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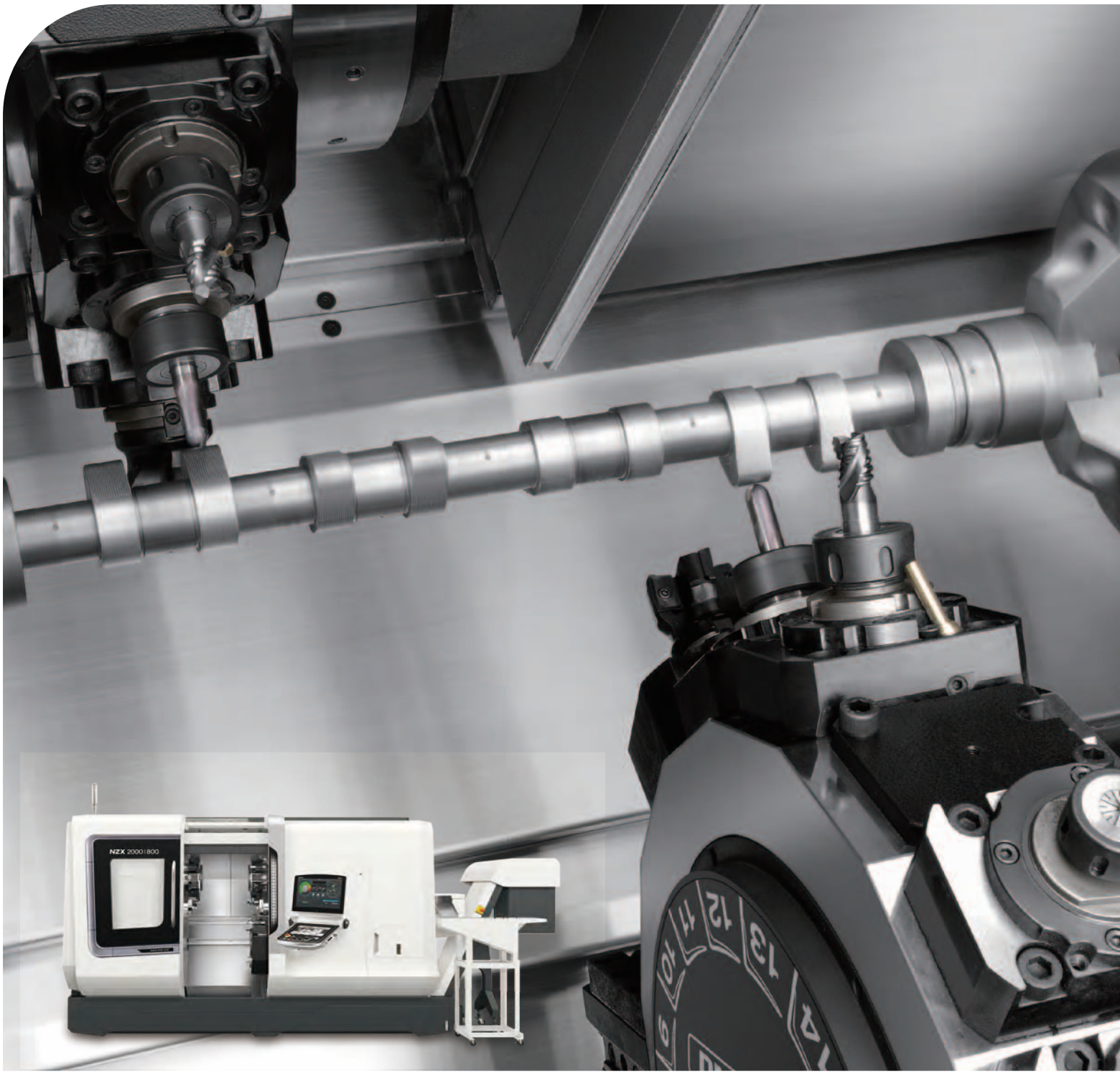
DMG MORI

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

NZX 1500
NZX 2000

NZX 1500 / NZX 2000



Seeking the last word in mass production machines High-efficiency multi-axis turning center enabling the ultimate in process integration with up to three turrets

The NZX 1500 and NZX 2000, which offer high-precision,
high-efficiency machining of complex workpieces while seeking maximum productivity,
have evolved further by incorporating the innovative touch screen user interface CELOS.
The new ergonomically designed covers enable the machines to cope flexibly
with any conceivable situation during machine operation.
With up to three turrets and the Y-axis structure, the NZX 1500 and NZX 2000 bring unprecedented
levels of efficiency to the shop floor aiming for greater productivity.

NZX 2000

Main features

Basic structure

Travel

X1, X2, X3-axis 210 mm (8.3 in.)

Y1, Y3-axis 110 mm (4.3 in.)
<+65, −45 mm (+2.6, −1.8 in.)>

Y2-axis 110 mm (4.3 in.)
<+45, −65 mm (+1.8, −2.6 in.)>

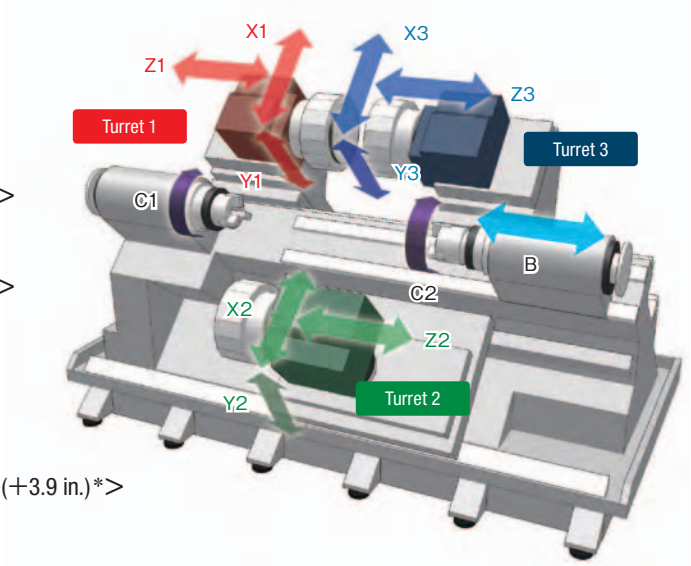
2-turret specifications <S/SY/SY2>

Z1, Z2-axis 810 mm (31.9 in.)

3-turret specifications <ST/STY2/STY3>

Z1, Z3-axis 300 mm (11.8 in.) <+100 mm(+3.9 in.)*>

Z2-axis 810 mm (31.9 in.)



● Photo: NZX 2000|800STY3

Spindle 2

B-axis **NZX 1500** 900 mm (35.4 in.)

NZX 2000 870 mm (34.3 in.)

