

GSA+

GSA TECHNOLOGY CO., LTD.

CNC Rotary Table



GSA+

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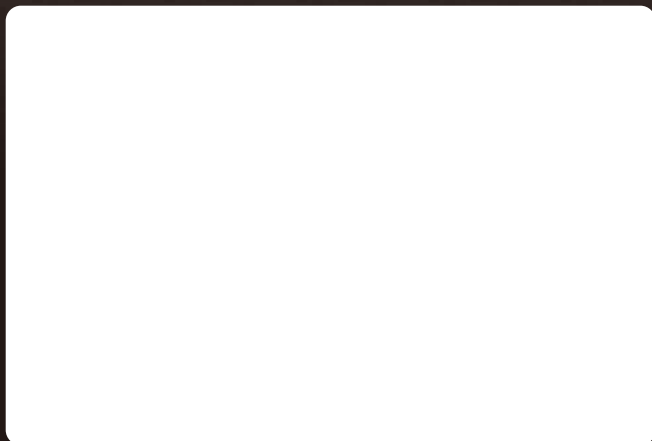
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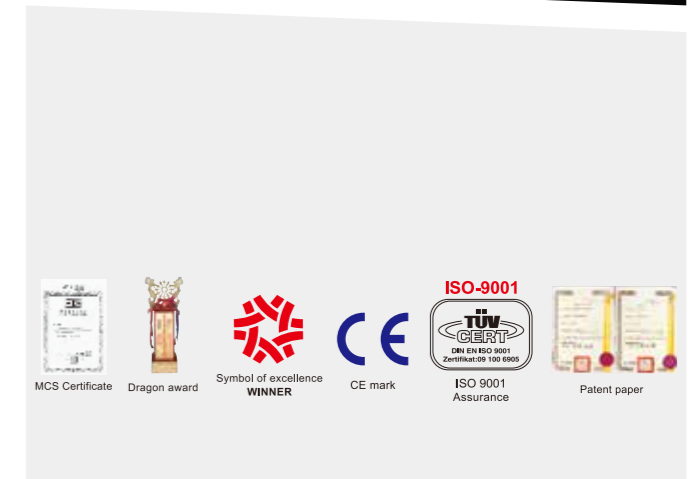


2017 02 06



GSA+

- GSA TECHNOLOGY CO., LTD. established in 1978, from time to time, our growing of devotion work stable, keeping in mind of honesty, faith, profession and innovation, non-stop communication and promotion of critical quality procedure, ensure every products could meet high quality of duration and precision.
- Further we display our products at IMTS-Chicago, EMO-Hannover, JIMTOF-Tokyo and TIMTOS-Taipei, and receiving reputation from the customer of the worldwide.
- To meet the request of customer, both upgrading the quality of our produces and purchasing new machinery of testing and inspection, collecting update technology to develop value-added products.
- The sales & service had been built around the network of worldwide, technical supporting and customer service are connected through our agents and dealers more than 30 countries of the world.
- We stay improving and innovating our products as the goal of never ending story, the satisfied of our customer and continuing devotion of our products are what working for the mutual benefits of our customers and members of GSA.

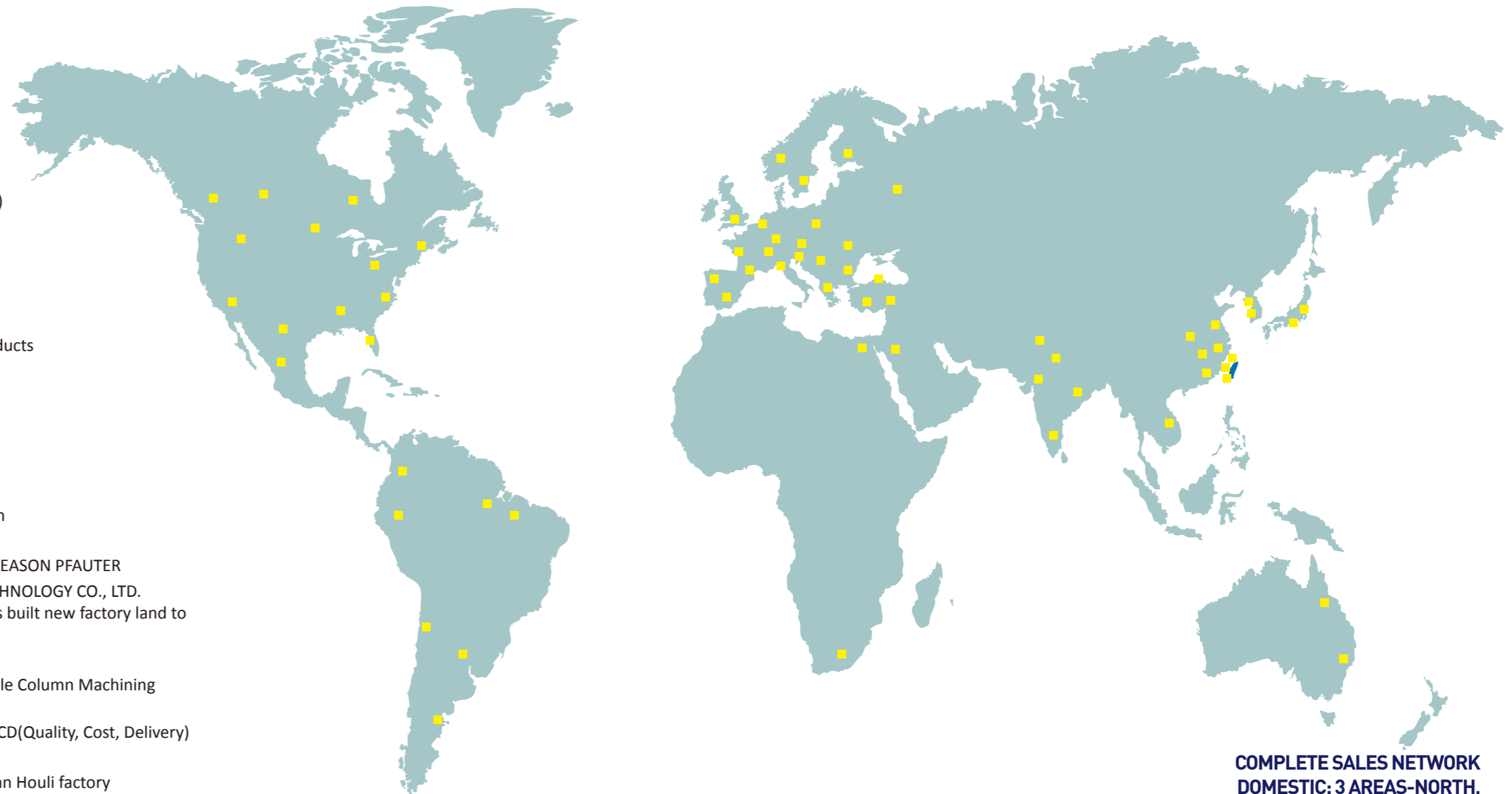


MARKETING & SALES MANAGEMENT



Perfect and strong service team members with excellence professional technique

- 1978 Company established, started product of Precision-Index-Tables
- 1980 Professional manufacturer of Precision-Feed-Index-Tables
- 1985 Cooperated with vendors in Switzerland, Germany, Japan & USA
- 1988 Products No. 1 awarded MCS (Mechanical Components Standards)
Professional manufacturer of CNC-Rotary-Table
- 1990 Built a new Factory 4,290m² of production-line 1,500m²
Phase-in products A/M-Pallet-Changer, CNC-Tilting-Rotary-Table
- 1992 Organized and set up branch office in Shanghai, China
- 1994 Products awarded "Symbol of Excellence winner"
- 1996 Certificate approved of ISO-9001 by TÜV Rheinland, Germany Products
awarded again the "Symbol of Excellence winner"
- 1997 Release new series of Tool-Turret for CNC Lathe
- 1999 Ready to again Y2K and carry out ERP in whole factory
- 2000 Complete second factory building
To set up service center in Shanghai, China
- 2003 To expand factory buildings to 7,600m²
- 2004 OEM power milling turret and servo drive turret designed by Japan
- 2006 Complete development of power turret
- 2007 Import Germany made CNC Hobbing machine (P600/800) from GLEASON PFAUTER
- 2008 Transferred the name of Golden Sun Industrial Co., Ltd to GSA TECHNOLOGY CO., LTD.
specialize in manufacturing CNC Rotary Table and Turret which has built new factory land to 15,000m²
- 2009 Implementation of 5S for workplace improvement
- 2010 Acquired Germany Made 5 Axes Milling Machine and 5-Face Double Column Machining Center
- 2011 Implementation of T.O.C(Theory of Constraints) to reach goal of QCD(Quality, Cost, Delivery)
- 2012 To build China new factory (Jiashan, Shanghai) 20,000m²
- 2015 China new factory (Jiashan, Shanghai) finished, start to build Taiwan Houli factory



COMPLETE SALES NETWORK
DOMESTIC: 3 AREAS-NORTH, MIDDLE, SOUTH-TAIWAN
OVERSEA: AGENT & DEALERS SPREAD OUT 40 COUNTRIES OF THE WORLD

IDEAL PERFORMANCE HIGH EFFICIENCY GREAT DURABILITY

with Excellent Worm Gear System



Materials

Worm shaft : Case hardened alloy steel
Worm wheel : Special high tensile brass alloy equal to strength of a steel alloy

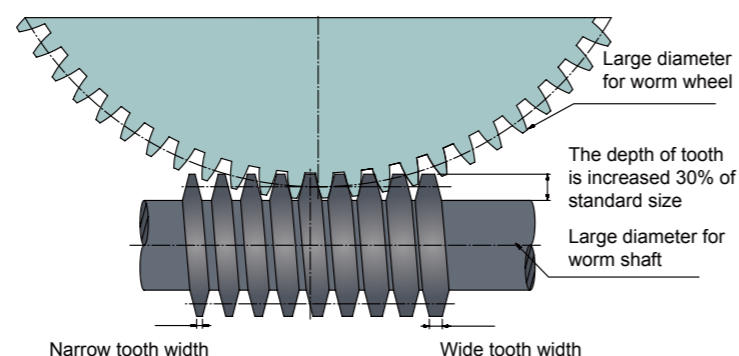
Efficiency of transmission torque

The combination of worm shaft and worm wheel makes the friction factor smaller and the efficiency of transmission torque larger

Tooth profile

The depth of tooth is larger in module of standard size

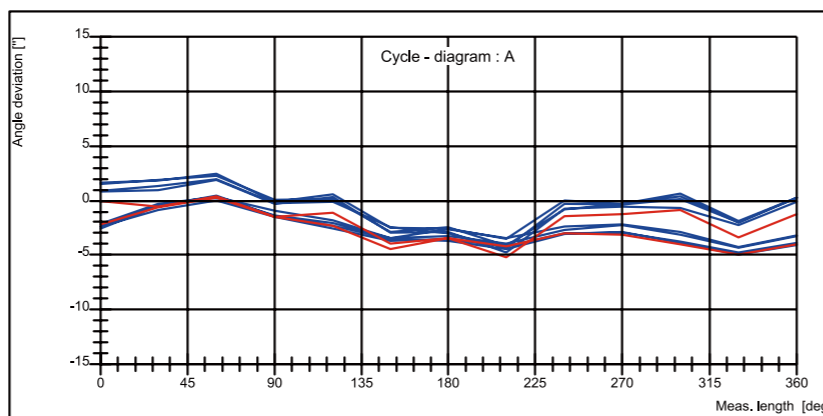
(I) The Matching Schema of Dual Lead Worm Wheel and Worm Shaft



- Surface contact between in worm wheel and worm shaft can be reached 35%~45% suitable for heavy cutting and continuous processing
- Good wear-resisting, there is no need to adjust backlash at least 1~2 years
- Indexing accuracy class is maintained within 10 (sec.) (standard 15 sec.)

(II) Indexing Accuracy Class for CNC Rotary Table

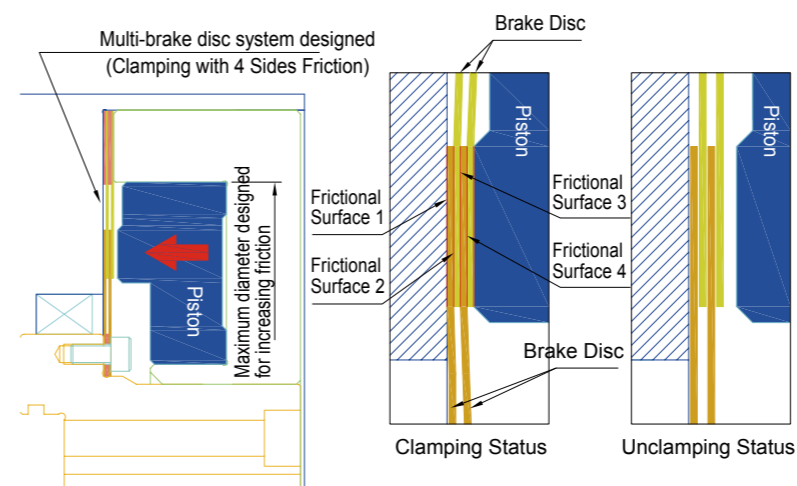
HEIDENHAIN ACCOM



- Indexing accuracy class: 10(sec.) (standard 15 sec.)
- Repeatability: 4 (sec.)
- According to ISO 230.2 standard of inspection which can be qualified to Aeronautics and Military Industry.

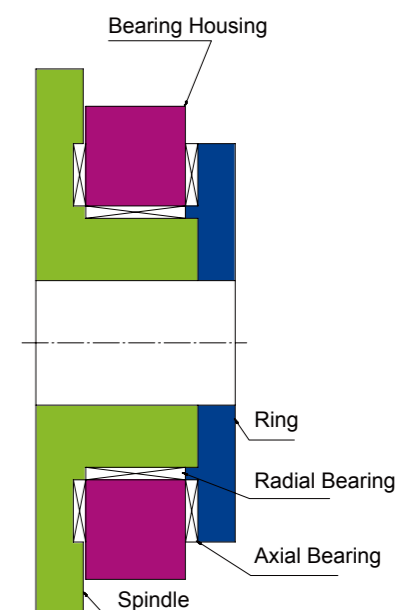
(III) The Schema of Brake System Clamping force is increased 2~3 times if compare with other brands of company

- Multi-brake disc system designed (Clamping with 4 Sides Friction)
- Creating clamp torque 200 kg·m from pneumatic source : 5kg/cm²
- Compact & high durability designed; there is no lifting-up situation during rotating



(IV) The Schema of Advantage Bearing System

- 3 sides constraint designed, supporting force is greater than same dimension of Cross-Roller Ring (bearing) above 2 times
- Dual bearings designed, extending diameter suitable for heavy cutting



(V) Indexing Accuracy Class for Hirth Coupling

- Indexing accuracy class: ±3 (sec.)
- Repeatability: ±1 (sec.)
- Contact rate of Teeth surface can be reached 90%



(VI) Gear Ratio

- To match high speed machine center (60m/min) with high speed CNC Rotary Table
- Gear ratio 90:1 can be reached 33rpm (motor:3000rpm)



GERMANY MADE GLEASON PFAUTER CNC HOBGING MACHINE

Adopting Germany made GLEASON PFAUTER CNC Hobbing machine (P600/800) for worm wheel machining, indexing accuracy class can be reached 5 (sec.) Accuracy class is conformed to DIN2 (same as JIS 0). Using built-in Direct Drive Motor designed in spindle of rotary table, there is no backlash situation.



CNC WORM SHAFT GRINDING MACHINIE

Adopting direct drive motor in spindle and other axes use linear motor for worm shaft machining. Inspecting accuracy can be reached 0.002mm anywhere in grinding.

Adopting Germany made DMG 5 Axes Turning / Milling / Grinding High-End Mahcine. Machining Job: High Precision Large Size Work-Piece. DIA. within 2,000mm.



Adopting Germany made DMG 5 Axes Milling Machine. Machine Job: Tool-Disc Machining from Roughing to Finish Mahcining.

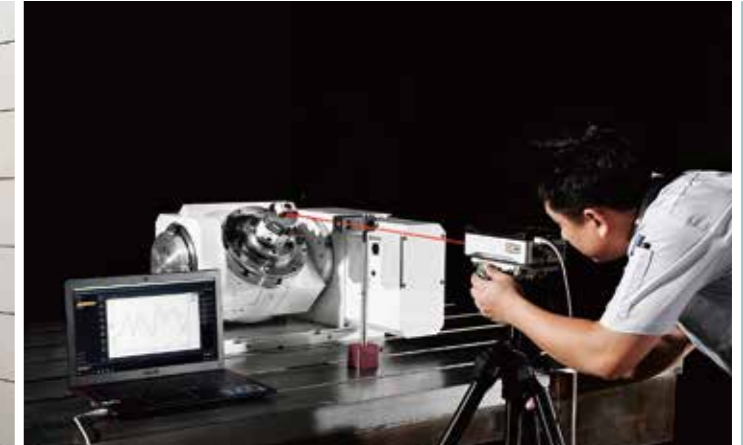


Adopting CNC Horizontal Machining Center for Housing and Tool-Disc Machining.



3D Measuring Machine from ZEISS Germany

- Feature: Measure geometric accuracy error for all components.
- Accuracy: $1.9\mu + L/300\text{mm}$



RENISHAW Two Axes Calibrator

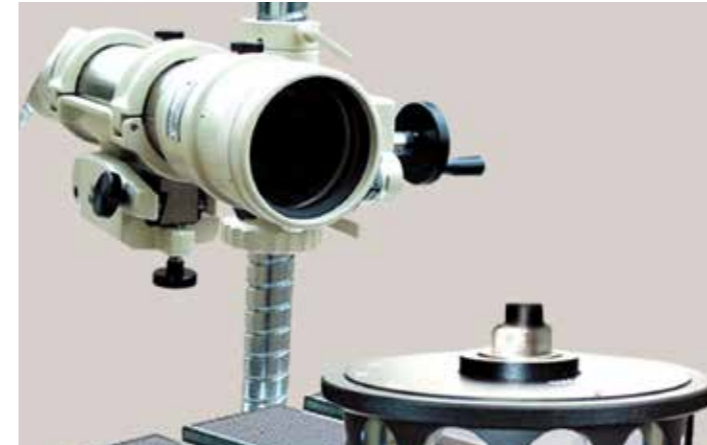
- Feature: Inspect 2 axes angle accuracy.
- Accuracy: ± 1 arc sec.



Adopting 5-Face CNC Double Column Machining Center for Large Size Housing Machining.

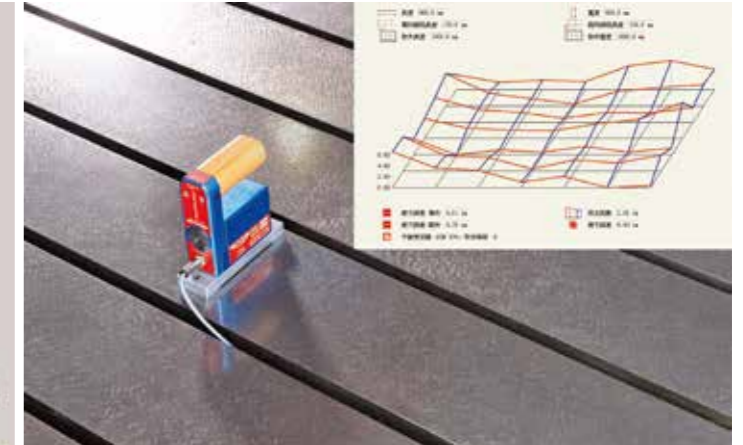


Adopting OKUMA MA-60HB HMC for Housing machining, the parallelism and perpendicularity in boring machining can be reached 0.005mm in between spindle hole and center hole of worm shaft.



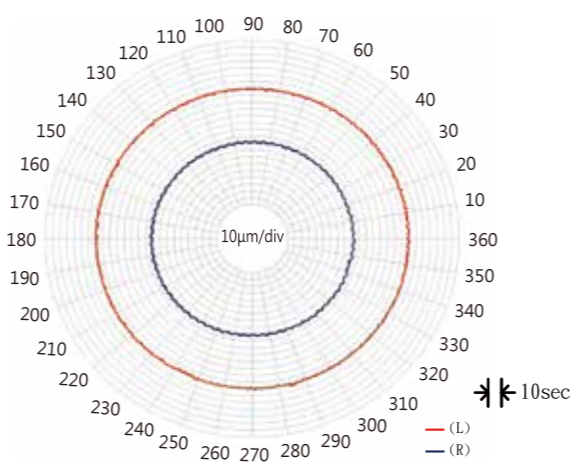
Autocollimator from Nikon Japan

- Feature: Inspect angle accuracy and angle error.
- Accuracy: ± 1 arc sec.



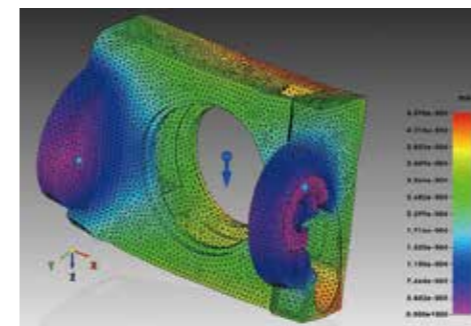
Electronic Level Device from Wyler Switzerland

- Feature: Inspect top flatness of large size rotary table.
- Accuracy: 0.001 mm/m

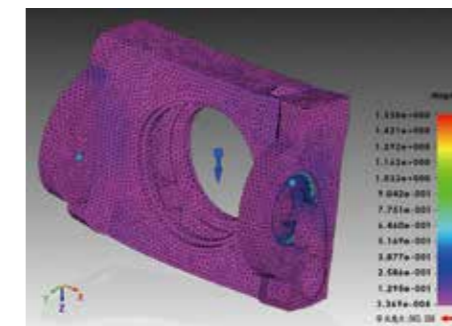


Surface contact and pitch error testing for worm gear system.

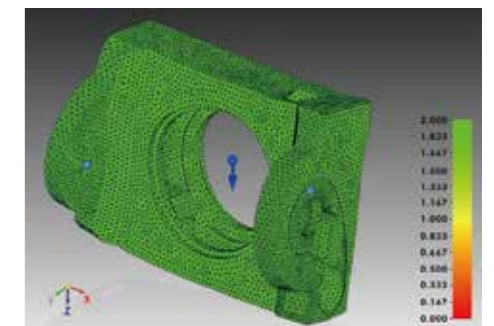
SIMULATION & ANALYSIS TECHNOLOGY



Displacement - Total Translation



Stress - Von Mises



Stress - Safety Factor

INDEX

CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

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CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

GCT

PT

APCR / APCI

Controller

Coupling

Accessories

CNC

CNC Rotary Table Satandard Type P.13



| | | |
|----------|----------|----------|
| CNC-120R | CNC-170R | CNC-200R |
| CNC-250R | CNC-320R | CNC-400R |
| CNC-500R | CNC-630R | CNC-800R |

CNCB

CNC Rotary Table Mega Thru Hole Type P.17



CNCB-800R

CNC

CNC Rotary Table Back Mounted Motor Type P.19



| | |
|-----------|-----------|
| CNC-120RB | CNC-170RB |
| CNC-200RB | CNC-250RB |

CNC

CNC Rotary Table Multi-Spindle Type P.21



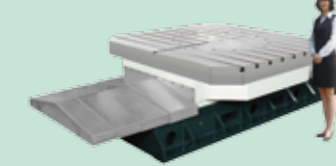
| | |
|---------------------------|---------------------------|
| CNC-120R ^{2W/3W} | CNC-170R ^{2W/3W} |
| CNC-200R ^{2W/3W} | CNC-250R ^{2W/3W} |
| CNC-320R ^{2W/3W} | |

Large Size Table Large Size Horizontal CNC Rotary Table P.40



| | | |
|----------|----------|----------|
| HRT-400 | HRT-500 | HRT-630 |
| | HRT-800 | HRT-1000 |
| HRT-1500 | HRT-2000 | HRT-2500 |

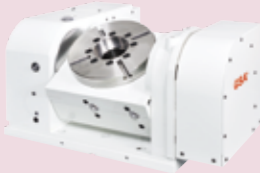
Large Size Table Heavy-Duty CNC Rotary Linear Table P.43



| | |
|----------|----------|
| RLT-1500 | RLT-2000 |
| | RLT-2500 |

CNCT

CNC Tilting Rotary Table P.25



| | |
|----------|----------|
| CNCT-100 | CNCT-200 |
| CNCT-250 | CNCT-320 |

CNCT

CNC Trunnion Table P.27



| | |
|------------|----------|
| CNCT-320RS | CNCT-450 |
| CNCT-630 | CNCT-800 |

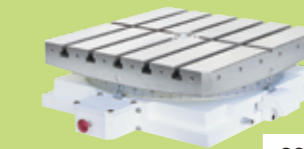
Large Size Table Large Size CNC Rotary Table P.45



| | | |
|------------|------------|------------|
| CNC-1000HV | CNC-1200HV | CNC-1500HV |
| CNC-2000HV | | |

GCT

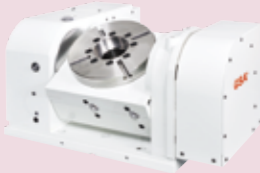
Precision Index Table P.47



| | |
|---------|----------|
| GCT-301 | GCT-450 |
| GCT-600 | GCT-700 |
| GCT-800 | GCT-1000 |
| | GCT-1200 |

CNCT

CNC Tilting Rotary Table P.25



| | |
|----------|----------|
| CNCT-100 | CNCT-200 |
| CNCT-250 | CNCT-320 |

CNCT

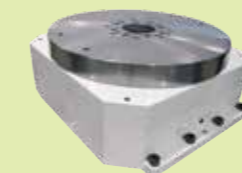
CNC Trunnion Table P.27



| | |
|------------|----------|
| CNCT-320RS | CNCT-450 |
| CNCT-630 | CNCT-800 |

PT

High Precision Center Table With Pallets P.49



| | | |
|--------|--------|--------|
| PT-200 | PT-340 | PT-470 |
| PT-600 | PT-800 | |

APCR/APCI

Horizontal Machining Center Table With Pallets P.51



| | | |
|---------------|----------------|---------------|
| APCR/APCI 400 | APCR/APCI 500 | APCR/APCI 630 |
| APCR/APCI 800 | APCR/APCI 1000 | |

CNCMT

CNC Manual Tilting Rotary Table P.30



| | |
|-----------|-----------|
| CNCMT-200 | CNCMT-250 |
| CNCMT-320 | CNCMT-400 |
| CNCMT-500 | CNCMT-630 |

NCF

CNC Face Gear Indexer P.32



| | |
|----------|----------|
| NCF-250R | NCF-320R |
| NCF-400R | NCF-500R |

Controller AC Servo Controller P.53



Coupling Hirth Coupling P.56



Tailstock Manual Tailstock P.34



| | | |
|---------|---------|---------|
| TS-A115 | TS-A135 | TS-A160 |
| TS-B185 | TS-B190 | TS-B210 |
| TS-B250 | TS-B255 | TS-B270 |
| TS-C310 | TS-C400 | TS-C480 |

Tailstock Pneumatic Tailstock Hydraulic Tailstock P.35



| | | |
|------------------------|------------------------|------------------------|
| TS-A115 ^{P/H} | TS-A135 ^{P/H} | TS-A160 ^{P/H} |
| TS-B185 ^{P/H} | TS-B190 ^{P/H} | TS-B210 ^{P/H} |
| TS-B250 ^{P/H} | TS-B255 ^{P/H} | TS-B270 ^{P/H} |
| TS-C310 ^{P/H} | TS-C400 ^{P/H} | TS-C480 ^{P/H} |

Accessories Optional Accessories P.58



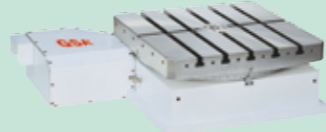
Application Application of Products P.61

Tailstock Strong Tailstock P.36



| | |
|----------|----------|
| TSA-120S | TSA-200S |
| TSA-251S | TSA-320S |

Large Size Table Horizontal Rotary / Index Center Table P.37

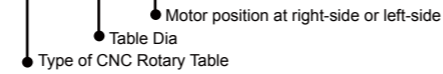


| | |
|---------|---------|
| HIT-400 | HIT-500 |
| HIT-630 | HIT-800 |



- ⊙ A combination of high precision bronze / nickel worm wheel and case hardened steel worm screw ensures long term indexing accuracy.
- ⊙ Dual lead worm wheel/worm shaft which allow easy backlash adjustment.
- ⊙ Double bearing design suitable for heavy cutting.
- ⊙ One piece of faceplate and spindle design which offer rigid construction.
- ⊙ Low Gear ratio design (90:1) which offer high speed feed rate.
- ⊙ **Large thru hole design** which allow large work piece going thru spindle.

