

# Installation and Operations Manual Donaldson Vehicle Data Logger



**In order to recommend the proper emissions reduction solution for a vehicle, it's critical to capture and record exhaust temperature data of the vehicle in its normal operating use.**

**This document includes...**

- **general information**
- **software installation**
- **data logger installation**
- **instructions on returning captured data to Donaldson**

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## General Information

It is important to understand the exhaust temperature profile before applying a DPF muffler. Insufficient temperatures may lead to premature DPF plugging and increased maintenance to keep the filter clean and engine running.

A data-logger is a device used to record the exhaust temperature during engine operation. The recorder is operated for several days to provide a reasonable sample size. The vehicle must operate under 'normal operating conditions' so that an accurate picture of the exhaust temperature profile is obtained. Engine duty-cycle plays a big role in exhaust temperatures, and is influenced by factors such as vehicle speed, load, idling, geography ambient temperatures and driver tendencies.

### How long do I need to data log the vehicle?

Donaldson recommends three days of normal daily operation.

For questions or concerns about data-logging, please contact Donaldson at [emissions@donaldson.com](mailto:emissions@donaldson.com).

## Data Logger Package

**Item X007947 kit includes:**



Data Logger (blue plastic case)  
1/8" NPT half coupling (P226616)  
1/8" NPT compression fitting (P227812)  
Installation and operation manual (P480348)

Other items you'll need for data logging:

- Donaldson Profile Form\*
- Software and PC interface cable - order separately from Donaldson (item X007948)
- Computer with Microsoft® Windows® operating system

\*DCIProfileform2-2.xls - supplied separately by Donaldson



## Data Logger Installation

The installation involves the following steps:

- 1 - Data Logger Software Install and Data Recording Set-up
- 2 - Weld the half coupling into the Exhaust System
- 3 - Mount the Data-Logger Case
- 4 - Route the thermocouple cable from the compression fitting to the data-logger case.
- 5 - Downloading Data from the Data Logger
- 6 - Forward Data and Vehicle Profile Form to Donaldson

### Step 1 - Data Logger Software Install and Data Recording Set-up

Before mounting the data logger case on the vehicle, install the supplied software and set the dates for recording data. The collected data will be used to determine if a DPF (Diesel Particulate Filter) can be installed or if a DOC (Diesel Oxidation Catalyst) is appropriate for this truck in this usage.

Install the Software on your computer.

Open the data logger case.

Connect the supplied PC Interface Cable to your computer (to the COM port) and to the Thermocouple Recorder inside the data logger.

#### Initialization / Start Up:

Start → Programs → Madgetech 2.0.

Device → Identify Device and Read Status → Device Detail → Thermocouple Type; Select Type K → OK  
*Note: If a new screen does not open, check connection between computer and the data logger.*

Device → Start → Yes

Delay Start → [Choose the start Date and Time]


Select Reading Rate of 15 seconds → Start Device → OK

Unplug PC Interface Cable from computer and Data Logger. Secure cover on data logger.

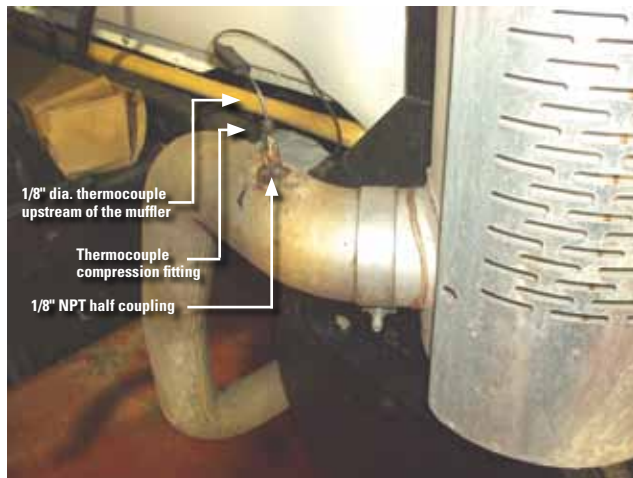
*Software updates available from: [www.madgetech.com](http://www.madgetech.com). Do not download software where release date is "beta."*

## Step 2 - Weld the Half Coupling into the Exhaust System

Weld a 1/8" NPT half coupling into the exhaust system as close to the muffler inlet as possible allowing room to install the half coupling, compression fitting and thermocouple.

