ANALYT MESSTECHNIK



OPERATING MANUAL

SKC DataTrac Software for the Leland Legacy Pump

Installing DataTrac, connecting the Leland Legacy pump to a PC, monitoring and calibrating the pump live, programming timed and scheduled sampling runs, and turning the pump history into reports.

AMTC-MN-0022

Rev. 2 · October 2026

About this manual

SKC DataTrac is the Windows software that connects an SKC Leland Legacy high-flow sample pump to a PC. With it you watch and control the pump while it runs, apply a flow correction during calibration, send timed runs and multi-day sampling schedules to the pump, and read the pump's history back to the PC to print it, archive it or merge it with your sample data into a worker exposure profile.

The manual follows that order. Product description (p. 8) says what DataTrac does; installation and the first connection follow under Installation. Operation (p. 13) describes the windows you work in — Pump Manager, Real Time Monitor (p. 14), STEL and timed runs (p. 17) and the Pump Scheduler (p. 18) — and A worked example (p. 24) programs a full work week step by step. Pump history (p. 26) and Reports and calibration records (p. 27) deal with the data afterwards.

If you have not used DataTrac before, connect a pump and try the Real Time Monitor first: it shows straight away what the pump is doing and what each setting changes. For questions, contact Analyt-MTC (see Service, warranty and contacts (p. 32)).

Keep this manual for the lifetime of the product. The current revision is on the product page at analyt-mtc.com.

Conventions in this manual:

- Keys, buttons and menu entries are printed like this: **ToPump**.
- A menu path such as **View** › **Pump Scheduler** means that you open each entry in turn.

Abbreviations

Abbreviation	Meaning
COM	Serial communication port
LPT	Parallel printer port
PC	Personal computer
STEL	Short-term exposure (a short timed sample)
USB	Universal Serial Bus

How this manual marks information

⚠ WARNING

A hazardous situation which, if not avoided, could result in death or serious injury.

NOTICE

Practices not related to personal injury — damage to the product, the process or the sample.

Note
Information that helps understanding; never a hazard.

Cells and window names are also written in bold: **Program Edit Bar**. Keys on the pump keypad are shown as and .

Document information

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Revision history

Rev.	Date	Change
2	October 2026	Quality programme: new document type, number and identity pages.
1	October 2026	First issue.

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CHAPTER 1

Safety

Read this chapter before you install DataTrac and connect the Leland Legacy pump. Its safety messages concern where you may connect the pump, and schedules and data that DataTrac or a calibration changes or erases in the pump.

Intended use

DataTrac for the Leland Legacy is PC software for the SKC Leland Legacy sample pump. Use it with the DataTrac USB cable to monitor and calibrate the pump, to send timed runs and sampling schedules to it, and to read back, save and report its history.

Everything that concerns the pump itself — its battery pack, charging, sampling trains and maintenance — is described in the SKC Leland Legacy Sample Pump operating manual (AMTC-MN-0043). Read its Safety chapter before you use the pump.

Where to connect the pump

The Leland Legacy is not intrinsically safe and is not built for hazardous locations, as its operating manual states. This applies while the pump is connected to the PC as well.

⚠ WARNING

The Leland Legacy pump is not intrinsically safe. In a hazardous location it can ignite an explosive atmosphere, and the result can be a fire or an explosion. Never use the pump in a hazardous location, whether it is sampling, charging or connected to the PC. Connect it to the PC only in an area known to be non-hazardous.

Schedules and data in the pump

Writing a schedule, resetting the pump clock, the clear commands and a full calibration change or erase what the pump holds. Save the history and the schedule to the PC first if you still need them.

NOTICE

The Scheduler Options (p. 23) take effect only when the schedule is written to the pump. Options set after you click ToPump do not apply to this schedule, and an old history stays in the pump. Before you click ToPump, set the Scheduler Options (View › Scheduler Presets). If the pump history is to be cleared, clear it now with Tools › Clear History or set Clear History to Yes in the options.

NOTICE

The pump clock can be reset only after the pump history has been cleared. Clearing deletes the history in the pump. When you reset the pump time, DataTrac asks whether to clear the history; the time is not changed unless you agree. Save the history first if you still need it (see Saving and printing the history (p. 27)).

NOTICE

Tools › Clear Schedule deletes the schedule both on screen and in the memory of the connected pump. Save it first if you still need it.

NOTICE

The pump holds about 300 history entries. A history stays in the pump until it is cleared; once more than 300 operations have been recorded since the last clear, the oldest entries are overwritten and only the 300 most recent remain. Save the history to the PC before that happens.

NOTICE

A full calibration completely clears the DataTrac run time parameters and the Pump Schedule in the pump. Save the schedule as a program file before you calibrate.

CHAPTER 2

Product description

DataTrac runs the Leland Legacy pump from a PC. This chapter lists what the software does, what the PC needs and what you need to connect the pump.

What DataTrac does

With the pump connected, DataTrac lets you:

- see the pump's operating state live — flow rate, temperature, atmospheric pressure, run time and battery status;
- apply a flow correction while you calibrate the pump flow;
- program a sampling operation of up to 26 sequences, each at its own flow rate if needed — and prepare and save such a program even without a pump connected;
- download the run time data and the pump history to the PC and print the history file;
- record the sampling details on a sample sheet and print a worker exposure profile that combines them with the run data and pump history;
- record the date of the pump's calibration.

System requirements

- Microsoft Windows 7 or later
- At least 20 MB free hard-disk space
- A free USB port for the DataTrac USB cable

What you need

- DataTrac software for the Leland Legacy, with its instructions, a free download from the SKC website
- DataTrac USB cable for the Leland Legacy

Both come together as the DataTrac PC Software & Interface Kit, Cat. No. 877-92K.

CHAPTER 3

Installation

Installing DataTrac

Install DataTrac on the PC, connect the Leland Legacy pump with the DataTrac USB cable, and let the software check that the pump clock and the PC clock agree. After that, every window of the software is open to you.

First installation

1. Close all applications.
2. On the SKC website, open the product page **DataTrac Software for Leland Legacy** and select **DataTrac for Leland Legacy Download** to download DataTrac and install it on your PC.

When the installation is complete, the desktop carries a shortcut to the program (**Legacy.exe**, labelled **Leland Legacy**). If the installation fails, an error box tells you so; run the installation again.

To change installation settings later, run the installer again as for an update (steps 1 to 4 below) and choose **Modify** in the **Program Maintenance** window.



Figure 1. The **Leland Legacy** shortcut that the installation puts on the desktop.

Installing an update

Remove the installed version first, then install the new one.

1. Close all applications.
2. On the SKC website, open the product page **DataTrac Software for Leland Legacy** and select **DataTrac for Leland Legacy Download** to download the new version and install it.
3. In the installer **Welcome** window, click **Next**.
4. The **Program Maintenance** window offers three options: **Modify** changes the installation settings, **Repair** updates the installed software, **Remove** deletes the installed version from the hard disk. Removing it is the recommended way:
   a. Click **Remove**, then **Next**.
   b. In the **Remove the Program** window, click **Remove**. The **Removing the Program** window shows the progress.
   c. When the **Wizard Completed** window confirms that the old version has been removed, click **Finish**.
5. Install the new version as described under First installation (p. 9).

Connecting the pump to the PC

The USB cable runs from the pump's interface port to a USB port on the PC (Figure 2). DataTrac offers its full range of functions only while a pump is connected and active. Without a pump, the Pump Manager still opens, but with limited functions (see If the connection fails (p. 11)).

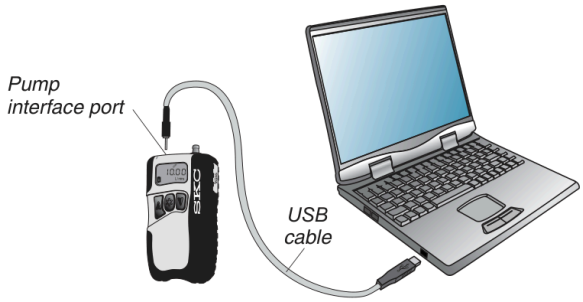


Figure 2. Hardware set-up. **1** Pump interface port · **2** DataTrac USB cable to a USB port of the PC

First connection

WARNING

The Leland Legacy pump is not intrinsically safe. In a hazardous location it can ignite an explosive atmosphere, and the result can be a fire or an explosion. Never use the pump in a hazardous location, whether it is sampling, charging or connected to the PC. Connect it to the PC only in an area known to be non-hazardous.

