



Title: Filter Cleaning of HVAC System

SOP No.:		Revision No.:	00
Effective Date:		Supersedes No.	Nil
Review Date:		Page No.	1 of 13

1.0 OBJECTIVE:

To lay down a Procedure for filter cleaning of HVAC system.

2.0 SCOPE:

This SOP is applicable for Cleaning of Pre, Fine, Fresh, Exhaust and Riser Filters of AHU/DHU/FCU/FDV/EXU and Dynamic Pass Box Units.

3.0 RESPONSIBILITY:

Operator/Operating Person – Engineering & Concern Department.

4.0 ACCOUNTABILITY:

Head – Engineering

5.0 ABBREVIATIONS:

AHU	Air Handling Unit
ER	Engineering
EXU	Exhaust Unit
DHU	Dehumidifier
FCU	Fan Coil Unit
FDV	Force Draft Ventilation
QA	Quality Assurance
HVAC	Heating Ventilation and Air Conditioning

6.0 PROCEDURE:

6.1 All washable filter of AHU (i.e. Pre, Fine, Fresh, riser & exhaust filters) shall be cleaned in designated Filter Cleaning Area.

6.2 Concern department shall raise the intimation as per **Annexure –VI** Titled as “**Intimation Slip for Filter Cleaning/ Replacement**” to engineering department for riser filters cleaning as per requirement and also concern department personal shall inform verbally through IOM to engineering person to stop AHU/DHU.



Title: Filter Cleaning of HVAC System

SOP No.:		Revision No.:	00
Effective Date:		Supersedes No.	Nil
Review Date:		Page No.	2 of 13

- 6.3** HVAC person shall stop the respective AHU/DHU as per procedure defined in SOP and record the observation in respective operation log.
- 6.4** Production person along with engineering person will open the return grill with the help of required tools and remove the riser filter from the filter plenum.
- 6.5** Production / Engineering person will put the riser filter (which is to be cleaned) in clean polybag with un-cleaned label (**Annexure - IV**) affix on it, and the same will carry through change room/pass box for handing over to HVAC person for cleaning along with its intimation slip.
- 6.6** HVAC person shall handover cleaned return riser filter in double polybag which is properly closed by cable tie and having cleaned label status (as per **Annexure - VI**) on polybag to production person.
- 6.7** After reaching in respective change room/pass box one polybag shall be removed and filter shall be in single polybag and hand over to concern person.
- 6.8** Production person will fit the clean return riser filters in its respective filter plenum and close the filter riser grill with the help of required tools and after activity completion, concern department personal shall inform telephonically / IOM to engineering HVAC person to start AHU/DHU
- 6.9** Received filter from user department for cleaning shall be transferred to filter cleaning area for cleaning purpose.
- 6.10** Riser filter cleaning record shall be recorded in respective **Annexure –III** “Riser filter cleaning record”.
- 6.11** As per below mention procedure Filter Cleaning activity shall be performed :
- 6.15.1** Initially start the respective AHU/DHU/ Hot Air Unit of filter cleaning room and drying room before 30 min and ensure that the desired temperature (35°C to 50°C) is achieved in filter drying room.
- 6.15.2** Prior to start up filter cleaning activity, use all the appropriate PPE which includes nose mask & hand gloves.
- 6.15.3** Check and ensure that all the utility requirement is available i.e. Compressed Air, raw water & purified water.
- 6.15.4** Check & ensure all the equipped instrument (i.e. pressure gauge, Hygrometer, valve etc.) related to filter cleaning activity are working properly and are in calibrated stage.
- 6.15.5** Take the un-cleaned Filter to respective filter cleaning area through Pass box.



Title: Filter Cleaning of HVAC System

SOP No.:		Revision No.:	00
Effective Date:		Supersedes No.	Nil
Review Date:		Page No.	3 of 13

