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hand assembly made easy

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We have been specialists in Hand Assembly systems for 25 years, with 1500 systems installed in:

- Australia
- Belgium
- China
- Czech Republic
- France
- India
- Ireland
- Malaysia
- New Zealand
- Russia
- South Africa
- Turkey
- UK
- USA

MASCOT

PCB Hand Assembly made easy

SIGMA

Product Hand Assembly made easy

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Some of our Clients


Jabil
CIRCUIT
intel
AVO
AVO INTERNATIONAL
gspk
LIMITED
Marconi
HUGHES
ELECTRONICS
EMS
EuropeanGasTurbines
LINN
HEWLETT
PACKARD
Expanding Possibilities
Agilent Technologies
SIEMENS
TTi
THURLBY THANDAR
Veeder-Root
XCEL
Power Systems
PEAK INDUSTRIES
Contract Manufacturing
www.peakind.com
LDS
TEST AND MEASUREMENT
invensys
WESTINGHOUSE
rail systems
smiths
bringing technology to life
SOLECTRON
SONY
invensys
EUROTHERM
SEAWARD
GROUP
Schlumberger
METTLER
TOLEDO

Mascot

PCB Hand Assembly made easy

Right part delivered
Right time
Right position
Right polarity

RIGHT FIRST TIME – EVERY TIME

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Summary

Mascot ensures that the right component is placed in the right position, with the right orientation, ensuring that each step is right first time.

Mascot minimises PCB assembly time and significantly improves quality for through-hole and odd-form insertion; inspection and re-work. Our customers typically report a 66% improvement in quality when using *Mascot*.

Mascot can eliminate set up time, making it perfect for electronics manufacturers who produce a high mix of PCBs and have small to medium sized batch runs.

The user friendly software requires virtually no training for operators.

Customers report payback times as little as 10 months

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How does Mascot work?

Mascot offers work instructions (also known as Standard Operating Procedures, PCB Overlays, or Method sheets) at each step of the assembly. Component images or video clips can be displayed with the assembly instructions.

The correct component is presented to the operator in antistatic trays by intelligent motorised carousels (or LED indicators) removing the possibility of incorrect component selection.

At the same time, an eye-safe laser precisely indicates the component's position & orientation on the PCB, signalling if the component has polarity. The laser beam is accurate, fast moving and easy to see in all lighting conditions. There are no bulbs to change or filters to clean.

Each *Mascot* can run up to four carousels, each holding 50 bins, therefore a single *Mascot* workstation can present up to 200 carousel bin locations.
Mascot can also drive up to 176 LED indicators on Tote Bin Arrays, IC Dispensers, or even clip-on LEDs.

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Mascot Pushtrack

Our most popular configuration of Mascot

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Mascot Pushtrack

Configuring multiple Mascot systems in a flow line formation allows your Mascots to store ALL the materials needed to build your entire range of PCBs.

As a new board passes down the line, each Mascot system automatically loads up the correct assembly programme and begins to deliver the work instructions and the parts which it holds for that board.

Working in this way eliminates kitting and setup time, enabling high volumes of small batches to be built with ease.

Many of our customers find Mascot's "Lean Line" function an invaluable feature for their high volume, high mix production.

Since there is no kitting, a Batch of One can be as economic as a Batch of 100.

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Mascot Pushtracks in Jabil Penang, Malaysia

Jabil Penang initially ordered just 4 Mascots in 2003.

This number has now grown steadily to 40 Mascots, on this one site alone.

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Mascot Custom

Mascot can even be retrofitted onto your existing motorised conveyor lines.
We have fitted Mascots to many manufacturers' motorised flowlines including: Flexlink, Nutek, Promass and PMJ.

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Mascot Custom at Parker SSD Drives, Littlehampton.

Parker SSD have 2x flowlines of Mascots working in a Lean Line setup.

They have reported a **66% reduction** in their error rate since the implementation of their Mascots.

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Different sized trays, and LED Tote Bin Arrays for use with Mascot and Sigma.

