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# GTW-1500 SERIES

## TURRET / GANG TOOLING
## MULTI-AXIS CNC TURNING CENTER

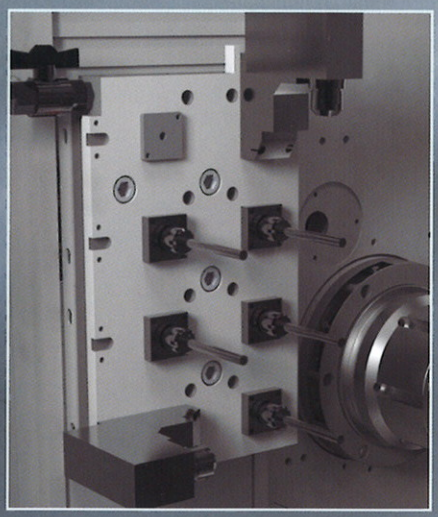

THE ULTIMATE MACHINING POWER

GOODWAY®

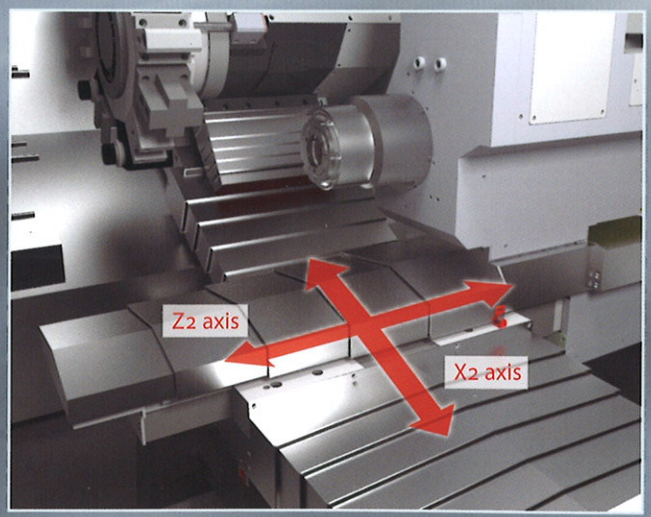
# TURRET / GANG TOOLING MULTI-AXIS TURNING CENTER

With the latest technology and high quality components of the industry, GOODWAY GTW series multi-axis turning centers combined with multi-axis, high efficiency and high performance especially developed for medical & automobile industry. It can easily complete the complex front and back side machining of work-piece with high efficiency and high precision machining performance. It's perfectly once again annotating a new standard of multi-axis turning center.

- Combined with turret and gang tooling systems is more convenient for programming, and makes series high efficiency and economic.
- Brand new design of X-axis on sub-spindle provides high efficiency of working space. The gang tooling can continue working after catch the work-piece from sub-spindle. It is no need to return to home position which increases the efficiency of machining.
- Twin spindles with collect chuck hold design is suitable for dual face turning on any shaft type work-piece.
- Standard twin Y-axis function with driven turret, gang tooling system and C-axis can improve the ability for complex machining and accuracy.
- With separated coolant tank and rear side of chips conveyor design, it is easy to maintain and provide high efficiency for cooling.



Gang tooling system




Sub-spindle $Z_2$ & $X_2$ axes


( GTW-1500 series with optional accessories )

# High Rigidity Structure

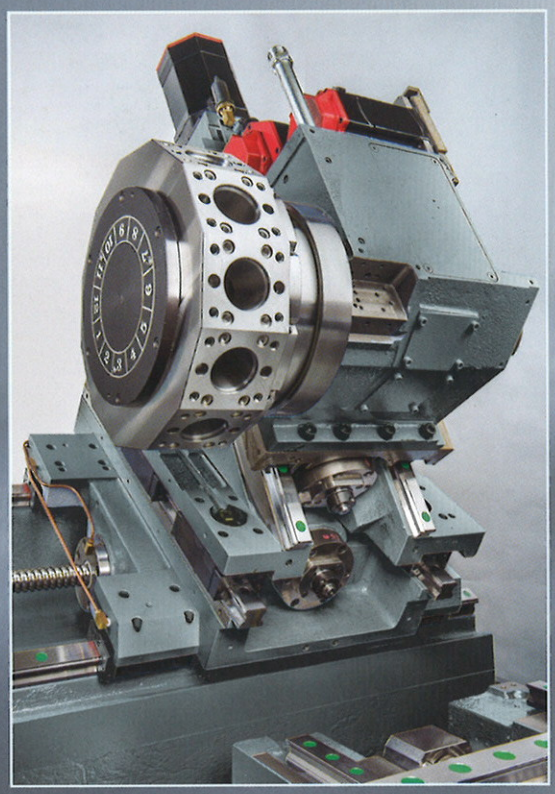
- By using Finite Element Analysis ( FEA ), the optimal reinforced ribs are directly cast into the integrated base. Mechanical rigidity has been increased sharply compared to conventional design. The GTW series is capable of performing super-duty turning and maintain long-term super high-precision accuracy.

- The heavily ribbed, thermally balanced, high rigidity of Meehanite grade casting FC35 is capable of with standing much greater stress without deforming and provides maximum vibration dampening, which result in a machine that will outlast and outperform the competition.

