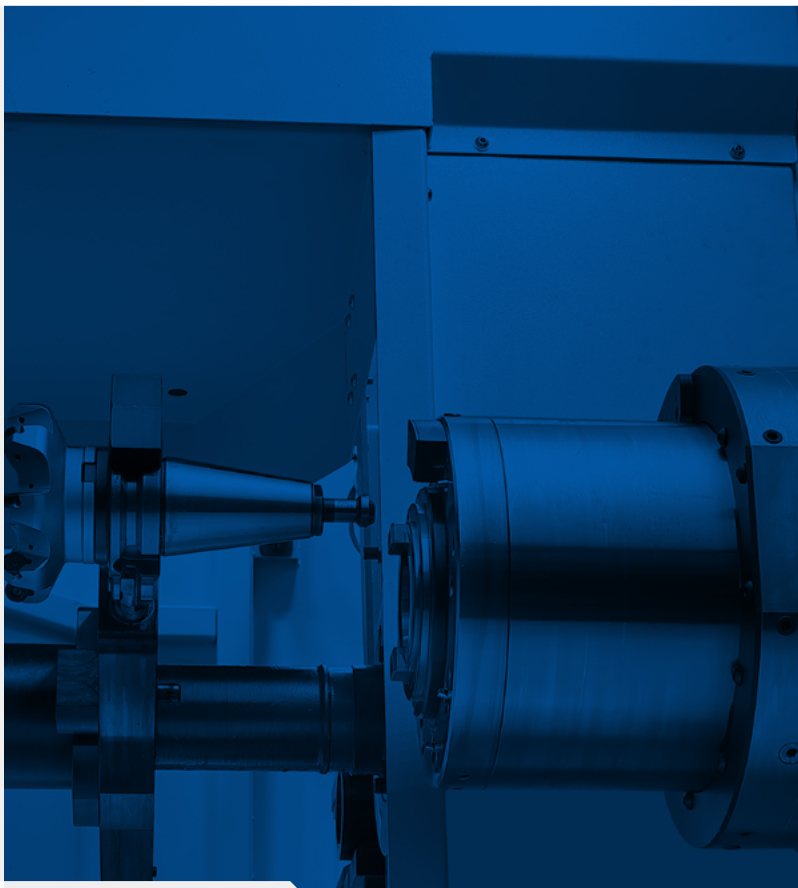
DN SOLUTIONS

HIGH-SPEED, HIGH-PRODUCTIVITY HORIZONTAL MACHINING CENTER

NHP 5500 · 6300 2nd Gen.

NHP 5500 2nd Gen.
NHP 6300 2nd Gen.





NHP 5500·6300 2nd Gen.

NHP 2nd seires considerably improved the productivity with faster X/Y/Z feed acceleration/deceleration, shorter tool change time and faster table rotation time. And it secured improved machining accuracy with spindle smart thermal control, X/Y/Z all axis ball screw shaft and nut cooling and 3-point support structure equipped as standard. Also provided are various automation solutions and the chip removal function, ensuring stable continuous machining for long periods of time.

CONTENTS

Product Overview

Basic Information

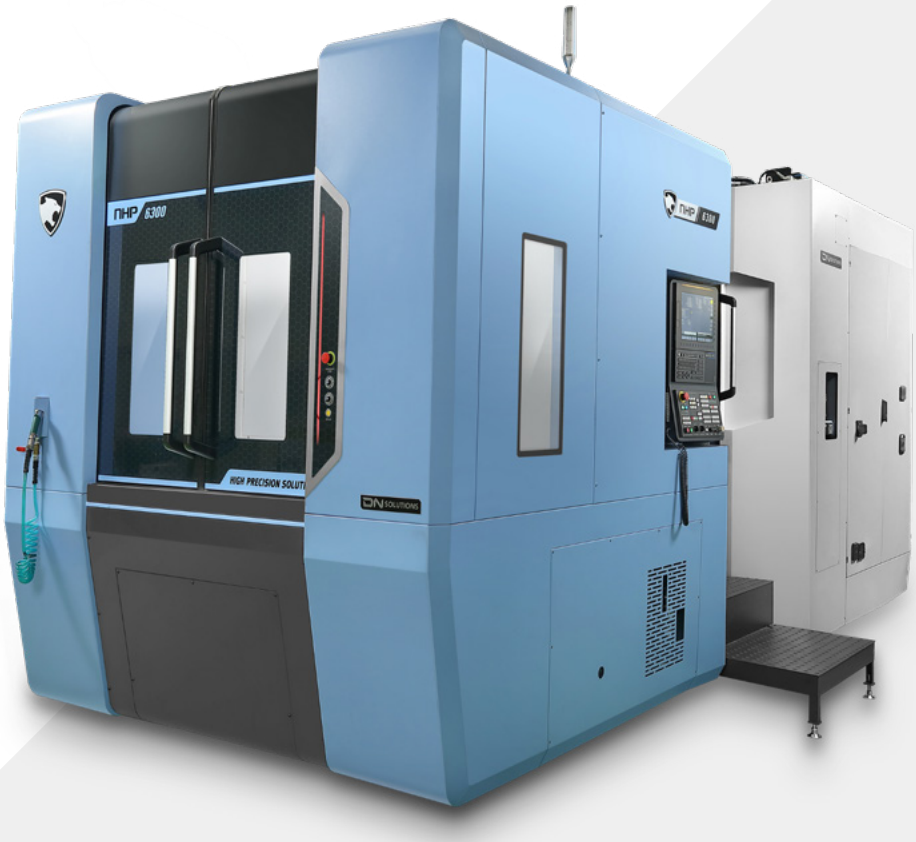
04 Basic Structure
05 Table
06 Spindle
07 Magazine
08 2nd Generation Sales Points
10 Standard I Optional Specifications
11 Peripheral Equipment
13 Peripheral Equipment I Convenient Functions
14 Pallet System

Detailed Information

15 FANUC 31i PLUS
16 EZ WORK
17 Convenient Operation
18 CUFOS
20 Easy Set-up I Operation
21 Easy Maintenance, Cufos: Standard Optional Specs
22 Power I Torque
24 Dimensions
26 Table Dimensions
27 Working Area
28 Machine Specifications

Customer Support Service

29 Why DN Solutions
30 Customer Support and Services
31 Global Network



ENHANCED PRODUCTIVITY

- Enhanced feed axis acceleration and deceleration, rapid traverse speed of 60 m/min, and a tool change time (T-T-T) of 1.7 seconds minimize non-cutting time and improve productivity.

LONG-LASTING HIGH PRECISION

- Equipped with a built-in spindle featuring a thermal displacement sensor, ball screw shaft and nut cooling function as standard, high-speed and high-precision X/Y/Z Roller LM guides, and a three-point support bed structure to ensure long-term stability and high-precision machining.

VARIOUS AUTOMATION SOLUTIONS/CONVENIENCE FUNCTIONS

- LPS and RPS automatic pallet changers support up to 72 pallets and enable the integration of table-through coolant and pneumatic fixtures.



BASIC STRUCTURE

A high level of precision can be achieved on a stable basis thanks to the 3-point support type bed structure and the X/Y/Z ball screw shaft and nut cooling function.

Travel distance

NHP 5500/6300

X-axis **800/1050** mm
31.5 / 41.3 inch

Y-axis **750/900** mm
29.5 / 35.4 inch

Z-axis **900/1000** mm
35.4 / 39.4 inch

Feed axis acceleration/deceleration

NHP 5500/6300

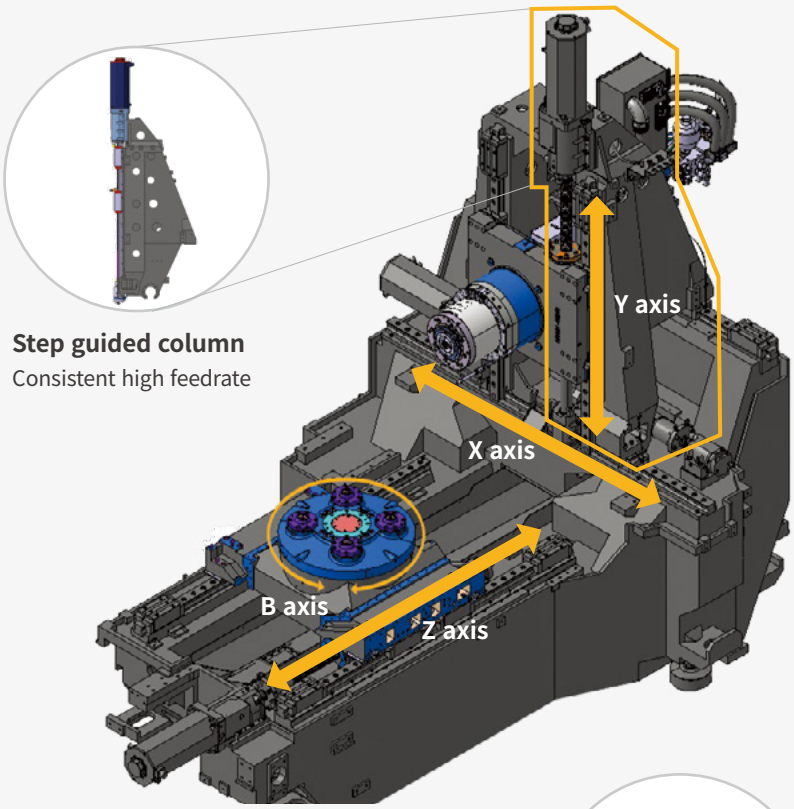
X-axis **0.91/0.74** g

Y-axis **1.02/0.87** g

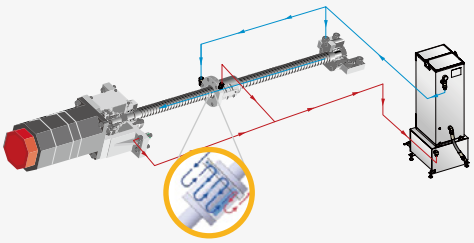
Z-axis **0.85/0.85** g

Rapid traverse rate

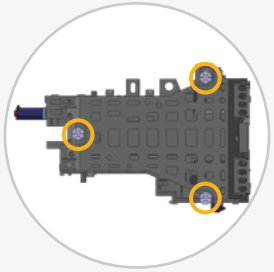
60 m/min
2362.2 ipm



Step guided column
Consistent high feedrate



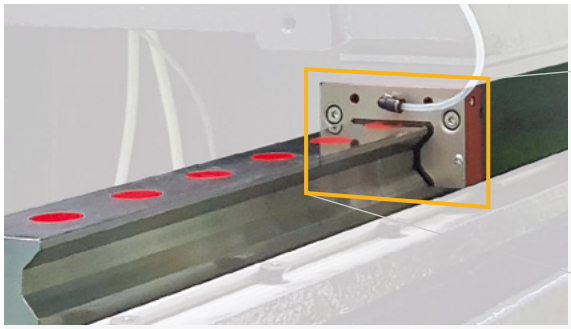
Ball screw shaft and nut cooling
Reduced thermal displacement for feed axis and consistent high precision

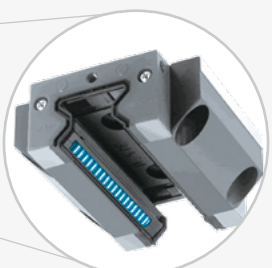


3-point support type bed structure
Leading to the positional stability of the machine ensuring accuracy

Fast precision X/Y/Z/ feed structure

Productivity has been greatly ncreased with the high-speed, high-precision roller type LM guideway installed for X/Y/Z entire axes and even faster acceleration and deceleration performance





High-rigidity, high-precision roller type LM guideway

TABLE

Rotary shuttle-type pallet changer can be operated on a stable and accurate basis, enhancing its reliability.