The first time the USB cable is plugged into a PC, Windows installs a driver for it.

Note
Do not press any keys while the driver for the USB serial port is being installed.

1. Connect the pump to the PC with the DataTrac USB cable.

   If Windows opens the **Found New Hardware Wizard**:

   a. Check that the wizard is about to install software for **USB Serial Port**. If it offers any other software, cancel the wizard and plug the USB cable into a different USB port.
   b. Select **Install the software automatically (Recommended)** and click **Next**.
   c. The **Installing USB Serial Port** window appears. The installation can take several minutes.
   d. When the **Completing the Found New Hardware Wizard** window reports success, click **Finish**.

2. Press any key on the pump keypad to activate the pump display.
3. Start DataTrac: double-click the **Leland Legacy** shortcut on the desktop.
4. In the **Leland Legacy Connection** window (Figure 3, left), click **Connect to Pump**.
5. If the connection works, the window shows a handshake icon (Figure 3, right); continue with Clock check (p. 12). If an error box appears instead, see If the connection fails (p. 11).

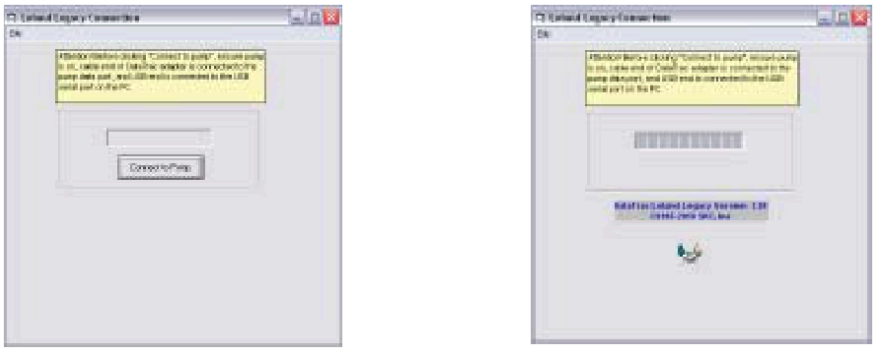


Figure 3. The **Leland Legacy Connection** window (left) and the handshake icon after a successful connection (right).

Later connections

Once the driver is installed, repeat steps 1 to 5 above without the wizard.

If the connection fails

When DataTrac cannot reach the pump, it shows a connection error box. Work through these checks:

1. Make sure the pump display is active — press a key on the pump.
2. Check the cable connections and click **Retry**.
3. If the error box appears again, check the COM port number Windows has given the USB cable: it must be between 1 and 9. See Changing the COM port (p. 11).

> **Note**
> **Ignore** in the error box opens the Pump Manager without a pump. Only part of the software can then be used — enough, for example, to prepare and save a program.

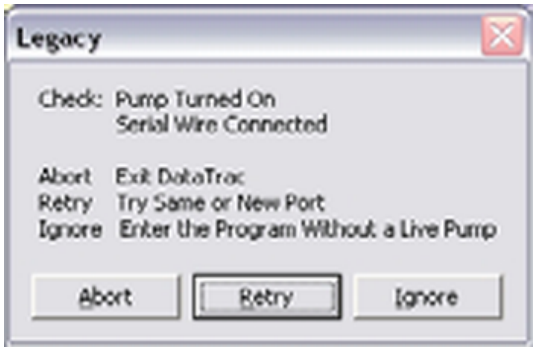


Figure 4. The connection error box.

Changing the COM port

1. Leave the DataTrac USB cable plugged into the USB port.
2. Open the **Start** menu, right-click **My Computer** (on later Windows versions **Computer** or **This PC**) and select **Manage**.
3. Select **Device Manager** and expand **Ports (COM & LPT)**.
4. Double-click **USB Serial Port** (shown as COM10 or similar) and open the **Port Settings** tab.
5. Click **Advanced**, choose a port between COM5 and COM9 in the **COM Port Number** list, and click **OK**.
6. Connect again as described under First connection (p. 10).

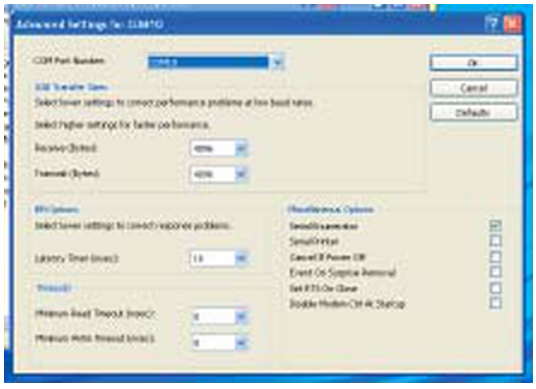


Figure 5. The **COM Port Number** list in the Windows port settings.

Clock check

Right after connecting, DataTrac compares the pump clock with the PC clock. If the dates differ by a day or more, or the times by more than 5 minutes, the **Time Discrepancy Alert** window opens.

1. Choose how to reconcile the date and time, and click **OK**.
2. DataTrac loads and opens the **SKC DataTrac Pump Manager** window (see Operation (p. 13)).

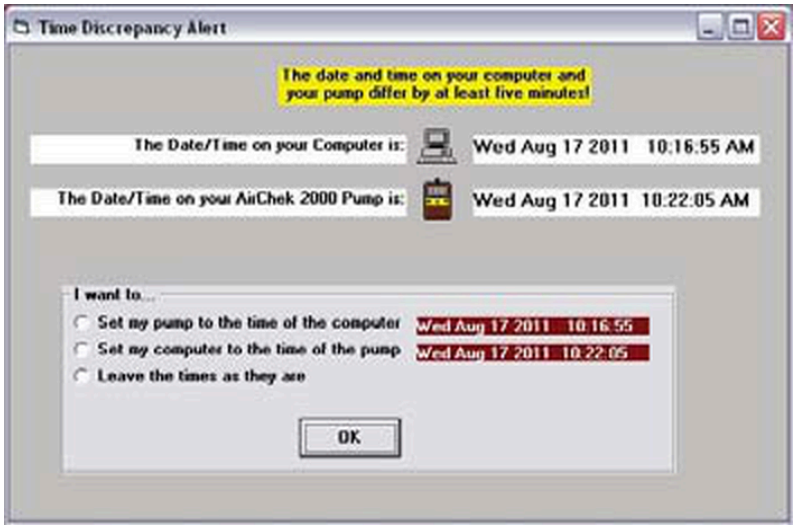


Figure 6. The **Time Discrepancy Alert** window.

CHAPTER 4

Operation

DataTrac is operated through its windows: the **SKC DataTrac Pump Manager** opens every other window; the **SKC Real Time Monitor** shows and controls the connected pump and applies the flow correction during calibration; timed runs and the **SKC Pump Scheduler** program its sampling; the **SKC Pump History**, the sample sheet and the reports keep the records on the PC.

The **SKC DataTrac Pump Manager** is the first window DataTrac opens and the hub of the software: every other window is opened from its menus.



Figure 7. The **SKC DataTrac Pump Manager** window, the first window DataTrac opens.

Menus

Command	What it does
FILE	
Exit	Closes DataTrac and returns to Windows.
VIEW	
Pump Scheduler	Opens the **SKC Pump Scheduler**, where sampling programs are built (Pump Scheduler (p. 18)).
STEL/Timed Run	Opens the **STEL/Timed Run** window (STEL and timed runs (p. 17)).
Sample Sheet	Opens the **Sample Sheet Setup** window (Sample sheet (p. 28)).
Report	Loads a report file saved on the PC (Worker exposure profile (p. 29)).
Pump History	Opens the **SKC Pump History** window (Pump history (p. 26)).
Archive History	Loads a history file saved on the PC (Archive History (p. 27)).
Calibration Info	Opens the **Calibration Info** window with the CalChek full-calibration data (CalChek full calibration data (p. 29)).
Real Time Monitor	Opens the **SKC Real Time Monitor** (Real Time Monitor (p. 14)).
TOOLS	
Set Date/Time	Opens the **Set Date/Time for Pump** window.
Temperature and Pressure Calibration	Opens the **Temperature and Barometric Calibration** window.

