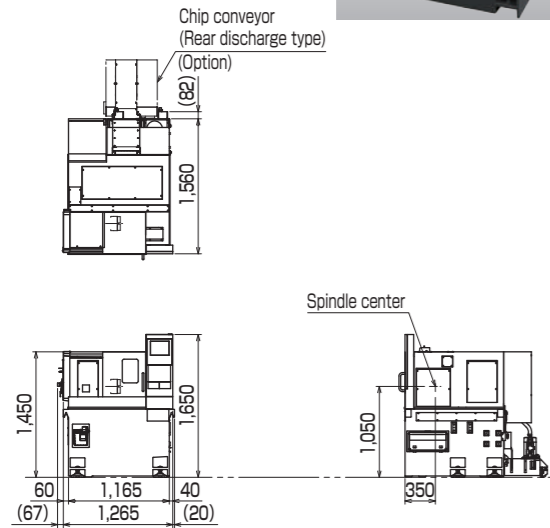


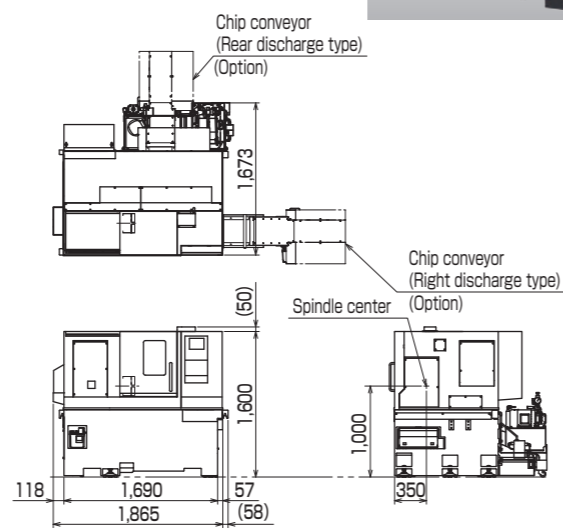
TSUGAMI

Layout

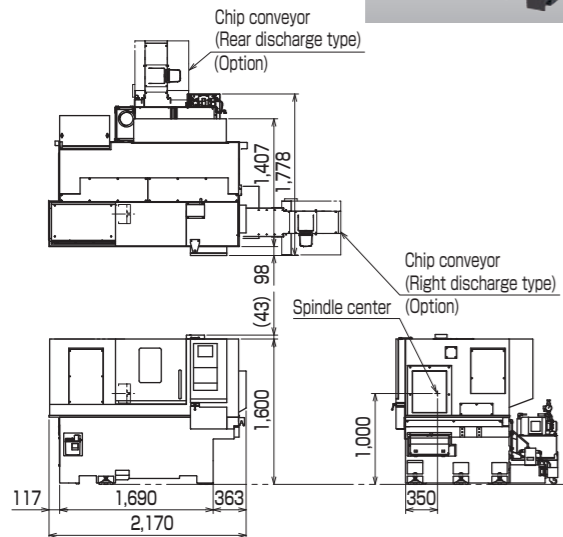
Mi06JC-II



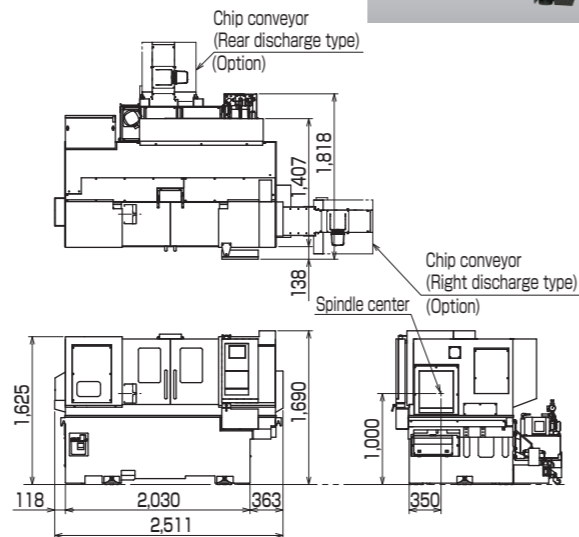
Mi06J-II
Mi08J-II



Mi08JL5-II



Mi08JL8-II



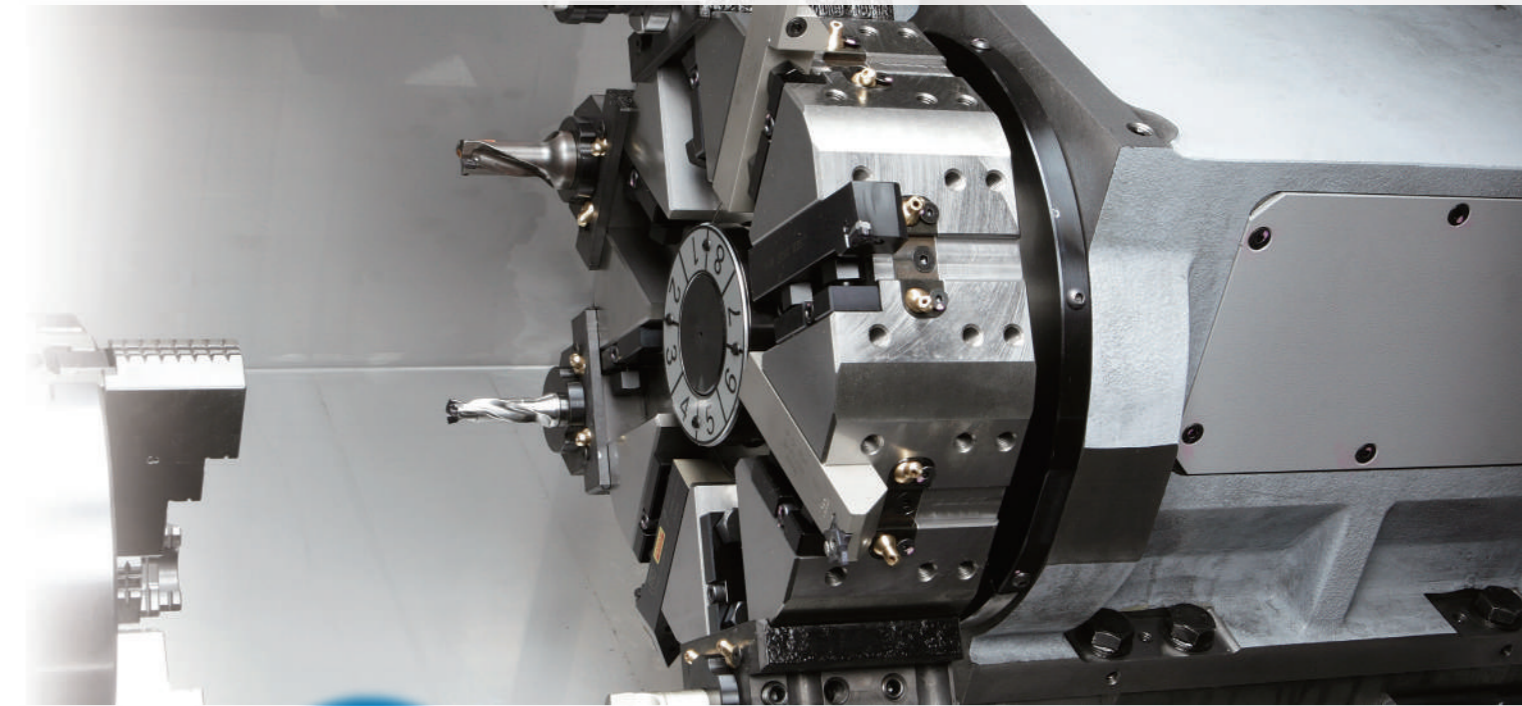
Export permission by the Japanese Government may be required for exporting our products in accordance with the Foreign Exchange and Foreign Trade Law. Please contact our sales office before exporting our products.

The specifications of this catalogue are subject to change without prior notice.

