Laboratory Equipment Manufacturer
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Microplate Washer
Operation Manual
MIC-WAS-100

PLEASE READ THIS MANUAL CAREFULLY BEFORE OPERATION

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A. Introduction

MIC-WAS-100 is a gravity and hand operated manifold designed to wash immunoassays in 8-well strips ELISA plates and 96-well ELISA microplates. It is a perfect addition for the laboratory with limited budget. The system applies an 8-Channel manifold with 2 ports, one port connects to a suction bottle with a vacuum source and another port connected to a buffer bottle on a higher place (>60 cm). There are 2 rows of stainless steel tube with different length on the manifold, the shorter row for dispensing buffer, the longer row for sucking waste medium. When the vacuum source on working, if the longer row of tubes are immersed into well, then the waste medium in the well will be sucked into the waste bottle. On the other side, when press the button on the manifold, the shorter tubes will dispense buffer into the well by gravity force. The manifold is made of PTFE and the tubes are stainless steel 304, durable, autoclavable and effective.

In addition, MIC-WAS-100 offers an unique platform in order to hang the manifold and place microplate, you can put the microplate in horizontal or straight and slope direction, ergonomic and reducing residues effectively.

B. Important Notice

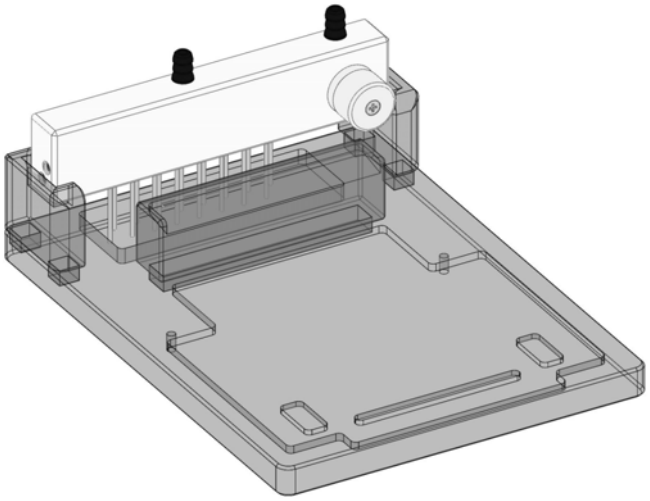
1. Before using this product please read this manual carefully.
2. Please discard the packing materials according to your local environmental protection policy.
3. When using a vacuum source, do not exceed 10 PSI.
4. If you have any questions about the operation of this product, please link maintenance staff and do not make improper removable.
5. After each use, please clean the pipeline and outward appearance

C. Unpacking and checking

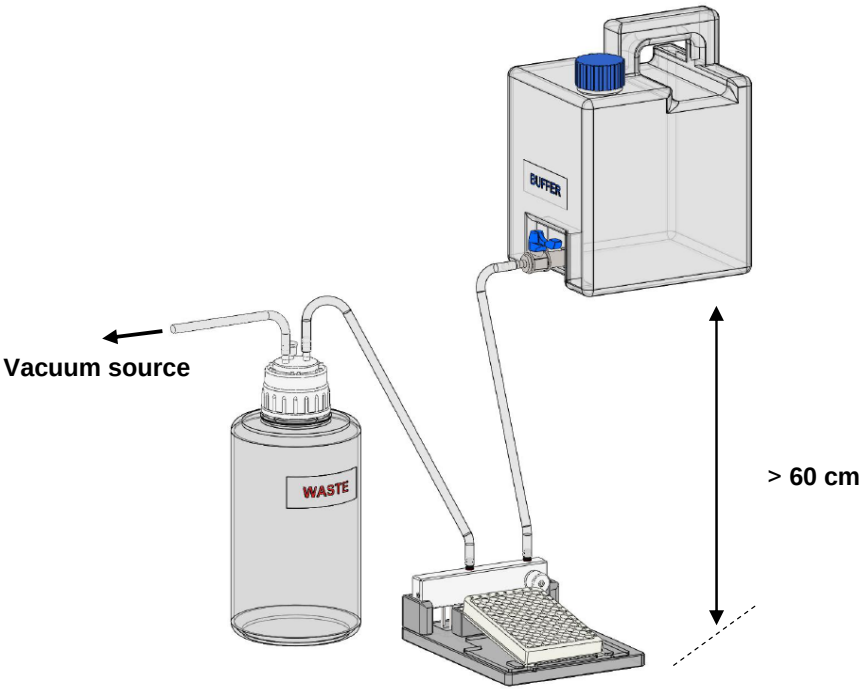
Before unpacking this product, please check the box without any joint damage. After unpacking, please check the accessories complete as list also. If any questions, please keep serial number, the packing box, and contact local distributor immediately to claim support.

