



PHARMA DEVILS

**INSTALLATION QUALIFICATION
PROTOCOL CUM REPORT
FOR
GARMENT WASHING MACHINE**

PROTOCOL No.:

**INSTALLATION QUALIFICATION
PROTOCOL CUM REPORT
FOR
GARMENT WASHING MACHINE**

EQUIPMENT ID. No.	
LOCATION	Washing & Sterilization Area
DATE OF QUALIFICATION	
SUPERSEDE PROTOCOL No.	NIL



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1.0 PROTOCOL PRE – APPROVAL:

PREPARED BY:

DESIGNATION	NAME	SIGNATURE	DATE
OFFICER/EXECUTIVE (QUALITY ASSURANCE)			

REVIEWED BY:

DESIGNATION	NAME	SIGNATURE	DATE
OPERATING MANAZGER (QUALITY ASSURANCE)			
HEAD (ENGINEERING)			

APPROVED BY:

DESIGNATION	NAME	SIGNATURE	DATE
HEAD (PRODUCTION)			



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2.0 OBJECTIVE:

- To provide documented evidence for the Installation Qualification of Garment Washing Machine.
- To confirm that the equipment and its components are installed as per the specifications mentioned in the design qualification document and other requirements given by supplier.

3.0 SCOPE:

- The scope of this Installation Qualification Protocol cum Report is limited to qualification of **Garment Washing Machine (Make:)** (Capacity- 7.0 Kg) to be installed in Washing & sterilization Area.
- This document provides all the relevant information related to specification, installation checks and acceptance criteria to be required to perform installation qualification activity of Garment Washing Machine.



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4.0 RESPONSIBILITY:

The Validation Group, comprising of a representative from each of the following departments shall be responsible for the overall compliance of this Protocol cum Report:

DEPARTMENTS	RESPONSIBILITIES
Quality Assurance	<ul style="list-style-type: none">• Preparation, Review, Authorization and Compilation of the Installation Qualification Protocol cum Report.• Co-ordination with Production and Engineering to carryout Installation Qualification.• Monitoring of Installation Qualification Activity.• Post Approval of Installation Qualification Protocol cum Report after Execution.
Production	<ul style="list-style-type: none">• Review & Pre Approval of Protocol cum Report.• To Co-ordinate and support for Execution of Qualification study as per Protocol.• Post Approval of Installation Qualification Protocol cum Report after Execution.
Engineering	<ul style="list-style-type: none">• Review & Pre Approval of Installation Qualification Protocol cum Report.• Co-ordination, execution and technical support in Garment Washing Machine Installation Qualification Activity.• Responsible for Trouble Shooting (if occurs during execution).• Post Approval of Installation Qualification Protocol cum Report after Execution.



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5.0 EQUIPMENT DETAILS:

Equipment Name	Garment Washing Machine
Equipment ID.	
Manufacturer's Name	
Supplier's Name	
Capacity	7 Kg.
Model	
Sr.No.	
Location of Installation	Washing & Sterilization Area

6.0 SYSTEM DESCRIPTION:

With 7 kg load capacity, Fully Automatic Garment Washing Machine can cater to the needs of everyone. The Garment Washing Machine is equipped with Turbo Clean technology that enables movement of the drum in the opposite direction of the pulsator, giving a perfect wash. The Punch +3 pulsator ensures that detergent rich water penetrates inside the fibers of the clothes. Its Fuzzy Logic control feature has built-in sensors that automatically sense the load capacity, detergent, water level, and decide the appropriate wash program. Along with perfect washing, you will get thoroughly rinsed clothes with this washing machine. Its waterfall circulation feature enables uniform circulation of water. The Air dry function helps in removing moisture from clothes eliminates bad odor and facilitates quick drying of clothes. Durable and sturdy, the washing machine comes with a rust resistant stainless steel tub which protects against stains and bad odor. There is an anti bacterial filter which ensures proper cleanliness as well as sanitation of the washing machine and clothes.

Main parts of Garment Washing Machine are as follow:

- 1) I-Sensor:** I-Sensor mark cleverly uses color schemes to indicate the amount of detergent using. Orange means less, green is proper and red stands for excessive detergent.
- 2) Water Inlet Control Valve:** Near the water inlet point of the washing there is water inlet control valve. When you load the clothes in washing machine, this valve gets opened automatically and it closes automatically depending on the total quantity of the water required. The water control valve is actually the solenoid valve.
- 3) Water Pump:** The water pump circulates water through the washing machine. It works in two directions, re-circulating the water during wash cycle and draining the water during the spin cycle.



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4) Tub: There are two types of tubs in the washing machine; inner and outer. The clothes are loaded in the inner tub, where the clothes are washed, rinsed and dried. The inner tub has small holes for draining the water. The external tub covers the inner tub and supports it during various cycles of clothes washing.

