



## Compact CNC Lathe for Automatic Machining

# UT-100/GX-100 Series

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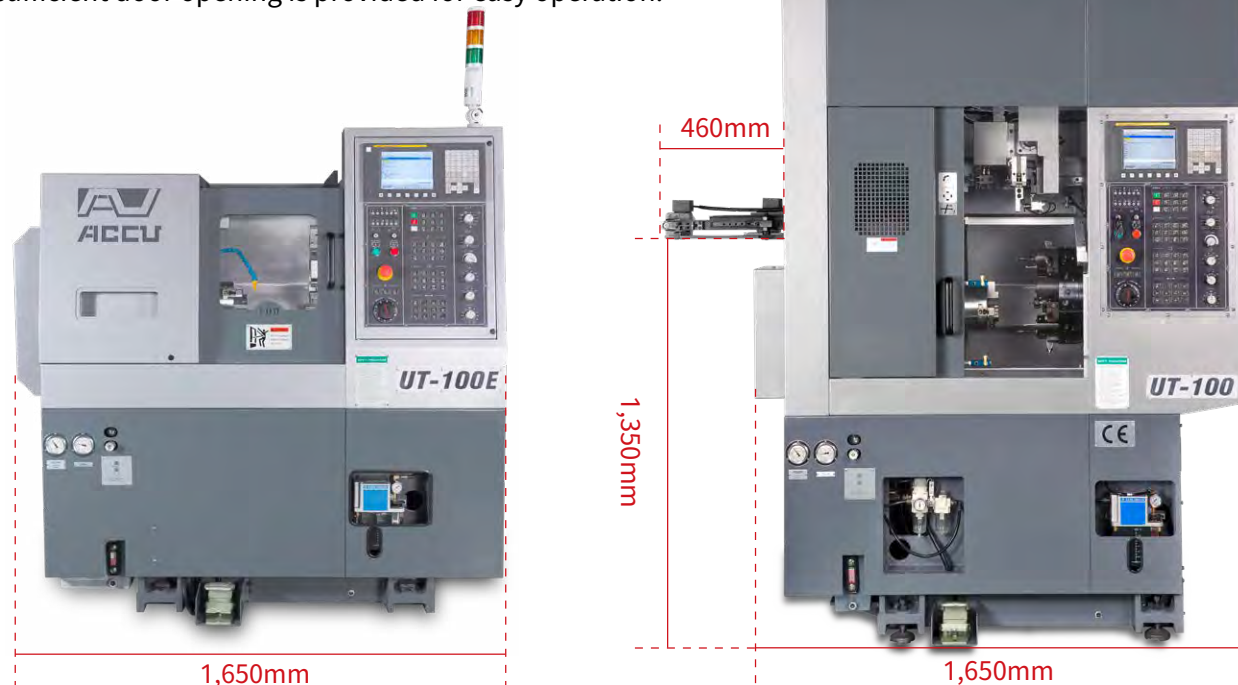




## MINIMIZED FOOTPRINT

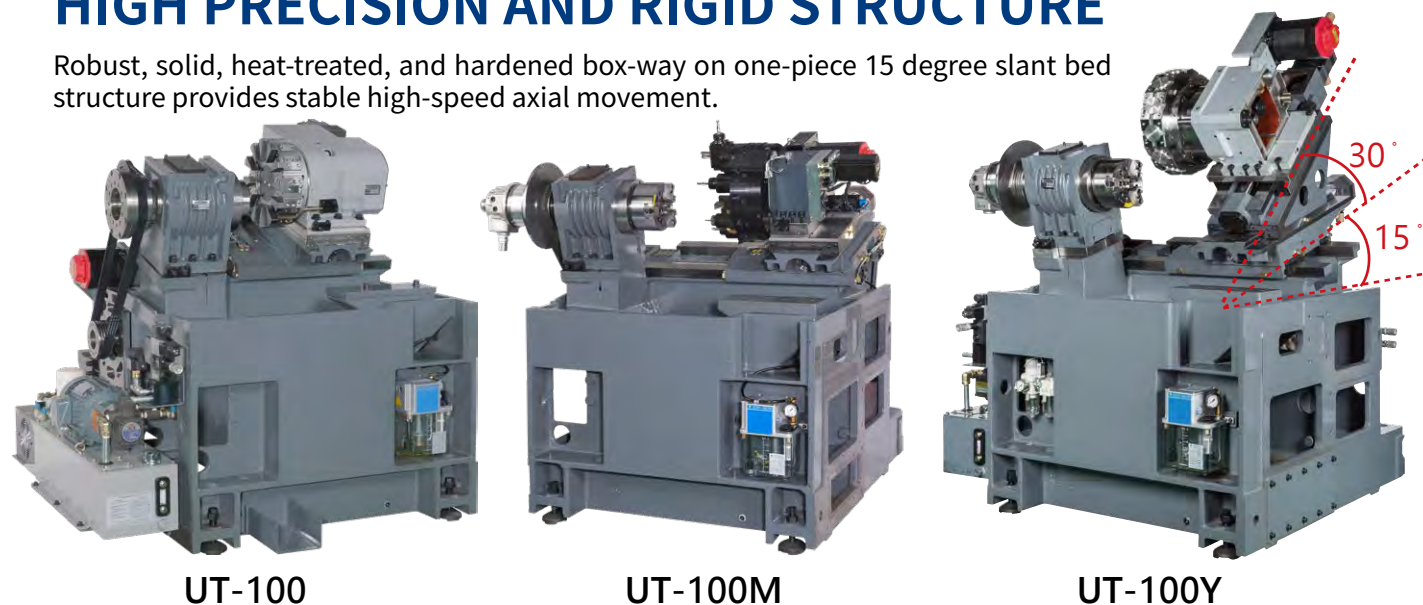
UT-100 is the perfect solution for limited working space, with its industrial aesthetic design having the width of only 1650 mm. Even with minimized machine width, sufficient door opening is provided for easy operation.

- Built-in compact loader



## HIGH PRECISION AND RIGID STRUCTURE

Robust, solid, heat-treated, and hardened box-way on one-piece 15 degree slant bed structure provides stable high-speed axial movement.



UT-100

UT-100M

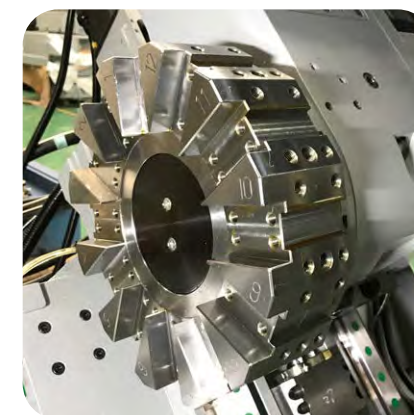
UT-100Y

## TOP QUALITY MEEHANITE CASTING

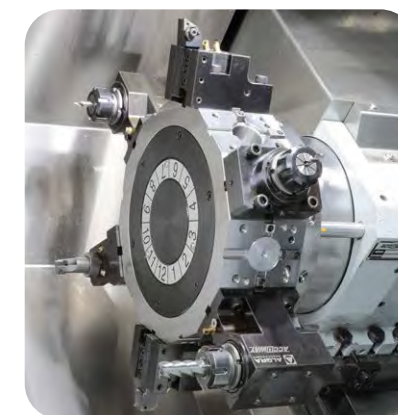
Meehanite casting owns fine and stable matrix structure with uniformly distributed graphite flakes and properties. Natural seasoning as well as annealing stress-relief process effectively reduce repeated dimensional changes, absorb machining induced thermal stress and vibration. Such excellent machining characteristics lead to high volume cutting with less tool wear advantages. Entire cutting cycle time is thus minimized to achieve higher production efficiency.

## HIGH-PRECISION HEADSTOCK

Symmetric heat-dissipated fin shaped ribbed headstock design eliminates thermal distortion effectively. It is precisely bored and ground to ensure excellent roundness and concentricity. Spindle and bearings are assembled with headstock by precision tools and fixtures. Standardized run-in test removes abnormal temperature arising from mismatched tolerance.



Hydraulic Turret



BMT



VDI

## HIGH PRECISION SERVO MECHANICAL TURRET

Mounted with high precision and large size curve coupling, turret disc is driven by cam-follower with hydraulic motor or servo motor to obtain high repeated indexing accuracy under continuous tool change. The 12-position BMT or VDI live tool turret providing various profile milling and off-center drilling capabilities has trouble-free maintenance with less misalignment problem. If equipped with special coolant nozzle, turret can support up to 70 Bar of high pressure.

## ACCURATE LEAD PITCH BALLSCREW

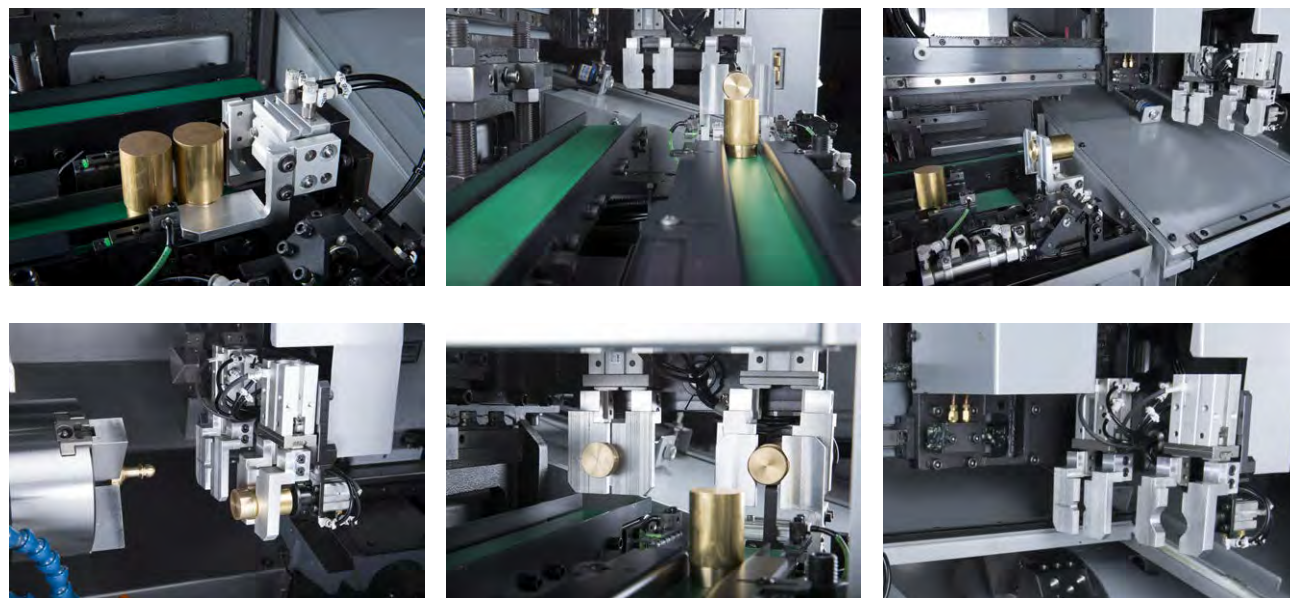
Pre-tensioned, precise ballscrew with special cooling networks eliminate backlash and thermal elongation significantly. Direct-drive motor not only reduces energy loss during transmission, but also increases axial positioning accuracy.



