



**THE MOST OPTIMAL PARTNER IN  
AUTOMATIC MANUFACTURING OF  
IVD PRODUCTS**

## Company Vision and Core Values



### SHINHAN FA SYSTEM's Automatic Machine Range for IVD Products

#### Assembler for Rapid Diagnostic Testing Devices

- SEMI-AUTOMATED ASSEMBLER
- FULLY AUTOMATIC ASSEMBLER

#### Various Machine for Production of Diagnostic Testing Devices

- REEL TO REEL LAMINATER
- DISPENSER
- ROTARY SLITTER
- GUILOTINE CUTTER , ETC.

#### Other Machine for Production Automation

- CONVEYOR SYSTEM
- PACKING MACHIIINE, SELECTOR, QUANTITATIVE INJECTOR , ETC.

#### Feeders and Feeder Related Products

- BOWL FEEDER SYSTEM
- LINEAR FEEDER SYSTEM
- TOTAL PARTS FEEDER SYSTEM, ETC.

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# SHA-1800 Assembly System

## for Rapid Diagnostic Device



### Product Overview

With this system machine, once a bottom plastic case is fed by a parts feeder onto the system automatically, manpower put test strip (membrane with reagent laminated) into a specific position in the bottom case manually, the system combines the bottom case having a strip inside with a top case fed by another parts feeder and aligned by the system, press, and release the finally and fairly assembled devices to an outlet automatically.

### Main Features

- Except for strip placement into bottom case manually by manpower, all other operations incl. aligned feeding of top and bottom cases are done automatically by the system
- Isolation of incorrectly assembled bottom case & strip through inspection of strip existence by a color sensor
- Cost-efficient through the minimized labor input (2 persons)
- Easy setting and operation with a Touch Screen
- Stable operation by adopting Servo Motors

### Specifications

(can be changed depending on applied devices)

Model name	SHA-1800
Applicable Products	Rectangular shaped rapid diagnostic test device
Capacity	1,800~2,400 Devices / hour
Required manpower	2 persons
Bottom and Top case supply	Automatic by 2 units of parts feeders
Strip placement	Manually by operators
Isolation of incorrectly assembled product	Available by a color sensor
Main operation	by Servo Motors
Control Panel	PLC / Touch Screen
Bottom & Top case coupling	by air cylinder / Roller Press
Dimension	Approx. 5.5(L) x 3.0(W) x 1.8(H) m
Weight	Approx. 700 Kg
Power supply	AC 110 / 220V, 50 / 60 Hz
Required Air Pressure	5~7 Kgf / $\text{cm}^2$

# SHA-2000R Assembly System

## for Rapid Diagnostic Device



### Product Overview

With this system machine, once loading top and bottom plastic cases onto device transfer conveyors are done manually by manpower, 1st vision inspection (1 unit) of a card(membrane with reagent laminated), cutting the card to strips, placing the fair quality strips only into the bottom case(1 SCP unit) fed aligned, 2nd inspections(1 unit), combining the bottom case having a strip inside with a top case fed aligned, and release finally and fairly assembled devices to an outlet.

### Main Features

- Except feeding of top and bottom cases are done manually by manpower, all other operations incl. SCP(Strip Cut, Pick, and Place) are done automatically
- High productivity by adopting a SCP(Strip Cut, Pick, and Place) unit and successive operation
- Isolation of not fairly assembled devices by 2 vision inspection units
- Easy operation by a Touch Screen
- Stable operation by applying Servo Motors

### Specifications

(can be changed depending on applied devices)

Model name	SHA-2000R
Applicable products	Rectangular shaped rapid diagnostic device
Capacity	1,800~2,400 Devices / hour
Required manpower	2 persons
Bottom & Top case supply	Manually by manpower
SCP(Strip Cut-Pick and Place) unit quantity	1 unit
Isolation of incorrectly assembled product	Available by 2 vision cameras
Main operation	by Clutch break motor
Control Panel	PLC / Touch Screen
Strip cutting tool	Guillotine Cutter (+/- 0.1mm tolerance)
Bottom & Top case coupling	by Air Cylinder / Roller Press
Loadable card q'ty on a magazine	30~50 Cards
Dimension	Approx. 2.7(L) x 1.7(W) x 1.8(H) m
Weight	1200 Kg
Power supply	AC 110 / 220V, 50 / 60 Hz
Required air pressure	5~7 Kg / cm <sup>2</sup>