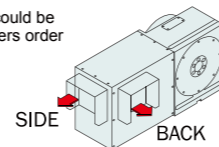
MODEL NO : CNC-320 R/L



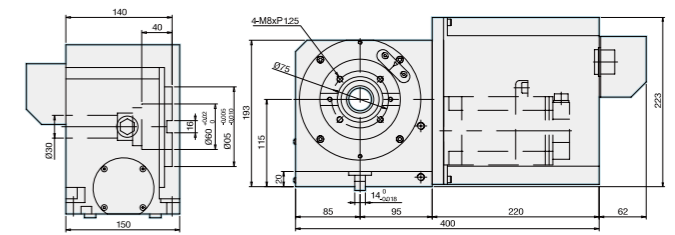
| ITEM / MODEL | CNC-120R | CNC-170R | CNC-200R | CNC-250R | CNC-320R | |
|---|---|---------------------------------------|---------------------------------------|---------------------------------------|--|-------------------|
| Table Dia (mm/inch) | 120 / 4.72 | 170 / 6.69 | 200 / 7.87 | 250 / 9.84 | 320 / 12.60 | |
| Center Height in Vertical (mm / inch) | 115 / 4.53 | 135 / 5.31 | 160 / 6.3 | 185 / 7.28 | 210 / 8.27 | |
| Table Height in Horizontal (mm / inch) | 170 / 6.69 | 165 / 6.5 | 165 / 6.5 | 200 / 7.87 | 240 / 9.45 | |
| Over all Height in Vertical Without Motor Cover (mm / inch) | 193 / 7.60 | 240 / 9.45 | 265 / 10.63 | 315 / 12.4 | 380 / 14.96 | |
| Thru-Hole Dia (mm / inch) | 30 ^{H7} / 1.18 ^{H7} | 35 ^{H7} / 1.37 ^{H7} | 35 ^{H7} / 1.37 ^{H7} | 70 ^{H7} / 2.75 ^{H7} | 110 ^{H7} / 4.33 ^{H7} | |
| Width of T-slot (mm / inch) | 10 ^{H7} / 0.39 ^{H7} | 12 ^{H7} / 0.47 ^{H7} | 12 ^{H7} / 0.47 ^{H7} | 12 ^{H7} / 0.47 ^{H7} | 14 ^{H7} / 0.55 ^{H7} | |
| Width of Guide Block (mm / inch) | 14 ^{H7} / 0.55 ^{H7} | 18 ^{H7} / 0.71 ^{H7} | 18 ^{H7} / 0.71 ^{H7} | 18 ^{H7} / 0.71 ^{H7} | 18 ^{H7} / 0.71 ^{H7} | |
| Servo motor type | MELDAS | HF-75T | HF-104T | HF-104T | HF-104T / HF-154T | HF-204S |
| | FANUC | α2 i | α4 i | α4 i | α4 i / α8 i | α12 i |
| | SIEMENS | 1FK7042 | 1FK7060 | 1FK7060 | 1FK7060 / 1FK7063 | 1FK7083 |
| | HEIDENHAIN | QSY96G | QSY116C | QSY116C | QSY116C / QSY116E | QSY155B / QSY155C |
| Gear Ratio | 1:60 | 1:90 | 1:90 | 1:180/1:90 | 1:180/1:90 | |
| Min. Indexing Unit degree (degree) | 0.001° | 0.001° | 0.001° | 0.001° | 0.001° | |
| Max. R.P.M. (rpm) (motor : 2000 / rpm) | 33.3 | 22.2 | 22.2 | 11.1/22.2 | 11.1/22.2 | |
| Pneu. clamp force (kg·m) (P:5kg / cm ²) | 12 | 25 | 25 | 47 | 71 | |
| Hydro. clamp force (kg·m) (P:20kg / cm ²) | 24 | 50 | 50 | 94 | 142 | |
| Indexing Accuracy Class (sec.) | 30" | | | | | |
| | High Accuracy Rotary Table Refer to P59 chart 2 | | | | | |
| Repeatability (sec.) | Unidirectional | 4" | 4" | 4" | 4" | 4" |
| | Bidirectional | 8" | 8" | 8" | 8" | 8" |
| Max. Machining Force (kg·m) | 12 | 23 | 23 | 45 | 78 | |
| N.W. (kgs) | 28 | 70 | 84 | 124 | 210 | |
| Max. Load | Vertical | W=35 kg | W=100 kg | W=125 kg | W=150 kg | W=175 kg |
| | Horizontal | W=75 kg | W=200 kg | W=250 kg | W=300 kg | W=350 kg |
| Max. Radial Load | | F=800 kg | F=1000 kg | F=1100 kg | F=1450 kg | F=2500 kg |
| | | FxL=8 kg·m | FxL=50 kg·m | FxL=50 kg·m | FxL=94 kg·m | FxL=142 kg·m |
| Coupling | | FxL=18 kg·m | FxL=78 kg·m | FxL=100 kg·m | FxL=180 kg·m | FxL=200 kg·m |

- * GSA remains the right of modification. All specifications can be modified according to customers' requirement.
- Up & backside cable outlet is available, slant motor cover also available
 - Standard accessory : eye bolts, clamping blocks
 - ⊙ Adapting Tailstock → Refer to P : 34-36
 - ⊙ To match AC-/DC-/Stepping-Controller → Refer to P : 53-55
 - ⊙ Optional accessories → Refer to P : 58

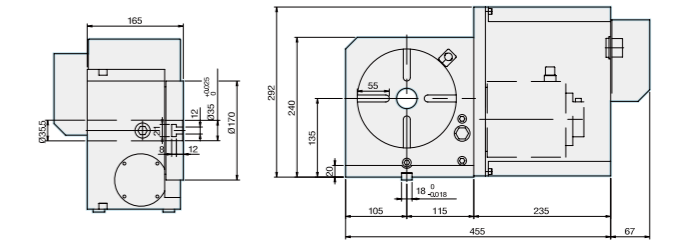
● Outlet of wire box could be decided by customers order



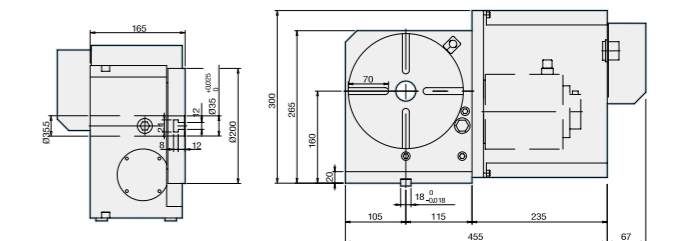
CNC-120R



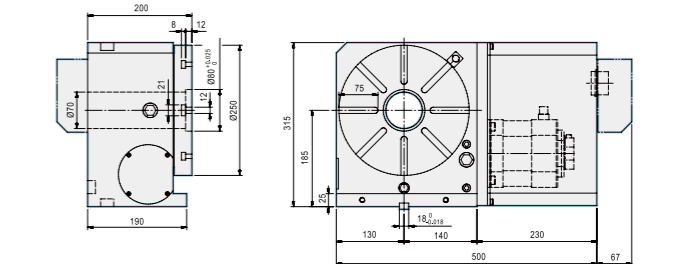
CNC-170R



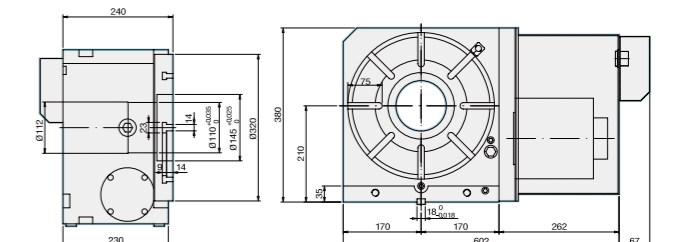
CNC-200R



CNC-250R



CNC-320R



NOTE : Difference motor becomes difference length of motor cover

Accuracy Standards

| MODEL | Unit:mm | | | | | | |
|----------|--------------------|---|--------------------------------|---|------------------|---|--|
| | Table top flatness | Parallelism of table top and frame bottom | Runout of table spindle center | Perpendicularity of table top to frame bottom | Table top runout | Perpendicularity of table top to frame bottom guide block | Parallelism of center line between headstock & tailstock to frame bottom guide block |
| CNC-120R | 0.01 | 0.01 | 0.015 | 0.012 | 0.01 | 0.02 | 0.02 |
| CNC-170R | 0.01 | 0.01 | 0.01 | 0.02 | 0.015 | 0.02 | 0.02 |
| CNC-200R | 0.01 | 0.01 | 0.01 | 0.02 | 0.015 | 0.02 | 0.02 |
| CNC-250R | 0.01 | 0.01 | 0.01 | 0.02 | 0.015 | 0.02 | 0.02 |
| CNC-320R | 0.01 | 0.01 | 0.01 | 0.02 | 0.015 | 0.02 | 0.02 |

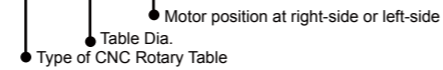
CNC
CNCB
CNCT / CNCMT
NCF
Tailstock
Large Size Table
GCT
PT
APCR / APCI
Controller
Coupling
Accessories

CNC
CNCB
CNCT / CNCMT
NCF
Tailstock
Large Size Table
GCT
PT
APCR / APCI
Controller
Coupling
Accessories



- ⊙ A combination of high precision bronze / nickel worm wheel and case hardened steel worm screw ensures long term indexing accuracy.
- ⊙ Dual lead worm wheel/worm shaft which allow easy backlash adjustment.
- ⊙ Double bearing design suitable for heavy cutting.
- ⊙ One piece of faceplate and spindle design which offer rigid construction.
- ⊙ Low Gear ratio design (90:1) which offer high speed feed rate.
- ⊙ **Large thru hole design** which allow large work piece going thru spindle.

MODEL NO : **CNC-400 R/L**

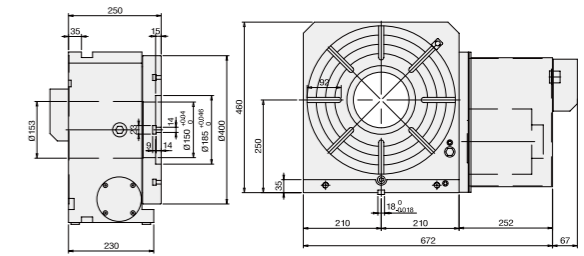


| ITEM / MODEL | | CNC-400R | CNC-500R | CNC-630R | CNC-800R |
|---|----------------|---------------------------------------|--|---------------------------------------|---------------------------------------|
| Table Dia (mm/inch) | | 400 / 15.75 | 500 / 19.69 | 630 / 24.8 | 800 / 31.5 |
| Center Height in Vertical (mm / inch) | | 250 / 9.84 | 310 / 12.20 | 400 / 15.75 | 480 / 18.90 |
| Table Height in Horizontal (mm / inch) | | 250 / 9.84 | 290 / 11.42 | 320 / 12.60 | 340 / 13.39 |
| Over all Height in Vertical Without Motor Cover (mm / inch) | | 460 / 18.11 | 570 / 22.44 | 725 / 28.54 | 880 / 34.65 |
| Thru-Hole Dia (mm / inch) | | 150 ^{H7} / 5.9 ^{H7} | 180 ^{H7} / 7.09 ^{H7} | 254 ^{H7} / 10 ^{H7} | 254 ^{H7} / 10 ^{H7} |
| Width of T-slot (mm / inch) | | 14 ^{H7} / 0.55 ^{H7} | 18 ^{H7} / 0.71 ^{H7} | 18 ^{H7} / 0.71 ^{H7} | 20 ^{H7} / 0.79 ^{H7} |
| Width of Guide Block (mm / inch) | | 18 ^{H7} / 0.71 ^{H7} | 18 ^{H7} / 0.71 ^{H7} | 18 ^{H7} / 0.71 ^{H7} | 22 ^{H7} / 0.87 ^{H7} |
| Servo motor type | MELDAS | HF-204S | HF-204S / HF-354S | HF-354S | HF-354S |
| | FANUC | α12 i | α12 i / α22 i | α22 i | α22 i |
| | SIEMENS | 1FK7083 | 1FK7083 / 1FK7101 | 1FK7101 | 1FK7101 |
| | HEIDENHAIN | QSY155C | QSY155F | QSY190C | QSY190C |
| Gear Ratio | | 1:90 | 1:120 | 1:180 | 1:180 |
| Min. Indexing (degree) | | 0.001° | 0.001° | 0.001° | 0.001° |
| Max. R.P.M. (rpm) (motor : 2000 / rpm) | | 22.2 | 16.7 | 11.1 | 11.1 |
| Pneu. clamp force (kg·m) (P:5kg / cm ²) | | 92 | 160 | 350 | 430 |
| Hydro. clamp force (kg·m) (P:20kg / cm ²) | | 184 | 380 | 700 | 1050 |
| Indexing Accuracy Class (sec.) | | A | 15" | A | 15" |
| High Accuracy Rotary Table Refer to P59 chart 2 | | | | | |
| Repeatability (sec.) | Unidirectional | 4" | 4" | 4" | 4" |
| | Bidirectional | 8" | 8" | 8" | 8" |
| Max. Machining Force (kg·m) | | 160 | 230 | 320 | 350 |
| N.W. (kgs) | | 280 | 480 | 860 | 1200 |
| Max. Load | Vertical | W=300 kg | W=350 kg | W=400 kg | W=600 kg |
| | Horizontal | W=500 kg | W=600 kg | W=1000 kg | W=1500 kg |
| Max. Radial Load | | F=3500 kg | F=4000 kg | F=5000 kg | F=6000 kg |
| | | FxL=184 kg·m | FxL=380 kg·m | FxL=700 kg·m | FxL=1050 kg·m |
| Coupling | | FxL=250 kg·m | FxL=350 kg·m | FxL=800 kg·m | FxL=1000 kg·m |

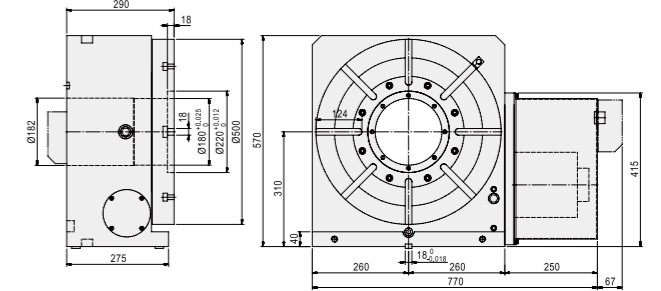
* GSA remains the right of modification. All specifications can be modified according to customers' requirement.

- Up & backside cable outlet is available, slant motor cover also available
- Standard accessory : eye bolts, clamping blocks
- ⊙ Adapting Tailstock → Refer to P : 34-36
- ⊙ To match AC-/DC-/Stepping-Controller → Refer to P : 53-55
- ⊙ Optional accessories → Refer to P : 58

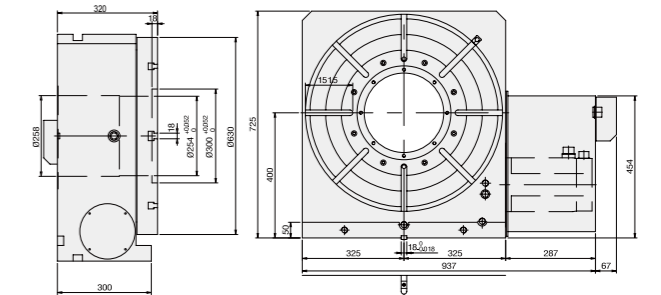
CNC-400R



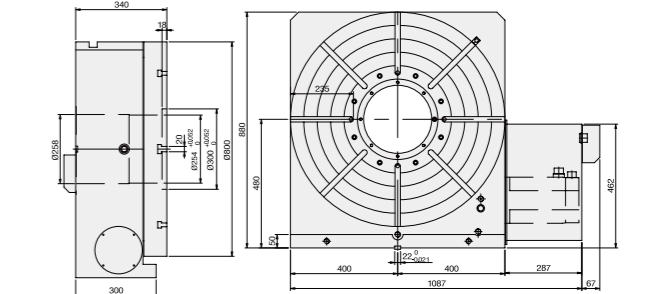
CNC-500R



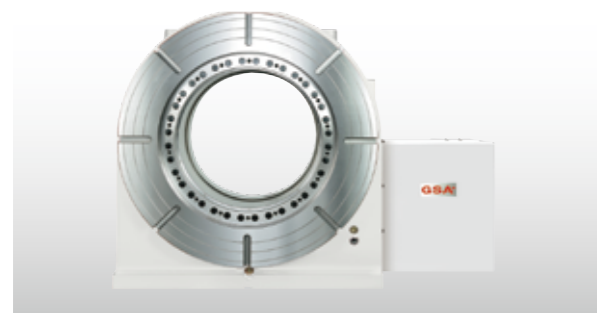
CNC-630R



CNC-800R



| Accuracy Standards | | | | | | | Unit:mm |
|--------------------|--------------------|---|--------------------------------|---|------------------|---|--|
| ITEM | Table top flatness | Parallelism of table top and frame bottom | Runout of table spindle center | Perpendicularity of table top to frame bottom | Table top runout | Perpendicularity of table top to frame bottom guide block | Parallelism of center line between headstock & tailstock to frame bottom guide block |
| CNC-400R | 0.015 | 0.015 | 0.01 | 0.02 | 0.015 | 0.02 | 0.02 |
| CNC-500R | 0.015 | 0.015 | 0.01 | 0.02 | 0.015 | 0.02 | 0.02 |
| CNC-630R | 0.025 | 0.025 | 0.01 | 0.025 | 0.02 | 0.02 | 0.02 |
| CNC-800R | 0.025 | 0.025 | 0.01 | 0.025 | 0.02 | 0.02 | 0.02 |

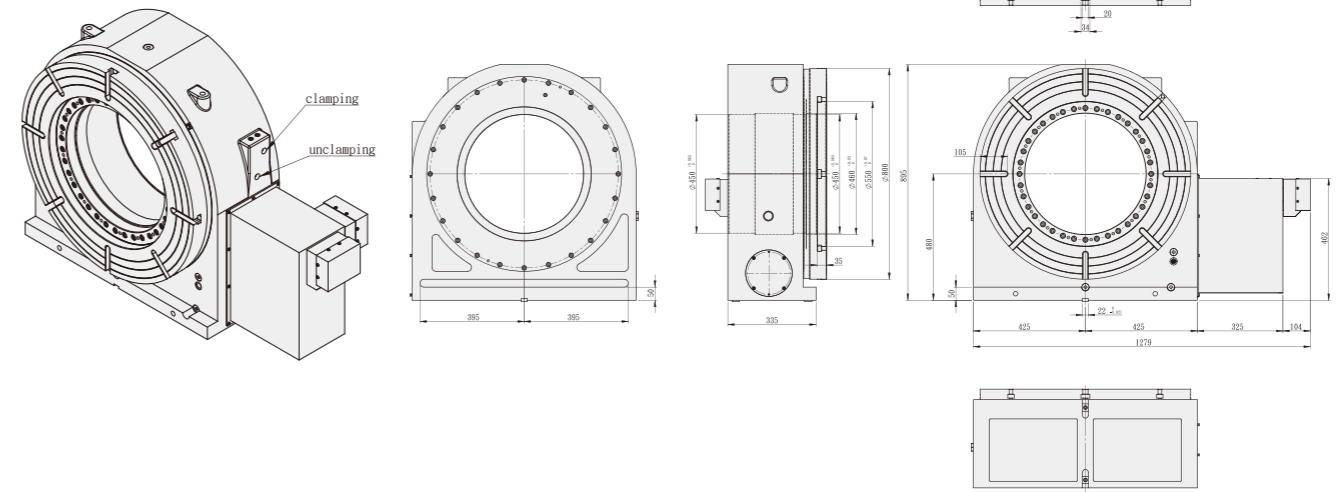


- ◎ A combination of high precision bronze / nickel worm wheel and case hardened steel worm screw ensures long term indexing accuracy.
- ◎ Dual lead worm wheel / worm shaft which allowable easy backlash adjustment.
- ◎ Mega thru hole design which allowable large work piece going thru spindle.

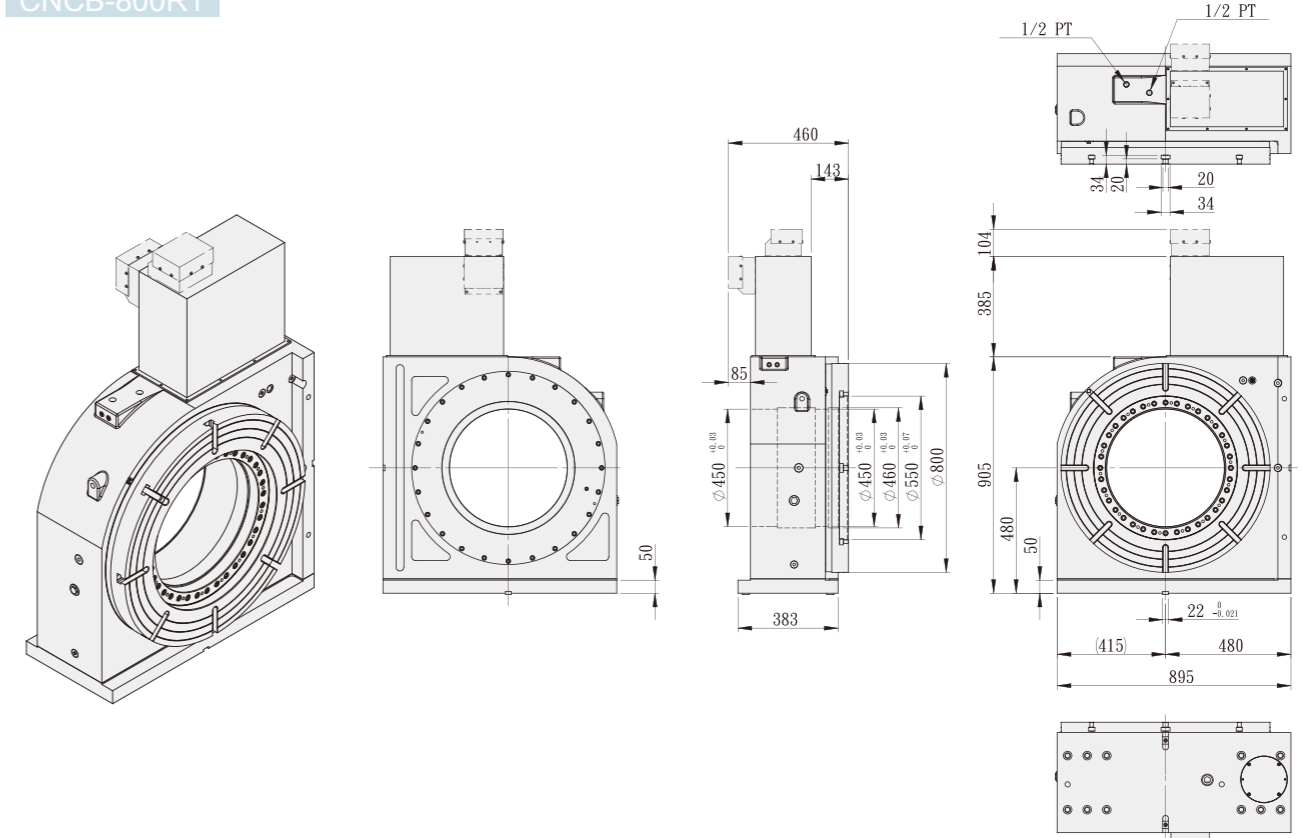
| ITEM / MODEL | | CNCB-800R | CNCB-800RT |
|---|----------------|---|------------|
| Table Diameter (mm/inch) | | 800 / 31.5 | |
| Center Height in Vertical (mm/inch) | | 480 / 18.90 | |
| Table Height in Horizontal (mm/inch) | | 375 / 14.77 | |
| Over All Height in Vertical Without Motor Cover (mm/inch) | | 895 / 35.24 | |
| Thru-Hole Diameter (mm) | | 450 ^{H7} / 17.72 ^{H7} | |
| Width of T-slot (mm) | | 20 ^{H7} / 0.79 ^{H7} | |
| Width of Guide Block (mm) | | 22 ^{H7} / 0.87 ^{H7} | |
| Servo Motor Type | MELDAS | HF-354S | |
| | FANUC | α22 i | |
| | SIEMENS | 1FK7101 | |
| | HEIDENHAIN | QSY190C | |
| Gear Ratio | | 1:180 | |
| Min. Increment (degree) | | 0.001° | |
| Max. R.P.M. (rpm)(motor: 200 / rpm) | | 11.1 | |
| Hydro. Clamp Force (kg·m)(P:20kg / cm ²) | | 1600 | |
| Indexing Accuracy Class (sec.) | | A 15" | |
| Repeatability (sec.) | Unidirectional | 4" | |
| | Bidirectional | 8" | |
| Max. Machining Force (kg·m) | | 350 | |
| N. W. (kgs) | | 1060 | |
| Max. Load | Vertical | W=1500kg | |
| | Horizontal | w=3000kg | |
| Max. Radial Load | | F=5000kg | |
| | | FxL=1600kg·m | |
| | | FxL=1600kg·m | |
| | | FxL=1600kg·m | |

※ GSA remains the right of modification. All specifications can be modified according to customers' requirement.

CNCB-800R



CNCB-800RT



| Accuracy Standards | | | | | | | | Unit:mm |
|--------------------|--------------------|---|--------------------------------|---|------------------|---|--|---------|
| ITEM | Table top flatness | Parallelism of table top and frame bottom | Runout of table spindle center | Perpendicularity of table top to frame bottom | Table top runout | Perpendicularity of table top to frame bottom guide block | Parallelism of center line between headstock & tailstock to frame bottom guide block | |
| CNCB-800R | 0.015 | 0.015 | 0.01 | 0.02 | 0.015 | 0.02 | 0.02 | |
| CNCB-800RT | 0.015 | 0.015 | 0.01 | 0.02 | 0.015 | 0.02 | 0.02 | |

CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

GCT

PT

APCR / APCI

Controller

Coupling

Accessories

CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

GCT

PT

APCR / APCI

Controller

Coupling

Accessories



- ⊙ Back-Mounted Motor, avoid the interference with M/C splash guard.
- ⊙ Suitable for small-size of CNC Machining / Tapping-Center.

※This model can not be installed horizontal position.

