



CNC Training Simulator

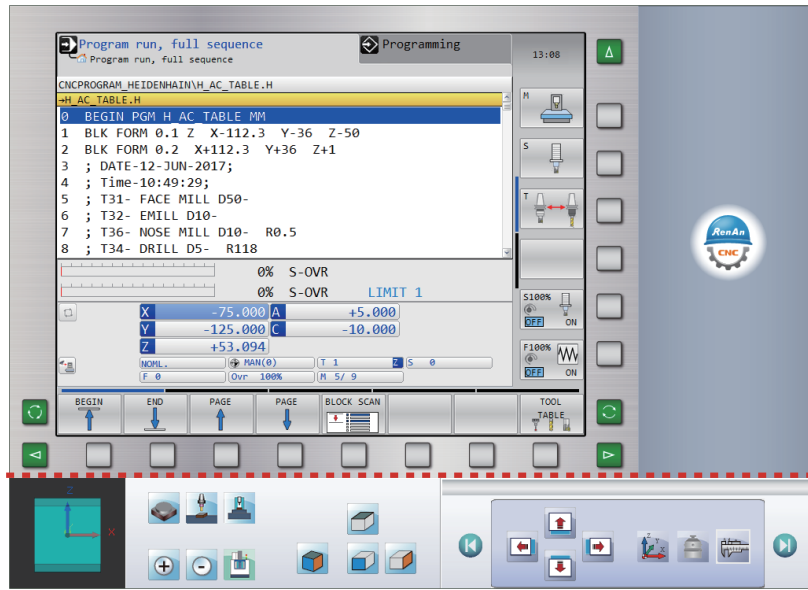
Heidenhain TNC640-5Axis (TBTC)/(TATC)



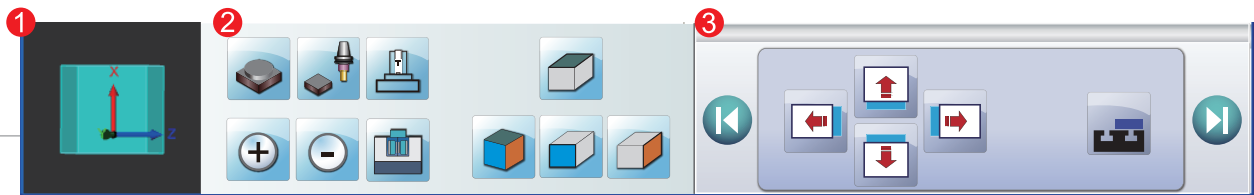
- 3D view simulation display:
Overall 3D machine and cutting simulation display
- CNC controller:
Include controller function panel and touch panel tool list
- CNC operation panel :
Real machine operation panel

CNC Controller Function

(Heidenhein TNC640 -5 Axis)



Tool bar in touch panel



- 1 **3D view** : touch and drag to rotate the view
Display any direction and angle of current 3D view
- 2 **View function** : common functions for rapidly switching different views
- 3 **Application function** : sliding interface, change different kinds of function keys
by sliding the interface



