Operators Manual

GD30I

Flexicon® DENMARK

OPERATORS MANUAL

Machine Type: GD30I

1 DECLARATION OF CONFORMITY

We   Flexicon A/S
        Frejasvej 2-6
        DK-4100 Ringsted

declare on our sole responsibility that the product:

GD30I

Flexicon a·s denmark ®	
Model	GD30I
Serial No.	YYMM XXXX
Supply	230V/50Hz/350W
Year	2006

CE

to which this declaration relates is in conformity with the following standard(s):

| 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

Ringsted, August 2006   Mads Ulric Jensen
                                                          Signature.

2 CAUTION

This manual should be read before using the GD30I.

Explanations to the pictograms:
Warning against touching/Warning against opening:

Warning against high voltage:

When operating the GD30I, make sure that the dispenser head is closed.

The mains switch is used for emergency stopping.

The GD30I should only be used for dosing and filling of liquid fluids.

The GD30I must be placed on a stable bed plate and in such a way, that it is not exposed to great humidity, high temperatures or other abnormal operating-environments. It is not to be used in explosion hazardous environments.

It is prohibited to maintain or clean the GD30I, when it is connected to the power supply.

It is prohibited for unauthorised personnel to open the cover of the GD30I's electrical parts.

Always remember that the GD30I must be earthed by way of the switch.

Handle the filling needles with caution.

The pump must not run dry.
The pump needs a filling nozzle with cut off valve.

3   GENERAL INFORMATION

3.1   Unpacking and inspection

GD30I is a dispenser in the Flexicon Multi Filling System (FMFS). The GD30I cannot do fillings by itself, but must be connected to Flexicon's control unit, MC12, or to a PC with RS485 multidrop communication.

Please check that all ordered items have been received and that no items were damaged during transport. In case of any defects or omissions, please contact Flexicon A/S or your supplier immediately.

When ordering spare parts or accessories for the GD30I, please state the serial number stamped. The serial number is stamped on the label on the bottom of the GD30I.

Please check that the connected mains plug is of the correct type with the correct earthed switch. If this is not the case, the correct type of plug must be mounted with the following connections.

Yellow/green -   earth
Blue -   neutral
Brown -   phase

ALWAYS REMEMBER that this machine must be earthed.

3.2   The Dispensing Principle

GD30I operates with a pump of positive displacement rotary type. The volume at the inlet increases when the gears rotate and the product ids drawn into the pump. It is then transported in the space between the gears and the periphery of the body to the discharge side. The volume between the gears is reduced here and the product is forced out through the outlet.

The gears operate without metallic contact with casing. The pumps have gears in AISI 316 acid resistant steel (PTFE impregnated). This gives an efficient performance and gentle handling of liquids products.

The gaskets are made of EPDM.

THE PUMP MUST NOT RUN DRY.

The best performance is reached with a positive product support.

The pump needs a filling nozzle with cut off valve.

3.3 Installation

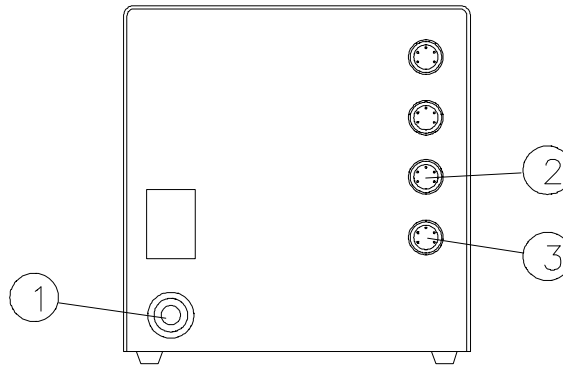GD30I must be placed on a stable bedplate, and all electrical connections are on its rear.

Fig. 3.1

The cable with plug (1) is connected to an earthed switch.

The communication cable from MC12 (type 3) comes fitted with two 4-pin DIN plugs. One is connected to the "net 1" socket (2) on the GD30I, and the other plug is connected to the "net" socket on MC12.
The terminator supplied with MC12 (4-pin blind DIN plug) is connected to the "net 2" (3) socket on GD30I.

Should the system be operating with more than one GD30I, the "net 2" socket (3) is to be connected to the "net 1" socket (2) on the next GD30I by a communication cable (type 3). The terminator is connected to the last GD30I on the line.

Address "1" is the factory setting of GD30I. In case you want to change this setting, please consult section 1.4 in this manual.

GD30I is now ready to be switched on and to be programmed from the MC12.

3.4 Addressing of filling station

Address	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
SW1	1	0	1	0	1	0	1	0	1	0	1	0	1	0	1	0
SW2	1	1	0	0	1	1	0	0	1	1	0	0	1	1	0	0
SW3	1	1	1	1	0	0	0	0	1	1	1	1	0	0	0	0
SW4	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0

Fig. 3.2

Address "1" is the factory setting of GD30I.

If the GD30I is one of several filling stations in a system, none of the stations may have the same address and it must therefore be changed.

Change of address is performed via a dip-switch placed at the bottom of the GD30I. This change may only be carried out when the machine is turned off at the main switch.

