Cleveland Equipment

SGF Series Gear Filler

Instruction Manual

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Contents

Introduction

The microcomputer-controlled semi-automatic filling machine is equipped with imported microcomputer-controlled chips which can control the filling time and filling flow precisely. Besides, it uses internationally famous frequency conversion speed controller and imported magnetic gear stainless pump (316L) as key components; therefore it is of high quality and wearable. It is widely used in the industries such as pharmacy, food, grease, daily chemical, domestic chemical, agricultural chemical and so on. It is able to fill almost all kinds of liquid such as: various medicaments, chemicals, grease, cosmetic, food and other kinds of granule-free liquid.

I. Functional Features

1. Equipped with microcomputer-controlled chips, it features in precise control and easy operation.
2. Digital display, precise and free from parallax.
3. Touch panels, comfortable hand touch and good sensitivity.
4. Data saving function in the chips.
5. Large filling range. For small pump machine, it is adjustable from 1ml to10, 000ml; for large pump machine, from 10ml to 80,000 ml
6. The whole shell is made of stainless steel.

II. Technical Parameters

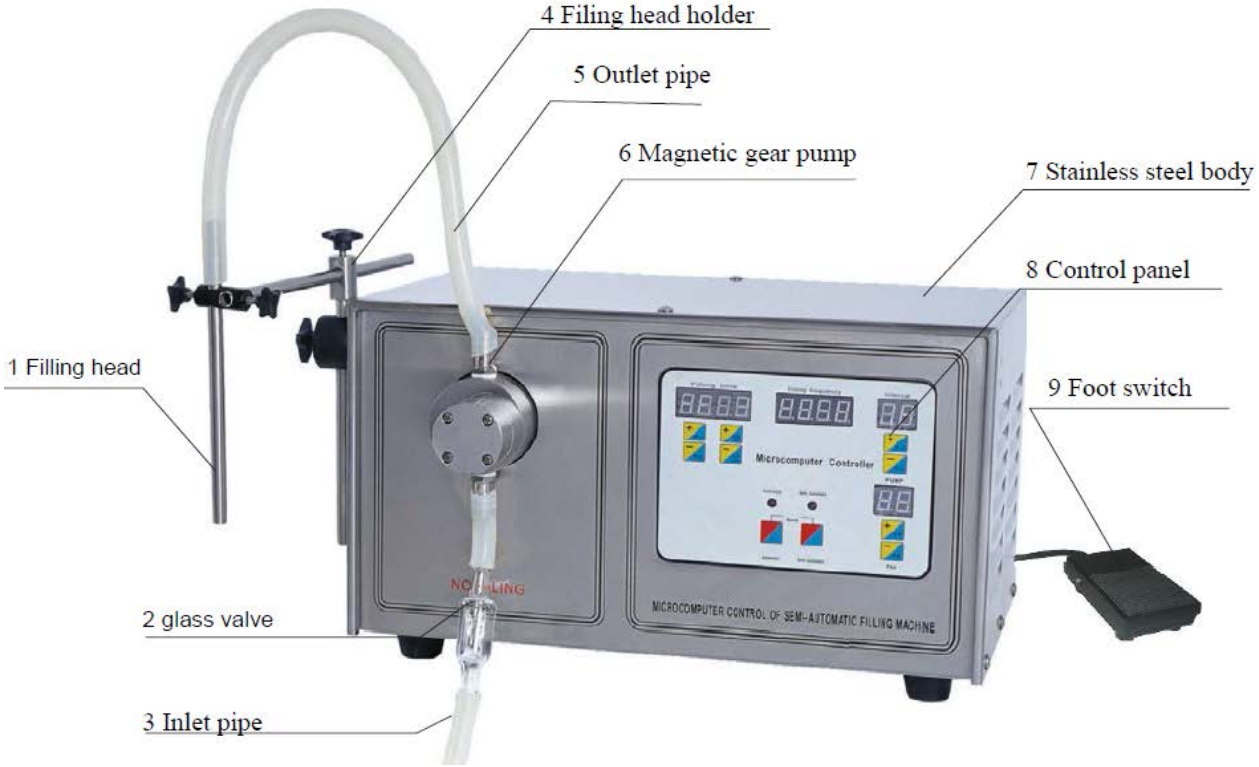
Model	Rated Voltage	Powe	Max. Flow	Tolera nce	Body Size （mm）	Body Weight	Packing Size(mm)
SGF-	110V	380	Single	±1.5%	480×360×2	16Kg	610×480×3
SGF-1-2	110V	760	Single pump	±1.5%	580×360×2	21Kg	685×480×4
SGF-2	110V	38W	Single pump	±1.5%	410×330×2	11Kg	525×445×3
SGF-2-2	110V	76W	Single pump	±1.5%	510×330×2	16Kg	610×480×3

