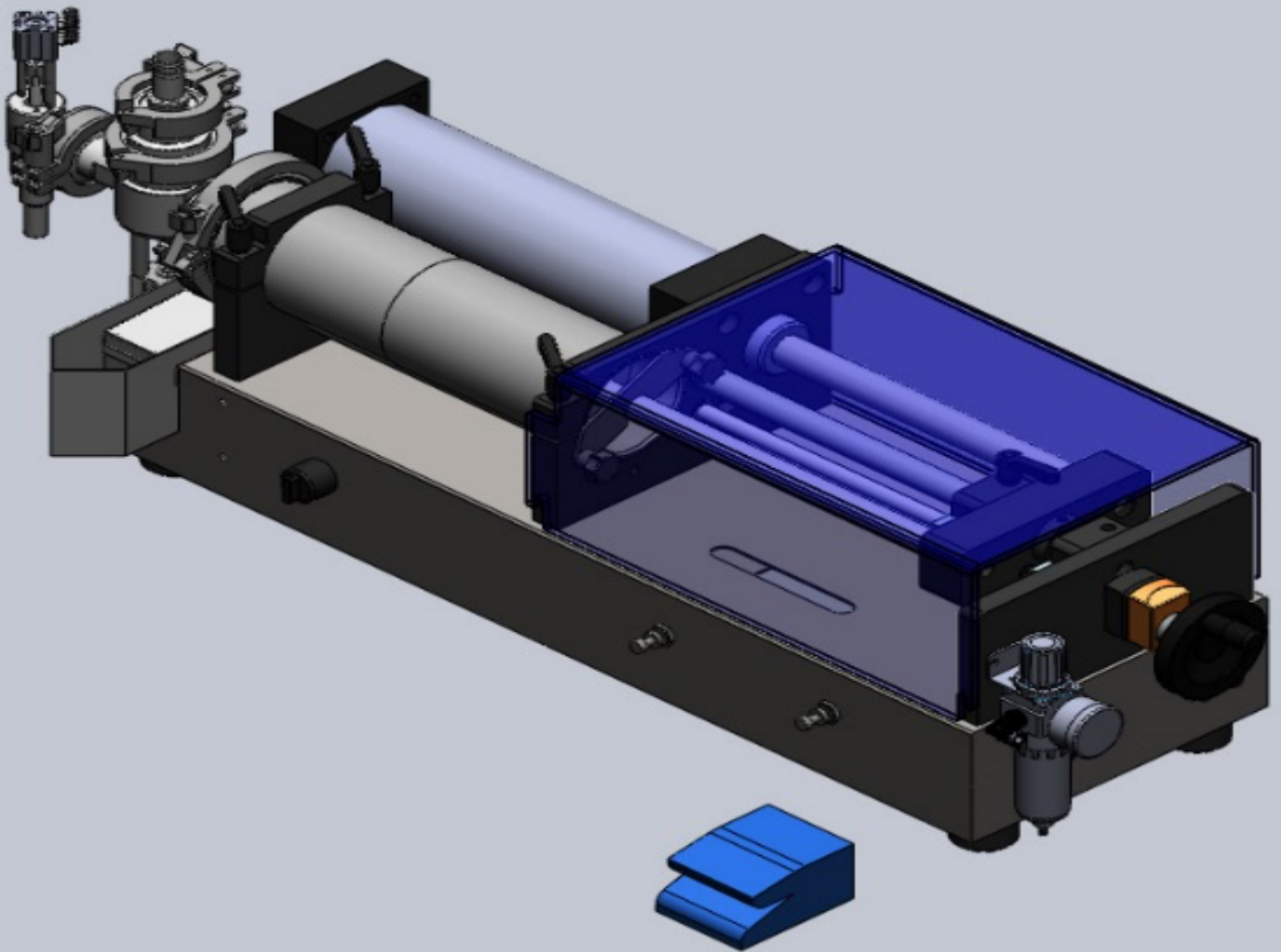


# USER MANUAL

## Tabletop Piston Liquid Filler



**FP-1000**

**200/500/1000**

Edition 6 05/2016

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# 1 SAFETY INSTRUCTION

This manual is designed for operators who are not acquainted with the machine, so please follow the instructions to operate and adjust the machine step by step. If you cannot thoroughly understand some of the instructions, please ask experienced technicians for help or contact us. Thank you!

**Note: Please read this user manual in detail before taking any action to operate the machine!**



- This machine is driven by 110 or 220 VAC. The voltage should fit for the power standard of the machine and should always stay within the security limit.



- Only engineering technicians are allowed to make adjustment of the machine, but any adjustment is forbidden while the machine is running. Failure to follow this warning may expose the operator to danger.



- Do not place the machine near high temperature or inflammables. The places where are not stable or where the machine will be crashed easily are also not suitable to place the machine.

- To prevent from getting electric shocks, the machine cannot be placed in a humid environment.

- Do not attempt to remove/replace parts or to use the machine for any other purpose other than what is recommended by NEOSTARPACK.

- Do not randomly apply lubricants to any part of the machine.

