

## PRO Series Smartcenter

Intelligent machining center

- Hartrol plus controller
- 5-year warranty on guideways
- Oversized column design
- Oil separation system design
- #40 one-piece spindle housing design



Website



Facebook



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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CAT.NO : 20171222-E03

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## Hartford

Hartrol • Smartcenter • Robocell

We manufacture intelligent machines only

# 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

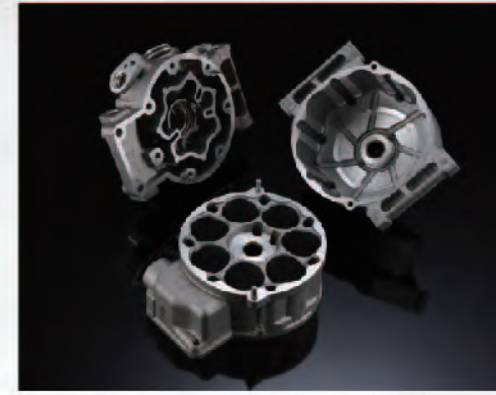
The main technologies of Hartford smartcenter include intelligent managing system, status monitoring, alarm predicting, machine status diagnosis, crash preventing, 3D program simulation, machining efficiency improving...etc.

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



## Increase Cutting Efficiency

Hartford Power Center is a compactly constructed package that combine greater cutting capabilities, critical accuracy and zero-defect features.



1. Oil pressure valve



2. Inspection jig part



3. Connecting rod

## Actual Cutting Test

Model: PRO-1000

■ Spindle: 6,000 rpm Gear type, 11kW ■ Cutting material : S45C



**Face milling**  
 Tool diameter Ø80 mm  
 Feed rate 2,200 mm/min  
 Cutting depth 2 mm  
 Cutting volume 65 mm



**End milling**  
 Tool diameter Ø50 mm  
 Feed rate 1,100mm/min  
 Cutting depth 10 mm  
 Cutting width 20 mm  
 Cutting volume 220 cc/min



**Tapping**  
 Tool diameter Ø30 mm  
 Feed rate 600 mm/min  
 Cutting depth 30 mm



**Drilling**  
 Tool diameter Ø50 mm  
 Feed rate 76mm/min  
 Cutting depth 30 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.

# Optimum Structure for Power Center

With unique structure and features, Hartford Power Center is right the machine which can boost your efficiency.



The picture shown is PRO-1000



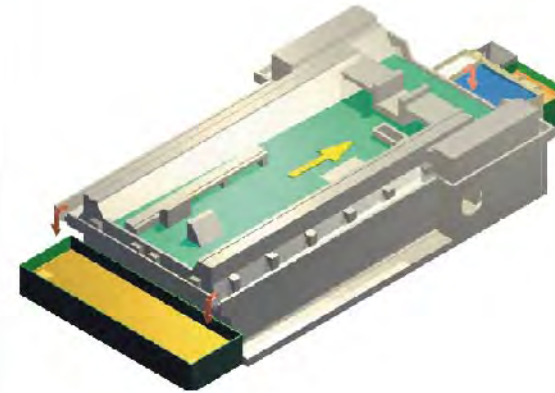
Full range of linear guideway five-year warranty

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.

### Oil/fluid separation device

- Extend the life of cutting fluid.
- Cost reduction.
- Eco-friendly.
- Available with PRO-1000.



### Increased and widen fastening surface on base

- Increase machine rigidity.
- The width of column base is **1,000mm**
- Increase structure rigidity.
- Machining range is: **1,000x600x630mm** (PRO-1000)
- Increased and widen fastening contact surface on base increase machine stability.



### #40 one-piece spindle housing design

- Increase machine rigidity and cutting performance.
- Reducing weight to reduce acceleration stresses and increase positional accuracy.
- Provide additional support for the spindle to absorb the cutting forces.
- Unavailable with PRO-1000 G8K



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

- Without backlash or servo lag problem caused by a belt
- High torque servo motors are directly coupled with ballscrews.
- 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 an essential tool for enhancing performance on your production floor.

## The difference between Hartrol plus and others

Function	Hartrol plus 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	1350	400(1000 Max.)



