NIKKEN

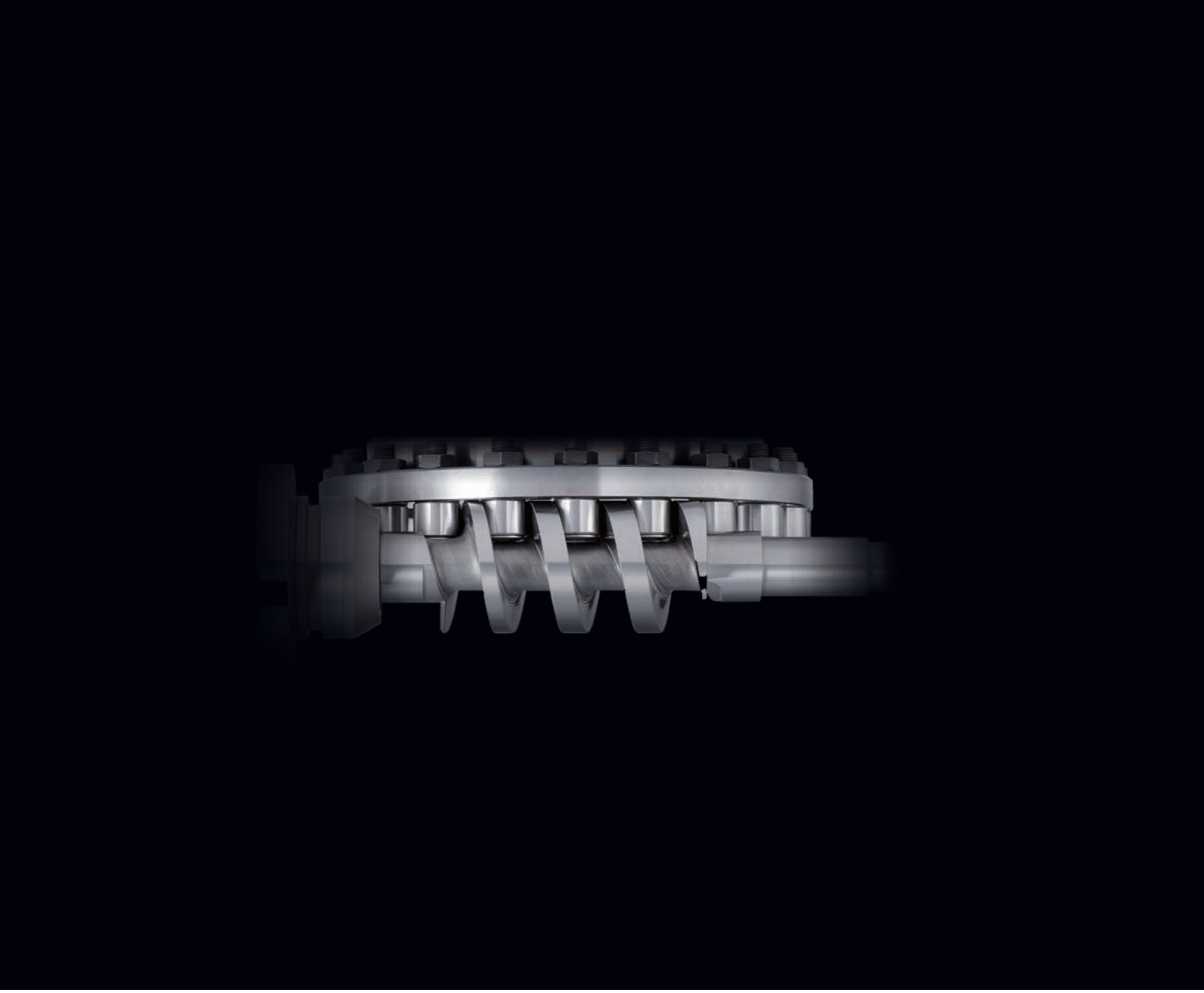
RED ROTARY TABLE SERIES

New Barrel Cam Mechanism

ROLLER EVOLUTION DRIVE



NIKKEN KOSAKUSHO WORKS, LTD.
CAT. NO.8812



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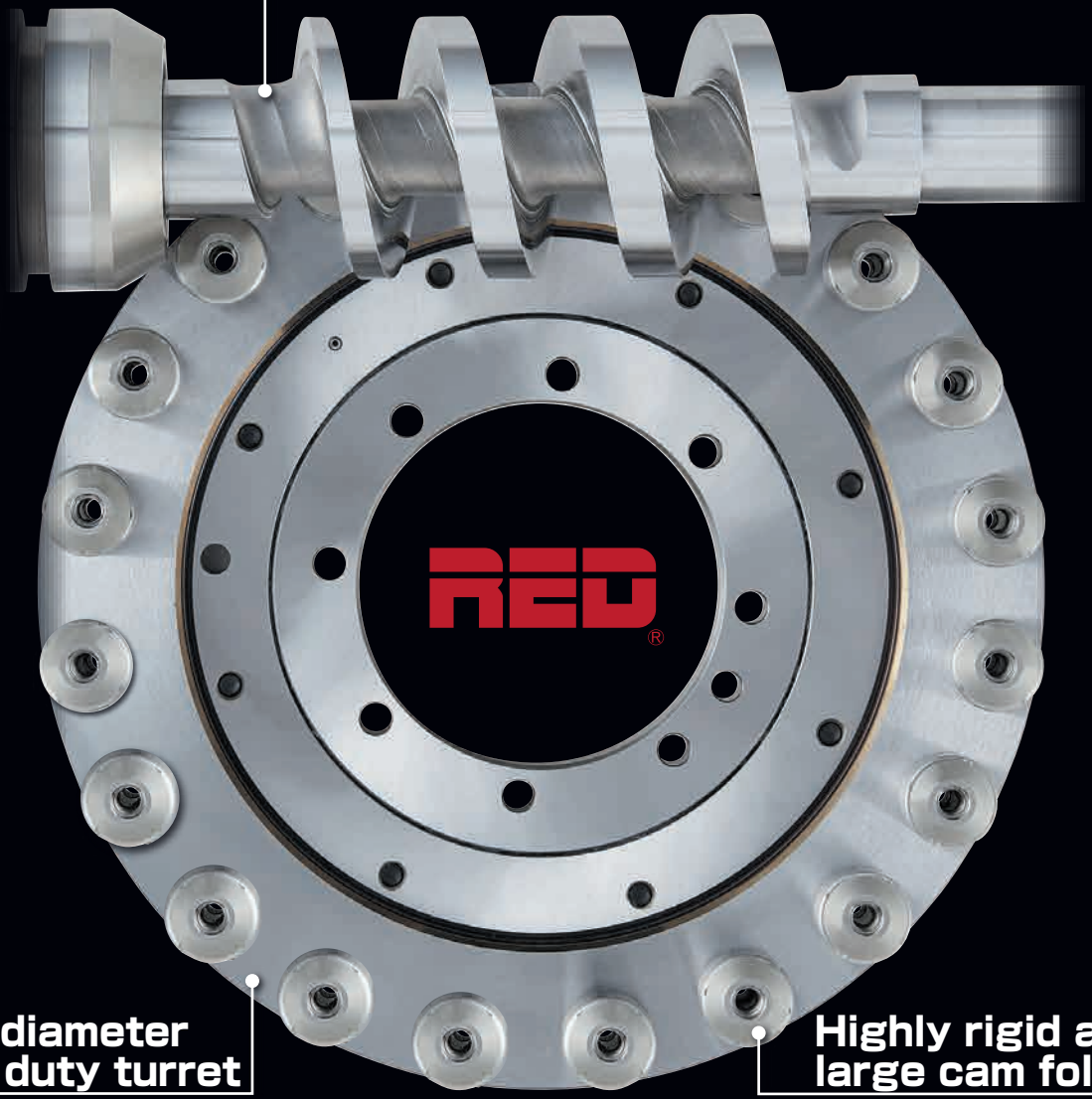
https://www.nikken-kosakusho.co.jp/en
e-mail : export@nikken-kosakusho.co.jp

