

GTCNC-60TT

CNC Lathe Controller

Features

- Linkage axes: X, Z axes.
- Pulse equivalent: 0.001mm
- 32 bits 200MHz ARM Industrial microprocessor
- 32MB user memory.
- Resolution is 320x240, black-white LCD display.
- Unique and original appearance design.
- Real-time and all-round self-diagnosis function
- Feed per minute, feed per revolution.
- Metric system, English system input mode.
- Constant linear velocity control.
- Linear, circular, thread interpolation instruction can machining of metric/inch single/ multi-thread, taper thread, end-face thread, variable pitch thread, continual thread
- Multiple Compound cycle instructions, such as ex-circle rough turned compound cycle, head face rough turned compound cycle, complex type outline rough turned compound cycle, outer diameter/inside diameter/grooving compound cycle, thread cutting compound cycle etc
- Automatic backlash compensation and storage type pitch error compensation. Tool length automatic compensation, tool radius compensation.
- Display current time, single piece time and running time.
- Multiple interpolation function and M, S, T function.
- Parameter, software backup and upgrade function.
- Controller tool numbers: turrets type: 12 tools; gang tool post:99 tools



◆Speed

- Max rapid traverse: 20m/min
- Max cutting speed: 10m/min
- Program preview, realizing smooth connection between blocks

◆Precision

- Standard Screw pitch compensation, improving machining precision to the most

◆Interface

- USB port, RS232 port supply DNC function by transmit rate 115200bit.
- Encoder line can be set as request

◆Operation

- Full-screen editing interface and foreground-background processing operation, which can do programming, parameter adjustment etc at the same time
- Multilevel password protection, such as program, parameter protection to convenient equipment management
- Start machining at random block or tool number
- Compatible with popular international CNC system in instruction code and most program can be run directly without modifying.

Table 1 G Instruction-code and function

G code	Group	Function
G00	01	Rapid motion
G01		Linear interpolation
G02		Circular interpolation CW
G03		Circular interpolation CCW
G33		Thread cutting
G04	00	dwell
G20	06	Inch format input
G21		Metric format input
G28	00	X, Z axis return to the first reference point
G281		X axis return to the first reference point
G283		Z axis return to the first reference point
G26		ZX axis return to program original point
G261		X axis return to program original point
G263		Z axis return to program original point
G40	07	tool radius compensation cancel
G41		cutter radius compensation, left
G42		cutter radius compensation, right
G60	15	accurate positioning
G64		Continual path processing
G77	09	Cylindrical/conical in/ex diameter cutting canned cycle Format: G77 X(U)_Z(W)_ I_ F_
G78		Thread cutting canned cycle Format: G78 X(U)_Z(W)_ I_ J_ Q_ K(E)_ L(SP)_
G79		End face cutting canned cycle Format: G79 X(U)_Z(W)_ K_ F_
G70		Finish turning cycle Format: G70 P_ L_
G71		Cylindrical rough turning multi-cycle Format: G71 L_ Q_ R_ I_ K_ F_ S_ T_
G72		end face rough turning multi-cycle Format: G72 L_ Q_ R_ I_ K_ F_ S_ T_
G173		Multiple mode contour rough turning multi-cycle Format: G173 L_ Q_ R_P_ I_ K_ F_ S_ T_
G174		End face pick drilling multi-cycle Format: G174 X(U)_ Z(W)_ Q_ R_ I_ J_ F_ P_
G175		Interior/exterior diameter drilling/grooving multi-cycle Format: G175 X(U)_ Z(W)_ Q_ R_ I_ J_ F_ P_
G176		Thread cutting multi-cycle Format: G176 P(m_ r_ a_)_R_ X(U)_ Z(W)_ I_ J_ Q_ K(E)_ SP_
G90	03	Absolute programming
G91		incremental programming
G52	00	Set local coordinates

G94	05	Feed per minute mode
G95		Feed per revolution mode
G96	08	Constant surface speed control
G97		Constant surface speed control cancel
G22	19	Program recycle
G800		Program recycle cancel

Table 2 M code and its function

Category	Code	Function	Format	Remark
Program control	M00	Program pause.	M00	
	M02	Program end.	M02	
	M30	Program end, by M05,M09 end	M30	
	M20	Program end, repeated executes program according to running times set in parameter, applied to test CNC	M20	
Spindle	M03	Spindle CW	M03	output
	M04	Spindle CCW	M04	
	M05	Spindle stop	M05	
Cooling	M08	Cooling on	M08	output
	M09	Cooling off	M09	
Chuck	M10	Chuck clamping	M10	output
	M11	Chuck unclamping	M11	
Center	M55	Center tightening	M55	output
	M54	Center release	M54	
Lubricate	M23	Lubricate on	M23	output
	M22	Lubricate off	M22	
Self-defined output	M25	Self-defined 1 on	M25	
	M24	Self-defined 1 off	M24	
	M71	Self-defined 2 on	M71	
	M70	Self-defined 2 off	M70	
	M73	Self-defined 3 on	M73	
	M72	Self-defined 3 off	M72	
	M75	Self-defined 4 on	M75	
	M74	Self-defined 4 off	M74	
	M77	Self-defined 5 on	M77	
	M76	Self-defined 5 off	M76	
	M79	Self-defined 6 on	M79	
	M78	Self-defined 6 off	M78	
	M81	Self-defined 7 on	M81	
	M80	Self-defined 7 off	M80	
	M83	Self-defined 8 on	M83	
	M82	Self-defined 8 off	M82	



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Self-defined input	M12	Check 0V valid	M12	
	M13	Check +24V valid	M13	
	M18	Check 0V valid	M18	
	M19	Check +24V valid	M19	
	M28	Check 0V valid	M28	
	M29	Check +24V valid	M29	
	M14	Check 0V valid skip	M14 p	
	M15	Check +24V valid skip	M15 p	
	M16	Check 0V valid skip	M16 p	
	M17	Check +24V valid skip	M17 p	
Sub-program	M97	Skip	M97 P	L=1-99
	M98	Calling	M98 P L	
	M99	Calling return	M99	
Spindle gear shifting	M41	1 st grade	M41	Output S02S04
	M42	2 nd grade	M42	Output S01S04
	M43	3 rd grade	M43	Output S02S03
	M44	4 th grade	M44	Output S01S03
Machine coordinates clear	M317	clear X-axis of Machine coordinates		
	M319	clear Z-axis of Machine coordinates		
	M320	clear both X and Z-axis of Machine coordinates		