Command	What it does
HELP	
About	Shows the software versions on the PC and in the pump, the pump serial number, the date of the last full calibration, the language, and information about downloading the latest DataTrac version.
On-line Manual	Opens the latest DataTrac Software Operating Instructions (SKC Form 40085) as a PDF file. To download them, go to the Knowledge Center on the SKC website.

> **Note**
> Note the versions and the serial number shown under **Help › About** before you contact Analyt-MTC about the software or the pump.

Real Time Monitor

The **SKC Real Time Monitor** controls the connected pump directly. It shows what the pump is doing, updated every few seconds, lets you start and stop it, applies the flow correction during calibration and holds the pump's display units, battery type and flow-fault behaviour.

Open it with **View › Real Time Monitor** in the Pump Manager. The window also shows the serial number of the connected pump. Figure 8 shows the panels of the window; each is described below.

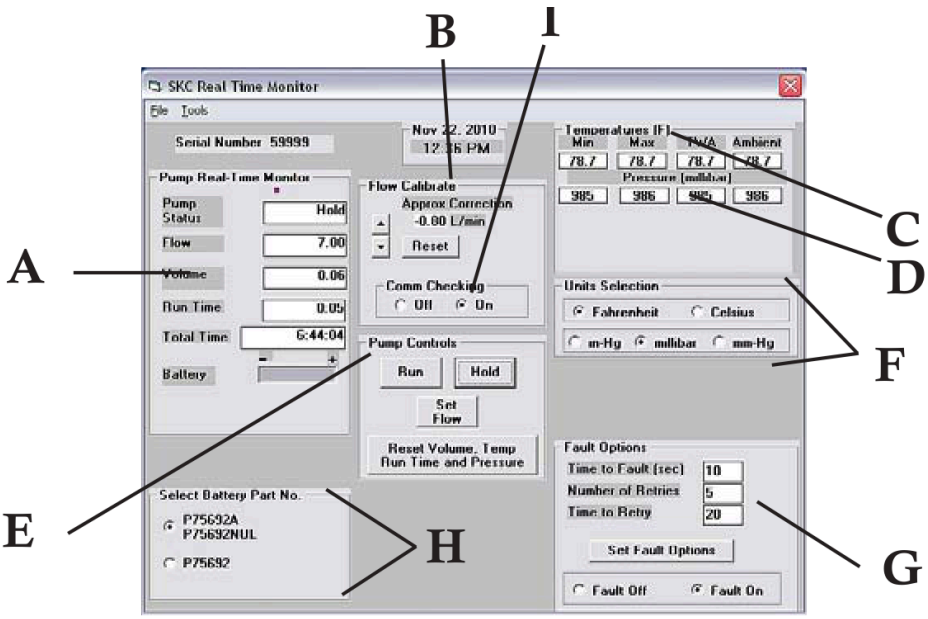


Figure 8. The **SKC Real Time Monitor**. **A** Pump status display (p. 14) · **B** Flow Calibrate (p. 15) · **C**, **D** Temperature and pressure (p. 16) · **E** Pump Controls (p. 16) · **F** Units Selection (p. 17) · **G** Fault Options (p. 17) · **H** Battery selection (p. 15) · **I** Comm Checking (p. 16)

Menus

Command	What it does
File › Exit	Closes the Real Time Monitor and returns to the previous window.
Tools › Clear Schedule	Deletes the sampling schedule programmed into the pump.
Tools › Clear STEL/Timed Run	Deletes the timed run programmed into the pump.
Tools › Clear History	Deletes the pump history.

Pump status display

Panel A shows the pump's current state and run data. The values are refreshed every 5 seconds.

Cell	Shows
Pump Status	The operating state of the pump; see the table below.
Flow	The present flow rate, in L/min.
Volume	The total volume of air pumped since the last reset.
Run Time	The total run time since the last reset.
Total Time	The total run time since the pump's factory calibration.
Battery	The battery charge as a coloured bar between − (empty, left) and + (full, right): the longer the bar, the fuller the battery.

Pump status readouts

Readout	The pump is …
Run	running.
Hold	on hold.
Fault (Run)	in flow fault while running.
Fault (Hold)	in flow fault and on hold.
Prog (Run)	running as part of a program.
Prog (Hold)	on hold within a running program.
Prog (Sleep)	asleep within a running program.
Sleep	in sleep mode.
Reset	reset: its run time data have been set to zero.
User Setup	being set up by a user on its own keypad.
Pre-Cal Flow	in single-point calibration; first calibration average, with date and time.
Post-Cal Flow	in single-point calibration; final calibration average, with date and time.
Timed Run	running a preset sampling time (ST).
Low Bat	reporting a depleted battery.
Flow Adjust	having its flow rate or flow correction adjusted by a user.

Battery type

The pump reports its battery status correctly only if DataTrac knows which battery pack is fitted. Read the part number on the label of the battery pack and click the button under **Select Battery Part No.** (panel H) that shows this part number.

Flow correction during calibration

Calibrate the Leland Legacy before every sample run. In panel B, the ▲ button increases the correction applied to the pump flow and ▼ decreases it; **Reset** sets the **Approx Correction** back to zero. The correction can be set within ±2.5 L/min.

While you adjust, the flow reading on the calibrator changes; the flow shown on the pump does not.

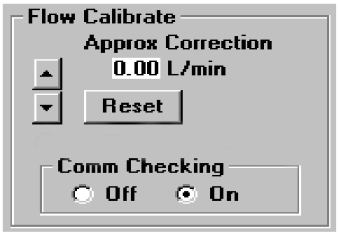


Figure 9. Flow Calibrate with **Comm Checking**.

1. Click **Reset**. The correction returns to 0.00 L/min.
2. Switch the pump on and connect its inlet to a primary standard calibrator. Read the flow on the calibrator.
3. Click ▲ or ▼ until the calibrator shows the flow rate you want.

4. After sampling, calibrate again to verify the flow.

> **Note**
> Changing the pump's flow setting also resets the correction to 0.00 L/min.

Example. You want 10 L/min. Set the pump to 10 L/min. If the calibrator reads 9.7 L/min, click ▯ until it reads 10 L/min; if it reads 10.5 L/min, click ▯ until it reads 10 L/min. Verify again after sampling.

Comm Checking

Comm Checking (panel I) watches the cable connection between PC and pump. It is on by default. If the cable comes off, an error message appears: reconnect the pump and click **Retry**.

To program several pumps one after another, switch Comm Checking **Off**: you can then unplug one pump and plug in the next without an error message each time.

> **Note**
> With Comm Checking off, the readings in the Real Time Monitor are no longer updated, and the pump goes to sleep five minutes after its last exchange with the PC.



Figure 10. The error message when Comm Checking finds no connection.

Temperature and pressure

Panels C and D show the temperature and the atmospheric pressure of the air entering the pump, each as four values:

Cell	Shows
Min	The lowest value during the program run.
Max	The highest value during the program run.
TWA	The time-weighted average of all values.
Ambient	The present value.

Min, Max and TWA are calculated over the pump's total run time. They stay in memory and keep counting into later runs until you reset them with **Reset Volume, Temp, Run Time and Pressure** (see Pump controls (p. 16)).

> **Note**
> The temperature shown is that of the air inside the pump, not the ambient air temperature.

Pump controls

Button	What it does
Run	Starts the pump (RUN).

Button	What it does
Hold	Puts the pump on hold (HOLD).
Set Flow	Opens the **Monitor Set Flow** window, which works like the Scheduler Set Flow window (Setting the flow rate (p. 21)).
Reset Volume, Temp, Run Time and Pressure	Clears the accumulated volume and time and the Min, Max and TWA values of temperature and pressure.

Units

Panel F sets the units the connected pump uses: **Fahrenheit** or **Celsius** for temperature, and **in-Hg** (inches of mercury), **millibar** or **mm-Hg** (millimetres of mercury) for atmospheric pressure.

Fault options

Panel G decides how the pump reacts when its flow is obstructed: how long it tolerates the fault, and how often and after what pause it tries to restart. Click a box and type the value.