# SHA-2500R Assembly System

## for Rapid Diagnostic Device



### Product Overview

With this system machine, loading top and bottom cases onto main transfer rail are done by parts feeders, 1st vision inspection(1 unit) of a card(membrane with reagent laminated), cutting the card to strips, placing the cut strip into the bottom case(1 SCP unit) fed aligned, combining the bottom case having a strip inside with a top case fed aligned, 2nd vision inspections (1 unit), and finally and fairly assembled devices to an outlet are done automatically.

### Main Features

- All the operations including automatic feeding of top and bottom cases by 2 parts feeders and SCP(Strip Cut, Pick, and Place) are done automatically
- High productivity by successive operation and a SCP(Strip Cut, Pick, and Place) unit
- Isolation of not fairly assembled devices by 2 vision inspection units
- Easy operation by a PLC Touch Screen
- Stable operation by applying Servo Motors
- Enhanced cost efficiency by minimized labor input

### Specifications

(can be changed depending on applied devices)

Model name	SHA-2500R
Applicable products	Rectangular shaped rapid diagnostic test device(strip inside)
Capacity	2,200~2,500 Devices / hour
Required manpower	1 Person
Bottom & Top case supply	Automatic by 2 Units of parts feeder
SCP(Strip Cut-Pick and Place) unit quantity	1 unit
Isolation of incorrectly assembled product	Available by 2 vision units
Main operation	by Clutch break motor
Control Panel	PLC / Touch Screen
Strip cutting tool	Guillotine Cutter (+/- 0.1mm tolerance)
Bottom & Top case coupling	by Air Cylinder / Roller Press
Loadable card q'ty on a magazine	30~50 Cards
Dimension	Approx. 5.7(L) X 2.0(W) X 1.8(H) m
Weight	1700Kg
Power supply	AC 110 / 220V, 50 / 60 Hz
Required air pressure	5~7 Kgf / cm <sup>2</sup>

# SHA-4000 Assembly System

## for Rapid Diagnostic Device



### Product Overview

With this system machine, loading top and bottom cases onto main transfer rail are done by parts feeders, 1st vision inspection (2 units) of a card (membrane with reagent laminated), cutting the card to strips, placing the cut strip (2 SCP units) into the bottom case, coupling top device case with the bottom device case, 2nd vision inspection (1 unit), and release finally and fairly assembled devices to an outlet are done automatically.

### Main Features

- All the operations including feeding of top and bottom cases by 2 parts feeders and SCP(Strip Cut, Pick, and Place) units are done automatically
- High productivity by 2 SCP(Strip Cut, Pick, and Place) units and successive operation system
- Isolation of not fairly assembled devices by 3 vision inspection units
- Easy operation by a PLC Touch Screen
- Stable operation by applying Servo Motors
- Enhanced cost efficiency by minimized labor input

### Specifications

(can be changed depending on applied devices)

Model name	SHA-4000
Applicable products	Rectangular shaped rapid diagnostic device
Capacity	Approx. 3800~4,000 Devices / hour
Required manpower	1 Person
Bottom & Top case supply	by 2 units of Parts Feeder
SCP(Strip Cut-Pick and Place) unit quantity	2 units
Isolation of incorrectly assembled product	Available by 3 Vision units
Main operation	by Servo Motors (Shuttle & Guide Rail)
Control Panel	PLC / Touch Screen
Strip cutting tool	Guillotine Cutter
Bottom & Top case coupling	by Air Cylinder / Roller Press
Loadable card qty on a magazine	30~50 Cards
Dimension	Approx. 5.7(L) x 3.0(W) x 1.8(H) m
Weight	2500 Kg
Power supply	AC 110 / 220V, 50 / 60 Hz
Required air pressure	5~7 Kg / cm <sup>2</sup>

# SHP-4000 Pillow Pouch Packing & Sealing System



## Product Overview

This machine does pillow type pouch(aluminum coated inside) packing of a rapid diagnostic test device and 3 sides heat sealing on the pouch