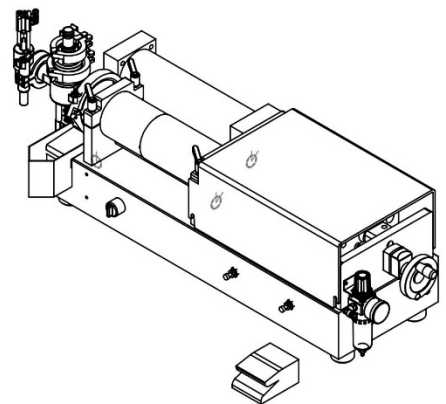
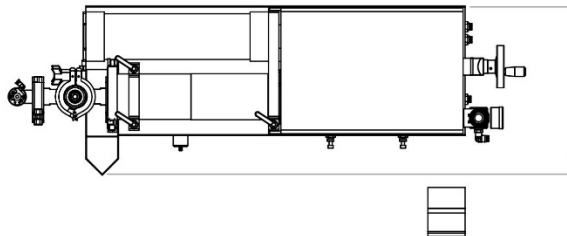
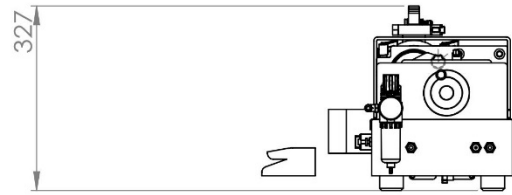
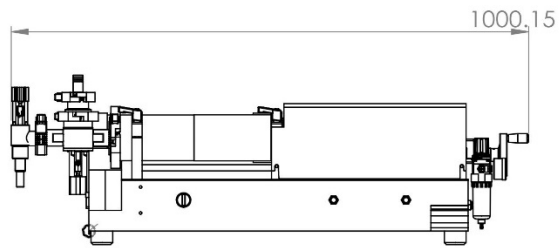
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## **Notice of Equipment Improvements & Document Revisions**

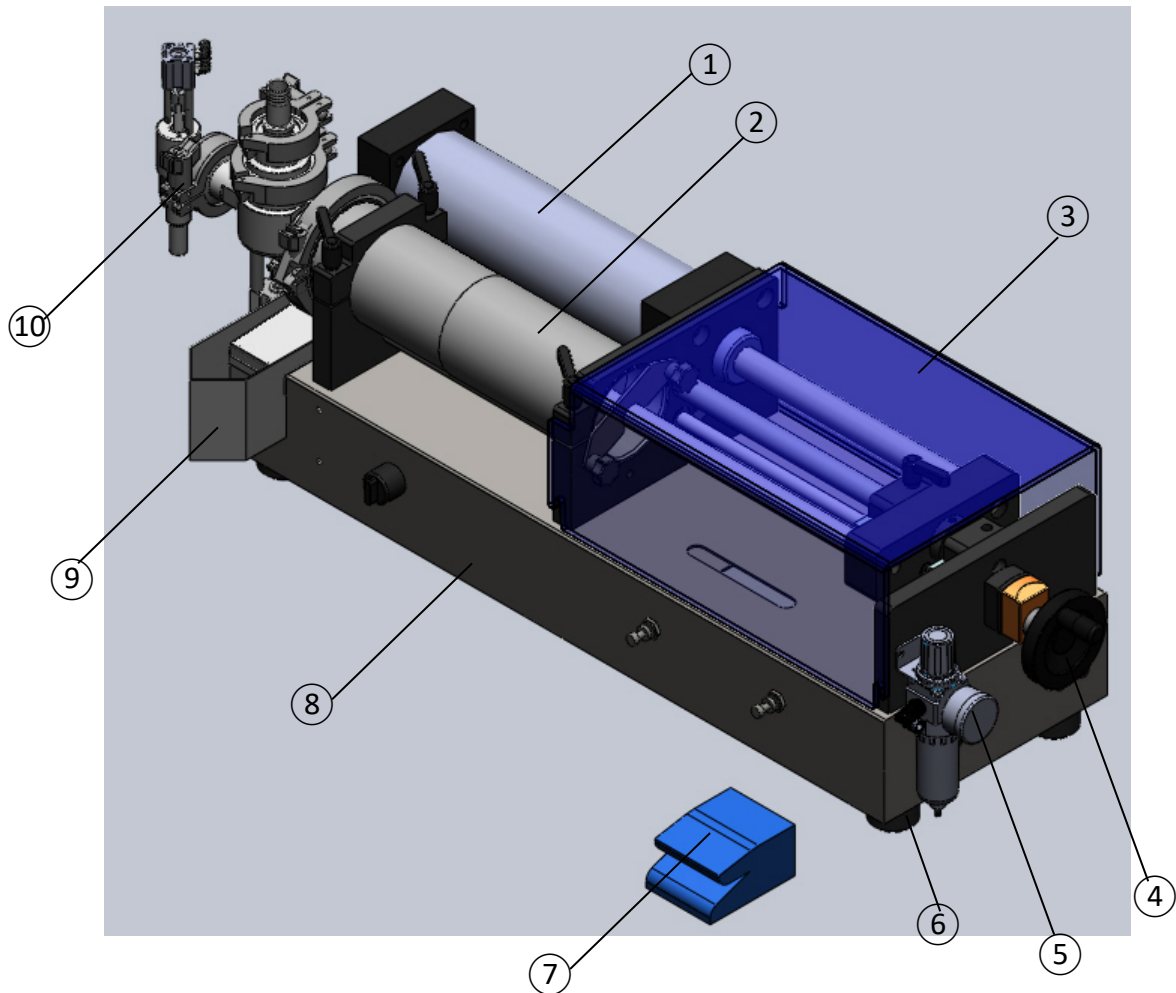
Neostarpac Co., Ltd. continually devotes to developing and researching for new items and reserves the right to change or terminate the production specifications and features which are presented in this manual without notice and without taking any responsibilities. Neostarpac has also strived to provide all the needed information in this guide, but if there is any error, Neostarpac reserves the right to correct for the next revisions.

