SMEC

LCV 850/1060

VERTICAL MACHINING CENTER

SMEC America Corp.

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❖ Design and specifications subject to change without notice.

SMEC America Corp.

SMEC

Samsung Machine Tools Engineering Company

SMEC

Company History

- **1988** - Started as **Samsung Heavy Industries** Machine Tools Business
- **1989** - Horizontal and vertical machining center technology partnership with **OKK Japan**
- **1991** - Turning center and vertical machining center technology partnership with **Mori Seiki**
- **1996** - 5-sided processing center technology partnership with **Toshiba**
- **1999** - Spun out from **Samsung Aerospace Industries** and established **SMEC Co., Ltd**
- **2018** - **SMEC America Corp** established to provide factory support to the distributor network and customers

SMEC'S Advanced Engineering and Machine Design

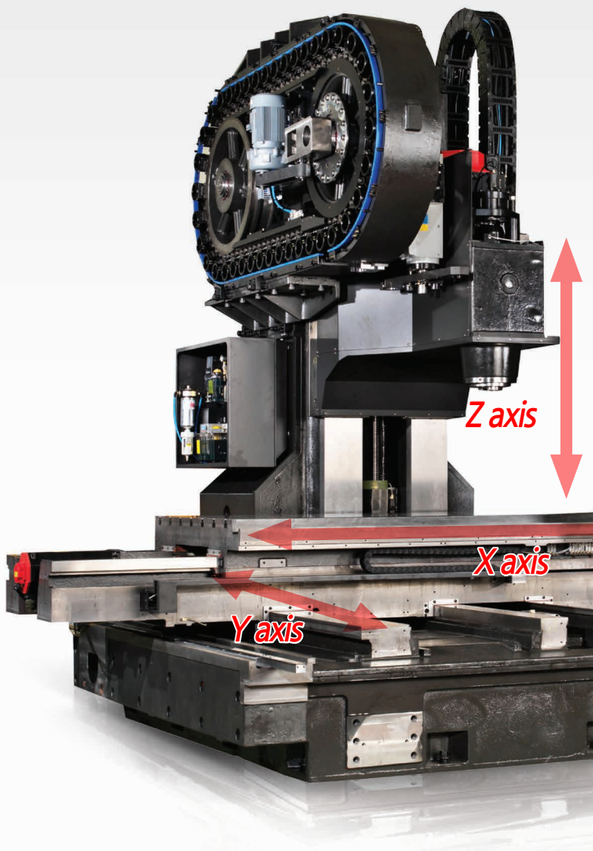
High Performance and Heavy Duty Machine Construction

- High speed, Ultra precision and high rigidity headstock
- Rigid one piece cast iron bed and wide box ways to support the saddle
- Largest machining capacity in its class
- High torque 2-speed gear box spindle drive system
- Easy chip removal and coolant washdown design

Description		LCV 850	LCV 1060
Table Size	inch	80.71×33.46	110.24×41.73
Travel(X/Y/Z)	inch	78.7/33.5/31.5	98.4/41.7/35.4
Spindle RPM	rpm	6,000	6,000
Spindle Power	Hp	25 / 20	25 / 20
Max. Table Load	lbs	6,600	11,000
Rapid Traverse Rate(X/Y/Z)	inch/min	787/787/630	630/630/630

LCV 850
LCV 1060

LCV 850 / 1060, One Piece Frame Design and High Rigidity Spindle Guarantee High Performance Machining



LCV 850 / 1060

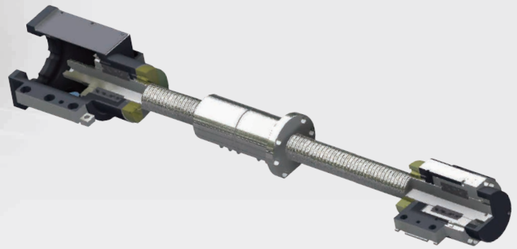
Max, Speed
6,000 rpm

Spindle Motor
25 / 20 Hp

Spindle Torque
452 / 366 lbs.ft

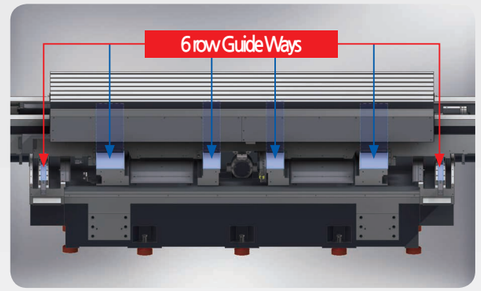
Rapid Traverse Speed (X/Y/Z)
LCV 850 : 787/787/630 inch/min
LCV 1060 : 630/630/630 inch/min

