Servicemaster

Why Use Servicemaster?

Introduction

JCB machines now use the latest developments in electronic management of machine systems. This means that machine systems such as service hydraulics, engine, transmission and steering are controlled using electronic control units (ECUs).

The ECUs process inputs from electrical sensors and then output signals to electrical actuators on the applicable devices. The ECUs are also connected to the machine CANbus electronic communication system.

Fault Finding

Faults with ECU controlled systems can be difficult or impossible to trace using traditional methods.

In addition to the primary function of machine control the ECUs are also able to detect possible faults with sensors and actuators. The faults are 'logged' using a code system.

Use **Servicemaster** to see and understand these codes.

In addition **Servicemaster** has direct links to relevant on-screen help information about relevant devices. This information is designed to help you identify, test, and if applicable, remove and replace devices.

Identify Poor Maintenance

System faults that are present, or have happened in the past can be seen. This is not only useful when fault finding but can also identify poor standards of maintenance. For example a log showing a history of water in fuel detected.

Use **Servicemaster** to see and understand these codes.

Access Machine Set Up Data

Machine parameters such as tyre sizes, gear shift points and engine injector calibration codes are all stored and used by the relevant control ECU's. During the life of the machine it will be necessary to change some of these parameters. Without the correct data the machine will not operate correctly.

This can only be done with **Servicemaster**.

Re-Programming ECUs

The ECU's use pre-loaded data to compute responses to inputs from sensors. If an ECU is replaced the correct data files must be programmed ('flashed') into the ECU memory.

New data files may also be issued by JCB Service to improve machine operation. This will also require the ECU to be re-programmed.

This can only be done with **Servicemaster**.

Summary

With the latest **Servicemaster** software loaded on your laptop and you can:

- **Fault find**
- For fast, effective fault finding.
- **Check maintenance standards**
- See if the machine has been abused.
- **View and change machine set up data**
- This can only be done with Servicemaster.
- **Flash ECUs with the correct data files**
- This can only be done with Servicemaster.

What is Servicemaster?

Introduction

JCB Servicemaster is software for use with Microsoft Windows and a laptop personal computer.

The laptop computer is connected to the machine 'diagnostic socket' using special cables and an adapter. Use Servicemaster software to:

– Display data from machine ECUs

– Change data stored in ECUs

CANbus Communications System

C   Controller   **A**   Area   **N**   Network

Servicemaster software communicates with the machine ECUs using the CAN.

CAN is an electronic communications system that connects compatible machine ECUs to one pair of data wires called the CANbus. Coded data is sent to and from the ECUs on the CANbus. By connecting Servicemaster software to the CANbus this data is seen and decoded for use by an engineer.

Servicemaster Structure

Servicemaster software is supplied as part of the JCB Service data DVD **11A** issued to JCB dealers.

The DVD includes all the software tools for all applicable JCB machines. A selector window **11B** is used to choose the correct software tool set **11C** for each machine range.
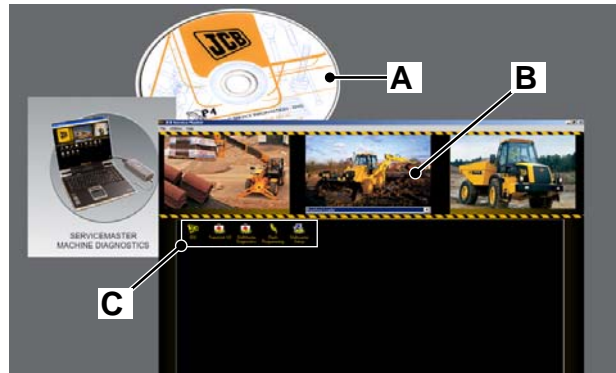

Fig 11.

Tool Sets

Tool sets **11C** are different for each machine range. A typical tool set includes:

Vehicle Setup tool	Diagnostics tool
Flash Programmer tool	Data Logger tool
Service History	

Each tool is specific to the chosen machine range. The tool icons are 'shortcuts' to the tool software files. Detailed information about how to use the tools is given in the applicable machine documentation.

