

# MEP Counter Pressure Filler

## Addendum: Setup and Maintenance

- Read this addendum and the MEP manual carefully before operating the filler.
- One person should be assigned to maintain the filler. Only this primary operator should make adjustments. This primary operator should train additional operators. However, adjustments should be made by, or under the careful supervision of the primary operator.

### Setup of the Counterpressure Filling Machine

The filler has been setup and tested at St. Patrick's of Texas prior to delivery. You may need to make adjustments specific to your bottle.

1. Bottle Height Adjustment. Place bottle on bottle platform. Adjust bottle platform height (see Fig 1) until top of bottle is at the "Level Bottle" height (see Fig. 2). The adjustment nut is located behind and below the right side bottle platform (Fig. 1).
2. Center bottle to nozzle. See Fig. 2.
3. If necessary, adjust microswitch. See Fig. 2. Bottle must trip microswitch when placed on bottle stand.

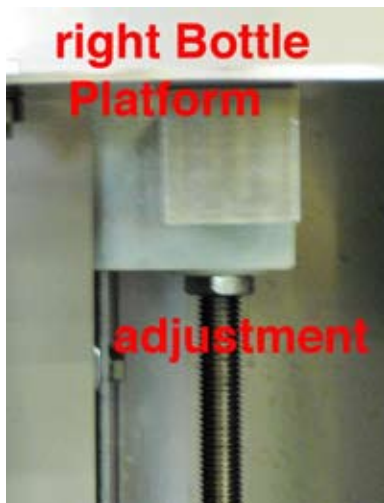
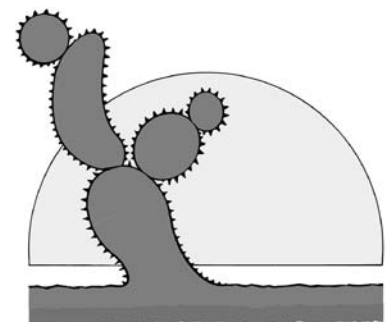


Figure 1. The nut to adjust the bottle height is located behind and below the right side bottle platform.

Figure 2. Top of bottle must be level with "LEVEL BOTTLE" line (1). Center bottle with nozzle by adjusting back support (2). Adjust microswitch (3) to insure it 'clicks' when bottle is placed on platform.



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This manual and parts are available online.

4. See Fig. 3. Attach air compressor hose. (air compressor should be set >90 psi)
5. Adjust regulator on filler to 5-6 bar. (75-90 psi).
6. Attach counterpressure gas, usually CO<sub>2</sub>. Attach CO<sub>2</sub> line (8 mm tubing) to push-in fitting on lower left side. CO<sub>2</sub> pressure must be less than pressure of the product tank. For example, if the product tank is 25 psi, then CO<sub>2</sub> pressure should be ~20-24 psi. Max pressure of CO<sub>2</sub> is 60 psi.
7. See Fig. 4. Attach product line to hose barb on upper right of unit. 3/4" hose. Clamp securely. Attach other end of hose to your product tank.
8. See Fig. 5. Turn power on. Green light below OFF/ON will light.
9. Place bottle(s) on bottle platform. You can use one or two bottles.
10. Close door. Bottles will be lifted to nozzles and then fill. After filling, bottle platform will lower and you can open door and remove bottles.
11. Check fill level of bottles. If too low, increase Fill Time (see Fig. 5). If bottles are full, then you may decrease fill time. Fill time depends on size of bottle as well as product pressure.



Figure 3. Attach air hose. Set your air compressor set to >90 psi. Adjust regulator (1) to 5-6 bar (75-90 psi). Attach CO<sub>2</sub> line to (2). CO<sub>2</sub> pressure must be less than product tank pressure. Max pressure of CO<sub>2</sub> line is 60 psi.



Figure 4. Product Inlet (1). Plate (2) is removed periodically for maintenance.



Figure 5. OFF/On switch at top with green indicator light below it. Fill Time adjustment. DRAIN button used only if product line is disconnected.

### Before Each Use

- Fill several bottles with clean water before each use. It is best to use hot water if possible. You will need a keg or other pressurized tank of clean water.

### After Each Use

- Press DRAIN button (Fig. 5) to empty the upper tank. Put a bucket under the drain tubing (on back of unit) to collect the product.
- Flush the unit by filling several bottles with clear water. Hot water is preferable.
- If the unit will not be used again the following day, it is best to remove the plate (2) of the upper tank and wipe out the tank and allow it to dry before replacing the plate.

