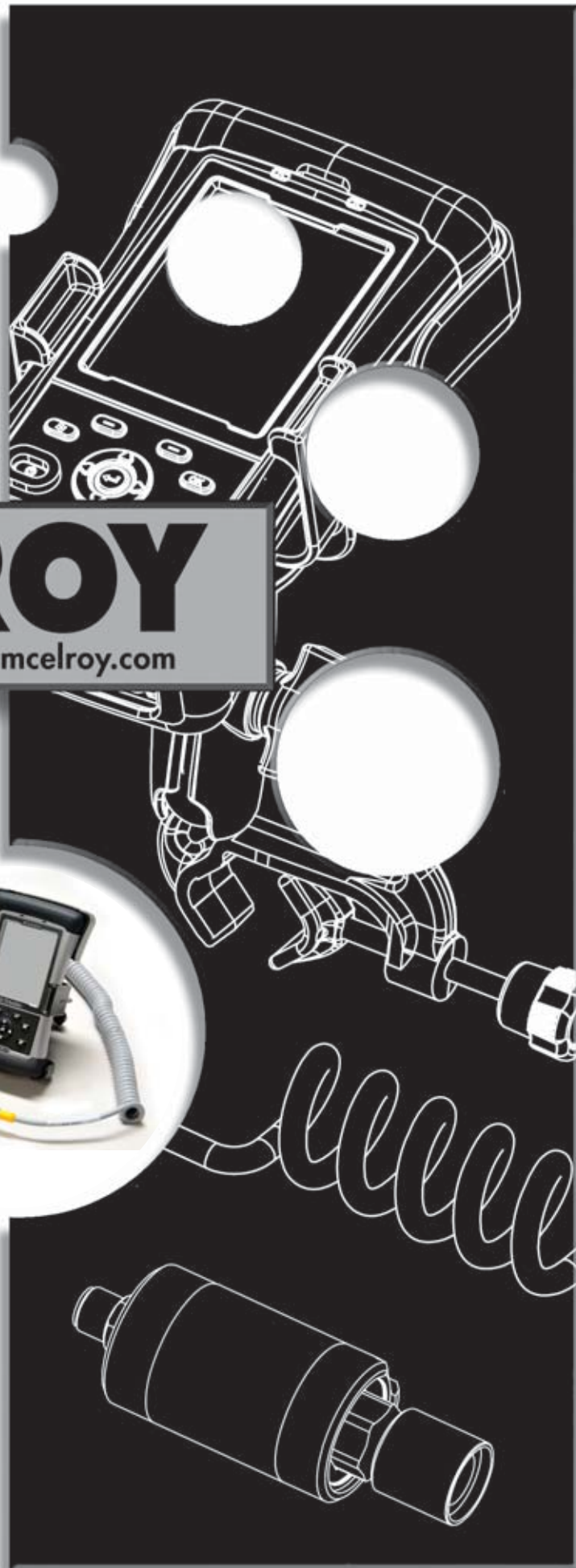


Operator's Manual



McELROY

www.mcelroy.com



Fusion Joint Verification
and Documentation

DataLogger® 5

Original Language: English

Manual: DL16301 Revision: B 12/14

This product and other products
could be protected by patents or
have patents pending. All the latest
patent information is available at
patent.mcelroy.com



Introduction



Thank You for purchasing this McElroy product.

McElroy's DataLogger® 5 system uses the DataLogger® handheld computer with a pressure sender to record information in the making of pipe fusion joints. The DataLogger 5 pressure sender reads pressures up to 3000 psi. The DataLogger 5 is compact, it logs a report for each joint and stores it on the handheld computer. The DL5m software is available in multiple languages and has FusionGuide™ visual assistant that color codes the produced graphs for better interpretation.

The McElroy DataLogger® 5 system consists of a pressure sender, the DataLogger handheld computer, and optional accessories. In addition to providing a user interface, the handheld computer is capable of storing hundreds of reports limited only by its memory capacity. For example, a computer with 20MB of user accessible memory can store up to 10,000 reports that are 2Kbytes in length. (Note: although the computer has the capacity, you are strongly advised to upload joint report data to DataLogger® Vault™ for permanent online storage and easy access).

IMPORTANT: Please take every precaution to safeguard your joint report files. Make backups often. McElroy cannot guarantee the safety and integrity of joint reports beyond the specification of component manufacturers and the handling of equipment in the field.

TX04598-10-30-13



McElroy University

For more than 30 years, McElroy has been the only pipe fusion machine manufacturer to continuously offer advanced training. Course offerings are meant to enhance your efficiency, productivity and safety in the proper use of McElroy machines. McElroy University classes are structured so that the skills learned and the machines used in each class closely match the machines found on pipelining jobsites. We offer training at our facility or yours. Our uniquely qualified McElroy University course instructors offer years of industry experience.

Tuition for each course includes lunches, course materials and a certificate of completion. Online registration, as well as up-to-date course offerings and dates, is available at www.mcelroy.com/university

This manual is intended as a guide only and does not take the place of proper training by qualified instructors. The information in this manual is not all inclusive and can not encompass all possible situations that can be encountered during various operations.

TX04659-03-24-14



MU2-03-13-14



Warranty



LIMITED WARRANTY

McElroy Manufacturing, Inc. (McElroy) warrants all products manufactured, sold and repaired by it to be free from defects in materials and workmanship, its obligation under this warranty being limited to repairing or replacing at its factory and new products, within **5 years** after shipment, with the exception of purchased items (such as electronic devices, pumps, switches, etc.), in which case that manufacturer's warranty applies. Warranty applies when returned freight is prepaid and which, upon examination, shall disclose to have been defective. This warranty does not apply to any product or component which has been repaired or altered by anyone other than McElroy or has become damaged due to misuse, negligence or casualty, or has not been operated or maintained according to McElroy's printed instructions and warnings. This warranty is expressly in lieu of all other warranties expressed or implied. The remedies of the Buyer are the exclusive and sole remedies available and Buyer shall not be entitled to receive any incidental or consequential damages. Buyer waives the benefit of any rule that disclaimer of warranty shall be construed against McElroy and agrees that such disclaimers herein shall be construed liberally in favor of McElroy.

RETURN OF GOODS

Buyer agrees not to return goods for any reason except upon the written consent of McElroy obtained in advance of such return, which consent, if given, shall specify the terms and conditions and charges upon which any such return may be made. Materials returned to McElroy, for warranty work, repair, etc., **must have a Return Material Authorization (RMA) number**, and be so noted on the package at time of shipment. For assistance, inquiry shall be directed to:

McElroy Manufacturing, Inc.
P.O. Box 580550
833 North Fulton Street Tulsa, Oklahoma 74158-0550
PHONE: (918) 836-8611, FAX: (918) 831-9285.
EMAIL: techsupport@mcelroy.com

Note: Certain repairs, warranty work, and inquiries may be directed, at McElroy's discretion, to an authorized service center or distributor.

DISCLAIMER OF LIABILITY

McElroy accepts no responsibility of liability for fusion joints. Operation and maintenance of the product is the responsibility of others. We recommend qualified joining procedures be followed when using McElroy fusion equipment.

McElroy makes no other warranty of any kind whatever, express or implied; and all implied warranties of merchantability and fitness for a particular purpose which exceed the aforesaid obligation are hereby disclaimed by McElroy.

PRODUCT IMPROVEMENT

McElroy reserves the right to make any changes in or improvements on its products without incurring any liability or obligation to update or change previously sold machines and/or the accessories thereto.

INFORMATION DISCLOSED

No information of knowledge heretofore or hereafter disclosed to McElroy in the performance of or in connection with the terms hereof, shall be deemed to be confidential or proprietary, unless otherwise expressly agreed to in writing by McElroy and any such information or knowledge shall be free from restrictions, other than a claim for patent infringement, is part of the consideration hereof.

PROPRIETARY RIGHTS

All proprietary rights pertaining to the equipment or the components of the equipment to be delivered by McElroy hereunder, and all patent rights therein, arising prior to, or in the course of, or as a result of the design or fabrication of the said product, are exclusively the property of McElroy.

LAW APPLICABLE

All sales shall be governed by the Uniform Commercial Code of Oklahoma, U.S.A.

Register your product online to activate your warranty: www.McElroy.com/fusion

(Copy information listed on the machine nameplate here for your records).

Model No. _____

Serial No. _____

Date Received _____

Distributor _____



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Tulsa, Oklahoma, USA
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All product names or trademarks are property of their respective owners. All information, illustrations and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.



Equipment Safety



Safety Alerts



This hazard alert sign appears in this manual. When you see this sign, carefully read what it says. **YOUR SAFETY IS AT STAKE.**

You will see the hazard alert sign with these words: **DANGER**, **WARNING**, and **CAUTION**.



WR00051-11-30-92

DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

Indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.

In this manual you should look for two other words: **NOTICE** and **IMPORTANT**.

NOTICE: can keep you from doing something that might damage the machine or someone's property. It may also be used to alert against unsafe practices.

IMPORTANT: can help you do a better job or make your job easier in some way.



TX00030-12-1-92

Read and Understand

Do not operate this equipment until you have carefully read, and understand all the sections of this manual, and all other equipment manuals that will be used with it.

Your safety and the safety of others depends upon care and judgment in the operation of this equipment.

Follow all applicable federal, state, local, and industry specific regulations.

McElroy Manufacturing, Inc. cannot anticipate every possible circumstance that might involve a potential hazard. The warnings in this manual and on the machine are therefore not all inclusive. You must satisfy yourself that a procedure, tool, work method, or operating technique is safe for you and others. You should also ensure that the machine will not be damaged or made unsafe by the method of operation or maintenance you choose.



WR00052-12-1-92

TX02946-4-15-09



Equipment Safety



General Safety

Safety is important. Report anything unusual that you notice during set up or operation.

LISTEN for thumps, bumps, rattles, squeals, air leaks, or unusual sounds.

SMELL odors like burning insulation, hot metal, burning rubber, hot oil, or natural gas.

FEEL any changes in the way the equipment operates.

SEE problems with wiring and cables, hydraulic connections, or other equipment.

REPORT anything you see, feel, smell, or hear that is different from what you expect, or that you think may be unsafe.



SAFE1ST1222-92

TX00114-4-22-93

Wear Safety Equipment

Wear a hard hat, safety shoes, safety glasses, and other applicable personal protective equipment.

Remove jewelry and rings, and do not wear loose-fitting clothing or long hair that could catch on controls or moving machinery.



WR00053-12-2-92

TX00032-4-7-93

Equipment is Not Explosion Proof

⚠ DANGER DataLogger[®] equipment is not explosion proof. Operation of equipment in an explosive atmosphere may result in serious injury or death.

Do not operate this equipment in an explosive atmosphere.



WR00034-11-30-92

TX04388-05-23-14



Equipment Safety



Units With Hydraulics

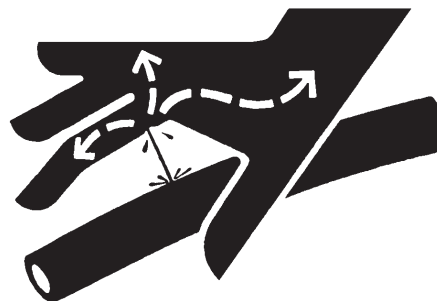
For hydraulically operated equipment, it is important to remember that a sudden hydraulic oil leak can cause serious injury, or even be fatal if the pressure is high enough.