Setting	Range	Meaning
Time to Fault (sec)	5–30 s	How long the pump stays in flow mode with a fault before it changes to Flow Fault Hold.
Number of Retries	0–25	How many times the pump tries to restart after going to Flow Fault Hold.
Time to Retry (sec)	5–600 s	The pause between the hold after a flow fault and the restart attempt.
Set Fault Options	—	Saves the values above.
Fault On / Fault Off	—	Switches flow-fault detection on or off. With **Fault Off**, no flow fault occurs.

STEL and timed runs

A timed run makes the pump sample for a fixed time — 15 minutes for a short-term exposure (STEL) sample, for example — and stop by itself. You set flow rate and run time in DataTrac; you start the run on the pump.

Open the window with **View › STEL/Timed Run** in the Pump Manager.

The run time can be set up to 99 999 minutes.

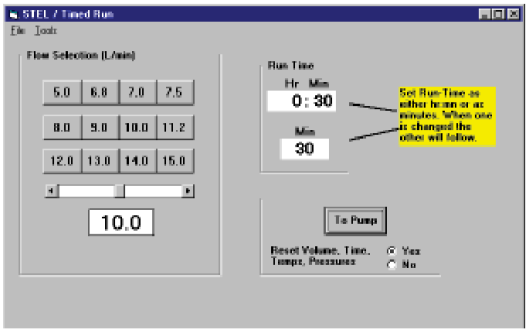


Figure 11. The **STEL/Timed Run** window.

Programming a timed run

1. Select the flow rate with the **Flow Selection (L/min)** buttons and the scroll bar.
2. Click the **Run Time** box and enter the duration in hours and minutes.
3. Click **To Pump**. The settings are sent to the connected pump.
4. To start the run, press the ▯ and ▯ keys on the pump at the same time. The pump stops automatically when the run time has elapsed.

Controls and menus

Control	What it does
Flow Selection (L/min)	Selects the pump flow rate.
Run Time	Sets the run time in hours and minutes.
To Pump	Sends the settings to the pump.
Reset Volume, Run Time, Temps, Pressures	Resets the Min, Max and TWA values in the Real Time Monitor.
File › Exit	Closes the STEL/Timed Run window.
Tools › Clear STEL in Pump	Cancels the sampling time programmed into the pump.
Tools › Change Default Flow Buttons	Shows how to change the default flow rates on the **Flow Selection** buttons.

Pump Scheduler

The **SKC Pump Scheduler** is where sampling programs are written. Each program is one sampling period with its flow rate, start and stop. Up to 26 programs form the pump schedule, which DataTrac writes into the pump; the pump then starts and stops on its own. Schedules can also be saved on the PC, loaded again from disk or read back from a pump, and printed.

Open the window with **View › Pump Scheduler** in the Pump Manager. A worked example (p. 24) goes through a complete schedule step by step.

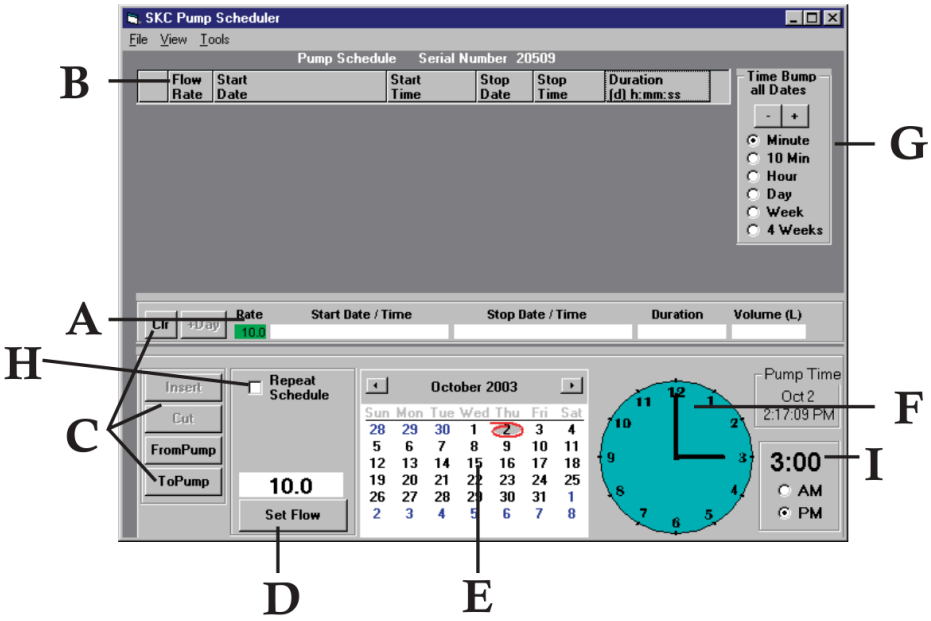


Figure 12. The **SKC Pump Scheduler**. **A** Program Edit Bar (p. 19) · **B** Pump Schedule (p. 19) · **C** Programming buttons (p. 19) · **D** Set Flow (p. 21) · **E**, **F** Calendar and clock (p. 21) · **G** Time Bump all Dates (p. 22) · **H** Repeat Schedule (p. 24) · **I** Digital time display (p. 22)

Menus

Command	What it does
FILE	
Open	Opens a program saved on disk.
Save	Saves the program on the PC.
Print	Prints the pump schedule shown on screen.
Exit	Closes the Pump Scheduler.

Command	What it does
VIEW	
Cycle Scheduler	Opens the **Cycle Scheduler** (Cycle Scheduler (p. 23)).
Preview Repeat Schedule	Opens the **Repeat Scheduler** summary (Repeat Scheduler (p. 24)).
Scheduler Presets	Opens the **Scheduler Options** window (Scheduler Options (p. 23)).
Clock Resolution	Sets the time steps of the clock face (Dates and times (p. 21)).
TOOLS	
Clear Schedule	Deletes the programmed pump schedule.
Clear History	Deletes the pump history.
Compare Pump Clock/PC Clock	Shows the pump and PC times and lets you synchronise them (Pump and PC clock (p. 22)).
Comm Checking	Switches communication checking on or off; a tick in the menu shows it is on (Comm Checking (p. 16)).

Program Edit Bar

A program is put together in the Program Edit Bar (A). Choose a value with the controls of the window — the **Set Flow** button, the calendar, the clock — and then click the cell it belongs in. A program holds these parameters:

Parameter	Value
Rate	Flow rate in L/min
Start Date, **Start Time**	When the program starts
Stop Date, **Stop Time**	When the program stops
Duration	Total run time of the program, in days, hours, minutes and seconds ([d] h:mm:ss)

Pump Schedule

The Pump Schedule (B) lists the programs you have inserted from the Program Edit Bar. Sending this list to the pump's memory programs the pump for the whole sampling operation. The schedule holds at most 26 programs; for longer or repetitive operations use the Cycle Scheduler (p. 23) or the Repeat Scheduler (p. 24).

> **Note**
> Before you enter the first program, open the Scheduler Options (p. 23) and set whether the run data are reset and the pump history is cleared when the schedule is sent. If the history is to be cleared, see the notice under Writing the schedule to the pump (p. 20).

Pump Schedule

	Flow Rate	Start Date	Start Time	Stop Date	Stop Time	Duration [d] h:mm:ss
1	9.0	Mon Nov 17 2003	8:00:00 AM	Nov 17	4:00:00	8:00:00
2	9.0	Tue Nov 18 2003	8:00:00 AM	Nov 18	4:00:00	8:00:00
3	9.0	Wed Nov 19 2003	8:00:00 AM	Nov 19	4:00:00	8:00:00
4	9.0	Thu Nov 20 2003	8:00:00 AM	Nov 20	4:00:00	8:00:00

Figure 13. The **Pump Schedule** with programs.

Programming buttons

Button	What it does
Clr	Erases the program in the Program Edit Bar.

Button	What it does
+Day	Moves the program in the Program Edit Bar on by one day — the quick way to enter the same start and stop times on consecutive days. The Repeat Scheduler (p. 24) does the same for whole weeks.
Insert	Adds the program in the Program Edit Bar to the Pump Schedule.
Cut	Takes the selected (highlighted) program out of the Pump Schedule and puts it in the Program Edit Bar for editing. Double-clicking the program number or the line number left of the rate column does the same.
FromPump	Reads the schedule stored in the connected pump and shows it in the Pump Schedule.
ToPump	Writes the Pump Schedule into the connected pump.

Editing a program

Double-click a program in the Pump Schedule. It leaves the schedule and appears in the Program Edit Bar, replacing whatever was there. Make the changes and click **Insert** to put it back.

