



AUTOMATIONS MACHINETOOLS PVT. LTD

Customized Machines, Your Helping Hands

***AUTOMATION MACHINES
FOR IN-VITRO DIAGNOSTIC TEST
KIT
MANUFACTURING***

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CUTTING MACHINES

1 Programmable Guillotine Shear GS-01



Description:

This is a programmable guillotine type strip cutting machine which is designed to cut a wide range of laminated card into final strip sizes.

Salient Features:

- HMI controlled machine having following features: -
 - Speed for cutting & output size.
 - Has memory to recall last steps from previous run.
 - Programmable strip cutter cut final width and numbers of strips automatically.
- Safety cover with sensors is equipped in the machine in order to enhance safety.

Specification:

- Card Size: Thickness: Max. 2.5 mm, Width: Max. 100 mm
- Strip Width Size: Min 2 to 10mm
- Strip Width Accuracy: ± 0.1
- Machine Weight - 80kgs

Requirement:

- Single phase 220 volts electrical supply required.
- Floor space(mm) : 680(L) \times 400(W) \times 450(H) ,

Output:

- Card cutting speed - 150 to 400 strips per minute.

Video Link:

<https://youtu.be/qlq158Nc9uk>

2 Programmable Guillotine Shear GSW-03



Description:

This is a programmable guillotine type strip cutting machine which is designed to cut a wide range of absorbent, sample pad into final strip sizes.

Salient Features:

- It is the extension of the previous machine GS-01.
- This machine is used for large card sizes of 2mm thick and 300 mm width max
- Strip cutting size can be easily controlled via programmable by HMI.
- Rest all features and functions remain the same.
- Strip size can be cut to one decimal i.e. 4.1, 4.2 etc.

- **Specification:**

- Card Size: Thickness: Max. 2, Width: Max. 300 mm
- Strip Width Size : Min 3.0 to ~
- Strip Width Accuracy : ± 0.15
- Machine Weight 100 kg Approx.

- **Requirement:**

- Single phase 220 volts electrical supply required.
- Floor Space in mm- 680×400×450Height

Output:

- Card cutting speed - 50 to 150 strips per minute

Video Link:

<https://drive.google.com/file/d/14r6nDMBMqegplewC86t12LZNkknAngY7/view?usp=sharing>

3 Gang Slitter GSM-01



Description:

Electrical motor powered standard gang slitter for cutting of Glucose Test Strip or Biosensor cards.

Salient Features:

- Manually placing of cards.
- The machine can operate on card length maximum up to 300mm.
- The strip cutting size 5 to 6mm
- Machine weight 150kg Approx.

Requirement:

- Single phase 220 volts electrical supply required.
- Floor space of 700 x 500 x 400 high;

Output:

- Card cutting speed 700 to 1000 cards per hour

4 Gang Slitter GSM-02

Description

Electrical motor powered standard gang slitter for cutting of lateral flow card.

Salient Features:

- Manually placing of cards.
- The machine can operate on card length maximum up to 300mm.
- The strip cutting size 3 to 4mm
- Machine weight 150 kg Approx.

Requirement:

- Single phase 220 volts electrical supply required.
- Floor space of 700 x 500 x 400 high;

Output:

- Card cutting speed 800 to 1000 cards per hour

Video link:

<https://drive.google.com/file/d/1pXZxhLJFad4mqKRPenrfxvYlyfjb2rNp/view?usp=sharing>

CARD LAMINATION MACHINES

1 Membrane lamination LS-02



Description:

- The machine is designed for in-line processing of lateral flow device.
- It laminates three adhesive tapes on the blank card with automatic "Reel to Reel" feeding.
- It unwinds the insulation of adhesive tapes and over it nitrocellulose membrane is laminated.
- It is then cut to 300 mm length with inbuilt guillotine shear.

Salient Features:

- Continuous plastic base roll is used & is cut automatically after the sticking of tapes.
- Electro-pneumatic PLC based machine.
- HMI controlled machine.
- Use of servo stepper motor for accurate indexing.
- Cutting of device card to the required length.