CNC real machine operation panel

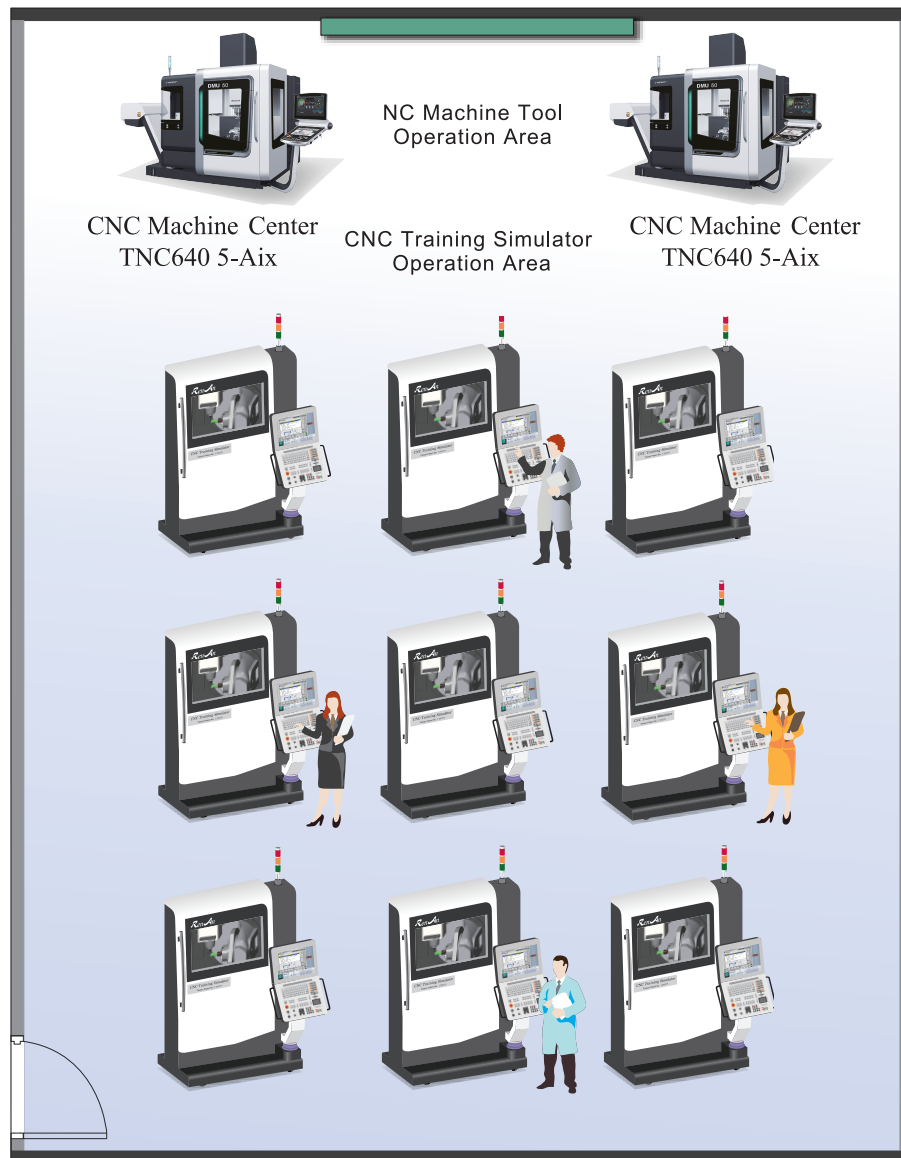
Human interface, primary educational training equipment

CNC training machine is equipped with exactly same overall appearance, actual handwheel and real machine operation panel as numerical control machine. Its purpose is to train students for accumulating.

CNC machine operation skills (program transmission, programming, tool selection, tool compensation and alarm clear) Overall design is more attractive,

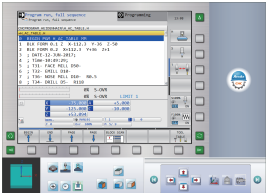

and it emphasizes on interaction to make students less mistakes happened.

Not only decreasing learning cost but also letting students work and learn in the safe environment.