Table Size
80.71×33.46 inch
110.24×41.73 inch

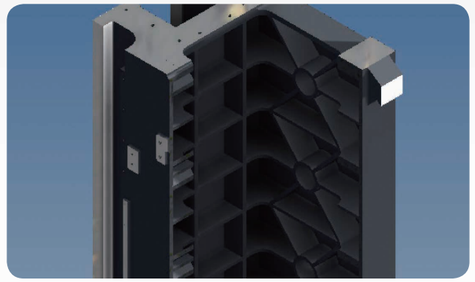


Large Size Ball Screws and Axis Drives

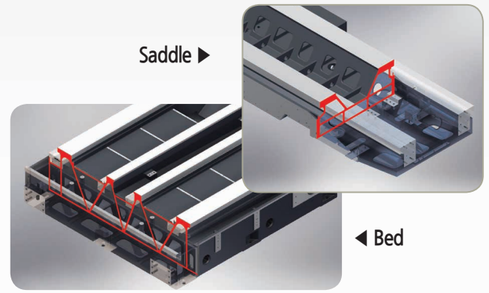
High precision double-nut ballscrews are centered between the guide ways, ensuring outstanding positioning repeatability with virtually no thermal growth.



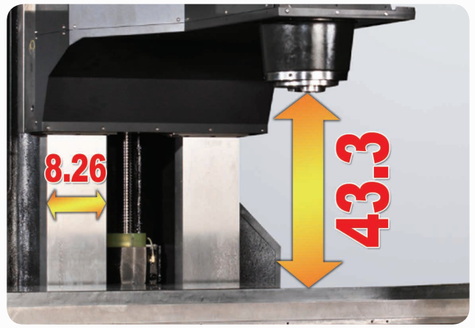
4 row Box guide ways and 2 row Roller Recirculating Units ensure table position accuracies and provide excellent support for the saddle preventing table overhang.



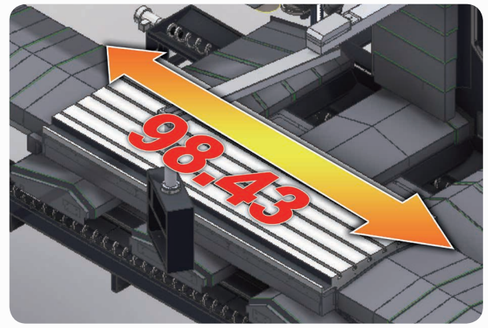
Highly rigid radial rib configuration provides high rigidity and vibration dampening during machining.



Rigid Box construction of the Bed and Saddle with properly arranged triangular truss Ribs provide minimal vibration even during heavy machining.

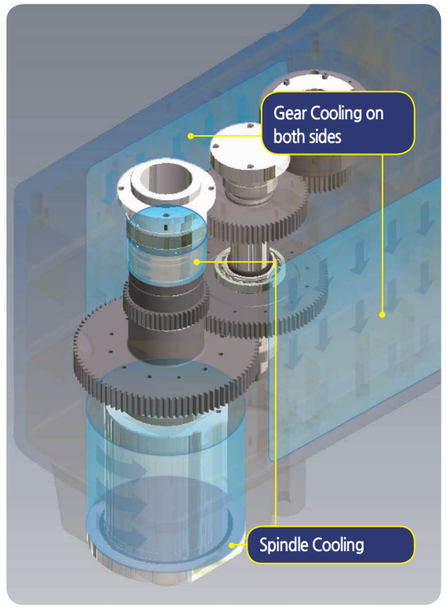


The largest Z-stroke of its class(35.43"), the headstock is supported by wide Z-axis guide ways (8.26").
(Image : LCV 1060)



With the longest X-axis (98.4") of its class, LCV 1060 is capable of machining various size parts.