Rapid traverse rate

X1, X2, X3-axis 30 m/min (98.4 fpm)

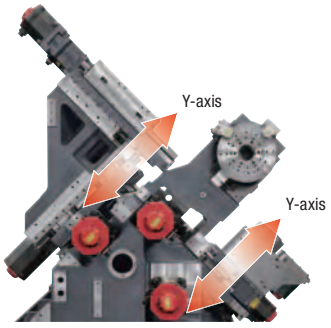
Y1, Y2, Y3-axis 20 m/min (65.6 fpm)

Z1, Z2, Z3-axis 50 m/min (164.1 fpm)

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

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. Also, its extremely rigid structure offers high-precision machining equal to or better than a machining center. As a multi-axis machine, it boasts outstanding milling ability surpassing the best multi-axis lathe.



Working area

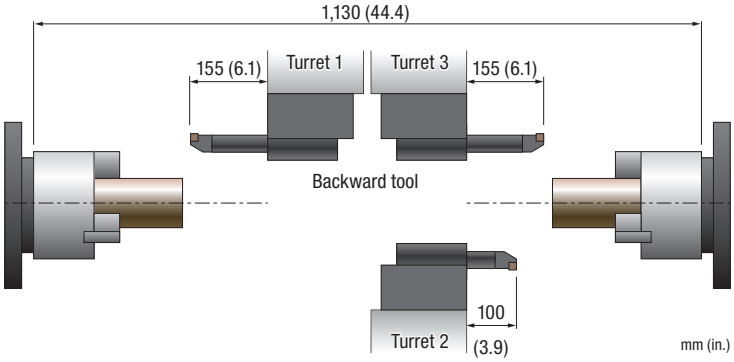
Wide work envelope

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>



Spindle

	NZX 1500	NZX 2000
Chuck size	6-inch	8-inch
Bar work capacity	ϕ 52 mm (ϕ2.0 in.)	ϕ 65 mm (ϕ2.5 in.)
Max. spindle speed	6,000 min-1	5,000 min-1
Spindle drive motor	22/18.5 kW (30/24.7 HP) (30 min./cont) 25/22 kW (33.3/30 HP) (30 min./cont) OP	25/22 kW (33.3/30 HP) (30 min./cont)

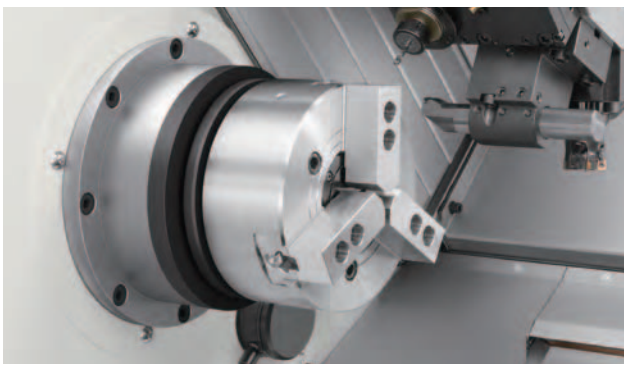
	NZX 1500		NZX 2000	
Chuck size	6-inch (Spindle 1)	6-inch (Spindle 2)	8-inch (Spindle 1)	8-inch (Spindle 2)
Spindle acceleration time	3.58 sec. (0→6,000 min-1)	3.65 sec. (0→6,000 min-1)	3.26 sec. (0→5,000 min-1)	3.18 sec. (0→5,000 min-1)
Spindle deceleration time	3.10 sec. (6,000→0 min-1)	3.10 sec. (6,000→0 min-1)	2.67 sec. (5,000→0 min-1)	2.65 sec. (5,000→0 min-1)

● Measurements are with a chuck fitted.

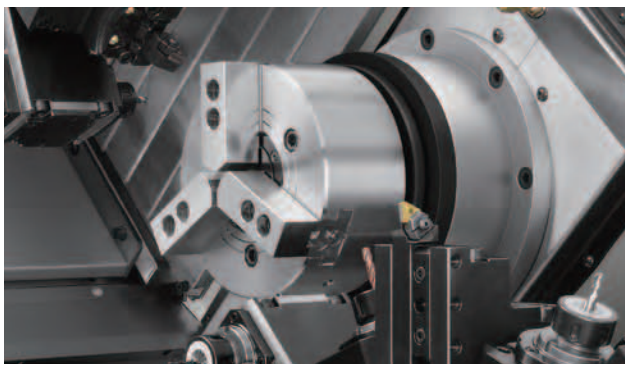
Bar work capacity ϕ80 mm (ϕ3.1 in) Specifications OP Consultation is required

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

● For T 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.



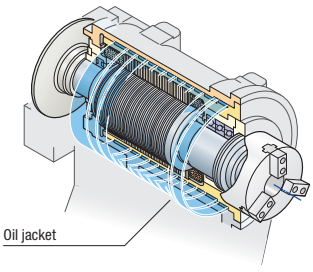
Spindle 1



Spindle 2

Spindle lubrication

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.



Oil cooler

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

Main features

Turret

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	6,000 min^{-1} 12,000 min^{-1} OP
Turret indexing time (1-station)	0.18 sec.
Rotary tool spindle output	7.5 kW/5.5 kW (10 HP/7.5 HP) <30 min./cont>
Rotary tool spindle acceleration time	0.09 sec. (0→6,000 min^{-1})
Rotary tool spindle deceleration time	0.09 sec. (6,000→0 min^{-1})

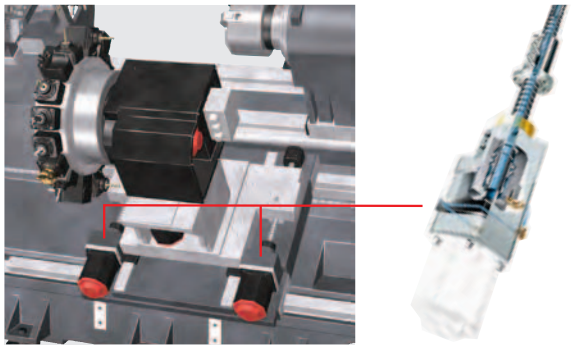
Turret 2 X-axis

<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.

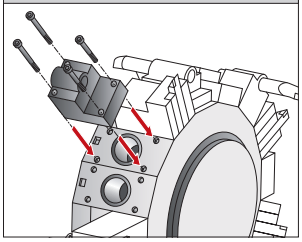


Tool changing

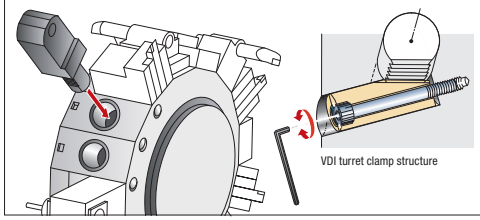
A bolt clamp type turret that provides higher rigidity is adopted for turrets 1, 2 and 3. Quick change type turrets compatible with VDI tools are available as an option. (For tool holders, please use DMG MORI specified products.)