III. Caution

1. Use 110V(±5%), 50/60Hz AC power supply. Use the rated fuse correctly. Disconnect the power supply before putting the fuse in or removing the fuse.
2. To avoid body injury, please use grounded AC sockets. The plug and the socket should be in good contact; otherwise the filling machine may be broken easily.
3. The filling machine should be installed in a ventilated, dry place with few dust; it should be placed horizontally and 20CM away from the wall or other objects, so that it can exhaust normally.
4. The check valve should be vertical and downward, otherwise the precision may be affected.
5. The filing head should be vertical and downward, otherwise there may be drippings.
6. The angle of the pipe elbow should not be too small, otherwise the flow and precision may be affected.
7. There should not be obvious difference in the level of the material barrel; otherwise the precision may be affected.
8. Volatile liquid should be used in a ventilated environment.
9. Do not use with a high frequency wave machine.
10. Do not use with high voltage devices.
11. Please tell the features of the liquid to be filled to the manufacturer; so the manufacturer can choose a suitable inlet/outlet pipe.
12. To avoid burn or electric shock, please do not open the machine box at will. During operation, do not put any metal into the box or touch the heat- dispelling components; otherwise, serious electric shock may happen.
13. The material to be filled should be free from hard granules, high adhesive objects or line-shaped objects.