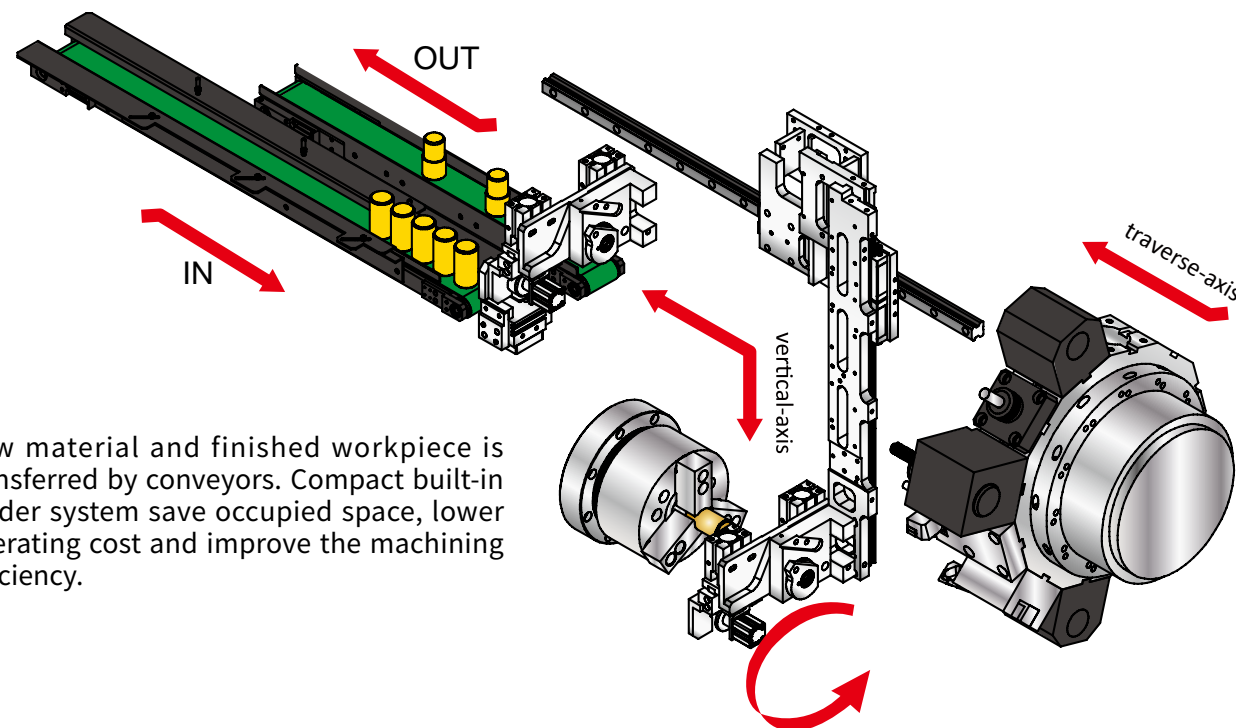


## FLEXIBLE AUTOMATION SYSTEM

UT-100 series offers optional built-in type and gantry type automatic loading/unloading system. The maximum diameter of raw material is 125 mm and weight limit is 2 kg respectively to satisfy various production requirement. Raw material is loaded, processed and unloaded with finished part automatically. It can optimized machine run time under minimized labor interference.



## BUILT-IN TYPE LOADER SYSTEM

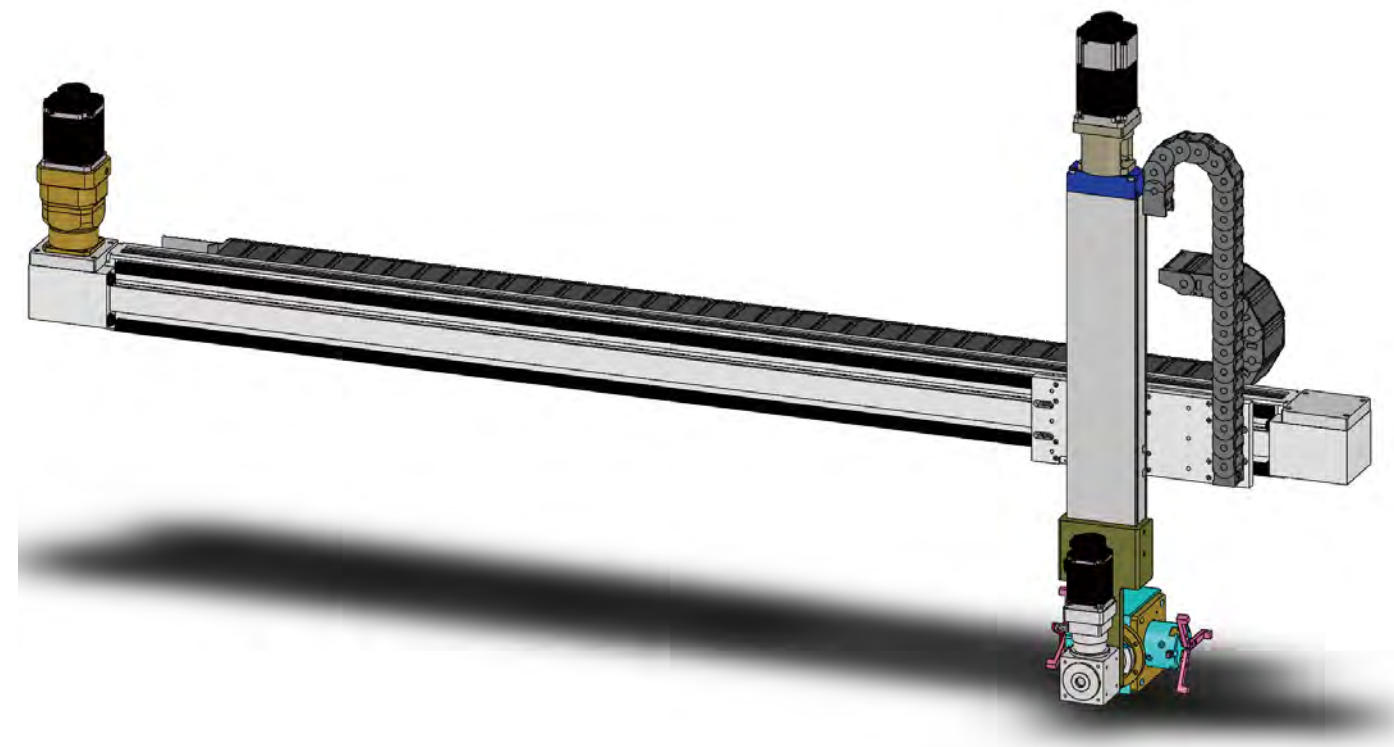


Raw material and finished workpiece is transferred by conveyors. Compact built-in loader system save occupied space, lower operating cost and improve the machining efficiency.

| Item<br>Model     | Loader<br>axis | Max.<br>Diameter | Max.<br>Length | Max.<br>weight | traverse-axis   |        |                           | vertical-axis   |            |                           |
|-------------------|----------------|------------------|----------------|----------------|-----------------|--------|---------------------------|-----------------|------------|---------------------------|
|                   |                |                  |                |                | drive<br>system | stroke | Rapid<br>traverse<br>rate | drive<br>system | stroke     | Rapid<br>traverse<br>rate |
| UT-100<br>UT-100Y | 2              | Ø60              | 100            | 0.5/1          | servo<br>motor  | 360    | 84                        | servo<br>motor  | 360<br>660 | 84                        |

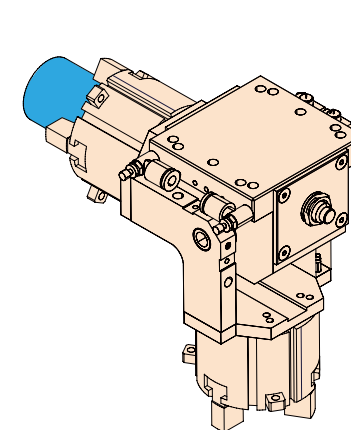
## GANTRY LOADER SYSTEM

Raw material and finished workpiece is stored on various type of work stockers to match workpiece geometry and feeding requirement.

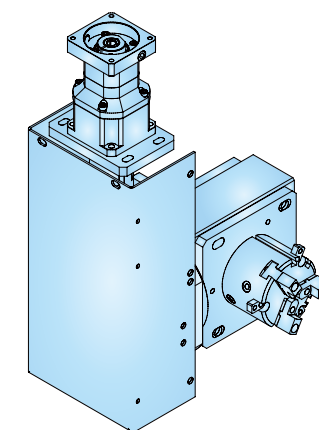


| Item<br>Model | Loader<br>axis | Max.<br>Diameter | Max.<br>Length | Max.<br>weight | traverse-axis   |        |                           | vertical-axis   |        |                           |
|---------------|----------------|------------------|----------------|----------------|-----------------|--------|---------------------------|-----------------|--------|---------------------------|
|               |                |                  |                |                | drive<br>system | stroke | Rapid<br>traverse<br>rate | drive<br>system | stroke | Rapid<br>traverse<br>rate |
| UT-100MX      | 2              | Ø150             | 100            | 1              | servo<br>motor  | 1650   | 90                        | servo<br>motor  | 360    | 75                        |

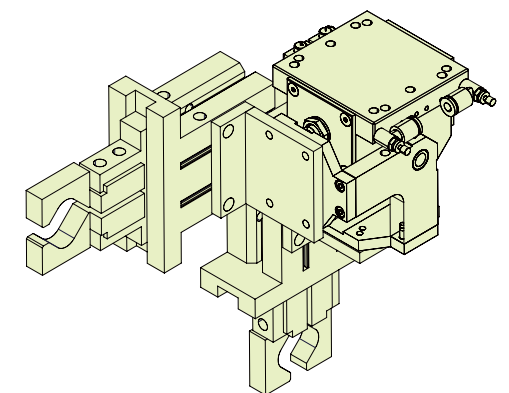
## GRIPPER HEADS



3-jaw pneumatic gripper with 2 x 90° indexing.



