Operator's manual

EBU250

Content

1. Declaration of conformity

We Flexicon A/S

Frejasvej 2-6
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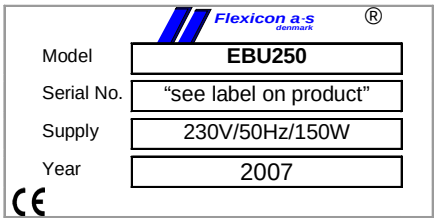
declare on our sole responsibility that the product:

EBU250



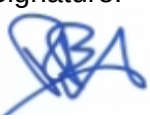
To which this declaration relates is in conformity with the following standards:

DS/EN ISO 12100	Safety of machinery - Basic concepts, general principles of design
DS/EN 60204	Safety of machinery – Electrical equipment of machines

According to the provisions in the Directives:

98/37/EC	On the approximation of the laws of the Member States relating to machinery.
73/23/EEC	On the harmonization of the laws of Member States relating to electrical equipment designed for use within certain voltage limits
2004/108/EC	On the approximation of the laws of the Member States relating to electromagnetic compatibility

Signature:



February 2007

Flemming Jørgensen
Director

Ringsted, Denmark

2. Use

When filling foaming products in larger volumes, it is often needed to move the filling nozzle to the bottom of the bottle and raise the nozzle at the same speed as the product level rises in the bottle during the fill. The EBU250 is used for these applications and is therefore mainly used together with Flexicon fillers PD22I and GD30I.

The EBU250 system uses a long filling nozzle with outside valve. The nozzle is carried by two moveable rods, which are driven by a stepper motor.
The nozzle will normally be the pneumatic type with outside valve to prevent dripping during nozzle movement. The stroke length of the EBU250 system is adjustable and is maximum 250 mm.
The bottle is placed against the bottle support and on the platform at the front of the unit for correct height and centre positioning.

The EBU250 unit is connected to the main supply and to an MC12 control computer.

There are three action sequences in a complete cycle:

Transport	-	From the top position to bottom of the bottle.
Filling	-	Nozzle raises at the speed of the filling.
Transport	-	From the position where the fill ended and to the top position.

All three actions are programmed at the MC12 control computer in function 51. The parameters will be saved with the filling program.

Both transport and filling speeds can be adjusted from 1 to 250 mm per second.

EBU is manufactured from AISI304 steel, Delrin and anodised Aluminium.

3. Filling Nozzle

For the EBU 250 is a pneumatically solution recommended, but for the EBU described in this manual the nozzles are customised.

4. Connections

Electrical connections are placed on side and rear of EBU.

EBU must be supplied by 230 VAC with ground. The supply is connected to (1) in Fig. 4.1

EBU cannot perform filling by itself hence it must be connected to a controller like Flexicon's MC12 which the standard Master Controller for Flexicon machines.

If using the configuration as shown below, the communication cable from MC12 is connected to the "A" socket "Net 1" on the drive. Then the multi cable is connected to the MC12 and the other end is connected to the EBU. EBU should be connected to 230 VAC with earth.

The MC12 is programmed for use with EBU by using function 51 and answering the question, which appear on the MC12 display. For more information on programming please see later in this manual or refer to reference manual for MC12.

5. Adjustment of EBU Stroke

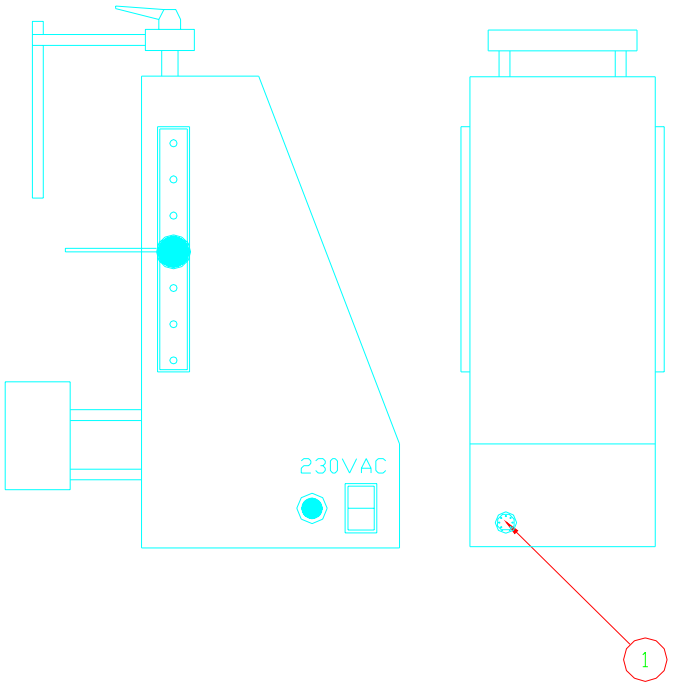


Fig. 4.1

Before starting production, the EBU must be adjusted. By loosening the screw (3) the filling position can be altered. To prevent high bottles to tip, two metal rods (2) are mounted on the EBU. These can be moved and placed in the holes in the side panels. The rods are secured by black screws (4).