Addresses between 1 and 16 may be chosen, and Fig. 3.2 shows the various combinations.

4   CONTROL

4.1   Control panel

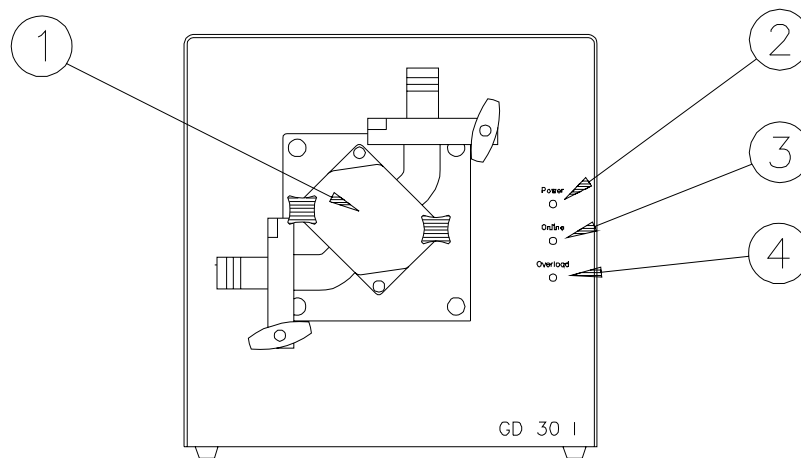Fig. 4.1

(1) Dispenser head
(2)"Power" lights up when the filler is on
(3)"On line" lights up when communicating with MC12
(4)"Overload", lights up when GD30I is overloaded.

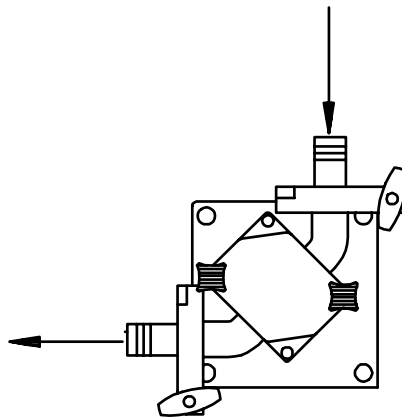# 5   DAILY USE

5.1   Pump Connections

Fig. 5.1

The dimension of tubes mounted at the inlet and discharge side should minimum be 7/8" and 1/2" respectively.
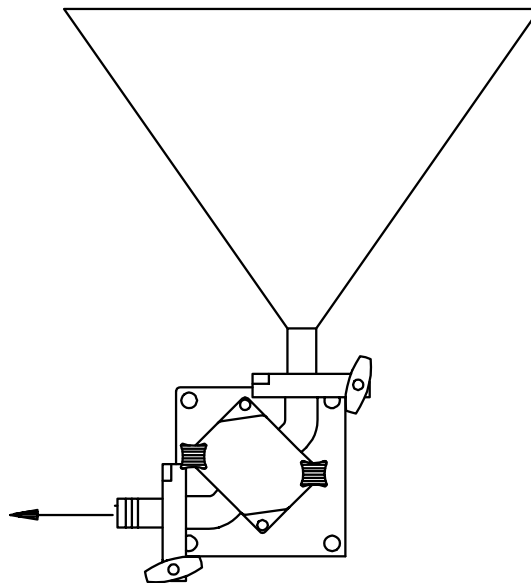
Fig. 5.2

If the product is of high viscosity, it is necessary to mount a hopper for good product support of the pump - see Fig. 5.2.

The dispenser head is now ready for operation.

6 PROGRAMMING

6.1 Programming principle

In the following, a parameter will be the value of a single function, e.g. volume, or acceleration.

A program will be a complete set of parameters which together will constitute the GD30I work instructions.

The actual programming will be made on the MC12 and reference is made to the MC12 manual.

6.2 GD30I parameters

1. Volume
Value: ml
Range: 10 - 9999 ml
GD30I can dispense from 10 to 9999 ml, but for volumes exceeding approx. 1000 ml, the capacity will drop significantly.

If the volume is changed, a recalibration should be made.

2. Velocity:
Range: 30-750 rpm
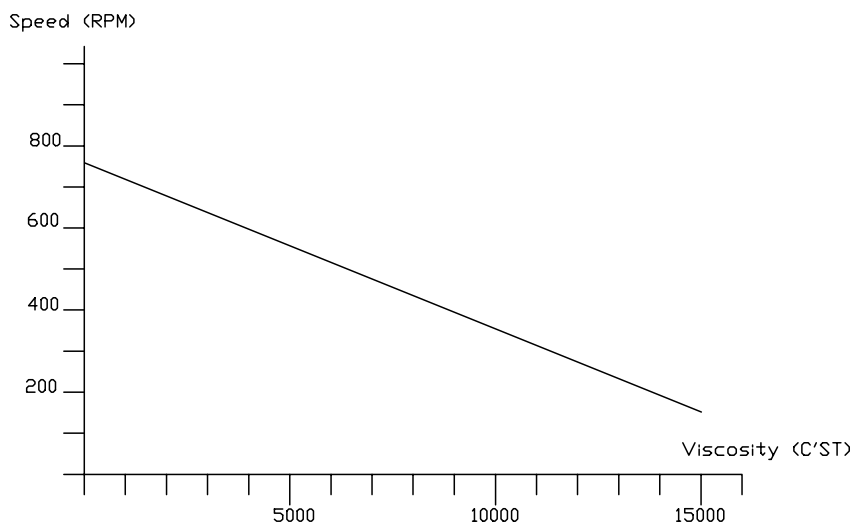The velocity must be adjusted to the viscosity of the product, and Fig. 6.1 gives a guideline for this.

