NIKKEN

CNC ROTARY TABLE for FANUC ROBODRILL

NCT200LFA

5AX-DD200BF2

CNC205LFA

5AX-201FA

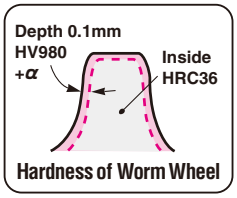
5AX-100FA

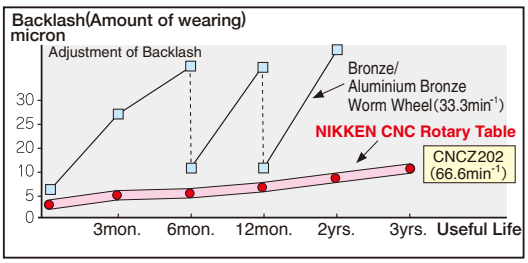
NIKKEN KOSAKUSHO WORKS, LTD.
CAT.NO.8211

ANTI-WEARING, HIGH RIGIDITY and HIGH SPEED ROTATION

Worm Wheel

Specially hardened and furthermore ion-nitrided on the tooth. Thus, the problem of the sliding friction is solved. The hardness of the tooth surface and inside is shown at right hand side.





Worm Wheel of Others
(Bronze/Aluminium Bronze)

It is not exaggeration that the most important parts of the CNC rotary table is worm system. Please choose NIKKEN CNC rotary table with special worm system for our anti-wearing, high rigidity and high speed rotation.

CNC Rotary Table for ROBODRILL

NIKKEN

When mounting a CNC ROTARY TABLE on ROBODRILL, the machine needs an additional axis option.
(Servo amplifier, connector unit, etc.)
You need to be careful when using CNCROTARY tables in foreign countries. In the case of machines for Europe and China, the connector unit is different from that for general use Please contact the machine specifications when ordering.
If you want to mount the tilt CNC rotary table on a machine that supports only one additional axis, or if you can not prepare the additional axis, you can select with a NIKKEN controller.

ROBODRILL α-DSiB5 Series

α-D14SiB5 / α-D14SiB5ADV α-D21SiB5 / α-D21SiB5ADV ☞ P.3	CNC105LFA CNC205LFA 5AX-100FA 5AX-DD100AF

ROBODRILL α-DMiB5 Series

α-D14MiB5 / α-D14MiB5ADV α-D21MiB5 / α-D21MiB5ADV α-D14LiB5 / α-D14LiB5ADV α-D21LiB5 / α-D21LiB5ADV ☞ P.6	CNC180LFA CNC202LFA CNC205LFA CNC260LFA NCT200LFA NCT200ELFA 5AX-130FA 5AX-201FA 5AX-DD200AF2 5AX-DD200BF2

How to Select Your Best CNC Rotary Table

NIKKEN

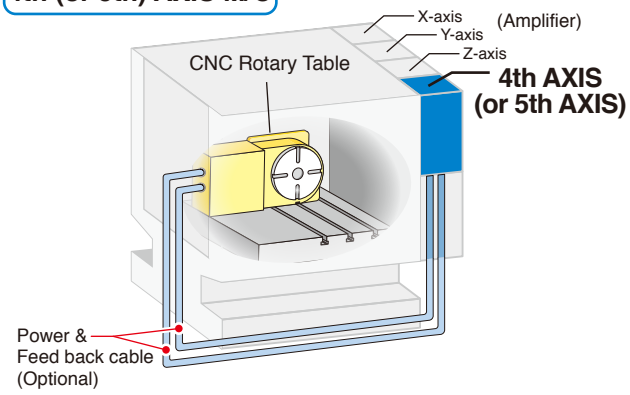
How CNC Rotary Table is Controlled

Additional Axis

You can choose additional axis when the machine has 4th or 5th axis.
CNC rotary table can be controlled by machine in this case.

1. 4th or 5th amplifier is required for the machine. It should be used exactly the same one used for X, Y and Z axis. Install same servomotor(s) used for X, Y and Z axis.
2. The type of the servomotor or amplifier is defined by the types of rotary table.
3. Decide by whom servomotor will be supplied.
4. External dimensions and specifications depend on the type of servomotor.
5. Parameter configuration, hydraulic connection, wiring and installation of amplifiers should be provided by machine tool builders.

4th (or 5th) AXIS M/C

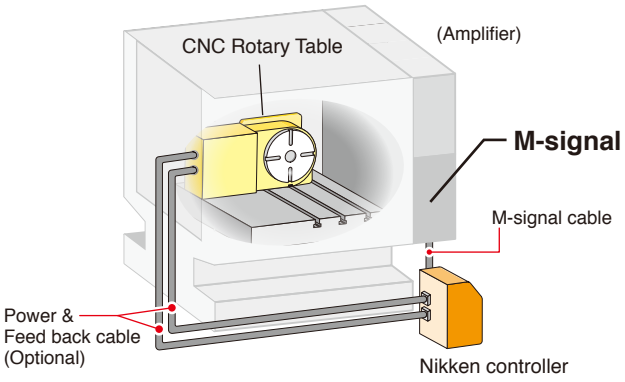


NIKKEN Controller (M-signal)

You can choose NIKKEN Controller when the machine doesn't have additional axis.
Note: at least one M-signal code is required.

1. At least one M-Signal is required on the machine.
2. Input M-signal as "index start" command on the machine, high accuracy indexing, equally divided indexing (2-9999), or lead operation is allowed.
3. Control unit, servo-motor and all cables will be supplied by NIKKEN.

3th AXIS M/C



How to Read Product Code

NIKKEN

CNC 180 L F A - M

- CNC
- 180 : Diameter of the rotary table face plate (mm)
- L : Motor mounting location Non: Right mount, L : Left mount, B: Back mount, T : Top mount
- F : Motor maker (*Code No.)
- A : Type of motor Non : DC servo, A: AC servo
- M : With / without Motor Non : without motor M : with motor

M-signal CTRL	*Code No.
αi21Controller	AA21
*5AX : Both Axis	WAA21
*5AX : Each Axis	DAA21
EZController	EZ

Makers for Additional Axis CTRL	*Code No.
FANUC	F

● Single Axis CNC Rotary Table

NCT200 EL F A - M

- NCT200 : Code No. of vertical/horizontal type CNC rotary table
  CNC Rotary Table
  NCT : Standerd
  NCTZ : High Speed
- EL : Diameter of the rotary table face plate (mm)
- F : Face Plate
  W/O Face Plate : E
  With Face Plate : No Letter
- A : Motor mounting location
  Non: Right mount, L: Left mount
- A : Motor maker
- A : Type of motor Non: DC servo, A: AC servo
- M : With/without Motor
  Non: without motor
  M: with motor

NCT200

● 5AX Rotary & Tilting Table

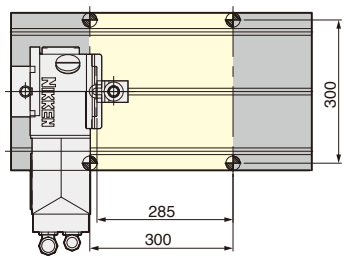
5AX- 201 F A - M

- 5AX : Code No. of Rotray & Tilting Table
- 201 : Diameter of the table face plate (mm)
- F : Motor maker
- A : Type of motor Non: DC servo, A: AC servo
- M : With/without Motor
  Non: without motor, M: with motor

5AX-201

CNC ROTARY TABLE for ROBODRILL α-DSiB5/α-DSiB5ADV

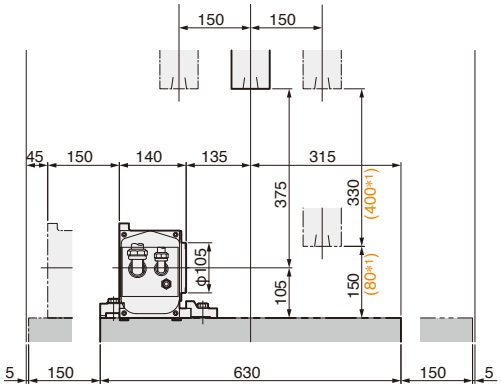
CNC105LFA

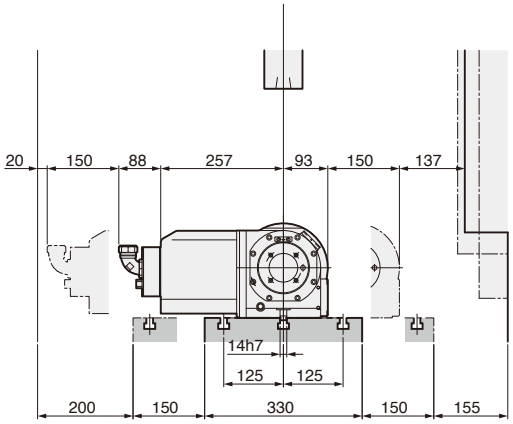


COMPACT CNC ROTARY TABLE

- Diameter of Table : Φ105mm
- MAX. Work Load : 30kg
- MAX. Rotation Speed : 33.3(min-1),**66.6(min-1)**∗1
- Indexing Accuracy : ±30sec.
- Brake Torque : 205N·m
- Net Weight : 30kg
- Servo Motor : αiF1/5000
- Spindle Hole : Φ60mmH7×Φ30mm Through Hole

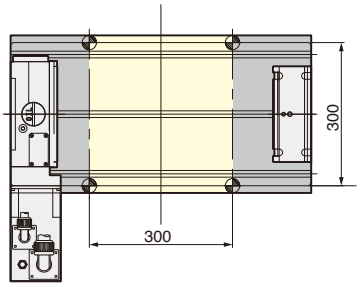
∗1:High speed Z series





(∗1)The figures with orange color are the figures for(**α-DSiB5ADV Series**)

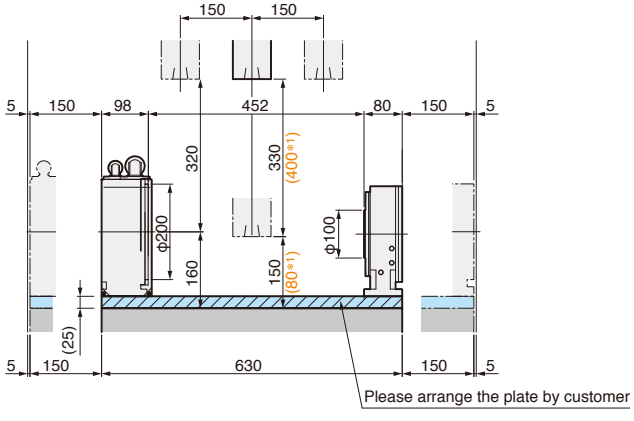
CNC205LFA(TAS-100N)

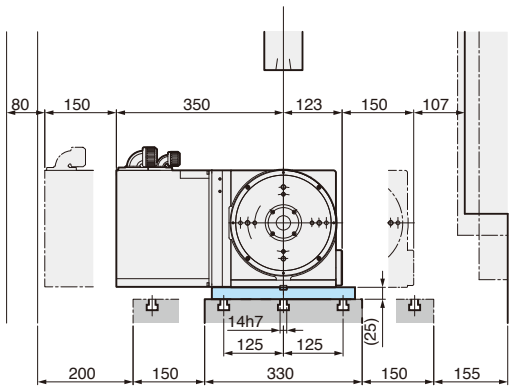


Slim type CNC ROTARY TABLE

- Diameter of Table : Φ200mm
- MAX. Work Load : 100kg(with support table)
- MAX. Rotation Speed : 33.3(min-1),**66.6(min-1)**∗1
- Indexing Accuracy : ±20sec.
- Brake Torque : 380N·m
- Net Weight : 45kg
- Servo Motor : αiF2/5000
- 6 ports buit rotary joint can be fitted

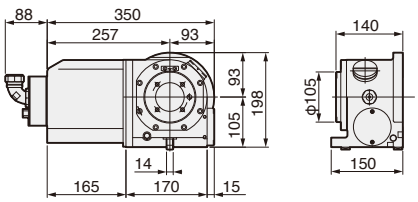
∗1:High speed Z series



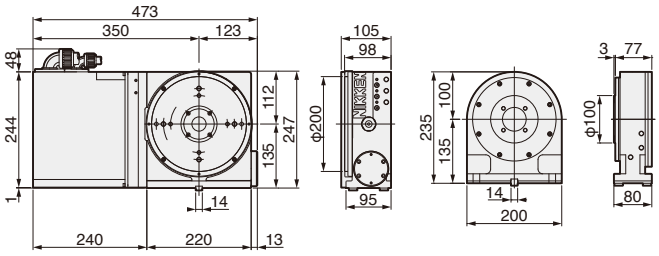


(∗1)The figures with orange color are the figures for(**α-DSiB5ADV Series**)

CNC105LFA

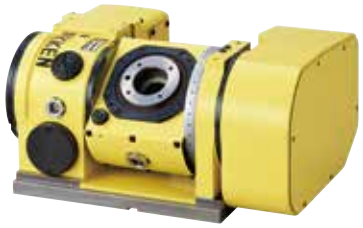


CNC205LFA(TAS-100N)



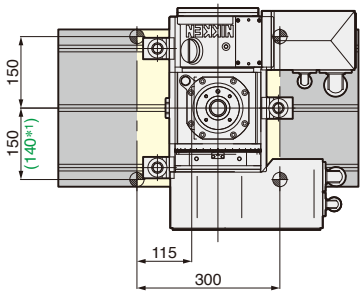
5AX TILTING ROTARY TABLE for ROBODRILLα-DSiB5 NIKKEN

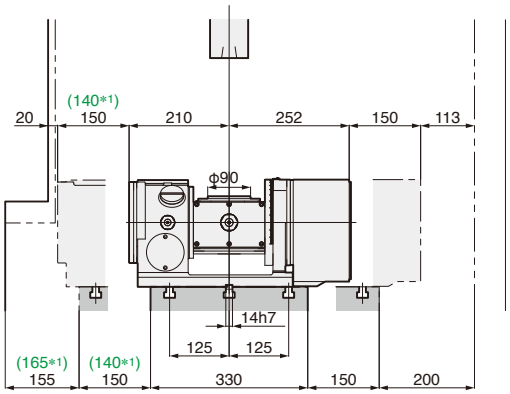
5AX-100FA

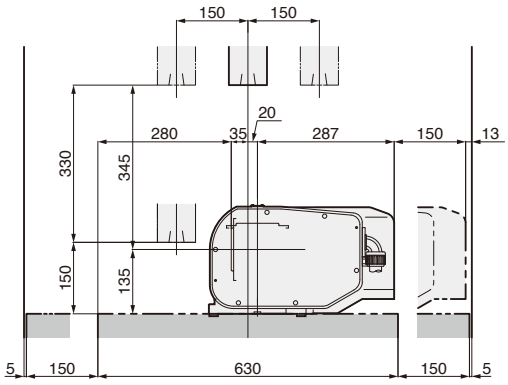


Compact 5AX TILTING ROTARY TABLE

- ●Diameter of Table : Φ90mm
- ●MAX. Work Load : 20kg(Vertical)40kg(Horizontal)
- ●MAX. Rotation Speed : 44.4(min-1)(Rotary),22.2(min-1)(Tilting)
- ●Indexing Accuracy : ±30sec.(Rotary), 60sec.(Tilting)
- ●Brake Torque : 200N·m(Rotary), 410N·m(Tilting)
- ●Net Weight : 84kg
- ●Servo Motor : αiF1/5000(Rotary)
  αiF1/5000(Tilting)
- ●Spindle Hole : Φ50mmH7×Φ30mm Through Hole
- ●Tilting Angle : 0°～105°



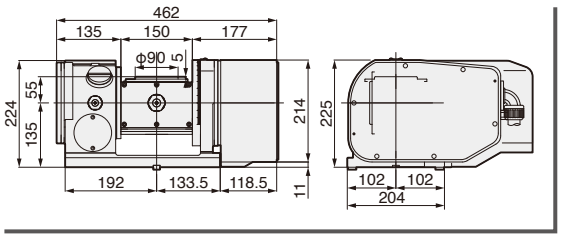


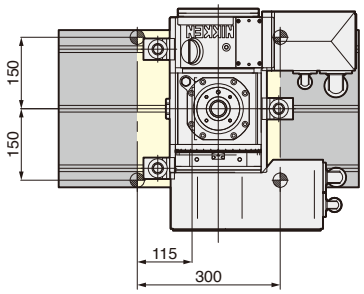


(*1)The figures with green color are the figures for metal cover.