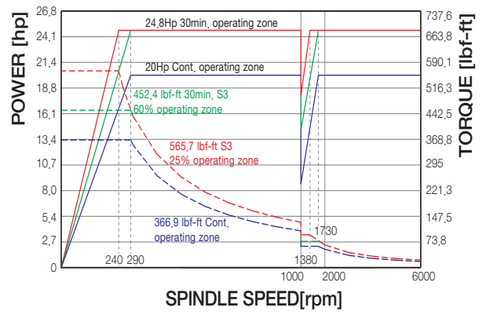
2-Speed Geared Headstock, 6,000RPM

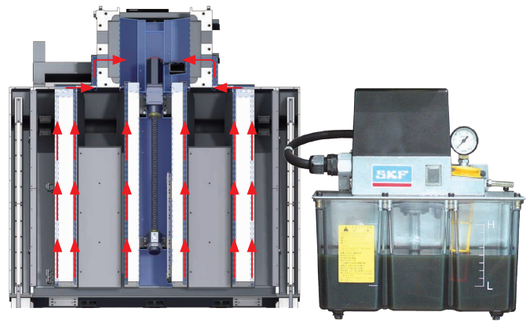


Optimized Thermal Expansion Prevention

With intergrated and complete headstock cooling system - separately cooling the spindle and gender(on both sides), minimal thermal expansion is accomplished

Spindle Power and Torque Diagram



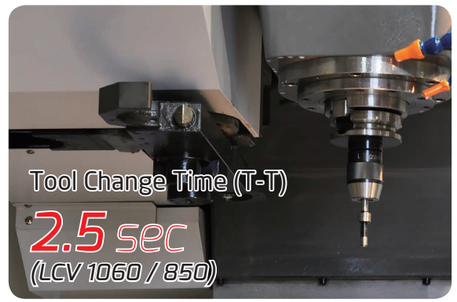


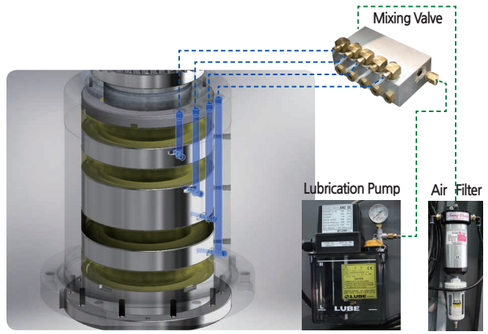
Lubrication Circulation System

The highly reliable line of products supply the right amount of lubricant to the guide ways through the metering value. Waste lubricant is collected, increasing the life span of the cutting oil.

Centralized Pneumatic Utility Check

With the centralized utility check layout, operators can easily check operation status of lubrication, bearing fluid, air supply, etc.





Spindle Bearing Air-Oil Lubrication

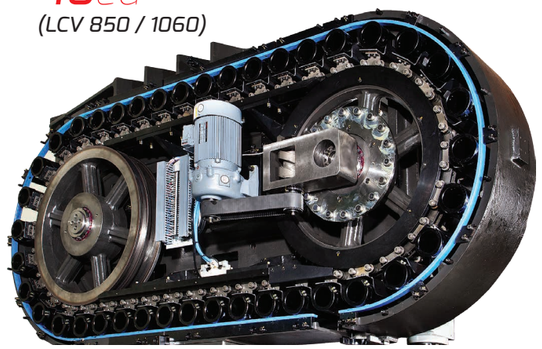
The spindle is lubricated by oil and air supplied by the metered lubrication pump and air filter. The mixing valve regulates the right amount of the oil and air to be dispated in to the spindle bearings.

High Efficiency Spindle Oil Cooler Unit Maintains the Highest Spindle Accuracy

The Oil Cooler Unit keeps oil at room temperature and forces cooled oil to the heated areas of the spindle, maintaining constant temperature for high accuracy machining.