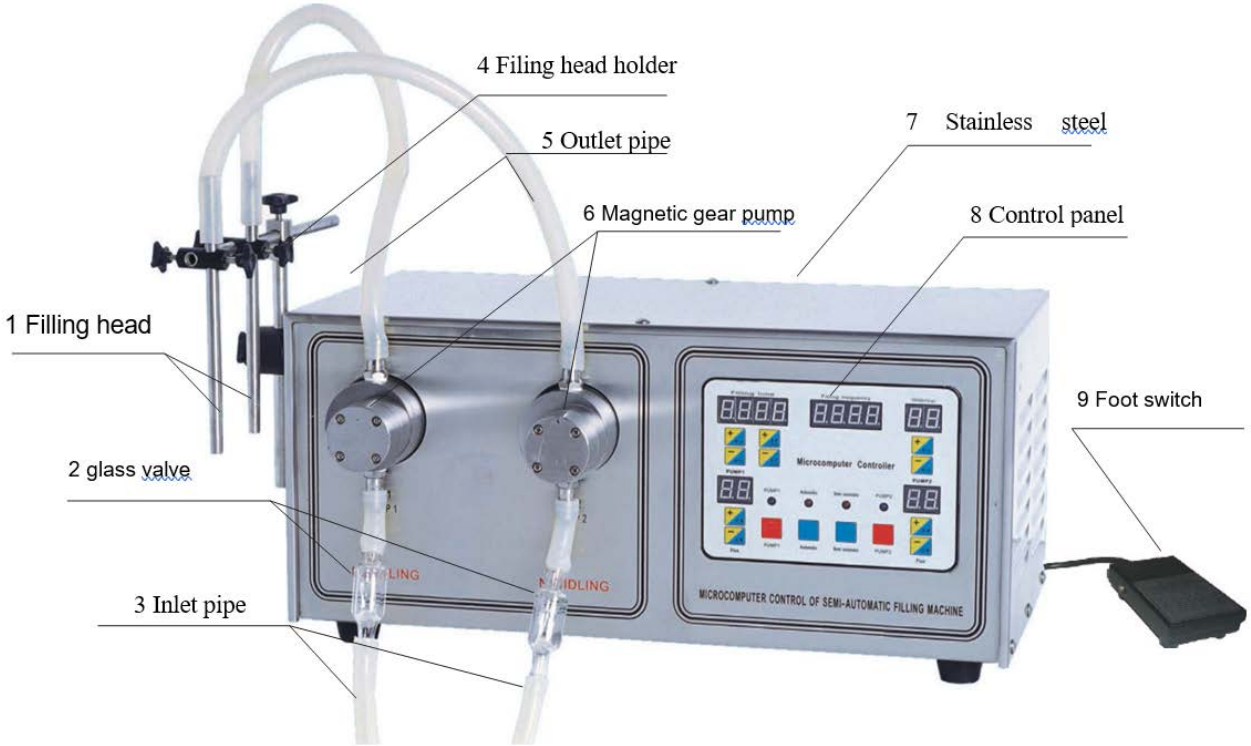
IV. General Operation

1 Equipment Structure Introduction



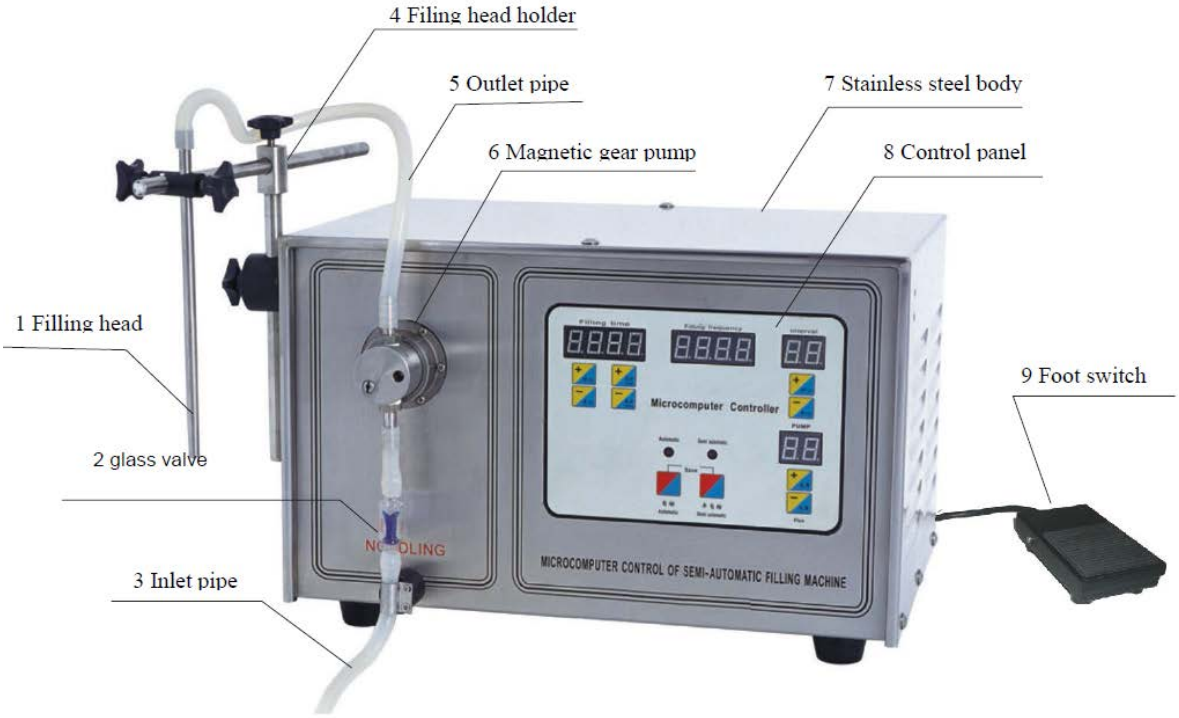
Model:SGF-1

(Figure 1）Single Filling Head Large Pump Machine



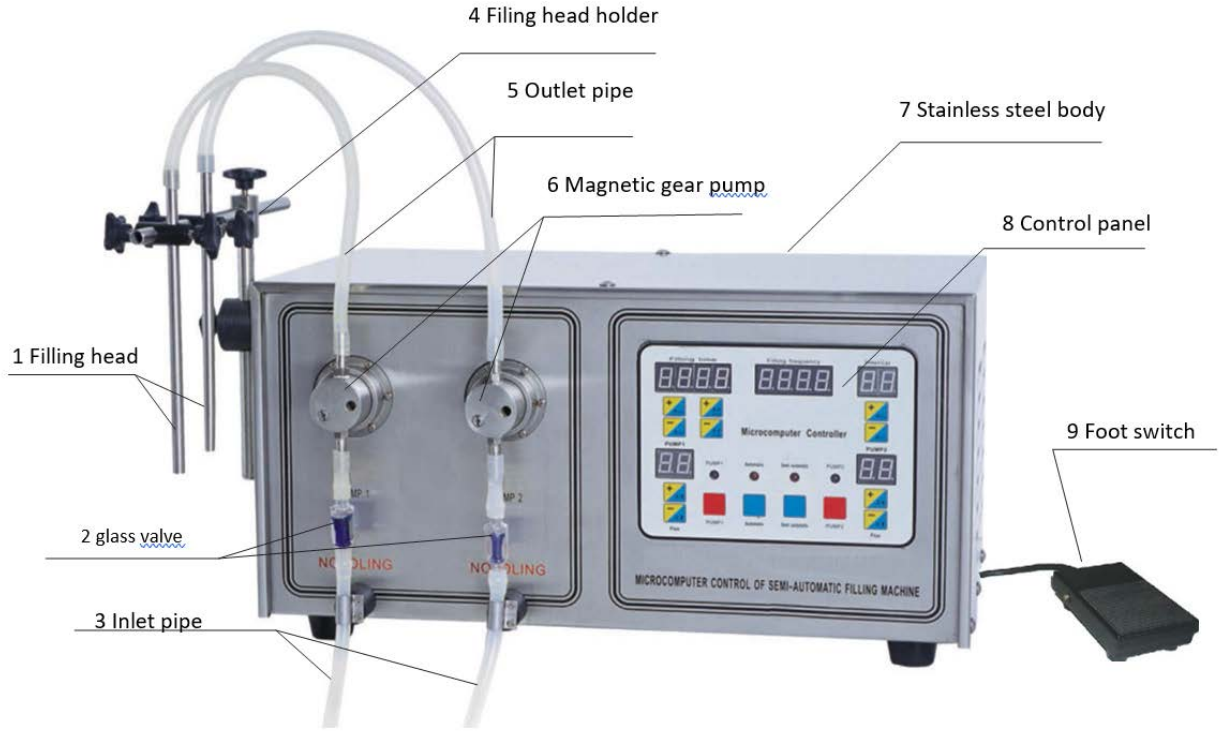
Model:SGF-1-2

（Figure 2）Double Filling Head Large Pump Machine



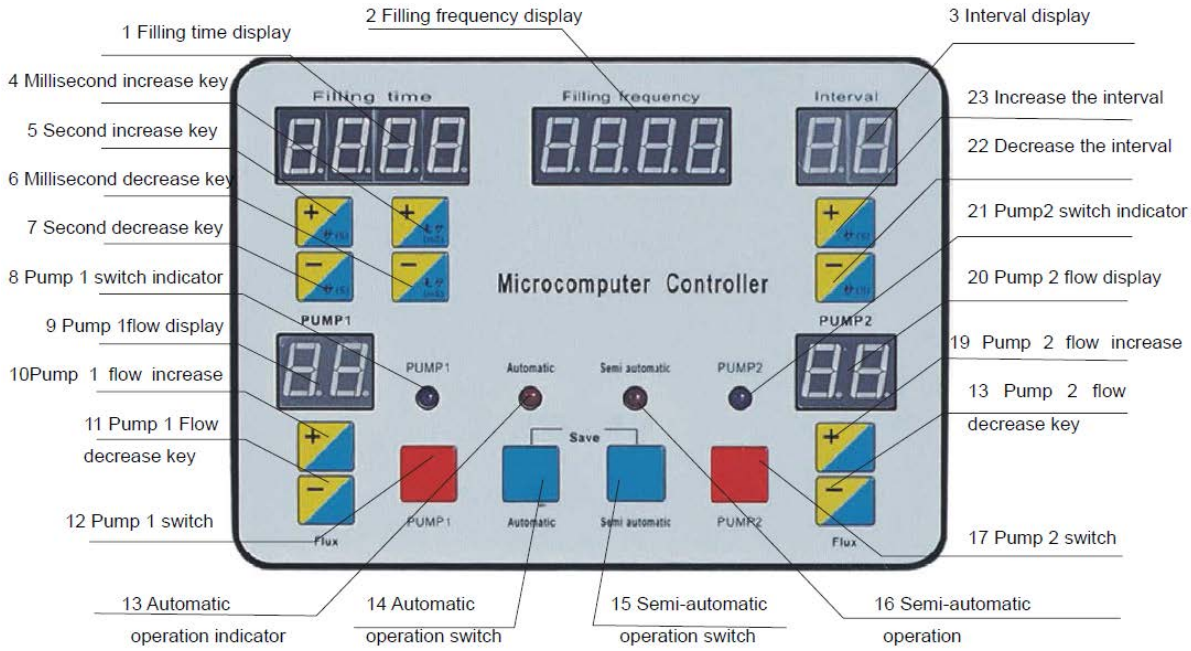
Model:SGF-2

（Figure3）Double Filling Head Large Pump Machine



Model:SGF-2-2

（Figure4）Double Filling Head Large Pump Machine



（Figure 5）Operation Panel of Double Pump Machine

2 Operation of the Control Panel (Use a double pump machine to demonstrate.)

1). Set filling time: The filling time is displayed in a 4-digit digital value (refer to Figure 5); it can be set from 0.01S to 99.99S; the precision is 0.01S. Four keys (Millisecond Increase Key, Second Increase Key, Millisecond Decrease