⚠ WARNING

Escaping fluid under pressure can penetrate the skin causing serious injury. Keep hands and body away from pinholes which eject fluid under pressure. Use a piece of cardboard or paper to search for leaks. If any fluid is injected into the skin, it must be immediately removed by a doctor familiar with this type of injury.

NOTICE: Wear safety glasses, and keep face clear of area when bleeding air from hydraulic system to avoid spraying oil into eyes.

TX03077-2-16-10



WR00078-4-8-93

Do Not Stare into Laser Beam

⚠ CAUTION

Do not stare into beam of the laser. Damage to eyes could occur. Point the laser only at the object you are scanning.



WR00101-10-16-13

TX04599-10-30-13

Heater Is Hot

⚠ CAUTION

The heater is hot and will burn clothing and skin. Keep the heater in its insulated heater stand or blanket when not in use, and use care when heating the pipe.

NOTICE: Use only a clean non-synthetic cloth such as a cotton cloth to clean the heater plates.

TX00104-8-12-94



WR00030-2-10-93

Fusion Machine Procedures

Familiarize yourself with the fusion machine you will be working with by reading the Manufacturer's manuals for the machine. Read the Safety Information to avoid potentially dangerous situations.

NOTICE: Follow the pipe manufacturer's procedures or appropriate joining standard for fusing the pipe being used.

Failure to adhere to proper machine and fusion procedures can result in damage to the machine and bad fusion joints.



WR00079-2-7-96

TX04403-3-2-12



Overview



The DataLogger® 5

McElroy's DataLogger® 5 system uses a handheld computer with a pressure sender to record information in the making of pipe fusion joints. The DataLogger 5 pressure sender reads pressures up to 3000 psi. The DataLogger 5 is compact, it logs a report for each joint and stores it on the handheld computer. The DL5m software is available in multiple languages and has FusionGuide™ visual assistant that color codes the produced graphs for better interpretation.



TX04608-11-12-13

Pressure Sender

The pressure sender is connected to the handheld computer via a cable. The cable can be replaced easily by unscrewing from both ends. The pressure sender taps into the hydraulic system of a fusion machine via a quick-disconnect. Pressure reading is displayed on the computer screen as long as the handheld computer is turned on and communicating with the pressure sender. The serial number and pressure rating of the sender is engraved on the pressure sender.

NOTICE: Do not store pressure probe with adapter fitting(s) attached. Stored pressure can damage the pressure sender.

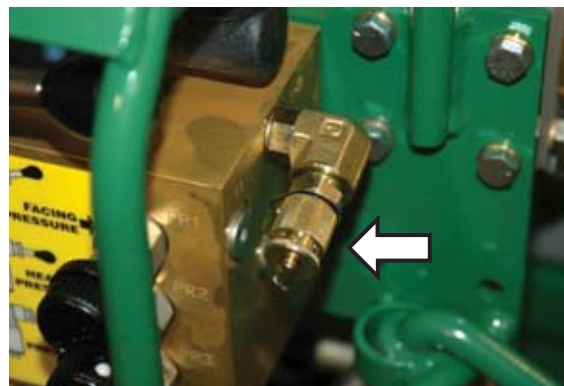


PH04659-2-8-12

TX04609-11-12-13

Connecting To A Fusion Machine

NOTICE: The fusion machine must have a hydraulic quick disconnect for connecting the pressure sender. If the machine does not have one, contact your distributor for the proper adapter or retrofit kit.



PH03026-4-13-05

TX04391-2-29-12

DataLogger Handheld Computer

The DataLogger Handheld Computer is a compact and rugged handheld computer with a high resolution screen, camera, GPS, and barcode scanner. The handheld runs the Windows® Mobile operating system.

The software program **McElroy DL5m** runs on the handheld computer to provide a user interface and joint report storage. The DL5m is pre-installed with multiple languages.



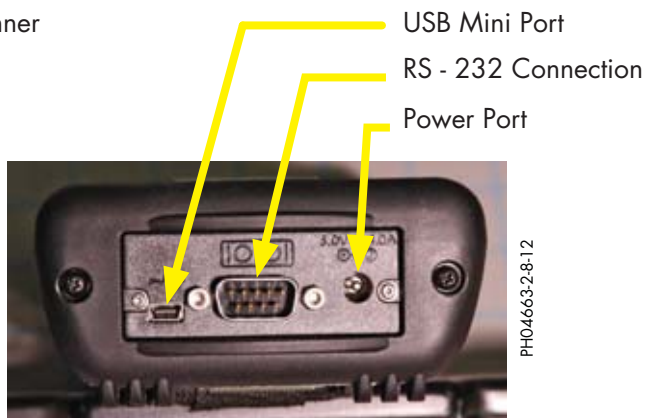
PH04932-8-30-13



Left Soft Key	Makes the left selection at the bottom of the screen.
Right Soft Key	Makes the right selection at the bottom of the screen.
Windows® Key	This Key is not used with the DL5m software.
OK Key	This Key is not used with the DL5m software.
Arrow Pad	Four directional buttons for navigating and changing values.
Enter Key	Confirms or activates selections in the software.
Quick Launch Key	Activates the camera focus.
Power Key	Quick press turns off the handheld computer. Hold for 1 second to turn off the backlight. Hold for 3 seconds for the utility/reset menu. (The Power Key will not function during the logging process.)



PH04965-10-22-13



PH04663-2-8-12

TX04600-11-12-13



Overview



DataLogger Software

The DataLogger software program **McElroy DL5m** provides a user interface for the logging of fusion joints and joint report storage. The DL5m is pre-installed with multiple languages.

The DataLogger software features:

User Interface: Easy to navigate user interface to make logging fusion joints simple.

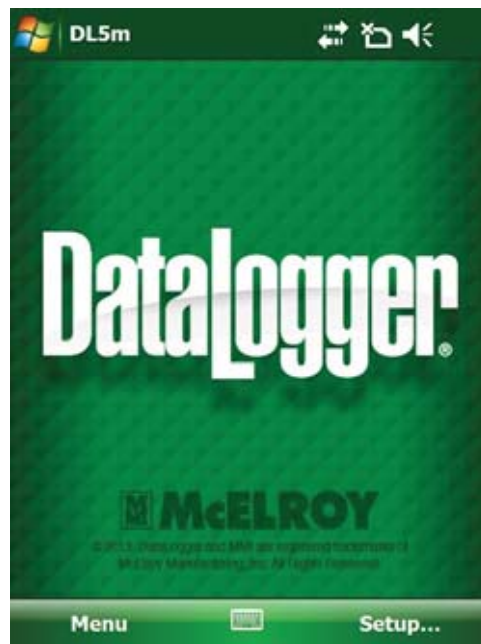
Multi-Point Heater Temperatures: Record heater measurements up to 8 points on the heater.

Barcode Scanning: Scan the bar code on the pipe and have that information populate the pipe information in the software.

Take Photos: Take up to 4 photos of fusion joint related material.

FusionGuide™: Visually analyze fusion joint report graphs.

Fusion Standards: The DataLogger Software comes preloaded with many common fusion standards.



PH04963-10-24-13



DataLogger® Vault™

The DataLogger® Vault™ is a new software application from McElroy that provides joint data storage and analysis at no cost to users of the McElroy DataLogger version 3, 4, and 5. The DataLogger Vault is a secure, online application that allows users to view and analyze their joint data from almost any device, from almost any location. All that is needed is a device such as a PC, Mac, smartphone, tablet, etc. that has a browser and access to the Internet.

DataLogger 3, 4 and 5 data all reside together within the DataLogger Vault so it is not necessary to use multiple pieces of software to view joint data. And with features such as automatic grouping and sorting of joint data, custom tagging and filtering, it's very easy to sort, view and analyze joint data by job, operator, machine, etc. without having to re-key data into a spreadsheet or database application.

If you do not already have access to the DataLogger Vault, we recommend creating your free account prior to fusing pipe with the DataLogger 5 so that you will be ready to take full advantage of the DataLogger 5's advanced features.

To create your free DataLogger Vault account, and for more information (including complete instructions), visit: <http://vault.mcelroy.com>.

The screenshot displays the DataLogger Vault web application interface. The top navigation bar includes links for Home, Upload Joint Reports, and Log Out. The main content area is titled 'Joint Information' and shows details for Reference Number 0114. The interface is divided into several sections: 'Job Details', 'Fusion Machine', 'Pipe Specifications', and 'Pressures'. The 'Job Details' section includes fields for Job Number (1), Joint Time (2010-01-01 08:25:54.8), Job (DL3 VAULT TEST), Operator (Ted Operator), and Notes. The 'Fusion Machine' section lists Machine Name (C21087), Machine Model (#28 mF), and Fusion Area (4.75 sq). The 'Pipe Specifications' section shows Pipe Material (R6x710), Pipe Size (4" IPS), and Wall Thickness (0.813). The 'Pressures' section displays a table of pressure readings for various gauges.

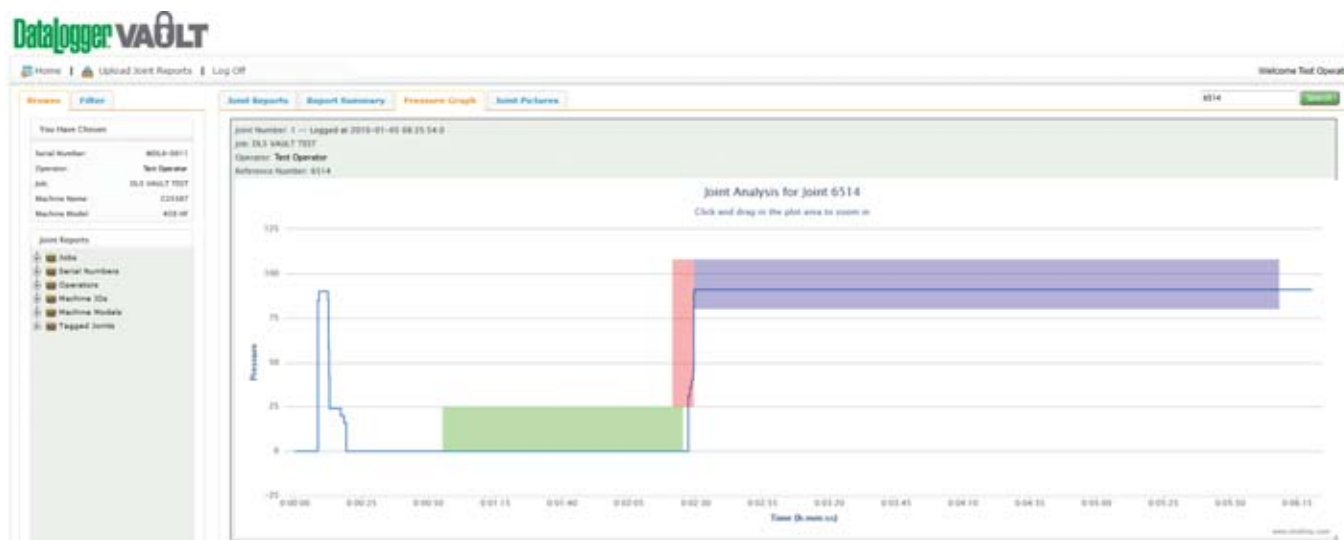
Gauge Pressure	Interfacial	Gauge
Brake-up	75 psi	94 psi
Heat Soak		21 psi
Force	75 psi	94 psi
Cool		

Joint Information

PH04968-10-30-13



DataLogger® Vault™



FusionGuide™



Image of Completed Fusion Joint

Introduction

The DataLogger 5 features multipoint heater temperature entry, camera, GPS, barcode scanning, and FusionGuide™ visual fusion joint analysis.