How to Set Up Servicemaster

Note: The procedures that follow describe how to set up Servicemaster for USB compatible equipment. There are other procedures and options. These are described in detail in the Servicemaster help files contained on the JCB Service Information DVD.

Before you set up Servicemaster make sure you have:

–   A Microsoft Windows compatible laptop computer with a DVD drive and a USB port (**12A**)

Note: Servicemaster is compatible with Windows 98, 2000, ME and XP.

–   The latest Servicemaster software (JCB Service Information DVD) (**12B**)
–   A JCB compatible data link adapter (DLA) (**12C)**
–   The correct connection cables (**12D**)

Important: DO NOT connect any cables at the laptop, DLA or machine now.

Fig 12.

To set up Servicemaster for the first time:

1   **Install Servicemaster**

2   **Start Servicemaster**

3   **Load the DLA laptop driver software**

4   **Configure the DLA type and communications port**

5   **Make sure that the DLA flash memory contains the latest firmware file**

6   **Connect Servicemaster to the machine CANbus**

Install Servicemaster

1 Exit all open programs on your laptop computer.

2 Insert the 'JCB Service Information Pack DVD' into the DVD drive. The chooser screen will open. Click on the 'S4' icon. ⇒ *Fig 13. (M-40)*

Fig 13.

3 The S4 chooser screen will open. Click on the Servicemaster Icon. ⇒ *Fig 14. (M-40)*

Fig 14.

4 The Servicemaster set up screen will open. Click on the 'Install' button. ⇒ *Fig 15. (M-40)*. The installation process now starts:

Fig 15.

a At the 'installer' screen click 'Next'. ⇒ *Fig 16. (M-40)*

Fig 16.

b At the 'destination location' screen click 'Next'.

c At the 'installation type' screen click 'Next'. (A full installation is recommended.)

d At the 'installation complete' screen, click 'Finish'.

Start Servicemaster

1   Double click on the Servicemaster icon. ⇨ *Fig 17. (M-41)*. (The icon is found on the desktop or in the 'Start' menu -'Programs' - 'JCB'.)

Fig 17.

2   The Servicemaster chooser window will open. ⇨ *Fig 18. (M-41)*

Fig 18.

3   Open the drop down menu to see the machines and components supported by Servicemaster tools. ⇨ *Fig 19. (M-41)*

Fig 19.

Load the DLA Laptop Driver Software

To use Servicemaster for the first time you must load the DLA driver software. You will not have to do the procedure again.

Important: DO NOT connect the DLA or cables at the laptop or machine now.

1   Start the Servicemaster software on your laptop computer. ⇨ *Start Servicemaster (☐ M-41)*

2   Select 'DLA' from the drop down menu. ⇨ *Fig 20. (☐ M-42)*

Fig 20.

3   Double click on the USB driver icon. ⇨ *Fig 21. (☐ M-42)*

Fig 21.

Note: Drivers are also available for computers with serial ports (no USB) and other versions of Microsoft Windows. If your laptop does not have a USB port, double click on the correct driver icon.

4   The driver installer window will open. ⇨ *Fig 22. (☐ M-42)*. Follow the on-screen installation instructions to complete the installation.

Fig 22.

Configure the DLA Type and Communications Port

To use Servicemaster for the first time you must make sure that the correct DLA and laptop port is selected to communicate with the DLA. You will not have to do the procedure again.

1   Start the Servicemaster software on your laptop computer. ⇨ **_Start Servicemaster (M-41)_**

2   Select 'DLA' from the Servicemaster drop down menu. ⇨ **_Fig 20. (M-42)_**

3   Double click the COM Port Chooser icon. ⇨ **_Fig 23. (M-43)_**

Fig 23.

4   The DLA Chooser window will open. Select the 'USB/Serial DLA' device and then click 'Apply'. ⇨ **_Fig 24. (M-43)_**

Fig 24.