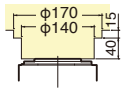
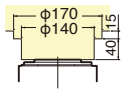
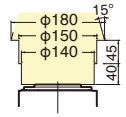
5AX TILTING ROTARY TABLE for ROBODRILLα-DSiB5ADV NIKKEN

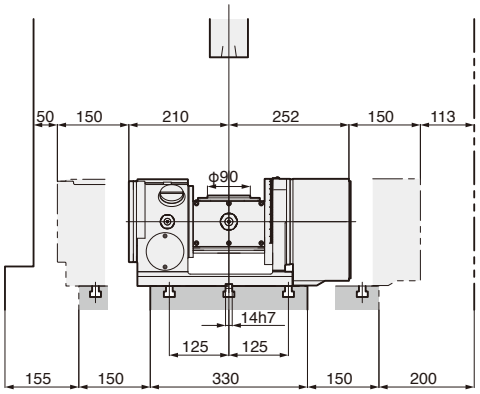
5AX-100FA

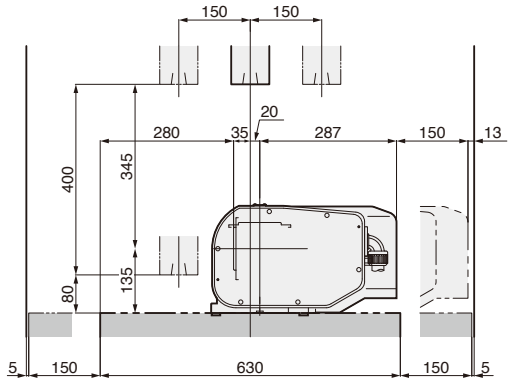




■The Area of Noninterference in Tilting Position.

Angle	5AX-100FA
0° ⟆ 45°	
0° ⟆ 90°	
0° ⟆ 105°	





Extensive Lineup of Attachments

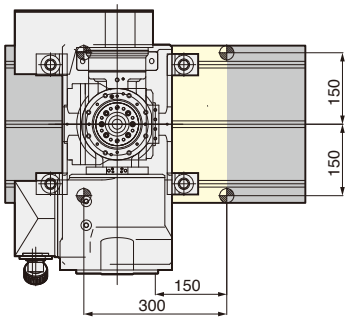
Jig Plate

Scroll Chuck

Center Socket

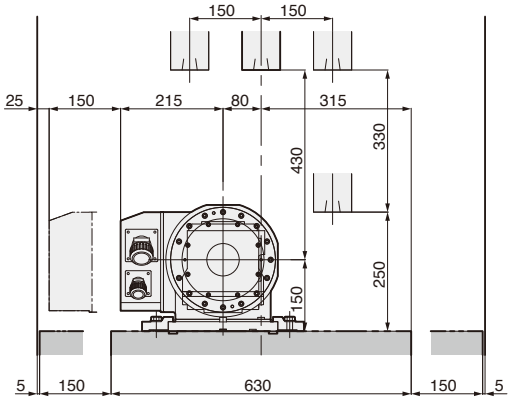
CONPACT TILTING ROTARY TABLE WITH DD MOTOR for ROBODRILL α-DSiB5 NIKKEN

5AX-DD100AF

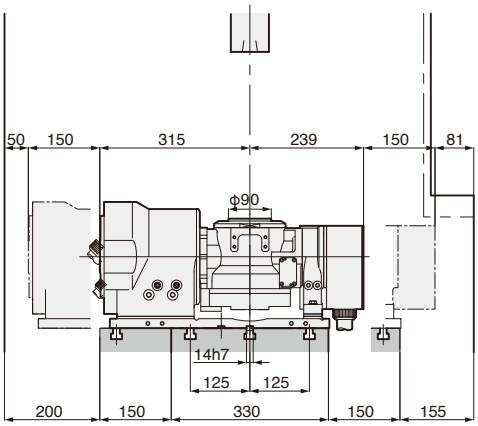


Compact 5AX TILTING ROTARY TABLE with DD

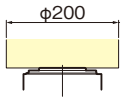
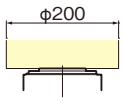
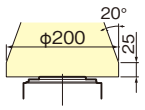
- ●Diameter of Table : Φ90mm
- ●MAX. Work Load : 10kg(Vertical)20kg(Horizontal)
- ●MAX. Rotation Speed : 200min^{-1}(Rotary),100min^{-1}(Tilting)
- ●Indexing Accuracy : ±10sec.(Rotary), ±15sec.(Tilting)
- ●Brake Torque : 75N·m(Rotary), 205N·m(Tilting)
- ●Net Weight : 120kg
- ●Servo Motor : DiS15 / 1000(Rotary)
  DiS60 / 400(Tilting)
- ●Spindle Hole : Φ50mm$_{H7}$×Φ20mm Through Hole
- ●Tilting Angle : 0°～110°



Layout with 100mm high column

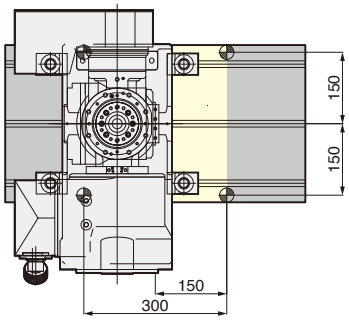


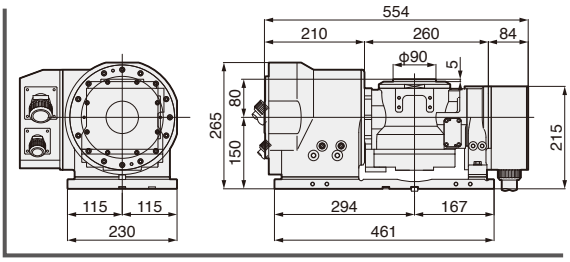
■The Area of Noninterference in Tilting Position.

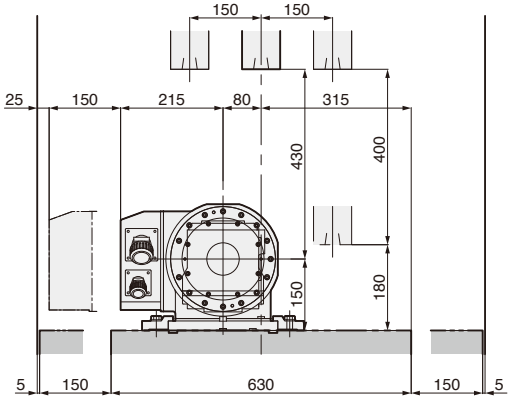
Angle	5AX-DD100AF
0° ∫ 45°	
0° ∫ 90°	
0° ∫ 110°	

CONPACT TILTING ROTARY TABLE WITH DD MOTOR for ROBODRILL α-DSiB5ADV NIKKEN

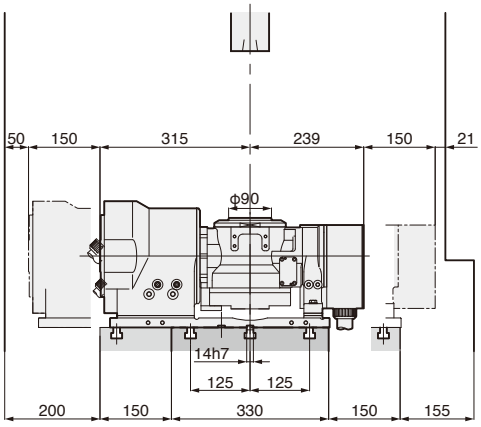
5AX-DD100AF







Layout with 100mm high column



Opens up New Possibilities for Machining with Compact M/C

Suitable for many applications, from IT parts to automotive parts.

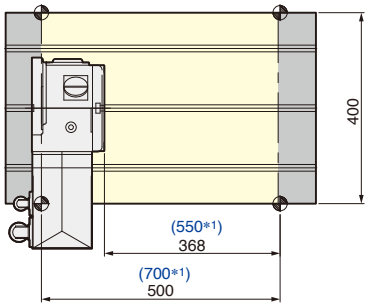
High-precision 5-axis machining of precision electronic devices such as smartphones, automobile parts, etc. can be accomplished using a compact machining center.

Impeller

5AX-DD200AF2

CNC ROTARY TABLE for ROBODRILL α-DMiB5/α-DMiB5ADV NIKKEN

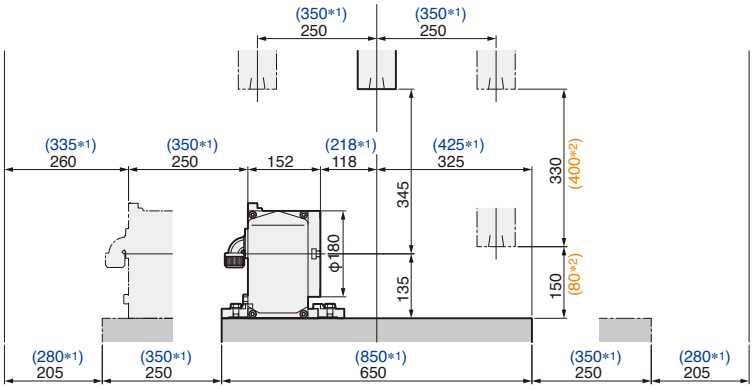
CNC180LFA

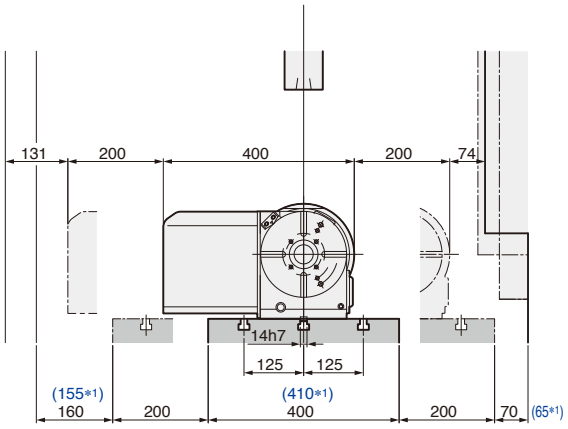


CNC ROTARY TABLE

- ●Diameter of Table : Φ180mm
- ●MAX. Work Load : 100kg(Vertical)200kg(Horizontal)
- ●MAX. Rotation Speed : 33.3(min-1),**66.6(min-1)***1
- ●Indexing Accuracy : ±20sec.
- ●Brake Torque : 303N·m
- ●Net Weight : 45kg
- ●Servo Motor : αiF1/5000
- ●Spindle Hole : Φ60mmH7×Φ40mm Through Hole

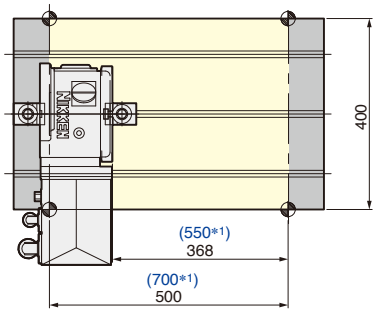
*1:High speed Z series





(　　*1)The figures with blue color are the figures for (α-DLiB5)
(　　*2)The figures with orange color are the figures for(α-DiB5ADV Series)

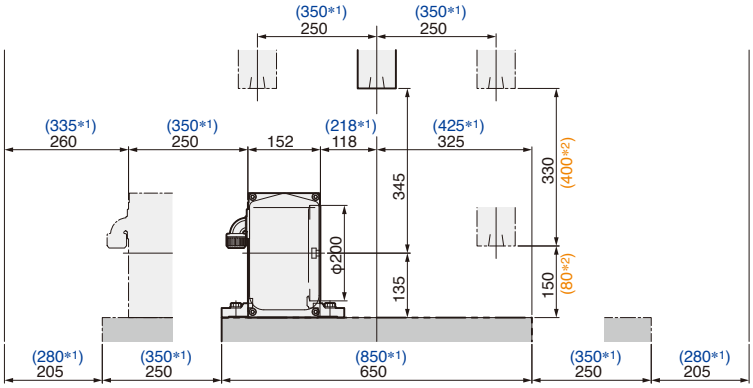
CNC202LFA

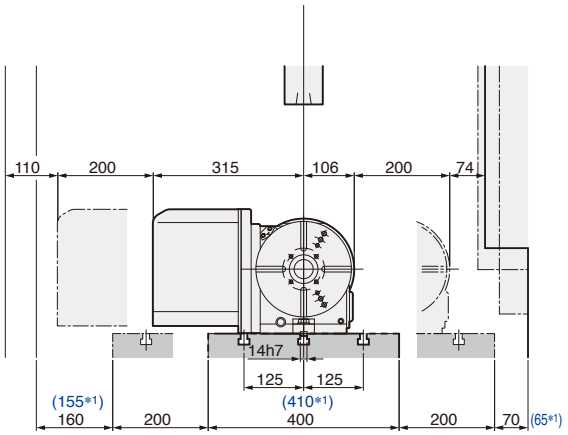


CNC ROTARY TABLE

- ●Diameter of Table : Φ200mm
- ●MAX. Work Load : 100kg(Vertical)200kg(Horizontal)
- ●MAX. Rotation Speed : 33.3(min-1),**66.6(min-1)***1
- ●Indexing Accuracy : ±20sec.
- ●Brake Torque : 303N·m
- ●Net Weight : 55kg
- ●Servo Motor : αiF4/5000
- ●Spindle Hole : Φ60mmH7×Φ40mm Through Hole

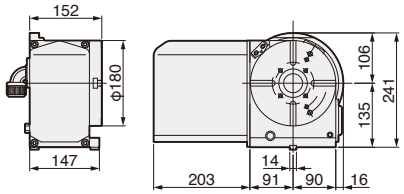
*1:High speed Z series



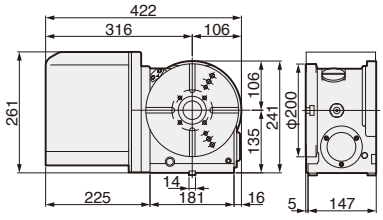


(　　*1)The figures with blue color are the figures for (α-DLiB5)
(　　*2)The figures with orange color are the figures for(α-DiB5ADV Series)