2-jaw servo gripper with 2 x 180° indexing.

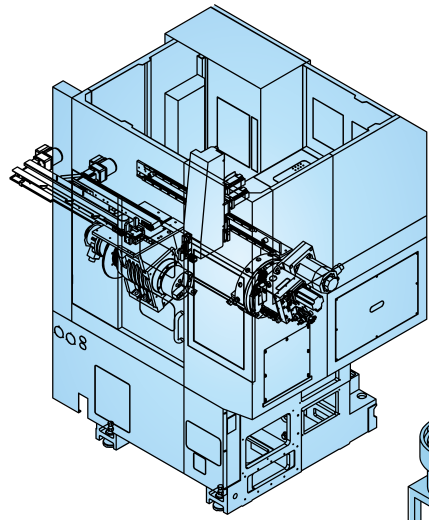


Pneumatic gripper for shafts with 2 x 90° indexing.

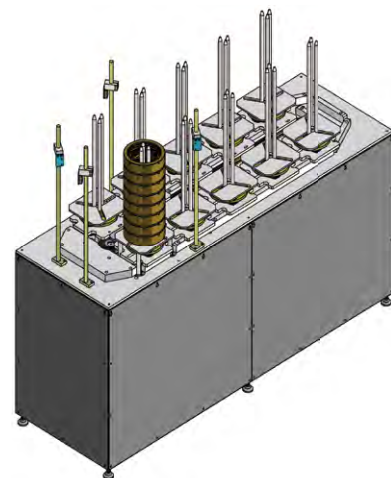


## AUTO FEEDING

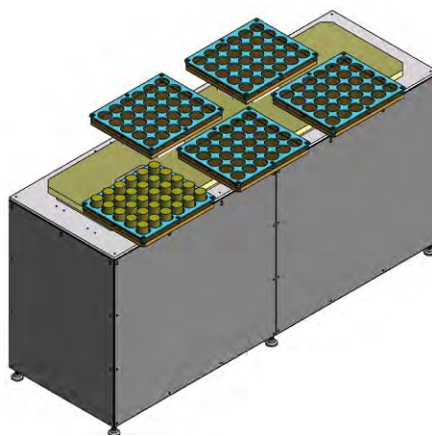
Applicable for various types of material feeders for different workpiece requirements.



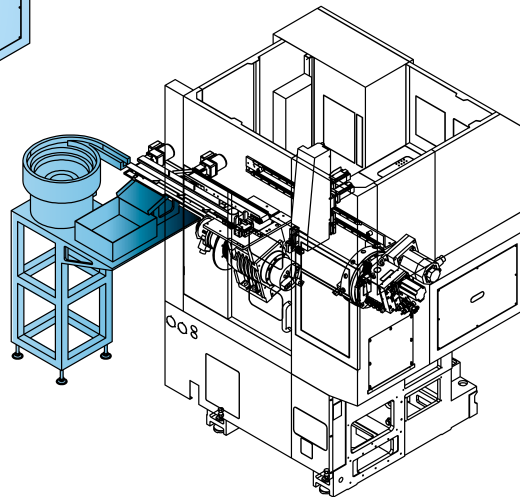
Vibration feeder & tray stocker



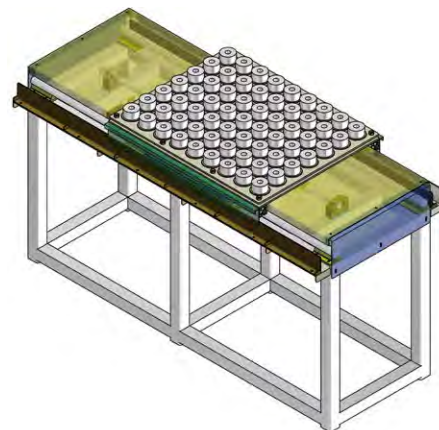
Multi-layer work stocker



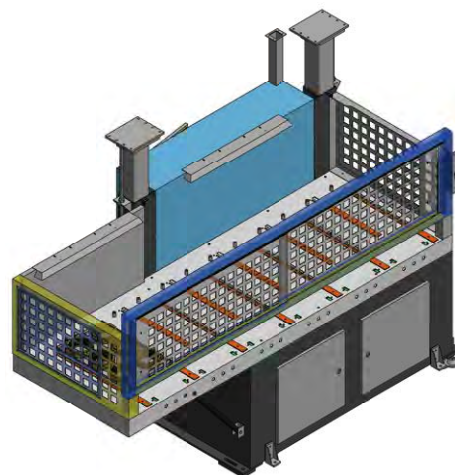
Multi-pallet stocker



Conveyor tray stocker



Transferred single pallet stocker

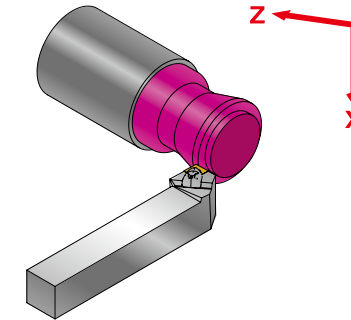


Fixed pallet stocker

## VARIETY OF MACHINING CAPACITY

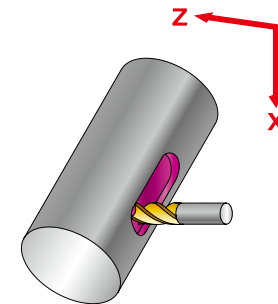
### • Basic Turning

Machining Inner and outer diameters, end face, conical surface, threads, tapping...etc.



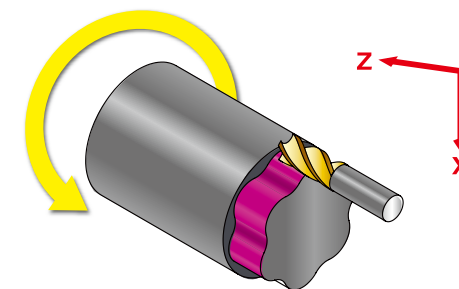
### • Slot Milling

Machining flat surface & groove.



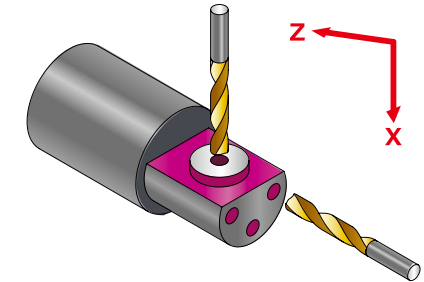
### • Contour machining

C-axis & X-axis simultaneous cutting



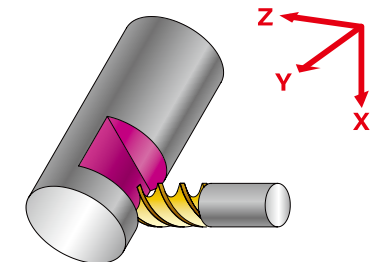
### • Live tool drilling

Precise parts reaming



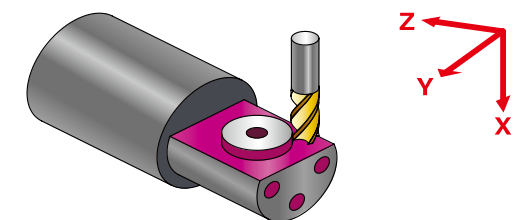
### • Basic complex machining

By using Y-axis combined motion control to perform flat, contour, groove, and slot milling

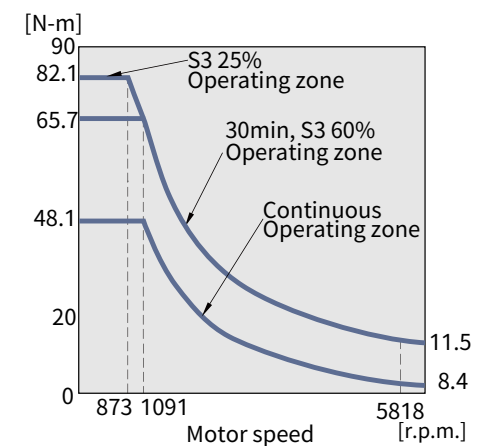
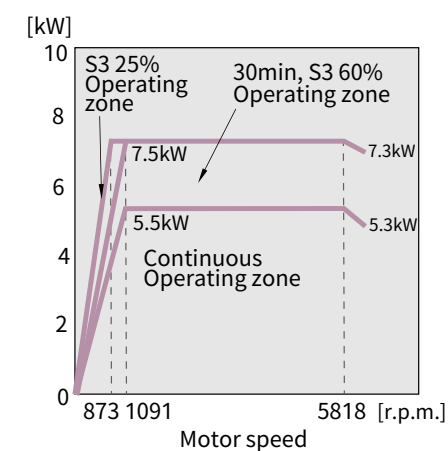