TSUGAMI CORPORATION

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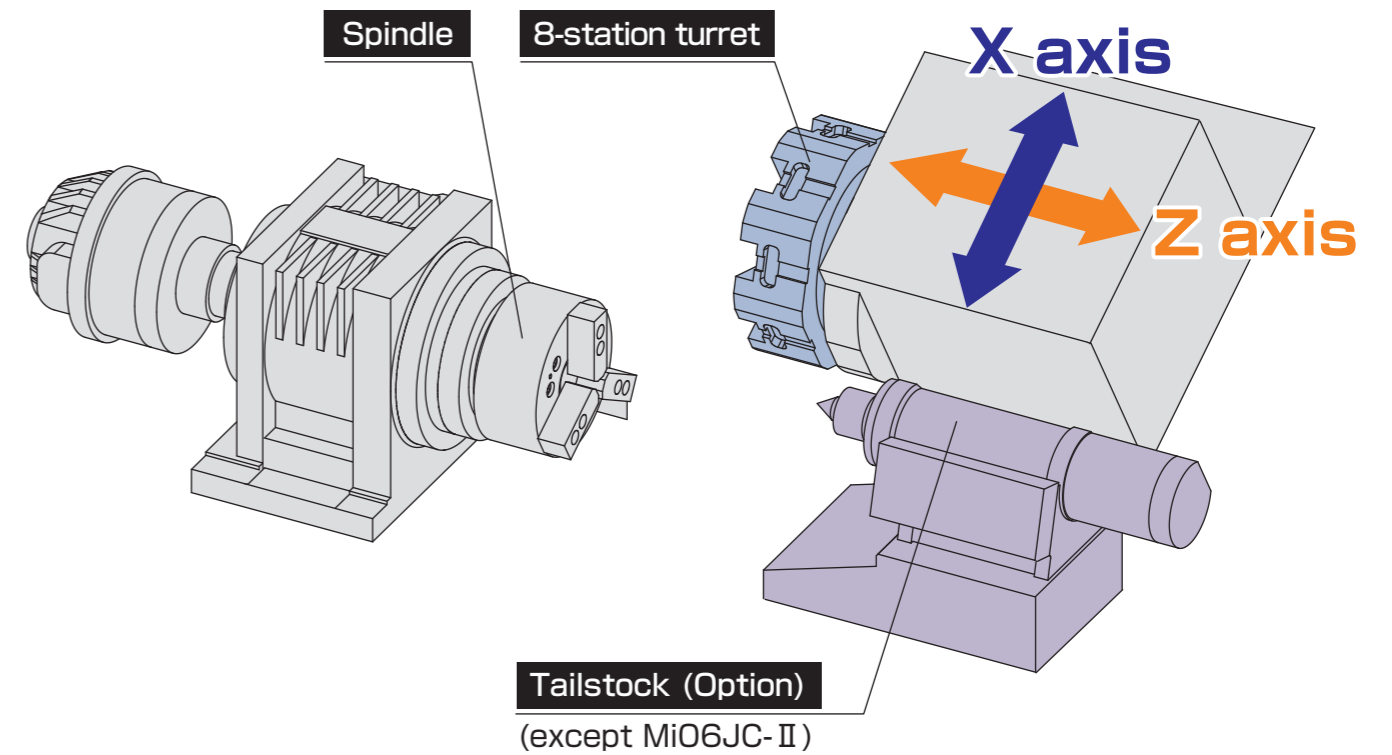
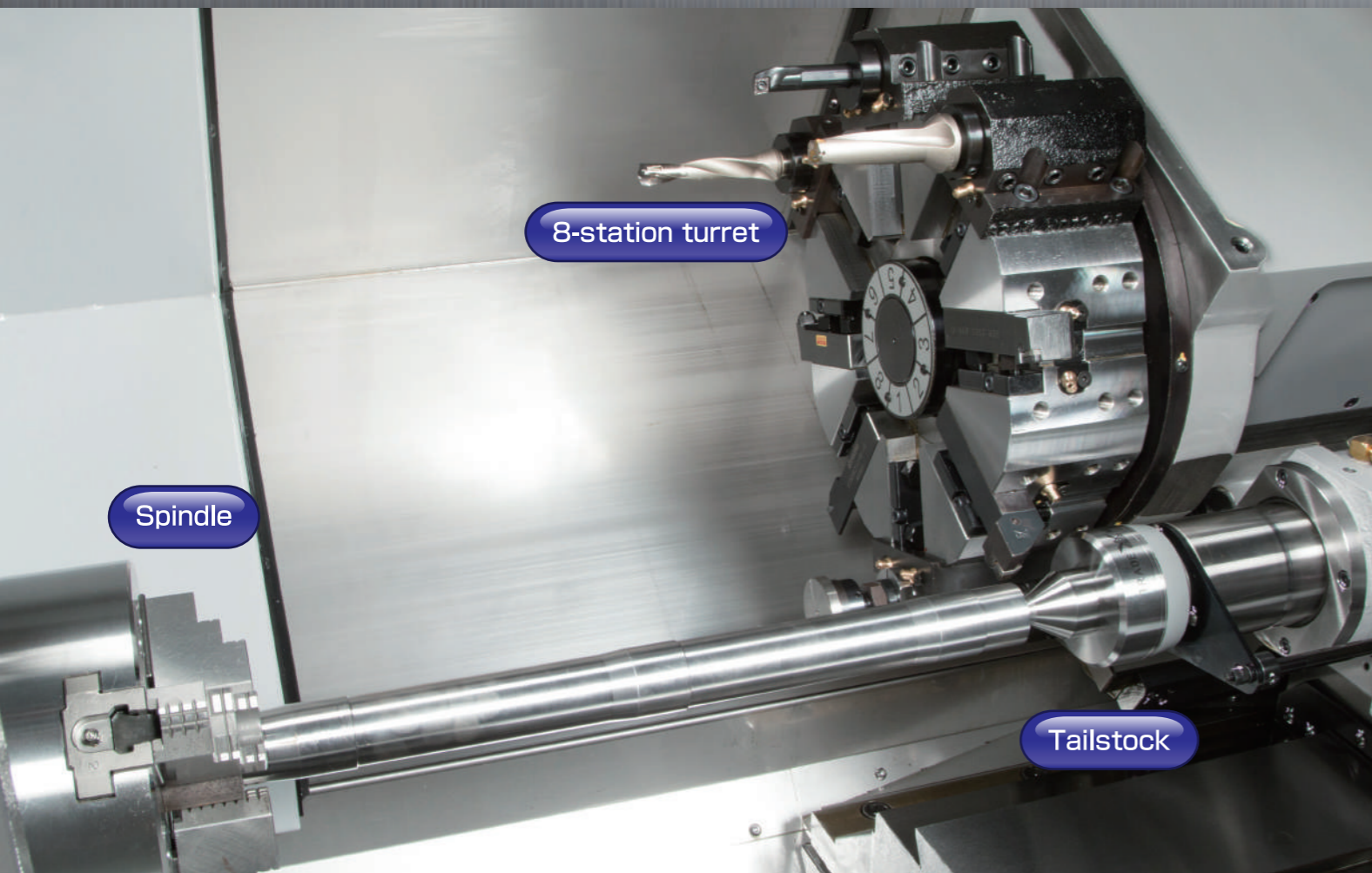
CNC Lathe Mi06JC-II Mi06J-II/Mi08J-II Mi08JL5-II/Mi08JL8-II



- High accuracy
- High rigidity
- High productivity
- Space saving
- Overwhelming cost performance



Realizes high accuracy, high rigidity, high productivity, space saving, and overwhelming cost performance



Best selection to meet needs

Space saving basic machine



Mi06JC-II

Chuck size: 6 inch
 Max. machining dia.: $\phi 220\text{mm}$
 $\phi 42\text{mm}$ (Barstock) (Option)
 Max. machining length: 190mm

Basic machine



Mi06J/Mi08J-II

Chuck size: 6 inch/8 inch
 Max. machining dia.: $\phi 260\text{mm}$ / $\phi 280\text{mm}$
 $\phi 51\text{mm}$ / $\phi 65\text{mm}$ (Barstock)
 Max. machining length: 290mm

Long stroke basic machine



Mi08JL5-II

Chuck size: 8 inch
 Max. machining dia.: $\phi 280\text{mm}$
 $\phi 65\text{mm}$ (Barstock)
 Max. machining length: 500mm

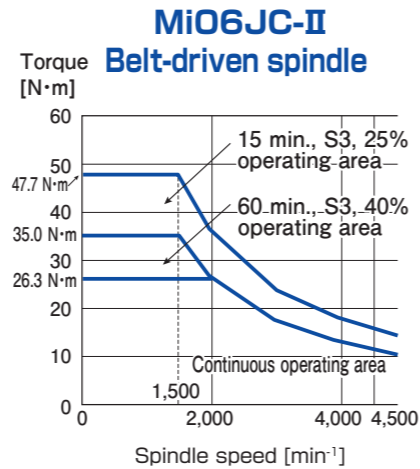


Mi08JL8-II

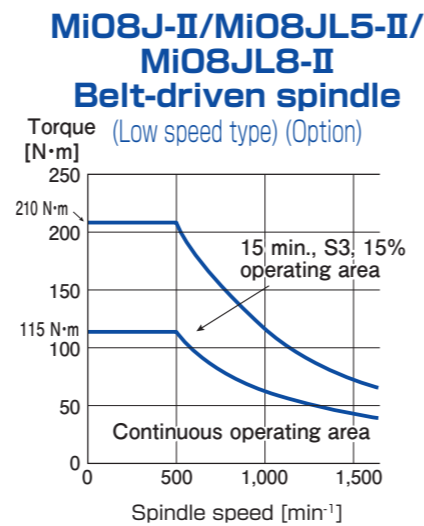
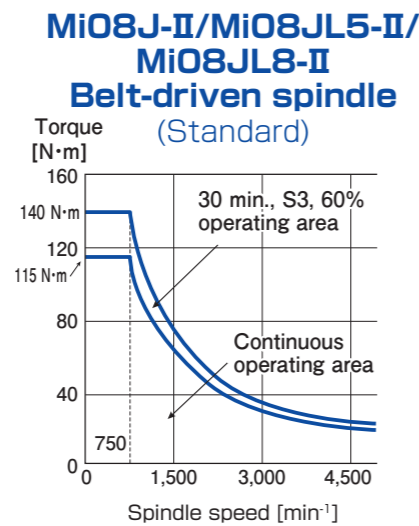
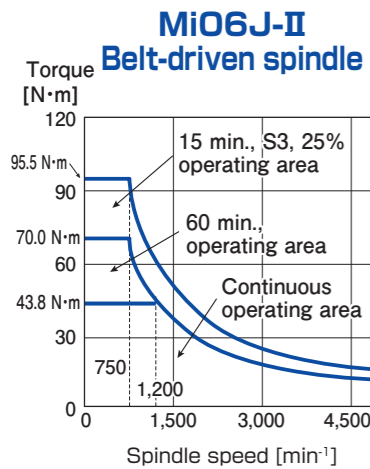
Chuck size: 8 inch
 Max. machining dia.: $\phi 280\text{mm}$
 $\phi 65\text{mm}$ (Barstock)
 Max. machining length: 800mm

Machining capability to achieve high productivity (Material: [JIS] S45C)

Standard type	
Turning (Cutting area)	Drilling
0.9 mm² Machining dia.: ϕ 50 mm Cutting depth: 3.0 mm Cutting speed: 200 m/min Feed: 0.3 mm/rev	ϕ20 mm Cutting speed: 200 m/min Feed: 0.2 mm/rev



	Standard type		Low speed type (Option)	
	Turning (Cutting area)	Drilling	Turning (Cutting area)	Drilling
Mi06J-II	1.5 mm² Machining dia.: ϕ 50 mm Cutting depth: 3.0 mm Cutting speed: 150 m/min Feed: 0.5 mm/rev	ϕ20 mm Cutting speed: 150 m/min Feed: 0.2 mm/rev		
Mi08J-II Mi08JL5-II Mi08JL8-II	1.6 mm² Machining dia.: ϕ 70 mm Cutting depth: 3.2 mm Cutting speed: 150 m/min Feed: 0.5 mm/rev	ϕ30 mm Cutting speed: 150 m/min Feed: 0.2 mm/rev	2.0 mm² Machining dia.: ϕ 100 mm Cutting depth: 4.0 mm Cutting speed: 150 m/min Feed: 0.5 mm/rev	ϕ30 mm Cutting speed: 150 m/min Feed: 0.2 mm/rev