Key and Second Decrease Key) can be used to set the filling time; press the Second Increase Key or Second Decrease Key to increase or decrease the filling time by 1S; press the Millisecond Increase Key or Millisecond Decrease Key to increase or decrease the filling time by 0.01S. When the value increases or decreases to the maximum or minimum value, it will go back to the minimum or maximum value. Keep pressing a key for more than 2 seconds; related value will increase or decrease continuously.

2). Set interval: The interval is displayed in a 2-digit digital value (refer to Figure 5); it can be set from 0.1S to 9.9S; the precision is 0.1S. Two keys (Interval Increase Key, Interval Decrease Key) can be used to set the interval. Press the Interval Increase Key or Interval Decrease Key, and the interval value will increase or decrease by 0.1S. When the value increases or decreases to the maximum or minimum value, it will go back to the minimum or maximum value. Keep pressing a key for more

than 2 seconds; related value will increase or decrease continuously.

3). Set the flow of pump 1: The flow of pump 1 is displayed in a 2-digit digital value (refer to Figure 5); it can be set from 0 to 60. The minimum value is 0 (close) and the maximum value is 60. Two keys (Pump 1 Flow Increase Key, Pump 1 Flow Decrease Key) can be used to set the flow of pump 1. When pressing the Pump 1 Flow Increase Key or Pump 1 Flow Decrease Key, the flow value will increase or decrease by 1. When the value increases or decreases to the maximum or minimum value, it will go back to the minimum or maximum value. Keep pressing a key for more than 2 seconds; related value will increase or decrease continuously.