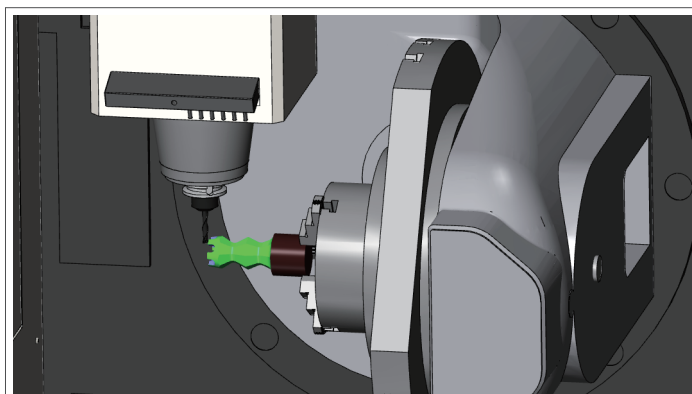
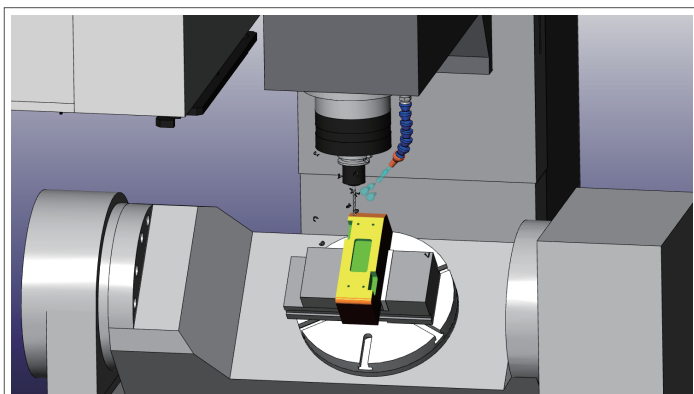
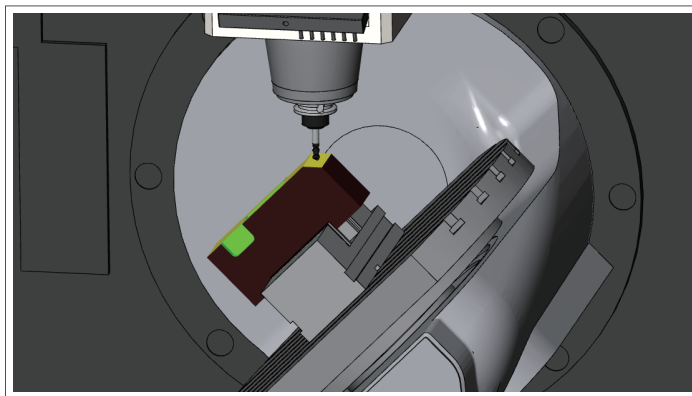
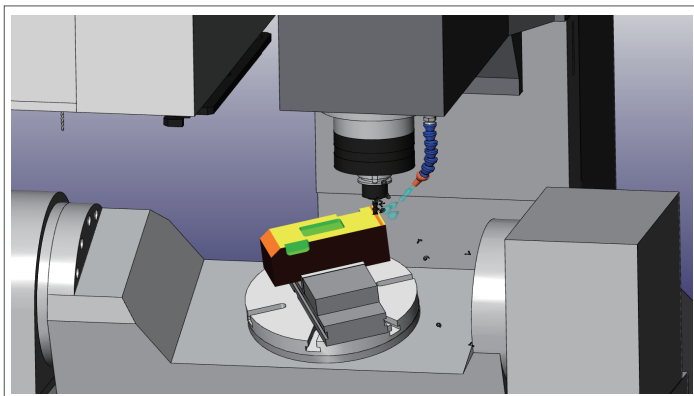


More professional is your technical skill,
more promising is your future going to be

Product design, production management, factory manager,
technology consultant, marketing sells, micro venture

Item	Specification
<p>Specification Of Hardware</p>	<ul style="list-style-type: none"> PC Mother Board <ul style="list-style-type: none"> (1) CPU: Intel Core (2) SSD 128GB CNC Operation Panel (Used by Siemens controller). Controller case linking to machine is all-in-one design, which can rotate around 180 degrees for more flexible adjustment Machining Status Display Light (three colors) Touch Screen 17" <ul style="list-style-type: none"> (1) Best Resolution: 1024*768 (2) Display: 4:3 LED screen 32" <ul style="list-style-type: none"> (1) Best Resolution: 1920*1080
<p>CNC Controller Function</p> 	<ul style="list-style-type: none"> Heidenhain TNC640 5Axis CNC milling Simulation Based on Heidenhain TNC640 controller panel to design the overall simulation interface <ul style="list-style-type: none"> (1)[AUTO] : Display coordinate, absolute coordinate and machining status, Block Scan (2)[MDI] : Display coordinate, absolute coordinate and machining status (3)[EDIT] : [SELECT] 、[COPY] 、[CUT] 、[PASTE] 、guided program input Q INFO 、Program Lock (4)[TOOL TABLE] : Tool setting and Tool offset (5)[DATUM MANAGEMENT] : Workpiece Coordinate setting and alter (6)[PGM] Program Manager : New 、Open 、Select 、Copy 、Delete 、Rename (7)[ERR] Alarm : Error list
<p>CNC Machine Operation Panel Function</p> 	<ul style="list-style-type: none"> CNC Machine Operation Panel Mode Switch Functions <ul style="list-style-type: none"> (1)[AUTO] : Auto mode, [Single block], [Cycle Start], [Hold] (2)[MDI] : Key in command directly mode (3)[MANUAL] : Jog Mode, Feedrate override adjustment Axis direction movement +X axis, -X axis, +Y axis, -Y axis, +Z axis, -Z axis, +IV axis, -IV axis, + V axis, -V axis, rapid Mode, Traverse adjustment. (4)[EDIT] : Program edit mode Switches adjustment include Switches adjustment include Feed override, Spindle speed Handwheel, Handwheel feedrate, Handwheel axis direction Program lock, Emergency stop, Coolant fluid, Door open/ close, Work light
<p>CNC Machine Simulation</p>	<ul style="list-style-type: none"> Based on 3D solid simulation. Vertical 5 Axis-Milling Machining Center Includes vise, Z axis tool setter, Tools, Automatic Tool change ATC <ul style="list-style-type: none"> Travel : X axis 650, Y axis 550, Z axis 550 (mm) Rapid : X axis 18, Y axis 18, Z axis 18 (m/min) B axis 24, C axis 24 (rpm) Max Cutting feed : X axis 6, Y axis 6, Z axis 6 (m/min) B axis 24, C axis 24 (rpm) Simulate whole CNC machine with solid operation panel and dynamic simulation Collision detection: tool and material. Work table: cradling rotation (A axis+ C axis)/Workpiece material setting <ul style="list-style-type: none"> (1) Cuboid Workpiece Size : Max Length = 200mm Max Width = 200mm Max Height = 200mm (2) Cyclinder Workpiece Size : Max Diameter = 120mm Max Length = 250mm Max Reach = 200mm (3) Workpiece position