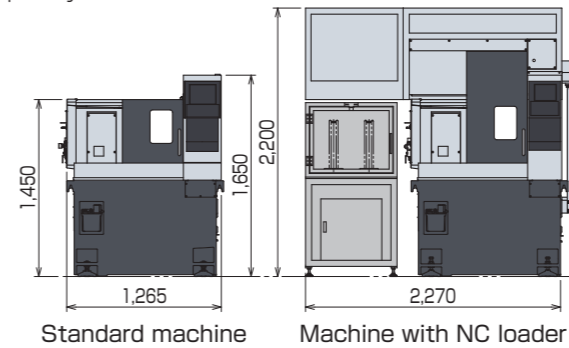
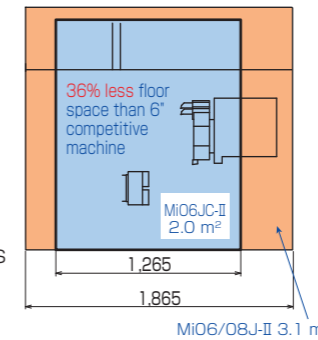
PRECISION TSUGAMI
Mi06JC-II

JC-II Type

Space saving basic machine for turning, drilling, and boring

Space saving

- Compact machine: width 1,265 mm
- 1,450 mm height to the upper guard gives a clear view of the factory which makes operational supervision easier.
- Pullout type coolant tank helps chip cleaning easy.
- Standard coolant tank capacity: 116 L



Machining capability

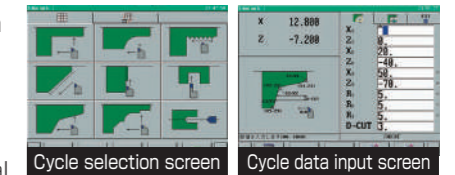
- Enables turning, drilling, and boring.
- Realizes heavy-duty cutting by rigid basic structure.
- Corresponds to the compact automation system.

High-accuracy machining

- Thanks to the thermal displacement compensation, the long-term stable production is realized.

Simple operation

- Programs can be created easily with optional on-board conversational programming software (FANUC: TURN MATE i).
- Safety setting up by interference prevention function at debug mode.
- Reduces the damage to the machine with retraction function by abnormal load detection.



Turret dedicated for turning

- The turret dedicated for turning allows \square 20 mm tool to be mounted on the turret surface directly, and it realizes high efficiency machining.



Item	Specifications
Total number of tools	8
OD tool size	\square 20 mm
Drill holder hole dia.	ϕ 25 mm

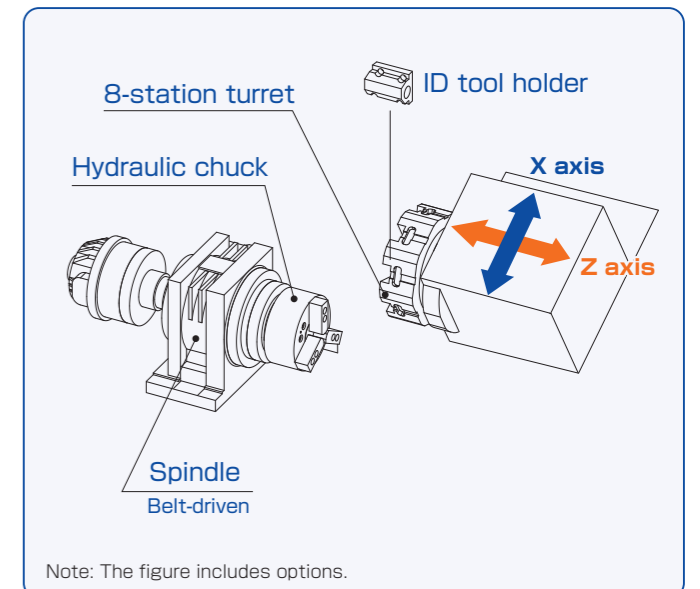
High rigidity

- High-rigidity box slide is equipped for X axis to enable heavy-duty cutting.



Overwhelming cost performance

- Overwhelming cost performance to enable big profit by small investment



Note: The figure includes options.

Mi06J-II/Mi08J-II

J-II Type

Basic machine for turning, drilling, and boring

Machining capability

- Enables turning, drilling, and boring.
- Realizes heavy-duty cutting by rigid basic structure.
- Achieves high productivity by heavy-duty cutting and stable machining accuracy.
- Pullout type coolant tank helps chip cleaning easy.
- Standard coolant tank capacity: 145 L



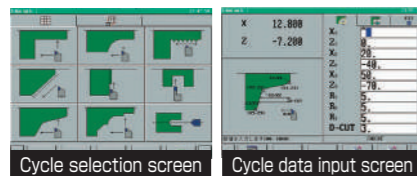
8-station turret

High-accuracy machining

- Thanks to the thermal displacement compensation, the long-term stable production is realized.
- Optional built-in motor spindle is selectable.

Simple operation

- Programs can be created easily with optional on-board conversational programming software (FANUC: TURN MATE i).
- Safety setting up by interference prevention function at debug mode.
- Reduces the damage to the machine with retraction function by abnormal load detection.



Cycle selection screen

Cycle data input screen

Turret dedicated for turning

- The turret dedicated for turning allows □25 mm tool to be mounted on the turret surface directly, and it realizes high efficiency machining.

Item	Specifications
Total number of tools	8
OD tool size	□25 mm
Drill holder hole dia.	φ32 mm/φ40 mm

High rigidity

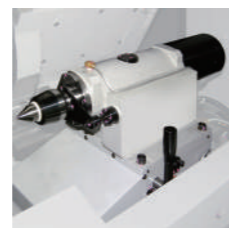
- High-rigidity box slide is equipped for X axis to enable heavy-duty cutting.

Overwhelming cost performance

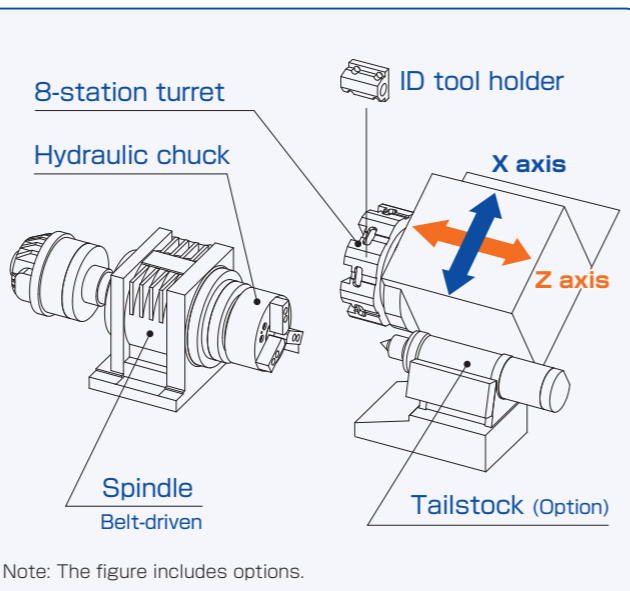
- Overwhelming cost performance to enable big profit by small investment

Corresponds to a long workpiece

- The tailstock (option) enables machining of a long workpiece or a workpiece with less chucking length.



Item	Specifications
Taper size	MT No.4
Tailstock stroke	100 mm (Hydraulic drive)
Position adjustment	Manual (240 mm)



Mi08JL5-II

JL5-II Type

Long stroke type basic machine for turning, drilling, and boring (Max. machining length: 500 mm)

Machining capability

- Max. machining length: 500 mm
- Enables turning, drilling, and boring.
- Realizes heavy-duty cutting by rigid basic structure.
- Equipped with the high rigidity tailstock (option) for long workpieces.
- Pullout type coolant tank helps chip cleaning easy.
- Standard coolant tank capacity: 145 L



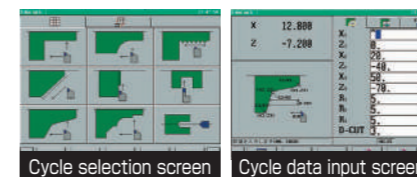
8-station turret

High-accuracy machining

- Thanks to the thermal displacement compensation, the long-term stable production is realized.
- Optional built-in motor spindle is selectable.

Simple operation

- Programs can be created easily with optional on-board conversational programming software (FANUC: TURN MATE i).
- Safety setting up by interference prevention function at debug mode.
- Reduces the damage to the machine with retraction function by abnormal load detection.



Cycle selection screen

Cycle data input screen

Turret dedicated for turning

- The turret dedicated for turning allows □25 mm tool to be mounted on the turret surface directly, and it realizes high efficiency machining.

Item	Specifications
Total number of tools	8
OD tool size	□25 mm
Drill holder hole dia.	φ32 mm/φ40 mm

High rigidity

- High-rigidity box slide is equipped for X axis to enable heavy-duty cutting.

Overwhelming cost performance

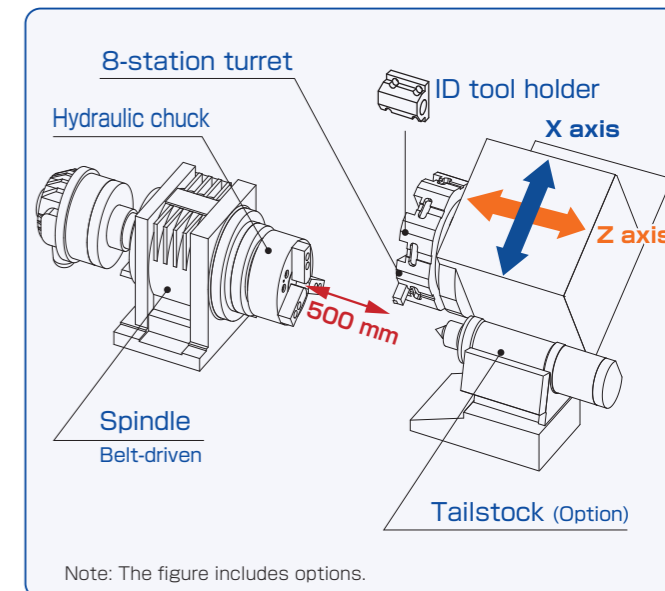
- Overwhelming cost performance to enable big profit by small investment

Corresponds to a long workpiece

- The tailstock (option) enables machining of a long workpiece or a workpiece with less chucking length.