MODEL NO : CNC-170 RB

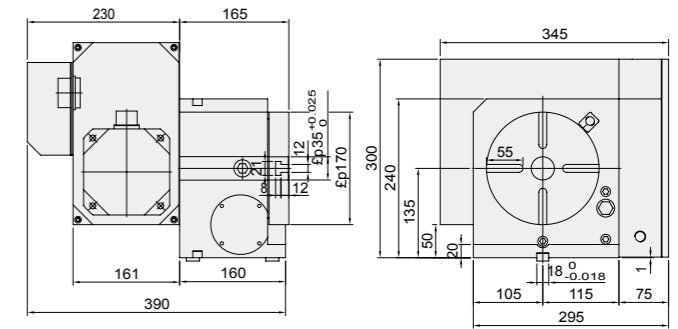
- Back-Mounted Motor
- Table Dia.
- Type of CNC Rotary Table

| ITEM / MODEL | | CNC-120RB | CNC-170RB | CNC-200RB | CNC-250RB | | | | |
|---|----------------|---|---------------------------------------|---------------------------------------|---------------------------------------|---|-----|---|-----|
| Table Dia (mm/inch) | | 120 / 4.72 | 170 / 6.69 | 200 / 7.87 | 250 / 9.84 | | | | |
| Center Height in Vertical (mm / inch) | | 115 / 4.53 | 135 / 5.31 | 160 / 6.3 | 185 / 7.28 | | | | |
| Over all Height in Vertical (mm / inch) | | 250 / 9.84 | 300 / 11.81 | 325 / 12.5 | 365 / 14.37 | | | | |
| Thru-Hole Dia (mm / inch) | | 30 ^{H7} / 1.18 ^{H7} | 35 ^{H7} / 1.38 ^{H7} | 35 ^{H7} / 1.38 ^{H7} | 70 ^{H7} / 2.75 ^{H7} | | | | |
| Width of T-slot (mm / inch) | | 10 ^{H7} / 0.39 ^{H7} | 12 ^{H7} / 0.47 ^{H7} | 12 ^{H7} / 0.47 ^{H7} | 12 ^{H7} / 0.47 ^{H7} | | | | |
| Width of Guide Block (mm / inch) | | 14 ^{H7} / 0.55 ^{H7} | 18 ^{H7} / 0.71 ^{H7} | 18 ^{H7} / 0.71 ^{H7} | 18 ^{H7} / 0.71 ^{H7} | | | | |
| Servo motor type | MELDAS | HF-75T | HF-104T | HF-104T | HF-104T | | | | |
| | FANUC | α2 i | α4 i | α4 i | α4 i | | | | |
| | SIEMENS | 1FK7042 | 1FK7060 | 1FK7060 | 1FK7060 | | | | |
| | HEIDENHAIN | QSY96G | QSY116C | QSY116C | QSY116C | | | | |
| Gear Ratio | | 1:60 | 1:90 | 1:90 | 1:90 | | | | |
| Min. Indexing (degree) | | 0.001° | 0.001° | 0.001° | 0.001° | | | | |
| Max. R.P.M. (rpm) (motor : 2000 / rpm) | | 33.3 | 22.2 | 22.2 | 22.2 | | | | |
| Pneu. clamp force (kg·m) (P:5kg / cm ²) | | 12 | 25 | 25 | 47 | | | | |
| Hydro. clamp force (kg·m) (P:20kg / cm ²) | | 24 | 50 | 50 | 94 | | | | |
| Indexing Accuracy Class (sec.) | | A | 60" | A | 20" | A | 20" | A | 15" |
| | | High Accuracy Rotary Table Refer to P59 chart 2 | | | | | | | |
| Repeatability (sec.) | Unidirectional | 4" | 4" | 4" | 4" | | | | |
| | Bidirectional | 8" | 8" | 8" | 8" | | | | |
| Max. Machining Force (kg·m) | | 12 | 23 | 23 | 45 | | | | |
| N.W. (kgs) | | 70 | 70 | 84 | 124 | | | | |
| Max. Load | Vertical | W=35 kg | W=100 kg | W=125 kg | W=150 kg | | | | |
| | Horizontal | W=75 kg | W=200 kg | W=250 kg | W=300 kg | | | | |
| Max. Radial Load | | F=800 kg | F=1000 kg | F=1100 kg | F=1450 kg | | | | |
| | | FxL=8 kg·m | FxL=50 kg·m | FxL=50 kg·m | FxL=94 kg·m | | | | |
| | | FxL=18 kg·m | FxL=78 kg·m | FxL=100 kg·m | FxL=180 kg·m | | | | |

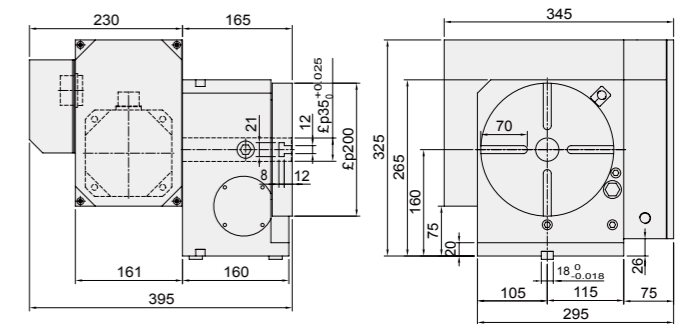
※ GSA remains the right of modification. All specifications can be modified according to customers' requirement.

- Up & backside cable outlet is available, slant motor cover also available
- Standard accessory : eye bolts, clamping blocks
- ⊙ Adapting Tailstock→ Refer to P : 34-36
- ⊙ To match AC-/DC-/Stepping-Controller→ Refer to P : 53-55
- ⊙ Optional accessories→ Refer to P : 58

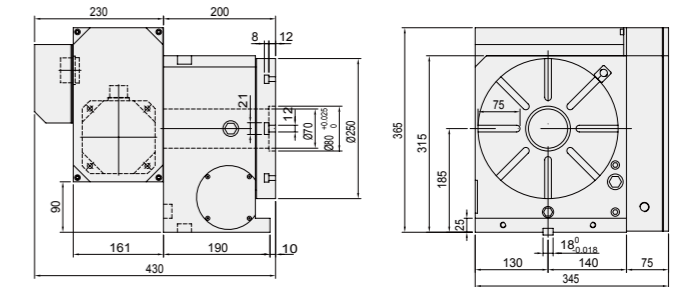
CNC-170RB



CNC-200RB



CNC-250RB



| Accuracy Standards | | | | | | | Unit:mm |
|--------------------|--------------------|---|--------------------------------|---|------------------|---|--|
| ITEM | Table top flatness | Parallelism of table top and frame bottom | Runout of table spindle center | Perpendicularity of table top to frame bottom | Table top runout | Perpendicularity of table top to frame bottom guide block | Parallelism of center line between headstock & tailstock to frame bottom guide block |
| CNC-120RB | 0.01 | 0.01 | 0.01 | 0.02 | 0.015 | 0.02 | 0.02 |
| CNC-170RB | 0.01 | 0.01 | 0.01 | 0.02 | 0.015 | 0.02 | 0.02 |
| CNC-200RB | 0.01 | 0.01 | 0.01 | 0.02 | 0.015 | 0.02 | 0.02 |
| CNC-250RB | 0.01 | 0.02 | 0.01 | 0.02 | 0.015 | 0.02 | 0.02 |

CNC

CNCB

CNCT
/
CNCMT

NCF

Tailstock

Large
Size
Table

GCT

PT

APCR
/
APCI

Controller

Coupling

Accessories

CNC

CNCB

CNCT
/
CNCMT

NCF

Tailstock

Large
Size
Table

GCT

PT

APCR
/
APCI

Controller

Coupling

Accessories



- ⊙ Double productivity, decreasing machining-time and cost.
- ⊙ Multi-Points pneumatic brake system offers superior clamp torque, insures smooth machining without deflection under a heavy load.
- ⊙ Increasing machining speed, reduce the time on rotating ATC and workpiece loading-unloading.

MODEL NO : CNC-200R 3W

● Spindle Numbers
● Table Dia.
● Type of CNC Rotary Table

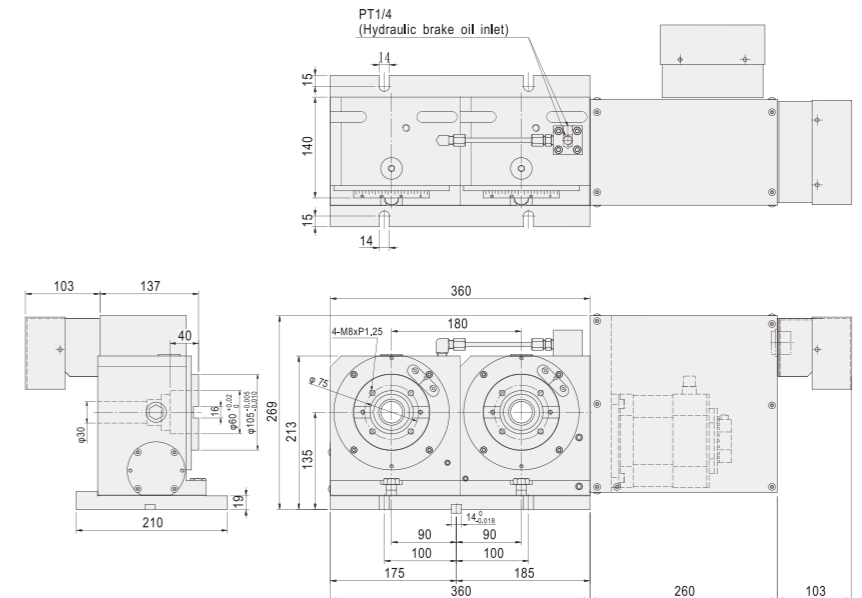
| ITEM / MODEL | CNC-120R-2W(3W)(4W) | CNC-170R-2W(3W)(4W) | CNC-200R-2W(3W)(4W) | | | | | |
|---|---------------------------------------|---------------------------------------|---------------------------------------|--------------|------------------------------------|---------|---------|---------|
| Table Dia (mm/inch) | 120 / 4.72 | 170 / 6.69 | 200 / 7.87 | | | | | |
| Center Height in Vertical (mm / inch) | 115 / 4.53 | 135 / 5.31 | 190 / 7.48 | | | | | |
| Table Height in Horizontal (mm / inch) | 170 / 6.69 | 165 / 6.5 | 290 / 11.42 | | | | | |
| Over all Height in Vertical Without Motor Cover (mm / inch) | 193 / 7.60 | 240 / 9.45 | 315 / 12.40 | | | | | |
| Thru-Hole Dia (mm / inch) | 30 ^{H7} / 1.18 ^{H7} | 35 ^{H7} / 1.37 ^{H7} | 35 ^{H7} / 1.38 ^{H7} | | | | | |
| Width of T-slot (mm / inch) | 10 ^{H7} / 0.39 ^{H7} | 12 ^{H7} / 0.47 ^{H7} | 12 ^{H7} / 0.47 ^{H7} | | | | | |
| Width of Guide Block (mm / inch) | 14 ^{H7} / 0.55 ^{H7} | 18 ^{H7} / 0.71 ^{H7} | 18 ^{H7} / 0.71 ^{H7} | | | | | |
| Servo motor type | MELDAS | SIEMENS | HF-75T | 1FK7042 | HF-104T | 1FK7060 | HF-154T | 1FK7063 |
| | FANUC | HEIDENHAIN | α2 i | QSY96G | α4 i | QSY116C | α8 i | QSY116C |
| Gear Ratio | 1:60 | | 1:90 | | 1:90 | | | |
| Min. Increment(degree) | 0.001° | | 0.001° | | 0.001° | | | |
| Max. R.P.M. (rpm) (motor : 2000 / rpm) | 33.3 | | 22.2 | | 22.2 | | | |
| Pneu. clamp force (kg•m) (P:5kg / cm ²) | 12 | | 25 | | 25 | | | |
| Hydro. clamp force (kg•m) (P:20kg / cm ²) | 24 | | 50 | | 50 | | | |
| Indexing Accuracy Class (sec.) | 30" | | 20" | | 20" | | | |
| Repeatability (sec.) | Unidirectional 4" Bidirectional 8" | | Unidirectional 4" Bidirectional 8" | | Unidirectional 4" Bidirectional 8" | | | |
| Max. Machine Force (kg•m) | 12 | | 23 | | 23 | | | |
| N. W. (kgs) | 84 | | 210 | | 270 | | | |
| Max. Load | Vertical | W=35 kg | W=100 kg | W=125 kg | | | | |
| | Horizontal | W=75 kg | W=200 kg | W=250 kg | | | | |
| Max. Radial Load | | W=800 kg | W=1000 kg | W=1100 kg | | | | |
| | | FxL=8 kg•m | FxL=50 kg•m | FxL=50 kg•m | | | | |
| | | FxL=18 kg•m | FxL=78 kg•m | FxL=100 kg•m | | | | |

※ GSA remains the right of modification. All specifications can be modified according to customers' requirement.
 ※ Standard aussyory : eye bolts, clamping blocks.

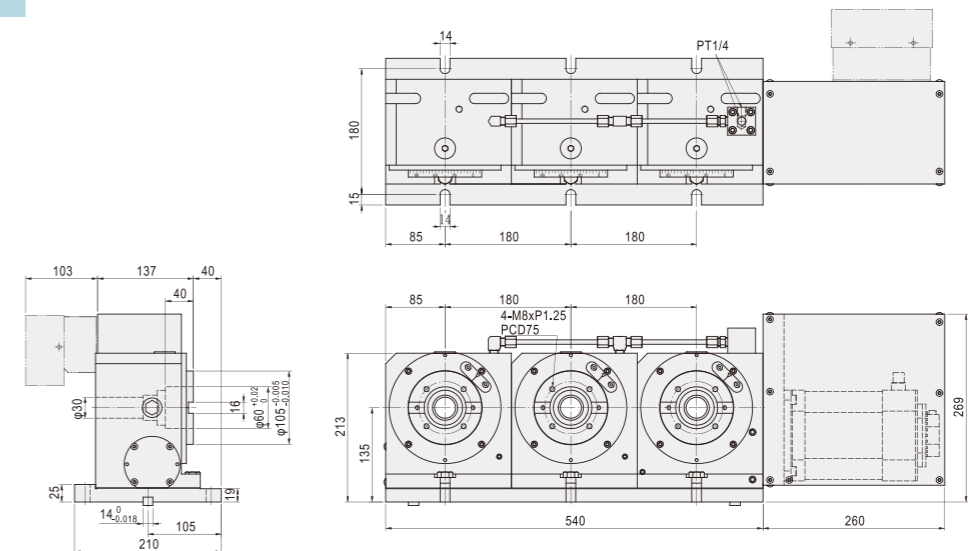
Accuracy Standards

| MODEL | Unit:mm | | | | | | |
|-------------|--------------------|---|--------------------------------|---|------------------|---|--|
| | Table top flatness | Parallelism of table top and frame bottom | Runout of table spindle center | Perpendicularity of table top to frame bottom | Table top runout | Perpendicularity of table top to frame bottom guide block | Parallelism of center line between headstock & tailstock to frame bottom guide block |
| CNC-120R-2W | 0.01 | 0.02 | 0.01 | 0.012 | 0.015 | 0.02 | 0.02 |
| CNC-120R-3W | 0.01 | 0.02 | 0.01 | 0.012 | 0.015 | 0.02 | 0.02 |
| CNC-120R-4W | 0.01 | 0.02 | 0.01 | 0.012 | 0.015 | 0.02 | 0.02 |
| CNC-170R-2W | 0.01 | 0.02 | 0.01 | 0.012 | 0.015 | 0.02 | 0.02 |
| CNC-170R-3W | 0.01 | 0.02 | 0.01 | 0.012 | 0.015 | 0.02 | 0.02 |
| CNC-170R-4W | 0.01 | 0.02 | 0.01 | 0.012 | 0.015 | 0.02 | 0.02 |
| CNC-200R-2W | 0.01 | 0.02 | 0.01 | 0.012 | 0.015 | 0.02 | 0.02 |
| CNC-200R-3W | 0.01 | 0.02 | 0.01 | 0.012 | 0.015 | 0.02 | 0.02 |
| CNC-200R-4W | 0.01 | 0.02 | 0.01 | 0.012 | 0.015 | 0.02 | 0.02 |

CNC-120R-2W

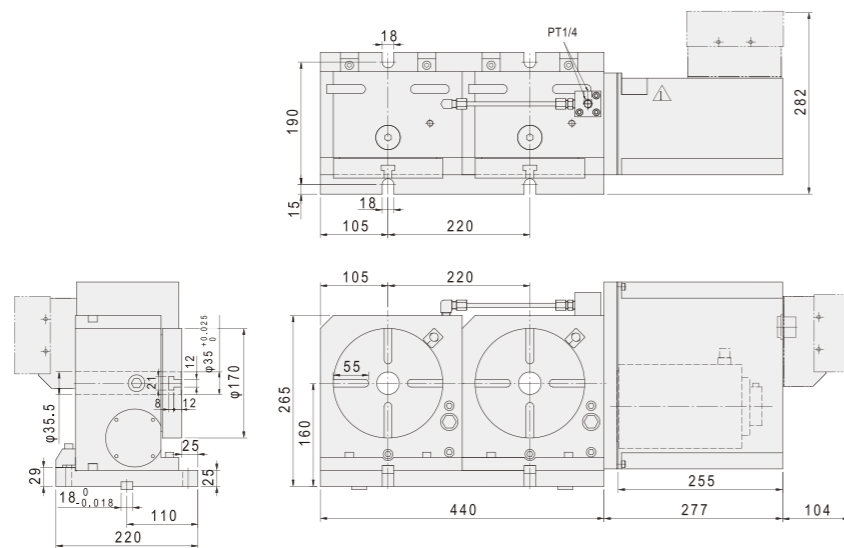


CNC-120R-3W



CNC

CNC-170R-2W

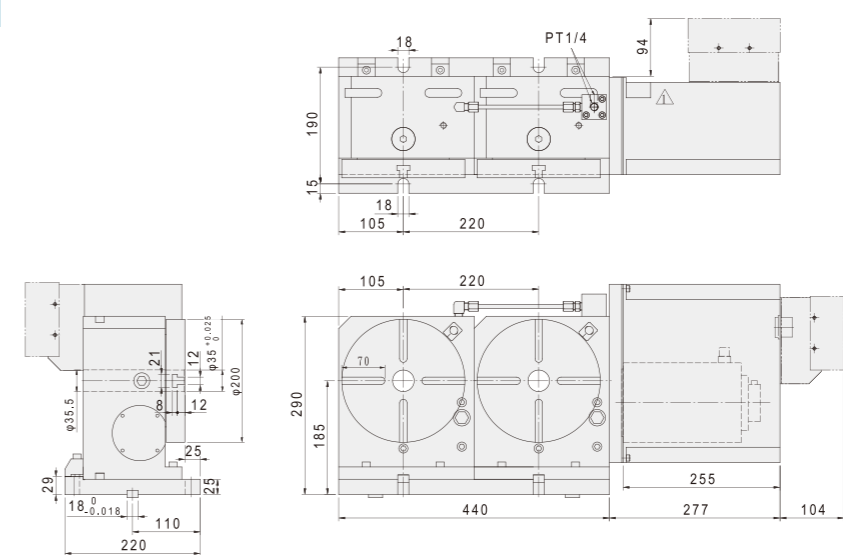


CNCB

CNCT / CNCMT

NCF

CNC-200R-2W



CNC

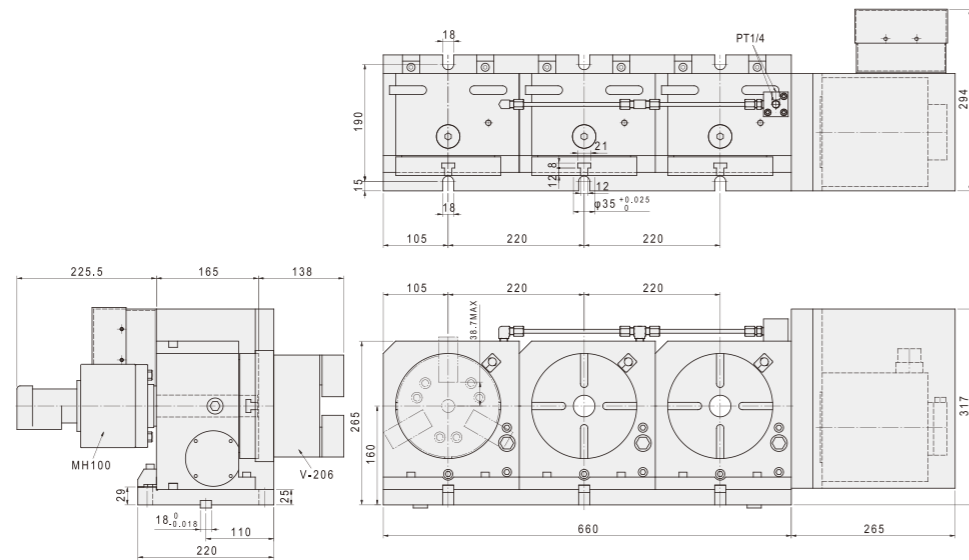
CNCB

CNCT / CNCMT

NCF

Tailstock

CNC-170R-3W

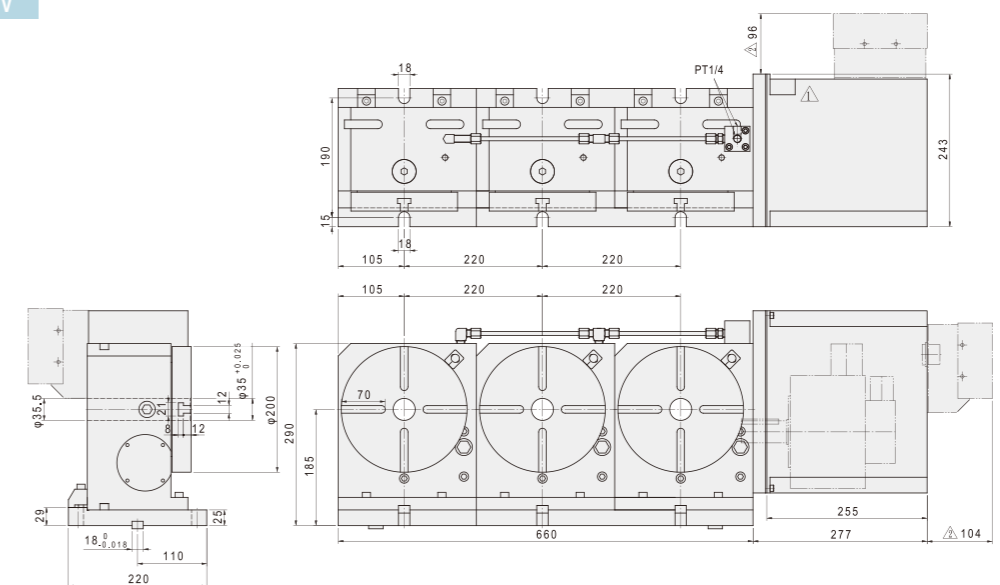


Large Size Table

GCT

PT

CNC-200R-3W



Tailstock

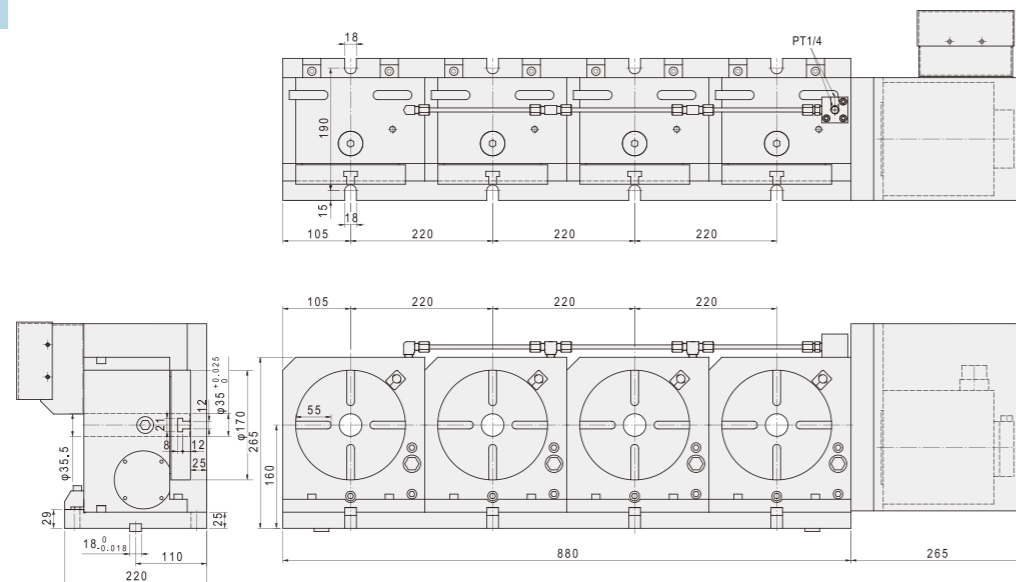
Large Size Table

GCT

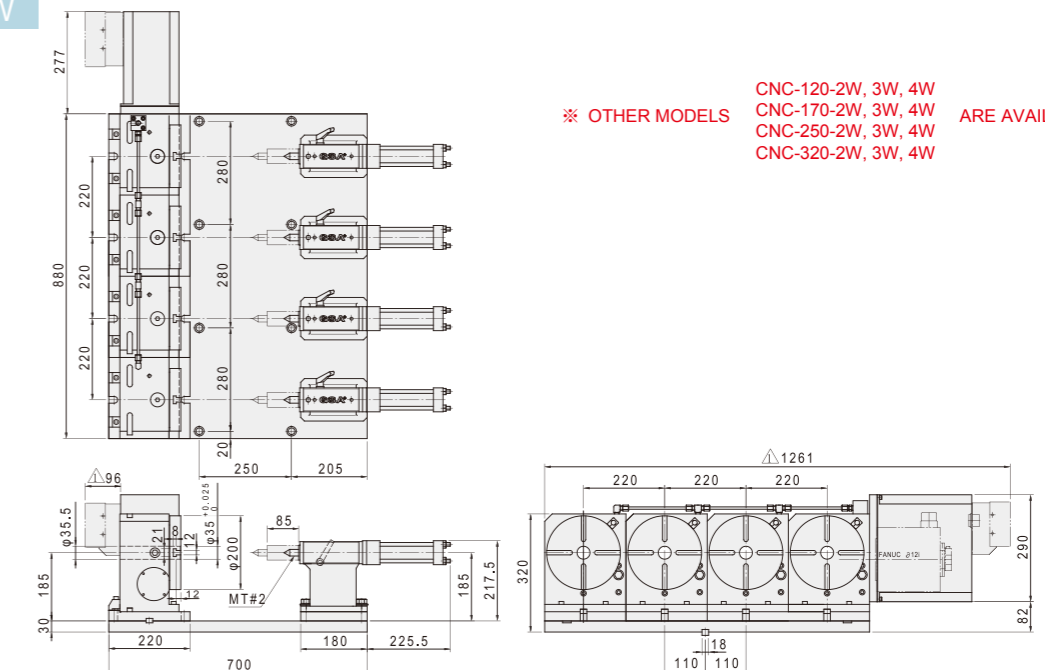
PT

APCR / APCI

CNC-170R-4W



CNC-200R-4W



※ OTHER MODELS ARE AVAILABLE
 CNC-120-2W, 3W, 4W
 CNC-170-2W, 3W, 4W
 CNC-250-2W, 3W, 4W
 CNC-320-2W, 3W, 4W

Controller

Controller

Coupling

Coupling

Accessories

Accessories

CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

GCT

PT

APCR / APCI

Controller

Coupling

Accessories



- ⊙ Easy Installation Easy Operation.
- ⊙ Compact Design Wide Machine Range.
- ⊙ Even Approx. One Meter Table M/C Could be Installed.
- ⊙ To match 5 axes M/C for continuing machining, the tilting axis could be connected the M-code by using our single axis AC/DC/Stepping servo controller.