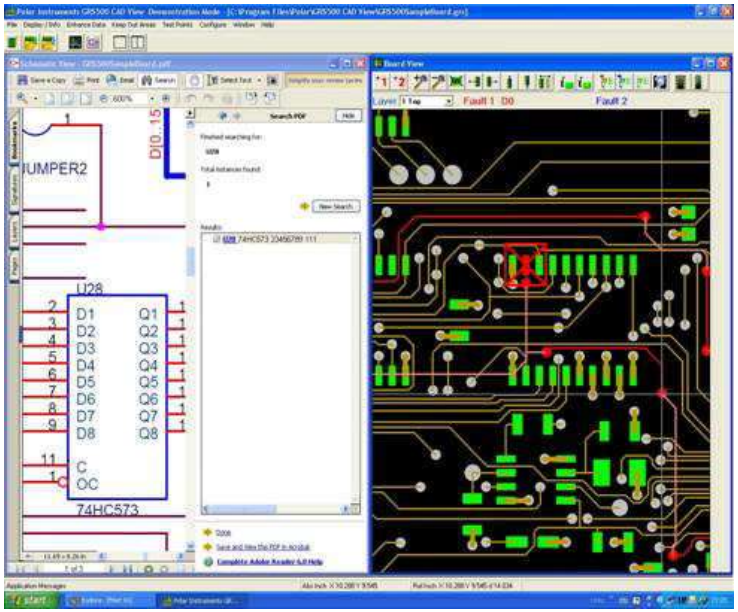
10 bin trays

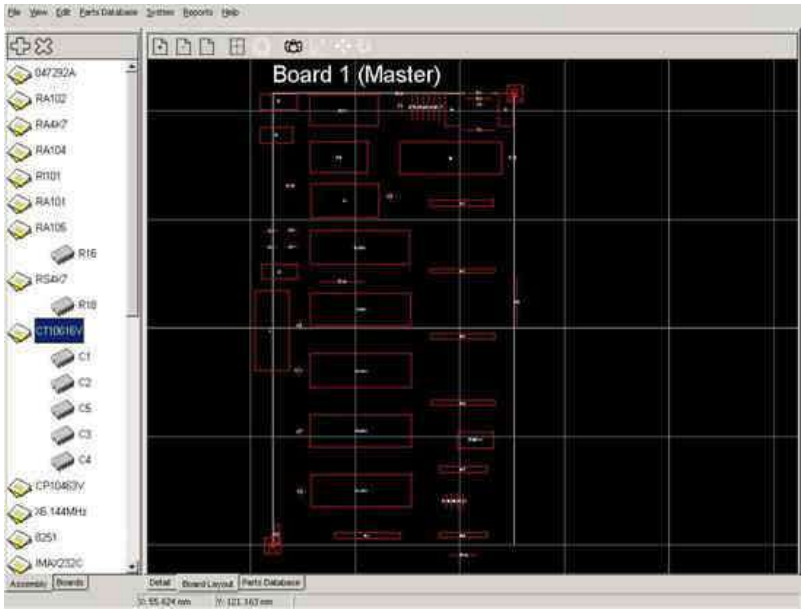
4 bin trays

16 bin LED tote array

32 bin LED tote array

Programming your Mascot Assembly Programs





Robotas' *Pro Compiler* software allows you to generate the majority of your assembly programmes in minutes by simply importing your existing PCB CAD data and BOM files, therefore drastically reducing set up time, and assuring accuracy.

Import your existing Parts Database – Use your existing parts to create new assemblies.

Use the Drag and Drop function to create or alter your assembly steps if you wish.

Make your program changes quickly & simply, supporting Kaizen continuous improvement.

