

S-Plus Series

Smartcenter
Intelligent machining center

- Hartrol plus controller
- 5-Year warranty on guideways
- One-piece design for spindle head
- Tool change time: 1.38 sec
- Oversized column design



Hartford

Hartrol · Smartcenter · Robocell

We manufacture intelligent machines only

Hartford has sold more than 50,000 machines to all over the world, accumulated more than 37,000 customers, who absolutely affirm Hartford's manufacturing experience and ingenious machine manufacture technology.

We insist on providing customers with the best quality machining centers.

We will devote more carefully, in order to continuously enhance the technical level of manufacture and applications.

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What is Smartcenter?

Smartcenter is Smart machine center, an intelligent machine if put it in a simple way.

A Hartford Smartcenter has to include

1. Intelligent operating interface
2. Intelligent machining: Machining accuracy/ surface accuracy/ self learning / self optimizing
3. Intelligent quality control: Auto compensation for machining accuracy
4. Intelligent maintenance program : Active notification/ Active machine down time schedule also include other intelligent functions, help user reaching the target of Zero Down Time.

The benefits of Hartford smartcenter

- + Intelligent management : Fully aware of the machining status
- + Fully aware of the status of the machine key components.
- + Improving of the machine efficiency
- + Crash protection – Stop the machine immediately to prevent the further damage when alarm occurred .

Hartford Smartcenter will help you become an intelligent manager

The main technologies of Hartford smartcenter include intelligent managing system, status monitoring, alarm predicting, machine status diagnosis, crash preventing, 3D program simulation, machining efficiency improving...etc.

All the intelligent functions help you control the machine status and assure the job quality.



Increased Efficiency & Greater Productivity

Hartford S-PLUS series is a high efficiency and productivity machining Center which can used for mass production jobs and dramatically Reduce your machining center.



1. Bicycle front fork part



3. Shock absorber for motorcycle



2. Fine dragon pillar

Actual Cutting Test

Model: S-PLUS 10

■ Spindle: 10,000 rpm DDS type 11kW ■ Cutting material: S45C



Face milling
 Tool diameter Ø80 mm
 Feed rate 1,500 mm/min
 Depth 2 mm
 Cutting volume 195 cc
 Cutting Width 65 mm



End milling
 Tool diameter Ø63 mm
 Feed rate 2,240mm/min
 Depth 30 mm
 Width 3 mm
 Cutting volume 201 cc