Item	Specifications
Taper size	MT No.5
Tailstock stroke	100 mm (Hydraulic drive)
Position adjustment	Manual (345 mm)



JL8-II Type

Long stroke type basic machine for turning, drilling, and boring (Max. machining length: 800 mm)

Machining capability

- Max. machining length: 800 mm
- Enables turning, drilling, and boring.
- Realizes heavy-duty cutting by rigid basic structure.
- Equipped with the high rigidity tailstock (option) for long workpieces.
- Pullout type coolant tank helps chip cleaning easy.
- Standard coolant tank capacity: 145 L



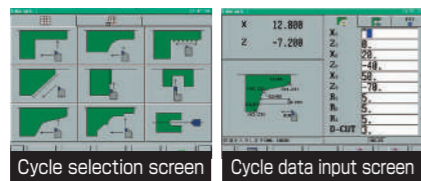
8-station turret

High-accuracy machining

- Thanks to the thermal displacement compensation, the long-term stable production is realized.
- Optional built-in motor spindle is selectable.

Simple operation

- Programs can be created easily with optional on-board conversational programming software (FANUC: TURN MATE i).
- Safety setting up by interference prevention function at debug mode.
- Reduces the damage to the machine with retraction function by abnormal load detection.



Cycle selection screen

Cycle data input screen

Turret dedicated for turning

- The turret dedicated for turning allows □25 mm tool to be mounted on the turret surface directly, and it realizes high efficiency machining.

Item	Specifications
Total number of tools	8
OD tool size	□25 mm
Drill holder hole dia.	φ32 mm/φ40 mm

High rigidity

- High-rigidity box slide is equipped for X axis to enable heavy-duty cutting.

Overwhelming cost performance

- Overwhelming cost performance to enable big profit by small investment

Corresponds to a long workpiece

- Deflection of long workpiece is reduced by using the intermediate work rest unit (option).

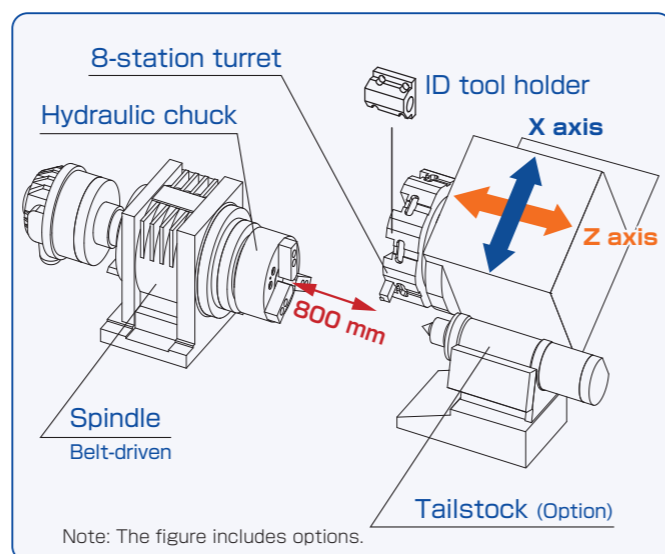


- The tailstock (option) enables machining of a long workpiece or a workpiece with less chucking length.



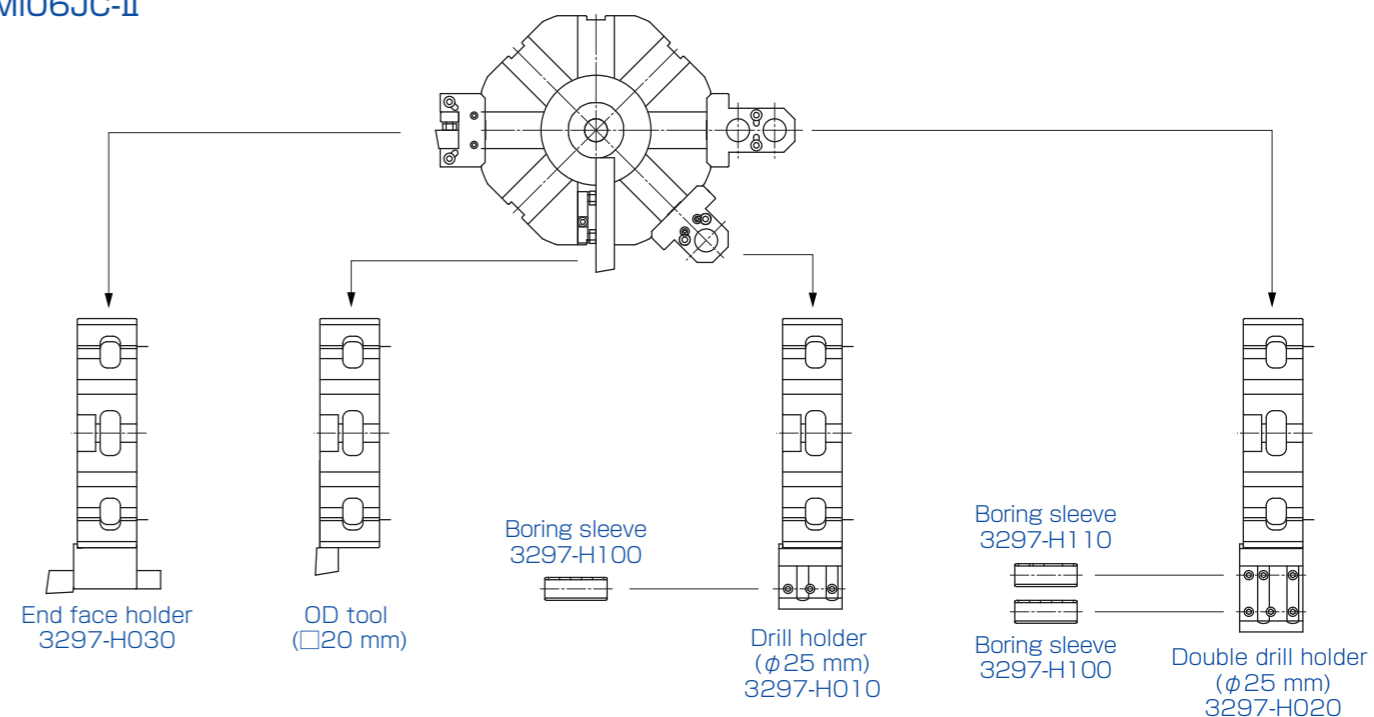
Item	Specifications
Taper size	MT No.5
Tailstock stroke	100 mm (Hydraulic drive)
Position adjustment	Manual (345 mm)

- When using the tailstock (option), the minimum workpiece length is 423.5 mm.
Note: The length varies depending on specifications of chuck or live center.

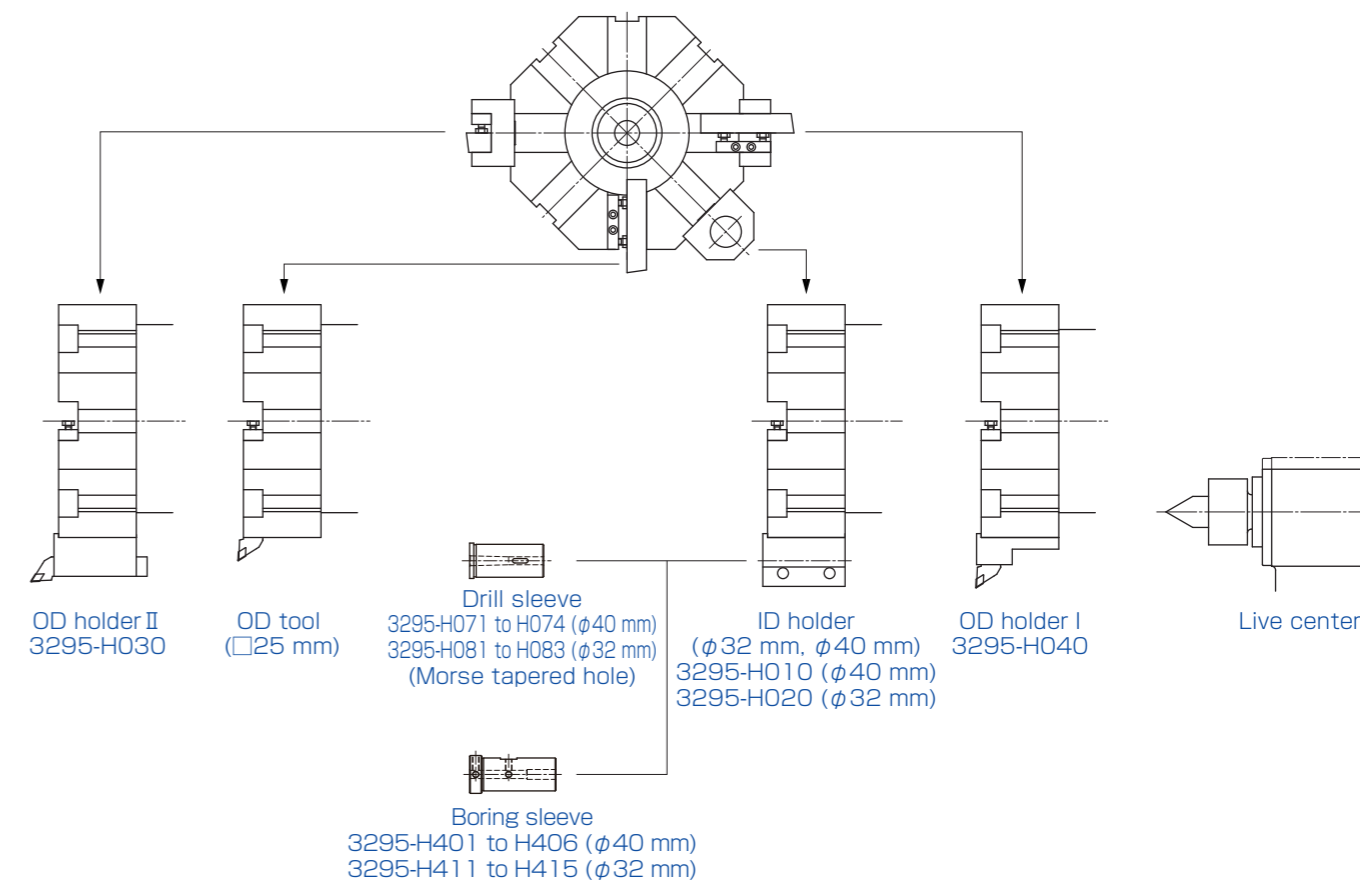


Tool holder (Option)