The handheld computer comes with McElroy default settings and the DL5m software preloaded.

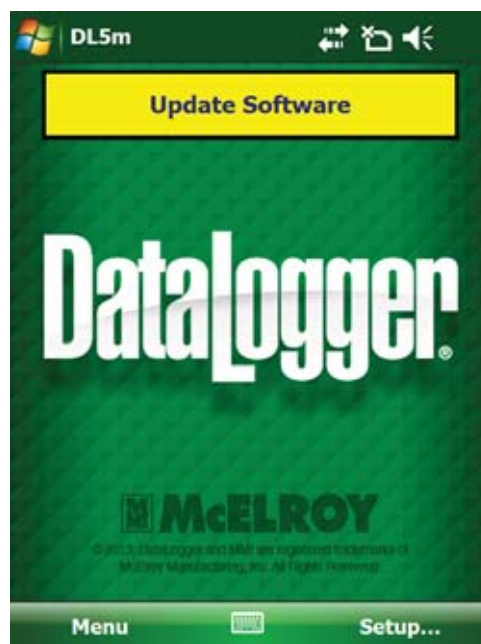
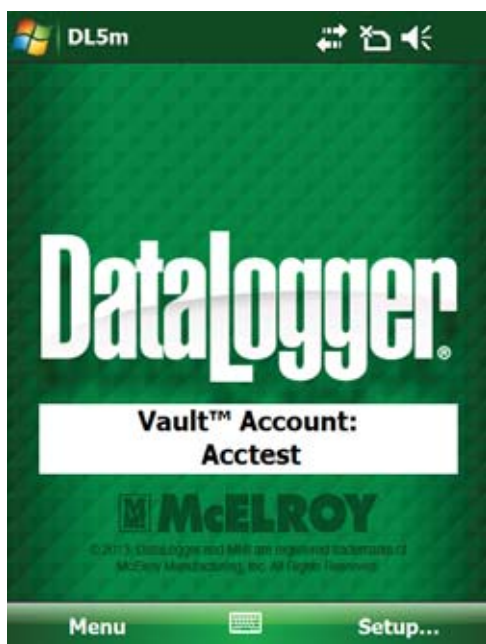
Menu items can be accessed by the tapping corresponding text label on the screen or by pushing the buttons on the keypad. For instance to access the **Settings...** menu item, push the **Left Soft Key** below the word **Menu** to reveal the DL5 menu then use the **Up/Down Keys** to navigate to **Settings...** then push **Enter**:



Access to program settings and logging starts from the main screen:

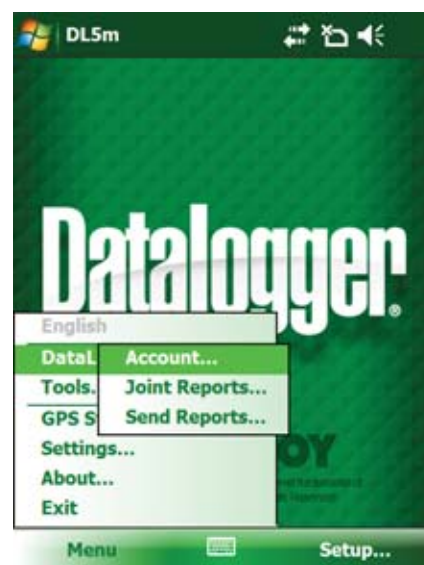
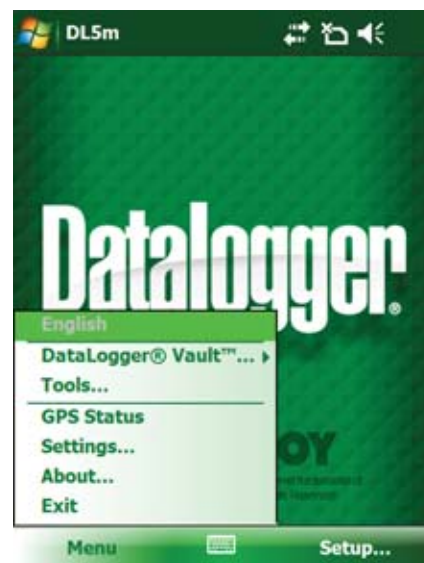
Below the DataLogger logo on the main screen, the current Vault account user is displayed.

When connected to the internet and an update is available for the software, an update software box will appear above the DataLogger logo on the main screen. Press the update software box to download and install the software update.



Main Menu

- 1) **English** - When a language other than English is used and the "Toggle to English" feature is enabled, this menu item toggles the display language to English.
- 2) **DataLogger® Vault™...** - Change the current Vault account to send joint reports to. View joint reports stored on the handheld computer. Send joint reports from the handheld computer to the DataLogger Vault.



- a) **Account...** - A DataLogger Vault account is required to automatically send joint reports. Go to <http://vault.mcelroy.com> and create a new account.



An account is required to automatically send joint reports to the DataLogger® Vault™.

Please set up a New account or use a registered account.



Main Menu (cont'd)

Under **Options...** there is two options for DataLogger Vault Account.

Registered... - Enter a username and password for a registered account.

Delete... - Allows you to delete the username and password information stored on the handheld device for the current Vault account. This will not remove any joint reports stored on the handheld device.



An account is required to automatically send joint reports to the DataLogger® Vault™.

Please set up a New account or use a registered account.



User Name

Password



PH05329-12-03-14

PH05330-12-03-14

PH05331-12-03-14

Main Menu (cont'd)

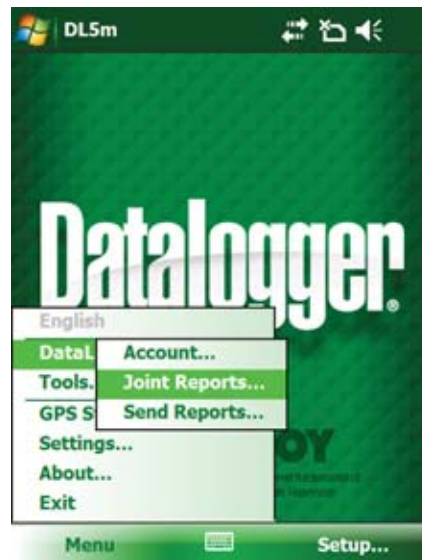
- b) **Joint Reports...** - Displays the joint reports not sent and sent to the DataLogger Vault.

Not sent to DataLogger® Vault™ - Lists the joint reports not sent to the Vault. If connected to the internet, the reports are sent automatically and not display any reports.

If joint reports are listed here, they can be viewed and appended and when connected to the internet sent to the Vault using the **Send Reports...** option.

Sent to DataLogger® Vault™ - List the joint reports sent to the Vault. Select a joint report to view the report and append the report.

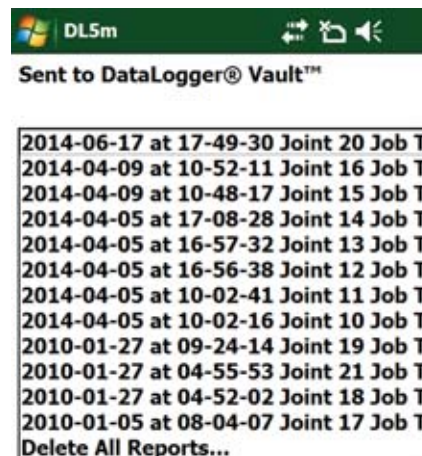
At the end of the list there is an option to delete all the sent joint reports.



PH05334-12-03-14



PH05332-12-03-14



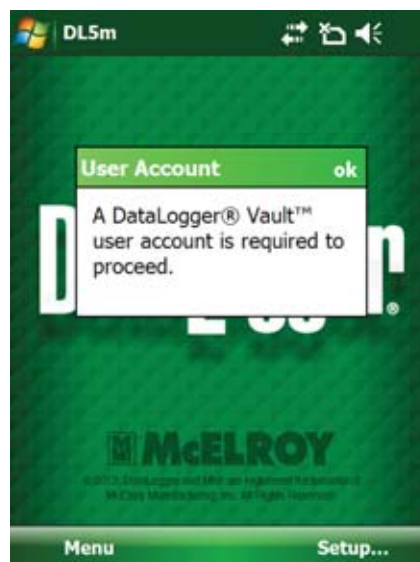
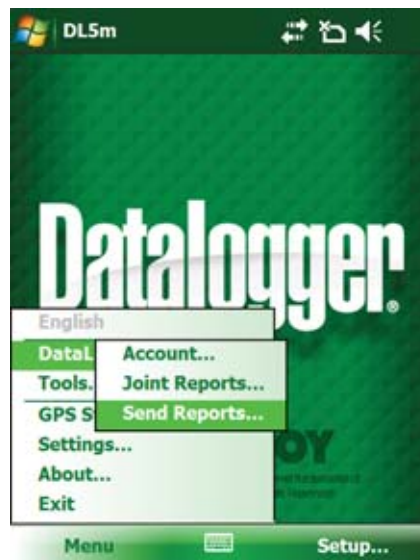
PH05333-12-03-14



Main Menu (cont'd)

- c) **Send Reports...** - When connected to the internet, send all joint reports not sent to the Vault.

The handheld device must be logged into a DataLogger Vault account to be able to send reports.



Main Menu (cont'd)

3) **Tools...** - Supporting utilities:

- a) **Update Software:** DL5m software can be downloaded directly to the device for installation when Internet connection is available via wireless connection or Mobile Device Center.
- b) **Copy Report Files:** Report files can be copied onto an SD card or USB drive attached to the optional adapter/cable. Contact your distributor about these options.
- c) **Reset Computer:** Can be used if the device needs to be reset to correct an issue such as WiFi connection.
- d) **Help:** Displays information about the Tools.

4) **GPS Status...** - Displays GPS information such as satellite count, signal strength, coordinates, etc.

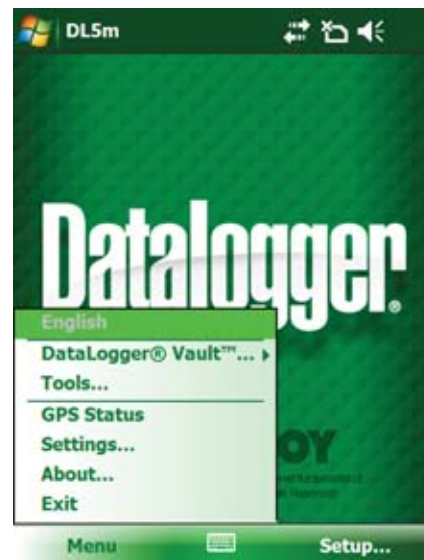
5) **Settings...** - Change program settings:

- a) **Display language:** selects language from the languages installed in the software.
- b) **Pressure units:** psi, bar, kg/cm², MPa
- c) **Temperature units:** °F, °C

6) **About...** - Display the software and firmware version, copyright information, computer serial number and pressure calibration date and time.

7) **Exit** - Exit the DL5m software.

TX04603-12-04-14



PH05326-12-03-14

Setup to Log a Joint

1) **Operator**

From the main screen, tap **Setup...** or push the **Right Soft Key** to begin.