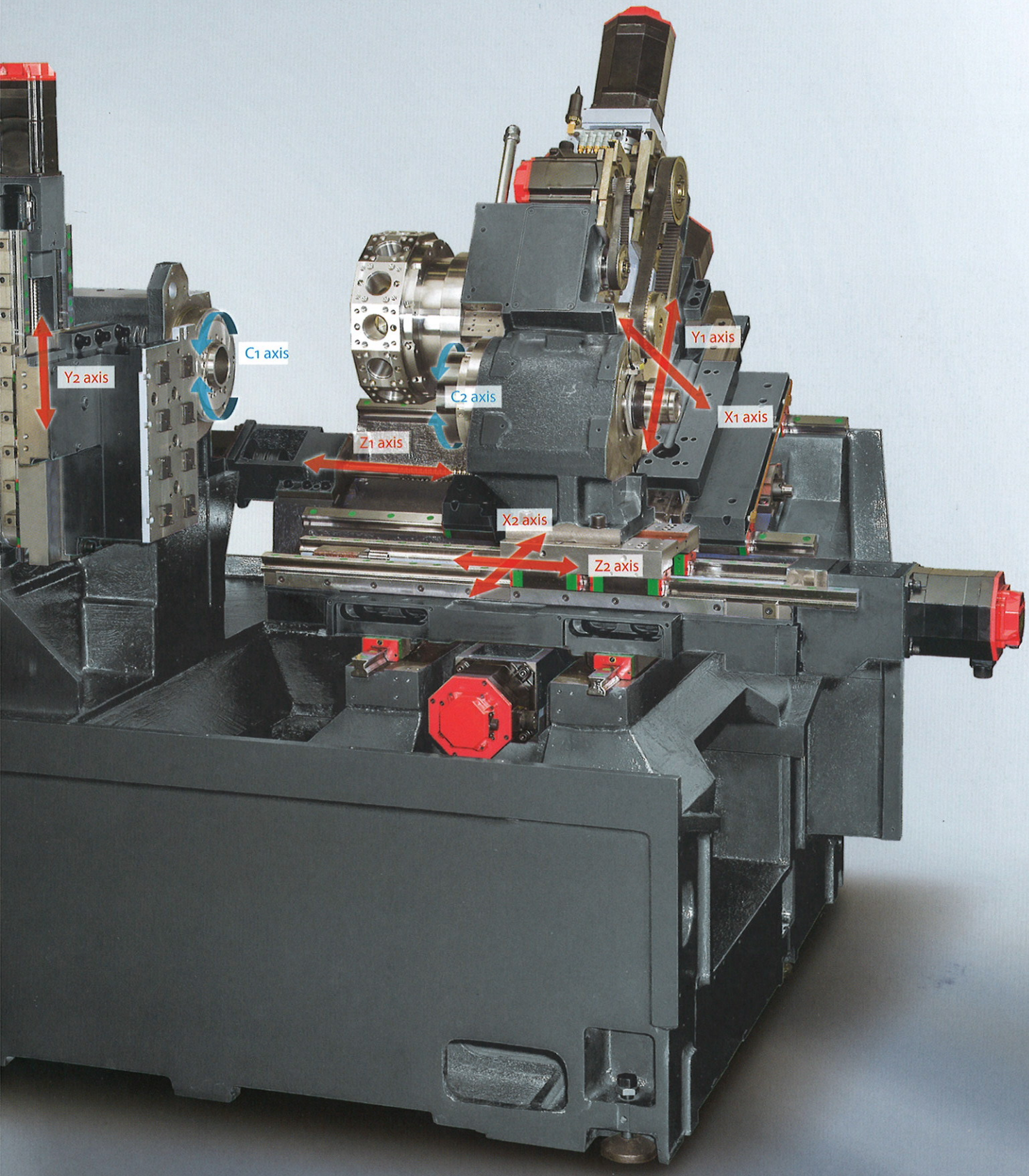
- Contract surfaces of all slides, spindles, turrets and ball screw bearing housings and base are precisely hand scrapped to provide maximum assembly precision, structural rigidity, and load distribution.

- X, Y and Z axes uses high speed, high accuracy linear guide ways design and stretch to reach maximum intensity and accuracy, which can ensure the structural rigidity and reach the rapid feed rate.

- X, Y and Z axes are driven by high class FANUC αi series absolute AC servo motors, and provide tremendous thrust output with faster acceleration / deceleration.



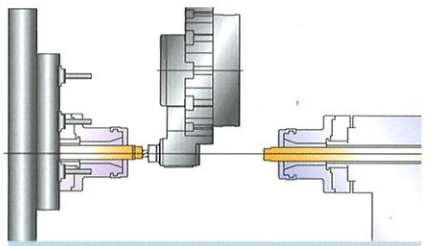
- 30° Slant bed design provides extremely stable base and saddle.



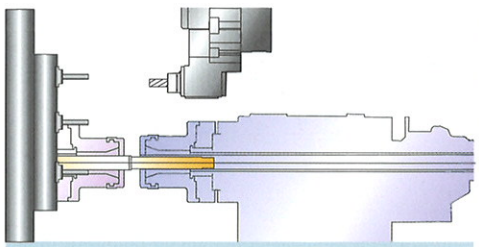

( Main construction of GTW-1500 series )

# Flexible Machining Mode

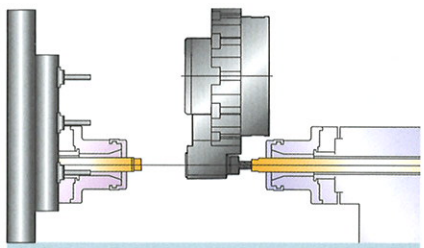
The turret can support main and sub-spindle while machining. Gang tooling system is specially for rear side of machining on sub-spindle. The specialized tooling system features with loading and unloading system, which provides flexible and high efficiency machining mode. From bar feeding, processing and discharging can all be completed at once in one machine.