MODEL NO : CNCT-250

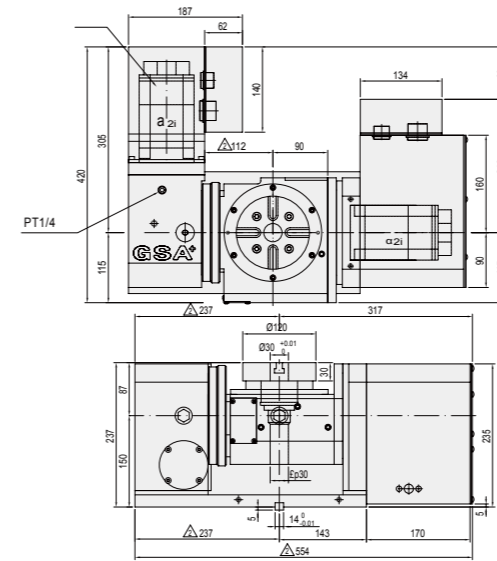
- Table Dia.
- Type of CNC Tilting Rotary Table

| ITEM / MODEL | | CNCT-100 | CNCT-200 | CNCT-250 | CNCT-320 | | | | |
|--|---|----------------------------|-------------------------|-------------------------|--------------------------|------------|---------|------------|---------|
| Table Dia (mm) | | 120 | 200 | 250 | 320 | | | | |
| Table center Height in Vertical (mm) | | 150 | 195 | 225 | 255 | | | | |
| Over all Height in Vertical (mm) | | 235 | 360 | 355 | 425 | | | | |
| Thru-Hole Dia (mm) | | 30 ^{H7} | 35 ^{H7} | 70 ^{H7} | 110 ^{H7} | | | | |
| Width of T-slot (mm) | | 10 ^{H7} | 12 ^{H7} | 12 ^{H7} | 14 ^{H7} | | | | |
| Width of Guide Block (mm) | | 14 ^{H7} | 18 ^{H7} | 18 ^{H7} | 18 ^{H7} | | | | |
| Servo motor type | | Rotating | Tilting | Rotating | Tilting | Rotating | Tilting | Rotating | Tilting |
| | MELDAS | HF-75T | HF-75T | HF-104T | HF-154T | HF-104T | HF-154T | HF-154T | HF-204S |
| | FANUC | α2 i | α2 i | α4 i | α8 i | α4 i | α8 i | α8 i | α12 i |
| | SIEMENS | 1FK7042 | 1FK7042 | 1FK7060 | 1FK7063 | 1FK7060 | 1FK7063 | 1FK7063 | 1FK7083 |
| | HEIDENHAIN | QSY96G | QSY96G | QSY116C | QSY116E | QSY116C | QSY116E | QSY116E | QSY155B |
| Gear Ratio | | 1:72 | 1:120 | 1:90 | 1:180 | 1:90 | 1:180 | 1:180 | 1:180 |
| Min. Increment(degree) | | 0.001° | 0.001° | 0.001° | 0.001° | 0.001° | 0.001° | 0.001° | 0.001° |
| Max. R.P.M. (rpm) (motor : 2000 / rpm) | | 27.8 | 16.7 | 22.2 | 11.1 | 22.2 | 11.1 | 11.1 | 11.1 |
| Tilting degree | | -20°~120° | | -110°~110° | | -110°~110° | | -110°~110° | |
| Rotation axis | Pneu. clamp force(kg·m)(P:5kg / cm ²) | 12 | 25 | 50 | 71 | | | | |
| | Hydro. clamp force(kg·m)(P:20kg / cm ²) | 24 | 50 | 100 | 142 | | | | |
| | Indexing Accuracy (sec.) | 30" | 20" | 15" | 15" | | | | |
| Tilting axis | Pneumatic/Hydraulic clamping force(kg·m) | 12/24 | 25/50 | 50/100 | 71/142 | | | | |
| | Indexing Accuracy (sec.) | 60" | 50" | 30" | 30" | | | | |
| N.W (kgs) | | 105 | 240 | 280 | 450 | | | | |
| Max. Load | Vertical | W=20 kg | W=50 kg | W=60 kg | W=100 kg | | | | |
| | Horizontal | W=35 kg | W=100 kg | W=100 kg | W=200 kg | | | | |
| Max. Radial Load | | F=400 kg | F=500 kg | F=1200 kg | F=1500 kg | | | | |
| | | FxL=24 kg·m | FxL=50 kg·m | FxL=100 kg·m | FxL=142 kg·m | | | | |
| | | FxL=30 kg·m | FxL=102 kg·m | FxL=120 kg·m | FxL=200 kg·m | | | | |
| Max. Working Inertia | $J = \frac{WD^2}{8X980}$ | 0.87kg·cm·sec ² | 6kg·cm·sec ² | 8kg·cm·sec ² | 26kg·cm·sec ² | | | | |

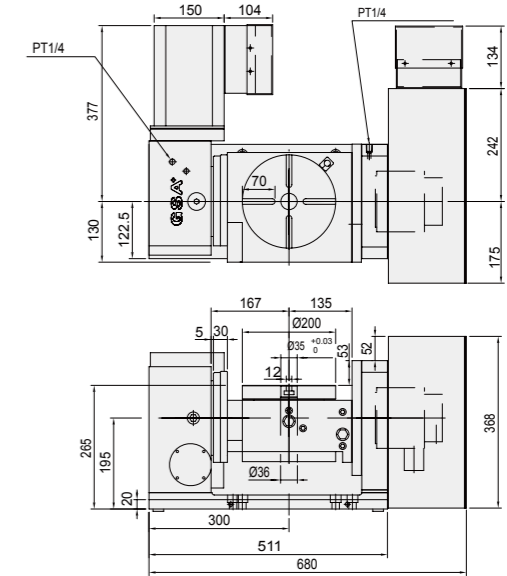
※ GSA remains the right of modification. All specifications can be modified according to customers' requirement.

- Standard accessory : eye bolts, clamping blocks
- Could be increased tilting angle ±180°
- ⊙ Adapting Tailstock→ Refer to P : 34-36
- ⊙ To match AC/DC/Stepping-Controller→ Refer to P : 53-55

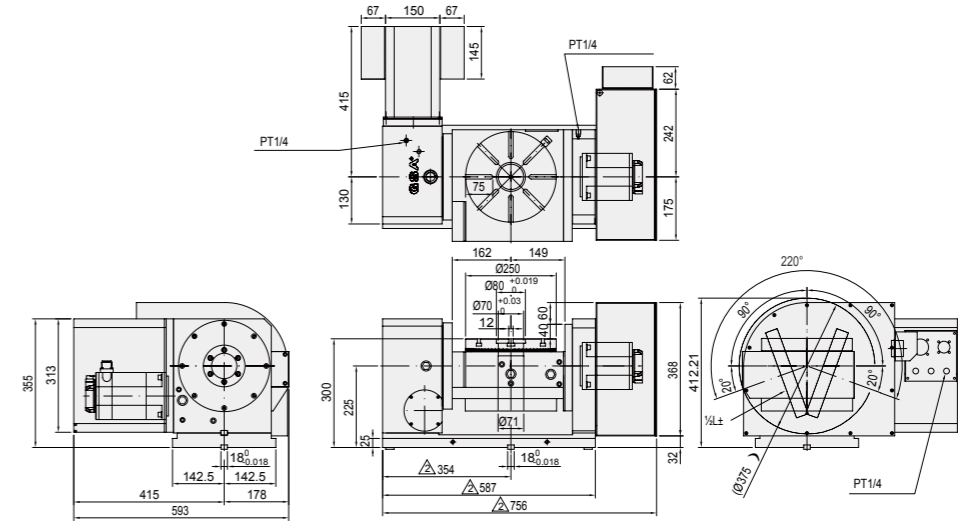
CNCT-100



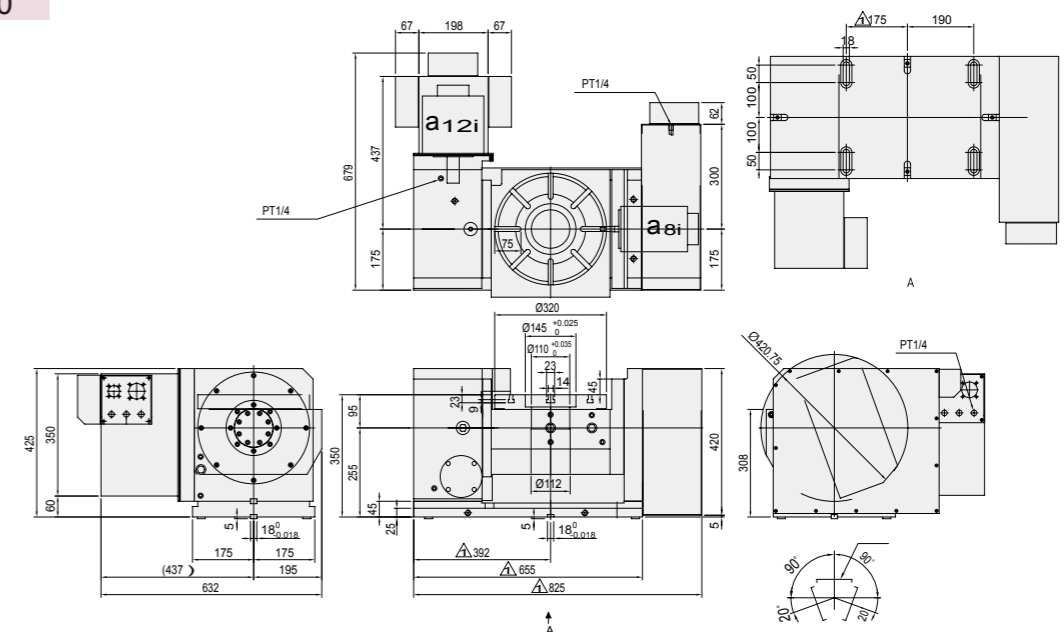
CNCT-200



CNCT-250A



CNCT-320



CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

GCT

PT

APCR / APCI

Controller

Coupling

Accessories

CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

GCT

PT

APCR / APCI

Controller

Coupling

Accessories



- ⊙ Dual-Lead worm wheel and worm shaft design with wear-resisting material suitable for 5 axes simultaneous machining.
- ⊙ Low center height profile design with wide range machining space.
- ⊙ Optional balance pistons provides heavy cutting application and long-term using.

MODEL NO : **CNCT-450**

● Table Dia.
● Type of CNC Tilting Rotary Table

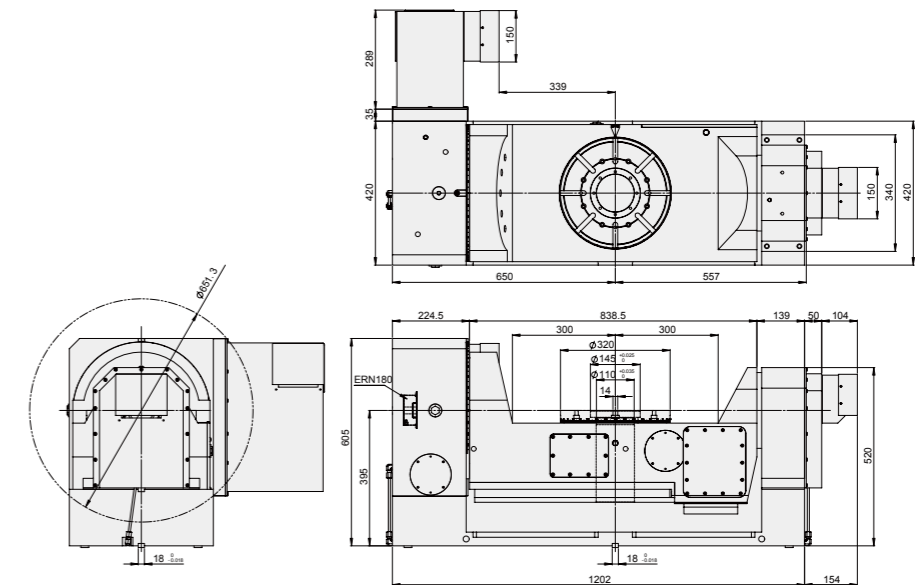
| ITEM / MODEL | | CNCT-320RS | | CNCT-450 | | CNCT-630 | | CNCT-800 | |
|--|---|---------------------------|---------|---------------------------|---------|---------------------------|---------|----------------------------|---------|
| Table Dia (mm) | | 320 | | 450 | | 630 | | 800 | |
| Table center Height in Vertical (mm) | | 375 | | 440 | | 580 | | 650 | |
| Over all Height in Vertical (mm) | | 675 | | 650 | | 905 | | 1050 | |
| Thru-Hole Dia (mm) | | 145 ^{H7} | | 150 ^{H7} | | 254 ^{H7} | | 254 ^{H7} | |
| Width of T-slot (mm) | | 14 ^{H7} | | 14 ^{H7} | | 18 ^{H7} | | 20 ^{H7} | |
| Width of Guide Block (mm) | | 18 ^{H7} | | 18 ^{H7} | | 22 ^{H7} | | 22 ^{H7} | |
| Servo motor type | | Rotating | Tilting | Rotating | Tilting | Rotating | Tilting | Rotating | Tilting |
| | MELDAS | HF-154T | HF-354S | HF-204S | HF-354S | HF-354S | HF-354S | HF-354S | HF-453S |
| | FANUC | α8 i | α22 i | α12 i | α22 i | α22 i | α22 i | α22 i | α30 i |
| | SIEMENS | 1FK7063 | 1FK7101 | 1FK7083 | 1FK7101 | 1FK7101 | 1FK7101 | 1FK7101 | 1FK7103 |
| | HEIDENHAIN | QSY116E | QSY155F | QSY155C | QSY155F | QSY190C | QSY190C | QSY190C | QSY190D |
| Gear Ratio | | 1:180 | | 1:180 | | 1:180 | | 1:180 | |
| Min. Increment(degree) | | 0.001° | | 0.001° | | 0.001° | | 0.001° | |
| Max. R.P.M. (rpm) (motor : 2000 / rpm) | | 11.1 | | 11.1 | | 22.2 | | 11.1 | |
| Tilting degree | | -120°~120° | | -120°~120° | | -120°~120° | | -120°~120° | |
| Rotation axis | Pneu. clamp force(kg·m)(P:5kg / cm ²) | 71 | | 90 | | 350 | | 450 | |
| | Hydro. clamp force(kg·m)(P:20kg / cm ²) | 142 | | 180 | | 450 | | 450 | |
| | Indexing Accuracy (sec.) | 15" | | 15" | | 15" | | 15" | |
| | Repeatability (sec.) | 4" | | 4" | | 4" | | 4" | |
| Tilting axis | Pneumatic/Hydraulic clamping force(kg·m) | 95/190 | | 120/210 | | 420/800 | | -/1250 | |
| | Indexing Accuracy (sec.) | 30" | | 30" | | 30" | | 30" | |
| N.W (kgs) | | 1050 | | 1160 | | 2650 | | 4850 | |
| Max. Load | Vertical | W=100 kg | | W=150 kg | | W=300 kg | | W=600 kg | |
| | Horizontal | W=200 kg | | W=300 kg | | W=500 kg | | W=1000 kg | |
| Max. Radial Load | | F=1500 kg | | F=1880 kg | | F=2080 kg | | F=2600 kg | |
| | | F _{xL} =190 kg·m | | F _{xL} =210 kg·m | | F _{xL} =800 kg·m | | F _{xL} =1250 kg·m | |
| | | F _{xL} =200 kg·m | | F _{xL} =280 kg·m | | F _{xL} =390 kg·m | | F _{xL} =460 kg·m | |
| | | F _{xL} =200 kg·m | | F _{xL} =280 kg·m | | F _{xL} =390 kg·m | | F _{xL} =460 kg·m | |
| Max. Working Inertia | $J = \frac{WD^2}{(8 \times 980)}$ | 26kg·cm·sec ² | | 100kg·cm·sec ² | | 360kg·cm·sec ² | | 1000kg·cm·sec ² | |

※ GSA remains the right of modification. All specifications can be modified according to customers' requirement.

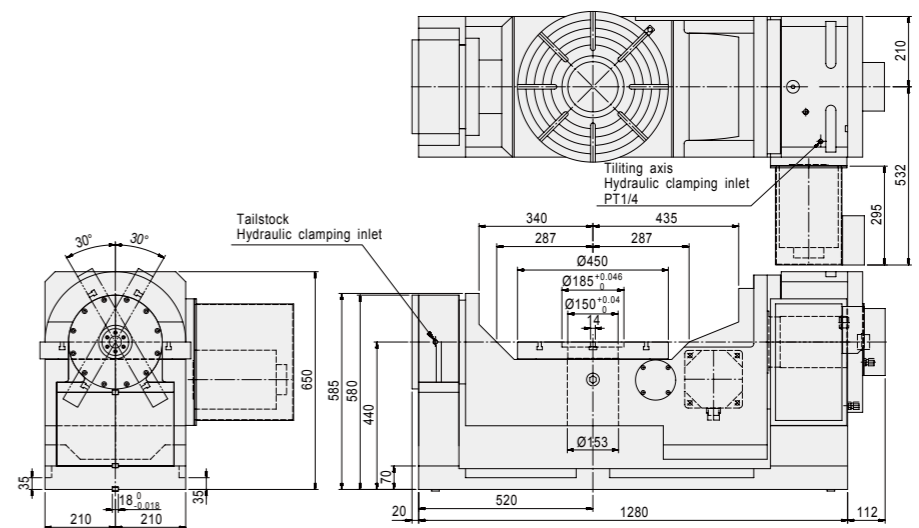
- Standard accessory : eye bolts, clamping blocks
- Could be increased tilting angle ±180°

- ⊙ Adapting Tailstock→ Refer to P : 34-36
- ⊙ To match AC/DC-/Stepping-Controller→ Refer to P : 53-55

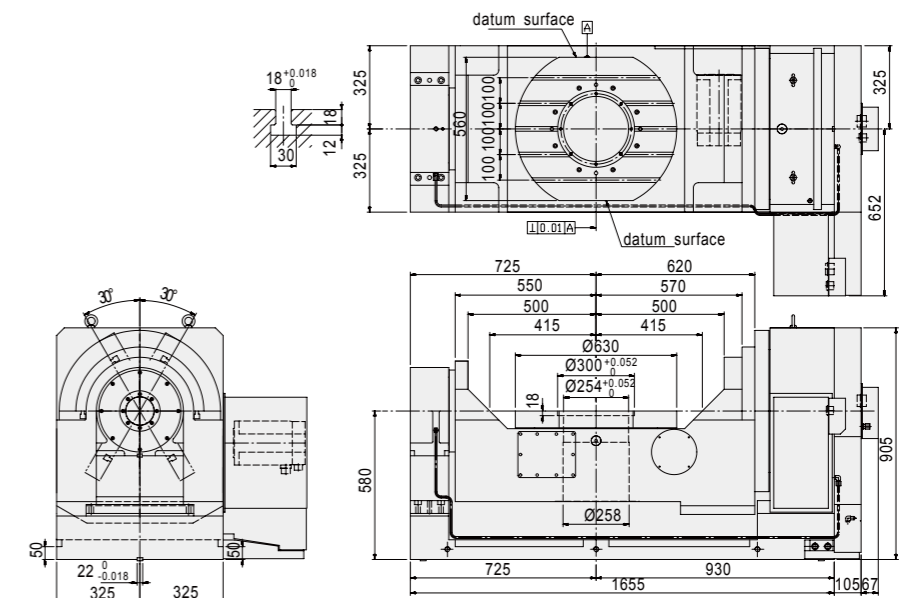
CNCT-320RS



CNCT-450



CNCT-630



CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

GCT

PT

APCR / APCI

Controller

Coupling

Accessories

CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

GCT

PT

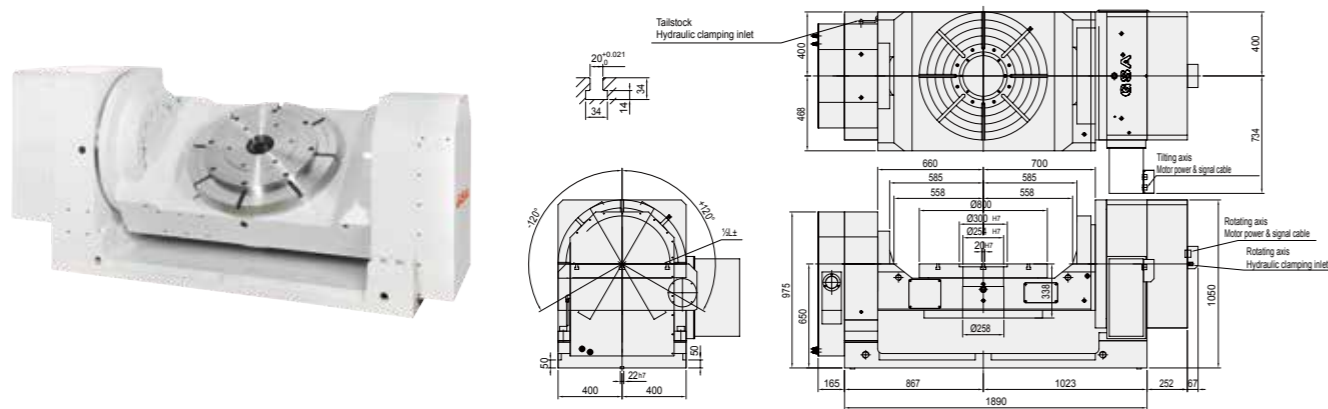
APCR / APCI

Controller

Coupling

Accessories

CNCT-800



| Accuracy Standards | | | | | | | | Unit:mm | | |
|--------------------|--------------------|---|--------------------------------|------------------|--|--|--|---|--|--|
| ITEM | Table top flatness | Parallelism of table top and frame bottom | Runout of table spindle center | Table top runout | Parallelism of tilting axis center line and frame bottom | Parallelism of table top to frame bottom guide | An encoder measuring instrument should be used for indexing accuracy measurements (Rotating) | An encoder measuring instrument should be used for indexing accuracy measurements (Tilting) | | |
| CNCT-100 | 0.01 | 0.02 | 0.01 | 0.015 | 0.02 | 0.02 | 30" | 60" | | |
| CNCT-200 | 0.01 | 0.02 | 0.01 | 0.015 | 0.02 | 0.02 | 25" | 50" | | |
| CNCT-250 | 0.01 | 0.02 | 0.01 | 0.015 | 0.02 | 0.02 | 15" | 50" | | |
| CNCT-320 | 0.01 | 0.02 | 0.01 | 0.015 | 0.02 | 0.02 | 15" | 30" | | |
| CNCT-320RS | 0.01 | 0.02 | 0.01 | 0.015 | 0.02 | 0.02 | 15" | 30" | | |
| CNCT-450 | 0.01 | 0.02 | 0.01 | 0.015 | 0.02 | 0.02 | 15" | 30" | | |
| CNCT-630 | 0.01 | 0.02 | 0.01 | 0.015 | 0.02 | 0.02 | 15" | 30" | | |
| CNCT-800 | 0.01 | 0.02 | 0.01 | 0.015 | 0.02 | 0.02 | 15" | 30" | | |

HOW to Retrofit CNCT with M/C & Controller

| M/C Preparation | Status of M/C | Completed package for CNCT table | | | | | | | FUNCTION |
|-----------------------|---|----------------------------------|----------|----------|----------|----------|----------|----------|---|
| | | | CNCT-100 | CNCT-200 | CNCT-250 | CNCT-320 | CNCT-450 | CNCT-630 | |
| Standard 3 axes | CNC machine equipped with 3 axes (X, Y, Z) without additional axis | Rotating | M-Mate A | M-Mate A | M-Mate A | M-Mate B | M-Mate B | M-Mate B | The rotating and tilting axes only for positioning machining purpose and cost efficiency |
| | | Tilting | M-Mate A | M-Mate A | M-Mate B | M-Mate B | M-Mate C | M-Mate C | |
| Addition 4th axis | CNC machine equipped with an additional 4th axis (X, Z, A) | Rotating | A axis | A axis | A axis | A axis | A axis | A axis | Tilting axis prepared for positioning machining and rotating axis is prepared for continuing machining (X, Y, Z, A) |
| | | Tilting | M-Mate A | M-Mate A | M-Mate B | M-Mate B | M-Mate C | M-Mate C | |
| Addition 4th 5th axis | CNC machine equipped with an additional 4th and 5th axes (X, Z, A, B) | Rotating | A axis | A axis | A axis | A axis | A axis | A axis | X · Y · Z · A · B, 5 AXES are prepared for continuing machining |
| | | Tilting | B axis | B axis | B axis | B axis | B axis | B axis | |

- Before place your order, please advise us the type of AC-SERVO-MOTOR and SERVO-DRIVE for CNC control system
- Specification of M-Mate controller, refer to P : 55

CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

GCT

PT

APCR / APCI

Controller

Coupling

Accessories



- ⊙ Suitable for conventional Milling, Boring and Tapping Machine.
- ⊙ Suitable to E.D.M. machine, for machining workpieces of wheel-moulding machine of bicycle, motorcycle.
- ⊙ Manual tilting, Rotating by CNC control.

MODEL NO : CNCMT-320

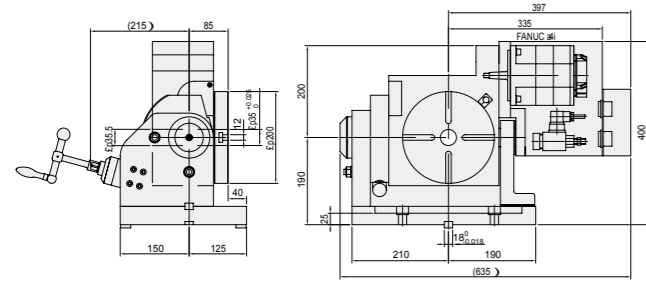
- CNCMT: Type of Manual Tilting Rotary Table
- TNC: Type of Tilting Dividing Head

| ITEM / MODEL | CNCMT-200 | CNCMT-250 | CNCMT-320 | CNCMT-400 | CNCMT-500 | CNCMT-630 | | | | | | |
|--|---|------------------|-------------------|-------------------|-------------------|-------------------|--------------|-----------------|----------|-----------------|----------|-----------------|
| Table Dia (mm) | ø200 | ø250 | ø320 | ø400 | ø500 | ø630 | | | | | | |
| Table Height in Horizontal (mm) | 275 | 280 | 330 | 375 | 400 | 480 | | | | | | |
| Center Height in Vertical (mm) | 190 | 210 | 270 | 290 | 330 | 440 | | | | | | |
| Over all Height in Vertical (mm) | 317 | 450 | 595 | 648 | 735 | 940 | | | | | | |
| Thru-Hole Dia (mm) | 30 ^{H7} | 70 ^{H7} | 110 ^{H7} | 150 ^{H7} | 180 ^{H7} | 254 ^{H7} | | | | | | |
| Width of T-slot (mm) | 12 ^{H7} | 12 ^{H7} | 14 ^{H7} | 14 ^{H7} | 18 ^{H7} | 18 ^{H7} | | | | | | |
| Width of Guide Block (mm) | 18 ^{H7} | 18 ^{H7} | 18 ^{H7} | 18 ^{H7} | 18 ^{H7} | 18 ^{H7} | | | | | | |
| Servo motor type | MELDAS | HF-104T | Rotating | Tilting (Scale) | Rotating | Tilting (Scale) | Rotating | Tilting (Scale) | Rotating | Tilting (Scale) | Rotating | Tilting (Scale) |
| | FANUC | α4 i | Manual | Manual | HF-104T | Manual | HF-204S | Manual | HF-204S | Manual | HF-204S | Manual |
| | SIEMENS | 1FK7060 | | | α12 i | | 1FK7083 | | α12 i | | 1FK7083 | |
| | HEIDENHAIN | QSY116C | QSY116C | QSY155C | QSY155C | QSY155F | QSY190C | | | | | |
| Gear Ratio | 1:90 | - | 1:90 | - | 1:180/1:90 | - | 1:90 | - | 1:120 | - | 1:180 | - |
| Min. Increment(degree) | 0.001° | 1° | 0.001° | 1° | 0.001° | 1° | 0.001° | 1° | 0.001° | 1° | 0.001° | 1° |
| Max. R.P.M. (rpm) (motor : 2000 / rpm) | 22.2 | - | 22.2 | - | 11.1/22.2 | - | 22.2 | - | 16.7 | - | 11.1 | - |
| Tilting degree | 0°~105° | | 0°~100° | | 0°~100° | | 0°~100° | | 0°~100° | | 0°~100° | |
| Rotation axis | Pneu. clamp force(kg·m)(P:5kg / cm ²) | 25 | 47 | 71 | 92 | 160 | 350 | | | | | |
| | Hydro. clamp force(kg·m)(P:20kg / cm ²) | 50 | 94 | 142 | 184 | 380 | 700 | | | | | |
| | Indexing Accuracy (sec.) | 20" | 15" | 15" | 15" | 15" | 15" | | | | | |
| | Repeatability(sec.) | Unidirectional | 4" | 4" | 4" | 4" | 4" | 4" | | | | |
| Bidirectional | | 8" | 8" | 8" | 8" | 8" | 8" | | | | | |
| N.W (kgs) | 135 | 220 | 310 | 380 | 450 | 1000 | | | | | | |
| Max. Load | Vertical | W=40 kg | W=125 kg | W=150 kg | W=300 kg | W=350 kg | W=500 kg | | | | | |
| | Horizontal | W=80 kg | W=300 kg | W=350 kg | W=500 kg | W=600 kg | W=1000 kg | | | | | |
| Max. Radial Load | F | F=600 kg | F=1208 kg | F=1375 kg | F=1585 kg | F=1880 kg | F=2080 kg | | | | | |
| | FxL | FxL=50 kg·m | FxL=94 kg·m | FxL=142 kg·m | FxL=184 kg·m | FxL=380 kg·m | FxL=700 kg·m | | | | | |
| | FxL | FxL=20 kg·m | FxL=72 kg·m | FxL=115 kg·m | FxL=180 kg·m | FxL=245 kg·m | FxL=300 kg·m | | | | | |

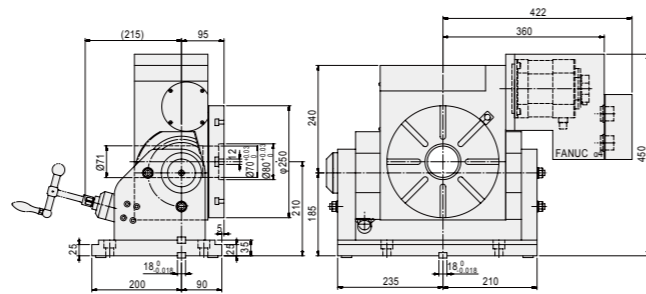
※ GSA remains the right of modification. All specifications can be modified according to customers' requirement.

