TNC

TNC 124

Straight Cut Control for Milling,
Drilling and Boring Machines

HEIDENHAIN

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TNC 124

Straight Cut Control for Milling, Drilling and Boring Machines

Not every machining task requires a contouring control and all the advanced features of a CNC machine — in many cases a straight cut control and the features offered on the TNC 124 are fully adequate.

With the TNC 124 you don't have to write NC programs for simple manual machining tasks. You can move the machine axes either continuously with the axis buttons, or in jog increments if you have an electronic handwheel. Or simply enter the target position and start axis motion with the touch of a key.

The TNC 124 takes into account the tool length and radius for up to 99 different tools. Standard cycles are provided for machining bolt hole circles and linear hole patterns. The machining sequence is illustrated graphically on the screen.

For more complicated machining tasks or for series production you can generate an NC program right at the control. This is done either by keying in the positions or by transferring the actual positions directly into the program (teach-in mode).

The TNC 124 can store up to 20 programs and a total of 2000 program blocks. If you need even more program memory, the data interface enables you to use an external storage device.

The programs you create are executed either block by block or automatically (full sequence). The feed rate override control allows you to adjust the programmed feed rate depending on the momentary machining conditions.

The TNC 124 is easy to use and features on-screen operating instructions (HELP) to assist you when you're not sure how to proceed. Other support features include a cutting data calculator, pocket calculator and stopwatch.

