

bertolaso

(Verona)

s.p.a.

Zimella

COLLO PACK
707-258-3940

USE AND MAINTENANCE

SPARE PARTS LIST

Bertolaso - 5 Head
screw capper
macchina Tipo-Sigma 105
mod. 338
machine # 338.233

2-29 spring for levers

(Takes 20)
would like 40

atic capping machines

11/11/16

Ordered 40 ea.
on 8/8/16

13 to Arrive

27 Back-Ordered

36

38

Machine number 338.233
~~338.433~~

Year 1983

Installed - 3-86

edition 1976

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Controllato			

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RULES FOR THE USE OF THIS BOOK

This maintenance book is useful to all the SIGMA machines with 3 or 5 heads, for the modular drawing system adopted to make these machines.

Further, as people may use MAUCERI and ALCOA heads, the following instructions are divided into three groups: - common instructions

- Mauceri heads instructions
- Alcoa heads instructions.

Therefore, please follow the instructions according to the capping heads mounted on the machinery.

There also is a fourth part, in this maintenance book, for any special applications, as per order.

The spare parts list is divided according to the capping heads mounted on the machines.

CHARACTERISTICS AND PERFORMANCE

Type of closing	.....
Closing heads	..... n.
Min/max output per hour	..... B/h
Bottle diameters	..... mm
Bottle heights	..... mm
Allowance on bottle diameter	..... mm
Allowance on bottle height	..... mm
Depth	..... mm
Width	..... mm
Maximum height	..... mm
Height of working plane	..... mm
Weight	..... kg
Self-braking electric motor	..... Hp
Feeding voltage	..... V.
Low tension	..... V.
Cap feeder	..... VA

Machine	
SIGMA 103	SIGMA 105
R.O.Pilferproof or safety caps	
3	5
2500-7000	4200-12000
55-120	55-120
140-370	140-370
± 2	± 2
+ 3	+ 3
820	820
1550	1550
2100	2100
950-1050	950-1050
1000	1050
1,5	1,5
220-380	220-380
24	24
600	600

Data are not binding

CONTINUOUS SPEED VARIATOR

A speed variator with an expanding pulley is mounted on the machine to allow the maximum exploitation and the perfect synchronism with the whole bottling line machinery.

The speed variation must be done only when the machine is on, by turning the handle (page 14, n. 1).-

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PHASING OF THE MACHINE

One of the basic conditions for an excellent bottle-feeding into the machine without breakage or blocking of the machine, and for obtaining an efficient production speed, is a perfect phasing of the bottle-transport unit.

While the star-wheels, both the one on the left and the right side and the one in the middle, do not need any phasing as they are mounted on fixed parts, the screw-conveyor must be phased each time you change type of bottle.

Each screw-conveyor is fitted with its phasing-disc, which, after initial regulation, does not need any more phasing during successive mounting operations.

The phasing of the screw-conveyor must be effected as follows:

- 1) Take one of the new bottles to be closed and place it exactly on the middle of the conveyor chain (page 14, n. 2);
- 2) Loosen the two handgrips (page 14, n.3) and approach the bottle-conveyor side board, leaving a ply of 1,5 - 2 mm, then block;
- 3) Loosen the two handgrips (page 14, n.4) and approach also the screw-conveyor, leaving the same play;
- 4) Place the bottle in the space between the bottle-feeding star and the screw-conveyor and check if there is a clearance of 3-4 mm. If not, remove the screw-conveyor, loosen the two screws (page 15, n.5), reassemble and turn the screw-conveyor until you obtain the clearance desired.

Remove the screw-conveyor again, fix the screws and reassemble.-

REPLACING OF THE BOTTLE-CONVEYOR UNIT

When the new bottles to be closed have a different form or diameter from the ones previously closed, the bottle-conveyor unit must be substituted as follows:

- 1) Replace the screw-conveyor (page 14, n.6);
- 2) Replace the bottle-feeding and outlet star-wheels (page 15, n. 7 and 8), the central star-wheel (page 15, n.9), and the front (page 15, n. 10) and rear conveyors (page 15, n. 11);
- 3) Set the side-boards and the screw-conveyor as above described.

CONVEYOR CHAIN SPEED

In order to regulate the speed of the conveyor-chain, which must be executed on the driving head in question, this very important rule must be kept in mind: the screw-conveyor must NEVER drag the bottles but only separate them; a slightly braking action is preferable.

In order to obtain an excellent bottle feeding, the conveyor-chain must have a speed of 280 mm per bottle for the capping machine with 3 heads and 180 mm per bottle for the capping machine with 5 heads.

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CAPS FEEDING

To get a perfect caps feeding, turn the fitted handle at the centre of the vibrator control board (page 14, n.12).

It's ESSENTIAL the vibrator feeding tension is always 220 Volt, with an allowance of $\pm 1,5\%$. A voltage stabilizer is necessary if high rushes of current are possible. If a different voltage than 220V. is available, insert a transformer before the vibrator. Don't increase the feeder vibration more than necessary otherwise the caps might be damaged. Check the perfect condition and assembly of the rubber anti-vibrating feet under the vibrator (page 14, n. 13). The vibrations must not be transmitted to the holding column for any reason, thus not to compromise the caps feeding. In case of bad caps feeding, check the following points:

- 1) feeding tension to be 220 Volt, allowance $\pm 1,5\%$;
- 2) vibrations must not be transmitted to the holding column;
- 3) the spring fixing screws might be loosen
- 4) there is rust on the electromagnet aircore or the aircore value is not right; in this case is should be restored.

When people change caps type and/or sizes, if the vibrator is set for the new caps, too, it's enough to adjust the final part of the channel both the upper key and the lateral jaws.