- Up & backside cable outlet is available, slant motor cover also available
- Standard accessory: eye bolts, clamping blocks
- ⊙ Adapting Tailstock→ Refer to P : 34-36
- ⊙ To match AC-/DC-/Stepping-Controller→ Refer to P : 53-55

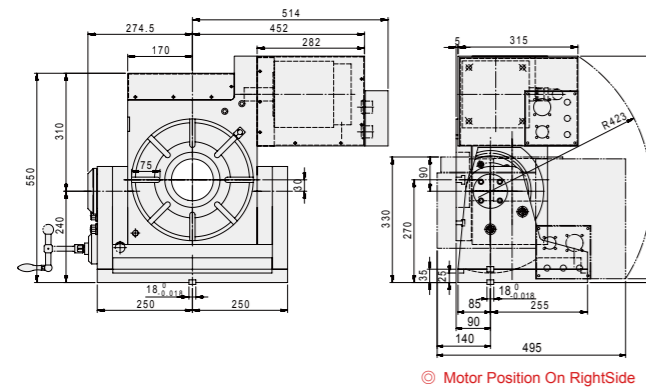
CNCMT-200



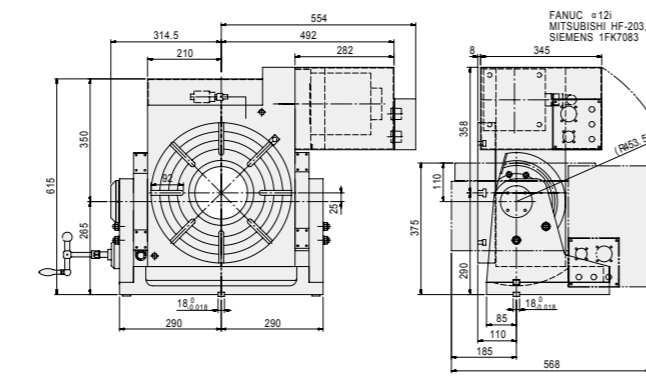
CNCMT-250



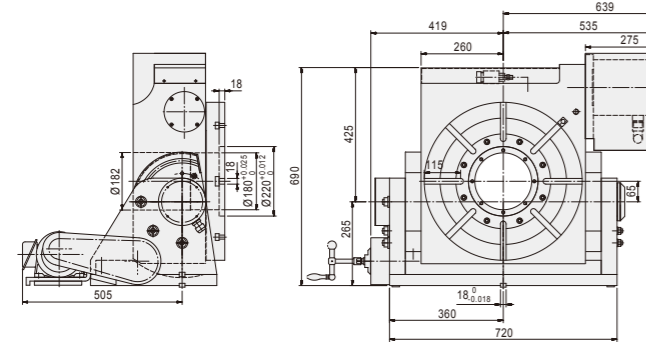
CNCMT-320



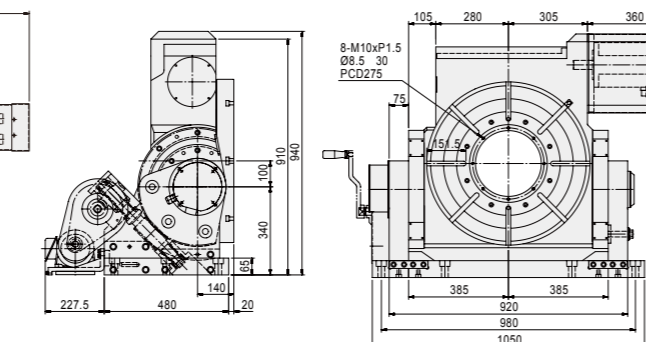
CNCMT-400



CNCMT-500



CNCMT-630



| Accuracy Standards | | | | | | | Unit:mm |
|--------------------|--------------------|---|--------------------------------|------------------|--|--|--|
| ITEM | Table top flatness | Parallelism of table top and frame bottom | Runout of table spindle center | Table top runout | Parallelism of tilting axis center line and frame bottom | Parallelism of table top to frame bottom guide block | An encoder measuring instrument should be used for indexing accuracy measurements (Rotating) |
| CNCMT-200 | 0.01 | 0.02 | 0.01 | 0.015 | 0.02 | 0.02 | 25" |
| CNCMT-250 | 0.01 | 0.02 | 0.01 | 0.015 | 0.02 | 0.02 | 25" |
| CNCMT-320 | 0.01 | 0.02 | 0.01 | 0.015 | 0.02 | 0.02 | 15" |
| CNCMT-400 | 0.02 | 0.02 | 0.01 | 0.015 | 0.02 | 0.02 | 15" |
| CNCMT-500 | 0.02 | 0.02 | 0.01 | 0.015 | 0.02 | 0.02 | 15" |
| CNCMT-630 | 0.02 | 0.02 | 0.01 | 0.015 | 0.02 | 0.02 | 15" |



- Build-in 3pcs hirth coupling, ensure the indexing accuracy +/- 5 sec.
- Could be direct connected to the 4th. axis on machining-center. Also could be connected the M-code by using G.S. single axis AC/DC/Stepping servo controller.
- Compact design, adapting precision bearing, ensure rigidity and long-term operation.
- Build-in 3 pieces hirth coupling, table will not lifting-up during rotating.

MODEL NO : **NCF-250**



| ITEM / MODEL | NCF-250R | NCF-320R | NCF-400R | NCF-500R |
|--|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| Table Dia (mm / inch) | ø250 / ø9.84 | ø320 / ø12.6 | ø400 / ø15.75 | ø500 / ø19.69 |
| Center Height in Vertical (mm / inch) | 185 / 7.28 | 210 / 8.27 | 250 / 9.83 | 310 / 12.21 |
| Table Height in Horizontal (mm / inch) | 200 / 7.87 | 240 / 9.45 | 250 / 9.83 | 305 / 12.01 |
| Over all Height in Vertical Without Motor Cover(mm / inch) | 315 / 12.40 | 380 / 14.96 | 460 / 18.11 | 560 / 22.05 |
| Thru-Hole Dia (mm / inch) | 30 ^{H7} / 1.8 ^{H7} | 80 ^{H7} / 3.15 ^{H7} | 70 ^{H7} / 2.76 ^{H7} | 80 ^{H7} / 3.15 ^{H7} |
| Width of T-slot (mm / inch) | 12 ^{H7} / 0.47 ^{H7} | 14 ^{H7} / 0.55 ^{H7} | 14 ^{H7} / 0.55 ^{H7} | 14 ^{H7} / 0.55 ^{H7} |
| Width of Guide Block (mm / inch) | 18 ^{H7} / 0.71 ^{H7} | 18 ^{H7} / 0.71 ^{H7} | 18 ^{H7} / 0.71 ^{H7} | 18 ^{H7} / 0.71 ^{H7} |
| Servo Motor type | MELDAS | HF-154T | HF-204S | HF-204S |
| | FANUC | α8 i | α12 i | α12 i |
| | SIEMENS | 1FK7063 | 1FK7083 | 1FK7083 |
| | HEIDENHAIN | QSY116E | QSY155C | QSY155F |
| Gear Ratio | 1:90 | 1:90 | 1:90 | 1:180 |
| Min. increment (degree) | 1° or 5° | 1° or 5° | 1° or 5° | 1° or 5° |
| Max. R.P.M. (rpm) (motor : 2000/ rpm) | 22.2 | 22.2 | 22.2 | 11.1 |
| Repeatability (sec.) | Unidirectional | 1" | 1" | 1" |
| | Bidirectional | 2" | 2" | 2" |
| N.W.(kgs) | 110 | 240 | 280 | 320 |
| Clamp Torque (kg·m) | 500 | 500 | 600 | 700 |
| Load capacity in vertical (with tailstock) (kgs) | 250 | 400 | 500 | 600 |

| ITEM | Max. Load | | Max. Radial Load | | | Max. Working Inertia | Spindle Drive Torque |
|----------|-----------|------------|------------------|--------------------------|--------------------------|--|----------------------|
| | Vertical | Horizontal | F | F _L | F _L | J = $\frac{W \cdot D^2}{8 \times 980}$ | F |
| NCF-250R | W=125 kg | W=300 kg | F=3500kg | F _L =220 kg·m | F _L =140 kg·m | 24kg·cm·sec ² | 13.5 kg·m |
| NCF-320R | W=150 kg | W=350 kg | F=5000kg | F _L =500 kg·m | F _L =400 kg·m | 102kg·cm·sec ² | 54 kg·m |
| NCF-400R | W=250 kg | W=500 kg | F=6000kg | F _L =600 kg·m | F _L =400 kg·m | 102kg·cm·sec ² | 54 kg·m |
| NCF-500R | W=400 kg | W=600 kg | F=7000kg | F _L =700 kg·m | F _L =400 kg·m | 102kg·cm·sec ² | 54 kg·m |

※ GSA remains the right of modification. All specifications can be modified according to customers' requirement.

- Up & backside cable outlet is available, slant motor cover also available.
- Requested pneumatic source : 5 kg·cm² : hydraulic source : 20 kg·cm²
- Standard accessory: eye bolts, clamping blocks

CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

GCT

PT

APCR / APCI

Controller

Coupling

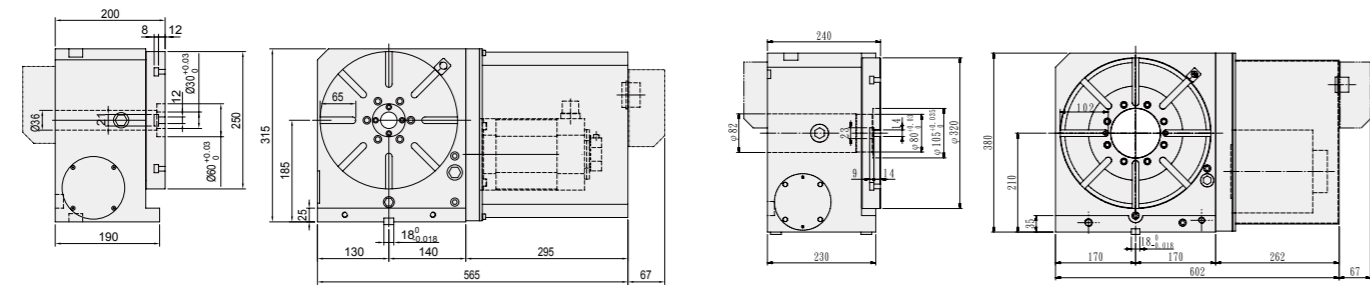
Accessories

| Accuracy Standards | | | | | | | | Unit:mm |
|--------------------|--------------------|---|--------------------------------|---|------------------|---|--|---------|
| ITEM | Table top flatness | Parallelism of table top and frame bottom | Runout of table spindle center | Perpendicularity of table top to frame bottom | Table top runout | Perpendicularity of table top to frame bottom guide block | Parallelism of center line between headstock & tailstock to frame bottom guide block | |
| MODEL | | | | | | | | |
| NCF-250R | 0.01 | 0.01 | 0.01 | 0.015 | 0.01 | 0.02 | 0.02 | |
| NCF-320R | 0.01 | 0.01 | 0.01 | 0.015 | 0.01 | 0.02 | 0.02 | |
| NCF-400R | 0.015 | 0.015 | 0.01 | 0.02 | 0.015 | 0.02 | 0.02 | |
| NCF-500R | 0.015 | 0.015 | 0.01 | 0.02 | 0.015 | 0.02 | 0.02 | |

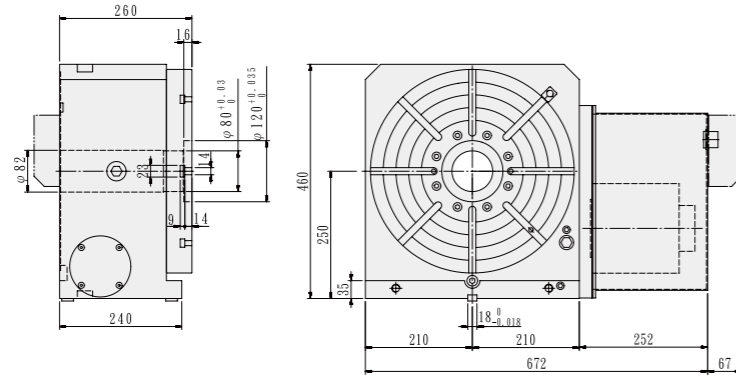
© Adapting Tailstock→ Refer to P : 34-36
 © To match AC-/DC-/Stepping-Controller→ Refer to P : 53-55

NCF-250R

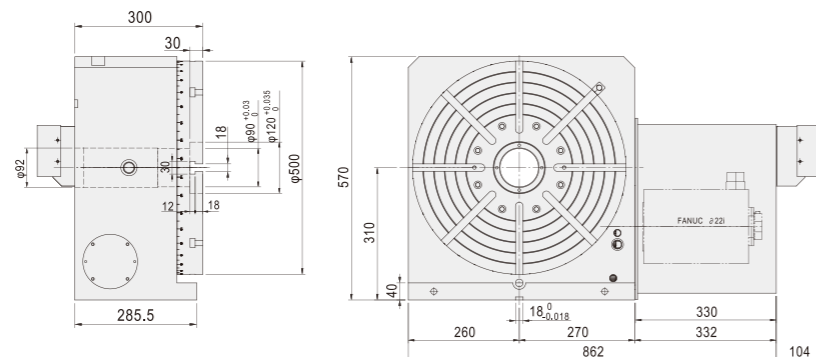
NCF-320R



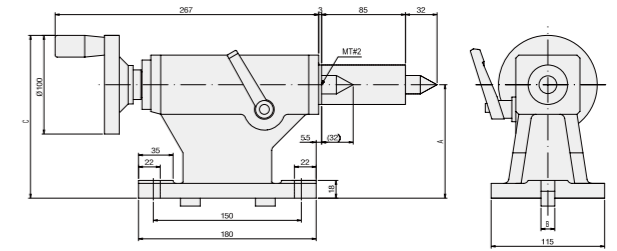
NCF-400R



NCF-500R



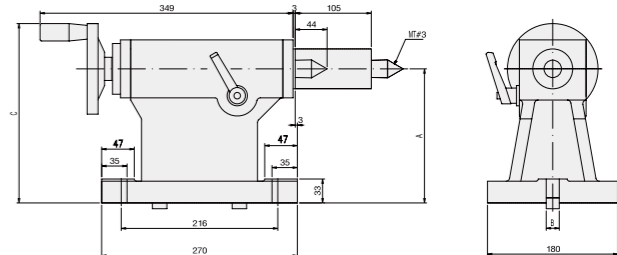
TS-A



| MODEL | A | B | C | Center Taper | Suitable Rotary Table |
|---------|-----|----|-----|--------------|-----------------------|
| TS-A115 | 115 | 14 | 165 | MT#2 | CNC-120R |
| TS-A135 | 135 | 18 | 185 | MT#2 | CNC-170R, CNC-170RB |
| TS-A160 | 160 | 18 | 210 | MT#2 | CNC-200R, CNC-200RB |



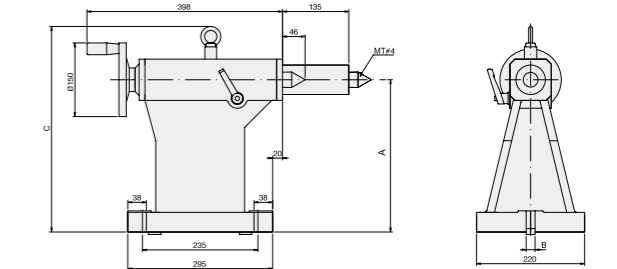
TS-B



| MODEL | A | B | C | Center Taper | Suitable Rotary Table |
|---------|-----|----|-----|--------------|------------------------------|
| TS-B185 | 185 | 18 | 250 | MT#3 | CNC-250R, NCF-250, CNC-250RB |
| TS-B190 | 190 | 18 | 255 | MT#3 | CNCMT-200 |
| TS-B210 | 210 | 18 | 275 | MT#3 | CNC-320R, NCF-320, CNCMT-250 |
| TS-B250 | 250 | 18 | 315 | MT#3 | CNC-400R, NCF-400 |
| TS-B255 | 255 | 18 | 320 | MT#3 | CNCT-320 |
| TS-B270 | 270 | 18 | 345 | MT#3 | CNCMT-320 |



TS-C



| MODEL | A | B | C | Center Taper | Suitable Rotary Table |
|---------|-----|----|-----|--------------|-----------------------|
| TS-C310 | 310 | 18 | 420 | MT#4 | CNC-500R |
| TS-C400 | 400 | 18 | 510 | MT#4 | CNC-630R |
| TS-C480 | 480 | 22 | 590 | MT#4 | CNC-800R |

CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

GCT

PT

APCR / APCI

Controller

Coupling

Accessories

CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

GCT

PT

APCR / APCI

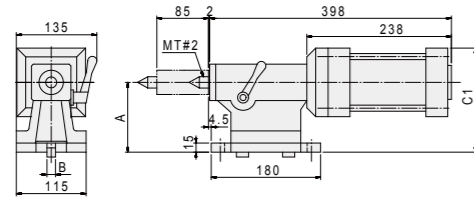
Controller

Coupling

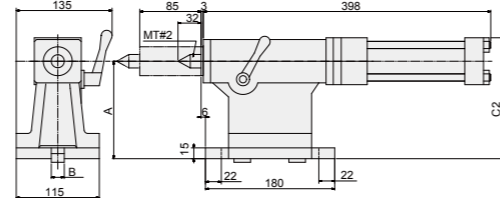
Accessories



TS-A(P)

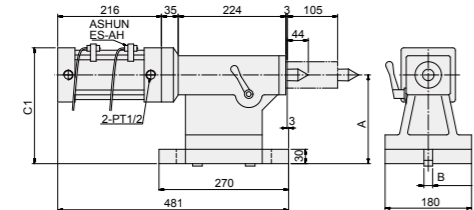


TS-A(H)

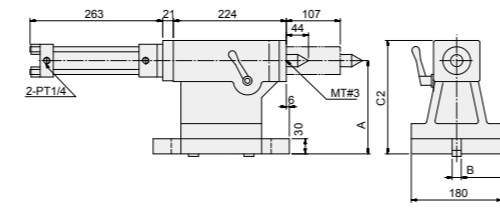


| MODEL | A | B | C 1 (P) | C 2 (H) | Center Taper | Suitable Rotary Table |
|---------------|-----|----|---------|---------|--------------|-----------------------|
| TS-A115 (P/H) | 115 | 14 | 172 | 148 | MT#2 | CNC-120R |
| TS-A135 (P/H) | 135 | 18 | 192 | 168 | MT#2 | CNC-170R, CNC-170RB |
| TS-A160 (P/H) | 160 | 18 | 217 | 193 | MT#2 | CNC-200R, CNC-200RB |

TS-B(P)

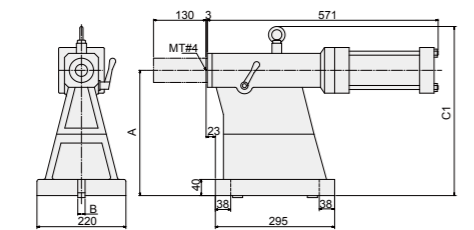


TS-B(H)

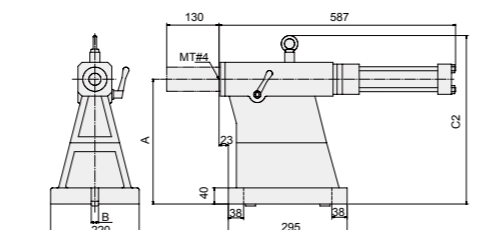


| MODEL | A | B | C 1 (P) | C 2 (H) | Center Taper | Suitable Rotary Table |
|---------------|-----|----|---------|---------|--------------|------------------------------|
| TS-B185 (P/H) | 185 | 18 | 242 | 225 | MT#3 | CNC-250R, NCF-250, CNC-250RB |
| TS-B190 (P/H) | 190 | 18 | 247 | 230 | MT#3 | CNCMT-200 |
| TS-B210 (P/H) | 210 | 18 | 267 | 250 | MT#3 | CNC-320R, NCF-320, CNCMT-250 |
| TS-B250 (P/H) | 250 | 18 | 307 | 290 | MT#3 | CNC-400R, NCF-400 |
| TS-B255 (P/H) | 255 | 18 | 312 | 295 | MT#3 | CNCT-320 |
| TS-B270 (P/H) | 270 | 18 | 327 | 310 | MT#3 | CNCMT-320 |

TS-C(P)



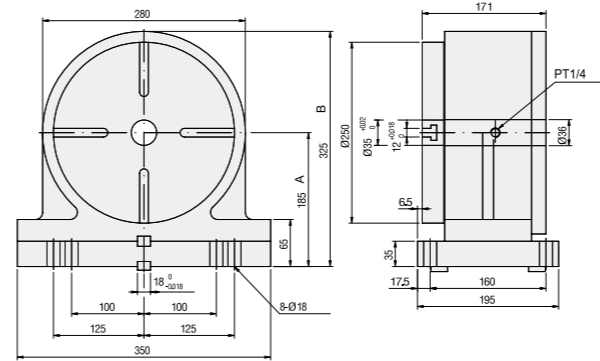
TS-C(H)



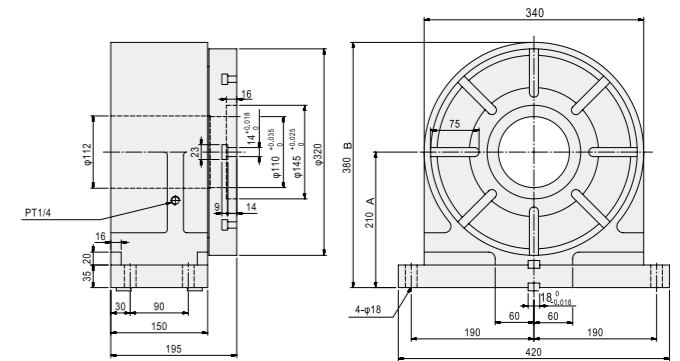
| MODEL | A | B | C 1 (P) | C 2 (H) | Center Taper | Suitable Rotary Table |
|---------------|-----|----|---------|---------|--------------|-----------------------|
| TS-C310 (P/H) | 310 | 18 | 420 | 420 | MT#4 | CNC-500R |
| TS-C400 (P/H) | 400 | 18 | 510 | 510 | MT#4 | CNC-630R |
| TS-C480 (P/H) | 480 | 22 | 590 | 590 | MT#4 | CNC-800R |



TSA-251S



TSA-320S



| ITEM / MODEL | TSA-120S | TSA-200S | TSA-251S | TSA-320S |
|-------------------------------------|---------------------------------|---------------------------------|----------------------------------|----------------------------------|
| Table Dia (mm) | ø120 | ø200 | ø250 | ø320 |
| (A)Center Height in Vertical (mm) | 115 | 160 | 185 | 210 |
| (B)Over all Height in Vertical (mm) | 196 | 265 | 325 | 380 |
| Thru-Hole Dia (mm) | ø30 | ø35 | ø35 | ø110 |
| Width of T-slot (mm) | 10 ^{H7} | 12 ^{H7} | 12 ^{H7} | 14 ^{H7} |
| Width of Guide Block (mm) | 14 ^{H7} | 18 ^{H7} | 18 ^{H7} | 18 ^{H7} |
| Pneu.clamp force (kg·m) | 15(Power 5kg/cm ²) | 25(Power 5kg/cm ²) | 65(Power 5kg/cm ²) | 80(Power 5kg/cm ²) |
| Hydro.clamp force (kg·m) | 25(Power 20kg/cm ²) | 50(Power 20kg/cm ²) | 115(Power 20kg/cm ²) | 150(Power 20kg/cm ²) |
| N.W. (kgs) | 20 | 45 | 82 | 138 |
| Suitable Rotary Table | CNC-120R | CNC-170R CNC-200R | CNC-250R CNC-320R CNC-400R | CNC-320R CNC-400R CNC-500R |

CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

GCT

PT

APCR / APCI

Controller

Coupling

Accessories

CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

GCT

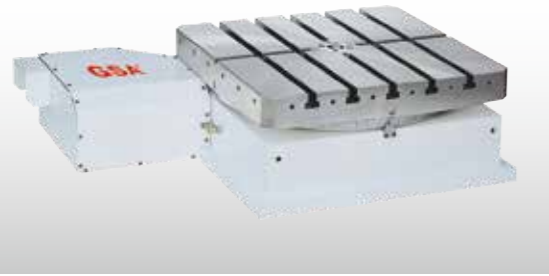
PT

APCR / APCI

Controller

Coupling

Accessories



- ⊙ Suitable for Horizontal Machining Center.
- ⊙ Rotating Speed can be reached 33.3 RPM.
- ⊙ Adapting A special anti-wearing/rigid alloy of bronze/nickel worm wheel and hardened steel worm screw ensure long term indexing accuracy.
- ⊙ Double powerful brake system with large size of clamping contact surface suitable for heavy cutting.
- ⊙ Adapting 2 pcs or 3 pcs Hirth Coupling for positioning, Repeatability can be reached +/- 0.5 sec Besides accuracy will not be changed even operation times increasing.
- ⊙ Indexing Accuracy according to customer's requirement: +/- 2 sec. or +/- 3 sec.
- ⊙ All units in Tables are manufactured from high quality materials and workmanship. Every Table has Running/Accuracy testing for at least 48 hours. All electrical parts are imported from Japan/Germany for performance confidence.

| ITEM / MODEL | | HIT-400 | HIT-500 | | |
|--|------------------------------|--------------------------------|-------------------------|------------|-------------------|
| Table Size LxW (mm) | | 400 x 400 | 500 x 500 | | |
| Over all height (mm) | | 310 | 310 | | |
| Center Hole Dia. (mm) | | 30 ^{H7} | 30 ^{H7} | | |
| T-slot size (mm) | | 14 ^{H7} | 14 ^{H7} | | |
| Rotating direction | | CW / CCW | CW / CCW | | |
| Power of drive | Clamping/unclamping | Hydraulic 20kg/cm ² | | | |
| | Revolving (Servo Motor Type) | MELDAS | HF-204S | MELDAS | HF-204S / HF-354S |
| | | FANUS | α12 i | FANUS | α12 i / α22 i |
| | | SIEMENS | 1FK7083 | SIEMENS | 1FK7083 / 1FK7101 |
| | | HEIDENHAIN | QSY155C | HEIDENHAIN | QSY155F |
| or other brand with same torque as above | | | | | |
| Gear Ratio | | 1:90 | 1:120 | | |
| Max. R.P.M. of working table (rpm) | | 22.2 (Motor : 2000/rpm) | 16.7 (Motor : 2000/rpm) | | |
| Min. Increment Degree | | 1° or 5° | 1° or 5° | | |
| Max. loading weight (kgs) | | 500 | 500 | | |
| Clamping force (kg)(evenly distributed) | | 3300 | 3700 | | |
| Lifting distance during clamp / unclamp (mm) | | 0 | 0 | | |
| Weight.(kgs) | | 325 | 360 | | |
| Indexing Accuracy (sec.) | | ±5" | ±5" | | |

| ITEM / MODEL | | HIT-630 | HIT-800 | | |
|--|------------------------------|--------------------------------|-------------------------|------------|---------|
| Table Size LxW (mm) | | 630 x 630 | 800 x 800 | | |
| Over all height (mm) | | 285 | 360 | | |
| Center Hole Dia. (mm) | | 40 ^{H7} | 55 ^{H7} | | |
| T-slot size (mm) | | 20 ^{H7} | 22 ^{H7} | | |
| Rotating direction | | CW / CCW | CW / CCW | | |
| Power of drive | Clamping/unclamping | Hydraulic 25kg/cm ² | | | |
| | Revolving (Servo Motor Type) | MELDAS | HF-354S | MELDAS | HF-354S |
| | | FANUS | α22 i | FANUS | α22 i |
| | | SIEMENS | 1FK7101 | SIEMENS | 1FK7101 |
| | | HEIDENHAIN | QSY190C | HEIDENHAIN | QSY190C |
| or other brand with same torque as above | | | | | |
| Gear Ratio | | 1:180 | 1:180 | | |
| Max. R.P.M. of working table (rpm) | | 11.1 (Motor : 2000/rpm) | 11.1 (Motor : 2000/rpm) | | |
| Min. Increment Degree | | 1° or 5° | 1° | | |
| Max. loading weight (kgs) | | 2500 | 3000 | | |
| Clamping force (kg)(evenly distributed) | | 4000 | 7000 | | |
| Lifting distance during clamp / unclamp (mm) | | 0 | 0 | | |
| Weight.(kgs) | | 525 | 1360 | | |
| Indexing Accuracy (sec.) | | ±5" | ±5" | | |

※ GSA remains the right of modification. All specifications can be modified according to customers' requirement.