Requirement:

- 5-6 bar pressure clean compressed air.
- Single phase 220 volts electrical supply required.
- Floor space required 2000 x 500 x 1500 mm high.
- Machine weight 350 kg Approx.

Output:

- 300- 350 cards per hour.

Video link:

<https://drive.google.com/file/d/1ggLJWC-U7BJ2JAAtBTyIltPsgHQMqAMzz/view?usp=sharing>

2 Membrane Laminator LS-04



Description:

- The machine is designed for in-line processing of lateral flow device.
- Designed to cope with various sizes of membrane/absorbent pad/plastic roll.

Salient Features:

- Continuous plastic base roll is used & is cut automatically at 300mm length after the sticking of tapes.
- 6 station machine and 5 rewinding for complete manufacturing of lateral flow laminated cards.
- Automatic feeding for continuous card roll.
- Electro-pneumatic PLC based machine with Touch screen HMI.
- Use of Servo stepper motor for accurate indexing.
- Cutting length of the card easily changeable using touch screen HMI.
- Machine weight 400 kgs. Approx.

Requirement:

- 5-6 bar pressure clean compressed air at 50 LPM.
- Single phase 230 volts electrical supply required.
- Floor space required 2400 X 560 X 1150 mm high

Output:

300- 450 cards per hour

Video link:

<https://youtu.be/8NmycSK514o>



Description

- Continuous roll of conjugate/membrane soaking in a liquid and drying system.
- Reel to reel unwinding and winding at predetermined tension and speed
- PLC based machine with touch screen controlled panel.
- The maximum roll size would be 350 mm diameter and width 25 mm.

Salient Features:

- Continuous roll of conjugate/membrane soaking in a liquid and drying system.
- Inline heating chamber for a length of 14 meter.
- Additional Dehumidifier.
- Digitally air quality controlled in the cabinet using sensors and inline air heating system.
- Soaking in a dip tank with liquid level sensor and peristaltic pump to maintain the liquid level.
- Variable tape Speed 0.3-3m/min.
- Re-winder driven by servo controlled motors with electronically maintained the tape tension.

Requirement:

- Single phase 220 volts AC supply at 50Hz. Power consumption 7.5KW approx.
- Floor space required 2.3 X 1.2 X 2.7 Meters High. Machine weight 400 kg.

Video link:

<https://drive.google.com/file/d/1QWCiD5w9niztA3tu5HZSLgrCKv6vTGh4/view?usp=drivesdk>

KIT ASSEMBLY MACHINES

1 Roll Press Kit Assembly Machine SKA-04



Description:

- Kit Roll Pressing machine pressing of two halves of the cassettes of any type of test kits.
- Table top stand-alone machine.
- Kit to be placed on conveyor manually.
- Two stage pressing.
- Feeding system is manual and then it is passed through the rubber rollers, gap and pressure adjustment setting is available on rollers and can be set according to thickness of the kit and required pressure in assembly.
- Conveyor speed is adjustable.
- Thickness of the kits that can be pressed - 3.5 mm to 7 mm.

Specification:

- Conveyor 200 wide by 600mm long.
- Machine weight 65 kgs. Approx.
- Conveyor Belt Speed-2 to 14 m/min

Requirement:

- Single phase 220 volts electrical supply required.
- Table space required 350 x 750 x 350 mm high

Video link:

https://drive.google.com/file/d/1Pqw4dyJZdnTOy3Kn_B1yQIT748nBz5Yh/view?usp=sharing

2 Roll Press Kit Assembly Machine with Extended Conveyor SKA-04E



Description:

- Kit Roll Pressing machine pressing of two halves of the cassettes of any type of test kits.
- Table top stand-alone machine.
- Kit to be placed on conveyor manually.
- Two stage pressing.
- Feeding system is manual and then it is passed through the rubber rollers, gap and pressure adjustment setting is available on rollers and can be set according to thickness of the kit and required pressure in assembly.
- Conveyor speed is adjustable.
- Thickness of the kits that can be pressed - 3.5 mm to 7 mm.

Specification:

- Conveyor 200 wide by 1200mm long.
- Machine weight 90 kg Approx.
- Conveyor Belt Speed-2 to 14 m/min

Requirement:

- Single phase 220 volts electrical supply required.
- Table space required 350 x 1400 x 350 mm high
- Machine weight each 90 kg Approx.

