

User Guide

Mobile Oil Tester Kit



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DEFINITIONS



WARNING: Risk of injury or death.



CAUTION: Risk of damage to objects



IMPORTANT: Important information

TABLE OF ACRONYMS

MOT - Mobile Oil Tester Kit	TBN - Total Base Number	LHS - Left Hand Side
FSH - Full Spectrum Holistic	UKCA - UK Conformity Assessed	PDO - Process Data Object
OQS - Oil Quality Sensor	FAQ's - Frequently Asked Questions	ENC - Electronic Navigational Charts
TDN - Tan Delta Number	BS - British Standard	T&Cs - Terms and Conditions
TAN - Total Acid Number	RHS - Right Hand Side	

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DISCLAIMER

Read these instructions carefully and look at the equipment to become familiar with the device before trying to operate or maintain it. Always ensure the correct configuration and connection of the sensor in accordance with these instructions prior to any use.

The information contained within this manual affects your legal rights, responsibilities, and safety.

Failure to read and follow any instructions and warnings contained within this document may result in a serious injury to yourself or others, damage to your Tan Delta Systems product(s), or damage to other objects.

By using your Tan Delta Systems product(s), you are agreeing that you acknowledge and understand this disclaimer and warning.

Tan Delta Systems accepts no liability for damage, injury or any legal responsibilities incurred directly or indirectly from the use of this product. The user shall at all times observe safe and lawful practices including, but not limited to, those set out in this document and any associated reference documents.

AMENDMENT RECORD SHEET

Version Number	Amendment(s)	Amended by	Date
0_1	New document	S Rickards	DD Month YYYY

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1 PRODUCT INFORMATION

1.1 Introduction

The Tan Delta **Mobile Oil Tester Kit (MOT Kit)** allows you to gain immediate insight into your oil condition, and perform field tests on oil samples quickly, without the need for lab analysis

You can build up regular test data from a wide range of assets to easily identify unusual readings associated with contamination or increased oil wear.

The Tan Delta MOT software will provide both qualitative and quantitative feedback for each sample to help you take the appropriate action.

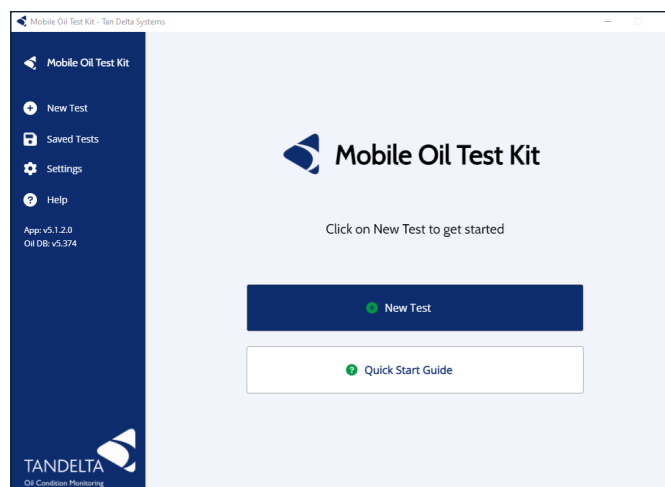


Fig. 1-1 MOT Software Start screen

1.2 Technical Specification

Product Information	
Name	Mobile Oil Tester (MOT) Kit
Product No.	OQ-MOT-1-G2
Physical	
Weight (in case)	3 kg
Oil Quality Detection Parameters	
Elements	Wear and contamination
System Requirements	
Operating system	Windows 10 or above
Minimum space	166 Mb
Internet connection	Required for application and database updates
Standards and Certification	
Shock and Vibration (Sensor only)	BS EN 60068-2-30 (Test Db - Cyc.Hum.) BS EN 60068-2-6 (Test Fc - Sine Vib.) BS EN 60068-2-27 (Test Ea - Mech. Shock)
EMC (Sensor only)	EN 61000-6-4:2007 (Generic Emissions Standard for Industrial Environments) EN 61000-6-2:2005 (Generic Immunity Standard for Industrial Environments) EN 61000-6-2:2007 (Generic Immunity Standard for Industrial Environments)
Carry Case	Case protection: Waterproof, Crush-proof, Dust-proof, Corrosion-proof. Case certification: IP67, Stanag 4280/Defstan 81-41, MIL C-1450-J, ATA 306.0 mm 234.0 mm 150 mm

1.3 Kit Content

IMPORTANT:

When unpacking your MOT kit, please ensure that all the items listed are present.

If any of the items are missing, please contact your distributor or support@tandeltasystems.com

What's in the box Product Code: MOT-1	
Item	Description
1	Tan Delta yellow peli case
2	OQSx-G2 sensor
3	Sensor to PC power & data cable - Cable J
4	MOT Kit bottle adaptor
5	USB stick (containing MOT software)
6	MOT Quick Start Guide
7	Reusable sample bottles
8	Loctite 7063® Solvent Cleaner (UK only due to shipping restrictions)



*Loctite 7063
Solvent Cleaner
(Recommended)



Fig. 1-2 MOT Kit contents

Additional Items Required

- Cleaner* (if not included)
- Additional new clean sample bottles (available from Tan Delta)
- Tissue Paper/Paper Towels
- Nitrile Gloves

1.4 Dimensions

Item	Description
1	OQSx-G2 Sensor
2	Outer Case
3	Sensor Ring
4	Sample Bottles

Approximate measurements.
Illustrations not to scale.

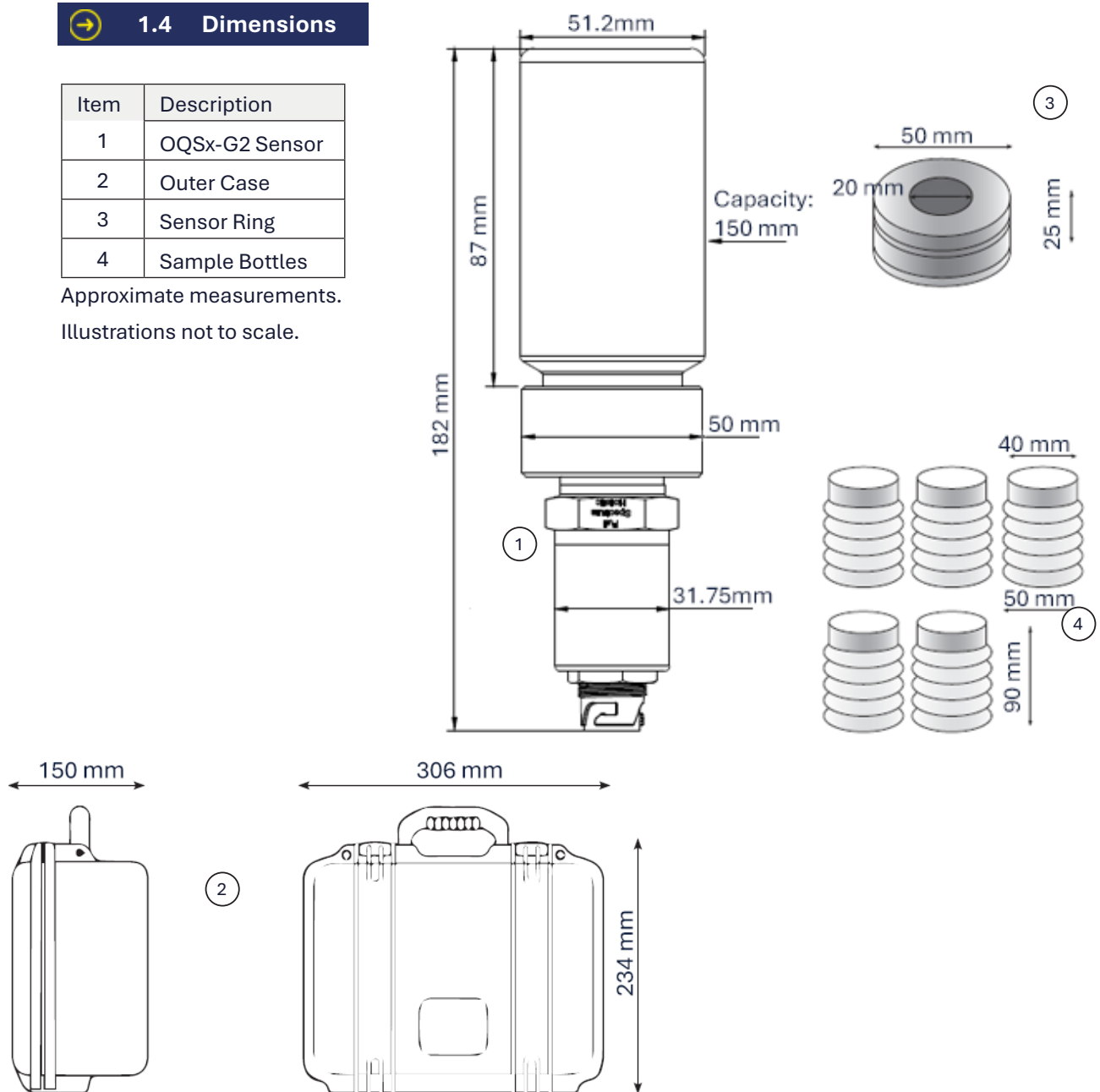


Fig. 1-3 MOT Kit dimensions

1.5 Measuring Oil Quality

The Tan Delta System describes oil wear and oil condition using a **Tan Delta Number**.