Max. workpiece size

NHP 5500

Ø900 x H1100 mm
35.4 x 43.3 inch

NHP 6300

Ø1050 x H1350 mm
35.4 x 43.3 inch

Max. workpiece weight (W)

NHP 5500 / 6300

800 {1000 OPTION} /
1500 kg 3306.9 lb

Pallet change time

NHP 5500 / 6300

12 {15 OPTION} / **16** sec

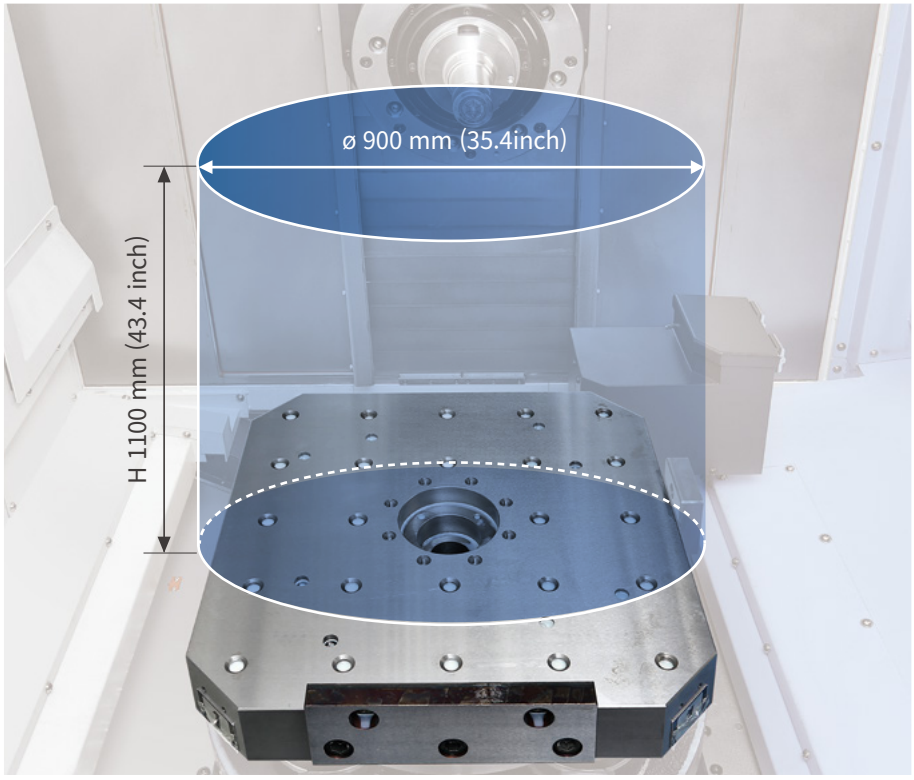


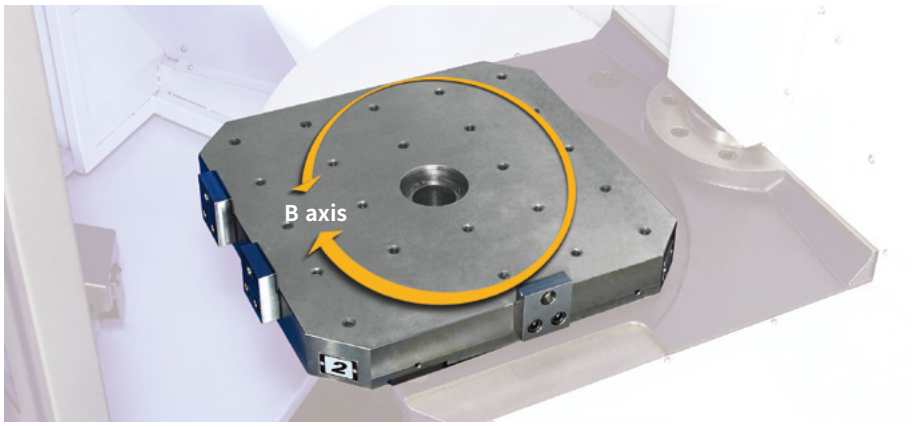
Table rotation (B axis)

1° control index table:
NHP 5500 :
90 degrees 1.1 sec, 180 degrees 1.5 sec
NHP 6300 :
90 degrees 1.3 sec, 180 degrees 1.7 sec

0.001 degrees RGC* type rotary table OPTION:
Max. allowable rotative speed
30 r/min(NHP5500), 25 r/min(NHP6300)

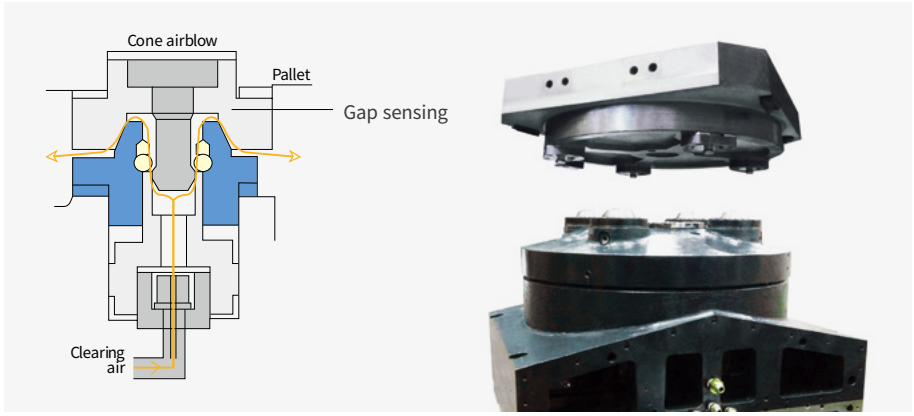
0.001 degrees DDM** type rotary table OPTION:
Max. allowable rotative speed 100 r/min

**Roller Gear Cam* ***Direct Drive Motor*



Cone Air Blower

As a mechanism designed for precise pallet position repeatability, the air blower injects high pressure air into the location cones connecting the table to the pallet. This removes chips from the locating surfaces and ensures highly accurate pallet positioning.



SPINDLE

This built-in spindle minimizes the occurrence of vibration and heat generation. It's equipped with sensor-type spindle smart thermal error compensation, providing excellent high-speed, high-precision cutting performance.

Spindle cooling system (oil cooler) available in the standard model

Max spindle speed

NHP 5500
10000 {15000 OPTION} r/min

NHP 6300
12000 {15000 OPTION} r/min

Spindle tool taper

ISO #50

Max. spindle motor power

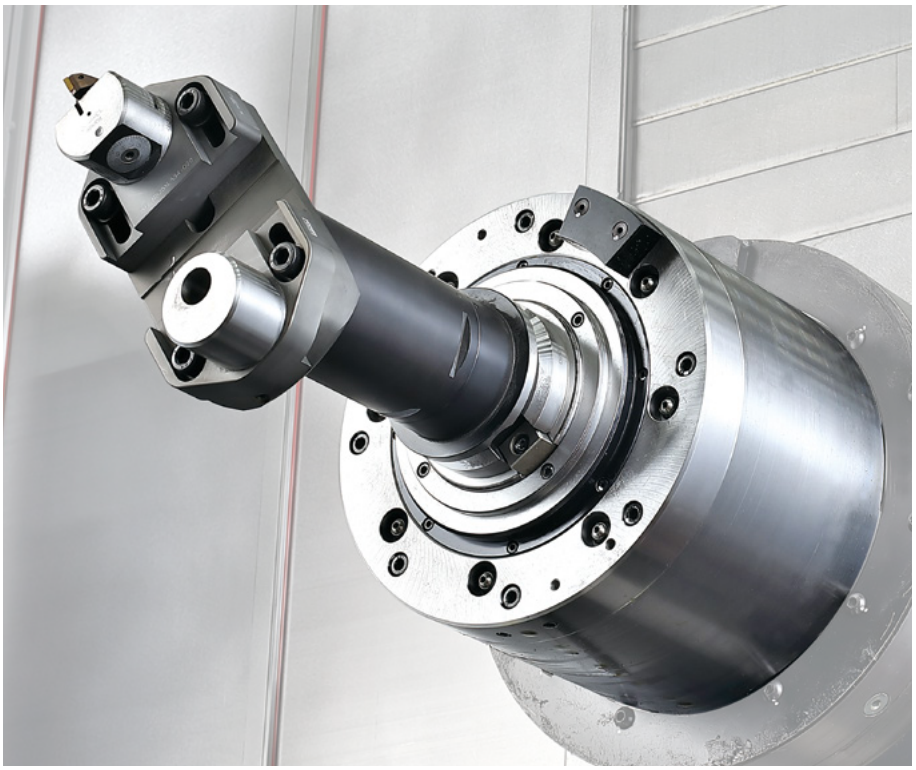
NHP 5500
37/45 kW (10K High Torque)

NHP 5500
45 kW

Max. spindle motor torque

NHP 5500
516/644 N.m (10K High Torque)
1009 N.m (8K High Torque)

NHP 6300
600/809 N.m (12K High Torque)
1202 N.m (8K High Torque)



Spindle Cooling System

An oil cooler system is provided as a standard feature for long-term, continuous operation at high speeds. The oil is cooled down in the cooler before circulating around the spindle bearings and built-in motor to minimize thermal error and deliver high-precision cutting.

High-Speed, high-precision spindle

Designed to minimize vibration and thermal error while offering rapid acceleration and deceleration, the spindle guarantees excellent cutting performance from steel to nonferrous metal parts. Thanks to its increased rigidity, the spindle supports various machining from high speed cutting to low speed heavy cutting.

Spindle cooling system and spindle smart thermal control function available in the standard model

The oil cooler system as well as the spindle thermal error compensation function is provided in the standard model to keep the level of spindle heat generation and thermal error to a minimum.



MAGAZINE

Varied types of the tool magazine are provided for enhanced customer convenience.

Tool changer

Tool magazine capacity

40 ea
{60, 91, 121, 151, 196, 256, 316 OPTION}

Tool change time

NHP 5500/6300
Tool To Tool(T-T-T) **1.7/2.5** sec
Chip To Chip(C-T-C) **4.7/5.6** sec

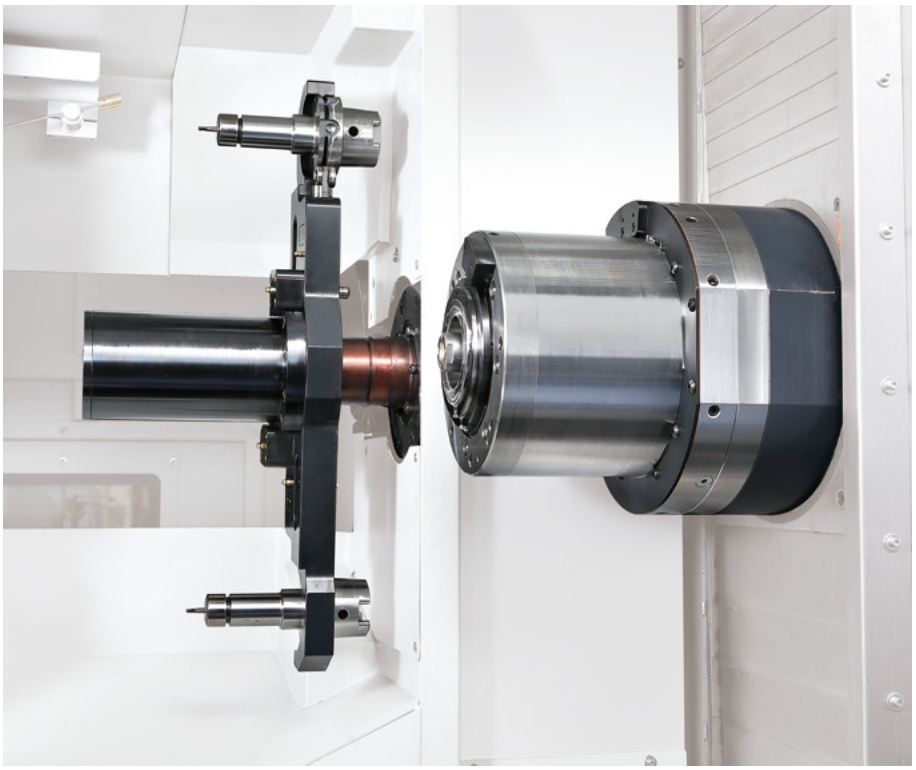
Max. tool length

NHP 5500/6300
550/630 mm (BT/CAT/DIN)
21.7 / 24.8 inch

620/700 mm (HSK)
24.4 / 27.6 inch

Max. tool weight

25 kg 55.1 lb (40/60T)
30 kg 66.1 lb (More than 91T)

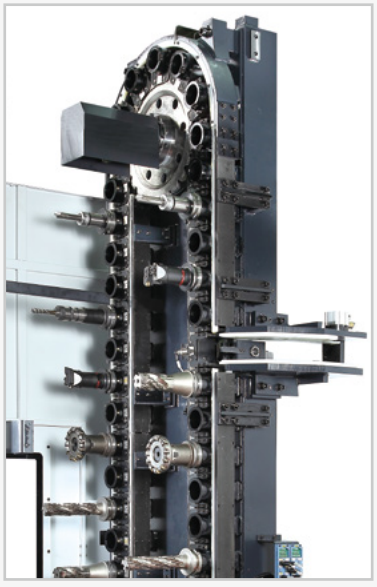


Servo-driven ATC

The ATC is capable of handling pot-type tools weighing up to 25kg and chain-type tools weighing up to 30kg at high speeds using a servo motor and fast tool indexing and spindle positioning.