Fig. 6.1

In case of large velocity changes or big changes in the dispense volume a recalibration should be carried out.

3. Acceleration/deceleration
Value: An integral number
Range: 1 - 100
The acceleration and the deceleration will always be the same. The lowest value (1) will give the slowest acceleration, and the highest value (100) will give the fastest acceleration.

If the acceleration is changed, a recalibration should be made.

4. Reversing (back suction)
Value: An integral number
Range: 0 - 10
If the pump is moved a little backwards (reversing) after the completion of fillings, a minor back suction will be created. This can prevent dripping from the filling needle.
The value "0" will give no reversing, but the value "10" will give maximum reversing.

ALWAYS make a recalibration if the reversing value is altered.
For other programming possibilities, reference is made to the MC12 manual.

7   CLEANING AND MAINTENANCE

7.1   Daily cleaning

Daily cleaning will not be necessary except for the normal routine cleaning of production equipment. Liquids must NOT be splashed onto GD30I. It may only be cleaned with a damp piece of paper or cloth.

7.2   Maintenance

As all movable parts in GD30I are maintenance-free, no maintenance is required apart from normal cleaning of the equipment.

If service should be needed, please contact your supplier or Flexicon A/S.

7.3   Disposal:

The machines can be disposed in the same way as Personal Computers.

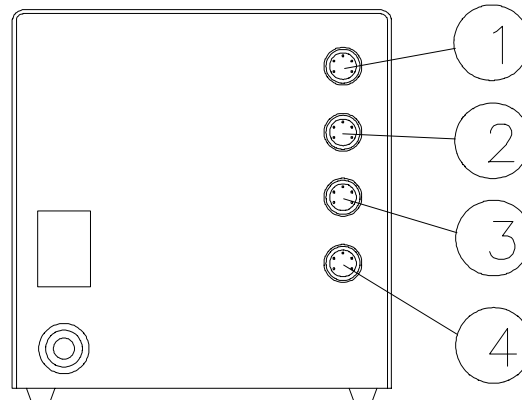## 8   INTERFACE AND CHANGE OF POWER

8.1   Interface

Fig. 8.1

(1) external 1: pin 1: Input for start signal.
+5 - 50 VDC, min. 100 msec. positive-edge-trigged.

pin 2: Output, +24 VDC, max. 500 mA.

pin 3: Ground.

pin 4: Status output, max. +24 VDC, 100 mA.
Pin 4 is earthed via an open collector during filling.

Pin 5: Status output, max. +24VDC, 100 mA
Pin 5 is complementary to pin 4.

(2) external 2: pin 1: Input for disabling.
+5 to +50 VDC. If this pin is activated, the drive will be
disabled (no dispensing).

pin 2: Output, +24 VDC, max. 500 mA.

pin 3: Ground.

pin 4: Status output, max. +24 VDC, 100 mA.
Pin 4 is grounded via an open collector during filling.

pin 5: Status output, max. + 24 VDC, 100 mA.
Pin 5 is complementary to pin 4.

(3) net 1:

   This socket is reserved for (RS-485) network communication.

(4) net 2:

   This socket is reserved for (RS-485) network communication.
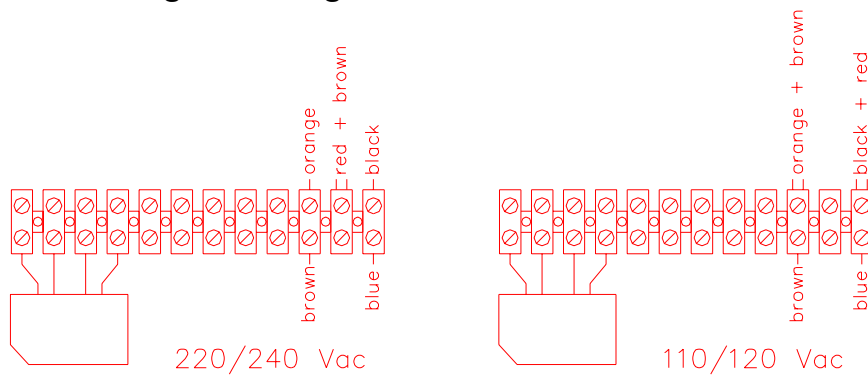
8.2 Change of voltage

Fig. 8.2

The GD30I can be converted to accept another supply voltage. The conversion can be made inside the machine by moving the cables of the transformer clamps.

9 ANNEX A

Sound pressure level: LAeq < 70 dB(a)

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