The Tan Delta OQSxG2 measures the Tan Delta Number (TDN) which is a scale running from 1200 (upper limit) to 0 (lower limit).

When new, the Clean Point for most oils will generally be between 0950 and 0850 on the TDN scale. The TDN will fall as the oil condition deteriorates.

The actual value will depend on several factors: Most importantly;

- How pure the base stock is
- What additive packages have been included
- During use, as the oil deteriorates, TDN value will decrease.

Oil wear is not linear, it tends to follow an exponential curve, therefore any initial change in wear and/or contamination will tend to be slow, however, as the wear and/or contamination increases, the rate at which the oil degrades will increase.



Fig. 1-3 Measuring Oil Quality

IMPORTANT:

The TDN does not start at 1000 for a new, clean oil, and some oils can be improved by using sophisticated on-line or off-line filtration.

An oil can also improve on the TDN scale, as well as deteriorate.



Fig. 1-4 Typical Oil Analysis Report

2 INSTALLATION

2.1 Installing the MOT Software

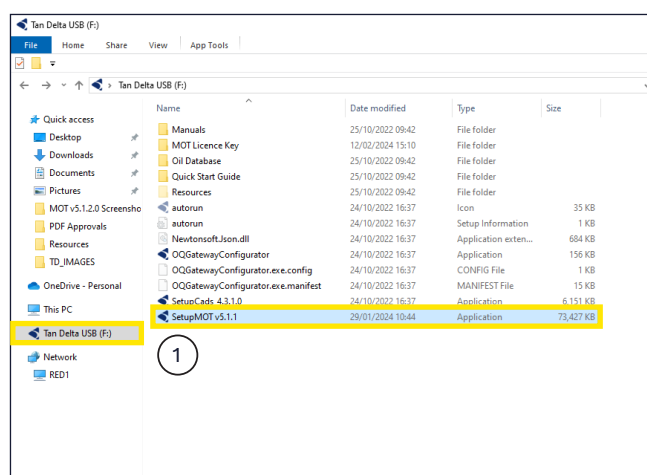


IMPORTANT:

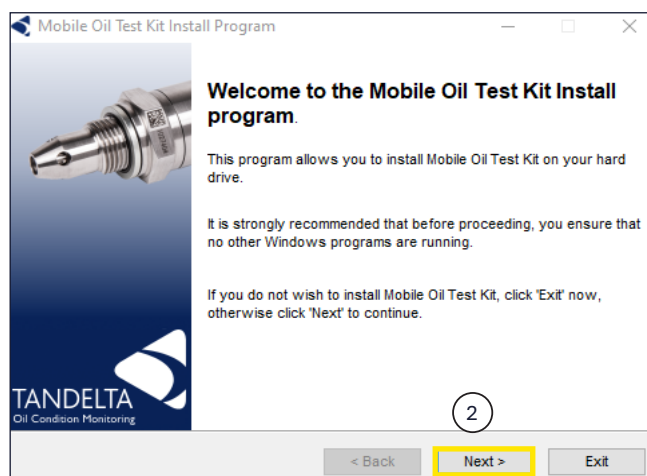
Make sure that your computer/device is running Windows 10 or above, and that you have administrator privileges, and that the device has the required 166 Mb of available disk space.

- 1) Plug the USB stick into your PC/Laptop. This should automatically launch Windows Explorer to display the files.

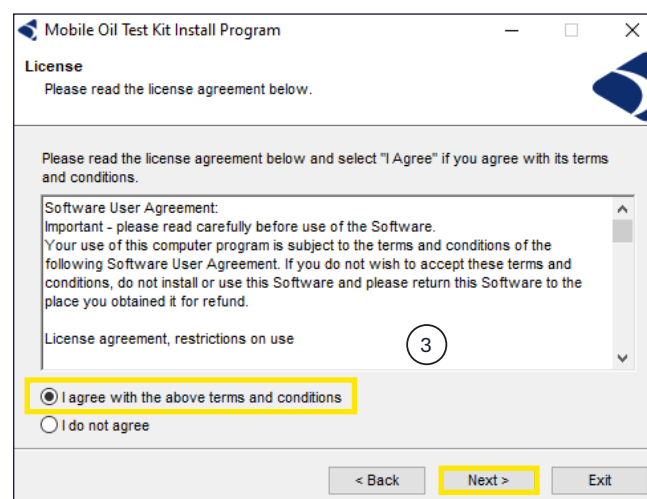
To start the installation, double-click on the **SetupMOT.exe** file.



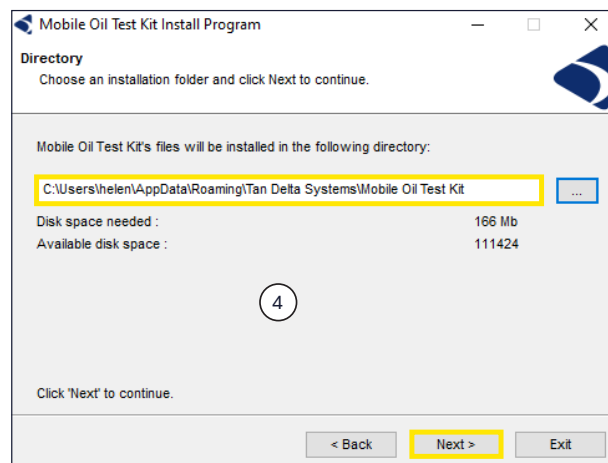
- 2) The **Welcome** screen will be displayed. Follow the instructions to complete the set up, then click **Next**.



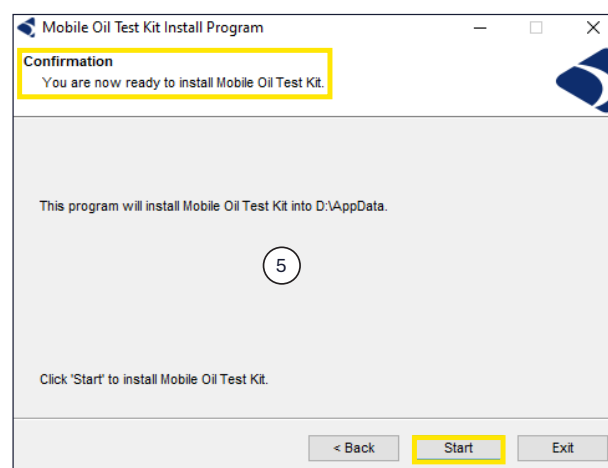
- 3) When the software is first started, the **License Agreement** screen will be displayed. Read the License Agreement and, if you want to continue with installation, click on **I agree with the above terms and conditions**, then click **Next**.



