



# PHARMA DEVILS

PRODUCTION DEPARTMENT

## STANDARD OPERATING PROCEDURE

<b>Department:</b> Production	<b>SOP No.:</b>
<b>Title:</b> Cleaning and Operation of Fluid Bed Processor	<b>Effective Date:</b>
<b>Supersedes:</b> Nil	<b>Review Date:</b>
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### 1.0 OBJECTIVE:

To lay down a procedure for Cleaning and Operation of Fluid Bed Processor (APCG-1200C).

### 2.0 SCOPE:

This SOP applies to the Cleaning and Operation of Fluid Bed Processor (APCG-1200C) in Production area.

### 3.0 RESPONSIBILITY:

Technical Associate : Cleaning and Operation  
Officer and Executive : Supervision  
Head Production : SOP compliance  
IPQA Person : Line Clearance

### 4.0 DEFINITION (S):

NA

### 5.0 PROCEDURE:

#### 5.1 "TYPE A" CLEANING: Change over from one lot to next lot of the same product and same potency and of similar product with ascending potency".

- 5.1.1 Remove "UNDER PROCESS" label and affix dully-filled "TO BE CLEANED" label to the machine.
- 5.1.2 Enter the cleaning start time equipment usage and cleaning log sheet as per SOP.
- 5.1.3 Shake the finger bag in manually mode to dedust. (If applicable).
- 5.1.4 Remove the remainants of the previous batch from the equipment and the area with a dry clean lint free duster.
- 5.1.5 Clean the powder attached with the wall and return raiser with a dry clean lint free duster.
- 5.1.6 Disconnect the atomization and needle air pipes from the spraying guns and clean with a dry lint free duster.
- 5.1.7 Disconnect the Product Bed Temperature (PBT) sensor & unseal the container, then remove the product bowl, swing out the expansion chamber and clean with a dry clean lint free duster to remove any leftover material.
- 5.1.8 Switch off the main power supply.
- 5.1.9 Dismantle the spraying system.
- 5.1.10 Dismantle the air channeliser to the product bowl by unclamped the toggle clamps and clean with a dry lint free duster.
- 5.1.11 Remove the UP-bed and down-bed plate, fine mesh and clean with a dry lint free duster.
- 5.1.12 **Method of cleaning of Spray system and corresponding tubes:**



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- 5.1.12.1 Close the valve of solution feeding vessel.
- 5.1.12.2 Removes the product inlet and outlet tubes from the nozzles of the solution-feeding vessel.
- 5.1.12.3 Unscrew the four hex bolts and then remove the spraying gun assembly from the FBP.
- 5.1.12.4 Dip the tubes into purified water.
- 5.1.12.5 Remove the nozzle from the spray gun.
- 5.1.12.6 Reduce the atomizing air pressure to zero.
- 5.1.12.7 Run the peristaltic pump at high speed.
- 5.1.12.8 Clean the utility cables limit switches and control panel with a dry lint free duster.
- 5.1.12.9 Affix dully filled status label on FBP as “CLEANED” with date and signature of Production Officer verified by QA officer.
- 5.1.12.10 Record the cleaning completion time in equipment usage log sheet as per SOP.
- 5.1.13 Cleaning of outer body and product transfer pipes of pneumatic conveying system and WIP pump with lint free cloth.

### NOTE:

Ensure that spray guns & corresponding tubes cleaned to and there is no deposition of coating solution or solid materials either in tube or in the nozzles of spray guns.

### 5.2 “TYPE B” CLEANING: This is a cleaning procedure for Changeover of product with different actives/color/descending potency or after maintenance of contact parts.

