
LEADJECK[®] CNC

聯傑自動化科技股份有限公司
LEADJECK AUTOMATION CO.,LTD.

台中市北屯區松竹路三段 51號
NO.51, SEC.3, SUNG CHU RD., TAICHUNG, TAIWAN, R.O.C.
TEL:886-4-2244-2421 FAX:04-2245-1598
E-mail:leadjeck@ms31.hinet.net Website:www.leadjeckcnc.com.tw

LEADJECK 5-Axes CNC Milling Control

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A. CNC Milling Control:

- .Type: LAC-50M/Plus
- .Controllable Axes: 3~5
- .Simultaneous Control Axes: 3~5
- .Spindle Axis: 1~2
- .Suitable Machines: CNC Milling, CNC Machining Center, CNC Tapping Center,...etc.
- .Extended Version: 3~12 Axes Mill-Turn Machine Tools, Multi-axes Double Column Machine.

B. Hardware Standard Feature:

- .15" High Resolution TFT LCD Color Monitor.
- .System with Milti-core in Parallel High Speed Processing.
- .Full Key Pad with Sealed Tack switch & LED Indicator.
- .Modular Hardware PC Boards for easy Maintenance.
- .PLC I/O Points with LED Indicator on System Relay Board for easy Trouble Shooting.
- .On-line Hardware Self-Diagnostic Function.
- .Healthy LED Indicator in each PC-boards and Fuses.
- .NC Part Programs, Control Software & System Parameters Stored in CF Memory Card for High Reliability, the Backup Battery is un-necessary.
- .Thru RS-232C, Portable CF Memory Card or Ethernet, System can be linked with PC Computer for High Speed On-line DNC Operation.
- .Thru Ethernet, System can be linked with Network for Remote Trouble Shooting and Update the Control Software.

C. Software Standard Feature:

- .Least Command Input: 0.001mm (Metric), 0.0001in (Inch).
- .G/M Code Programming Compatible with FANUC System.
- .Tool Path with X-Y, Z-X and 3D Graphic Color Display.
- .Graphic Display with Zoom In, Zoom Out and Shift Function.
- .Position of Relative, Work, Machine and All Coordinates Display.
- .PLC I/O Points, Internal Relays with Description and Status Display.
- .PLC Capacity: 64 Inputs, 64 Outputs, 256 Internal Relays & 16 Timers and Counters.
- .Machine, Servo, Tool Offset, Compensation, PLC Timer/Counter, RS232 and Ethernet Parameters with Description Display and Protected by Password.
- .Alarm Messages with Alarm Code and Description Display for Easy Trouble Shooting.
- .Working Time and Part Counter Display.
- .NC Part Program G/M Code Programming Debug Function.
- .Program Block Number & String Search Functions.
- .Cartesian/Polar Coordinates, Absolute/Incremental Programming.
- .Conversational Milling, Drilling and Tapping Functions.
- .Drilling/Milling Canned Cycle, Call Sub-Program, Coordinate Rotation, Scaling and Mirror Image Functions.
- .64 Tools Length/Diameter with Geometric & Wear Offsets.
- .Tool Diameter and Tool Length Compensation.
- .Spindle Vector Dual Drive with Low Speed High Torque Control.
- .Spindle Orientation and Rigid Tapping Function.
- .Arm Type & Disk Type Tool magazine control.
- .Helical Interpolation and Chamfer Function.
- .Automatic Corner Feedrate Override.
- .Block Processing Time: 2ms.
- .Axes Auto Zero Return Function.
- .Hardware & Software Stroke Limit.
- .Position Feedforward Control with Linear or S-curve Acceleration/Deceleration.
- .Spindle High/Low Gear Auto Change Control.
- .Actual Spindle Speed Control with S Code.
- .Bi-directional Ball Screw Pitch Error Compensation.
- .Axes Backlash Compensations of Rapid and Cutting Motions.