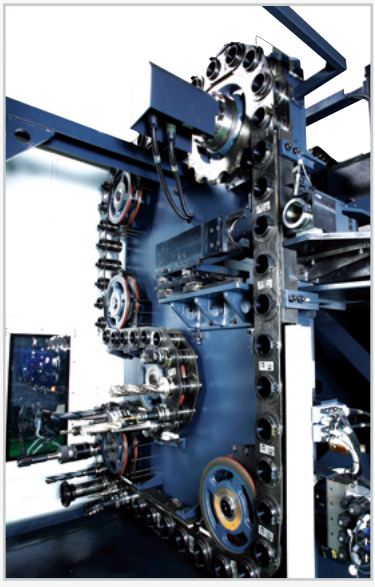
Tool Magazine type

Pot type magazine



40 / 60 tools OPTION

Chain type magazine OPTION



91 / 121 / 151 tools

Matrix type magazine OPTION

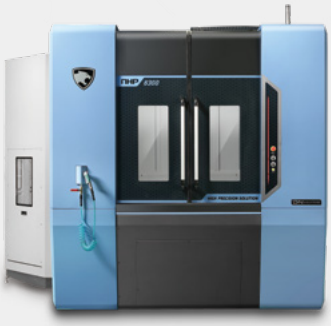


196 / 256 / 316 tools

2nd GENERATION SALES POINTS

NEW Increase Productivity

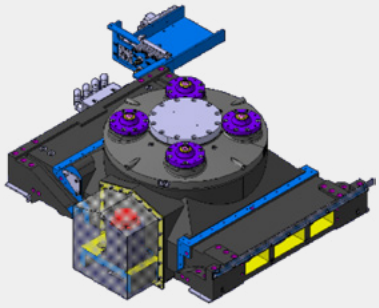
Increase acceleration deceleration by 20%



Contents	NHP6300	NHP6300 2nd
Induction motor	0.64 / 0.73 / 0.64	0.74 / 0.87 / 0.85

NEW Increase Productivity

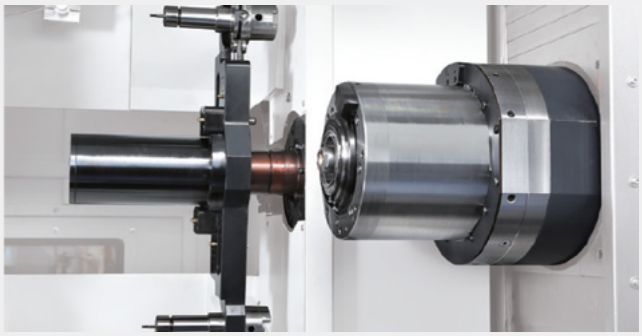
Table index time reduced by 35%



Contents	NHP6300	NHP6300 2nd
Index Time	2.0s (90°)	1.3s (90°)
Rotate Speed	15rpm	35rpm

NEW Increase Productivity

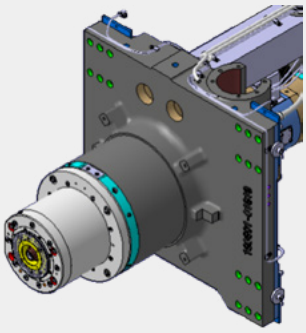
Tool change time reduced by 30%



Contents	NHP6300	NHP6300 2nd
Tool change time(T-T-T)	2.5	1.7

NEW Increase Productivity

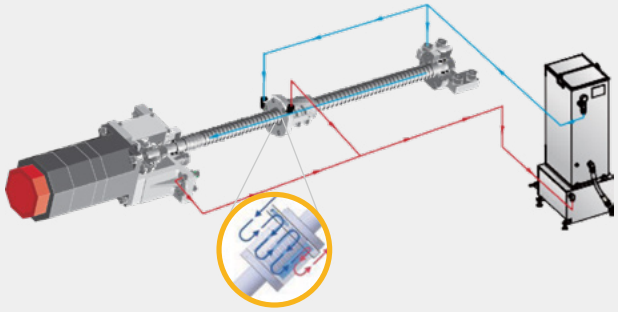
Spindle acceleration/ deceleration time reduced by 15%



Contents	NHP6300	NHP6300 2nd
ACC/DEC	4.0 / 3.5	3.6 / 3.1

NEW Improved Precision

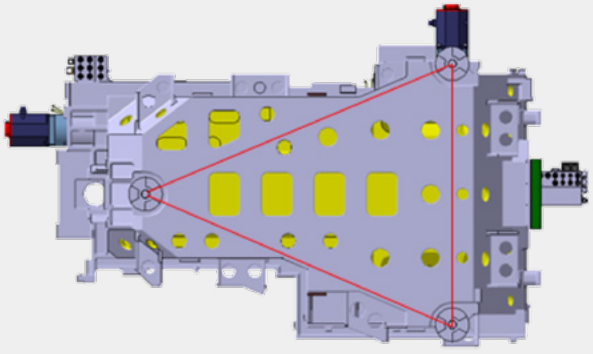
Ball screw shaft cooling and nut cooling standard



NEW Improved Precision

3-point leveling system

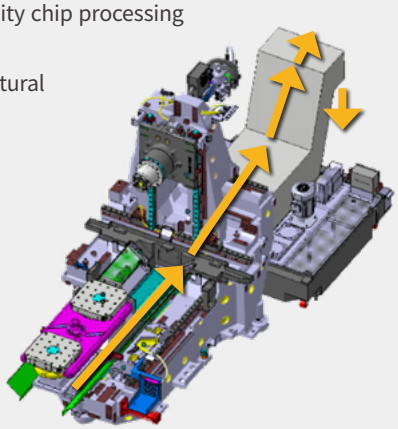
- Reduce machine setup time
- Maintain machine precision and improve performance



NEW Increase Chip Disposal

Center trough type chip disposal structure

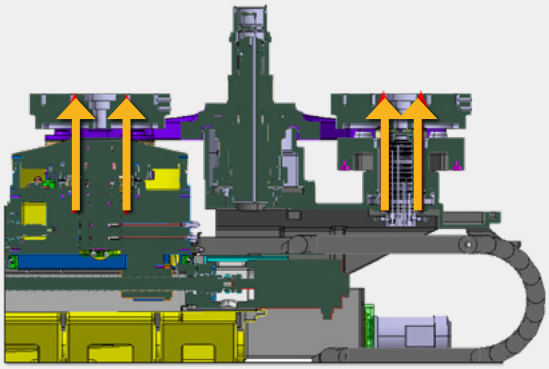
- Improving high-capacity chip processing performance
- Improvement of structural thermal deformation



NEW Increase Convenience

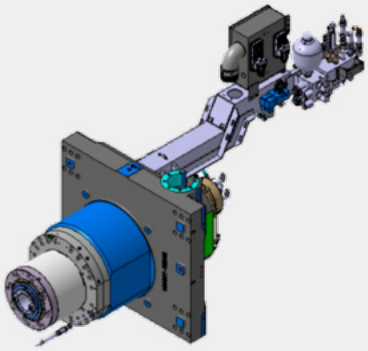
Table center thru hydraulic fixture line

- Improved automation response capabilities



NEW Improve Options Performance

High torque spindle torque increased by 19%



Contents	Prev	New 8k
Max Torque (N·m(ft-lbs))	1011 (746.1)	1202 (887.1)

NEW Energy Saving

Apply grease lubrication

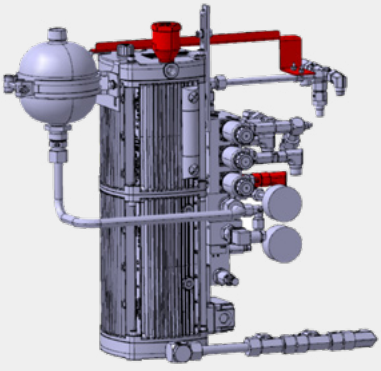
- Energy saving
- Reduce machine maintenance costs



NEW Energy Saving

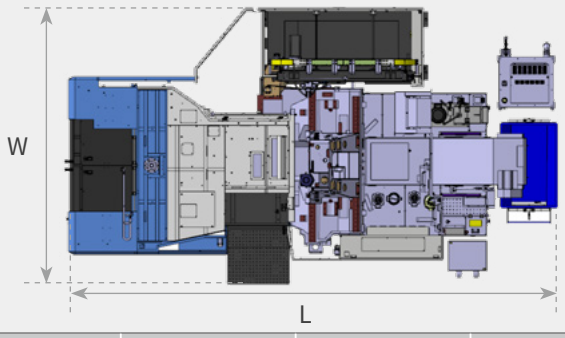
Power pack

- Reduced energy consumption due to intermittent operation of hydraulic motors
- Noise reduction



NEW Increase Convenience

Layout reduced by 13%



Contents	W	L	H
Previous model	3940 (155.1)	7230 (284.6)	3495 (137.6)
NHP6300 2nd	3775 (148.6)	6831 (268.9)	3430 (135.0)

STANDARD I OPTIONAL SPECIFICATIONS

A range of options is available to suit individual requirements.

Description	Features		NHP 5500 / NHP 6300 2nd Gen.
Tool magazine	40-tool pot type		●
	60-tool pot type		○
	91/121/151 tools_ Chain type		○
	196/256/316 tools_ Matrix type		○
	Tool ID (Balluff sensor)		○
	Tool management function (TMT1/2/8 digit)		○
Tool shank type	BT50		●
	CAT50/DIN50/HSK-A100		○
Mist collector	Mist Collector		○
Spindle	10000 r/min, 37/26 kW (NHP 5500)		●
	10000 r/min, High Torque 45/26 kW (NHP 5500)		○
	12000 r/min, 45/25 kW (NHP 6300)		●
	High Torque 8000r/min, 1009N.m (NHP 5500)		○
	High Torque 8000r/min, 1202N.m (NHP 6300)		○
	High speed 15000 r/min, 37/30 kW		○
	Spindle air curtain		●
	U-axis drive (D'ANDREA TA-C160/200)		○
Hydraulic fixtures	Upper hydraulic lines 2X2, 4X4, 6X6, 8X8		○
	Lower hydraulic lines setup part max. 8 ports; table part 2 ports		○
	Hydraulic fixture unit		○
Automation	LPS (Linear Pallet System); 12 to 72 pallets		○
	LPS (Linear Pallet System); 6 pallets		○
Automatic workpiece measurement	OMP60		○
	RMP60		○
Automatic tool measurement device	TS27R, RMI-QE, TRS2, NC 4_Renishaw		○
	D5A_OMRON		○
	FEM 1CP_Far East Machine Tool		○
	BK9_MSC		○
Accuracy	Linear scale (X/YZ axes)		○
	Spindle smart thermal control		●
	Structure smart thermal control		○
	Ball screw shaft cooling		●
Chip Handling System	SCRAPER type; Drum chip conveyor**		○
	2-step drum chip conveyor**		○
	Internal chip conveyor		○
	Chip bucket		○
Coolant	Flood	0.7 Mpa (1.1 kW)	●
	Flushing (50Hz: 2.5kW 0.32MPa / 60Hz: 2.5kW 0.22MPa)		●
	TSC	2 Mpa (2.9 kW)	○
		3 Mpa (3.7 kW)	○
		7 Mpa (7.5 kW)	○
	Coolant gun		○
	Oil skimmer		●
	MQL system		○
	Water soluble Coolant Chiller***		○
	Coolant level switch, Sensing level; Low/High		○
Table	Index table (1° control)		●
	Rotary table (0.001 control, RGC type)		○
	Rotary table (0.001 control, DDM type)		○
Pallet	Tap Pallet		●
	T-slot pallet		○
	Max. allowable weight increased (800kg --> 1000kg) (NHP 5500)		○
AIR	Pallet air clamping (Ensuring clamping)		○
	AIR GUN		○
Convenient Function	SPIN WINDOW(ELECTRIC TYPE)		○
	APC-set up auto indexing		○
	Setup shower coolant		○

*Please contact DN Solutions to find put more about specifications and options

● Standard ○ Optional X N/A

* When using a semi-synthetic type or synthetic type, contact our sales representative or service center in advance

** External chip conveyor must be drum type for NHP 2nd machines. **If a Hinged type drum chip conveyor is required. Please contact our representative.

*** Technical consultation is mandatory for the chilling of non-water soluble coolant

Fire Safety Precautions There is a high risk of fire when using non-water-soluble cutting fluids, processing flammable materials, neglecting the controlled and careful use of coolants and modifying the machine without the consent of the manufacturer. Always check the SAFETY GUIDELINES carefully before using the machine.

PERIPHERAL EQUIPMENT

Chip Conveyor OPTION

Chip disposal is very important to productivity and the work environment.
To meet this requirement, the NHP Series enhances chip disposal performance, thus improving the work environment.