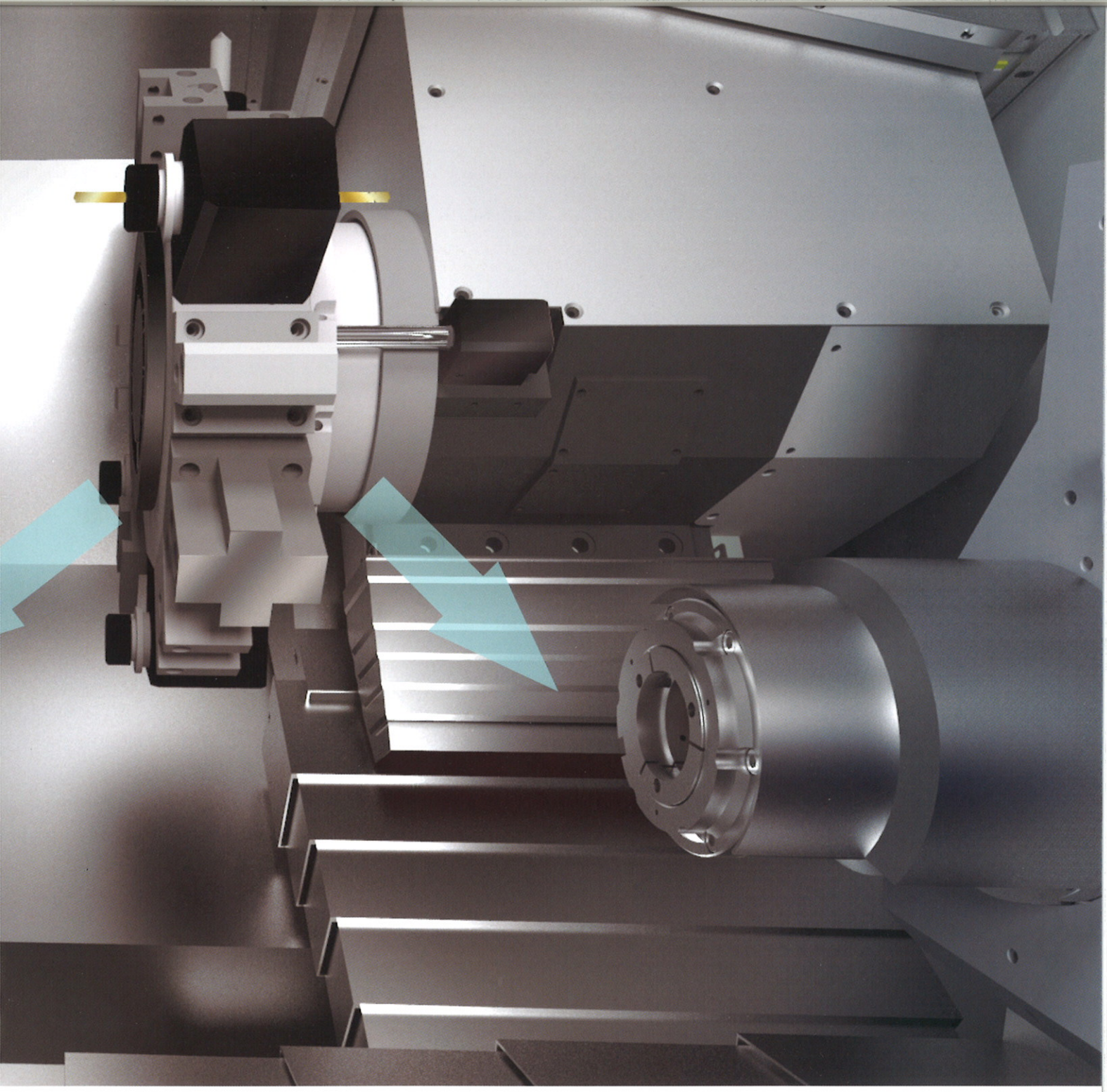
Front side machining

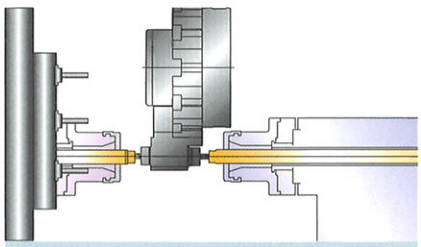


Sub-spindle clamps the work-piece

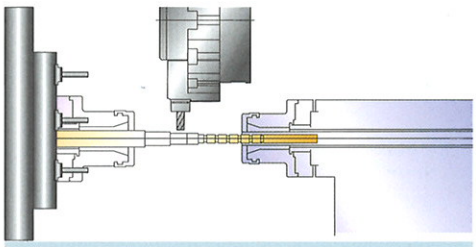


Rear side machining

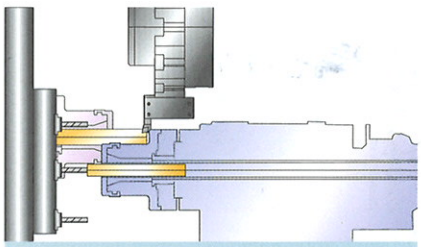




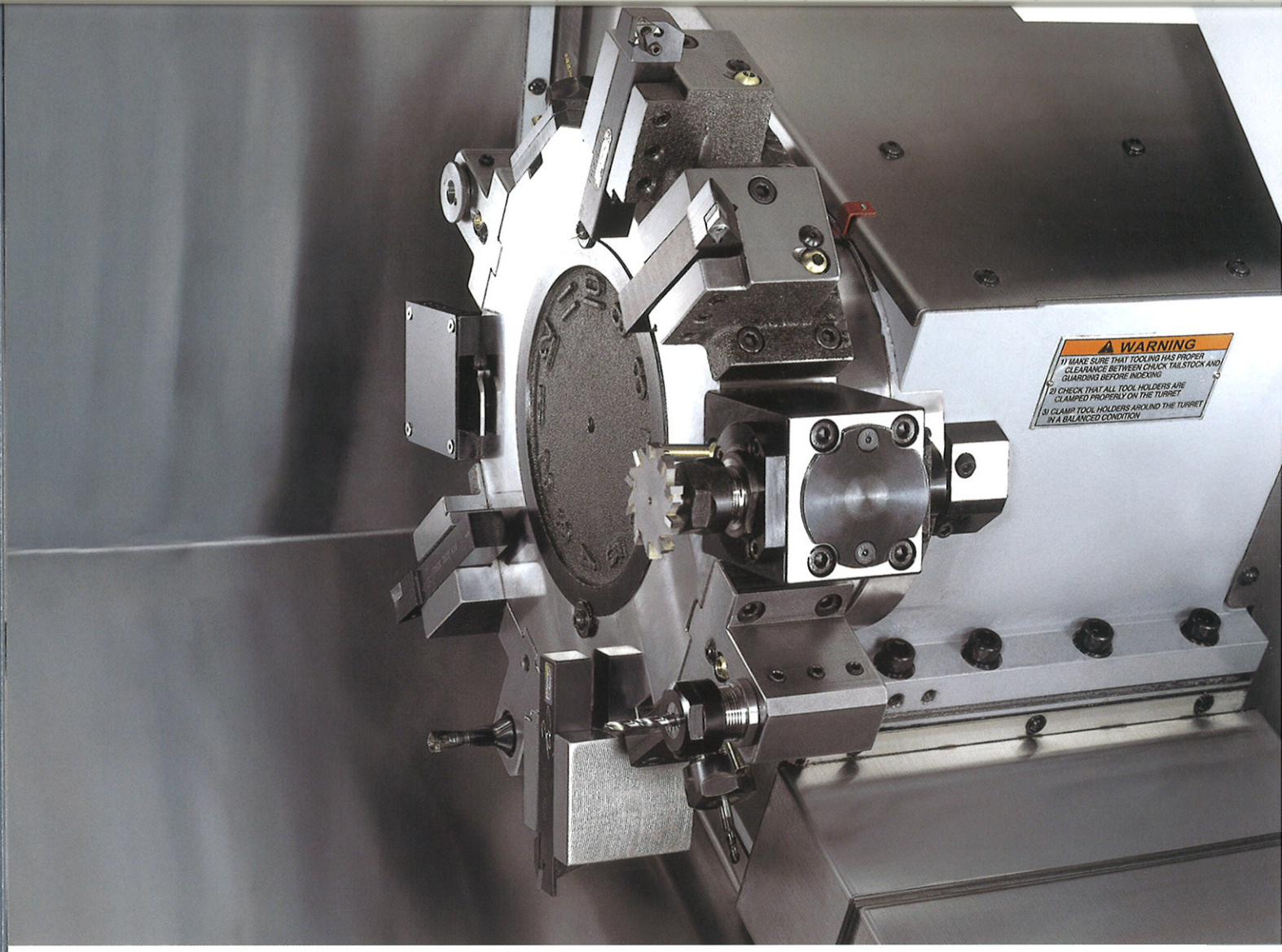
Front / rear sides machining
in the same time