# Spindles Manufactured by Hartford Offer Quality Assurance

## Machine Dimension

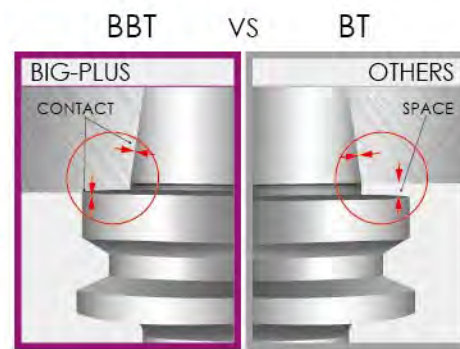
### Spindle type

- #40 Pulley 8000rpm opt. 10000/12000 rpm
- #40 Gear opt. 6,000/8000(PRO-1000) rpm

### BBT Option

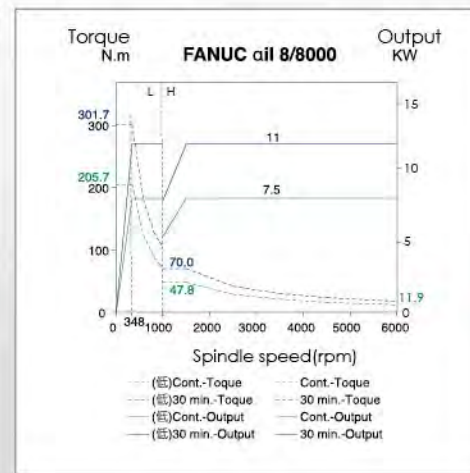
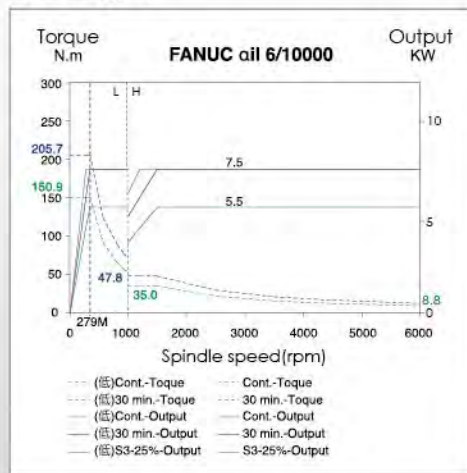
- Dual contact between the taper and the flange.
- Improves the rigidity, accuracy, speed and performance.
- Radial deflection, vibration and deviation are significantly reduced.

↑  
 30%  
 rigidity

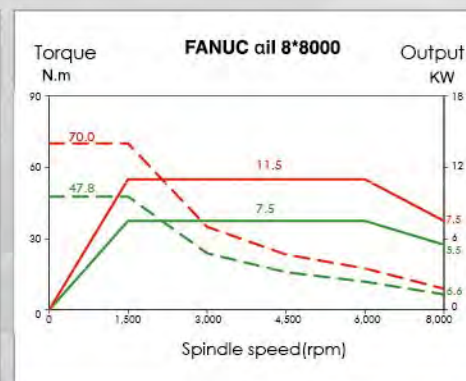
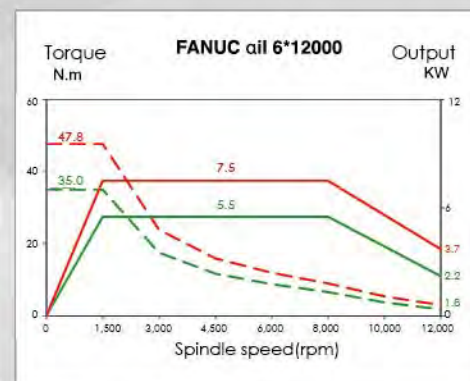
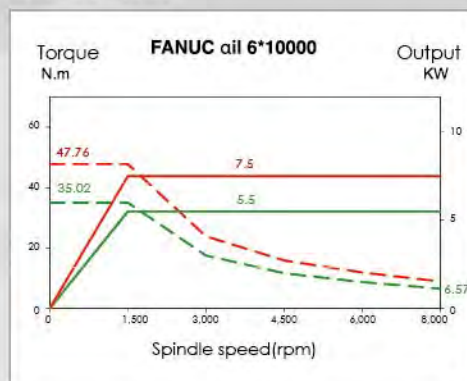