The test device and, if required, dropper are fed manually by manpower and desiccant are fed manually by the same or by the machine when rolled desiccant with 'I' mark is available

The machine is composed of infeed conveyor, film feeding unit, and sealing unit

## Main Features

- High productivity with cost efficiency
- Applicable to a certain shape of general solid products as well as rapid diagnostic test devices

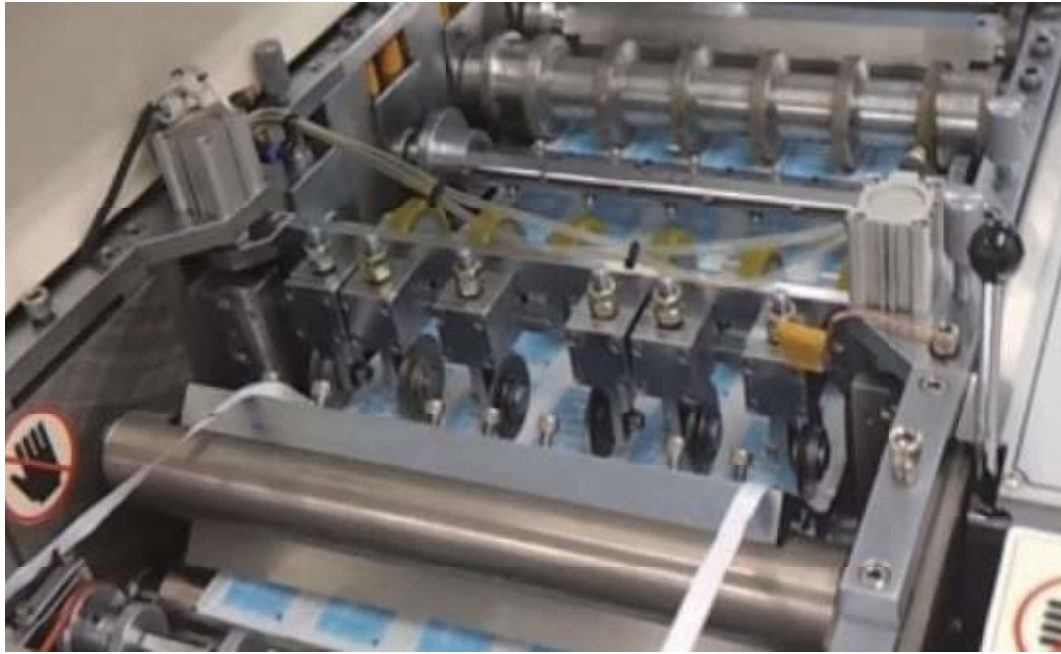
## Specifications

(can be changed depending on applied devices)

Model name	SHP-4000
Applicable product	rapid diagnostic test devices etc.
Packing material	AL + PE, Heat sealable film
Packing size	negotiable
Capacity	Approx. 80 pouches / min.
Required manpower	3~4 persons
Packing type	3 sides heat sealing
Print alignment	by photo sensors
Control panel	PLC / Touch Screen
Required air pressure	5~7 kgf/cm <sup>2</sup>
Power supply	AC 220/380V, 50/60Hz, Single Phase/3 Phase
Dimension	Approx. 4.5m x 1.1m x 1.8m
Weight	1200Kg



# SHP-9000 Pouch Packing System



## Product Overview

- This system is to pack a rapid diagnostic test device, a desiccant, and if required, a dropper in a pouch by unit of programmed quantity
- Test device, desiccant, and dropper can be fed automatically or manually by manpower
- All other working procedures after the feeding of the test material till release of the sealed pouch to an outlet are done automatically
- The system consists of Infeed Conveyor, Film Feeding unit, Sealing unit, Cutting unit, and Release unit

## Main Features

- Long-term cost efficiency by minimized labor input
- Applicable to certain shape of general solid products as well as rapid diagnostic device

## Specifications

(can be changed depending on applied devices)