Corresponding machining
on both main and sub-spindle

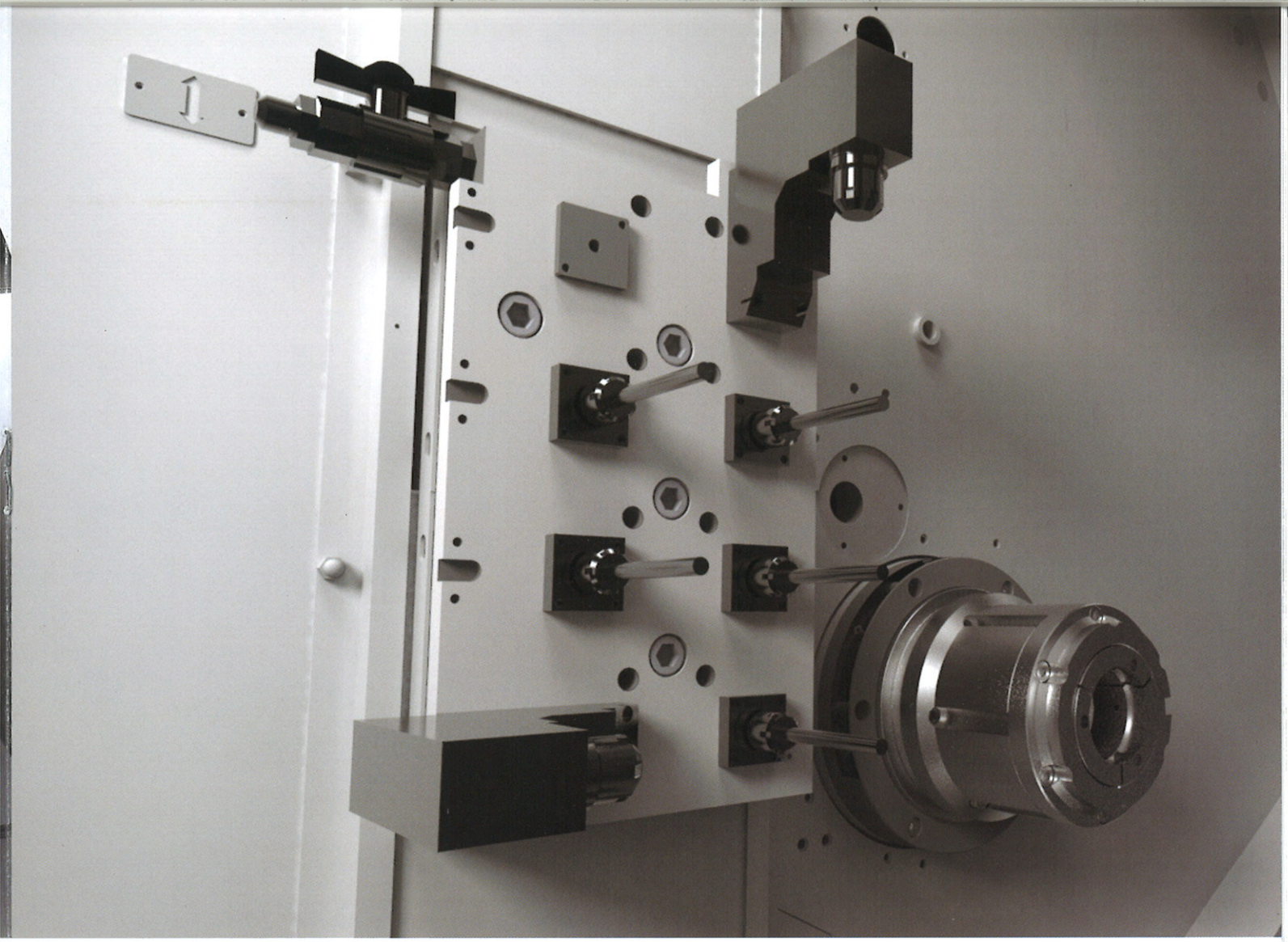


Gang tooling machining
on rear side of work-piece




# Live Tooling Turret and Y-axis

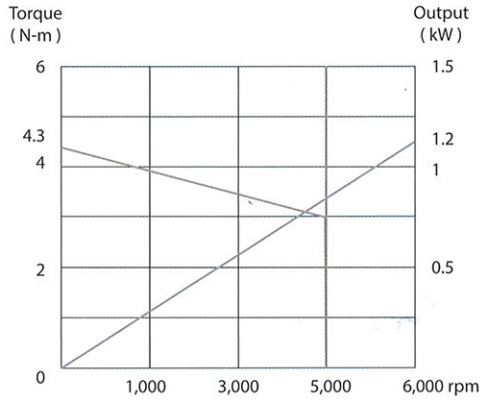
- Adopt super high precision curvic couplings accurately positioning turret disk ensures the rigidity of turret in any cutting conditions.
- Heavy load servo indexing turret features the latest turret disk technology, achieving 0.2 second indexing for adjacent stations and 0.5 second for stations at the opposite end of the disk.
- 12-station live tooling turret is available for option, and only the working tools are spinning with the rest tools are not, which can save the wear of the tool.
- Y1-axis travel: 70 mm = ± 35 mm, Y1-axis and X1-axis direction included angle 30°, the gravity of turret is always located on the range of the saddle to ensure the rigidity of full travel.