● The photo shows the bolt-tightened turret head

Bolt-tightened turret head

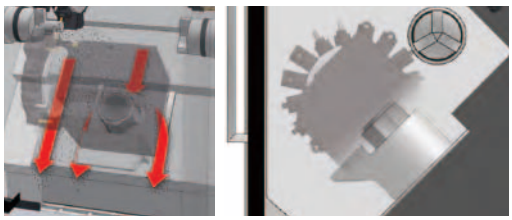


Quick-change type turret head <VDI> OP



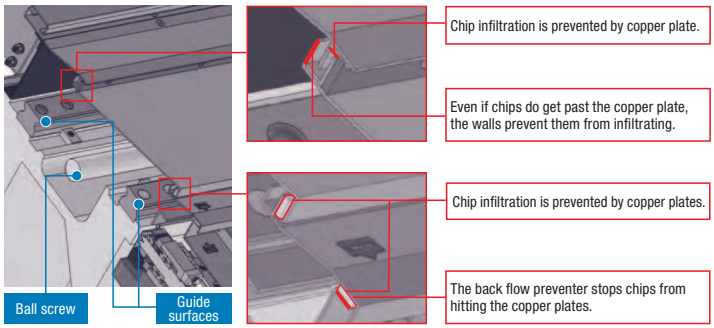
Turtleneck structure

By using an ORC (Octagonal Ram Construction) for Turret 2's Y-axis, we have been able to save space for the axis guides, eliminating chip accumulation. This structure offers excellent chip disposal.



The labyrinth structure for the bed cover

By completely eliminating gaps in the cover, we have prevented chips from infiltrating inside. This protects the guide surfaces and the ball screws from chips. (fewer gaps)



Built-in Motor Turret

BMT®
Built-in Motor Turret

Original technology

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.

Turret temperature increases
Compared with conventional machine 1/10 or less

Vibration amplitude
Compared with conventional machine 1/3 or less

■ Effects of the BMT

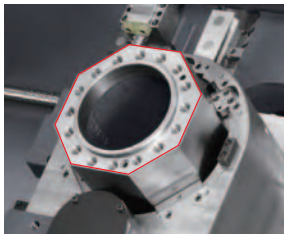
- Improved milling power
- Improved milling accuracy
- Controls the turret's heat and vibration
- Reduced energy loss

Octagonal Ram Construction

ORC®
Octagonal Ram Construction

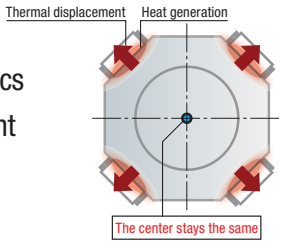
Original technology

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-speed, high-precision feed.

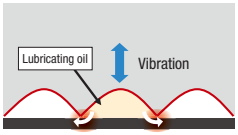


■ Effects of ORC

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



Square guides' excellent damping characteristics



Lubricating oil outflow

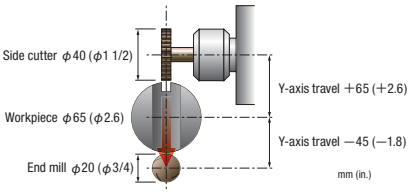
Heat generated by friction

The lubricating oil in the oil pockets which were made by scraping is forced in and out through the gaps because of the contact pressure caused by vibration, generating heat.

||

Vibration is reduced by converting vibrational energy into heat energy. This helps control chattering caused by vibration.

Y-axis control

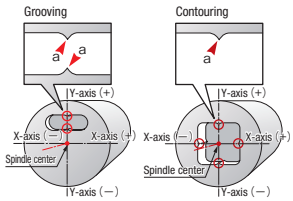


A ϕ20 mm (ϕ3/4 in.) end mill can cut right through the workpiece, without turning it over

Key way slotting is possible with a ϕ40 mm (ϕ1 1/2 in.) side cutter

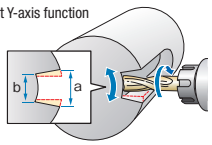
■ Comparison between polar coordinate interpolation and Y-axis control

Until now, slotting and contouring were done on turning centers by using polar coodinate interpolation, but the cutting conditions at the intersection point (a) of the workpiece center line and the machining line changed when the direction of travel on the X-axis was reversed. This affected the geometric accuracy. With the Y-axis control, however, the cutting conditions do not change, offering high geometric precision.



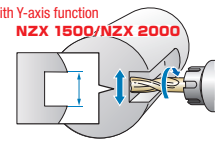
■ Key way milling using a turning center with the Y-axis function

Without Y-axis function



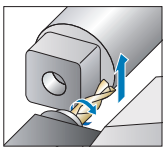
Adjusting the key way width at the outside (a) and the inside (b) is difficult.

With Y-axis function
NZX 1500/NZX 2000

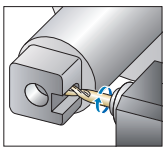


The key way width can be adjusted with the Y-axis function.

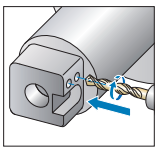
■ Bar machining with Y-axis control



1. Side milling



2. Off-center keyway milling



3. Off-center drilling

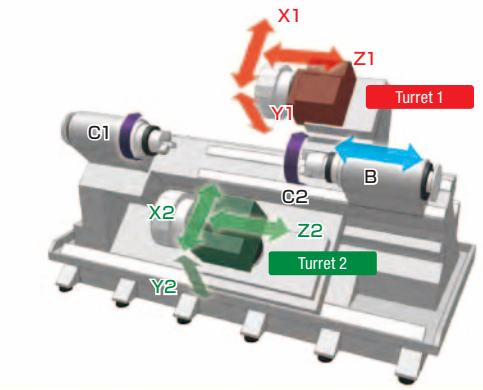
BMT: Built-in Motor Turret ORC: Octagonal Ram Construction

Main features

Variations

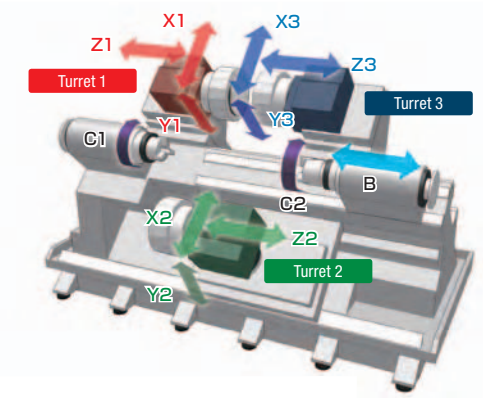
2-turret specifications

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



3-turret specifications

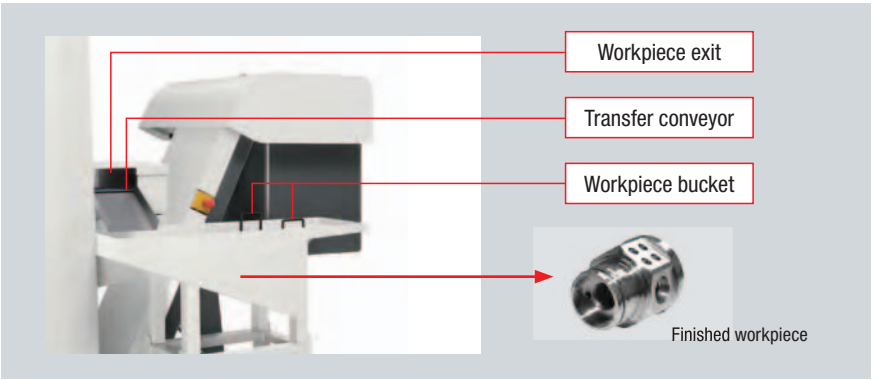
	Turret 1	Turret 2	Turret 3
NZX 1500	800ST NZX 2000	800ST	X1, Z1	X2, Z2	X3, Z3
NZX 1500	800STY2 NZX 2000	800STY2	X1, Z1, Y1	X2, Z2, Y2	X3, Z3
NZX 1500	800STY3 NZX 2000	800STY3	X1, Z1, Y1	X2, Z2, Y2	X3, Z3, Y3