- 6.15.6** Take out the filter from polythene bag in filter cleaning area and put the removed poly bag in waste bin.
- 6.15.7** Inspect the filters initially before performing filter cleaning activity for any physical damage and proper sealing if found any damage then affix the rejected label status and discard the filter and record the same in remark column of respective **Annexure II & III**.
- 6.15.8** Place the Un-cleaned filter in reverse position to its operation and clean with compressed air at a pressure of **0.5 to 2.5 kg/cm²**.
- 6.15.9** After compressed air cleaning, filter shall be cleaned by raw water at a pressure **0.5 – 2.5 kg/cm²**.
- 6.15.10** After raw water cleaning again flush the filter with compressed air at a pressure **0.5 – 2.5 kg/cm²** to rinse off excess water.
- 6.15.11** Finally rinse the filter with purified water.
- 6.15.12** Semi Dry the filter with compressed air at a pressure **0.5 – 2.5 kg/cm²**.
- 6.15.13** After completion of filter cleaning activity or before sending to filter drying room, again inspect the filter visually for any deposited dirt/dust or any damage.
- 6.12** Transfer the filter's to filter drying room through respective pass box.
- 6.13** Dry the filter for minimum **4 hrs. at 35°C to 50°C** temperature in drying room.
- 6.14** Inspect the filter physically for properly drying and transfer the filter to the dedicated cleaned filter storage area after inserting it in new double poly bag with cleaned label status on it.
- 6.15** Details of return riser filter cleaning & drying shall be recorded in **Annexure – III** titled as **“Return Riser Filter Cleaning Record”** & details of Pre, fine fresh & exhaust air filter cleaning & drying record shall be recorded in **Annexure – II** titled as **“Filter Cleaning Record”**.
- 6.16** If any shift change over will occur during filter cleaning/ drying activity, then done by signature is logged by that person who will start the activity and another person who will end that respective activity shall sign under remark column.
- 6.17** Filter cleaning schedule shall be prepared as per **Annexure – V** “Filter Replacement/Cleaning schedule” to carry out filter cleaning activity of AHU/DHU/FCU/FDV/EXU & pass box unit.
- 6.18** All Washable filter (Pre, fine, fresh air & exhaust filter) of AHU shall be cleaned as per schedule with a tolerance of ± 7 days.



Title: Filter Cleaning of HVAC System

SOP No.:		Revision No.:	00
Effective Date:		Supersedes No.	Nil
Review Date:		Page No.	4 of 13

6.19 Pre, fine, fresh & Exhaust air filter cleaning & drying record shall be recorded in **Annexure –II** “Filter Cleaning Record”.

6.20 **Annexure – II** titled as “Filter Cleaning Record” is specimen, this is to serve the intended purpose. **Annexure – III** shall be updated section wise by incorporating the respective AHU/DHU/FCU/EXU/Pass Box and qty. of filters.

6.21 Frequency of Filter Cleaning :

6.20.1 Riser filter of area shall be cleaned after as per intimation received from user department or after 10 batches in case of continuous batches of same product or with a frequency of Monthly ± 7 days (In case of no Production Plan).

6.20.2 Pre, fine, fresh & Exhaust air filter shall be cleaned with a frequency of **Monthly ± 7 days** or whenever D.P Limit exceeds and same shall be recorded as per **Annexure no. II**.

6.20.3 In case if DP limit exceed than specified limit then initially intimate to user department through verbally/IOM and after consulting, filter cleaning activity is performed.

6.20.4 Dynamic Pass Box filters shall be cleaned with a frequency of Monthly ± 7 days.

7.0 ANNEXURES:

ANNEXURE No.	TITLE OF ANNEXURE	FORMAT No.
Annexure-I	Filter Drying Room Temperature Record	
Annexure-II	Filter Cleaning Record	
Annexure-III	Riser filter cleaning Record	
Annexure-IV	Status Label	
Annexure-V	Filter Replacement/Cleaning Schedule	
Annexure-VI	Intimation Slip For Filter Cleaning/ Replacement	
Annexure – VII	Process Flow Diagram for Filter Cleaning Process	

ENCLOSURES: SOP Training Record

8.0 DISTRIBUTION:

- Controlled Copy No. 01 Quality Assurance
- Controlled Copy No. 02 Engineering
- Master Copy Quality Assurance

9.0 REFERENCES:

Not Applicable.