■Please give your order to the following agent.

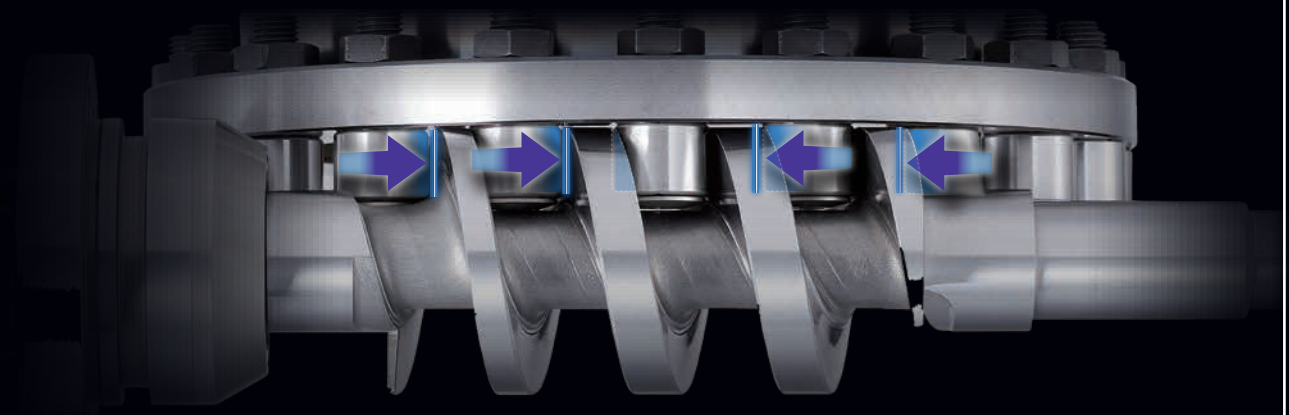
D.UJ.1

●Specifications are subject to change without notice.

Equipped with The New RED Barrel Cam Mechanism



No backlash is achieved by preloading the contact area between the cam follower and cam shaft.



The camshaft (input shaft) and turret (output shaft) are in rolling contact from both sides via cam followers that are suitably preloaded. As torque is transmitted while rotating, the structure has a low coefficient of friction and is resistant to wear, eliminating any need to adjust backlash during regular maintenance. The camshaft is machined with high precision into a theoretically calculated shape so that the position of the cam follower matches under preloaded conditions, achieving high rotational accuracy and indexing accuracy without error.

Made in Japan, Made by NIKKEN.

NIKKEN have developed a barrel cam mechanism for all "RED Tables", in order to achieve the ultimate performance required by our customers. In the pursuit of productivity, durability and ease of maintenance, we have designed and manufactured all of the main parts in-house using our own production system.

■Spirit of Innovation

In pursuit of exceptional performance

Our name "NIKKEN" means "Doing research & study every day", and this expresses the spirit of our company. This spirit is alive in every component of our RED rotary tables. To achieve unmatched high precision, high rigidity, and durability, we utilize a variety of key components incorporating our own innovative ideas, rather than relying on off-the-shelf parts.

■Long Life Concept

In-house design and manufacturing for secure environment

Although our products are highly durable, it is naturally to replace parts occasionally. Since the key components are manufactured in-house, our customers avoid the risk of not being able to perform product repairs due to being discontinued off-the-shelf parts. You can continue to rely on our high-precision products under secure environment over the long term.

High-speed, high-precision indexing with no backlash

NEW design contributes to automation

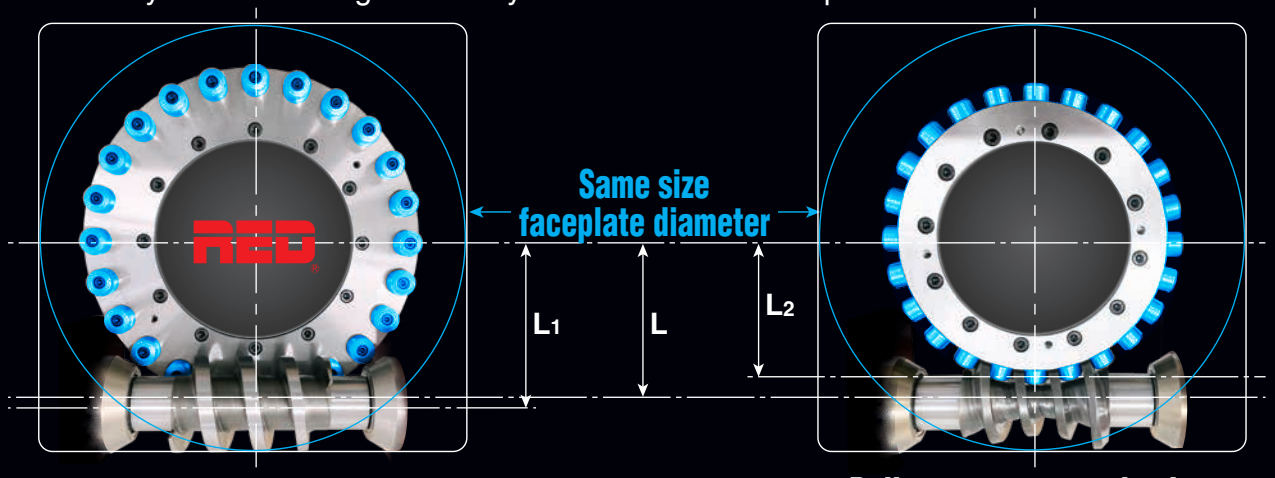


Wide range of sizes and full lineup



High rigidity structure of the new RED barrel cam mechanism

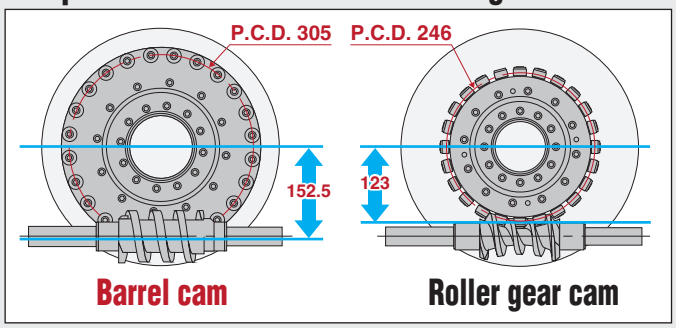
In general roller gear cam mechanisms, cam followers are arranged radially to the turret. In the barrel cam mechanism used in Nikken RED rotary tables, the cam followers are arranged perpendicular to the turret. Therefore, this increases rigidity by around 2.5 times when compared with a rotary table of roller gear cam system of the same faceplate diameter.



