

High-Precision, High-Efficiency Multi-Axis Turning Center

NZX 1500

NZX 2000

NZX 1500 / NZX 2000



NZX 1500 / NZX 2000

Precise Machining of High-performance Mass Production Parts

For fields requiring mass-production of high-performance parts such as automotive parts and hydraulic / pneumatic equipment, one of the top priority issues is how to reduce cycle times in mass production of complex parts.

The NZX 1500 and NZX 2000, turning center-based multi-axis turning centers, can be equipped with up to three turrets, each of which comes standard with the milling function. The NZX machines achieve high-efficiency machining of complex parts by utilizing the Y-axis function that can be mounted on all three turrets.





2



4



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Automotives

- 1 Camshaft
- 2 Brake drum

Construction machinery

- 3 Spool

Industrial machinery

- 4 Sleeve

Agricultural machinery

- 5 Flange

NZX 1500 / NZX 2000

The Ultimate in Bar Machining Productivity

The NZX 1500 / NZX 2000 were designed with the innovative concept of handling the entire machining of complex parts on one machine.

The machines incorporated a variety of features to deliver unmatched efficiency and productivity in bar machining: the BMT (Built-in Motor Turret) used in all three turrets provides powerful milling and the turtleneck structure employed in the Y-axis of Turret 2 ensures excellent chip disposal.

Additionally, having a newly designed machine cover and the touch screen user interface CELOS, the NZX 1500 / NZX 2000 cope flexibly with any conceivable situation during machine operation.



Milling

- + BMT enables milling at speeds of up to 12,000 min⁻¹ (standard: 6,000 min⁻¹)
- + Up to 16 tools can be mounted on each turret

High rigidity

- + Thick and robust machine structure
- + ORC (Octagonal Ram Construction) maximizes the rigidity of the Turret 2 Y-axis
- + The turtleneck structure prevents chip accumulation on Turret 2

High precision

- + High-resolution direct scale feedback (option)

CELOS

- + Consistent administration, documentation and visualization of order, process and machine data
- + Extension of functions possible by adding applications, and high compatibility with existing information infrastructure and software

High speed

- + Rapid traverse rate <X- / Y- / Z-axis>:
30 / 20 / 50 m/min (98.4 / 65.6 / 164.1 fpm)

Power-saving

- + Function for energy-saving and visualization of the effect

NZX 1500 / NZX 2000

A Wide Range of Variations to Meet Market Needs

The NZX 1500 / NZX 2000 employ Spindle 2 as standard and provide a variety of specifications such as T type (with 3 turrets) and Y type (with Y-axis). Offering flexible specification options, the machines allow customers to select the ideal specifications according to their workpiece or production requirements, making themselves versatile for any production floor.



		NZX 1500	NZX 2000
Travel (X-axis)	mm (in.)	X1, X2, X3: 210 (8.3)	
		Y1, Y3: 110 (4.3) <+65, -45 (+2.6, -1.8)> Y2: 110 (4.3) <+45, -65 (+1.8, -2.6)> / 110 (4.3) <+65, -45 (+2.6, -1.8)>*1	
Travel (Z-axis)	mm (in.)	Z1, Z2: 810 (31.9)	
		Z1, Z3: 300 (11.8) <+100 (+3.9)*2>	Z2: 810 (31.9)
		Z1, Z2: 280 (11.0)	
B-axis travel (Spindle 2)	mm (in.)	900 (35.4)	870 (34.3)
Max. spindle speed	min ⁻¹	6,000	5,000
Floor space (Width×Depth)	mm (in.)	4,396×2,835 (173.1×111.6)	
		[4,897×2,835 (192.8×111.6)*3] [5,129×2,835 (201.9×111.6)*4]	

[] Option

*1 Center shutter specifications

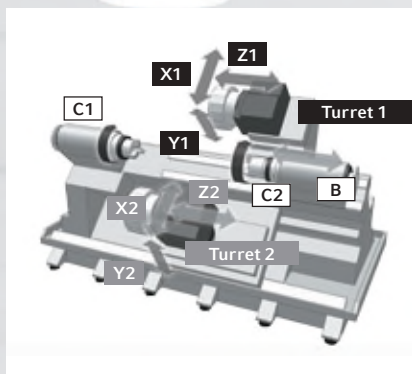
*2 When one turret is moving in the plus direction, another turret moves in the minus direction.

*3 Including chip conveyor (right disposal)

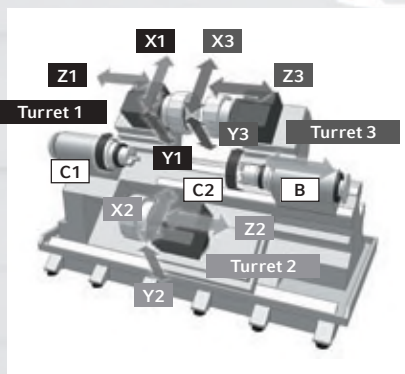
*4 Including chip conveyor (right disposal) <EN type>

EN: European Norm (European Standards)

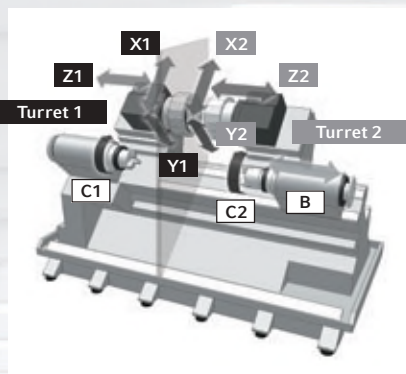
2-turret specifications



3-turret specifications



Center shutter specifications

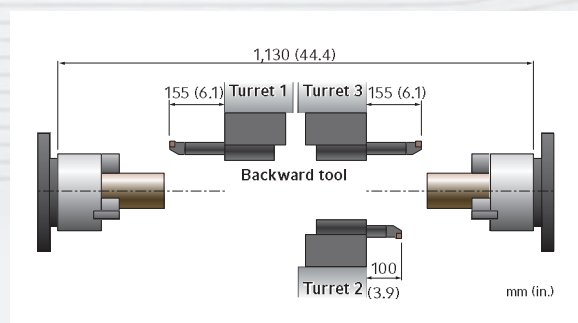


NZX 2000



Working area

- + Distance between spindle large noses:
1,130 mm (44.4 in.)
- + Backward tool max. tool length:
155 mm (6.1 in.) <Turret 1, Turret 3>



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Variations

2-turret specifications

	NZX 1500 800S NZX 2000 800S	NZX 1500 800SY NZX 2000 800SY	NZX 1500 800SY2 NZX 2000 800SY2
Turret 1	X1 / Z1	X1 / Z1 / Y1	X1 / Z1 / Y1
Turret 2	X2 / Z2	X2 / Z2	X2 / Z2 / Y2

3-turret specifications

	NZX 1500 800ST NZX 2000 800ST	NZX 1500 800STY2 NZX 2000 800STY2	NZX 1500 800STY3 NZX 2000 800STY3
Turret 1	X1 / Z1	X1 / Z1 / Y1	X1 / Z1 / Y1
Turret 2	X2 / Z2	X2 / Z2 / Y2	X2 / Z2 / Y2
Turret 3	X3 / Z3	X3 / Z3	X3 / Z3 / Y3

Center shutter specifications

	NZX 1500 800S DL NZX 2000 800S DL	NZX 1500 800SY2 DL NZX 2000 800SY2 DL
Turret 1	X1 / Z1	X1 / Z1 / Y1
Turret 2	X2 / Z2	X2 / Z2 / Y2

NZX 1500 / NZX 2000

Basic Design — The Pursuit of High Rigidity

DMG MORI pursues high rigidity from the basic design stage.

For the Y-axis feed structure of Turret 2, the ORC (Octagonal Ram Construction) is used to offer superior damping performance and greater rigidity. The octagonal structure enables the slideways, which are located diagonally opposite each other, to generate heat evenly and offset thermal displacement. The thick and robust structure guarantees high-precision, chatter-free machining as well as thermally stable high-speed feed.

1 Robust bed

Thick and robust structure ensures high-precision machining.

2 Orthogonal Y-axis

In the NZX 1500 / NZX 2000, all the Y axes are orthogonal. This allows high-efficiency machining because of its excellent straightness and high-speed feed.