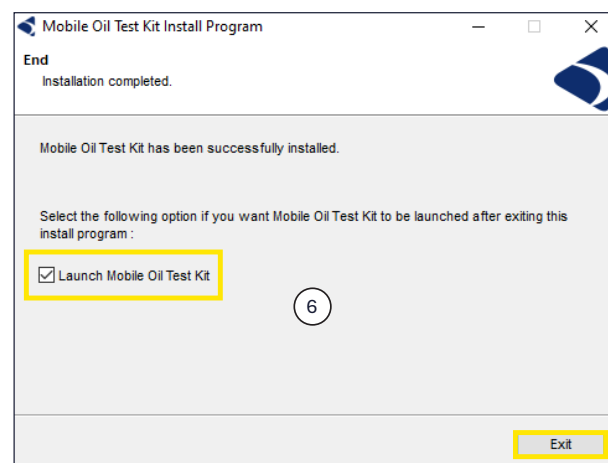
- 4) Choose an installation folder on your computer/device, then click **Next**.



- 5) The **Confirmation - You are now ready to install the Mobile Oil Test Kit** is displayed. Click **Start**.



- 6) **Installation completed.**
Select **Launch Mobile Oil Test Kit**, then click **Exit**.

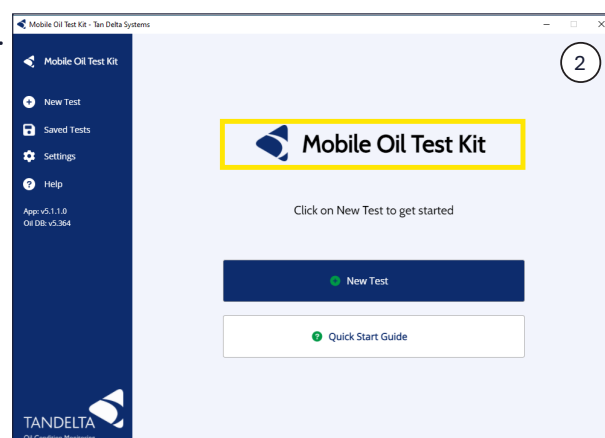


2.2 Start the MOT Software

- 1) When the software installation is complete, the Loading page will display until the home page is loaded.



- 2) The MOT Kit Software **Home** page will then load.



2.3 Cable Driver



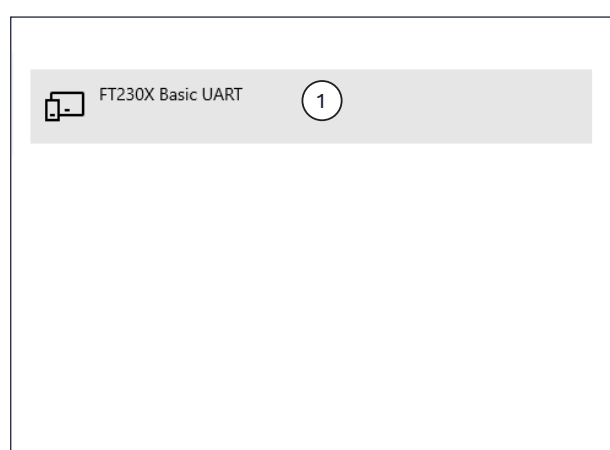
IMPORTANT:

The cable driver should be installed with the MOT Software already running.

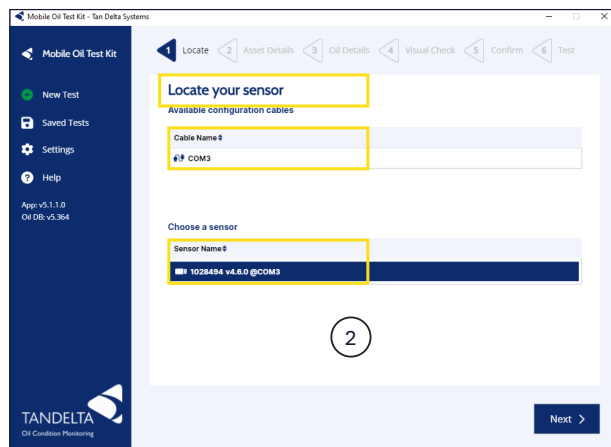
If you needed Administrator rights when installing the MOT Software, you will also need Administrator rights to install the cable drivers.

The driver information for the cable will install automatically. If this is not found, check your IT System's firewall settings for obstruction.

- 1) Plug the USB end of the **Config Cable** into your PC/laptop.
Your device will find and install the COM port automatically.

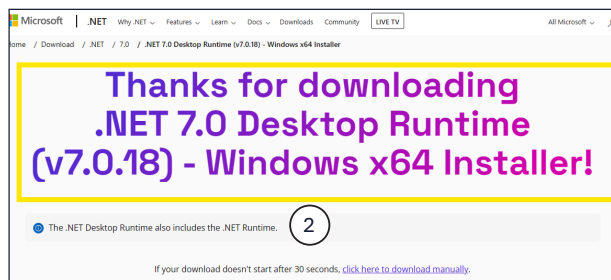
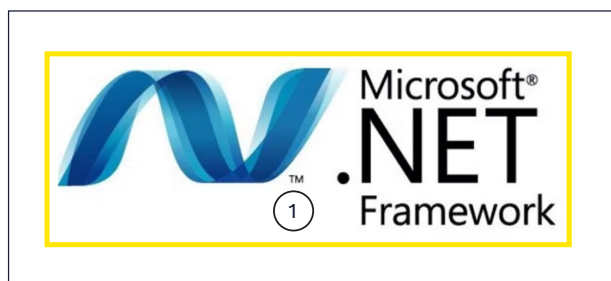


- 2) The COM port to which you are connected will appear under **Cable Names**.



2.4 .NET Framework

- 1) Your device may require you install **.NET Framework**.
This is a Microsoft product that enables you to run programmes written in different languages.
- 2) If prompted, it is safe to download.



2.5 Activate the License

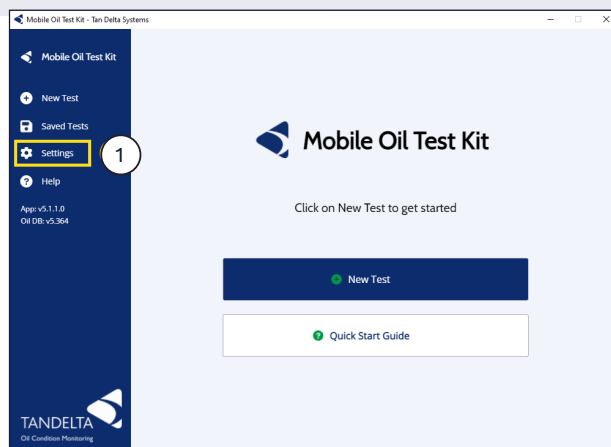


IMPORTANT:

The license provided is only valid for use with the kit provided, and is specific to the sensor supplied.

If the license is lost or the sensor is replaced for any reason, a new license will need to be obtained. Contact your distributor / point of sale for assistance with updating the license key.

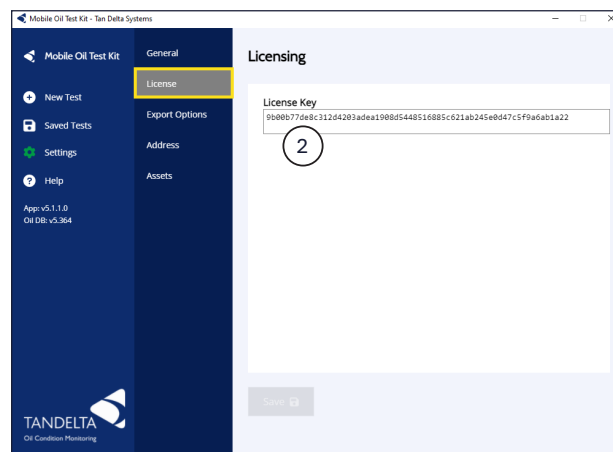
- 1) From the **Home** page, click on **Settings**.



2) Click on **License**

A box will appear to add your **License Key** number.

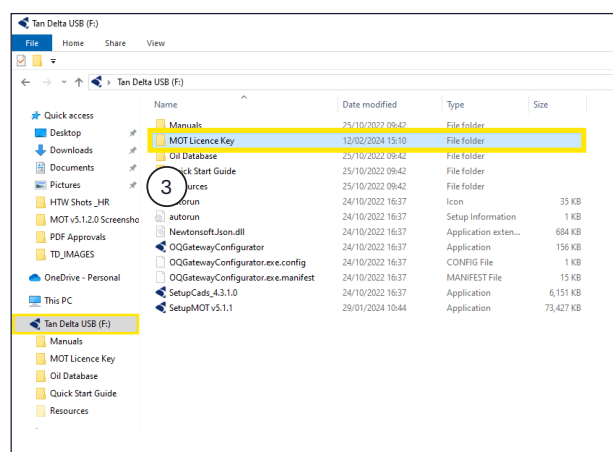
This is found on the USB Stick provided with your MOT Kit.



