- **Increase production**
- **Make more effective production decisions**
- **Highlight production bottlenecks**
- **Schedule machine maintenance more effectively**
- **Automatically calculate your OEE**

Profitability by Efficiency

MDC-MAX
When reliability matters

MDC-Max helps everyone in the Company not just Management

Realtime Machine Data Collection from your CNC machines

CIMCO MDC highlights manufacturing problem within 24 hours of installation

CNC recently installed a CIMCO Machine Data Collection (MDC) system at a customer site that had tooling cost issues. The Production director had only recently taken over the management of the shop floor and felt that the tooling costs were too high. CIMCO MDC was installed and completed before the night shift arrived. The next morning the production director checked the monitoring data collected from the machines and immediately had his answer.

The night shift cycle times for 4 machines were 30% less than during the day and the same machines were stopped for over an hour at the end of the shift. The operators had turned up the feedrates so they could take a break at the end of their shift. But the increased feedrates resulted in poor tool tip life and increased tooling costs.

The customer now has reduced tooling costs while still achieving the same production schedules and says that the system will pay for itself in a matter of months.

CIMCO MDC tracks reasons for machine down time

A large Aerospace contractor were concerned that their production was not keeping up with demand and had made the decision to buy several additional machines. CNC suggested checking the runtime clocks on the machines for a week to see how much production time was being achieved. They were astonished to find that their machine utilization was below 50% but could not get an accurate picture of why this was happening.

CNC installed CIMCO MDC to monitor the machines along with bar code readers for the operators to swipe downtime codes. MDC highlighted several problems in production two of which were poor maintenance response and failure to replace tooling quickly enough to get the machine back in production. Following the MDC installation the customer implemented several measures including a priority system for maintenance and availability of new pre-set tools. They now achieve overall machine utilisation of over 68% and meet their production targets which has increased profitability so they can now invest in new plant.

### CIMCO MDC keeps lights-out machining on track

A North West company approached the Advanced Machining Centre in Nelson to find them a solution to their lights-out machining problems. They had 4 automatic bar fed lathes that ran through the night but occasionally one would stop and no-one was there to fix the problem and restart production. CNC installed CIMCO MDC which monitors in-cycle from the machines and, if the machines stops, sends an email and a text message to a stand by operator at home. The company has increased production and machine utilisation without having to pay increased wage costs.

I would like to install MDC but know there will be resistance from the shop floor.

Many shop floor staff are suspicious of monitoring systems as they see it as "big brother" watching them trying to get them to work harder. However MDC can actually benefit the staff by highlighting problems that have been apparent to them for some time but have been unable to convince management of the problem.

We installed MDC at a company that was not hitting production targets and the production manager was being pushed to increase production. He had already reported problems with several of the machines that made it impossible to hit the targets but nothing had been done. Two weeks after installation the production manager sat down with the MD and the MDC figures showed conclusively that 2 machines were indeed causing the backlog in production.

The machines in question were bar fed machines and the company had switched to a cheaper material supplier but the bars were constantly sticking and jamming the machines causing lost production. MDC highlighted this problem and the company changed back to their original supplier and are now hitting their production targets.
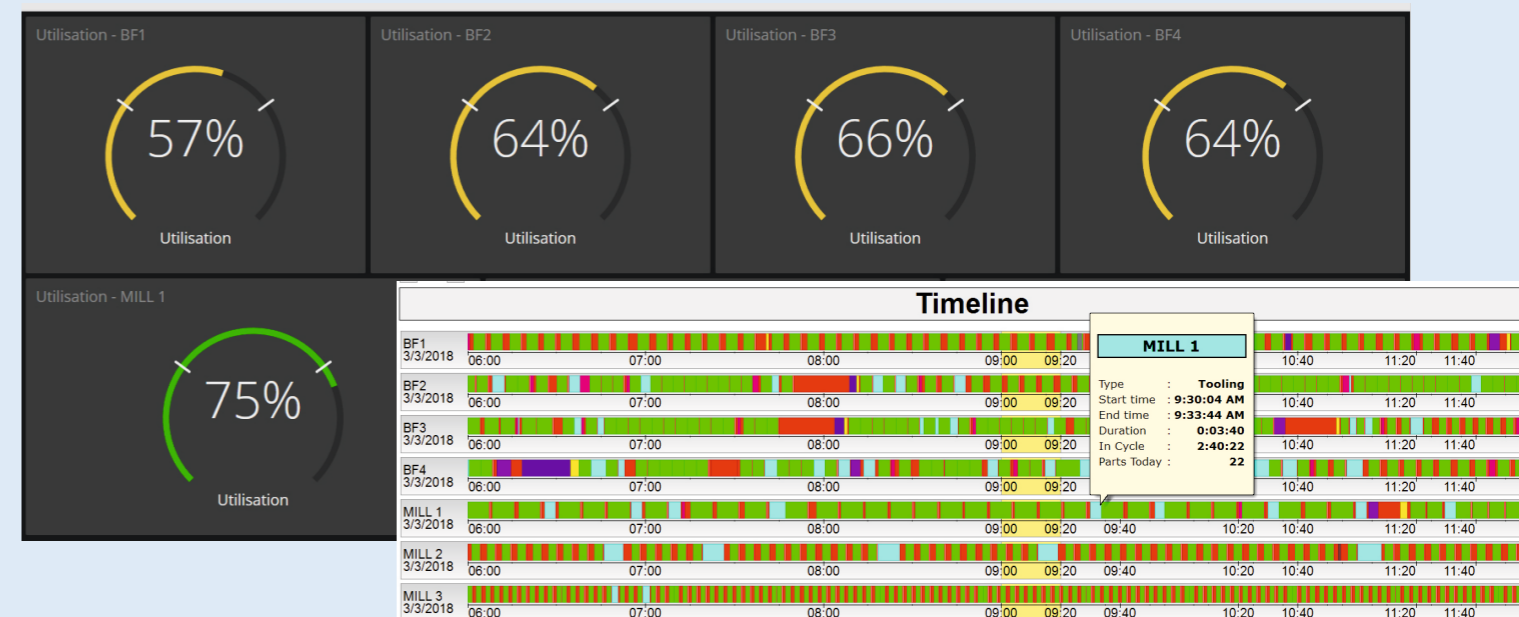
Gas-Arc in Diss