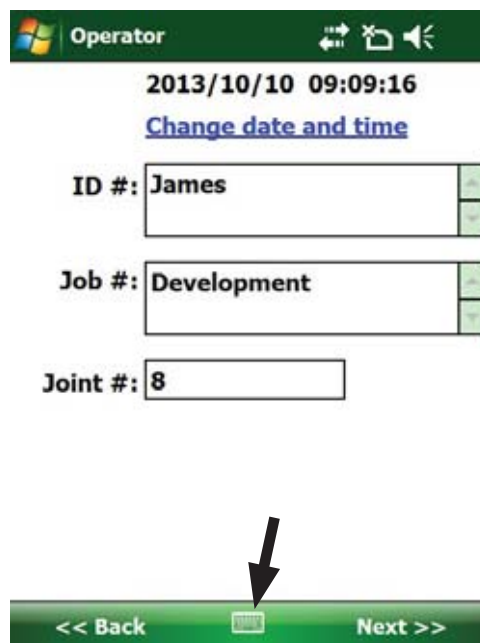
Always make sure the time and date are correct before making a joint. If time and date need adjustment, tap **Change Date and Time**.

Use the stylus to activate the onscreen keyboard by tapping the keyboard symbol.

Operator ID and Job # can be letters or numbers up to 30 characters each.

Joint # is digits-only, and it auto-increments after each completed joint.

Tap **Next >>** or push the **Right Soft Key** to setup machine, fusion type, and specification.



PH04938-10-16-13

Setup to Log a Joint (cont'd)

2) Machine

Enter machine ID using the stylus and onscreen keyboard.

Select a machine model or choose **Unlisted** to enter a machine number and piston area.

Select a fusion type: Butt Fusion, Sidewall, or Dual Containment.

Select a fusion standard or specification.

Common specifications come preloaded: ASTM, ISO, UK, or DVS.

An **Other** selection allows for generic fusion calculation not based on an industry standard.

Tap **Next >>** to enter interfacial pressure..

Machine

ID: Test Machine

Model: #28 HF

Piston Area: 4.71 in²

Fusion Type: Butt Fusion

Specification: ASTM F2620-12

PH04939-10-16-13

3) IFP

When the ASTM fusion standard is selected, the interfacial pressure (IFP) can be varied between 60psi and 90psi using the up/down arrow keys on the keypad.

Tap **Next >>** to enter pipe material and size information.

<< Back Next >>

IFP

Range: 60psi - 90psi

75 psi

Use up/down arrow keys to select interfacial pressure

PH04940-10-16-13

4) Pipe

Manually select a pipe material from the list or enter an **"Unlisted"** material.

Enter pipe size and select the corresponding units. These numbers affect the fusion parameter calculations.

Tap **"Next >>"** to enter optional Notes (Step 5) about the joint.

OR

Use the barcode scanner on pipe with manufacturer stamped barcode.

Select the **Scan Barcode** option by tapping the selection or push the **Enter key** in the middle of the keypad.

<< Back Next >>

Pipe

Material: PE3608

Size: g IPS

Wall Thickness: 17 DR

Butt Fusion
ASTM F2620-12

Scan Barcode

<< Back Next >>

PH04941-10-16-13

Setup to Log a Joint (cont'd)

4a) Pipe - Scan Barcode

With barcode scanning option selected, tap the finger icon near the bottom of the screen or push the **Enter Key** in the middle of the keypad to activate the laser scanner



Do not stare into beam of the laser. Damage to eyes could occur. Point the laser only at the object you are scanning.

If the scanner times out, push the **Enter Key** to reactive it.

Point the red laser beam at the barcode to capture it.

Once the barcode is successfully scanned, detail pipe information from the barcode is displayed in the order of pipe size, manufacturer, lot number, production date, material, type, and the scanned barcode characters.

Tap **Next >>** to enter optional Notes about the joint.

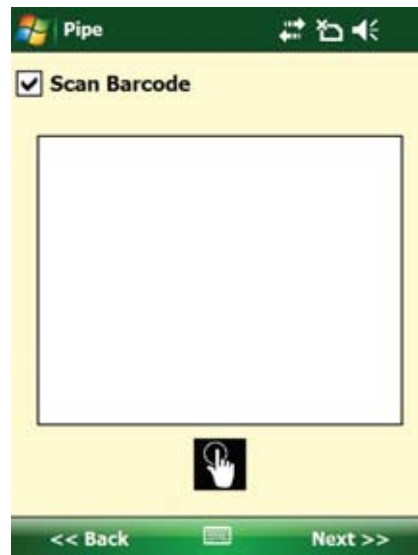
5) Notes (Optional)

Enter notes about the joint (optional)

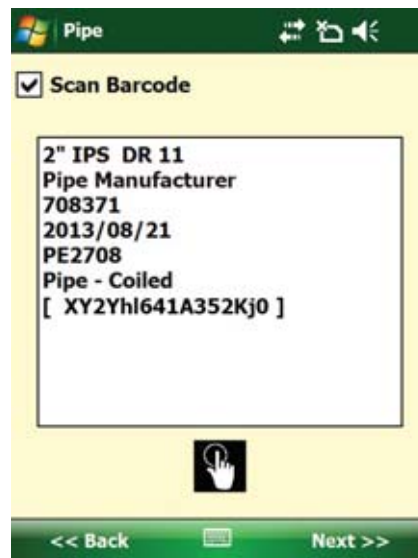
More characters can be appended after the joint is made.

(The use of the stylus is not required after this screen)

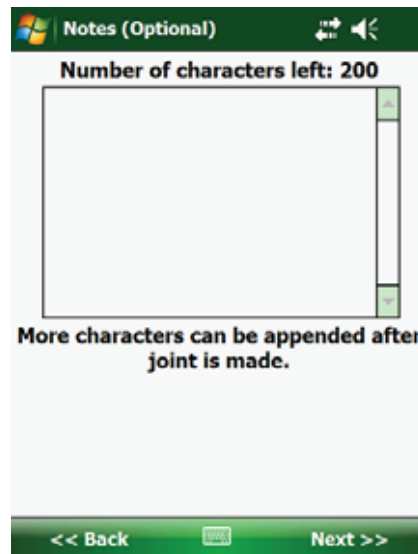
Tap **Next >>** to take photo (optional)



PH04942-10-16-13



PH04943-10-16-13




PH04614-2-13-12

Setup to Log a Joint (cont'd)

6) Photos

Up to 2 photos may be taken before the pipe is fused. The remaining unused photos can be taken after the pipe is fused for a total of 4 photos for each fusion joint. These photos can be taken to show pipe alignment, face off, job site setup, or anything related to the pipe fusion.

To take a photo, push the **Enter Key** in the middle of the keypad or tap on the **Camera icon**  near the bottom of the screen. This will activate the camera.

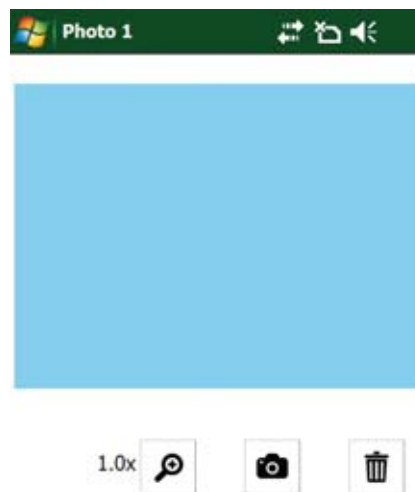
To take a photo, first point the top of the device at the subject, then press the **Quick Launch Key** at the bottom right corner of the keypad to focus on the subject. A green focusing rectangle will appear on the screen.

Once focused, push the **Enter Key** in the middle of the keypad to capture the photo.

If GPS signal is available, photos will be stamped with GPS coordinates, and the red "**Acquiring GPS Fix...**" message will turn into the green "**GPS Ready**" message near the top left corner of the screen.

NOTE: Camera settings are optimized for this application, so please do not adjust them.

Once the photo is captured, tap **Back** or the **Left Soft Key** to exit the Camera feature.



PH04944-10-16-13



PH04945-10-16-13



PH046142-13-12

Setup to Log a Joint (cont'd)

In the viewing screen, the photo can be zoomed in and out using the **Magnifier icon**.

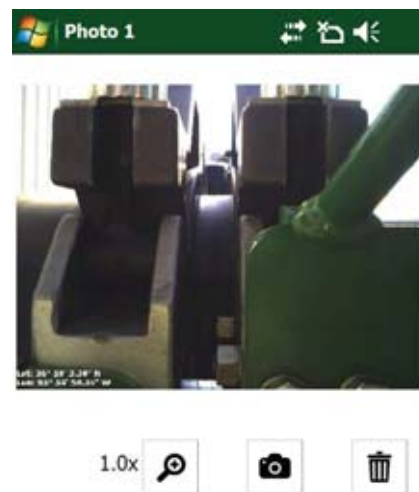
IMPORTANT: GPS coordinates will be stamped at the lower left corner of the photo if GPS signal is available.

A new photo can be taken to replace the current photo by tapping the **Camera icon** or pushing the **Enter Key** in the middle of the keypad.

To remove or delete the photo so that it will not be recorded in the report, tap the **Trash Can** icon.

When done, tap **Next >>** or the **Right Soft Key** to measure drag.

If one photo is taken, a second photo screen will appear to allow taking an optional second photo for the report.



PH04947-10-16-13

7) Drag Pressure

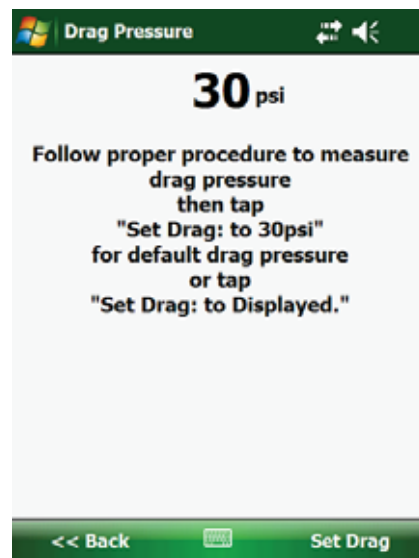
Follow drag pressure measurement procedures from the fusion machine operator's manual.

Press the **Right Soft Key** to select Set Drag.

Use the **Up/Down** arrow keys to select the default 30 psi drag pressure or the measured and displayed pressure at the top of the screen.

Press the **Enter** key to register the intended drag pressure.

Tap **Next >>** to review the recommended fusion pressures and times and prepare machine to fuse pipe.



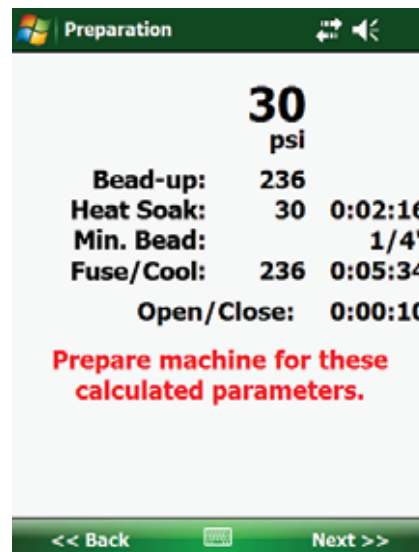
PH04615-2-13-12

8) Preparation

Review the recommended fusion pressures and times and prepare machine to fuse pipe.

This example shows ASTM specified nominal pressures, minimum cycle times, bead size after heat soaking the pipe, and maximum carriage open/close time for heater removal.

Tap **Next >>** to record heater temperature.



PH04617-2-13-12

Setup to Log a Joint (cont'd)

9) Heater

8 Heater points can be recorded, 4 from each side of the heater.

Select a point on the heater and measure the temperature. Use the **Up/Down Arrow Key** to adjust the number (425 in the example) in the box near the lower right corner of the screen to the measured temperature.