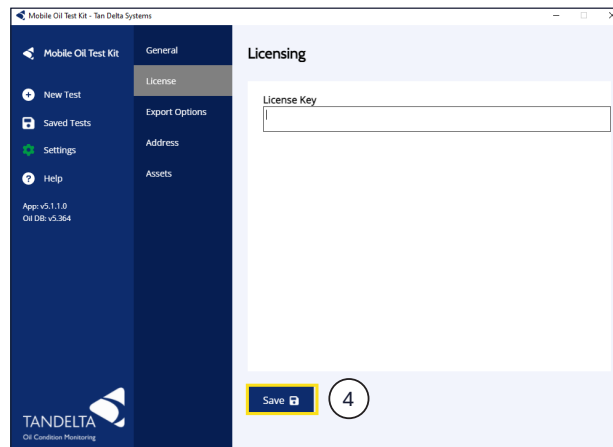
3) In File Explorer, access the files on the Tan Delta USB

Click on **MOT License key** to open the folder containing your license number.

Copy and Paste this number into the **License Key** box in the software.

4) When your License Key number is entered correctly, click **Save**.

Your license key will be saved.



3 OPERATION



IMPORTANT - SAMPLE PREPARATION:

Take your first sample and connect the bottle adaptor and sensor.

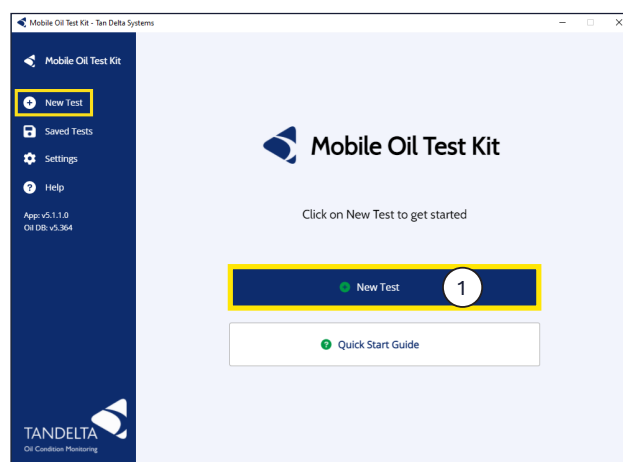
Invert the bottle so the sensor tip is submerged in the oil. It may take some time for air bubbles to escape from around the electrode of the sensor, for viscosities under 100 this should take no more than 10 seconds, for higher viscosities this can take some time.

Some firm taps with the palm of your hand on the bottle adaptor should help dislodge the bubbles.

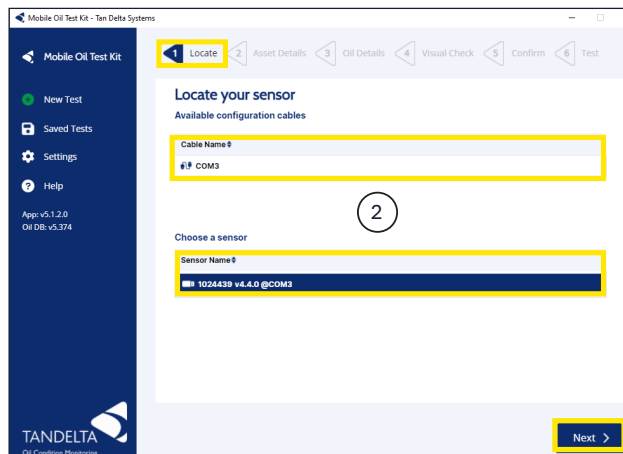


3.1 Run a Test / Take a Reading

- 1) To run a new test, start the MOT software.
After a few seconds, the home screen of the MOT software will be displayed.
Click on **New Test** to begin.



- 2) The **Locate your Sensor** screen is displayed.
Plug in the USB end of the Config Cable into your PC/laptop. The COM port you are connected to will appear under **Cable Names**.
The sensor serial number will appear under **Device Names**.



When running a test, the software will collect **Asset Details** to save with the test results, and to build a history of tests. This details are stored on the PC upon which the software is installed.

The software can collect the following information:

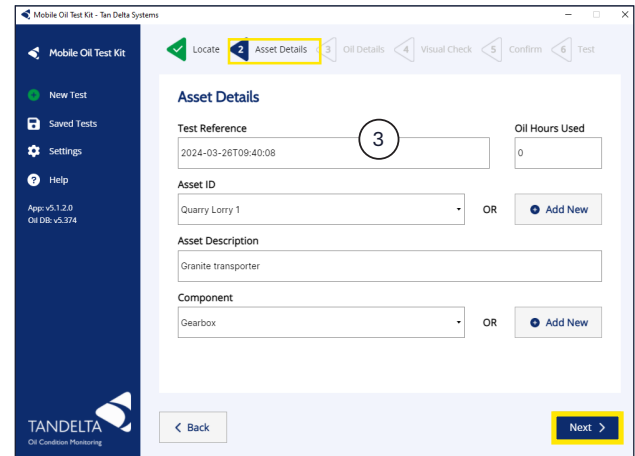
- **Test Reference***
(You can choose your own, or a default time stamp-based reference can be used.)
- **Oil Hours Used**
(How many hours the oil has been in use for)
- **Asset ID***
- **Sample Point**
(location on the asset where the Oil Sample was taken)

* **Test Reference** and **Asset ID** are mandatory fields

3) Click **Next**.

The **Asset Details** screen is displayed.

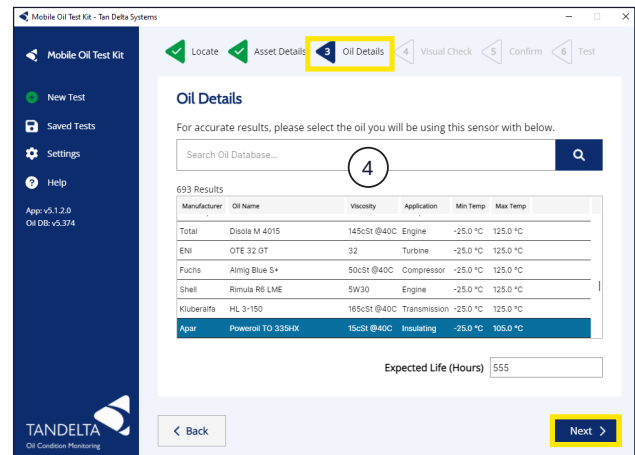
If required, select an **Asset ID** and add the **Oil Hours Used** and **Sample Point** details. Click **Next**.


4) The **Oil Details** screen is displayed.

You can use the column headings to order and filter the list of results to find your oil e.g. **Manufacturer, Oil Number, Viscosity** etc.

Select your oil from the database.

Click **Next**.



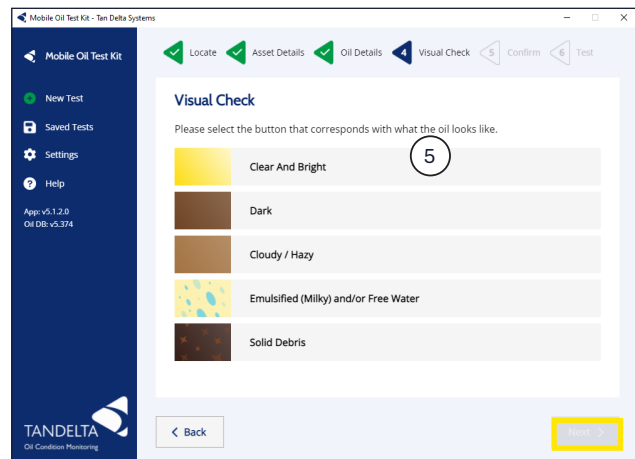
Manufacturer	Oil Name	Viscosity	Application	Min Temp	Max Temp
Total	Diplole M 4015	145cSt @40C	Engine	-25.0 °C	125.0 °C
ENI	OTE 32 OT	32	Turbine	-25.0 °C	125.0 °C
Fuchs	Almig Blue S+	50cSt @40C	Compressor	-25.0 °C	125.0 °C
Shell	Rimula R6 LME	5W30	Engine	-25.0 °C	125.0 °C
Klubersafta	HL 3-150	165cSt @40C	Transmission	-25.0 °C	125.0 °C
Apur	Poweroil TD 339HX	15cSt @40C	Insulating	-25.0 °C	105.0 °C

5) The **Visual Check** screen is displayed.