Model name	SHP-9000
Applicable Products	Rapid Diagnostic Device etc.
Required manpower	2 persons
Packing Material	AL+PE, Heat sealable film
Packing size	Negotiable
Capacity	Approx. 30 Cuts / minute (7200 ~ 9000 pouches / hour)
Packing Lane qty	4~5 Lanes
Packing type	4 sides embossing adhesion
Print alignment	Photo sensor
Control Panel	PLC / Touch Screen
Required air pressure	5-7 Kg <sub>f</sub> / cm <sup>2</sup>
Power supply	AC 380V, 60Hz, 3 Phase
Dimension	Approx. 7.0(L) x 2.6(W) x 2.0(H) m
Weight	Approx. 1200 Kg

# SHD-6000 Reel to Reel Dispensing And Drying System



## Product Overview

SHD-6000 is an automated system machine that makes successive reel to reel supply of membrane, dispense a constant amount of reagent on the membrane, vision inspection, dry, and release automatically.

The system machine is suitable for a medium to a high volume reagent absorbed membrane production facility.

## Main Features

- High productivity with the least labor input
- Efficient quality control by in-line vision inspection
- Stable quality production through keeping dry room temperature at a specific level
- Prevention of contamination that may occur by contact with human hand in manual production
- Easy setting (dispensing amount, speed, length, distance, etc.) and operation by Touch Screen

## Specifications

(can be changed depending on applied devices)

Model name	SHD-6000
Required manpower	1 person
Dispensing method	Syringe pump
Applicable product	Membrane Roll
Dispensing speed	10~150 mm /sec.
Dispensing amount	0.2~10 $\mu$ L /cm (Tubing Tip), 0.6~10 $\mu$ L /cm (Sapphire Tip)
Dispensing line qty	4 Lines (can be added by customer need)
Accuracy(pump)	+/-1% from target result at full stroke
Precision(pump)	Within 0,05% at full stroke (using 250 $\mu$ l and above syringe)
Dry room oven temperature	30~60 $^{\circ}$ C
Control Panel	PLC / Touch Screen
Dimension	Approx. 3,0(L) x 0,7(W) x 1,8(H) m
Weight	Approx. 500 Kg
Power supply	AC 110 / 220V, 50 / 60 Hz
Required air pressure	5~7 Kg / $cm^2$

# SHD-5000 Bottle/Tube Dispensing and Capping System



## Product Overview

SHF-5000 is an automated system machine that fills liquid material, e.g. buffer solution etc. into bottles/vials/tubes and do inner cap and outer cap(screw type) automatically.

## Main Features

- Efficient quality control through prevention from contamination that may occur by contact with human hand in manual production
- Easy setting and operation by Touch Screen
- Stable operation by adopting Servo Motor
- Long-term cost efficiency by minimal labor input

## Specifications

(can be changed depending on applied devices)

Model name	SHD-5000
Applicable Products	Liquid Fluid and a Bottle to be filled in
Capacity	depends on filling volume and bottle quantity per cycle
Filling volume	Adjustable (can be customized)
Required manpower	1 person
Pump type	Tubing pump or Syringe pump
Main operation	by Servo Motors
Control Panel	PLC / Touch Screen
Power supply	AC 110/220V, 50/60 Hz
Required air pressure	5~7 Kgf / $\text{cm}^2$

# SHD-8000 Dip & Dry System



## Product Overview

This system dips membrane or various pad material from a roll into liquid reagent solution, dries the dipped membrane or other pad, and rewind as a roll after the drying process. The system is suitable for mass production of reagent absorbed membrane and other pads

## Main Features

- High-level production efficiency and products quality control
- Automatic reagent amount control
- Collection of excessive reagent solution
- Reagent solution temperature control
- Temperature control in the dry chamber
- Automatic tension control in the process of membrane or pad winding and re-winding
- Dipping and Drying speed control
- Easy membrane attach and detach
- Easy cleaning (parts of reagent contacts can be detachable)

## Specifications

(can be changed depending on applied devices)

Model name	SHD-8000
Applicable product	Rolled membrane or various types of pad, reagent solution
Roll width	60mm ~300mm
Reagent tank and roller	Detachable (exchangeable)
Drying Chamber Temperature	Adjustable up to 120° C
Rolling speed	15mm ~ 120mm / sec.
Option	Extra parts of reagent contacts (i.e. Reagent Tank, Rollers), Dehumidifier in the Chamber, Slitter(Rotary Ring Knife)
Power supply	AC220V/380V, 50/60Hz, Single/3 Phases
Required air pressure	5~7 kgf/cm <sup>2</sup>
Dimension and Weight	Variable depending on applied products and customer's requirements

# SHD-1000 Line Dispenser



## Product Overview

SHD-1000 is a semi-automated machine that is designed to dispense programmed amount of liquid reagent onto the membrane attached on a card (uncut sheet) once a personal operator input the card into the machine manually.