● Up & backside cable outlet is available, slant motor cover also available.

● Standard accessory : eye bolts, clamping blocks

CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

GCT

PT

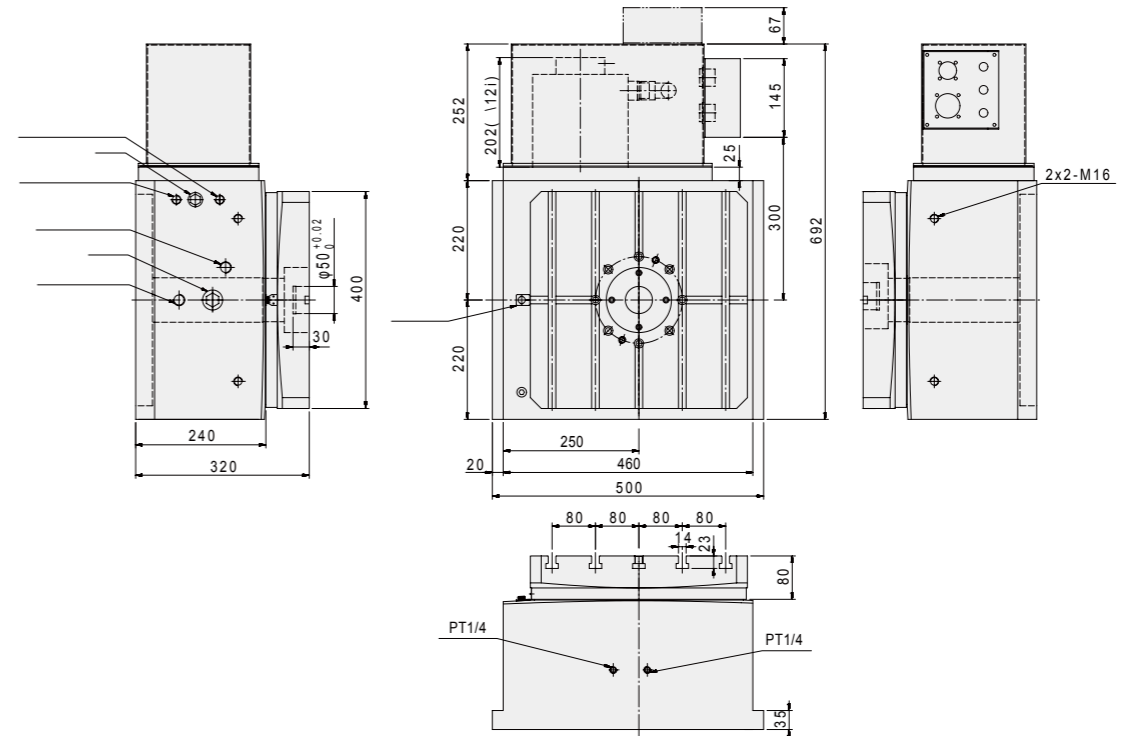
APCR / APCI

Controller

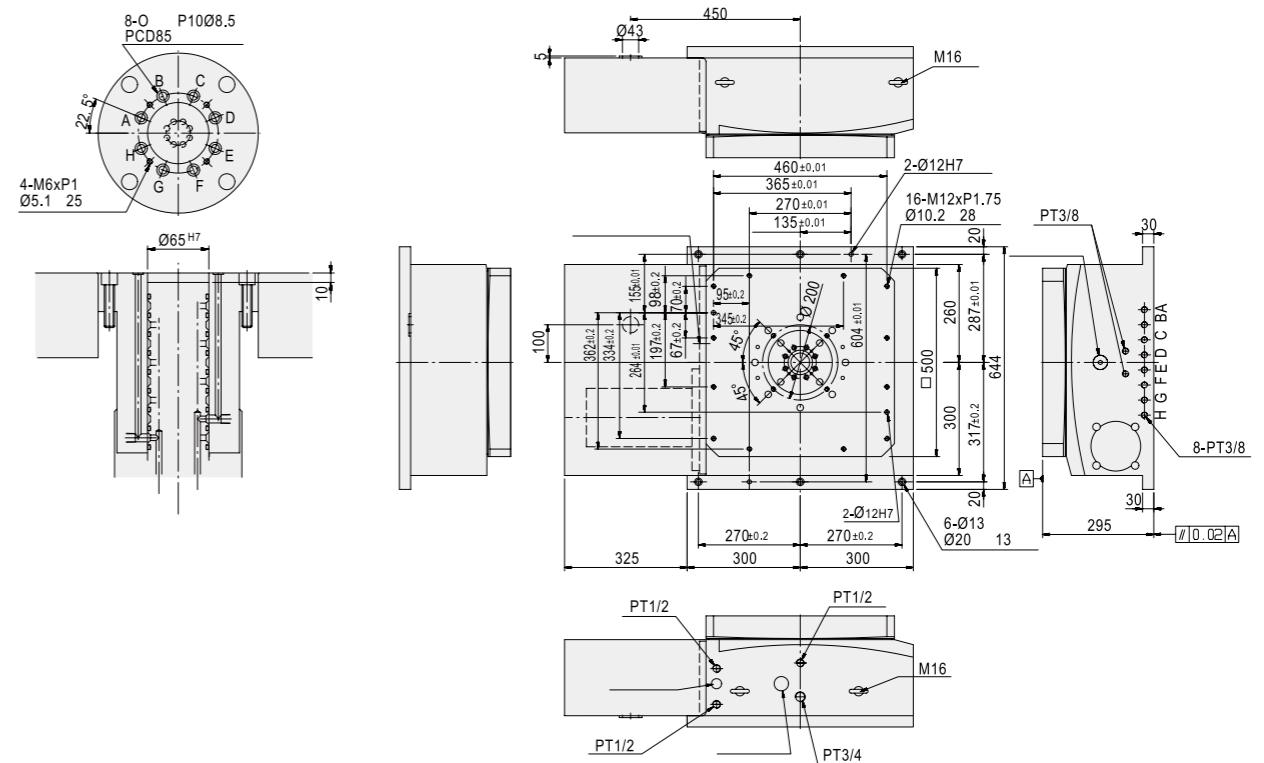
Coupling

Accessories

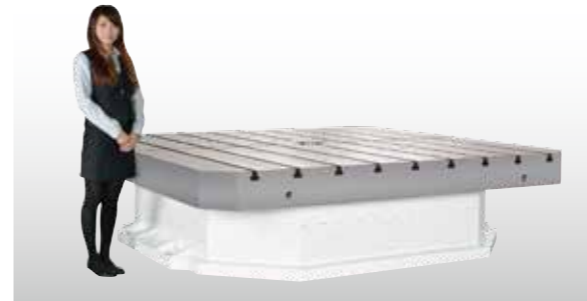
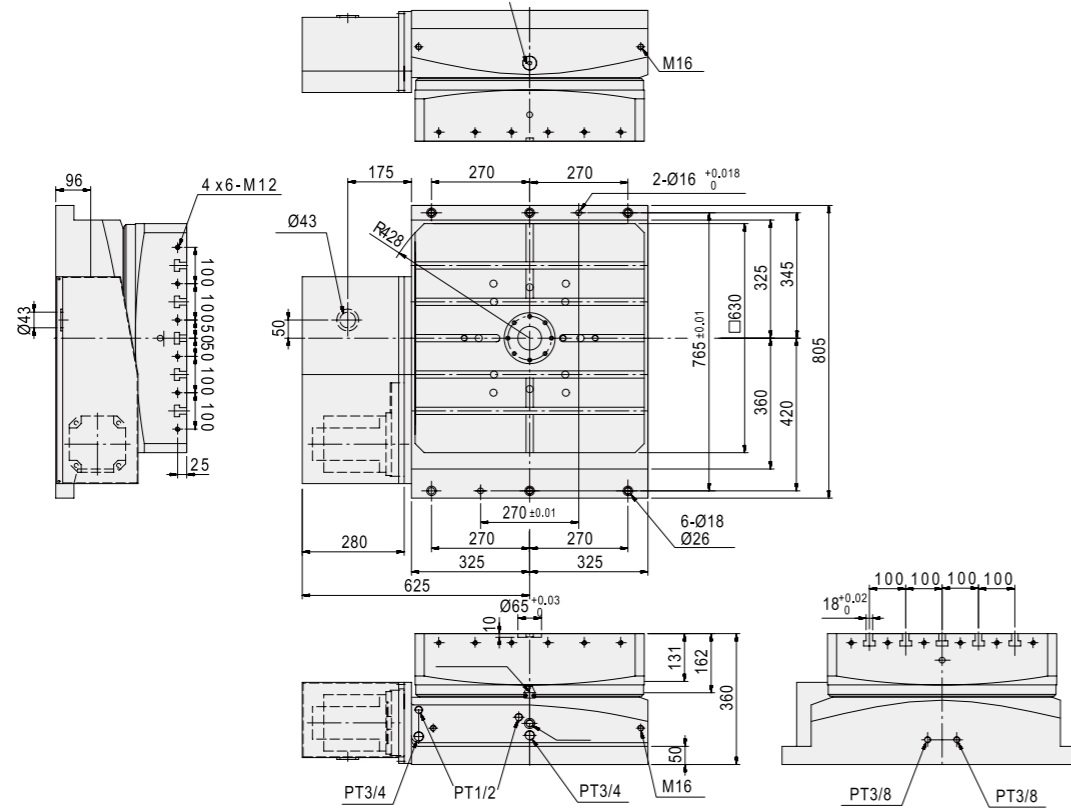
HIT-400



HIT-500



HIT-630

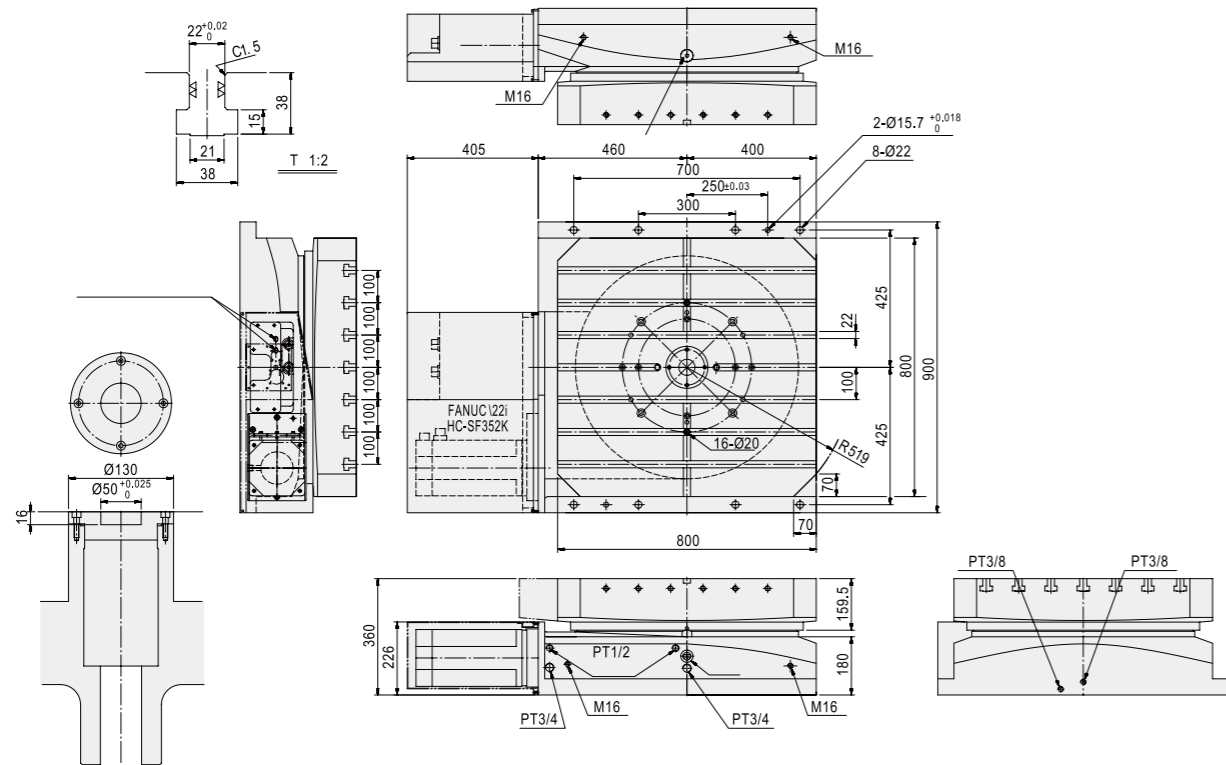


- ◎ Suitable for Horizontal Machining Center, floor type boring machine. For both indexing & simultaneous machine.
- ◎ Hi-Accuracy, Adapting a special anti-wearing alloy of bronze/nickel double-lead worm wheel and hardened steel worm screw ensure long term indexing accuracy.
- ◎ Could be manufactured according to customers' designing and interface of machine Saddle.
- ◎ Hydraulic Clamping, high rigid brake structure for heavy cutting.
- ◎ Table size from size 400mm to 2,500mm or manufactured according to customer's requirement, high loading/accuracy design also available suitable for heavy machining and metrology applications.
- ◎ Build-in hydraulic ports system suitable for Special Machine of Horizontal machining Center and Automobile/Motorbike Industrial.
- ◎ All units in Tables are manufactured from high quality materials and workmanship. Every Table has Running/Accuracy testing for at least 48 hours. All electrical parts are imported from Japan/Germany for performance confidence.
- ◎ Random dividing 0.001 degrees, Indexing Accuracy according to customer's requirement 6 sec, 10 sec. or higher indexing accuracy. (encoder is required)

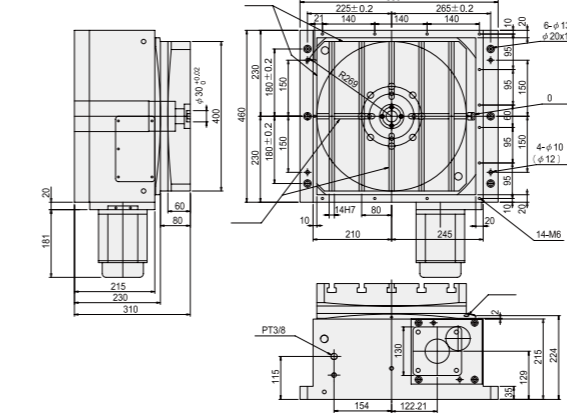
| ITEM / MODEL | HRT-400 | HRT-500 | HRT-630 | HRT-800 |
|--|---------|---------|---------|---------|
| Table Size (mm) | 400 | 500 | 630 | 800 |
| T-slots size (mm) | 14 | 14 | 18 | 22 |
| Table Swing Dia. (mm) | 500 | 660 | 800 | 1040 |
| Total Height (mm) | 310 | 295 | 360 | 385 |
| Max. Loading (kgs)(evenly distributed) | 500 | 600 | 1200 | 2000 |
| Vertical Max. Force (kg) | 1585 | 1880 | 2080 | 2080 |
| Load Capacity During Rotating(kg / cm ²) | 102 | 191 | 405 | 816 |
| Clamping Force (kgs) | 3500 | 5500 | 6500 | 7000 |
| Machining Torque (kg/m) | 122 | 230 | 330 | 350 |
| Parallelism Of Table Top and Frame Bottom (mm) | 0.015 | 0.015 | 0.025 | 0.03 |
| Repeatability (sec.) | 4" | 4" | 4" | 4" |

※ GSA remains the right of modification. All specifications can be modified according to customers' requirement.
 ※ To match servo motor type → Refer to P:37 (HIT series)

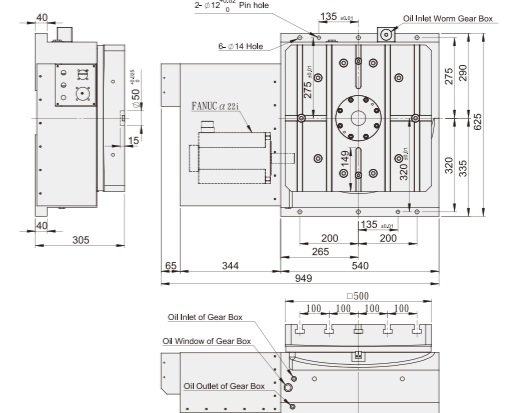
HIT-800



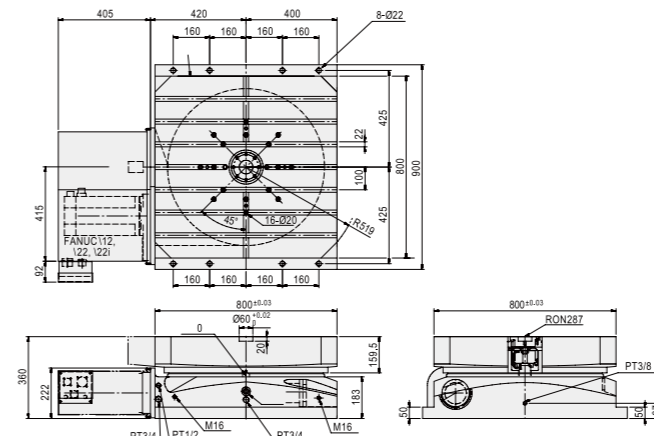
HRT-400



HRT-500



HRT-800



CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

GCT

PT

APCR / APCI

Controller

Coupling

Accessories

CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

GCT

PT

APCR / APCI

Controller

Coupling

Accessories

CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table



- ⊙ Suitable for floor type boring machine, both indexing & simultaneous machine.
- ⊙ Hi-Accuracy, Adapting a special anti-wearing alloy of bronze/nickel double-lead worm wheel and hardened steel worm shaft ensure long term indexing accuracy.
- ⊙ All units in Tables are manufactured from high quality materials and workmanship. Every Table has Running/Accuracy testing for at least 48 hours. All electrical parts are imported from Japan/Germany for performance confidence.
- ⊙ Random dividing 0.001 degrees, Indexing Accuracy according to customer's requirement 5 sec., 10sec. or higher indexing accuracy. (encoder required)
- ⊙ 3 face large roller bearing design with excellent price-performance and low maintenance.

| ITEM / MODEL | RLT-1500 | RLT-2000 | RLT-2500 |
|--|-------------|-------------|-------------|
| Max. Load in Tons | 15 | 20 | 30 |
| Table Sizes (mm) | 1500 x 1500 | 2000 x 2000 | 2500 x 2500 |
| Bearing Diameter (outside/mm) | 1280 | 1600 | 1800 |
| Max. rpm R/T | 4.16 | 4.16 | 1.6 |
| Tilting moment (Nm) | 211.680 | 282.240 | 282.240 |
| Tangential Moment, Clamped (Nm) | 19.600 | 43.900 | 140.000 |
| Machining Moment (Nm)(S1/S6) | 12.000 | 23.462 | 39.103 |
| W1 Axis Stroke (mm) | 1500 | 1500 | 1500 |
| Linear Axis Feed Rate (m/min) | 20 | 20 | 20 |
| Feeding Force Linear Axis (N) | 25.000 | 25.000 | 25.000 |
| No. of Guide Rails | 2 | 2 | 4 |
| Parallelism Between Bottom and Top Surface | 0.025 | 0.025 | 0.025 |
| Concentricity at Center (mm) | 0.01 | 0.01 | 0.01 |

※ GSA remains the right of modification. All specifications can be modified according to customers' requirement.

GCT

RLT-1500

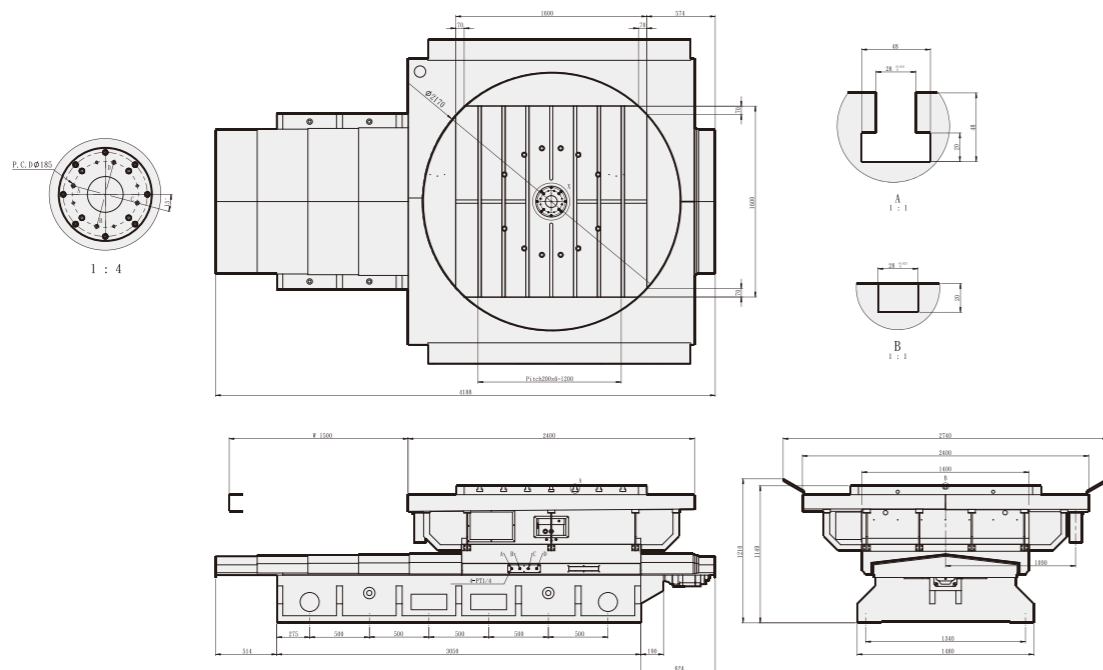
PT

APCR / APCI

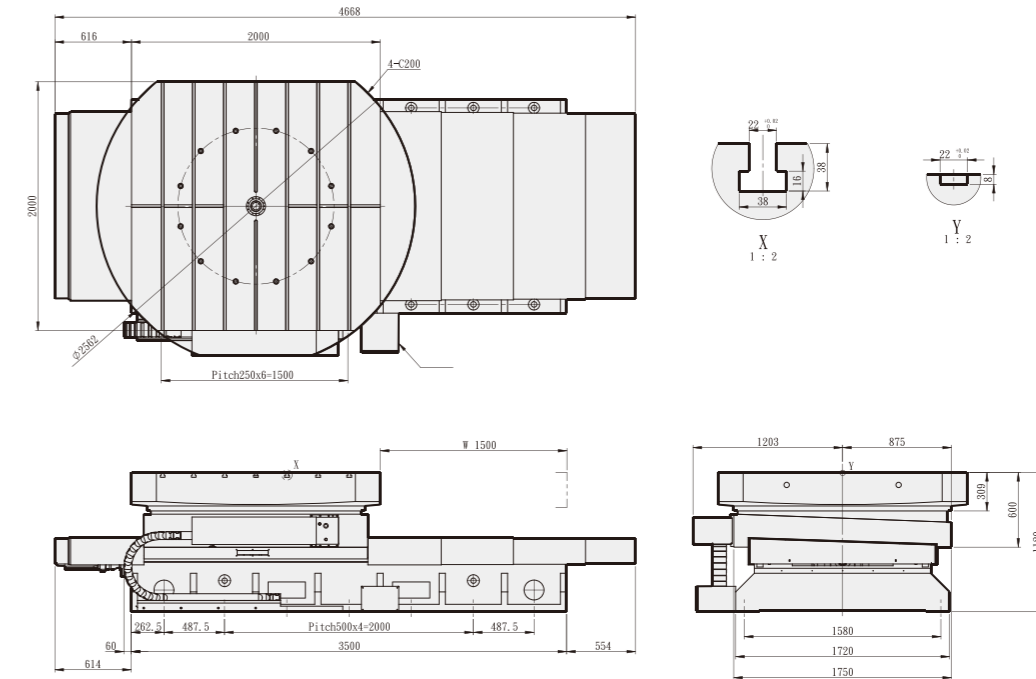
Controller

Coupling

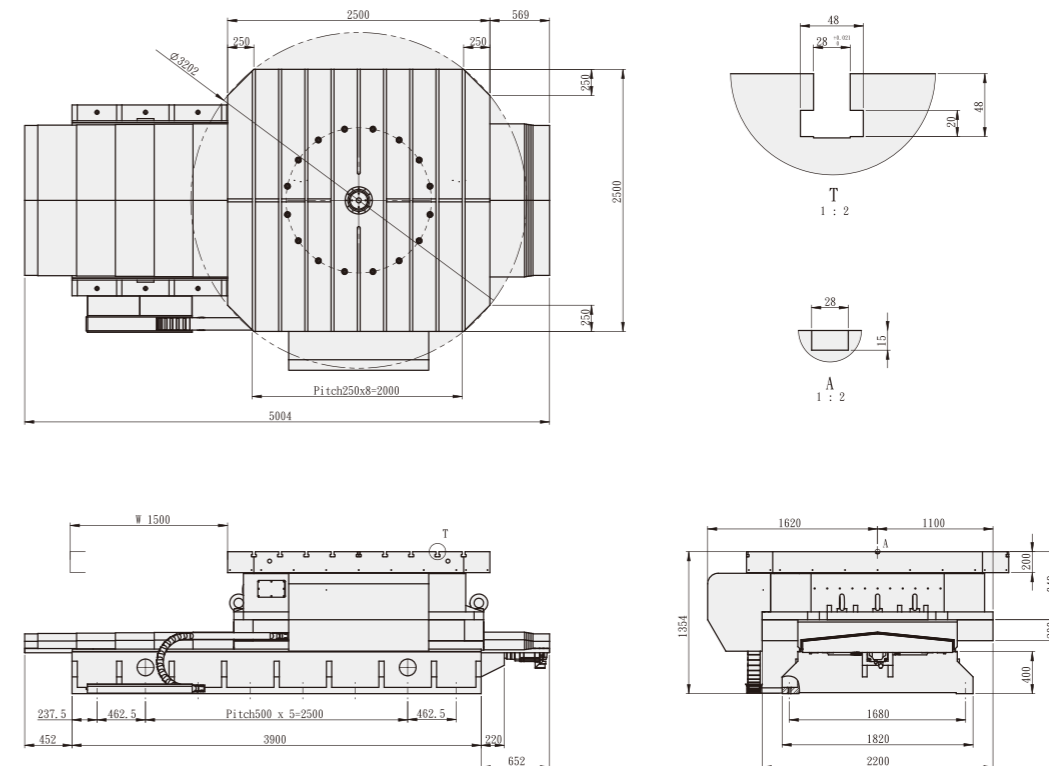
Accessories



RLT-2000



RLT-2500



CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

GCT

PT

APCR / APCI

Controller

Coupling

Accessories

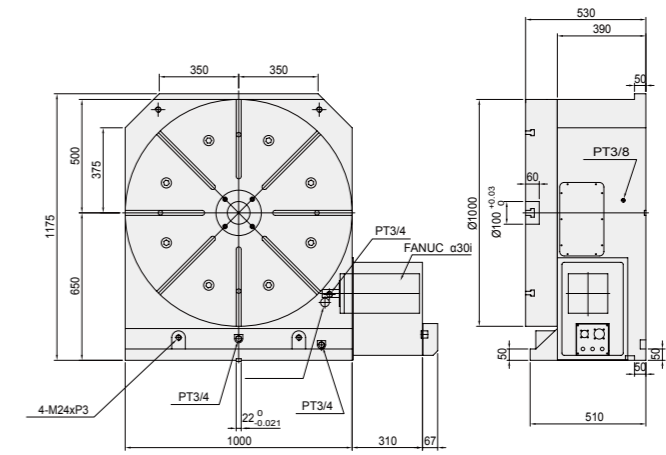


- Table size from size 1,000mm to size 2,000mm can be manufactured in both Vertical/Horizontal position. With high accuracy and high loading capacity which are suitable for heavy machining and metrology applications.
- High Heavy loading capacity **axial-radial Roller Bearings** are incorporated to provide high rigidity.
- All units in Tables are manufactured from high quality materials and workmanship. Every Table has Running/Accuracy testing for at least 48 performance confidence.
- Can be designed by customers' drawings Saddle.
- 0.001 degree increment is standard. Indexing accuracy can be choosed by customers' request. 5 sec. or 10 sec. (encoder is required.)