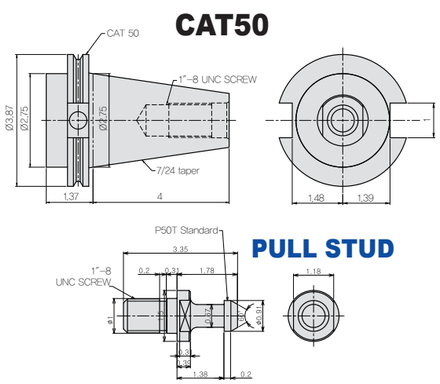
Tool Magazine Capacity

40ea
(LCV 850 / 1060)



Tool Shank

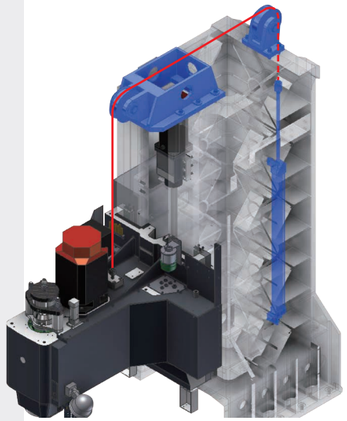
Unit : inch



■ Machine Structure

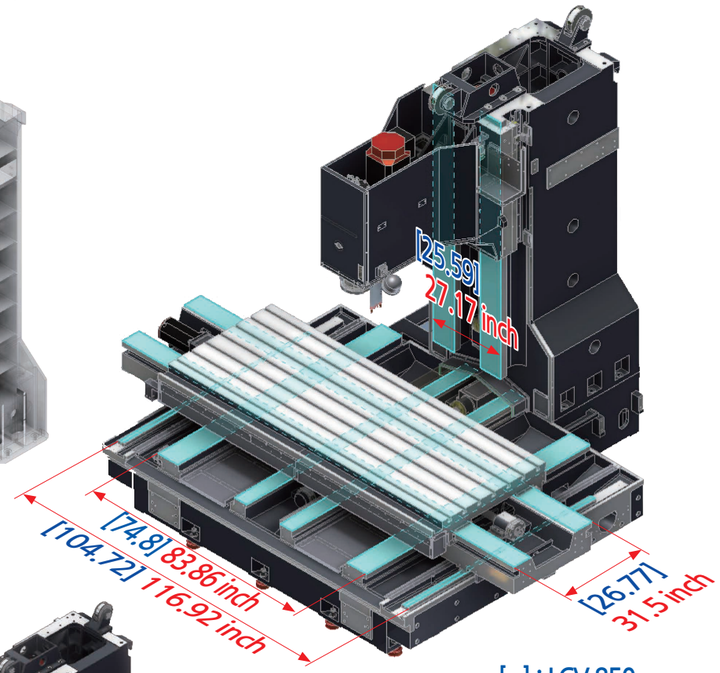
Hydraulic Balance Cylinder

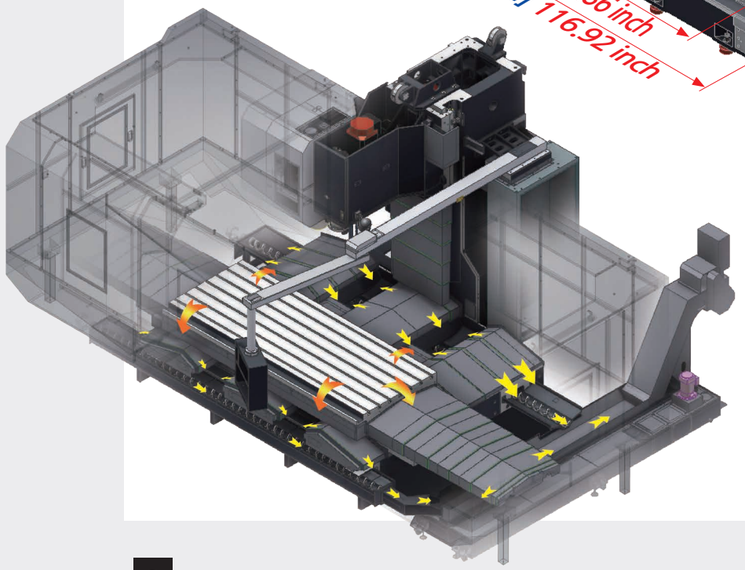
- Prevents Ball Screw overload due to the Head weight
- Maintains long-term rigidity by preventing the wear on Head Slide Ways