Tap the corresponding box, for instance A1, to place the number in the box.

Optionally, measure and record more points on the heater using the above procedure.

To remove a number, tap the **X** near the lower right corner of the screen. Make sure the checkbox is marked with a check symbol (☒) and then tap on the box with the number to delete.

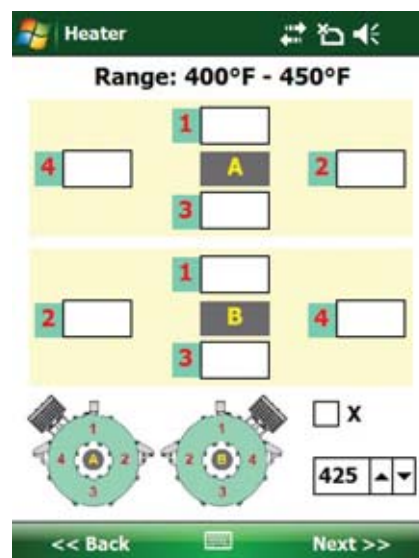
Tap **Next >>**

10) Ready to Log

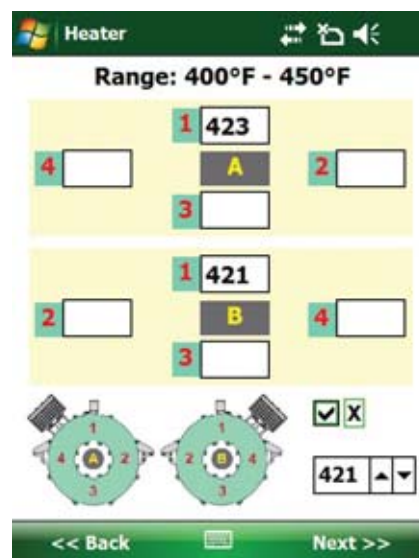
Make sure pipe ends are properly faced and heater is securely placed in the fusion machine between two pipe ends.

If necessary, press **<< Back** to review or change settings on previous screens or tap **Cancel** to go back to the main DataLogger screen.

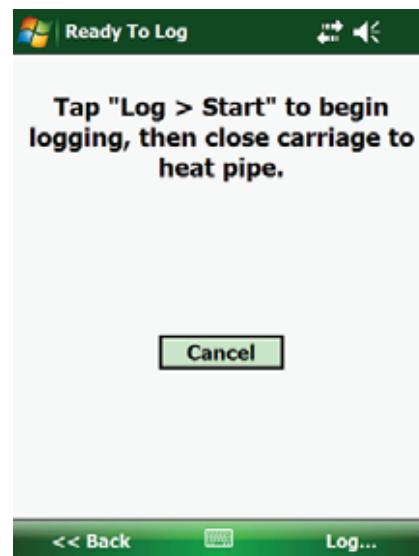
Press the **Right Soft Key** then **Enter** or tap **Log...** and then **Start** to begin logging then close the carriage to heat pipe.



PH04948-10-16-73



PH04949-10-16-13



PH04619-2-13-11



Operation



Setup to Log a Joint (cont'd)

11) Logging...

While logging a joint, the number of data points logged is displayed, along with the elapsed time, the current pressure reading, the various pressures, times, bead size, and open/close time.

A stop watch at the lower left corner can be used to time the various fusion cycles. Pressing the **Left Soft Key** or tapping **Reset SW** resets the stopwatch count.

GPS activity is shown at the lower right corner of the screen. **"Acquiring GPS Fix..."** appears when the handheld computer is seeking GPS signal, and actual coordinates replaces the text when GPS signal is acquired.

At the end of the fusion process, press the **Right Soft Key** then **Enter** or tap **Stop** then **Yes** to stop logging.



Review Joint Report

Joint Report

Review the joint report before proceeding to the next fusion joint.

Joint Report page 1 is displayed when logging is completed. This page shows:

1. Date and Time
2. Joint Number
3. Job Number
4. Operator
5. Machine ID
6. Model of Machine
7. Piston Area of Machine
8. Pipe: Type with size (barcode data if recorded)

Tap **Next >>** or press the **Right Soft Key** to go to page 2.

Tap **<< End** or press the **Left Soft Key** to go back to the main DataLogger screen.

Joint Report page 2 is displayed. This page shows:

9. Fusion Type with Standard used
10. Heater Temperature Range
11. External Probe Measurement (up to 8 temperatures)
12. Specification Pressures and Times
13. Recorded Drag Pressure
14. Interfacial Pressure

Tap **Next >>** or press the **Right Soft Key** to go to page 3.

Tap **<< Back** or press the **Left Soft Key** to go back to the previous page.

Joint Report page 3 is displayed. This page shows:

15. Computer Serial Number
16. Software and Version Number
17. DataLogger Serial Number
18. Pressure Sender Firmware Version
19. Calibration Date
20. GPS Coordinates

Up to 3 GPS coordinates can be recorded. The first set of coordinates is recorded when logging starts.

To add new GPS coordinates, tap the **GPS icon** on the screen or push Enter in the middle of the keypad and follow the instructions on the screen.

To cancel recording GPS when "Acquiring GPS Fix..." is displayed, tap **Next >>**.

To append GPS coordinates at a later time, go to the "Append GPS Coordinates" section of this manual.

Tap **Next >>** or press the **Right Soft Key** to go to page 4.

Tap **<< Back** or press the **Left Soft Key** to go back to the previous.



Page 1:

1. Date/Time: 2013/09/11 10:28:23
2. Joint No.: 4
3. Job No.: Beta Test
4. Operator: Tester
5. Mach. ID: Beta Machine
6. Model: #28 HF
7. Piston Area: 4.71 in²
8. Pipe: PE4710
8 " IPS DR 11

PH04951-10-16-13



Page 2:

9. Fusion Type:
Butt Fusion
ASTM F2620-12
10. Heater: 400°F - 450°F
11. External Probe:
A: 425°F, 423°F, 424°F, 426°F
B: 424°F, 426°F, 423°F, 427°F
12. Pressures (psi) and times:

	psi	
Bead-up	336	
Heat Soak	28	0:03:31
Min. Bead		1/4"
Fuse/Cool	336	0:08:37
Open/Close:		0:00:15

PH04952-10-16-13



Page 3:

15. Computer: ES2XC63707
16. Software: DL5m d001
17. DataLogger®: MDL4-0082
18. Firmware: v0.6
19. Calibration: 2013/08/01 14:07
20. GPS:
36°10'3.0"N 95°54'58.1"W
2013/09/11 15:32:14 (UTC)

PH04953-10-16-13



Review Joint Report (cont'd)

Joint Report Notes page allows viewing of the notes entered prior to the joint being made, and the ability to append more notes to the joint report.

To append more notes, tap the **Append Notes...** button on the screen.

Tap **Next >>** to view the Front-end Plot

Tap **<< Back** or press the **Left Soft Key** to go back to the previous page.

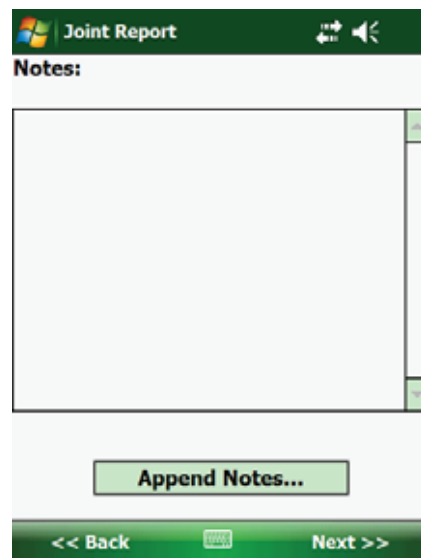
The top box is read-only and it shows notes entered previously.

The bottom box is where characters for the new notes can be entered. A total of 1000 characters are allowed per joint report. New notes entered in this box will be appended to notes in the read-only box above.

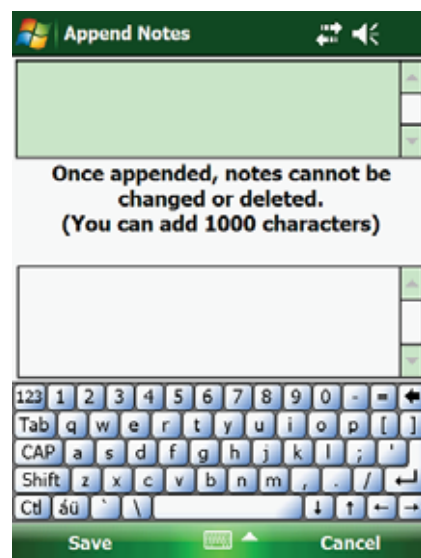
Use the scroll bar on the right side of the text boxes to scroll through long messages.

After notes are entered, tap **Save** or press the **Left Soft Key** to save the new notes.

Otherwise tap **Cancel** to discard the new notes and exit the Append Notes screen without saving.



PH04626-2-13-12



PH04627-2-13-12

Review Joint Report (cont'd)

NOTE: This is only a demonstration. Data used is fictitious and for demonstration purposes only. Do not use this graph as a benchmark for inspecting other fusion joints. There are several factors that determine what a graph should look like and all graphs will not look exactly the same. Training and resources are available to assist in how to interpret a graph.

The appearance of joint reports varies due to several factors, but their basic profile resembles the following samples:

The Datalogger 5 features FusionGuide™ which applies shaded areas to the plots in order to quickly determine whether a logged fusion joint is within the selected fusion specification. The shaded areas highlight the heat soak time (green), open/close time (red), and fuse/cool time (blue).

The front-end plot of the report highlights the soak cycle during which the pipe ends are heat-soaked.

Tap **Next >>** or press the **Right Soft Key** to view the Heater Removal Plot.

Tap **<< Back** or press the **Left Soft Key** to go back to the previous page.

The Heater Removal Plot estimates the carriage open/close time period.

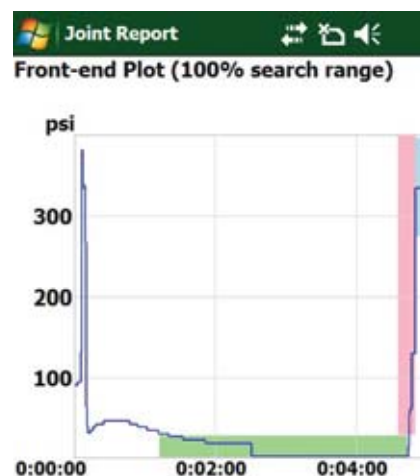
Tap **Next >>** or press the **Right Soft Key** to view the Summary Plot.

Tap **<< Back** or press the **Left Soft Key** to go back to the previous page.

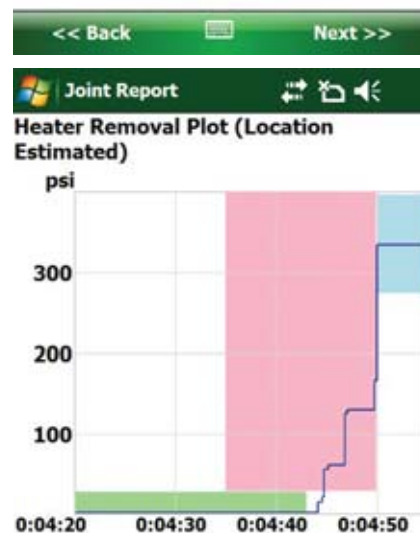
The Summary Plot shows the entire fusion process.

Tap **End >>** or press the **Right Soft Key** to end viewing the current joint report and back to the main screen.