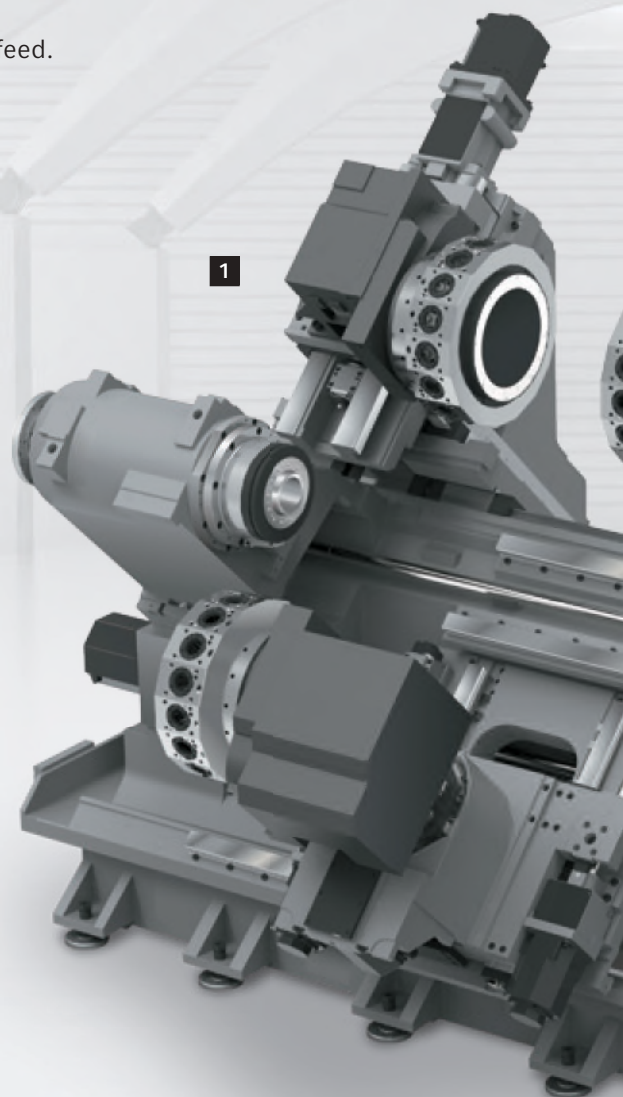
3 Turtleneck structure

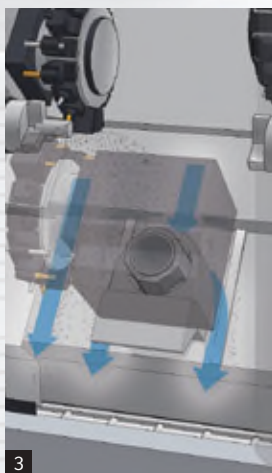
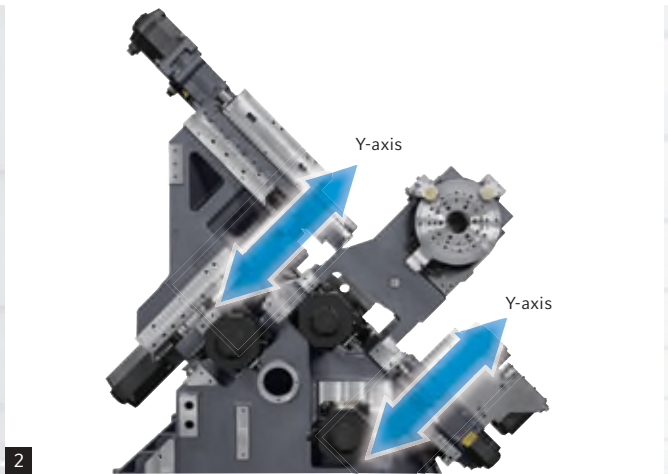
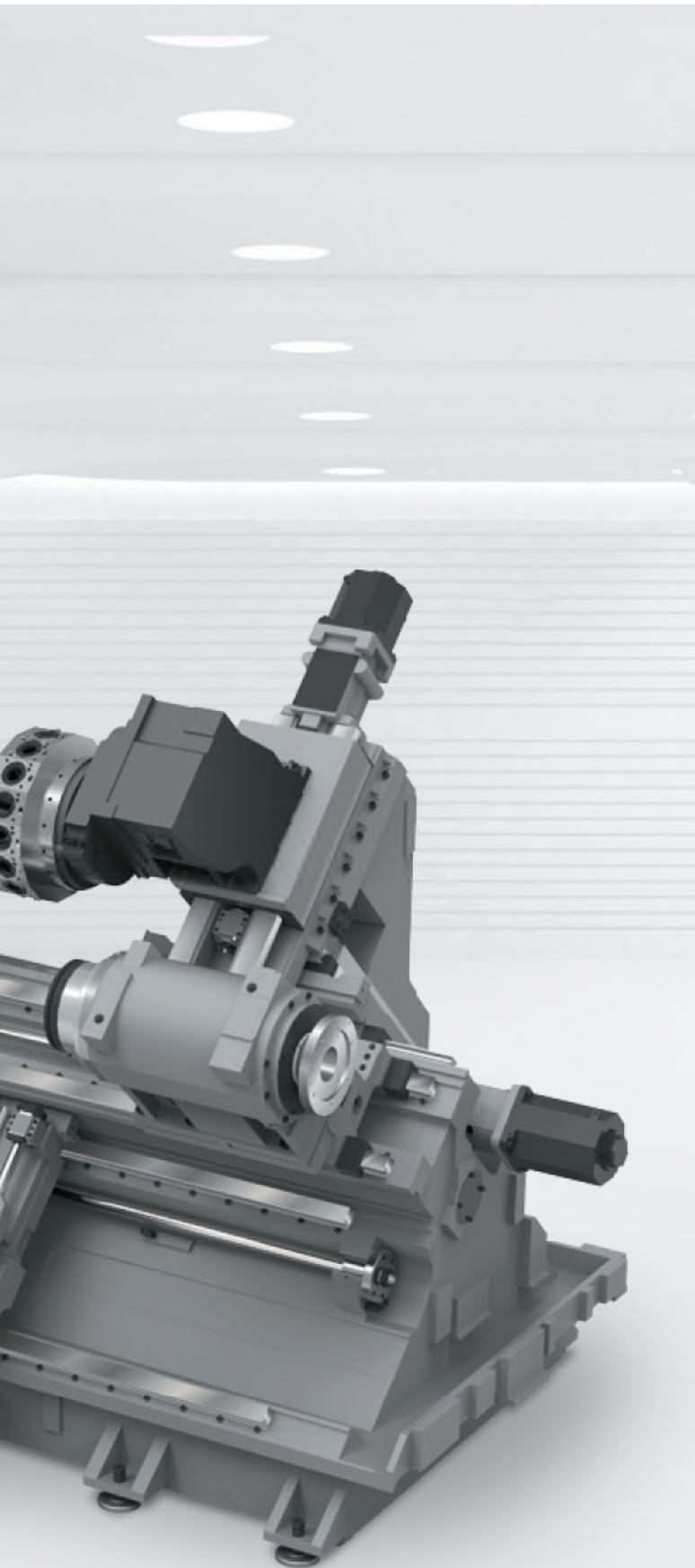
Thanks to the octagonal ram used for the Turret 2 Y-axis, the axis guide space is minimized, eliminating chip accumulation and improving chip disposal.

4 Finite Element Method

Highly rigid body achieved through FEM analysis

FEM: Finite Element Method





NZX 1500 / NZX 2000

Complete Thermal Displacement Control

Thermal displacement has a great impact on machining accuracy.

The major factors causing thermal displacement include heat generation during machining operation, ambient temperature changes and coolant temperature rises.

DMG MORI thoroughly examines each of these factors from every angle, and takes original and comprehensive measures to control thermal displacement.

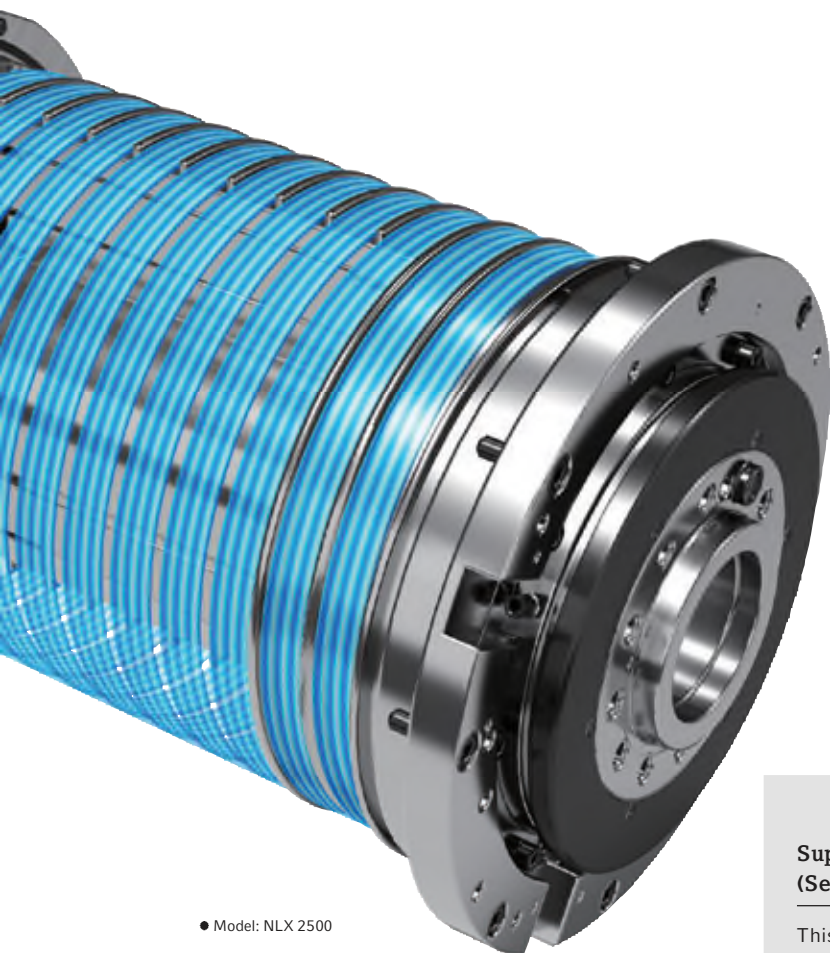
For the spindle, the largest heat source, an oil jacket is coiled all over the spindle to suppress temperature rise in the spindle.



Direct scale feedback (Option)



- + Superior precision with the Magnescale absolute linear measuring system featuring a standard resolution of 0.01 μm
- + High-resolution, magnetic measuring system
- + Resistance to oil and condensation due to a magnetic detection principle
- + Impact resistance of 450 m/s^2 (17,716.5 in./s^2)
- + Vibration resistance of 250 m/s^2 (9,842.5 in./s^2)
- + Thermal expansion coefficient as cast iron



● Model: NLX 2500

Spindle cooling



Oil chiller

Temperature-controlled cooling oil is forcibly circulated into the spindle.

A structure that maintains a uniform temperature around the spindle, the largest source of heat, has been adopted. In addition, the oil jacket coiled around the spindle fully to the rear suppresses spindle temperature rise.

Super-high pressure coolant system (Separate type) <Option>

This is effective for chip disposal, cooling the machining point and extending tool life.



Discharge pressure	MPa (psi)	7.0 (1,015)
		48.6 (12.8)
Discharge volume	50 Hz	48.6 (12.8)
	60 Hz	48.6 (12.8)