- 5.2.1 Remove “UNDER PROCESS” label and affix dully-filled “TO BE CLEANED” label to the machine.
- 5.2.2 Enter the cleaning start time in equipment usage log sheet as per SOP.
- 5.2.3 Shake the finger bag in manually mode to dedust. (If applicable)
- 5.2.4 Remove the remainants of the previous batch from the equipment and the area with a dry clean lint free duster.
- 5.2.5 Clean the powder attached with the wall and return raiser with a dry clean lint free duster.
- 5.2.6 Disconnect the atomization and needle air pipes from the spraying guns and clean with a dry lint free duster.
- 5.2.7 Disconnect the Product Bed Temperature (PBT) sensor & unseal the container, then remove the product bowl, and swing out the expansion chamber.
- 5.2.8 Dismantle the spraying system.
- 5.2.9 Dismantle the air channeliser to the product bowl by unclamped the toggle clamps.
- 5.2.10 Scrub the supporting plate with a nylon scrubber using purified water.
- 5.2.11 Remove the inner partition, fine sieve, perforated bottom, sampling port & cup.



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- 5.2.12 Unseal and bring down both right and left finger bag by operating the finger bag holding ring towards lower side by click on finger bag LH DOWN and RH DOWN on PLC.
- 5.2.13 Switch off the main power supply.
- 5.2.14 Remove the finger bag rings from the finger holding coupling and clean the bags as per SOP.
- 5.2.15 Rinse the wurster container, inner partition with fixing components; fine sieve, perforated bottom, sampling port & cup with Purified water till visually cleaned.
- 5.2.16 Dismantle the elliptical shaped observation window (1 nos.) of expansion chamber, elliptical shaped observation window (04 nos.) of product container bowl (bottom spray bowl).
- 5.2.17 Scrub the expansion chamber, finger bag holder ring, view glasses with gasket, inflated gasket (5 nos.), and inflated tube ring with a nylon scrubber using purified water from inside and outside to remove any adhered material.
- 5.2.18 Use the ladder to clean the outer surface bag chamber and expansion chamber.
- 5.2.19 Rinse all the above parts with purified water till visually cleaned.
- 5.2.20 Scrub the product container bowl and trolley with a nylon scrubber using purified water.
- 5.2.21 Scrub the sieve and supporting plate with nylon scrubber using purified water till visually cleaned.
- 5.2.22 Place the sieve and the supporting plate on a clean S.S. pellet. Reassemble the sieve and the supporting plate.
- 5.2.23 **Method of cleaning of Spray system and corresponding tubes:**
- 5.2.23.1 Close the valve of solution feeding vessel.
- 5.2.23.2 Removes the product inlet and outlet tubes from the nozzles of the solution-feeding vessel.
- 5.2.23.3 Unscrew the four hex bolts and then remove the spraying assembly from the FBP.
- 5.2.23.4 Dip the tubes into purified water.
- 5.2.23.5 Remove the nozzle from the spray gun.
- 5.2.23.6 Reduce the atomizing air pressure to zero.
- 5.2.23.7 Run the peristaltic pump at high speed.
- 5.2.23.8 Continue this till fresh water comes out from the spray guns.
- 5.2.23.9 Dismantle the spray gun and clean with purified water till visually cleaned.
- 5.2.24 Dismantle the pneumatic conveying system and product pipes.
- 5.2.25 Wash the body and the chamber of the pneumatic conveying system with purified water till visually clean.
- 5.2.26 Wash the pneumatic conveying system filter bag with water and dry it along with finger bag.
- 5.2.27 Wash the product pipes with purified water till visually clean. After cleaning hang the product pipes in inverted  $\cap$  position.
- 5.2.28 Always use dedicated product pipes.



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5.2.29 Wipe the body of WIP pump with wet lint free cloth.

### 5.3 Frequency:

5.3.1 Type 'A' cleaning is applicable after completion of every lot / batch of same product, same potency and of similar product with ascending potency. If same product is processed for more than seven days then follow the procedure of type – B cleaning as per SOP.

5.3.2 Type 'B' cleaning is applicable in case of change over of product with different actives / colour / descending potency or after maintenance of contact parts or same product is run for more than seven days cleaning Type - B done after completion of batch as per SOP.

5.3.3 Shift end cleaning is applicable in case of at the end of working day, Dedusting of machine with dry lint free cloth.

#### NOTE:

- 1) After Type - B cleaning, if machine is not used within 72 hours, clean the machine “before use”, with the lint free duster dipped in 70% v/v IPA solution followed by dry lint free duster and dully sign the “CLEANED” label again. Record the activity in equipment usage log sheet as per SOP.
- 2) Always use dedicated product pipes.