Tapping
 Tool diameter Ø20 mm
 Feed rate 2,000 mm/min
 Depth 25 mm

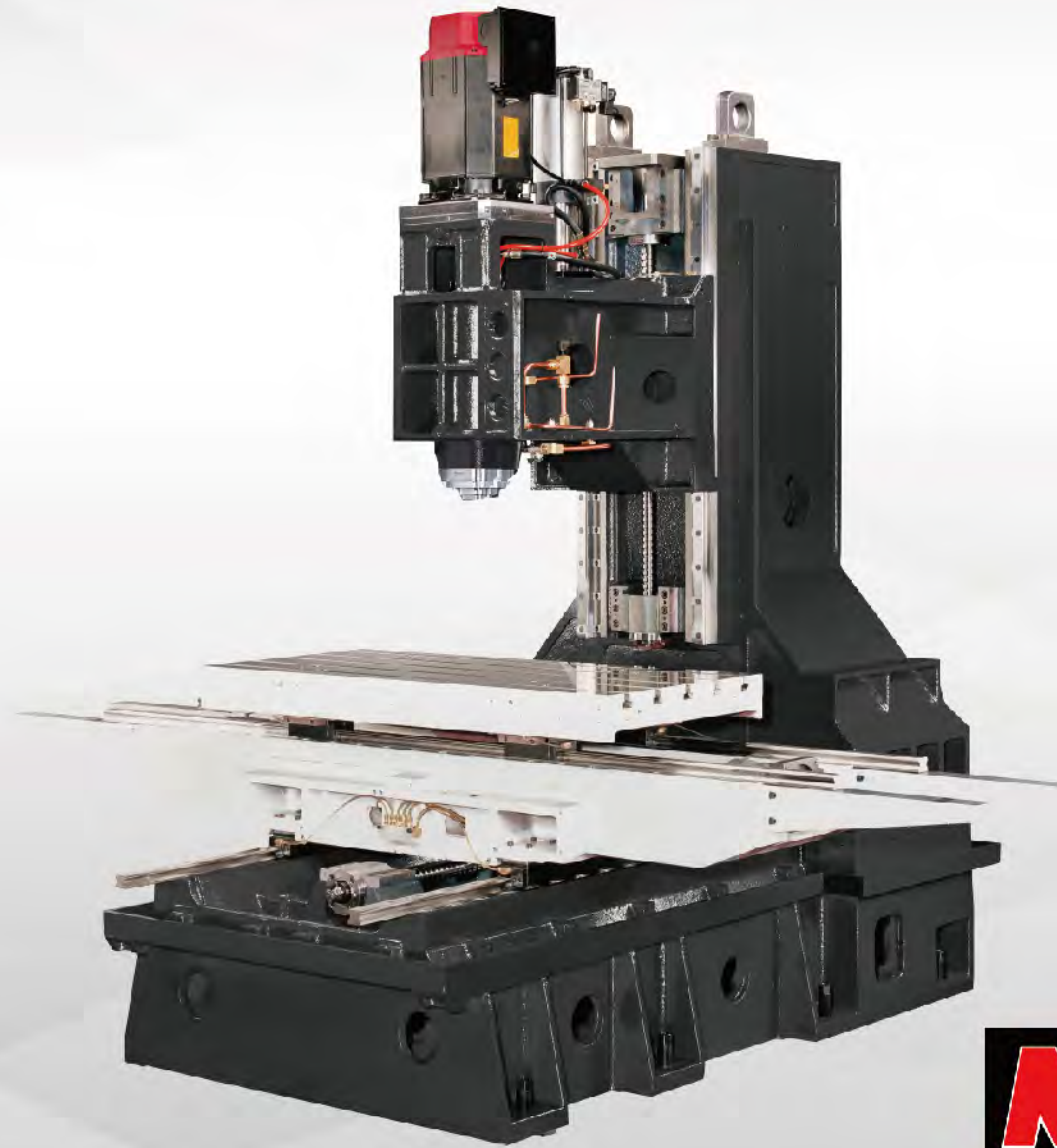


Drilling
 Tool diameter Ø18 mm
 Feed rate 140 mm/min
 Depth 25 mm

All the test results featured in this catalogue were produced under strict testing condition in a special zed testing environment. Under different testing conditions and in less than ideal testing environments. that the test results may vary from those shown in this catalogue.

A New Level of Rigidity and Stability Through a Perfectly Designed Structure

Ruggedly and precision built for years of accurate production work, the Hartford SPLUS is specially designed for all users who required speed and accuracy.

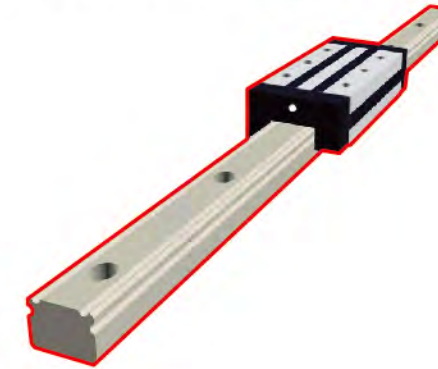


Full range of linear guideway five-year warranty

Warranty coverage will not apply under the following conditions,
1.Improper operation (collision)
2.Lack of regular cleaning of accumulated debris causing damaged to the linear rails&carriages.

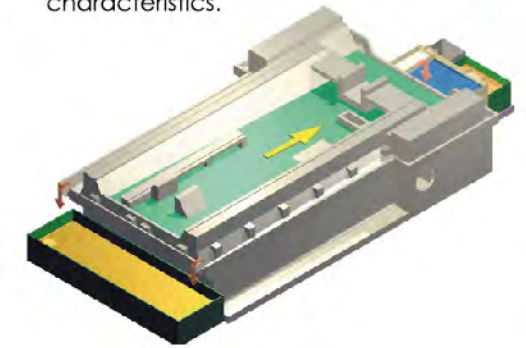
High accuracy linear guideway design

- The linear guideways on all 3-axis are high grade, providing stability for heavy cutting.
- High efficiency machining center.
- Minimum traverse rate of **30 m/min.**



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

- Minimum tool change time is **1.38 sec** (tool-to-tool.)



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 bearing.
- Boosts machining efficiency and reliability.



Intelligent Controller- **Hartrol Plus**

What is Hartrol plus?

- 19" multi-touch screen
- IPC is equipped with the Windows operating system
- Automatic feed system control function(opt.)


By the use of open architecture, we begin to enter a new era of intelligent processing. In addition to basic functions, we have joined hardware and software exclusively developed by Hartford. Software can be added to and updated at any time with new features.