Scraper type drum chip conveyor



Eco-Friendly Devices



Oil skimmer

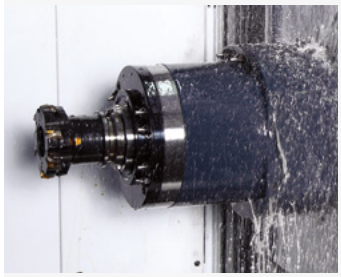


Mist collector OPTION

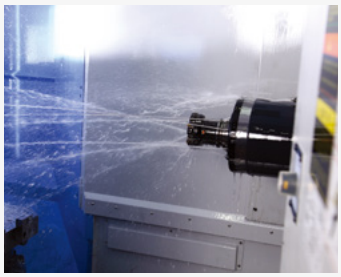
Chip disposal solution

A solution for smooth chip disposal is provided to prevent any deterioration in accuracy and productivity caused by the chips that are stuck or piled up

Chip Removal System



FLUSHING COOLANT



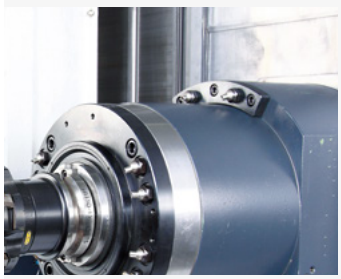
FLOOD COOLANT



SHOWER COOLANT OPTION



Coolant gun OPTION



COOLANT FLUSHING ON THE SPINDLE HEAD



SPINDLE-THROUGH COOLANT (TSC) OPTION



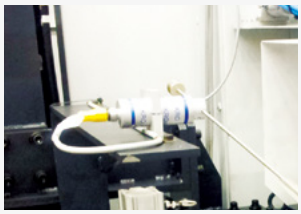
MQL SYSTEM OPTION: SPRAYING ECO-FRIENDLY OIL MIXED WITH AIR, INSTEAD OF CUTTING OIL



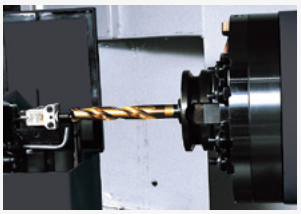
Internal Chip conveyor OPTION (SCRAPER/HINGED)

PERIPHERAL EQUIPMENT

Measuring Devices



Auto tool damage detection device I (BK 9) OPTION



Auto tool damage detection device II (OMRON) OPTION



AUTOMATIC TOOL MEASURING DEVICE (TS 27R) OPTION

Coolant Chiller OPTION



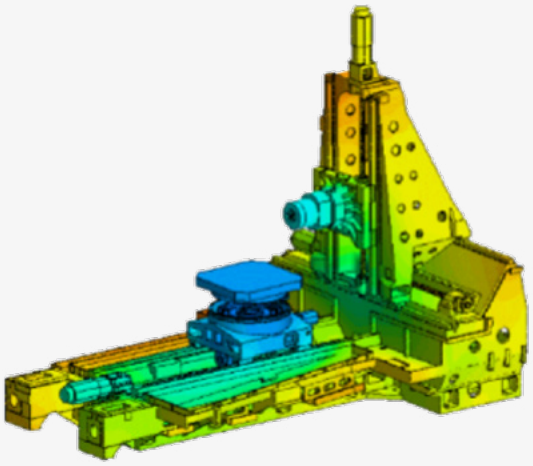
Linear scale available in the standard model OPTION

- X/Y/Z all axes
- Retaining long-term positioning and repetition accuracy



Spindle Smart Thermal Control (Std.) Structure Smart Thermal Control OPTION

Structure (Bed, column, X-axis base) thermal error stabilized



SFC(Sludge Free Coolant tank)* OPTION

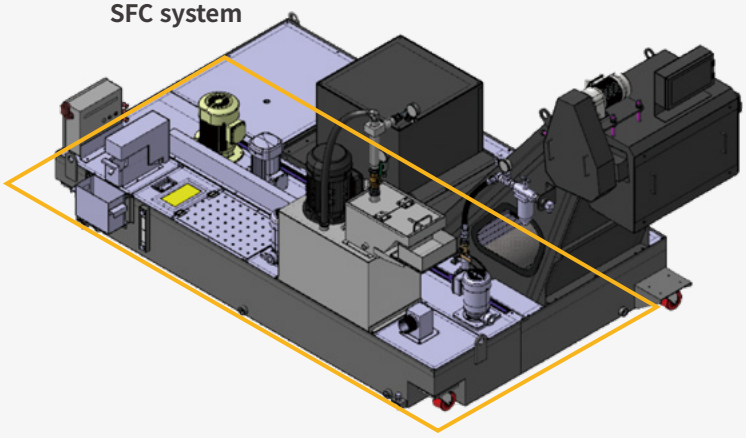
** Selecting the SFC option requires a coolant chiller*

This coolant tank system is intended for automatically eliminating the fine chips and sludge deposited on the bottom of the tank.

- Preventing the sludge from being deposited by causing the coolant to flow.
- Collecting and separating sludge using the cyclone filter and the additional pump

- Extending coolant life (Cost saving)
- Reducing the frequency of cleaning (Machine operating ratio and productivity increased)
- Best suited for unmanned automation solutions

SFC system



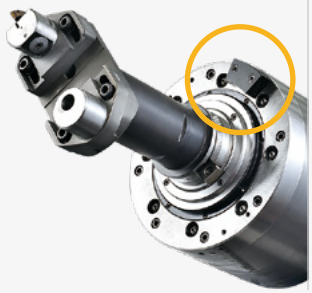
PERIPHERAL EQUIPMENT I CONVENIENT FUNCTIONS

This operator-oriented design is intended for providing the customer with convenience and safety.

User-oriented design

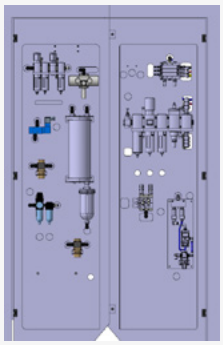
Internal footing and an anti-door-lock function are provided to prevent the operator from being locked in the machine and to guarantee the operator's safety. The installation of a centralized service unit and screen panel enhances the operator's convenience.

Coolant flushing on the spindle head to keep clean from chips over the spindle



Centralized utility service unit

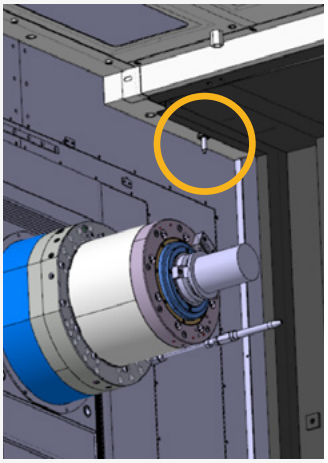
The utilities service unit is centralized for convenient maintainability.



ATC screen panel



Anti-door lock device



Safety has been improved with machine internal footings



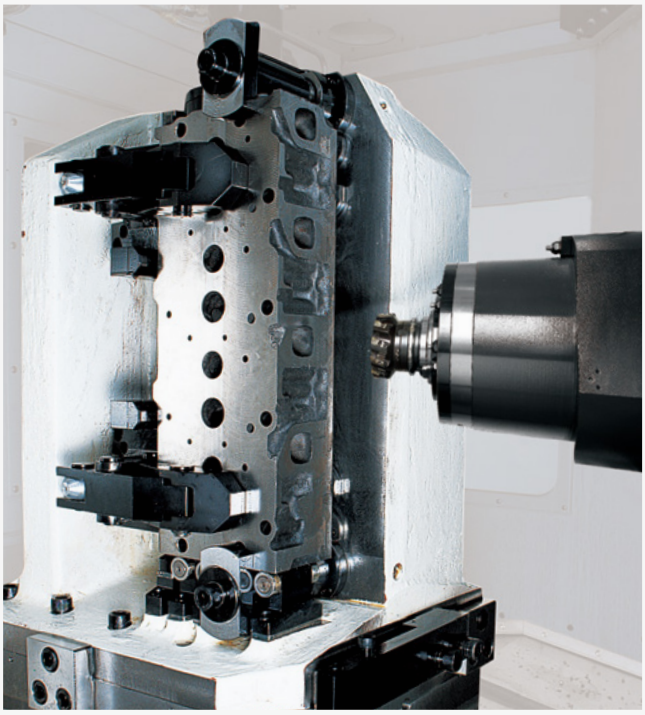
Application

We offer a wide range of solutions that can be optimized to suit each customer's needs.

Clamping Fixtures

The following hydraulic and pneumatic fixture options are available for setting up workpieces:

List of workpiece clamping fixtures (hydraulic/pneumatic) OPTION



Hydraulic/pneumatic fixture pot

- A/B Line : 2, 4, 6, 8 Pairs (Including solenoid valve)
- P/T Line : 2, 4, 6, 8 Pairs (Solenoid valve not included)

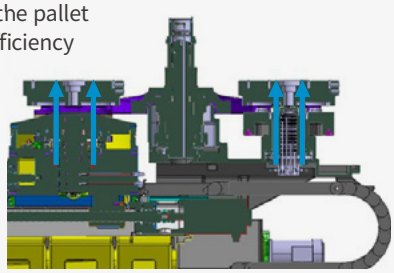
Clamping fixture hydraulic motor

- 2.2 kW / 7MPa
- 3.7 kW / 15MPa
- 5.5 kW / 21MPa

※ *Please provide us with detailed specifications on the order sheet*

Hydraulic/pneumatic fixture lines on the pallet bottom

Hydraulic/pneumatic fixture lines can be built into the table of the pallet bottom to increase the efficiency of the machine interior space, creating a safer working environment.



PALLET SYSTEM

Pallet System (Linear) 5500/6300

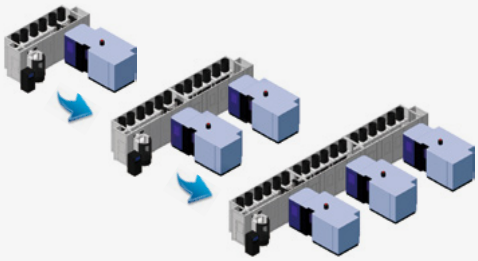
Pallet System (Linear) 5500/6300 are wonderfully designed, allowing them to provide a high level of automation system for the customers.



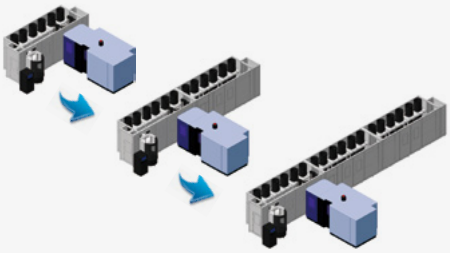
Features

- Servo-driven system providing reliability
- Easy to install
- Simple on-site modification

Improved Productivity



Extended automation run-time



DN Round Storage 5500/6300

Compact automation system for BT 50 HMC machines

Features

- Servo-driven system providing reliability
- Easy to install
- Simple on-site modification





** Please refer to the LPS/DRS catalog for detailed information.*

FANUC 31i PLUS

Fanuc 31i Plus maximizes customer productivity and convenience.



15" Touch screen + New OP

DN Solutions Fanuc 31iB/B5 Plus' operation panel enhances operating convenience by incorporating common-design buttons and layout. It features a Qwerty keyboard for fast and easy data input and operation.

FANUC 31i Plus

5-inch color display

- Intuitive and user-friendly design

USB and PCMCIA card QWERTY keyboard

- EZ-Guide i standard
- 4MB Memory
- Enhance AICC BLOCK
- Touch pen provided as standard
- Ergonimic operator panel
- Hot keys

iHMI touchscreen

iHMI provides an intuitive interface that uses a touchscreen for quick and easy operation.

Range of applications

Providing various applications related to planning, machining, improvement and utility, for customer convenience.



NUMERIC CONTROL SPECIFICATIONS

FANUC

Item		Specifications	F31i PLUS NHP 5500/6300 2nd Gen.
Controlled axis	Controlled axes		4 (X,Y,Z,B)
	Simultaneously controlled axes		4 axes
	Additional controlled Axis	Add 1 axis (5th Axis)	○
Data input/output	Fast data server		○
	Memory card input/output		●
	USB memory input/output		●
	Large capacity memory(2GB)*2	Note *2) Available Option only with 15" Touch LCD (iHMI Only)	○
Interface function	Embedded Ethernet		●
	Fast Ethernet		○
	Enhanced Embedded Ethernet function		●
Operation	DNC operation	Included in RS232C interface.	●
	DNC operation with memory card		●
Program input	Workpiece coordinate system	G52 - G59	●
	Addition of workpiece coordinate system	G54.1 P1 X 48 (48 pairs)	●
	Tool number command		T4 digits
	Tilted working plane indexing command	G68.2 TWP	○*
Feed function	AI contour control II	G5.1 Q_, 600 Blocks	○*
	AI contour control II	G5.1 Q_, 1000 Blocks	●
	High smooth TCP		X
Operation Guidance Function	EZ Guidei (Conversational Programming Solution)		●
	iHMI with Machining Cycle	Note *1) Only with 15" Touch LCD standard	●
	EZ Operation package		●
Setting and display	CNC screen dual display function		●
Network	FANUC MT Connect		✪
	FANUC OPC UA		✪
Others	Display unit	15" color LCD	X
		15" color LCD with Touch Panel	●
	Part program storage size & Number of registerable programs	640M(256KB)_500 programs	X
		1280M(512KB)_1000 programs	X
		2560M(1MB)_1000 programs	X
		5120M(2MB)_1000 programs	X
		10240M(4MB)_1000 programs	●
		20480M(8MB)_1000 programs	○
		2560M(1MB)_2000 programs	○
		5120M(2MB)_4000 programs	○
		10240M(4MB)_4000 programs	○
		20480M(8MB)_4000 programs	○

Network: FANUC MTConnect and FANUC OPC UA available.

** The number of look-ahead blocks may be changed or limited depending on the peripheral device or the configuration of the internal NC system.*

● *Standard* ○ *Optional* *X N/A* ✪ *Available*

EZ WORK

The software developed by DN Solutions features numerous functions designed for convenience and ease of operation.

EZ WORK

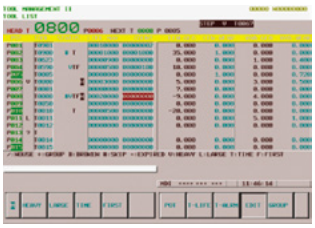
The EZ work package delivers speed and efficiency. This menu-driven innovation not only helps customers reduce setup times, but also simplifies common tasks and procedures, reducing the potential for errors. EZ work reduces operating time, protects machinery, enhances quality and speeds up maintenance interventions.