Comparison of design values for the same faceplate dia. (e.g. φ400)

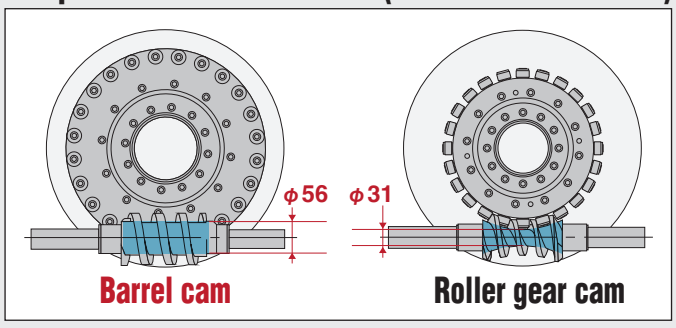
	Barrel cam	Roller gear cam	Dimensional expansion ratio
Cam follower mounting dia.	L1=152.5	L2=123	120%
Cam shaft size (cam shaft center dia.)	56	31	180%
Cam shaft size (cam shaft center dia.)	26	22	120%

Comparison of cam follower mounting dia.



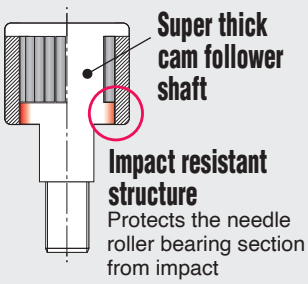
Compared to the roller gear cam mechanism, the barrel cam mechanism has the advantage of being able to design a larger cam follower mounting diameter. As a result, the pitch between adjacent cam followers can be wider, allowing for larger cam followers. Also, in terms of the cam shaft shape, the roller gear cam mechanism has a drum shape and its rigidity is limited to the smallest diameter in the center, whereas the barrel cam mechanism has a thick, uniform, straight shape.

Comparison of cam shaft size (cam shaft center dia.)

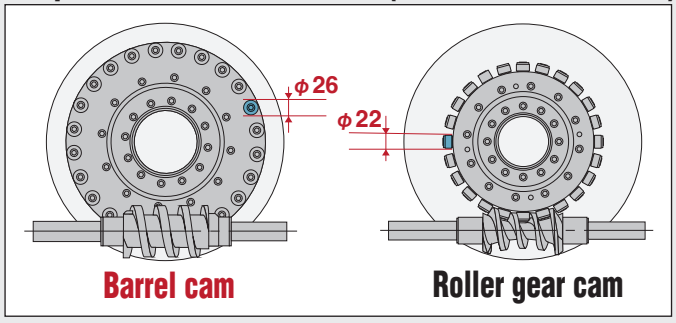


Nikken's unique ultra-thick, high-rigidity cam followers

The RED rotary table uses ultra-thick, high-rigidity cam followers to increase the life and rigidity of the needle roller by increasing its diameter, and to increase the rigidity of the coupling with the turret by increasing the size of the cam follower fixing bolt.



Comparison of cam follower size (cam follower outer dia.)

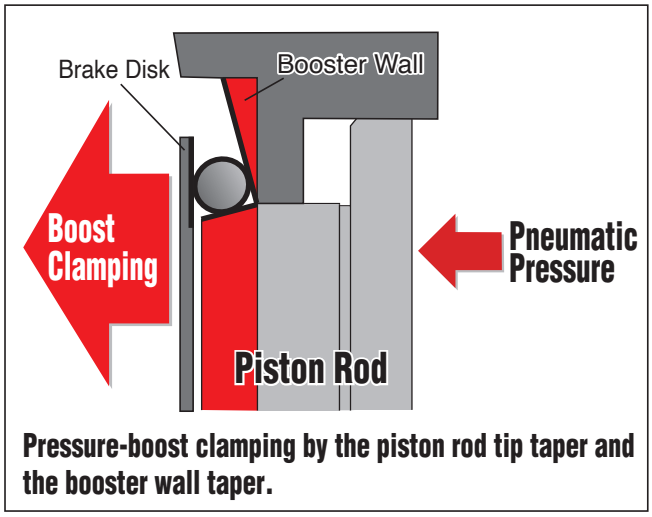


Lightweight and compact rotary table for powerful, large-size

Equipped with "Mechanical Booster" for no backlash + strong clamping

Compact models such as RED200/300 and 5AX-RED200 are newly equipped with a mechanical brake mechanism named "mechanical booster" that provides powerful clamping force even on machines without a hydraulic source. The brake torque that can withstand machining propulsion away from the swivel center, such as machining of large workpieces that exceed the table diameter, is achieved only by supplying air. Compared with the conventional small rotary table, the "Mechanical Booster" can significantly improve machining conditions and machining content.

Mechanical Booster

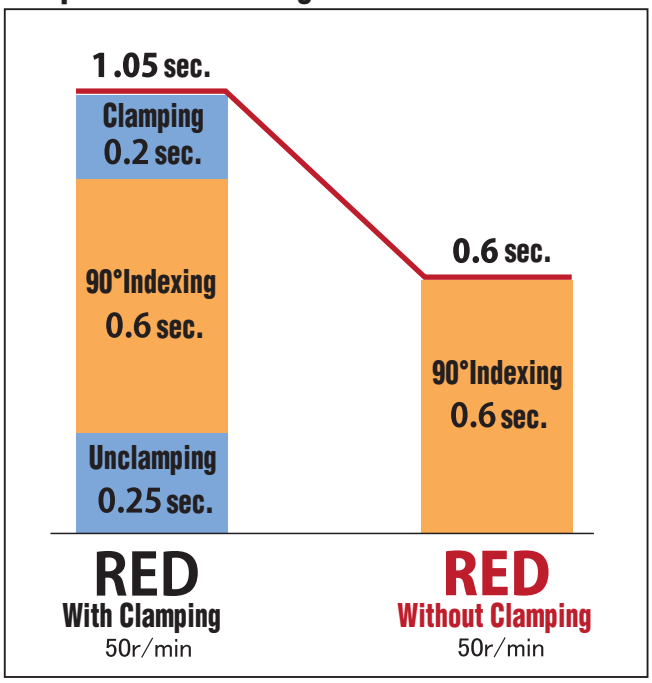


Pressure-boost clamping by the piston rod tip taper and the booster wall taper.