Rigid and Reliable Body Structure

- Stable base and column construction
- Wide induction hardened and precision ground box guide ways





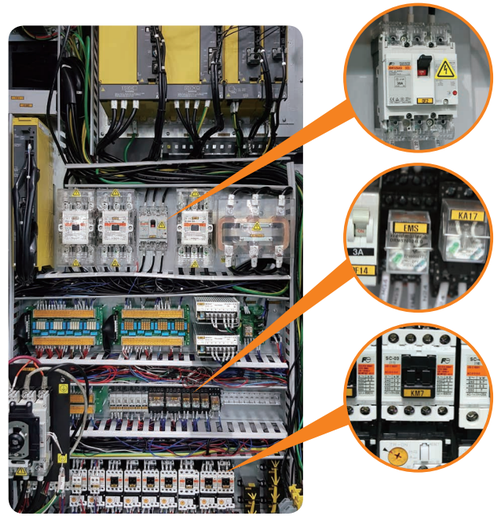
Easy and Efficient Chip Disposal Design

High volume of flushing coolant allows minimal chip build-up, and slanted splash guard design effectively moves chips in to the screw type built-in conveyors.

■ Machine Structure

Centralized Control Panel

- 10,4 inch color LCD
- Semi permanent LED LAMP
- Easy to operate and access Pendant Arm and mobile MPG



Electric Cabinet Made with Highly Reliable Components

- Magnet switch, circuit breaker, Schneider
- Relays (Widemuller, Omron)

■ FANUC Manual Guide *i* Software

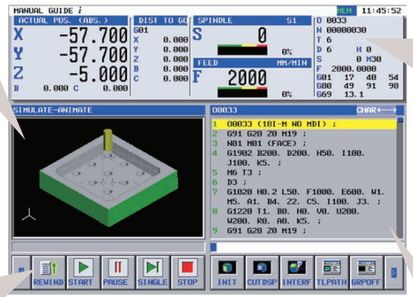
Equipped with standard FANUC Manual Guide i software, program simulation and checking finished work pieces is now easier than ever.

Program Simulation

Program simulation thru three-dimensional graphic

Concise and easy to see display

Easy to see the entire process with concise control screen display.



Current Operation panel

The panel offers basic information such as axis position and spindle speed.

Simple and User Friendly Control Panel

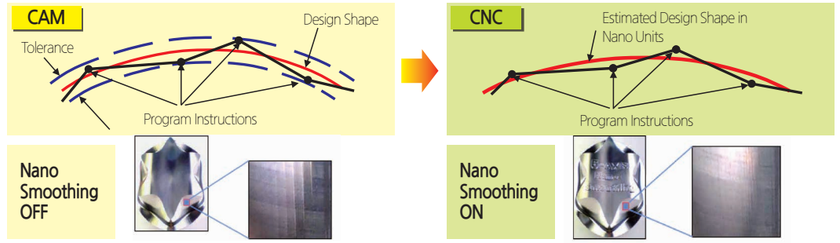
Menu buttons for user friendly operation

Convenient Programming System

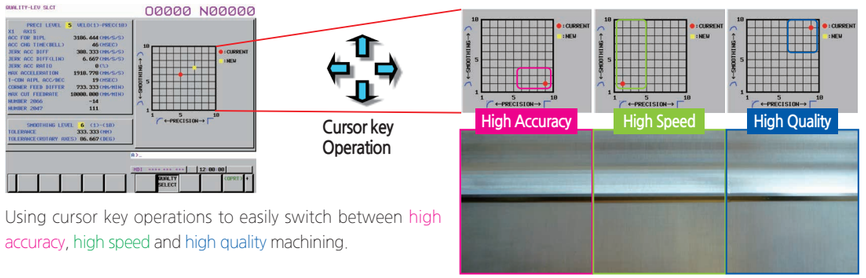
Easy program inputs by ISO code based programming.