### Spindle diagrams

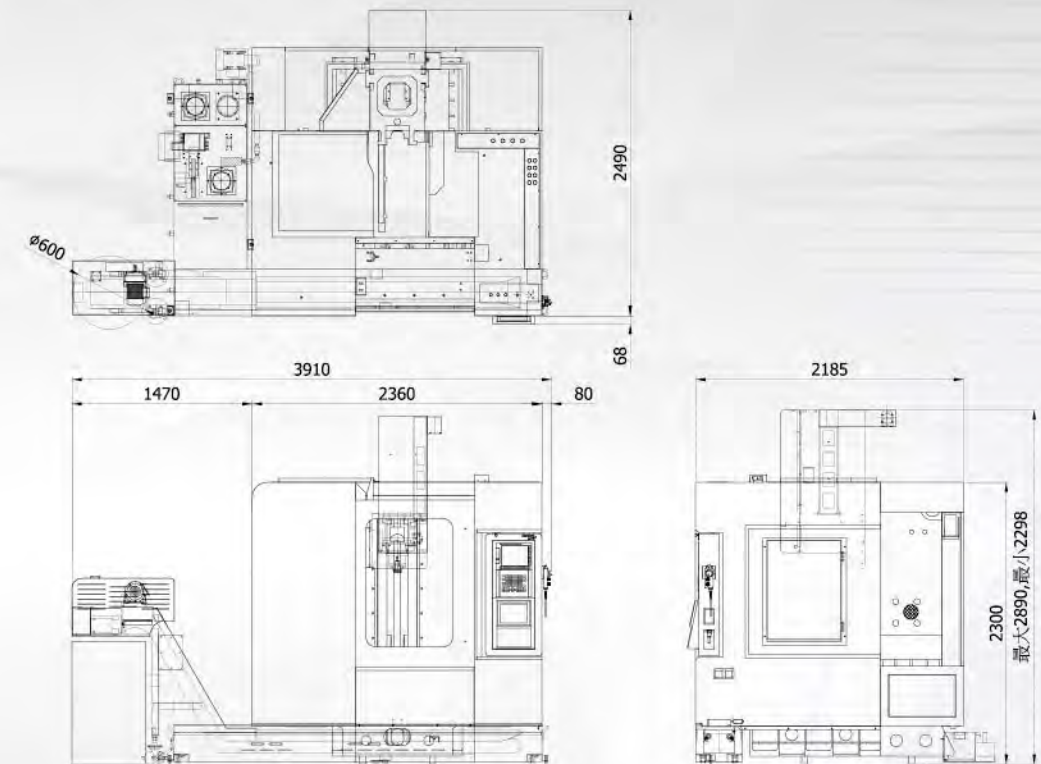
#### (Gear type)



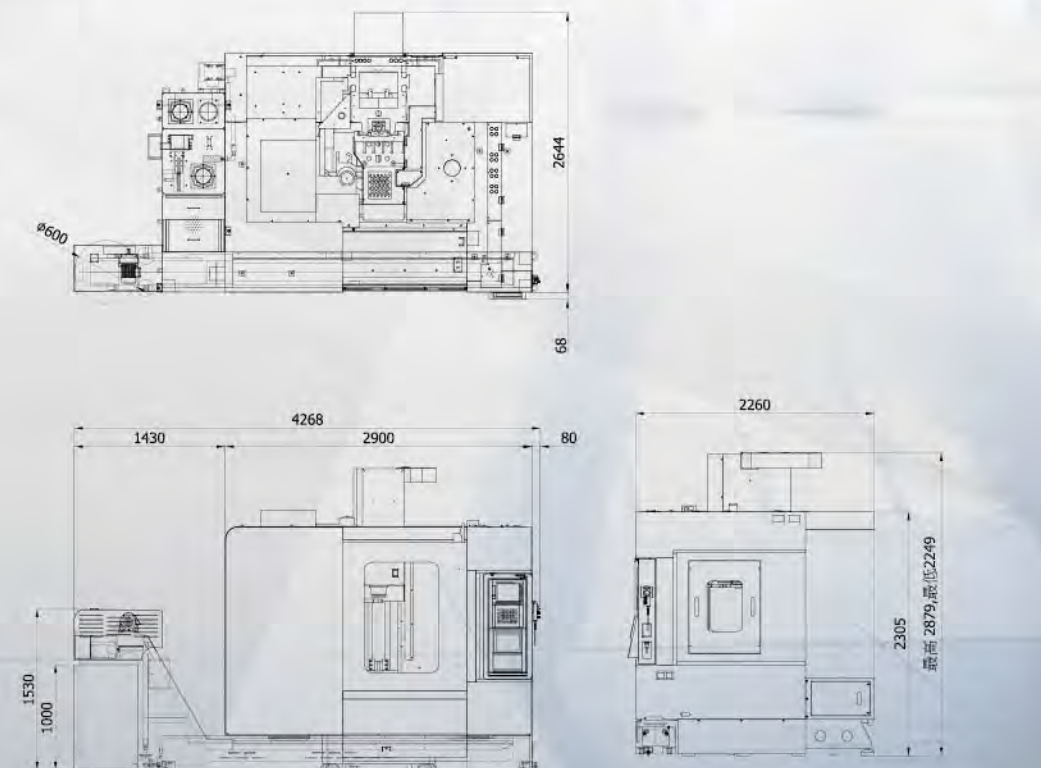
#### (Pulley type)