3 Roll Press Kit Assembly Machine with Assembly Conveyor SKA-04C



Description:

- SKA-04/C, have been designed specifically for easy assembling top and bottom component plastic housings of rapid test device.
- 1.6 meter long modular table is provided for the manually assembly and a conveyor in the center to transfer the assembled kit for pressing.
- The roll pressing machine is attached to the end of the conveyor table.

Specification:

- Conveyor 200 wide by 1600mm long with table and a Roll pressing machine of belt size 200 x 600 mm.
- Conveyor Belt Speed-2 to 14 m/min
- SS Table size 800 x 1600 mm.

Requirement:

- Single phase 220 volts electrical supply required.
- Floor space required 3600 x 1000 x 1500 mm high
- Machine weight 140 kg Approx.

4 Manual Device manufacturing Machine with Servo Indexing Conveyor System SKA-05



Description:

- This Machine is an electro-pneumatic machine for assembly of test kit with servo indexing conveyor.
- Top bottom cassette feeding and strip placing into cassette is manual process. The pressing of the kits by pneumatic cylinders.

Salient features:

- Electro-pneumatic PLC based machine with 3.5" Touch screen HMI panel.
- The Table size 600 x 3200 mm long and 900mm high can accommodate 8 people.
- Slotted conveyor belt for ease of placing cassettes and strips.
- Four track conveyor with separate pressing cylinder for each track.
- Settable parameters like conveyor speed, index delay.
- Indexing type conveyor results consistent output.
- Aluminium modular profile table construction covered with SS sheet. MOC for conveyor ENP mild steel.

Requirement:

- 5-6 bar pressure clean compressed air at 90 LPM.
- Single phase 220 volts electrical supply required.
- Floor space required 3500mm x 1000mm.

Output:

2800- 3000 kits per hour

Video link:

<https://drive.google.com/file/d/1yazS6h88Wged44xBR8V3caGzzjth3XiL/view?usp=sharing>

5 Semi-Automatic Device Manufacturing Machine SKA-07



Description/Function:

- Bio-Diagnostic test kit assembly machine for top & bottom cassettes assembly with auto test strip cut & place system and camera vision system of finished part inspection.
- 2 kits would be manufacture per stroke/cycle.
- The top and bottom cassettes would be fed manually to machine rest all process is automated.
- The device laminate or 300 mm long cards should be stored in a batch of 20-30 nos. in the card holder.
- The machine consist of inbuilt shear cutter which cuts the card into strips and place automatically into the bottom cassettes with aid of vacuum pick and place.
- The cassettes are indexed by servo controlled chain indexing system.
- The top cassettes are vacuum picked and placed over the bottom for assembly.
- Then the kits are pressed two times one by pneumatic cylinder and then by rubber rollers.

Salient Features / Specifications:

- PLC based electro-pneumatic machine with touch screen HMI.
- The pick & place would be done using servo motors.
- Feeding of top & bottom manually to the conveyer
- Auto cut & place system for placing of test strips in to bottom cassettes.
- Bad test strips rejection management system using vision system.
- Also the Inspection for finish/ assembled kits would be done using Vision Camera.
- Input of 20-30 nos. of 300 mm long Device cards would be placed in a storage area; from there it would be picked & placed automatically in to the cutting machine.
- Same width of bottom cassette size of various lateral flow kits can be manufactured.
- 1 operator & 2 persons require for feeding of top bottom manually.
- Machine weight 800 kg. Approx.

Requirement:

- Single phase 220 volts, 3KW electrical supply required
- 6 bars clean and compressed air @ 400 LPM
- Floor space required 3000 x 1900 x 1600 mm high

Output:

- 1800 - 2200 kits per hour.