### Periodic Maintenance.

1. Lubricate the nozzles regularly. Food grade silicone spray is fine for daily use---simply spray on moving parts. Heavy food grade grease is best if nozzles are disassembled.
2. Remove the back cover at least once each year. Lubricate the dovetail slide and rails (Fig 6).
3. Change the translucent tubing as needed--it will become discolored or dirty with use. All the tubing is either 4 or 8 mm metric tubing.
4. Keep filler clean and dry. Do not store in humid or wet area.

**Special Note:** PUSH-IN Fittings are used for all liquid and gas lines. To remove tubing: Simply push in on the collar while pulling out on the tubing. To insert tubing. Simply push-in.



Figure 6. Back of unit with cover removed. Lubricate slide and rails annually.

### DO NOT

1. DO NOT use OZONE to clean a filler. Ozone will destroy all rubber and plastic components and should NEVER be used on equipment with rubber or plastic components.
2. DO NOT use a HOSE or PRESSURE WASHER to clean a filling machine. Simply wipe down with clean damp cloth. Pressure washers should NEVER be used on equipment with bearings or electrical components.
3. DO NOT use METABISULFITE (or any harsh chemicals) for cleaning or sanitizing. Metabisulfite is not a sanitizer nor a cleaner and should NEVER be used as such. Metabisulfite is corrosive to most metals including stainless steel.

## **CONDITIONS OF SALE AND WARRANTY**

1. Read carefully this operator's handbook before operating our Ri1200 filling machine.
2. M.E.P. guarantees his Ri1200 filling machine in case of breakages caused by faulty components or incorrect assembly.
3. Our Ri1200 filling machine has a 12-month warranty. This begins on shipping date from St. Patrick's of Texas. This guarantee is valid only for the first owner of the filling machine.
4. Warranty only consists in replacing the damaged parts and it does include neither refunds for losses caused by the stopping of the machine nor any cost of labour or any transport cost to send the filling machine to a repair shop.
5. Any repair or modification made to the machine by unauthorized personnel will make the warranty decline.
6. We cannot be held responsible for damages due to incorrect use of the filling machine, lack in carrying out the maintenance operations or problems arisen during transport.
7. M.E.P. reserves the right to introduce changes without previous notice to the Ri1200 filling machine; however, the supply of spare parts of the previous models will be guaranteed.

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## **1. DESCRIPTION OF THE Ri1200 FILLING MACHINE**

## 1. DESCRIPTION OF THE Ri1200 FILLING MACHINE

Our Ri1200 filling machine is suitable to fill under-pressure products until 6 bar with a high content in CO<sub>2</sub>.

This machine is almost entirely made of stainless steel; the only parts made of carbon steel are the internal mechanisms but they are galvanized.

All the parts the product goes through are made of stainless steel or materials suitable to the contact with food.

All moving mechanisms are supported by ball-recirculating elements in order to guarantee both precision and reliability.

The Ri1200 filling machine requires an electric connection, compressed-air feeding and azote under pressure.

All the moving parts are protected by special safety guards, above all the front door made of transparent polycarbonate which protects the operator from any burst caused by bottle faults.

This door is equipped with a safety sensor that both stops the machine and sets to zero the bottle pressure when the door is open.

### SAFETY SYMBOLS:



General danger



Caution: refer to the operator's handbook



Caution: 230 Volt tension.



Caution: rotating gears. Severing of fingers.

## **2. OPERATING DIRECTIONS**

The functioning of the Ri1200 filling machine requires putting bottles on the bottle-platform where a lever sensor senses them (see picture 1). After closing the front safety door, bottles are lifted, they are brought to the same height as the filling injectors and they are pushed against them until the cylindrical closing part is raised. This closing part is used to cut down to the least the injectors dripping during the bottles loading and unloading.

A preparatory pressurization phase using azote goes before the filling phase using under-pressure product. At the end there is a depressurization phase that brings the pressure inside the bottles nearly to the atmospheric one. In this way the possible product discharge from the bottles that an excessive difference in pressure could cause during the descent and the injectors detaching are both avoided.

The product goes directly from the autoclave to the upper part of the machine where there is a cylindrical tank.

An adjusting system always keeps the pressure inside the tank lower than that of the autoclave, so that the product can go directly without using a pump in the middle.

### **3. TECHNICAL DETAILS**

The Ri1200 filling machine is used mostly to fill sparkling wine inside 0,75-litre bottles. However, it is suitable to sparkling products in general and to bottles with different sizes.

