

Network-DNC

What is special with network-DNC?

DNC5000

leanDNC

Crossgrade-DNC

DNC-In-The-Box® Technology

10 good reasons for DNC-In-The-Box®

All about DNC

For OEMs and large Accounts

Machine Data Collection

Network Adaptors

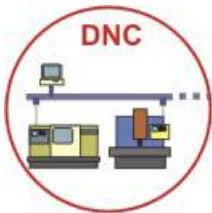
About us

Quotation

Contact us



All about DNC



ALL ABOUT DNC (DIRECT NUMERICAL CONTROL)

What you should know before you decide to buy a DNC system

1. WHAT IS DNC?

The term **DNC** comes from Direct Numerical Control (today sometimes also called Distributed Numerical Control) and defines originally a direct data connection between a CNC and a computer. Today we understand two different tasks:

1. A safe data connection between computer and CNC
2. A data management for the part programs and all related documents

2. WHAT IS A SAFE DATA CONNECTION?

When the first NC machines came into the market, RS232 (V.24) was the only standardised interface, and the transmission via RS232 cables was the only possibility to transfer a part

program from a computer to the control.

But RS232 has some some fundamental restrictions: it only guarranties a safe transfer over max 15 m and it has no error correction and no reliable error checking. Some plausible data errors are not recognized. Heavy electro-magnetical noise is very common in shopfloors. This noise on RS232 can damage data and once in the controller and not recognized, they can cause machine crashes and finally expensive damage. Therefore, avoid old RS232 technologi or keep the cable runs as short as possible.

Data integrity is guarrantied by the use of **standard networks** (Ethernet or Token Ring). It is the network protocol TCP/IP that checks the traffic on the network and has a built-in error correction. This allows dangerless data transfer even in a rough electrical environment as mechanical shopfloors usually are.

3. WHAT BENEFIT GIVES YOU A DATA MANAGEMENT?

Think a moment about the capital you have in your part programs. How many hours would you have to reinvest should your part programs get lost? How much time have your operators spent to make new part programs or reconstruct them because the latest version was lost? How many production hours have you lost because the operators had to leave the control to get a laptop, find the right program, load the program and put the laptop back? Time lost because the program load had to be repeated several times, the modified programs had not been saved or the time you spent to compare programs and save the latest version? etc. etc. etc...

A modern, efficient DNC system with program management stores your part programs in a logical way:

by machines

by customers

by part numbers (or design numbers)

and lets you know for which operation or setup a program is used.

At the same time you should be able to see or edit the program on a mouse click. Saved programs should be compared automatically to the original so that you can see whether there has a modification been done and you can decide which one to use in the future.

Programs have to be associated to machines or a group; and machines should only be allowed to acces their own programs.

4. WHAT DO YOU WANT TO ACHIEVE WITH A DNC SYSTEM?

- **4. Some reasons to buy a DNC system**
 - reduction of downtimes
- improved organisation of part programs
- exact logging for ISO9001 or FDA (e.g. when was which part produced on which machine)
- revision control (archivation of modified programs)
- unique networking concept for the whole company
- integration with all related systems (ERP - CAD - CAM - DNC)
- simplified work preparation
- relief for machine operators

5. WHICH INFORMATION TO MANAGE?

- part programs
- tool data
- part sketches
- digital setup pictures
- technical notes
- etc.

6. SORT CRITERIA

- by machines and part number, or
- by machines and part number and operation
- by machines customer number, part number and operation
- etc.

7. CONSIDERATIONS OF THE ENTREPRENEUR

- How many machines are DNC-capable (serial interface or built-in Ethernet card available)?
- How many machines have only a tape punch/reader interface?
- Would you prefer a Wireless LAN to standard Ethernet?
- How future-oriented is the system? (what effect does the change of the operating system have, what if new technologies are introduced?)
- Who in your company should be responsible for the DNC system?
- Which competences do you delegate to this person?
- How long should the pay-back period be for the DNC system?
- How much money are you ready to invest?
- What maintenance cost is reasonable for the system?
- How easy can the DNC system be maintained (remote access, download of new software, etc.)?
- Who should have access to the part programs and production data (machine operators, CAD/CAM users, shopfloor supervisors, etc.)?
- Should the system be ready for expansion with Machine Tool Monitoring or a Runtime-based Maintenance software?
- What expertise has the vendor (references, etc.)?
- Where is the vendor or his distributor/reseller based?