Tool support functions



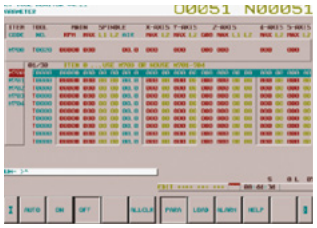
Tool management I

- Tool magazine control
- Tool state display
- Fastems Tool Add/ Remove Function OPTION



Tool management II OPTION

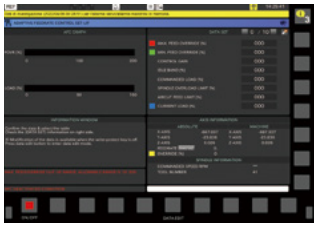
- Tool magazine control
- Tool life management
- Tool life prediction
- Tool state control
- Balluff Tool ID function



Tool load monitor OPTION

- Detection of tool damage
- Detection of abnormalities during operation
- Detection of no-load air cutting

Productivity improvement functions



Adaptive Feed Control

Function to control feedrate so that the cutting can be carried out at a constant load



APC Setting Screen

A simple automation function that supports automatic processing of the next pallet by setting the processing program for each pallet of the equipment including APC in advance

Pallet magazine support functions



Work Load Control

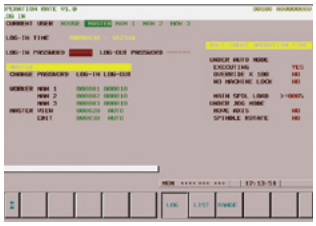
Optimal machining values can be automatically entered into parameters according to the weight of the workpiece placed on the table



PMC Soft Panel Switch

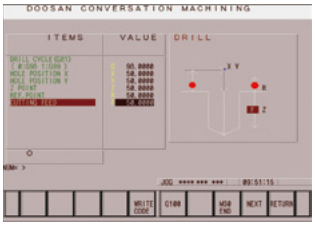
Manual operations that occur continuously in each stages for APC,ATC change command

Operation support, Help desk functions



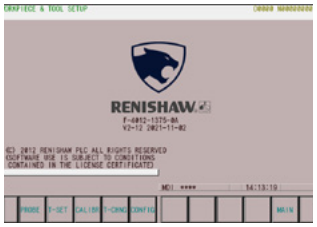
Operation rate

- Measure various machine operating rate
- Support 3 shift operation
- calculate and save 30 days operating rate
- Show data for a specific period



Pattern Cycle

A function to automatically create frequently used part programs.



Renishaw GUI

Renishaw tool length measuring and compensate function



Spindle Warm Up

A function that assists spindle warm-up for spindle life when the spindle has not been used for a certain period of time

CONVENIENT OPERATION

SIEMENS SINUMERIK ONE

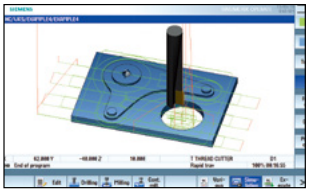


Even Faster & Easier processing + 398mm screen

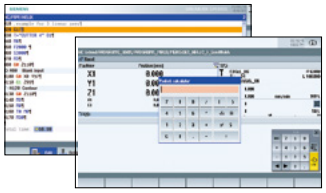
All programming, set-up, actual machining and verification process are getting easier and faster. Especially, intuitive conversational programming guidance with 3D UI(user interface) on 18.5" large touch screen is helpful for unskilled engineers.

- 18.5 inch touch screen
- 50% improvement in processing speed(compared to S840D)
- Graphic programming
- PLC-based flexible automation/ peripheral device expandability

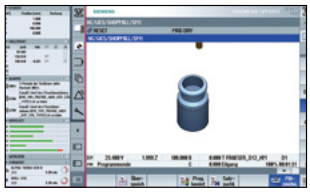
Conversational convenient function



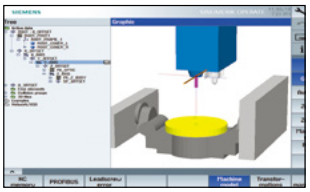
Simulation and machining contour monitoring



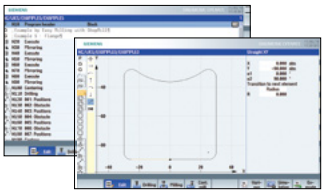
Smart function



Side screen widget



3D collision avoidance and collision avoidance ECO



Shop mill part programming

NUMERIC CONTROL SPECIFICATIONS

SIEMENS

Item		Specifications	S-ONE
Controlled axis	Controlled axes		4 axes (X, Y, Z, B)
	Simultaneously controlled axes		4 axes
Data input/output	Memory card input/output	(Local drive)	●
	USB memory input/output		●
Interface function	Ethernet	(X130)	●
Operation	Execution from Extenal Storage(EES)		○
	On network drive	(without EES option, Extcall)	●
	On USB storage medium, e.g. memory stick	(without EES option, Extcall)	●
Program input	Workpiece coordinate system	G54 - G57	●
	Addition of workpiece coordinate system	G505 - G599	●
Interpolation & Feed function	Top surface		○
	Look ahead number of block		1000
Programming & Editing function	3D simulation, finished part		●
	Simultaneous recording		●
	DXF Reader for PC integrated in SINUMERIK Operate		○
Operation Guidance Function	ShopMill		●
	EZ Work		●
Setting and display	Operation via a VNC viewer		●
Network	MTConnect		✪
	OPCUA		○
Others	18.5" color display with touch screen		●
	21.5" color display with touch screen		○
	CNC user memory	10 MB	●
	Max. CNC user memory	28 MB	○
	Collision avoidance (machine, working area)		○
	Collision avoidance ECO (machine, working area)		○
	Evaluation of internal drive		○
	CNC user memory extend		○
	TOOL ID		○

● *Standard* ○ *Optional* *X N/A* *Available*

CUSTOMIZED USER-FRIENDLY FLEXIBLE OPERATION SOLUTIONS

CUFOS is a PC based control system created by DN Solutions. equipped with intuitive user-friendly functions such as a smart phone screen and easy customization, CUFOS helps to improve operational efficiency and performance for the user.

FEATURES

19 INCH TOUCHSCREEN

- Program memory : 40GB
- App-based Interface like smart phone, tablet PC

EASY PROGRAMMING

- Sketch cycle : Gear skiving, Gear hobbing, Polygon turning (continuously being added…)
- SSD data server : Program file sharing/ managing (CF card/USB/External PC)

EASY SET-UP/OPERATION

- Tool management for PUMA SMX
- CPS(collision protection system)
- Manual viewer
- File manager & PDF viewer

EASY MAINTENANCE

- Status monitor
- Alarm guidance
- Maintenance manager

CUFOS



CUFOS INTERFACE

User-friendly screen controls

CUFOS, the PC-based control created by DN Solutions, is an integrated system solution using an intuitive 19-inch touchscreen. The system provides a convenient operator interface, a high level of customization and many useful high technology apps.





Supports various apps in three fields—setup, machining and utility

It provides easy configuration by allowing users to add and edit functions on the home screen according to job requirements.

Intuitive operation via touch screen

Simple customization is available for specific work environments.

CUFOS Open CNC

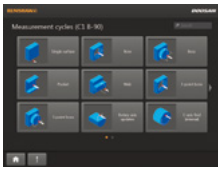
CUFOS operation for enhanced productivity

The CUFOS operating system is based upon the integration of all aspects of the manufacturing process, including setting, machining and maintenance. It consolidates up-to-date software technology created by DN Solutions, to improve overall efficiency and productivity. Using the system's modular construction, each function can be easy integrated with external PC software systems and applications, such as CAM and Tool Data systems.



CUFOS

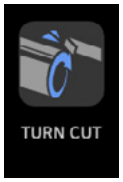
programming
set up
tool data
machining
maintenance



PC software



Applications



CUFOS: TURN CUT

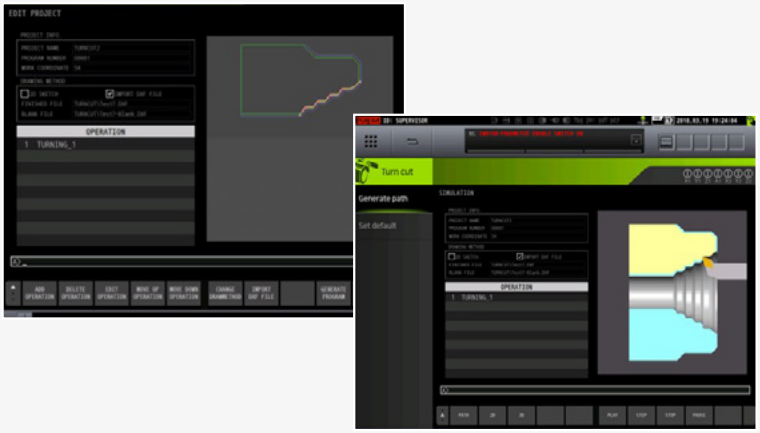
Turn cut

Generate tool path for Turn-cut operation

Applicable models: NHP series

- Linear scales and ballscrew shaft cooling are required on the machine.
- Renishaw NC4 should be included depending on the level of precision required by the customer

• Reduced setup time
• Users can easily generate tool paths for programming turn-cut operations based on profile shapes such as linear, arc, chamfer, round, groove, and simple threading
• Reduced investment costs for special tooling



Supports tool path generation for internal or external machining with a horizontal machining center.

EASY SET-UP I OPERATION

Tool management, collision protection between machine unit/ workpiece/tooling and various user guidance provide higher productivity and user-convenience.

Tool management

DN Solutions EZ work tool management

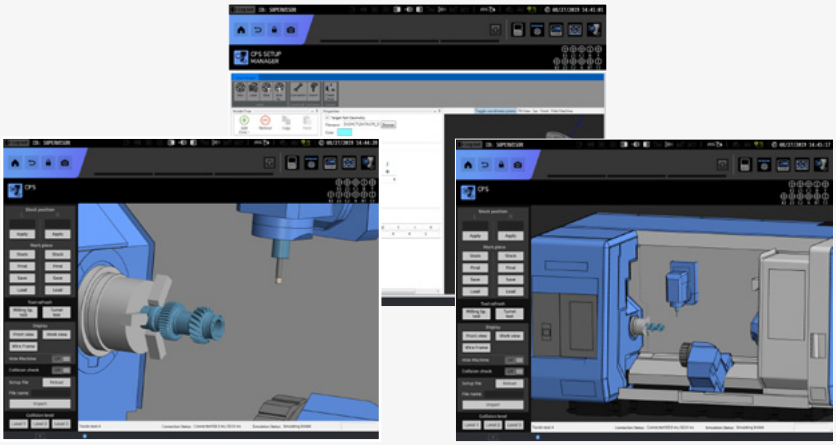




Includes a summary monitoring screen and gives the operator easy access to DN Solutions's own tool management system which provides comprehensive real time data on each tool, such as remaining tool life and status of tool groups.

CPS (Collision protection system)

A function to prevent real-time collision between the tool and equipment / machine elements inside the working area.



Use the setup manager with the CPS app to build up the machine model, and add tool, workpiece and workholding equipment details.

File Manager & PDF viewer

Ability to transfer various type of files including CF cards, USB memory, external PCs and memory inside CUFOS, NC programs between NC memory.
PDF drawings can be directly open on the screen via PDF viewer



EASY MAINTENANCE

Keeping a machine in best condition through status monitoring, alarm guidance and maintenance manager functions.

Status monitoring

Monitoring various information such as spindle, milling spindle, feed axis, cycle time, program/tool no. on one screen.



Alarm guidance

Presenting an operator alarm's causes and troubleshooting guides and sending an email when the alarm last for a long time.



Maintenance manager

Monitors the status of machine and control elements, and confirms the alarm condition and maintenanceschedule for preventative maintenance.



CUFOS: STANDARD I OPTIONAL SPECS

A diverse range of functions and apps are Status monitoring available to meet your needs.

