



# InterTech

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## RINSER / FILLER / CAPPER

<b>Manufactured:</b>	<b>Sidel</b>
<b>Model:</b>	<b>Eurotronica 40/7010 - 113</b>
<b>Capacity:</b>	<b>13.000 bph – 1,5 L</b>
<b>Product:</b>	<b>Beer / carbonated SD / still water</b>
<b>Cap:</b>	<b>PCO 1881</b>
<b>YOM:</b>	<b>2006</b>
<b>Type:</b>	<b>AF C36</b>

### Important Details:

Machine already disassembled, immediate available



## GENERAL DESIGN DATA

- Electrics:
  - Power: 380 V.  $\pm$  10%
  - 3 phases + PEN (TN-C)
  - Cycles: Hz. 50
  - Control voltage: V. 24 DC for Plc only
  
- Utilities:Compressed air: Pressure min 6 bar/ max 8 bar
  
- Process water :
  - Temperature min +14°C/max+20°C.
  - (for rinser)
  - Water pressure 3 bar
  
- Cold water temperature: min: +14°C – max: + 20°C
  
- CO2:
  - Purity: 99,98%
  - Pressure: 7-8 bar for the filler

## GENERAL SPECIFICATIONS

Filler nominal capacity:	13.000 bph with 1.5 lt. Pet Beer 9.000 bph with 2.5 lt. Pet Beer 11.900 bph with 1.5 lt. Pet CSD 14.400 bph with 0.5 lt. Pet CSD
Product	1. Beer 2. Carbonated Soft Drinks 3. Sparkling water 4. Still water
Filling temperature:	8-9°C Beer – 15°C CSD/Water
CO2 content	Beer max 5,5 g/l CSD/CSW medium 5,5-6 g/l, max 8,5 g/l
Closure 1st size :	28 mm. plastic cap PCO1881

### Technological guarantees (Beer in PET)

1. Co2 consumption during the bottling	650 g/hl +/- 50g
2. Oxygen PIK UP	0,05 mg/l
3. Oxygen in head space )	0,28 mg/l (dep. on fill level and bottle shape)
4. Bottles damage on the filler	0.02%
5. Accuracy of the level height	SIGMA 1,5
6. Rest of water into the bottle after rinsing	2 ml for 1,5 lt

# TECHNICAL DESCRIPTION

## Bottle Rinsing BLOCKRINSER 1 R 40 pitch 113

### Main features

- High speed rotary rinsing for handling glass and/or plastic bottles
- The base is incorporated in that of the filler
- Stainless steel AISI 304 microcasting execution of the main parts of the bottle grippers
- Gripping bottle clamps in food grade rubber easily interchangeable
- The opening and the closing kinematic mechanism of the grippers ensures perfect gripping of the bottle during its capsizing even in case of particularly heavy glass bottles
- Heat resistant plastic components allow hot bottle rinsing up to 80°C
- Central distribution manifold composed by two stainless steel overlapped plates (one moving and one fixed) whose sliding area is coated with a baked clay surfacing guaranteeing a perfect seal which is maintenance free
- Bottle moving system manufactured in order to reduce the noise level to the minimum
- Maintenance costs reduced by means of high density polyethylene moving starwheel guides with interchangeable wear bands
- Production flexibility reducing times for change-overs for different bottle sizes
- Cleaning and maintenance operating times reduced by easy access to the different parts of the machine

### The basic machine consists of:

- Stainless steel coated basement
- Central distribution manifold in stainless steel with a baked clay
- Machine stop pressure switch in case of pressure leakage
- Juromatic closing flow electrovalve when machine stops
- Centralized lubrication (pump excluded)
- Stainless steel basement front protection with transparent plastic panels and perimetral frame of carousel in stainless steel
- Safety stop in case of doors opening during running of machine

## **Machine description**

The machine is composed by two main parts: the basement and the rotary carousel

### **Base**

The machine base is incorporated in that of the filler and it is inclusive of starwheels and bottle moving guides, bottle feed conveyors, inlet wormscrew and moving transmission devices.

The base is manufactured in steel coated by a stainless steel plate.

Stainless steel height adjustable feet support the basement.

The moving gears are built in cast iron and nylon alternatively

### **Rinsing and draining carousel**

The carousel is positioned on stainless steel height adjustable feet driven by means of an electric motor. It includes the rinsing grippers with a lever sliding arm on a twist suitable for handling the bottles, one separate collection tanks for the recovery of the liquid used during rinsing, a central distribution manifold.