Note: Older DLAs and laptop computers may not be compatible with USB ports. Choose the 'Parallel/Serial DLA' device in the DLA chooser.
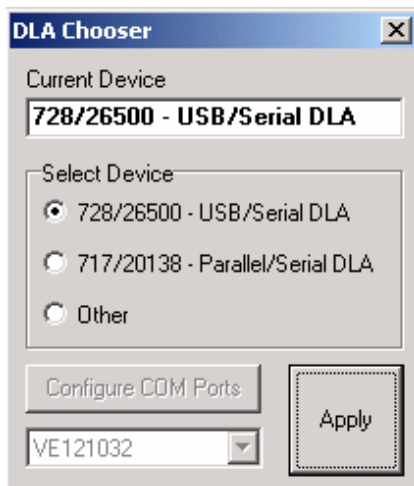
Check the DLA Firmware File

The DLA has software embedded in its own flash memory. This file must be replaced with a new one when new firmware is released. You will only have to Check the DLA firmware file version if you receive a new Servicemaster version or use a different DLA.

1 Make sure that the DLA is connected to the laptop computer. ⇒ *Connect the 'USB PC Cable' 29A to the DLA and a free port on your laptop computer. (⌐ M-45)*

2 Start the Servicemaster software on your laptop computer. ⇒ *Start Servicemaster (⌐ M-41)*

3 Select 'DLA' from the drop down menu. ⇒ *Fig 20. (⌐ M-42)*

4 Double click on the USB DLA Flash Loader icon. ⇒ *Fig 25. (⌐ M-44)*

Fig 25.

Note: Older DLAs and laptop computers may not be compatible with USB ports. Double click the 'Flash loader for Serial/Parallel DLA' icon.

5 The device flash update tool window opens. The details of the firmware in the DLA are displayed including the application version, for example 1.04.
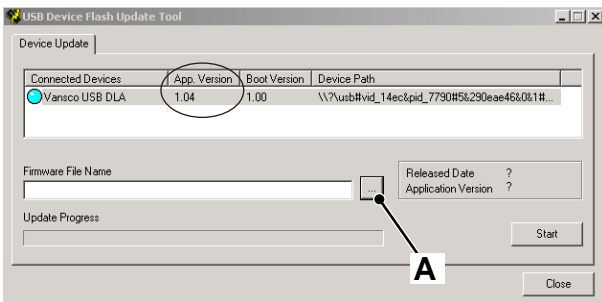

Fig 26.

6 **Check for a new firmware file**: Click on the browse button **26A** and locate the file stored within the JCB_Servicemaster directory on your laptop hard drive.

a Click the 'Open' button. The selected file appears in the 'Firmware File Name' field together with its release date and application version, for example 2.01. ⇒ *Fig 28. (⌐ M-44)*
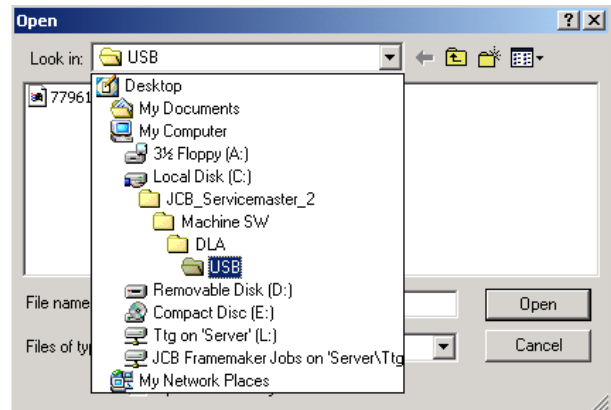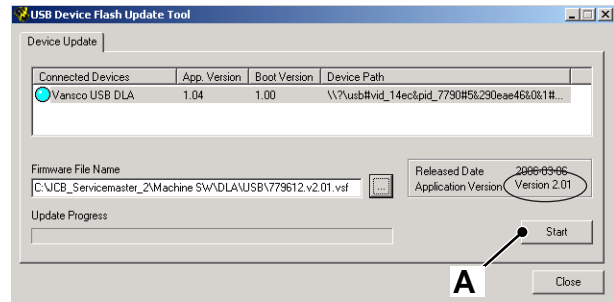

Fig 27.