Feature

In-machine traveling type workpiece unloader OP

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

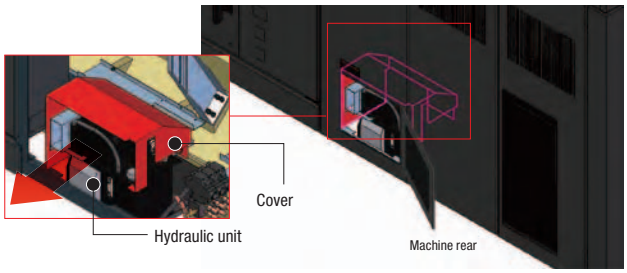


Specifications	Hand type	Bucket type
Turning diameter	ϕ10 mm (0.4 in.) — ϕ80 mm (3.1 in.)	
Max. turning length	150 mm (5.9 in.)	
Max. transfer weight	5.0 kg (11.0 lb.)	

High-precision equipment

Heat-shielding layout

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



Direct scale feedback (X-axis, Z-axis) OP

The absolute magnetic linear scale (full closed-loop control) made by Magnescale is effective for high-precision positioning, and is available as an option.

- High accuracy, high resolution
- Greater accuracy than optical scale
- Highly resistant to condensation and oil
- Vibration and impact resistant characteristics

Resolution

0.01 μm

Magnescale

Coolant cooling system (Separate type) OP

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, please be sure to consult with our sales representative.

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

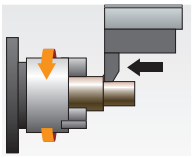
Cutting test

NZX 2000|800STY3

Turning

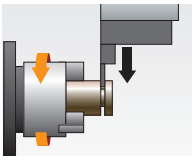
Material <JIS> S45C* (Carbon steel)

■ Heavy-duty cutting (O.D.)



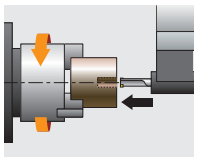
Material removal rate	346.0 mL/min (21.1 in^3./min) <Spindle 1 / Turret 1>
Spindle speed	822 min^{-1}
Cutting speed	160 m/min (525.0 fpm)
Feedrate	0.4 mm/rev (0.016 ipr)
Depth of cut	5 mm (0.20 in.)

■ O.D. grooving



Width of cut	4.0 mm (0.16 in.) <Spindle 1 / Turret 1>
Spindle speed	403 min^{-1}
Cutting speed	100 m/min (328.1 fpm)
Feedrate	0.1 mm/rev (0.004 ipr)
Depth of cut	5 mm (0.20 in.)

■ Throw-away drill



Spindle 1

Material removal rate	360.0 mL/min (22.0 in^3./min)	
Turret	Turret 1	Turret 2
Drill diameter	ϕ 40 mm (ϕ 1.6 in.)	ϕ 40 mm (ϕ 1.6 in.)
Spindle speed	955 min^{-1}	955 min^{-1}
Cutting speed	120 m/min (393.7 fpm)	120 m/min (393.7 fpm)
Feedrate	0.3 mm/rev (0.012 ipr)	0.3 mm/rev (0.012 ipr)

Spindle 2

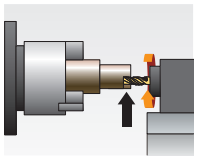
Material removal rate	360.0 mL/min (22.0 in^3./min)	
Turret	Turret 2	Turret 3
Drill diameter	ϕ 40 mm (ϕ 1.6 in.)	ϕ 40 mm (ϕ 1.6 in.)
Spindle speed	955 min^{-1}	955 min^{-1}
Cutting speed	120 m/min (393.7 fpm)	120 m/min (393.7 fpm)
Feedrate	0.3 mm/rev (0.012 ipr)	0.3 mm/rev (0.012 ipr)

* 1045·1046(ANSI), C45·C45E·C45R(BS, DIN), 45(GB)

Milling

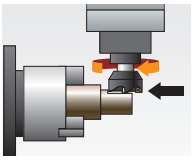
Material <JIS> S45C* (Carbon steel)

■ End mill



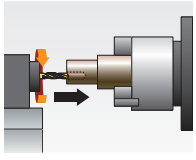
Material removal rate	19.2 mL/min (1.2 in^3./min) <Spindle 1 / Turret 2>
Tool	ϕ16 mm (ϕ5/8 in.)
Rotary tool spindle speed range	400 min^{-1}
Cutting speed	20 m/min (65.6 fpm)
Feedrate	80 mm/min (3.1 ipm)
Depth of cut	15 mm (0.6 in.)

■ Face mill



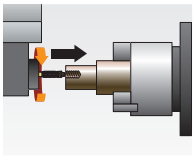
Material removal rate	48.9 mL/min (3.0 in^3./min) <Spindle 1 / Turret 1>
Tool	ϕ50 mm (ϕ2 in.) <4 teeth>
Rotary tool spindle speed range	955 min^{-1}
Cutting speed	150 m/min (492.2 fpm)
Feedrate	764 mm/min (30.1 ipm)
Depth of cut	1.6 mm (0.06 in.)

■ Drill



Material removal rate	25.6 mL/min (1.6 in^3./min) <Spindle 2 / Turret 2>
Tool	ϕ16 mm (ϕ5/8 in.)
Rotary tool spindle speed range	490 min^{-1}
Cutting speed	25 m/min (82.0 fpm)
Feedrate	127 mm/min (5.0 ipm)

■ Tap



Tool	M16×P2.0 <Spindle 2 / Turret 3>
Rotary tool spindle speed range	200 min^{-1}
Cutting speed	10 m/min (32.8 fpm)

* 1045·1046(ANSI), C45·C45E·C45R(BS, DIN), 45(GB)

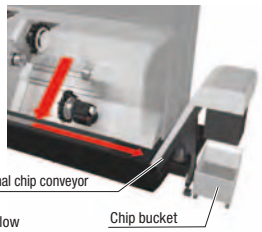
JIS: Japanese Industrial Standard

- The milling ability shown here is for C-axis brake specifications.
- The cutting test results indicated in this catalog are provided as an example. The results indicated in this catalog may not be obtained due to differences in cutting conditions and environmental conditions during measurement.