## 2 PRODUCT DESCRIPTION

### 2.1 THREE VIEW DRAWING



## 2.2 COMPONENTS



① Pneumatic cylinder

⑥ Pad

② Filling cylinder

⑦ Foot Pedal

③ Cover

⑧ Sheet metal

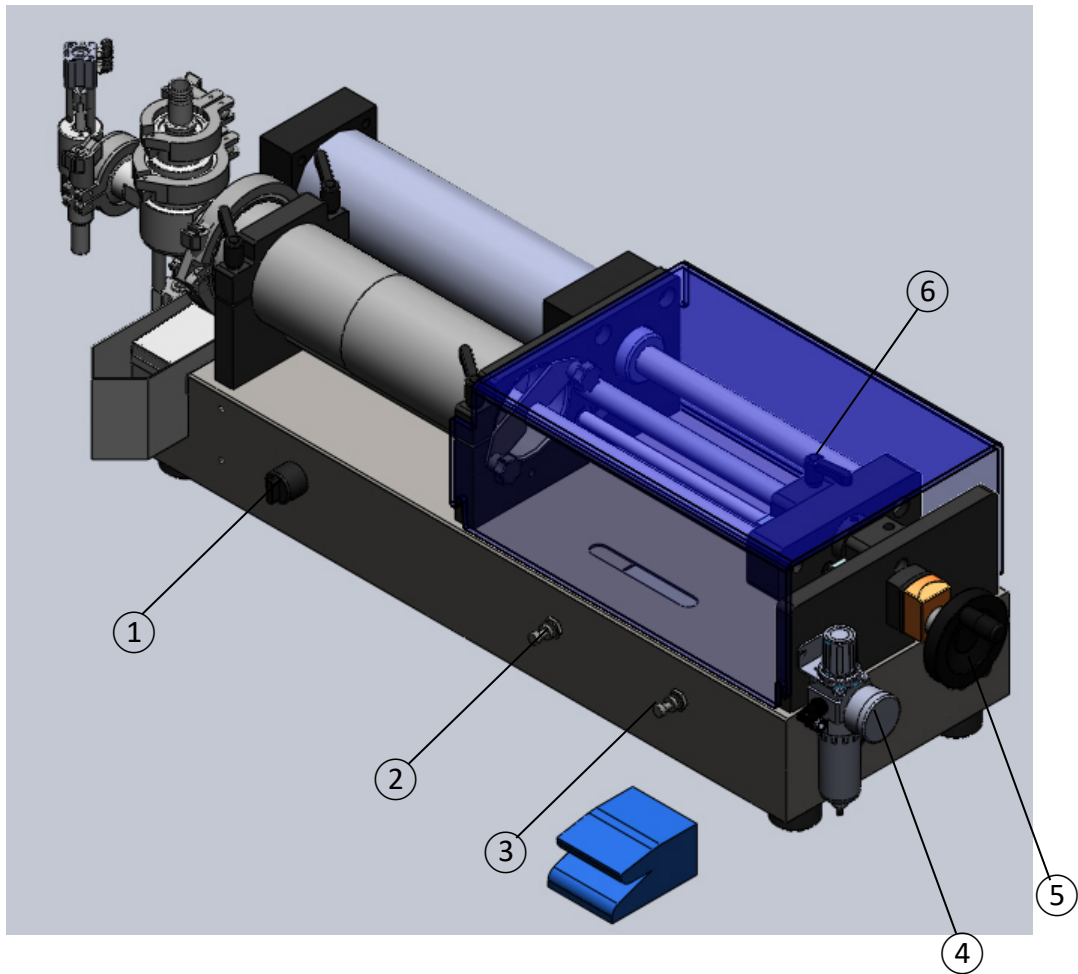
④ Hand wheel & Indicator

⑨ Drip tray

⑤ Regulator

⑩ Filling nozzle module

## 2.3 CONTROL INTERFACE



### 1 Knob for filling mode:

- Left: manual mode.
- Middle: automatic mode.

### 2 Knob for filling speed

- Clockwise: slow down.
- Counterclockwise: speed up.

### 3 Knob for refill speed

- Clockwise: slow down.
- Counterclockwise: speed up.

### 4 Regulator

- To adjust and show the pressure.
- Clockwise: increase pressure.
  - Counterclockwise: decrease pressure.

### 5 Hand wheel with indicator

To adjust the parameter of filling volume and show the parameter of filling volume.

### 6 Hand lever for fix filling volume

To fix filling volume after adjusting the parameter of filling volume.