The carousel, on which the clamping grippers and the spraying nozzles are fixed, is supported by a large diameter bearing in order to reach a perfect balance of movement and a correct weigh distribution

### **Rinsing fluid feeding and functioning principles**

Bottles arriving at the rinser are synchronized with the pitch of the machine by means of a starwheel positioned at rinser inlet and centered under the grippers .

The gripping of the bottles is effected when the bottle is guided by the starwheel allowing a perfect centring also at high speed.

The lever arm sliding on the twist ensures that the bottle capsizing are on the spraying nozzle.

The distribution manifold, if required; allows the variation of the rinsing treatment.

### **Movement transmission**

The motorisation of the blokrinser is achieved by means of a cardanic joint connected with the filler main drive.

## **Safety devices**

The rinser stops for the following reasons:

- Opening of the protection doors during running
- Bottle on its side at the discharge starwheel
- Absence of pressure of the rinsing solution
- No bottle no rinsing

## **Automation**

The Plc on the filler enables the controls of the basic functions of the rinser and points out eventual malfunctions.

## TECHNICAL CHART

### BLOCKRINSER 1 R 40 pitch 113

PRODUCT	FILLING TEMP	SIZE	OUTPUT
BEER	8-9°C.	1.0 lt. Pet	13.000bph
N° of grippers			40
Pitch			Mm. 113
Bottles workable		diameter min/max	Mm. 45-104
		height min/max	Mm. 130.360
N° of treatments			1
Spray time 1 rinsing section			Sec 2
Draining time 1			Sec 4,4
<b>Total treatment time</b>			<b>Sec 6.4</b>
Main drive unit		powered by the filler	
Water consumption		press. max 3 bar	M <sup>3</sup> /h 3.5 max
Connection for water feed		1" gas	
Connection for water outlet		DN 50	
Connection for compressed air		1/2" gas max 7 bar	

## Filling Capping Monobloc EUROTRONICA PN 70 / 10H p.113

The SIG Simonazzi Eurotronica PN PET 70/10 K pitch 113 mm is a fully automatic rotary filler/capper, with electronically controlled pneumatic filling valves equipped with probe.

### Main features

- Neck handling of the bottles throughout the monobloc
- The isobarometric filler is designed for cold or ambient filling of soft drinks.
- Production flexibility with possibility of rapid bottle size change and product change times
- Easy access to all parts of the machine for cleaning and maintenance operations with consequent saving in time
- The sniffing gas is collected in annular chamber in the filler, and channeled in one point.
- Product level control in the tank is carried out with capacitive probes (4), independently from the CO<sub>2</sub> pressure control (which is done via a modulating valve).
- Extensive use of stainless steel throughout the machine (not only for parts in contact with the product)
- Electronically controlled pneumatic filling valve, with filling level by means of vent tubes,.
- Each filling valve is equipped with an electronic control card, communicating with the machine fixed control part through an infrared communication system. This system simplifies also the cabling of the rotary part and reduces the electronic part on board.
- Each valve can be independently set, also during machine operation. It is therefore also feasible the automatic adjustment of the time delay in the filling process of each valve, depending on the feedback of the filling level monitoring.
- Annular tank with filling valves fitted on the outer wall
- Possibility of slow filling speed in the fill height control stage
- Possibility of returning gas to the ring bowl or to a separate channel

### Structure

The machine basically consists of two main parts: basement and filling carousel

#### The base

The frame of the base is a sturdy structure in stainless steel, resting on stainless steel feet, adjustable in height.

The base houses:

- the motorisation
- the drive transmission parts (with gears alternatively in metal and special plastic for noise reduction and reduced lubrication).
- the special starwheels for bottle handling.
- the crowner

### The filler carrousel

The filling carrousel is fitted with stainless steel supports, adjustable in height, and includes the bottle lifts, the filling bowl complete with valves and the product infeed unit.

- The rotary part of the carrousel is installed on a large diameter bearing, allowing great stability of the system.
- The bowl can be adjusted in height to allow for different bottle sizes by means of an electric or pneumatic motor.
- Annular bowl of very large section, which reduces the effect of the centrifugal force on the product; the level in the bowl is controlled by means of probes.
- All parts in contact with the product are in stainless steel AISI 304.
- The snift gas from all valves is collected into a special annular channel, and discharged in one point.