Click on the coloured button & description that best matches your oil sample.

- **Clear and Bright** - the oil contains no contamination and is light in colour.
- **Dark** - the oil contains little or no contamination, but is noticeably darker than its original colour.
- **Cloudy / Hazy** - the oil contains some contamination and is difficult to see through.
- **Emulsified (Milky) and/or Free Water** - The oil has changed consistency to become an emulsion and/or water is clearly visible in the sample.
- **Solid Debris** - larger particles of contaminant are clearly visible in the oil sample.

Click **Next**.



The visual rating serves 2 functions:

Function 1

It accounts for the fact that the MOT kit is for reading static samples, so there is potential for separation, and the sample may not be uniform throughout.

For example, you could have free water, which would not touch the sensor tip, however it certainly shouldn't be ignored, so the visual check will account for this. If the sample was shaken to emulsify the water/oil, then the sensor would pick it up and the reading would increase, and so the visual check will account for this.

Alternatively, if you have particles large enough to see, then these are not going to be detected by the sensor, but they certainly need to be accounted for.

Function 2

A visual check should be completed when taking any oil sample (if your oil is Cloudy, Emulsified, has Free Water or Solid Debris, then it needs to be changed promptly).

The MOT software always tells you to do this, and if any of the conditions listed are present, you will be given a warning to act immediately.

The MOT kit is designed to be used repeatedly on the same pieces of machinery, to build up a trend of oil condition. From this, you can identify spurious results which would indicate a problem.

The visual descriptions also help with this by giving an additional qualitative data set.

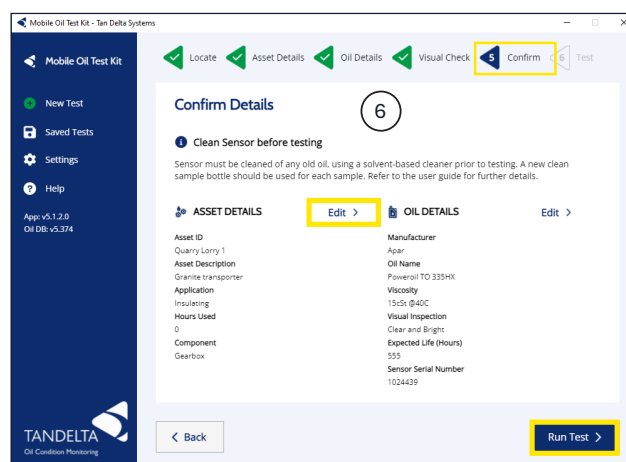
- 6) The **Confirm Details** screen is displayed.

Check that the details are correct.

If changes are needed, click **Edit >** and amend as required.

Click **Next**.

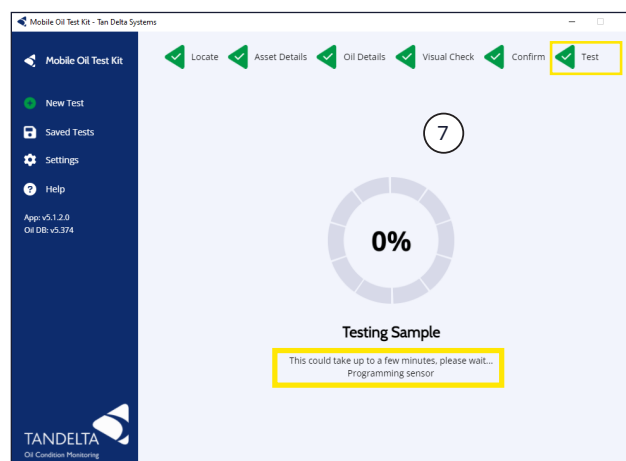
Click **Run Test** to begin the analysis.



- 7) The **Testing Sample** screen is displayed.

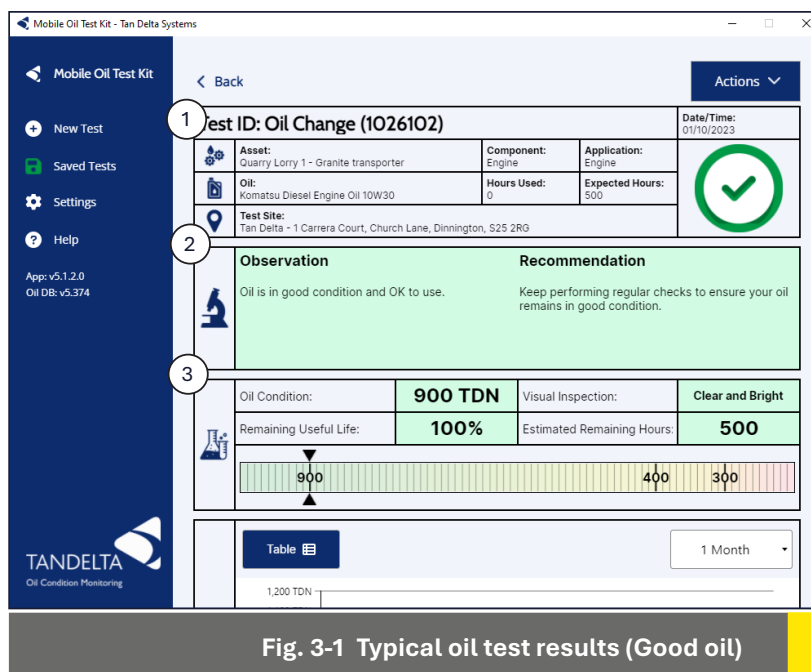
Your oil will now be analysed.

This test will take a few minutes.



3.2 Interpreting your Results

3.2.1 Typical oil test results (Good oil)



3.2.2 Explanation of results

1 Test Details			
Test ID: User-defined Test ID			Date/Time Test date and time
Asset: The asset containing the component being tested e.g. Vehicle, Transformer etc.	Component: The component within the asset that is being tested e.g. Engine, Gearbox etc.	Application: The application for the oil being tested e.g. Engine, Gearbox, Hydraulic system etc.	Result icon:  Oil is good  Oil is approaching end of life 
Oil: The oil being tested. Select the correct oil profile from the oil database when configuring the sensor.	Hours Used: The number of hours that the oil has been in use on the component. Zero for new oil.	Expected Hours: The typical number of hours of use before an oil change is needed..	
Test ID: The name and address details of your test facility			
			Oil is contaminated - change immediately and investigate cause
2 Test Observation and Recommendation			
Observation: A summary of the condition of the oil.		Recommendation: A recommended course of action based on the condition of the oil. Refer also to the test result icon.	
3 Oil Condition Summary			
Oil Condition: The Tan Delta Number (TDN) of the oil.		Visual Inspection: The visual appearance of the oil, as chosen by the tester during the test set up. Refer to Section 3.1.	
Remaining Useful Life: The remaining lifespan of the oil, expressed as a percentage.		Estimated Remaining Hours: The estimated number of working hours before an oil change is needed.	

The following examples show typical test results for various oil conditions:

3.2.3 Worn Oil Results

Mobile Oil Test Kit - Tan Delta Systems

Back Actions

Test ID: Fifth check (1026102) Date/Time: 14/12/2023

Asset: Quarry Lorry 1 - Granite transporter Component: Engine Application: Engine

Oil: Komatsu Diesel Engine Oil 10W30 Hours Used: 500 Expected Hours: 500

Test Site: Tan Delta - 1 Carrera Court, Church Lane, Dinnington, S25 2R9

Observation: Oil is approaching end of life. Recommendation: Consider scheduling a full/partial oil change soon and increasing the frequency of testing.