Description	Features		NHP / NHM
Hardware	19" Color LCD Screen		●
	Main RAM memory	16 GB	●
	Storage Memory	SSD 240GB	●
	2 point-touch panel port		●
	Windows Embedded standard 10 Operating System		●
Applications	DN Solutions Tool Management		○
	Collison Protection System		○
	SSD Data server Application(Note: Incase of using this application, Data server (for Standard CNC) funtion can not be used)		●
	Turncut		○
	Set and Inspection Application(cooperated with Renishaw)		○
	File Manager		●
	FTP Server service		●
	Smart key access control application		○
	Memo Application		●
	Machine status Monitor application		●
	Alarm guidance application		●
	Sketch Cycle		X
	EOP		●
iHMI basic application	NC Control		●
	FANUC iHMI		●
	Manual viewer Application		●
	Calendar Application		●
	Browser Application		●
	Periodic Maintenace Application		●
	Data Logger Application		●
	Servo viewer Application		●

● *Standard* ○ *Optional* *X N/A*

POWER I TORQUE

NHP 5500

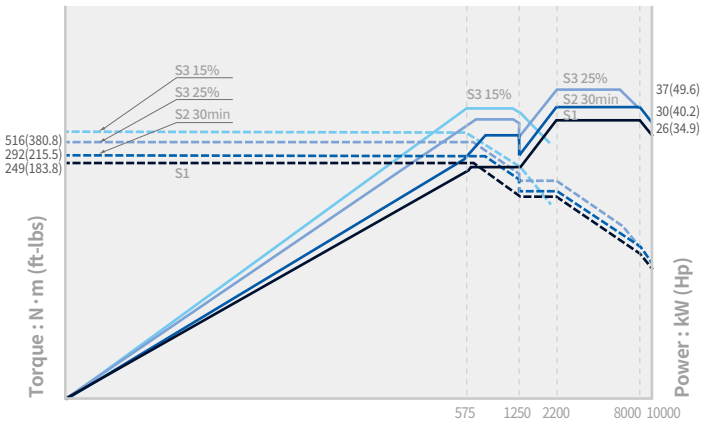
10000 r/min FANUC

Max. spindle power

37/26 kW
(49.6 / 34.9 Hp)

Max. Spindle torque

516 N·m
(380.8 ft-lbs)



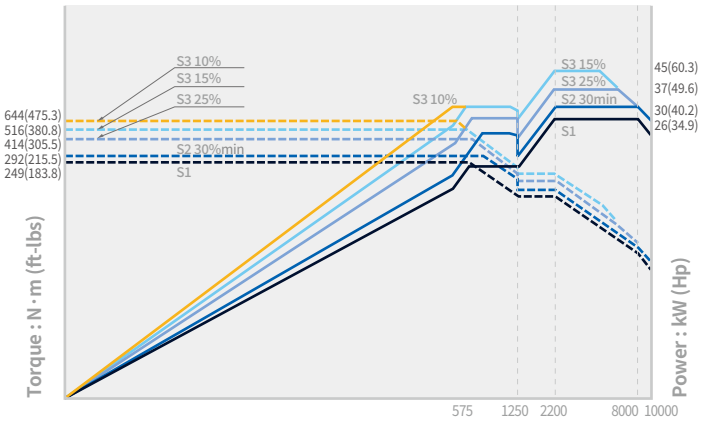
10000 r/min FANUC OPTION

Max. spindle power

45/26 kW
(60.3 / 34.9 Hp)

Max. Spindle torque

644 N·m
(475.3 ft-lbs)



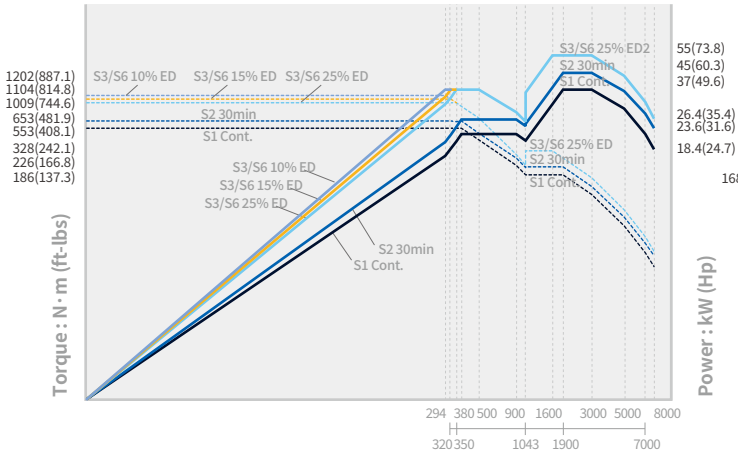
8000 r/min FANUC OPTION

Max. spindle power

55/30 kW
(73.8 / 40.2 Hp)

Max. Spindle torque

1009 N·m
(744.6 ft-lbs)



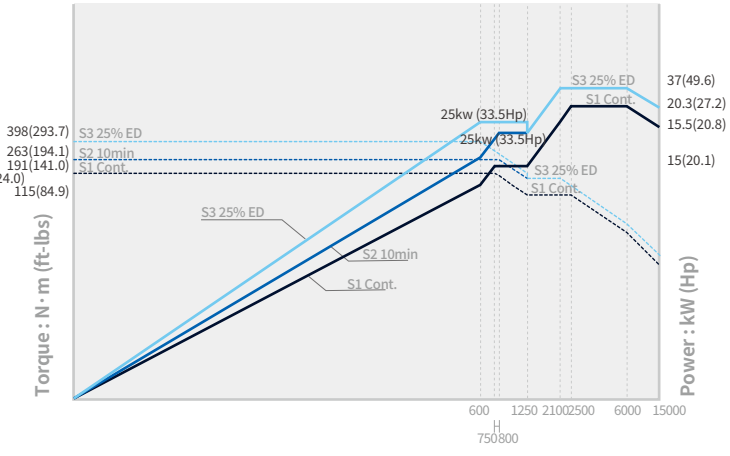
15000 r/min FANUC OPTION

Max. spindle power

37/30 kW
(49.6 / 40.2 Hp)

Max. Spindle torque

398 N·m
(293.7 ft-lbs)



POWER I TORQUE

NHP 6300

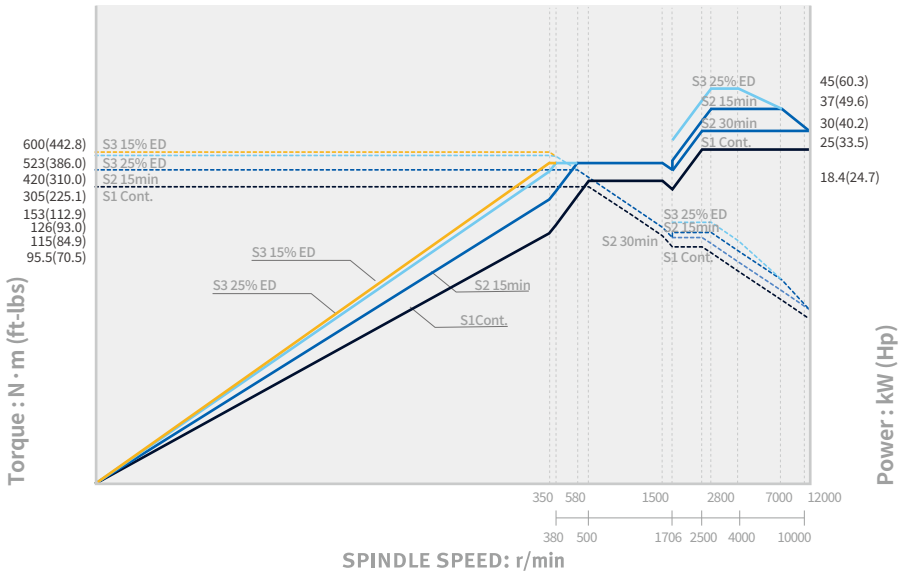
12000 r/min FANUC

Max. spindle power

45/25 kW
(60.3 / 33.5 Hp)

Max. Spindle torque

600 N·m
(442.8 ft-lbs)



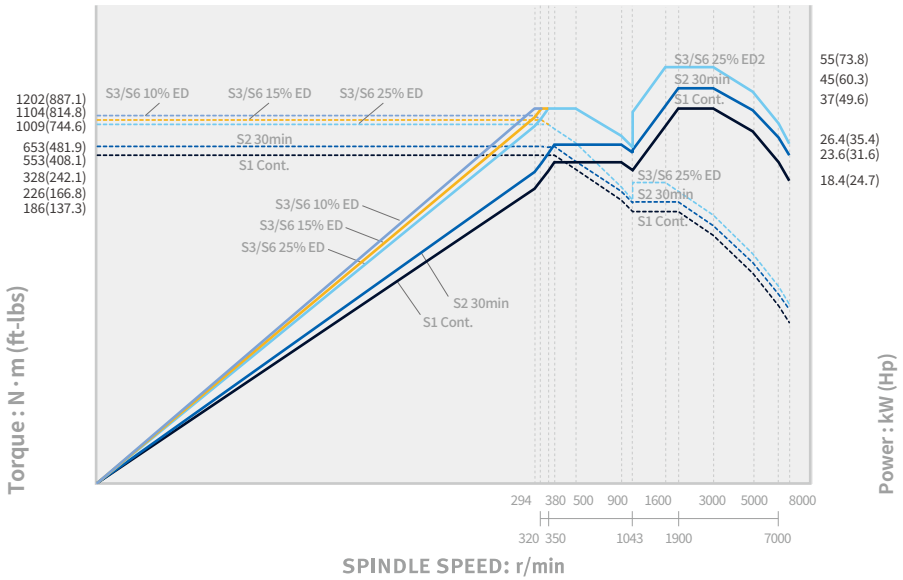
8000 r/min FANUC OPTION

Max. spindle power

55/37 kW
(73.8 / 49.6 Hp)

Max. Spindle torque

1202 N·m
(887.1 ft-lbs)



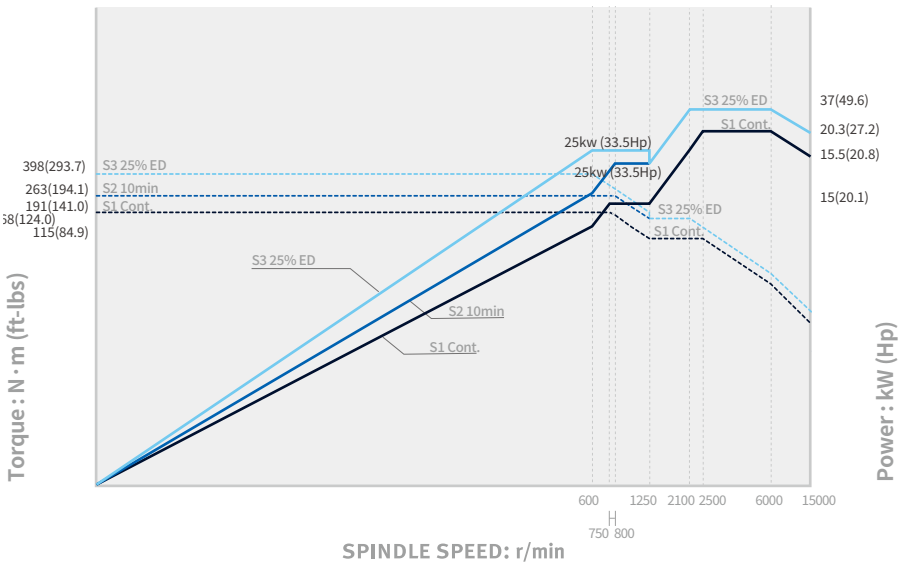
15000 r/min FANUC OPTION

Max. spindle power

37/30 kW
(49.6 / 40.2 Hp)

Max. Spindle torque

398 N·m
(293.7 ft-lbs)

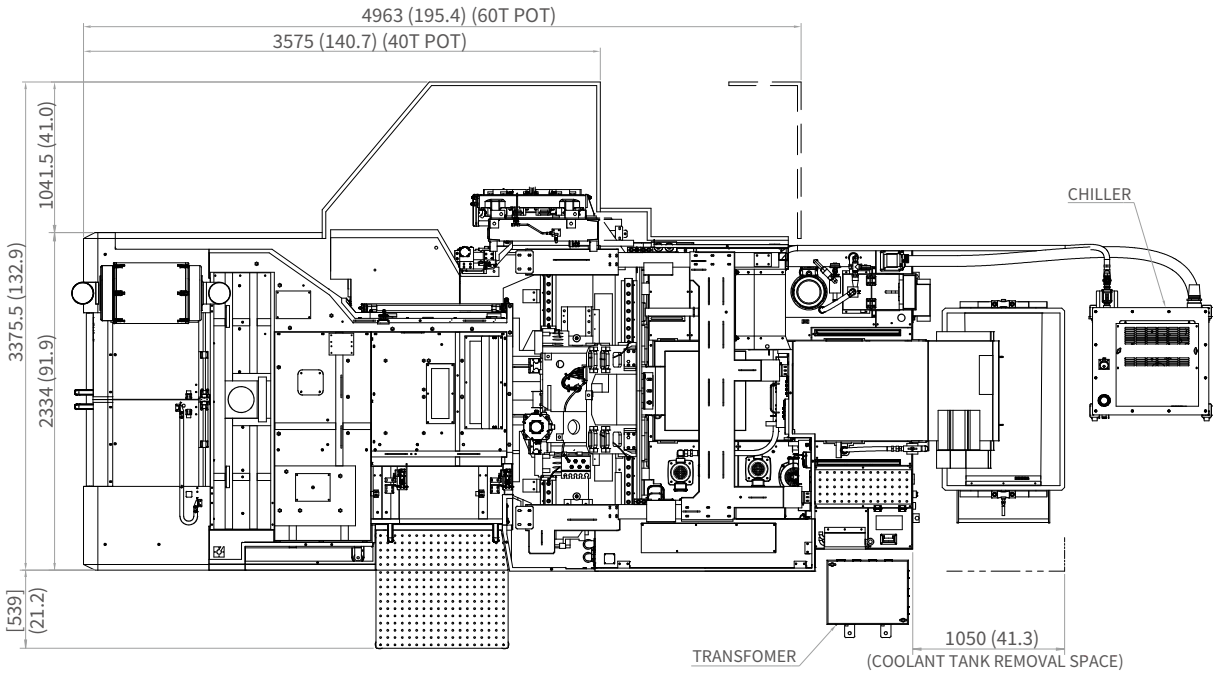


DIMENSIONS

NHP 5500

Units : mm (inch)

