



PHARMA SCHOLARS

QUALITY DEPARTMENT

**OPERATIONAL QUALIFICATION PROTOCOL FOR AUTOMATIC HIGH SPEED
LINEAR VIAL WASHING MACHINE-300**

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**OPERATIONAL QUALIFICATION
PROTOCOL
FOR
AUTOMATIC HIGH SPEED LINEAR
VIAL WASHING MACHINE-300**

EQUIPMENT ID	
EQUIPMENT LOCATION	
EQUIPMENT MAKE`	
DOCUMENT NO.	
REASON FOR QUALIFICATION	



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Signing of this Operational Qualification Protocol indicates agreement with the Validation Master Plan approach of the equipment. Further if any changes in this protocol are required, protocol will be revised and duly approved.

PREPARED BY:

Organization	Name	Signature	Date
Production			

CHECKED BY:

Organization	Name	Signature	Date
Engineering			
Production			
Quality assurance			

APPROVED BY:

Organization	Name	Signature	Date
Head Engineering			
Head Manufacturing			

AUTHORISED BY:

Functional area	Name	Signature	Date
Head Quality			

2.0 OBJECTIVE

The objectives of this Operational Qualification (OQ) are as follows:



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- To verify that the equipment operates in accordance with the design and user requirements as defined by set acceptance criteria and complies with relevant cGMP requirements.
- To demonstrate that the system will operate reproducibly and consistently within its operating range.
- To confirm the suitability of the Standard Operating Procedures for all routine activities associated with the system.

Following execution of the protocol a summary report will be written and approved. All results, conclusions, exceptions and variances will be addressed and final disposition of the equipment will be Automatic high speed linear vial washing machine-300 Machine stated. Successful completion of this protocol and approval of the summary report will verify that the meets all the acceptance criteria and is ready for PQ.

3.0 SCOPE

This protocol covers all aspects of Operational Qualification for the Blister Packing Machine serving the; in Dry Powder Injection Facility. Scope incorporates qualification of Automatic High Speed Linear Vial Washing Machine-300 this protocol will define the methods and documentation used to qualify the Automatic High Speed Linear Vial Washing Machine-300 for OQ. Successful completion of this protocol will verify that the Automatic High Speed Linear Vial Washing Machine-300 meets all acceptance criteria and is ready for Performance Qualification.

4.0 RESPONSIBILITIES

Department	Responsibilities
Production	Prepare and check the Operational Qualification Protocol.
	Distributes the finalized protocol for check, approve and authorization signatures.
	Execution of Operational Qualification Protocol.
	Complied qualification data package, and final report.
Engineering	Check, approve and execution of Installation qualification protocol.
Quality Assurance	Check, approve and execution of Installation qualification protocol
	Final authorization of protocol.

5.0 SYSTEM DESCRIPTION

- 5.1 The machine works on the principle of jet washing of the individual vials in a mouth down position by a series of jets.
- 5.2 The vials are loaded on the unloading station by placing a box or tray of vials on it.
~~the complete layer of the vials is pushed out to the machine platform.~~



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- 5.3 The vials go to infeed lifter by the help of in feed conveyor. This infeed lifter then carries the vials in to the pockets.
- 5.4 After vials going in to pockets the pocket channel run to the backside. During this process the infeed lifter come back and carry other vials.
- 5.5 The index channel of vials carries forward at a time. During each stoppage of this movement, nozzles manifold raises up and a nozzle enters the mouth of each individual vial.
- 5.6 A solenoid valve in the water and air lines is now activated and a jet of air / water hits the inside of the vial to thoroughly clean it.
- 5.7 An external cleaning station is also provided. The standard washing sequence provided is as under.
- 5.8 These washed vials are then taken away from the pockets with support of vial guide plate and come out on the out feed lifter.
- 5.9 Out feed lifter come down and the pusher transfer the vials on the outfeed conveyor.
- 5.10 **Washing Sequence**
- Ist wash- compressed air.
 - IInd wash- recirculated water.
 - IIIrd wash- recirculated water.
 - IVth wash- compressed air.
 - Vth wash- purified water.
 - VIth wash- compressed air.
 - VIIth wash- purified water.
 - VIIIth wash- compressed air.
 - IXth wash-WFI water
 - Xth wash- compressed air.

6.0 DOCUMENTATION REQUIREMENTS

The OQ File should include:

- This OQ Protocol.
- Any laboratory test results or their referenced location.
- Any change control actions that may have occurred during the qualification activities.
- Any variances, exceptions or investigation reports generated during the qualification activities.