Oil Condition: 360 TDN Visual Inspection: Dark

Remaining Useful Life: 10% Estimated Remaining Hours: 55

900 400 300

Table 1 Month

1,200 TDN

3.2.4 Depleted Oil Results

Mobile Oil Test Kit - Tan Delta Systems

Back Actions

Test ID: Sixth check (1026102) Date/Time: 20/12/2023

Asset: Quarry Lorry 1 - Granite transporter Component: Engine Application: Engine

Oil: Komatsu Diesel Engine Oil 10W30 Hours Used: 550 Expected Hours: 500

Test Site: Tan Delta - 1 Carrera Court, Church Lane, Dinnington, S25 2R9

Observation: Oil is at end of life. Recommendation: Undertake a full/partial oil change immediately.

Oil Condition: 260 TDN Visual Inspection: Dark

Remaining Useful Life: 0% Estimated Remaining Hours: 0

900 400 300

Table 1 Month

1,200 TDN

3.2.5 Cloudy Oil Results

Mobile Oil Test Kit - Tan Delta Systems

Back Actions

Test ID: Fifth check (1026102) Date/Time: 14/12/2023

Asset: Quarry Lorry 1 - Granite transporter Component: Engine Application: Engine

Oil: Komatsu Diesel Engine Oil 10W30 Hours Used: 500 Expected Hours: 500

Test Site: Tan Delta - 1 Carrera Court, Church Lane, Dinnington, S25 2R9

Observation: Oil is approaching end of life. Recommendation: Consider scheduling a full/partial oil change soon and increasing the frequency of testing.

Oil Condition: 360 TDN Visual Inspection: Dark

Remaining Useful Life: 10% Estimated Remaining Hours: 55

900 400 300

Table 1 Month

1,200 TDN

3.2.6 Water Contamination Results

Mobile Oil Test Kit - Tan Delta Systems

Back Actions

Test ID: Water Ingress (1026102) Date/Time: 20/12/2023

Asset: Quarry Lorry 1 - Granite transporter Component: Gearbox Application: Transmission

Oil: Komatsu Diesel Engine Oil 10W30 Hours Used: 300 Expected Hours: 2000

Test Site: Tan Delta - 1 Carrera Court, Church Lane, Dinnington, S25 2R9

Observation: Visual inspection indicates that the oil is contaminated. Recommendation: If possible, stop using the equipment and/or undertake a full/partial oil change immediately and send this sample to your oil laboratory for detailed analysis, also increase the frequency of testing.

Oil Condition: ---- Visual Inspection: Emulsified and/or Free Water

Remaining Useful Life: ---- Estimated Remaining Hours: ----

900 700 500

Table 1 Month

1,200 TDN

3.2.7 Metal Contamination Results

Mobile Oil Test Kit - Tan Delta Systems

Back Actions

Test ID: Swarf (1026102) Date/Time: 20/12/2023

Asset: Quarry Lorry 1 - Granite transporter Component: Gearbox Application: Transmission

Oil: Komatsu Diesel Engine Oil 10W30 Hours Used: 300 Expected Hours: 2000

Test Site: Tan Delta - 1 Carrera Court, Church Lane, Dinnington, S25 2R9

Observation: Visual inspection indicates that the oil is contaminated. Recommendation: If possible, stop using the equipment and/or undertake a full/partial oil change immediately and send this sample to your oil laboratory for detailed analysis, also increase the frequency of testing.

Oil Condition: ---- Visual Inspection: Solid Debris

Remaining Useful Life: ---- Estimated Remaining Hours: ----

900 700 500

Table 1 Month

1,200 TDN

3.2.8 Accelerated Wear Results

Mobile Oil Test Kit - Tan Delta Systems

Back Actions

Test ID: Accelerated Wear (1026102) Date/Time: 20/12/2023

Asset: Quarry Lorry 1 - Granite transporter Component: Gearbox Application: Transmission

Oil: Komatsu Diesel Engine Oil 10W30 Hours Used: 100 Expected Hours: 2000

Test Site: Tan Delta - 1 Carrera Court, Church Lane, Dinnington, S25 2R9

Observation: Oil is aging faster than expected. Recommendation: Increase the frequency of testing and send this sample to your oil laboratory for detailed analysis.

Oil Condition: 855 TDN Visual Inspection: Dark

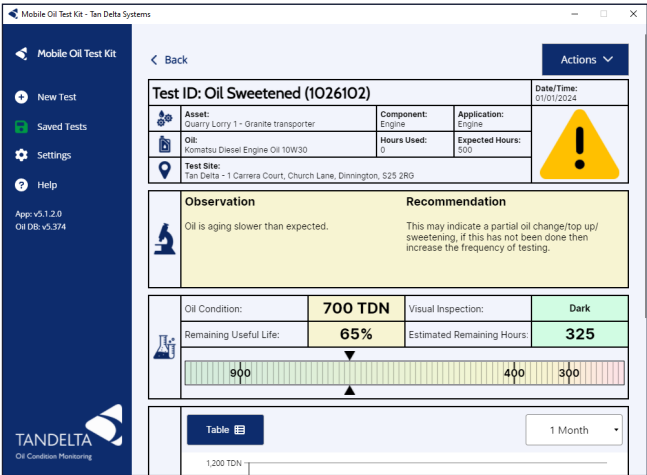
Remaining Useful Life: 90% Estimated Remaining Hours: 900

900 700 500

Table 1 Month

1,200 TDN

3.2.9 Unexpected Oil Improvement Results

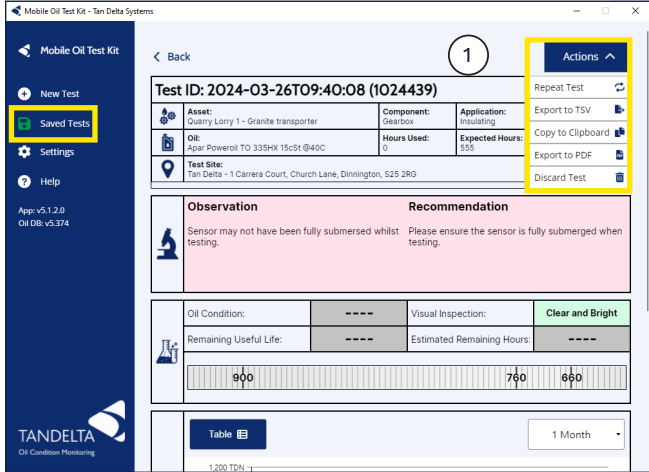


3.3 Actions

1) Actions

In the **Actions** drop-down menu, the following options are available

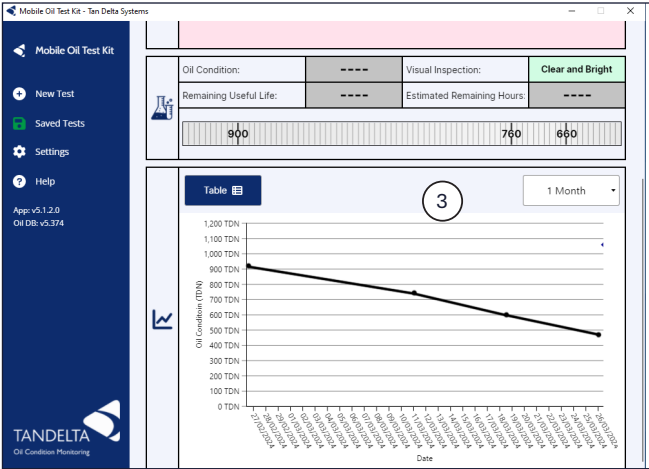
Action	Description
Repeat Test	Repeats the test using the same details
Export to TSV	Export the test as a TSV file for further analysis.
Copy to Clipboard	Copies the test results to the Clipboard for insertion in a report or document.
Export to PDF	Exports the test results as a PDF file.
Discard Test	Deletes the test record.



2) Historic Trend Graph

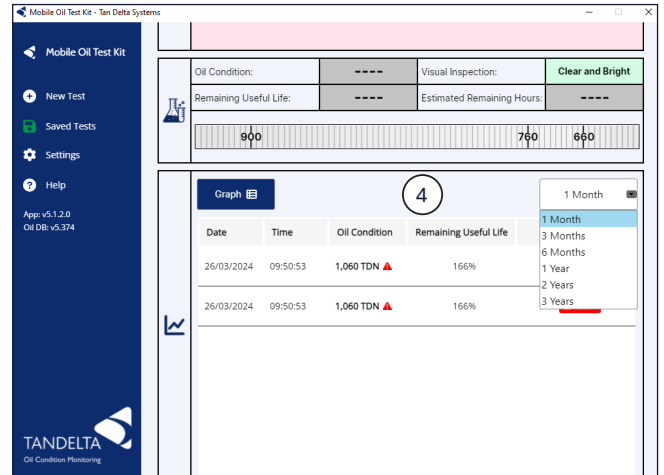
On the **Test Result** screen, you can switch between viewing the data as a graph or in table form.