If the new bottles are different in height from the ones the vibrator is set for, turn the screw so that the bottles rightly keep the caps (page 14, n. 14).

COMPRESSED AIR SYSTEM

The machine is provided with a compressed air system to push the caps forward into the selecting path. The compressor connection is below the switchboard (page 14, n. 15). It's also provided with a manometer and pressure adjustment; fitted regulators, to regulate the air blow intensity, are set at the air exit.

When the machine is not connected with a central compressed air system, it's enough to get a compressor with 500 liters of displaced volume.

DISCONNECTION OF MACHINE FROM THE WORKING CYCLE

If the machine is connected to other machines in the same bottling line and it becomes necessary to use the conveyor chain not operating the machine, the following operations are to be performed:

- 1) Remove the screw-conveyor (page 14, n. 6) by loosening the two hand-grips (page 14, n. 4), remove the star-wheel in entry and exit (page 15, n. 7 and 8) and the front bottle conveyor (page 15, n. 10);
- 2) Mount the straight bottle slides, which may be supplied on request.

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COMMON MAINTENANCE AND LUBRICATIONSCREW-CONVEYOR GEARBOX

Each week the oil level must be controlled through the control window (page 15, n. 16). Each 4 months the oil must be substituted by removing the draining plug (page 15, n. 17). The oil can be let in by removing the cover.
Oil contents: kg 0,5 .

SCREW-CONVEYOR BEARING

The screw-conveyor is mounted on a self-lubricating bearing consisting of sintered oil-retaining material. Periodically the oil, consumed during use, have to be replaced; therefore each week some drops of oil have to be feed into the lubrication hole (page 14, n. 18).-

REDUCING GEAR

The reducing endless screw mounted on the machine, is life-lubrication type; therefore the grease must NEVER be replaced.
If, for any chance, it might be necessary to open the reducing gear box, replace the grease only with

SHELL TIVELLA COMPOUND A

GREASING

- a.- Once a month, inject grease in all the greasers by a suitable syringe (page 16, n. 19);
- b.- Coat with grease all the star-wheel shaft driving spur gear, situated into the frame and under the upper part of the same (page 15, n. 20);
- c.- Coat with grease the electric motor guides and screws, situated into the machine frame;
- d.- Inject grease through the fitted greaser at the center of the variator (page 15, n. 35);
Be careful to grease neither the belt nor the rim of the pulley.

RECOMMENDED OILS AND GREASES

For all above-mentioned lubrication, we recommend the following lubricants:

- 1) Oils :
IP PONTIAX FZG85W/30
SHELL DENTAX SAE 90
BP ENERGOL GEAR OIL SAE 90
ESSO GEAR OIL SAE 90
AGIP F1-ROTRA 90

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2) Greases

TOTAL TOTALOIL CD SAE 90
 ARAL GETRIEBEOEL HYP
 IP AULON GREASE 3
 SHELL LIVONA GREASE 3
 BP ENERGREGREASE GP 3
 ESSO ANDOX M. 275
 MOBIL MOBILGREASE AA N°2
 AGIP F1-GR-SP
 TOTAL TOTALGREASE HARELDA RB
 ARAL MEHRZEWCKFETT

ELECTROMAGNETIC BRAKE

After a long working shift it might occur that the electromagnetic brake mounted on the motor does not brake sufficiently any more. To obtain the initial braking conditions, the instructions attached to this book have to be observed.

VIBRATING FEEDER

The feeder need no particular maintenance, excepting a daily cleaning of all the corpuscles inside the orientating path and removing the misshaped caps which might cause obstruction of the channel.-

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MAINTENANCE OF THE MACHINE EQUIPPED WITH "A L C O A" HEADS

HEIGHT ADJUSTMENT OF MACHINE

The heads height adjustment is carried out as follows:

- 1) Release the two screws locking the heads holding group (page 16, n. 21);
- 2) Insert the suitable handle in the back shaft (page 16, n. 22) and lift up, at the maximum, the heads holding group;
- 3) Take one of the bottles to be closed, with a cap on, under the head, situated at the back of the machine, exactly in the middle (page 16, n. 23);
- 4) Low down the heads holding unit, by the handle, so that the bearings mounted on the rollers driving arms, are on the bush for 1 mm at least (drawing pag. 16);
- 5) Adjust the neck bottle guiding star-wheel height (page 15, n. 24).-

HEAD ADJUSTMENT

1) Rollers

28 MM

a.- closing diameter adjustment:

- remove the bottle centering device;
- put under the head the suitable caliper (page 17, n. 25);
- loosen the screws locking the arms on which the rollers are mounted (page 17, n. 26);
- push inside the rollers so that they touch the caliper, then lock the screws again.

b.- rollers height adjustment:

The rollers are mounted on threaded and notched bushing for screwing (at the upper part for threading rollers and at the lower part for the folding ones). They are fixed by small screws, to allow the rollers height adjustment and get a perfect threading and folding action.

- threading rollers: remove the cap from one of the bottle previously closed, cut and save the bottom cap. Keep the bottle, with the cap bottom on, under the head, situated at the back part of the machine (page 17, n. 27) then turn the bottle so that the threading roller is set at the bottle thread beginning; low down the head and check the roller exactly gets in to the thread troat (see drawing page 17).

If not, adjust the roller by working on the above mentioned bushing.

- folding rollers: once the threading rollers are adjusted, people have to adjust the folding ones. Push the roller near the bottle and check that between the roller and the bottle neck step there is a space of 0,3 mm (see drawing page 17). If not, adjust the roller by working on the above mentioned bushing.

2) Rollers side-weight adjustment

The rollers side-weight adjustment is set as follows:

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