Writing the schedule to the pump

NOTICE

The Scheduler Options (p. 23) take effect only when the schedule is written to the pump. Options set after you click ToPump do not apply to this schedule, and an old history stays in the pump. Before you click ToPump, set the Scheduler Options (View › Scheduler Presets). If the pump history is to be cleared, clear it now with Tools › Clear History or set Clear History to Yes in the options.

1. Click **ToPump**. A confirmation box asks you to write the program to the pump with the serial number shown.
2. Click **OK**. The message **Program Loaded** confirms the transfer.
3. If the pump already holds a program, DataTrac asks whether to overwrite it. Click **Yes** to replace it.

The pump display now shows the **PROG** icon. It stays on until every program of the schedule has run.

Note
As long as the PROG icon is shown, the pump cannot be operated by hand: the keypad takes over again only when all programmed runs are complete.



Figure 14. The confirmation dialog box after **ToPump**.



Figure 15. The **Program Loaded** dialog box.



Figure 16. The pump display with the **PROG** icon.

Reading a schedule from the pump

Click **FromPump** to display the schedule of a pump that has already been programmed.

Saving, opening and printing programs

File › Save stores the Pump Schedule on the PC as a program file with the extension **.pgm**. **File › Open** loads a saved program, and **File › Print** prints the schedule shown on screen.

Setting the flow rate

The **Set Flow** button (D) opens the **Scheduler Set Flow** window, which offers a set of numbered flow-rate buttons and a scroll bar.

1. Click the button with the flow rate you want. The value appears in the display cell.
2. Fine-tune it with the scroll bar if needed.
3. Click **OK**. The flow rate is entered in the **Rate** cell of the Program Edit Bar.

Previous returns the display to the flow rate set before.

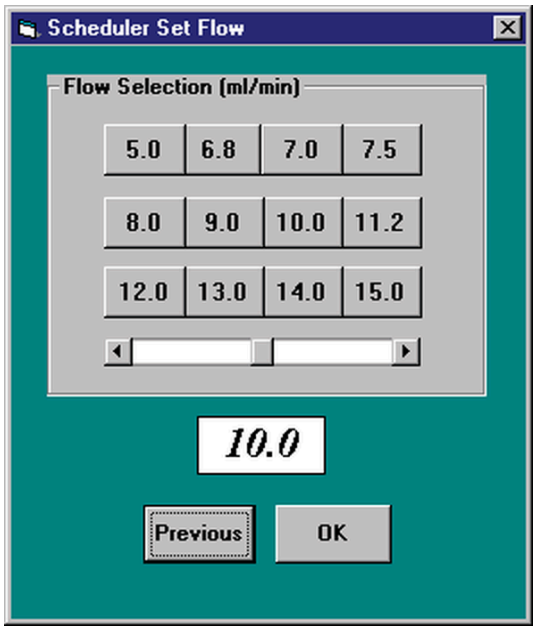


Figure 17. The **Scheduler Set Flow** window.

Dates and times

Calendar

The calendar (E) covers the period over which the pump can be programmed. Click a date, then click the **Start Date/Time** or **Stop Date/Time** cell of the Program Edit Bar to enter it. The arrows beside the month name change the month.

Clock

The clock (F) consists of a clock face, a digital display of the time set on the face, **AM** and **PM** buttons and the present date and time. Its rim is divided into steps of 10, 15 or 30 minutes or 1 hour. Choose the step under **View › Clock Resolution**, or click the rim between two numbers.

1. Set the clock resolution.
2. Click the rim of the clock face at the time you want, then **AM** or **PM**.
3. Click the **Start Date/Time** or **Stop Date/Time** cell of the Program Edit Bar.

Example. For 4:15 PM, choose **15 minutes** as the clock resolution, click the rim at 4:15 and click **PM**.

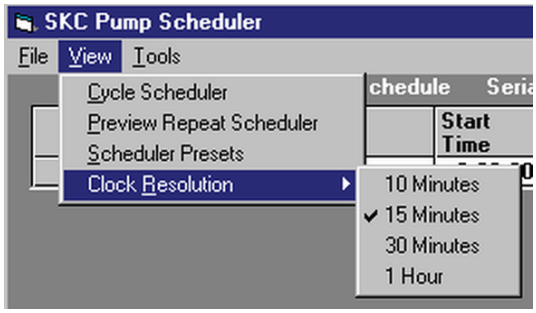


Figure 18. View › Clock Resolution in the Pump Scheduler.

Typing a time

For a time that does not fall on a step of the clock face, use the digital time display (I). Double-click it so that it is highlighted, and type the time, colon included. To change single digits, drag across them to select them. Then click the time cell of the Program Edit Bar.

Shifting all times

The **Time Bump all Dates** buttons (G) move every start and stop time in the Pump Schedule at once. Choose the interval — **Minute**, **10 Min**, **Hour**, **Day**, **Week** or **4 Weeks** — and click **+** to add it to all times or **–** to subtract it.

Pump and PC clock

Tools › Compare Pump Clock/PC Clock opens the **Date/Time Display** window. It shows the date and time of the PC and of the connected pump and lets you set one to the other, or leave both as they are.

NOTICE

The pump clock can be reset only after the pump history has been cleared. Clearing deletes the history in the pump. When you reset the pump time, DataTrac asks whether to clear the history; the time is not changed unless you agree. Save the history first if you still need it (see Saving and printing the history (p. 27)).

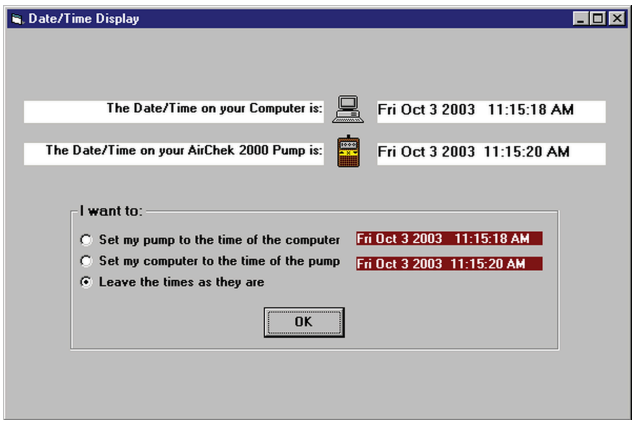


Figure 19. The **Date/Time Display** window.

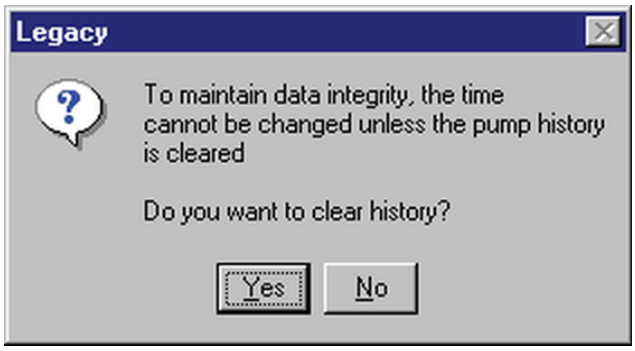


Figure 20. The **Clear History** message.

Scheduler Options

Open the **Scheduler Options** window with **View › Scheduler Presets**. The options are applied when the schedule is sent to the pump with **ToPump**. Click **OK** to keep the settings and return.

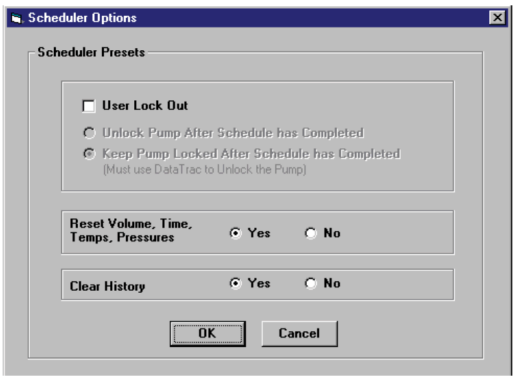


Figure 21. Scheduler Options.