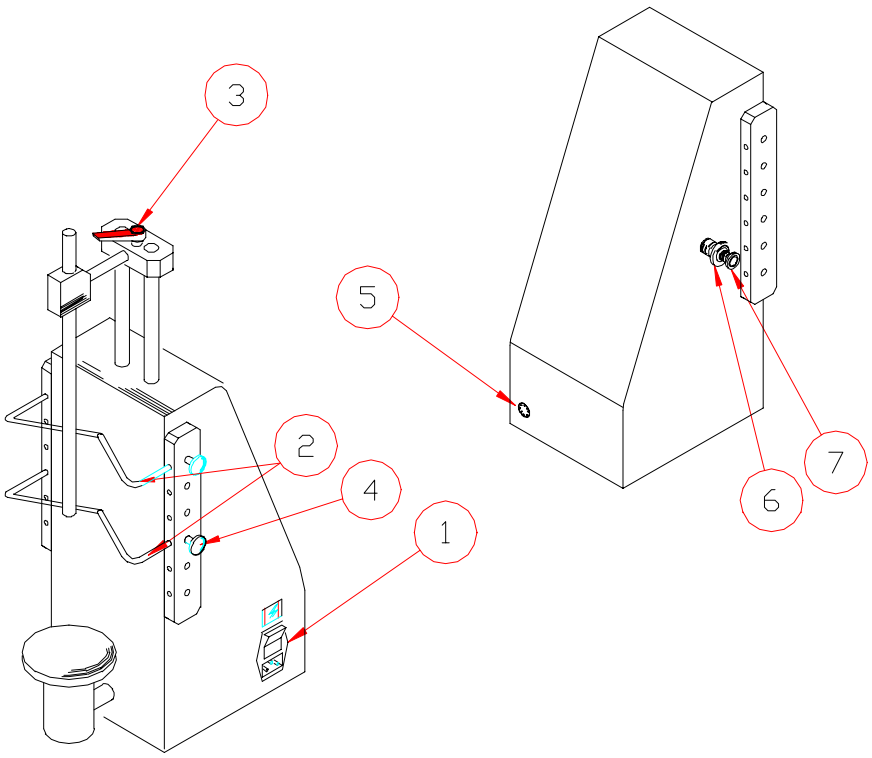


Fig. 5.2

The stroke of EBU (Up and down movement) is adjusted by screws (6) and (7). Loosen the (7) and turn the (6) CW to reduce the strike and turn CCW to increase the stroke. Secure the (7).

6. Using the EBU250 with MC12

6.1 Filling nozzle set-up

If a system is connected to movable filling nozzles a special set-up is required for the system, this is done using Function 51 on MC12.

6.2 Bottom-up filling

A system, which lowers the filling nozzle to the bottom of the bottle before the drive is started. When the drive is started, the filling nozzle moves slowly upwards, adjusted in such a way that the filling nozzle follows the liquid.
When the filling is completed, the filling nozzle will retract quickly.
This system requires set-up in **Function 51**.

Filling nozzle set-up is selected with a number depending on the system.

Electrical Bottom-up filling = 3

If 1 is selected, the system will ask for the drive number that the filling needle should follow.

F51 NEEDLE-TYPE:	3	I 1
F47: PRINTER-SETUP		
F48: RS232-SETUP	F49: BALANCE SETUP	
F51: NEEDLE	F53: DRIVES ON/OFF	

Fig. 6.1

F51 FOLLOW DRIVE	0	I 1
F47: PRINTER-SETUP		
F48: RS232-SETUP	F49: BALANCE SETUP	
F51: NEEDLE	F53: DRIVES ON/OFF	

Fig. 6.2

The drive number is entered followed by <ENT>, and the system will go into set-up position.

After entering drive number the nozzle should follow, the MC12 asks for a transport speed by displaying:

F51 TRANSPORT SPEED (mm/sec): 30_		I 1
F47: PRINTER-SETUP		
F48: RS232-SETUP	F49: BALANCE SETUP	
F51: NEEDLE	F53: DRIVES ON/OFF	

Fig. 6.3

The transport speed is the speed by which the nozzle moves up and down when NOT filling. The speed is set in millimetres/sec.

The MC12 then asks for a fill speed by displaying:

F51 FILL SPEED (mm/sec): 30_		I 1
F47: PRINTER-SETUP		
F48: RS232-SETUP	F49: BALANCE SETUP	
F51: NEEDLE	F53: DRIVES ON/OFF	

Fig. 6.4

The fill speed is the speed by which the nozzle moves upward while filling. The speed is set in millimetres/sec.

The set-up menu is then shown. The purpose here is to run a test on nozzle after it has been positioned mechanically:

F51 SET-UP (0:DOWN / 1:UP):		I 1
F47: PRINTER-SETUP		
F48: RS232-SETUP	F49: BALANCE SETUP	
F51: NEEDLE	F53: DRIVES ON/OFF	

Fig. 6.5

This operates as described in this manual with one addition. When <2> is entered, the speed is reduced with 1mm/sec, and when <3> is entered, the speed is increased with 1mm/sec.

The last menu displays the text:

F51 FILL SPEED (2:DEC/3:INC):	I 1
F47: PRINTER-SETUP	
F48: RS232-SETUP	F49: BALANCE SETUP
F51: NEEDLE	F53: DRIVES ON/OFF

Fig. 6.6

Here it is possible to start the filling sequence by <disp><GO> and then trim the fill speed (speed of nozzle moving upwards) to follow the product surface by pressing <2> for reduced speed or <3> for increased speed. The actual fill speed is shown in millimetres/sec.

7. Technical specifications

Technical specifications	
Power supply	230 VAC
Capacity	200 Watt.
Casing	Stainless steel
Holder	Delrin
Filling Speed	1-250 mm/sec.