7.0 DATA COLLECTION

All individuals executing this Protocol shall complete the attached *Signature Sheet*. All personnel shall have suitable documented training or experience.

All approvals shall be made in **BLACK** ink.

All data entry shall be made in **BLACK** ink.

All corrections to this Protocol, which are not retyped, are to be made in **BLACK** ink. All written corrections to this Protocol or to data entered in this Protocol should be made by using a single line to delete the error. The person who makes the correction shall initial and date it and add comment to explain reason for correction.

After performing the qualification tests, collect all relevant printouts and certificates and retain for inclusion in the OQ File. If more Data Sheets or Variance Sheets are required, they are to be attached to this Protocol as *Annexure* and to be listed in *Section 14 List of Annexure*.

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LINEAR VIAL WASHING MACHINE-300****Protocol cum Report No.:****Batch Size:****Page No.: 6 of 19****8.0 CHANGE CONTROL**

Any changes or modifications to the system shall be performed in accordance with the all Project Change Control Procedure.

Change Control Forms raised during the execution of this OQ will be filed along with the protocol. An assessment will be made for each change to determine whether or not any re-validation is required.

9.0 PRE-QUALIFICATION REQUIREMENTS

The results of any tests should meet the limits and acceptance criteria specified in the test documents. Any deviations or issues should be rectified and documented prior to OQ commencing. Open action items resulting from these tests shall be listed in the Comments section.

9.1 System Pre-requisites

No.	Description of Pre-requisite	Completed [Yes/No]	Verified By	Date
1	Verify that the IQ of the Automatic High Speed Linear Vial Washing Machine-300 has been executed and approved. IQ Protocol Document No: IQ/BP/002-00	Yes/No*		
2	Verify that Site Acceptance Tests (SAT) of the Automatic High Speed Linear Vial Washing Machine-300 MACHINE has been executed and approved.	Yes/No*		
3	Verify that the safety walk through has been completed and that the system is safe to use.	Yes/No*		
Verify that authorised drafts of the following procedures (SOP / PMI) relevant to operation of the Automatic High Speed Linear Vial Washing Machine-300 Machine are available.				
4	SOP of Automatic High Speed Linear Vial Washing Machine-300 Machine Operation	Yes/No*		
5	SOP of Automatic High Speed Linear Vial Washing Machine-300 Machine Maintenance.	Yes/No*		

Note:- * -Circle one, which is appropriate.



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9.2 Test Equipment Calibration

Review the calibration status for the test equipment to be utilised and record the calibration due dates in the table below. All equipment/instrumentation must remain within the calibration due date for the duration of OQ test for which the item is used. If a due date potentially occurs during the testing period then the instrument must be recalibrated before it can be utilised.

Equipment Name	Equipment Owner	Equipment Number	Due Date	Signature	Date

Reviewed by		Date	
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**OPERATIONAL QUALIFICATION PROTOCOL FOR AUTOMATIC HIGH SPEED
LINEAR VIAL WASHING MACHINE-300****Protocol cum Report No.:****Batch Size:****Page No.: 8 of 19****10.0 TESTS AND CHECKS****10.1 SOP Verification****10.1.1 Purpose**

To verify the accuracy of Standard Operating Procedures applicable to the Automatic high speed linear vial washing machine-300

10.1.2 Method

Obtain a controlled copy of each SOP referenced within section 10.1.4. During the course of OQ testing, perform each operation according to the instruction indicated within the appropriate SOP. Mark with a highlighter pen each instruction or statement within the SOP which is verified and in accordance with the actual practice. Write any differences from actual practice in red ink on the copy of the SOP. On completion, write "Operational Qualification - SOP Verification" on the marked-up copy of the SOP, sign & date it and attach as an annexure to the OQ protocol together with any other raw data such as printouts. Ensure all SOP's identified in Section 10.1.4 are evaluated and checked.

10.1.3 Acceptance Criteria

At the completion of OQ testing, all standard operating procedures referenced within section 10.1.4 will be annotated to correctly reflect the applicable method instruction(s) required to obtain intended operation or function result.

10.1.4 Results

Enter the SOPs into the table below and verify that they have been evaluated and checked. Incorporate the marked up SOPs as an appendix to the OQ report together with any other raw data such as printouts

SOP Number	SOP Description	SOP accurate after check [Y/N]	Initial / Date
	Automatic high speed linear vial washing machine-300 Operation and cleaning		

Comments:

Reviewed by

Date



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10.2 System Start-Up and Shutdown Test

10.2.1 Objective

To verify that the system components will power-up and start as defined by the design documentation.