CNC180LFA

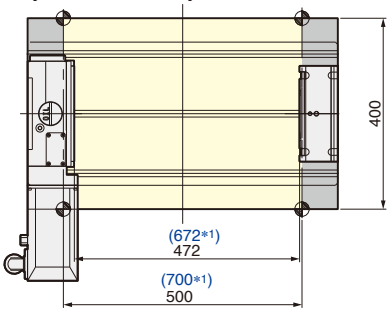


CNC202LFA



CNC ROTARY TABLE for ROBODRILL α-DMiB5/α-DMiB5ADV

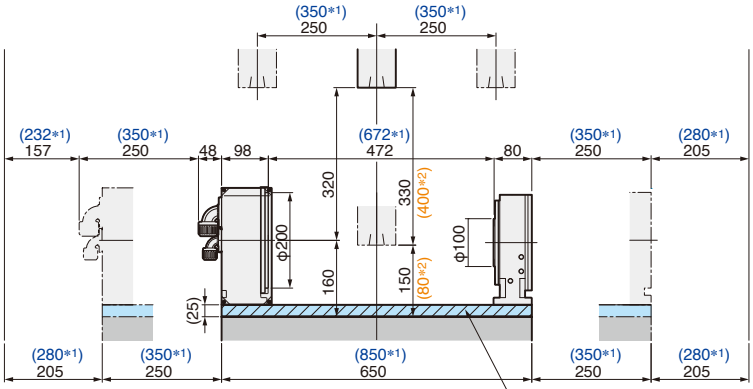
CNC205LFA (TAS-100N)

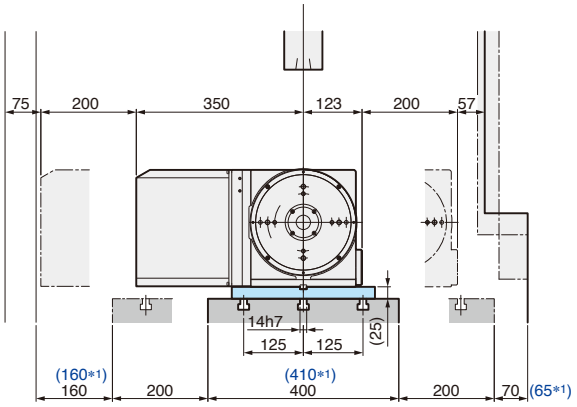


Slim type CNC ROTARY TABLE

- ●Diameter of Table : Φ200mm
- ●MAX. Work Load : 100kg (with support table)
- ●MAX. Rotation Speed : 33.3 (min^{-1}), **66.6 (min^{-1})** *1
- ●Indexing Accuracy : ±20sec.
- ●Brake Torque : 380N·m
- ●Net Weight : 45kg
- ●Servo Motor : α iF2/5000
- ●6 ports buit rotary joint can be fitted

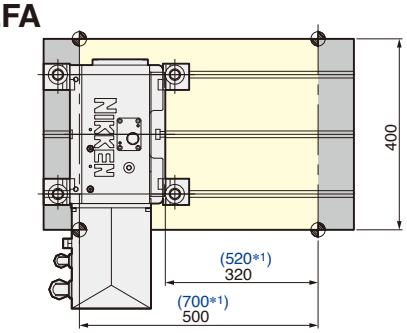
*1:High speed Z series





(*1) The figures with blue color are the figures for (α-DLiB5)
(*2) The figures with orange color are the figures for (α-DiB5ADV Series)

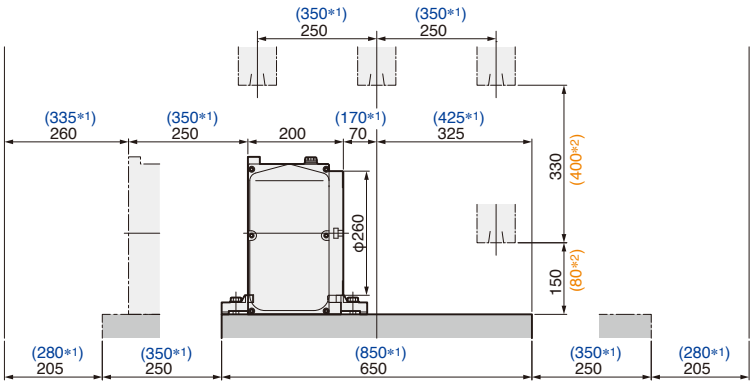
CNC260LFA

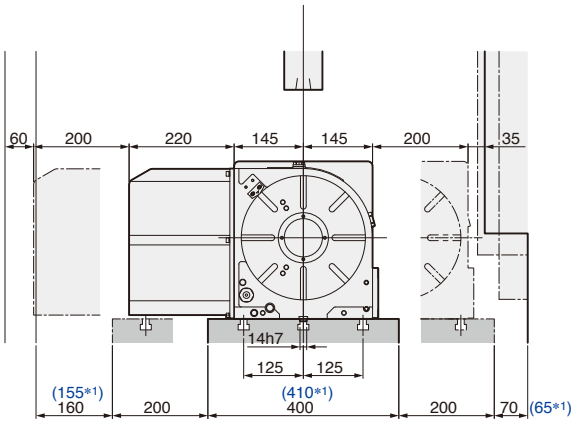


CNC ROTARY TABLE

- ●Diameter of Table : Φ260mm
- ●MAX. Work Load : 150kg(Vertical)300kg(Horizontal)
- ●MAX. Rotation Speed : 25 (min^{-1}), **50 (min^{-1})** *1
- ●Indexing Accuracy : 20sec.
- ●Brake Torque : 588N·m (Pneumatic), 1568N·m (Hydraulic)
- ●Net Weight : 120kg
- ●Servo Motor : α iF4/5000
- ●Spindle Hole : Φ80mm H7 Through Hole

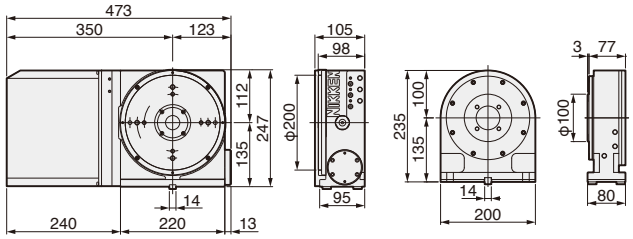
*1:High speed Z series



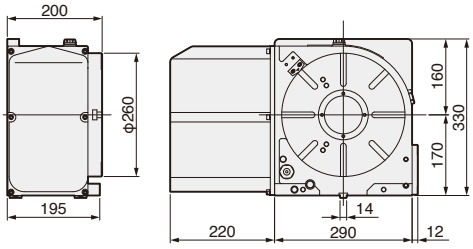


(*1) The figures with blue color are the figures for (α-DLiB5)
(*2) The figures with orange color are the figures for (α-DiB5ADV Series)

CNC205LFA (TAS-100N)

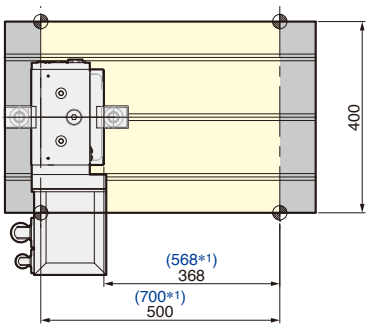


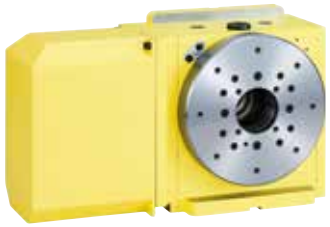
CNC260LFA



CNC ROTARY TABLE for ROBODRILLα-DMiB5/α-DMiB5ADV NIKKEN

NCT200LFA

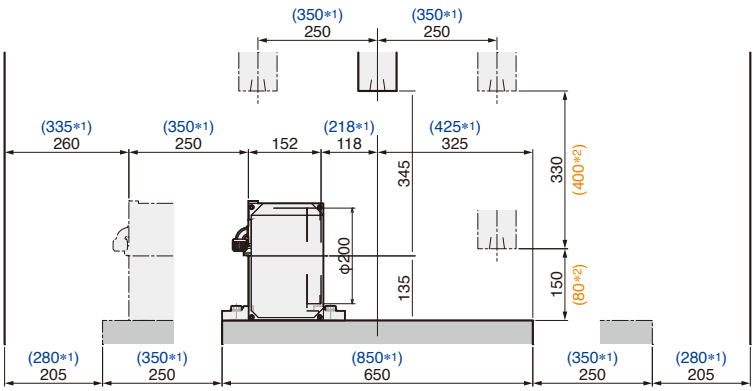


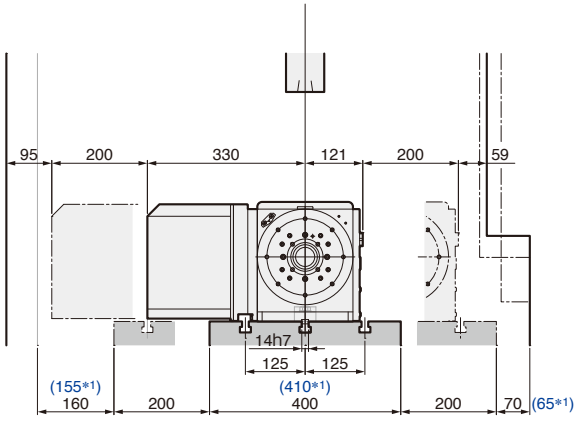


NCT ROTARY TABLE

- ●Diameter of Table : Φ200mm
- ●MAX. Work Load : 100kg(Vertical) 200kg(Horizontal)
- ●MAX. Rotation Speed : 33.3(min-1),**66.6(min-1)***1
- ●Indexing Accuracy : ±20sec.
- ●Brake Torque : 900N·m
- ●Net Weight : 65kg
- ●Servo Motor : αiF4/5000
- ●Spindle Hole : Φ60mmH7×Φ40mm Through Hole

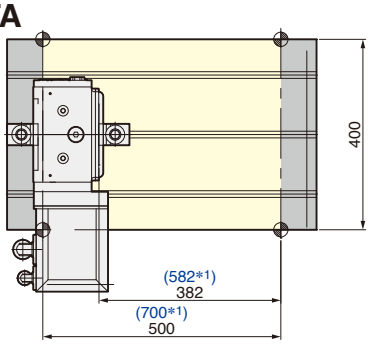
*1:High speed Z series





(　*1)The figures with blue color are the figures for (α-DLiB5)
(　*2)The figures with orange color are the figures for (α-DiB5ADV Series)

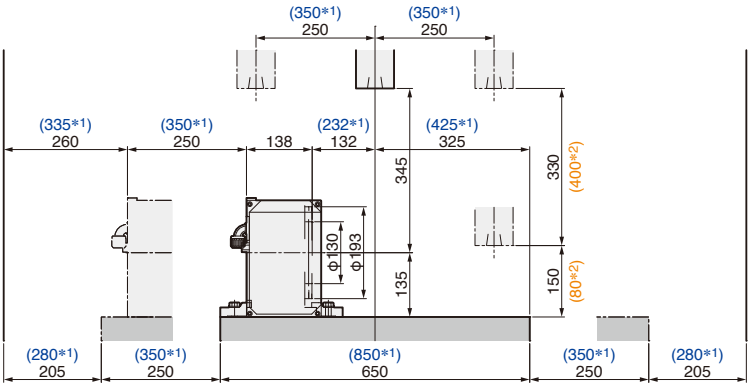
NCT200ELFA

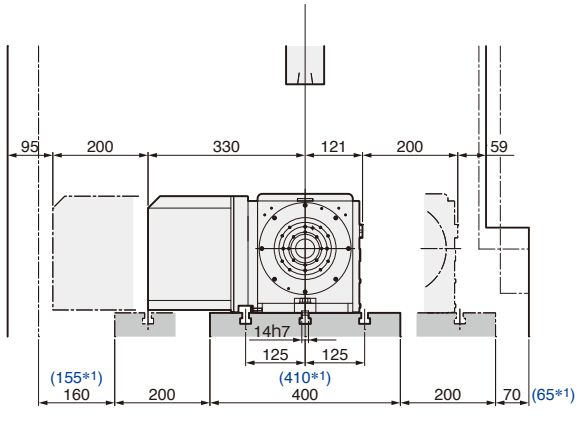


NCT ROTARY TABLE (Without φ200 face plate)

- ●Diameter of Table : Φ130mm
- ●MAX. Work Load : 100kg(Vertical) 200kg(Horizontal)
- ●MAX. Rotation Speed : 33.3(min-1),**66.6(min-1)***1
- ●Indexing Accuracy : ±20sec.
- ●Brake Torque : 900N·m
- ●Net Weight : 62kg
- ●Servo Motor : αiF4/5000
- ●Spindle Hole : Φ60mmH7×Φ40mm Through Hole

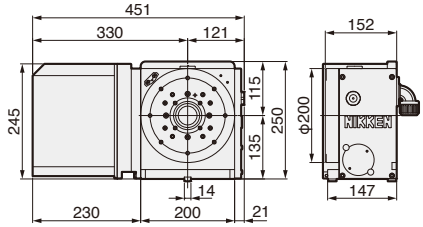
*1:High speed Z series



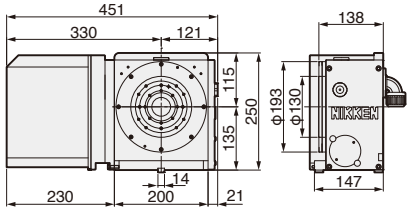


(　*1)The figures with blue color are the figures for (α-DLiB5)
(　*2)The figures with orange color are the figures for (α-DiB5ADV Series)

NCT200LFA

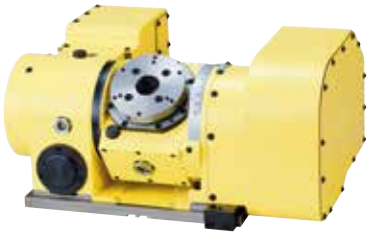


NCT200ELFA



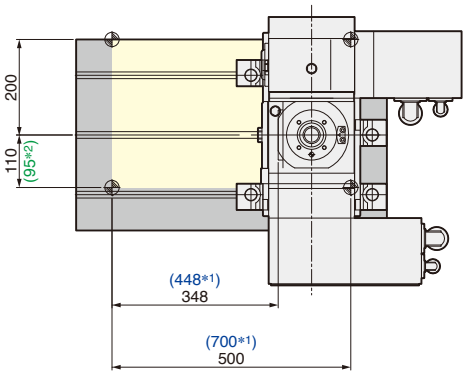
5AX TILTING ROTARY TABLE for ROBODRILL α-DMiB5 NIKKEN