Super-high pressure coolant system



Coolant chiller (Separate type) <Option>



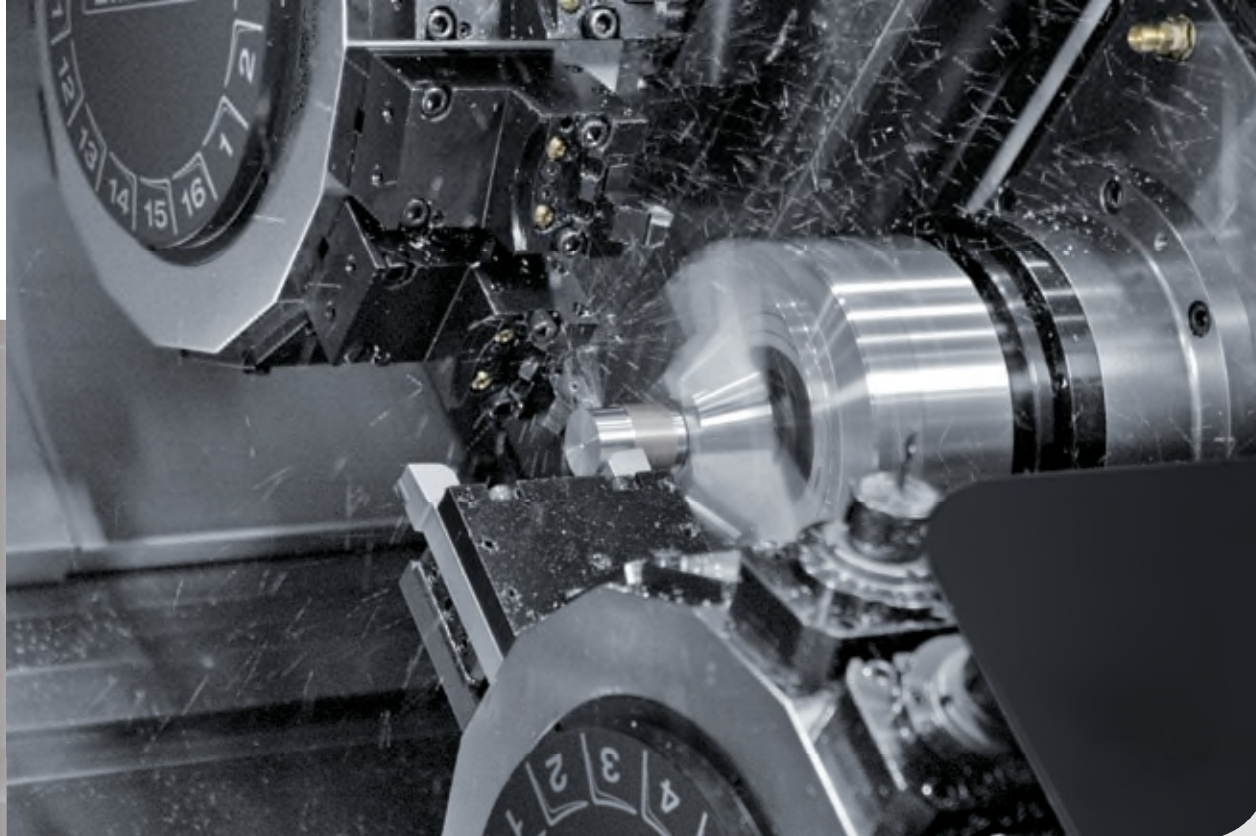
Raised coolant temperature causes thermal displacement in the fixtures and workpiece, affecting the machining accuracy of the workpiece. Use this unit to prevent the coolant from heating up. When using oil-based coolant, the coolant temperature can become extremely high even with the standard coolant pump, so please be sure to select this unit. **When using oil-based coolant or a super-high-pressure coolant system, please be sure to consult our sales representative.**

● We cannot guarantee that this unit will completely control the coolant temperature. It is designed to help prevent oil temperature increases.

NZX 1500 / NZX 2000

High-performance Spindle to Respond to Customer Demand

Both Spindle 1 and Spindle 2 feature through-spindle holes of $\phi 61$ ($\phi 2.4$) mm on the NZX 1500 and $\phi 73$ ($\phi 2.8$) mm on the NZX 2000, and $\phi 91$ ($\phi 3.5$)-mm is optionally available for Spindle 1 of the NZX 2000. Moreover, the high-torque specification is offered as an option for both models and spindles to maximize the machines' performance in bar machining*. Automatic complete machining of complex workpieces is also possible when the machines are used in combination with a loader, bar feeder or workpiece ejector.



Spindle

		NZX 1500		NZX 2000	
Chuck size	in.	6 (Spindle 1)	6 (Spindle 2)	8 (Spindle 1)	8 (Spindle 2)
Bar work capacity*	mm (in.)	φ 52 (φ 2.0)		φ 65 (φ 2.5)	
Max. spindle speed	min ⁻¹	6,000		5,000	
Spindle drive motor	kW (HP)	22 / 18.5 (30 / 24.7) <30 min. / cont> [25 / 22 (33.3 / 30) <30 min. / cont>]		25 / 22 (33.3 / 30) <30 min./cont>	
Spindle acceleration time	sec. (min ⁻¹)	3.58 (0→6,000)	3.65 (0→6,000)	3.26 (0→5,000)	3.18 (0→5,000)
Spindle deceleration time	sec. (min ⁻¹)	3.10 (6,000→0)	3.10 (6,000→0)	2.67 (5,000→0)	2.65 (5,000→0)

● Measurements are with a chuck fitted. [] Option

* Depending on the chuck / cylinder used and its restrictions, it may not be possible to reach full bar work capacity.

Bar work capacity φ 80 mm (φ 3.1 in) Specifications <Option> <Spindle 1 only>

		NZX 2000
Chuck size	in.	10 (Spindle 1)
Bar work capacity	mm (in.)	φ 80 (φ 3.1)
Max. spindle speed	min ⁻¹	4,000
Spindle drive motor	kW (HP)	26 / 22 (34.7 / 30) <30 min. / cont>

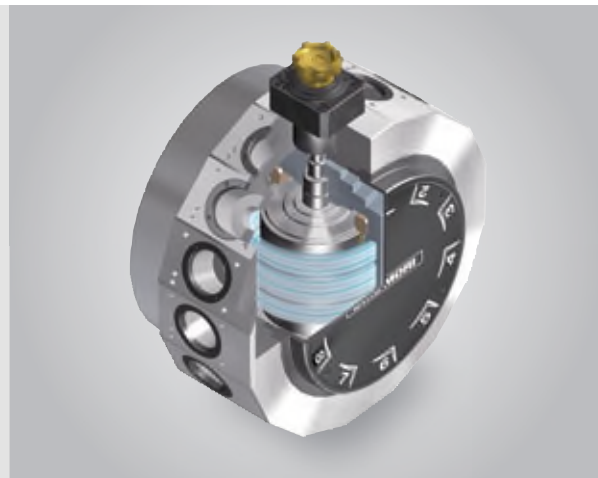
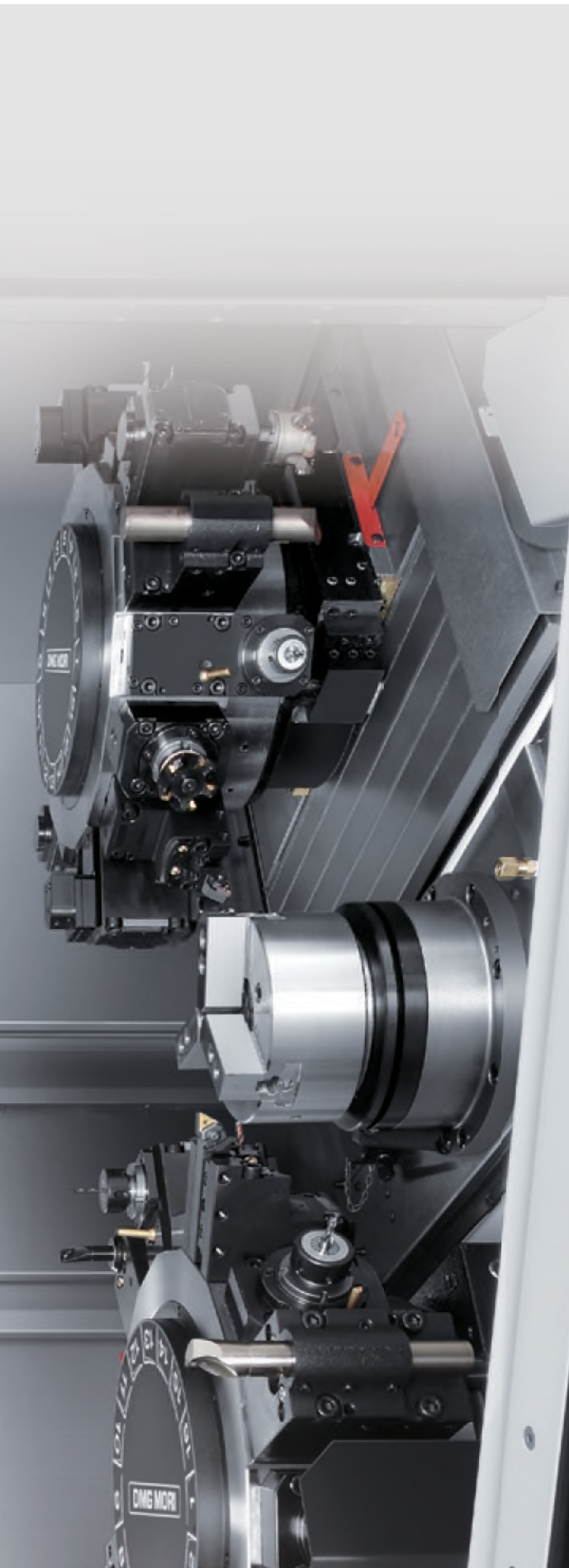
● For T specifications (3-turret specifications): It is necessary to consider restrictions to make the tool tip go over the spindle center during I.D. boring with Turret 1 (upper left) on the Spindle 1 side.
For boring with Turret 2 (lower), there is no restriction to be considered.

NZX 1500 / NZX 2000

Highly Productive Machining with Up To 3 Turrets and Y-axis

The NZX 1500 / NZX 2000 can be equipped with up to three turrets, and each turret can hold up to 16 tools, resulting in a maximum of 48 tools on three turrets.

All of the turrets come equipped with a built-in motor with a maximum output of 7.5 kW (10 HP), which is 1.7 times greater than previous models, and offer a rotary tool spindle speed of up to 12,000 min⁻¹ (option), which is fourfold faster than previous models. By utilizing three turrets and the Y-axis function, the machines can reduce machining time by up to 70% compared with a general, single-turret turning center.

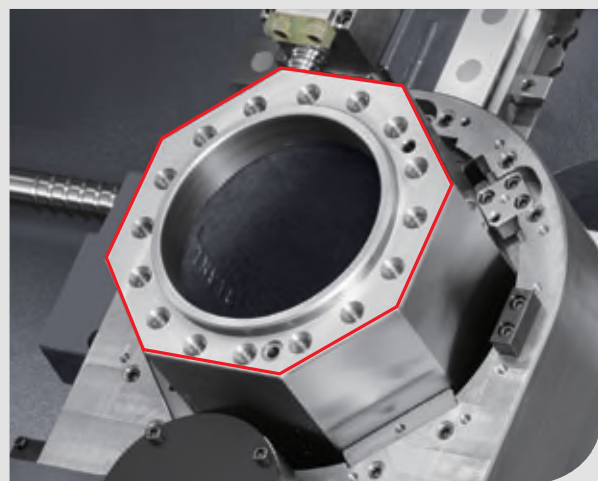


Built-in Motor Turret

The built-in structure, in which the motor is placed inside the turret, minimizes heat generation and vibration, improves transmission efficiency and significantly increases cutting power, speed and accuracy.