Mi06JC-II



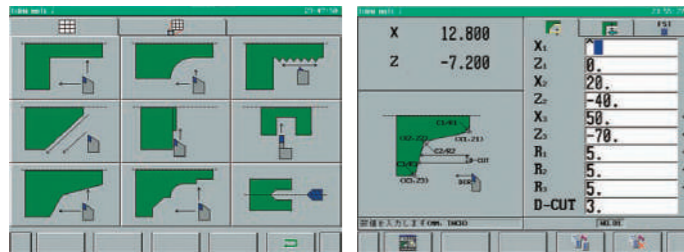
Mi06J-II/Mi08J-II
Mi08JL5-II/Mi08JL8-II



Control functions

Automatic programming software (Option)

On-board conversational programming software, TURN MATE i (FANUC), is prepared as an option.



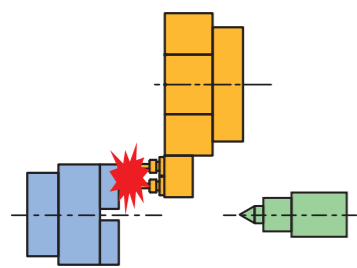
Cycle selection screen

Cycle data input screen

- By inputting data according to the guidance displayed on the screen, processing without NC program is possible.
- Continuous operation of the machining cycle (up to 20 pcs.)
- ISO program conversion function of the processing cycle
Dedicated program for TURN MATE i (FANUC) can be converted to the ISO program.

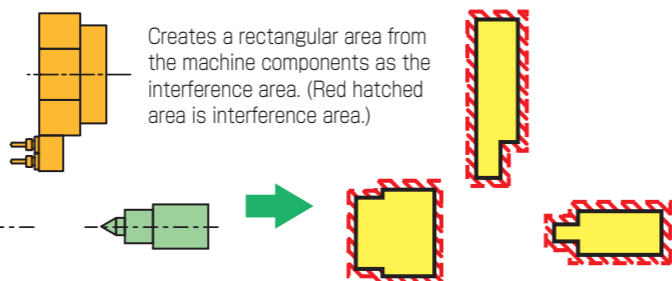
Retraction function by abnormal load detection (Standard)

When load level exceeds the preset level due to the collision, cutting tool breakage, etc., an alarm will occur, and the slide is moved to the retracting direction immediately to reduce the damage to the machine.



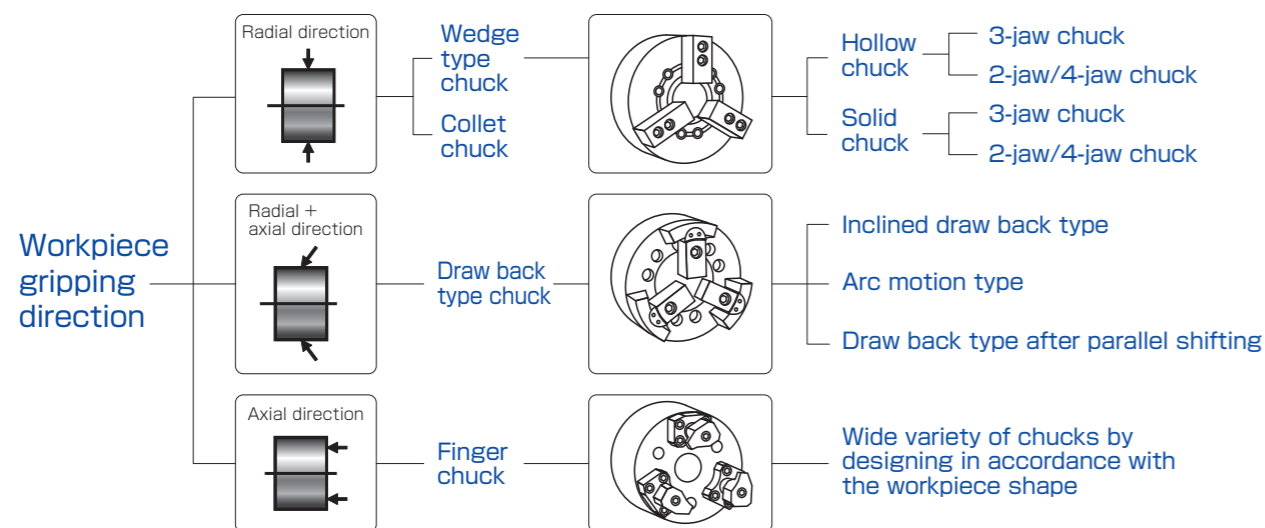
Interference prevention function at debug mode (Standard)

When the linear axis enters into the interference area at debug mode, the axis stops moving and the alarm occurs.



Creates a rectangular area from the machine components as the interference area. (Red hatched area is interference area.)

Chuck system (Option)




Options

Chip conveyor

The installation direction of the chip conveyor can be selected from either right side discharge or rear discharge.

(Only rear discharge is available for Mi06JC-II.)

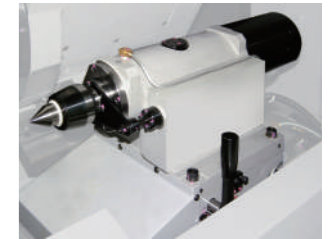
Spec.	Hinge type
Applicable	Steel
Usage	For long chips

Spec.	Hinge + filter type
Applicable	Steel, Castings, Non-ferrous
Usage	From fine, crushed chips to long chips
Shape	 Filter

Tailstock

Enables machining of a long workpiece or a workpiece with less chucking length.

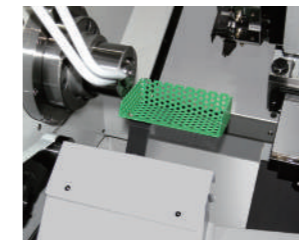
(Except JC)



Work catcher

The workpiece is discharged to the work conveyor.

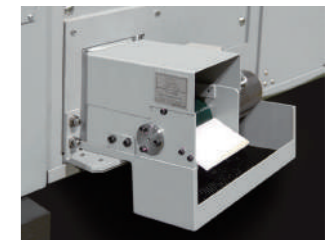
(It cannot be used together with the tool setter.)



Work conveyor

The workpiece is carried to the outside of the machine.

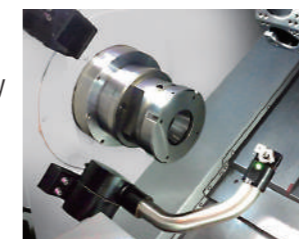
(The work storage box is not included in this option.)



Tool setter

Tool offset is set automatically by pressing the tool against the sensor located at the top of the arm.

(It cannot be used together with the work catcher.)



Signal indicator (triple)

Three color lamp indicates the status of the machine.



Foot switch

The spindle chuck is opened or closed with the foot switch.

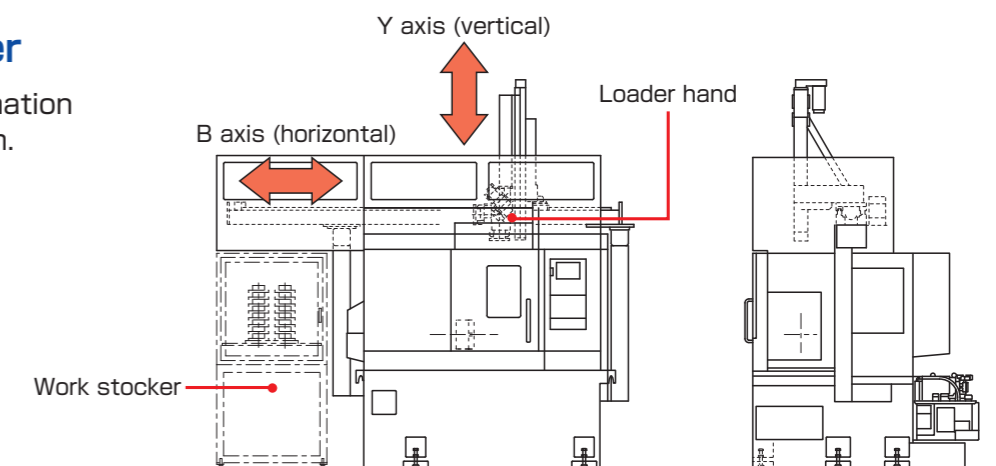


High pressure pump (2 MPa)

A trochoidal pump with discharge pressure of 2 MPa is available.

2-axis NC loader

Corresponds to automation with NC loader system.