#### **BOTTLES DIMENSIONS**

maximum diameter = 165 mm

maximum height = 585 mm

minimum height = 240 mm

inner diameter of the bottle neck = 16.5 – 20 mm

#### **MACHINE**

height = 1760 mm

width = 450 mm

length = 700 mm

weight = 86 Kg

#### **MACHINE WITH WHEELED SUPPORT**

height = 2200 mm

width = 450 mm

length = 700 mm

weight = 96 Kg

#### **STARTING**

single-phase starting = 230 Volt, 50 Hz

advised compressed-air pressure = 5 – 6 bar

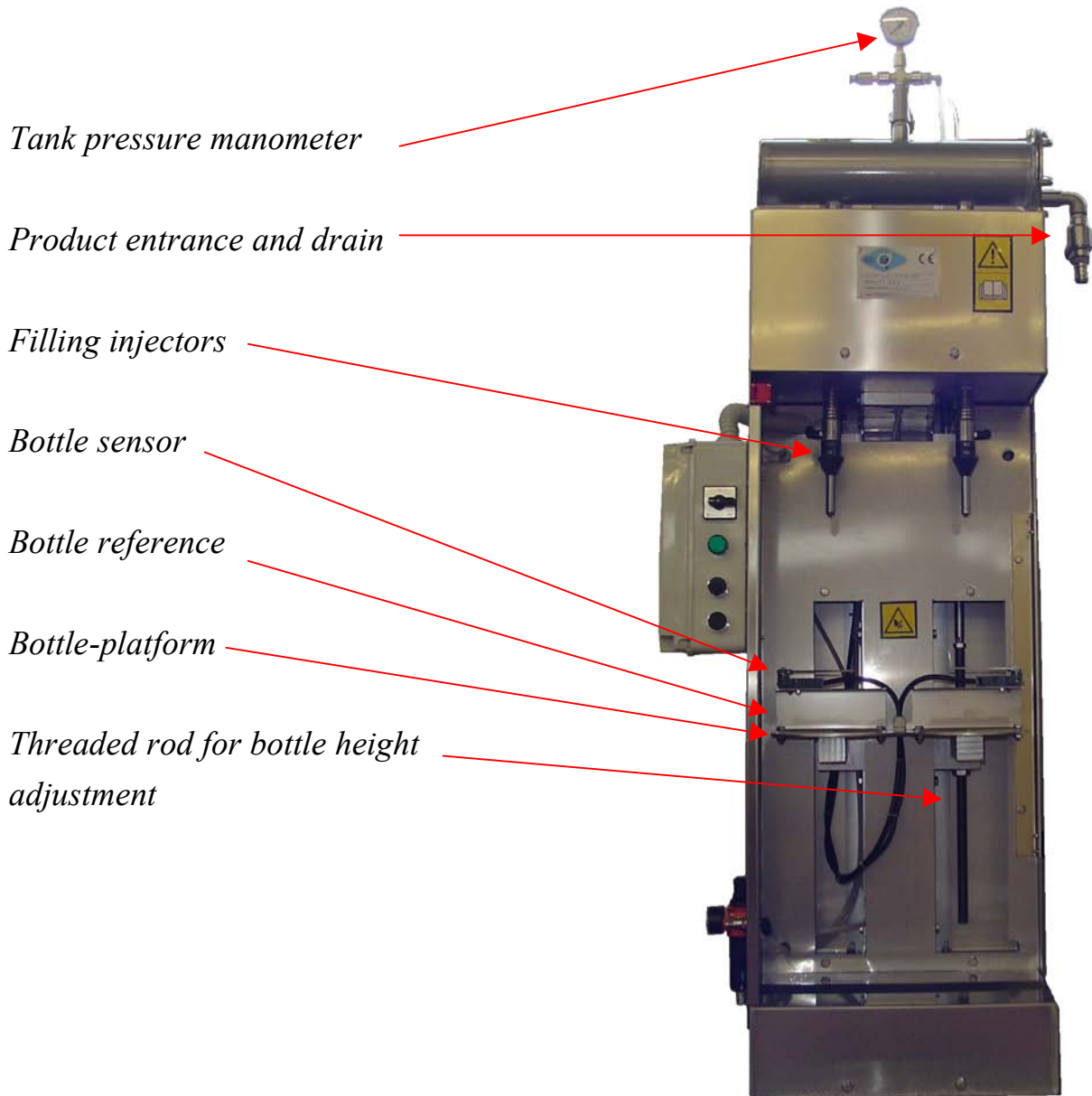
compressed-air consumption (6 bar) = 2,4 Nl / complete filling operation

azote pressure = a little lower than the pressure of the product going in and  
maximum 4 bar

## PRODUCT PRESSURE

maximum = 6 bar

minimum = it has to be enough so that the upper tank can be filled



Picture 1.