- + Improved milling power
- + Improved milling accuracy
- + Controls the turret's heat and vibration
- + Reduced energy loss
- + Turret temperature increases: Compared with conventional machine 1/10 or less
- + Vibration amplitude: Compared with conventional machine 1/3 or less

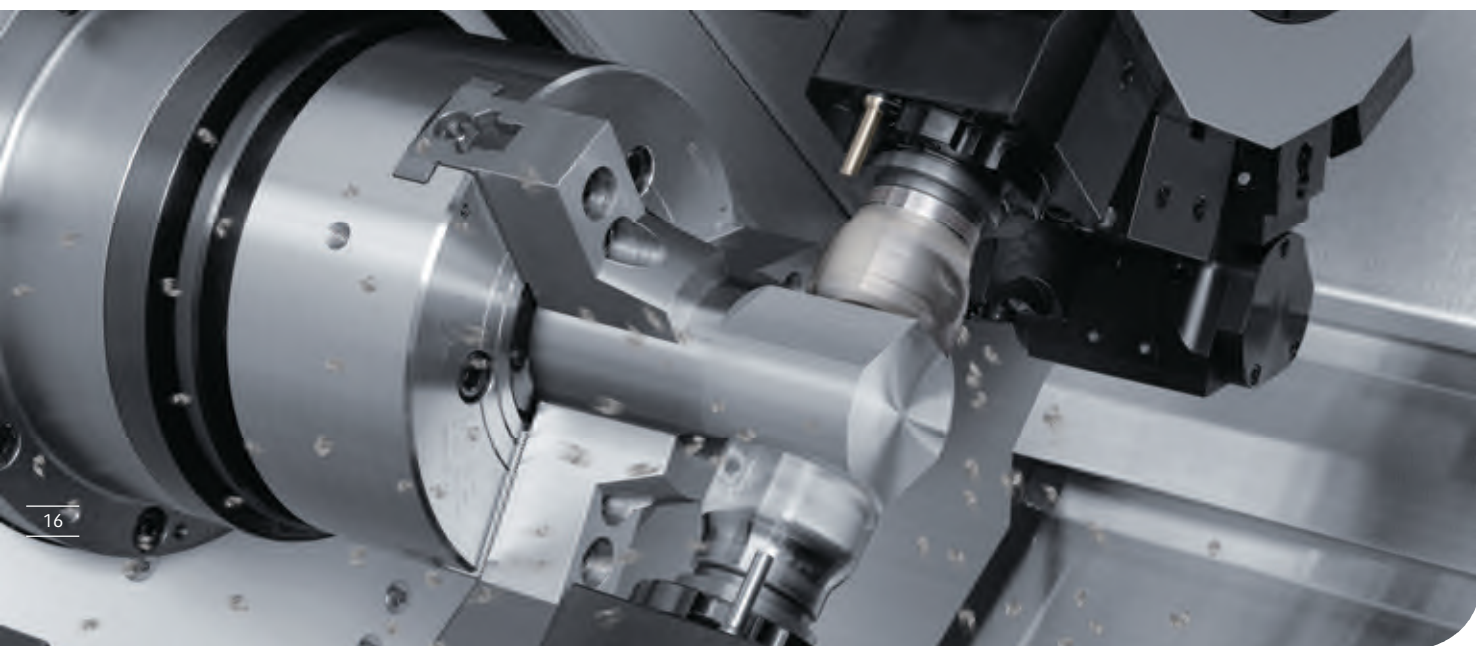
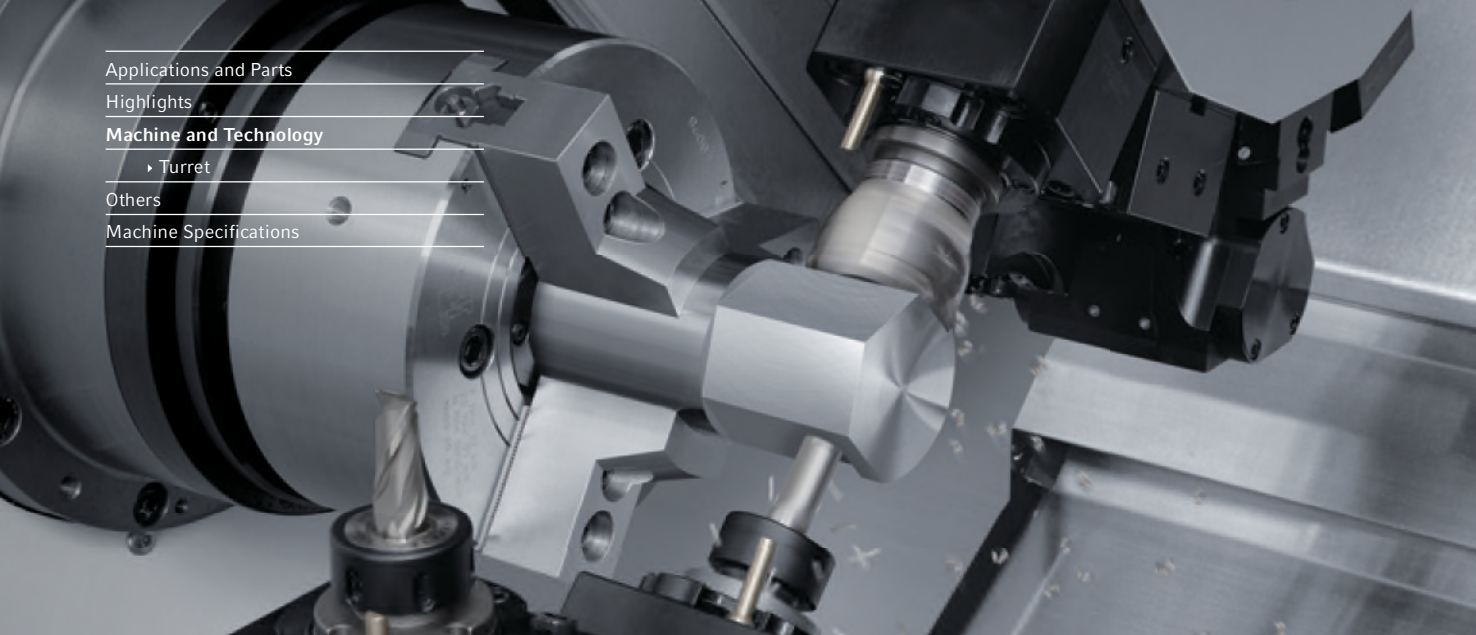


Octagonal Ram Construction

The 4 guideways are located diagonally from each other, so they distort symmetrically in response to the heat generated by high-speed travel. This means that the center stays in the same position, offering high-rigidity, high-precision feed.



- + Superior damping characteristics
- + Controls thermal displacement
- + Achieves high-rigidity, high-precision feed



3 Turrets

The NZX 1500 / NZX 2000, which can be equipped with up to 3 turrets, can do a wide variety of machining on one machine. Since no setup change is required, the series has various advantages such as reducing work-in-process inventory and transfer costs, and eliminating accuracy deterioration between processes.

- + Max. number of tools (Turret 3×16 tools)
48 tools

Max. rotary tool spindle speed	min ⁻¹
Turret indexing time (1-station)	sec.
Rotary tool spindle output	kW (HP)
Rotary tool spindle acceleration time	sec. (min ⁻¹)
Rotary tool spindle deceleration time	sec. (min ⁻¹)

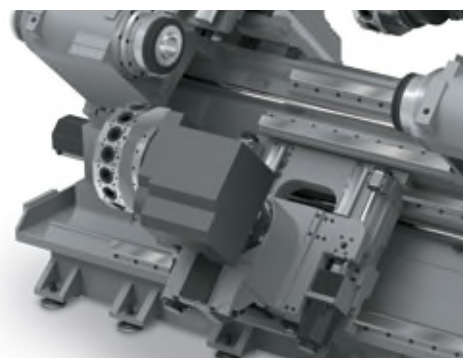
[] Option

NZX 1500 / NZX 2000	
Max. rotary tool spindle speed	6,000 [12,000]
Turret indexing time (1-station)	0.18
Rotary tool spindle output	7.5 / 5.5 (10 / 7.5) <30 min./cont>
Rotary tool spindle acceleration time	0.09 (0→6,000)
Rotary tool spindle deceleration time	0.09 (6,000→0)

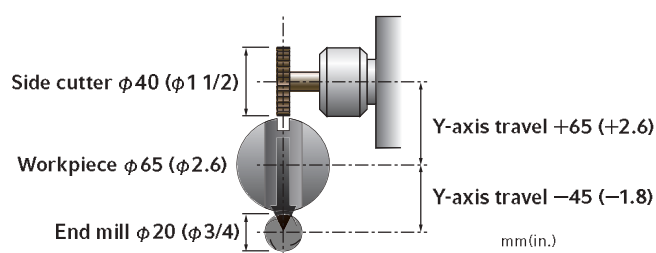
Turret 2 X-axis

Twin drive: Twin drive is used for Turret 2's X-axis drive to achieve high speed and low vibration. Also, since the twin drive offers stable operation even with a wide saddle, the Y-axis which uses ORC can be located at the center.

Ball screw core cooling: Through holes have been made in the core section of the ball screws, and a ball screw core cooling system using cooling oil to suppress thermal change has been adopted. While suppressing heat generation in the ball screws, this also circulates cooling oil around the entire support bearing, reducing generation of heat during high-speed rotation. In addition, cooling oil is circulated in the motor base, preventing heat from the motor being transmitted to the cast iron of the main body.



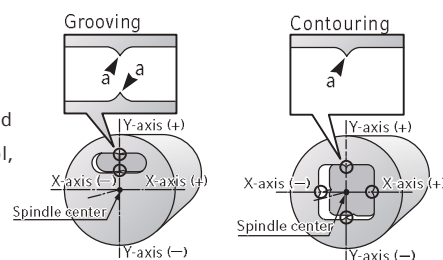
Y-axis control



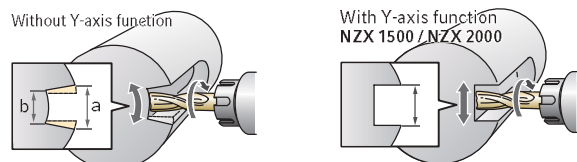
- + A $\phi 20$ mm ($\phi 3/4$ in.) end mill can cut right through the workpiece, without turning it over
- + Key way slotting is possible with a $\phi 40$ mm ($\phi 1\ 1/2$ in.) side cutter

Comparison between polar coordinate interpolation and Y-axis control

On traditional turning centers with the milling function, grooving and contouring are performed in the polar coordinate interpolation mode. With polar coordinate interpolation, the X-axis movement reverses at the intersections (a) between the workpiece center line and the profile, which changes cutting conditions and affects form accuracy. With Y-axis control, on the other hand, form accuracy is not affected by cutting condition changes, thus ensuring high form accuracy.