### **Bottle infeed and lifting**

When they leave the wormscrew and enter the infeed starwheel, the bottles are kept stable and perpendicular to the working surface by handling parts designed to suit their shape.

The centering cups descend on the bottles, still held by the infeed starwheel, before they are lifted by the pneumatic lifters.

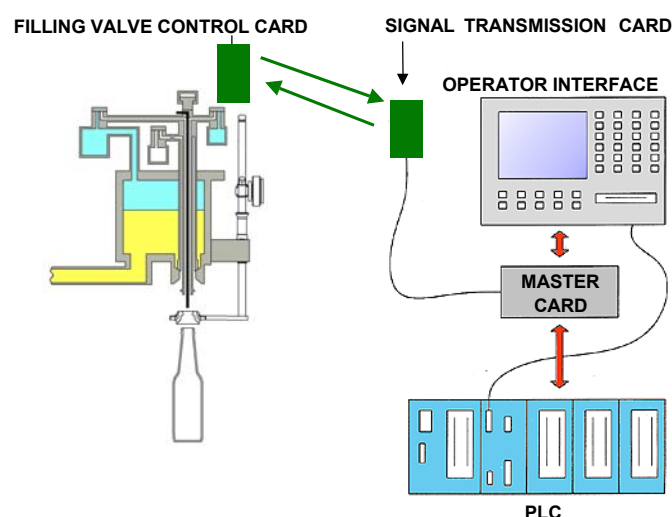
The pressure applied to the bottle lip prevents any slipping and allows positioning

and perfect centering. In this way it is possible to avoid any damage to the necks of the bottles and to level probes.

The bottle lifting columns are positioned to the outer part of the bowl in order to facilitate cleaning operations.

### **Filling valve control**

On each filling valve there have one pneumatic valves controlling the filling process. Each filling valve is controlled by an independent hi-speed microprocessor (*fine tuning can be done separately for each valve and not for block of valves as in other similar machines*). Moreover the control of the machine is installed on the fixed part of the machine, separated from the control of the filling valves and it is interfaced with these latter by means of an infrared-communication system.



- The setting of parameters, the feed-back and alarm signals relevant to the filling phases are transmitted by the master card to the operator interface.
- The filling parameters and the control signals necessary for the correct operation of all filling valves are collected in an electronic card located in the PC slot (Master card).
- The master card manages the data transmission process from the PC to filling valve control (Slave card), by means of an infra-red communications system.
- Master card controls the single slave card through four infrared signal transmission card placed around the filler carousel
- Malfunctioning valve may temporarily be disabled without interrupting the overall performance of the filler

### **Plastic Screw caps Capper**

- **Turret drive** including center shaft, bottle carrier, bearing block, pignon hub, drive gear and anti rotation columns .
- Rotary mechanical cap unscrambling hopper (to be mounted on the top plate of the turret) with SEW motor, level photocell and air cut solenoid valve set for one size of flat plastic screw cap - stainless steel cap chute with cap control.

### **Cap transfer mechanism**

with sweep starwheel (Pick and Place).

magnetic screw capping heads with chucks set for one size of flat plastic screw cap.

### **Drive transmission**

Eurostar PN-P is driven by an ABB ac electric motor activated by a Danfoss frequency converter. The rated speed can be selected by the operator as a function of the bottle processed. The slowing down speeds are controlled by the PLC in accordance with the sensors positioned upstream and downstream of the machine. The speed of the infeed conveyor is mechanically synchronized with the filling machine speed. It can be supplied with an analog signal to synchronize the discharge conveyor or the infeed pressureless inliner.

### **Product infeed and level control in bowl**

The product arrives from below into the central manifold and is transferred to the bowl by means of a series of pipes arranged in a radial pattern. The pipes are in mirror-finish stainless steel, with oversized diameter and large curvature radius. In this way the product is circulated at low speed avoiding possible turbulence.

The level control (min/max) in the bowl is achieved with four capacitive probes (standard) that regulate the counterpressure blow off valves.

### **Safety devices**

The filling machine stops for the following reasons:

Opening of the interlocked door when the machine is running

Blockage of a cup in the upper position

Bottle jam at outlet

Discharge conveyors stopped

Motor overload relay activated

Absence of crowns in the descent chutes

Sanitizing

The machine is fitted for closed circuit "cleaning in place" sanitizing carried out by using dummy bottles to be fitted on the valves. The obtained sanitizing cycle provides the best results whatever product is handled by the filling machine.