Brakeless machining is also available to significantly reduce machining time.

Brakeless machining with servo lock is also possi ble, depending on the workpiece material and machining conditions. The barrel cam mechanism, which is driven by appropriate preload with no back lash and no rattle, contributes to productivity improvement by drastically reducing machining time.

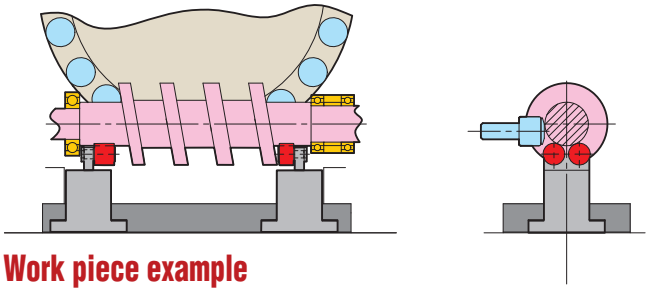
Comparison of indexing time



★ The above figures are for RED200.
★ The time for both clamping and unclamping includes the time for the confirmation timer.

Roller Support Mechanism（option）

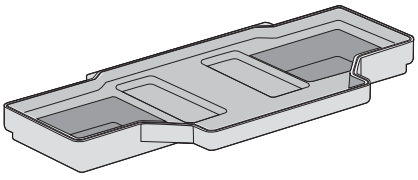
Even under overload conditions, the deflection of the camshaft is controlled, resulting in improved drive efficiency, durability, and indexing accuracy.



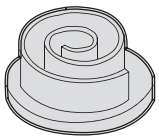
It is effective for compact models such as **RED200/300** and **tilting axis of 5AX-RED200-500L,** when the unbalanced load is significant large

Work piece example

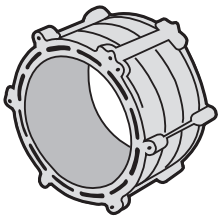
High-speed indexing performance is utilized for high-speed indexing of lightweight, large, and thin-walled workpieces, such as EV-related workpieces.



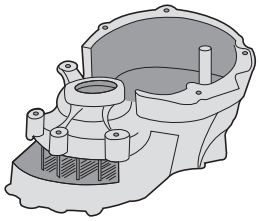
Battery case



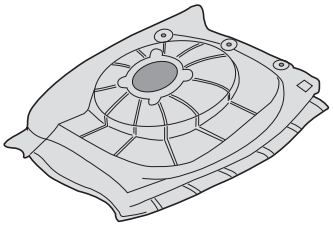
Scroll cam for compressor



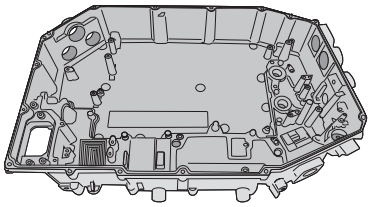
Moter Hausing



Reduced Housing



Panel



Inverter case

Equipped with Roller Evolution Drive Tilting Rotary Table



RED200

- High rigidity, high speed indexing, high precision
- Multi-port rotary joints available
- A variety of attachments can be fitted

Code No. example:REDB200LFAB-M

RED	B	200	L	F	A	B	-	M

Roller Evolution Drive

Bore★1
- B :Big
- (blank) :Standard

Dia of faceplate φmm

Motor location
- L :Left
- H :Horizontal
- (blank) :Right

Motor maker ☞P.14

Type of Motor
- A :AC
- (blank) :DC

Mechanical brake
- B :With
- (blank) :W/O

Motor
- M :With Motor (W/O Motor brake)
- MB :With Motor (With Motor brake)
- (blank) :W/O Motor

Specification

★1:For Big Bore, only RED200 is available.

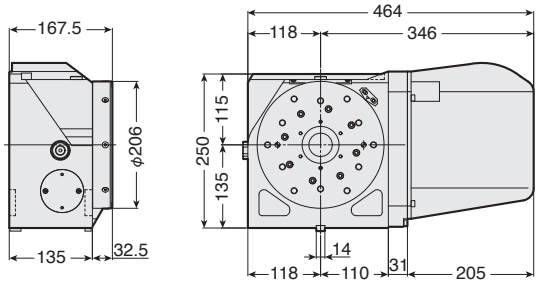
Item / Code No.		RED200	RED300	RED400	RED500	RED500H
Diameter of Table	φmm	206	310	406	500	500
Diameter of Spindle Hole	φmm	φ60H7 φ38*6	φ90H7 φ68	φ105H7 φ81	φ130H7 φ106	φ130H7 φ106
Center Height	mm	135	170	230	310	—
Width of T Slot *1	mm	—	—	—	—	—
Clamping System		Pneumatic (0.5MPa)	Pneumatic (0.5MPa)	Hydraulic (3.5MPa)	Hydraulic (3.5MPa)	Hydraulic (3.5MPa)
Clamping Torque	N・m	600*2	1430*2	2000	3600	3600
Servo Motor (with brake) *3		αiS4/5000-B	αiS8/4000-B	αiS22/4000-B	αiS40/3000-B	αiS40/3000-B
MIN. Increment		0.001°	0.001°	0.001°	0.001°	0.001°
Total Reduction Ratio		1/60	1/60	1/60	1/60	1/60
Rotation Speed *4*5	r/min	50(60)	50(60)	50(60)	50(60)	50(60)
Indexing Accuracy	sec	±20	20	15	15	15
Repeatability	sec	4	4	4	4	4
MAX. Work Load on the Table	Vertical kg	100	275	300	500	—
	Horizontal kg	200	550	600	1000	1000
Guide Line of MAX. Unbalancing Load	*5 N・m	35	100	200	500	—
MAX. Work Inertia	*5 Vertical kg・m2	2.5	8.6	15.4	24.7	53.2(Horizontal)
Driving Torque	*5 *7 N・m	259 (475) *8	529	1400	2463	2463
Optional (Flange plate type) Rotary Joint max. number of ports		9+1	10+1	10+1	12+1	12+1
Net Weight	kg	60	123	250	410	400

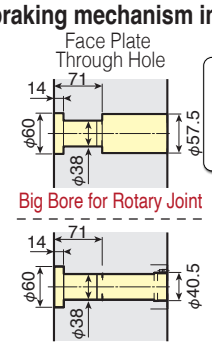
*1 : T-slotted faceplate is available as an option. Please order as required.
*2 : Without Mechanical brake is standard.
*3 : Selecting motor with brake is recommended. ☞P.14
*4 : The motor is used at 3,000r/min. The rotation speed in () is when the motor is used at 3,600r/min. It may be possible depending on jig fixtures or components.
*5 : Table speed, allowable work inertia, and continuous holding torque are values for FANUC motors.
*6 : Please use Big Bore specification when flange type rotary joints are fitted.
Please use standard bore specification when power chucks, rotary cylinders, encoders are fitted.
*7 : Driving torque does not refer to the continuous cutting torque. It refers to the torque within the range required for positioning the payload mass (workpiece and fixture).
*8 : The values shown are for FANUC αiS8/4000-B. Please ask the external dimensions separately.

