

**SMART**  
MACHINE TOOL

# Intelligent Machining Center

## SM Linear Guideway Series Smartcenter

- Fanuc controller
- 5-Year warranty on guideways
- One-piece bed design
- Tool change time: 1.38 sec
- Oversized column design



# Durable and stable machining center

## A perfect demonstration for machining accuracy and ability

A valuable vertical machining center is the result of constant creative concepts and total dedication to quality. When the ambition of pursuing perfection is incorporated into the design, the result is a perfect machine.

The SMART vertical machining centers are designed and built with these concepts in mind. Over the years, SMART engineers have spent a great effort designing a unique VMC that is cost-effective for our customers.



1. Bicycle



2. Auto industry- connecting rod



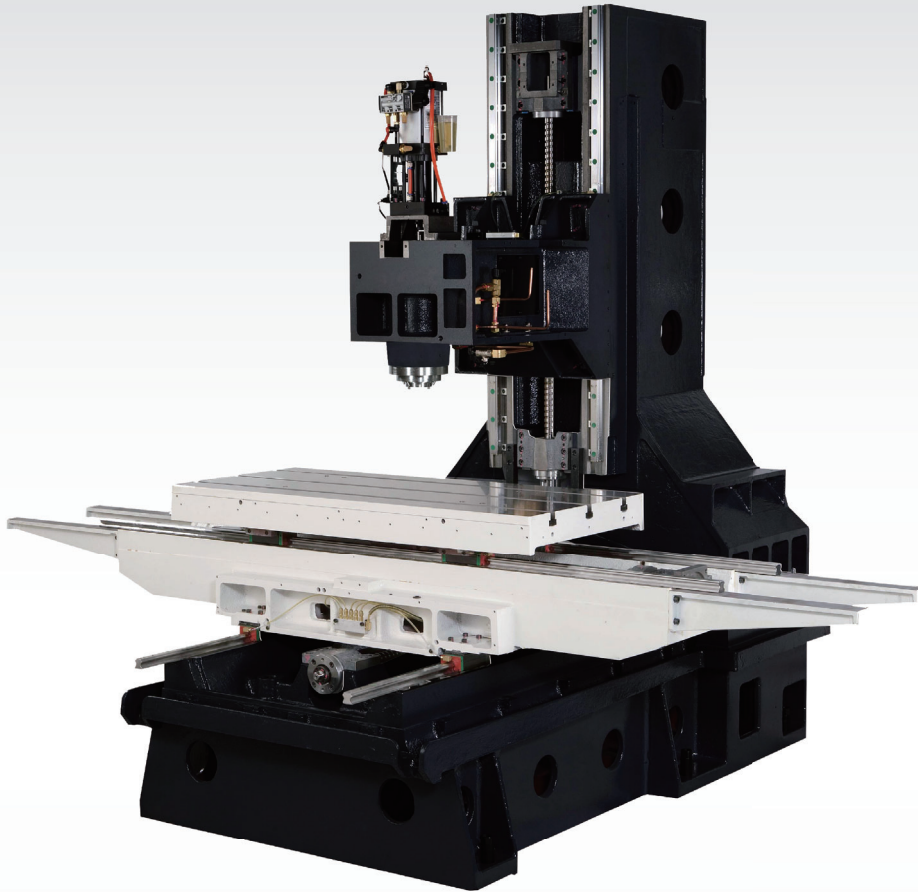
### Full range of linear guideway five-year warranty:

Warranty coverage will not apply under following conditions

1. Improper operation (collision)
2. Lack of regular cleaning of accumulated debris, which causes damage to the linear rails & carriages.

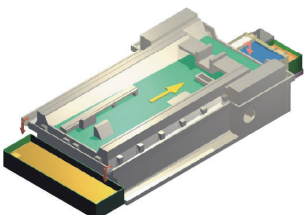
# The Ultimate VMC (SM1050)

One of the important elements that determines a machining center's accuracy and capability is structural rigidity. The SM series was designed according to the principles of FEA.



## One-piece bed design

- The bed is one-piece design.
- The column is wider.
- Prevents twisting and distortion under even the most severe cutting forces.
- The fine grain Meehanite cast iron contributes to unparalleled damping characteristics.



## Excellent tool change time

- SM1050 minimum tool change time **1.38 sec** (tool-to-tool).



