

# The Operating Modes of a CNC Machine

## Zero Return

We pass each axis over a reference point and the machine establishes its position.



# Rapid

In the Rapid Mode:

Move each axis at the maximum speed

This can be overridden



Rapid override normally 25, 50 and 100%

Minimum is specific to each control. (this also effects zero return)



The axes are moved with buttons



On bigger machine this is used more. When setting, the machine may need to make bigger moves and you can do them quicker.

Keep on a low setting when not running programs

# Jog

In the jog mode you move the axes around with the same buttons as above. The speed of movement is controlled by a dial.



Please note this dial is also the federate override be sure to set it back to 100% before running a program.



## Handle Handwheel or MPG

This is used to move the machine around with a handwheel.



You would have to select an increment and the axis you want to move



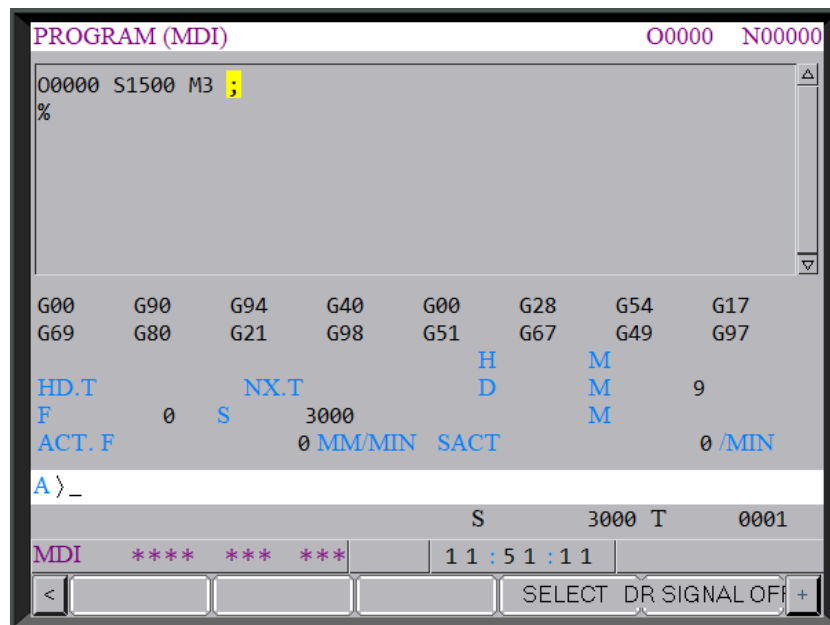
# MDI (Manual Data Input)

Use MDI to issue simple commands to the machine.

M6 T1                    (Change to tool 1)  
G0 X0 Y0                (Rapid to X0 Y0)  
M3 S500                 (Start the spindle at 500 RPM)



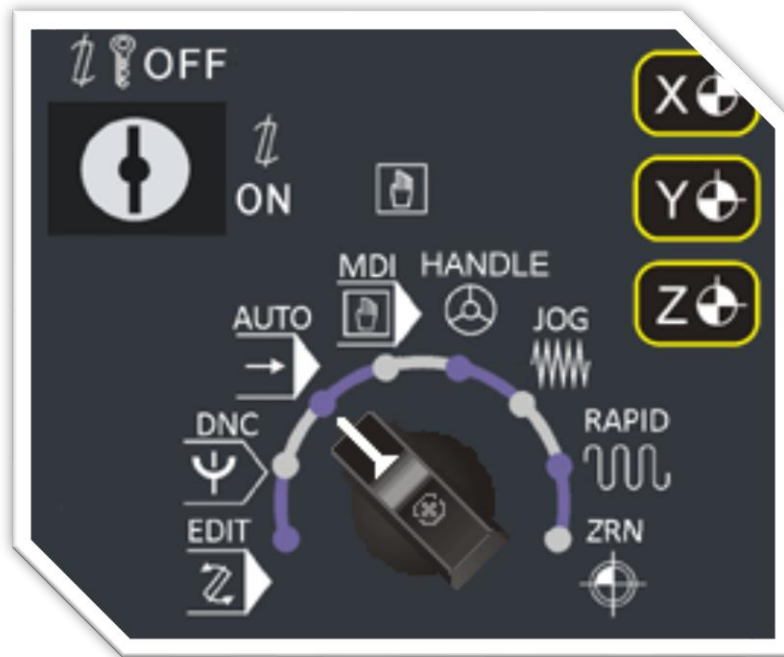
This is the MDI screen



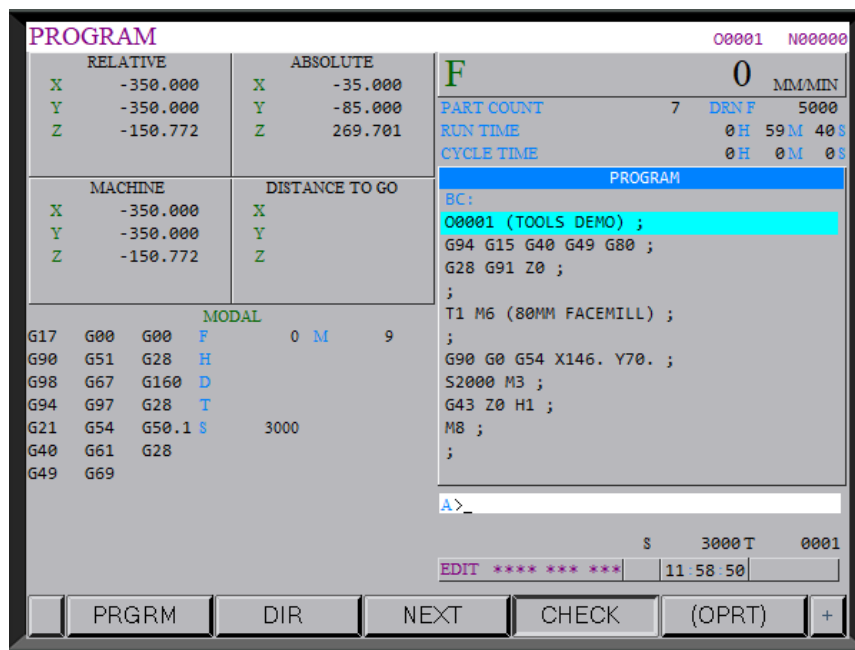
The screen will normally clear after use

# Auto

Sometimes called Memory this mode is used to run a program and make the part.



The program runs from the program number until it sees M30 then it will stop and return to the start.



## DNC (direct numerical control)

In this mode you can run a CNC program directly from your PC. It is sometimes called drip feed.



Some machines will run from USB. You would normally use a cable for DNC.



# Edit

In the Edit Mode:

- Alter, delete and add to programs

- Delete programs

- Take programs in and out of the control