### • Profile machining

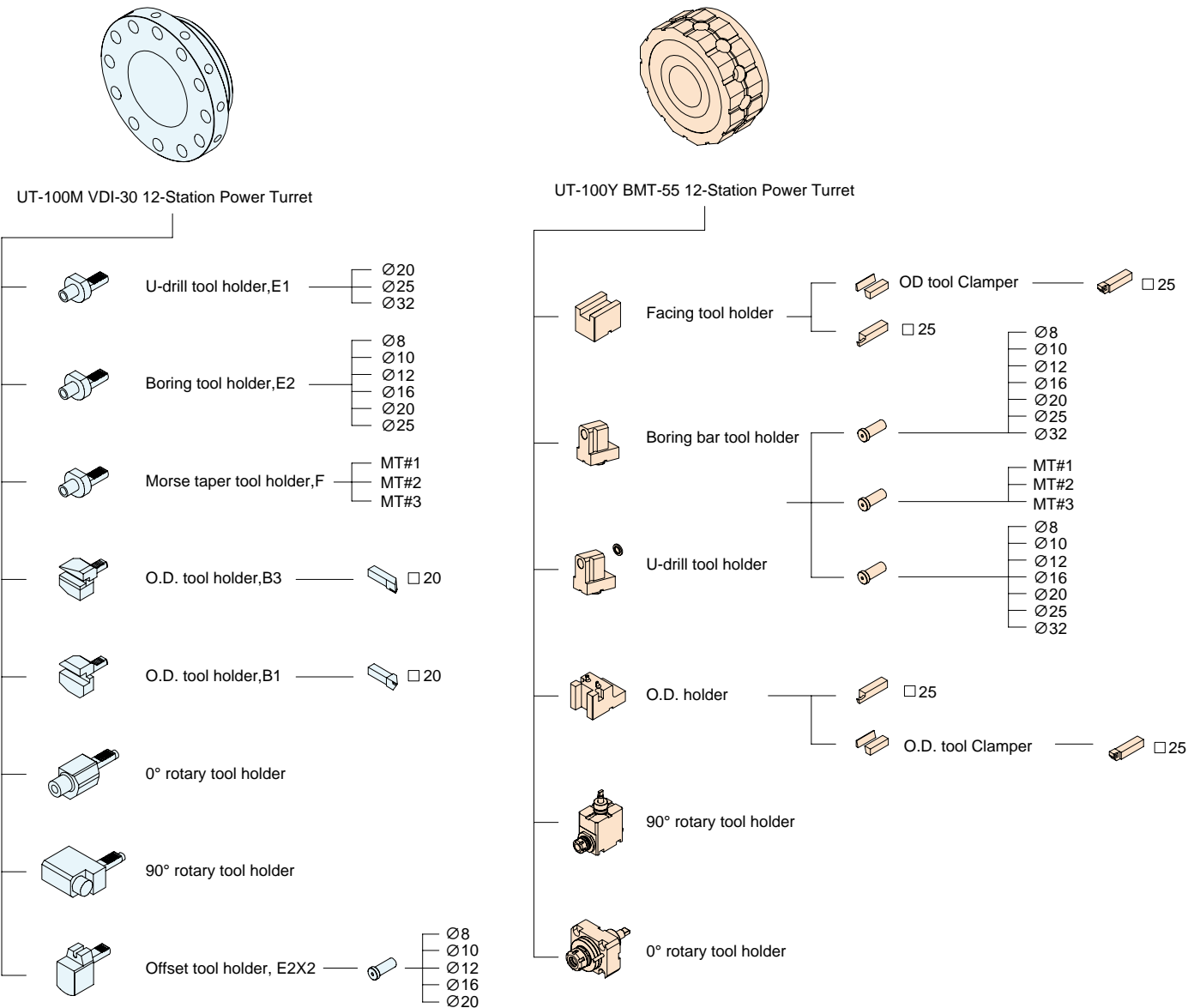
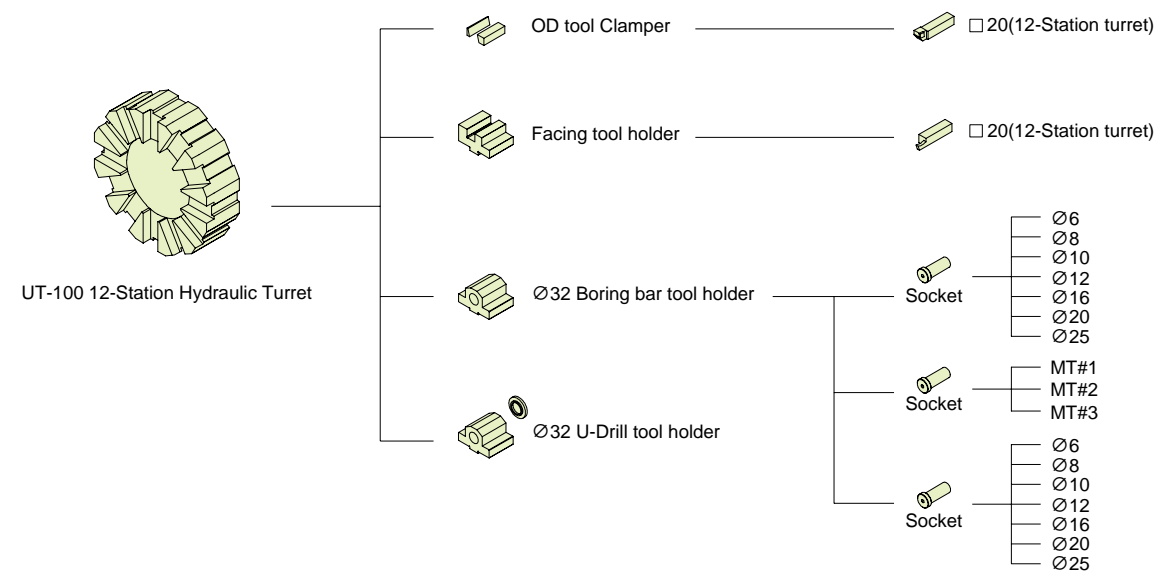
Z-axis & Y-axis simultaneous cutting