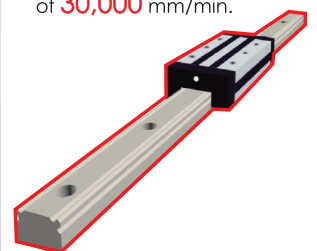
## Oversized column design

- Increased width of the interface between the column and base.
- Enhances machine stability.
- Increases machine rigidity and efficiency.



## High accuracy linear guideway design

- The linear guideways on all 3-axes are high grade, providing stability for heavy cutting.
- High efficiency machining center.
- Maximum rapid traverse rate of **30,000 mm/min**.



All results featured in this catalog were produced under strict testing conditions in a specialized testing environment. Under different testing conditions and in less than ideal testing environments, the results may vary from those shown in this catalog.

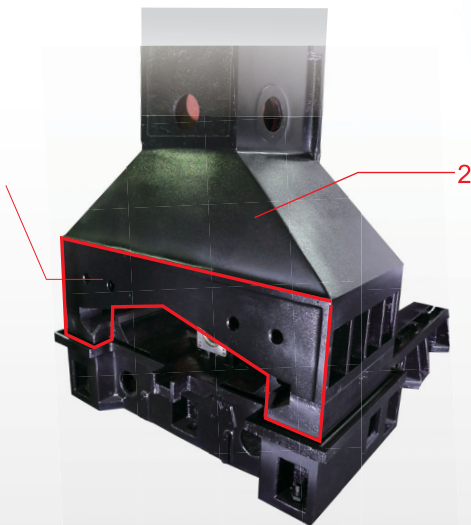


# The Brand of Highest Efficiency for Electrical Industries (SM1370-40/1570-40)

Offering more unique features than any other competitive machine, providing superior value in speed, accuracy and stability.



The picture shows SM1370-40

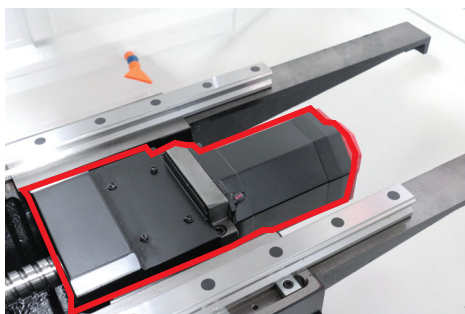


## 1 Extra large interference between column and base

- Increases column rigidity in X-axis direction.
- The extension of the column base increases rigidity in Y and Z axes.

## 2 Column rear-inclination design

- Reduces unnecessary mass.
- Shifts the center of gravity forwards.
- Increases the damping effect in the Y-axis direction.



## 3-axis direct transmission between servo motor and ballscrew

- High torque servo motors are directly coupled with ballscrews.
- Without backlash or servo lag problem caused by a belt.
- All ballscrews are center-supported plus both ends utilize precision angular contact bearings.
- Boosts machining efficiency and reliability.

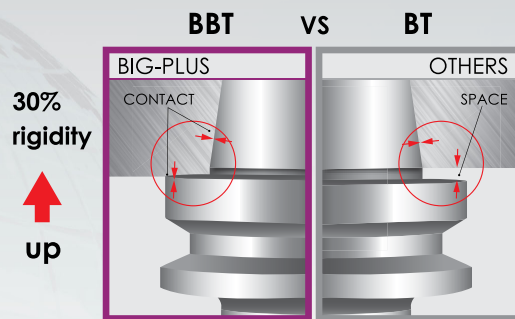
# Spindles Manufactured by SMART Means Guaranteed Quality

## Spindle type

- #40 Pulley 12000 rpm(8000/10000 rpm)
- #40 DDS 15000 rpm(10000/12000 rpm)

## BBT for optional

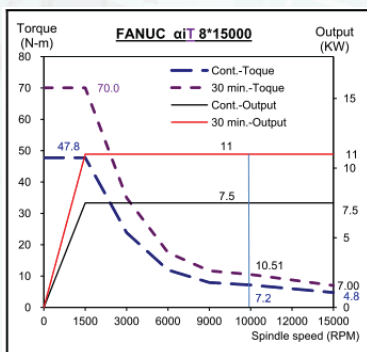
- Dual contact between the taper and the flange. Improves the rigidity, accuracy, speed and performance.
- Radial deflection, vibration and deviation are significantly reduced.