Item	Specification
	<ul style="list-style-type: none"> ● Milling Tool Magazine setting : Face Mill, End Mill, Rough Boring, Finish Boring, Ball, Round, Chamfer , Thread Mill, Drill, Tap. ● Tool magazine setting: tool setting, modify, delete ● Standard View : top view (XY) 、 front view (ZX) 、 side view (YZ) ● Universal View : material view, bed view, machine view ● Operator View : shift, rotate, zoom in / out ● Operation Function : Z axis setting, electric tool length setter function X axis Y axis setting, electronic touch probe Include machine bed, spindle head, vise, Z axis tool setter, tools, automatic tool change ATC ● Emulated design includes coolant fluid, chips spurting when cutting the workpiece, sound (tool movement, cutting, spindle rotation, alarm) ● Collision detect: Tool V.S. material, vise, rotation, collision check ● Workpiece dimension measurement: length, width, height, linear distance ● Undo and initialize to Default Setting ● CNC Program Import and Export
CNC Machine Program Simulation	<ul style="list-style-type: none"> ● Program cutting simulation includes 3+2 axis, includes 4 axis synchronized ● Heidenhain Program Function : <ul style="list-style-type: none"> (1) Program execute cutting ,simulation, command : L C CR CT (2) Dwell Command : CYCL DEF 9 (3) Plane select command : TOOL CALL X/Y/Z (4) Tool Call and Definition command : TOOL CALL, TOOL DEF (5) Tool compensation command : R0 RR RL R+ R- (6) Workpiece Dimension, Inch/Metric : MM INCH (7) Workpiece Dimension, absolute/incremental dimension command : IX_ IY_ IZ_... (8) Support Drilling Cycle : CYCL DEF 200 、 CYCL DEF 203 、 CYCL DEF 205 、 CYCL DEF 240 、 CYCL DEF 241 (9) Support Tapping Cycle : CYCL DEF 206 、 CYCL DEF 207 、 CYCL DEF 209 (10) Support Reaming, Boring Cycle: CYCL DEF 201 、 CYCL DEF 202 、 CYCL DEF 204 、 CYCL DEF 208 (11) Datum Shift with Datum table: CYCL DEF 7 (12) Datum setting: CYCL DEF 247 (13) Polar Coordinates Movement command : LP CP CR CTP (14) Support G01 auto chamfer CHF, RND command function (15) Sloped machining: AXIAL, EULER, POINT, PROJECTED ● M code auxiliary function <ul style="list-style-type: none"> (M00)program stop (M03)spindle forward (M08) coolant fluid on (M01)optional stop (M04)spindle reversal (M09) coolant fluid off (M02)program end (M05)spindle stop (M13) Spindle forward & coolant fluid on (M30)program end (M06)auto change tool (M14) Spindle reversal & coolant fluid on (M91)Coordinates are referenced to machine datum (M92)Coordinates are referenced to position defined by machine tool builder (M99)Blockwise cycle call (M116)Feedrate for rotary axes in mm/min (M117)Feedrate for rotary axes in deg/min (M126)Shortest-path traverse of rotary axes



5 Axis Rotary Table (AC Axis)

5 Axis Rotary Table (BC Axis)

Dimension & Weight

CNC Milling Operation Simulator

Shell Case: 2mm thick panel - beating & painting

Simulator Dimension: L 1,200mm* W 630mm*H 1,720 (rollers+ H 80mm)

Controller Case Dimension: L507mm* W630mm

Net Weight: 210kg±10%

Easily installed in the classroom , easily moved by the rollers

Invention Patent

Taiwan Patent No.I289273

China Patent: No.ZL2006-1-0139895.2

Both China and Taiwan invention patent intellectual



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