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## Introduction

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Technology is evolving at an alarming rate. Computers are everywhere and this can be quite daunting to many of us who missed out on computer education at school.

However, computers are here to stay and offer many advantages to the motor trade. There are many systems offering new ways of improving how we manage panel and paint shops, and how we carry out repairs to customers' vehicles.

This course will introduce you to the various computer and digital imaging systems in use today in the collision repair industry, using a mixture of theory and hands-on activities to get a good understanding of how they relate to your situation.

You will be required to complete various theory and practical exercises to demonstrate your understanding of the study guide, so you are able to understand and use any system that you encounter.

# Use computer and digital imaging systems for vehicle specifications

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## What are they?

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For many years we have seen computers used to record details of invoices, colour formulations and so on. But digital assessment systems, using high-speed data transfer for communication, are relatively new to the trade. These systems were put in place by insurance companies to speed up the claims process and reduce dependence on mobile assessors. There have been a few teething problems, as can be expected from any new technology, but we have to look to the future and concentrate on the many advantages these systems have to offer.

## Types of systems available

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Types of computer-based systems available for repairing vehicle bodies and paintwork include:

» Quoting systems

» Measuring systems

- these include digital imaging systems

» Shop management systems

- these include spreadsheets for work hours, job tracking, efficiency calculations

» Paint management systems.

## Purpose of these systems

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Computer and digital imaging systems come in many configurations, but they are all designed to store information that can be accessed for specific tasks when required, the same way that books can. However, there are advantages to computer-based formats, as you will see.

Repair shops invest large amounts of money and training to install such systems, for many reasons.

## Work provider compliance

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Some insurers require that digital imaging systems be installed at the business's own cost.

These systems allow photos and damage assessments to be sent to a central assessing centre via high-speed Internet connection (broadband).

## Shop management efficiency

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Digital estimating programs make it easy to transfer a successful quote into a job sheet and, ultimately, an invoice. Estimators are less likely to forget items or labour hours, and the estimate looks more professional to the customer than a handwritten quote.

Shop owners have to record more data these days to pinpoint where money is being made or lost. Specific panel and paint shop management systems help owners and managers to measure every aspect of the operation, from booking in the work, right through the repair process to completion.

### Stock control

These programs were developed by paint companies to enable full stock control that networks the mixing area and the office with materials used for each job, and flags when products need replacement.

### Government legislation

In some countries environmental pressure has forced paint shops to record all materials that release Volatile Organic Compounds (VOC). Modern paintshop computer management systems track VOC emissions, and regular audits are required.

This is not a requirement in New Zealand at the moment.

### Changing technology

Many work providers require comprehensive measuring systems. In the field of body repair, three-dimensional measuring systems can accurately pinpoint hidden damage within complex modern vehicle structures.

### Information source

The Internet is an easily accessible source of knowledge for repairers. You can search technical websites for up-to-the minute information relating to all aspects of the trade, and search for the most competitive deals on parts and equipment.



#### Activity 1

For this activity, you will need to gather information about a digital estimating system. If you do not have one in your workshop, use the Internet to source information.

- a. What is the main purpose of using this system?
- b. How is the newer system different from the old system?
- c. What advantages are there over older processes?
- d. What are the disadvantages?

There is feedback on this activity at the end of the study guide.

# Features of computer management systems

A diverse range of computer management systems are available, so we will look at just two in detail.

## Example 1: DuPont colour system

For many people working in the panel and paint industry, their first experience of computer systems was in the paint shop (1990s). Colour databases were a logical choice to become digital, as paint companies were spending a great deal of money providing the latest printed colour formula books that were soon out of date. Now, many systems offer simple CD-Rom-based colour retrieval, with regular updates, with the option of online access to the latest colours.



Figure 1 DuPont ColorNet system

© DuPont

Not only does the system in the diagram above provide colour formulations, but it also provides:

**Colours** — can be sourced quickly via internal CD-Rom-based programme, or online

**Accuracy** — mixes all wet products from as little as 50ml by weight, including primers and clears. This eliminates any accuracy issues that can occur when mixing by volume in a tapered plastic cup. Also, the computer always remembers the mixing ratio

**Stock control** — records products used per job, or by each painter for the day, week or month. This saves painters having to write down materials, as the computer logs all mixes to specific job numbers. Find out who the most economical painters are, and those who need training

**Personal database** — saves often-used colours, or can be edited as required and kept for future use

**Ability to recalculate a mix multiple times** — in the event of inaccurate pouring

**Option to connect Spectrophotometer** — directly to computer for difficult colours or vehicles lacking colour identification

**Technical data sheets** — and material safety data sheets also available on the system

**VOC recording** (if required)

**System sends information to front office** — including products in need of restocking

**All mixes** — recorded to a job number for accurate costing.

## Example 2: Blackhawk measuring system

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© Figure 2 Blackhawk Shark computerised measuring system

The technology used in modern motor vehicle body construction has brought challenges in accurately measuring complex damage. Computerised digital measuring systems have helped to ease these challenges.

The Blackhawk system, for example, has the following features:

- » Compatible with existing straightening equipment
- » One person can set up the lightweight components quickly
- » Photos of attachment points are provided on-screen
- » Select specifications for the vehicle to be measured, and the computer guides the technician through the process
- » Monitor up to 12 points while straightening
- » Presents accurate data to calculate (and justify) the repair estimate
- » Provides pre- and post-repair reports for customer confidence.



## Activity 2

Select a computer system that you use in your workshop.

- a. What is its purpose?
- b. List all the features (you may need to refer to the manufacturer's manual).
- c. Which features do you use on a day-to-day basis?
- d. What other features would be useful to use?
- e. What is stopping you from using these?

While there is no feedback on this activity, it has been designed to support your learning.

## Use of digital images

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Digital images of vehicle damage can be useful in a variety of circumstances, such as:

- » quoting to insurance companies
- » in conjunction with estimating programs
- » for company records (in case of a dispute)
- » to record existing/pre-accident damage
- » to send to parts suppliers
- » as a record for non-insurance work.

### Taking the right digital images

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Estimating/quoting using digital images provides the repairer with the challenge of capturing photos that best show damage to a vehicle. Most insurers provide guidelines for doing this. The extra time spent capturing clear images is in the best interest of repairers wanting the fairest repair allowance.

Here are some useful guidelines:

- » Use a suitable camera that meets or exceeds minimum requirements.
- » Adjust the camera to the settings provided by the insurer. A resolution of 640 x 480 will give acceptable clarity and still provide adequate detail when the image is enlarged.



*Figure 3 Close-up of damage. A straight edge is used to accentuate the damaged area*

- » Remove vehicle parts that might make it difficult to capture all damage.
- » Park vehicle in a position where there are no distracting reflections that may hide damage. (Security fencing reflections mask most damage, for example).
- » Position yourself so the images do not show your reflection.

Indirect and direct damage should be photographed (this will be covered in more detail later in this study guide).