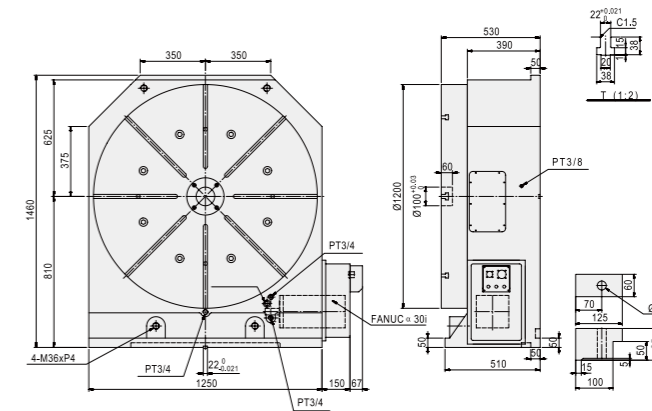
| ITEM / MODEL | | CNC-1000HV | CNC-1200HV | CNC-1500HV | CNC-2000HV |
|---|------------|---|------------------|------------------|------------------|
| Table Dia (mm) | | 1000 | 1200 | 1500 | 2000 |
| Center Height in Vertical (mm) | | 650 | 810 | 900 | 1100 |
| Table Height in Horizontal (mm) | | 530 | 530 | 700 | 800 |
| Over all Height in Vertical Without Motor Cover (mm) | | 1175 | 1460 | 1695 | 2145 |
| Center Holes (mm) | | 100 X 60 | 100 X 60 | 200 X 70 | 200 X 70 |
| Width of T-slot (mm) | | 22 ^{H7} | 22 ^{H7} | 22 ^{H7} | 28 ^{H7} |
| Width of Guide Block (mm) | | 22 ^{H7} | 22 ^{H7} | 28 ^{H7} | 36 ^{H7} |
| Servo motor type | MELDAS | HF-453S | HF-453S | HF-453S | HF-703S |
| | FANUC | α30 i | α30 i | α30 i | α40 i |
| | SIEMENS | 1FK7103 | 1FK7103 | 1FK7103 | 1FK7105 |
| | HEIDENHAIN | QSY190D | QSY190D | QSY190D | QSY190F |
| Gear Ratio | | 1:360 | 1:360 | 1:720 | 1:720 |
| Min. Indexing (degree) | | 0.001° | 0.001° | 0.001° | 0.001° |
| Max. R.P.M. (rpm) (motor : 2000 / rpm) | | 5.56 | 5.56 | 2.78 | 2.78 |
| Hydro. clamp force (kg·m) (P:35kg / cm ²) | | 1100 | 1100 | 1500 | 2000 |
| Indexing Accuracy Class (sec.) | | A | 60" | A | 60" |
| | | High Accuracy Rotary Table Refer to P59 chart 2 | | | |
| Indexing Accuracy | Encoder | 5" / 10" | 5" / 10" | 5" / 10" | 5" / 10" |
| Repeatability | Encoder | 4" | 4" | 4" | 4" |
| Max. Machining Force (kg·m) | | 500 | 500 | 600 | 700 |
| N.W. (kgs) | | 2500 | 3500 | 6000 | 8000 |
| Max. Load | Vertical | W=1500 kg | W=2000 kg | W=3000 kg | W=4000 kg |
| | Horizontal | W=3500 kg | W=5000 kg | W=8000 kg | W=10000 kg |
| Max. Radial Load | | F=5000 kg | F=6000 kg | F=7000 kg | F=8000 kg |
| | | FxL=1100 kg·m | FxL=1100 kg·m | FxL=1500 kg·m | FxL=2000 kg·m |
| | | FxL=2000 kg·m | FxL=2500 kg·m | FxL=3000 kg·m | FxL=3500 kg·m |

※ GSA remains the right of modification. All specifications can be modified according to customers' requirement.

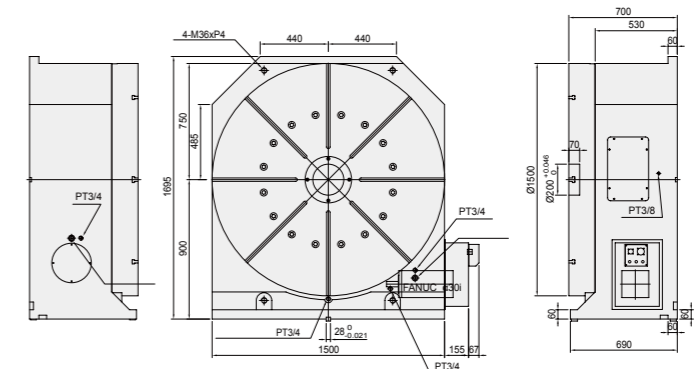
CNC-1000



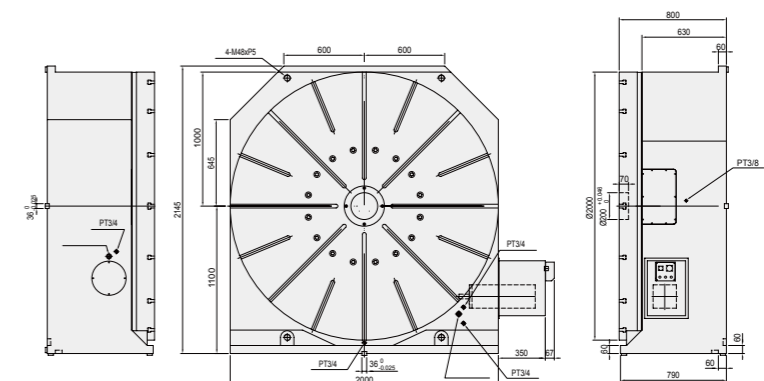
CNC-1200



CNC-1500



CNC-2000



CNC
CNCB
CNCT / CNCMT
NCF
Tailstock
Large Size Table
GCT
PT
APCR / APCI
Controller
Coupling
Accessories

CNC
CNCB
CNCT / CNCMT
NCF
Tailstock
Large Size Table
GCT
PT
APCR / APCI
Controller
Coupling
Accessories

CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

GCT

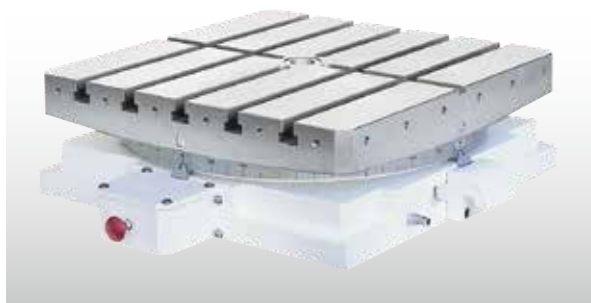
PT

APCR / APCI

Controller

Coupling

Accessories



- ◎ Suitable for the high accuracy machining such as Boring-Milling, Grinding-Machine.
- ◎ Build-in 2 pieces hirth coupling for positioning, indexing accuracy +/- 3 sec, ensure a long-term operation.
- ◎ Powerful clamping design, allow heavy cutting and boring.
- ◎ Clamping / Unclamping by pneumatic, easy operation.
- ◎ The body is FC-35 cast iron, durable and will last longer without deformation.

MODEL NO : GCT-600

● Size of Table
● Type of precision index table

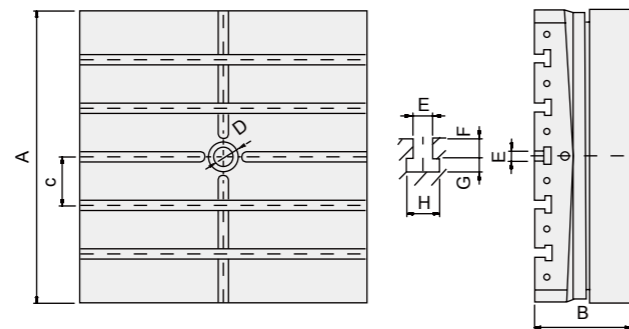


2 PCS hirth coupling

| ITEM / MODEL | GCT-301 | GCT-450 | GCT-600 | GCT-700 | GCT-800 | GCT-1000 | GCT-1200 | |
|---|--------------------------------|---------------------------------------|---------|---------|---------|-----------|--|--|
| Table size L x W (mm) | 300X300 | 450X450 | 600X600 | 700X700 | 800X800 | 1000X1000 | 1200X1200 | |
| Height (mm) | 140 | 170 | 200 | 220 | 280 | 300 | 340 | |
| Spindle hole (mm) | ø25 | ø30 | ø40 | ø40 | ø60 | ø60 | ø80 | |
| T-slot (mm) | 14 | 18 | 20 | 20 | 22 | 22 | 22 | |
| Table rotating | clockwise and counterclockwise | | | | | | | |
| Table Lifting up & Clamp down stroke (mm) | 5 | 5 | 5 | 5 | 8 | 8 | 8 | |
| Driving | Longitudinal | Pneu. Pressure 5~8 kg/cm ² | | | | | Pneu. 5~8 kg/cm ² Hydro. 30 kg/cm ² | |
| | Revolving | Manual | | | | | | |
| Number of division (degree)(evenly distributed) | 15° | 1° or 5° | | | | | | |
| Max. load weight in theory (kgs) | 1200 | 2400 | 3400 | 3400 | 4500 | 6000 | 7000 | |
| Allowable load weight (kgs) | 500 | 1000 | 2000 | 2000 | 3000 | 5000 | 6000 | |
| Clamping capacity (kgs) | - | 2200 | 3200 | 3200 | 5400 | 5400 | 8100 | |
| N.W. (kgs) | 90 | 200 | 400 | 600 | 900 | 1200 | 2000 | |

※ GSA remains the right of modification. All specifications can be modified according to customers' requirement.

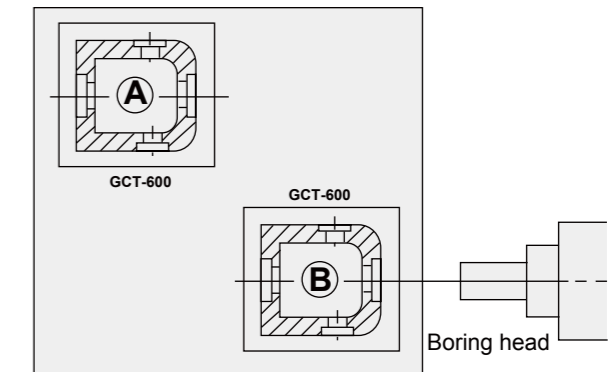
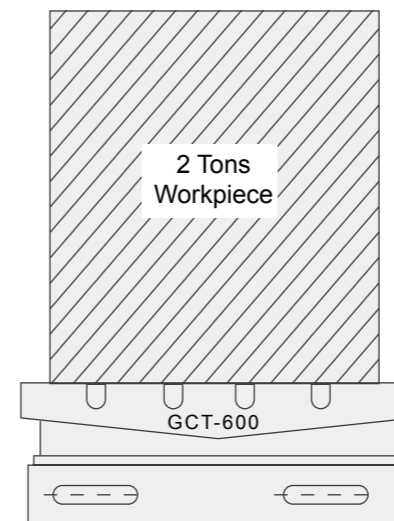
GCT-301~1200



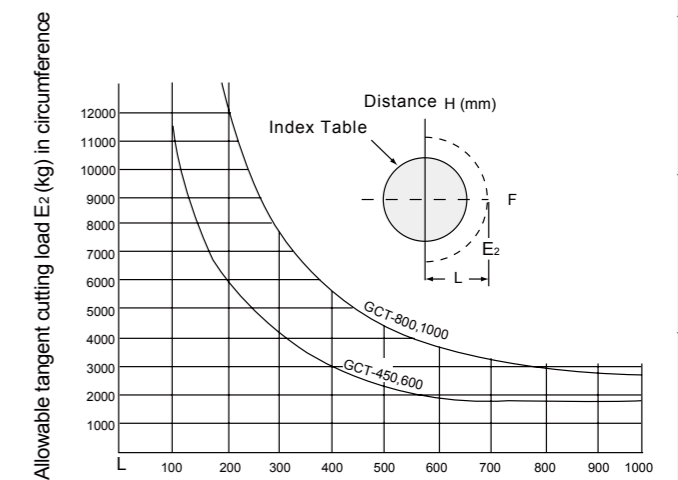
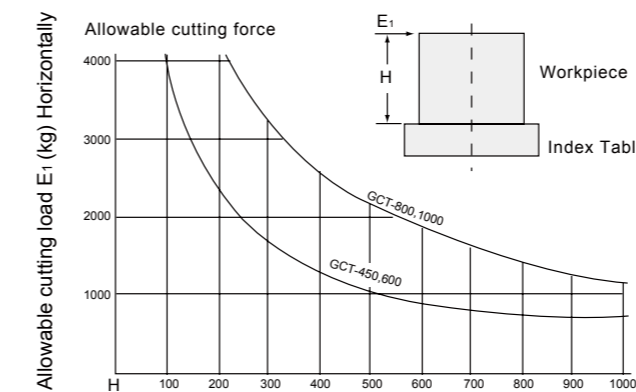
| | GCT-301 | GCT-450 | GCT-600 | GCT-700 | GCT-800 | GCT-1000 | GCT-1200 |
|---|---------|---------|---------|---------|---------|----------|----------|
| A | 300 | 450 | 600 | 700 | 800 | 1000 | 1200 |
| B | 140 | 170 | 200 | 220 | 280 | 300 | 340 |
| C | 100 | 100 | 100 | 125 | 100 | 150 | 200 |
| D | - | 30 | 40 | 40 | 60 | 60 | 80 |
| E | 12 | 18 | 20 | 20 | 22 | 22 | 22 |
| F | 14 | 16 | 20 | 20 | 23 | 23 | 23 |
| G | 9 | 12 | 14 | 14 | 15 | 15 | 15 |
| H | 23 | 28 | 35 | 35 | 38 | 38 | 38 |

| Accuracy Standards | | | | | | | | Unit:mm | |
|--------------------|--------------------------------|---------------------------|-------------------|---|--------------------|---------------------------|-------------------------------|---------------------------------|----------------------------|
| ITEM MODEL | Concentricity of center spigot | Flatness of table surface | Table oscillation | Parallelism between bottom and top surfaces | T-slot right angle | Right angle of table side | Concertricity and T-slot side | Test by NIKON "Auto collimator" | |
| | | | | | | | | Divide into 4 equal parts | Divide into 72 equal parts |
| GCT-301 | 0.01 | 0.01 | 0.01 | 0.01 | 0.015 | 0.015 | 0.015 | ±2" | ±3" |
| GCT-450 | 0.01 | 0.015 | 0.01 | 0.015 | 0.015 | 0.015 | 0.015 | ±2" | ±3" |
| GCT-600 | 0.01 | 0.02 | 0.015 | 0.02 | 0.02 | 0.02 | 0.02 | ±2" | ±3" |
| GCT-700 | 0.01 | 0.02 | 0.015 | 0.02 | 0.02 | 0.02 | 0.02 | ±2" | ±3" |
| GCT-800 | 0.01 | 0.02 | 0.015 | 0.02 | 0.02 | 0.02 | 0.02 | ±2" | ±3" |
| GCT-1000 | 0.01 | 0.03 | 0.02 | 0.03 | 0.03 | 0.03 | 0.02 | ±2" | ±3" |
| GCT-1200 | 0.01 | 0.03 | 0.02 | 0.03 | 0.03 | 0.03 | 0.02 | ±2" | ±3" |

Machining Status



Allowed Loading Chart



CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

GCT

PT

APCR / APCI

Controller

Coupling

Accessories

CNC

CNCB

CNCT
/
CNCMT

NCF

Tailstock

Large
Size
Table

GCT

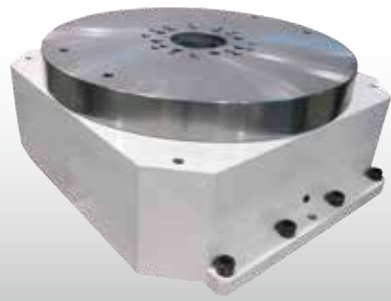
PT

APCR
/
APCI

Controller

Coupling

Accessories



- ⊙ Suitable for round-type special-purpose machine and horizontal M/C for high precision machining.
- ⊙ Build-in 3 pieces hirth coupling, without lifting up and down during rotating, shorten the indexing cycle, ensure positioning.
- ⊙ Powerful clamping design, allow heavy cutting and boring.
- ⊙ Indexing accuracy ± 4 sec. ensure a long-term operation.

MODEL NO : **PT-340-40**

● Name of Table
● Size of Table
● Number of Position

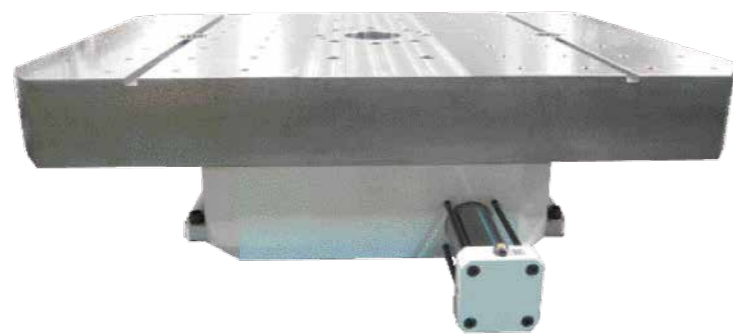


| ITEM / MODEL | PT-200 | PT-340 | PT-470 | PT-600 | PT-800 | | |
|--|--|-------------------|-------------------|--------------------|--------------------|-------|-------|
| Table Diameter (mm) | Ø200 | Ø340 | Ø470 | Ø600 | Ø800 | | |
| Table Center Hole Diameter (mm) | Ø30 ^{H6} | Ø65 ^{H6} | Ø90 ^{H6} | Ø110 ^{H6} | Ø120 ^{H6} | | |
| Table Center Hole Depth (mm) | 30 | 11 | 11 | 11 | 40 | | |
| Table Center Through Hole Diameter (mm) | Ø27 | Ø30.5 | Ø41 | Ø53 | Ø80 | | |
| Table Overall Height (mm) | 175 | 210 | 240 | 260 | 305 | | |
| Hydraulic Pressure (kg/cm ²) | 35 | 35 | 35 | 35 | 35 | | |
| Index Number (standard)(division) | 4, 6, 8, 12, 24 (one of them) | | | | | | |
| Index Number (available)(division) | *2, 3, 5, 9.....available by special order | | | | | | |
| Rotating Direction | CW & CCW | | | | | | |
| Indexing Accuracy (accumulative)(sec.) | $\pm 4''$ | $\pm 4''$ | $\pm 4''$ | $\pm 4''$ | $\pm 4''$ | | |
| Repetitive Accuracy (sec.) | $\pm 1''$ | $\pm 1''$ | $\pm 1''$ | $\pm 1''$ | $\pm 1''$ | | |
| Rotation Torque (kg-m) | 25 | 57 | 86 | 144 | 280 | | |
| Permissible Instant Inertia WR ² (kg-m ²) | 7 | 21.25 | 45 | 125 | 300 | | |
| Indexing Time of 90° Degrees (s) | 1.7 | 2.3 | 3.4 | 5.4 | 9.6 | | |
| Clamping Torque | F | kgf | 1260 | 1560 | 3970 | 6448 | 9600 |
| | | N | 12340 | 15200 | 38500 | 63000 | 94000 |
| | FXL | kg-m | 108 | 332 | 1428 | 1980 | 4000 |
| | | N-m | 1060 | 3250 | 13390 | 19400 | 39200 |
| FXH | kg-m | 55 | 145 | 550 | 840 | 1950 | |
| | N-m | 541 | 1423 | 5390 | 8232 | 19110 | |
| Load Capacity | O° | kg | 120 | 500 | 700 | 1250 | 2400 |
| Weight (Net)(kg) | | | 50 | 115 | 270 | 480 | 900 |

※ GSA remains the right of modification. All specifications can be modified according to customers' requirement.

Application of Products

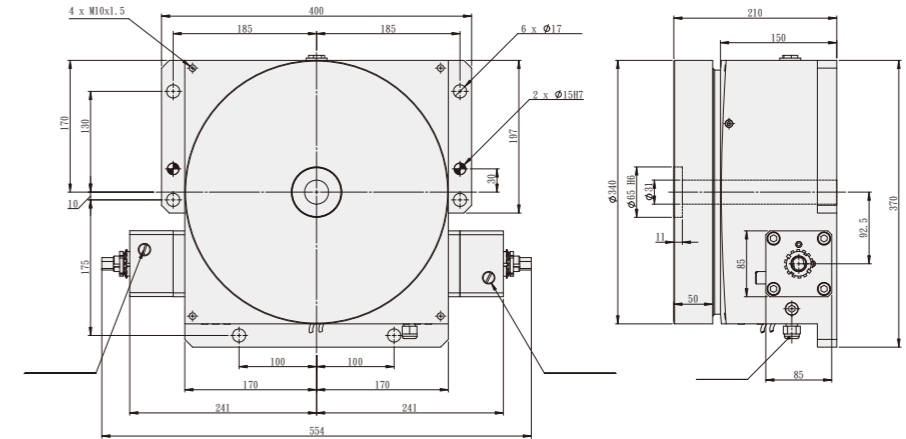
Pallet Changer for HMC or Moving Column VMC



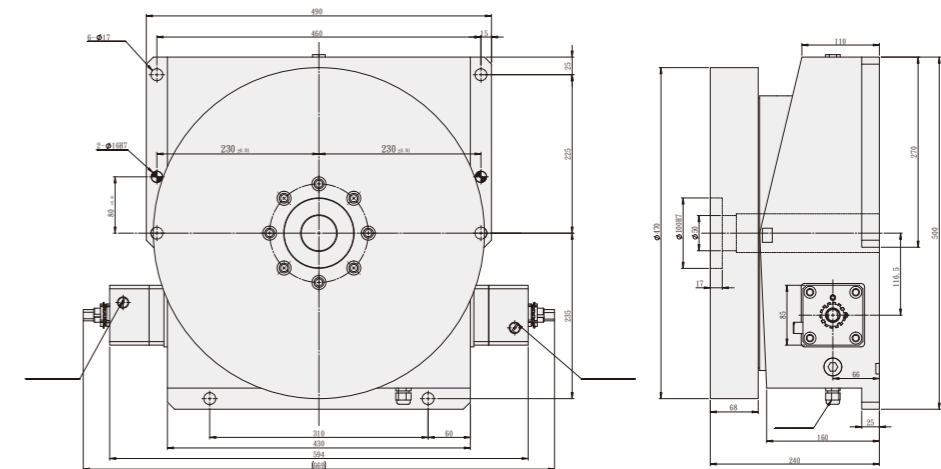
Guaranteed Inspection Accuracy

| Inspection items | PT-200 | PT-340 | PT-470 | PT-600 | PT-800 |
|---|--------|--------|--------|--------|--------|
| Concentricity Center Hole (mm) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
| Table Run Out (mm) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
| Table Straightness (mm) | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 |
| Parallelism Between Plate and Base (mm) | 0.02 | 0.02 | 0.02 | 0.03 | 0.03 |

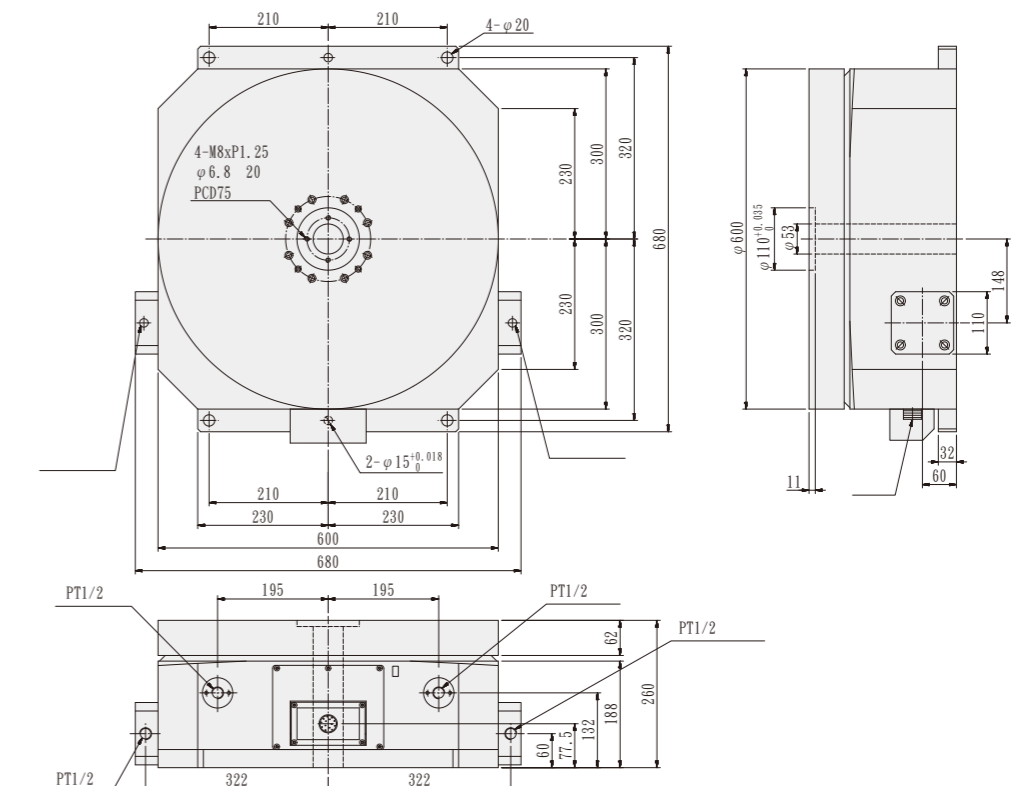
PT-340



PT-470



PT-600



CNC

CNCB

CNCT
/
CNCMT

NCF

Tailstock

Large
Size
Table

GCT

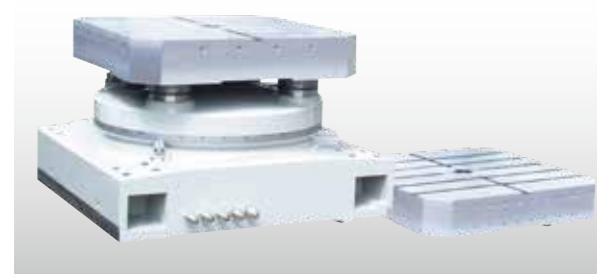
PT

APCR
/
APCI

Controller

Coupling

Accessories



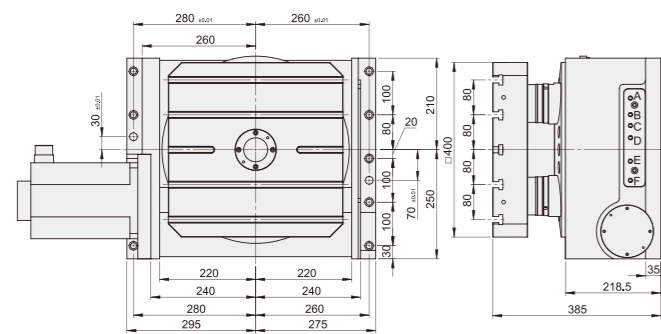
- High accuracy and tested modular system for Table (Receiver) & single/Multi Pallets design. Especially suitable for new Horizontal Machining Centers as well as for existing Customers' Design Horizontal Table/Pallets manufacturing.
- All units Table(Receiver) & single/Multi Pallets are manufactured from high quality materials and workmanship. Every Table has Running/Accuracy testing for at least 48 hours. All electrical parts are imported from Japan/Germany for performance confidence.
- Can be finished according to DIN, ISO or Customers' design, All pallets are exchangeable for every Index Tables or CNC Tables (Receivers) Pallets changing type can be Swing or Forward/Backward designed.
- By high accuracy 4 pcs Cones/Cups.
- By Hydraulic 4 pcs Pull Studs or Clamping Plate.
- Can be designed by customers' drawings Saddle.
- 1 degree or 0.001 degree increment are optional Can be chosen by customers' request. +/- 2 sec. or +/- 3 sec.(APR series:encoder is required)

| ITEM / MODEL | APCR/APCI 400 | APCR/APCI 500 | APCR/APCI 630 | APCR/APCI 800 | APCR/APCI 1000 |
|--|---------------|---------------|---------------|---------------|----------------|
| Pallet Dimensions (mm) | 400 | 500 | 630 | 800 | 1000 |
| T-slots Size (mm) | 14 | 14 | 18 | 22 | 22 |
| Rounded Corners (mm) | 500 | 628 | 800 | 1040 | 1570 |
| Total Height (mm) | 370 | 550 | 505 | 525 | 550 |
| Clamping Station Weight (kgs) | 365 | 600 | 750 | 900 | 1100 |
| Pallet Weight (kgs) | 75 | 120 | 170 | 200 | 300 |
| Max. Loading (kgs)(evenly distributed) | 500 | 600 | 1200 | 2000 | 3000 |
| Clamping Force (kgs) | 3500 | 5500 | 6500 | 7000 | 8000 |
| Machining Torque (kg/m) | 122 | 230 | 330 | 350 | 450 |
| Parallelism (mm) | 0.015 | 0.015 | 0.025 | 0.03 | 0.03 |
| Repeatability (mm) | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |

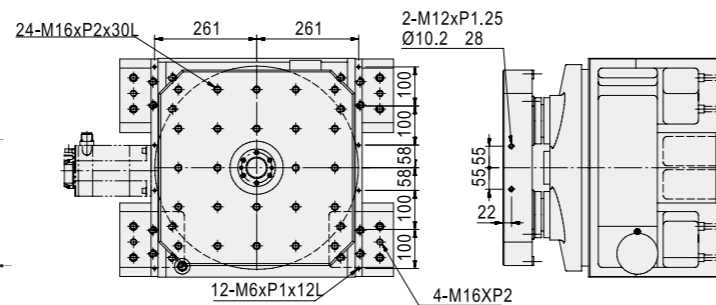
※ GSA remains the right of modification. All specifications can be modified according to customers' requirement.

| Accuracy Standards | | | | | | | | Unit:mm |
|--------------------|--------------------------------|-------------------|---|--------------------|---------------------------|-------------------------------|--------------------|---------|
| ITEM | Concentricity of center spigot | Table oscillation | Parallelism between bottom and top surfaces | T-slot right angle | Right angle of table side | Concentricity and T-slot side | Table top flatness | |
| MODEL | | | | | | | | |
| APCI-400 | 0.01 | 0.015 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | |
| APCI-500 | 0.01 | 0.015 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | |
| APCR-630 | 0.01 | 0.015 | 0.02 | 0.02 | 0.02 | 0.02 | 0.02 | |
| APCR-800 | 0.01 | 0.015 | 0.025 | 0.025 | 0.025 | 0.021 | 0.025 | |
| APCR-1000 | 0.01 | 0.015 | 0.025 | 0.025 | 0.025 | 0.033 | 0.025 | |

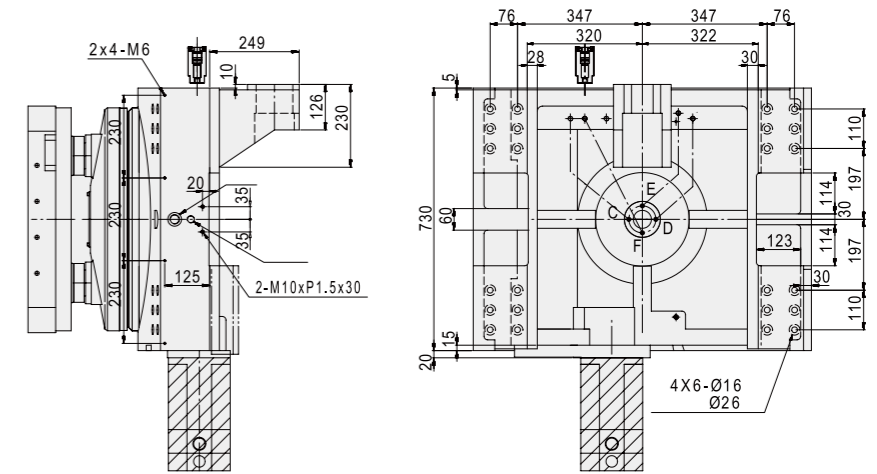
APCI-400



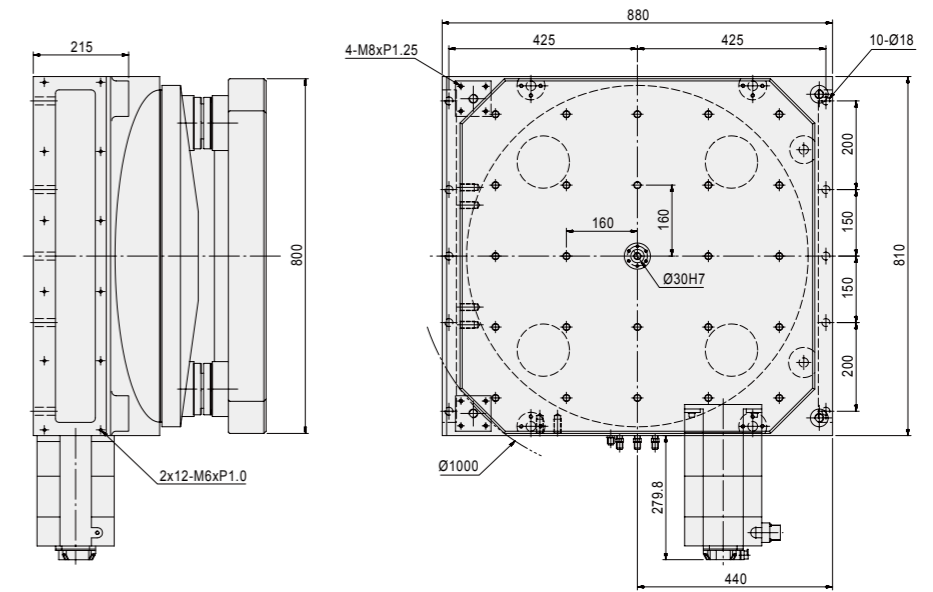
APCI-500



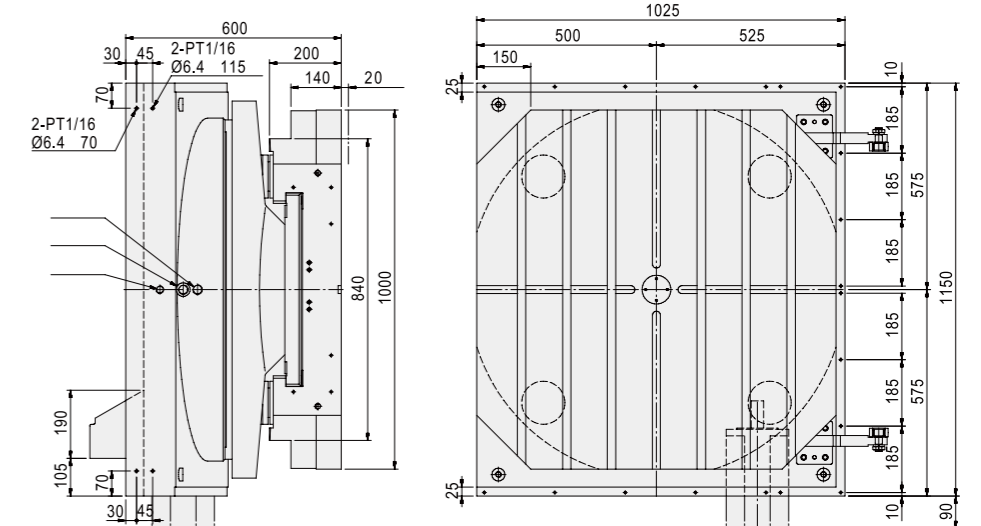
APCR-630



APCR-800



APCR-1000



CNC
CNCB
CNCT / CNCMT
NCF
Tailstock
Large Size Table
GCT
PT
APCR / APCI
Controller
Coupling
Accessories

CNC
CNCB
CNCT / CNCMT
NCF
Tailstock
Large Size Table
GCT
PT
APCR / APCI
Controller
Coupling
Accessories

CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

GCT

PT

APCR / APCI

Controller

Coupling

Accessories



- Easy operation, saving space of machine shop.
- Connecting with-CNC Rotary Table to M-Code of CNC M/C for equal division indexing machining.
- The best solution for conventional M/C which could not retrofitted 4th axis.
- Program capacity = 9 sets, minimum increment 0.001°

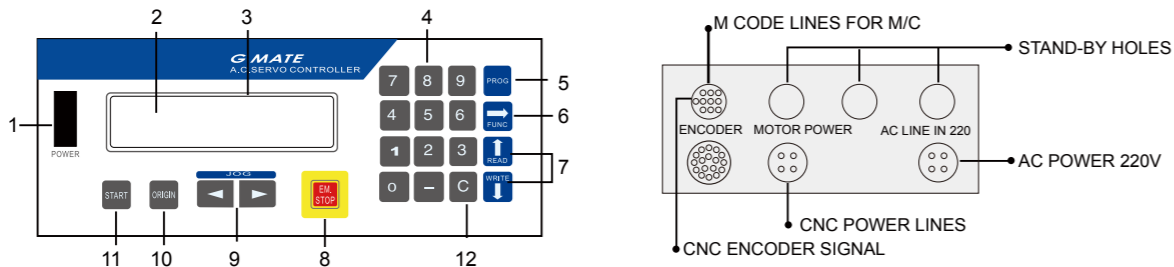
Suitable Rotary Table :

| | | | |
|-----------|-----------|----------|-----------|
| CNC-120R | CNC-200RB | CNC-400R | CNCMT-200 |
| CNC-170RB | CNC-250R | CNC-500R | CNCMT-320 |
| CNC-170R | CNC-250RB | CNC-630R | NCF-250 |
| CNC-200R | CNC-320R | CNC-800R | |

| ITEM | SPECIFICATION | ITEM | SPECIFICATION |
|---------------------|---|--------------------------------|---|
| Min. Increment | 0.001° | Key-Lock Function | Set Parameter # 7 to (1) |
| Programmable Angle | 1-999° | Mode Selection After Power On | Program mode / Run mode |
| Max. Equal Dividing | 2-999 equal dividing | Backlash Adjustment | Parameter # 17 |
| Emergency Stop | Whole system stop | Previous Step Display Function | Pushing "WRITE" key |
| Input System | key board | Next Step Display | Pushing "READ" key |
| Zero Return | Can be compensated by software / hardware | Standard Parameter Function | Parameter # 1-17 can be set easily |
| Feed rate | F1~F2000 (degree/sec.) | Motor | Meldas HC motor with feed back unit |
| Program Capacity | Nine programs, 99 steps for each program | Connection Cable | For input power/pulse coder, motor power cycle start / finish signal / brake signal |
| Jump Function | Jump to sub-program (code. 95) | Input Power | AC 240V/50Hz / three phase |
| Loop Count | Up to 999 times per step | Voltage | Below 48V/DC |

Example

| | | | |
|--------|---|--------|---|
| Step 1 | Turn (Power) switch on. | Step 5 | Push [PROG] to feed-rate (F), input "30" |
| Step 2 | Push and hold [PROG] and release display becomes blinking | Step 6 | Push [FUNC] to loops (L), input "4" |
| Step 3 | Push and hold [CLR] for 5 sec. or "00" display | Step 7 | Push [PROG] display become no blinking |
| Step 4 | Key in "9000" | Step 8 | Push [START] table start rotating 4 times |



| | | | |
|--|--|--|--|
| | 1. POWER SWITCH | | 8. EMERGENCY STOP BUTTON • The rotating table shows down and stop. • When (11) CYCLE START BUTTON is depressed again, the table rotates the remaining angle of the program. |
| | 2. PROGRAM STEP DISPLAY SCAN Present the step number you are on. | | |
| | 3. DATA DISPLAY SCAN To show either position, step angle feedrate or loop count. | | 9. JOG BUTTON To jog the movement at single step, holding for rapid movement after 150 pulse. |
| | 4. DATA ENTER KEYS Enter in data of program | | |
| | 5. MODE BUTTON To select in the PROGRAM or RUN mode • If the display is steady, you are in RUN mode. • If it is flashing on and off, you are in PROGRAM mode. | | 10. ZERO RETURN BUTTON In the RUN mode, push the button will return the table to Zero Point. |
| | 6. FUNCTION BUTTON To view the piece of data in the display scan of the controller. | | |
| | 7. STEP READ or WRITE BUTTON • Scans step number from 1-99. • To read or write preventor or next step. | | 11. CYCLE START BUTTON The table rotates as programmed. |
| | | | |
| | 12. CLEAR BUTTON • In the RUN mode, it resets the "P" display to zero. • In the PROGRAM mode, it is used to clear the current line or collect the error | | |

CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

GCT

PT

APCR / APCI

Controller

Coupling

Accessories



- Easy operation, saving space of machine shop.
- Connecting with-CNC Rotary Table to M-Code of CNC M/C for equal division indexing machining.
- The best solution for conventional M/C which could not retrofitted 4th axis.
- Program capacity = 9 sets, minimum increment 0.001°

Suitable Rotary Table :

| | | | |
|-----------|-----------|----------|-----------|
| CNC-120R | CNC-200RB | CNC-400R | CNCMT-200 |
| CNC-170RB | CNC-250R | CNC-500R | CNCMT-320 |
| CNC-170R | CNC-250RB | CNC-630R | NCF-250 |
| CNC-200R | CNC-320R | CNC-800R | |

| ITEM | SPECIFICATION | ITEM | SPECIFICATION |
|---------------------|---|----------------------------------|--|
| Min. Increment | 0.001° | Key-Lock Function | Set Parameter #7 to (0) |
| Programmable Angle | 0+/-359.999° | | |
| Max. Equal Dividing | 0+/-359.999° | | |
| Emergency Stop | Whole system stop | Mode Selection After Power On | Program mode / Run mode |
| Input System | key board or RS232C | Backlash Adjustment | Parameter number # 10 |
| Zero Return | Can be compensated by hardware / software | Previous Step Display Function | Pushing "↑" key |
| Feed rate | 1~999.9 deg / sec | Next Step Display | Pushing "↓" key |
| Program Capacity | 10 Programs, 99 steps for each program | Standard Parameter | Parameter PA01-26, PA50-66 can be set easily |
| Jump Function | Jump to sub-program | Compensation Function of Encoder | Optional PA48=2 |
| Loop Count | Up to 999 times per step | | |

Example

| | | | |
|--------|---|--------|---|
| Step 1 | Turn (Power) switch on. | Step 5 | Push PROG to feed-rate (F), input "30" |
| Step 2 | Push and hold PROG and release display becomes blinking | Step 6 | Push FUNC to loops (L), input "4" |
| Step 3 | Push and hold CLR for 5 sec. or "00" display | Step 7 | Push PROG display become no blinking |
| Step 4 | Key in "9000" | Step 8 | Push START table start rotating 4 times |

NO. SPECIFICATION

| | | |
|----|---|--|
| 1 | Program step display : Present the step number | |
| 2 | Data display : To show either position, step angle, feedrate or count | |
| 3 | Led Indicator : There are 8 LED indicators on the control panel. | |
| 4 | "STEP/PROG" KEY : During either run or program mode this key is used touches other programs. Press this key and the "Program" & "Step" number flash. | |
| 5 | "MODE KEY" : This key toggles the control between run and program mode. | |
| 6 | "INS" KEY (INSERT) Insert a program step into memory in program mode. | |
| 7 | "→" RIGHT ARROW KEY : This key has the following functions: a. In both run and program mode it changes the control display from "P","S","F","L","P","S"...Entries. b. In program mode for parameter entry it scrolls display through parameter settings. c. Scrolling or directing programmer or parameter access. | |
| 8 | "↑" THE UP ARROW KEY : Scrolls the program up through steps or up through parameters. | |
| 9 | "↓" THE DOWN ARROW KEY : Scrolls the program up through steps or through parameters. | |
| 10 | NUMERIC KEYS(0 to 9) : Data entered has the numeric or mathematical face value of key pressed. "+/-" KEY (PLUS / MINUS) : this key has 2 functions: a. Sets the motor running direction in program mode for an incremental move. b. Selects the alpha "Op Code" (a through d) during program mode. During op code selection press the "+/-" key scrolls the program from op code A to op code D. | |
| 11 | "STOP KEY" : Press this key stops program execution or motor running. During motor running press the "STOP" key once-motor stops and the stop "LED" lights. Press the "Start" key to continue the remaining unexcited portion of this step. But, if another key is pressed or the "STOP" key is pressed again the unexcited portion of the step is lost. Press the "Start" key now executes the current full-programmed step again. | |
| 12 | "START KEY" : This key is functional only in the "RUN" mode. When this key is pressed the current step shown on display will be executed. For the duration of the motor running or program executing the "LED" above the "Start" key is illuminated. This "Start" key and the "Remote Start" signal perform the same function-that is initiating a motor moving. | |
| 13 | "Home KEY" : The home functions are defined in parameters PA11, PA12 and PA13. (See the parameter section). parameter 04 establishes the "ZERO" or "HOME" speed and parameter 01 establishes the home acceleration or deceleration values. | |
| 14 | "Zero KEY" : Pressing this key returns the motor to the absolute zero position. Parameter 04 establishes the "ZERO" or "HOME" speed and parameter 01 establishes the "ZERO" acceleration or deceleration values. | |
| 15 | "+JOG" AND "-JOG" KEY : Holding either of these 2 keys down causes the motor rotate in the corresponding direction. Parameter 03 establishes the jog speed and parameter 02 establishes the jog acceleration or deceleration values. | |

NO. SPECIFICATION

| | | |
|----|---|--|
| 1 | Motor Connection : The motor connector is 14 pin MS type with part no MS3-102A-20-27S. | |
| 2 | Encoder Connection : The motor connector is 10 pin MS type with part no MS3-102A-18-1P. | |
| 3 | Interface Signal : The interface connector is 17 pin MS type with part no MS-3102A-20-29P. | |
| 4 | Hand Wheel Connection : Please also see PA24 for further detail about the hand wheel control. | |
| 5 | RS232C Connection : The RS232C connector is a 9 pin D type connector. pin 2 and pin 3 / pin 7 and pin 8 are exchanged inside the controller. So, please use a one to one connection cable for this connector. | |
| 6 | Faceplate Encoder Connection : The faceplate encoder is an option only for those models, which have dual feedback feature. | |
| 7 | Brake Solenoid (DC24V) | |
| 8 | AC Power Input : Please supply 110V/220 VAC with minimum 10 Amp to this power socket. | |
| 9 | Fuse 10A/15A : Please use a 10A/15 Amps rating current / 3 cm / slow blow main fuse for this controller. | |
| 10 | FG | |

CNC

CNCB

CNCT / CNCMT



Chuck / Hydraulic Cylinder / Tailstock with Rotary Table Application

Chart 1

| Suitable Rotary Table | | CNC-120R | CNC-170R | CNC-200R | CNC-250R | CNC-320R | CNC-400R | CNC-500R | CNC-630R | CNC-800R |
|------------------------------------|--------------|----------|----------|----------|----------|-------------------|-------------------|----------|-------------|-------------|
| Manual Scroll chuck | Model NO. | SC-4 | SC-6 | SC-7 | SC-8 | SC-10 | SC-12 | SC-12 | SC-12 SC-16 | SC-12 SC-16 |
| | Size | 4" | 6" | 7" | 8" | 10" | 12" | 12" | 12" 16" | 12" 16" |
| Hydraulic chuck (Non Through hole) | Model NO. | V-206 | V-206 | V-206 | V-208 | V-210 | V-212 | V-212 | V-215 V-218 | V-215 V-218 |
| | Size | 6" | 6" | 6" | 8" | 10" | 12" | 12" | 15" 18" | 15" 18" |
| Rotary Hydraulic cylinder | Model NO. | MH100 | MH100 | MH100 | MH125 | MH125 | MH150 | MH150 | MH200 | MH200 |
| Tailstock Type | Manual | TS-A115 | TS-A135 | TS-A160 | TS-B185 | TS-B210 | TS-B250 | TS-C310 | TS-C400 | TS-C480 |
| | Pneumatic | TS-A115P | TS-A135P | TS-A160P | TS-B185P | TS-B210P | TS-B250P | TS-C310P | TS-C400P | TS-C480P |
| | Hydraulic | TS-A115H | TS-A135H | TS-A160H | TS-B185H | TS-B210H | TS-B250H | TS-C310H | TS-C400H | TS-C480H |
| | Strong (P/H) | TSA-120S | TSA-200S | TSA-200S | TSA-251S | TSA-251S TSA-320S | TSA-251S TSA-320S | TSA-320S | TSA-320S | TSA-320S |

- ※ SC series is 3-jaw scroll chuck and internal and external jaws can be used interchangeably.
- ※ SIC series is 4-jaw scroll. Gripping of square or octagonal workpieces could fit into central line automatically. SIC series has high stability in gripping thin tube workpieces.
- ※ SK series is 3-jaw strong scroll chuck. The hard jaws are suitable for heavy cutting and soft jaws suitable for light and precision cutting. The hard jaws could be used as internal and external jaws.
- ※ SIK series is 4-jaw strong scroll chuck. The hard jaws are adopted for square or octagonal thin tube workpieces machining. The soft jaws could grip rectangular workpiece after being unisotropic machined.

GCT

PT

APCR / APCI

Controller

Coupling

Accessories



Accuracy of Table and Encoder

Chart 2

| | Encoder Accuracy | Table Accuracy |
|----------------------------|------------------|----------------|
| RON275 RON285 RCN223 | ±5" | 10" |
| RON287C RCN227F | ±2.5" | 7" |
| RON886 | ±1" | 5" |

CNC

CNCB

CNCT / CNCMT

NCF

Tailstock

Large Size Table

GCT

PT

APCR / APCI

Controller

Coupling

Accessories



Motor Torque Chart

| STALL TORQUE | 1Nm | 2Nm | 3Nm | 4Nm | 8Nm | 12Nm | 22Nm | 30Nm | 40Nm |
|--------------|-----------|-----------|---------|------------|------------|------------|-------------|-------------|------------|
| FANUC | α 1/5000i | α 2/5000i | | α 4/4000i | α 8/3000i | α 12/3000i | α 22/3000i | α 30/3000i | α 40/3000i |
| | SVM1-20i | | | SVM1-40i | | SVM1-80i | | SVM1-120i | SVM1-160i |
| | | | | | α c4/3000i | α c8/2000i | α c12/2000i | α c22/2000i | |
| | | | | | β 4/4000i | β 8/3000i | β 12/3001is | β 22/3001is | |
| | | | | β SVM1-20i | | β SVM1-40i | | | |
| SIEMENS | 1FK7042 | | 1FK7060 | 1FK7063 | 1FK7083 | 1FK7101 | 1FK7103 | 1FK7103 | 1FK7105 |
| MITSUBISHI | HF-75T | HF-54T | HF-104T | HF-154T | HF-204S | HF-354S | HF-453S | HF-703S | |
| HEIDENHAIN | QSY96A | QSY96G | QSY116C | | QSY116E | QSY155B,C | QSY155D | QSY155F | QSY190D |

- ※ Please choose the suitable characteristics (stall torque, MAX. torque and rotor inertia etc.) of the servo motors according to different size of CNC rotary table.
- ※ Other servo motor can be installed, please inform dimension and specification of servo motor in advance.
- ※ MAX. R.P.M of the servo motor(CNC rotary table) is decided from the acceleration characteristics of the servo motor and the practical load test.

(1)Hydraulic Unit



(2)PHC Booster



(3)Jig Fixture





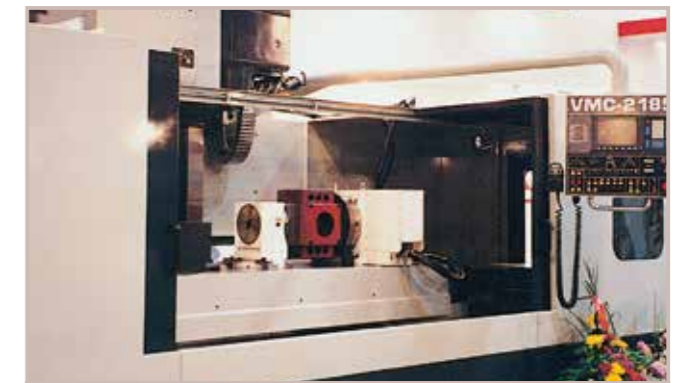
CNC-200R
Application : Vertical Machining Center



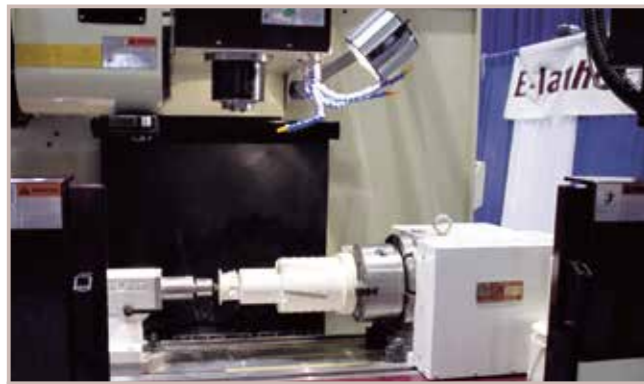
CNC-200R
Application : Vertical / Horizontal Machining Center



NCF-400 + TSA-251S(Strong Tailstock)
Application : Vertical / Horizontal Machining Center



NCF-400 + TSA-251S (Special tailstock + 4 faces fixture plate)
Application : Vertical / Horizontal Machining Center



CNC-250R
Application : Vertical / Horizontal Machining Center



CNC-320R + TSA-320S(Strong Tailstock)
Application : Vertical Machining Center



CNCT-100
Application : Vertical Machining Center



CNCT-200
Application : Vertical Machining Center



CNC-320R
Application : Vertical Machining Center



CNC-320 + TS-B210(Tailstock)
Application : Vertical Machining Center



CNCT-450
Application : Vertical Machining Center



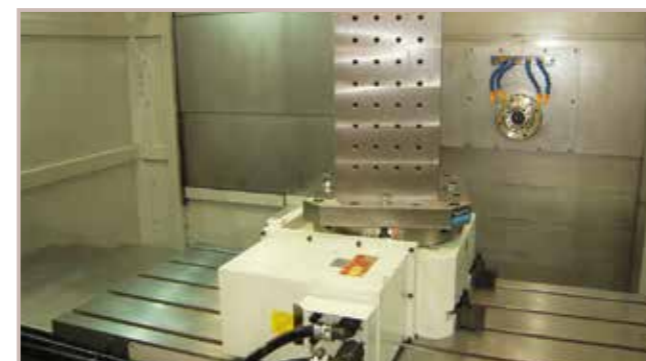
CNCT-800
Application : Large Size Machining Center



CNC-800R + G-Mate or M-Mate
Application : Horizontal Machining Center or Conventional Machine



CNC-1500RV
Application : Horizontal Machining Center



HIT-400
Application : Horizontal Machining Center



HRT-1500
Application : Horizontal Machining Center