### **Automation**

The VDU interface (Simonazzi Touchscreen PC) enables a more precise handling, than the traditional pushbutton panel, of the various control functions giving also a greater control over any inappropriate actions on the part of the operator. Each operation can be protected by a password. It is possible to have access to and modify (function protected by a password) the functioning parameters without the need for special instruments (programming case). Diagnostic functions and production data are handled in a more complete and efficient manner. A Siemens S7 PLC allows the control of the basic machine functions and signals any problem. There are various optional applications that increase the automation of the machine.

Included in the basic quoted machine

Neck handling of the bottles throughout the monobloc.

Variable speed drive (range from 0 to maximum, frequency controlled).

Stainless steel push button panel complete with safety and control instruments.

Safety at work guards.

Filler bowl according to PED European Norms (tested up to 7 bar)

Manual dummy bottles for in place cleaning.

Centralised CIP system for the filler

Noise reduction screens

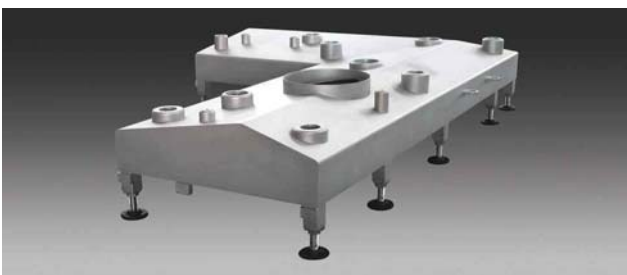
Centralised lift cylinder lubrication (oil)

Sight glass, sample cock, drain valve at product infeed

Main utility valves

Electrical control (PLC Siemens)

Stainless steel machine hygienic baseframe (see picture below)



## **Product infeed adjustment unit**

Consists of:

Ascon pressure transmitter

Ascon electric pressure regulator

Hartman Braun electric/pneumatic converter

Modulating valve complete with Masoneilan connecting cones

Sampling cocks

## **The fobbing unit**

This is placed between the filling carousel and the capping unit and facilitates the evacuation of the air remaining in the bottle neck.

The procedure involves the injection of H<sub>2</sub>O at high pressure.

The unit consists of the following:

- High pressure pneumatic pump with PID pressure regulation done via machine PLC
- Pressure transmitter. Pressure set point is set via a dedicated page on machine HMI.

**TECHNICAL CHART EUROSTAR PN 40/70/10H, pitch 113**

PRODUCT	TEMPERATURE	SIZE	OUTPUT bph
BEER	8-9°C°C.	1.0 lt. Pet	13.000
Type of filling valve	high flow		
No. of filling valves			70
No. of capping heads			10
Dimensions of bottles that can be handled	diameter min/max	Mm.	52-104
	height min/max	Mm.	135-360
Main drive unit			Kw 7,5
Auxiliary drive units:			
	Hopper	Kw	0,37
<b>Total installed power</b>			<b>Kw 7,87</b>
Operational max. pressure			Bar/psi 7/101,5
Tank	test norms	PED	
Compressed air consumption	min/max press.6/12 bar	Nlt/1'	530
Water consumption for plates washing	min. press.2 bar	Nlt/1'	180
Connection for compressed air feed	1/2" gas		
Connection for CO2/sterile air feed	1 gas FF (pressure 6-12 bar)		
Connection for product feed	DN 100 DIN 405		
Connection for sanitation	DN 50 DIN 405		
Connection for plate washing water feed	1" gas		

## **Pneumatic CAP FEEDER/ELEVATOR model SP10**

Delivery up to 30.000 caps/hour.

Incorporated buffer hopper for up to 30.000 caps.

Constructed in satined stainless steel AISI 304

Feeding by means of large vibrator regulated by a rheostat.

Silent, cast fan, very high prevalence with delivery regulated by a shutter.

Introduction into the transporter tube by means of special anti-overflow injectors.

Standard transporter tube with wide radius bends.

Cyclone arrival separator in bored steel sheet with rubber bumper skirt to protect against knocks and scratches.

Automatic operation piloted by the inductive level regulator situated on the hopper of the crowner turret, either existing or supplied by us, with adjustable timer to stop the vibrator before the fan in order to avoid blockages in line.