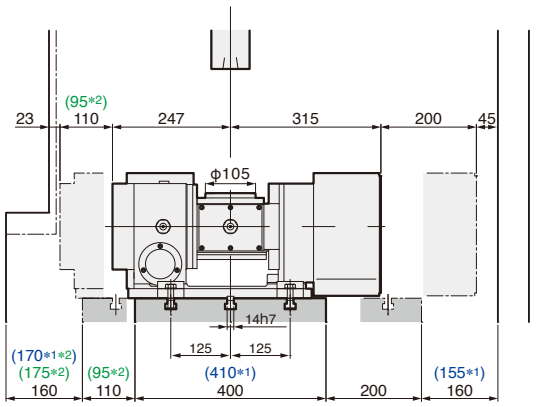
5AX-130FA

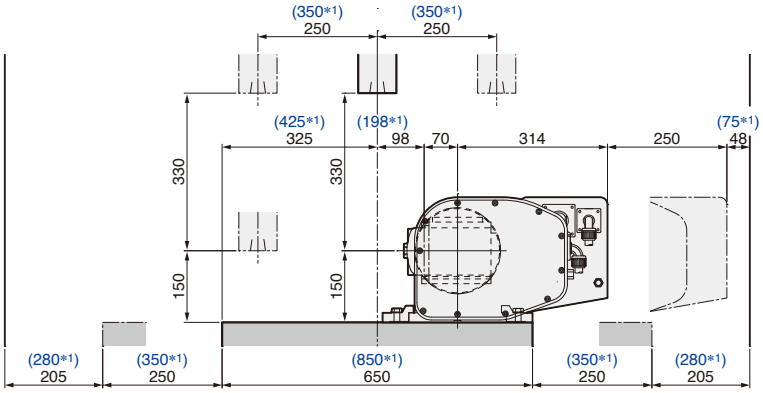


5AX TILTING ROTARY TABLE

- ●Diameter of Table : Φ105mm (With Φ130mm sub table)
- ●MAX. Work Load : 25kg(Vertical)50kg(Horizontal)
- ●MAX. Rotation Speed : 33.3(min-1) (Rotary),16.6(min-1) (Tilting)
- ●Indexing Accuracy : ±30sec. (Rotary), 60sec. (Tilting)
- ●Brake Torque : 205N·m (Rotary), 303N·m (Tilting)
- ●Net Weight : 115kg
- ●Servo Motor : α iF2/5000 (Rotary)
  α iF2/5000 (Tilting)
- ●Spindle Hole : Φ50mmH7×Φ30mm Through Hole
- ●Tilting Angle : 0°～105°



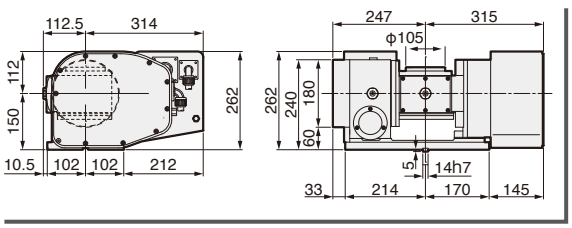


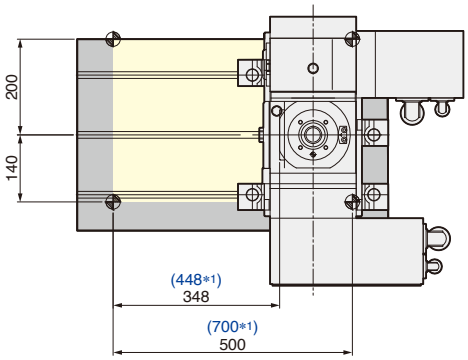


(*1) The figures with blue color are the figures for (α-DLiB5)
(*2) The figures with green color are the figures for metal cover.

5AX TILTING ROTARY TABLE for ROBODRILL α-DMiB5ADV NIKKEN

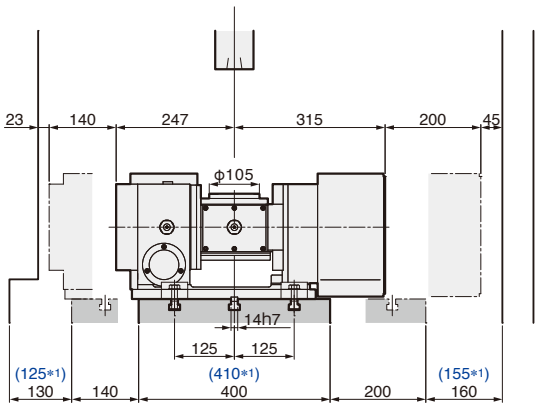
5AX-130FA

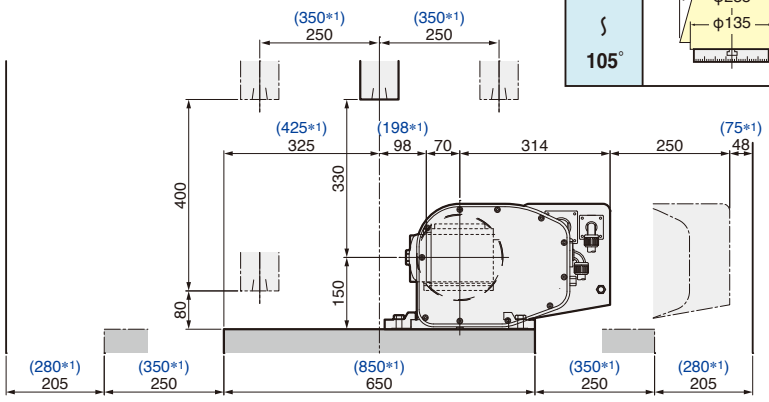




■The Area of Noninterference in Tilting Position.

Angle	5AX-130FA
0° ⟆ 45°	Φ135, 25
0° ⟆ 90°	Φ300, Φ135, 37
0° ⟆ 105°	Φ235, Φ135, 15°, 70





(*1) The figures with blue color are the figures for (α-DLiB5ADV)

NIKKEN CNC ROTARY TABLE works in many applications throughout the world.
Please feel free to contact us.

5AX-130& ROBOT

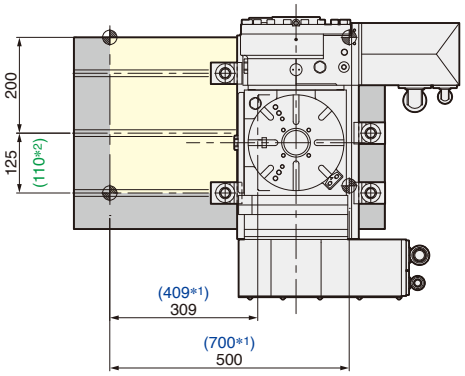
CNC202& ROBOT

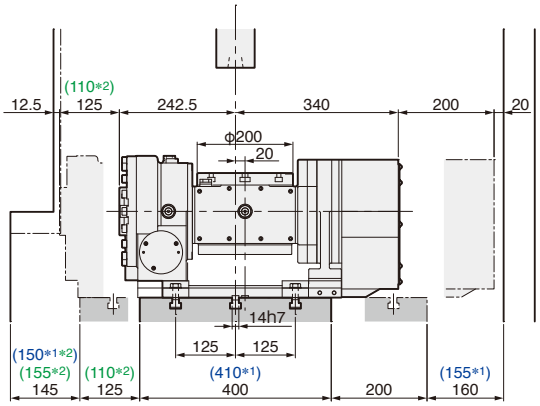
5AX TILTING ROTARY TABLE for ROBODRILL α-DMiB5 NIKKEN

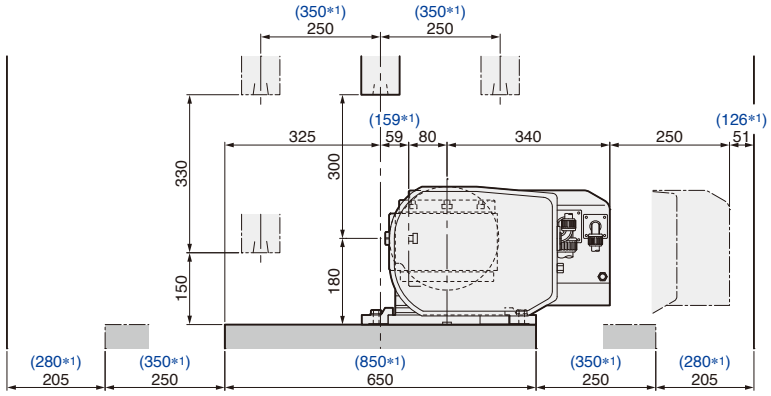
5AX-201FA

5AX TILTING ROTARY TABLE

- ●Diameter of Table : Φ200mm
- ●MAX. Work Load : 40kg(Vertical)60kg(Horizontal)
- ●MAX. Rotation Speed : 22.2(min-1)(Rotary),16.6(min-1)(Tilting)
- ●Indexing Accuracy : ±20sec.(Rotary), 60sec.(Tilting)
- ●Brake Torque : 588N·m(Rotary), 612N·m(Tilting)(Hydraulic) 303N·m(Rotary), 303N·m(Tilting)(Pneumatic)
- ●Net Weight : 160kg
- ●Servo Motor : αiF2/5000(Rotary) αiS4/5000(Tilting)
- ●Spindle Hole : Φ60mmH7×Φ50mm Through Hole
- ●Tilting Angle : 0°～105°



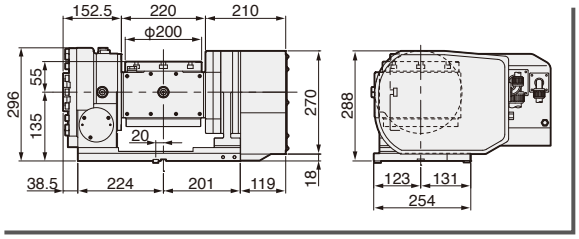


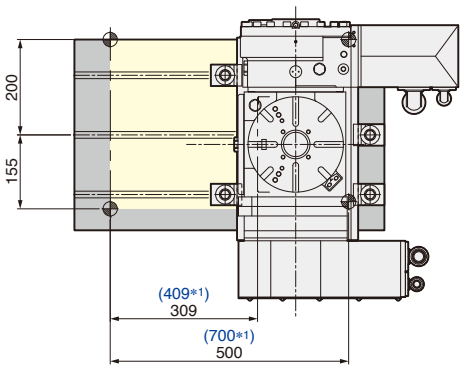


(*1)The figures with blue color are the figures for (α-DLiB5)
(*2)The figures with green color are the figures for metal cover.

5AX TILTING ROTARY TABLE for ROBODRILL α-DMiB5ADV NIKKEN

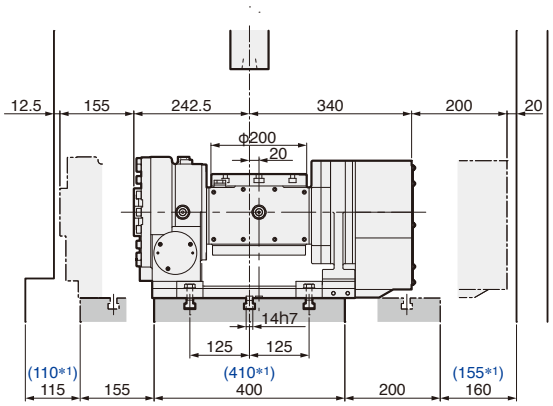
5AX-201FA

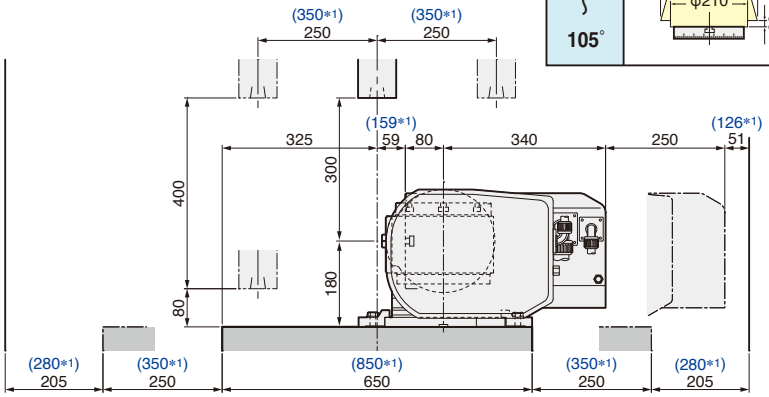




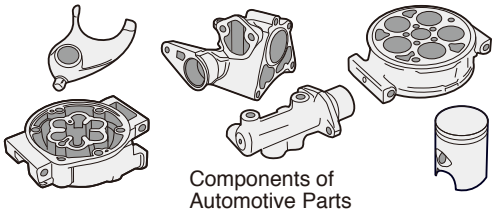
■The Area of Noninterference in Tilting Position.

Angle	5AX-201FA
0° ⟆ 45°	φ210, 41
0° ⟆ 90°	φ350, φ310, φ210, 41, 12
0° ⟆ 105°	φ250, φ210, 15°, 90

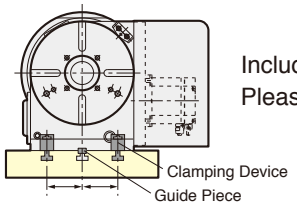




(*1)The figures with blue color are the figures for (α-DLiB5ADV)



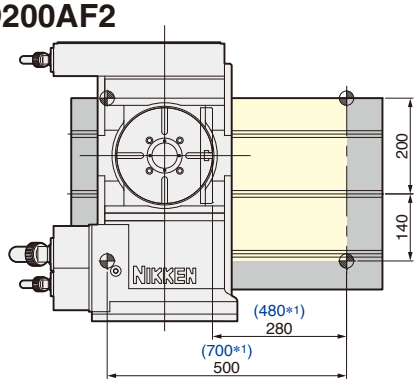
Components of Automotive Parts



Includes guide piece and Clamping Device.
Please refer to CNC ROTARY TABLE catalog.