### 5.4 OPERATION:

#### 5.4.1 Machine setting:

5.4.1.1 Ensure 'CLEANED' label duly filled and signed is affixed on the equipment.

5.4.1.2 Ensure cleanliness of area and the equipment. Record the observations in the equipment usage log sheet as per SOP. Affix 'UNDER PROCESS' label duly filled and signed on the equipment.

5.4.1.3 Ensure that the compressed air and main electric supply is 'ON' from Service Area.

5.4.1.4 After ON of the electric supply, Main screen will appear on PLC. The screen shows:

PEPPERL+ FUCHS	OSD
DEFUALT	ANISH

5.4.1.5 Double click on Anish folder. Then enter user name and password and press ok. Welcome screen will appear. Click on Login and then enter operative level, supervisor level, manager level or maintenance level in user name option and their respective password as per the authorization and press on ok button.

5.4.1.6 After Login, press BAG UP-DOWN Option button on PLC. The screen shows:

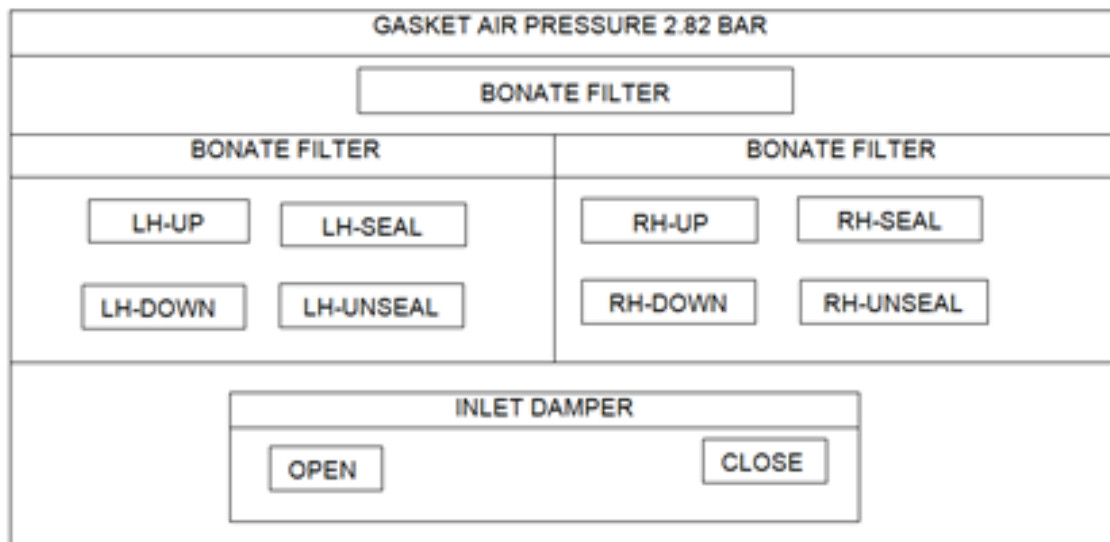


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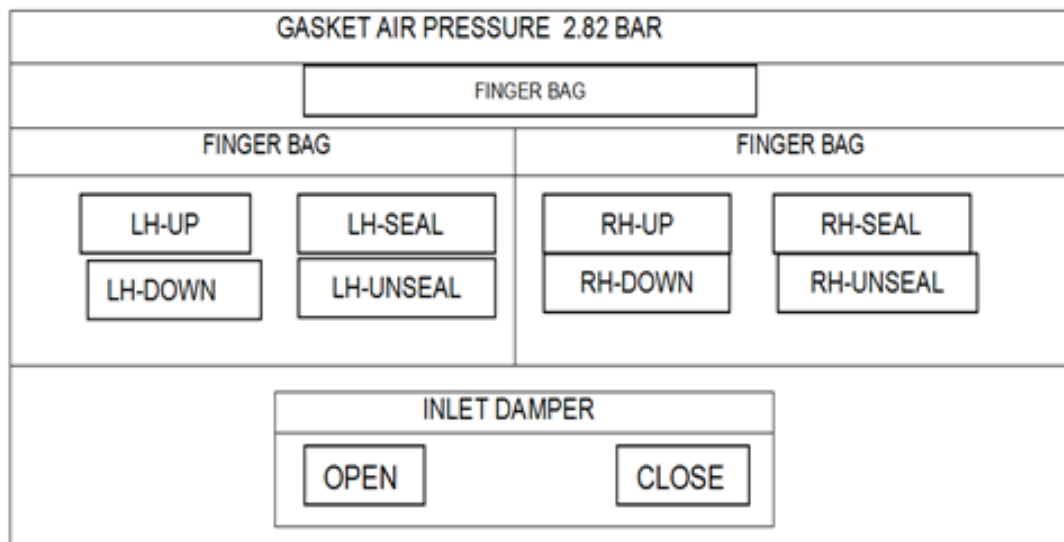
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- 5.4.1.7 Click on bonate filter for change of mode to finger bag and for the attachment of finger bag. Select BONATE FILTER or FINGER BAG screen as per requirement. The finger bag selected screen shows:



- 5.4.1.8 After connecting both the finger bags press RH-UP & LH-UP button to up the finger bags, pneumatic cylinder of righthand side & lefthand side will move up (set the position manually) After that to seal the bags, press RH-SEAL and LH-SEAL button.
- 5.4.1.9 To down the finger bags, first unseal them and then press RH-DOWN & LH-DOWN buttons, Pneumatic cylinder of righthand side and lefthand side will come down.

**CAUTION:**



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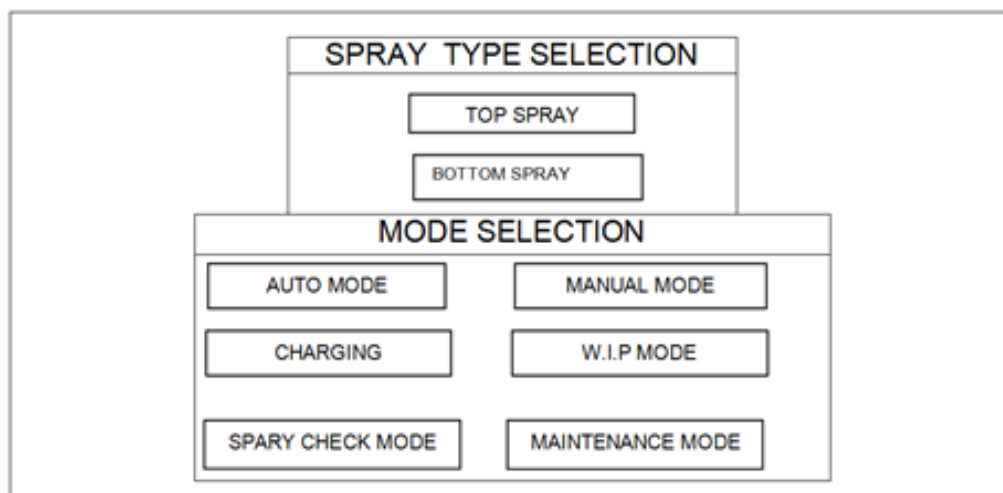
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Do above operations only when the expansion chamber is in full open condition. If finger bags are not in up or seal conditions then machine will not seal and run. The sealing pressure of the gasket has to be set always between 2-3 BAR. If it is above 3 BAR the gasket may blast.

- 5.4.1.10 Set the spraying system in the air channeliser.
- 5.4.1.11 Close the expansion chamber.
- 5.4.1.12 Place the FBP product bowl containing material to be processed in between the plenum and expansion chamber, and then insert the product bed temperature sensor in the temperature sensor port of product container, fit the atomizing air pressure pipe, needle pressure pipe and solution loading pipe.
- 5.4.1.13 In BAG UP-DOWN screen, the screen shows inlet damper ON/OFF button.
- 5.4.1.14 Here OPEN or CLOSE the Inlet Damper as required.
- 5.4.1.15 Press Mode selection button in the welcome screen. Here MODE selection screen will appear.