Option	Effect
User Lock Out	Tick the box to lock the pump once the schedule has been sent: nobody can then change its operating settings on the keypad, though the data display can still be scrolled. Choose **Unlock Pump After Schedule has Completed** to release the lock automatically, or **Keep Pump Locked…** to keep it until it is released in DataTrac. Untick the box to switch the lock off.
Reset Volume, Time, Temps, Pressures	**Yes** sets the accumulated volume, the run time, the minimum and maximum temperatures and the pressure data to zero; **No** keeps them.
Clear History	**Yes** clears the pump history; **No** keeps it.

Cycle Scheduler

The Cycle Scheduler programs intermittent sampling — the pump runs, pauses and runs again — over several days in only a few entries. Open it with **View › Cycle Scheduler**. DataTrac builds the list of start and stop times from your entries and shows the total run time and total volume.

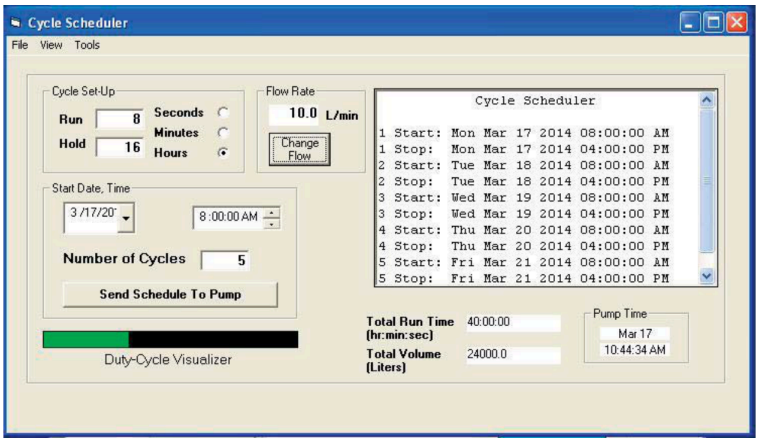


Figure 22. The **Cycle Scheduler**, here with five daily runs of 8 hours at 10 L/min.

Cell or button	What it does
Cycle Setup: Run	How long each cycle runs.
Cycle Setup: Hold	The pause between cycles.
Seconds, **Minutes**, **Hours**	The time unit for Run and Hold.
Flow Rate	The pump flow rate in L/min.
Start Date, Time	Date and time of the first cycle.
Number of Cycles	How many cycles to run.
Cycle Scheduler list	The cycle schedule DataTrac has compiled, with **Total Run Time** and **Total Volume**.

Cell or button	What it does
Duty-Cycle Visualizer	A bar showing what share of the time the pump will be running.
Send Schedule To Pump	Sends the cycle program to the connected pump.

Repeat Scheduler

The Repeat Scheduler repeats an existing Pump Schedule daily or weekly, for many weeks if needed. Within the schedule, each day can be different. It needs a Pump Schedule to repeat. After sending, **View › Preview Repeat Schedule** shows a summary with the total run time and volume.

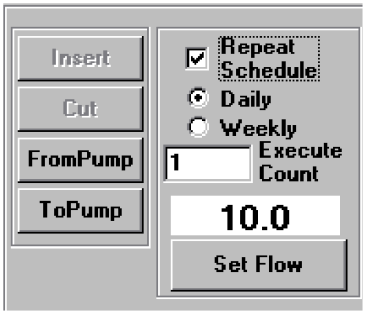


Figure 23. Repeat Scheduler controls.

1. In the Pump Scheduler, click the **Repeat Schedule** box until it shows a tick.
2. Click **Daily** or **Weekly** for the repeat interval.
3. Enter in **Execute Count** how many times the schedule is to be repeated.
4. Enter the flow rate in the **Set Flow** cell or with the **Set Flow** button, and click **ToPump**.

A worked example

The task: the Leland Legacy is to sample at a constant 10 L/min from 8:00 AM to 4:00 PM every day of one work week, Monday to Friday. This section enters that schedule in the Pump Scheduler, then shows how the Repeat Scheduler extends it over ten weeks and how the Cycle Scheduler sets up the same week in a single window.

Before you start

Open **View › Scheduler Presets** and choose whether the volume, time, temperature and pressure data and the pump history are to be reset when the schedule is sent (see Scheduler Options (p. 23)).

Entering Monday

1. **Flow rate.** Click **Set Flow**. In the **Scheduler Set Flow** window, click **10.0** and then **OK**. The **Rate** cell of the Program Edit Bar shows 10.0.
2. **Date.** Click a Monday in the calendar — not one that has already passed. Click the **Start Date/Time** cell, then the **Stop Date/Time** cell: both now carry that date.
3. **Start time.** Click the 8 on the clock face. The hands and the digital display show 8:00. Click **AM**, then the **Start Date/Time** cell: it shows 8:00 AM.
4. **Stop time.** Click the 4 on the clock face, click **PM**, then the **Stop Date/Time** cell: it shows 4:00 PM. The **Duration** cell now shows 8 hours, the length of the run.
5. **Insert.** Click **Insert**. The program — 10 L/min from 8:00 AM to 4:00 PM on Monday — appears in the Pump Schedule and also stays in the Program Edit Bar.

Adding the other days

Every day of the week needs its own program with the same settings.

1. Click **+Day**. Start and stop date in the Program Edit Bar move on by one day.
2. Click **Insert**. Tuesday's program joins the Pump Schedule.
3. Repeat both steps until Friday is in the schedule.

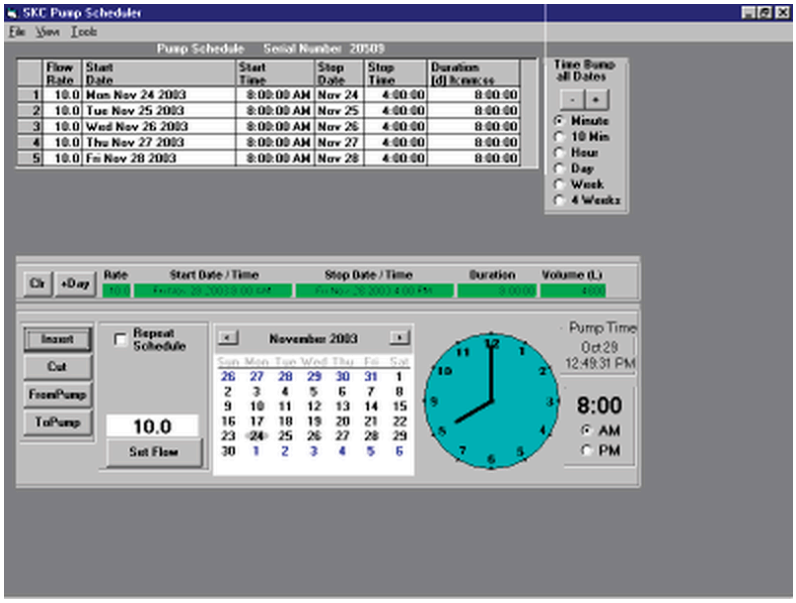


Figure 24. The Pump Scheduler with the pump program for the working week.

Sending, saving and printing

1. Check the **Scheduler Presets** once more, then click **ToPump**. DataTrac writes every program of the Pump Schedule into the pump.
2. To keep the schedule for later use or editing, choose **File › Save**. It is saved as a program file (.pgm).
3. To print it, choose **File › Print**.

> **NOTICE**
>
> **Tools › Clear Schedule** deletes the schedule both on screen and in the memory of the connected pump. Save it first if you still need it.

4. To erase the schedule on screen and in the pump, choose **Tools › Clear Schedule**.

Repeating the week ten times

If the same week is to be sampled for the next 10 weeks, the Repeat Scheduler saves entering it again (see Repeat Scheduler (p. 24)).

1. Set up the week in the Pump Scheduler as above.
2. At the bottom of the window, click the **Repeat Schedule** box so that it shows a tick.
3. Click **Weekly**.
4. Click the **Execute Count** box and enter 10.
5. Click **ToPump** to send the program to the pump.