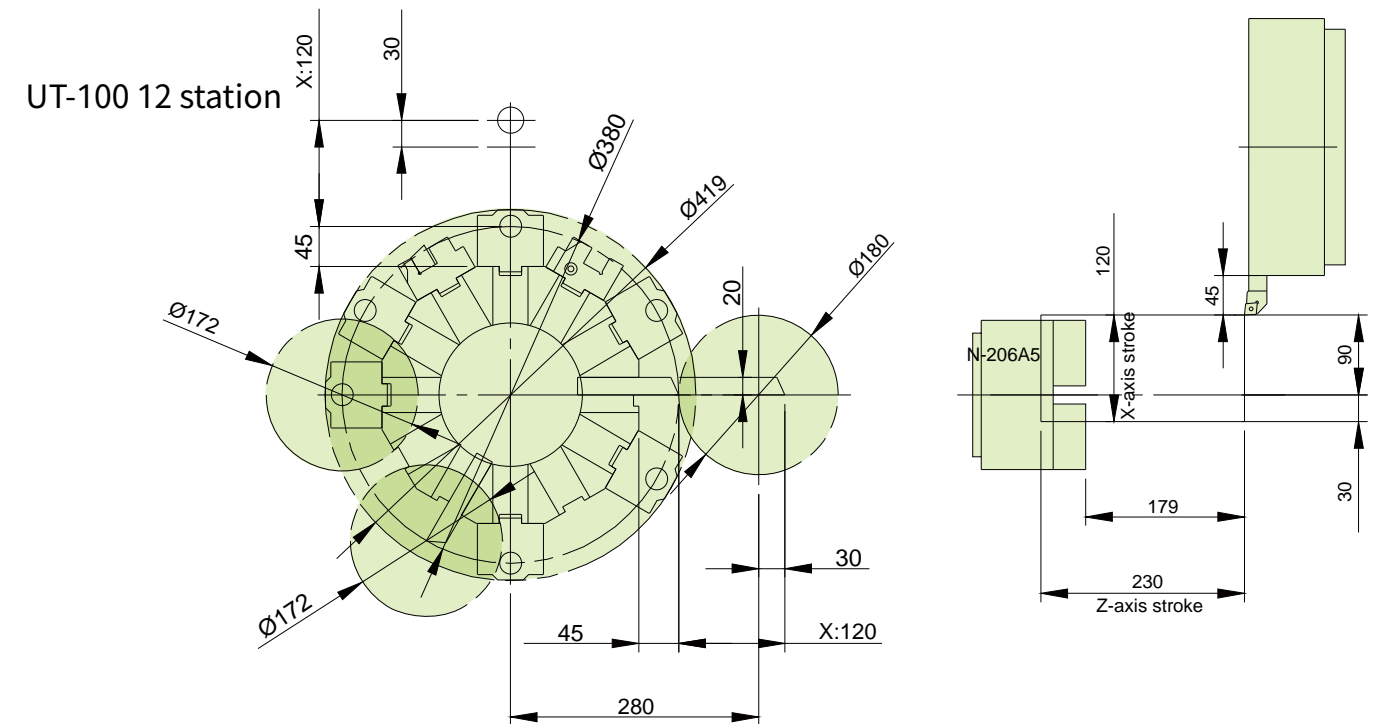
## SPINDLE MOTOR TORQUE POWER CHART



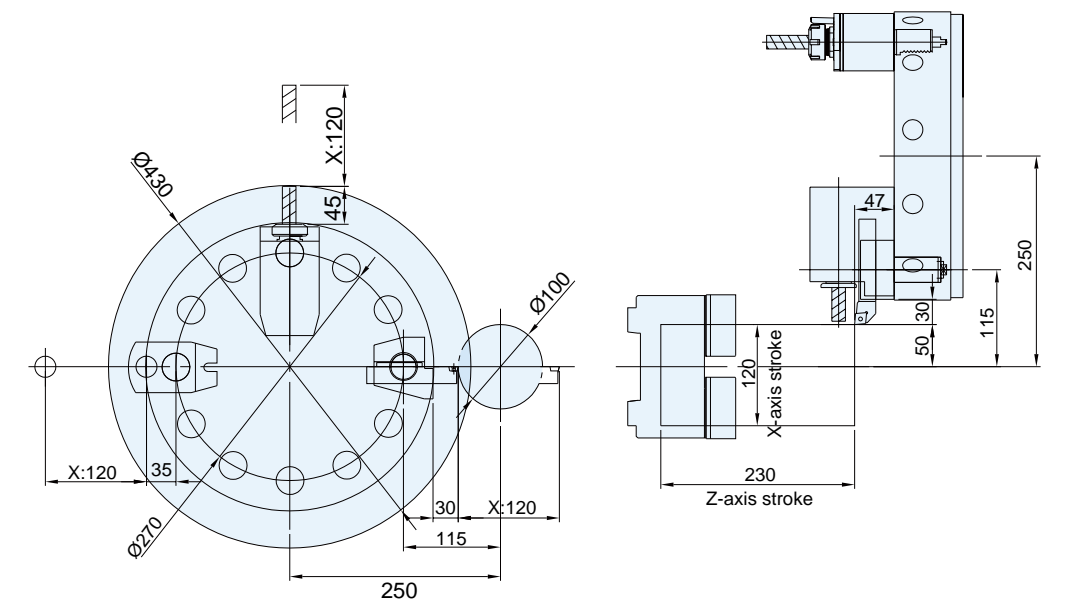
# TOOLING SYSTEM



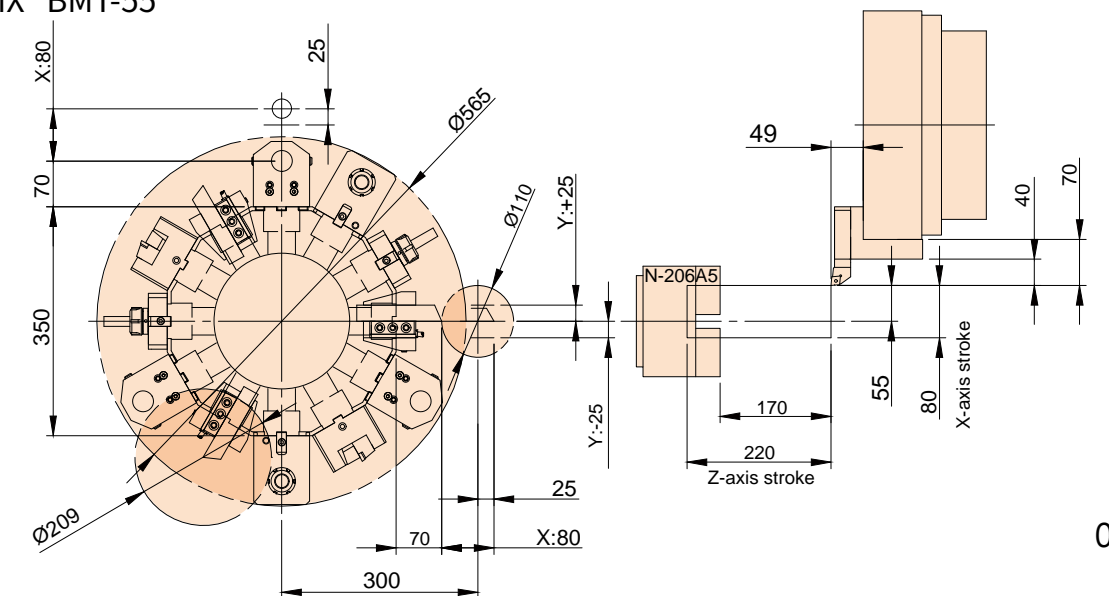
# WORKING RANGE DIAGRAM



UT-100M VDI-30

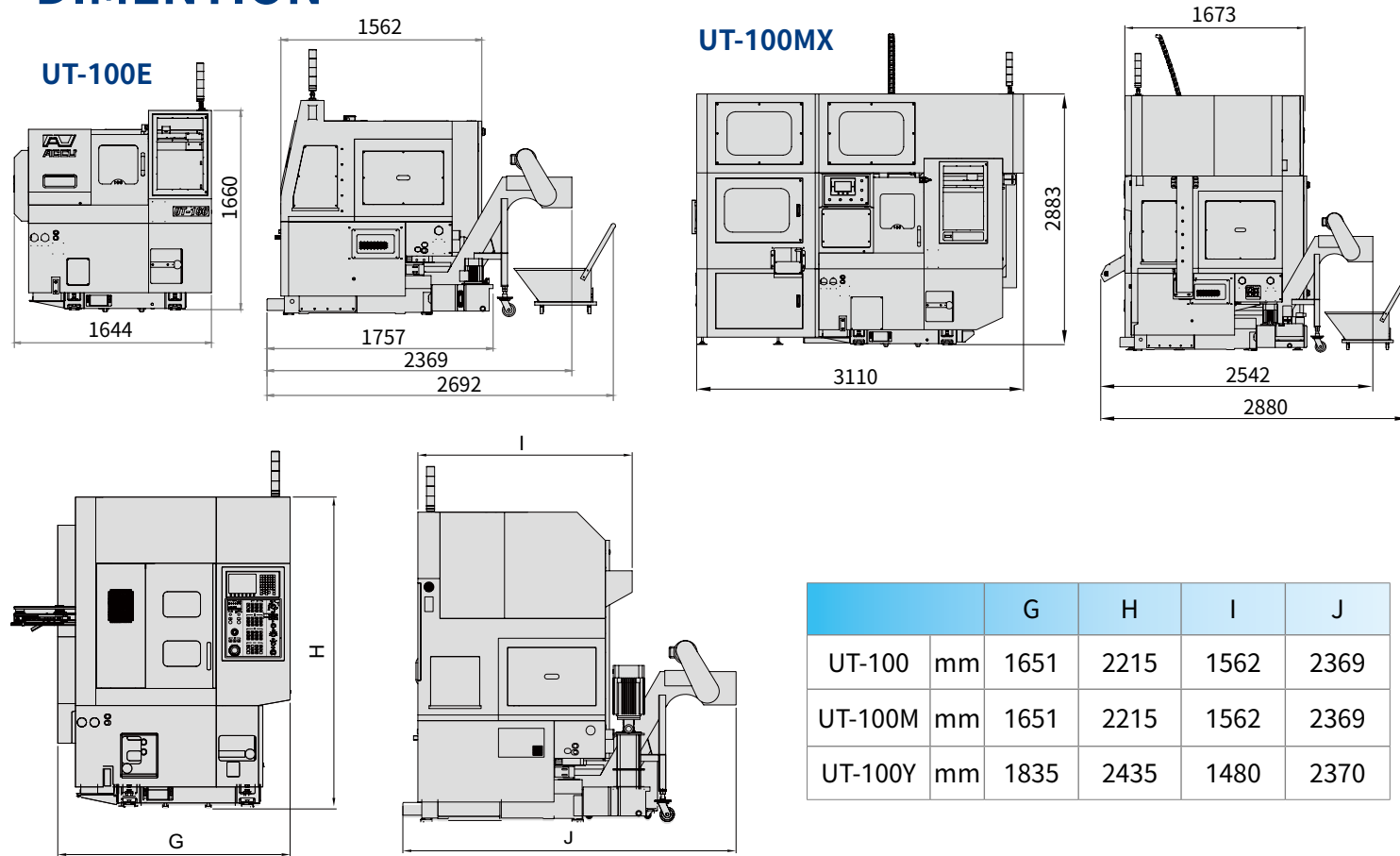


UT-100Y/UT-100MX BMT-55





## DIMENTION



| Item/Model                             |         | UT-100EM        | UT-100E         | UT-100          | UT-100M          | UT-100MX        | UT-100Y       |
|--|---------|-----------------|-----------------|-----------------|------------------|-----------------|---------------|
| Controller                             |         | FANUC 0i-T      |                 |                 |                  |                 |               |
| Swing over bed                         | mm      | 380             |                 |                 |                  |                 | 450           |
| Swing over saddle                      | mm      | 320             |                 |                 |                  |                 | 330           |
| Max. turning diameter                  | mm      | 100             | 180             |                 | 100              | 220             | 110           |
| Max. turning length                    | mm      | 140             | 175             |                 | 130              | 155             | 170           |
| Spindle nose taper                     | ASA     | A2-5            |                 |                 |                  |                 |               |
| Chuck diameter                         | inch    | 6               |                 |                 |                  |                 |               |
| Spindle speed                          | rpm     | 6000            |                 |                 |                  |                 |               |
| Spindle motor power<br>(Cont. / 30min) | kW      | 5.5/7.5         |                 |                 |                  |                 |               |
| Bar capacity                           | mm      | 30              |                 |                 |                  |                 |               |
| X-axis Travel                          | mm      | 120             |                 |                 |                  |                 | 80            |
| Y-axis Travel                          | mm      | -               |                 |                 |                  |                 | ±25           |