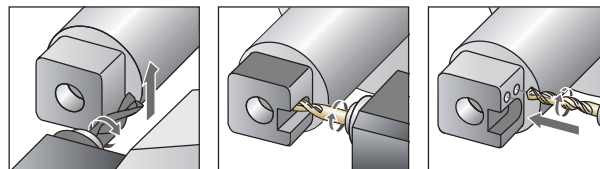
Circumferential grooving on a turning center with the Y-axis



Adjusting the key way width at the outside (a) and the inside (b) is difficult.

The key way width can be adjusted with the Y-axis function.

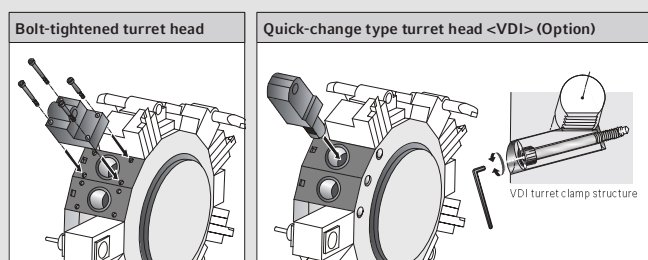
Bar machining with Y-axis control



• The photo shows the bolt-tightened turret head

Tool changing

A bolt clamp type turret that provides higher rigidity is adopted for turrets 1, 2 and 3. Quick change type turrets compatible with VDI tools are available as an option. (For tool holders, please use DMG MORI specified products.)



NZX 1500 / NZX 2000

Open Innovation to Maintain Ideal Machining Quality

We offer a variety of high-performance peripheral equipment according to customer needs and workpieces. The combination of the NZX Series machine and high-performance peripheral equipment delivers high-precision machining and excellent durability.

Chip conveyor (Option)

+ Provides highly efficient chip disposal

○: Suitable —: Not suitable

Workpiece material and chip size	Steel			Cast iron	Aluminum, non-ferrous metal		
	Long	Short	Powdery	Short	Long	Short	Powdery
Hinge type+Drum filter type	○	○	○	○	○	○	○
Hinge type	○	—	—	—	○	—	—
Scraper type	—	○	○	○	—	—	—
Scraper type+Drum filter type (Consultation is required)	—	○*1	○	○	—	○	○
Magnet scraper type (Consultation is required)	—	○	○	○	—	—	—
Magnet scraper type+Drum filter type (Consultation is required)	—	○*1	○	○	—	○*2	○*2

*1 Please use a steel filter

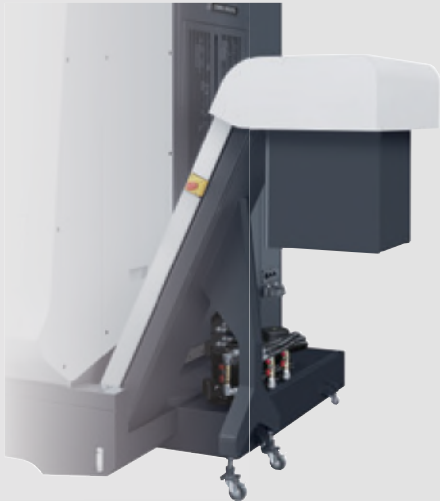
*2 Effective for ferrous alloys

Chip size guidelines

Short: chips shorter than 50 mm (2.0 in.), blocks of chips smaller than ϕ 40 mm (ϕ 1.6 in.)

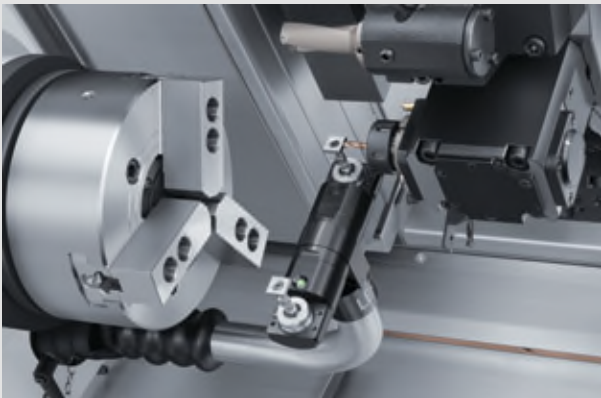
Long: bigger than the above.

- The options table shows the general options when using coolant. Changes may be necessary if you are not using coolant, or depending on the amount of coolant, compatibility with machines, or the specifications required.
- Please select a chip conveyor to suit the shape of your chips. When using special or difficult-to-cut material (chip hardness HRC45 or higher), please consult our sales representative.
- We have prepared several options for different chip shapes and material. For details, please consult our sales representative.



Manual in-machine tool presetter

It allows efficient tool measurements and facilitates setup operations.



Spindle 1 side

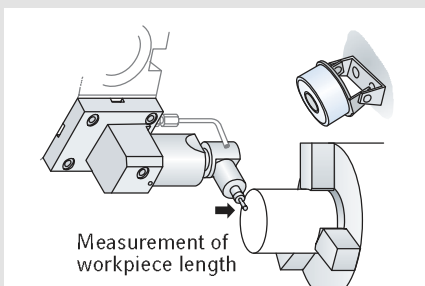
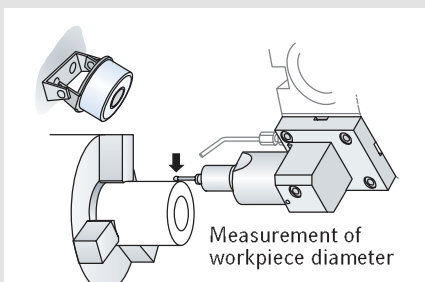


Spindle 2 side

Collet chuck (Option)



In-machine measuring system (Option)



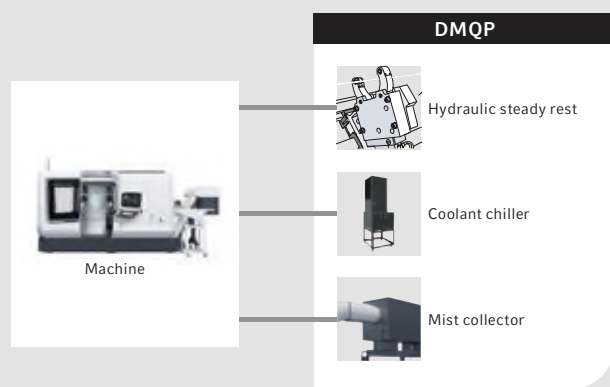
Mist collector (Option)



DMQP (Option)

The DMQP program is designed to certify peripherals that meet DMG MORI standards in quality, performance and maintainability. DMQP provides customers with greater peace of mind.

Comprehensive support with machine + peripherals



Service Center

- + Qualified peripherals are arranged by DMG MORI
- + Toll-free phone support is available 24 hours a day, 365 days a year (Japan only)

● For more details on DMQP items, please consult our sales representative.
DMQP:DMG MORI Qualified Products

NZX 1500 / NZX 2000

Cutting-edge Design Pursuing Usability

In order to achieve grater operating efficiency, DMG MORI incorporated various technologies and features throughout the machines focusing on operability and maintainability.

We have reduced MTTR (Mean Time To Repair) through an in-depth analysis of customer needs, which include a wide door opening for improved work efficiency and ease of maintenance.

Necessary improvements to make daily and periodic inspections easier were also made so that the machines can always run in the best condition.



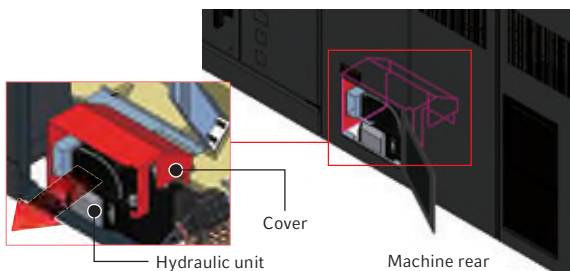
1 Swivel-type operation panel

The swivel, touch screen operation panel offers improved operability and outstanding accessibility to the spindle and workpiece.



2 Heat-shielding layout

Covering the hydraulic unit prevents heat from being transmitted to the machine.



3 Pneumatic Equipment

Pneumatic equipment requiring periodic maintenance is placed at the right side of the machine for better maintainability.



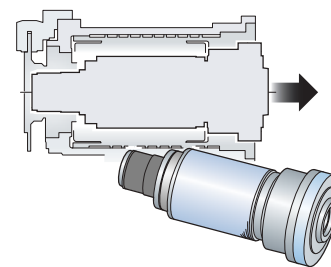
4 Manual Display

Manuals can be displayed on the CELOS screen, on which the operator can perform a keyword search or jump to a linked page in the same way as on a PC. This function is particularly useful when the operator needs to view manuals during maintenance or other work.



5 Replacement of spindle unit

By changing the spindle unit to a cartridge, we have dramatically reduced replacement time.



6 Lubricating oil tank (for slideways)

The supply port of the lubricating oil tank for slideways is located in the front of the machine to allow for easier refilling.



NZX 1500 / NZX 2000

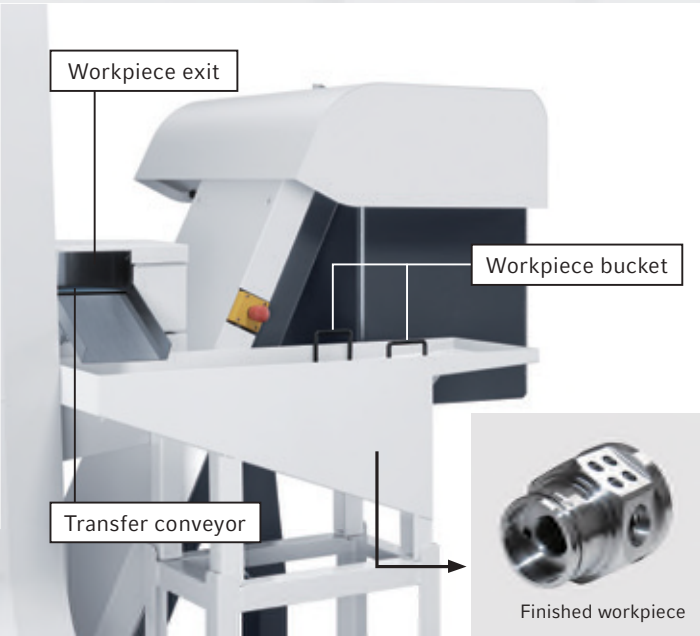
Solutions Best Matched to Customers’ Needs

DMG MORI proposes an array of solutions to address customers' ever-diversifying manufacturing challenges. Our automation solutions, including an in-machine travelling workpiece unloader which provides smooth handling of finished parts and a bar feeder which enables complete machining of bar stock, help customers build the most suitable mass-production system.