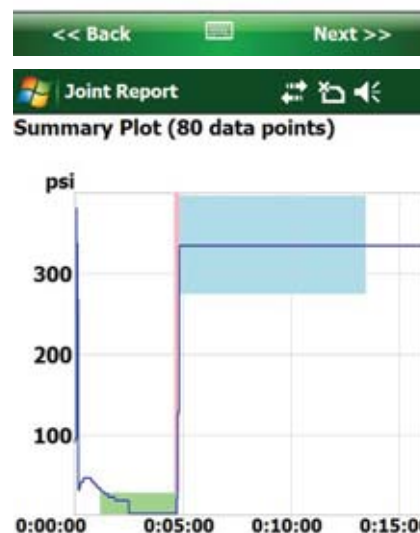
Tap **<< Back** or press the **Left Soft Key** to go back to the previous page.



PH04954-10-16-13



PH04955-10-16-13



PH04956-10-16-13

Review Joint Report (cont'd)

Photos taken prior to logging are part of the report and cannot be removed.

GPS coordinates is tagged at the lower left corner of the photo if available.

Tap the **Magnifier icon**  to zoom in on the photo.

Tap **Next >>** when done reviewing the photo.


A second photo taken prior to logging is part of the report and cannot be deleted.

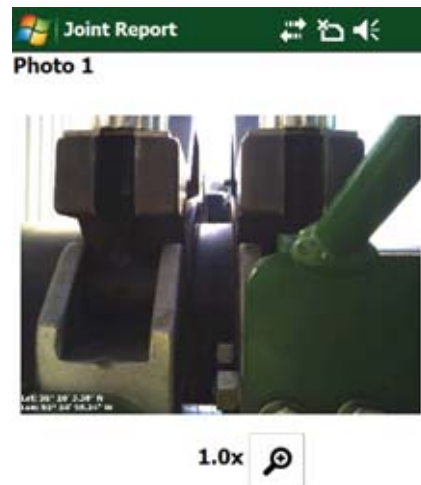
GPS coordinates is tagged at the lower left corner of the photo if available.

Tap the **Magnifier icon**  to zoom in on the photo.

Tap **Next >>** when done reviewing the photo.

A total of 4 photos can be included in a joint report.

To add new photo after the joint is made, tap the **Camera icon**  near the bottom of the screen, or push the **Enter Key** in the middle of the keypad to activate the Camera.



PH04957-10-16-13



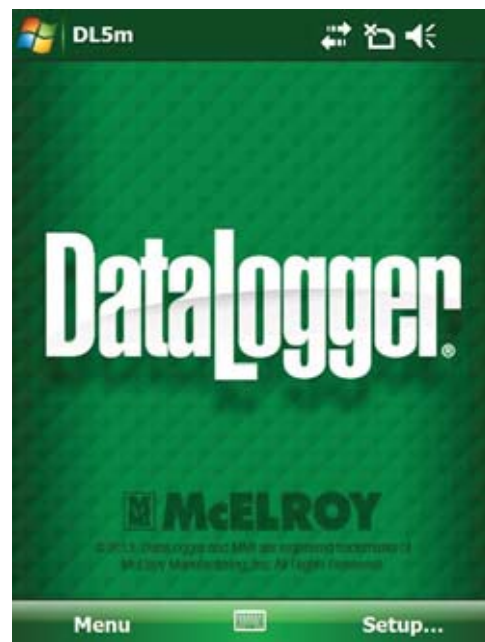
PH04958-10-16-13



PH04959-10-16-13

Review Joint Review (cont'd)

Once back at the main screen, you may prepare to make another fusion joint by pressing the **Right Soft Key** or tapping **Setup...**



PH04963-10-24-13

Data from the previous joint will be carried over to reduce data entry for the next joint saving time at the jobsite.

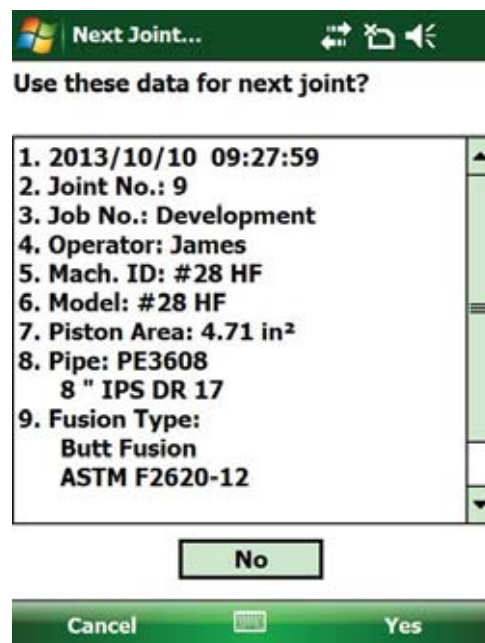
Time and date are automatically updated for the next joint. Joint number is also automatically incremented after each joint.

Use the scroll bar on the side to review more data about the next joint.

Press the **Right Soft Key** to select Yes and start a new joint.

Press the **Left Soft Key** to select Cancel to go back to main screen.

Tap **No** to enter new data for the next joint.



PH04960-10-16-13

Append GPS Coordinates

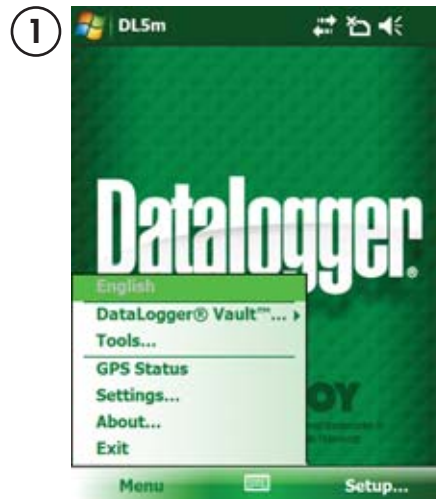
After a fusion joint is completed, it may be necessary to append the GPS coordinates in that report if that fusion joint has moved to a different location.

To append the GPS coordinates:

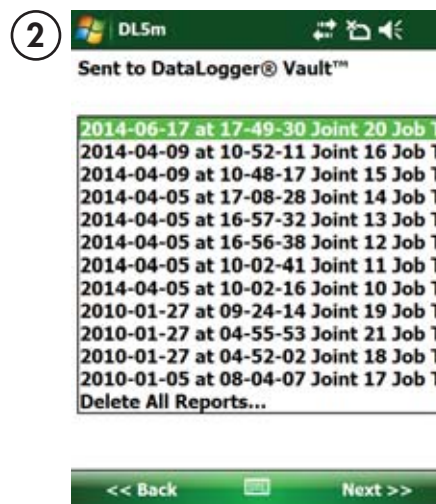
- 1) Go to **DataLogger® Vault™...** on the main menu on the main screen and select **Joint Reports...**
- 2) Select the joint report you wish to append from the list on the handheld computer.
- 3) Navigate through the joint report to **Page 3** of the joint report.

To add new GPS coordinates, tap the **GPS icon** on the bottom of the screen or push **Enter** in the middle of the keypad and follow the instructions on the screen.

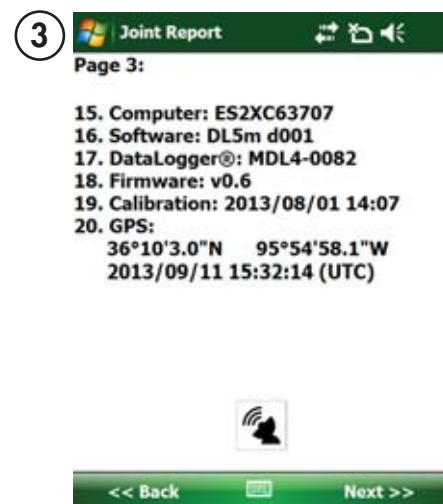
- 4) There will be two warning dialog boxes asking if you want to proceed with recording new GPS coordinates.
- 5) Up to 3 GPS coordinates can be recorded. The first set of coordinates is recorded when logging starts. If there is no GPS icon at the bottom of Page 3 of the joint report, then all 3 of the GPS coordinates have been used.



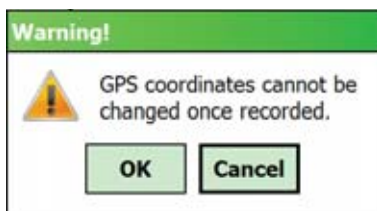
PH05326-12-03-14



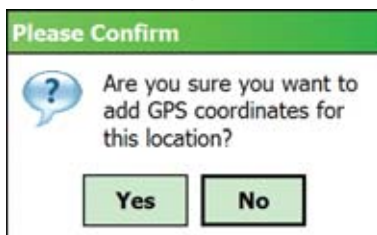
PH05335-12-03-14



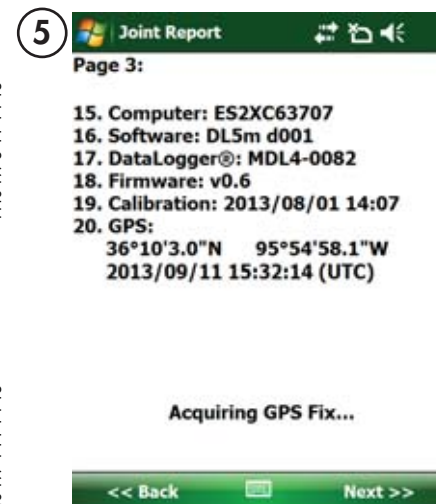
PH04972-11-14-13



PH04973-11-14-13



PH04974-11-14-13



PH04975-11-14-13



Transfer Joint Reports



Transfer Joint Reports to PC

Introduction

McElroy DataLogger 5 joint reports can be viewed and analyzed on the DataLogger Vault (<http://vault.mcelroy.com>). Joint reports are transferred from the DataLogger 5 to your PC using the Microsoft® Windows® Mobile Device Center (for Windows® 8, Windows® 7 or Vista®) or Microsoft® ActiveSync® (for Windows® XP).

Microsoft Software (for transferring joint reports)

There are different versions of Microsoft® Windows® operating systems in circulation: Windows® XP, 32-bit and 64-bit versions of Windows® Vista®, Windows® 7 and Windows® 8. First, find out which operating system your computer runs and then visit <http://www.mcelroy.com/fusion/support/> to download the corresponding Microsoft® software.