| Z-axis Travel                          | mm      | 230             |                 |                 |                  |                 | 220           |
| X-axis Rapid Traverse Rate             | m/min   | 12              |                 |                 |                  |                 |               |
| Y-axis Rapid Traverse Rate             | m/min   | -               |                 |                 |                  |                 | 10            |
| Z-axis Rapid Traverse Rate             | m/min   | 18              |                 |                 |                  |                 |               |
| Turret driven type                     |         | Servo           | Hydraulic/Servo |                 | Servo mechanical |                 |               |
| Tooling system                         |         | -               | BOT             |                 | VDI-30           | BMT-55          |               |
| Number of tools                        | station | 12              |                 |                 |                  |                 |               |
| Square tool shank size                 | mm      | 20              |                 |                 |                  | 25              |               |
| Round tool shank size                  | mm      | 32              |                 |                 |                  | 40              |               |
| Max. Rotary Tool Speed                 | rpm     | 6000            | -               |                 | 6000             |                 |               |
| Rotary Tool driver power               | kW      | 4.5             | -               |                 | 4.5              |                 |               |
| Machine dimension L x W x H            | m       | 1.9 x 1.7 x 1.8 | 1.7 x 1.6 x 1.7 | 1.7 x 1.6 x 2.2 | 1.7 x 1.6 x 2.2  | 3.1 x 1.7 x 2.4 | 2.4 x 2 x 2.5 |
| Net weight                             | kg      | 1800            | 1800            | 1900            | 1900             | 2200            | 2300          |

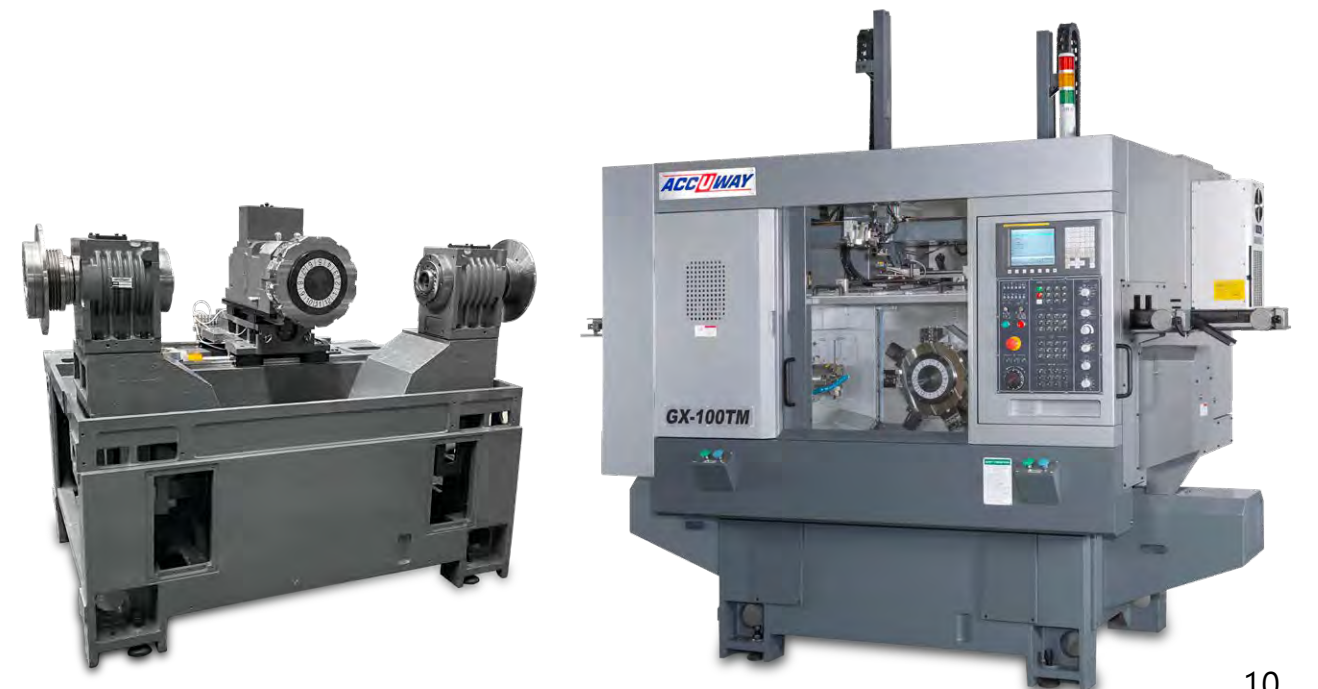
## EXCELLENT MACHINING PERFORMANCE

- GX-100 with two opposing spindles and one slide that carries out its excellent machining performance.
- Two built-in, rapid loaders save the space and increase productivity without time loss.
- Gang type / BMT tool holder substantially cuts the idle time and improves cutting's flexibility.
- High precision and rapid machining is accomplished by simple construction.

