



STANDARD OPERATING PROCEDURE

Department: Production	SOP No.:
Title: Operation and Cleaning of NFD for Strip Packing Machine	Effective Date:
Supersedes: Nil	Review Date:
Issue Date:	Page No.:

1.0 OBJECTIVE:

To lay down a procedure for Operation and cleaning of NFD for Strip pack machine.

2.0 SCOPE:

This procedure is applicable for Operation and cleaning of NFD for Strip pack machine.

3.0 RESPONSIBILITY:

Technical Associate: Cleaning and Operation.

Production: Officer/Executive/Assistant Manager.

Head Production: To ensure execution & compliance.

4.0 PROCEDURE:

4.1 CLEANING:

4.1.1 Change over from one batch to next batch of same product and different Product or after maintenance of contact part.

4.1.2 Ensure that the main power supply is 'OFF'.

4.1.3 Ensure that the compressed air supply is 'OFF'.

4.1.4 Dry clean the outer part of machine and utility cables with dry lint free cloth.

4.1.5 Dry clean the sensor roller assembly, Support assembly, rejection assembly and PLC with dry lint free cloth.

4.2 OPERATION:

4.2.1 Sensor roller assembly setting :

4.2.1.1 Use of this assembly is to sense the presence or absence of tablet/capsule in the strip pocket.

4.2.1.2 It contains Sensing roller which directly comes in contact with the strip. Sensing strip which is always in contact with the sensor and up down movement of the strip is sensed by the sensor, Spring which keeps the sensing strip in its position, Left and right movement adjustment screw, forward and backward movement adjustment screw and Locking pin which locks the assembly in right position.



STANDARD OPERATING PROCEDURE

Department: Production

SOP No.:

Title: Operation and Cleaning of NFD for Strip Packing Machine

Effective Date:

Supersedes: Nil

Review Date:

Issue Date:

Page No.:

4.2.1.3 Set the assembly in such a way so that when empty pocket is present in front of sensing roller, distance between sensor and sensing strip should be zero and when filled pocket is present in front of sensing roller, distance between sensor and sensing strip should be 10 mm.

4.2.1.4 One assembly is to be set for each column which is filled in one dropping.

4.2.2 **Support assembly setting:**

4.2.2.1 Use of this assembly is to support the tablet / capsule when it is getting sensed by the sensing roller assembly.

4.2.2.2 It contains Support assembly bracket which is movable up to 90 degree to remove the support rod, Support rings which are to be adjusted to support the tablets while sensing.

4.2.2.3 Set the support rings so that their position is in line with each knurling of the combined strip sample before the slitters. These rings can be moved on the support rod to left or right by making internal screw loose.

4.2.3 **Rejection assembly setting:**

4.2.3.1 Use of this assembly is to guide the bad strips into rejection bin and good strips to conveyor belt.

4.2.3.2 It contains the Flapper which is a metallic plate to guide the strips. Set the flapper according to the number of strips getting cut in one stroke below the cutter. Ideally one flapper for one strip.

4.2.3.3 Flapper assembly can be moved up and down and flappers can be moved forward and backward according to the strip length and strip position.

4.2.4 **Foil joint sensor setting:**

4.2.4.1 Two sensors are provided on each side i.e. one at plain foil side and one at printed foil side, to sense the joint in the foil roll.

4.2.4.2 Set the sensors in such a way that it can easily sense the joint on the roll by moving the sensor forward and backward.