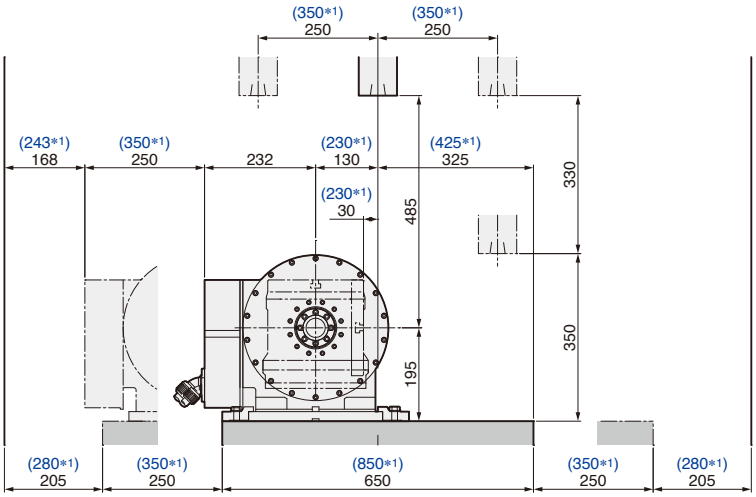
TILTING ROTARY TABLE WITH DD MOTOR for ROBODRILL α-DMiB5 NIKKEN

5AX-DD200AF2

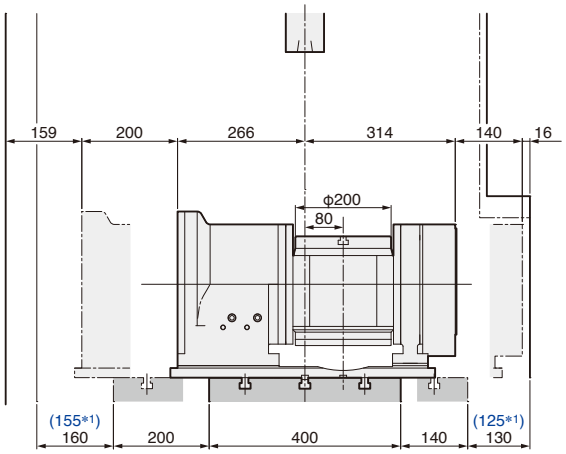


5AX TILTING ROTARY TABLE with DD MOTOR

- ●Diameter of Table : Φ200mm
- ●MAX. Work Load : 15kg(Vertical)30kg(Horizontal)
- ●MAX. Rotation Speed : 200min^{-1}(Rotary),150min^{-1}(Tilting)
- ●Indexing Accuracy : ±10sec.(Rotary), ±15sec.(Tilting)
- ●Brake Torque : 150N·m(Rotary), 500N·m(Tilting)
- ●Net Weight : 190kg
- ●Servo Motor : DiS 60 / 400(Rotary) DiS150 / 300(Tilting)
- ●Spindle Hole : Φ53mm$_{H7}$×Φ40mm Through Hole
- ●Tilting Angle : 0°～110°



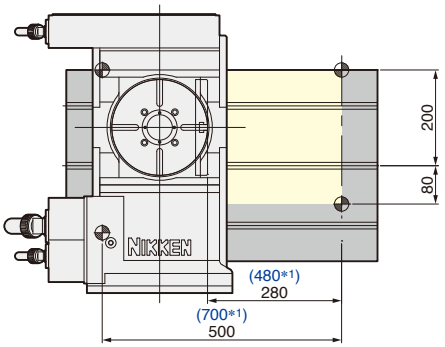
Layout with 200mm high column

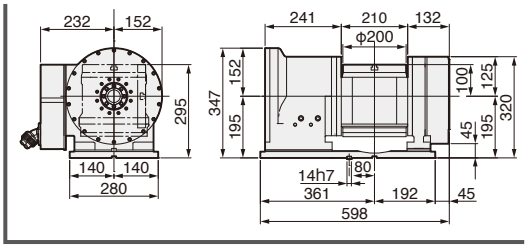


(*1)The figures with blue color are the figures for (α-DLiB5)

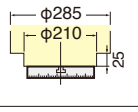
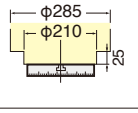
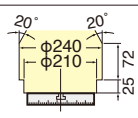
TILTING ROTARY TABLE WITH DD MOTOR for ROBODRILL α-DMiB5ADV NIKKEN

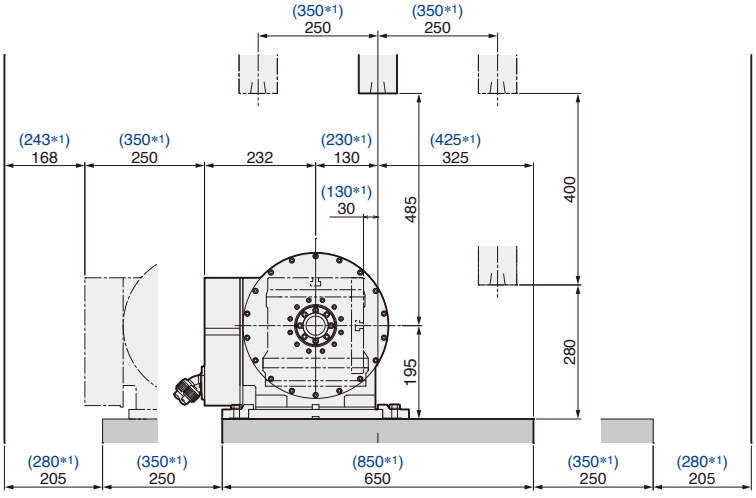
5AX-DD200AF2



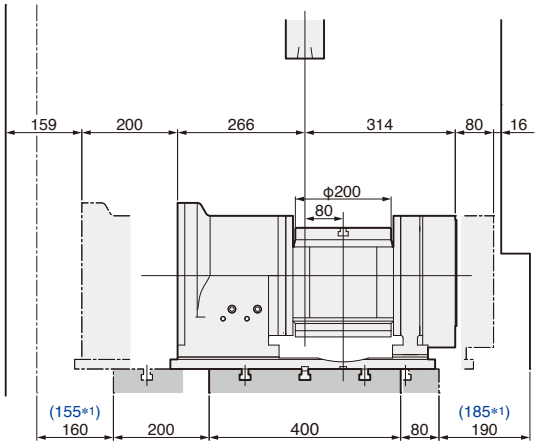


■The Area of Noninterference in Tilting Position.

Angle	5AX-DD200AF2
-45° ⟆ 45°	
-90° ⟆ 90°	
-110° ⟆ 110°	



Layout with 200mm high column



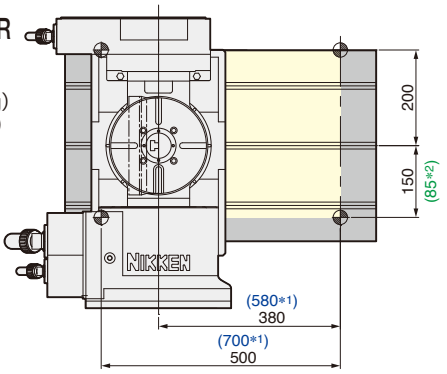
(*1)The figures with blue color are the figures for (α-DLiB5ADV)

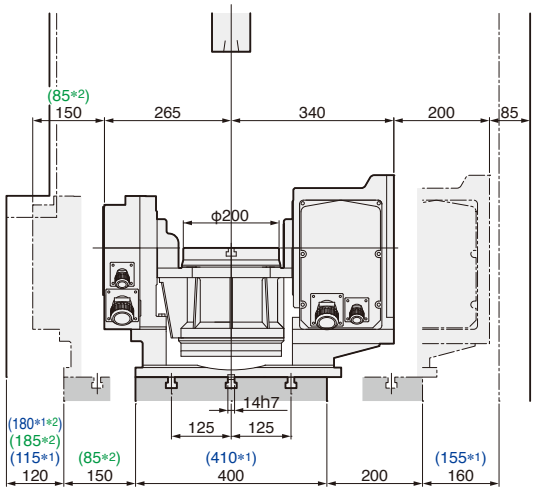
TILTING ROTARY TABLE WITH DD MOTOR for ROBODRILL α-DMiB5 NIKKEN

5AX-DD200BF2

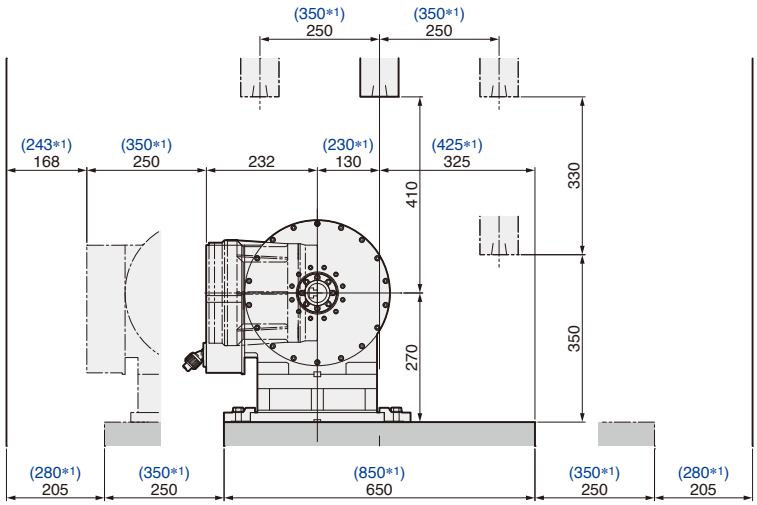
5AX TILTING ROTARY TABLE with DD MOTOR

- ●Diameter of Table : Φ200mm
- ●MAX. Work Load : 30kg
- ●MAX. Rotation Speed : 200min-1(Rotary),150min-1(Tilting)
- ●Indexing Accuracy : ±10sec.(Rotary), ±15sec.(Tilting)
- ●Brake Torque : 150N·m(Rotary), 500N·m(Tilting)
- ●Net Weight : 185kg
- ●Servo Motor : DiS 60 / 400(Rotary)
  DiS150 / 300(Tilting)
- ●Spindle Hole : Φ53mmH7×Φ40mm Through Hole
- ●Tilting Angle : 0°～110°





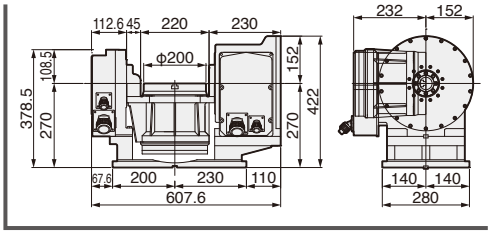
Layout with 200mm high column

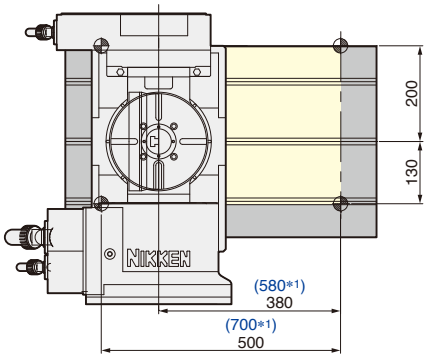


(*1)The figures with blue color are the figures for (α-DLiB5)
(*2)The figures with green color are the figures for metal cover.

TILTING ROTARY TABLE WITH DD MOTOR for ROBODRILL α-DMiB5ADV NIKKEN

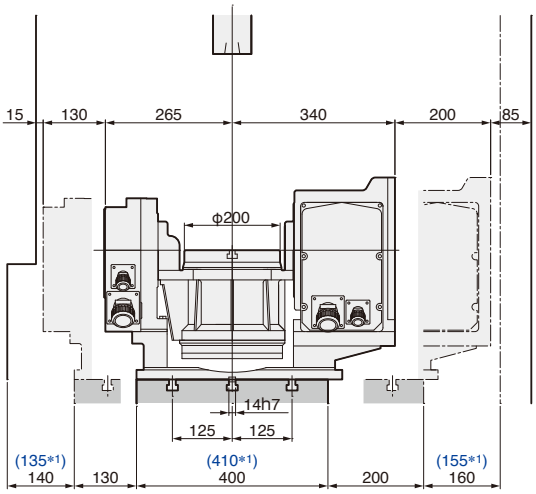
5AX-DD200BF2



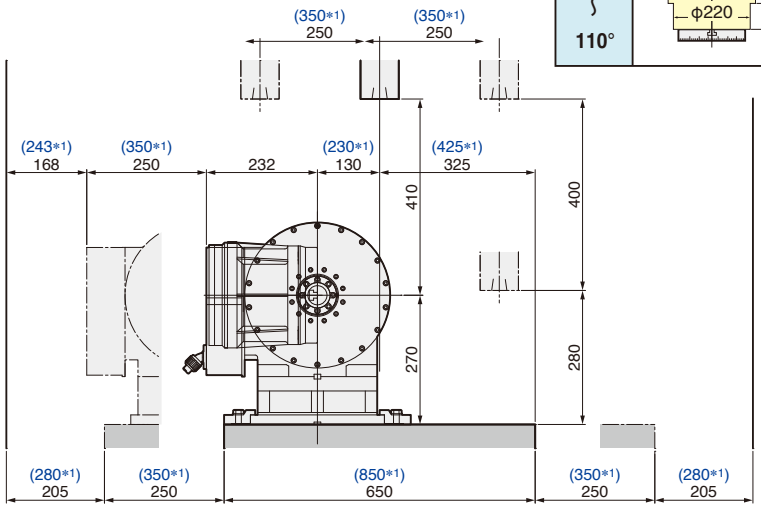


The Area of Noninterference in Tilting Position.

Angle	5AX-DD200BF2
-45° ⟆ 45°	Φ250 Φ220 60 65
-90° ⟆ 90°	Φ250 Φ220 60 65
-110° ⟆ 110°	Φ290 Φ250 Φ220 60 65



Layout with 200mm high column



(*1)The figures with blue color are the figures for (α-DLiB5ADV)

M-SIGNAL NIKKEN CONTROLLER

NIKKEN

αX21 and EZ controller feature

If the 4th axis (5th axis) doesn't have an additional axis, it can be driven with one M signal.
It uses The state-of-the-art digital servomotor and absolute encoder. Excellent acceleration / deceleration characteristics, optimized servo parameters and powered-up motor torque realize high quality, high performance, long life.

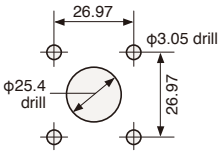
αX21controller
Length×Width×Height
300mm×280mm×285mm

EZ controller
Length×Width×Height
260mm×225mm×275mm

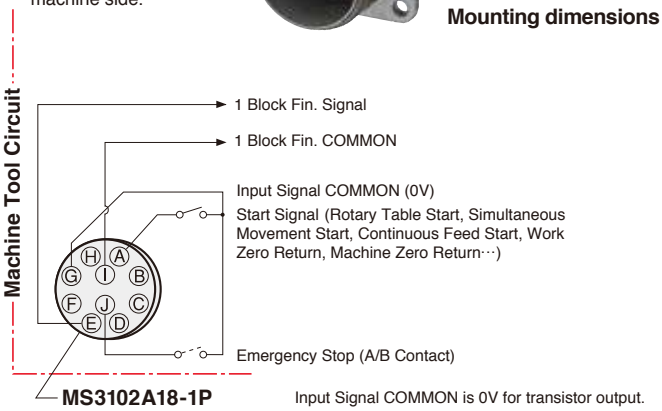
αX21 and EZ controller connection

Normally the controller will be operated only by connecting M Signal (Start Signal) and 1 Block Fin. Signal. Emergency Stop Input must be set to B contact only for 5AX-Tables. For other Tables, you can choose A/B contact for Emergency Stop Input.

When to be connected to machine,receptacle MS3102A18-1P is provided. Arrange the electric circuits of your machine side.



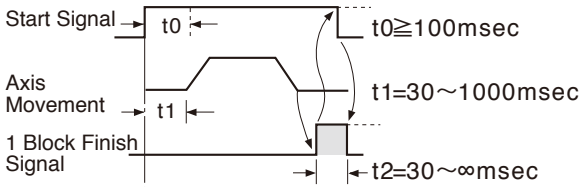
Mounting dimensions



MS3102A18-1P

Input Signal COMMON is 0V for transistor output.

Input/Output Time Chart



t1 and t2 can be set by parameter.

