for easy maintenance and convenient repairing.
- **Quick Cleaning** : stainless steel inner chamber can be cleaned easily.

Rewinder AT-RW5060

Excellent Accuracy Rewinding : self-made correction system is collocated with displacement collecting, even incoming material with tensionless, rewinding accuracy can be remained within ±1mm.

Rewinding Tightness : rewinding tension wheel is collocated with taper control to make rewinding fine tightness, the coiled material will not be loosened upon transportation.

Optional Device

- **Air Shaft for the coiled material** : the sleeve for 3″ is changed to 6″ air shaft.
- **Air Shaft for tear-off and adhesive film** : the film must be torn-off before printing or adhere after printing.
- **Squeegee auto leveling calibration :** automatically detect squeegee leveling to optimize printing ink layer evenness.
- **Dust-proof enclosure :** various types can be selected, all types with window opening to facilitate maintenance.
- **Electrostatic elimination device** : based on the requirement for production condition to get mounted at location by customer designation.

SPECIFICATION

Spec for entire line	ATMALINE RR5060/C
Substrate Spec	Thickness 0.05～0.25mm Coil width 160~500mm Printing length 400~600mm Coil diameter, max. ø550mm Coil weight, max. 80kg
Workflow Direction	Left-in Right–out (option : right-in left-out)
Productivity (full speed full stroke)	12p/min (720p/h) = throughput 7.3m/min
Working Height	1100+50mm

Max Printing Area	500x600mm
Min Printing Area	160x350mm
Power Source	3ϕ, 220/380V, 50/60Hz
Power Consumption for Entire Line	35.4+43kw
Compressed Air Pressure	6～7kg/cm^2
Air Exhaustion for Entire Line	40L/min.
Entire Line Dimension	2210(D)x12850(L)x2150(H)mm
Entire Line Net Weight	AT-RR5060/C 2795kg AT-TIO5050/CP (5 sections) 2463kg AT-RW5060 470kg Total weight : 5728kg

Unwinding Structure	**AT-RR5060/C**
Machine Dimension	4000(L)x1970(D)x2100(H)mm
Machine Weight	2795mm
Air Exhaustion	30L/Min
Max Coiled Material Outer Diameter	ø550mm
Max Outer Diameter Wheel for Tear-off Film	ø250mm
Stretch Speed	800~1200mm/sec
Cleaning Device (option)	Attached with double side cleaning roller (optional single side roller)

Screen Fine Adjustment Structure	
Max Frame O/D Size	1100x1100mm
Min Frame O/D Size	900x900mm
Frame Height	25～45mm
Screen Cleaning Equipment	Retractable Screen Frame

Printing Head Structure	AT-RR5060/C
Printing Direction	From back to front side
Squeegee Skew Angle Adjustment	20±10˚
Flood Coater Inclination Adjustment	45±5˚
Printing Speed	20～830mm/sec

Squeegee / Flood Coater Pressing Pressure	3~62kg

Table Structure	AT-RR5060/C
Working Table Size	660(W)x680(D)mm
Vacuum Are	490x620mm
Max Printing Area	500x600mm
Min Printing Area	160x350mm
Enclosure Structure	**AT-RR5060/C**
Warning Lamp Style	3 colors lamp + buzzer
Screen Cleaning Button	Each button at front and back side
Door Alarm Relieved Button	One at back side

CCD Registering Structure	AT-RR5060/C
CCD camera	2 sets
FOV scope	10.18 x 13.57mm
Registration Accuracy	±5μm

Cleaning Roller Structure	AT-RR5060/C
Cleaning Roller Equipment	Each roller at up / down side
Cleaning Roller Module Structure	Standard : Silicon Rubber Roller + Adhesive Paper Tape Option : Rubber Roller + Transfer Wheel