4.2.5 **NFD parameter setting:**

4.2.5.1 Switch ON the machine by using the ON/OFF switch present on the side wall of the machine.



PHARMA DEVILS

PRODUCTION DEPARTMENT

STANDARD OPERATING PROCEDURE

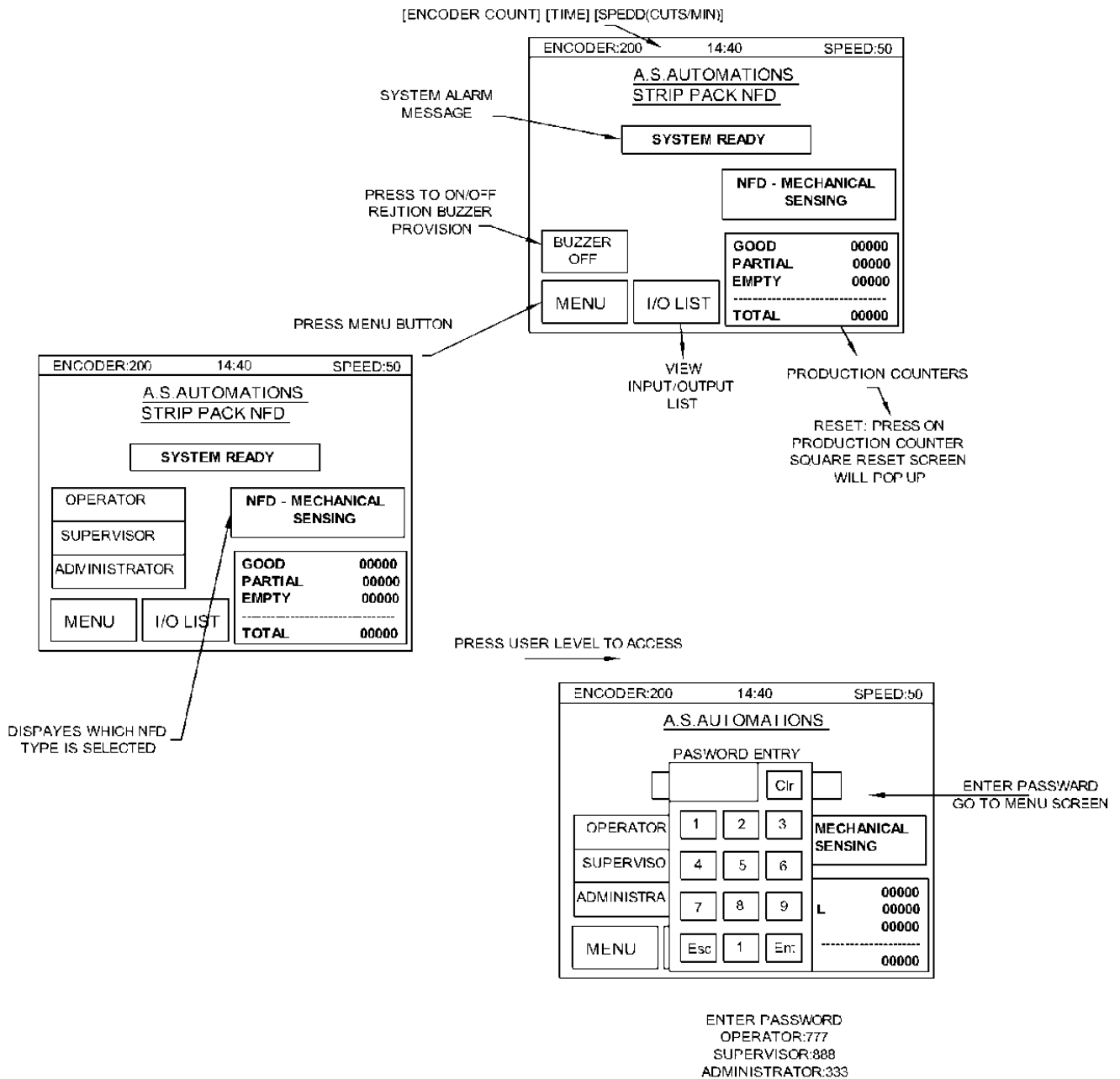
Department: Production	SOP No.:
Title: Operation and Cleaning of NFD for Strip Packing Machine	Effective Date:
Supersedes: Nil	Review Date:
Issue Date:	Page No.:

- 4.2.5.2 Start the compressed air supply to the machine.
- 4.2.5.3 After switching ON the HMI displays the main screen as per given below. It shows the Current Time, Encoder position, Speed of the machine in cuts/min, No. of good strips, No. of empty strips, No. of partial strips, Buzzer on/off, I/O list, NFD mechanical sensing and MENU option.
- 4.2.5.4 Press the MENU option on the screen, next screen appears which displays Operator, Supervisor, Administrator level to access, go on required level and enter the password to access as per below screen and press MENU option.