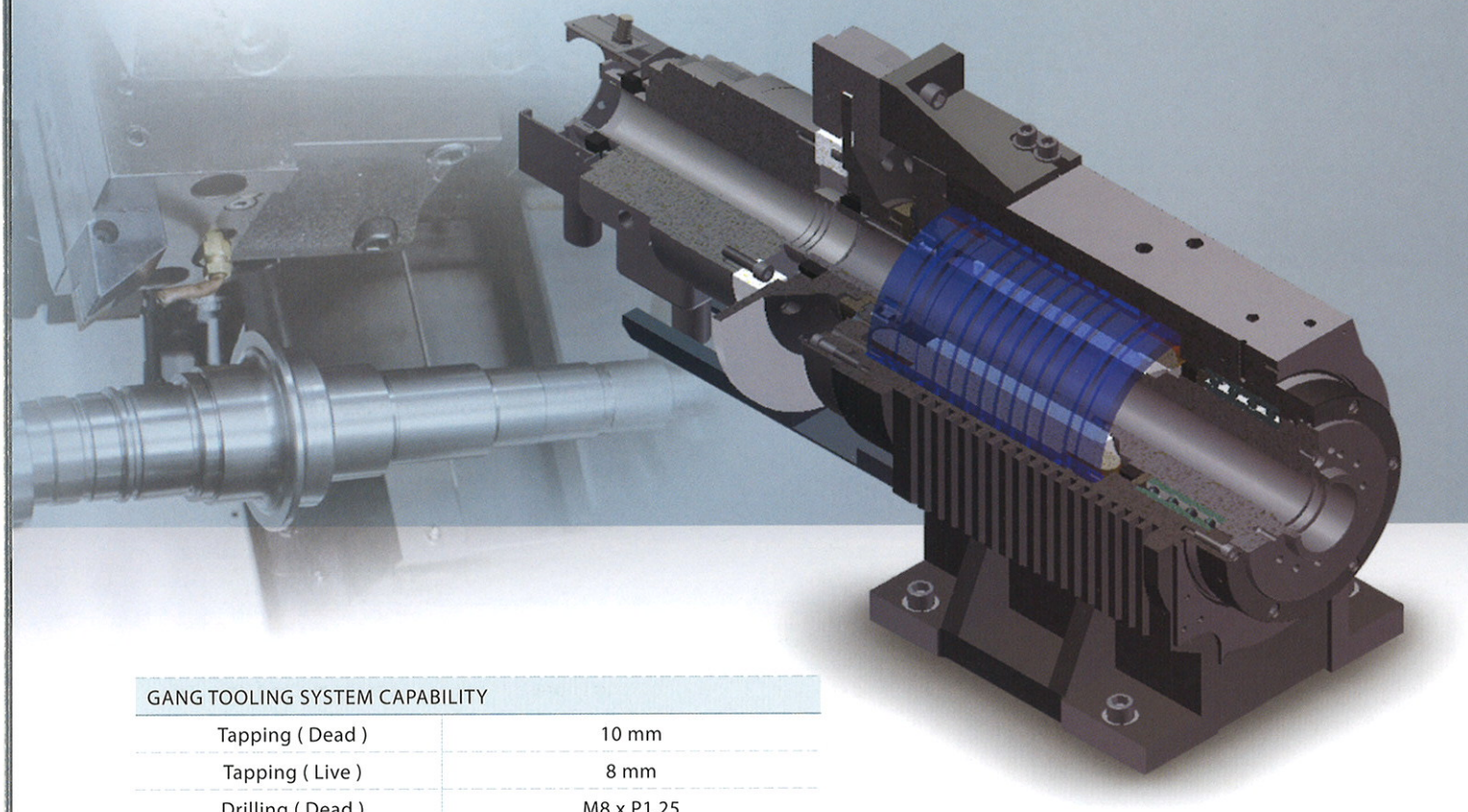
# Gang Tooling System & Y-axis

- Gang tooling system provides 8-station live tooling and driven by AC servo motor with high torque, which can accomplish the hardest machining easily.
- Easy dismount design on gang tooling system is especially designed for sub-spindle. Rapid tool change, and no need to recede tools, which greatly improves the machining efficiency on rear side machining.
- Y2-axis travel : 250 mm, rapid feed rate : 24 m/min. with rapid tool change and enable to perform multi-tasking for precise machining.

TORQUE OUTPUT OF LIVE TOOLS



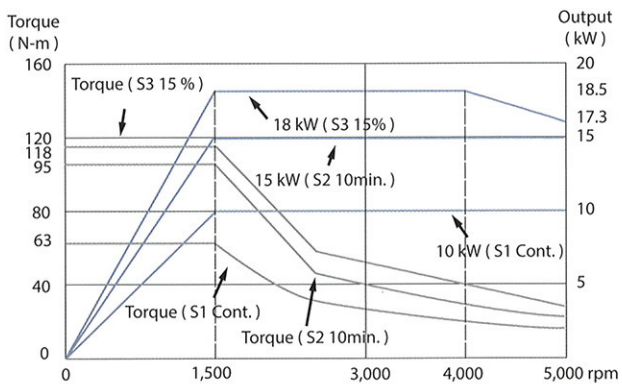
# THE ULTIMATE MACHINING POWER



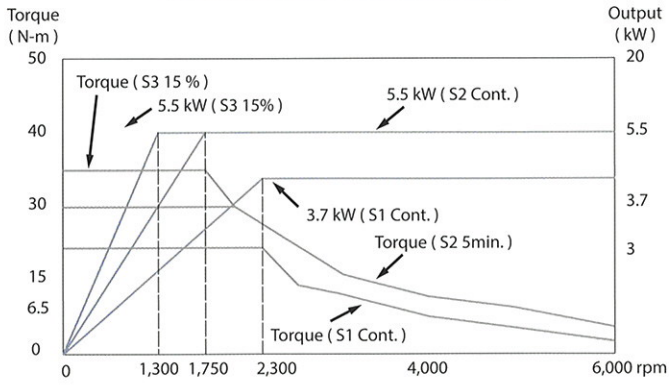
| GANG TOOLING SYSTEM CAPABILITY | |
|---|---|
| Tapping ( Dead ) | 10 mm |
| Tapping ( Live ) | 8 mm |
| Drilling ( Dead ) | M8 x P1.25 |
| Drilling ( Live ) | M6 x P1.0 |
| Milling ( Live ) | 10 mm |

| LIVE TOOLING TURRET MACHINING CAPABILITY | | | | | |
|---|---|---|---|---|---|
| | Diameter | Spindle speed ( rpm ) | Feedrate ( mm / min ) | Cutting Speed ( m / min ) | Cutting Depth ( mm ) |
| Drilling | Ø13 HSS | 600 | 65 | 26.5 | N / A |
| End drill | Ø13 HSS | 600 | 60 | N / A | 10 |
| Tapping | M8 x P1.25 | 600 | 750 | 15 | N / A |