4). Set the flow of pump 2: The flow of pump 2 is displayed in a 2-digit digital value (refer to Figure 5); the setting is the same with the setting of pump 1.

5). Open pump 1: When the pump 1 indicator lights, on, pump 1 is open; when it extinguishes, it is close. Press Pump 1 Switch to open and close the pump.

6). Open pump 2: (The same as pump 1)

7). Semi-automatic filling: When the machine is standby (namely, in semi-automatic status), press the semi-automatic operation switch (or press the foot switch) to count down the filling time. If pump 1 or pump 2 is open, pump 1 or pump 2 will start working with the reset flow until the filling time counts down to 0. The number on the filling counter increase by 1 and the filling time will go back to the preset value.

8). Automatic filling: When the machine is standby (namely, in semi-automatic status), press the semi-automatic operation switch (or press the foot switch) to count down the filling time. If pump 1 or pump 2 is open, pump 1 or pump 2 will start working with the reset flow until the filling time counts down to 0 and pump 1 and pump 2 are closed. The number of filling counter increase and the filling time will go back to the preset value. Then it starts to count down the interval time; when the interval time is 0, start to count down the filling time. Repeat the procedure; press the Automatic Filling Key to stop filling.

9). Save the setting: When the machine is standby (semi-automatic status), keep pressing the automatic operation switch and semi-automatic operation switch simultaneously until you hear along buzz, and the setting (filling time, interval, pump 1 flow and pump 2 flow) is saved. You can use the setting next time and do not need to set again.

3 Introduction of the Back Panel (Figure is not available)

1). AC110V, 50/60Hz AC socket

2). Fuse holder

3). Foot switch socket

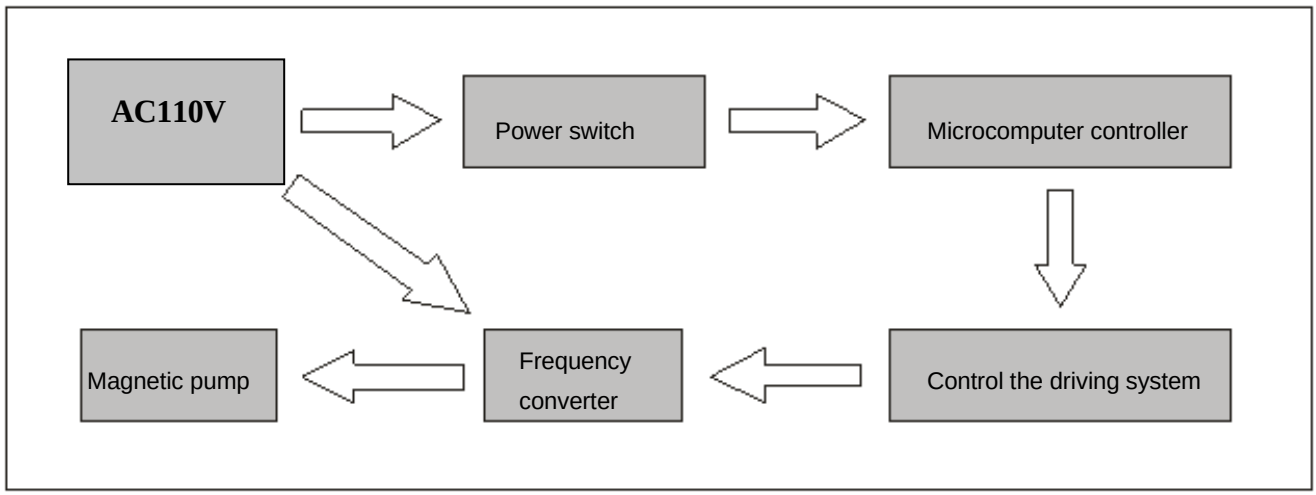
4 Operation Methods

1). Put the machine on a working table; prepare the material barrel and bottles to be filled; connect the power supply and turn on the power switch; the microcomputer-controlled panel starts and carries out a quick self-check; after the buzzer of the panel makes a long buzz, the panel finishes the self-check and is standby. The filling time, interval, pump 1 flow and pump 2 flow are the same with the value saved last time.