- 5.4.1.16 First select the type of spray required that is Bottom Spray or Top Spray. Then select the mode as required.

### 5.4.2 Setting of Wurster Chamber:

- 5.4.2.1 Height of the wurster chamber is depending on the required fluidization in a particular product.
- 5.4.2.2 Height of the wurster chamber can be adjusted from 0-60 mm with the help of a handle.
- 5.4.2.3 For up the wurster chamber rotate the handle clockwise direction and for down the wurster chamber rotate the handle anticlockwise.

### 5.4.3 Recipe Edit / Load / Delete:

- 5.4.3.1 Recipes edit/ load / delete in AUTO Mode.
- 5.4.3.2 Select the AUTO MODE from Mode Selection screen.



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- 5.4.3.3 After AUTO MODE Selection, click on Recipe button on the welcome screen. The next screen shows the set parameters screen.
- 5.4.3.4 Here click on the Recipe upload/download button to create, edit, upload, delete and download recipe. In this screen there are 5 stages for the setting of parameters. Set the parameters in these stages, drying and cooling time set at the end of the last 5th stage. Give name here for new recipe then save and download it.
- 5.4.3.5 Select these stages as per recipe requirement.
- 5.4.3.6 After selection of recipe come back to previous screen by click on back button.
- 5.4.3.7 Here set the gun choke pressure for all the guns.
- 5.4.3.8 Select the Machine Control Mode CFM / HZ as per recipe requirement and then select the stages at the top.
- 5.4.3.9 Select the Alarm tolerance button. Here set the low and high parameters for the Alarms.
- 5.4.3.10 After loading all the parameters go to Selected Mode Auto on the welcome screen.
- 5.4.3.11 Next screen will appear with P and I diagram and CONTAINER SEAL-UNSEAL, AUTO MODE ON-OFF, AUTO RESET, STEAM DRAIN ON- OFF options.
- 5.4.3.12 Seal the container; click on Auto Reset button before start the Auto Mode.
- 5.4.3.13 Click on Steam Auto button to Drain OFF the condensate as per need, when there is fall in Inlet temperature.
- 5.4.3.14 Click on Batch Start/Stop option in the P & I Diagram screen.
- 5.4.3.15 Here next screen appear to enter the Product Name, Batch Number, Operator Name, Lot Number. Click on the Batch Start/Stop button to start and stop the batch and then close it.
- NOTE:** Data only start saving after click on start button.

### 5.5 Manual Mode Operation:

- 5.5.1 Select Manual Mode from the MODE SELECTION screen, then click on PARAMETERS button on the welcome screen.
- 5.5.2 Next Screen will appear to set the parameters as require.
- 5.5.3 Screen shows the following parameters, Set blower Speed, Set CFM, Set Inlet Temperature, Product bed Temperature, Exhaust Temperature, ATM air pressure, Coating ON (Bed) Temperature, Coating OFF (Bed) Temperature, Pre-heating Temperature, Dew point Temperature, Process Humidity, Needle air pressure, Scrubber water pressure and Set print frequency.
- 5.5.4 Select the Machine Control Mode CFM / HZ as per requirement.
- 5.5.5 Click on the Bag Shaking button appear on the screen. Next screen appear with bag SHAKE ON / OFF option and here time for bag shaking delay and number of bag shaking strokes added. Then close the screen by click on close button.
- 5.5.6 After that select the SELECTED MODE MANUAL button on the welcome screen.





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- 5.5.7 Screen appear with P and I diagram and CONTAINER SEAL/UNSEAL, BLOWER ON/OFF, STEAM ON/OFF, ATOMISING ON/OFF, PERISTALTIC PUMP ON/OFF, BAG SHAKE ON/OFF, STEAM AUTO for DRAIN ON- OFF options. Another screen appear here for HUMIDIFIER ON/OFF, PRE HEATER ON/OFF and PRE HEATER DRAIN ON/OFF options.
- 5.5.8 To start the machine in manual mode first connect PBT sensor, press SEAL to seal the Container, ON the Atomizing pressure, ON the Blower, ON the Steam, then ON the Peristaltic Pump.
- 5.5.9 Click on Batch Start/Stop option in the P & I Diagram screen.
- 5.5.10 Next screen appear to enter the Product Name, Batch Number, Operator Name, Lot Number. Click on the Batch Start/Stop button to start or stop the batch and then close it.
- 5.5.11 Select the MACHINE LAMP option on P & I diagram screen to ON/OFF the Machine Lamp.
- 5.5.12 Select the Pump ON/OFF button on P & I diagram, next screen will appear with peristaltic pumps ON/OFF options, Forward/Reverse direction option, Atomizing ON/OFF option. Here spray gun pressure and speed of the pumps can be set.
- 5.5.13 Pumps can be run on synchronous or unsynchronous mode. Select as per requirement.