Specifications

Machine specifications

Item	Mi06JC-II	Mi06J-II	Mi08J-II	Mi08JL5-II	Mi08JL8-II
Max. machining dia.	φ220 mm φ42 mm (Barstock) (Option)	φ260 mm φ51 mm (Barstock)	φ280 mm φ65 mm (Barstock)	φ280 mm φ65 mm (Barstock)	
Max. machining length	190 mm	290 mm		500 mm	800 mm
Swing over bed	φ530 mm	φ540 mm		φ540 mm	
Spindle chuck size	6 inch	6 inch	8 inch	8 inch	8 inch
Spindle speed	Max. 4,500 min ⁻¹ (Rated speed: 4,000 min ⁻¹)*1	Max. 4,500 min ⁻¹ (Rated speed: 4,000 min ⁻¹)*1	Max. 4,000 min ⁻¹ (Rated speed: 3,500 min ⁻¹)*1 (Standard type) / Max. 1,500 min ⁻¹ (Low speed type) (Option)	Max. 4,000 min ⁻¹ (Rated speed: 3,500 min ⁻¹)*1 (Standard type) / Max. 1,500 min ⁻¹ (Low speed type) (Option)	
Spindle end face configuration	φ140 mm flat	JIS A2-6		JIS A2-6	
Spindle bore	φ52 mm	φ73 mm		φ73 mm	
Spindle draw tube ID	φ43.6 mm	φ52 mm	φ66 mm	φ66 mm	
Spindle bearing ID	φ80 mm	φ100 mm		φ100 mm	
Number of turret stations	8	8		8	
OD tool size	□20 mm	□25 mm		□25 mm	
Drill holder hole dia.	φ25 mm	φ32 mm/φ40 mm		φ32 mm/φ40 mm	
Spindle motor	5.5/7.5 kW	5.5/7.5 kW	9/11 kW	9/11 kW	
Coolant pump motor	520 / 815 W (50 Hz / 60 Hz)				
Stroke X axis/Z axis	X axis: 130 mm Z axis: 230 mm	X axis: 160 mm Z axis: 330 mm		X axis: 160 mm Z axis: 560 mm	X axis: 160 mm Z axis: 860 mm
Rapid traverse rate X axis/Z axis	X axis, Z axis: 24 m/min	X axis: 24 m/min Z axis: 27 m/min		X axis: 24 m/min Z axis: 27 m/min	
Taper size for tailstock (Option)	—	MT No.4		MT No.5	
Power source requirement	18 kVA	23 kVA	27 kVA	27 kVA	
Compressed air requirement	0.5 MPa				
Air discharge rate	100 NL/min				
Coolant tank capacity	116 L	145 L		145 L	
Size (Width x Depth x Height)	1,265 mm x 1,560 mm x 1,650 mm	1,865 mm x 1,673 mm x 1,600 mm		2,170 mm x 1,778 mm x 1,600 mm	2,511 mm x 1,818 mm x 1,690 mm
Weight	2,230 kg	3,300 kg		3,430 kg	4,000 kg

*1 The rotation more than the rated speed should be short period.

NC specifications

Item	Mi06JC-II	Mi06J-II	Mi08J-II	Mi08JL5-II	Mi08JL8-II
Controlled axes	X, Z				
Least input increment	0.001 mm (X-axis in diameter)				
Max. programmable value	±8 digits				
Interpolation method	Linear, Circular				
Feedrate	1 to 6,000 mm/min				
Feedrate override	0 to 150% in 10% increments				
Dwell	G04, 0 to 99999.999				
Absolute/incremental command	X, Z: Absolute U, W: Incremental				
Number of tool offset	64				
LCD/MDI	10.4" color LCD				
Display language	Japanese / English				
Part program storage size	2 Mbyte				
Number of registerable programs	1,000				
Miscellaneous functions	M4-digits				
Spindle functions	S4-digits				
Tool functions	T4-digits				

Safety Instructions for Coolant Selection

Use a water-miscible coolant only. Do not use any oil-based coolant.

In case of using an oil-based coolant:

- There is a risk of fire which hot chips or cutting-heat may ignite coolant mist.
- Since the temperature of oil-based coolant rises more than that of water-miscible coolant, it has a great influence on the thermal displacement of the machine.
- In case of unavoidable use of oil-based coolant, an appropriate device for safety such as automatic fire extinguisher is required.

Before using an oil-based coolant, please contact TSUGAMI at the time of consideration of installation.

Accessories

Machine standard accessories

Item	MiO6JC-II	MiO6J-II/MiO8J-II	MiO8JL5-II/MiO8JL8-II
Internal light		Standard	
Door interlock		Standard	
Through-turret coolant	—		Standard
Hydraulic cylinder	Standard (Solid)		Standard
Standard tools		Standard	
Plate, Leveling bolt		Standard	
Transit clamps		Standard	
Spindle air purge		Standard	
Thermal displacement compensation		Standard	
Over-spindle coolant nozzle		Standard	
Coolant level switch		Standard	
Lubrication discharge detection		Standard	

NC standard accessories

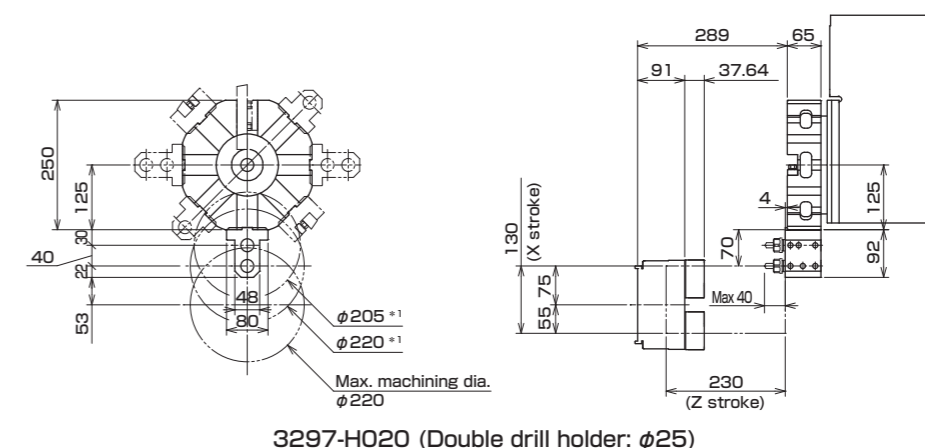
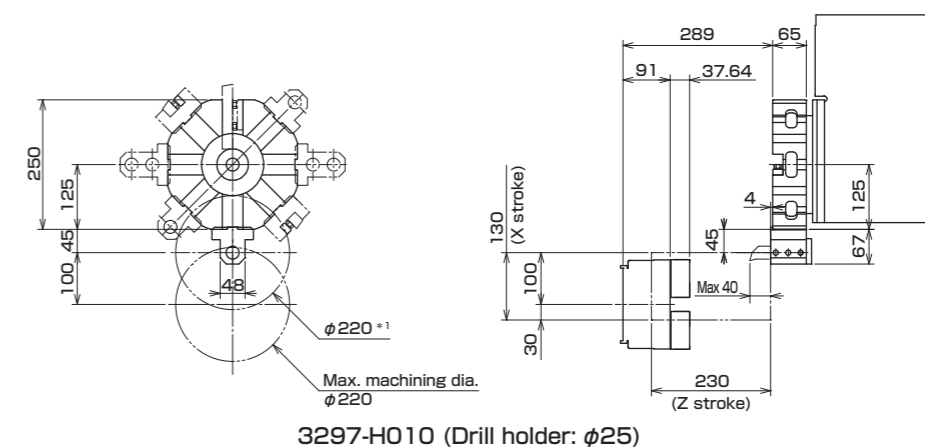
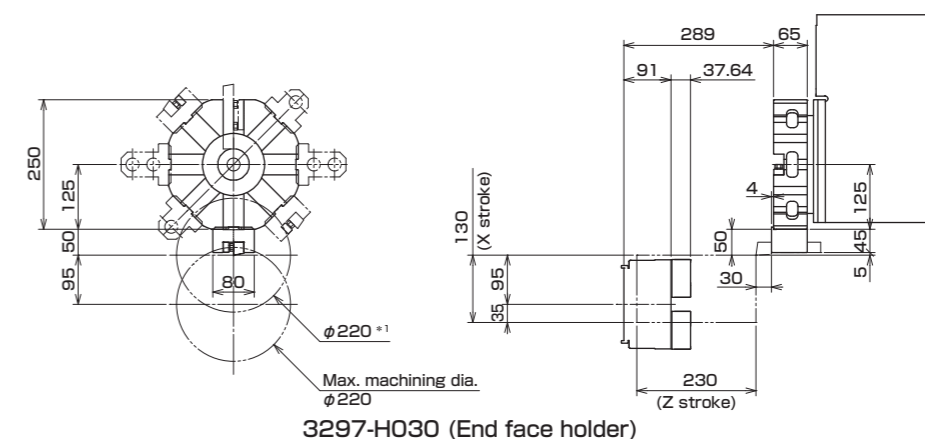
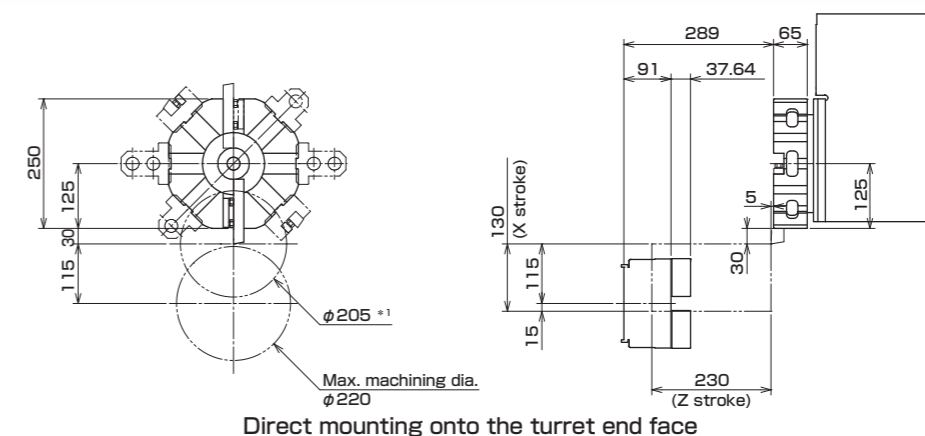
Item	Item	Item
Chasing function	Tool geometry/wear offset	Rigid tap (spindle)
Continuous thread cutting	Programmable data input	Abnormal load detection
Manual pulse generator	Chamfering & corner R	Variable-lead thread cutting
Memory card I/O interface	Multiple repetitive cycle	Thread cutting cycle retract
Background editing	Extended program editing	Interference prevention function
Run time & parts number display	Direct drawing dimension programming	Power consumption monitor
Custom macro	Inch/metric conversion	
Constant surface speed control	Canned drilling cycle	