The week as a cycle

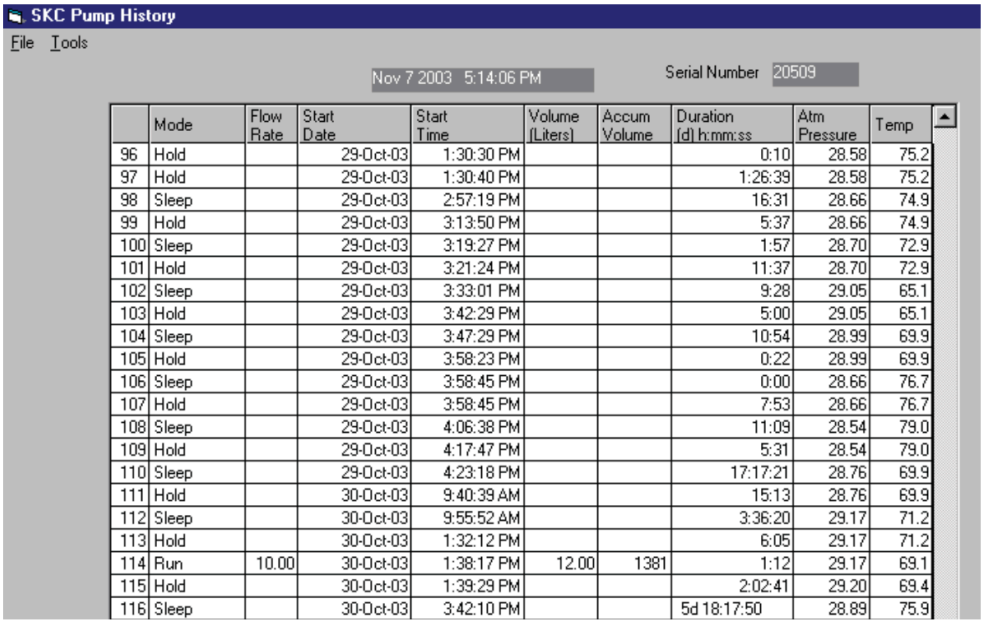
The Cycle Scheduler describes the week as five cycles of 8 hours running and 16 hours on hold (Figure 22).

1. In the Pump Scheduler, choose **View › Cycle Scheduler**.
2. Under **Start Date, Time**, select the Monday the week starts (17 March in Figure 22). Click the time box and set 8:00 AM with the arrow keys, or select the digit to change and type the new one.
3. In **Number of Cycles**, select the entry and type 5.
4. Under **Cycle Setup**, select the entry in **Run** and type 8; select the entry in **Hold** and type 16, the time between runs. Choose **Hours** as the unit.
5. Under **Flow Rate**, click **Change Flow**, select 10 L/min and click **OK**.
6. Check the compiled list of start and stop times. The **Duty-Cycle Visualizer** bar below shows how much of the time the pump will be running.
7. When the schedule is correct, click **Send Schedule To Pump**.

Pump history

The pump records every operation it performs — each run, hold, sleep, fault and calibration — in its history. The **SKC Pump History** window reads that record from the connected pump; you can print it, save it on the PC, and later reopen the saved file in **Archive History**.

Open the window with **View › Pump History** in the Pump Manager.



	Mode	Flow Rate	Start Date	Start Time	Volume (Liters)	Accum Volume	Duration (d) h:mm:ss	Atm Pressure	Temp
96	Hold		29-Oct-03	1:30:30 PM			0:10	28.58	75.2
97	Hold		29-Oct-03	1:30:40 PM			1:26:39	28.58	75.2
98	Sleep		29-Oct-03	2:57:19 PM			16:31	28.66	74.9
99	Hold		29-Oct-03	3:13:50 PM			5:37	28.66	74.9
100	Sleep		29-Oct-03	3:19:27 PM			1:57	28.70	72.9
101	Hold		29-Oct-03	3:21:24 PM			11:37	28.70	72.9
102	Sleep		29-Oct-03	3:33:01 PM			9:28	29.05	65.1
103	Hold		29-Oct-03	3:42:29 PM			5:00	29.05	65.1
104	Sleep		29-Oct-03	3:47:29 PM			10:54	28.99	69.9
105	Hold		29-Oct-03	3:58:23 PM			0:22	28.99	69.9
106	Sleep		29-Oct-03	3:58:45 PM			0:00	28.66	76.7
107	Hold		29-Oct-03	3:58:45 PM			7:53	28.66	76.7
108	Sleep		29-Oct-03	4:06:38 PM			11:09	28.54	79.0
109	Hold		29-Oct-03	4:17:47 PM			5:31	28.54	79.0
110	Sleep		29-Oct-03	4:23:18 PM			17:17:21	28.76	69.9
111	Hold		30-Oct-03	9:40:39 AM			15:13	28.76	69.9
112	Sleep		30-Oct-03	9:55:52 AM			3:36:20	29.17	71.2
113	Hold		30-Oct-03	1:32:12 PM			6:05	29.17	71.2
114	Run	10.00	30-Oct-03	1:38:17 PM	12.00	1381	1:12	29.17	69.1
115	Hold		30-Oct-03	1:39:29 PM			2:02:41	29.20	69.4
116	Sleep		30-Oct-03	3:42:10 PM			5d 18:17:50	28.89	75.9

Figure 25. The **SKC Pump History** window.

NOTICE

The pump holds about 300 history entries. A history stays in the pump until it is cleared; once more than 300 operations have been recorded since the last clear, the oldest entries are overwritten and only the 300 most recent remain. Save the history to the PC before that happens.

Menus

Command	What it does
FILE	
Print History	Prints the history shown.
Save History	Saves the history on the PC as a history file (.hst), which Archive History (p. 27) can open.

Command	What it does
Save as Comma-separated Text	Saves the history as a text file (.txt).
Exit	Closes the window and returns to the previous one.
TOOLS	
Clear History	Deletes the history on screen and in the pump's memory.
Options	Sets the history display and sample interval options. Changes also apply to the pump's own display.
Reload History	Reads the existing history again.

Saving and printing the history

- **Save: File › Save History** stores the history on the PC as a history file (.hst).
- **Save as text: File › Save as Comma-separated Text** stores it as a comma-separated .txt file for use in other programs.
- **Print: File › Print History** prints the history shown on screen.
- **Clear: Tools › Clear History** deletes it — on screen and in the pump.

What a history entry contains

Each line of the history is one operation. The **Mode** column uses the same readouts as the Real Time Monitor (see Pump status display (p. 14)), plus **FullCal** for the full, multiple-point calibration mode. The other columns:

Column	Shows
Flow Rate	Flow rate in L/min.
Start Date, **Start Time**	When the operation began.
Volume (Litres)	Flow rate multiplied by duration.
Accum. Volume	The sum of all earlier volumes on the history page, in litres.
Duration	The total running time of the operation.
Atm Pressure, **Temp**	Atmospheric pressure and temperature.

Archive History

The **Archive History** window shows a history file saved earlier on the PC; it stays empty until you open one. Open it with **View › Archive History** in the Pump Manager.

1. Choose **File › Open**, browse to the history file (.hst) and select it.
2. To print it, choose **File › Print**. **File › Exit** returns to the previous window.

Reports and calibration records

A report — the worker exposure profile — joins two things: the details of the sample you enter on a sample sheet (media, method, location and so on) and the pump history of the run. Reports can be printed or saved as text for a word processor or text editor. The chapter ends with the CalChek full-calibration record and how to check that a printed copy is genuine.

File types at a glance

Extension	Contains	Created in
.pgm	Pump schedule (program)	Pump Scheduler, **File › Save**
.hst	Pump history	Pump History, **File › Save History**

Extension	Contains	Created in
.txt	History or report as text	Pump History or report window
.stp	Sample sheet, all cells	Sample Sheet Setup, **File › Save Setup**
.tpl	Sample sheet template, ticked cells only	Sample Sheet Setup, **File › Save Template**
.rpt	Worker exposure profile	Sample Sheet Setup, **Option › Merge Pump** or **Merge File**

Sample sheet

The **Sample Sheet Setup** window (**View › Sample Sheet** in the Pump Manager) holds the information about a sample run that will be printed in the report. Click a cell and type; the Tab key moves to the next cell.