## Spindle torque diagrams

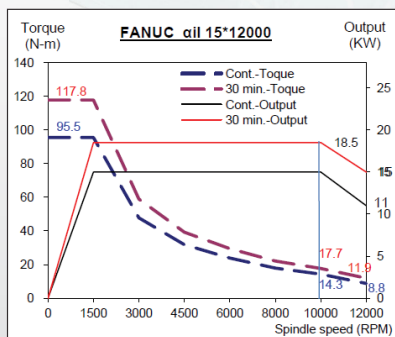
SM1050

Fanuc



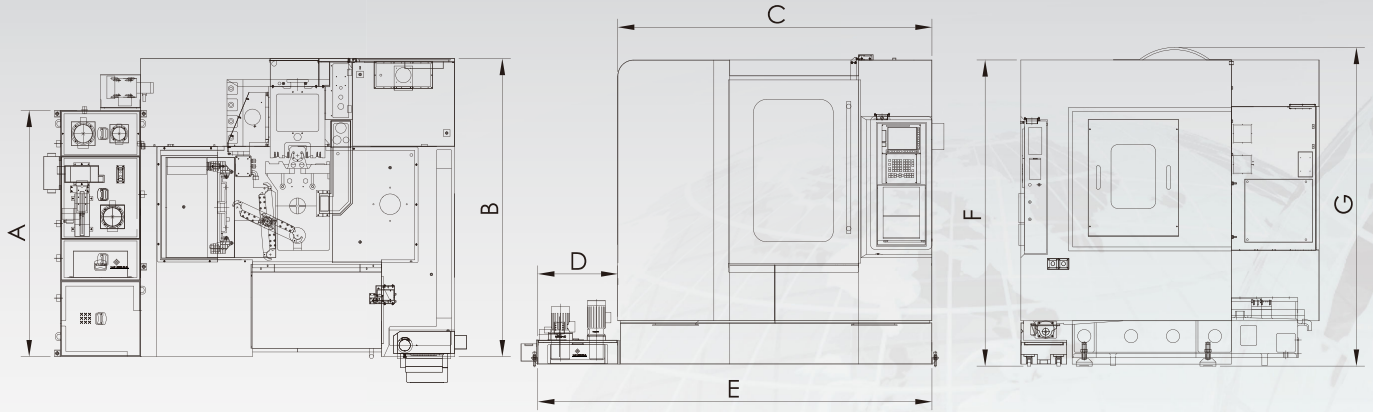
SM1370-40/1570-40

Fanuc



# Machine Dimensions

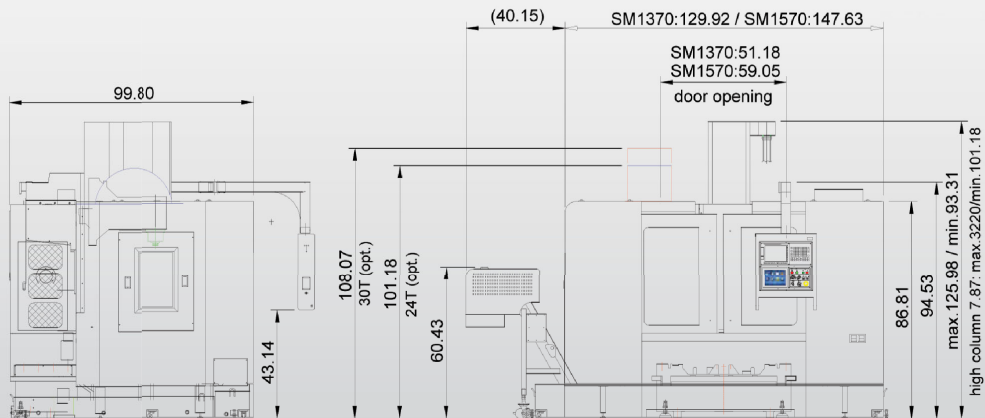
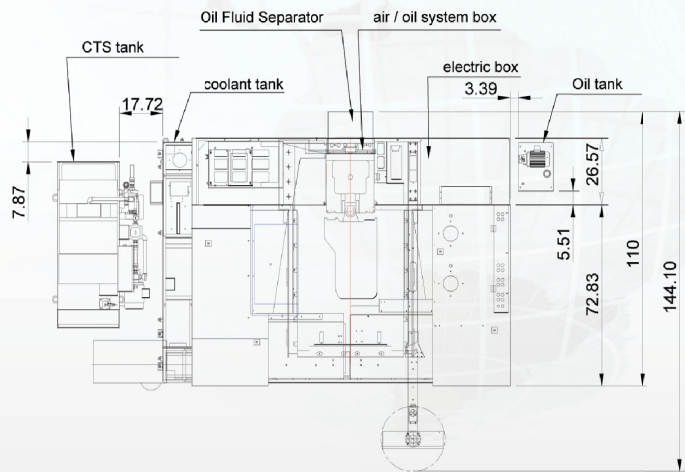
SM1050