- 2 x 8-Channel Manifold x1
- Spare Part Kit x1
- Plate-Base x1
- Instruction Manual x1

D. Over View

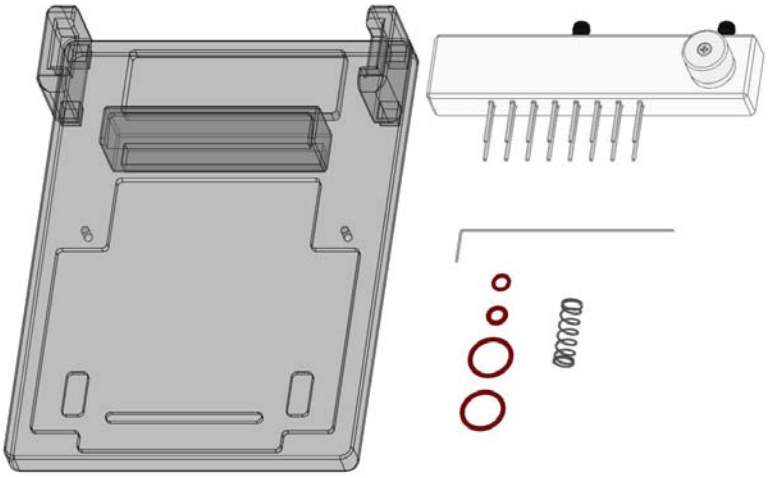


<Fig.1> MIC-WAS-100 Hand-held Microplate Washer Manifold Over View

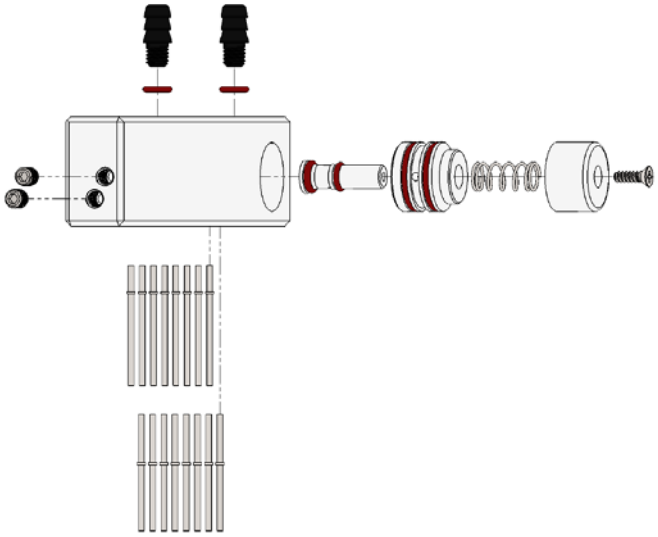


<Fig.2> MIC-WAS-100 Hand-held Microplate Washer Manifold System Over View

E. Part View



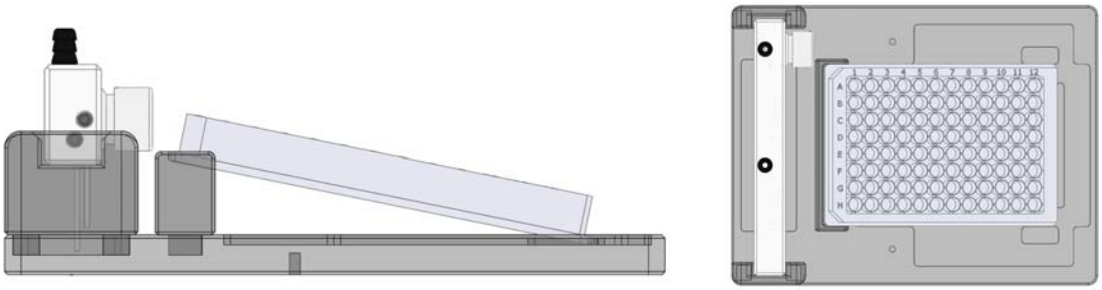
<Fig.3> MIC-WAS-100 Hand-held Microplate Washer Manifold Part View



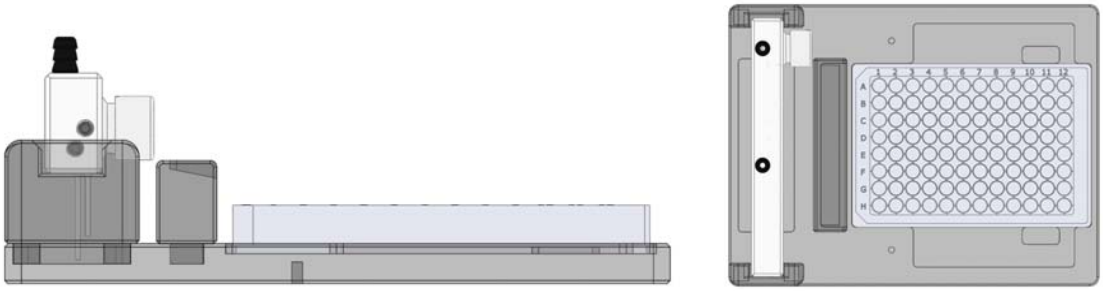
<Fig.4> 2 x 8-Channel Manifold Exploded View

F. Installation

1. Please connect the inlet port on the upper-right side of the manifold with the export of the wash bottle by using the appropriate length of tubing such as <Fig.2>.
   Note: Buffer bottle must 60 cm higher than manifold.