## 2.4 TECHNICAL SPECIFICATION

| Model            | FP-1000-200             | FP-1000-500                           | FP-1000-1000 |
|------------------|-------------------------|---------------------------------------|--------------|
| Filling Range    | 5–200 ml                | 30–500 ml                             | 100–1000 ml  |
| Filling Speed    | 50–150 ml/sec           |                                       |              |
| Filling Accuracy | ± 0.5 %                 |                                       |              |
| Compressed Air   | 4–5 kgf/cm <sup>2</sup> |                                       |              |
| Dimension        | FP-1000-200             | (L) 1100 mm × (W) 300 mm × (H) 300 mm |              |
|                  | FP-1000-500             | (L) 1100 mm × (W) 300 mm × (H) 300 mm |              |
|                  | FP-1000-1000            | (L) 1000 mm × (W) 350 mm × (H) 328 mm |              |

## **3 BEFORE OPERATION**

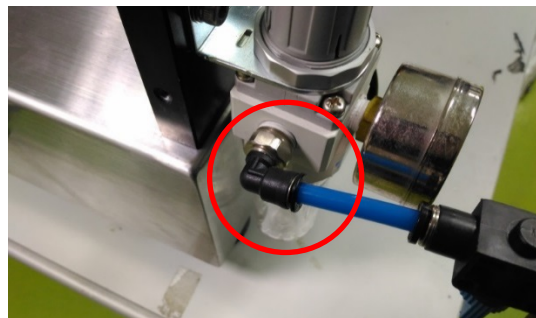
### **3.1 CONNECTIONS**

#### **3.1.1 Connect filling nozzle module and the tubes.**

Please connect the tube by color or diameter.



#### **3.1.2 Connect feeding hose or hopper.**



#### **3.1.3 Connect the air-compressor tube and make sure the tube switch in off.**



**3.1.4 Connect the foot pedal.**



**3.1.5 Twist on the tube switch and make sure the air compressor is on.**



**3.1.6 Adjust the air to 4–5 kgf/cm<sup>2</sup>.**



**3.1.7 Machine is ready to operate.**

## 3.2 AIR DISPENSING

3.2.1 Fill source tank with your product (if you use your own source tank, make sure the feeding hose is soaked below and suck your product when machine runs).

3.2.2 Speed the filling rate to maximum to help you dispense air from cylinder soon.

3.2.3 In order to speed up the process, please switch the knob to automatic mode. (Remind to put one container under the filling nozzles to avoid the liquid splashing on the floor.)

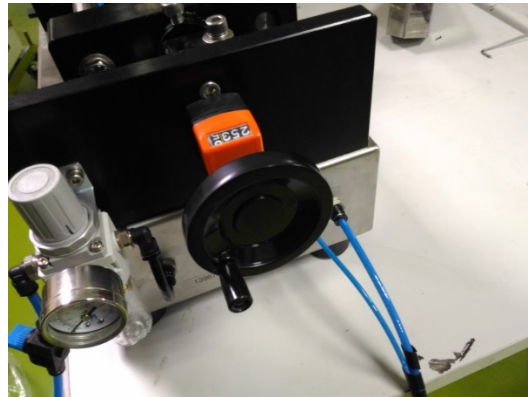
3.2.4 Keep running machine until there is no more air in the filling hose.

Note:

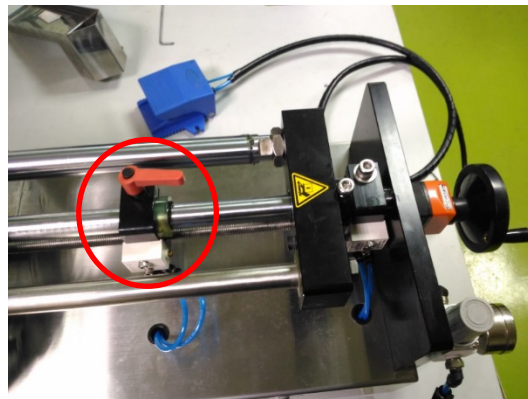
To keep machine filling accurately, ensure there is no air in cylinder and hose.

## 4 OPERATION

4.1 Adjust the parameter of filling volume by hand wheel and indicator. (Please see the Appendix for reference.)

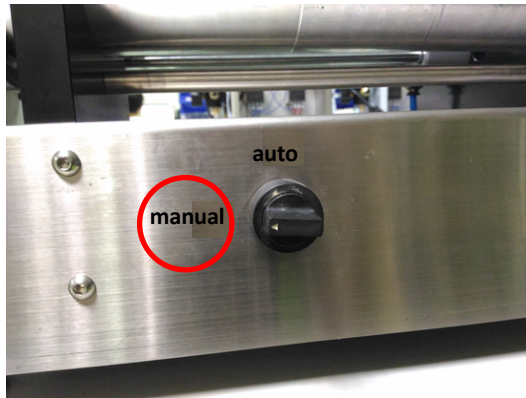


4.2 Tighten the hand lever after get the right filling volume.



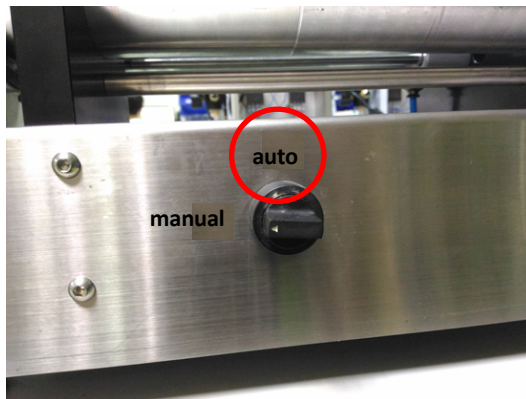
4.3 Place the bottle under filling nozzle and adjust the filler with **proper speed**. (The larger the scale is, the faster the filling speed will be. However, too fast or too slow will both affect the filling accuracy.)