Nano Smoothing (F0i-MF, F31i : Option)

Produce smoother machined surfaces using NURBS curves created through nano interpolation



Adjust quality of machined surface using Nano Smoothing(F0i-MF, 31i : Option)



Using cursor key operations to switch between high accuracy, high speed and high quality machining.

Moricon

Option

Moricon(Mobile Remote Control)

A remote machine monitoring and control solution that enables the operator to monitor in the machine in realtime anytime, anywhere using a smart device(iPad, iPhone, Galaxy Tab, Galaxy Phone) and remotely power the machine on and off.

Moricon-S
Mobile Machines.
Check various status information of the machine (mode, parts count, cycle time) anywhere in realtime.

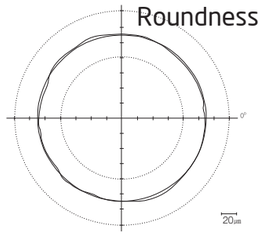
Moricon-W
1 Year 180 Hour Operation.
Operators are able to turn any machine registered to the application on and off remotely. By warming up the machine remotely, operators can recover up to 30 minutes of lost machining time per day.

Moricon-T
See the Machine Anytime Anywhere.
See the Machine Anytime Anywhere.
Check the video of any IP camera installed around the work space on any smart device. If a problem occurs, STOP the machine using the remote on/off feature.

■ High Precision

Unit : inch

Conditions	
Machine	LCV 1060
Material	A 1050P
Tool	Ø0.98×4T
Spindle Speed	1,500RPM
Depth of Out	0.004inch
Work Size	Ø7.09
Cutting Feedrate	11.81inch/min



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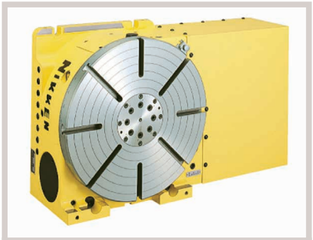
■ Accessories (Option)


Automatic Tool Length Measurement Unit


Coolant Gun (With Tank Opt.)


Oil Skimmer (With Tank Opt.)

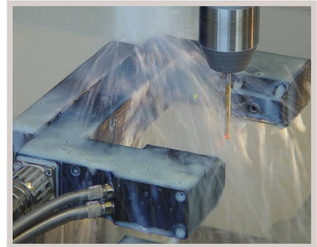

Additional 1-axis


Additional 2-axis


Lift Up Chip Conveyor

Thru Spindle Coolant

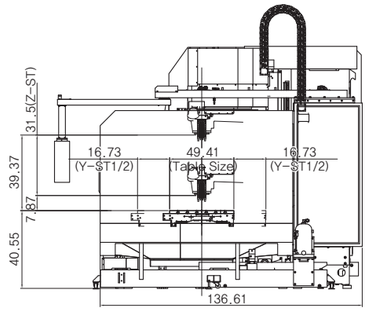

Linear Scale Feed Back System

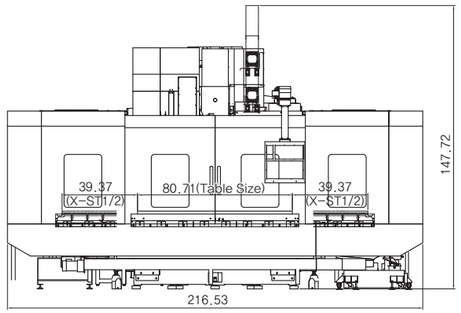

Tool Breakage Detection Sys.