Title: Filter Cleaning of HVAC System

SOP No.:		Revision No.:	00
Effective Date:		Supersedes No.	Nil
Review Date:		Page No.	5 of 13

10.0 REVISION HISTORY: CHANGE HISTORY LOG

Revision No.	Change Control No.	Details of Changes	Reason for Change	Effective Date	Updated By



Title: Filter Cleaning of HVAC System

SOP No.:		Revision No.:	00
Effective Date:		Supersedes No.	Nil
Review Date:		Page No.	6 of 13

ANNEXURE – I
FILTER DRYING ROOM TEMPERATURE RECORD

AREA: FILTER DRYING ROOM

FREQUENCY: EVERY TWO HOUR

LOCATION:

Date	Time			Filter Drying Room Temp. (35° C to 50 °C)	Pressure		Done By Sign & Date	Remarks
	Start	Stop	Reading		Compressed Air (0.5 to 2.5 Kg/cm ²)	Raw Water (0.5 to 2.5 Kg/cm ²)		

Review By
Sign & Date



PHARMA DEVILS
ENGINEERING DEPARTMENT

Title: Filter Cleaning of HVAC System

SOP No.:		Revision No.:	00
Effective Date:		Supersedes No.	Nil
Review Date:		Page No.	7 of 13

ANNEXURE – II
FILTER CLEANING RECORD

BLOCK:

Frequency: Monthly ± 7 Days
: Whenever DP limit Exceed

Date	Equipment ID	Qty. of Filter				Cleaning Time		Drying Time		Filter Condition Ok / Not ok	Done By Sign. & Date	Remarks
		Pre	Fine	Fresh Air	Exhaust Air	From	To	From	To			

Review By
Sign & Date



PHARMA DEVILS

ENGINEERING DEPARTMENT

Title: Filter Cleaning of HVAC System

SOP No.:		Revision No.:	00
Effective Date:		Supersedes No.	Nil
Review Date:		Page No.	8 of 13

ANNEXURE – III RISER FILTERS CLEANING RECORD

BLOCK:

Frequency: Every Product Changeover/ As per intimation
After every Ten batches (continuous batches of same product)
(Monthly ± 7 days in case of no production)

Sr. No.	Date	Riser Filter ID	Area	Qty. of Return Raiser	Cleaning Time		Drying Time		Filter Condition OK / NOT OK	Done By Sign. & Date	Remark
					From	To	From	To			

**Reviewed By
Sign & Date**



PHARMA DEVILS

ENGINEERING DEPARTMENT

Title: Filter Cleaning of HVAC System

SOP No.:		Revision No.:	00
Effective Date:		Supersedes No.	Nil
Review Date:		Page No.	9 of 13

ANNEXURE – IV

STATUS LABEL
SECTION :
Area :
STATUS OF FILTER:
REMARKS:
CHECKED BY : (SIGN & DATE)



Title: Filter Cleaning of HVAC System

SOP No.:		Revision No.:	00
Effective Date:		Supersedes No.	Nil
Review Date:		Page No.	10 of 13

ANNEXURE – V
FILTER REPLACEMENT/CLEANING SCHEDULE

YEAR:					REVISION NO.:											
BLOCK:					EFFECTIVE DATE :											
Sr. No.	Equipment ID	Equipment Location	Serving Area	Planning & Execution	January	February	March	April	May	June	July	August	September	October	November	December
				P												
				A												

Note: P – Planned Date & A – Actual Done Date

Prepared By (Engg.)
Sign & Date

Checked By (Engg.)
Sign & Date

Reviewed By (QA)
Sign & Date



PHARMA DEVILS

ENGINEERING DEPARTMENT

Title: Filter Cleaning of HVAC System

SOP No.:

Revision No.:

00

Effective Date:

Supersedes No.

Nil

Review Date:

Page No.