## Spindle




## Sub Spindle



# NC INTELLIGENCE

## G.LINC 350

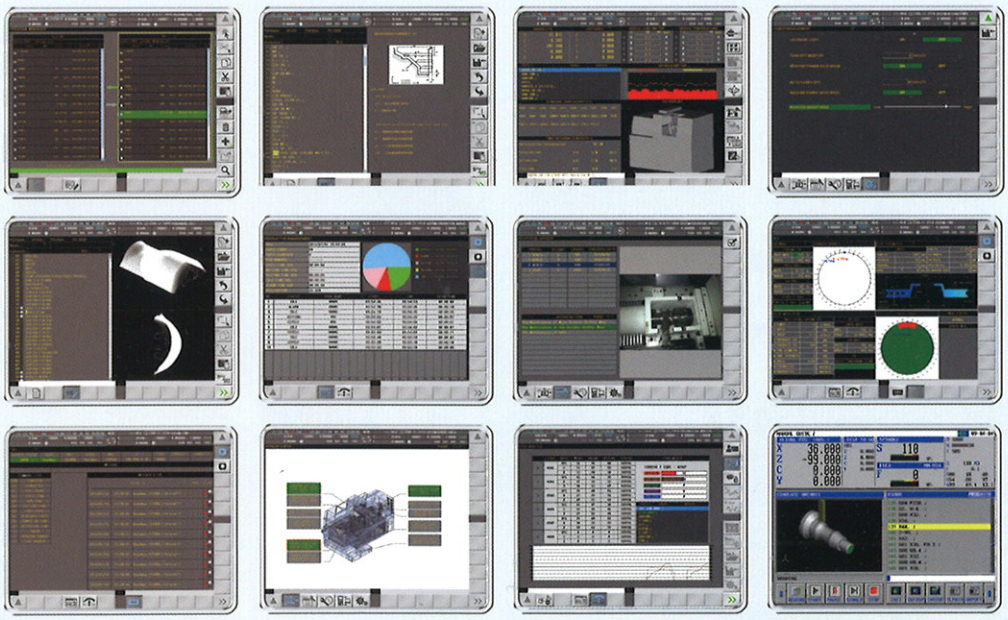
Advanced hardware combined with intelligent software, makes your machine smarter

- Advanced Hardware
- Reliable Continuous Operation
- Outstanding Operability
- Shortened Troubleshooting Time
- Streamlined Programming
- Improved Utilization Rate
- High Security and Shortened Machining Setting

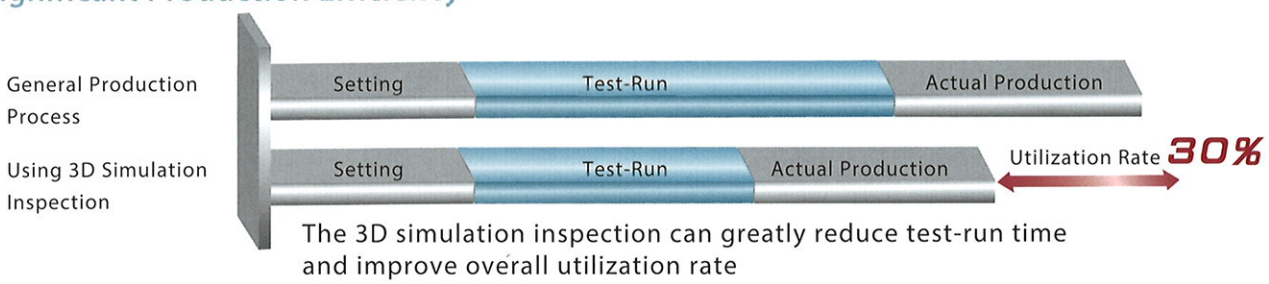
## Comprehensive Functions

### Programming → Setting → Test-Run → Actual Production → Daily Used

- Program management
- Friendly programing environment
- Programming auxiliary
- Manual Guide *i*
- Embedded E-manual
- 3D advance tool path and cutting simulation
- Tool load monitor
- Program check
- Smart balance detection
- 3D Real-time cutting simulation and interference check
- Tool load monitor
- 3D Real-time cutting simulation and interference check
- Safety signal viewer
- Fast alarm check productivity
- Productivity management
- Twin operation system switch
- Maintenance management



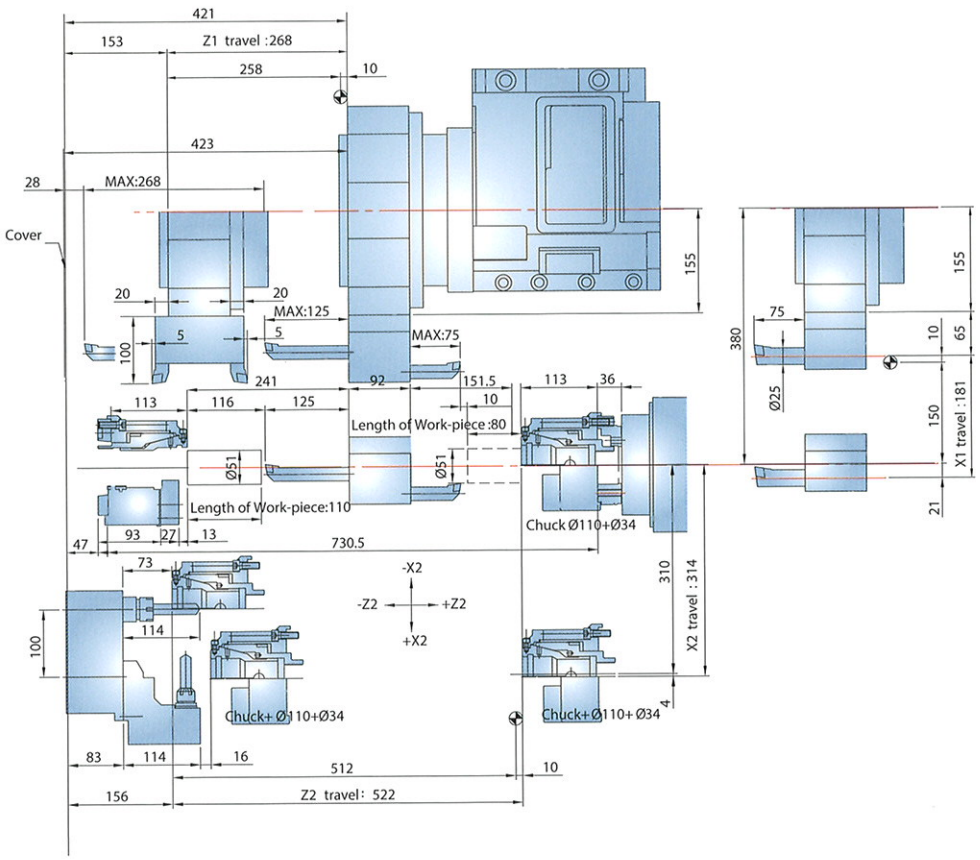
## Significant Production Efficiency




The 3D simulation inspection can greatly reduce test-run time and improve overall utilization rate