STANDARD OPERATING PROCEDURE

Department: Production	SOP No.:
Title: Operation and Cleaning of NFD for Strip Packing Machine	Effective Date:
Supersedes: Nil	Review Date:
Issue Date:	Page No.:



- 4.2.5.5 Press the **NFD Parameter** option on the screen, a new screen appears which is having parameter as SET STRIP LAYOUT,SET FLAPPER SELECTION and SET CLOCK option as per below screen. After pressing the **STRIP LAYOUT** a new screen appears which is having following values.
- a) **No. of Toes:** Press the No. of Toes option and enter the number of toes present on the cam



STANDARD OPERATING PROCEDURE

Department: Production

SOP No.:

Title: Operation and Cleaning of NFD for Strip Packing Machine

Effective Date:

Supersedes: Nil

Review Date:

Issue Date:

Page No.:

disc by using the numerical keyboard on the screen.

- b) **No. of Track:** Press the No. of Track option and enter the number of strips per cutting operation by using the numerical keyboard on the screen.
- c) **Sensor Count:** Press the Sensor Count option and enter the number of tablets / capsules to be sense by sensor in each row by using the numerical keyboard on the screen.
- d) **Column per Track:** Press the Column per Track option and enter the number of columns per strip / track by using the numerical keyboard on the screen.
- e) **Sensor Delay:** Press the Sensor Delay option and enter the time taken to sense the tablet for sensor by using the numerical keyboard on the screen. Ideally for small tablets value should be 1 and for large tablets value should be 0.
- f) **Reject length (No. of strips from sensing roller to flapper):** Press the No. of strips from sensing roller to flapper option and enter the number of strips present between sensing roller and flapper by using the numerical keyboard on the screen.
- g) **Print Rejection length:** No. of strips from printing station to feeding.
- h) **Seal Rejection length:** No. of strips from sealing station to flapper.
- i) **LH Joint Reject length:** No. of strips from LH joint sensor to feeding.
- j) **RH Joint Reject length:** No. of strips from RH joint sensor to feeding.
- k) By pressing EXIT option main menu screen appears.

4.2.5.6 **FLAPPER SELECTION:** Enter the number of the flapper to be used for each strip and if flapper is not in use then select the NOT USED option. Numbering of the flapper starts from the machine wall.

4.2.5.7 Press the **SET CLOCK** option on the screen, a new screen appears which is having following values

- a) NFD Clock: - Take the sensing roller position at the end of the strip and press the SET option on the screen.
- b) Flap: - Take the strip position between the cutter and flap and then press the SET option on the screen..
- c) By pressing NEXT option, new screen appears which contains values LOAD DEFAULT, CAM SIZE INCREASE and CAM SIZE DECREASE. Press LOAD DEFAULT option to



STANDARD OPERATING PROCEDURE

Department: Production

SOP No.:

Title: Operation and Cleaning of NFD for Strip Packing Machine

Effective Date:

Supersedes: Nil

Review Date:

Issue Date:

Page No.:

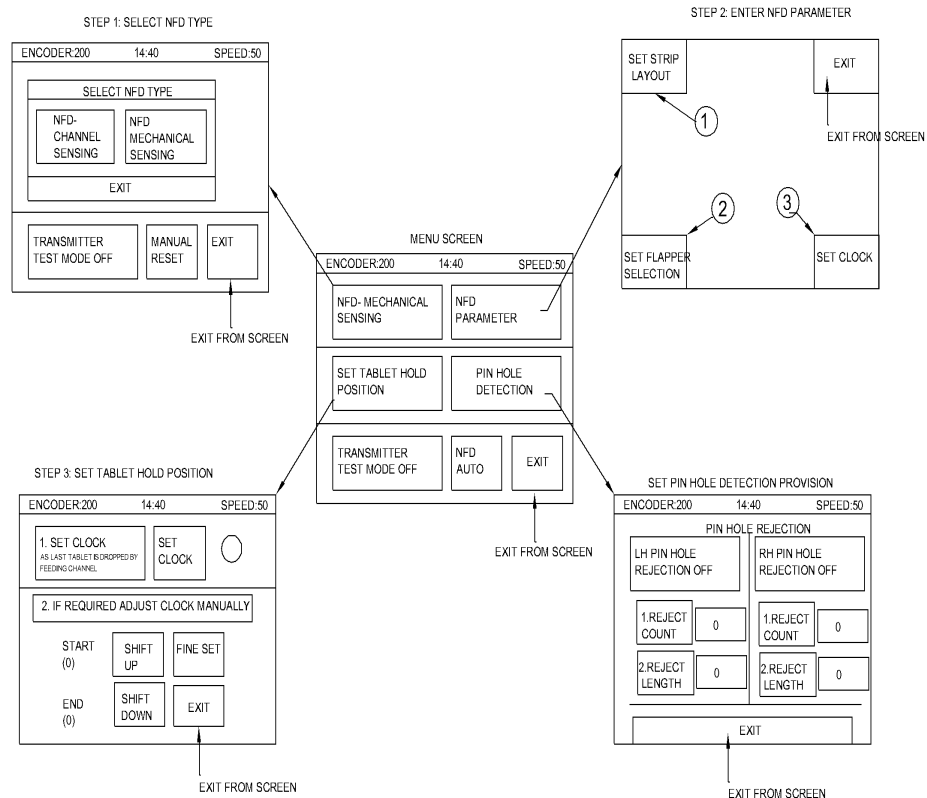
load the tablet cam values automatically.