Video link:

<https://drive.google.com/file/d/1q27CJ-9AvkYuwbc1CFyvUqiFrWL91j/view?usp=sharing>

6 Device Manufacturing Machine with Auto-feeder SKA-07B



Description/Function:

- Bio-Diagnostic test kit assembly machine for top & bottom cassettes assembly with auto test strip cut & place system with camera vision system of finished part inspection.
- 2 kits would be manufacture per stroke/cycle.
- The top and bottom cassettes would be fed automatically with the help of auto feeder.
- The machine consist of inbuilt shear cutter which cuts the card into strips and place automatically into the bottom cassettes with aid of vacuum pick and place.
- The cassettes are indexed by servo controlled chain indexing system.
- The top cassettes are picked by vacuum and placed over the bottom for assembly.
- Then the kits are pressed two times one by pneumatic cylinder and then by rubber rollers.

Salient Features / Specifications:

- PLC based electro-pneumatic machine with touch screen HMI.
- The pick & place would be done using servo motors.
- Feeding of top & bottom automatically to the conveyor.
- Auto cut & place system for placing of test strips in to bottom cassettes.
- Bad test strips rejection management system using vision system.
- Also the Inspection for finish/ assembled kits would be done using Vision Camera.
- Input of 15-20 nos. of 300 mm long Device cards would be placed in a storage area; from there it would be picked & placed automatically in to the cutting machine.
- Multiple sizes of lateral flow kits can be manufactured in this machine by adjusting the cassettes guides and locators.
- 1 person is required to operate the machine & rest auto feeding using bowl feeder for top & bottom.
- Machine weight 800 kg. Approx.

Requirement:

- Single phase 220 volts, 5KW electrical supply required
- 6 bars clean and compressed air @ 500 LPM
- Floor space required 4000 x 2800 x 1650 mm

Output:

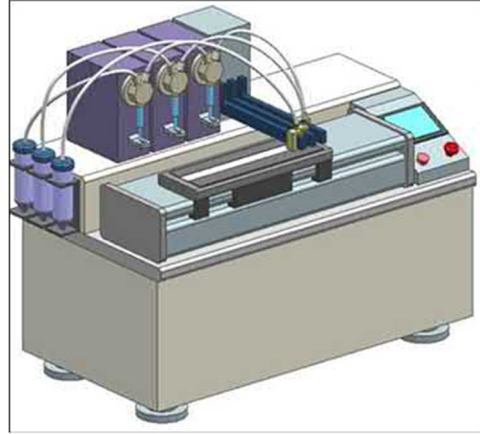
- 1700- 2000 kits per hour.

Video link:

https://drive.google.com/file/d/1-IU9_B2kAgAajfSIrjvF0mY4_6XuTlKE/view?usp=sharing

DISPENSING MACHINES

1 AdvancedDispensingSystem ADS-01



Description:

- Precision dispenser for reagent dispensing on lateral flow cards.

Salient Features /Specification:

- PLC based machine with HMI (touch screen controller).
- The dispensing line width or volume can be controlled by HMI parameters.
- Card size 100 width and 320mm length maximum.
- 3 sets of Syringe pump module is used for dispensing the liquid.
- 1-3 lines dispensing at 2.5 - 5 mm spacing in between.
- Linear servo motor for bed/card horizontal movement at the speed of 5 to 50 mm/sec. holding of card using vacuum pump or magnet clamp.
- Self-priming for removing of entrapped air bubbles in tubes.
- Non-contact dispensing, the dispensing tip height and spacing can be adjusted using micrometre scales.
- Both Contact type and non-contact type dispensing possible.
- One Extra atomizing nozzle can be provided for dispensing of conjugate on the fibre glass pads.
- Volumetric dispensing speed 0.1-0.5 μ L/cm.
- Machine weight 120 kg Approx.

Requirement:

- Require single phase 220volt AC supply at 50 Hz with 5-6 bar compressed air supply.
- Floor space in mm 850 x 500 x 600Height

Output:

- Dispensing at 100-350 cards per hours

2 Reel to Reel Dispensing RRDS-01

Description:

- Continuous multiline dispensing of reagent on membrane roll.