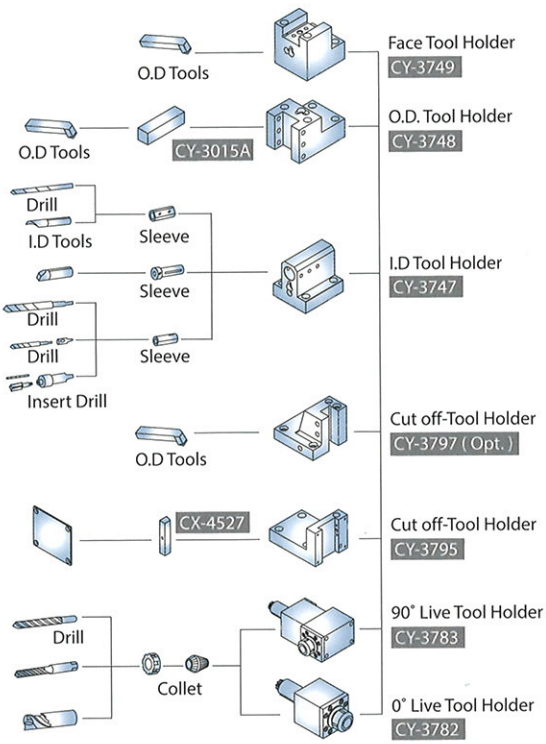
# GENERAL DIMENSION

## Work Range

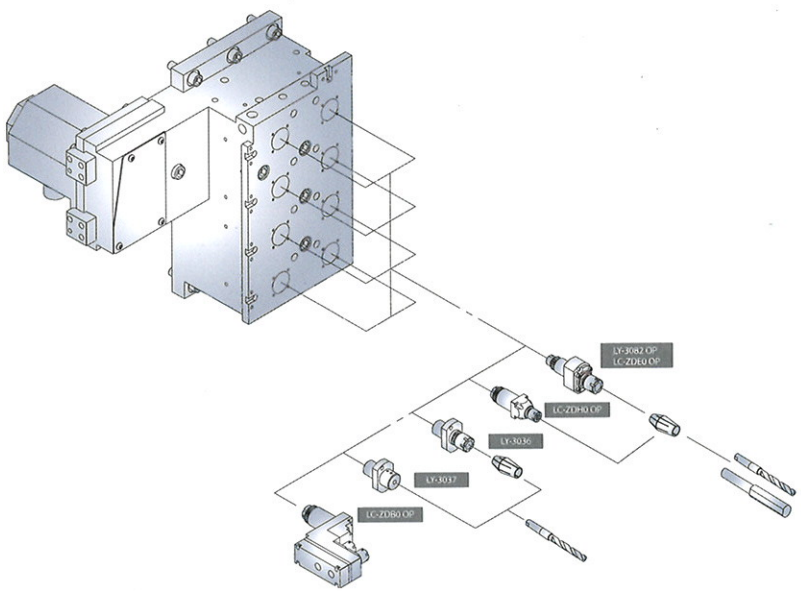



## TOOLING SYSTEM

### 【 12-STATION LIVE TOOLING TURRET 】



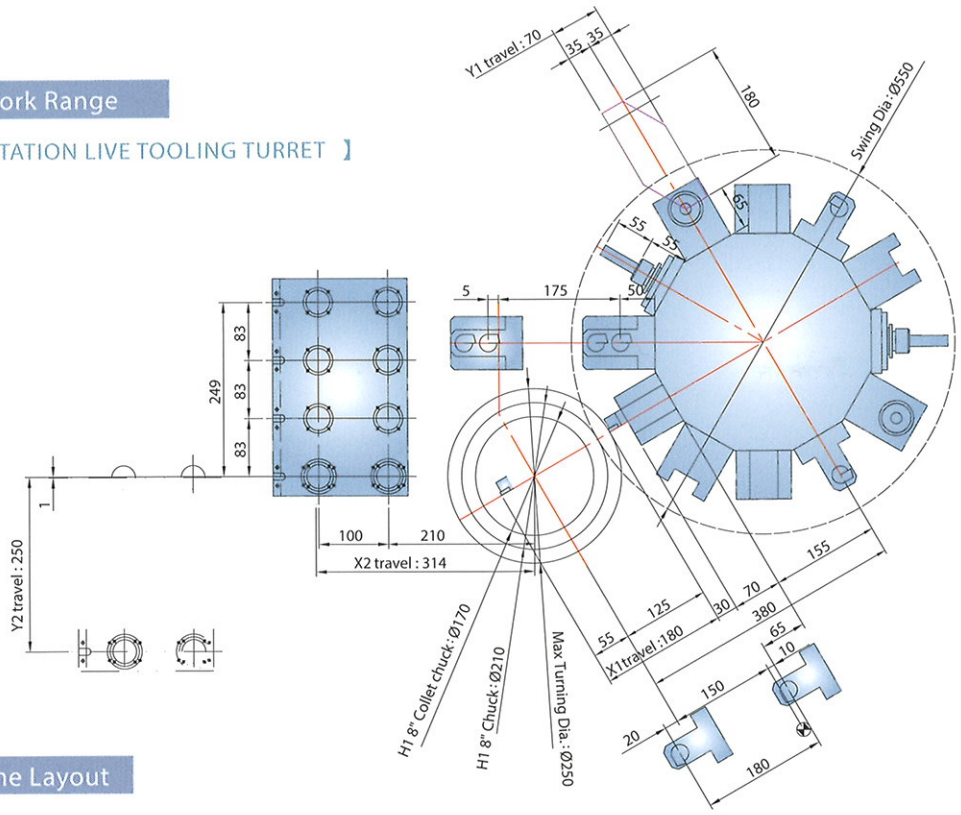

### 【 GANG TOOLING SYSTEM 】



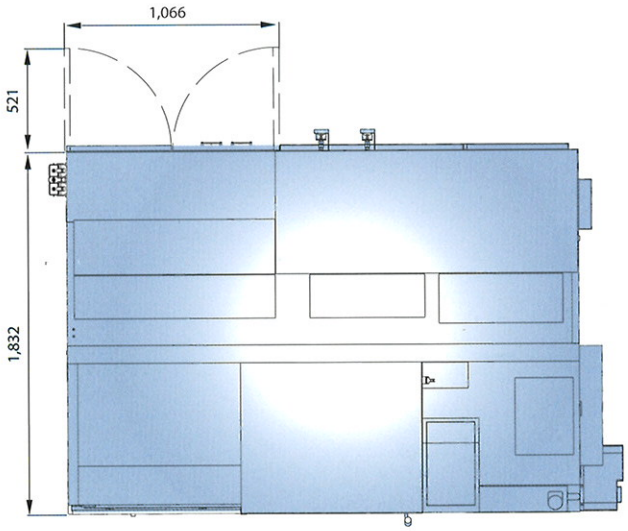

Unit : mm

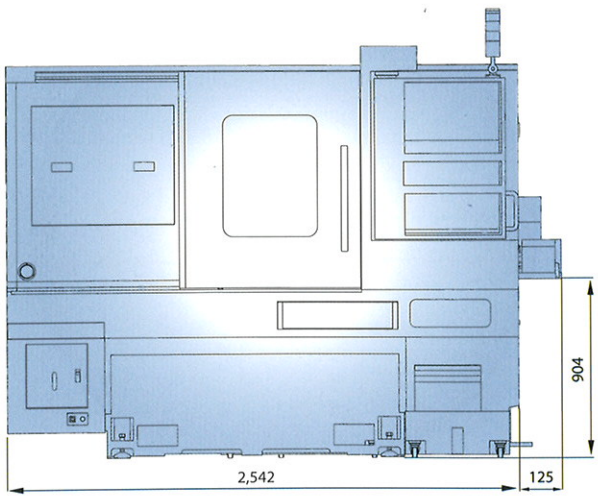
## Work Range

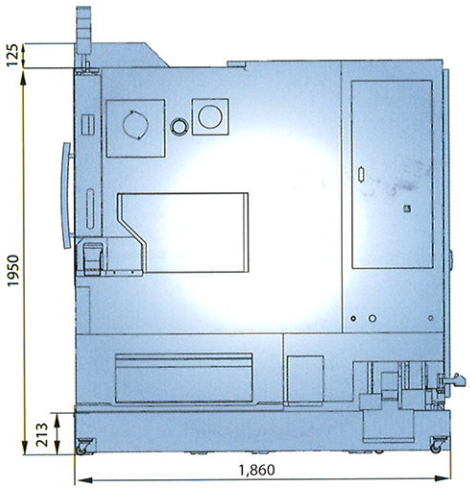
【 12-STATION LIVE TOOLING TURRET 】




## Machine Layout




Unit : mm

# MACHINE SPECIFICATIONS

| SPECIFICATIONS | GTW-1500 |
|---|---|
| Max. turning diameter | Live Tooling Turret + Y-axis : Ø 250 mm |
| Standard turning diameter | Live Tooling Turret : Ø 230 mm |
| Max. turning length | 210 mm |
| Chuck size | 8" |
| Bar capacity | Ø 51 mm |
| **SPINDLE** | |
| Hole through draw tube | Ø 52 mm |
| Hole through spindle | Ø 61 mm |
| Spindle nose | A2-6 |
| Spindle bearing diameter ( Front ) | Ø 120 mm |
| Spindle speed range | 5,000 rpm |
| Cont. torque / Instant torque | 63.7 N-m / 95.5 N-m |
| spindle motor ( cont. / 30 min ) | 10 / 15 kW |
| **SUB-SPINDLE** | |
| Chuck size | BNE-51-60C-S22 DIN173E DIN177E 5" |
| Hole through spindle | Ø 43 mm |
| Bar capacity | Ø 51 mm ( Collect Chuck Hold ) |
| Spindle nose | Ø 55 |
| Spindle bearing diameter | Ø 90 mm |
| Spindle speed range | 6,000 rpm |
| Cont. torque / instant torque | 15 N-m / 30 N-m |
| Spindle motor | 3.7 / 5.5 kW |
| **X / Z AXES** | |
| $X_1$ / $X_2$ axes travel | 180 / 314 mm |