In-machine traveling type workpiece unloader (Option)

- + Device to promptly and securely unload a workpiece
- + The unloader can access both Spindle 1 and Spindle 2

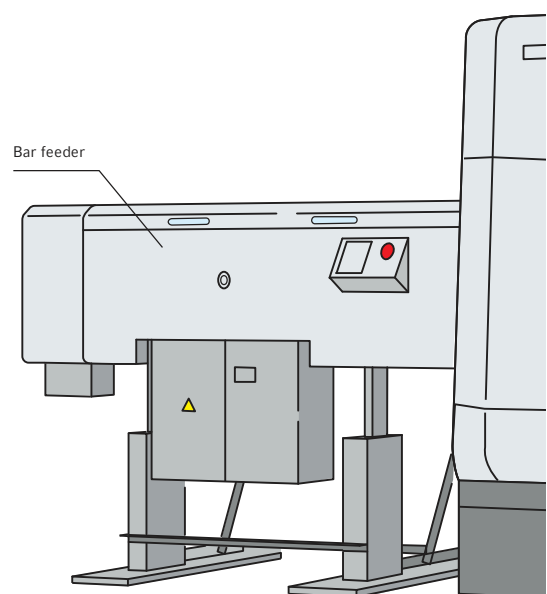
Specifications		Hand type	Bucket type
Turning diameter	mm (in.)	φ 10 (0.4)—φ 80 (3.1)	
Max. transfer length	mm (in.)	150 (5.9)	
Max. transfer weight	kg (lb.)	5.0 (11.0)	





Bar feeder system (Option)

Complete bar machining is possible on a single machine when coupled with a workpiece unloader. You won't need a work loader / unloader or turnover unit.



● Diagram: NZX 2000 | 800

Recommended accessories for bar feeder specification

- | | | |
|-----------------|-----------------|----------------------|
| + Bar feeder | + Multi counter | + Signal light |
| + Guide bushing | + Work stopper | + Workpiece unloader |

NZX 1500 / NZX 2000

From the Idea to the Finished Product

DMG MORI's operation system CELOS enables consistent management, documentation and visualization of orders, processes and machine data. The CELOS is compatible with various applications, allowing for extension of functions. The operation system also ensures high affinity for the existing information infrastructure and software.

CELOS APPs facilitate quick and easy operation: four examples »»



STATUS MONITOR

Status monitoring of the machine and machining

CELOS |

APP menu:

Central access to all available applications



ERGoline Control with 21.5-inch multi-touch-screen and FANUC

25

STANDARD

Standard user interfaces for all new high technology machines from DMG MORI

CONSISTENT

Consistent administration, documentation and visualization of order, process and machine data

COMPATIBLE

Compatible with PPS and ERP systems
Can be networked with CAD / CAM products
Open to trendsetting CELOS APP extensions

PPS: Production Planning and Scheduling System
ERP: Enterprise Resource Planning

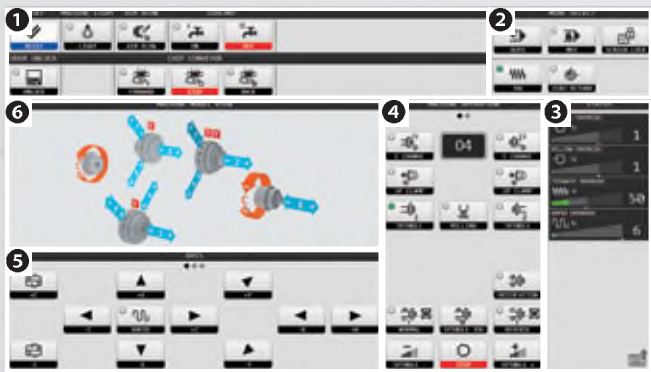
NZX 1500 / NZX 2000

Operation System MAPPS IV

MAPPS IV is a smart operation system mounted on CELOS.

It enables operators to easily control machine operation with touch operation.





Lower Touch Panel Screen Layout

- ① Individual function operation area : Displays function buttons at all times regardless of the operation mode.
- ② Operation mode selection area : Displays mode selection buttons at all times.
- ③ Status display area : Displays the override status.
- ④ Machine operation area : Displays buttons related to spindle / turret operation and optional functions over multiple pages.
- ⑤ Mode-by-mode operation area : Displays buttons related to axis feed, zero return or automatic operation over multiple pages. The available buttons will change depending on the mode selected.
- ⑥ In-machine display area : Displays the image showing the controlled axes and their travel directions.

Conversational automatic programming function

This function allows users to create programs simply by following the guidance on the screen. Much of the programming process has been simplified due to the minimal key entry required for even the most complex shapes.

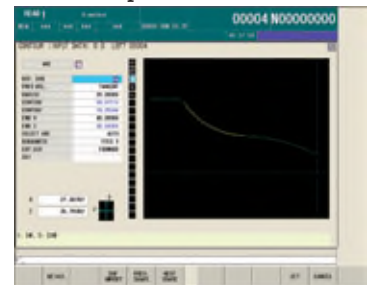
Machining menu



List display function



Contour input



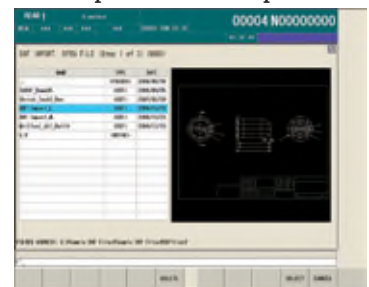
Simple soft jaw forming function



Relief machining (Option)

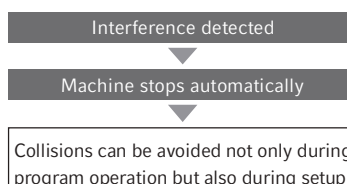


DXF import function (Option)



3D interference checking function

Interference between items such as the spindle, workpiece, soft jaw, tool, holder and turret can be checked in 3D. If interference is detected, the machine will stop operation regardless of whether it is in the automatic or manual mode, providing the highest level of protection against interference.



- The 3D interference checking function will check for interference accurately as long as the 3D model exactly matches the actual configuration of the spindles, workpieces, soft jaws, tools, holders and turrets.
- Customized design is required for special shape.
- A cutting simulation that shows how material is removed as machining proceeds cannot be carried out during a 3D interference check.

NZX 1500 / NZX 2000

Reduction in Environmental Burden

To conserve limited resources and protect global environment. The NZX 1500 / NZX 2000 pursues a high “environmental performance” that is required of machine tools.

Power-saving Functions

- + Inverter-controlled coolant supply
- + If the screen is not touched for a certain amount of time, the upper screen and the built-in worklight (LED) are turned off
- + If the screen is not touched for a certain amount of time and NC operation is not being performed, power is cut off to the servo motor, the spindle, the coolant pump and the chip conveyor, thereby saving energy
- + The latest, energy-efficient components with low power consumption and LED lighting are employed

Energy-saving Setting and Visualization of Energy-saving Effect

- + The energy-saving application enables visualization of the energy-saving effect
- + The running time, power consumption, and CO₂ emission statuses are displayed individually



Running time

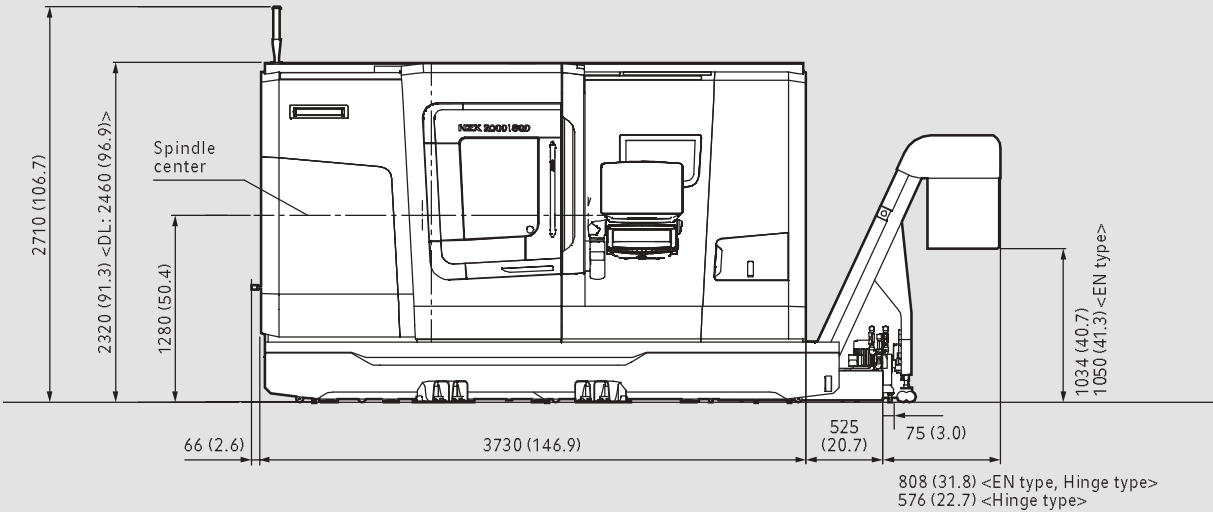
Reduced Cycle Times

- + The next M-code command can be specified before the previous command is completed. This enables multiple operations to be overlapped, resulting in shorter cycle times
- + The number of pecking movements in a deep hole drilling cycle is automatically controlled to reduce machining time

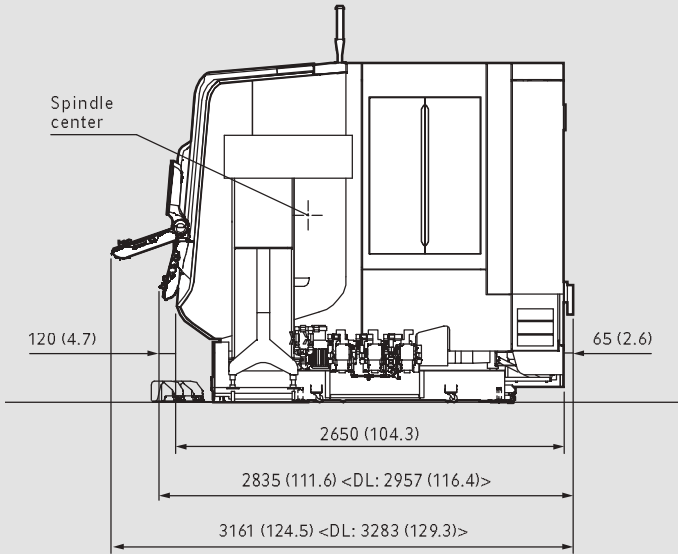
General View

mm (in.)