### Caution:

- A. Set the atomizing air pressure from 1.0 to 1.5 BAR.
- B. Set the needle air pressure 3.0 to 4.0 BAR.
- 5.5.14 At the end of the operation first 'OFF' the Peristaltic Pump, 'OFF' the Steam, 'OFF' the Blower, 'OFF' the Atomizing pressure then bag shaking manually as required disconnect the Product Bed Temperature Sensor then 'UNSEAL' the Container.
- 5.5.15 In case of "AUTO" mode failure during batch processing, machine can be run in "MANUAL" mode to Complete the batch by intimating to QA and Engineering department.
- Caution:** At the time of machine running always monitor the pressure across product bed. Normally it is 6-7 inches of water but if it is up to 20 or above it means sieves clogged.

## 5.6 CHARGING MODE:

- 5.6.1 Select the Charging mode from the MODE SELECTION on the welcome screen.
- 5.6.2 After selection click on SELECTED MODE CHARGING on the welcome screen. Screen appear with following parameters:

PARAMETERS	ENTRY RANGE		SET	ACTUAL	UNIT
	MIN.	MAX.			
SET BLOWER SPEED	0	50	30	0	HZ
ATM CFM				0	CFM
ATOMISING	0	10	1.00	0.00	BAR





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ATOMISING	<input type="checkbox"/> ON	<input type="checkbox"/> OFF
CONTAINER	<input type="checkbox"/> SEAL	<input type="checkbox"/> UNSEAL
BLOWER	<input type="checkbox"/> ON	<input type="checkbox"/> OFF
CHARGING VALVE	<input type="checkbox"/> ON	<input type="checkbox"/> OFF

5.6.3 First seal the Container, then ON Atomizing, ON Blower and in the last ON Charging valve.

5.6.4 Charging Mode used for the loading of materials to the FBP bowl.

### 5.7 W.I.P. MODE:

5.7.1 Select the W.I.P. mode from the MODE SELECTION on the welcome screen.

5.7.2 After selection click on SELECTED MODE WIP on the welcome screen.

5.7.3 Screen appear with following parameters -

RAW WATER		
CONTAINER	<input type="checkbox"/> SEAL	<input type="checkbox"/> UNSEAL
WIP- VALVE	<input type="checkbox"/> ON	<input type="checkbox"/> OFF
WIP PUMP SUPPLY	<input type="checkbox"/> ON	<input type="checkbox"/> OFF
RAW WATER INLET	<input type="checkbox"/> ON	<input type="checkbox"/> OFF
RAW WATER DISCHARGE	<input type="checkbox"/> ON	<input type="checkbox"/> OFF
PURE WATER INLET	<input type="checkbox"/> ON	<input type="checkbox"/> OFF
PURE WATER DISC.	<input type="checkbox"/> ON	<input type="checkbox"/> OFF
AODP PUMP	<input type="checkbox"/> ON	<input type="checkbox"/> OFF

5.7.4 Perform the Cleaning of the machine with purified water. Press on RAW WATER to change the mode to PURE WATER.

5.7.5 For cleaning first attach the hose pipes to the WIP pump and to inlet water supply and to discharge water supply connections.

5.7.6 For cleaning first seal the container, ON WIP valve, ON water inlet, ON water discharge and at last ON WIP pump supply.