RED200

Rotary joint (max. number of ports: 9+1) can also be mounted.
Equipped with the "Mechanical Booster," the most powerful pneumatic braking mechanism in Nikken's history.

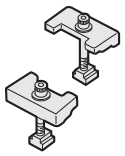






MECHANICAL inside BOOSTER

Clamp Device

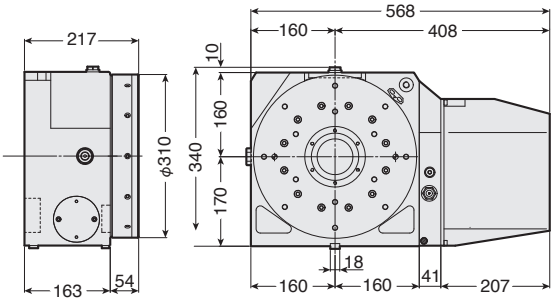


★ The photo show the model with optional rotary joint.
★ Please use Big Bore specification when flange type rotary joints are fitted. Standard for draw bar system

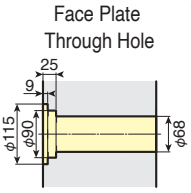
RED300

Rotary joint (Max. number of ports: 10+1) can also be mounted.
Equipped with the "Mechanical Booster," the most powerful pneumatic braking mechanism in Nikken's history.

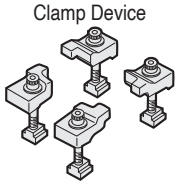




MECHANICAL inside BOOSTER



Clamp Device

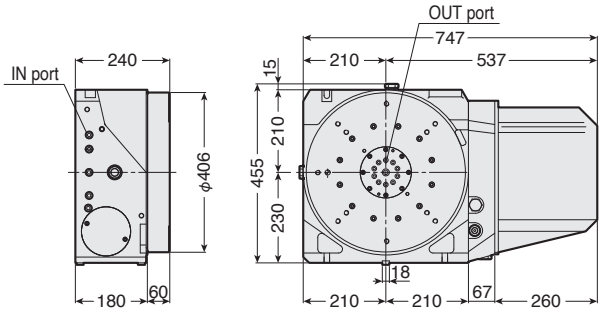


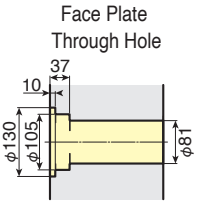
★ The photo show the model with optional rotary joint.

RED400

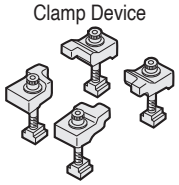
Rotary joint (max. number of ports: 10+1) can be mounted.







Clamp Device

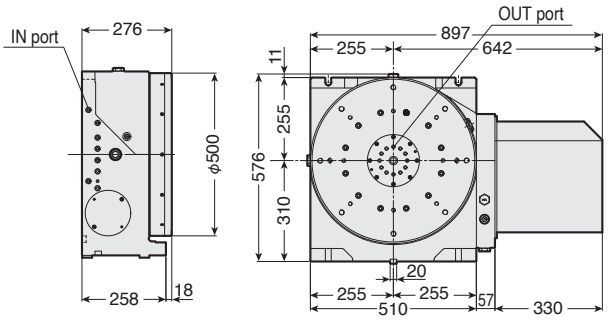


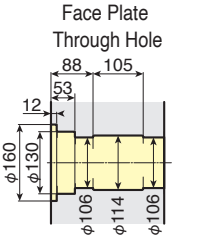
★ The photo and figure show the model with optional rotary joint.

RED500

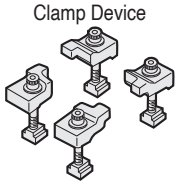
Rotary joints (maximum number of ports: 12+1) can be mounted.







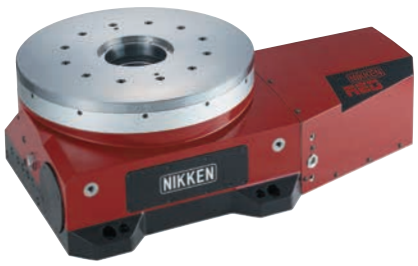
Clamp Device

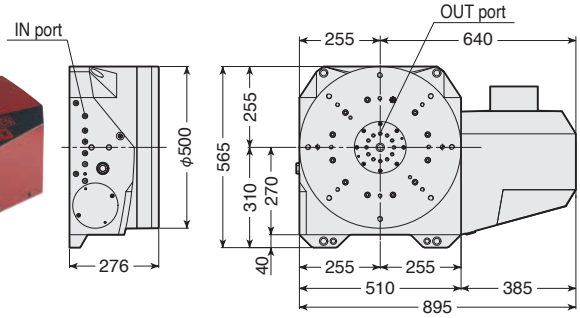


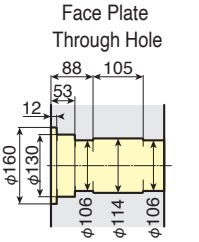
★ The figure show the model with optional rotary joint.

RED500H

Rotary joints (maximum number of ports: 12+1) can be mounted.



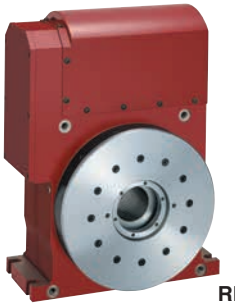




★ The figure show the model with optional rotary joint.

Equipped with Roller Evolution Drive
Top Side Motor Mounted Rotary Tabele

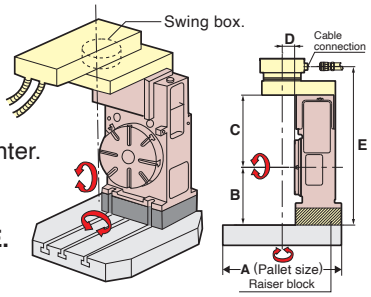
Semi-Standard



RED200T

- Ideal for the B-Axis of general-purpose horizontal M/C
- Multi-port rotary joints available
- Ideal for special purpose machines

Also ideal for B-axis of general-purpose horizontal machining center. Figure at right shows example of pallet mounting.
Please specify A, B, C, D and E.



Code No. example:REDB200TFAB-M

RED	B	200	T	F	A	B	-	M

Roller Evolution Drive

Bore★1
B :Big
(blank) :Standard

Dia of faceplate φmm

Motor location
T :Top

Motor maker
☞P.14

Type of Motor
A :AC
(blank) :DC

Mechanical brake
B :With
(blank) :W/O

Motor
M :With Motor (W/O Motor brake)
MB :With Motor (With Motor brake)
(blank) :W/O Motor

★1:For Big Bore, only RED200T is available.