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McElroy > Downloads

DataLogger® 5 (DL1600X)

- McElroy DL5m Software Version 1.0.0 (CAB)**
- Firmware Update and Calibration Version 1.0.0 Installer (zip)** (for DataLogger® 5 and 4)
- Firmware Image Version 5.0**

DataLogger® 4 (DL1370X)

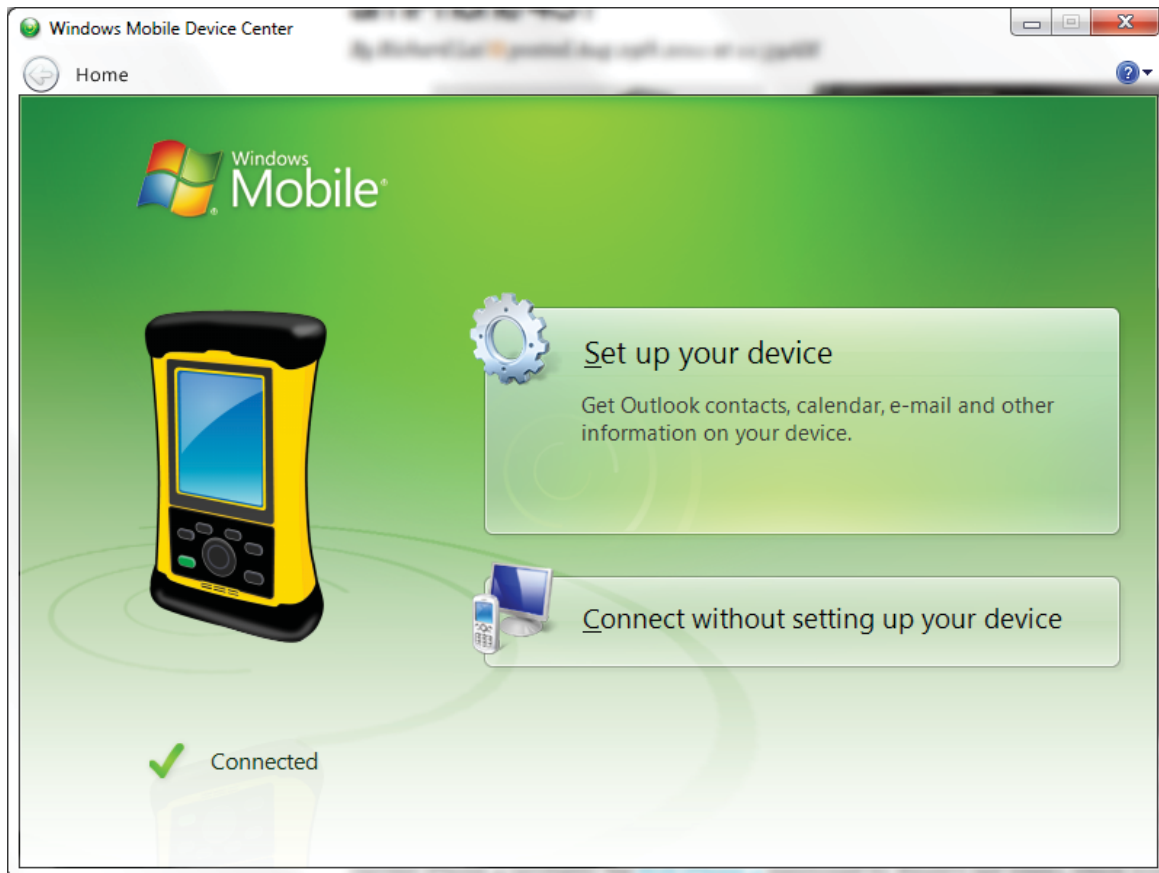
- McElroy Software for Windows PC**
 - + DL4c v1.0.4 (msi)
 - + Instructions
- Microsoft Downloads**
 - + ActiveSync (Windows XP)
 - + Mobile Device Center (32-bit Windows Vista/7/8.x)
 - + Mobile Device Center (64-bit Windows Vista/7/8.x)
 - + Description of Windows Mobile Device Center
- McElroy Software for Trimble Nomad**
 - + DL4m v1.0.8 (CAB)
 - + Instructions
 - + Microsoft .Net CF v3.5
 - + Firmware Image Version 0.7

Save and then run your downloaded Microsoft® software and follow the installation instructions. Installations may take a few minutes, so it is best to wait and make sure installation is complete before moving on. "Device Not Found" error near the end of the installation can be ignored because the operating system is looking for a device that is not yet connected to the PC.

PH04969-11-12-13

Connect Handheld Computer with Windows Mobile Device Center (Windows 8, Windows 7 and Vista)

- 1) Remove the pressure sender serial cable from your handheld computer. Connect the handheld computer to your PC using the mini-USB to PC cable. It may take longer for the PC to recognize and register the handheld computer if this is the first connection after installing Mobile Device Center.
- 2) The first time Mobile Device Center runs on your PC, you need to respond to the product registration form by choosing to "**Register**" the product or "**Don't register**" to skip the registration.
- 3) Wait for this screen to show "**Connected**" then click on "**Connect without setting up your device.**"



Transferring Joint Reports with Windows Mobile Device Center (Windows 8, Windows 7 and Vista)



PH04633-1-24-12

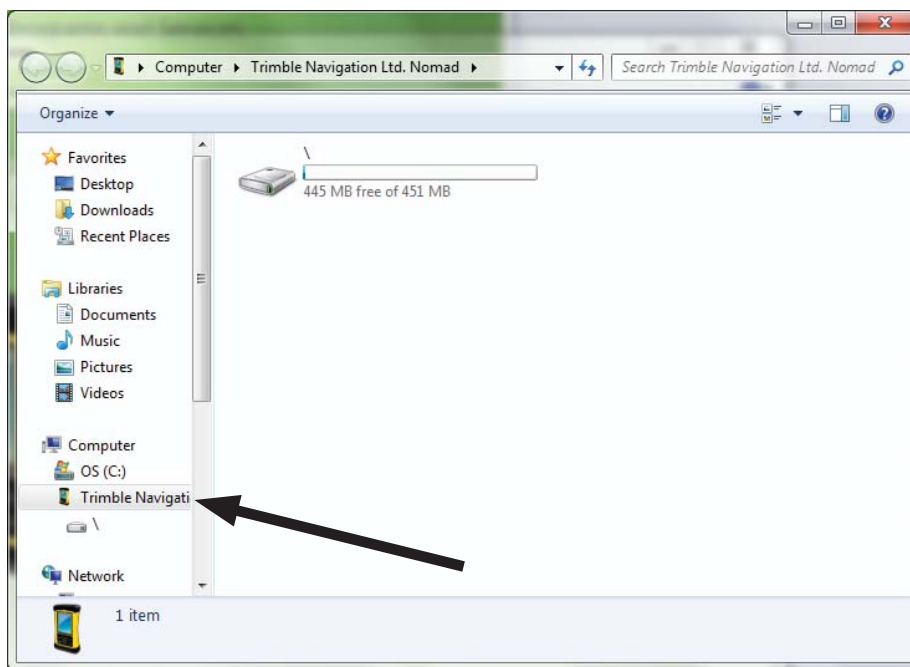
Hover over **"File Management"** in the Quick Connect page above to reveal **"Browse the contents of your device."**



PH04634-1-24-12

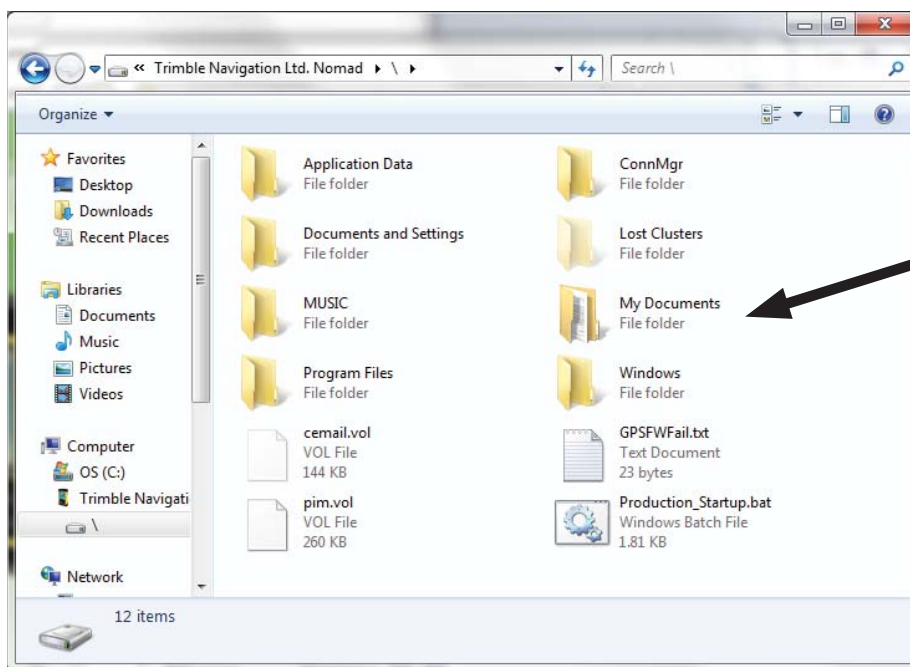
Click **"Browse the contents of your device."**

Transferring Joint Reports with Windows Mobile Device Center (Windows 8, Windows 7 and Vista)



PH04635-1-24-12

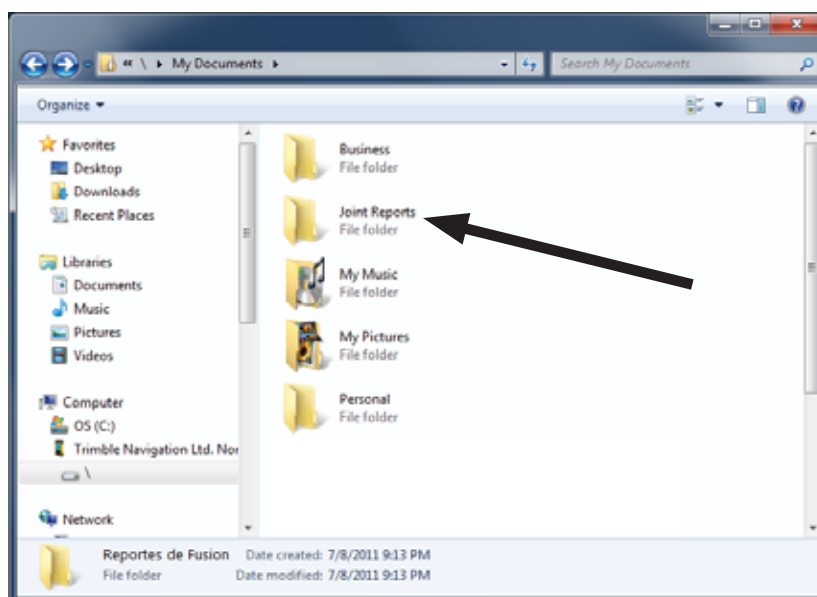
Double click on the device icon in the explorer window under "Computer\Trimble Navigation Ltd. Nomad"



PH04636-1-24-12

Double click on the "My Documents" folder and look for the "Joint Reports" folder

Transferring Joint Reports with Windows Mobile Device Center (Windows 8, Windows 7 and Vista)



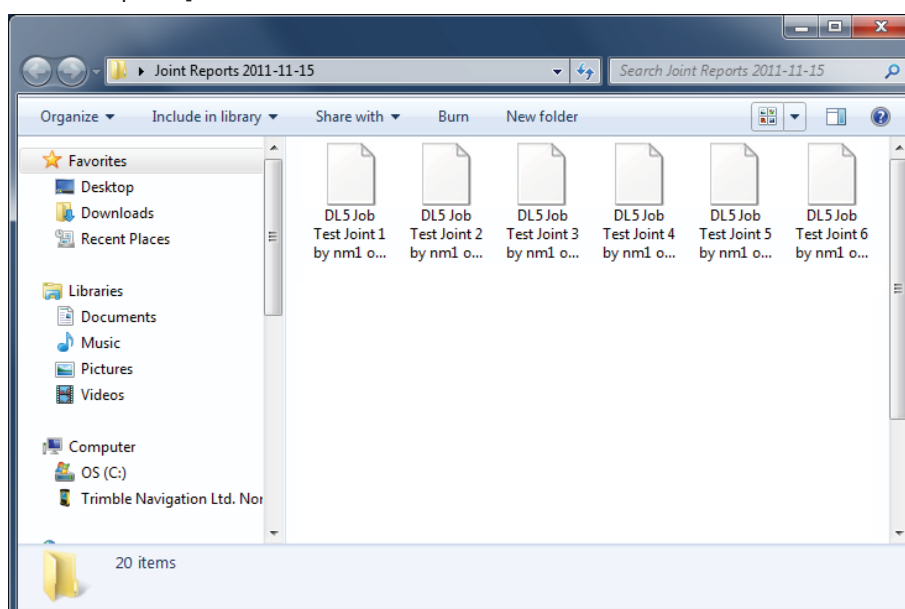
PH04637-1-24-12

Right-click on the **"Joint Reports"** folder and then click **"Copy"**.