### PRO-800



### PRO-1000



# Specification

Model	unit	PRO-800	PRO-1000
<b>Table</b>			
Working Surface	mm	900 x 470	1150 x 600
T-slot (Size x Number x Pitch)	mm	18 x 4 x 100	18 x 5 x 120
Max Table Load	kg	500	700
<b>Travel</b>			
Longitudinal Travel (X-axis)	mm	800	1000
Gross Travel (Y-axis)	mm	510	600
Vertical Travel (Z-axis)	mm	630	630
Distance From Spindle End to Table Center	mm	75 ~ 705	100 ~ 730
Distance From Spindle Center to Column	mm	550	650
<b>Spindle</b>			
Spindle Speed (Pulley)	rpm	8000(10000/12000 opt.)	8000(10000/12000 opt.)
Spindle Speed (Gear)	rpm	6000 opt.	6000(8000 opt.)
Spindle Nose Tape	rpm	#40	#40
<b>Feed</b>			
Cutting Feedrate (X, Y, Z Axes)	m / min	12 / 12 / 12	12 / 12 / 12
Rapid Traverse (X, Y, Z Axes)	m / min	24 / 24 / 20	20 / 20 / 20
<b>ATC</b>			
Tool Storage Capacity	pcs	S:16 A:24	S:16 A:24
Max. Tool Weight	kg	6	6
Max. Tool Size (Diameter x Length)	mm	A: 75 x 300L (S: 90 x 250L opt.)	A: φ75 x 300L (S: φ90 x 250L opt.)
Tool Shank		BT40(BBT/CAT/DIN)	BT40(BBT/CAT/DIN)
Pull Stud Bolt		P40T-1/CAT-40/DIN69872	P40T-1/CAT-40/DIN69872
<b>Motor</b>			
Spindle Drive Motor (Cont/30min)	kW	7.5 (11 opt.)	7.5 (11 opt.)
<b>Positioning Accuracy</b>			
3 axes laser positioning accuracy (JIS B6338)			
Positioning accuracy/Full travel	mm	±0.010	±0.010
Repetitive positioning accuracy	mm	±0.003	±0.003
3 axes laser positioning accuracy (VDI 3441) / Repeated 5 times			
Positioning accuracy	mm	0.022	0.022
Repetitive positioning accuracy	mm	0.01	0.01
<b>Other</b>			
Required Air Pressure	kg / cm <sup>2</sup>	6.5	6.5
Electric Power Consumption	KVA	15	20
Floor Space(Full Guarding)	mm	2360 x 2490 x 2890	2900 x 2644 x 2890
Net Weight	kg	S: 5400 A: 5600	S:6500 A: 6700
Collant tank(Standard)	L	279	306

## Standard&Optioanl Mechanical Accessories

### Standard

- Full splash guard
- Spray around spindle
- Lubrication system
- Spindle air curtain
- Tool package
- Fluorescent lamp x 1
- Coolant Tank
- Hartford manual x 1
- Foundation bolt, General
- Pre-load on 3 axes
- RS-232
- Z Axis Counter Balance
- Operator Panel, Rotary type
- #40 one-piece spindle housing
- Table side air blast M50 control
- Automatic Power OFF

### Optional

- Full-enclosed splash guard & top cover
- Wash down hose
- Auto tool length measurement
- NC rotary table
- Air gun
- Auto workpiece measurement
- Front mounted screw type chip conveyor
- Spindle oil cooler
- Closed-loop linear scale positioning system
- Link type chip conveyor
- Oil separation system
- #40 ATC 24T minimum tool change time 1.38 sec.
- Coolant flushing device
- Host
- Fluorescent lampx2
- Coolant through spindle
- Automatic door system\_Operating door

## Standard &Optional Electrical Function

### Hartrol / 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

### 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

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

VDI 3441 accuracy available upon order request.