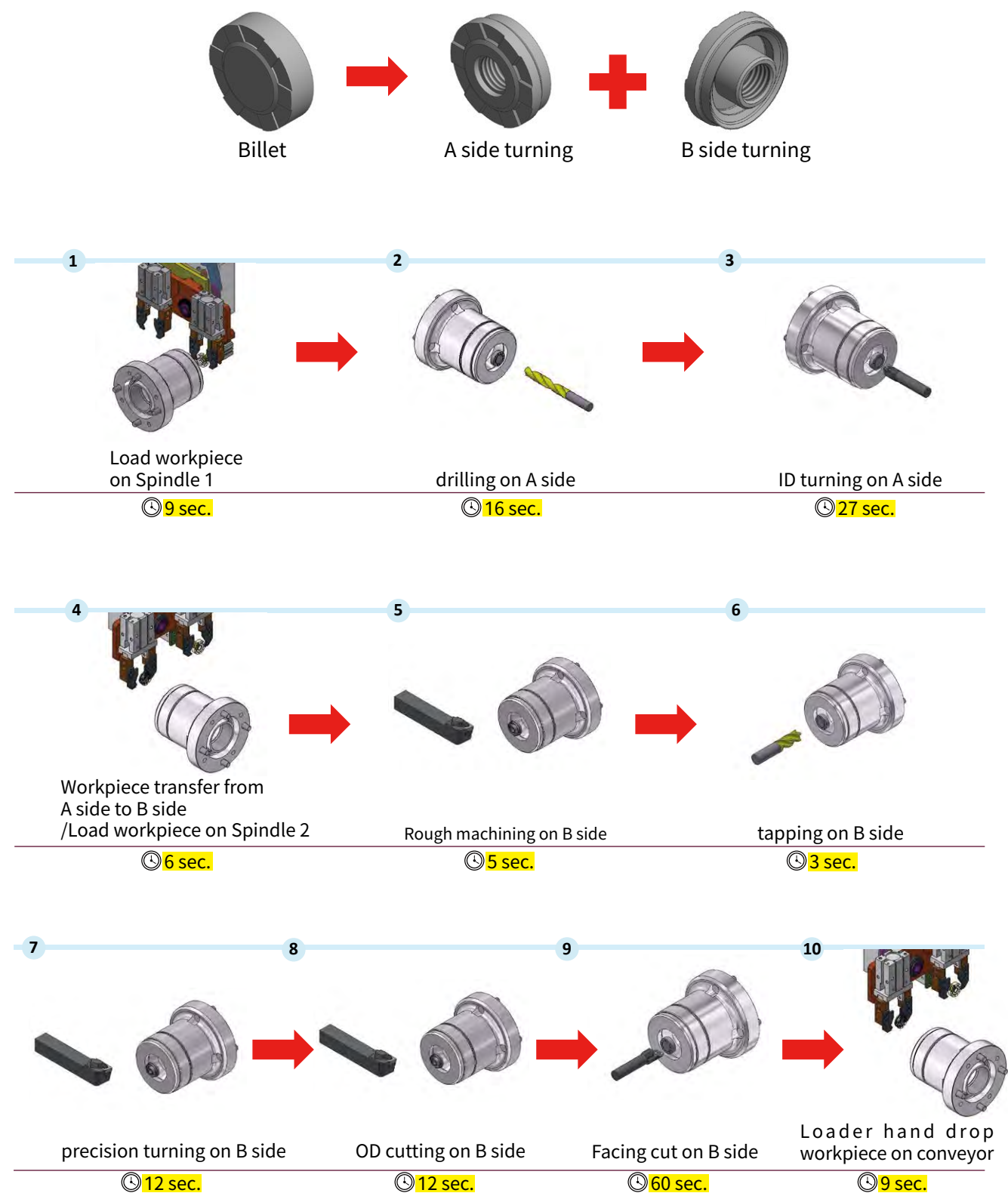
### ► GX-100 Gang Type



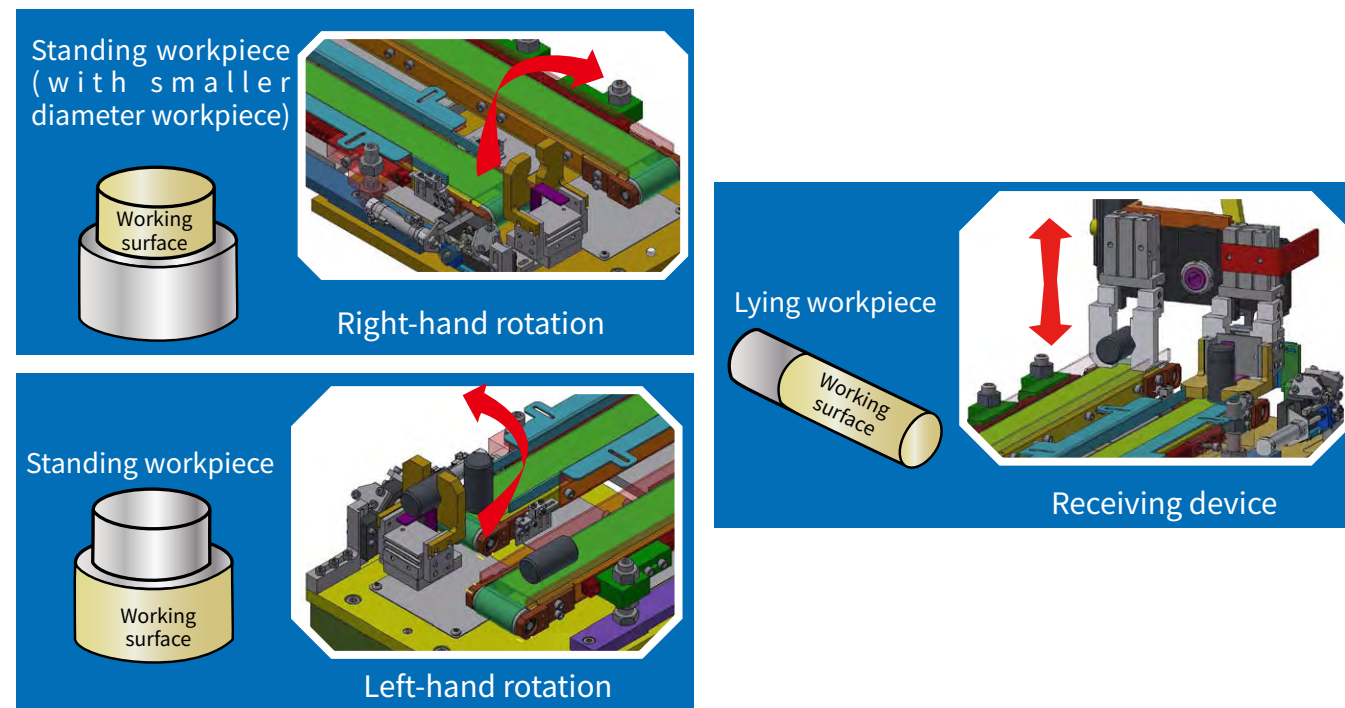
### ► GX-100TM BMT-45



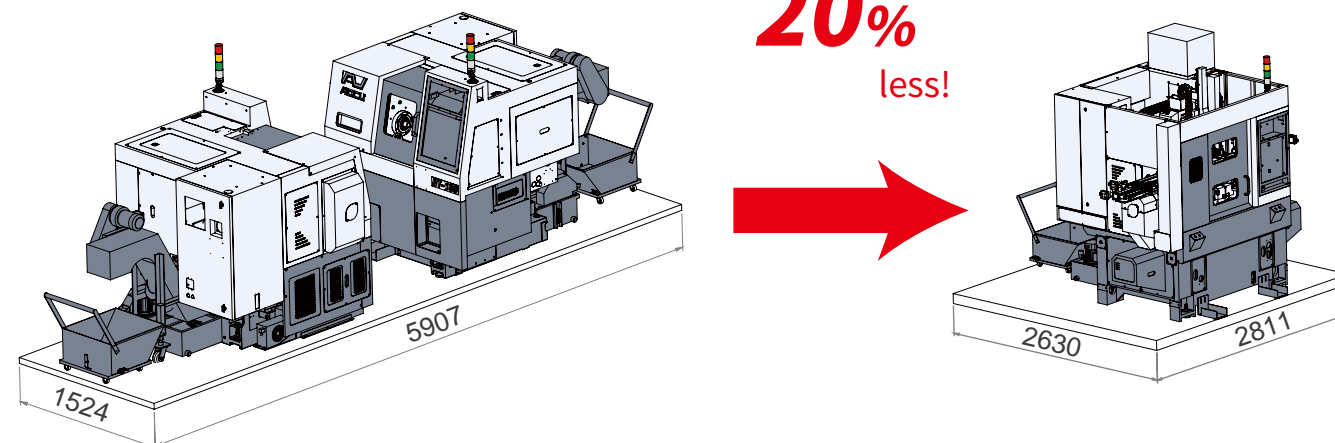
## SAMPLE TURNING FLOW CHART



## WORKPIECE FEEDING WAYS BY CONVEYOR

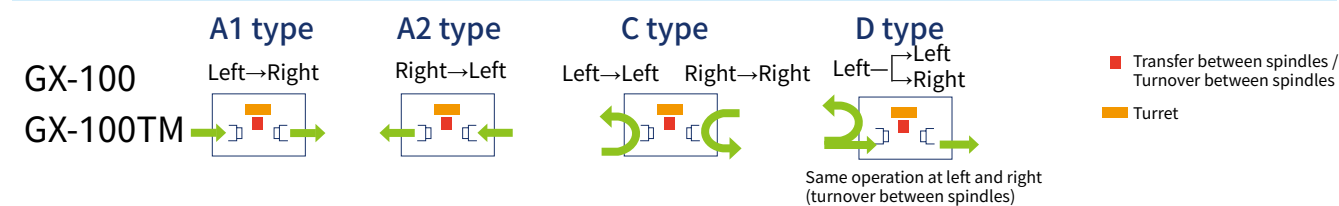


## WITH LESS FLOOR SPACE



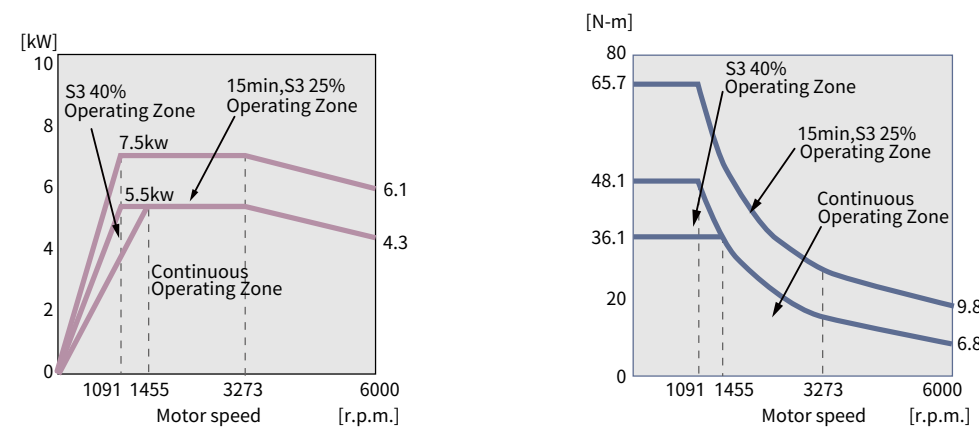
| Item<br>Model | Loader<br>axis | Max.<br>Diameter | Max.<br>Length | Max.<br>weight | Finger<br>stroke<br>(one side) | Conveyor<br>length | traverse-axis |                           | vertical-axis |                           |
|---------------|----------------|------------------|----------------|----------------|--------------------------------|--------------------|---------------|---------------------------|---------------|---------------------------|
|               |                |                  |                |                |                                |                    | stroke        | Rapid<br>traverse<br>rate | stroke        | Rapid<br>traverse<br>rate |
| GX-100        | 2              | Ø50              | 60             | 0.5            | 7                              | IN:780<br>OUT:580  | 400           | 84                        | 500           | 84                        |
| GX-100TM      |                |                  |                |                |                                |                    | 580           |                           | 550           |                           |

## Loading variations



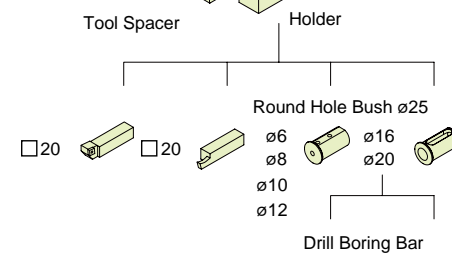
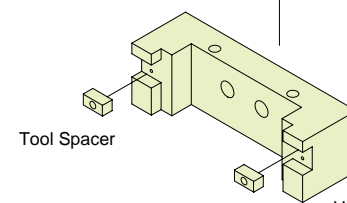
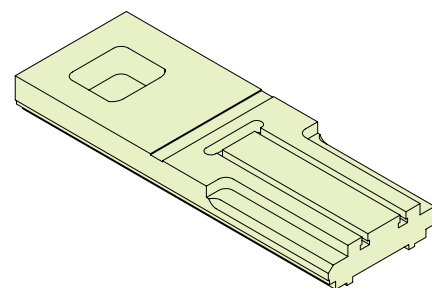