The graph will display the historic trend of any saved tests, which have a matching **Asset ID**, **Sample Point**, and **Oil Name**.



4) Historic Trend Table

Where the asset has previous tests recorded on the PC used for the test, a historic trend of previous test results will also be displayed.



3.4 Saved Tests

The software has a repository of **Saved Tests** which can be organized by **Date/Time**, **Result**, **Asset ID**, or **Test ID**.

These Saved Tests can be opened, and the list of actions can be accessed apart from Repeat Test as this can only be done immediately after the test completed.

Date / Time	Result	Oil Condition	Asset / Component	Test ID
01/10/2023 12:19:11	OKAY	900 TDN	Quarry Lorry 1 Engine	Oil Change
14/10/2023 12:19:11	OKAY	800 TDN	Quarry Lorry 1 Engine	First check
28/10/2023 12:19:11	OKAY	700 TDN	Quarry Lorry 1 Engine	Second check
14/11/2023 11:19:11	OKAY	600 TDN	Quarry Lorry 1 Engine	Third check
28/11/2023 11:19:11	OKAY	500 TDN	Quarry Lorry 1 Engine	Fourth check
14/12/2023 11:19:11	CAUTION	360 TDN	Quarry Lorry 1 Engine	Fifth check

3.5 Help

- 1) The help menu allows access to the **Quick Start Guide** and the **User Manual** for your version of the software in PDF Format.
- 2) You can also access details of the **Open Source Libraries** used for the software.

Quick Start Guide
The Quick Start Guide covers the basics to get you up and running with testing your oil samples.
[View Quick Start Guide](#)

User Manual
The User Manual contains more in-depth instructions, including a section on interpreting results.
[View User Manual](#)

Open Source Libraries
Mobile Oil Test Kit is built upon a number of open source software libraries. Click to view the list.
[View Open Source Libraries](#)

3.6 Open Source Libraries

- 1) This screen gives details of the **Open Source Libraries** used for the software

Open Source Libraries

Available UI

The MIT License (MIT)

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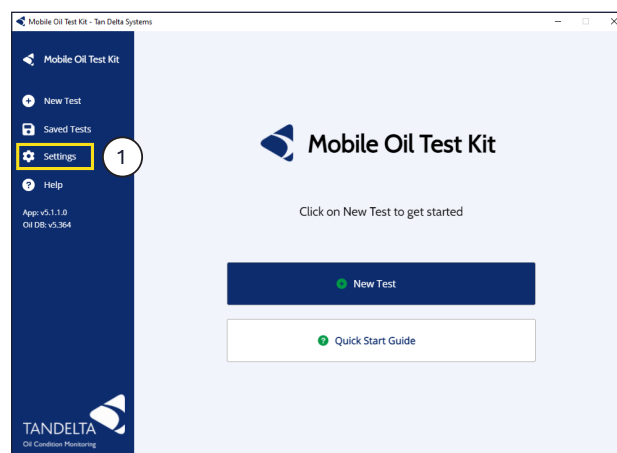
[View Open Source Libraries](#)

4 CONFIGURATION

Once you have run an oil test, you may want to adjust the MOT Software configuration to suit your requirements for further tests.

This is done via the options in the **Settings** menu

- 1) From the **Home** page, click on **Settings**.



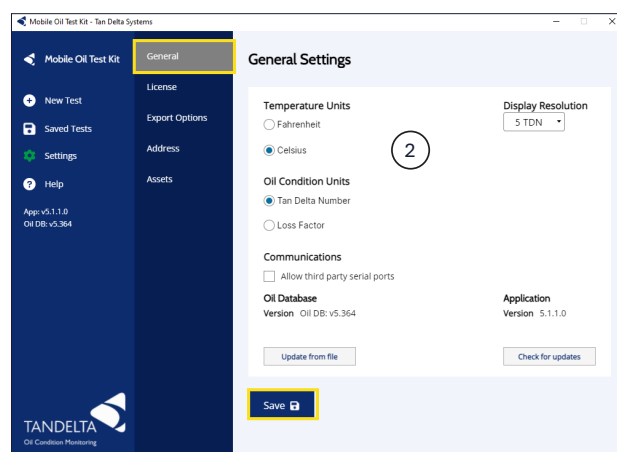
- 2) Click on **General**.

Select your preferred **Temperature Units**, **Display Resolution**, **Oil Condition Units**.

You can use the **Communications** checkbox to Allow third-party serial ports.

The **Oil Database** and MOT **Application** Version details are given, with links to upload a new database and check for application updates.

When you have selected the required options, Click **Save**.

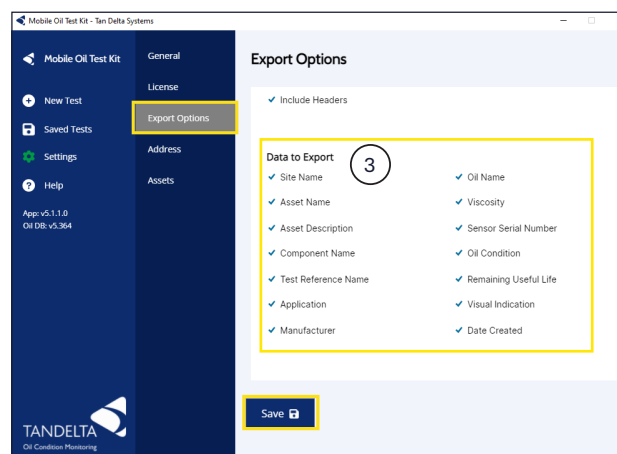


- 3) Click on **Export Options**.

Select the required **Data to Export**.

This data will be exported to a *.TSV file. This file is created when you select the **Export to TSV** option from the **Actions** menu on the oil test results screen.

Click **Save**.

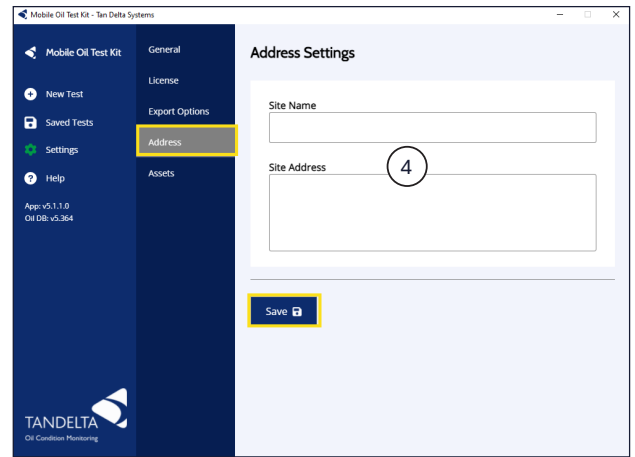


4) Click on **Address Settings**.

Use this screen to record the details of your test facility. This will appear on the test results screen and report.

Enter the required **Site Name** and **Site Address**.

Click **Save**.

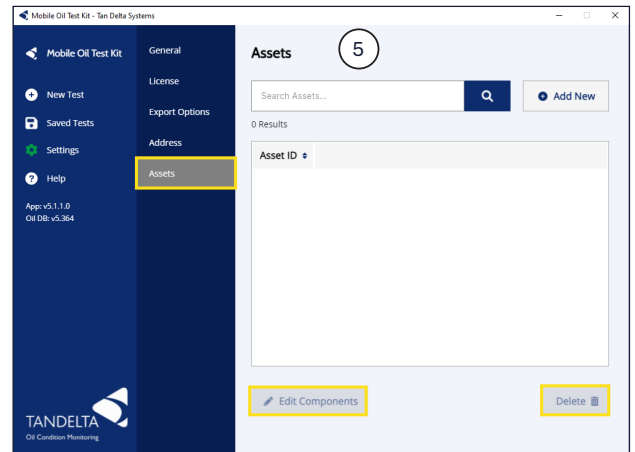


5) Click on **Assets**.