Fig 28.

7 **Load a new firmware file**: If the firmware in the DLA is not up to date, load the new file. Click the 'Start' button **28A** and follow the on-screen instructions.

Connect Servicemaster to the Machine CANbus

To use Servicemaster connect your laptop computer to the machine CANbus. Connection is made using Data Link Adapter (DLA) **29C** and the applicable cables.
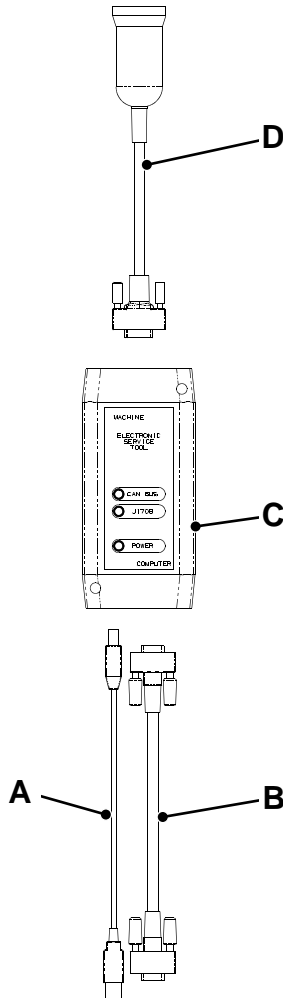
Fig 29.

Table 3. Component Key

A	USB PC Cable	718/20235
B	Serial PC Cable	718/20236
C	USB DLA	728/26500
D	Machine Cable	718/20237

Kit 892/01174 (includes items A,B,C and D)

1   Make sure the machine ignition system is OFF.

2   Connect the 'USB PC Cable' **29A** to the DLA and a free port on your laptop computer.

Note: Connect the USB cable directly to the laptop computer. DO NOT connect the cable via a USB hub.

*Note: Older DLAs and laptop computers may not be compatible with USB ports. Use the serial PC cable **29B** to connect the DLA to the laptop serial port.*
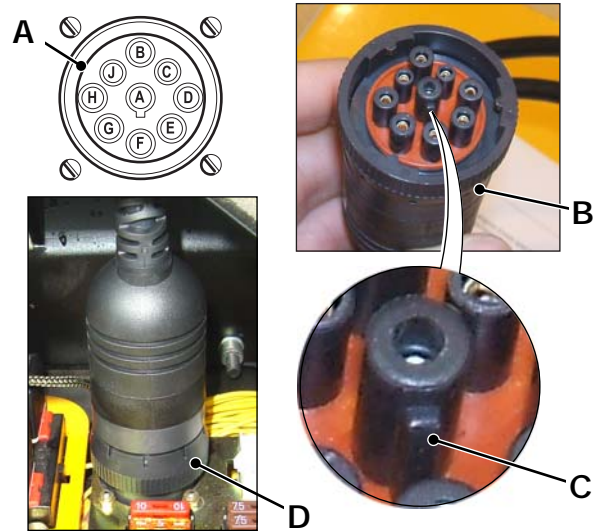
Fig 30.

3   Connect the 'Machine Cable' **29D** to the DLA. The 'Machine Cable' has a 15-way D-type connector on one end and a 9-way CAN connector on the other. Plug the 15-way connector into the DLA and tighten the thumb-screws.

4   Connect the 9-way CAN connector into the machines' Diagnostics Connector **30A** as follows:

   a   Position the CAN connector **30B** to align the centre pin location tab **30C** with the diagnostics connector. **30A**.

   b   Couple the connectors. Turn the locking ring **30D** clockwise to secure the connectors.