10.2.2 Method

Follow instructions in the Test Method column of section 10.2.4 to test the start-up and shutdown of each system component. Obtain approval from the Production, Electrical and Mechanical Departments (where applicable) prior to this test and attach the approval slip as an appendix to this protocol. Record all observations in section 10.2.4 and attach any raw data printouts as an appendix to this protocol.

10.2.3 Acceptance Criteria

All Start-up and Shutdown functions operate correctly as specified in the following document:

- *System Operating and Maintenance Manual* Automatic high speed linear vial washing machine-300 as supplied by vendor.

Specific acceptance criteria for each test are provided in the tables in section 10.2.4.

10.2.4 Results

Test Method	Expected Result	Actual Result	Acceptable [Y/N]	Initial / Date
Shutdown Procedure				
Switch "OFF" the mains on the control panel	"machine should stop immediately"			
Power-Up and Start Test				
Switch 'ON' the mains on the control panel	"ON" Indication in indicator.			

Equipment Operated by		Date	
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Comments:

Reviewed by		Date	
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10.3 System Functionality Tests

10.3.1 Objective

To verify Automatic high speed linear vial washing machine-300 components functionality.

10.3.2 Method

Prior to this test, power up and start-up each component as described in Section 10.2.4: *Power Up and Start Test*. Operate each item as described in Section 10.3.4 to test the functionality of the system. Record all observations in the Actual Results column in Section 10.3.4.

10.3.3 Acceptance Criteria

All aspects of control for individual components integrated within the Communiting Mill shall function as specified in the expected results column in Section 10.3.4.

10.3.4 Results

Test Method	Expected Result	Actual Result	Acceptable [Y/N]	Initial / Date
Switching on the Power ,Alarm check and safety valve				
Switch on the power to Automatic high speed linear vial washing machine-300	Machine is ready to start.			
Main switch	To open the panel box the switch should be in OFF Position. Machine can start by the main switch			
In feed vial jam	If any problem create on the In feed drum the limit switch is operate and machine stops at once. its display in the HMI			
Lifter vial jam	If any problem creates on the lifter at back side the limit switch is operated and machine stops at once. its display in the HMI			
Pusher vial jam	If any problem create at the pusher at the back side of the machine the limit switch is operated and machine stops at once. Its display in the HMI			
Discharge vial jam	If any problem create at the discharge vial drum at the back side of the machine the limit switch is operated and machine stops at once. Its display in the HMI.			
Test Method	Expected Result	Actual Result	Acceptable [Y/N]	Initial / Date



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Emergency stop	There are two Emergency stop for safety purpose is mounted on the main panel box and another is mounted at the back side cover.			
Water level	If any tank is empty machine stops at once. Its display in the HMI.			
Main switch	To open the panel box the switch should be in OFF Position. Machine can start by the main switch			
Manual	Every function stop as one by one in this mode			
Auto	Stop the machine by emergency stop			
Emergency stop	There are two emergency stop switches Provided on the front and backside of the machine. Press the emergency stop machine stop at once.			
In feed zone	The vials are loaded on in feed platform and pushed manually to the conveyor. The conveyor carries the vials on the in feed lifter by the help of loosening device. The in feed lifter carries the vials to the pockets.			
Washing zone	The vials set up in to the pockets after feeding. So now channel drive by indexing drive and come at the washing zone. There are ten washes, in the machine vials are washed one by one by Re – circulated purified, WFI water and air.			
Out feed zone	After washing vials came out from the machine by the help of out feed vial guide and out feed lifter and pusher. Pusher pushes the vials on the out feed conveyor.			

Equipment Operated by		Date	
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Comments:

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Reviewed by		Date	
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10.4 Confirmation of Critical Parameter and Full Function Testing**10.4.1 Objective**

To confirm that the critical parameter and full function of the Automatic High Speed Linear Vial Washing Machine-300 Machine are as defined below:-

- The lubricants used of food grade and they do not come into contact with product or product contact parts

10.4.2 Method

Follow the test methods described in section 10.4.4 for various parameters under test.

Record the observation in 10.4.4 actual results column.

Attach supporting documents, as applicable, in the annexure.

10.4.3 Acceptance Criteria

The critical operational parameters and full function testing on the Automatic high speed linear vial washing machine-300 has been identified and completed satisfactorily.