	A	B	C	D	E	F	G
SM1050	72.83	88.19	114.17	23.62	137.80	90.55	94.25

SM1370-40/1570-40

Unit : inch



# Machine Specifications

<b>Model</b>		<b>SM1050</b>	<b>SM1370-40</b>
<b>Table</b>	<b>unit</b>		
Working Surface	inch	45.28 x 20.08	55.12 x 25.59
T-slot (Size x Number x Pitch)	inch	0.71 x 0.12 x 6.30	0.71 x 0.2 x 4.92
Max Table Load	lbs.	1543.24	2204.62
<b>Travel</b>			
X-axis travel	inch	39.37	51.18
Y-axis travel	inch	20.08	27.56
Z-axis travel	inch	24.8	25.59
Distance From Spindle End to Table Center	inch	3.94~28.74	5.91~31.5 (13.78~39.37opt.)
Distance From Spindle Center to Column	inch	22.15	28.35
<b>Spindle</b>			
Spindle Speed (Pulley)	rpm	12000(8000/10000)	12000(8000/10000)
Spindle Speed (DDS)	rpm	15000	15000(10000/12000)
Spindle Nose Tape	rpm	#40	#40
<b>Feed</b>			
Cutting Feedrate (X/Y/ Z Axes)	ipm	472.44 / 472.44 / 472.44	590.55 / 590.55 / 590.55
Rapid Traverse (X/Y/ Z Axes)	ipm	1181.1/1181.1/944.88 (1574.8/1574.8/1181.1)	1811.1/1811.1/944.8 (1574.8/1574.8/1811.1)
<b>ATC</b>			
Tool Storage Capacity	pcs	A:24 / 30	A : 24 / 30 / 40
Max. Tool Weight	lbs.	15.43	15.43
Max. Tool Size (Diameter x Length)	inch	A: Ø2.95 x 11.81L	A : Ø 2.95x 11.81L
Tool Shank		CAT40 (BIG PLUS)	CAT40 (BIG PLUS)
Pull Stud Bolt		CAT-40	CAT-40
<b>Motor</b>			
Spindle Drive Motor	HP(30min/con)	10.06 (14.75 opt.)	14.75(20.12)
<b>Positioning Accuracy</b>			
3 axes laser positioning accuracy (JIS B6338)			
Positioning accuracy/Full travel	inch	±0.0003	±0.0003
Repetitive positioning accuracy	inch	±0.00008	±0.0001
3 axes laser positioning accuracy (VDI 3441)/ Repeated 5 times			
Positioning accuracy	inch	0.0003	0.0006
Repetitive positioning accuracy	inch	0.0002	0.0006
<b>Other</b>			
Required Air Pressure	PSI	92.45	92.45
Electric Power Consumption	KVA	10~30	20~40
Floor Space(Full Guarding)	inch	137.8 x 98.46	129.92 x 144.10
Net Weight	lbs.	9986.94	18298.37
Coolant tank(Standard)	gal	80.84	80.31

Specifications & dimensions are subject to change without notice.



Automation/ Intelligent

Application program

Key technology

Specification parameter

# Machine Specifications

## Standard Electrical Function

### Standard

- Workpiece calibration by MPG directly
- Parameter package
- Thread cutting(0i& 31i only)
- Tool magazine display(0i&31i only)
- Tool status display(0i&31i only)
- Special engraving marco