## Main Features

- Easy setting (dispense amount, speed, length, and distance) and user-friendly operation by a Touch Screen
- Dispense reagent onto the membrane on a card (uncut sheet) max. 4 lines at a time
- Various sizes of card (uncut sheet) can be applicable
- Tip height and dispensing position are adjustable by built-in micrometer
- Remaining reagent is recoverable by stroke adjustment
- Convenient bubble removal and cleaning by adopting syringe pump

## Specifications

(can be changed depending on applied devices)

Model name	SHD-1000 (old DM-100)
Dispense method	Syringe pump
Applicable product	Membrane laminated card (uncut sheet)
Speed	10~100 mm/sec.
Dispensing amount	0.2~10 $\mu$ l/cm (Tubing Tip), 0.6~10 $\mu$ l/cm (Sapphire Tip)
Dispensing line qty	Max. 4 Lines
Accuracy (pump)	Within +/-1% at full stroke
Precision (pump)	Within 0.05% at full stroke (using 250 $\mu$ l and above syringe)
Dispense distance	2.5~5 mm
Control panel	PLC / Touch Screen
Dimension	Approx. 0.6(L) x 0.5(W) x 0.42(H) m
Weight	Approx. 60 Kg
Power supply	AC 110 / 220V, 50 / 60 Hz
Required Air Pressure	5~7 Kgf / $cm^2$

# SHL-1000 Laminator



## Product Overview

The machine is designed to laminate membrane, sample pad, absorption pad, conjugation pad, cover tape, and other related material on the backing card and cut by specific width(50~100mm) and length (approx. 300 mm in general)

## Main Features

- Higher working efficiency (less error rate and contamination) compared with manual lamination by a human operator
- Easy operation by user friendly design
- Neat cutting and longer life span by adopting titanium coated blade
- Long term cost efficiency by minimal labor input

## Specifications

(can be changed depending on applied devices)

Model name	SHL-1000 (old LM-100)
Available number of laminating material	Max. 4 kinds
Backing card width	50~100mm
Backing card supply	Manually by an operator
Capacity	800~1,200 cards / hour
Lamination accuracy	+/- 0,1mm
Membrane roll outer diameter	Max. 350 mm
Membrane roll inner(core) diameter	Max. 76 mm
Absorption/sample/ conjugation pad O.D.	Negotiable
Absorption/sample/ conjugation pad I.D.	Negotiable
Roll weight	Max. 20 kg
Control panel	PLC / Touch Screen
Dimension	Approx. 1.7(L) x 0.5 (W) x 0.9 (H) m
Weight	Approx. 100kg
Power supply	AC 110 / 220V, 50 / 60 Hz

# SHC-900 Rotary Slitter



## Product Overview

The machine cut the card(uncut sheet) laminated with membrane and other related pads by specific width and release through a tray or a chute once a person manually input an uncut sheet on the equipment

## Main Features

- Easy operation by user friendly design
- Various width (3~8mm) of strip cutting is available by easy exchange of cutting blade
- Low cutting error by precise cutting blades
- Longer use life span using by titanium coated blade
- Minimized maintenance cost by simple operations
- Minimized strip's sticking to the blade by adopting antistatic ionizer

## Specifications

(can be changed depending on applied devices)

Model name	SHC-900 (old RSM-100)
Applicable product	Card (uncut sheet) with reagent absorbed membrane and other related pads
Capacity	900 Cards / hour (based on 4 sec. feeding interval)
Card length	Max. 320 mm
Card width	Max. 130 mm
Card depth	2.5 mm
Card feeding	Manually by a personal operator
Strip width	3~8 mm
Dimension	0,68(L) x 0,45(W) x 0,37(H) m
Weight	Approx. 80 kg
Power supply	AC110 / 220V, 50 / 60 Hz