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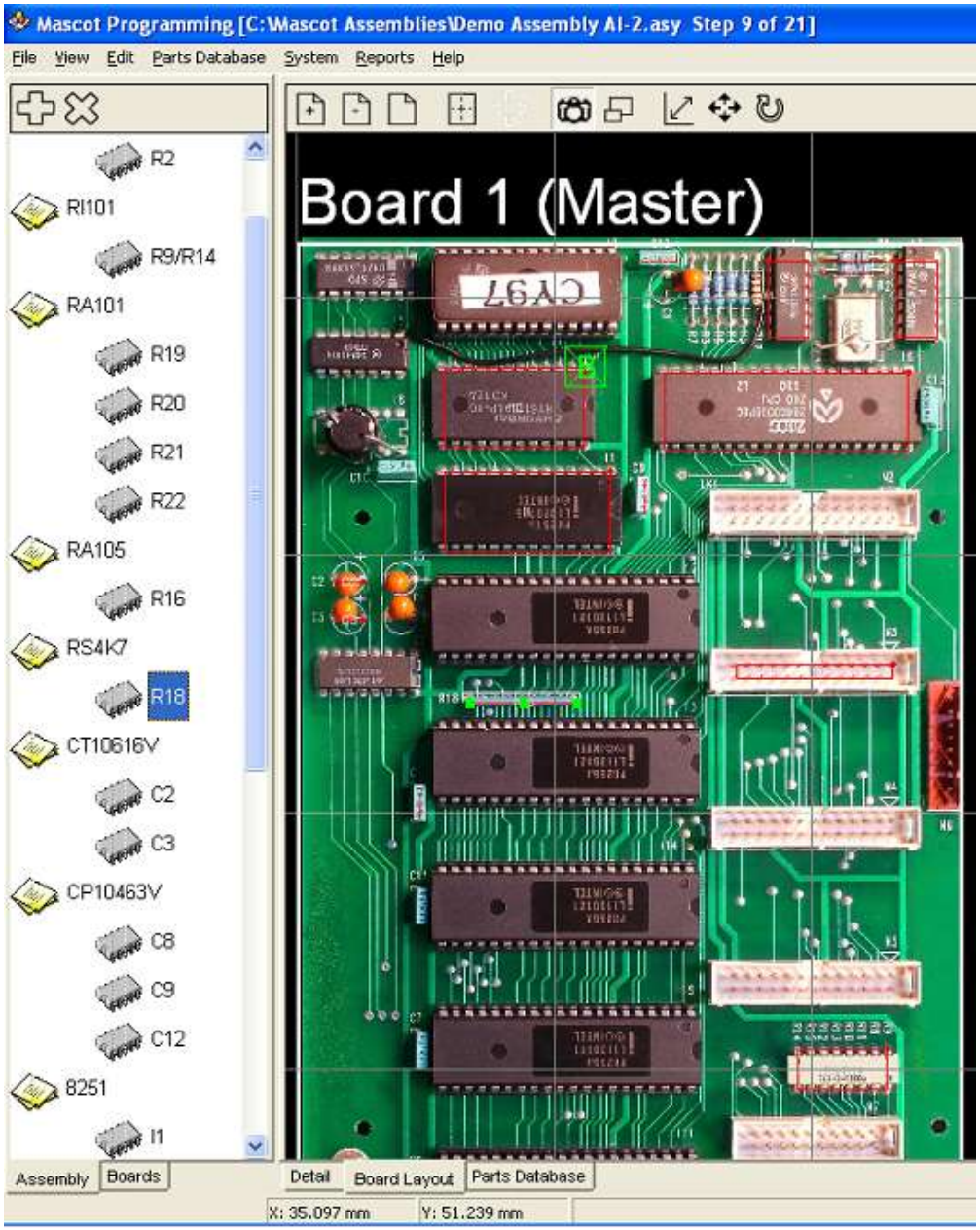
Auto Image

Add one single high quality image of the ‘golden board’ to your assembly programme, using your AOI machine.

At every step of the assembly, the software then automatically displays both the component’s exact location, and a magnified view of a correctly placed component.

This feature was described by one Robotas customer as “the best kept secret in electronics assembly”.

A Step & Repeat matrix of PCBs can be generated in seconds.