Peripheral equipment

External chip conveyor OP

Available Specifications	Workpiece material and chip size ○: Suitable ×: Not suitable						
	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

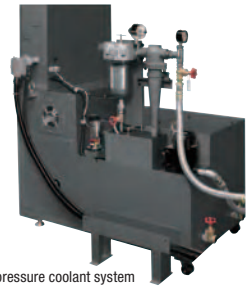


*1 Please use a steel filter
*2 Effective for ferrous alloys
Chip size guidelines
Short: chips shorter than 50 mm (2.0 in.), blocks of chips smaller than ϕ40 mm (ϕ1.6 in.)
Long: bigger than the above.

- 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 with our sales representative.
- We have prepared several options for different chip shapes and material. For details, please consult with our sales representative.

Super-high pressure coolant system (separate type) OP

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

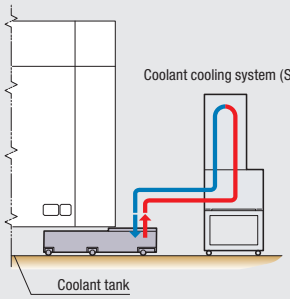


Super-high pressure coolant system

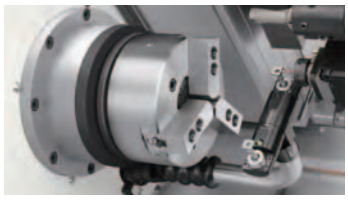
Discharge pressure	MPa (psi)	7.0 (1,015)
Discharge volume L/min (gpm)	50 Hz	48.6 (7.0)
	60 Hz	48.6 (7.0)

Recommended equipment **Coolant cooling system (Separate type)**

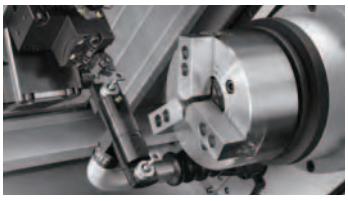
The super-high pressure coolant unit generates a lot of heat because it discharges coolant at high pressure. The coolant cooling unit controls the temperature of the coolant and suppresses temperature increases in the workpiece, tools and table, ensuring stable machining accuracy. This is essential equipment when using super-high pressure coolant. A unit with a heater will be customized.



Manual type in-machine tool presetter (Spindle 1 side/Headstock 2 side)

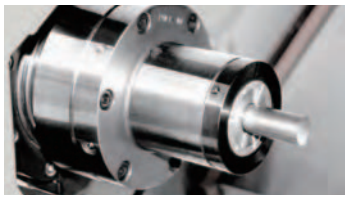


Spindle 1 side

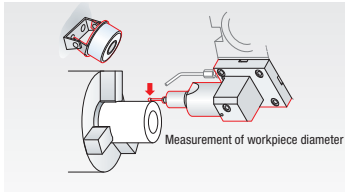


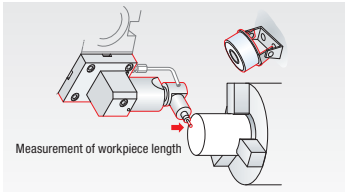
Headstock 2 side

Collet chuck OP



In-machine workpiece measurement system OP





Mist collector OP

CELOS Uniform user interface with touch operation

From the idea to the finished product

Simplifies every process from the idea to the finished product to facilitate operations.

- **A wide variety of pre-installed applications**
- **New operating comfort with touch monitors**
- **21.5" and 15.6" dual wide monitor**

CELOS with 21.5" ERGO*line* Touch®

21.5"
ERGO*line*® control panel with multi-touch monitor

CELOS STATUS MONITOR
Here CELOS visualises the current condition of the machine regarding the process, provides important key figures about the current order and order progress and informs the operator with special icons and text messages about possible NC errors or imminent maintenance work

MULTI-TOUCH-CONTROL PANEL
The combination of advanced software and hardware enables excellent usability and distinctive functionality.

Infinitely variable adjustment of the screen and the keyboard

SMART*key*®
Customised user authorisation. Individually adapted access privileges to the control system and the machine. With internal USB memory

Keys for the selection of operating mode

Release button for machine functions in operating mode

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

UNIFORM
Uniform, intuitive user interface for all high-tech machines from DMG MORI.

CONSISTENT
Consistent administration, documentation and visualisation of order, process and machine data.

CELOS APPs simplify fast and easy operation

CELOS –APP MENU: Central access to all available applications.

CELOS supports the user in daily practice with a process-oriented menu structure. Thanks to the touch functionality of the user gets to the “APP MENU” with one single touch. Similar to a smart phone or tablet terminal, the user has got direct access to all available APPs, which are differentiated according to their application field and can be selected with a single touch via the “APP MENU”. For instance, CELOS APPs like the “JOB MANAGER“ or “JOB ASSISTANT“ support machine operators with the network-integrated preparation, optimisation and systematic processing of production orders (with workpieces, fixture and NC programmes).

WORKSHOP OF THE FUTURE

With its open structure and integration ability, CELOS offers unique opportunities for the expansion of functionality with targeted applications.

JOB MANAGER

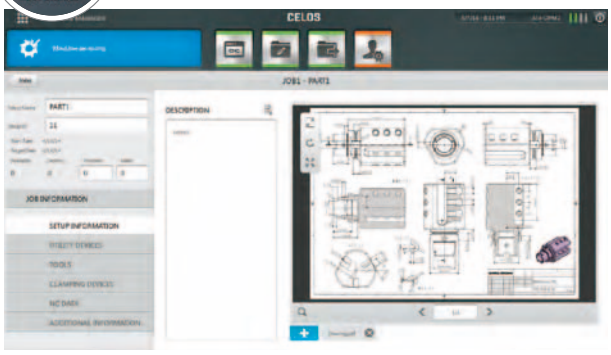
Systematic planning, administration and preparation of orders

> Machine-related creation and configuration of new orders

> Structured saving of all production-related data and documents

> Visualisation of orders, including NC programme, equipment, etc.

JOB ASSISTANT

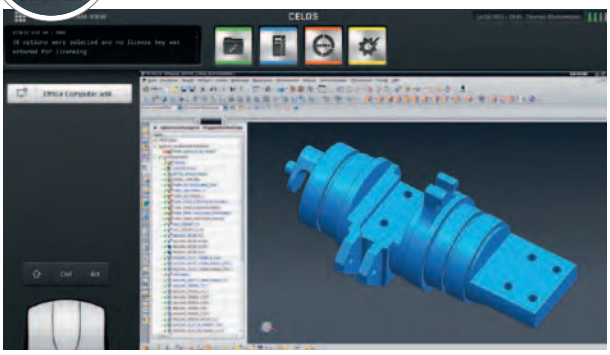


Choosing and processing orders

> Menu-guided set-up of the machine and processing of production orders in the dialogue

> Reliable error prevention thanks to work instructions with binding check list

CAD-CAM VIEW



Visualise workpieces and optimise programme data

> Remotely control an online PC with CAD and CAM software installed

> Open CAD files on the machine to check 3D models or drawings

> Edit CAM files on the machine to regenerate NC programs

> Check machine motion in advance using CAM software with the simulation function