| $Z_1$ / $Z_2$ axes travel | 268 / 522 mm |
| $X_1$ / $X_2$ axes servo motor ( cont. ) | 1.2 kW |
| $Z_1$ / $Z_2$ axes servo motor ( cont. ) | 1.2 kW |
| $X_1$ / $X_2$ axes rapids | 18 / 24 m/min. |
| $Z_1$ / $Z_2$ axes rapids | 30 m/min |
| $X_1$ / $X_2$ axes ball screw Ø pitch | Ø 32 x P6 mm / Ø 32 x P8 mm |
| $Z_1$ / $Z_2$ axes ball screw Ø pitch | Ø 32 x P10 mm |
| **LIVE TOOLING TURRET** | |
| Stations | 12 |
| Turret disk diameter | Ø 310 mm |
| Live tooling drive motor | 0.75 kW |
| Indexing drive type | FANUC $\alpha$ 12 / 4000is |
| O.D. tool shank size | □ 20 mm |
| I.D. tool shank size | Ø 25 mm |
| Live tooling shank size | ER 25 ( Ø 16 mm ) |
| Live tooling RPM range | 4,000 rpm |

| Y -AXIS | |
|---|---|
| $Y_1$ / $Y_2$ axes travel | ± 35 / 250 mm |
| $Y_1$ / $Y_2$ axes servo motor ( cont. ) | 1.2 / 0.75 kW |
| $Y_1$ / $Y_2$ axes rapids | 20 / 24 m/min. |
| $Y_1$ / $Y_2$ axes ball screw Ø pitch | Ø 32 x P10 mm / Ø 32 x P6 mm |
| **GANG TOOLING SYSTEM** | |
| Stations | 8 |
| Live tools | ER 16 |
| Live tooling RPM range | 5,000 rpm |
| **GENERAL** | |
| Positioning accuracy ( X / Y / Z ) | ± 0.005 mm |
| Repeatability ( X / Y / Z ) | ± 0.003 mm |
| CNC control | FANUC 32*i* / G.LINC 350 |
| Coolant tank capacity | 240 L |
| Machine weight | 4,000 Kg |
| Dimensions ( L × W × H ) | 2,544 x 1,867 x 1,980 mm |

Specications are subject to change without notice.

THE ULTIMATE MACHINING POWER

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