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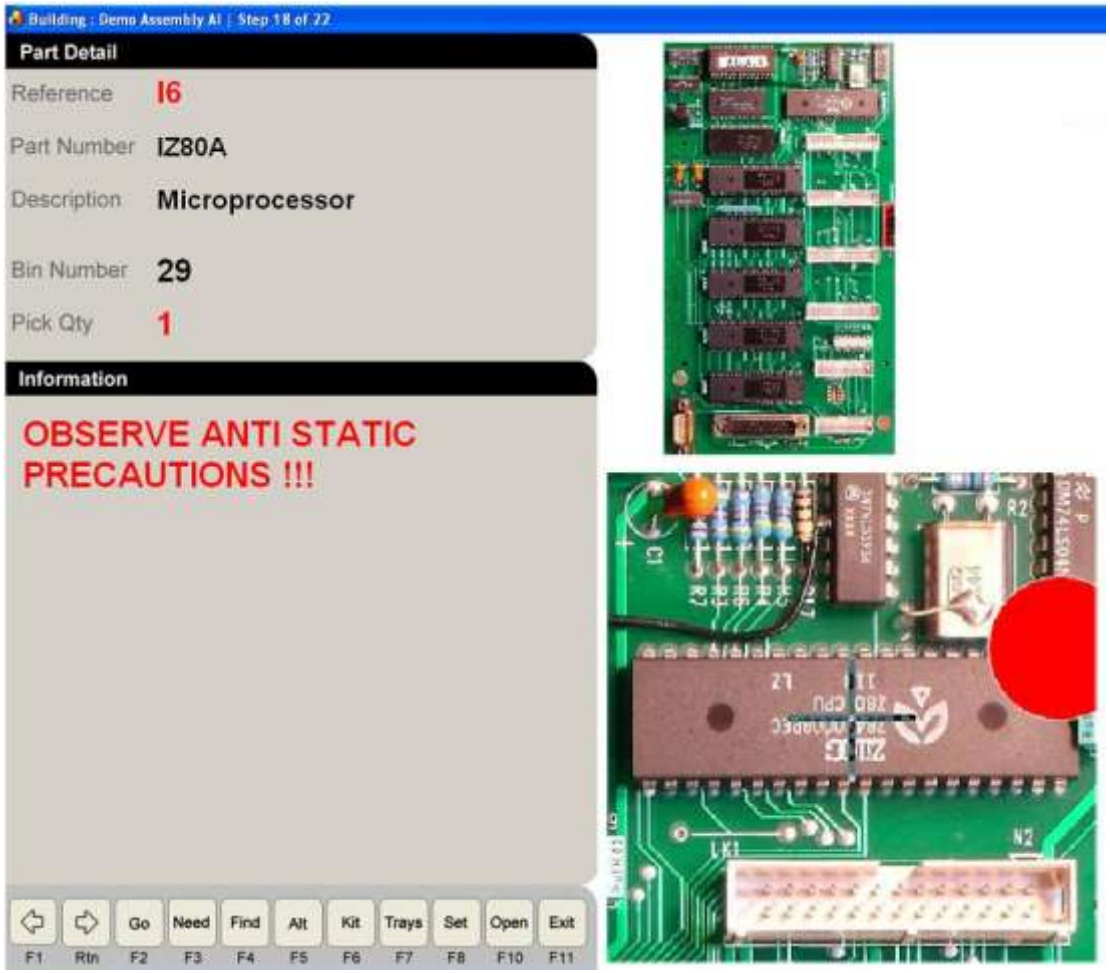
Mascot Software – Assembly screen

With the click a foot-pedal, or the touch of a screen, Mascot guides the operator through each step of the assembly.

In addition to the assistance from the laser and motorised carousels, the Operator is shown information about that specific step of the assembly, including:

- Details of the current part number and the quantity needed.
- Any work instructions relevant to that step of the assembly.
- An image of what the component should look like when it has been placed.
- The exact component placement location and orientation.