RS232C Automatic Loading Interface

···Pendant is to be used for manual operation and maintenance only. (αX21only)

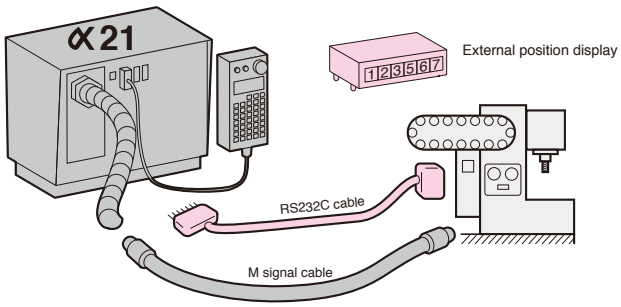
JAPAN PAT.

Program is loaded from Custom Macro of M/C, and start the program by the ordinary M signal. Total management of programs can be done on only M/C side. The necessary functions of M/C side are;

- Custom Macro
- Custom Macro External Output Function
- 2 sets of M signals

eg.

- **M21** : Start signal
- **M24** : Start signal of RS232C Automatic Loading Function (Start signal without 1 Block Fin. signal confirmation and keep this signal ON at least 100msec.)



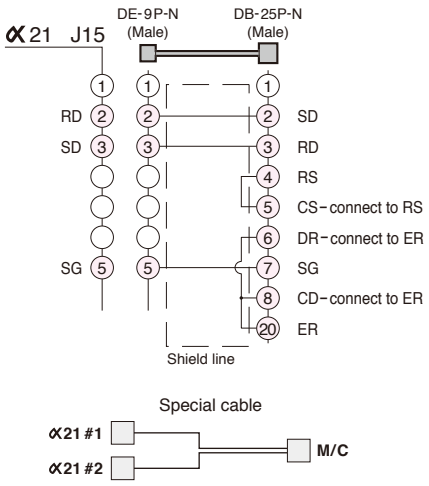
RS232C Direct Angle Command Interface (αX21 controller only)

JAPAN PAT.

This interface can start the block after sending one block data from custom macro of M/C. Equal dividing function (e.g. divided by 7) also can be sent. Therefore, program will be simple and more accurate and the total management of the programs can be done only on M/C.

- Custom Macro
- Custom Macro External Output Function
- 1 M signal (Start signal) **M21**

5AX-table with 2 off αX21 controllers can be connected to use RS232C direct angle command interface.In this case, special RS232C cable is required and 2 off M signals are required.



☞There are many optional features available.
Please refer to CNC ROTARY TABLE catalog.

ROTARY JOINT

Rotary Joint is a rotating connector to supply air, hydraulic pressure or coolant liquid from outside to a fixture on a CNC rotary table. If liquid is supplied with ordinary hoses, twisting will happen on them by rotation of the table. However, rotary joints can solve this problem as it rotates in accordance with the table.

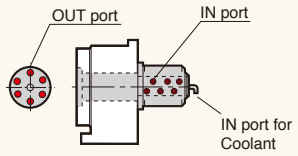
- Provides Pneumatic, hydraulic pressure or coolant from the rear of the table to a fixture.
- Automation of clamping/unclamping workpieces becomes possible.
- With a choice of 3 types: Cylinder type, Flange Plate type and Built-in type

★The coolant port is recommended to be separated because that the fine cutting swarf may come through the filter into the coolant port.
★The cylinder type rotary joint is equipped with a port in the center bore exclusively for the coolant liquid.
★Even the number of IN ports is limited, rotary joint can be installed for the rotary table with the rotary encoder. Please contact us.

Type of Rotary Joint

1 Cylinder type Rotary Joint

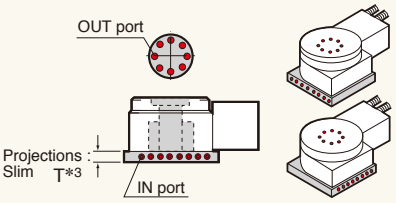
●Cylinder type rotary joint allows many ports.
●Cylinder type rotary joint can be mounted later.



★The cylinder type rotary joint is useful in machining with the coolant liquid, because it's equipped with a port exclusively for the coolant liquid.

2 Flange Plate type Rotary Joint

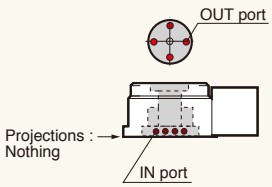
●Flange plate type rotary joint reduces supply block projections.
●Cylinder type rotary joint can be mounted later.



★The every position which causes no interference against M/C can be selected.

3 Built-in type Rotary Joint

●The highest space efficiency of all models of rotary joints.
●Built-in type rotary joint can be mounted without changing dimension.



PAT.2930889

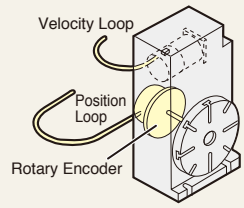
Rotary Joint List

Code No.	Cylinder type	Flange Plate type		Built-in type
	MAX. Number of Ports	MAX. Number of Ports	T*3(mm)	MAX. Number of Ports
NCT 200	6+1	6	39	—
CNC105	4+1	4	25	—
180, 202	6+1	6	25	—
205	—	—		6+1
260, 302	10+1	11	60	—
TAT-105, 170	6+1	2	25	—
200, 250	9+1*1	7	30	—
5AX-100	(4)	3	25	—
130	2 (4)	—	—	—
201	4 (6)	—	—	4*2
5AX-DD200A,B	—	4	—	—

★( ): MAX No. of high column table.★"+1" is the port located in the center hole for coolant.
*1: **TAT-200** is limited to 8 + 1P. *2: 4 reserve ports are provided on **5AX-201**. *3: "T"is dimension of supply block projections after mounting rotary joints.

●When the air is supplied for all IN ports, please contact us. ●Please do not supply the different pressure of the air in the IN ports next each other. ●Please make sure that the line filter should be provided for pneumatic supply use in order to avoid swarf and water ingress for rust problem. ●This is not avoidable that the oil of the hydraulic port may be leaked to the next air port for the long time use, due to the characteristic of the seal. Please do not assign the air port next to the hydraulic port as much as possible. ●The rotary joint must be specially treated to prevent from the rust, when using the glycol solution for the operating fluid. Please inform us when ordering. ●When the rotary joint is designed at your side, please select the low friction type seal. Then, please check the rotary table movement after installation of your rotary joint, not to over load.

High Precise Indexing (Full Closed Loop)



Configuration of High Precise Indexing Models

Full closed loop control becomes possible by mounting a rotary encoder at the back of rotary table. And high precise indexing becomes possible by detecting the rotary angle of the table directly.

- 3 grades can be selected for indexing accuracy; ±3", ±5" and ±10".
- In case indexing unit of 1" or very high rigidity is required, please select Hirth Coupling Index **NSVZ, NSVX** series table.

★Cables are not included in ultra precision option. Please order separately.
★Air purge of the encoder inside is available as an option for water proof. Please contact us.

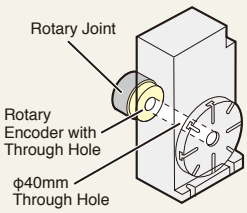
High Precise Indexing for CNC Rotary Table

Table Model \ Indexing Accuracy	±3″	±5″
	Rotary Encoder	Rotary Encoder
CNC105, 180, 202, NCT200	—	RCN2390
CNC260, 302	RCN8590	RCN2390

High Precise Indexing for Tilting Rotary Table

Table Model \ Indexing Accuracy		±5″	±10″
		Rotary Encoder	Rotary Encoder
5AX-130, -201	Rotary	RCN2390	—
	Tilting	—	RCN2390

High Precise Indexing with Thru-hole



Rotary Joint Supported High Precise Indexing

Rotary Joint Supported High Precise Indexing with Thru-hole

- Even the number of IN ports is limited, rotary joint can be installed for the rotary table with the rotary encoder forhigh precision indexing. Please contact us.
- The rotary table with RCN8390 or RCN8590 has ˜40mm through hole, and the rotary joint can be mounted.

Table Model \ Indexing Accuracy	±3″	±5″
	Rotary Encoder	Rotary Encoder
CNC260, 302	RCN8590	—

SUPPORT TABLE

NIKKEN

SUPPORT TABLE

Table Model	Center Height	W/O Clamping	With Clamping		Slim Spport Table With Clamping
			Air (0.5MPa)	Hyd. (3.5MPa)	
CNC105	105	CST100-105	TAT-105N		
CNC180, 202,205	135	CST100-135	TAT-170N		TAS-100N
NCT200	135	CST100-135	TAT-170N		TAS-100N
CNC260, 302	170		TAT-200N(Shared use Air/Hyd)*1		
			TAT-250N(Shared use Air/Hyd)		

*1 : The center height is possible to increase 20mm to use sub-base.

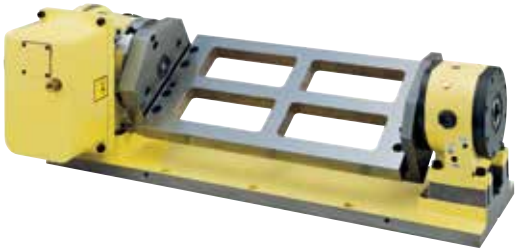
CST100-105, 135

TAS-100N

TAT-105N

TAT-170N

TAT-200N, 250N



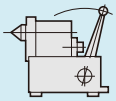
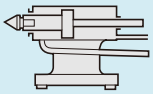
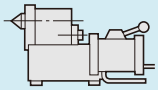
CNC180L & TAT-105N

CNC205L & Support Table

TAILSTOCK (MANUAL, PNEMATIC, HYDRAULIC)

NIKKEN

Tailstock List

Table Model / Center Height / Tailstock illust		Manual	PNEUMATIC / HYDRAULIC	HYDRAULIC
		 Stroke: 15mm	 Stroke: 60mm	 Stroke: 100mm
CNC105	105	P-105S	PBA-105	
CNC180, 202	135	P-125S	PBA-135	
NCT200	135	P-125S	PBA-135	
CNC260, 302	170	P-170S	PBA-170	H-170S
5AX-100	135	P-125S	PBA-135	
5AX-130	150	P-150S	PBA-150	H-150S
5AX-201	180	P-170S	PBA-180	H-170S

Manual Tailstock

Pneumatic / Hydraulic
Small Size Tailstock

Hydraulic Tailstock

SCROLL CHUCK

NIKKEN

Chuck Plate

Scroll Chuck

Holes for bolts of Front Mounting

Scroll Chucks with chuck plate marked＊ are NIKKEN Scroll Chuck of Front Mounting (Fig.1)

NIKKEN Scroll Chuck is used for X-4B.

The chuck plates for the scroll chucks without＊ can be used for the scroll chuck based on JIS B6151 SC/TC standard.

Scroll Chuck Gripping Range

Chuck Size	Gripping Range	
	External	Internal
4″	2～ 89	36～ 78
5″	3～104	42～ 92
6″	3～135	52～119
7″	3～153	56～134
9″	4～190	64～16

This is the actual gripping range not jow stroke.

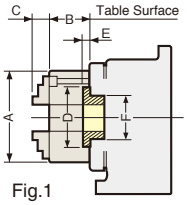


Fig.1

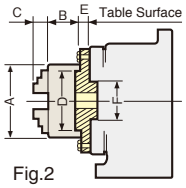


Fig.2

Scroll Chuck & Chuck Plate List

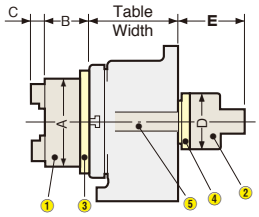
Table Model	Chuck Size	Chuck Plate	A	B	C	D	E	F	Fig. No.
CNC105	R-4	X-4B	112	58	31.25	80	13	60	2
CNC180	R-5	X-5C*	132	60	37.25	100	3.5	60	1
	R-6	X-6B*	167	66	44.25	130	4	60	1
CNC202	R-5	X-5C*	132	60	37.25	100	3.5	60	1
	R-6	X-6B*	167	66	44.25	130	4	60	1
	R-7	X-7A*	192	75	46.25	155	4	60	1
CNC260	R-6	X-6G*	167	66	44.25	130	4	80	1
	R-7	X-7L*	192	75	46.25	155	4	80	1
	R-9	X-9H	233	82	55.25	190	25	80	2
CNC302	R-6	X-6G*	167	66	44.25	130	4	80	1
	R-7	X-7L*	192	75	46.25	155	4	80	1
	R-9	X-9J	233	82	55.25	190	18	80	2
5AX-100	R-4	X-4D*1	112	58	31.25	80	3	40	1
5AX-130	R-4	X-4B	112	58	31.25	80	13	60	2
5AX-201	R-4	X-4B	112	58	31.25	80	13	60	2
	R-5	X-5C*	132	60	37.25	100	3.5	60	1
	R-6	X-6B*	167	66	44.25	130	4	60	1
	R-7	X-7A*	192	75	46.25	155	4	60	1

★The maker of the scroll chuck was changed. This table shows the chuck plate of the new maker. Please refer to **CAT NO.8168** or older for the chuck plate of the old maker.
★The dimension from the table surface to the jaw is; ＊:B+C Others: E+B+C ＊1：Jig-plate with φ120 (AX101R075) is required.

POWER CHUCK

NIKKEN

① Power Chuck
② Rotary Cylinder
③ Chuck Adapter
④ Cylinder Adapter
⑤ Connecting Rod



When power chuck or rotary cylinder is installed on 5AX table, the 5AX table must be High Column type.

Power Chuck & Rotary Cylinder List

Table Model	Power Chuck Code No.	Pnev. Rotary Cylinder / Hyd. Rotary Cylinder	A	B	C	D	E
CNC105	HO1MA-4	H05CH-100	110	70	27	115	215
		HH4C-80				130	220
CNC180	HO1MA-4	H05CH-100	110	70	27	115	215
		HH4C-80				130	220
	HO1MA-5	H05CH-150	135	70	27	115	215
		HH4C-80				186	235
	HO1MA-6(S)	H05CH-175	165	94	43	135	240
		HH4C-100				210	240
CNC202	HO1MA-4	H05CH-100	110	70	27	115	215
		HH4C-80				130	220
	HO1MA-5	H05CH-150	135	70	27	115	215
		HH4C-80				186	235
	HO1MA-6(S)	H05CH-175	165	94	43	135	240
		HH4C-100				210	240
NCT200	HO1MA-4	H05CH-100	110	70	27	115	215
		HH4C-80				130	220
	HO1MA-5	H05CH-150	135	70	27	115	215
		HH4C-80				186	235
	HO1MA-6(S)	H05CH-175	165	94	43	135	240
		HH4C-100				210	240

Table Model	Power Chuck Code No.	Pnev. Rotary Cylinder / Hyd. Rotary Cylinder	A	B	C	D	E
CNC260	HO1MA-6(S)	H05CH-175	165	94	43	135	240
		HH4C-100				210	240
	HO1MA-8(S)	H05CH-250	210	110	43	160	250
		HH4C-125				290	295
CNC302	HO1MA-6(S)	H05CH-175	165	94	43	135	240
		HH4C-100				210	240
	HO1MA-8(S)	H05CH-250	210	110	43	160	250
		HH4C-125				290	295
	HO1MA-10(S)	H05CH-300	254	120	43	160	250
		HH4C-125				340	310
5AX-100H 5AX-130H	HO1MA-4	Please ask for the detail.	110	70	27	–	–
5AX-201H	HO1MA-4		110	70	27	–	–
	HO1MA-5		135	70	27	–	–
	HO1MA-6(S)		165	94	43	–	–
						–	–

★HOWA power chucks and rotary cylinders (Higher:hydraulic, Lower:Air) are listed. Other maker's one can be mounted, please specify the Code No.
★NIKKEN air/hydraulic rotary cylinder is also available.