Characteristics:

- PLC based machine with HMI (touch screen controller).
- Reel un-winder and winder with controlled tensions for membrane
- 1-3 lines dispensing at 2.5 – 5 mm spacing in between.
- Reel diameter 300mm max. & width 35 mm max.
- Drying chamber for 10 meter long membrane line with digital controlled temperature.
- 6 sets of Syringe pump module is used for dispensing the liquid.
- The dispensing line width or volume can be controlled by input required parameters in HMI.
- Self-priming for removing of entrapped air bubbles in tubes.
- Frontline contact spacing can be adjusted using micrometre scales.

Requirement:

- Require single phase 220volt AC supply at 50 Hz and clean compressed air 5-6 bar @ 200 LPM.
- Size 2500 x 800 x 2000mm high and weight 300 Kg

Output:

- 18-50 meters per hour;
Volumetric dispensing speed 0.03-0.05 μ L/mm line speed 5-20 mm/sec

Add on features:

- Inline Camera vision inspection with line marking for undisposed/ disperse area of dispensing.

POUCH PACKING MACHINES

1 Vertical Form Fill & Sealing Machine PPH-02



Description:

- Vertical Form Fill Seal machine
- With Conveyor system integrated for auto input of product in the pouch.
- Desiccant/ Silica and Kits feeding require two persons.

Salient Features:

1. Conveyor system integrated for auto input of product in the pouch.
2. Electro-pneumatic PLC based machine with touch screen operating console.
3. 3 sided seal pouch.
4. Fixed pouch size.
5. Maximum Roll Diameter (mm)-400
6. Auto tuning temperature controller.

Requirement:

- 6 bar pressure clean compressed air @ 250LPM
- Single phase 230 volts, 4.5KW stabilised electrical supply required.
- Floor space required(mm) 2300 x 1000 x 2400 mm Height

Output:

- 1800 - 2000 pouch packaging per hour.

Add on features:

- Auto feeding of kit using vibratory bowl feeder.
- Online printing using inkjet or TTO printer.

Video link:

<https://youtu.be/TPEY8eIghpE>

2 Horizontal Form Fill & Sealing Machine PPH-03



Description:

- Horizontal 4 side rotary sealing, tear notch, slitting, cutting & packaging machine.
- Manual placing of the kit and desiccants on the part feeding conveyor.
- Machine integrated with printing, counting & batch sorting system.

Salient Features:

- Electro-pneumatic PLC based machine with touch screen operating console.
- 2 lines printing per pouch.
- 4 pouches lines/lanes machine or 4 nos. of pouches to be packed per cycle.
- 5-6 persons require for manual feeding of kit and desiccants on the conveyor.
- Fixed pouch Package size(mm)-120Length x 65Width
- Pouch sheet Roll Diameter maximum Dia. (mm)-350 & core Dia. 75 mm

Requirement:

- 5-6 bar pressure clean compressed air.
- Single phase 220 volts stabilised electrical power supply required.
- Floor space required (mm) approx. 4000 Length x 3000 Width x 1600 Height, weight 1600 kg.

Output:

- 6000-7000 pouch packaging per hour.

Video link:

<https://youtu.be/Ha-ZLMIdajM>

1 Filling & Sealing System FNC-XX



Description:

Filling & Sealing System is an automatic bottling equipment designed to fill various types of containers i.e. tubes, vials or bottles with liquid and then to close the containers by capping or by sealing the top. This is fully customized machine that tailor-fit to your specific type of containers used.

Salient Features /Specification:

- PLC based machine with HMI (touch screen controller).
- The dispensing volume can be controlled by HMI parameters as per customer's requirement.
- Dispensing by Peristaltic Pump or Syringe Pump as per accuracy and volume.
- Feeding would be manual. (Auto feeding optional by bowl feeder)
- De-capping and capping option available.
- Other sealing options available i.e. top sealing by aluminium foil, flip-off cap, etc.

Requirement:

- Require single phase 220volt AC supply at 50 Hz with 5-6 bar compressed air supply.
- Floor space depends upon customer's requirement.

Output:

- Approx. 5000pcs/hr (Based on 5vial Per cycle @3ml)

Add on features:

- Online printing and final packaging.

Video link:

https://drive.google.com/file/d/1nrjL3Db_iS6seASFqfN3Dp0H_r3QFtgm/view?usp=sharing

<https://www.youtube.com/@advancetooling>