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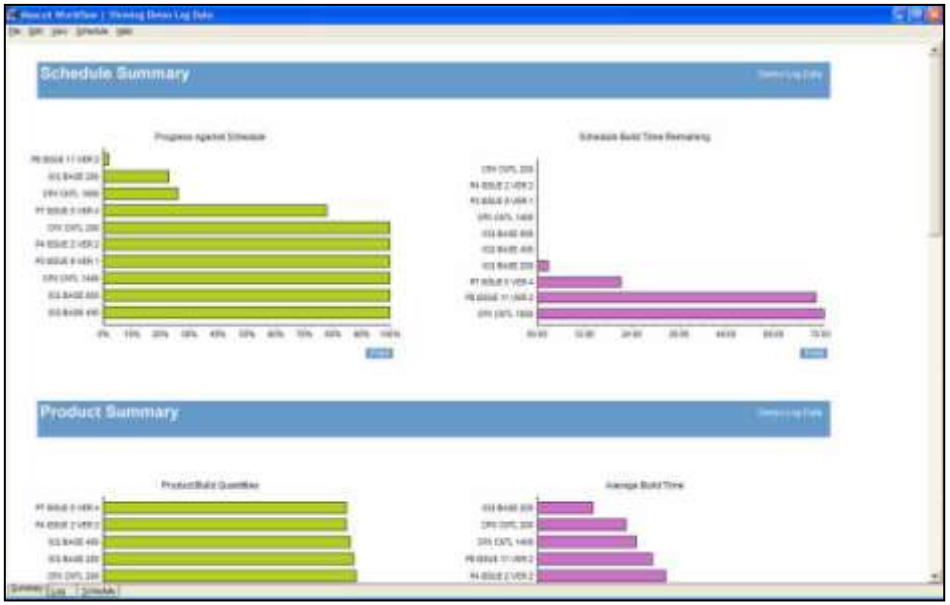
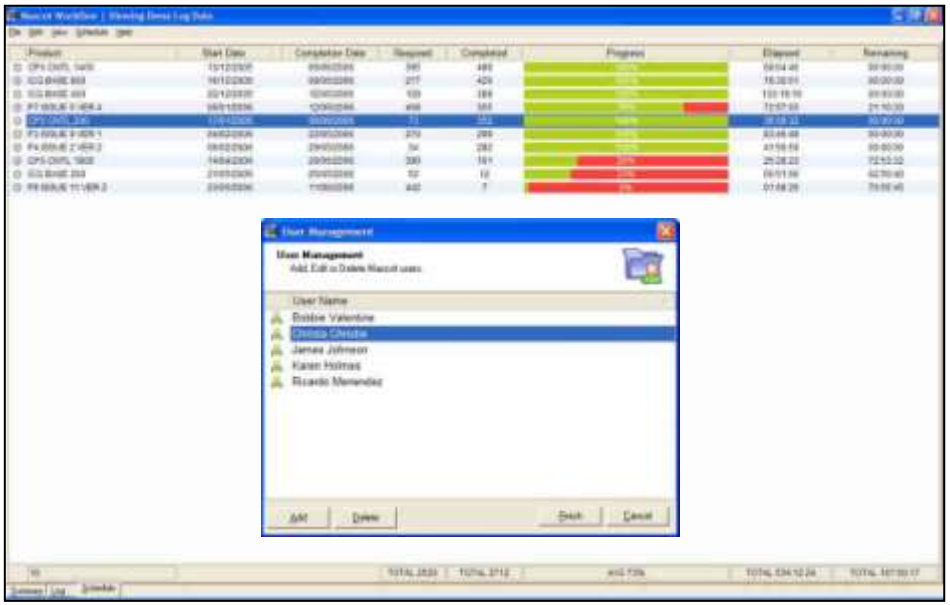
Workflow Software





Robotas' optional *Workflow* software is a flexible tool for analyzing production data from your networked Mascot PC workstations.

It collects and analyses production time and traceability data from all *Mascots* on your shop floor, letting you monitor each station's progress against its schedule of work.

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Sigma

Product Hand Assembly made easy

Right part delivered
Right time
Right work instruction
Right tool

RIGHT FIRST TIME – EVERY TIME

Sigma – for Final Product Hand Assembly

Ideal for manufacturers who make a high mix of products in small to medium batches, SIGMA systems ensure that the right parts are assembled in the right way using the right tools.

SIGMA facilitates the generation and distribution of work instructions, whist presenting the correct material to operators at each step of the assembly, for products with a complex family tree structure of sub assemblies.

Target Industries who would benefit from using SIGMA are the aerospace, defence, medical industries, or indeed any other sector where the highest standards of build quality is crucial,

SIGMA ensures that every step is RIGHT FIRST TIME.

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How does Sigma work?

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Sigma breaks down and delivers assembly instructions without the operator even being aware of the complex underlying sub assembly ‘family tree’ structure of the product which they are building.

At every single step of your assembly, SIGMA:

Delivers the correct part needed, from motorised carousels.