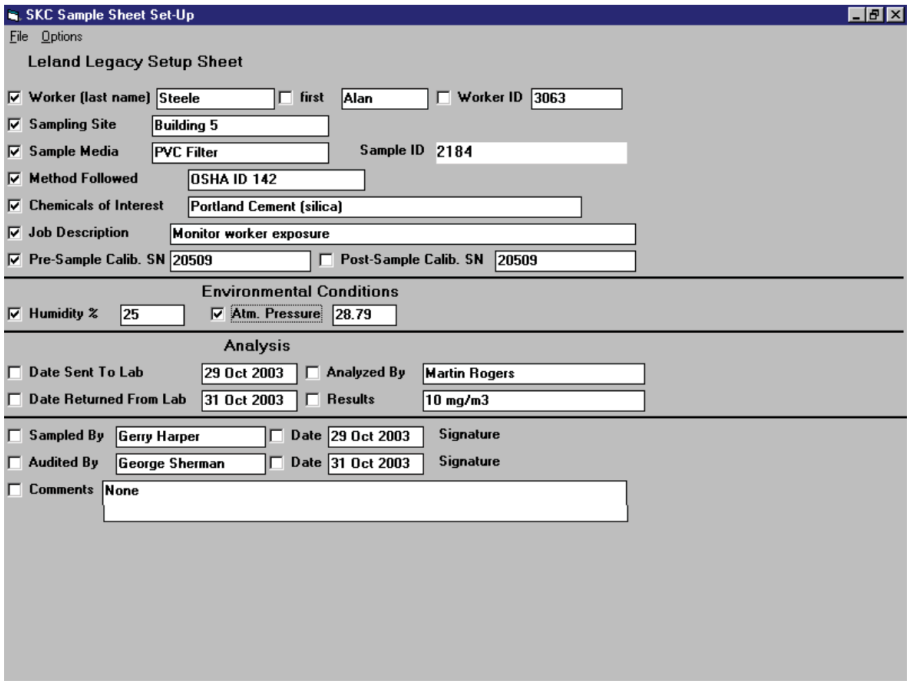


Figure 26. The **Sample Sheet Setup** window. The small square in front of each cell is its check box for templates.

Command	What it does
FILE	
New	Empties all cells.
Load Setup / **Save Setup**	Opens or saves a setup file (.stp) with the contents of all cells.
Load Template / **Save Template**	Opens or saves a template file (.tpl) with the contents of the ticked cells only.
Print	Prints the sample sheet or template shown.
Exit	Closes the window and returns to the previous one.
OPTION	
Merge Pump	Adds the history in the connected pump's memory to the sample sheet and creates a worker exposure profile.
Merge File	Adds the history from a saved history file to the sample sheet and creates a worker exposure profile.
Clear Sample Sheet	Deletes all data entered.

Setup files and templates

A **setup file** (.stp) keeps everything on the sample sheet. A **template** (.tpl) keeps only the cells whose check box is ticked, so information that rarely changes — the site, say, or the sampling method — need

not be typed again for every sample. Click a cell's check box until it shows a tick, then choose **File › Save Template**.

Worker exposure profile

A worker exposure profile combines the sample sheet shown on screen with a pump history — either from the connected pump or from a history file (.hst) on the PC.

1. Fill in or load the sample sheet.
2. Choose **Option › Merge Pump** to use the history of the connected pump, or **Option › Merge File** to use a saved history file.
3. The profile appears on screen and is saved on the PC as a report file (.rpt). Print it with **File › Print**.

In the report window, **File › Open** loads a saved report, **File › Save as Text** saves it as a .txt file that any word processor or text editor can read, **File › Print** prints it and **File › Exit** closes it. Saved reports can also be opened from the Pump Manager with **View › Report**.

CalChek full calibration data

After a full calibration of the pump with CalChek, DataTrac holds the results. Choose **View › Calibration Info** in the Pump Manager: the **Calibration Info** window shows the calibration results, the pump serial number and the date of the last full calibration. **File › Print** prints them; **File › Exit** returns to the Pump Manager.

NOTICE

A full calibration completely clears the DataTrac run time parameters and the Pump Schedule in the pump. Save the schedule as a program file before you calibrate.

Note

Clearing the history does not delete the full-calibration data. They are replaced only by the next full calibration.

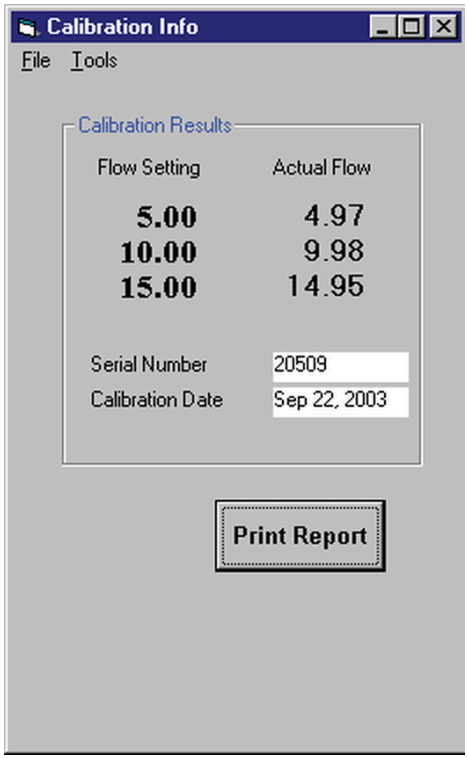


Figure 27. The **Calibration Info** window.

Checking a printed calibration report

Each printed calibration report carries a validation code. **Tools › Confirm Validation Code** in the Calibration Info window checks whether the values on a printout have been altered.

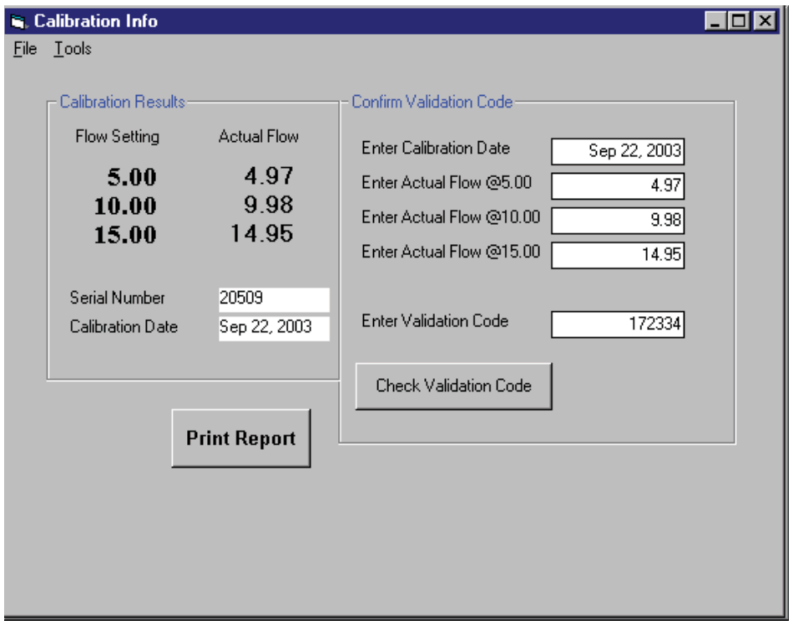


Figure 28. Calibration Info with the **Confirm Validation Code** fields.

1. In the Pump Manager, choose **View › Calibration Info** and click **Print Report**.
2. Choose **Tools › Confirm Validation Code**.
3. Enter the calibration date from the printed report in the form **mmm dd, yyyy** — for example **Aug 18, 2010**.
4. Enter each actual flow from the report, then the validation code.
5. Click **Check Validation Code**. A green bar reading **valid** confirms the data. A red box reading **invalid** means that the data were entered incorrectly or that the printout has been altered.

CHAPTER 5

Ordering information

Order from Analyt-MTC with the order code.

For any other version, contact Analyt-MTC.

Description	Order code
DataTrac PC Software & Interface Kit for the Leland Legacy: DataTrac software for the Leland Legacy and DataTrac USB cable	877-92K

CHAPTER 6

Service, warranty and contacts

Analyt-MTC is your contact for DataTrac and the Leland Legacy pump: the DataTrac USB cable or the complete DataTrac PC Software & Interface Kit (877-92K), help with installation and connection, and service, calibration and repair of the pump. Warranty claims are handled under Analyt-MTC's terms and conditions.

Contact

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www.analyt-mtc.com

Before you contact Analyt-MTC

Have the following at hand so that Analyt-MTC can help you quickly:

- the PC and pump software versions and the pump serial number from Help › About (Menus (p. 13));
- the Windows version of the PC and the COM port of the USB cable (Changing the COM port (p. 11));
- what happened, any error message, and the related entries in the pump history (p. 26) — a saved .hst file helps.

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