■ Machine Dimensions

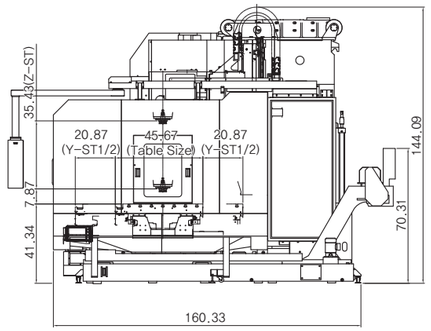
Unit : inch

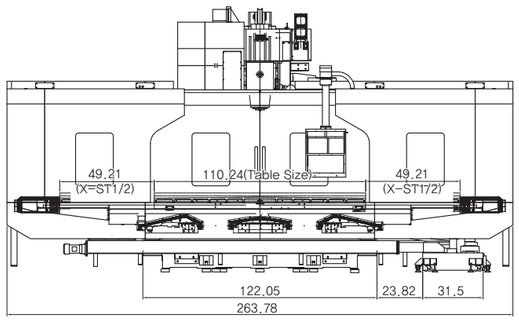
VERTICAL MACHINING CENTER
LCV 850





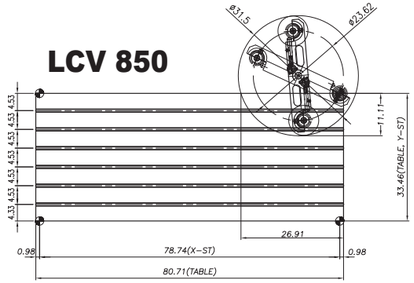
VERTICAL MACHINING CENTER
LCV 1060

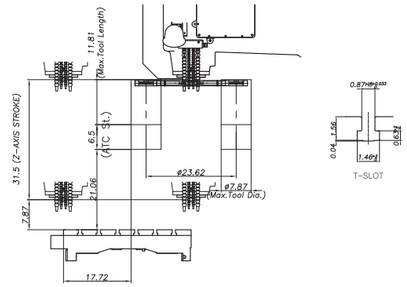




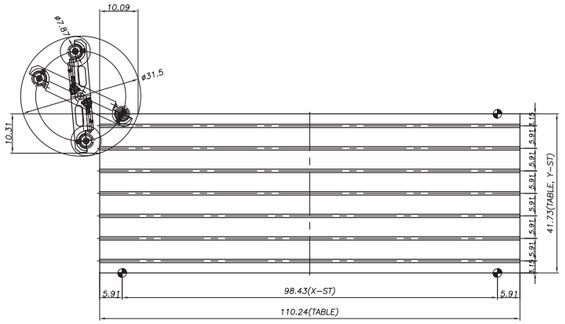
■ Table & T-Slot

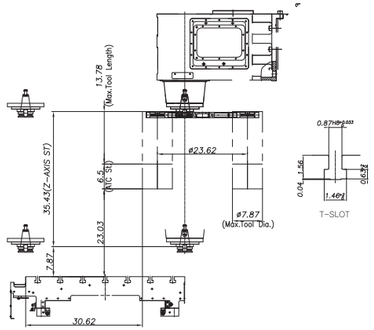
LCV 850





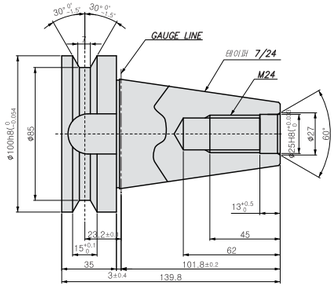
LCV 1060

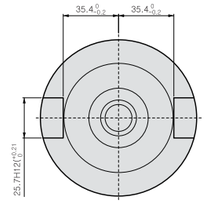




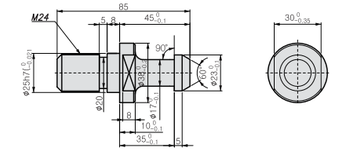
■ Tool Shank

BT50(BBT50)