# SPINDLE MOTOR TORQUE POWER CHART

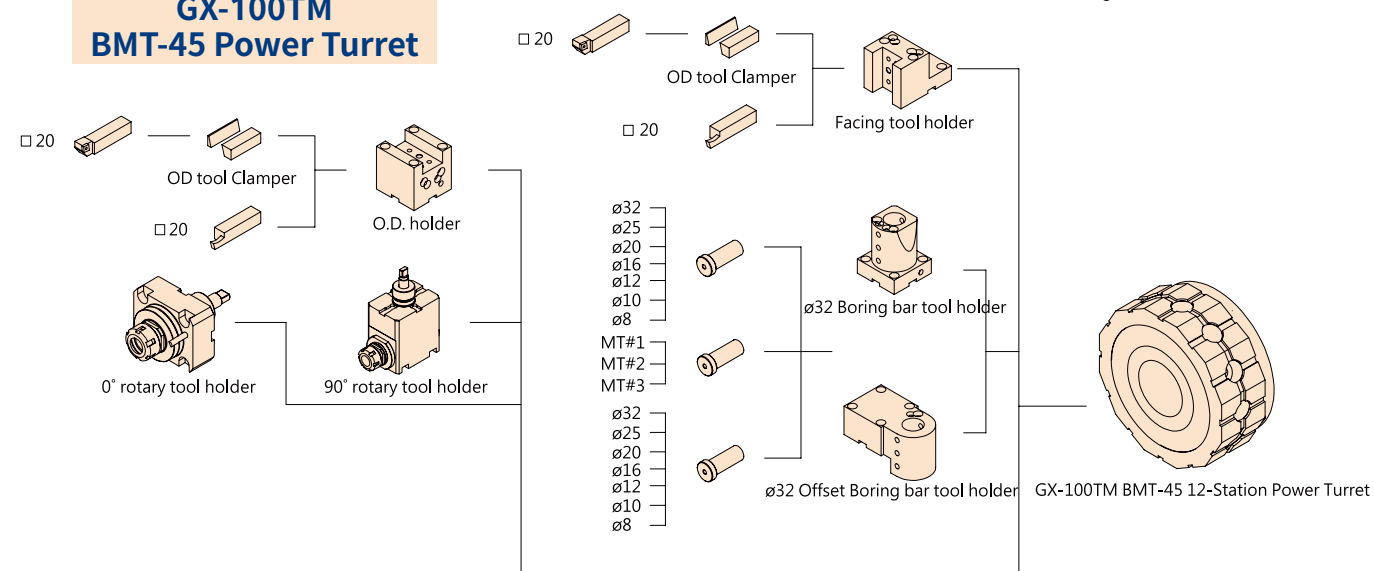


## TOOLING SYSTEM

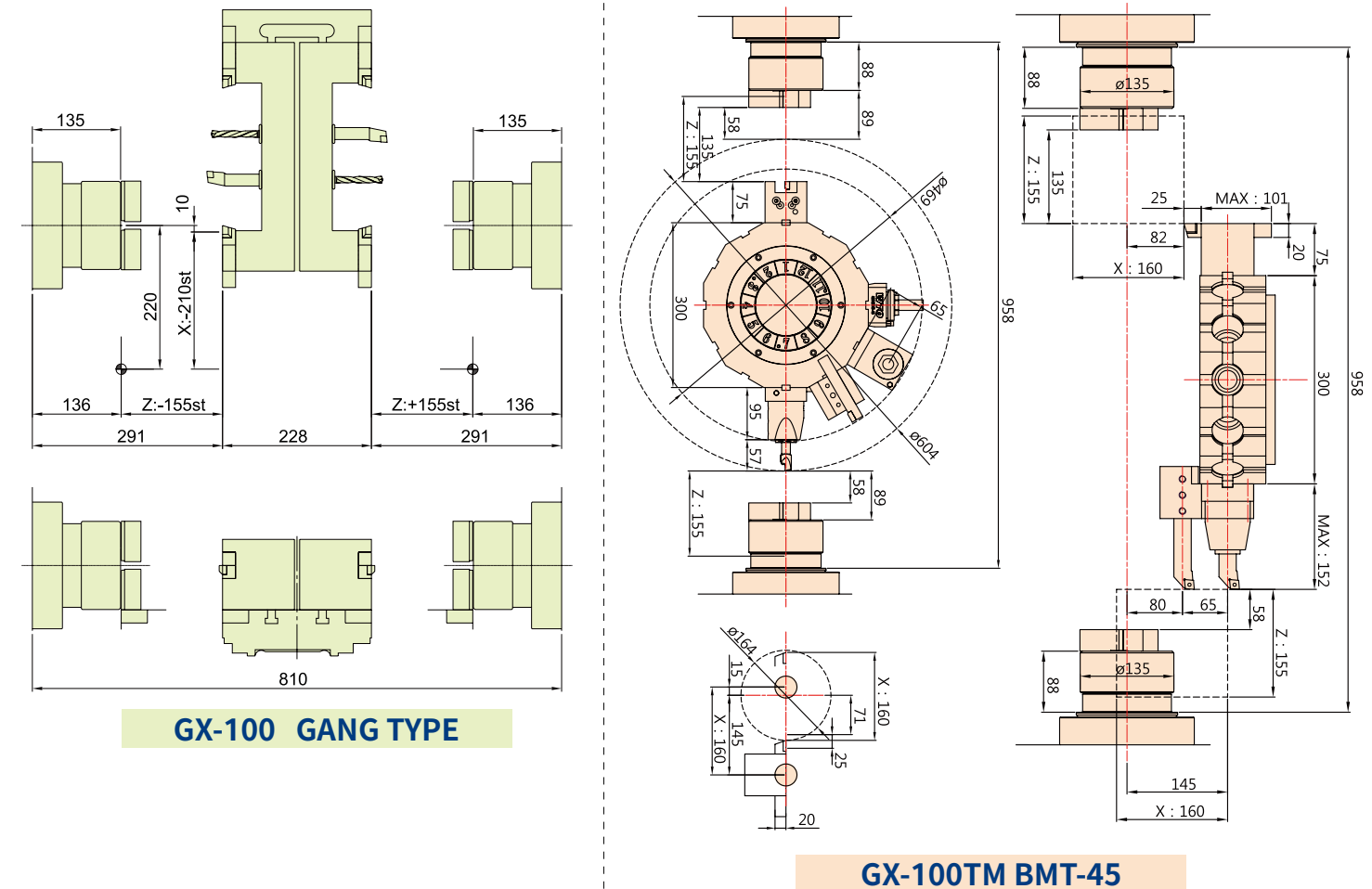
### GX-100 GANG TYPE



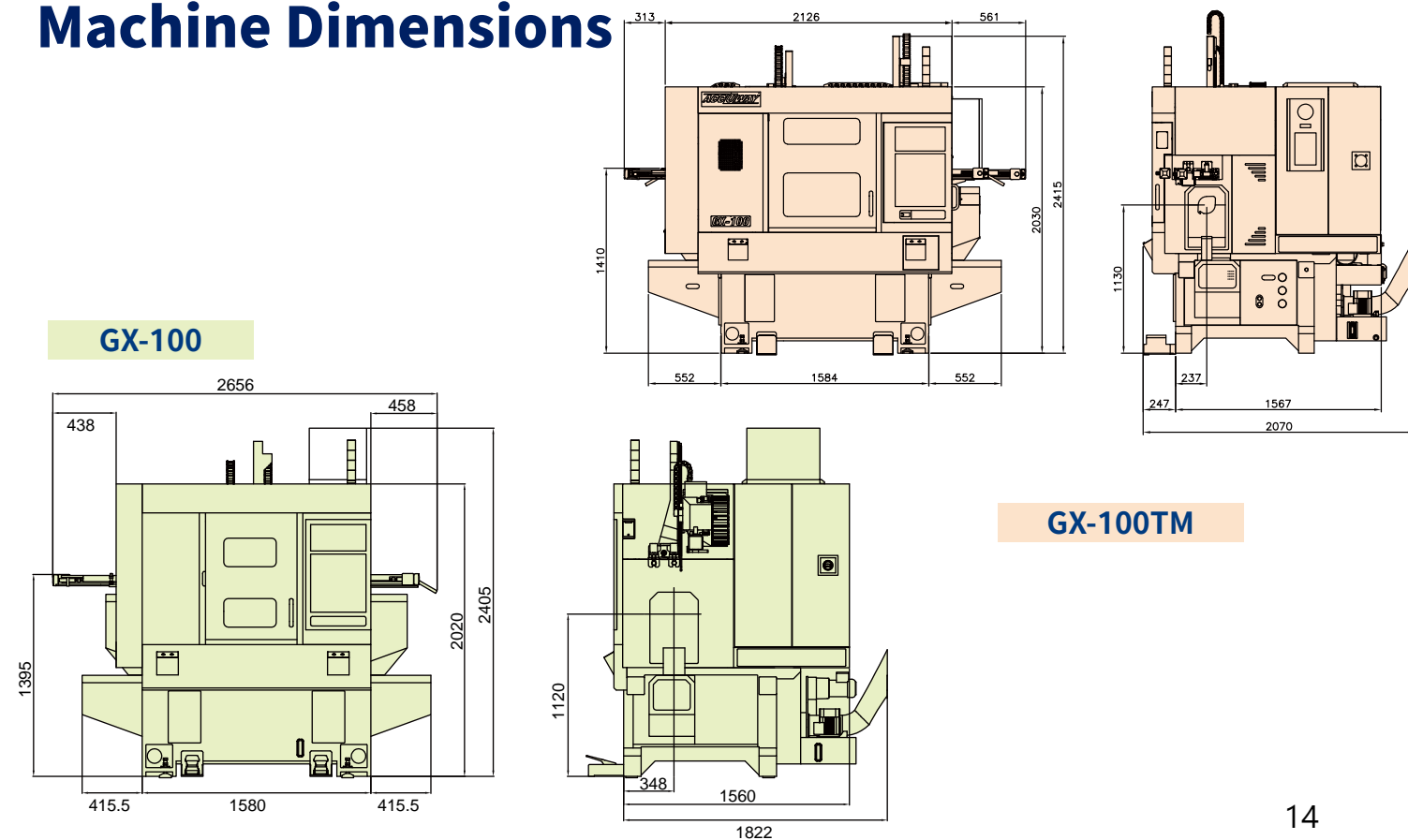
### GX-100TM BMT-45 Power Turret



## WORKING RANGE DIAGRAM

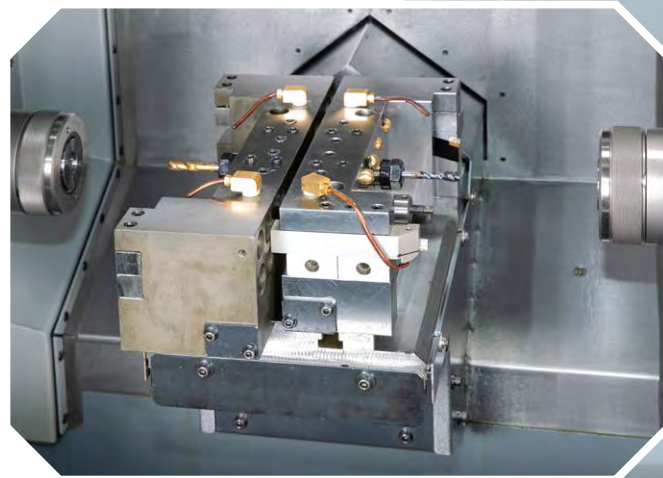


## Machine Dimensions

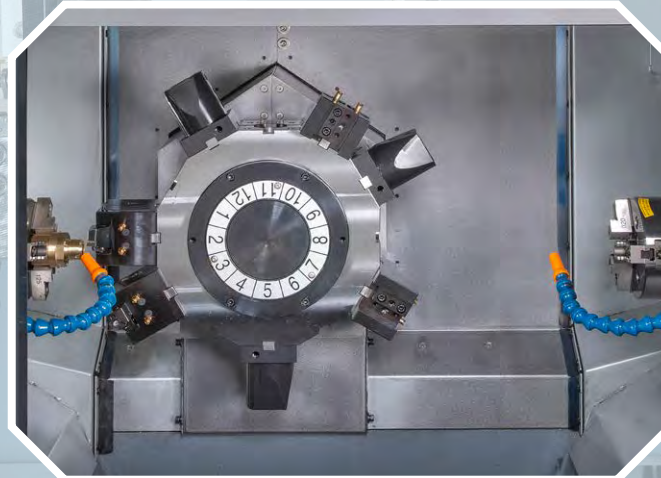




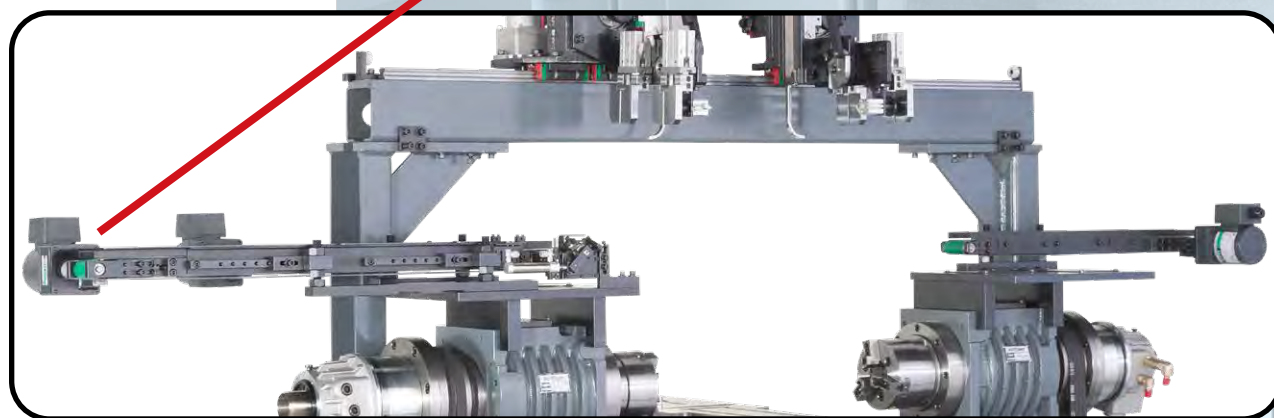
► Gang type



► BMT-45 Power Turret



► Two-way conveyor belt



## SPECIFICATIONS

| ITEM/MODEL                        |         | GX-100          | GX-100TM         |
|-----------------------------------|---------|-----------------|------------------|
| Controller                        |         | FANUC 0i-T      |                  |
| CAPACITY                          |         |                 |                  |
| Max. Turning Diameter(SP1)        | mm      | 50              | 70               |
| Max. Turning Diameter(SP2)        | mm      | 50              | 70               |
| Max. Turning Length               | mm      | 60              | 55               |
| Guide way type                    |         | Linear          |                  |
| SPINDLE 1                         |         |                 |                  |
| Spindle Nose                      | ASA     | A2-5            |                  |
| Chuck Diameter                    | inch    | 5               |                  |
| Bar Capacity                      | mm      | 30              |                  |
| Spindle Speed                     | rpm     | 6000            |                  |
| Spindle Motor Power(Cont. /30min) | kW      | 5.5/7.5         |                  |
| SPINDLE 2                         |         |                 |                  |
| Spindle Nose                      | ASA     | A2-5            |                  |
| Chuck Diameter                    | inch    | 5               |                  |
| Bar Capacity                      | mm      | 30              |                  |
| Spindle Speed                     | rpm     | 6000            |                  |
| Spindle Motor Power(Cont. /30min) | kW      | 5.5/7.5         |                  |
| TRAVELS                           |         |                 |                  |
| X-axis Travel                     | mm      | 210             | 160(145+15)      |
| Z-axis Travel                     | mm      | 310(±155)       | 310(±155)        |
| FEEDS                             |         |                 |                  |
| X-axis Rapid Traverse Rate        | m/min   | 18              |                  |
| Z-axis Rapid Traverse Rate        | m/min   | 24              |                  |
| TURRET                            |         |                 |                  |
| Tooling system                    |         | Gang Type       | BMT-45           |
| Turret driven type                |         | -               | Servo mechanical |
| Number of tools                   | station | -               | 12               |
| Square Tool Shank Size            | mm      | 20              |                  |
| Round Tool Shank Size             | mm      | 25              | 32               |
| Max. Rotary Tool Speed            | rpm     | -               | 6000             |
| Rotary Tool power                 | kW      | -               | 4.5              |
| DIMENSIONS                        |         |                 |                  |
| Machine dimension L x W x H       | m       | 2.7 x 2.0 x 2.4 | 3 x 2 x 2.4      |
| Machine Weight                    | kg      | 3200            | 3300             |