**Dimensions
in mm/inches**
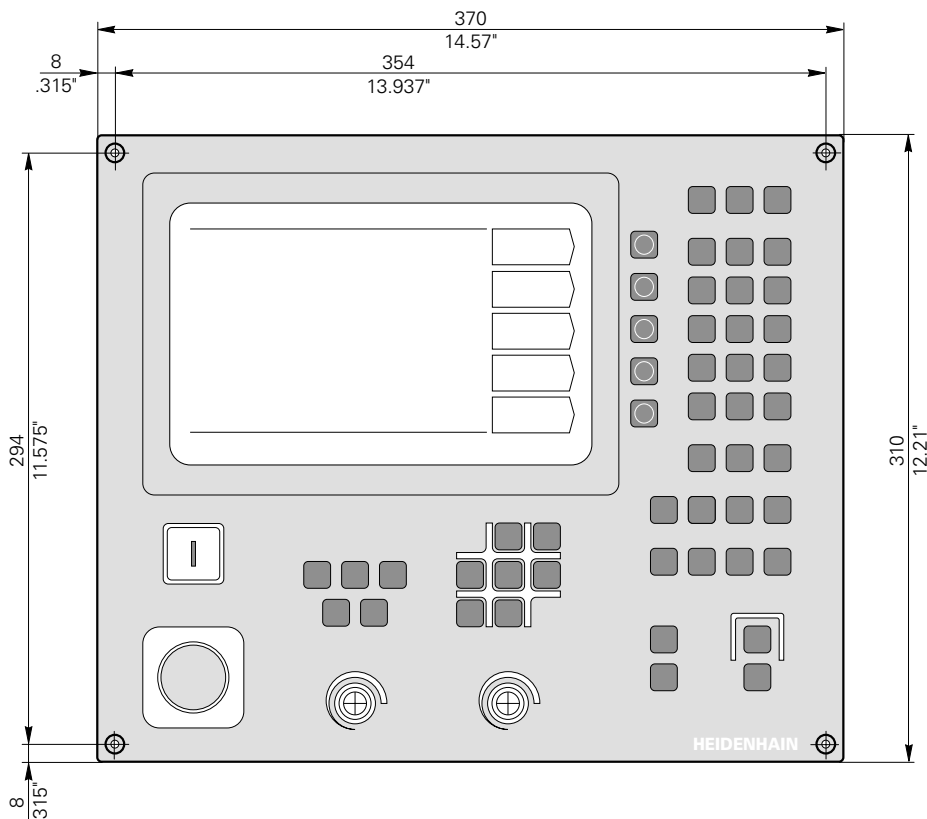
Specifications   TNC 124

	Straight cut control in panel-mount housing for milling, drilling and boring machines
Axes	3 controlled axes 1 non-controlled axis (for position display)
Interface to the drive	3 analog outputs ± 10 V; single-axis or common drive; drives with or without backlash
Spindle	• Coded output of spindle speed (over PLC outputs) • 1 analog output ± 10 V (optional) • Optional spindle override control (0 to 150%) on operating panel
Program input	HEIDENHAIN conversational format
Program memory	20 programs with a total of 2000 NC blocks; Up to 1000 NC blocks per program
Position data coordinates	Paraxial nominal positions in Cartesian coordinates; Absolute or incremental dimensions, in mm or inches; Teach-in programming
Input resolution and display step	Adjustable with parameters; Encoders with 20 μm grating period: 0.001 mm to 0.1 mm (0.000 05 to 0.005 in.)
Subprogramming	Program section repeats; subprograms
Fixed cycles	• Bolt hole circles and linear hole patterns with graphic support • Peck drilling and tapping • Rectangular pocket milling • Datum call • Dwell time
Tool compensation	Tool radius and length for 99 tools (tool table)
Datum points	99

Operating modes	**Manual**	• Traversing the machine axes • Jog increment positioning • Output of M and S codes • Datum call and setting • Probing functions for determining datum points • Electronic handwheel (optional)
	Positioning with manual data input	• For entering and executing positioning blocks one at a time • For entering cycles and executing them block by block • Output of M- and S-Codes, and feed rates • Datum call
	Program run	• For executing programs block by block or full sequence
	Programming and editing	• Program management • Creating part programs • Entering nominal positions • Actual value transfer • Programming M and S functions and feed rates • Calling tool numbers and the working plane • Programming cycles

User support features	• On-screen operating instructions (available immediately with the touch of a key) • Cutting data calculator • Pocket calculator • Stopwatch

Traverse range		Max. ±10000 mm (32.8 ft)
Traversing speed		Max. 30 m/min (1181 ipm)
	Feed rate override	0 to 150%
Error compensation		Linear and non-linear axis error compensation
Encoders		HEIDENHAIN incremental linear and angle encoders (preferably with distance-coded reference marks)
	Signal level	$\sim$ 11 µA$_{PP}$
Reference mark evaluation		After power interruption automatic datum transfer upon crossing over encoder reference marks
Data interface		RS-232-C/V.24
	Data transfer rate	38400, 9600, 4800, 2400, 1200, 600, 300, 110 baud
Integral machine axis buttons		• 6 axis keys • Rapid traverse • Spindle on clockwise • Spindle on counterclockwise • Spindle start • Spindle stop • Lock spindle • Unclamp tool • Coolant • NC start • NC stop • EMERGENCY STOP button • Control voltage on
Visual display unit		Integral flat luminescent screen, monochrom 192 mm x 120 mm (640 x 400 Pixel)
Integral PLC	Switching inputs	24 V DC; 15 vacant and 1 input "control operational"
	Switching outputs	24 V DC; 15 vacant and 1 output "control operational"
	PLC cycle time	24 ms
	Program memory	128K byte EPROM
	Program generation	On a PC with optional PLC programming software
	Timers	16
	Counters	8
Power supply		24 V DC
Power consumption		approx. 27 W
Ambient temperature	Operation Storage	0° to 45°C (32° to 113°F) –30° to 70°C (–22° to 158°F)
Weight		approx. 6.5 kg
Optional accessories	Electronic handwheels	One **HR 410** — Portable unit with additional keys for machining functions or one **HR 130** — For panel mounting or up to three **HR 150** — For panel mounting with HRA 110 handwheel adapter (on request)

BOLT CIRCLE: GRAPHIC

Next
Hole

End

Prev.
Hole

X:+   32.679   Y:+   40.000

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