4.4 Switch the knob for filling mode to manual mode and press the foot switch to check the filling volume is correct or not.



4.5 Adjust the parameter until you get the right filling volume.

4.6 After get the right filling volume you can switch to automatic mode. (When you switch to automatic mode, you have to ensure the refill time is enough for you to changing bottle.)



## **5 AFTER OPERATION**

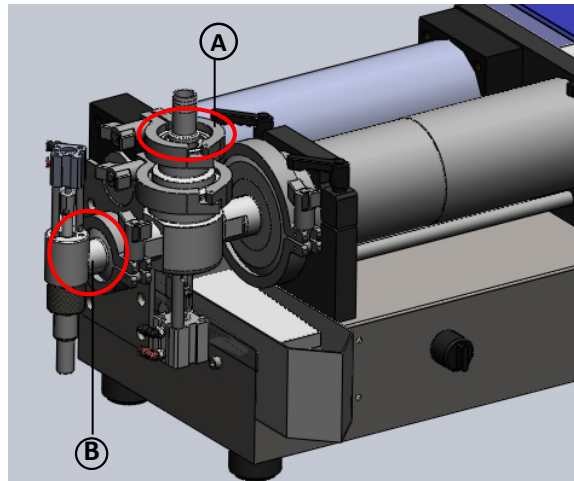
### **5.1 CLEANING**

**5.1.1 Disassemble the air compressor tube.**

**5.1.2 Take down the single pin clamp.**

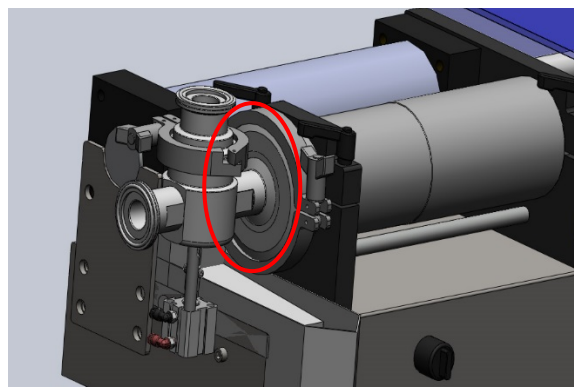
→ Take down the clamp ① to remove filling hose.

→ Take down the clamp ② to remove filling nozzle.



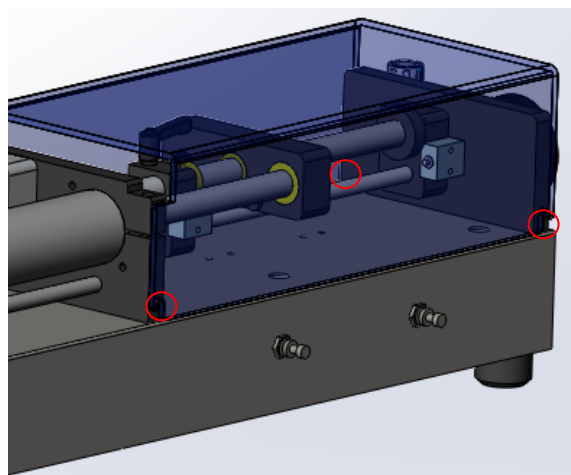
**5.1.3 Take down the single pin clamp.**

→ Take down the clamp to remove filling valve.



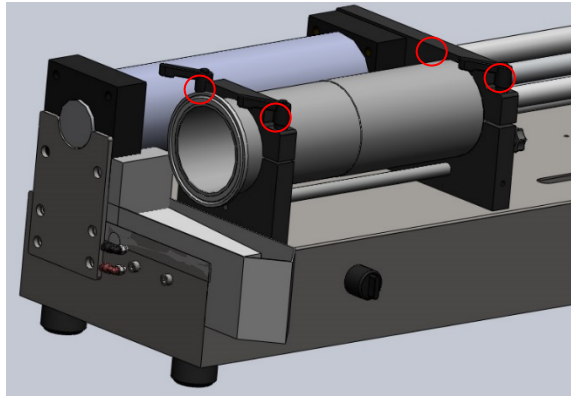
**5.1.4 Take down the cover.**

→ Loose the screws on the corner of cover to remove the cover. (The picture only marked three screws)



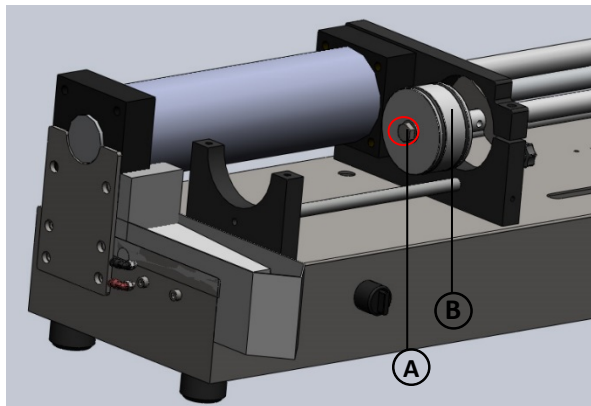
#### 5.1.5 Take down the cylinder.

→ Loose the hex socket set screws to remove the filling cylinder.