Find a clean spot on your Computer's desktop, right-click and then paste the entire Joint Reports folder on your desktop.

You may append today's date to the folder name, for instance "Joint Reports 2011-11-15".

Now you have successfully copied the entire Joint Reports folder on to your desktop PC. **[Note:** Once you are sure you have secured the joint reports on your PC and on an optional external or secondary storage, you may delete the folder on the handheld computer.]



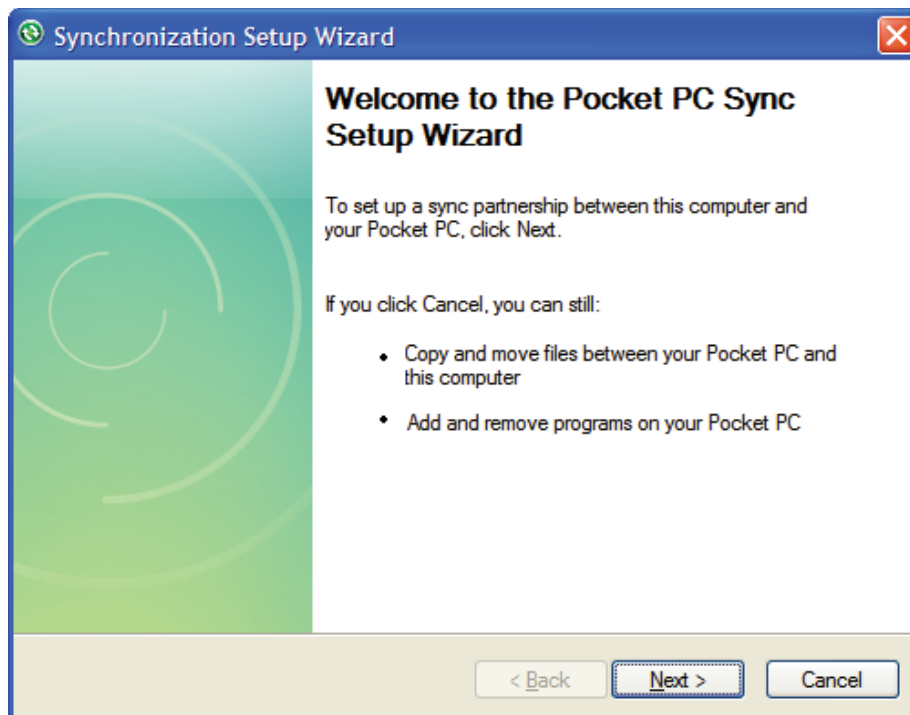
PH04961-10-17-13

Your joint reports folder may look like this with a list of joint reports:

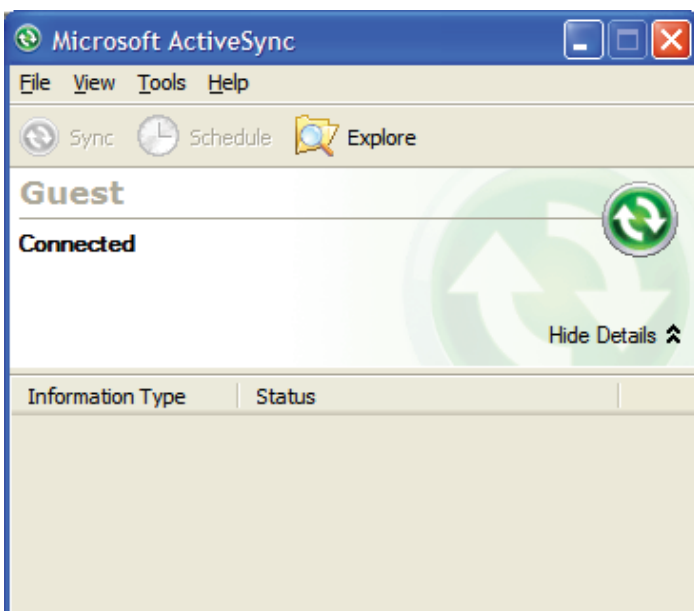
After you transfer your data to the PC, you can easily upload your data to the DataLogger Vault for review, analysis, and storage. See the "DataLogger Vault" section of this manual for more information.

Transferring Joint Reports with Microsoft ActiveSync for Windows XP

- 1) Remove the pressure sender serial cable from your handheld computer. Connect the handheld to your PC using the mini-USB to PC cable. It may take longer for the PC to recognize and register the handheld computer if this is the first connection after installing Microsoft ActiveSync.
- 2) Wait for this screen to show and then click **Cancel**



- 3) Click the **Explore** button below when ActiveSync shows "Connected"



PH04655-1-24-12

PH04656-1-24-12

Transferring Joint Reports with Microsoft ActiveSync for Windows XP

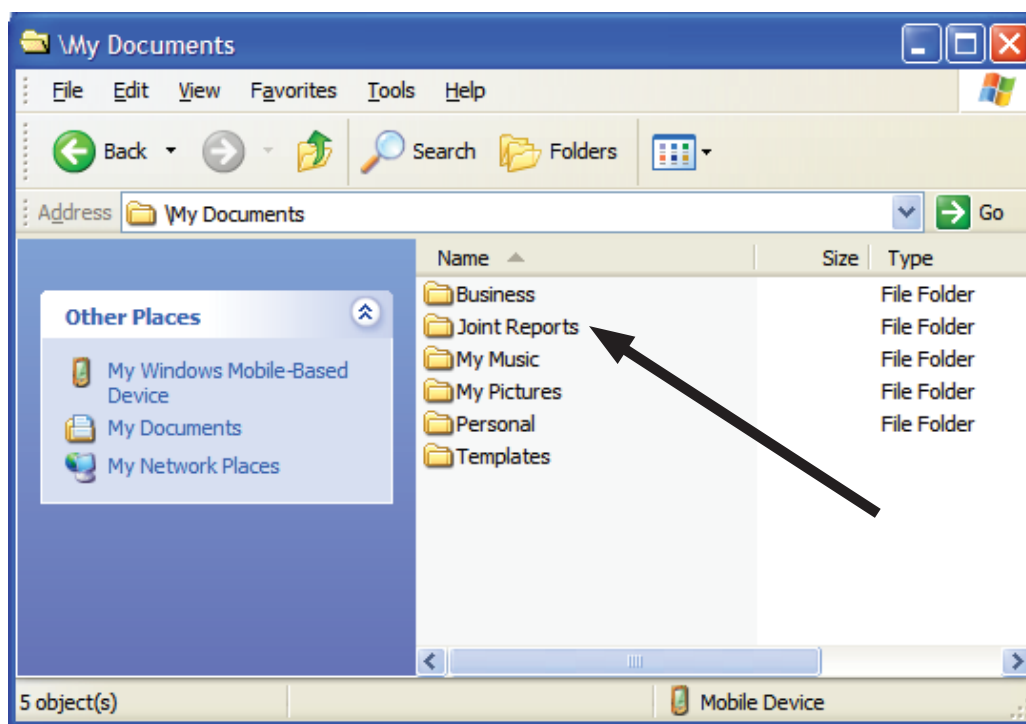
- 4) Right click on the "Joint Reports" folder and then click "Copy".

Find a clean spot on your computer's desktop, right click and then paste the entire Joint Reports folder on your desktop.

You may append today's date to the folder name, for instance "Joint Reports 2011-11-15".

Now you have successfully copied the entire Joint Reports folder on to your desktop PC.

Note: Once you are sure you have secured the joint reports on your PC and on an optional external or secondary storage, you may delete the folder on the handheld computer.



PH04657-1-24-12

After you transfer your data to the PC, you can easily upload your data to the DataLogger Vault for review, analysis, and storage. See the "DataLogger Vault" section of this manual for more information.



Usage and Care

Pressure Sender cord

The coiled cord, which connects the pressure sender to the handheld computer, has screw connectors on both ends. If the cord is damaged it is easily replaced by unscrewing both ends and installing a new cord.

Quick Disconnect

This DataLogger® uses an improved quick disconnect on the pressure sender. It is designed to seal reliably but not trap pressure in the line. It can be connected under pressure if necessary. To use this unit on older fusion machines you will need Fusion Machine Adapter Kit ADL6001. Remove the QD and fittings on the carriage manifold TXA port and replace them with the elbow and QD in the kit.

Pressure Sender

The pressure sender is calibrated at McElroy Manufacturing, Inc. Its calibration should be checked annually to maintain factory quality.

Handheld Computer

Keep the handheld computer clean especially around the connections, camera, barcode scanner, and keypad. Keep the screen clean and free of debris.

TX04610-11-12-13



Maintenance



No User Serviceable Parts

NOTICE: There are no parts of the DataLogger[®] that can be repaired by the user. Do not try to open the unit. Any attempt to open the unit can affect the weatherproofing and can damage the unit.



TX04399-2-29-12

Calibration

Pressure sender must be sent to McElroy or Authorized Service Center every year for calibration to ensure accuracy. A backup pressure sender may be kept on hand to minimize down time.

TX04400-2-29-12

Replacement Parts and Accessories

For replacement parts and accessories, visit the McElroy Parts Finder at: <http://fusion.mcelroy.com/parts/exec>
Enter your Serial Number or Model/Part Number to find parts and accessories for your equipment.

TX04611-11-12-13



Specifications



McElroy DataLogger® 5

Batteries:	5000 mAh Li-ion rechargeable module
Battery Life:	up to 11 hours at default settings
Operating Temp:	-4 to 140 degrees Fahrenheit (-20 to 60 degrees Celsius)
Display:	480 x 640 pixel (VGA) 16-bit color TFT with LED backlight
GPS:	2–4 m accuracy
Camera:	Digital, 5 megapixel resolution, with flash
Scanner:	Laser 1D barcode scanner (supports codes: UPCA, UPCE0, EAN8, EAN13, CODE128, CODE39, and I2OF5)
Radios:	Bluetooth 2.0 + EDR;
WLAN:	Wi-Fi (CCX v4 ASD) (802.11b/g);
WWAN:	Quad-band GSM GPRS/EDGE
Wired Link:	RS - 232 Compatible
Pressure Probe:	Range: 0 - 3000PSI Accuracy: 1% FSO
Data Sampling Rate:	5 samples per second
Handheld Computer:	Trimble® Nomad® computer. The handheld computer has the Windows® operating system available in several different languages. Each Nomad is setup at the factory and ready to log data.
Software Updates:	Available online at http://www.mcelroy.com/fusion/support/

About this manual . . .

McElroy Manufacturing continually strives to give customers the best quality products available. This manual is printed with materials made for durable applications and harsh environments.

This manual is waterproof, tear resistant, grease resistant, abrasion resistant and the bonding quality of the printing ensures a readable, durable product.

The material does not contain any cellulose based materials and does not contribute to the harvesting of our forests, or ozone-depleting constituents. This manual can be safely disposed of in a landfill and will not leach into ground water.

TX001660-8-19-99



The leader by design.

P.O. Box 580550 Tulsa, Oklahoma 74158-0550, USA
www.mcelroy.com