Model	Unit	SM1570-40
<b>Table</b>		
Working Surface	inch	62.99 x 25.59
T-slot (Size x Number x Pitch)	inch	0.71 x 0.2 x 4.92
Max Table Load	lbs.	2204.62
<b>Travel</b>		
X-axis travel	inch	59.06
Y-axis travel	inch	27.56
Z-axis travel	inch	25.59
Distance From Spindle End to Table Center	inch	5.91~31.5 (13.78~39.37opt.)
Distance From Spindle Center to Column	inch	28.35
<b>Spindle</b>		
Spindle Speed (Pulley)	rpm	12000(8000/10000)
Spindle Speed (DDS)	rpm	15000(10000/12000)
Spindle Nose Tape	rpm	#40
<b>Feed</b>		
Cutting Feedrate (X/Y/ Z Axes)	ipm	590.55 / 590.55 / 590.55
Rapid Traverse (X/Y/ Z Axes)	ipm	1181.1/1181.1/944.8 (1574.8/1574.8/1181.1)
<b>ATC</b>		
Tool Storage Capacity	pcs	A : 24 / 30 / 40
Max. Tool Weight	lbs.	15.43
Max. Tool Size (Diameter x Length)	inch	A: Ø2.95 x 11.81L
Tool Shank		CAT40 (BIG PLUS)
Pull Stud Bolt		CAT-40
<b>Motor</b>		
Spindle Drive Motor	HP(30min/con)	14.75(20.12)
<b>Positioning Accuracy</b>		
3 axes laser positioning accuracy (JIS B6338)		
Positioning accuracy/Full travel	inch	±0.0003
Repetitive positioning accuracy	inch	±0.0001
3 axes laser positioning accuracy (VDI 3441)/ Repeated 5 times		
Positioning accuracy	inch	0.0006
Repetitive positioning accuracy	inch	0.0003
<b>Other</b>		
Required Air Pressure	PSI	92.45
Electric Power Consumption	KVA	20~40
Floor Space(Full Guarding)	inch	147.64 x 144.10
Net Weight	lbs.	19841.60
Coolant tank(Standard)	gal	83.48



# Accessories

Standard : ● Optional : ★

Item	Model	SM1050	SM1370-40	SM1570-40
1.Full-Enclosed Splash Guard		●	●	●
2.Full-Enclosed Splash Guard for cts		★	★	★
3.Cooling System		●	●	●
4.Coolant Flushing Device		★	★	★
5.Coolant Jets Around Spindle		●	●	●
6.Spindle Oil Cooler		★	★	★
7.Air Blast Through Spindle		●	●	●
8.Table side air blast M50 control		●	●	●
9.Centralized automatic lubrication system		●	●	●
10.Oil Fluid Separator		●	●	●
11.X/Y/Z Axis Ball Screw Enforce Pressure		●	●	●
12.Coolant tank		●	●	●
13.Link type chip conveyer		★	★	★
14.Front Mounted Screw Type Chip Conveyer		★	★	★
15.Fluorescent Lampx1		●	●	●
16.Fluorescent Lampx2		★	★	★
17.Air Blast Through Spindle		●	●	●
18.Table Side Air Blast		●	●	●
19.Spindle Air Curtain		●	●	●
20.Coiling Tube Coolant gun		★	★	★
21.Hydraulic Hose Coolant gun		★	★	★
22.Air gun		★	★	★
23.Leveling Bolts and Blocks		●	●	●
24.Foundation bolt, Concrete		★	★	★
25.Remote Manual Pulse Generator		●	●	●
26.Convection Heat Exchanger in Control		★	●	●
27.Air conditioning for electrical cabinet		-	★	★
28.Auto Power off		●	●	●
29.Operation Finish Lamp		●	●	●
30.RS-232 Interface		●	●	●
31.Operation Manual & Electric Drawing Equipment		●	●	●
32.Tool Package		●	●	●
33.#40 8000rpm Pulley spindle		●	●	●
34.#40 10000/12000rpmPulley spindle		★	★	★
35.#40 10000/12000/15000rpmDDS spindle		★	★	★
36.#40 Drum Type Tool Magazine		★	●	●
37.#40 Disk Type Tool Magazine		●	★	★
38. Suspension Operator Box		-	●	●
39.Coolant Through Spindle		★	★	★
40.20BAR Coolant Through Spindle		★	★	★
41.25Bar/40Bar/70Bar Coolant Through Spindle		★	★	★
42.NC Rotary Table		★	★	★
43.DNC Software		★	★	★
44.Auto Tool Length Measurement		-	★	★
45.Auto Tool Length and Diameter Measurement		-	★	★
46.Auto Work Piece Measurement		-	★	★
47.Closed Loop Linear Scale Positioning System		-	★	★
48.Mist coolant system		★	★	★
49.Oil Mist Collector System		★	★	★

**SMART**  
**MACHINE TOOL**

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