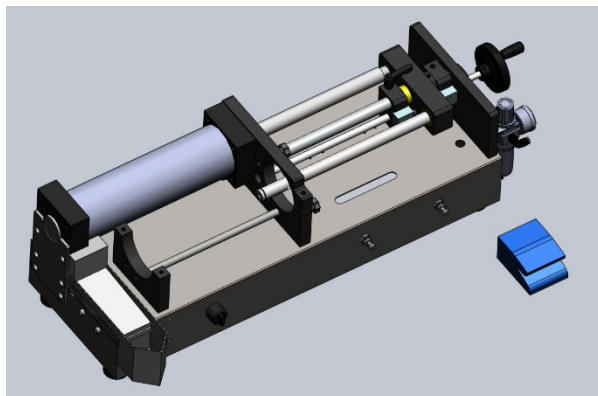
#### 5.1.6 Take down the piston.

→ Loose the hex bolts ① to remove the piston ②.



#### 5.1.7 Clean all of parts and re-assemble.

→The disassembling is done. Clean all of parts and please re-assemble the filler by reverse order.



## 5.2 MAINTENANCE

- 5.2.1 Avoid filling liquids that is **higher than 60°C**.
- 5.2.2 After filling, please be sure to clean the tubes and the cylinder to keep the machine clean.
  - ★ We suggest that you prepare some clean water to follow the steps of the before operation and then follow the instructions of cleaning to disassemble and clean the machine.
- 5.2.3 If you need to fill liquids with “granule”, please filter before filling in case the granule may block the filler and shorten the life of the machine.
- 5.2.4 Please be cautious while filling acid or alkaline liquids to prevent from splashing to hurt the operator(s) and the machine. After filling acid or alkaline products, please be sure to clean the tubes and the cylinder with a mass of water to keep longevity of the machine.

## 6 TROUBLESHOOTING

| Trouble(s)                                     | Possible Causes & Solutions                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>No Reaction</b>                             | <ol style="list-style-type: none"> <li>1. Check if the power switch of air compressor is "ON."</li> <li>2. Check if the tube of air compressor is connected with filler.</li> <li>3. Check if the tube switch of air compressor is "ON."</li> <li>4. Check the pressure is 4~5 kg/cm<sup>2</sup></li> <li>5. Check if the filling mode is <b>Automatic Mode</b>.</li> </ol>            |
| <b>Bubbles Appear/<br/>Poor Accuracy</b>       | <ol style="list-style-type: none"> <li>1. Be sure to dispense air from the tubes before filling.</li> <li>2. Check the feeding hoses is soaked below the surface of the liquid if you use your own source tank.</li> <li>3. Check if the O-rings are in good shape and are assembled properly.</li> <li>4. When you fill the liquid in the sourcing tank, make it smoothly.</li> </ol> |
| <b>Strange Noise/<br/>Not Filling Smoothly</b> | <ol style="list-style-type: none"> <li>1. Check if there is any particle in piston.</li> <li>2. Check the valve of filling nozzle installed correctly.</li> </ol>                                                                                                                                                                                                                      |

- In case there is any problem or malfunction that you cannot solve, please contact **Cleveland Equipment** immediately.

## 7 SPARE PARTS

### 7.1 FP-1000-200

| Spare Parts                        | Description                 | Qty/set |
|------------------------------------|-----------------------------|---------|
| O-ring for cylinder                | VT(SI) - O-ring23.39x3.5T   | 1       |
| O-ring for cylinder axial          | VT(SI) - O-ring15.6X1.78T   | 1       |
| O-ring for filling valve           | VT(SI) - O-ring16.8x3T      | 2       |
| O-ring for filling valve - UP type | VT(SI) - UP O-ring8x16x5    | 1       |
| O-ring for filling valve head      | VT(SI) - O-ring 20.35x1.78T | 2       |
| O-ring for filling nozzle -UP type | VT(SI) - UP O-ring 8x16x5   | 1       |
| O-ring for filling nozzle (35mm)   | VT(SI) - O-ring 20.35x1.78T | 1       |
| O-ring for filling nozzle (35mm)   | VT(SI) - O-ring 7x2.5T      | 1       |
| O-ring for filling nozzle (30mm)   | VT(SI) - O-ring 17.17x1.78T | 1       |
| O-ring for filling nozzle (30mm)   | VT(SI) - O-ring 5x2.5T      | 1       |
| Pad for filling valve              | Silicone Washer 2.5 inch    | 1       |
| Pad for filling valve              | Silicone Washer 2 inch      | 1       |
| Pad for filling valve              | Silicone Washer 1.5 inch    | 2       |
| Mechanical valve                   | S3B-M5                      | 2       |

### 7.2 FP-1000-500

| Spare Parts                        | Description                | Qty/set |
|------------------------------------|----------------------------|---------|
| O-ring for cylinder                | VT(SI) -O-ring42.7x3.5T    | 1       |
| O-ring for cylinder axial          | VT(SI) -O-ring15.6X1.78T   | 1       |
| O-ring for filling valve           | VT(SI) -O-ring16.8x3T      | 2       |
| O-ring for filling valve - UP type | VT(SI) -UP O-ring8x16x5    | 1       |
| O-ring for filling valve head      | VT(SI) -O-ring 20.35x1.78T | 2       |
| O-ring for filling nozzle -UP type | VT(SI) -UP O-ring 8x16x5   | 1       |
| O-ring for filling nozzle (35mm)   | VT(SI) -O-ring 20.35x1.78T | 1       |
| O-ring for filling nozzle (35mm)   | VT(SI) -O-ring 7x2.5T      | 1       |
| O-ring for filling nozzle (30mm)   | VT(SI) -O-ring 17.17x1.78T | 1       |
| O-ring for filling nozzle (30mm)   | VT(SI) -O-ring 5x2.5T      | 1       |
| Pad for filling valve              | Silicone Washer 2.5 inch   | 1       |
| Pad for filling valve              | Silicone Washer 2 inch     | 1       |
| Pad for filling valve              | Silicone Washer 1.5 inch   | 2       |
| Mechanical valve                   | S3B-M5                     | 2       |