5.7.7 AODP pump option given for cleaning with cleaning reagent.

**NOTE:** For cleaning of FBP pump pressure NLT 2.5 Bar.

### 5.8 SPRAY CHECK MODE:

5.8.1 Select the Spray check mode from the MODE SELECTION on the welcome screen.

5.8.2 After selection click on SELECTED MODE SPRAY CHECK on the welcome screen.

5.8.3 Screen appears with peristaltic pumps ON/OFF options, forward and reverses direction option, Atomizing ON/OFF option.



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5.8.4 Spray mode selected for the checking of spraying system.

### **5.9 Product Unloading:**

5.9.1 Product unloading performs in both auto and manual mode.

5.9.2 In the 'MANUAL MODE' screen, first press the 'BAG SHAKING' then disconnect PBT sensor and press 'UNSEAL' button to unseal the container.

5.9.3 Remove the product container.

5.9.4 Then unload the product in IPC/SS containers lined with double poly-bags using pneumatic conveying system.

5.9.5 Press EXIT SCADA button to logout from the user and press the EMERGENCY SWITCH.

5.9.6 Affix 'TO BE CLEANED' label duly filled and signed on the FBP and record the observations in equipment usage log sheet as per SOP.

### **5.10 BBD (Broken bag detector)/ SFM (Solid Flow Monitor) Challenge Test:**

5.10.1 Replace the 'CLEANED' label and affix 'UNDER PROCESS' label duly filled and signed on the equipment (In Case of cleaned equipment) Or it can perform during "Type-B" cleaning.

5.10.2 Take 200 grams of starch and put it in the FBP product bowl.

5.10.3 Start the FBP in Auto Mode.

5.10.4 The FBP should be tripped as the starch comes in contact with BBD/SFM.

5.10.5 After reset of BBD the machine can be start.

5.10.6 Record the activity in equipment usage log sheet as per SOP and in BBD/SFM Challenge test annexure-I.

5.10.7 Again take 200 grams of starch and put it in the FBP product bowl.

5.10.8 Start the FBP in Manual Mode.

5.10.9 The FBP should be tripped as the starch comes in contact with BBD.

5.10.10 After reset of SFM the machine can be start.

5.10.11 Record the activity in equipment usage log sheet as per SOP and in BBD/SFM Challenge test annexure-I.

5.10.12 After "BBD/SFM Challenge Test", Type B cleaning should be performed. And the same should be recorded in equipment usage log sheet as per SOP.

5.10.13 If 'BBD/SFM Challenge Test' not complies then inform to Production head and Maintenance head and after rectification again perform the 'BBD/SFM Challenge Test' and record the same in equipment usage log book.

5.10.14 SFM sensor cleaning is to be performed at the end of every week by maintenance personnel with internal communication from production to maintenance department and Annexure-III is to be incorporated to record the cleaning of SFM sensor end of every week.



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### 6.0 ABBREVIATION (S):

FBP	: Fluidized Bed Processor
IPA	: Isopropyl Alcohol
V/V	: Volume/Volume
PLC	: Programmable Logical Control
P & I	: Program and Instrument
SFM	: Solid Flow Monitor
SOP	: Standard Operating Procedure
LH	: Left Hand
RH	: Right Hand
PBT	: Product Bed Temperature
RPM	: Round/Rotation Per Minute
BBD	: Broken Bag Detector

### 7.0 REFERENCE (S):

SOP: Making entries in equipment usage and cleaning log sheet.  
SOP: Cleaning of Production Area.  
SOP: Status Labeling.

### 8.0 ANNEXURE (S):

Annexure-I: SFM (Solid Flow Monitor) Challenge Test.  
Annexure-II: Cleaning Checklist of Fluidized Bed Processor. (APCG-1200C)  
Annexure-III: SFM Sensor Cleaning record.

### 9.0 DISTRIBUTION:

**Master Copy** : Quality Assurance  
**Controlled Copy (S)** : Production department / Quality Assurance / Utility  
**Reference Copy (S)** : Production department.