⚠ **The additional machining may be necessary for the mounting of the power chuck after shipping.Please inform us when ordering, if the power chuck will be mounted after shipping.**

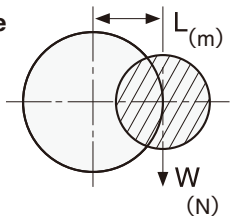
Relation between Unbalancing Load and Servo Motor

This table shows the guide line. Please make the unbalancing load as small as possible and use the counter balance weight for the precision machining.

Excessive unbalancing load causes the indexing accuracy and the durability to be worse. The relation between the guide line of the unbalancing load and the servo motor shows below. Please do not apply the load exceeding the guide line.

CNCZ series table can not be recommended for the application with large unbalancing load. **CNCZ** series table is recommended for the application only with light load.

Please inform us the detail of the component, jig fixture, indexing time etc. prior to your order. Then, the calculation of the load is studied and the best suitable rotary table (including the suitable motor) for your application is proposed. The servo parameter is also tuned.



Guide Line of MAX. Unbalancing Load for Additional Axis Control

MAX. Unbalancing Load (N·m)	CNC180FA	CNC202FA	CNC205FA	NCT200FA	CNC260FA
30	αiF2	αiF2	αiF2		
50	αiF4	αiF4			
60				αiF4	αiF4
100					αiF8

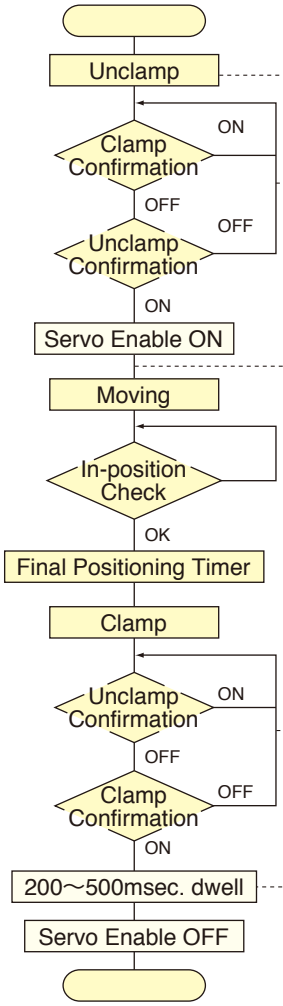
Guide Line of MAX. Unbalancing Load with NIKKEN Controller

MAX. Unbalancing Load (N·m)	CNC180	CNC202	CNC205	NCT200	CNC260
10	CNC180AA21-04				
20	CNC180AA21-08	CNC202AA21-08		NCT200AA21-08	
30			CNC205AA21-05		CNC260AA21-08
50	CNC180AA21-06	CNC202AA21-06			
60				NCT200AA21-06	CNC260AA21-06

Flow Chart of the Additional Axis Control

Servo enable is basically kept OFF during the mechanical brake clamps.

Flow Chart of the Additional Axis Control



- **Please specify the type of the solenoid valve and the action at clamping.**
  AC100V or DC24V
  ON Clamp or OFF Clamp
- Guide line of unclamp timer
  Pneumatic system : Approx. 150msec.
  Hydraulic system : Approx. 450msec.
  It will differ depending on the types of the brake and piping layout.
- 100～200msec. of the dwell after unclamp confirmation is required for **5AX-201**(Rotary), and **5AX-250**(Rotary).
- Guide line of clamp timer
  Pneumatic system : Approx. 100msec.
  Hydraulic system : Approx. 300msec.
  It will differ depending on the types of the brake and piping layout.
- **200～500msec. of the dwell after clamp confirmation is required for the hydraulic clamping system and the clamping system using the air-hydro booster. The timer value should be specified by the parameter setting.**

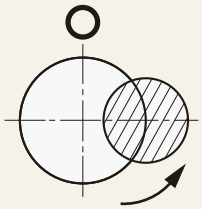
⚠ Please specify the solenoid valve control method when ordering

Please specify the brake control when ordering

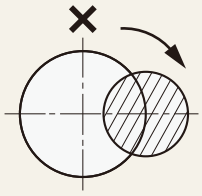
- **CNC(5AX) ROTARY TABLE is DC24V,ON clamp.**
- **ROTARY TABLE with DD motor is DC24V,OFF clamp.**

⚠ Positioning under unbalancing load

Please move the unbalancing load up to the destination position.



Positioning of the unbalancing up to the destination position is recommended.



Positioning of the unbalancing down to the destination position is not recommended.

Notes on the Use of DD TABLES

NIKKEN

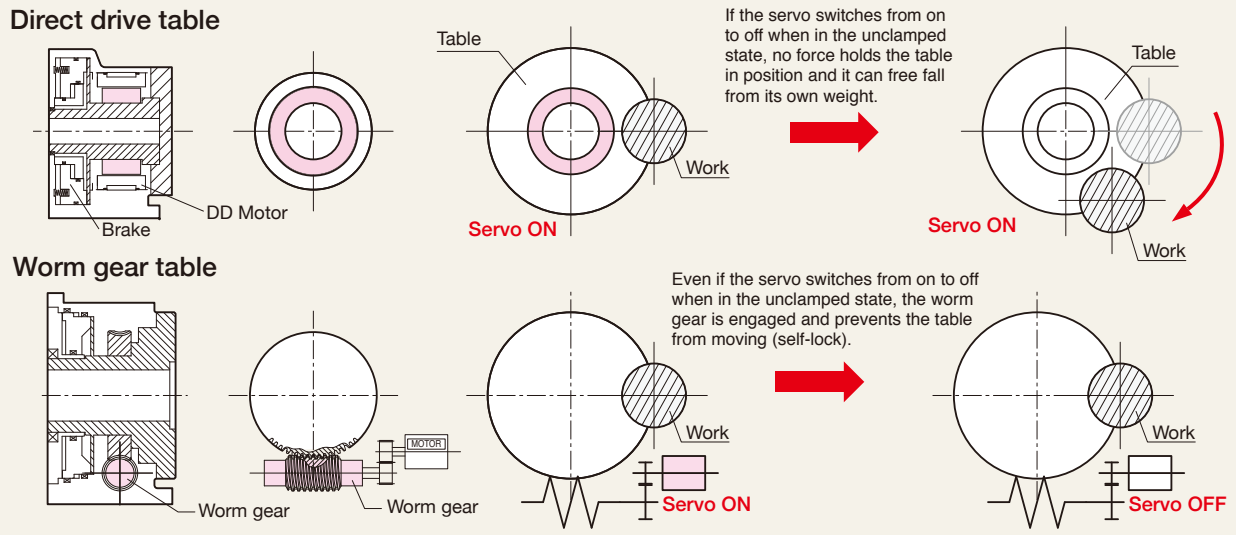
DD table characteristics

- The spindle is linked directly to the motor for excellent responsiveness. As a tradeoff for this responsiveness, the system is very sensitive to external force and loads, so it is necessary to set suitable parameters for each application.
- Adjustment is necessary to perform 5-axis simultaneous machining (synchronized machining). The NIKKEN standard parameters can be used for indexing and positioning. After confirming that optional functions* for synchronized machining are available, it is necessary to make appropriate settings to satisfy the customer's machining time and machining precision requirements. For simultaneous operation, suitable settings must be made to align the 4th (5th) axis with the three basic axes (XYZ).

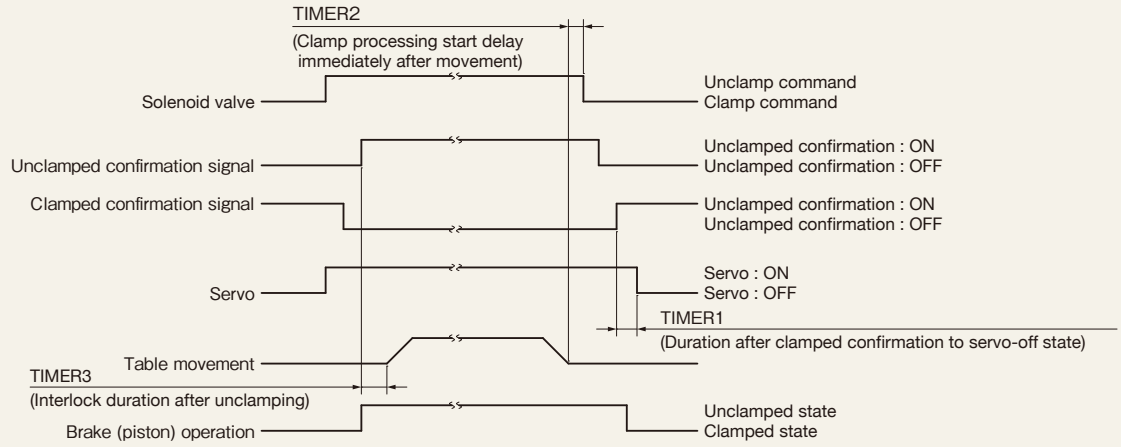
Clamping operation

Due to the characteristics of the DD table it can be turned easily by hand if power is not being supplied (free run state). The table will again be in the free run state when the servo turns off after the brake is applied, unless appropriate settings are made, and this can cause positioning inaccuracy. Consult with the machine manufacturer to ensure that the timing is as shown in the timing chart below to prevent a free run state from occurring.

Difference in structure between Direct Drive and Worm gear system



Reference timing chart



Preventing emergencies (in case of power interruption)

Configure a pneumatic (hydraulic) circuit (off-clamp) that will provide an effective brake should an emergency stop occur. Unlike normal clamping operation, in an emergency stop the brake is applied at the same time that the servo turns off momentarily, and this can result in positioning inaccuracy on an axis carrying a large load, such as the weight axis. To prevent this, enable the brake control function (FANUC).

Brake control function

To prevent the fall of the weight axis when an alarm is generated or an emergency stop occurs, instead of stopping excitation of the motor immediately, excitation of the motor continues for the duration specified by a parameter to allow the mechanical brake to engage.

⚠Cooling of Direct Drive Servomotor

Except for some types of direct drive servomotor, you can choose no-cooling or liquid cooling. Keep cooling makes it possible to use under continuous rating torque.
However, the special care is required because the continuous rating torque may fluctuate depending on the cooling condition.
External cooling devices should be prepared for cooling, such as chiller unit which is normally used for high speed spindles.Oil cooling must be used; water cooling is not allowed to prevent the rust.
Recommended cooling oil is [ISO VG2] equivalents. (Ex. IDEMITSU "SUPER MULTI 2")

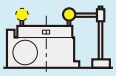
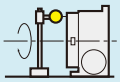
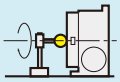
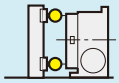
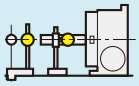
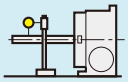
- In the case cooling is needed : ① Long time continuous running under high (close to maximum) speed rotation ② Very long time running under overload (above rated torque-below maximum torque) ③ Using special super-high speed servomotors
- Examples of cooling needed : ① Always-servo on under high-load condition (continuous turning operation) ② No-brake or the configuration that the servo is not off when clamping (Note: NIKKEN default configuration is servo OFF when clamping)
- Examples of cooling NOT needed : ① Indexing only ② Special use considering overload duty characteristics during non-cooling

Please feel free to contact us if you need any concerns of questions regarding cooling or if you use direct drive rotary table under special conditions.

Accuracy Standard

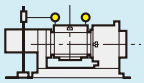
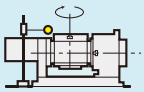
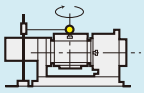
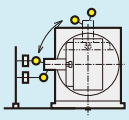
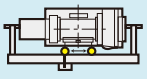
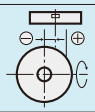
NIKKEN

CNC Rotary Table

No.	Measuring Item	Measuring Method	CNC105	CNC180/202	CNC205	NCT200E/200	CNC260/302
1	Parallelism between table surface and frame bottom surface (Concave)		0.015 mm	0.015 mm		0.015 mm	0.02mm
2	Runout of table surface		0.01 mm	0.01 mm	0.01 mm	0.01 mm	0.015mm
3	Concentricity of center bore		0.01 mm	0.01 mm	0.01 mm	0.01 mm	0.01 mm
4	Squareness of table surface (Minus deviation at upper part is not permitted.)		0.020 mm	0.02mm	0.02mm	0.02mm	0.02mm
5	Parallelism between center line of test bar and key way (At 150mm tip)		0.020 mm	0.02mm	0.02mm	0.02mm	0.02mm
6	Parallelism between frame bottom surface and table center line (At 150mm tip)		0.020 mm	0.02mm	0.02mm	0.02mm	0.02mm
7	Indexing accuracy		±30″	±20″	±20″	±20″	20″
8	Repeatability		4″	4″	4″	4″	4″

★ For ultra precision option: One rank higher accuracies than the above figures are inspected.

5AX Tilting Rotary Table

No.	Measuring Item	Measuring Method	5AX-100/130	5AX-201	5AX-DD100AF	5AX-DD200AF2	5AX-DD200BF2
1	Parallelism between table surface and frame bottom at tilting angle 0° (Concave)		0.015mm	0.015mm	0.01mm	0.01mm	0.01mm
2	Deviation of table surface at tilting angle 0°		0.01 mm	0.01 mm	0.01 mm	0.01 mm	0.01 mm
3	Deviation of table center hole at tilting angle 0°		0.01 mm	0.01 mm	0.01 mm	0.01 mm	0.01 mm
4	Deviation of center line of rotary axis at tilting angle 90°		0.02mm	0.02mm			
5	Parallelism between table surface and center line of guide key at tilting angle 90°		0.015mm	0.015mm	0.01mm	0.01mm	0.01mm
6	Displacement of center when moving from 0° to 90° at tilting angle 90°		0.01mm	0.015mm	0.015mm	0.015mm	0.015mm
7	Indexing accuracy of rotary axis		±30″	20″	±5″	±10″	±10″
8	Repeatability of rotary axis		4″	4″	2″	4″	4″
9	Indexing accuracy of tilting axis	Cumulative	60″	60″	±10″	±15″	±15″
10	Repeatability of tilting axis	——	±6″	±6″	±3″	6″	6″

★ For ultra precision option: One rank higher accuracies than the above figures are inspected.

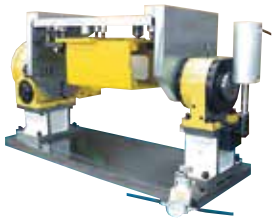
Specification of the rotary table to be used on the special purpose machines.