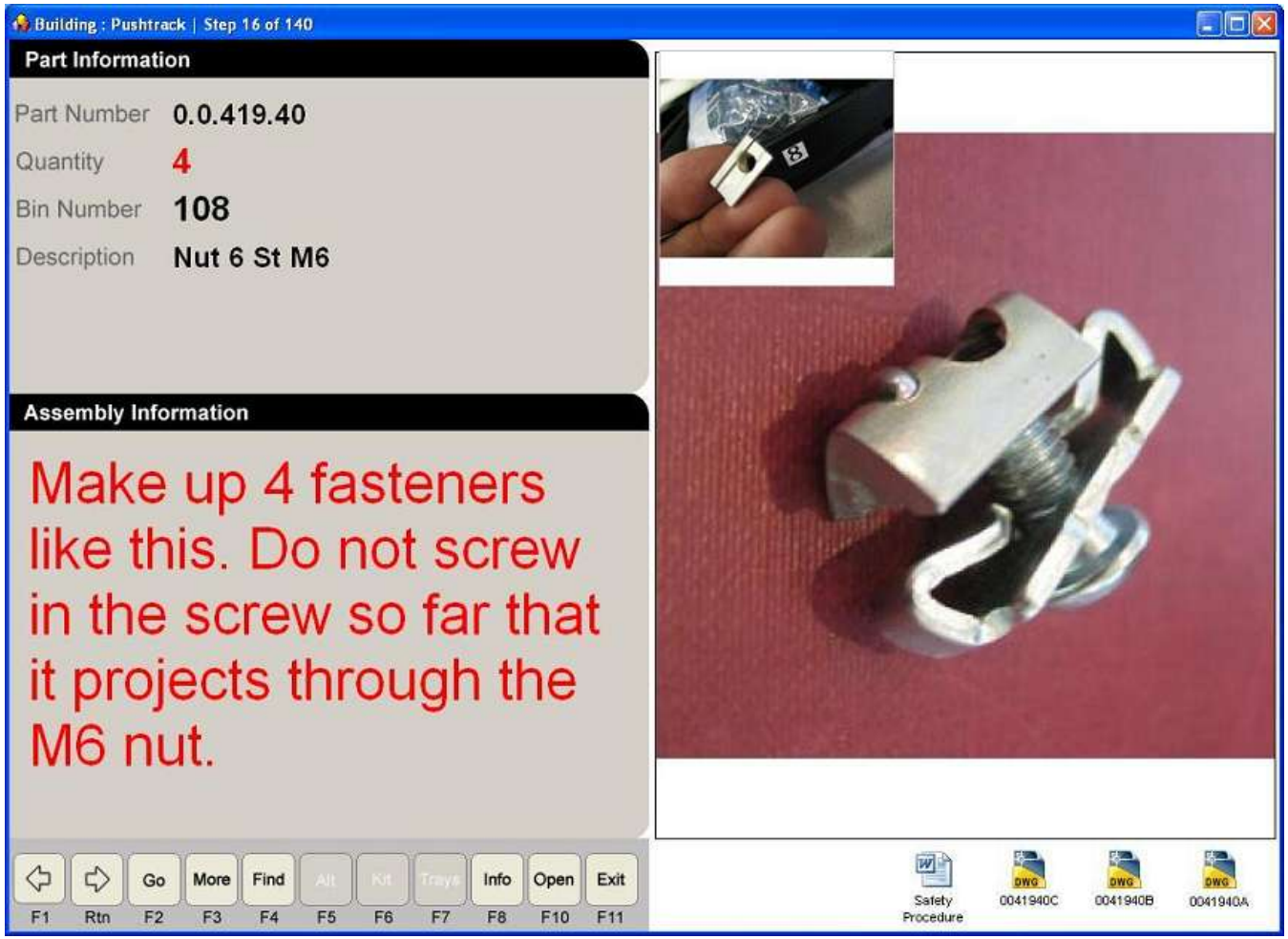
Displays an image of this part for easy verification.

Indicates the pick quantity.

Highlights the correct tool required, by LED.

Shows clear instructions for this assembly step, along with an image or video clip of the assembly operation.

Offers any relevant supporting documents (such as CAD Drawings, COSHH information or standard company procedure).