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### Annexure-II

#### Cleaning Checklist of Fluidized Bed Processor (APCG-1200C)

Name of the Equipment		FLUIDIZED BED PROCESSOR (APCG-1200C)	
Equipment I.D. No.		Previous product	
Batch No.		Date	
S.No.	Activity		Activity Performed
1.0	Dismantle the spraying system.		
2.0	Remove the product bowl, and swing out the expansion chamber.		
3.0	Dismantle the air channelizer to the product bowl by unclamped the toggle clamps.		
4.0	Remove the UP-bed and down bedplate, fine mesh.		
5.0	Scrub the supporting plate with a nylon scrubber using purified water.		
6.0	Remove the inner partition, fine sieve, perforated bottom, sampling port & cup.		
7.0	Rinse the wurster container, inner partition with fixing components; fine sieve, perforated bottom, sampling port & cup with Purified water till visually cleaned.		
8.0	Bring down the both finger bags by operating the finger bag holding ring towards lower side.		
9.0	Remove the finger bag rings or retention screens from the finger holding coupling and clean the bags.		
10.0	Dismantle the elliptical shaped observation window (1 nos.) of expansion chamber, elliptical shaped observation window (04 nos.) of product container bowl (bottom spray bowl).		
11.0	Scrub the expansion chamber and finger bag holder ring and view glasses with gasket, inflated gasket (5 nos.), inflated tube ring with a nylon scrubber using purified water from inside and outside to remove any adhered material.		
12.0	Use the ladder to clean the outer surface bag chamber and expansion chamber.		
13.0	Rinse all the above parts with purified water till visually cleaned.		
14.0	Scrub the product container bowl and trolley with a nylon scrubber using purified water.		



# PHARMA DEVILS

PRODUCTION DEPARTMENT

## STANDARD OPERATING PROCEDURE

<b>Department:</b> Production	<b>SOP No.:</b>
<b>Title:</b> Cleaning and Operation of Fluid Bed Processor	<b>Effective Date:</b>
<b>Supersedes:</b> Nil	<b>Review Date:</b>
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S.No.	Activity	Activity Performed
15.0	Scrub the sieve and supporting plate with nylon scrubber using purified water till visually cleaned.	
16.0	Place the sieve and the supporting plate on a clean S.S. pallet. Reassemble the sieve and the supporting plate.	
17.0	Method of cleaning of Spray system and corresponding tubes	
18.0	Close the valve of solution feeding vessel.	
18.1	Removes the product inlet and outlet tubes from the nozzles of the solution-feeding vessel.	
18.2	Unscrew the four hex bolts and then remove the spraying assembly from the FBP.	
18.3	Dip the tubes into purified water.	
18.4	Remove the nozzle from the spray gun.	
18.5	Reduce the atomizing air pressure to zero.	
18.6	Run the peristaltic pump at high speed.	
18.7	Continue this till fresh water comes out from the spray guns.	
18.8	Dismantle the spray gun and clean with purified water till visually cleaned.	
19.0	Scrub the outside of the FBP, supporting arms inlet air duct and the inlet chamber with a nylon scrubber using purified water till visually cleaned.	
20.0	Clean the outer surface of FBP; supporting arms inlet air duct and inlet air chamber with purified water till visually cleaned.	
21.0	Clean the utility cables limit switches and control panel with a dry lint free duster.	
22.0	Reassemble the observation window of product container, expansion chamber and bag chamber.	
23.0	Put the cleaned FBP finger bag and filter bag of pneumatic conveying system in FBP bowl.	
24.0	Assemble the FBP and operate the FBP at an inlet temperature of 65 ° C until the outlet temperature is achieved 63°C to 65°C. Ensure the bags are completely dried	



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S.No.	Activity	Activity Performed
	Remove the bags and transfer it to the granulation spare area.	
25.0	Rinse the FBP product bowl, bag chamber, expansion chamber and view glasses with sufficient quantity of purified water.	
26.0	Wipe out the body of FBP, bag chamber, expansion chamber, trolley and bowl with a clean dry lint free duster.	
27.0	Wipe all the above parts with 70% v/v IPA solution.	

**Note:** Put '√' mark if activity is performed and put 'X' if activity is not performed.

**Checked By (Prod.)**  
**Sign/Date**

**Verified By (QA)**  
**Sign/Date**