An intelligent controller

With three major solutions, Hartrol plus takes your machining to the next level. Highly optimized and intelligent controls bring even more capabilities and productivity to your metal cutting processes. With ease of use, advanced automation, and smart data collection, Hartrol plus is essential tool for enhancing performance on your production floor.

The difference between **Hartrol plus** and others

Function	Hartrol plus 1/2 	Others
Screen Size	19" Multi-touch Panel	10.4"(OPT:15")
Hard Drive	32GB CFast	NO
Smoothing Interpolation	SSS-4G	Option
Look Ahead Block	2700/1350	400(1000 Max.)



For more Hartrol plus features, please contact our sales staff.

Spindles Manufactured by Hartford Offer Quality Assurance

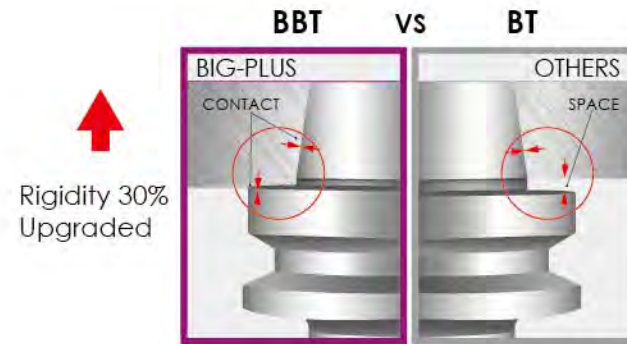
Machine Dimension

3/ SPINDLE TYPE

- #40 belt-drive 8,000 rpm opt.10,000 / 12,000 rpm
- #40 direct-drive opt. 10,000 / 12,000 / 15,000 rpm

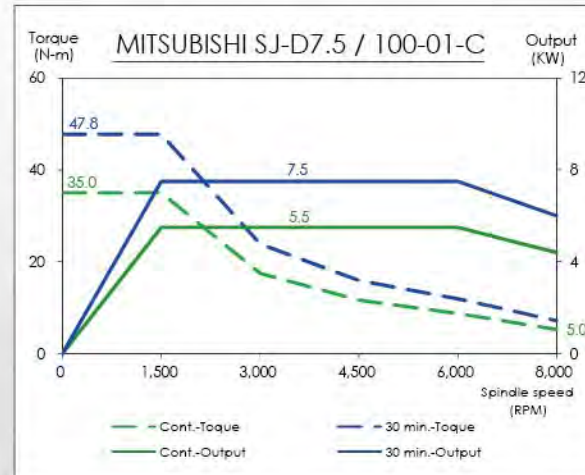
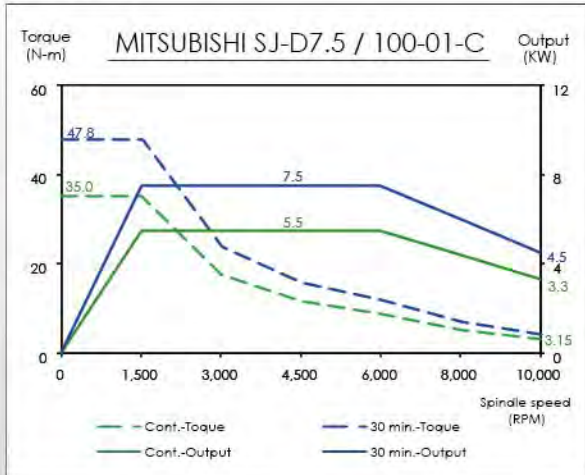
BBT SPINDLE TYPE (OPTIONAL)

- Two faces binding design for increasing cutting capability and machining accuracy
- Dramatically reduce errors and vibration