PULL STUD



■ Machine Specification

Unit : inch

DESCRIPTION			LCV 850	LCV 1060
TRAVEL	X-axis	inch	78.7	98.4
	Y-axis	inch	33.5	43.3
	Z-axis	inch	31.5	35.4
	Distance from table surface to spindle nose	inch	7.9 ~ 39.4	7.9 ~ 43.3
TABLE	Working Surface	inch	80.7×33.5	110×41.7
	Loading capacity	lbs	6,600	11,000
SPINDLE	Max. Spindle Speed	rpm	6,000	6,000
	Spindle Type	-	2Step Gear Drive	2Step Gear Drive
	Taper	-	NT50	NT50
	Bearing inner diameter	inch	Ø3.9	Ø3.9
	Motor(30min/const.)	hp	25 / 20	25 / 20
	Torque	lbs.ft	452 / 366	452 / 366
FEEDRATE	Rapid Traverse(X/Y/Z)	inch/min	787 / 787 / 630	630 / 630 / 630
	Feedrate(X/Y/Z)	inch/min	0.039 ~ 394	0.039 ~ 394
	Slideway Type	-	Box Way	Box Way
ATC	Tool Shank	-	CAT50	CAT50
	Pull Stud Type	-	90° Type	90° Type
	Tool Changing Time(T-T)	sec	2.5	2.5
	Magazine Capacity	ea	40	40
	Tool Selection	-	Memory Random	Memory Random
	Tool Weight/Length	lbs/inch	35.2 / 11.8	33 / 13.8
MOTORS	Coolant Pump Motor	hp	0.5	0.5
	Lubricant Pump(for Sliding Surface)	hp	0.024	0.024
OTHER	Air Pressure	psi	58 ~ 87	58 ~ 87
	Air Supply Capacity	gal/min	44	44
	Coolant Tank Capacity	gal	142	170
	Lubricant Tank	gal	0.8	1.3
Power Supply		kVA	48	48
Floor Space		inch	217×161	264×179
Machine Weight		lbs	39,700	55,200
CNC System			Fanuc 0*i*-MF	

• Figures in inches are converted from metric measurements. • Design and specifications subject to change without notice.

■ Standard Accessories

- TOOL AND TOOL BOX
- WORK LIGHT
- 3AXIS MPG
- COOLANT SYSTEM AND TANK
- FULL SPLASH GUARD(NO TOP COVER)
- 40 MAGAZINE(LCV 850 / 1060)

■ Optional Accessories

- CHIP CONVEYOR
- THRU SPINDLE COOLANT
- AUTO TOOL LENGTH MEASUREMENT
- DATA SERVER
- ROTARY TABLE 4thAXIS, 5thAXIS
- LINEAR SCALE

■ NC Unit Specifications / FANUC 0i-MF

Item		Specification	F 0*i*-MF
Controlled axis	feed axes		X,Y,Z,(A,B)
	Max. feed axes		4(6) AXIS
	Max. simultaneosly controlled axis		4
	Least command increment	0.001mm / 0.0001"	○
Operation functions	Pulse handle feed	X1, X10, X100	○
	Feedrate per minute	G94	○
	Feedrate per revolution	G95	○
Interpolation functions	Linear interpolation	G01	○
	Circular interpolation	G02, G03	○
	Dwell	G04	○
	Cylindrical interpolation	G70.1	○
	Reference position return	G28	○
	Reference position return check	G27	○
Feed function	Rapid traverse rate override	F0, 25%, 50%, 100%	○
	Feedrate override		0~200%
Spindle function	Spindle orientation		○
	Rigid tapping		○
Tool functions	Tool number command	T4-Digt / T2-Digt	○
	Tool nose radius compensation	G40 ~ G42	○
	Tool offset pairs		400
	Tool geometry/wear offset	GEOMETRY & WEAR DATA	○
	Tool life management		○
	Tool path graphic display		○
	Automatic tool length measurement		○
Program input	Absolute/incremental programming		○
	Multiple repetitive cycle	G70 ~ G76	○
	Canned cycles	G90, G92, G94	○
	Inch/metric conversion	G20 / G21	○
	Program restart		○
	Retraction for rigid tapping		○
	Max. programmable dimension	±99999.999mm/±9999.9999"	○
	M function	M3 digit	○
	Custom macro		○
	Canned cycle for drilling		○
	Direct drawing dimension programming		○
	Programmable data input	G10	○
	Optional block skip		○
	Workpiece coordinate system	G52 ~ G59	○
	Number of registerable programs		400EA
Setting and display	Alarm & Operator histor display	ALARM & OPERATION DISPLAY	○
	Run hour and parts count display	RUNNING TIME & PART NO. DISPLAY	○
	Display spindle & servo overload	SPINDLE & SERVO LOAD DISPLAY	○
	Self-diagnosis function		○
	Extended part program editing	COPY,MOVE, CHANGE OF NC PROGRAM	○
	Display screen		10.4" color
Data input/output	Memory card input/output		○
	USB memory input/output		○
Editing operation	Part program storage size	512Kbyte(1280m)	512kbyte
Manual guide i	Manual Guide I		Opt.