The **Assets** screen allows you to search for, add, edit, or delete Assets.

Asset details are usually entered when running an oil test. Assets are typically the equipment containing the component using the oil under test.

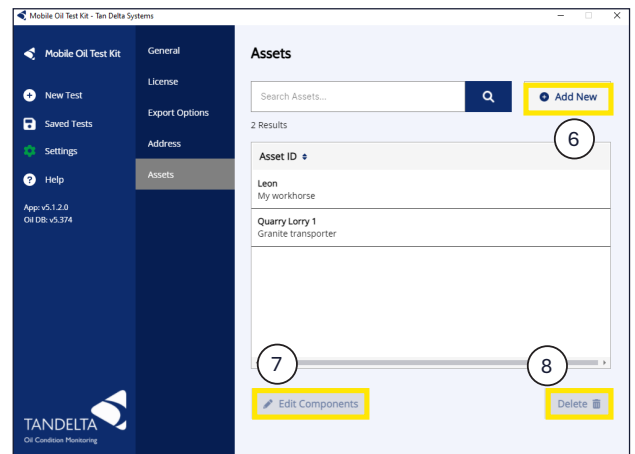
For example, an Excavator is an asset which contains components such as an Engine, a Gearbox and a Hydraulic system.



6) To add a new Asset, click on **Add New**.

On the **Add New Asset** screen, enter the **Name** and **Description** of the new Asset.

Click on **Save**.



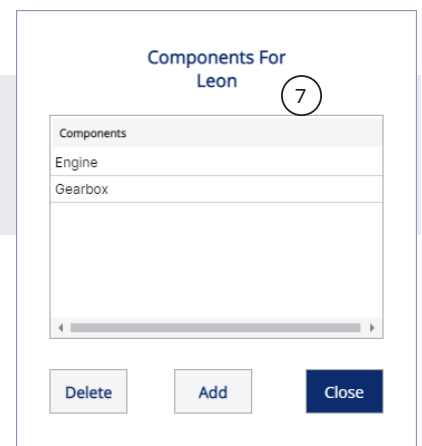
7) For each Asset, you can **Add** or **Edit Components**.

8) You can also **Delete Components** if no longer needed.



CAUTION

Deleting a component will also delete all previous test records for that component.




5 MAINTENANCE & CLEANING

5.1 Maintenance

IMPORTANT

The sensor must be cleaned thoroughly between uses using a zero-residue solvent cleaner, or using odourless kerosene.

5.2 Cleaning the sensor

CAUTION:

For accurate results, it is vitally important to do any test using a clean sensor.

Any oil residue from a previous test **MUST** be removed.

To clean the sensor:

- 1) Clean any excess oil from the end of the sensor with absorbent paper.
- 2) Remove the remaining oil by spraying Loctite 7063 cleaner into each of the four holes at the end of the sensor, and all over the outside of the tip.
- 3) Give a general exterior wash on both sides as shown in Fig. 5-1.
- 4) Give a longer blast into the centre hole (2 seconds).
- 5) Give the sensor a sharp shake to dislodge any solvent remaining around the electrode.
- 6) Leave to dry for at least 1 minute.



Fig. 4-1 Cleaning the Sensor

5.3 Cleaning an MOT kit oil sample bottle:

Replacement MOT Kit oil sample bottles are available to order from your Tan Delta Distributor.

MOT Kit oil sample bottles must be cleaned between use, using either a zero-residue solvent cleaner or odourless kerosene. Make sure that no residue is left behind that can affect the result of the tests.

- 1) Pour any remaining oil out of the bottle and wipe away any excess from the bottle neck.
- 2) Pour the cleaning agent into the bottle and attach the lid.
- 3) Shake the bottle to agitate the cleaner and remove any deposits from the bottle walls.
- 4) Pour away the cleaner/oil solution into a suitable oil disposal unit.
- 5) Repeat the process until all oil deposits are removed.
- 6) Leave the cleaned bottle to air dry before reuse.
- 7) The bottle collar and fibre washer must also be cleaned using the same cleaning agent and suitable paper towels to remove any residual oil deposits.
- 8) Make sure that the fibre washer is present before running a new test.

6 SUPPORT



6.1 FAQs

If you have any issues, please read the tips below before contacting us for further support.

1) Where are the Cable J drivers?

The drivers for Cable J should install automatically.

3) How do I update the software?

Software updates will be made available periodically by Tan Delta. You can check for updates in the software settings.

4) I cannot see my oil in the database, so I have used an oil which I believe is close, but the sensor isn't working?

The sensor will exhibit a different response for every oil. For best results, it is advised to obtain an Oil Profile which Tan Delta will add to our Oil Database. Please complete and submit an Oil Profile Request Form online at www.tandeltasystems.com/oil-availability-checker/

5) I'm changing my PC, can I carry over my test history to the new device?

Yes, you will need to locate the test history on your PC through the following file path:

C:\Users\DefaultUser\AppData\Roaming\Tan Delta Systems\UserData\

(You will need to change "DefaultUser" for whichever the installed user account is.)

You then copy the history contained in that folder to the same location on your new device.

6) Can I use the Software with Tablet devices or Mac devices?

The software is currently written for PCs using a Windows 10 OS or newer only, it can be used on Microsoft Surface devices by enabling third party apps to be installed.

Note: you may need a USB A to USB C adapter depending on the USB ports on your device.

7) Does the sensor require cleaning?

Cleaning is **not** required once the sensor is installed. However, when using the sensor for testing offline samples (i.e. MOT Kit), then cleaning between samples is essential.

8) Can I use other cleaning substances to clean my sensor?

We recommend using either a zero-residue solvent cleaner or odourless kerosene to clean See Section 6.1.1.

The sensor is tested with Loctite SF 7063 and odourless kerosene.

Similar formula cleaners are available, please contact Tan Delta for advice or guidance.



IMPORTANT:

Do not use water or detergent-based cleaners as these may react with any oil deposits and may not clean the sensor correctly.

6.1.1 Cleaning Procedure – Odourless Kerosene

- 1) Unplug and remove the sensor then use absorbent paper to wipe off the excess oil from the sensor tip and thread.
- 2) Attach a bottle adaptor to a sample bottle and pour in approximately 15ml of kerosene.
- 3) Screw in the sensor and shake vigorously for 2 minutes to ensure the kerosene washes up around the tip of the sensor.
- 4) Remove the sensor from the adaptor and shake rigorously over the absorbent paper to dislodge any excess kerosene.
- 5) Leave to dry for a few minutes.



6.2 Troubleshooting

Issue	Resolution
Software will not load	Incorrect installation. Install the software again using full administrator privileges.
Software cannot locate configuration cable	Check cable is not damaged and is plugged into an active USB port on your PC. Check that the USB port is set as an active COM port in your PC settings. Check to ensure the cable drivers are installed on your PC.
Software cannot locate sensor	Check the sensor is connected to your configuration cable and that the configuration cable has been located by the software.
Software is not licensed for the sensor being used	Check that you input the correct license code, and that the sensor is the correct one that was supplied with the kit
Test will not complete (progress icon is stuck and will not complete test)	Incorrect installation. Install the software again using full administrator privileges.
The oil I am testing is not listed in the oil database	The sensor uses a known oil database to configure the sensor for each test. If you need a new oil adding to the database, we will need to profile the oil. See the Tan Delta website for details of our oil profiling service.
Test result is different to what I expected	Clean the sensor thoroughly using the instructions in this manual. Take a new sample of oil from a sample port that has live oil and re-test. If the result is the same then the result is accurate.
There is no oil condition data in my test result (fields are greyed out)	The visual inspection reported that the oil condition is poor / visibly contaminated. This result means that the oil is not in a usable condition and action should be taken straight away.
There is no value for estimated remaining hours given	Check the expected oil hours and hours used fields are completed in the test setup. Complete these fields and run the test again.

7 SOFTWARE AGREEMENTS

7.1 Software User Agreement

**IMPORTANT:**

Please read carefully before using the Software.

Your use of this computer program is subject to the terms and conditions of the following Software User Agreement. If you do not wish to accept these terms and conditions, do not install or use this Software and please return this Software to the place you obtained it for refund.

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Oil Condition Monitoring

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