TOP



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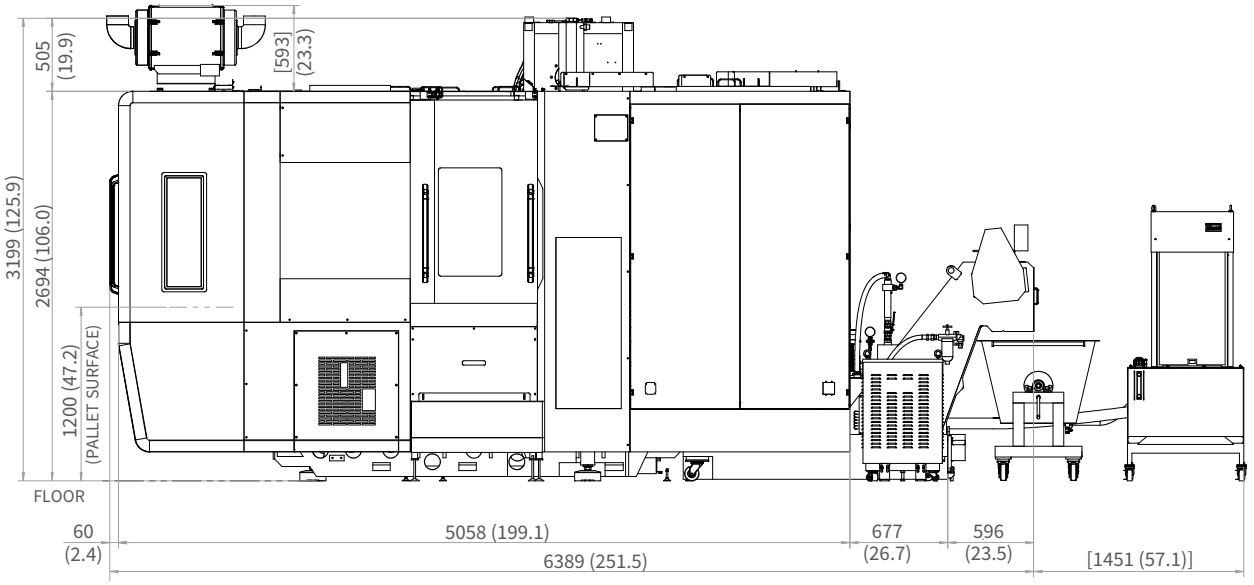


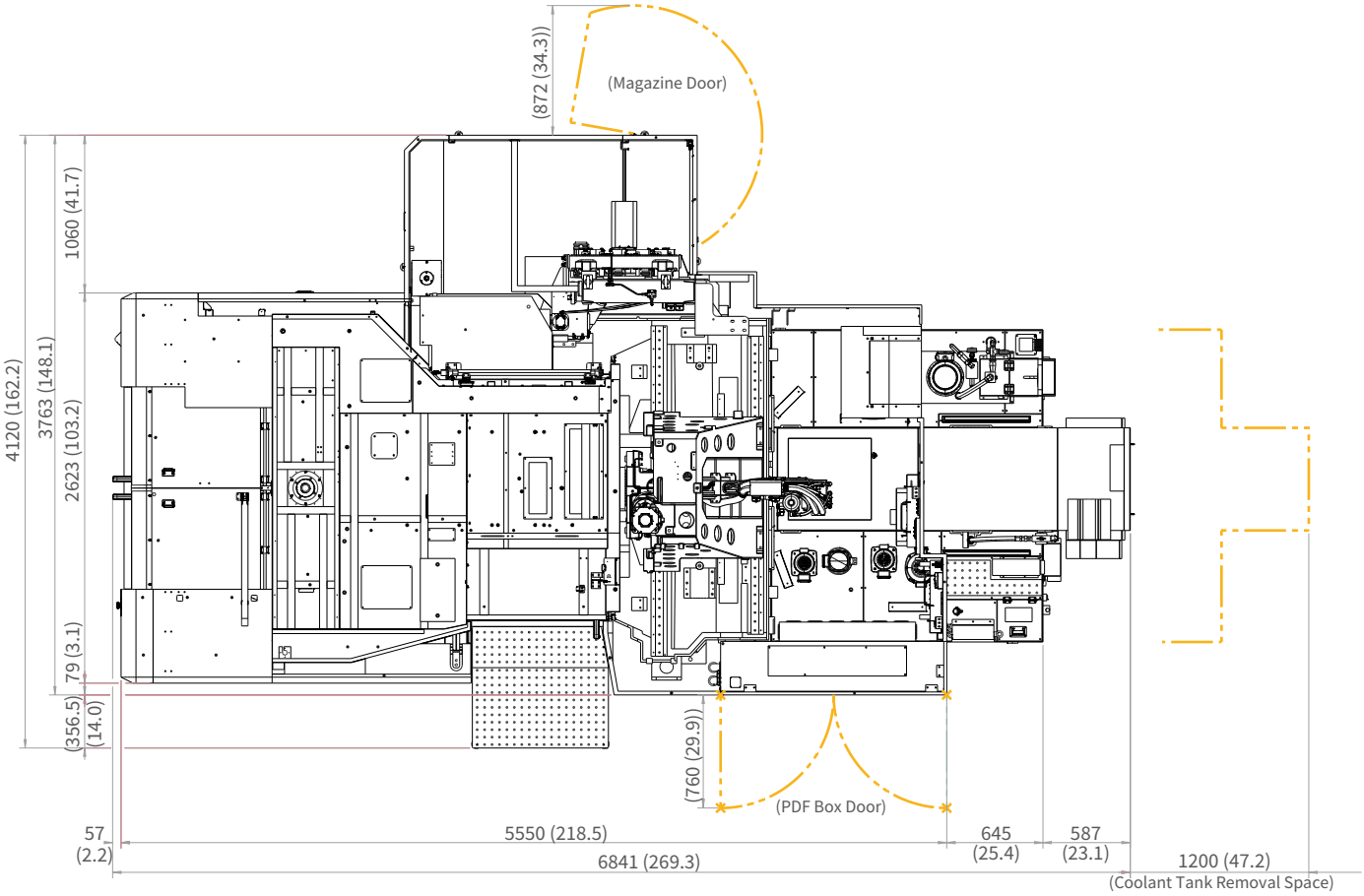
 ** Some peripheral equipment can be placed in other areas.*

DIMENSIONS

NHP 6300

Units : mm (inch)

TOP



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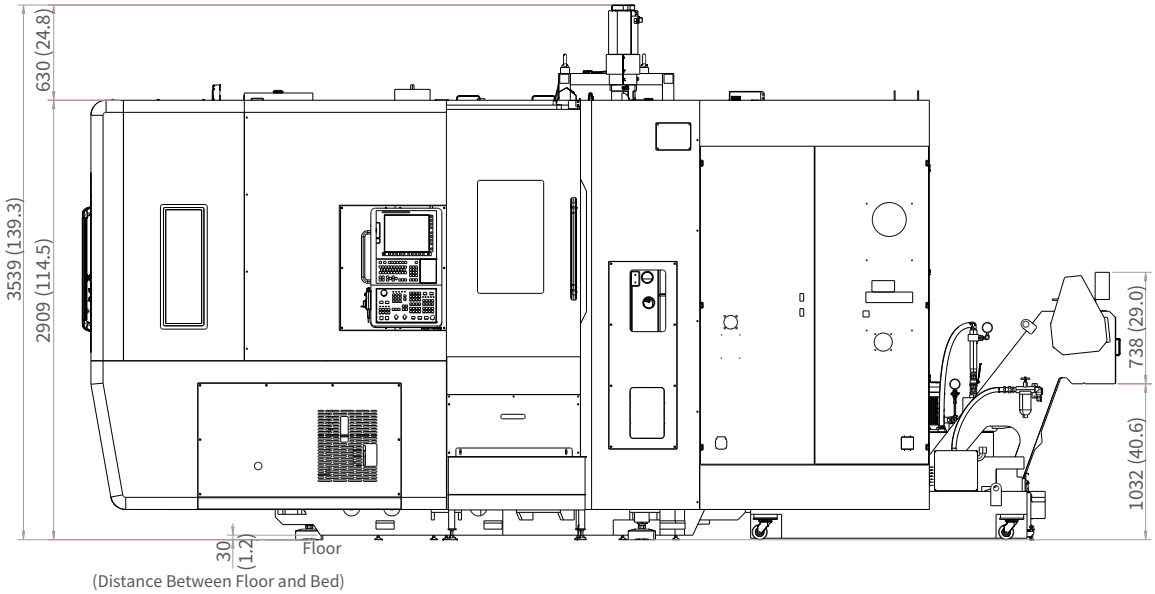
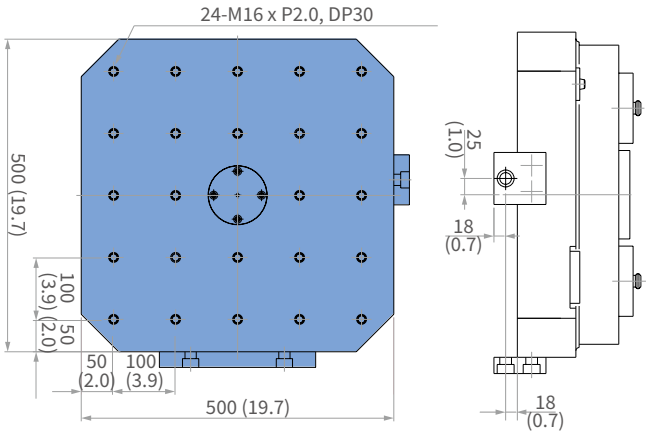


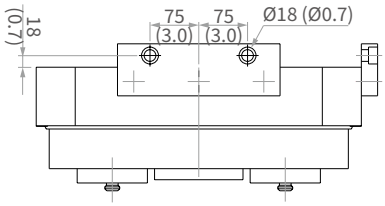
** Some peripheral equipment can be placed in other areas.*

TABLE DIMENSIONS

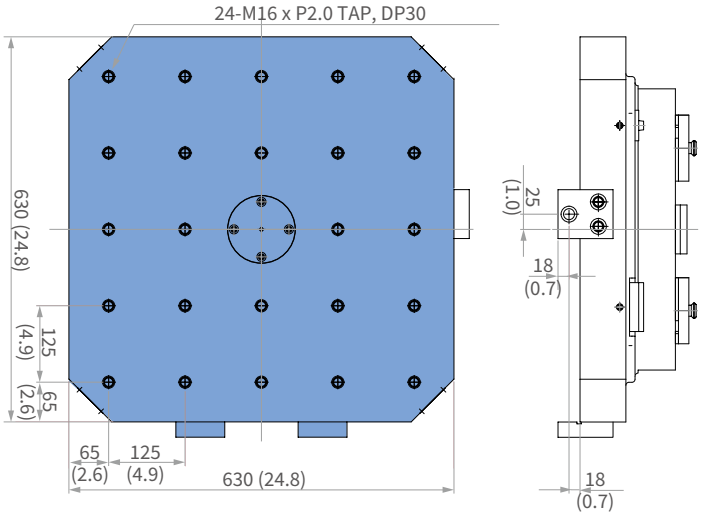
Units : mm (inch)

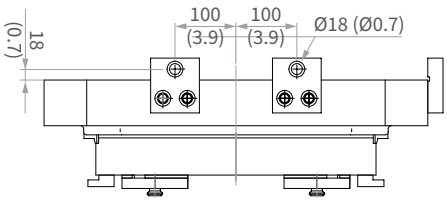
NHP 5500





NHP 6300



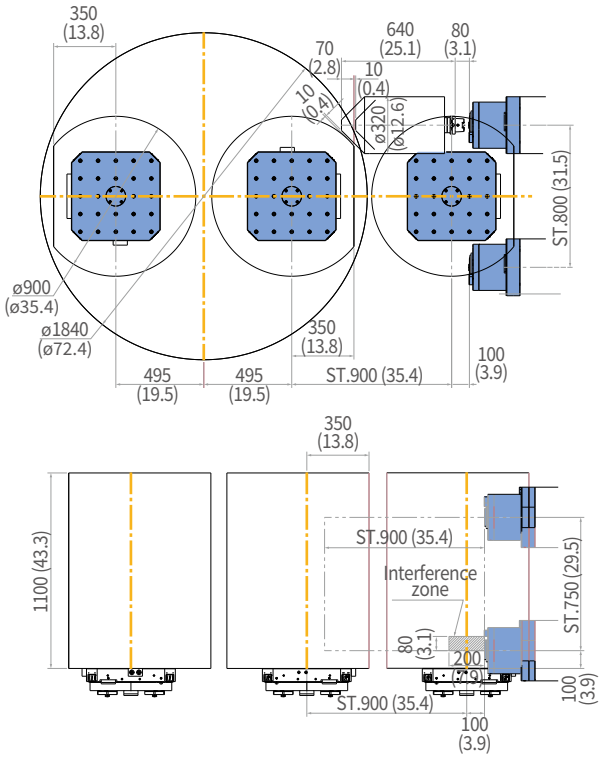


WORKING AREA

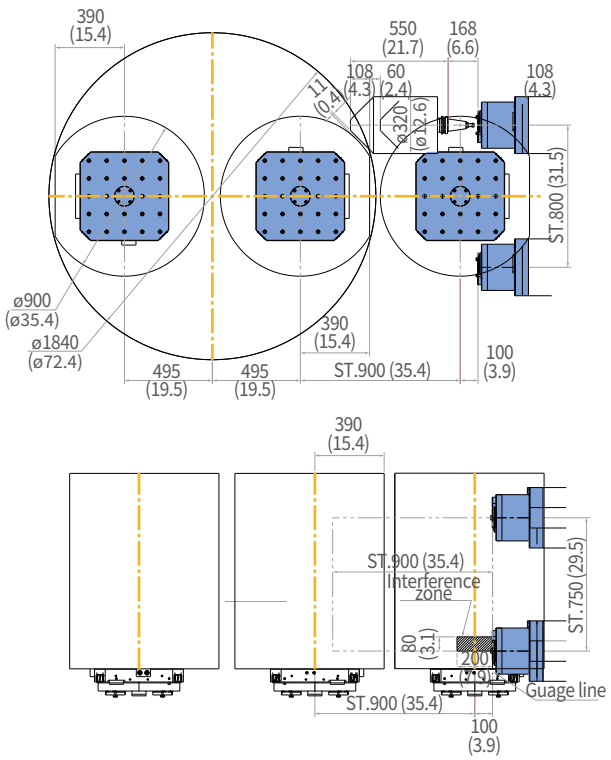
Units : mm (inch)