Specification

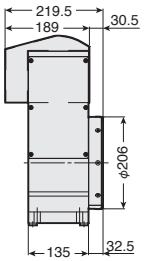
Item / Code No.		RED200T	RED300T	RED400T	RED500T
Diameter of Table	φmm	206	310	406	500
Diameter of Spindle Hole	φmm	φ60H7 φ38 *6	φ90H7 φ68	φ105H7 φ81	φ130H7 φ109
Center Height	mm	135	170	230	310
Width of T Slot *1	mm	—	—	—	—
Clamping System		Pneumatic (0.5MPa)	Pneumatic (0.5MPa)	Hydraulic (3.5MPa)	Hydraulic (3.5MPa)
Clamping Torque	N•m	600 *2	1430 *2	2000	3600
Servo Motor (with brake) *3		αiS4/5000-B	αiS8/4000-B	αiS22/4000-B	αiS40/3000-B
MIN. Increment		0.001°	0.001°	0.001°	0.001°
Total Reduction Ratio		1/60	1/60	1/60	1/90
Rotation Speed *4*5	r/min	50(60)	50(60)	50(60)	33.3(40)
Indexing Accuracy	sec	±20	20	15	15
Repeatability	sec	4	4	4	4
MAX. Work Load on the Table	Vertical kg	100	275	300	500
	Horizontal kg	—	—	—	—
Guide Line of MAX. Unbalancing Load	*5 N•m	35	100	200	500
MAX. Work Inertia	*5 Vertical kg•m2	2.5	8.6	15.4	55
Driving Torque	*5 *7 N•m	259 (475) *8	529	1400	3543
Optional (Flange plate type) Rotary Joint max. number of ports		9+1	10+1	10+1	13+1
Net Weight	kg	68	148	266	455

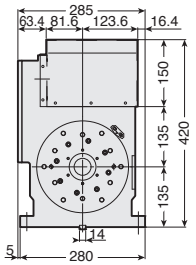
*1 : T-slotted faceplate is available as an option. Please order as required.
*2 : Without Mechanical brake is standard.
*3 : Selecting Motor with brake is recommended. ☞**P.14**
*4 : The motor is used at 3,000r/min. The rotation speed in () is when the motor is used at 3,600r/min. It may be possible depending on jig fixtures or components.
*5 : Table speed, allowable work inertia, and continuous holding torque are values for FANUC motors.
*6 : Please use Big Bore specification when flange type rotary joints are fitted.
Please use standard bore specification when power chucks, rotary cylinders, encoders are fitted.
*7 : Driving torque does not refer to the continuous cutting torque. It refers to the torque within the range required for positioning the payload mass (workpiece and fixture).
*8 : The values shown are for FANUC αiS8/4000-B. Please ask the external dimensions separately.

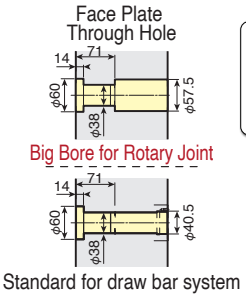
RED200T

Rotary joint (max. number of ports: 9+1) can also be mounted.
Equipped with the "Mechanical Booster," the most powerful pneumatic braking mechanism in Nikken's history.



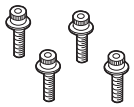






MECHANICAL inside BOOSTER

Clamp Device

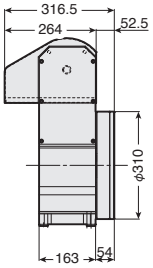


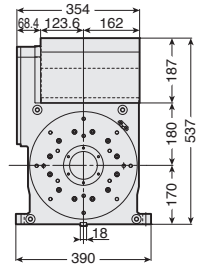
★ Please use Big Bore specification when flange type rotary joints are fitted.

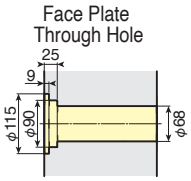
RED300T

Rotary joint (Max. number of ports: 10+1) can also be mounted.
Equipped with the "Mechanical Booster," the most powerful pneumatic braking mechanism in Nikken's history.



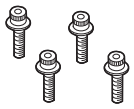






MECHANICAL inside BOOSTER

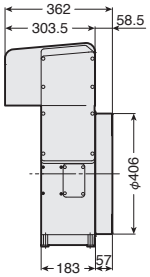
Clamp Device

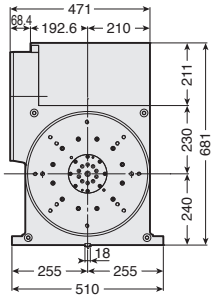


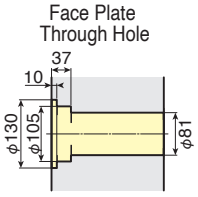
RED400T

Rotary joint (max. number of ports: 10+1) can be mounted.

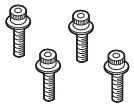








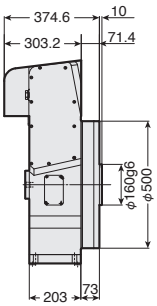
Clamp Device

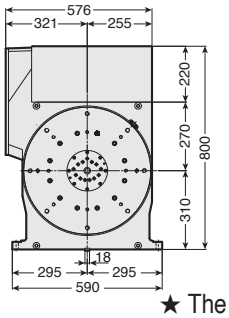


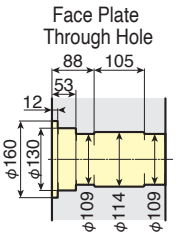
RED500T

Rotary joint (max. number of ports: 13+1) can be mounted.

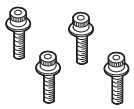








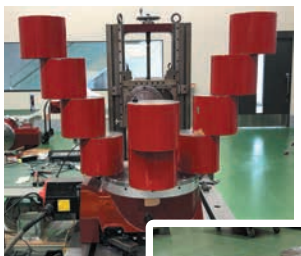
Clamp Device



★ The figure show the model with optional rotary joint.

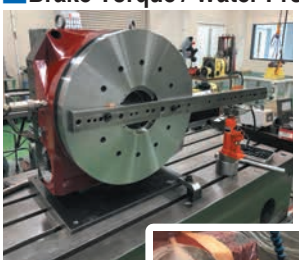
RED® Evolation Test

Over Load





Brake Torque / Water Proof





Cutting Stability / Accuracy Measurement





Equipped with Roller Evolution Drive Tilting Rotary Table



5AX-RED200-250

- Process integration can be achieved on BT30 machines
- Multi-port rotary joints available
- A variety of attachments can be fitted

Code No.example:5AX-REDB200-250FAB-M

5AX - RED B 200 - 250 L F A B - M

- **5AX**
- **Roller Evolution Drive**
- Bore: **B** :Big / ■ :Standard
- Dia of faceplate φmm
- Workpiece swing dia: **250** φ250mm / **500** φ500mm / **610** φ610mm
- Motor location: **L** :Left / ■ :Right
- Motor maker ☞P.14
- Type of Motor: **A** :AC / ■ :DC
- Mechanical brake★1: **B** :With / ■ :W/O
- Motor★2: **M** :With Motor (W/O Motor brake) / **MB** :With Motor (With Motor brake) / ■ :W/O Motor

Specification

★1:With/without mechanical brake can only be selected for rotary axis. Tilt axis must have mechanical brake.
★2:With/without motor brake can only be selected for rotary axis. Tilt axis must have motor with brake.

