

Air Sampling Pump

User Manual

JTF-8T

JTF-8TT

JTF-8Q

JTF-8QT

Rev.1



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CONTENTS

INTRODUCTION	PAGE 3
• Pump Models.....	PAGE 3
• Pump Layout.....	PAGE 7
PUMP OPERATION	PAGE 8
• Initial Setup.....	PAGE 8
• Setting/Calibrating Flow Rate.....	PAGE 10
• Running the Pump.....	PAGE 11
TIMER DISPLAY (TT & QT MODELS ONLY)	PAGE 12
• Timer Display Operation.....	PAGE 12
MAINTENANCE	PAGE 13
• Pump Maintenance.....	PAGE 13
• Battery Maintenance.....	PAGE 14
WARNINGS	PAGE 15
WARRANTY	PAGE 16
SPECIFICATION	PAGE 17
LIST OF FIGURES	PAGE 18
NOTES	PAGE 19

INTRODUCTION

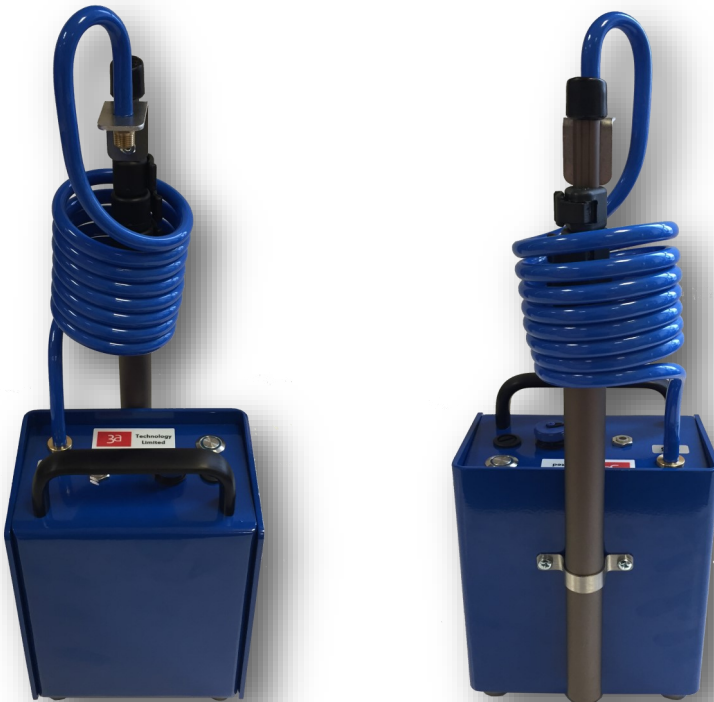
Pump Models

3a Technology Ltd. design and manufacture a number of different models/variations within the **JTF - 8** (8 Litres per minute) range.

An Adjustable flow rate from 0 - 13L/Min with a maximum run time of 7 - 8 hours.

JTF - 8T— features a **telescopic mast** without a timer display.

Figure 1.—



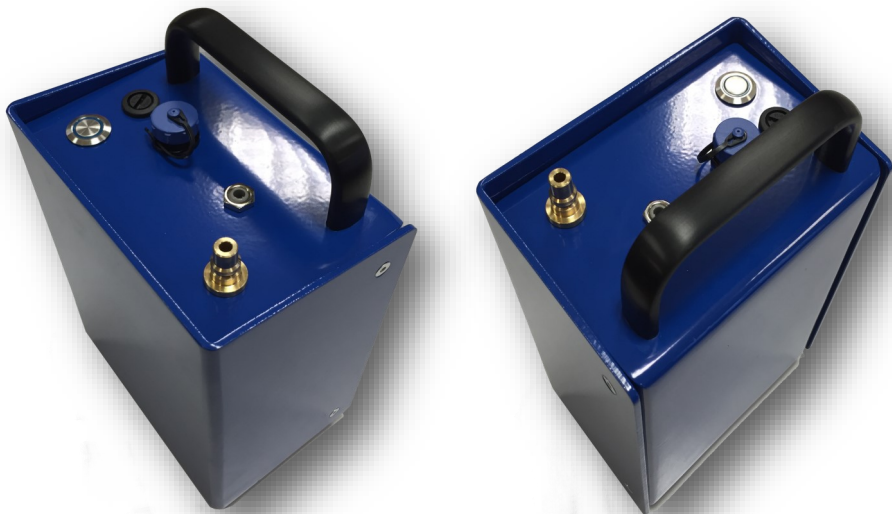
JTF - 8TT— features a telescopic mast and a timer display.