Machine specifications

Item			NZX 1500|800S	NZX 1500|800SY	NZX 1500|800SY2
Capacity	Swing over bed	mm (in.)	800 (31.5)		
	Swing over cross slide	mm (in.)	800 (31.5)		
	Max. distance between spindle large noses	mm (in.)	1,130 (44.4)		
	Max. turning diameter	mm (in.)	320 (12.5) <Interference with the cover>		
	Standard turning diameter	mm (in.)	200 (7.9)		
	Max. workpiece delivery diameter	mm (in.)	300 (11.8)		
	Max. turning length	mm (in.)	810 (31.8) <Max. length workpiece which can be machined using O.D. tool (with the workpiece supported at both ends)>		
	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)>
	Z-axis travel	mm (in.)	Z1, Z2: 810 (31.9)		
	B-axis travel (Spindle 2)	mm (in.)	900 (35.4)		
Spindle 1	Max. spindle speed	min^{-1}	6,000		
	Number of spindle speed ranges	Stage	2		
	Spindle nose		JIS A_2-5		
	Through-spindle hole diameter	mm (in.)	61 (2.4)		
	Spindle bearing inner diameter	mm (in.)	100 (3.9)		
	Min. spindle indexing increment		0.001°		
Spindle 2	Max. spindle speed	min^{-1}	6,000		
	Number of spindle speed ranges	Stage	2		
	Spindle nose		JIS A_2-5		
	Through-spindle hole diameter	mm (in.)	61 (2.4)		
	Spindle bearing inner diameter	mm (in.)	100 (3.9)		
	Min. spindle indexing increment		0.001°		
Turret	Turret type		16-station×2		
	Number of tool stations		16×2=32		
	Shank height for square tool	mm (in.)	20 (0.8)		
	Height of boring bar shank part	mm (in.)	32 (1.3)		
	Turret indexing time (1-station)	sec.	0.18		
	Max. rotary tool spindle speed	min^{-1}	6,000 [12,000]		
	Rotary tool machining ability	mm (in.)	Tap: M16, Drill: ϕ16 (ϕ0.6)		
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)
	Jog feedrate	mm/min (ipm)	0—5,000 (196.9)		
Motors	Spindle 1 drive motor	kW (HP)	22/18.5 (30/24.7) <30 min./cont> [25/22 (33.3/30) <30 min./cont> <High output>]		
	Spindle 2 drive motor	kW (HP)	22/18.5 (30/24.7) <30 min./cont> [25/22 (33.3/30) <30 min./cont> <High output>]		
	Rotary tool spindle drive motor <30 min./cont>	kW (HP)	7.5/5.5 (10/7.5)		
	Feed motor	kW (HP)	X1: 3.0 (4.0) X2: 1.2 (1.6)×2 Z1, Z2: 4.0 (5.3)	X1: 3.0 (4.0), X2: 1.2 (1.6)×2 Y1: 4.0 (5.3) Z1, Z2: 4.0 (5.3)	X1: 3.0 (4.0), X2: 2.5 (3.3)×2 Y1: 4.0 (5.3), Y2: 2.5 (3.3) Z1, Z2: 4.0 (5.3)
	Hydraulic pump motor	kW (HP)	1.5 (2.0) or equivalent		
	Lubricanting oil pump motor	kW (HP)	0.017 (0.02)		
	Coolant pump motor	kW (HP)	0.325/0.520 (0.43/0.69)		
	Cooling oil motor <50/60 Hz>	kW (HP)	4.2/4.7 (5.6/6.2)		
Power sources (Standard)	Electrical power supply <cont>	kVA	75.6	79.1	83.5
	Compressed air supply	MPa, L/min (psi/gpm)	0.5, 200 (72.5, 52.8) <ANR>		
Tank capacity	Hydraulic oil tank capacity	L (gal.)	10 (2.6)		
	Lubricanting oil tank capacity	L (gal.)	4.2 (1.1)		
	Coolant tank capacity	L (gal.)	450 (118.8)		
	Oil cooler tank capacity	L (gal.)	52 (13.7)		
Machine size	Machine height <From floor>	mm (in.)	2,320 (91.3)		
	Floor space <Width×Depth>	mm (in.)	4,255 (167.5) <Machine: 3,730 (146.9)+Tank: 525 (20.7)> [Chip conveyor right disposal: +806 (31.7)]×2,835 (111.6)		
	Mass of machine	kg (lb.)	8,100 (17,820)	8,200 (18,040)	8,400 (18,480)

[ ] Option

NZX 1500_2000 (140807)

- 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.
- ANR: Refers to a standard atmospheric state; i. e., temperature at 20°C (68°F); absolute pressure at 101.3 kPa (14.7 psi); and relative humidity at 65%.
- Power sources, Machine size: The actual values may differ from those specified in the catalogue, depending on the optional features and peripheral equipment.
- Compressed air supply: Please be sure to supply clean compressed air <air pressure: 0.7 MPa (101.5 psi), pressure dew point: 10°C (50°F) or below>.
- A criterion capacity to select a compressor is 90 L/min (23.8 gpm) per 0.75 kW (1 HP). However, this figure may differ depending on the type of compressors and options attached. For details, please check the compressor specifications.
- When the tool tip air blow is regularly used, air supply of more than 300 L/min (79.2 gpm) is separately required.
- The information in this catalog is valid as of August 2014.
- JIS: Japanese Industrial Standard