Options

Item	MiO6JC-II	MiO6J-II/MiO8J-II	MiO8JL5-II/MiO8JL8-II
Hydraulic chuck	○	○	○
Collet chuck	○	○	○
Tool holder	○	○	○
Work conveyor	○	○	○
2-axis NC loader	○	○	○ *1
Work stocker (flange)	○	○	○ *1
Work stocker (shaft)	—	○	○ *1
Tool setter	○	○	○
Chip conveyor *2	○ (Rear discharge only)	○	○
High pressure pump (2MPa)	○	○	○
Tailstock	—	○	○
Live center	—	○ (MT No.4)	○ (MT No.5)
Foot switch (spindle)	○	○	○
Signal indicator	○	○	○
Coolant flow switch	○	○	○
Bar feeder interface	○	○	○
RS232C input/output interface	○	○	○
Manual handle retrace	○	○	○
FANUC: TURN MATE i	○	○	○
Tool load monitor (spindle)	○	○	○
Tool load monitor (linear axis)	○	○	○
Tool counter	○	○	○
MT-LINK i	○	○	○
AI servo monitor *3	○	○	○

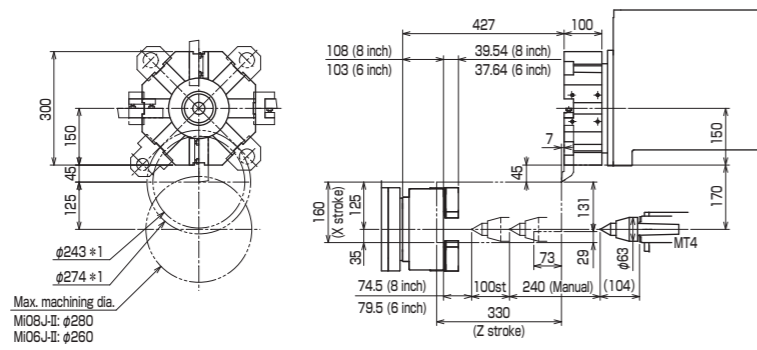
*1 Custom-made option for MiO8JL8-II. *2 Right side discharge or rear discharge is selectable. *3 MT-LINK i (option) is additionally required.

Tooling zone JC-II

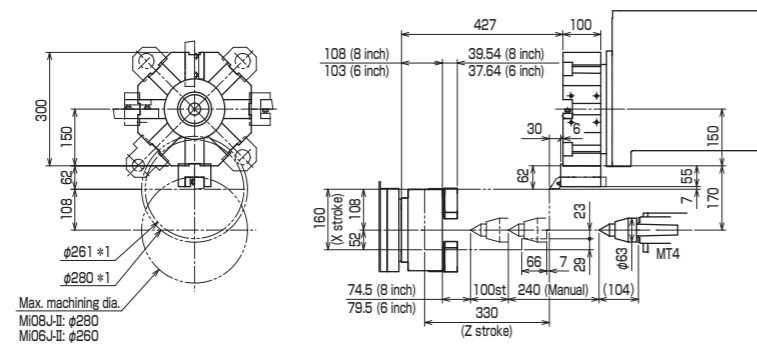


*1 Max. workpiece dia. restricted by the adjacent tool holders.
*2 Chuck type (HANDOX): OPB-206 (6 inch)

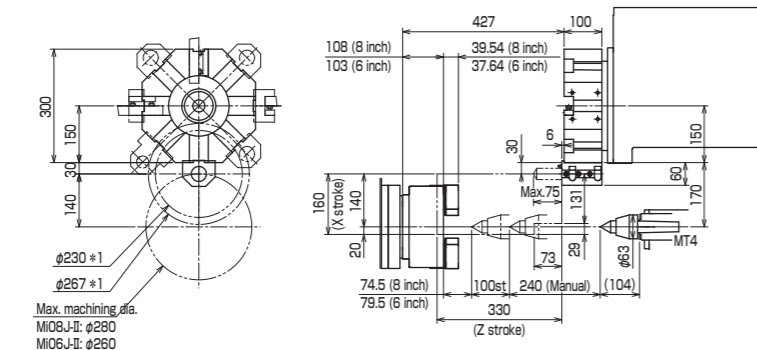
Tooling zone J-II



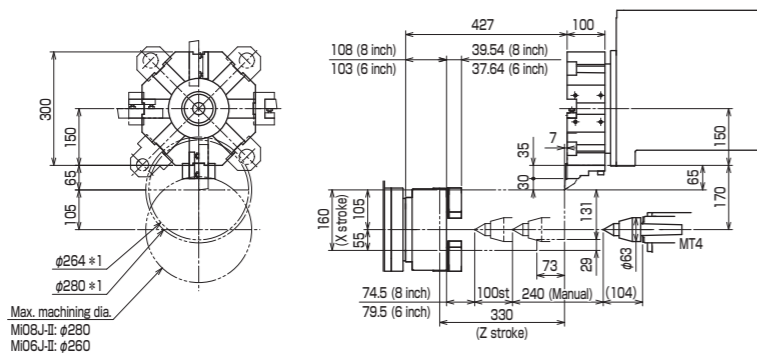
Direct mounting on the turret end face



3295-H030 (End face holder)



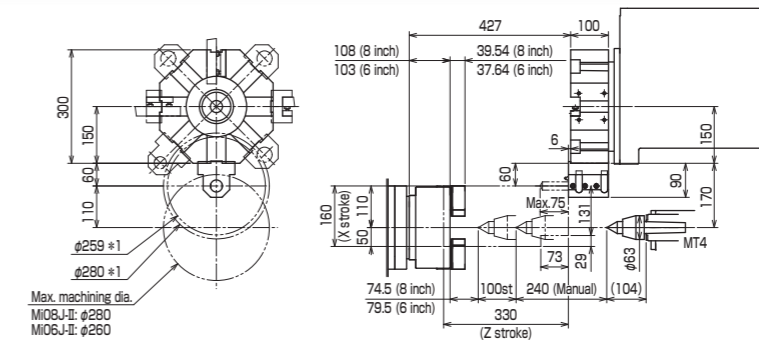
3295-H010 (Drill holder φ40 mm)



3295-H040 (Offset holder)

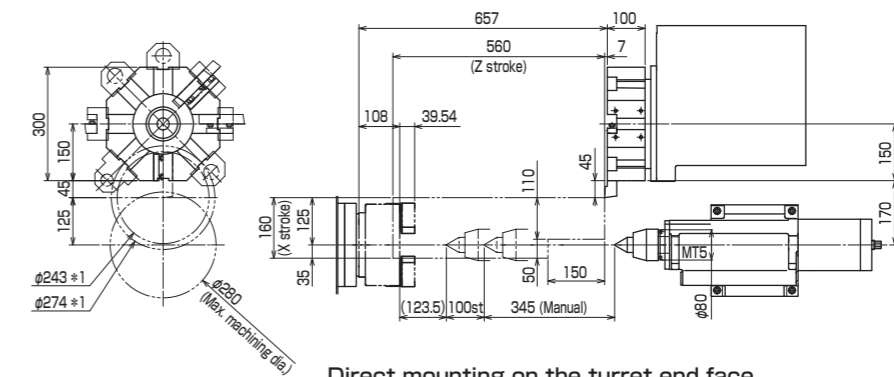
*1 Max. workpiece dia. restricted by the adjacent tool holders.
*2 Chuck type (CHANDOX): OPB-206 (6 inch), OPB-208 (8 inch)

Tooling zone J-II

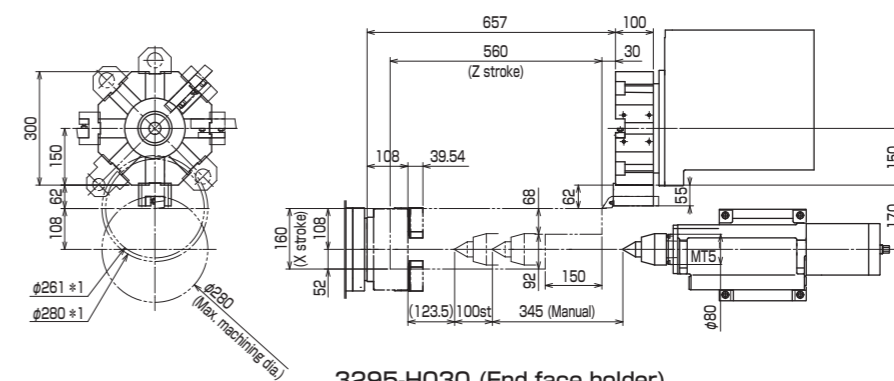


3295-H020 (Drill holder φ32 mm)