2). When using for the first time, fill some liquid into the inlet/outlet pipe of the pump; so that it is possible to fill the liquid from the material barrel to the target bottles.

3). At the beginning, there may be some air or bubbles in the outlet pipe. After filling for several times and the air or bubbles in the outlet pipe have been drained out, set the filling flow and time until the filling is satisfied.

V. System Sketch (refer to the figure below)



VI. List of Accessories

No.	Name	Specification（Model）	Quantity	Remarks
1	Power cord	250V—15A	1	——
2	Fuse	5A	3	——
3	User's Manual	Semi-automatic filling machine	1	——

VII. General Malfunctions and Solutions

Malfunctions	Reasons	Solutions
Not working	Broken circuit	Replace the power cord.
	The fuse is burned out.	Replace the fuse.
	Pipes are blocked by foreign substances.	Clean foreign substances.
	Pumps don't work.	Contact with the manufacturer.
Fail to stop	Wrong setting	Check the "Filling Time" setting.
	Display garbled value.	Contact with the manufacturer.
There are bubbles in the pipe when filling	There are air leakages in the joints.	Check the joint.
	There material is not enough.	Add material.
There are continuous bubbles in the outlet pipe when stopping.	There are foreign substances in the check valve.	Disassemble and clean the check valve.
There are drippings in the filling head.	The filling head is not vertical.	Adjust the filling head until it is vertical.
	The liquid specific gravity is too	Use a smaller filling head.
	The inlet/outlet pipe is not made	Choose a suitable hose.

VIII. Gear Filler Specifications

Model Number: SGF-2 & SGF-D-2

Type of Machine: Bottle Filler / Gear Filler
Construction: 304 Stainless Steel – Food Grade Standard
Seals: Buna – Food Grade Standard (See Separate List for Sizing)
Tubing: Silicone 7/16 Inch OD, FDA 21 CFR Part 177.2600, NSF-51, USP Class VI Criteria Food Grade Standard – www.grainger.com Part#2NYU6

Valve: ¼" Polypropylene Ball Cone Spring Check Valve, Food Grade Standard – www.grainger.com Part#4DHY3

Spring Stainless – Food Grade Standard

Gear Filler Specifications

Model Number: SGF-1 & SGF-D-1
Type of Machine: Bottle Filler / Gear Filler
Construction: 304 Stainless Steel – Food Grade Standard
Seals: Buna – Food Grade Standard
Tubing: 5/8 inc OD, FDA 21 CFR Part 177.2600, NSF-51, USP Class VI Criteria Food Grade Standard – www.grainger.com Part#2NYV4

Valve: 3/8" Polypropylene Ball Cone Spring Check Valve, Food Grade Standard – www.grainger.com Part#4DJA5

Valve Connection: 3/8", Ball Cone Spring Check Valve Glass Filled Polypropylene, FNPT Connection Type – www.grainger.com – Part#4DJC6

Spring Stainless – Food Grade Standard

IX. Gear Filler Orings Specifications

Model(s)
SGF-2 SGF-2-D

Total three o-rings: 32*2mm – Quantity 2
http://www.mcmaster.com/#o-rings/=sg94w7 (32*2) **9263K523** part number

http://www.theoringstore.com/index.php?main_page=index&cPath=368_65_68&sort=4a&page=3 (32*2) V2.00X032 Part #

38*2mm – Quanity 1
http://www.mcmaster.com/#o-rings/=sg96ea (38*2) **9263K661** part number

http://www.theoringstore.com/index.php?main_page=product_info&cPath=368_65_68&products_id=2844 (38*2) V2.00X038 Part #

Model(s):
SGF-1 SGF-1-2D
Total two seal o-rings, the size is 46*2mm

http://www.mcmaster.com/#o-rings/=sg96rc (46*2) **9263K665** Part number