## 4. INSTRUCTIONS FOR USE

Positioning. The Ri1200 filling machine must be placed on an even ground in a lit up room and far enough from other appliances.

Make sure that the screws which hold the safety guards are screwed tightly, especially the plastic ones which hold the switch-board.

Take off the antiscratch blue/white nylon film from the transparent front polycarbonate safety guard.

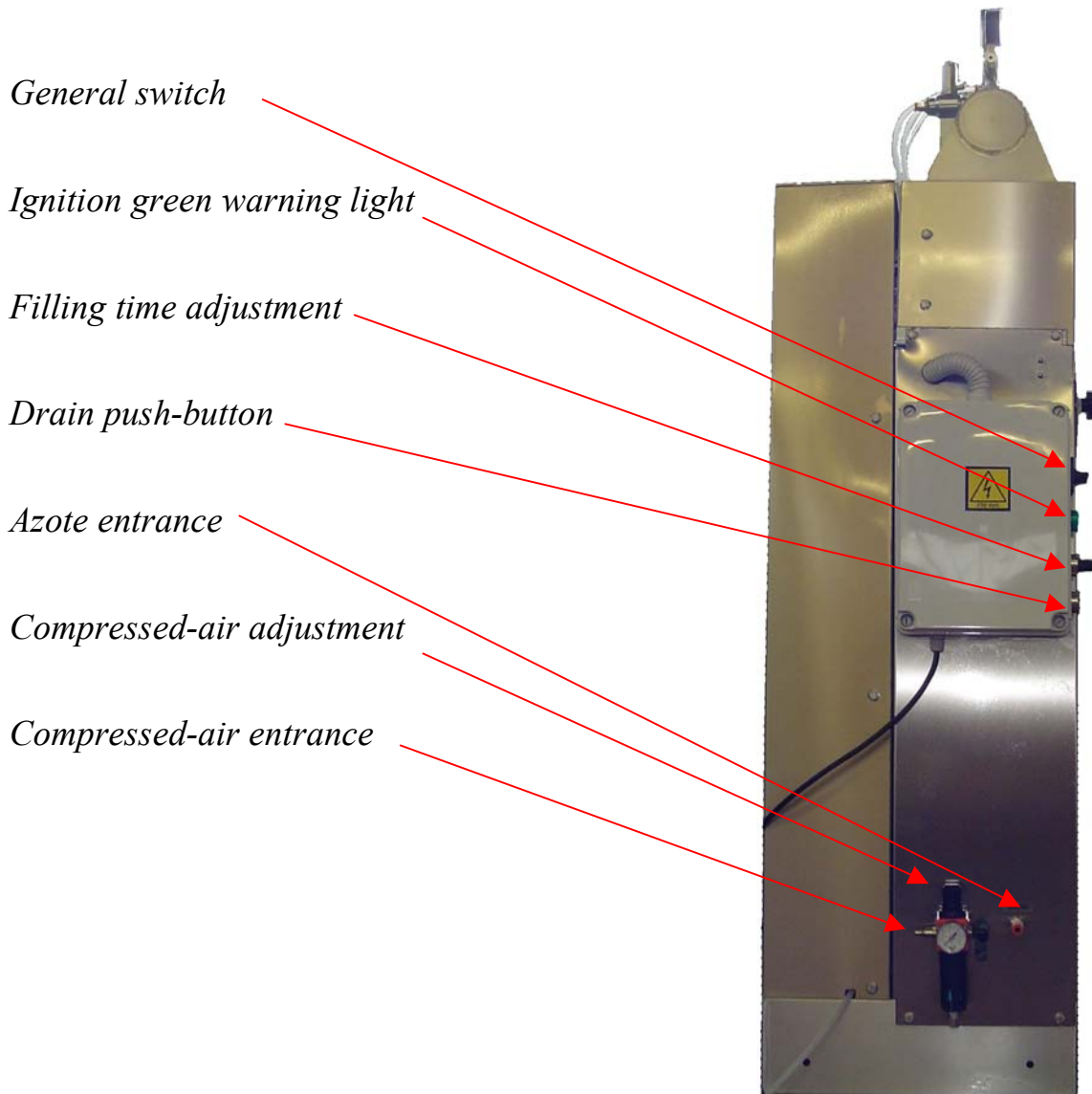
Now make the following adjustments.

First of all, put a bottle on the bottle-platform and adjust its height, so that the top of the bottle is 1 cm far from the injectors lower part. To do that, loosen the two bolts of the “threaded rod for bottle height adjustment” and tighten them in the right position (see picture 1).