## 7.3 FP-1000-1000

| Spare Parts                        | Description                | Qty/set |
|------------------------------------|----------------------------|---------|
| O-ring for cylinder                | VT(SI) -O-ring72.62x3.5T   | 1       |
| O-ring for cylinder axial          | VT(SI) -O-ring15.6X1.78T   | 1       |
| O-ring for filling valve           | VT(SI) -O-ring16.8x3T      | 2       |
| O-ring for filling valve - UP type | VT(SI) -UP O-ring8x16x5    | 1       |
| O-ring for filling valve head      | VT(SI) -O-ring 20.35x1.78T | 2       |
| O-ring for filling nozzle -UP type | VT(SI) -UP O-ring 8x16x5   | 1       |
| O-ring for filling nozzle (35mm)   | VT(SI) -O-ring 20.35x1.78T | 1       |
| O-ring for filling nozzle (35mm)   | VT(SI) -O-ring 7x2.5T      | 1       |
| O-ring for filling nozzle (30mm)   | VT(SI) -O-ring 17.17x1.78T | 1       |
| O-ring for filling nozzle (30mm)   | VT(SI) -O-ring 5x2.5T      | 1       |
| Pad for filling valve              | Silicone Washer 3.5 inch   | 1       |
| Pad for filling valve              | Silicone Washer 2 inch     | 1       |
| Pad for filling valve              | Silicone Washer 1.5 inch   | 2       |
| Mechanical valve                   | S3B-M5                     | 2       |

## **8 CONTACT INFORMATION**

If you have any questions or you need to order some spare parts, please contact us through the contact information below:

**Tel:**               **+866-888-6327**

**Fax:**               **+800-475-8915**

**E-mail:**           **[support@clevelandequipment.com](mailto:support@clevelandequipment.com)**

**Website:**       **[www.clevelandequipment.com](http://www.clevelandequipment.com)**

## 9 APPENDIX - PARAMETER CHART

### 9.1 FP-1000-200

|           | 5 ml   | 10 ml  | 15 ml  | 20 ml  | 25 ml  | 30 ml  | 35 ml  | 40 ml  | 45 ml  | 50 ml  |
|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Parameter | 008.1  | 016.2  | 024.3  | 032.3  | 040.4  | 048.5  | 056.6  | 064.7  | 072.8  | 080.8  |
|           | 55 ml  | 60 ml  | 65 ml  | 70 ml  | 75 ml  | 80 ml  | 85 ml  | 90 ml  | 95 ml  | 100 ml |
| Parameter | 088.9  | 097.0  | 105.1  | 113.2  | 121.3  | 129.3  | 137.4  | 145.5  | 153.6  | 161.7  |
|           | 105 ml | 110 ml | 115 ml | 120 ml | 125 ml | 130 ml | 135 ml | 140 ml | 145 ml | 150 ml |
| Parameter | 169.8  | 177.8  | 185.9  | 194.0  | 202.1  | 210.2  | 218.3  | 226.4  | 234.4  | 242.5  |
|           | 155 ml | 160 ml | 165 ml | 170 ml | 175 ml | 180 ml | 185 ml | 190 ml | 195 ml | 200 ml |
| Parameter | 250.6  | 258.7  | 266.8  | 274.9  | 282.9  | 291.0  | 299.1  | 307.2  | 315.3  | 323.4  |

- The parameter is for reference.
- If there is no correlative parameter, you can find out the value by using the formula for filling volume divided by 0.618.