2. Please connect the outlet port on the upper-left side of the manifold with the waste bottle connecting to a vacuum source by using the appropriate length of tubing such as <Fig.2>.
3. Please adjust the vacuum source to the appropriate level.
4. Please place the microplate wells to the plate-base like <Fig.5> or <Fig.6> (<Fig.5> which can get a better framework for operation is recommended).
5. Before operating the manifold, please press the button on the front side of the manifold and make sure each pipeline is full of cleaning agents.
6. The manifold is now ready for use.



<Fig.5> Microplate with slope operation



<Fig.6> Microplate with flat operation

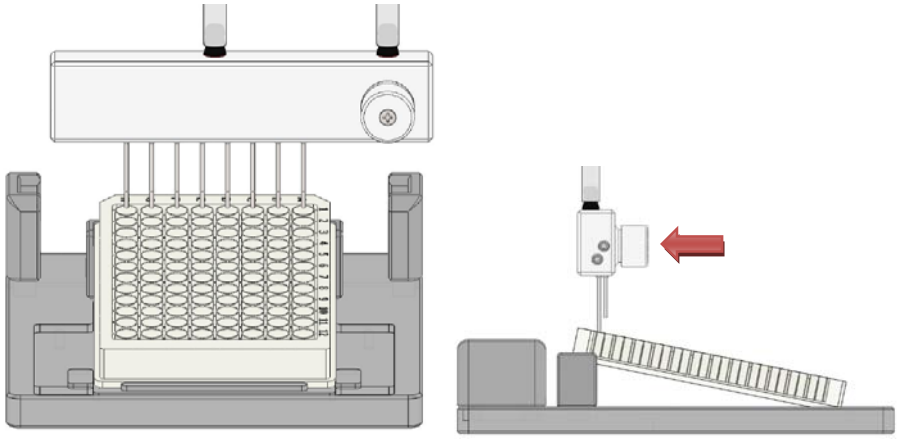
G. Operation

Dispensing Buffer:

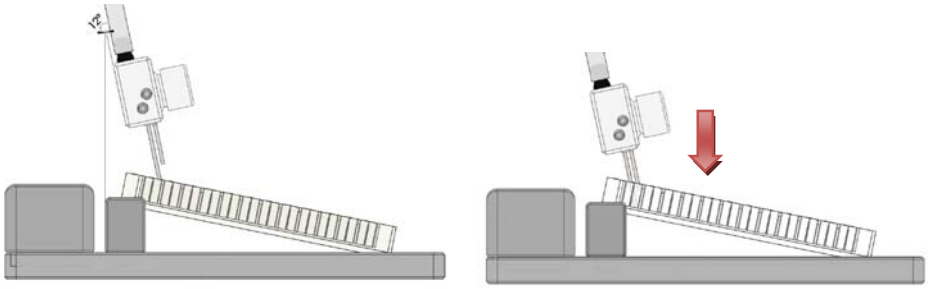
1. Hold the manifold like <Fig.7> → Leaning the suction tube on the wall of microplate well → Maintain the manifold body perpendicular to the plate-base → Press the button → Start dispensing → After the wells filled with the buffer, release the button to stop dispensing.
2. Dispense buffer on next row of microplate well as above method → Stop after dispensing all of the wells.
3. If the ELISA procedure requires cleaning oscillation, please shake the microplate wells gently and wait few seconds → Aspirate waste.

Aspirating Waste:

1. Inclines the manifold 12 degrees angles as <Fig.8> → Leaning the suction tube down the well wall and suck the waste.
2. Aspirate waste on next row of microplate well as above method → Stop after sucks all of the wells.
3. Repeats steps 1 to 5 as required.
4. After the final wash, please turn over the plate and tap 4 or 5 times on a lint-free paper towel gently to remove any remaining wash buffer to get best cleaning.



<Fig.7> Operation of dispense buffer



<Fig.8> Operation of aspirate waste

H. Maintaining

1. After each use, please wipe the remaining liquid on the plate-base or manifold.
2. Please use the distilled water to clean up the stainless steel aspirate and dispense tube for tens of seconds in order to avoid crystallization of the salt.
3. If the pipeline is blocked, please soak in water for half an hour, and then clear the blockage with the L-type cleaning rod, or replace the tube.
4. Manifold can be sterilized by autoclave but plate-base can't and it's recommended to sterilize before use to avoid contamination.
5. To ensure the working ability of the manifold, please change the O-ring (all) once a year; For O-ring replacement, please refer to Figure 4-Manifold Exploded View.

I. Troubleshooting

Failure Condition	**Possible Cause and Suggestions**
1. Button sprang open	1. Button is damaged → Replace a new one or back to local distributor 2. Check and make sure the pressure is under 10 PSI
2. Button is leaking water	1. O-ring sealing is bad → Replace the O-ring 2. Button is damaged → Replace a new one or back to local distributor
3. Dispensing buffer is too weak	1. Pipeline blockage → clear the blockage with the L-type cleaning rod or replace the stainless steel 2. Check and adjusting the pressure ***Note: no more than 10 PSI*** 3. O-ring sealing is bad → Replace the O-ring 4. Bad tightness on tubing → Replace or re-close the silicone tubes 5. The cap of wash bottle is screwed too tight → Loosen the cap to balance pressure
4. Aspirating waste is too weak	1. Adjust the vacuum to the appropriate level 2. Bad tightness on tubing → Replace or re-close the silicone tubes

J. Ordering Information

- 196100-01 MIC-WAS-100 Hand-held Microplate Washer Manifold with Plate-Base
- 196100-00 2 x 8-Channel Manifold
- 196100-03 Spare Part Kit
- 196100-04 Plate-Base for Microplate and Manifold
- 196200-02 Buffer Bottle, 4 liter (Nalgen 2318)
- 196200-04 Waste Bottle, 2 liter
- 167300-11 VP-17 Vacuum Pump, AC110V, 50/60Hz
- 167300-22 VP-17 Vacuum Pump, AC220V, 50/60Hz
- 196200-36 Silicon Tube (ψ5/16" x ψ3/16"), 100cm