Screen Printer Operation Control System	AT-RR5060/C
Control System	Advanced Beckhoff PLC，integrated connecting line to control and monitor screen printer and up/downstream station synchronously.
Haman-machine Interface	10.1 inch colored HMI Setting, editing, saving and retrieve 100 groups of printing parameters recipe
Historic Error Message	100 groups

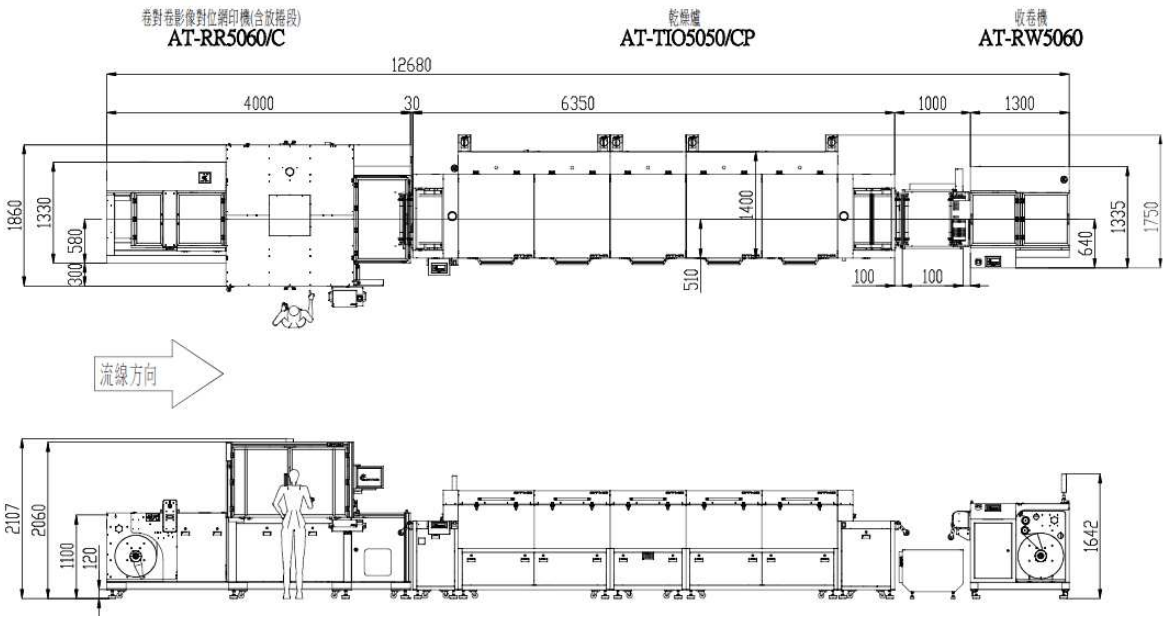
Language Selection	Chinese / English

Dryer Structure (Option)	AT-TIO5050/CP
Machine Dimension	1850(W)x8460(L)x1620(H)mm
Machine Weight	2463kg
Max Substrate Width	500mm
Max Substrate Thickness	5mm or below
Internal Substrate Length / Heating Substrate Length / Sections	6.7m/5m/5 sections
	Chassis heat insulation + upper hood + stainless steel inner chamber
Drying Energy	Hot air + IR 80~120ºC ±3%
Ventilation Volume	26.6cmm

Winder Structure	AT-RW5060
Machine Dimension	1595x1335x1650mm
Machine Weight	470kg
Winding Air Shaft	3" (6" air shaft sleeve, option)
Coiled Material Width	160～500mm
Winding Wheel for Max Outer Diameter of the Coiled Material	550mm
Adhesive Film Wheel for Max Outer Diameter of the Coiled Material	250mm
Coiled material Max Weight	80kg
Winding Accuracy	Material width +2mm
Electrostatic Elimination Device (option)	600mmx1 支
Dust-proof Enclosure (option)	Upper hood type, transparent window at top surface
Human-machine Interface	PROFACE 7 inch colored display

Three-view Diagram

ATMALINE RR5060/C



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