Programming your Sigma Assembly Programs

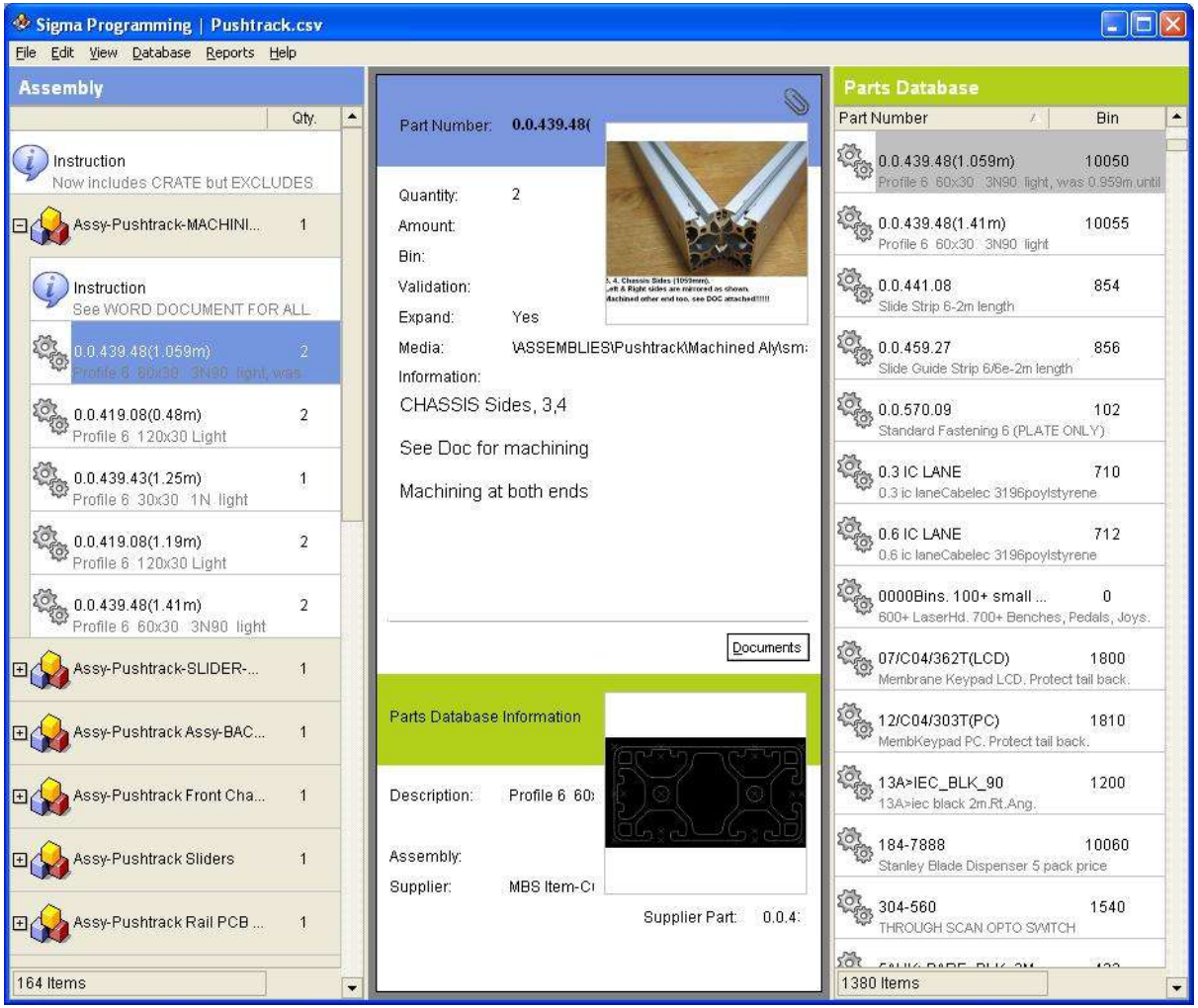
Robotas' *Pro Compiler* software allows you to generate the majority of your assembly programmes in minutes by simply importing your existing PCB CAD data and BOM files, therefore drastically reducing set up time, and assuring accuracy.

Import your Parts Database – Use your existing parts to create new assemblies.

Use the Drag and Drop function to create or alter your assembly steps if you wish.

Program changes can be made quickly & simply, supporting Kaizen continuous improvement.

SIGMA now has an inbuilt data import function (so Pro Compiler is NOT needed in addition for SIGMA)



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Nokia Vertu - case study

Nokia Vertu manufacture the most prestigious mobile phones in the world. Each customer's handset is assembled by hand, requiring the high degree of skill which combines that of a Swiss watch maker and a jeweller.

Because each Vertu customer's unique handset is made to order, Vertu have to manufacture in 'batches of one', meaning that set up time was previously a huge problem for them.

Vertu needed a system whereby operators could quickly and simply access each unique works order assembly instructions, whilst being presented with exactly the right part, in the right build sequence. Finding a solution to this problem was key to their business.

Sigma was the perfect solution!

In 2006 Robotas installed the first Sigma systems. Vertu have been so happy with the benefits which the system offers their business, they now have **29 systems** in operation, all with touch screen monitors and barcode readers to quickly load the correct program.

Thank you

For more information please visit

www.robotas.com