- .Axes Quadrant Spike Compensation of Cutting Motion.
- .Handle Interrupt Function.
- .Multi-Step Skip Function.
- .Feedrate Control Knob: 0% ~ 150%.
- .Rapid Traverse Knob: 0%, 25%, 50% and 100%.
- .Spindle Speed Control Knob: 50% ~ 120%.
- .Operation Mode: MEM, MDI, JOG, ZERO RETURN, EDIT and PROG LIST
- .MEM and MDI Operation functions:
 - Block Delete, M01 Stop, Single Block, Dry Run, Simulation, On-Line DNC, Re-Start.
 - Auto Power Off and Handle Control Feedrate.
- .JOG Mode Operation Functions:
 - Rapid Jog, Continuous Jog, Handle Jog, ATC Reverse, O.T. Release, ATC Forward,
 - Work Zero Set, Tool Offset Measure and Next Tool.
- .ZERO RETURN Mode Functions:
 - All Axes and Single Axis.
- .Mid-Program Re-start:
 - The NC Part Program Can be Executed from any Selected Block, or Whe the Execution was Terminated by Power Tripped or RESET, the Terminated Block will be Memorized, and the NC Part Program can be Re-start from this Block.
- .Auto Power Off:
 - System Power can be Trun Off Automatically by M30 Code at the End of NC Part Program.
- .Handle Control Feedrate:
 - The NC Part Program Exection Speed can be Controlled Slowly by Swing the Electronic Handle, the Tool Path Still follow the Program.
 - At the Begining of NC Part Program, the Tool Moving Down to the Part with Rapid Motion, at this time, Use this Function for Safty.
- .Work Zero Setup:
 - The Zero of Work Coordinate from G54 ~ G59 can be Setup by Teach-in for Easy and Safety.
- .Tool Offset Measure:
 - The Tool Length Offset also can be Setup by Teach-in.
- .Next Tool:

In JOG Mode, Key in the Number of Next Tool, and Press the Cycle Start Key, then the Tool Changed Canned Cycle will be executed.

D. G Code Functions:

- .G00: Rapid Motion Positioning.
- .G01: Linear Interpolation Motion.
- .G02: C.W Circular Interpolation Motion.
- .G03: C.C.W Circular Interpolation Motion.
- .G02: C.W Helical Interpolation Motion.
- .G03: C.C.W Helical Interpolation Motion.
- .G12: C.W Circular Pocket Milling.
- .G13: C.C.W Circular Pocket Milling.
- .G04: Dwell.
- .G05.1: High Speed/High Precision Contouring Control.
- .G09: Exact Stop.
- .G10: Set Offsets.
- .G17: XY Plane Selection.
- .G18: ZX Plane Selection.
- .G19: YZ Plane Selection.
- .G20: Select Inches.
- .G21: Select Metric.
- .G28: Return to Machine Zero.
- .G29: Move to Location through G28 Ref. Point.
- .G31: Skip Function.
- .G34: Bolt Holes Circle.
- .G35: Bolt Holes Along an Angle.
- .G36: Bolt Holes Arc.
- .G37.1: Bolt Holes Grid.
- .G37.2: Bolt Holes Edge of Grid.
- .G40: G41/G42 Cancel.
- .G41: Cutter Compensation Left.
- .G42: Cutter Compensation Right.
- .G43: Tool Length Compensation (+).