# SHC-100 Guillotine Strip Cutter

# SHC-300 Guillotine Sheet Cutter



## Product Overview

SHC-100 / 300 machine cuts various types and sizes of membrane and pads laminated sheet with a backing card / membrane or sheets for different pads into strip format. Strip width, speed, quantity for cutting can be adjustable by set-up through the touch screen

## Main Features

- Fast cutting speed
- Easy operation by user-friendly design
- Various width of card / sheet is available
- Cutting width, speed, and quantity can be adjustable by set-up through the touch screen
- Various types of work pattern(max. 10 kinds) can be programmed and saved through the touchscreen
- Low cutting error by precise cutting blades
- Longer use life-span by titanium coated blades
- The minimal strip's sticking to the blades by antistatic ionizer

## Specifications

(can be changed depending on applied devices)

Model name	SHC-100 / SHC-300
Applicable product	Membrane and other pads laminated sheet with a backing card / membrane or other sheets
Capacity	Max. 250 / 350 cuts / min.
Sheet width	60~110mm / 260~310mm (Adjustable)
Cutting width	3~100 mm
Cutting Accuracy	+/- 0.1 mm
Strip cutting quantity set-up	Available
Cutting blade	Titanium coated hardened steel
Control panel	PLC / Touch Screen
Dimension	470(L) x 670(W) x 325(H) mm / 490(L) x 670(W) x 325(H) mm
Weight	Approx. 20 / 30 Kg
Power supply	AC 110/220V , 50/60 Hz



# SHP-200 Tube Sealing Machine



## Product Overview

SHP-200 is a heat sealing machine using a sealing jig. This machine seals several tubes filled with a liquid solution using a film and cut the film at the same time

## Main Features

- Using a film, seal several tubes filled with liquid solution and cut all the tubes at a time
- Easy use through simple switch operation
- Hard and anti-rust by adopting stainless and duralumin
- Cover and emergency stop are adopted for safe work environment

## Specifications

(can be changed depending on applied devices)

Model name	SHP-200
Applicable product	Tube filled with a liquid solution
Sealing Capacity	Approx. 6 sec (based on using jig for 10 tubes)
Sealing temperature	Adjustable
Heater Capacity	300W
Control Panel	PLC / Touch Screen
Dimension	Approx. 780(L) x 1250 (W) x 880 (H)mm
Power supply	AC 100 / 220V, 50 / 60 Hz
Required air pressure	5~7 Kgf / cm <sup>2</sup>

# SHA-100 Pressing Machine



## Product Overview

This machine is to press the semi-assembled top case and bottom case(with a test strip inside) of a rapid diagnostic test device and release it to an outlet once it is placed manually by manpower

## Main Features

- Higher productivity than an assembly of the test device manually by manpower

## Specifications

(can be changed depending on applied devices)

Model name	SHA-100
Applicable product	Approx. 4000 devices/hour (can increase if manpower is added)
Capacity	Approx. 4000 devices/hour (can be increased if manpower is added)
Device(semi-assembled) feeding	manually by manpower
Operation tool	Button type (START / STOP / EMERGENCY button)
Inspection	Visually by manpower
Pressing tool	Roller Press
Dimension	Approx. 4(L) x 0.9(W) x 1.1(H) m
Weight	Approx. 150Kg
Power supply	AC 110/220V, 50/60 Hz

# Strong Points of SHINHAN FA SYSTEM and its Products

SHINHAN FA SYSTEM's systemic or single equipment give maximum productivity to its customers based on a leading-edge technology and accumulated know-how in production automation for about 25 years

Little malfunctions through enough test operations in SHINHAN FA SYSTEM before it hands over a finished machine to customers

Manufacture all its machine based on the user-friendly design from the development of the machine that the machines are more convenient, easier, and safer than other competitors' machine

SHINHAN FA SYSTEM produce most of the parts by itself and do After-Sale-Service to its customers directly that customers will have low -risk management and more active and effective support from the manufacturer, SHINHAN FA SYSTEM is available even in case there occur any unexpected problem in customer side



# HIGHER PERFORMANCE WITH COST EFFICIENCY



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