Item			NZX 1500|800ST	NZX 1500|800STY2	NZX 1500|800STY3
Capacity	Swing over bed	mm (in.)	800 (31.5)		
	Swing over cross slide	mm (in.)	800 (31.5)		
	Max. distance between spindle large noses	mm (in.)	1,130 (44.4)		
	Max. turning diameter	mm (in.)	320 (12.5) <Interference with the cover>		
	Standard turning diameter	mm (in.)	200 (7.9)		
	Max. workpiece delivery diameter	mm (in.)	300 (11.8)		
	Max. turning length	mm (in.)	810 (31.8) <Max. length workpiece which can be machined using O.D. tool on Turret 2 (with the workpiece supported at both ends)>		
	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)>, Z2: 810 (31.9)		
	B-axis travel (Spindle 2)	mm (in.)	900 (35.4)		
Spindle 1	Max. spindle speed	min^{-1}	6,000		
	Number of spindle speed ranges	Stage	2		
	Spindle nose		JIS A_2-5		
	Through-spindle hole diameter	mm (in.)	61 (2.4)		
	Spindle bearing inner diameter	mm (in.)	100 (3.9)		
	Min. spindle indexing increment		0.001°		
Spindle 2	Max. spindle speed	min^{-1}	6,000		
	Number of spindle speed ranges	Stage	2		
	Spindle nose		JIS A_2-5		
	Through-spindle hole diameter	mm (in.)	61 (2.4)		
	Spindle bearing inner diameter	mm (in.)	100 (3.9)		
	Min. spindle indexing increment		0.001°		
Turret	Turret type		16-station×3		
	Number of tool stations		16×3=48		
	Shank height for square tool	mm (in.)	20 (0.8)		
	Height of boring bar shank part	mm (in.)	32 (1.3)		
	Turret indexing time (1-station)	sec.	0.18		
	Max. rotary tool spindle speed	min^{-1}	6,000 [12,000]		
	Rotary tool machining ability	mm (in.)	Tap: M16, Drill: ϕ16 (ϕ0.6)		
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)
	Jog feedrate	mm/min (ipm)	0—5,000 (196.9)		
Motors	Spindle 1 drive motor	kW (HP)	22/18.5 (30/24.7) <30 min./cont> [25/22 (33.3/30) <30 min./cont> <High output>]		
	Spindle 2 drive motor	kW (HP)	22/18.5 (30/24.7) <30 min./cont> [25/22 (33.3/30) <30 min./cont> <High output>]		
	Rotary tool spindle drive motor <30 min./cont>	kW (HP)	7.5/5.5 (10/7.5)		
	Feed motor	kW (HP)	X1, X3: 3.0 (4.0) X2: 1.2 (1.6)×2 Z1, Z2, Z3: 4.0 (5.3)	X1, X3: 3.0 (4.0), X2: 2.5 (3.3)×2 Y1: 4.0 (5.3), Y2: 2.5 (3.3) Z1, Z2, Z3: 4.0 (5.3)	X1, X3: 3.0 (4.0), X2: 2.5 (3.3)×2 Y1, Y3: 4.0 (5.3), Y2: 2.5 (3.3) Z1, Z2, Z3: 4.0 (5.3)
	Hydraulic pump motor	kW (HP)	1.5 (2.0) or equivalent		
	Lubricanting oil pump motor	kW (HP)	0.017 (0.02)		
	Coolant pump motor	kW (HP)	0.325/0.520 (0.43/0.69)		
	Cooling oil motor <50/60 Hz>	kW (HP)	4.2/4.7 (5.6/6.2)		
Power sources (Standard)	Electrical power supply <cont>	kVA	82.4	86.7	90.2
	Compressed air supply	MPa, L/min (psi/gpm)	0.5, 200 (72.5, 52.8) <ANR>		
Tank capacity	Hydraulic oil tank capacity	L (gal.)	10 (2.6)		
	Lubricanting oil tank capacity	L (gal.)	4.2 (1.1)		
	Coolant tank capacity	L (gal.)	450 (118.8)		
	Oil cooler tank capacity	L (gal.)	52 (13.7)		
Machine size	Machine height <From floor>	mm (in.)	2,320 (91.3)		
	Floor space <Width×Depth>	mm (in.)	4,255 (167.5) <Machine: 3,730 (146.9)+Tank: 525 (20.7)> [Chip conveyor right disposal: +806 (31.7)]×2,835 (111.6)		
	Mass of machine	kg (lb.)	9,000 (19,800)	9,300 (20,460)	9,400 (20,680)

[ ] Option

NZX 1500_2000 (140807)

- 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.
- ANR: Refers to a standard atmospheric state; i. e., temperature at 20˚C (68˚F); absolute pressure at 101.3 kPa (14.7 psi); and relative humidity at 65%.
- Power sources, Machine size: The actual values may differ from those specified in the catalogue, depending on the optional features and peripheral equipment.
- Compressed air supply: Please be sure to supply clean compressed air <air pressure: 0.7 MPa (101.5 psi), pressure dew point: 10℃ (50°F) or below>.
- A criterion capacity to select a compressor is 90 L/min (23.8 gpm) per 0.75 kW (1 HP). However, this figure may differ depending on the type of compressors and options attached. For details, please check the compressor specifications.
- When the tool tip air blow is regularly used, air supply of more than 300 L/min (79.2 gpm) is separately required.

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

- The information in this catalog is valid as of August 2014.
- JIS: Japanese Industrial Standard

Machine specifications

Item			NZX 2000|800S	NZX 2000|800SY	NZX 2000|800SY2
Capacity	Swing over bed	mm (in.)	800 (31.5)		
	Swing over cross slide	mm (in.)	800 (31.5)		
	Max. distance between spindle large noses	mm (in.)	1,130 (44.4)		
	Max. turning diameter	mm (in.)	320 (12.5) <Interference with the cover>		
	Standard turning diameter	mm (in.)	200 (7.9)		
	Max. workpiece delivery diameter	mm (in.)	300 (11.8)		
	Max. turning length	mm (in.)	810 (31.8) <Max. length workpiece which can be machined using O.D. tool (with the workpiece supported at both ends)>		
	Bar work capacity	mm (in.)	65 (2.5)		
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)>
	Z-axis travel	mm (in.)	Z1, Z2: 810 (31.9)		
	B-axis travel (Spindle 2)	mm (in.)	870 (34.3)		
Spindle 1	Max. spindle speed	min^{-1}	5,000		
	Number of spindle speed ranges	Stage	2		
	Spindle nose		JIS A_2-6		
	Through-spindle hole diameter	mm (in.)	73 (2.9)		
	Spindle bearing inner diameter	mm (in.)	120 (4.7)		
	Min. spindle indexing increment		0.001°		
Spindle 2	Max. spindle speed	min^{-1}	5,000		
	Number of spindle speed ranges	Stage	2		
	Spindle nose		JIS A_2-6		
	Through-spindle hole diameter	mm (in.)	73 (2.9)		
	Spindle bearing inner diameter	mm (in.)	120 (4.7)		
	Min. spindle indexing increment		0.001°		
Turret	Turret type		16-station×2		
	Number of tool stations		16×2=32		
	Shank height for square tool	mm (in.)	20 (0.8)		
	Height of boring bar shank part	mm (in.)	32 (1.3)		
	Turret indexing time (1-station)	sec.	0.18		
	Max. rotary tool spindle speed	min^{-1}	6,000 [12,000]		
	Rotary tool machining ability	mm (in.)	Tap: M16, Drill: ϕ16 (ϕ0.6)		
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)
	Jog feedrate	mm/min (ipm)	0—5,000 (196.9)		
Motors	Spindle 1 drive motor <30 min./cont>	kW (HP)	25/22 (33.3/30) [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)		
	Feed motor	kW (HP)	X1: 3.0 (4.0) X2: 1.2 (1.6)×2 Z1, Z2: 4.0 (5.3)	X1: 3.0 (4.0), X2: 1.2 (1.6)×2 Y1: 4.0 (5.3) Z1, Z2: 4.0 (5.3)	X1: 3.0 (4.0) X2: 2.5 (3.3)×2 Y1: 4.0 (5.3), Y2: 2.5 (3.3) Z1, Z2: 4.0 (5.3)
	Hydraulic pump motor	kW (HP)	1.5 (2.0) or equivalent		
	Lubricanting oil pump motor	kW (HP)	0.017 (0.02)		
	Coolant pump motor	kW (HP)	0.325/0.520 (0.43/0.69)		
	Cooling oil motor <50/60 Hz>	kW (HP)	4.2/4.7 (5.6/6.2)		
Power sources (Standard)	Electrical power supply <cont>	kVA	83.7	87.1	91.5
	Compressed air supply	MPa, L/min (psi/gpm)	0.5, 200 (72.5, 52.8) <ANR>		
Tank capacity	Hydraulic oil tank capacity	L (gal.)	10 (2.6)		
	Lubricanting oil tank capacity	L (gal.)	4.2 (1.1)		
	Coolant tank capacity	L (gal.)	450 (118.8)		
	Oil cooler tank capacity	L (gal.)	52 (13.7)		
Machine size	Machine height <From floor>	mm (in.)	2,320 (91.3)		
	Floor space <Width×Depth>	mm (in.)	4,255 (167.5) <Machine: 3,730 (146.9)+Tank: 525 (20.7)> [Chip conveyor right disposal: +806 (31.7)]×2,835 (111.6)		
	Mass of machine	kg (lb.)	8,300 (18,260)	8,400 (18,480)	8,600 (18,920)
Noise data	A-weighted, time-average radiated sound pressure level	dB	61—68 <measurement uncertainty is 4 dB>		