NHP 5500

HSK100A

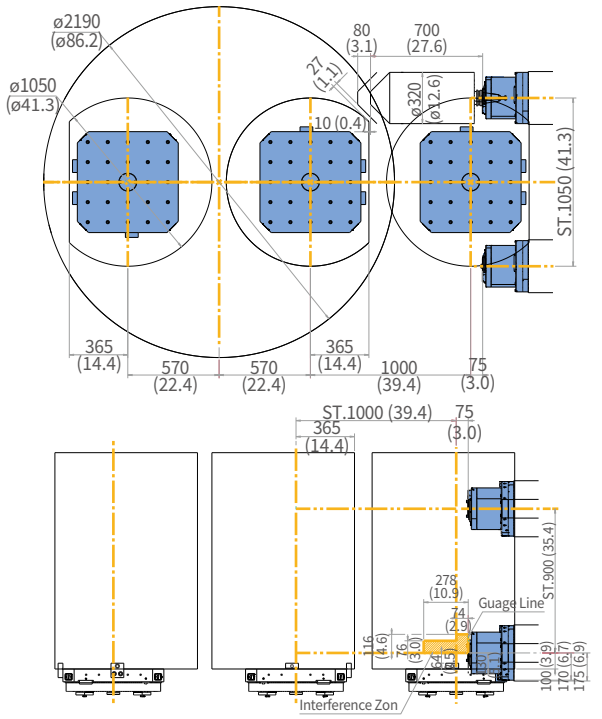


BT/CT/DIN



NHP 6300

HSK100A



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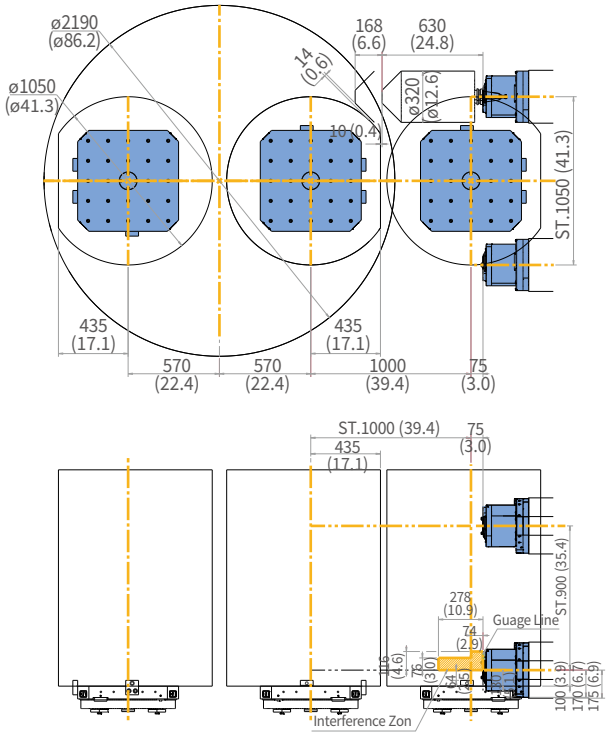


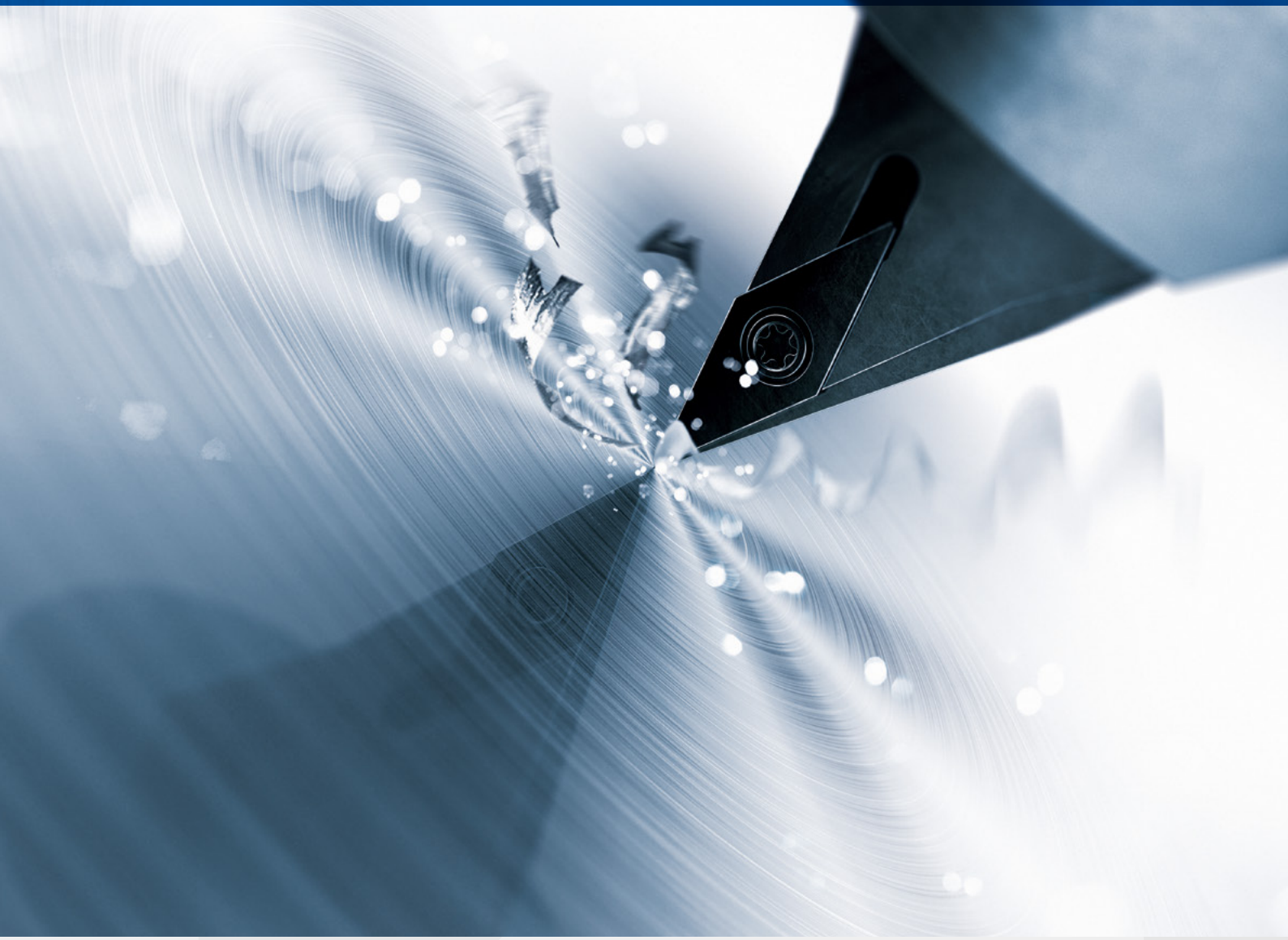
MACHINE SPECIFICATIONS

Description			Unit	NHP 5500 2nd Gen.	NHP 6300 2nd Gen.
Cutting capacity	Travel distance	X-axis	mm (inch)	800 (31.5)	1050 (41.3)
		Y-axis	mm (inch)	750 (29.5)	900 (35.4)
		Z-axis	mm (inch)	900 (35.4)	1000 (39.4)
	Distance from spindle nose to table center		mm (inch)	100~1000 (3.9~39.4)	100~1000 (3.9~39.4)
	Distance from spindle center to table top		mm (inch)	100~850 (3.9~33.5)	75 ~ 1075 (3.0 ~ 42.3)
Feed rate	Rapid feed rate	X-axis	m/min (ipm)	60 (2362.2)	60 (2362.2)
		Y-axis	m/min (ipm)	60 (2362.2)	60 (2362.2)
		Z-axis	m/min (ipm)	60 (2362.2)	60 (2362.2)
	Cutting feed rate		mm/min (ipm)	30000 (1181.1)	30000 (1181.1)
Pallet	Pallet type			24-M16xP2.0	24-M16xP2.0
	Pallet indexing angle		deg	1 {0.001(DD, RGC)}	1 {0.001(DD, RGC)}
	Max. loading capacity		kg (lb)	800 {1000} (1763.7 {2204.6})	1500 (3306.9)
	Work inertia *		N·m²	412	960
	Max. workpiece size		mm (inch)	Ø900 x 1100 (35.4 x 43.3)	Ø1050 x 1350h (Ø41.3 x 53.1h)
	Pallet size		mm (inch)	500 x 500 (19.7 x 19.7)	630 x 630 (24.8 x 24.8)
Spindle	Max spindle speed		r/min	10000 {10000, 8000, 15000}	12000 {8000, 15000}
	Taper			ISO #50, 7/24 TAPER	ISO #50, 7/24 TAPER
	Max. torque		N·m (ft-lbs)	516 (380.6) {644, 1009, 398 (475.3, 744.6, 293.7)}	600 (442.8) {1202, 398 (887.1, 293.7)}
Auto pallet changer (APC)	No. of pallets		ea	2	2
	Pallet change time		s	12	16
	APC indexing angle (rotation)		deg	90	90
Automatic tool changer (ATC)	Type of tool shank			BT50 {CAT50,DIN50,HSK-A100}	BT50 {CAT50,DIN50,HSK-A100}
	Tool storage capacity	Pot type	ea	40 {60}	40 {60}
			ea	{91, 121, 151}	{91, 121, 151}
		Matrix type	ea	{196, 256, 316}	{196, 256, 316}
	Max. tool diameter	With adjacent tool	mm (inch)	125 (4.9) (40/60T), 130 (5.1) (More than 91T)	125 (4.9) (40/60T), 130 (5.1) (More than 91T)
		W/O adjacent tool	mm (inch)	320 (12.6)	320 (12.6)
	Max. tool length		mm (inch)	550 (21.7) (BT/CAT/DIN) 620 (24.4) (HSK)	630 (24.8) (BT/CAT/DIN), 700 (27.6) (HSK)
	Max. tool weight		kg (lb)	25 (55.1) (40/60T), 30 (66.1) (More than 91T)	25 (55.1) (40/60T), 30 (66.1) (More than 91T)
	Max. tool moment		N·m (ft-lbs)	34.3 (25.3)	34.3
	Tool change time (tool to tool, tools)		s	1.7 (Less than 12kg)	1.7(Less than 12kg)
	Tool change time (chip-to-chip)		s	4.7 (Less than 12kg)	5.1(Less than 12kg)
Motor	Spindle motor power		kW (Hp)	37/26, 45/26, 55/30, 37/30 (49.6/34.9, 60.3/34.9, 73.8/40.2, 49.6/40.2)	45/25, 55/37, 37/30 (60.3/33.5, 73.8/49.6, 49.6/40.2)
Power source	Power consumption		kVA	66.99	79.58
	Compressed air pressure		Mpa	0.54	0.54
Tank capacity	Coolant tank capacity		L	1100	1100
	Lubricant tank capacity		L	1.4	1.4
Machine dimensions	Height		mm (inch)	3199 (125.9)	3540 (139.4)
	Length		mm (inch)	6389 (251.5) (Length with rear conveyor)	6850 (269.7)
	Width		mm (inch)	3375 (132.9)	3775 (148.6)
	Weight		kg (lb)	14000 (30864.3)	18000 (39682.6)

*{ } : Option * When the workpiece inertia exceeds the specified limit, the M-code for the heaviest workpiece setting in the Work Load Control function must be applied.*

WHY DN SOLUTIONS

The DN Solutions promise, MACHINE GREATNESS, has two important meanings. The first is simple: DN Solutions makes great machines. The second is a challenge to our end-users. With a product line that is this comprehensive, accurate and reliable, we equip our customers to machine greatness.
The big question: ***Why should you choose DN Solutions over other options?*** Here's why…



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DN Solutions provides systems-based professional support services, before and after the machine tool sale, by responding quickly and efficiently to customers. By supplying spare parts, product training, field service and technical support, we provide the expert care, attention and assistance our customers expect from a market leader.



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