Then check the position of the “bottle reference” (see picture 1) and make sure the bottle is lined up with the injectors. In the end check that the two lever sensors (“bottle sensor”, see picture 1) are correctly operated. A slight clang will be heard that comes from the closing of the electric contact inside these sensors.

Fix the product feeding pipe to the 20 mm-diameter pipe-holder located in the machine upper part by using necessarily a metal clamp (“product entrance and drain”, see picture 1), so that the pressure inside the autoclave can be opposed.

Before this operation, check that the six screws of the upper tank right flange are correctly tightened. The pipe-holder used for the product feeding has to be the same that will be used for the tank draining at the end of work.



**Picture 2.**

At this point connect the machine to the current, to the compressed-air feeding and to the azote bottle using the respective clutches (see picture 2).

With regard to the compressed-air, the 5 bar value is advisable for 0,75 litre-bottles and the 6 bar value is advisable for larger bottles.

Azote is used for the preparatory pressurization so that the next product entrance can be balanced.

In regard to the azote, then, the pressure depends substantially on the product that will be filled; that is, a little lower than the pressure of the product going in and maximum 4 bar.

By switching on the general switch the green warning light turns on and the machine turns on, too.

The machine starts when one or two bottles are put on the bottle-platform and the transparent door is closed.

If no bottles are put on the bottle-platform, the machine doesn't start and the bottle-platform doesn't lift.

All the operations are automatic and the filling cycle ends when the bottle-platform goes down; then, the front door can be opened.

When the bottles reach the injectors, make sure that the injectors mobile parts are being raised. If it is not so, move the bolts of the threaded rod (see picture 1, "threaded rod for bottle height adjustment") so that the bottle-platform can be located higher.

On the switch-board there is a knob-device (see picture 2, "filling time adjustment"). Check that the level of product inside the bottles is right when the injectors go down. If it is not so, turn the knob clockwise so that the bottles can stay longer under the injectors and the level of product inside the bottles will get higher.

The possibility to set the filling time allows you to shorten it for smaller bottles and to increase it for larger ones.

Anyway in case a longer time than that required is set, it is not a problem because once the level is reached, no more product will be let into the bottles.

When the pressure of the product to be filled is too close to 6 bar, it could be necessary to increase the compressed-air pressure above 5 bar even for 0,75 litre-bottles.

In case one wants to use bottles with a larger capacity, only one bottle at a time can be filled.

Before starting it is advisable to fill some hot water so that any residual manufacture and assembly products can be removed.

## **CAUTION**

The filling machine can be used by only an operator at a time and no one else should be near when the feeding cable is connected to the current and the machine is operating.

It is forbidden to push the “drain push-button” (see picture 2) when the product feeding pipe is connected to the machine tank.

In case any problem should happen, open the transparent front door: the filling will stop, the pressure will lower a little and the bottle-platform will go down.

At the end of work, disconnect the product feeding pipe and push the “drain push button” (see picture 2) to empty the upper tank.

Before pushing the “drain push button”, it is advisable to put a container under the tank pipe-holder in order to collect the product that could fall down.

The “drain push-button” works even when the front door is open.

Then the machine must be rinsed using hot water in order to remove all the sugary remainders that could jeopardize the gaskets seal as time passes.

With regard to the rinsing, it is advisable to connect a pipe that brings water to the upper tank and proceed as if it were a common filling operation and it is to be repeated some times.

## **5. MAINTENANCE**

A long machine working life is dependent upon constant and methodical compliance with the following instructions:

- take off the back safety plate and lubricate using grease the linear slide for the vertical sliding of the bottle-platform;

- check that there aren't any product leak, especially connected with the transparent pipes that connect the upper tank to the injectors. These transparent pipes must be changed periodically;
- lift the injectors mobile parts and unscrew the four-holed bottom elements (the nozzles), in order to check the inner seals and, if necessary, lubricate them using some drops of food oil. This operation is particularly necessary when the injectors mobile parts do not close properly;
- for a more accurate maintenance, the six screws that hold the upper tank right flange can be taken off and the inside can be checked.

When carrying out the maintenance operations, be very careful that the thread of the injectors bottom elements (the nozzles) are not being damaged and reassemble the upper tank right flange by screwing down properly all the screws.

At the end of each season or before a long stop we recommend to:

- store the machine in a dry place and cover it up with a cloth or a nylon film in order to prevent the dust from settling on the filling machine.

## **IMPORTANT**

Before carrying out any interventions on the machine always bring the starting switch to the "0" position and disconnect the current feeding cable, the compressed-air, the azote and the product feeding pipe.

In case any problem should happen during work, open immediately the front door and contact your local dealer or the manufacturer M.E.P.

## **ELECTRICAL SYSTEM**