1. Custom made on the Table Face Plate
   - Drilled hole, tapped hole, or dwell pin hole etc.
   - Without T-slot or with T-slot
   - Additional process at center hole
2. The location of the Oil Sight Grass, Oil Supply Port and Drain Port can be changed.
3. How to be mounted on the Machine
   - U-groove
   - Additional tapped holes on the backside
   - Shift the guide key position
4. Modification of the Motor Cover
5. Rotary Joint ☞P.14
6. Special Color

CNC202L
without T slot

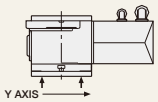
⚠ Selection of the CNC rotary table

- The support table is basically used in case of vertical application.
- The machining operation is generally light cut on aluminium materials, however, if the fixture or the component is large size, please make sure that the fixture inertia is within the MAX. work inertia.
- If the unbalance load is too big, it will affect on not only the indexing accuracy but also the durability. Please make sure the unbalance load will be within guide line list. ☞P.17
- In case of the unbalance load is large,
  -The high speed Z series rotary table is not suitable, please use standard rotary table.
  -Please installing the balance cylinder or counter balance.
  -Please advise us the details of the component, fig fixture, indexing time etc. prior to your order, and we will make a calculation of the load and select the best suitable rotary table for your application.
- If the huge amount of coolant has to be applied, we could prepare air purge (with pneumatic pressure of 0.03MPa) on the CNC rotary table body as an option. Please contact us the details.

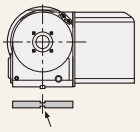


⚠ Check point for trunnion fixture

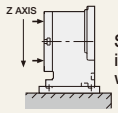
①When installing the table onto the sub-base, measure and check as follows.



Parallelism between table & sub-base is recommended within 0.01mm

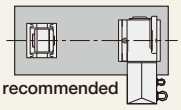


Difference between table center and sub-base center is recommended within 0.02mm

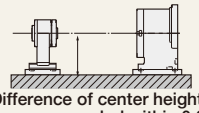


Squareness of table is recommended within 0.02mm

②Install the table & support table onto the M/C as follows.

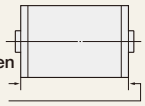


Center lines are recommended within 0.02mm



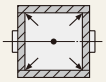
Difference of center height is recommended within 0.01mm

③Trunion fixture is recommended to be aligned as follows.



Squareness between center line & these faces is important

Center of both side are recommended within 0.01mm



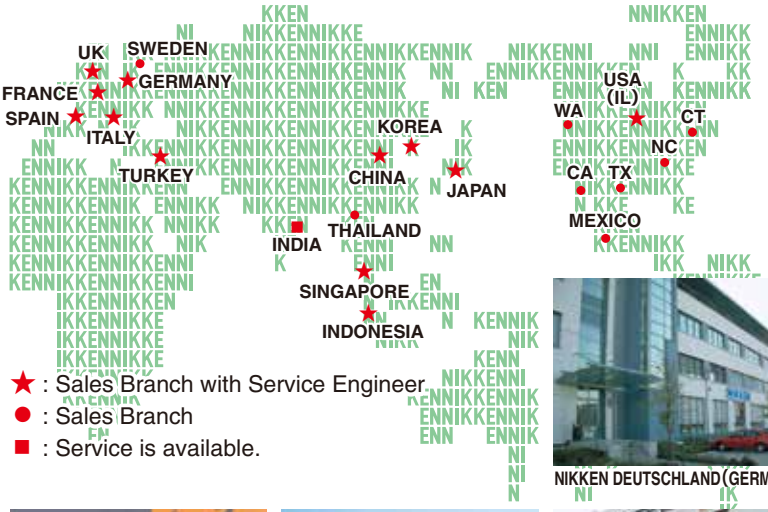
Squareness is important

⚠ Caution

- Always be careful not to inflict personal injury on any shop objects when unpacking this equipment.
- Caution should always be used when lifting this product. Especially when using lifting equipment. Manual lifting of this product may cause serious back injury. Always use safe lifting techniques.
- Install the rotary table on a well ventilated place hidden from direct sunlight, on a place not exposed to corrosive gas such as sulfuric acid and hydrochloric acid. Do not install the rotary table on a place with excessive high/low temperature. (Normal operating temperature: 5°C～40°C)
- Under the lower temperature condition, please warm the rotary table up just after power on. Or, please use lighter lubrication oil as another solution.
- Only the specified power voltage should be used. Incorrect power supply may result in fire.
- Always power off the machine before attempting any installation and wiring work. Failure to do this may result in serious personal injury or electric shock.
- The machine on which CNC rotary table is installed should have a complete cover or splash guard.
- When installing this product onto a machine tool, always pay special attention to the location of cables, hoses and hydraulic tanks (if used), to check for interference.
- Please make sure that all cables and hoses are sufficiently long to allow full axis travel.
- Always ensure that there is no interference with the CNC rotary table or tailstock unit of the ATC (Automatic Tool Change) position.
- Always ensure safe cable runs according to the instruction manual in order not to interfere with the machine operation. It is dangerous if the cables become entangled with the machine table or spindle unit.
- Always check the parallelism and squareness of the table to the machine axes and fix to the machine table using the fixings provided.
- Please follow the instruction manual for installation, wiring of cables and hoses. Failure to connect wiring correctly may cause fire or a serious accident.
- This table has been given a waterproof treatment, however if ingress of coolant should occur, stop using the table immediately. Failure to do so may result in the unit catching fire or causing serious electric malfunction.
- Always ensure that pneumatic or hydraulic hoses are connected correctly.
- Always keep the air filter clean to prevent water and dirt ingress from the air supply.
- Please ensure that the hydraulic pressure flows constantly on the pump line at brake clamp in the save energy type hydraulic circuit.
- Please use CNC rotary table within the specification. Exceeding the specification may cause defective components and irreparable damage. Please contact us in case of the beyond the specification before ordering.
- Never modify the table by yourself without previous agreement of NIKKEN
- Never to touch any moving parts. Failure to follow this instruction may result in serious personal injury.
- For the rotary table with the NIKKEN controller, firstly turn the power of NIKKEN controller off, then turn the power of main M/C off at the end of operation.
- Always remove swarf from the table after use. Long term operation without cleaning may cause damage to the internal mechanism.
- Always change the lubrication oil annually to prevent the gear wear.
- If a collision occurs with the table, power off the machine controller immediately and contact your distributor for repair.
- Always stop using the table if unusual noises are heard or the slackness or defection of work piece and jig fixture are found. Irrepanable damage may be happened. Please contact with your distributor for repair.

NIKKEN WORLD WIDE SALES BRANCH

There are overseas Sales Branches in 12 countries. Each sales branch has stocks for toolings and CNC Rotary Tables, and service engineers look after the maintenance and service operation of our products. In the other region, e.g. East-South Asia, Ozaena, South America, Africa, etc., there are some distributors. At the production line in abroad, as there are many requirements for special tools and CNC Rotary Table to suit the special specifications, please ask us or distributors for spare tools and maintenance parts in advance.



LYNDEX-NIKKEN (U.S.A.)

NIKKEN EUROPE & NIKKEN U.K (UK)

NIKKEN DEUTSCHLAND (GERMANY)


NIKKEN SCANDINAVIA (SWEDEN)


KOREA NIKKEN (KOREA)

OLASA (SPAIN)


CUTTING TOOL (SPAIN)


NIKKEN CHINA (CHINA)

HERRAMIENTAS LYNDEX-NIKKEN (MEXICO)

PROCOMO-NIKKEN (FRANCE)


NIKKEN INDONESIA (INDONESIA)

NIKKEN ASIA (SINGAPORE)


SIAM NIKKEN (THAILAND)


NIKKEN TURKEY (TURKEY)


VEGA INTERNATIONAL (ITALY)

NIKKEN CHINA

New Nikken China facility was moved to Qinzhou Road, Shanghai on 2014. JAN due to the business expansion in China. The standard items of NC tooling & CNC rotary table and each important spare parts are stocked for quick delivery.

The sales of nikken products through Internet is not started in China. For after service and the further maintenance, please purchase Nikken products through authorized distributors.

LYNDEX-NIKKEN (USA)

As North America's leading supplier of machine tool accessories, LYNDEX-NIKKEN is a wholly-owned subsidiary of NIKKEN Kosakusho Works., Ltd. - Japan. Backed by over a half century of experience, LYNDEX-NIKKEN sets the standard for high quality and high technology with a complete line of superior toolholders and machine tool accessories. From one source you can expect the best of both worlds: Extreme Quality and Advanced Technology.

NIKKEN EUROPE (UK)

The NIKKEN Euro Centre based in the UK was opened in 1999; from here we sell, distribute and support all products to our subsidiaries and dealers in over 20 countries around Europe.

In addition to carrying out the functions of NIKKEN UK in the United Kingdom (UK), we employ forty staff members and engineers. At the end of 2015, NICE (NIKKEN Innovation Centre Europe) opened in the AMRC manufacturing technology park, where it provides support to customers working with difficult-to-machine materials, particularly in the aviation and energy industries.

Technical Support and Training Section

machining centre equipped with Testing Facilities

Service Department

NIKKEN DEUTSCHLAND (GERMANY)

Nikken Deutschland GmbH, a wholly owned subsidiary in Germany of NIKKEN Kosakusho Works, was established in 2003 to take over the sales activities of the previous distributor. Based in Russelsheim, which is a town made famous by the manufacturing complex of Opel, the company is located about 15 minutes away by car from Frankfurt airport. Germany has ranked at the top of the machine tool industry for many years, and is also the supply source of machine tools that are fuelling the significant expansion now taking place in Eastern Europe. Nikken Deutschland GmbH has its base at the centre of the huge market of Germany and Eastern Europe, and continues to broaden the range of the company's sales operations.

Nikken Deutschland GmbH has participated in and contributed to many trade shows and exhibitions held in Germany, including the EMO show, METAF, AMB and EURO MOULD.

The sales territory of Nikken Deutschland GmbH spans the vast area of eastern Europe and covers such countries as the Czech Republic, Slovakia, Austria, Russia, Poland, Hungary, Romania and Bulgaria, all countries in which Japanese companies are rapidly expanding their business. The service is not limited to sales, but engineers make on-site adjustments, repairs and service calls as well.

PROCOMO-NIKKEN (FRANCE)

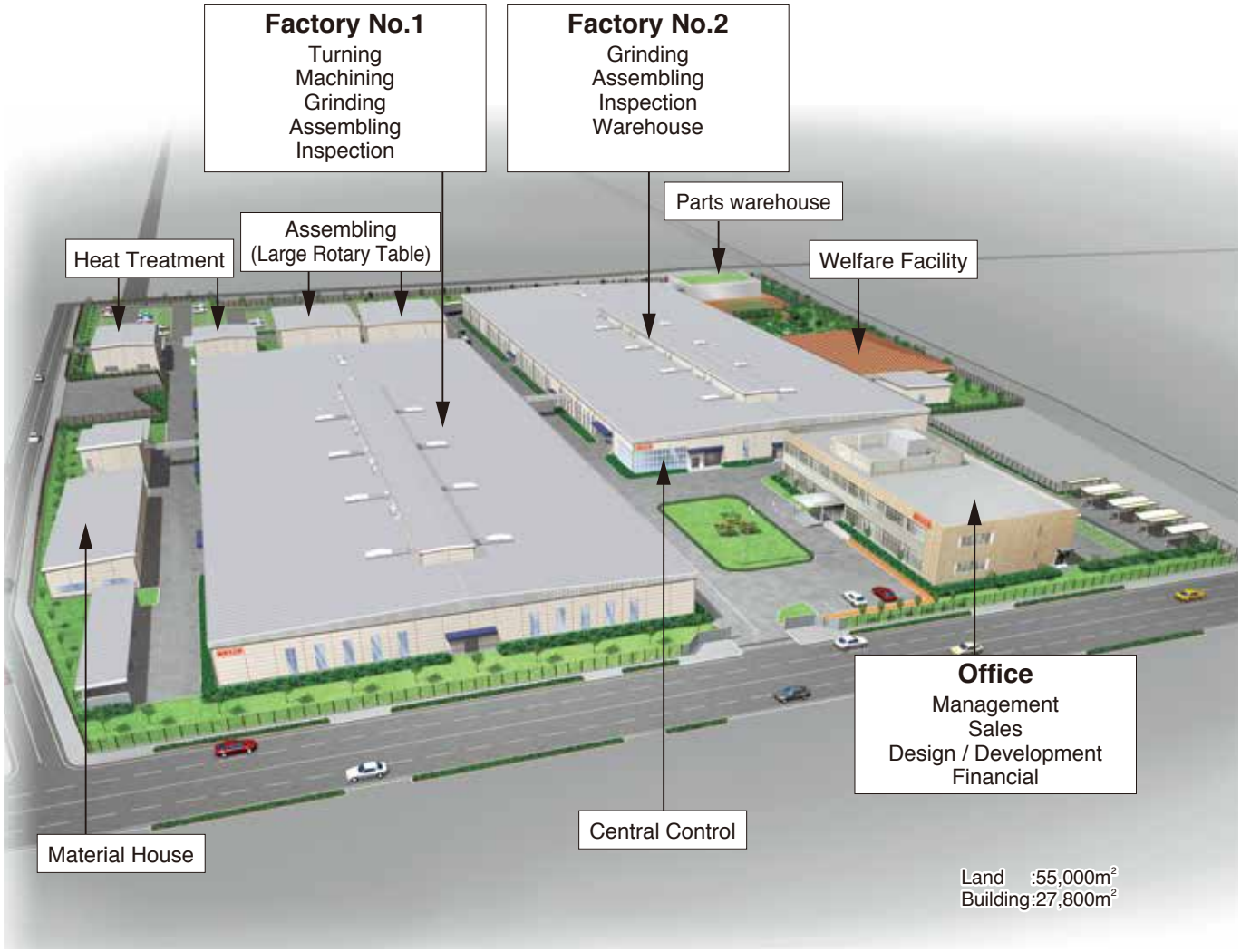
Procomo France S.A.S was established 30 years ago with the avowed intent to deliver the high-accuracy and high-quality tool holders and CNC rotary tables as well as related services, applications and after-sales servicing, into the hands of engineers in France. A major milestone in the company's history was marked in 2006 with the change of the company name to PROCOMO-NIKKEN, and the company took on a new lease of life as NIKKEN's wholly owned subsidiary in France.

The stocks of a large number of standard products are always on hand, enabling the products that customers need to be delivered in the shortest possible time. The NIKKEN Euro Centre and PROCOMO-NIKKEN retain constant and close contact; together they take on the challenge of how to machine products in a more rationalized manner, in a shorter time and to a higher accuracy so that France's engineers can meet every need of the French marketplace.

PROCOMO-NIKKEN has a team of five engineers dedicated full-time to providing users with application support prior to placing orders for tool holders and CNC rotary tables and to carrying out the preparation for shipment, education and training programs, maintenance and repairs, and servicing. This support network delivers a wide range of services, while willingly taking up the challenge of coming to grips with new applications.

Headquarter

NIKKEN



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■Please give your order to the following agent.

D.NH.1

●Specifications are subject to change without notice.