	<b>CAUTION!</b> Check direction of half coupling BEFORE welding in place.
The half coupling has directional threads and must be welded to the pipe in the proper direction.	

The thermocouple must be installed in a straight section of the exhaust no more than 12" (305mm) upstream of the muffler inlet.



Drill a 3/16" hole in the pipe in the center of the fitting. A 1/8" NPT fitting can be used to locate the center the hole in the fitting and protect the 1/8" NPT fitting threads. Clean out all metal shavings. Apply a small amount of anti-seize compound to the thermocouple compression fitting or half coupling before connect the two parts. Push the thermocouple probe all the way in so goes in to the center of the pipe. Tighten the thermocouple fitting.

## Step 3- Mount the Data-Logger

The data logger is installed inside a protective case to ease installation. This case should be mounted in such a way as to protect it from road grime, water, and other hazards. Attach the case to the vehicle as needed.

*Mounting Note: At the end of the data logging cycle, the case will need to be opened to access the recorded data – make sure the case is accessible when mounted.*

## Step 4 - Route thermocouple cable from fitting to data logger.

Route the thermocouple cable from the fitting to the data logger case, tying it up as needed.

## Step 5 - Downloading Data from the Data Logger

To access the recorded data you will need remove the data logger case from the truck, open the cover, and connect to a computer.

Open the data logger case.

Connect the supplied PC Interface Cable to your computer (to the COM port) and to the Thermocouple Recorder inside the data logger.

### Stop Recording and Download Data:

Start → Programs → Madgetech 2.0.

From the main tool bar, select:

Device → Stop Device → Yes → OK

Device → Read Device Data

*(Note: Data will be extracted from device during this step. The process typically takes less than 90 seconds.)*

Graph → Copy data to Excel → OK

*Save the new MS-Excel file. Please use your vehicle identification number as the file name. Close the MS-Excel program when complete.*

Device → Reset Device → Yes → OK

## Step 6 - Forward Data and Vehicle Profile Form to Donaldson

The final step is to pass on the data logger data and vehicle profile information to Donaldson (form is supplied by Donaldson). Please fill out one form per vehicle. See next page for more information.

*Note: The Donaldson profile form (DCIProfileForm.xls) should have been sent to you via email prior to the arrival of the data logger. If not, call Donaldson at the toll-free number on the back page.*

continued on next page

Completely fill in the Microsoft Excel profile form.

Select the "Import Temp Data" button at the top of the form. The button has a built in macro that prompts you to locate the data logger Excel sheet on your computer and then imports the sheet into the profile form file as sheet number 2.

Select the "Save File" button. This will prompt you to save the file as the Vehicle Identification Number entered into the profile form. Please follow this file naming procedure, as this is how Donaldson keeps track of your vehicle information.

Keep a copy of the file for your records and email the file to Donaldson at [emissions@donaldson.com](mailto:emissions@donaldson.com)

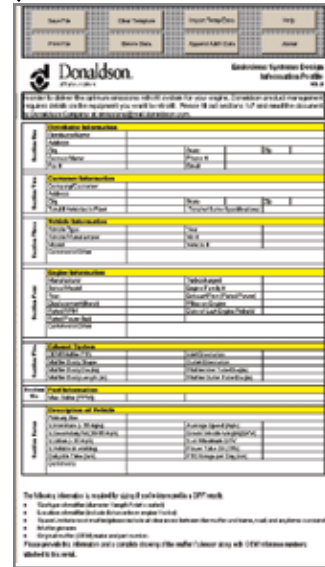


Import Temp Data - select to import data logger data into same excel file as second sheet

Save File - select to save your new file for a specific vehicle

Clear Template - clears the data in the form.

Delete Data - removes any attached sheets.



Snapshot of Excel Donaldson Profile Form (DCIprofileform2-2.xls).



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