## 9 APPENDIX - PARAMETER CHART

### 9.2 FP-1000-500

|           | 30 ml  | 35 ml  | 40 ml  | 45 ml  | 50 ml  | 55 ml  | 60 ml  | 65 ml  | 70 ml  | 75 ml  |
|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Parameter | 017.5  | 020.4  | 023.3  | 026.2  | 029.1  | 032.0  | 034.9  | 037.8  | 040.7  | 043.7  |
|           | 80 ml  | 85 ml  | 90 ml  | 95 ml  | 100 ml | 105 ml | 110 ml | 115 ml | 120 ml | 125 ml |
| Parameter | 046.6  | 049.5  | 052.4  | 055.3  | 058.2  | 061.1  | 064.0  | 066.9  | 069.8  | 072.8  |
|           | 130 ml | 135 ml | 140 ml | 145 ml | 150 ml | 155 ml | 160 ml | 165 ml | 170 ml | 175 ml |
| Parameter | 075.7  | 078.6  | 081.5  | 084.4  | 087.3  | 090.2  | 093.1  | 096.0  | 099.0  | 101.9  |
|           | 180 ml | 185 ml | 190 ml | 195 ml | 200 ml | 205 ml | 210 ml | 215 ml | 220 ml | 225 ml |
| Parameter | 104.8  | 107.7  | 110.6  | 113.5  | 116.4  | 119.3  | 122.2  | 125.1  | 128.1  | 131.0  |
|           | 230 ml | 235 ml | 240 ml | 245 ml | 250 ml | 255 ml | 260 ml | 265 ml | 270 ml | 275 ml |
| Parameter | 133.9  | 136.8  | 139.7  | 142.6  | 145.5  | 148.4  | 151.3  | 154.2  | 157.2  | 160.1  |
|           | 280 ml | 285 ml | 290 ml | 295 ml | 300 ml | 305 ml | 310 ml | 315 ml | 320 ml | 325 ml |
| Parameter | 163.0  | 165.9  | 168.8  | 171.7  | 174.6  | 177.5  | 180.4  | 183.4  | 186.3  | 189.2  |
|           | 330 ml | 335 ml | 340 ml | 345 ml | 350 ml | 355 ml | 360 ml | 365 ml | 370 ml | 375 ml |
| Parameter | 192.1  | 195.0  | 197.9  | 200.8  | 203.7  | 206.6  | 209.5  | 212.5  | 215.4  | 218.3  |
|           | 380 ml | 385 ml | 390 ml | 395 ml | 400 ml | 405 ml | 410 ml | 415 ml | 420 ml | 425 ml |
| Parameter | 221.2  | 224.1  | 227.0  | 229.9  | 232.8  | 235.7  | 238.6  | 241.6  | 244.5  | 247.4  |
|           | 430 ml | 435 ml | 440 ml | 445 ml | 450 ml | 455 ml | 460 ml | 465 ml | 470 ml | 475 ml |
| Parameter | 250.3  | 253.2  | 256.1  | 259.0  | 261.9  | 264.8  | 267.8  | 270.7  | 273.6  | 276.5  |
|           | 480 ml | 485 ml | 490 ml | 495 ml | 500 ml |        |        |        |        |        |
| Parameter | 279.4  | 282.3  | 285.2  | 288.1  | 291.0  |        |        |        |        |        |

- The parameter is for reference.
- If there is no correlative parameter, you can find out the value by using the formula for filling volume divided by 1.718.

## 9 APPENDIX - PARAMETER CHART

### 9.3 FP-1000-1000

|           | 100 ml | 110 ml | 120 ml | 130 ml | 140 ml | 150 ml | 160 ml | 170 ml | 180 ml | 190 ml |
|-----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Parameter | 022.7  | 025.0  | 027.3  | 029.5  | 031.8  | 034.1  | 036.4  | 038.6  | 040.9  | 043.2  |
|           | 200 ml | 210 ml | 220 ml | 230 ml | 240 ml | 250 ml | 260 ml | 270 ml | 280 ml | 290 ml |
| Parameter | 045.5  | 047.7  | 050.0  | 052.3  | 054.5  | 056.8  | 059.1  | 061.4  | 063.6  | 065.9  |
|           | 300 ml | 310 ml | 320 ml | 330 ml | 340 ml | 350 ml | 360 ml | 370 ml | 380 ml | 390 ml |
| Parameter | 068.2  | 070.5  | 072.7  | 075.0  | 077.3  | 079.5  | 081.8  | 084.1  | 086.4  | 088.6  |
|           | 400 ml | 410 ml | 420 ml | 430 ml | 440 ml | 450 ml | 460 ml | 470 ml | 480 ml | 490 ml |
| Parameter | 090.9  | 093.2  | 095.5  | 097.7  | 100.0  | 102.3  | 104.5  | 106.8  | 109.1  | 111.4  |
|           | 500 ml | 510 ml | 520 ml | 530 ml | 540 ml | 550 ml | 560 ml | 570 ml | 580 ml | 590 ml |
| Parameter | 113.6  | 115.9  | 118.2  | 120.5  | 122.7  | 125.0  | 127.3  | 129.5  | 131.8  | 134.1  |
|           | 600 ml | 610 ml | 620 ml | 630 ml | 640 ml | 650 ml | 660 ml | 670 ml | 680 ml | 690 ml |
| Parameter | 136.4  | 138.6  | 140.9  | 143.2  | 145.5  | 147.7  | 150.0  | 152.3  | 154.5  | 156.8  |
|           | 700 ml | 710 ml | 720 ml | 730 ml | 740 ml | 750 ml | 760 ml | 770 ml | 780 ml | 790 ml |
| Parameter | 159.1  | 161.4  | 163.6  | 165.9  | 168.2  | 170.5  | 172.7  | 175.0  | 177.3  | 179.5  |
|           | 800 ml | 810 ml | 820 ml | 830 ml | 840 ml | 850 ml | 860 ml | 870 ml | 880 ml | 890 ml |
| Parameter | 181.8  | 184.1  | 186.4  | 188.6  | 190.9  | 193.2  | 195.5  | 197.7  | 200.0  | 202.3  |
|           | 900 ml | 910 ml | 920 ml | 930 ml | 940 ml | 950 ml | 960 ml | 970 ml | 980 ml | 990 ml |
| Parameter | 204.5  | 206.8  | 209.1  | 211.4  | 213.6  | 215.9  | 218.2  | 220.5  | 222.7  | 225.0  |
|           | 1000ml |        |        |        |        |        |        |        |        |        |
| Parameter | 227.3  |        |        |        |        |        |        |        |        |        |

- The parameter is for reference.
- If there is no correlative parameter, you can find out the value by using the formula for filling volume divided by 4.4.