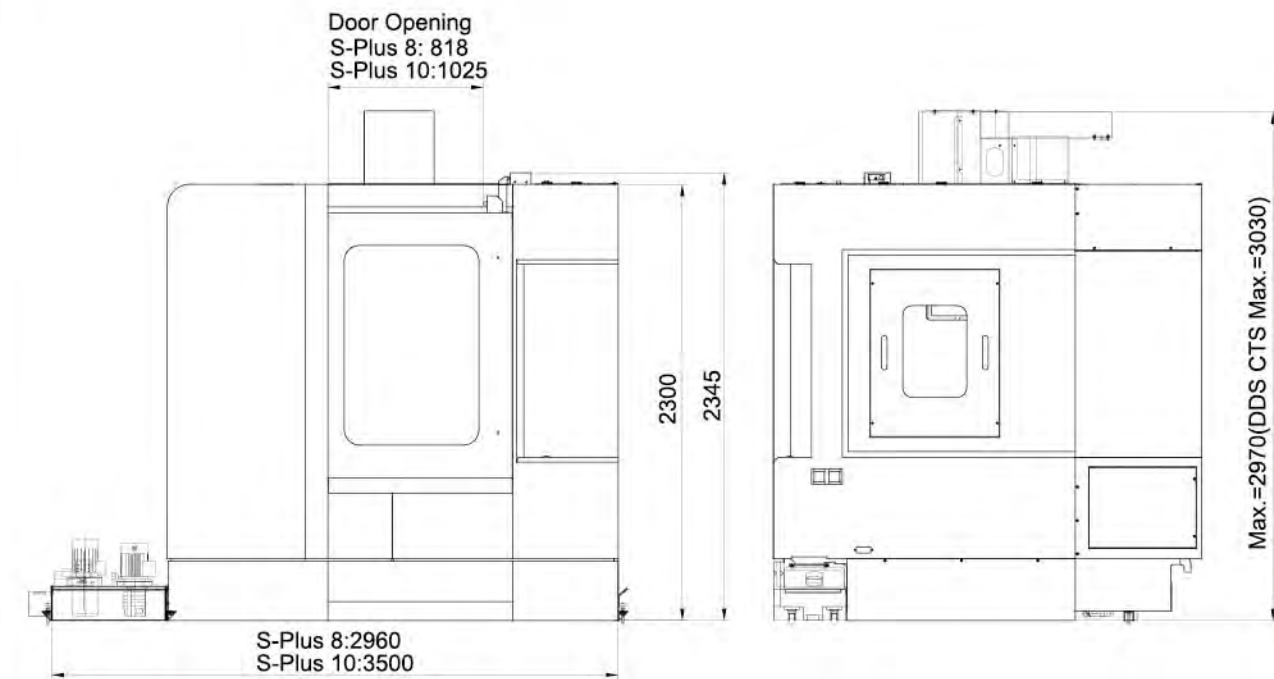
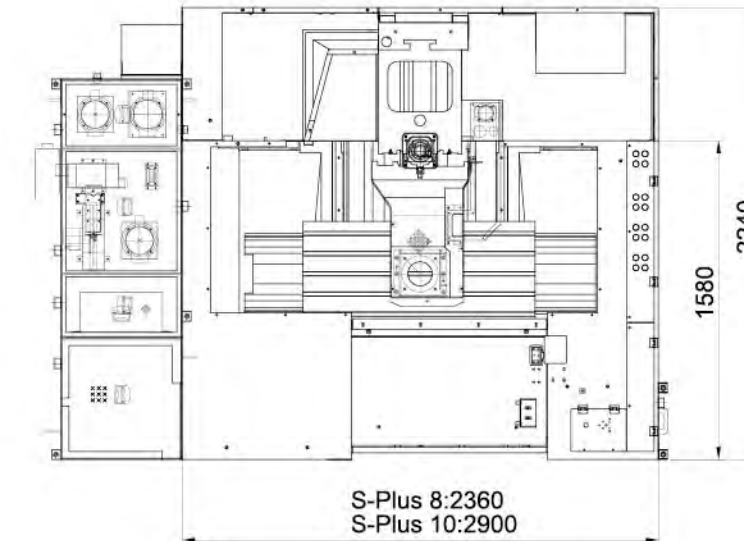
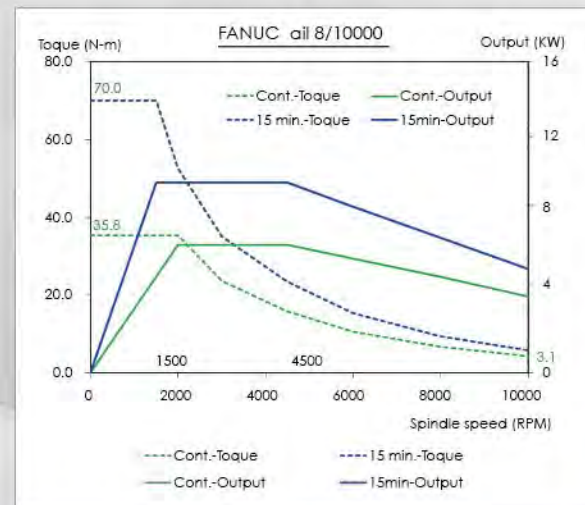
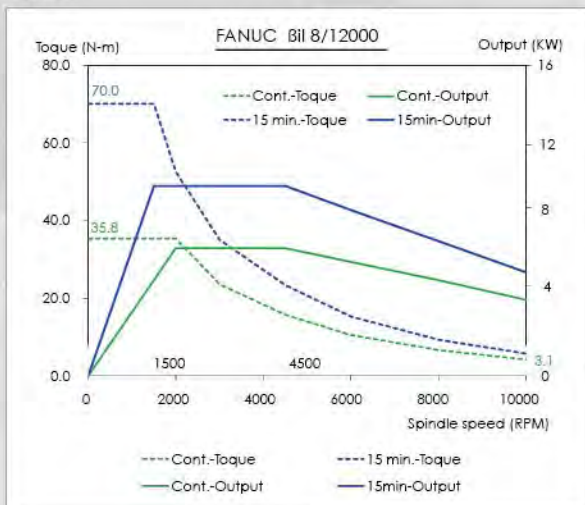