5) Agitator or Rotating Disc: The agitator is located inside the tub of the washing machine. It is the important part of the washing machine that actually performs the cleaning operation of the clothes. During the wash cycle the agitator rotates continuously and produces strong rotating currents within the water due to which the clothes also rotate inside the tub. The rotation of the clothes within water containing the detergent enables the removal of the dirt particles from the fabric of the clothes. Thus the agitator produces most important function of rubbing the clothes with each other as well as with water. In some washing machines, instead of the long agitator, there is a disc that contains blades on its upper side. The rotation of the disc and the blades produce strong currents within the water and the rubbing of clothes that helps in removing the dirt from clothes.

6) Motor of the Washing Machine: The motor is coupled to the agitator or the disc and produces its rotator motion. These are multispeed motors, whose speed can be changed as per the requirement. In the fully automatic washing machine the speed of the motor i.e. the agitator changes automatically as per the load on the washing machine.

7) Timer: The timer helps setting the wash time for the clothes manually. In the automatic mode the time is set automatically depending upon the number of clothes inside the washing machine.

8) Printed Circuit Board (PCB): The PCB comprises of the various electronic components and circuits, which are programmed to perform in unique ways depending on the load conditions (the condition and the amount of clothes loaded in the washing machine). They are sort of artificial intelligence devices that sense the various external conditions and take the decisions accordingly. These are also called as fuzzy logic systems. Thus the PCB will calculate the total weight of the clothes, and find out the quantity of water and detergent required, and the total time required for washing the clothes. Then they will decide the time required for washing and rinsing.

9) Drain Pipe: The drain pipe enables removing the dirty water from the washing that has been used for the washing purpose.



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7.0 PRE – QUALIFICATION REQUIREMENTS:

7.1 Verification of Documents:

- Executed and approved design qualification document.
- Technical specification of equipment.

7.1.1 Procedure:

- Verify the above mentioned documents for availability, completeness and approval status
- If any deviation is observed the same has to be recorded giving reasons for deviation and approved. Deviation should be approved by Authorized person.
- Approved Drawings and supporting documents would form a part of the IQ Protocol cum Report.

7.1.2 Acceptance Criteria:

- All the documents should be available, complete and approved by respective authorities.



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8.0 CRITICAL VARIABLES TO BE MET:

8.1 Installation Qualification Checklist:

S.No.	INSTALLATION CHECK	OBSERVATION	OBSERVED BY (ENGINEERING) SIGN/DATE
1.	Check the proper mechanical installation of Garment Washing Machine.		
2.	Check the proper electrical installation of Garment Washing Machine.		
3.	Check the parts are working properly.		
4.	Check the equipment is free from any defects.		
5.	Check the finishing of machine parts.		

**Checked By
(Production)**

Sign/Date:

Verified By

(Quality Assurance)

Sign/Date:

Inference:

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**Reviewed By
(Manager QA)**

Sign/Date:



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8.2 General Checks and Location Suitability:

INSTALLATION CHECKS	ACCEPTANCE CRITERIA	OBSERVATION	OBSERVED BY (ENGINEERING) SIGN/DATE
Grouting and Mounting	Should be properly grouted and mounted.		
Leveling	Should be properly balanced and leveled.		
Welding of Joints	Welding of joints should be without any welding burrs.		
Place of Installation	Washing & Sterilization Area Room		
Room Condition	General Room Conditions.		
Illumination	NLT 300 Lux		
Working space around the Equipment.	Should be sufficient for easy operation, cleaning, sanitation and maintenance.		

**Checked By
(Production)**

Sign/Date:

Inference:

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Verified By

(Quality Assurance)

Sign/Date:

Reviewed By

(Manager QA)

Sign/Date:



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8.3 Technical Specification:

CRITICAL VARIABLES	ACCEPTANCE CRITERIA	OBSERVATION	OBSERVED BY (ENGINEERING) SIGN/DATE
Make	LG		
Model		
Sr.No.		
Capacity (Direct Drive)	7.0 Kg		
Dimension (W X D X H)	600 X 440 X 850 (mm)		
Input (Watt)	460 W		
Rated Voltage	220 V, 50 Hz 2100 W		
Color	White		
Pulsator	Punch + 3		
Program	Fuzzy / Wool / Quick Wash		
Washing Type	3- Step Washing (Rubbing, rubbing & shaking, shaking and disentangling).		
Temperature Selection	Hot / Warm / Cold		
Window (Glass Type)	Transparent (Glass)		
Inner Tube	Stainless Steel		

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(Production)**

Sign/Date:

Verified By

(Quality Assurance)

Sign/Date:

Inference:

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Reviewed By

(Manager QA)

Sign/Date:



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8.4 MOC Verification List:

S.No.	PARTS NAME	MATERIAL OF CONSTRUCTION	OBSERVATION	OBSERVED BY (ENGINEERING) SIGN/DATE
1.	Powder Detergent Box	STD		
2.	Magic Filter	STD		
3.	Softener Inlet	STD		
4.	Bleach Dispenser	STD		
5.	Function Selector	STD		
6.	Inner Tube	Stainless Steel		
7.	Tub	Stainless Steel		
8.	Start/ Pause Button	STD		
9.	Water Supply Hose	STD		
10.	Power Plug	STD		
11.	Nozzle	STD		
12.	Castors	Polyurethane (PU)		
13.	Drain Hose	STD		
14.	Base	STD		
15.	Adjustable Legs	STD		

**Checked By
(Production)
Sign/Date:**

**Verified By
(Quality Assurance)
Sign/Date:**

Inference:
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**Reviewed By
(Manager QA)
Sign/Date:**



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8.5 Utility Verification List:

CRITICAL VARIABLES	ACCEPTANCE CRITERIA	OBSERVATION	OBSERVED BY (ENGINEERING) SIGN/DATE
Electrical Supply	Voltage : 220 V Phase : 3 Phase Frequency : 50 Hz		
Purified Water	0.3 to 10 Kg/Cm ²		

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(Production)**

Sign/Date:

Verified By

(Quality Assurance)

Sign/Date:

Inference:

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Reviewed By

(Manager QA)

Sign/Date:



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8.6 Safety:

CRITICAL VARIABLES	ACCEPTANCE CRITERIA	OBSERVATION	OBSERVED BY (ENGINEERING) SIGN/DATE
Water Heater Safety	<ul style="list-style-type: none">Under certain conditions hydrogen gas may be produced in water heater that has not been used for two or more. Hydrogen gas can be explosive under these circumstances. If the hot water has not been used for two or more, prevent the possibility of damage or injury by turning on all hot water faucets and allowing them to run for several minutes. Do this before using any electrical appliance which is connected to the HOT water system. <p>This simple procedure will allow any built-up hydrogen gas to escape. Since the gas is flammable, do not smoke or use an open flame or appliance during this process.</p>		
When not in use	<ul style="list-style-type: none">Wipe off dirt or dust on the controls of the power plug.At the time of cleaning the washing machine, do not apply water directly to any part of the washing machine.		



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CRITICAL VARIABLES	ACCEPTANCE CRITERIA	OBSERVATION	OBSERVED BY (ENGINEERING) SIGN/DATE
Electrical wiring and Earthing.	<ul style="list-style-type: none"> Electrical wiring should be as per approved drawings. Double external earthing to control machine panel and motors should be provided. 		
Safety Guards	<ul style="list-style-type: none"> Guards for all moving parts should be provided for safety. 		
Start On/Off switch: To Stop the process immediately.	<ul style="list-style-type: none"> Should be provided for equipment and operator safety. 		
MCB	<ul style="list-style-type: none"> MCB is provided so that when there is an overload in current or any short circuit then the MCB trips. 		
Noise Level	<ul style="list-style-type: none"> Below 80 db 		

**Checked By
(Production)**

Sign/Date:

**Verified By
(Quality Assurance)**

Sign/Date:

Inference:

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**Reviewed By
(Manager QA)**

Sign/Date:



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9.0 REFERENCES:

The Principle References is the following

- Design Qualification Party Document
- Installation Qualification Party Document

10.0 DOCUMENTS TO BE ATTACHED:

- Technical details for Equipment Requirement with Engineering Drawings.
- Any Other Relevant Document.

11.0 DEVIATION FROM PRE-DEFINED SPECIFICATION IF, ANY:

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12.0 CHANGE CONTROL, IF ANY:

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13.0 REVIEW (INCLUSIVE OF FOLLOW UP ACTION, IF ANY):

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14.0 CONCLUSION:

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15.0 RECOMMENDATION:

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16.0 ABBREVIATIONS:

- cGEP : Current Good Engineering Practice
- cGMP : Current Good Manufacturing Practice
- db : Decibel
- DQ : Design Qualification
- GA : General Arrangement
- GWM : Garment Washing Machine
- HP : Horse Power
- Hr : Hour
- Kg : Kilogram
- MOC : Material of Construction
- PCB : Printed Circuit Board
- PO : Purchase Order



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17.0 PROTOCOL POST APPROVAL:

PREPARED BY:

DESIGNATION	NAME	SIGNATURE	DATE
OFFICER/EXECUTIVE (QUALITY ASSURANCE)			

REVIEWED BY:

DESIGNATION	NAME	SIGNATURE	DATE
OPERATING MANAGER (QUALITY ASSURANCE)			
HEAD (ENGINEERING)			

APPROVED BY:

DESIGNATION	NAME	SIGNATURE	DATE
HEAD (PRODUCTION)			

APPROVED BY:

DESIGNATION	NAME	SIGNATURE	DATE
HEAD (QUALITY ASSURANCE)			