In 2012 we decided that we needed a much better method of monitoring our CNC machining processes and storing and controlling our programs. At that time we were monitoring our productivity by gathering data that was manually entered into Excel spreadsheets. We had traffic light machine monitoring on each machine, and our programs were stored using a very basic software program. We compared three packages based on cost, functionality and support, and decided on MDC-Max and NC-Base from Cambridge Numerical Control.

One of the many benefits of the MDC system is that we can all see what is happening in real time. Myself and the guys on the shop floor have instant information available to act upon to ensure we keep our downtime to a minimum. There is also a wealth of data you can extract and analyse. The shop floor works more efficiently and we know the reasons for our downtime; the staff have even suggested ways to minimise it.

Since having the system installed we have seen an increase in production resulting in improved lead times and on-time delivery to our customers.

MDC-Max is a decision making tool we use every day that makes us more effective. Nigel Cooper - Works Manager

WM Lee Ltd in Sheffield

The main benefits of having the MDC system from Cambridge Numerical Control is that I can see what production has taken place in real time. I can see when machines are in production and when they are not without the need to go out on to the shop floor. I don't even have to be there as I can access the system remotely.

MDC has given me a more accurate view of my personnel and production in general and I now have an effective tool to manage my nightshift.

Since having the system installed we have seen an increase in production of 15% on the machines where the MDC system is installed.

Cambridge Numerical Control are always there when I have a question and can fix most problems using the remote link they installed to our system. This means that they do not need to visit us and saves a lot of time.

Cambridge Numerical Control
Driving Productivity Forward

Now with web based operator screens and "at a glance" shopfloor layouts giving machine status and downtime
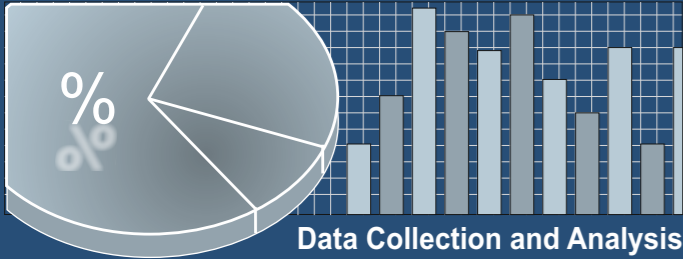
- Increase production
- Make more effective production decisions
- Highlight production bottlenecks
- Schedule machine maintenance more effectively
- Automatically calculate your OEE

MDC-MAX

When reliability matters

Machine Data Collection

What is Cimco MDC-Max?

Cimco MDC-Max is a real-time software machine tool data collection system that gives you realtime reports and charts about your shop floor productivity. MDC-Max makes your decisions easy as they will be based on accurate data collected from your machine tools.
In today's complex and competitive global markets, it is more important than ever to maximize effective use of manufacturing equipment.

MDC-Max provides powerful machine data collection and analysis capabilities to make this task easier and gives you realtime reports including Overall Equipment Effectiveness (OEE).

