

Model:
TU9/400B

Batch control unit **E**



Instruction manual

topflo[®] Batch control unit



▶ Instructions for calibration and operation of the batch control unit

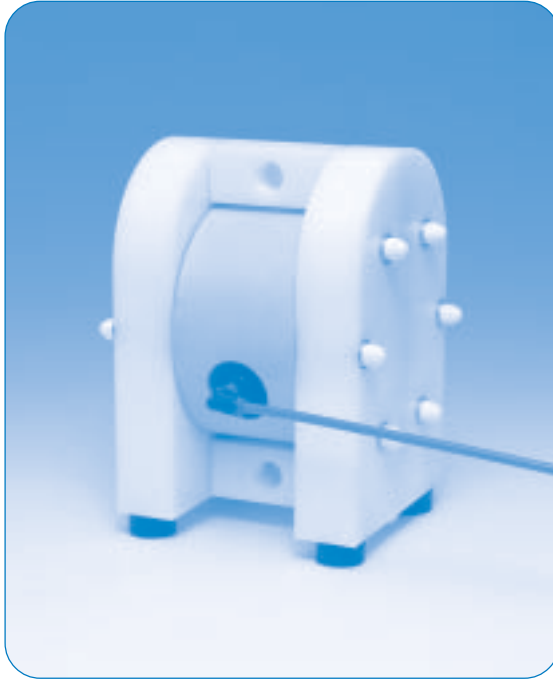


Read this instruction manual carefully, before you install and operate the unit

▶ 0. GENERAL

0.1 Introduction

The batch unit allows you to set and pump a certain volume of liquid. When the batch is started, the unit will count the number of pump strokes the pump is doing. Based on this information, the unit will shut off the pump when the desired volume has been pumped. The pump strokes are sensed from the variation of pressure in the air exhaust by a pressure switch (placed in the counter unit). No electric device is mounted on the pump, which allows for use even in explosion hazardous areas, provided that the batch unit is placed outside the Ex-zone.



- ◀ The strokes from the pump are sensed from the pressure of the outgoing air. The system is easy to apply on all Tapflo pumps. Separate instruction manuals for the pumps are available. Please contact us.
- ▼ Just set the batch volume and press "dispense" and the pump will automatically transfer the desired volume.



▶ 1. CALIBRATION



Note - Calibration processes detailed below are only suitable for pumps of less than one litre displacement per half stroke. For pumps of larger displacement refer to manufacturer.

1.1 Pre calibration set up

Ensure all connections are sound with no leaks, especially between unit and exhaust of pump.

Apply power to unit and switch on.

Ensure pump is fully primed using RED prime button.

Insert Calibration key and turn to calibrate position (3 'O' clock)

Programme the controller to factory calibration benchmarks as listed below. **Please note, that this pre calibration is done by the factory, so you do not have to follow these steps with your new batch unit.**

1. Press and hold '**PGM**' button and display will count down 3.. 2.. 1.. and then display '**type**'.
2. From '**type**' press '**SEL**' button to enter programming menu
3. Using button '**1**' (right hand button below display) toggle display until it reads '**counter**'.
4. Press '**SEL**'.
5. Press '**1**' and display will read '**dec pt**', then press '**SEL**'.
6. Press '**1**' until display reads '**0.0**', then press '**SEL**'.
7. Press '**1**' until display reads '**pscale**', then press '**SEL**'.
8. Press '**1**' until display reads '**multi**', then press '**SEL**'.
9. Using buttons under display enter 2.00000, then press '**SEL**'.
10. Press '**1**' until display reads '**speed**', then press '**SEL**'.
11. Press '**1**' until display reads '**lo**', then press '**SEL**'.
12. Press '**PGM**' and display will return to '**counter**'.
13. Press '**PGM**' and display will return to '**type**'.
14. Press '**1**' until display reads '**reset**', then press '**SEL**'.
15. Press '**1**' until display reads '**rst 0**', then press '**SEL**'.
16. Press '**1**' until display reads '**inhib**', then press '**SEL**'.
17. Press '**1**' until display reads '**prog**', then press '**SEL**'.
18. Press '**1**' until display reads '**auto**', then press '**SEL**'.
19. Press '**1**' until display reads '**off**', then press '**SEL**'.
20. Press '**1**' until display reads '**rltype**', then press '**SEL**'.
21. Press '**1**' until display reads '**latch**', then press '**SEL**'.
22. Press '**1**' until display reads '**rlsafe**', then press '**SEL**'.
23. Press '**1**' until display reads '**set**', then press '**SEL**'.
24. Press '**1**' until display reads '**lcd bl**', then press '**SEL**'.
25. Press '**1**' until display reads '**on**', then press '**SEL**'.
26. Press '**PGM**' and display will return to exit programming menu.

▶ 1. CALIBRATION

1.2 Calibration sequence

Ensure pump is fully primed and unit to pump exhaust connection is sound.

Follow the instructions above to ready the unit for calibration and calculation of the pre-scaling factor.

To do this the unit will batch dispense ten half strokes worth of media, which need to be collected, measured and recorded. The volume of media dispensed is dependant upon pump size and should be considered when selecting a suitable vessel.

Press '**SEL**' then using buttons under display enter 2.0, then press '**SEL**'.

Press yellow 'dispense' button. Upon completion of dispense record volume in litres. Repeat this process a number of times, then total volume dispensed. To calculate the pre-scaling factor use the formula below:

Total dispensed volume / Number of dispenses = Pre-scaling factor

E.G. Test results were 3.4l, 3.2l, 3.2l, 3.1l, and 3.3l

\ Pre-scaling factor = 16.2 / 5 = 3.24

1.2.1 To enter calculated pre-scaling factor.

1. Press and hold '**PGM**' button and display will count down 3.. 2.. 1.. and then display '**type**'.
2. From '**type**' press '**SEL**' button to enter programming menu
3. Using button '**1**' (right hand button below display) toggle display until it reads '**counter**'.
4. Press '**SEL**'.
5. Press '**1**' until display reads '**pscale**', then press '**SEL**'.
6. Press '**1**' until display reads '**multi**', then press '**SEL**'.
7. Using buttons under display enter pre-scaling factor i.e 3.24000, then press '**SEL**'.
8. Press '**PGM**' and display will return to exit programming menu.

1.2.2 The calibration is nearly complete, bar final test.

1. Return calibration key to 12 'O' clock position and remove key.
2. Press '**SEL**'
3. Using buttons under display set dispense volume to 10.0 litres.
4. Press '**SEL**'. The unit is now ready to dispense set volume.
5. Press yellow 'dispense' button.
6. Upon completion check dispensed volume is 10.0 litres +/- 10%

If volume dispensed was within tolerances then calibration has been successful.

If however volume dispensed was out side tolerances then calibration process will need to be repeated, but please check the following before re-calibration

- Was pump fully primed before commencing calibration process?
- Was connection between pump exhaust and unit trapped or leaky?
- Did unit count each exhaust pulse?
- Where there any air leaks in the fluid circuit?
- Was there any restriction on media flows through the pump?

If so rectify before re-calibration. Ensuring unit is returned to a pre-scaling factor of 2.00000 and dispense volume of 2.0 otherwise formula will not calculate properly.



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