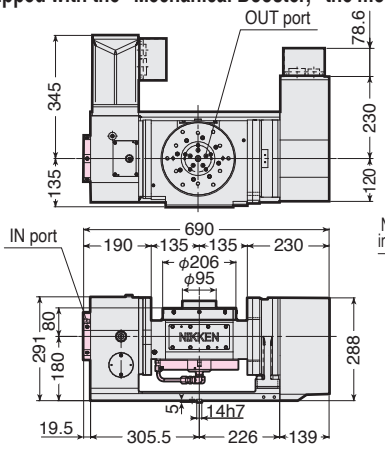
Item / Code No.		5AX-RED200-250		5AX-RED200-500L	
Diameter of Table	φmm	206		206	
Diameter of Spindle Hole	φmm	φ60H7 φ38 *6		φ60H7 φ38 *6	
Center Height	mm	180		310	
Table Height in Horizonatal Position	mm	260		310	
Width of T Slot*1		—		—	
Axis		Rotary	Tilting (0°～105°)	Rotary	Tilting (0°～105°)
Clamping System		Pneumatic (0.5MPa)	Pneumatic (0.5MPa)	Pneumatic (0.5MPa)	Pneumatic (0.5MPa)
Clamping Torque	N・m	600 *2	600	600 *2	600
Servo Motor (with brake)*3		αiS4/5000-B	αiS4/5000-B	αiS4/5000-B	αiS8/4000-B
MIN. Increment		0.001°	0.001°	0.001°	0.001°
Total Reduction Ratio		1/60	1/60	1/60	1/60
Rotation Speed*4*5	r/min	50(60)	50	50(60)	50
Indexing Accuracy	sec	± 20	60	± 20	60 *8
Repeatability	sec	4	± 6	4	± 6
MAX. Work Load on the Table	0° to 30°  kg	60		100	
	30° to 90°  kg	40		100	
MAX. Work Inertia	*5  kg・m2	3		3	
Driving Torque	*5 *7  N・m	259		259 (475)*9	
Optional (Flange plate type) Rotary Joint max. number of ports		5+1		9+1	
Net Weight	kg	164		225	

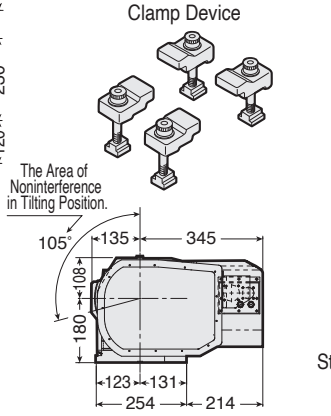
*1 : T-slotted faceplate is available as an option. Please order as required.
*2 : Without Mechanical brake for rotary axis is standard.
*3 : Selecting motor with brake is recommended. ☞P.14
*4 : The motor is used at 3,000r/min. The rotation speed in () is when the motor is used at 3,600r/min. It may be possible depending on jig fixtures or components.
*5 : Table speed, allowable work inertia, and continuous holding torque are values for FANUC motors.
*6 : Please use Big Bore specification when flange type rotary joints are fitted.
Please use standard bore specification when power chucks, rotary cylinders, encoders are fitted.
*7 : Driving torque does not refer to the continuous cutting torque. It refers to the torque within the range required for positioning the payload mass (workpiece and fixture).
*8 : Pitch error compensation is used.
*9 : The values shown are for FANUC αiS8/4000-B. Please ask the external dimensions separately.

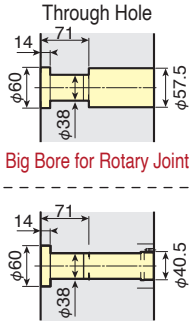
5AX-RED200-250

Rotary joint (max. number of ports: 5+1) can also be mounted.
Equipped with the "Mechanical Booster," the most powerful pneumatic braking mechanism in Nikken's history.









★ The figure show the model with optional rotary joint. ★ Please use Big Bore specification when flange type rotary joints are fitted.
When high column specification, centre height is 65mm higher than standard.

5AX-RED200-500L
5AX-RED200-610L

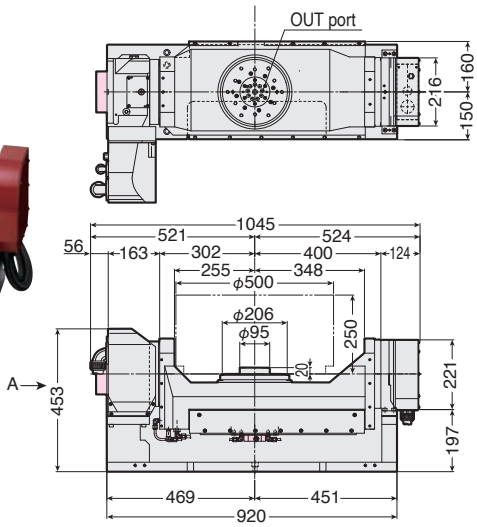
Rotary joint (max. number of ports: 9+1) can also be mounted.

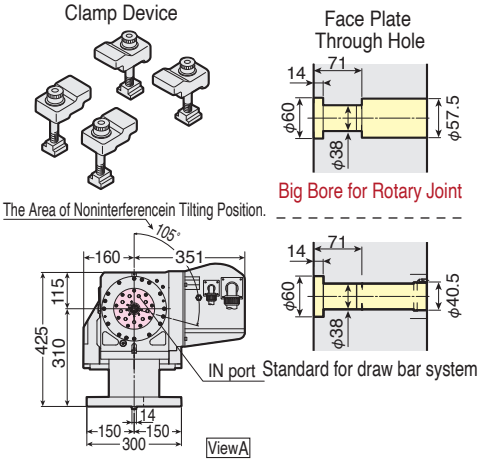
Equipped with the "Mechanical Booster," the most powerful pneumatic braking mechanism in Nikken's history.

Large Workpiece 5-Axis Machining with BT30 Machine

- Machining of Workpieces up to ϕ500mm (ϕ610 mm) on a Compact M/C
- High-Efficiency Machining of Large, Lightweight Aluminum Workpieces for EV Applications
- Expanded Machining Area at 90° Through Alignment of the Rotary Table Surface and Tilting Axis Center







★ The photo and figure show the model with optional rotary joint. ★ Please use Big Bore specification when flange type rotary joints are fitted.
★ The dimensions shown in the drawing are for the model with a maximum diameter of ϕ500. For dimensions and specifications of the ϕ610 model, please request the separate product documentation.

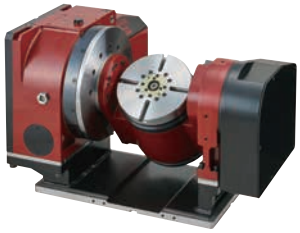
Examples of Custom Specifications (Different Table Diameters,Pictches etc.)