d) By pressing back option, main menu screen appears.

4.2.5.8 By pressing EXIT option, main menu screen appears.

4.2.6 Press the **NFD mechanical sensing** option, a new screen appears it contains NFD mechanical sensing and NFD channel sensing parameter, Select the NFD mechanical sensing key and press exit key from the screen as per below screen.

4.2.7 **SENSOR STATUS:** it shows the number of tablets which is getting sensed by each sensor during the operation.



4.2.8 Press the **TABLET HOLD POSITION** on the menu screen , a new screen appears which is having following values

a) **Clock Setting:** Stop the machine at last tablet drop of the strip from feeding channel. This is to done by operating the machine in inch mode.



STANDARD OPERATING PROCEDURE

Department: Production

SOP No.:

Title: Operation and Cleaning of NFD for Strip Packing Machine

Effective Date:

Supersedes: Nil

Review Date:

Issue Date:

Page No.:

- b) At this position press SET CLOCK option on screen. It will set the start and end cam for tablet hold.
- c) **CLOCK ADJUST:** Use SHIFT UP and SHIFT DOWN options to adjust the start and end cam manually for fine setting.
- d) By pressing EXIT option, main menu screen appears.

4.2.10 Press the **PRINTING REJECTION** option on the screen , a new screen appears which is having following values

- a) **Printing Rejection ON/OFF:** - Press this option to keep this provision ON or OFF.
- b) **Reject Count:** - Press the Reject Count option and enter the number of strips to be rejected by using the numerical keyboard on the screen.
- c) **Reject Length:** - Press the Reject Length option and enter the number of strips from printing station to feeding by using the numerical keyboard on the screen.
- d) **Time:** - Press the Time option and enter the machine stoppage time in seconds after which the printing rejection should operate by using the numerical keyboard on the screen.
- e) By pressing EXIT option, main menu screen appears.
- f) This provision is used to reject the printing rejection strips after each stoppage of the machine of defined time.

4.2.11 Press the **SEALING REJECTION** option on the screen , a new screen appears which is having following values

- a) **Sealing Rejection ON/OFF:** - Press this option to keep this provision ON or OFF.
- b) **Reject Count:** - Press the Reject Count option and enter the number of strips to be rejected by using the numerical keyboard on the screen.
- c) **Reject Length:** - Press the Reject Length option and enter the number of strips from sealing roller to flapper by using the numerical keyboard on the screen.
- d) **Time:** - Press the Time option and enter the machine stoppage time in seconds after which the sealing rejection should operate by using the numerical keyboard on the screen.
- e) By pressing EXIT option, main menu screen appears.
- f) This provision is used to reject the sealing rejection strips after each stoppage of the machine of defined time.