11 of 13

ANNEXURE – VI INTIMATION SLIP FOR FILTER CLEANING /REPLACEMENT

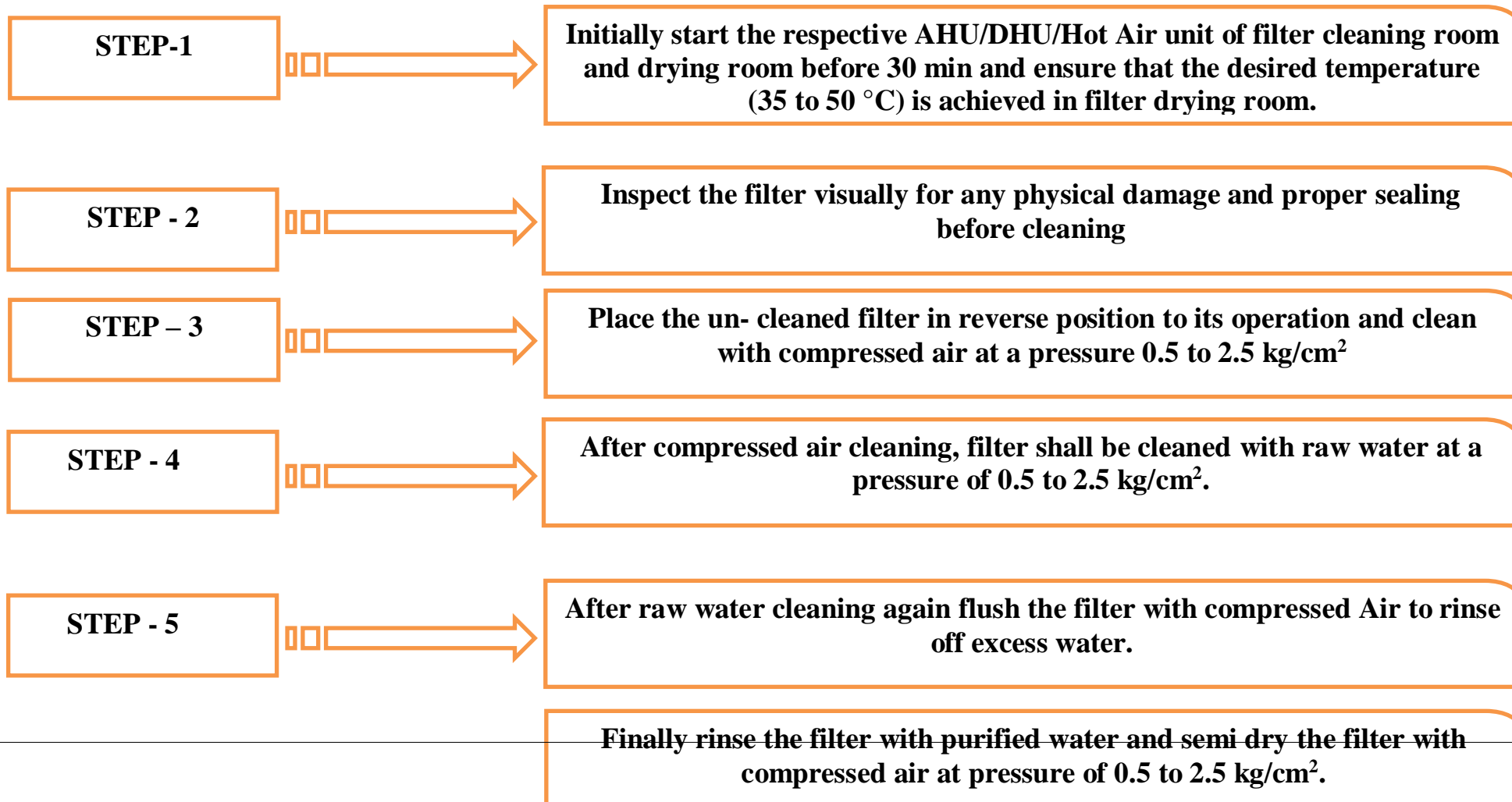
Activity Start Up Date & time		Intimation Raised By :	
Filter Type		Equipment ID / Area:	Qty. of Filter :
Filter removed by (User Dept.)	Sign:	Date :	
Un-cleaned Filter Received By (Engg.)	Sign:	Date :	
Cleaned Filter Handover By (Engg.)	Sign:	Date :	
Clean filter fitted by (User Dept.)	Sign	Date	
Activity Completion Date & Time:		Status (Ok/Not ok) :	
Activity Review By User Department (Sign & Date)			



Title: Filter Cleaning of HVAC System

SOP No.:		Revision No.:	00
Effective Date:		Supersedes No.	Nil
Review Date:		Page No.	12 of 13

ANNEXURE – VII
PROCESS FLOW DIAGRAM FOR FILTER CLEANING PROCESS





Title: Filter Cleaning of HVAC System

SOP No.:		Revision No.:	00
Effective Date:		Supersedes No.	Nil
Review Date:		Page No.	13 of 13

STEP - 6



STEP - 7



After completion of filter cleaning activity or before sending to filter drying room, again inspect the filter visually for any deposited dirt/dust or any damage.

STEP - 8



Transfer the filter's to filter drying room through respective pass box and dry the filter for maximum four hours at a temperature of 35 to 50° C.

STEP - 9



Finally inspect the filter physically for properly drying and transferred the dried filter to dedicated cleaned filter storage area after inserting it in new poly bag with cleaned label status on it.