All of this can be achieved without the need to place PC's beside the machine tools - all the data can be collected by cable, wireless or Ethernet (network) and is stored centrally even if you have multiple workshops or sites to monitor.

MDC-Max is a ground breaking product, written specifically for Windows 7 and above and takes advantage of the latest networking and wireless technologies.
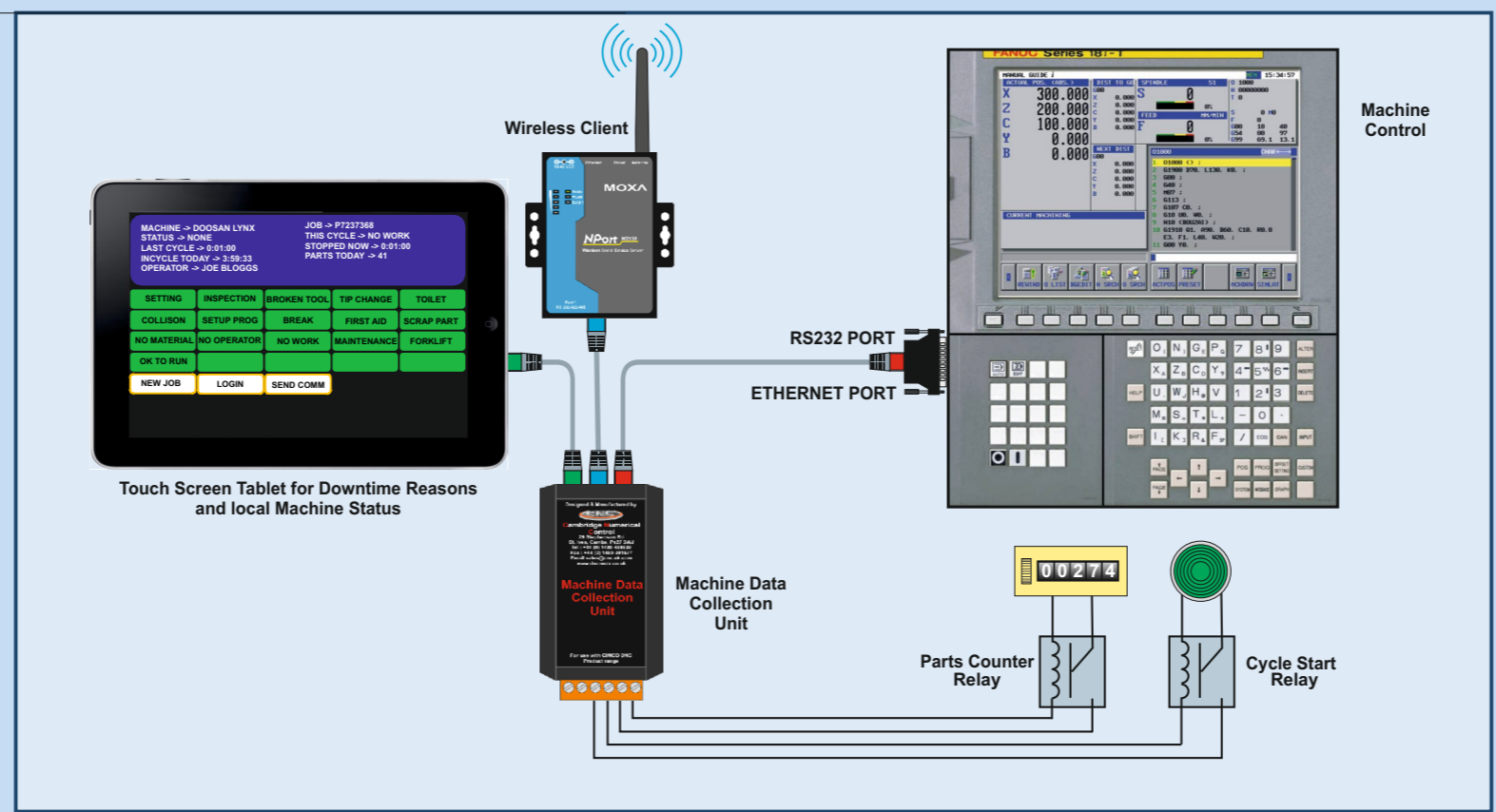
Features

- Integration with Windows Server and Microsoft SQL database technology
- Monitor your machines on your phone or tablet
- Monitor your machines from any PC connected to your network
- Monitor machines in a remote shop via WAN or VPN technology
- Monitor machines via the internet and a web browser
- The latest software also includes full "Lights Out Machine Monitoring"
- Run your machines unattended and get a text or email when a machine stops
- Connect to shop-floor cameras via the internet to see if an operator or engineer is needed to fix the problem
- View machine status from anywhere in the world

Realtime Feedback

MDC-Max helps to improve your decision making by giving you realtime feedback with answers to your manufacturing problems.