Front view



Side view



Q56324A01

Main Machine specifications (NZX 1500)

		NZX 1500 800				
		S	SY	SY2	S DL	SY2 DL
Capacity						
Swing over bed	mm (in.)	800 (31.5)				
Max. turning diameter	mm (in.)	320 (12.5) <Interference with the cover>				
Max. workpiece delivery diameter	mm (in.)	300 (11.8)				
Bar work capacity	mm (in.)	52 (2.0)				
Travel						
X-axis travel	mm (in.)			X1, X2: 210 (8.3)		
Y-axis travel	mm (in.)	—	Y1: 110 (4.3) <+65 (2.6), —45 (1.8)>	Y1: 110 (4.3) <+65 (2.6), —45 (1.8)> Y2: 110 (4.3) <+45 (1.8), —65 (2.6)>	—	Y1, Y2: 110 (4.3) <+65 (2.6), —45 (1.8)>
Z-axis travel	mm (in.)		Z1, Z2: 810 (31.9)		Z1, Z2: 280 (11.0)	
Spindle 1						
Max. spindle speed	min ⁻¹	6,000				
Spindle nose		JIS A ₂ -5				
Through-spindle hole diameter	mm (in.)	61 (2.4)				
Spindle 2						
Max. spindle speed	min ⁻¹	6,000				
Spindle nose		JIS A ₂ -5				
Through-spindle hole diameter	mm (in.)	61 (2.4)				
Turret						
Turret type		16-station×2				
Shank height for square tool	mm (in.)	20 (0.8)				
Max. rotary tool spindle speed	min ⁻¹	6,000 [12,000]				
Feedrate						
Rapid traverse rate	mm/min (ipm)	X1, X2: 30,000 (1,181.1) Z1, Z2: 50,000 (1,968.5)	X1, X2: 30,000 (1,181.1) Y1: 20,000 (787.4) Z1, Z2: 50,000 (1,968.5)	X1, X2: 30,000 (1,181.1) Y1, Y2: 20,000 (787.4) Z1, Z2: 50,000 (1,968.5)	X1, X2: 30,000 (1,181.1) Z1, Z2: 50,000 (1,968.5)	X1, X2: 30,000 (1,181.1) Y1, Y2: 20,000 (787.4) Z1, Z2: 50,000 (1,968.5)
Motors						
Spindle 1 drive motor (30 min. / cont)	kW (HP)	22 / 18.5 (30 / 24.7) [25 / 22 (33.3 / 30) <High output>]				
Spindle 2 drive motor (30 min. / cont)	kW (HP)	22 / 18.5 (30 / 24.7) [25 / 22 (33.3 / 30) <High output>]				
Rotary tool spindle drive motor (30 min. / cont)	kW (HP)	7.5 / 5.5 (10 / 7.5)				
Machine size						
Machine height <From floor>	mm (in.)	2,320 (91.3)			2,460 (96.9)	
Floor space <Width×Depth>	mm (in.)	4,396×2,835 (173.1×111.6) [4,897×2,835 (192.8×111.6)* ¹] [5,129×2,835 (201.9×111.6)* ²]			4,396×2,957 (173.1×116.4) [4,897×2,957 (192.8×116.4)* ¹] [5,129×2,957 (201.9×116.4)* ²]	
Mass of machine	kg (lb.)	8,000 (17,600)	8,100 (17,820)	8,300 (18,260)	8,000 (17,600)	8,300 (18,260)
Control unit						
FANUC		F31iB				

●JIS: Japanese Industrial Standard

		NZX 1500 800		
		ST	STY2	STY3
Capacity				
Swing over bed	mm (in.)	800 (31.5)		
Max. turning diameter	mm (in.)	320 (12.5) <Interference with the cover>		
Max. workpiece delivery diameter	mm (in.)	300 (11.8)		
Bar work capacity	mm (in.)	52 (2.0)		
Travel				
X-axis travel	mm (in.)	X1, X2, X3: 210 (8.3)		
Y-axis travel	mm (in.)	—	Y1: 110 (4.3) <+65 (2.6), −45 (1.8)> Y2: 110 (4.3) <+45 (1.8), −65 (2.6)>	Y1, Y3: 110 (4.3) <+65 (2.6), −45 (1.8)> Y2: 110 (4.3) <+45 (1.8), −65 (2.6)>
Z-axis travel	mm (in.)	Z1, Z3: 300 (11.8) <+100 (3.9)*1>, Z2: 810 (31.9)		
Spindle 1				
Max. spindle speed	min ⁻¹	6,000		
Spindle nose		JIS A ₂ -5		
Through-spindle hole diameter	mm (in.)	61 (2.4)		
Spindle 2				
Max. spindle speed	min ⁻¹	6,000		
Spindle nose		JIS A ₂ -5		
Through-spindle hole diameter	mm (in.)	61 (2.4)		
Turret				
Turret type		16-station×3		
Shank height for square tool	mm (in.)	20 (0.8)		
Max. rotary tool spindle speed	min ⁻¹	6,000 [12,000]		
Feedrate				
Rapid traverse rate	mm/min (ipm)	X1, X2, X3: 30,000 (1,181.1) Z1, Z2, Z3: 50,000 (1,968.5)	X1, X2, X3: 30,000 (1,181.1) Y1, Y2: 20,000 (787.4) Z1, Z2, Z3: 50,000 (1,968.5)	X1, X2, X3: 30,000 (1,181.1) Y1, Y2, Y3: 20,000 (787.4) Z1, Z2, Z3: 50,000 (1,968.5)
Motors				
Spindle 1 drive motor (30 min. / cont)	kW (HP)	22 / 18.5 (30 / 24.7) [25 / 22 (33.3 / 30) <High output>]		
Spindle 2 drive motor (30 min. / cont)	kW (HP)	22 / 18.5 (30 / 24.7) [25 / 22 (33.3 / 30) <High output>]		
Rotary tool spindle drive motor (30 min. / cont)	kW (HP)	7.5 / 5.5 (10 / 7.5)		
Machine size				
Machine height <From floor>	mm (in.)	2,320 (91.3)		
Floor space <Width×Depth>	mm (in.)	4,396×2,835 (173.1×111.6) [4,897×2,835 (192.8×111.6)*2] [5,129×2,835 (201.9×111.6)*3]		
Mass of machine	kg (lb.)	8,900 (19,580)	9,200 (20,240)	9,300 (20,460)
Control unit				
FANUC		F31iB		

[] Option

*1 When one turret is moving in the plus direction, another turret moves in the minus direction.

*2 Including chip conveyor (right disposal)

*3 Including chip conveyor (right disposal) <EN type>

● Bar work capacity: Depending on the chuck cylinder used and its restrictions, it may not be possible to reach full bar work capacity.

● Max. spindle speed: Depending on restrictions imposed by the workpiece clamping device, fixture and tool used, it may not be possible to rotate at the maximum spindle speed.

● Machine size: The actual values may differ from those specified in the catalogue, depending on the optional features and peripheral equipment.

● The information in this catalog is valid as of October 2016.

● JIS: Japanese Industrial Standard

NZX 1500 / NZX 2000

Main Machine specifications (NZX 2000)

		NZX 2000 800				
		S	SY	SY2	S DL	SY2 DL
Capacity						
Swing over bed	mm (in.)	800 (31.5)				
Max. turning diameter	mm (in.)	320 (12.5) <Interference with the cover>				
Max. workpiece delivery diameter	mm (in.)	300 (11.8)				
Bar work capacity	mm (in.)	65 (2.5) [80 (3.1)]*1				
Travel						
X-axis travel	mm (in.)			X1, X2: 210 (8.3)		
Y-axis travel	mm (in.)	—	Y1: 110 (4.3) <+65 (2.6), −45 (1.8)>	Y1: 110 (4.3) <+65 (2.6), −45 (1.8)> Y2: 110 (4.3) <+45 (1.8), −65 (2.6)>	—	Y1, Y2: 110 (4.3) <+65 (2.6), −45 (1.8)>
Z-axis travel	mm (in.)		Z1, Z2: 810 (31.9)		Z1, Z2: 280 (11.0)	
Spindle 1						
Max. spindle speed	min ^{−1}	5,000 [4,000]*1				
Spindle nose		JIS A ₂ -6				
Through-spindle hole diameter	mm (in.)	73 (2.8) [91 (3.5)]*1				
Spindle 2						
Max. spindle speed	min ^{−1}	5,000				
Spindle nose		JIS A ₂ -6				
Through-spindle hole diameter	mm (in.)	73 (2.8)				
Turret						
Turret type		16-station×2				
Shank height for square tool	mm (in.)	20 (0.8)				
Max. rotary tool spindle speed	min ^{−1}	6,000 [12,000]				
Feedrate						
Rapid traverse rate	mm/min (ipm)	X1, X2: 30,000 (1,181.1) Z1, Z2: 50,000 (1,968.5)	X1, X2: 30,000 (1,181.1) Y1: 20,000 (787.4) Z1, Z2: 50,000 (1,968.5)	X1, X2: 30,000 (1,181.1) Y1, Y2: 20,000 (787.4) Z1, Z2: 50,000 (1,968.5)	X1, X2: 30,000 (1,181.1) Z1, Z2: 50,000 (1,968.5)	X1, X2: 30,000 (1,181.1) Y1, Y2: 20,000 (787.4) Z1, Z2: 50,000 (1,968.5)
Motors						
Spindle 1 drive motor (30 min. / cont)	kW (HP)	25 / 22 (33.3 / 30) [26 / 22 (34.7 / 30)]*1 [25 / 22 (33.3 / 30) <High-torque>]				
Spindle 2 drive motor (30 min. / cont)	kW (HP)	25 / 22 (33.3 / 30) [25 / 22 (33.3 / 30) <High-torque>]				
Rotary tool spindle drive motor (30 min. / cont)	kW (HP)	7.5 / 5.5 (10 / 7.5)				
Machine size						
Machine height <From floor>	mm (in.)	2,320 (91.3)			2,460 (96.9)	
Floor space <Width×Depth>	mm (in.)	4,396×2,835 (173.1×111.6) [4,897×2,835 (192.8×111.6)*2] [5,129×2,835 (201.9×111.6)*3]			4,396×2,957 (173.1×116.4) [4,897×2,957 (192.8×116.4)*2] [5,129×2,957 (201.9×116.4)*3]	
Mass of machine	kg (lb.)	8,200 (18,040)	8,300 (18,260)	8,500 (18,700)	8,200 (18,040)	8,500 (18,700)
Control unit						
FANUC		F31iB				

[] Option

*1 Bar work capacity ϕ 80 mm (ϕ 3.1 in) Specifications <Spindle 1 only>

*2 Including chip conveyor (right disposal)

*3 Including chip conveyor (right disposal) <EN type>

●Bar work capacity: Depending on the chuck cylinder used and its restrictions, it may not be possible to reach full bar work capacity.