10.4.4 Results

Test Method	Expected Result	Actual Result	Acceptabl e [Y/N]	Initial / Date
Lubricants are Food Grade & does not come in contact with the Product				
Visual Inspection & test certificates from Vendor	Lubricants are Food Grade & does not come in contact with the Product			

Equipment Operated by		Date	
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Comments:			
Reviewed by		Date	

11.0 CHECKLIST OF ALL TESTS AND CHECKS

This checklist is provided to ensure that all tests or checks required for this protocol have been executed.

Reference No.	Tests or Checks	Executed [Y/N]	Comment
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10.1	SOP Verification		
10.2	Start-Up and Shutdown Test		
10.3	Functionality Test		
10.4	Confirmation of Critical Parameter and Full Function Testing		

Comments:

Reviewed by		Date	
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12.0 DEVIATION SHEET

Report any deviations from the acceptance criteria or exceptions from protocol instructions in the Record Sheet as described in SOP-“ Handling Of Deviations” Record the total number of exceptions / deviations reported during the qualification activities of this Protocol. Record the Deviation Number and Title in the Table below. Include all Deviation Record Sheets in the IQ File.

TOTAL NO. OF EXCEPTIONS / DEVIATIONS = _____



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Exception / Deviation No.	Exception / Deviation Title	Status

Comments:

Reviewed by

Date

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This Deviation and Corrective Action Report Form shall be completed for each result that does not meet the expected or as designed condition encountered during the execution of the protocol. Each form shall be numbered sequentially and tracked on the Deviation Sheet within the protocol.

Deviation Report Number:		
PROTOCOL SECTION NO.:		DATE OF TEST:
Description Of Test Result:		
IMMEDIATE ACTION TAKEN:		
Corrective Action Taken / Planned:		
Deviation Reported By:		
Name:	Signature:	Date:
Corrective action must be taken prior to approval of IQ or OQ? :		
HEAD - ENGG. SIGNATURE		DATE:
Head-User dept. signature		Date
QA Signature:		Date:
<u>Corrective Action Implemented:</u>		
Corrective Action Implemented By:		
Name:	Signature:	Date:
(Attach comments and supporting documentation as necessary)		
Was a re-test or amendment necessary due to the Deviation?		Date of re-test:
Is Deviation Closed (Yes/No):		
QA Signature:		Date:



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13.0 REFERENCES

The Principle Reference is the following

- Master Validation Plan forTablets, Capsules, Dry Syrup and dry Powder Injection Manufacturing Facility, VMP/001, Revision 00.
- Schedule – M – “Good Manufacturing Practices and Requirements of Premises, Plant and Equipment for Pharmaceutical Products.”
- WHO Essential Drugs and Medicines Policy, QA of Pharmaceuticals, Vol 2 – Good Manufacturing Practices and Inspection.

The following references are used to give addition guidance

- FDA/ISPE Baseline Pharmaceutical Engineering Guide-Volume 5:- Commissioning and Qualification Guide, First Edition / March 2001.
- Code of Federal Regulations (CFR), Title 21, Part 210, *Current Good Manufacturing Practice (cGMP) in Manufacturing, Processing, Packing, or Holding of Drugs*, General. April 1, 1998.
- Code of Federal Regulations (CFR), Title 21, Part 211, *Current Good Manufacturing Practice (cGMP) for Finished Pharmaceuticals*, April 1, 1998.
- EU Guide to Good Manufacturing Practice, Part 4, 1997.
- European Commission’s working party on control of medicines and inspections document, *Validation Master Plan, Design Qualification, Installation & Operational Qualification, Non Sterile Process Validation, Cleaning Validation*, October 1999.
- GAMP Guide, Validation of Automated Systems in Pharmaceutical Manufacture, Version 4.0, December 2001.
- SOP -“Handling of Deviations”.
- SOP -“Change Control Procedure”.



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14.0 LIST OF ANNEXURES

[illegible]



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15.0 SUMMARY

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16.0 POST APPROVALS

The following approvals signify that the OQ is complete and acceptable and that the system is ready for PQ Execution.

PRPARED BY:

Functional area	Name	Signature	Date
Production			

CHECKED BY:

Functional area	Name	Signature	Date
Engineering			
Production			
Quality assurance			

APPROVED BY:

Functional area	Name	Signature	Date
Head Engineering			
Head Manufacturing			

AUTHORISED BY:

Functional area	Name	Signature	Date
Head Quality			