SPINDLE TORQUE DIGRAM

Mitsubishi



Fanuc



Machine Specifications

Model Table	Unit	S-plus 8	S-plus 10
Working Surface	mm	950 x 520	1150 x 520
T-slot (Size x Number x Pitch)	mm	18 x 5 x 100	18 x 5 x 100
Max Table Load	kg	500	700
Travel			
X-axis travel	mm	800	1020
Y-axis travel	mm	520	520
Z-axis travel	mm	550	550
Distance From Spindle End to Table Center	mm	100~650	100~650
Spindle			
Spindle Speed (Pulley)	rpm	8000(10000 / 12000 opt.)	8000(10000 / 12000 opt.)
Spindle Speed (DDS)	rpm	10000(12000 / 15000 opt.)	10000(12000 / 15000 opt.)
Spindle Nose Tape	rpm	#40	#40
Feed			
Cutting Feedrate (X/Y/ Z Axes)	m / min	10 / 10 / 10	10 / 10 / 10
Rapid Traverse (X/Y/ Z Axes)	m / min	30/30/24 (40/40/32 opt.)	30/30/24 (40/40/32 opt.)
ATC			
Tool Storage Capacity	pcs	A:24(30 opt.)	A:24(30 opt.)
Max. Tool Weight	kg	7	7
Max. Tool Size (Diameter x Length)	mm	A: ϕ 75x300L	A: ϕ 75x300L
Tool Shank		BT40 (BBT / CAT / DIN)	BT40 (BBT / CAT / DIN)
Pull Stud Bolt		P40T-1 / CAT-40 / DIN69872	P40T-1 / CAT-40 / DIN69872
Motor			
Spindle Drive Motor (30min/Con)	kW	7.5(11/15opt.)	7.5(11/15opt.)
Positioning Accuracy			
3 axes laser positioning accuracy (JIS B6338)			
Positioning accuracy/Full travel	mm	\pm 0.008	\pm 0.008
Repetitive positioning accuracy	mm	\pm 0.002	\pm 0.002
3 axes laser positioning accuracy (VDI 3441)/ Repeated 5 times			
Positioning accuracy	mm	0.010	0.010
Repetitive positioning accuracy	mm	0.006	0.006
Other			
Required Air Pressure	kg/cm ²	6.5	6.5
Electric Power Consumption	KVA	20	20
Floor Space(Full Guarding)	mm	2960 x 2510	3500 x 2510
Net Weight	kg	4700	5000
Coolant tank(Standard)	L	279	306

Standard & Optional Electrical Function

Hartrol / Standard

- Workpiece calibration by MPG directly
- Parameter package
- Thread cutting(Oi& 31i only)
- Tool magazine display(Oi&31i only)
- Tool status display((Oi&31i only)
- Character carving marco

Hartnet/Optional

- Management system of utilization
- Machining time countdown
- Convenient file transfer

Electrical Function/Optional

- Lifting function against gravity
- Retraction for rigid tapping
- Intelligent MPG

Standard & Optional Mechanical Accessories

Standard

- Full splash guard
- Coolant tank
- Automatic lubrication system
- Air blast through spindle
- Operation manual & electric drawing
- Leveling bolts & blocks
- Spindle air curtain
- MPG
- Automatic power off
- Lubrication system
- Fluorescent lampx1
- Coolant jets around spindle

Optional

- Full enclosed splash guard(CTS)
- NC rotary table
- Front mounted screw type chip conveyor
- Link type chip conveyor
- Coolant flushing device
- Coolant through spindle
- Wash down hose
- Air gun
- Spindle oil cooler
- Oil separation system
- Host
- Automatic door
- Auto tool length measurement
- Auto workpiece measurement
- Closed-loop inear scale

VDI 3441 accuracy available upon order request.

Specifications & dimensions are subject to change without notice (for actual weight, shipped product shall prevail.)