●Max. spindle speed: Depending on restrictions imposed by the workpiece clamping device, fixture and tool used, it may not be possible to rotate at the maximum spindle speed.

●Machine size: The actual values may differ from those specified in the catalogue, depending on the optional features and peripheral equipment.

●The information in this catalog is valid as of October 2016.

●JIS: Japanese Industrial Standard

		NZX 2000 800		
		ST	STY2	STY3
Capacity				
Swing over bed	mm (in.)	800 (31.5)		
Max. turning diameter	mm (in.)	320 (12.5) <Interference with the cover>		
Max. workpiece delivery diameter	mm (in.)	300 (11.8)		
Bar work capacity	mm (in.)	65 (2.5) [80 (3.1)]*1		
Travel				
X-axis travel	mm (in.)	X1, X2, X3: 210 (8.3)		
Y-axis travel	mm (in.)	—	Y1: 110 (4.3) <+65 (2.6), -45 (1.8)> Y2: 110 (4.3) <+45 (1.8), -65 (2.6)>	Y1, Y3: 110 (4.3) <+65 (2.6), -45 (1.8)> Y2: 110 (4.3) <+45 (1.8), -65 (2.6)>
Z-axis travel	mm (in.)	Z1, Z3: 300 (11.8) <+100 (3.9)*2>, Z2: 810 (31.9)		
Spindle 1				
Max. spindle speed	min ⁻¹	5,000 [4,000]*1		
Spindle nose		JIS A ₂ -6		
Through-spindle hole diameter	mm (in.)	73 (2.8) [91 (3.5)]*1		
Spindle 2				
Max. spindle speed	min ⁻¹	5,000		
Spindle nose		JIS A ₂ -6		
Through-spindle hole diameter	mm (in.)	73 (2.8)		
Turret				
Turret type		16-station×3		
Shank height for square tool	mm (in.)	20 (0.8)		
Max. rotary tool spindle speed	min ⁻¹	6,000 [12,000]		
Feedrate				
Rapid traverse rate	mm/min (ipm)	X1, X2, X3: 30,000 (1,181.1) Z1, Z2, Z3: 50,000 (1,968.5)	X1, X2, X3: 30,000 (1,181.1) Y1, Y2: 20,000 (787.4) Z1, Z2, Z3: 50,000 (1,968.5)	X1, X2, X3: 30,000 (1,181.1) Y1, Y2, Y3: 20,000 (787.4) Z1, Z2, Z3: 50,000 (1,968.5)
Motors				
Spindle 1 drive motor (30 min. / cont)	kW (HP)	25 / 22 (33.3 / 30) [26 / 22 (34.7 / 30)]*1 [25 / 22 (33.3 / 30) <High-torque>]		
Spindle 2 drive motor (30 min. / cont)	kW (HP)	25 / 22 (33.3 / 30) [25 / 22 (33.3 / 30) <High-torque>]		
Rotary tool spindle drive motor (30 min. / cont)	kW (HP)	7.5 / 5.5 (10 / 7.5)		
Machine size				
Machine height <From floor>	mm (in.)	2,320 (91.3)		
Floor space <Width×Depth>	mm (in.)	4,396×2,835 (173.1×111.6) [4,897×2,835 (192.8×111.6)*3] [5,129×2,835 (201.9×111.6)*4]		
Mass of machine	kg (lb.)	9,100 (20,020)		
Control unit				
FANUC		F31iB		

[] Option

*1 Bar work capacity ϕ 80 mm (ϕ 3.1 in) Specifications <Spindle 1 only>

*2 When one turret is moving in the plus direction, another turret moves in the minus direction.

*3 Including chip conveyor (right disposal)

*4 Including chip conveyor (right disposal) <EN type>

● Bar work capacity: Depending on the chuck cylinder used and its restrictions, it may not be possible to reach full bar work capacity.

● Max. spindle speed: Depending on restrictions imposed by the workpiece clamping device, fixture and tool used, it may not be possible to rotate at the maximum spindle speed.

● Machine size: The actual values may differ from those specified in the catalogue, depending on the optional features and peripheral equipment.

● The information in this catalog is valid as of October 2016.

● JIS: Japanese Industrial Standard

NZX 1500 / NZX 2000

Main Standard & optional features

●: Standard
○: Option
—: Not applicable

		NZX 1500 800						
		S	SY	SY2	ST	STY2	STY3	S DL
Spindle (Spindle 1 • Spindle 2)								
6,000 min ⁻¹ : 22 / 18.5 kW (30 / 24.7 HP) <30 min./cont>		●	●	●	●	●	●	●
6,000 min ⁻¹ : 25 / 22 kW (33.3 / 30 HP) <30 min./cont> <High output>		○	○	○	○	○	○	○
		NZX 2000 800						
		S	SY	SY2	ST	STY2	STY3	S DL
Spindle (Spindle 1 • Spindle 2)								
5,000 min ⁻¹ : 25 / 22 kW (33.3 / 30 HP) <30 min./cont>		●	●	●	●	●	●	●
5,000 min ⁻¹ : 25 / 22 kW (33.3 / 30 HP) <30 min./cont> <High-torque>		○	○	○	○	○	○	○
4,000 min ⁻¹ : 26 / 22 kW (34.7 / 30 HP) <30 min./cont> <Bar work capacity ϕ 80 mm (ϕ 3.1 in) Specifications> <Spindle 1 only>		○	○	○	○	○	○	○
		NZX 1500 800 / NZX 2000 800						
		S	SY	SY2	ST	STY2	STY3	S DL
Turret								
Y-axis	Turret 1	—	●	●	—	●	●	—
	Turret 2	—	—	●	—	●	●	—
	Turret 3	—	—	—	—	—	●	—
16-station bolt-tightened turret	Turret 1	●	●	●	●	●	●	●
	Turret 2	●	●	●	●	●	●	●
	Turret 3	—	—	—	●	●	●	—
Max. rotary tool spindle speed	Turret 1	●	●	●	●	●	●	●
	Turret 2	●	●	●	●	●	●	●
	Turret 3	—	—	—	●	●	●	—
Fixture / Steady rest								
Hydraulic steady rest (Turret 2) SLU-X2Z	Unit only	○*	○*	○*	○*	○*	○*	—
	Interface	○	○	○	○	○	○	—
Coolant								
Coolant system	350 / 550 W (50 / 60 Hz)	●	●	●	●	●	●	●
Chip flushing coolant	800 / 1,100 W (50 / 60 Hz)	●	●	●	●	●	●	—
Mist collector	HVS-220 ^{*1}	○*	○*	○*	○*	○*	○*	○*
	AFS1600 ^{*2}	○*	○*	○*	○*	○*	○*	○*
Chip disposal								
Chip conveyor	Right discharge, Scraper type	○	○	○	○	○	○	○
	Right discharge, Hinge type	○	○	○	○	○	○	○
	Right discharge, Hinge type+Drum filter type	○	○	○	○	○	○	○

● : Standard
○ : Option
— : Not applicable

			NZX 1500 800 / NZX 2000 800						
			S	SY	SY2	ST	STY2	STY3	S DL
Measurement									
Manual in-machine tool presetter	Spindle 1 side		●	●	●	●	●	●	●
	Spindle 2 side		●	●	●	●	●	●	●
Improved accuracy									
Direct scale feedback	Turret 1 (X-axis, Z-axis)		○	○	○	○	○	○	○
	Turret 2 (X-axis, Z-axis)		○	○	○	○	○	○	○
	Turret 3 (X-axis, Z-axis)		—	—	—	○	○	○	—
Automation									
Workpiece unloader	Spindle 1 (Workpiece receiver)		○	○	○	○	○	○	○
	Spindle 1 (Workpiece receiver) + Spindle 2 (Hand) <With workpiece transfer conveyor>		○	○	○	○	○	—	—
	Spindle 1 (Workpiece receiver) + Spindle 2 (Workpiece receiver) <With workpiece transfer conveyor>		○	○	○	○	○	—	—
	Spindle 2 (Hand) <With workpiece transfer conveyor>		○	○	○	○	○	—	—
	Spindle 2 (Workpiece receiver) <With workpiece transfer conveyor>		○	○	○	○	○	○ ^{*3}	○ ^{*3}
In-machine traveling type workpiece unloader	In-machine traveling type (Workpiece receiver) <With workpiece transfer conveyor>		○	○	○	○	○	—	—
	In-machine traveling type (Hand) <With workpiece transfer conveyor>		○	○	○	○	○	—	—
Loader	Gantry loader	LG-05	○	○	○	○	○	○	○
		LG-10	○	○	○	○	○	○	○
Other									
• Built-in worklight	• Tool holders	• Hand tools	●	●	●	●	●	●	●
Chuck foot switch	1 foot switch		●	●	●	●	●	●	●
Signal light 4 layers	Red, Yellow, Green, Blue (LED type)		○	○	○	○	○	○	○
Manual pulse generator (separate type)			○	○	○	○	○	○	○

* DMQP (DMG MORI Qualified Products)

*1 For oil based coolant only (Not available in Europe)

*2 For water-soluble coolant


*3 Without workpiece transfer conveyor

● DMQP: Please see Page 19 for details.

● The information in this catalog is valid as of October 2016.

● Specifications, accessories, safety device and function are available upon request.

● Some options are not available in particular regions. For details, please consult our sales representative.

 Flammable coolant such as oil-based coolant has a high risk of ignition, and will cause fire or machine breakage if ignited.
If you have to use a flammable coolant for any reason, please be sure to consult our sales representative.

<Precautions for Machine Relocation>

EXPORTATION:

All contracts are subject to export permit by the Government of Japan.
Customer shall comply with the laws and regulations of the exporting country governing the exportation or re-exportation of the Equipment, including but not limited to the Export Administration Regulations.
The Equipment is subject to export restrictions imposed by Japan and other exporting countries and the Customer will not export or permit the export of the Equipment anywhere outside the exporting country without proper government authorization.
To prevent the illegal diversion of the Equipment to individuals or nations that threaten international security, it may include a "Relocation Machine Security Function" that automatically disables the Equipment if it is moved following installation.
If the Equipment is so-disabled, it can only be re-enabled by contacting DMG MORI or its distributor representative. DMG MORI and its distributor representative may refuse to re-enable the Equipment if it determines that doing so would be an unauthorized export of technology or otherwise violates applicable export restrictions.
DMG MORI and its distributor representative shall have no obligation to re-enable such Equipment.
DMG MORI and its distributor representative shall have no liability (including for lost profits or business interruption or under the limited service warranty included herein) as a result of the Equipment being disabled.

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