Figure 2.—



JTF - 8Q— features a quick release fitted mast without a timer display.

Figure 3.—



JTF - 8QT— features a quick release fitted mast and a timer display.

Figure 4.—



Pump Layout

- (1) On/Off Switch with Blue L.E.D.
- (2) Fuse Holder
- (3) Charge Socket
- (4) Flow Control Pot
- (5) Air Hose Inlet (Vacuum only)
- (6) Timer Display (Only on TT & QT Models)
- (7) Telescopic Mast (Only on T & TT Models)
- (8) Handle
- (9) Recoil Tubing (Only on T & TT Models)

Figure 5.—



PUMP OPERATION

Initial Setup

To use the JTF-8 air sampling pump you must make sure the pump is fully charged then setup the equipment as below. (See Figure 7.)

- 1) Attach the sample head/cowl (preloaded with a filter paper) to the screw fitting at the top of the mast.
- 2) With a foam pad or cowl adapter, attach it to one end on a length of tubing.
- 3) Then attach the remaining end of the tubing to the top of the flow meter.
- 4) Double check for any kinks or blockages in the tubing before switching the pump on.

***Note** - The fuse holder will be unscrewed on brand new pumps and will need screwing back in before switching the pump on. This procedure is done for shipping/transporting pumps, disconnecting the battery from the motor controller.

Figure 6.—



Figure 7.—



Setting/Calibrating Flow Rate

After the initial setup of the pump, sample head and flow meter, the pump can now be switched on to set the flow rate.

- 1) Switch the pump on, the blue L.E.D. light will illuminate when in operation.
- 2) With a trimmer or small screw driver, insert in to the flow control pot and rotate clockwise to increase the flow rate or rotate anti-clockwise to decrease the flow rate of the pump. **(See Figure 8.)**
- 3) When adjusting the flow control pot, the float on the flow meter should increase and decrease across the scale. The user will set the flow rate to the sampling requirements.
- 4) Once the flow rate is set according to the flow meter, disconnect the foam pad or cowl adapter and remove the flow meter from the initial setup sample train.
- 5) The pump should now be ready to carry out the air sampling tests.

Figure 8.—





Running the Pump

When running the pump, the total battery run time is around 7 - 8 hours max.

When the pump is coming towards the maximum run time, the low battery disconnect circuit will enable and the pump will automatically shut down.

At this point, the blue L.E.D. on the switch will no longer be illuminated, showing that the pump has totally shut down.

If the user tries to turn on the pump again, the blue L.E.D. on the switch will flash and the low battery disconnect will enable again, shutting down the pump.

Once the pump is charged again, the pump will then turn back on.

This feature provides protection for the battery pack ensuring it does not run down completely flat. (**See battery management for more details.**)

TIMER DISPLAY (TT & QT MODELS ONLY)

Timer Display Operation

The timer display used in the JTF-8 & 16 range counts in Hours, Minutes and Seconds from the moment the pump is switched on.

When the battery is low, the battery disconnect circuit will enable and stop the pump and the timer from running.

The timer will display the run time until the user pushes the blue manual reset button on the front panel causing it to reset back to zero for the next run test.

Figure 9.—



MAINTENANCE

Pump Maintenance & Service

Pump maintenance is essential for maintaining accuracy and extending the pump's life.

There are a number of ways to maintain the pump, one is by simply keeping the pump clean after every use.