- What jobs are in production?
- How many good parts have been produced?
- How much scrap has been produced?
- What machines are on downtime and why?
- How much has the downtime cost?
- What is causing the downtime?

Wireless Client

Machine Control

MACHINE -> DOOSAN LYNX
STATUS -> NONE
LAST CYCLE -> 0:01:00
INCYCLE TODAY -> 3:59:33
OPERATOR -> JOE BLOGGS

JOB -> P7237368
THIS CYCLE -> NO WORK
STOPPED NOW -> 0:01:00
PARTS TODAY -> 41

SETTING	INSPECTION	BROKEN TOOL	TIP CHANGE	TOILET
COLLISON	SETUP PROG	BREAK	FIRST AID	SCRAP PART
NO MATERIAL	NO OPERATOR	NO WORK	MAINTENANCE	FORKLIFT
OK TO RUN				
NEW JOB	LOGIN	SEND COMM		

Touch Screen Tablet for Downtime Reasons and local Machine Status

RS232 PORT

ETHERNET PORT

Machine Data Collection Unit

Machine Data Collection Unit

00274

Parts Counter Relay

Cycle Start Relay

A Truly Integrated Solution

MDC-Max is fully integrated with DNC-Max and NC-Base giving you a complete DNC, document revision management and Machine Data Collection system from one supplier.

MDC-Max

MDC-Max is the software which is responsible for collecting all the machine tool data for in cycle and number of parts produced.

NC-Base

The data collected by MDC-Max can be analysed immediately by the NC base module to produce graphs and charts showing you exactly what is happening with your production schedules. NC-Base also allows you to store any documents related to a particular job. These can be drawings, photographs of machine setups, tool lists, operation sheets, CNC programs etc. This makes finding any information about a particular job extremely easy.

DNC-Max

DNC-Max controls the sending and receiving of CNC programs to your range of machine tools. Programs can be requested from the machine control thus avoiding the operator having to leave his machine. Any program changed by the operator and sent back to DNC-Max is automatically raised in issue or stored in a quarantine area. This gives you the ability to track changes and revert back to any previous issue if necessary.

How it Works

Each machine is connected to the MDC system via a legacy MDC unit or directly via ethernet depending on it's age.

MDC-Max then records all machine activity such as cycle start, stop, part complete and, optionally, feedrate override, spindle speed and alarm status.

If a machine is not in production for any reason the operator enters a downtime reason on a tablet or PC to let MDC-Max know why the machine is stopped. If the machine is stopped for any length of time without a reason the supervisor is alerted.

These codes can be customised to suit your installation and will normally include:

- Waiting for Setter
- Waiting for Maintenance
- Waiting for Tooling
- Waiting for Material
- Etc.....

MDC-Max uses this information to calculate production statistics in realtime and historical reports for the last shift, day, week or month.

These reports can be generated automatically as an email and sent to a group of users on a regular basis.

Live Dashboards, Reports and Graphs

MDC-Max generates dashboards, charts and graphs updated in realtime and can create automated Excel reports too so you can see exactly what is happening with your production schedules.

- Cycle Time per Part (min, max and average)
- Number of parts per shift / operator
- Number of scrapped parts
- Machine downtime
- Scheduled Maintenance
- Unscheduled maintenance
- Setup Time per part
- Operator effectiveness
- Overall Equipment Effectiveness (OEE)
- Realtime Machine Display – see which machines are running at a glance.

64%
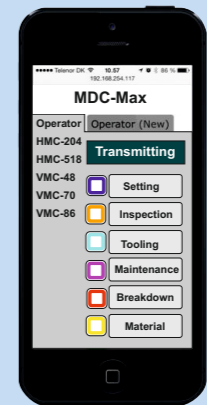
MDC-Max Web Client

The Web Client enables you to use your phone or tablet to monitor your machines and see what's happening away from your factory. When a machine has a breakdown you will know immediately by text message or email. The same text can be sent to a machine setter or maintenance engineer so the problem can be handled without delay. You will be back in production quicker and meet those tight delivery schedules.

MDC-Max

Operator	Operator (New)
HMC-204	Transmitting
HMC-518	
VMC-48	Setting
VMC-70	Inspection
VMC-86	Tooling
	Maintenance
	Breakdown
	Material

MDC-Max can be installed using your existing RS232, Ethernet cabling or by Wireless technology.

WiFi