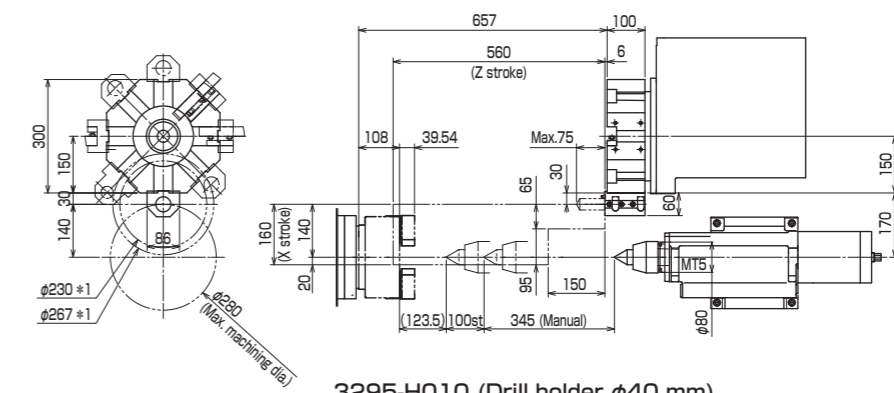
Tooling zone JL5-II



Direct mounting on the turret end face



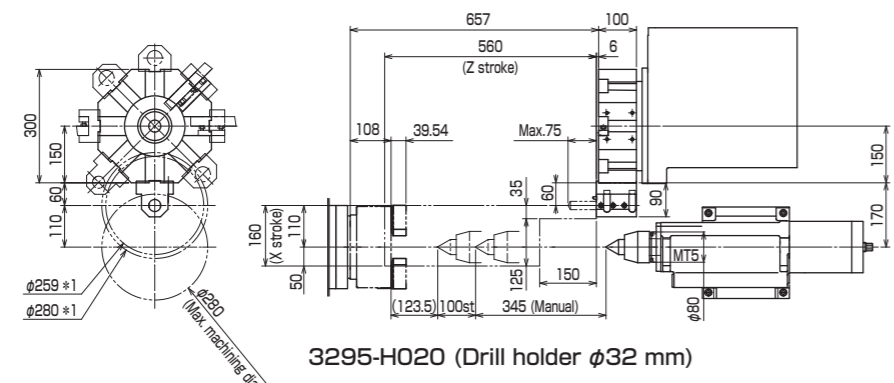
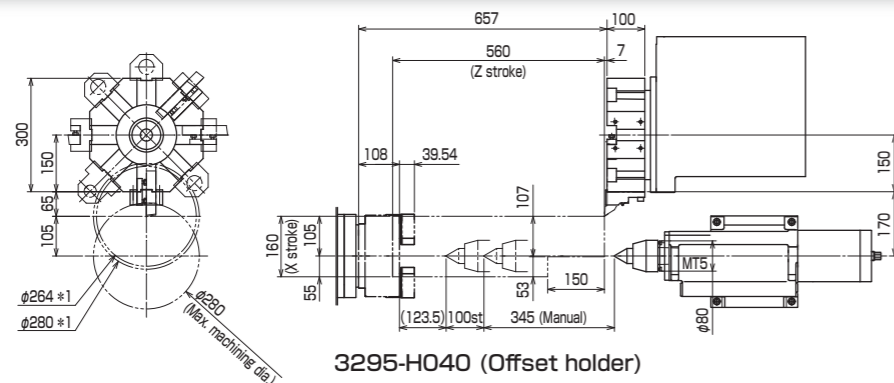
3295-H030 (End face holder)



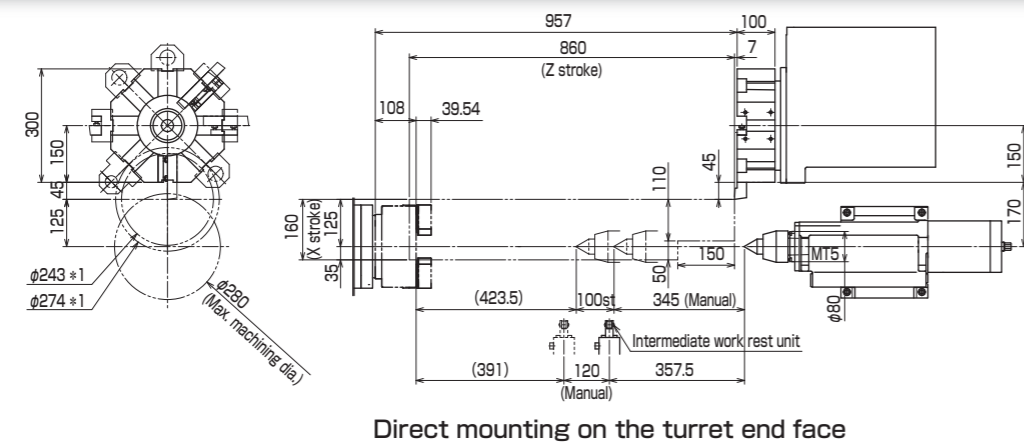
3295-H010 (Drill holder φ40 mm)

*1 Max. workpiece dia. restricted by the adjacent tool holders.
*2 Chuck type of J-II (CHANDOX): OPB-206 (6 inch), OPB-208 (8 inch)
*3 Chuck type of JL5-II (CHANDOX): OPB-208 (8 inch)

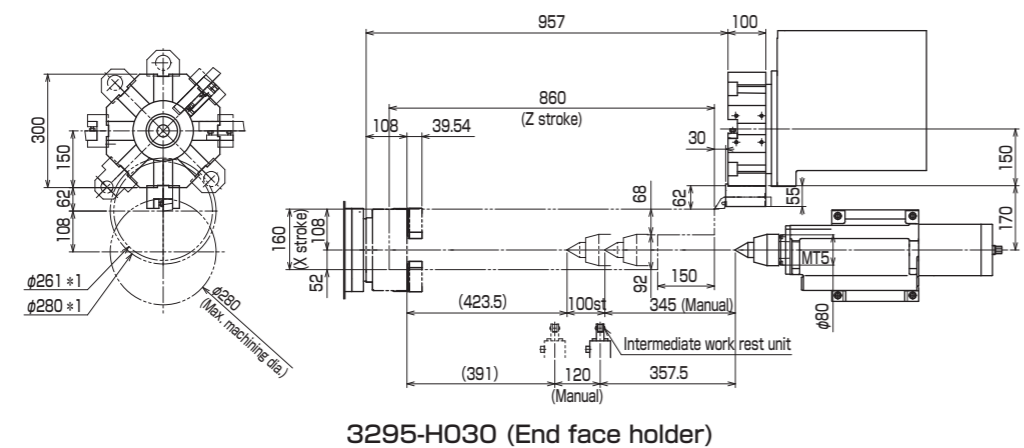
Tooling zone JL5-II



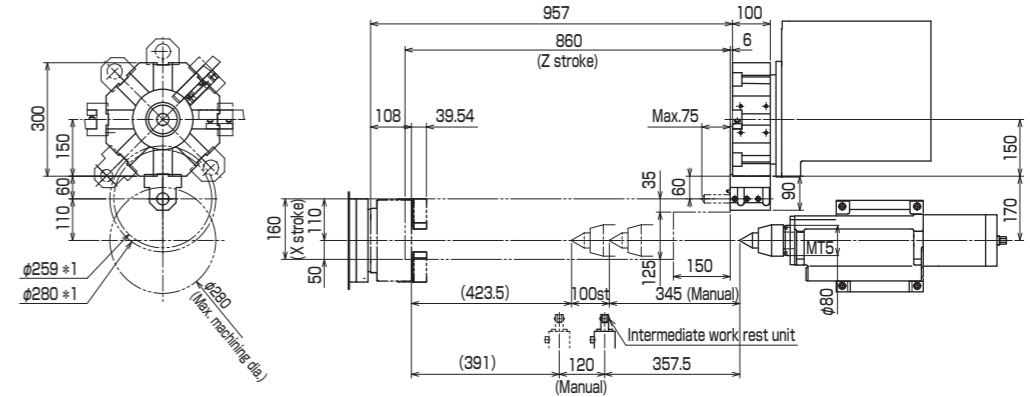
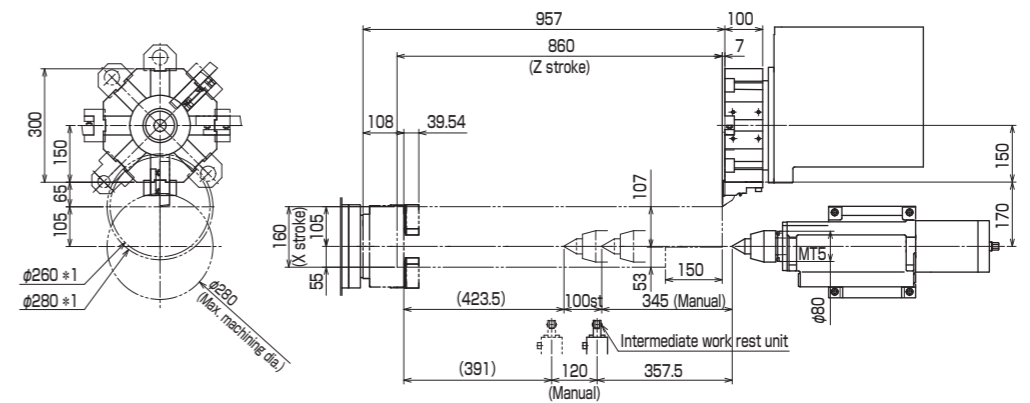
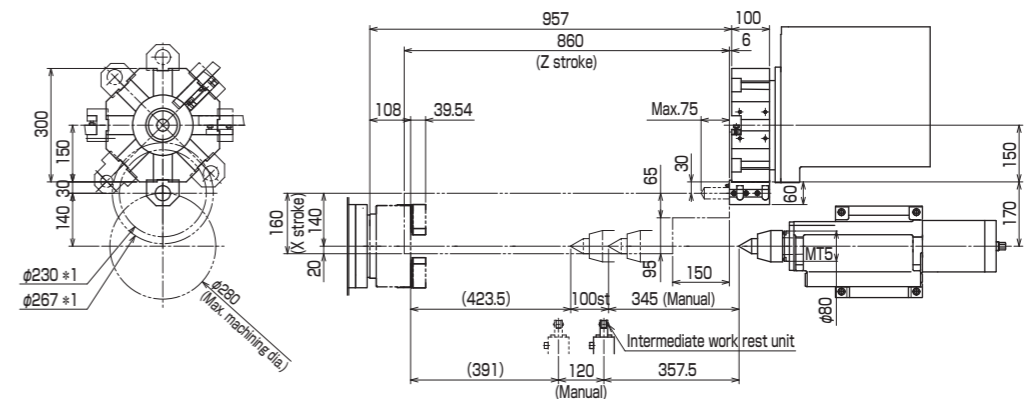
Tooling zone JL8-II



Direct mounting on the turret end face



Tooling zone JL8-II



*1 Max. workpiece dia. restricted by the adjacent tool holders.
*2 Chuck type (CHANDOX): OPB-208 (8 inch)

*1 Max. workpiece dia. restricted by the adjacent tool holders.
*2 Chuck type (CHANDOX): OPB-208 (8 inch)