The **JTF - 8** sampling pump range has an internal filter inside to prevent large particles of dust or broken filter papers from getting inside the pump assembly itself.

Another method of keeping the pump maintained is by returning it back to 3a Technology Ltd. for a frequent service (**usually once a year**) in which we carry out a diagnostics hardware test. This extensive test will check the performance of the pump in accuracy, flow range, leaks and overall runtime until the pump meets our standards

If parts prove to be damaged, we can replace them under warranty or at cost. (**See warranty for more details.**)

Battery Maintenance

Battery maintenance is also another key point to maintaining the pump.

The battery pack used in the JTF-8 range is a 10-cell nickel metal hydride pack. This battery pack must be fully charged and maintained to achieve its maximum performance.

Unlike nickel cadmium batteries, nickel metal hydride packs do not suffer from the memory effect.

When using new batteries, it may take a few or more cycles in order for the new battery to break in and achieve its full performance.

Batteries always have a small internal leakage current and self discharge when they are not being used over a long period of time. It is good practice to charge and top up batteries frequently in order to prevent batteries from depreciating in overall capacity and performance. A regular cycle of charging and discharging the battery by running the pump will also keep the battery pack active.

It is not good practice to leave batteries on standby/trickle charging and plugged in overnight or unattended as batteries may overcharge and damage themselves or lead to other unforeseen circumstances.

WARNINGS

- Do not use any other battery charger other than the specific type supplied by 3a Technology Ltd. as it may damage the batteries and void the warranty.
- Please maintain the battery pack frequently.
- Once the unit has run and the auto cut off is enabled, do not leave the pump on or fully discharged for long periods of time as this could lead to a decrease in performance.
- As stated under battery maintenance, do not over charge or discharge batteries, leave plugged in on standby/trickle charge for long periods of time or leave unattended or on overnight.
- Keep the unit clean and free of blockages.
- Do not reverse battery or charger polarity.
- The unit must not be switched on whilst charging. The charger is not a power supply.
- Please use the right size trimmer or screw driver as it may damage the flow control pot.
- Do not attempt to open/unseal the case. This will void the warranty.



WARRANTY

All products produced by 3a Technology Ltd come with a 1 year warranty in contrast with workmanship and other defects on or within the product.

***Note** - Batteries are only warranted for 6 months.

SPECIFICATION

Standard Kit Contents

1x JTF-8 Pump

1x Mast

1x Charger

General

Controls: Flow adjust pot, on/off switch

Timer Display: Hours, Minutes, Seconds 00:00:00

(TT & QT models only)

Dimensions (w/o mast): H21.5 x W13.5 x D9.5cm

Dimensions (w/ telescopic mast): H40 x W13.5 x D11.2cm

Dimensions (w/o quick release mast):

Weight (w/o mast):

Weight (w/ telescopic mast): 2.4kgs

Weight (w/ quick release mast) :

Power

Battery Pack: 12V 4.5Ah

Battery Type: Nickel Metal Hydride

Charger: 3a Tech - 0.9 Amp Charger

Charge Time: 4 - 5 Hours

Operating Spec

Flow Range: 0 - 13L/min (Litres per minute)

Run Time: 7 - 8 Hours @ 8L/min using a 1.2u Filter

3 - 4 Hours @12L/min using a 1.2u Filter

w/ = With w/o = Without



LIST OF FIGURES

Figure. 1 - JTF-8T.....	PAGE 3
Figure. 2 - JTF-8TT.....	PAGE 4
Figure. 3 - JTF-8Q.....	PAGE 5
Figure. 4 - JTF-8QT.....	PAGE 6
Figure. 5 - JTF-8 Pump Layout.....	PAGE 7
Figure. 6 - Foam Pad & Cowl Adapter.....	PAGE 8
Figure. 7 - Initial Setup.....	PAGE 9
Figure. 8 - Flow Adjust/Calibration.....	PAGE 10
Figure. 9 - Timer Display.....	PAGE 12



NOTES

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