[ ] Option

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- 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.
- ANR:Refers to a standard atmospheric state; i. e., temperature at 20°C (68°F); absolute pressure at 101.3 kPa (14.7 psi); and relative humidity at 65%.
- Power sources, Machine size: The actual values may differ from those specified in the catalogue, depending on the optional features and peripheral equipment.
- Compressed air supply: Please be sure to supply clean compressed air <air pressure: 0.7 MPa (101.5 psi), pressure dew point: 10°C (50°F) or below>.
- A criterion capacity to select a compressor is 90 L/min (23.8 gpm) per 0.75 kW (1 HP). However, this figure may differ depending on the type of compressors and options attached. For details, please check the compressor specifications.
- When the tool tip air blow is regularly used, air supply of more than 300 L/min (79.2 gpm) is separately required.
- Noise data: the measurement was performed at the front of the NZX 2000|800STY3 machine with a maximum spindle speed of 5,000 min^{-1}. For details, please consult with our sales representative.
- The information in this catalog is valid as of August 2014.
- JIS: Japanese Industrial Standard

Item			NZX 2000|800ST	NZX 2000|800STY2	NZX 2000|800STY3
Capacity	Swing over bed	mm (in.)	800 (31.5)		
	Swing over cross slide	mm (in.)	800 (31.5)		
	Max. distance between spindle large noses	mm (in.)	1,130 (44.4)		
	Max. turning diameter	mm (in.)	320 (12.5) <Interference with the cover>		
	Standard turning diameter	mm (in.)	200 (7.9)		
	Max. workpiece delivery diameter	mm (in.)	300 (11.8)		
	Max. turning length	mm (in.)	810 (31.8) (Max. length workpiece which can be machined using O.D. tool on Turret 2 <with the workpiece supported at both ends>)		
	Bar work capacity	mm (in.)	65 (2.5)		
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)>, Z2: 810 (31.9)		
	B-axis travel (Spindle 2)	mm (in.)	870 (34.3)		
Spindle 1	Max. spindle speed	min^{-1}	5,000		
	Number of spindle speed ranges	Stage	2		
	Spindle nose		JIS A_2-6		
	Through-spindle hole diameter	mm (in.)	73 (2.9)		
	Spindle bearing inner diameter	mm (in.)	120 (4.7)		
	Min. spindle indexing increment		0.001°		
Spindle 2	Max. spindle speed	min^{-1}	5,000		
	Number of spindle speed ranges	Stage	2		
	Spindle nose		JIS A_2-6		
	Through-spindle hole diameter	mm (in.)	73 (2.9)		
	Spindle bearing inner diameter	mm (in.)	120 (4.7)		
	Min. spindle indexing increment		0.001°		
Turret	Turret type		16-station×3		
	Number of tool stations		16×3=48		
	Shank height for square tool	mm (in.)	20 (0.8)		
	Height of boring bar shank part	mm (in.)	32 (1.3)		
	Turret indexing time (1-station)	sec.	0.18		
	Max. rotary tool spindle speed	min^{-1}	6,000 [12,000]		
	Rotary tool machining ability	mm (in.)	Tap: M16, Drill: ϕ16 (ϕ0.6)		
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)
	Jog feedrate	mm/min (ipm)	0—5,000 (196.9)		
Motors	Spindle 1 drive motor <30 min./cont>	kW (HP)	25/22 (33.3/30) [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)		
	Feed motor	kW (HP)	X1, X3: 3.0 (4.0) X2: 1.2 (1.6)×2 Z1, Z2, Z3: 4.0 (5.3)	X1, X3: 3.0 (4.0), X2: 2.5 (3.3)×2 Y1: 4.0 (5.3), Y2: 2.5 (3.3) Z1, Z2, Z3: 4.0 (5.3)	X1, X3: 3.0 (4.0), X2: 2.5 (3.3)×2 Y1, Y3: 4.0 (5.3), Y2: 2.5 (3.3) Z1, Z2, Z3: 4.0 (5.3)
	Hydraulic pump motor	kW (HP)	1.5 (2.0) or equivalent		
	Lubricanting oil pump motor	kW (HP)	0.017 (0.02)		
	Coolant pump motor	kW (HP)	0.325/0.520 (0.43/0.69)		
	Cooling oil motor <50/60 Hz>	kW (HP)	4.2/4.7 (5.6/6.2)		
Power sources (Standard)	Electrical power supply <cont>	kVA	90.4	94.8	98.2
	Compressed air supply	MPa, L/min (psi/gpm)	0.5, 200 (72.5, 52.8) <ANR>		
Tank capacity	Hydraulic oil tank capacity	L (gal.)	10 (2.6)		
	Lubricanting oil tank capacity	L (gal.)	4.2 (1.1)		
	Coolant tank capacity	L (gal.)	450 (118.8)		
	Oil cooler tank capacity	L (gal.)	52 (13.7)		
Machine size	Machine height <From floor>	mm (in.)	2,320 (91.3)		
	Floor space <Width×Depth>	mm (in.)	4,255 (167.5) <Machine: 3,730 (146.9)+Tank: 525 (20.7)> [Chip conveyor right disposal: +806 (31.7)]×2,835 (111.6)		
	Mass of machine	kg (lb.)	9,200 (20,240)	9,500 (20,900)	9,600 (21,120)
Noise data	A-weighted, time-average radiated sound pressure level	dB	61—68 <measurement uncertainty is 4 dB>		

[ ] Option

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- When the tool tip air blow is regularly used, air supply of more than 300 L/min (79.2 gpm) is separately required.

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

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DMG MORI

2-year warranty, twice the peace of mind.

For machines delivered outside of Japan, parts relating to machine breakdown will be guaranteed free for 2 years from the date of installation, and labor costs to repair will be free for 1 year. Please contact our sales representative for details.

<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 SEIKI or its distributor representative. DMG MORI SEIKI 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 SEIKI and its distributor representative shall have no obligation to re-enable such Equipment. DMG MORI SEIKI 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.

- If you have any questions regarding the content, contact our sales representative.
- The information in this catalog is valid as of August 2014. Designs and specifications are subject to changes without notice.
- The machines shown in the catalog may differ from the actual machines. The location and the size of the nameplates may also differ from the actual machines, or the nameplates may not be attached to some machines.
- DMG MORI SEIKI is not responsible for differences between the information in the catalog and the actual machine.

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