.G44: Tool Length Compensation (-).
.G49: G43/G44 Cancel.
.G50: Cancel Scaling.
.G51: Scaling.
.G50.1: Cancel Mirror Image.
.G51.1: Enable Mirror Image
.G52: Set Local Coordinate System.
.G53: Machine Coordinate Positioning.
.G54 ~ G59: Select Work Coordinate System #1 ~ #6.
.G61: Select Exact Stop Modal.
.G64: Select Normal Cutting Modal.
.G68: Rotation.
.G69: Cancel G68 Rotation.
.G73: High Speed Peck Drilling Canned Cycle.
.G74: Reverse Tap Canned Cycle.
.G76: Fine Boring Canned Cycle.
.G80: Canned Cycle Cancel.
.G81: Drill Canned Cycle.
.G82: Spot Drill Canned Cycle.
.G83: Peck Drilling Canned Cycle.
.G84: Tap Canned Cycle.
.G85: Boring Canned Cycle.
.G86: Bore and Stop Canned Cycle.
.G87: Back Bore Canned Cycle.
.G88: Bore and Manual Retract Canned Cycle.
.G89: Bore and Dwell Canned Cycle.
.G90: Absolute Position Commands.
.G91: Incremental Position Commands.
.G92: Set Work Coordinate Systems Shift Value.
.G98: Canned Cycle Initial Point Return.
.G99: Canned Cycle R Plane Return.
. ,C : Linear Chamfer at Corner.
. ,R : Circular Chamfer at Corner.

E. M Code Functions:

- .M00: Stop Program.
- .M01: Optional Program Stop.
- .M02: Program End.
- .M03: Spindle C.W.
- .M04: Spindle C.C.W.
- .M05: Spindle Stop.
- .M06: Tool Change.
- .M07: Mist Coolant On.
- .M08: Coolant On.
- .M09: Mist Coolant and Coolant Off.
- .M10: A-axis Unclamp On.
- .M11: A-axis Unclamp Off.
- .M12: Magazine Fwd. In.
- .M13: Magazine Back Out.
- .M14: Chip Spray On.
- .M15: Chip Spray Off.
- .M16: Chip Conveyor Forward.
- .M17: Chip Conveyor Reverse.
- .M18: Chip Conveyor Stop.
- .M19: Orient Spindle.
- .M30: Program End and Rewind.
- .M97: Loop Operation.
- .M98: Call External Subprogram.
 - M98P__L__;
 - P: Subprogram Start Block N Code.
 - L: Cycle Times;
- .M99: Subprogram Return.

F. Optional Functions:

- .G05.1: High Speed/High Precision Contouring Control.
 - .Block Processing Time: 1ms.
 - .Look Ahead Function up to 1024 blocks.

- .Linear Acceleration/Deceleration before Interpolation.
- .Auto Feedrate Override at Corner.
- .Feedrate Limit with Axis Acceleration.
- .Feedrate Limit with Circular Radius.
- .Velocity Feedforward Control for High Accuracy Tracking.
- .Portable Electronic Handle.
- .3 Electronic Handles for X,Y,Z Axes.
- .Glass Scale interface Position Feedback Control.



*** 2-axes CNC Lathe ***



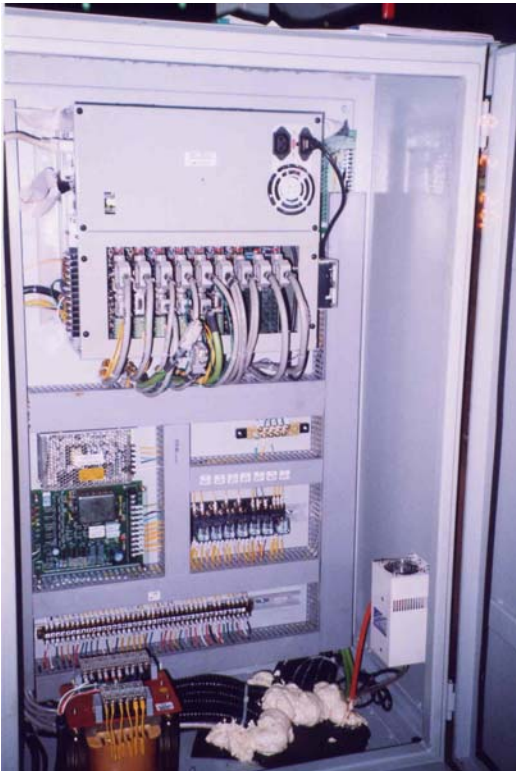
*** 3~5-axes CNC Machining Center ***



* Operation Panel in English *



* Operation Panel in Chinese *



* 12-axes CNC Controller *



* 4-axes CNC Controller *