STANDARD OPERATING PROCEDURE

Department: Production	SOP No.:
Title: Operation and Cleaning of NFD for Strip Packing Machine	Effective Date:
Supersedes: Nil	Review Date:
Issue Date:	Page No.:

4.2.12 Press the **LH JOINT REJECTION** option on the screen, a new screen appears which is having following values.

- a) **LH Joint Rejection ON/OFF:** - Press this option to keep this provision ON or OFF.
- b) **Reject Count:** - Press the Reject Count option and enter the number of strips to be rejected by using the numerical keyboard on the screen.
- c) **Reject Length:** - Press the Reject Length option and enter the number of strips from LH joint sensor to feeding by using the numerical keyboard on the screen.
- d) **Time:** - Press the Time option and enter the time delay for sensor to avoid the fluctuations during sensing due to wrinkles or printed matter on the foil. Single value indicates 10 milliseconds.
- e) **Joint Sensor Teach:** - Press this option to open the new screen which contains the procedure to teach the sensor.
- f) By pressing EXIT option, main menu screen appears.
- g) This provision is used to reject the joint in the foil at the left side of the machine.

4.2.13 Press the **RH JOINT REJECTION** option on the screen, a new screen appears which is having following values

- a) **RH Joint Rejection ON/OFF:-** Press this option to keep this provision ON or OFF.
- b) **Reject Count:-** Press the Reject Count option and enter the number of strips to be rejected by using the numerical keyboard on the screen.
- c) **Reject Length:** - Press the Reject Length option and enter the number of strips from RH joint sensor to feeding by using the numerical keyboard on the screen.
- d) **Time:** - Press the Time option and enter the time delay for sensor to avoid the fluctuations during sensing due to wrinkles or printed matter on the foil. Single value indicates 10 milliseconds.
- e) **Joint Sensor Teach:** - Press this option to open the new screen which contains the procedure to teach the sensor.
- f) By pressing EXIT option, main menu screen appears.
- g) This provision is used to reject the joint in the foil at the right side of the machine.

4.2.14 By pressing EXIT option, main screen appears on display.



STANDARD OPERATING PROCEDURE

Department: Production

SOP No.:

Title: Operation and Cleaning of NFD for Strip Packing Machine

Effective Date:

Supersedes: Nil

Review Date:

Issue Date:

Page No.:

4.2.15 Press the MENU option on the screen, next screen appears which displays VIEW and EDIT option.

4.2.16 By pressing VIEW option Main menu screen appears and all the parameters such as EDIT mode can be viewed. When any parameter required to change in VIEW mode then password is required and when correct password is given the system directly goes to EDIT mode.

4.3 Alarms

4.3.1 Buzzer sound with a flash light turns on when a empty pocket is detected by the sensor.

4.3.2 If the compressed air supply to the machine is low then the main screen shows the message 'LOW AIR PRESSURE' with continues sound of the buzzer. Give the required air pressure to the machine, rectify the problem and reset the alarm by pressing the screen.

4.3.3 If printing rejection is observed, it shows the alarm 'PRINTING REJECTION DETECTED', press the screen once to acknowledge the alarm.

4.3.4 If sealing rejection is observed, it shows the alarm 'SEALING REJECTION DETECTED' press the screen once to acknowledge the alarm.

4.4 Challenge test for NFD

4.4.1 Stop the tablet / capsule in one column and allow the empty pocket to run in front of the sensing roller and check whether the corresponding strip is rejected. Repeat the same procedure for all the columns and check for all.

4.4.2 Challenge test is to be performed as per the frequency mentioned in the BPR.

4.5 Frequency:

4.5.1 Challenge test: At the start of operation, every 4 hour and at the end of operation.

4.5.2 Performance test: Before Start of Batch.

5.0 ANNEXURE (S):

Nil

6.0 REFERENCE (S):

SOP: Preparation, approval, distribution, control, revision and destruction of Standard Operating Procedure (SOP)



PHARMA DEVILS

PRODUCTION DEPARTMENT

STANDARD OPERATING PROCEDURE

Department: Production

SOP No.:

Title: Operation and Cleaning of NFD for Strip Packing Machine

Effective Date:

Supersedes: Nil

Review Date:

Issue Date:

Page No.:

7.0 ABBREVIATION (S) / DEFINITION (S):

NFD : Nonfilled Detection

HMI : Human Machine Interface

I/O :Input/output

RH :Right hand

LH :Left Hand

REVISION CARD

S.No.	REVISION No.	REVISION DATE	DETAILS OF REVISION	REASON (S) FOR REVISION	REFERENCE CHANGE CONTROL NO
1	00	----	-----	New SOP	----