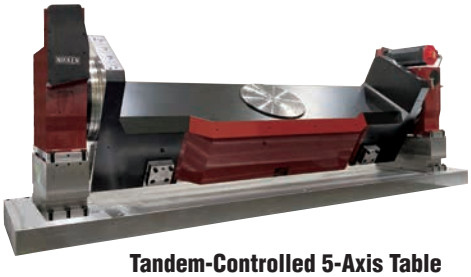
Eco Black Rotary Table
RED-D300-RP/SRP



5AX-RED400



RED + DD Hybrid
5AX-DD201HSR-RED



Tandem-Controlled 5-Axis Table

Accessories

Support Tables line-up

★Rotary joint is available for all models.

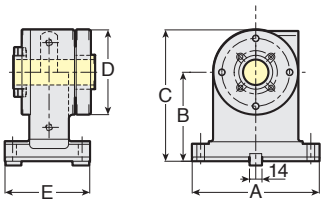
Table Model	Center Height	Without Clamping	With Clamping		With Clamping
			Pneumatic (0.5MPa)	Hydraulic (3.5MPa)	Slim design
RED200	135	CST100-135	TAT-170N		TAS-100N
RED300	170	–	TAT-200N*/250N(Shared use Air/Hyd)		–
RED400	230	–		TAT-321N/401N	TAT-403N
RED500	310	–		TAT-501N	–

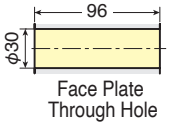
*It is possible to increase the center height by 20mm using a sub-base

CST100-135

■Without Clamping





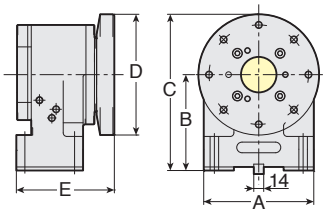


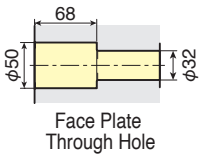
Code No.	A	B	C	D	E	Weight(kg)
CST100-135	150	135	185	100	100	8

TAT-170N

■Pneumatic : 0.5MPa
■Clamping Torque : 205N・m





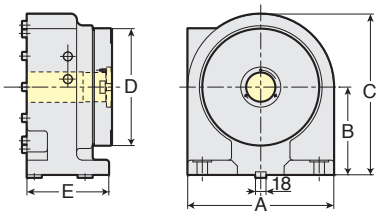


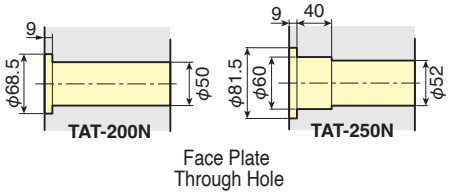
Code No.	A	B	C	D	E	Weight(kg)
TAT-170N	155	135	220	170	138	25

TAT-200N, 250N

■Pneumatic : 0.5MPa, Hydraulic : 3.5MPa
■Clamping Torque Pneumatic : 112N・m
Hydraulic : 784N・m





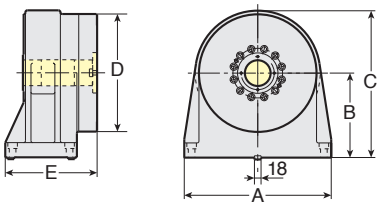


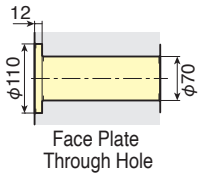
Code No.	A	B	C	D	E	Weight(kg)
TAT-200N	250	150	275	200	145	43
TAT-250N	250	170	295	250	145	50

TAT-321N, 401N, 501N

■Hydraulic : 3.5MPa
■Clamping Torque : 1470N・m



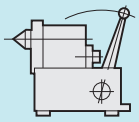
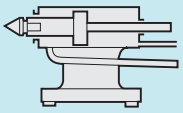
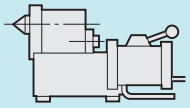




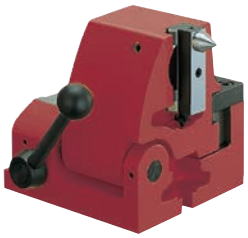
Code No.	A	B	C	D	E	Weight(kg)
TAT-321N	400	230	400	320	250	120
TAT-401N	400	230	430	400	250	140
TAT-501N	480	310	560	500	250	220

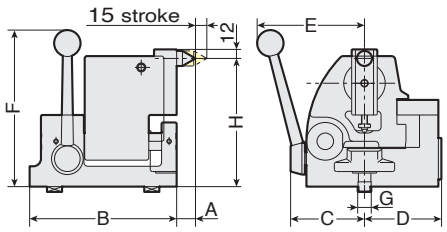
★The table without T slots "N" is standard. T slots are available (optional)
★Pneumatic ports: 2 x Rc1/8 Solenoid, Clamp-Unclamp switches are not included.
★Hydraulic connections are RC3/8 X 2 and pneumatic connections are RC1/8 X 2. Confirmation switches for clamp/unclamp and solenoid valve are not included.
★Please add **"— center height"** at the end of Code No. for the support table with different center height **(B). e.g. TAT-200N-170**

Tailstocks line-up

Table Model	Center Height	MANUAL	PNEUMATIC / HYDRAULIC	HYDRAULIC
		 Stroke:15mm	 Stroke:60mm	 Stroke:100mm
RED200	135	**P-125S**	**PBA-135**	—
RED300	170	**P-170S**	**PBA-170**	**H-170S**
RED400	230	**P-230S**	—	**H-230S**
RED500	310	**P-310S**	—	—

Manual Tailstock





Code No.	H(Center Height)	A	B	C	D	E	F	G	Weight(kg)
P-125S	130～140	27	150	76	74	120	210	14	11.5
P-170S	160～180	25	195	98	102	145	210	18	22.5
P-230S	220～240	25	195	98	102	145	250	18	27
P-310S	300～320	15	235	103	124	145	330	20	41.5

★The center height can be adjusted. Please refer to Center Height H on the table.
★Left hand type is available for all models.
★For P-170S and P-230S, 5 pcs of changeable centers are included.
★Live center can be applied.

Changeable Center



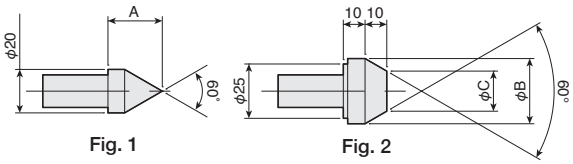


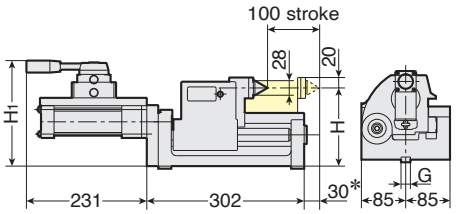
Fig. 1 Fig. 2

Code No.	Fig.	A	B	C
PC-2	1	25	—	—
PC-3	1	50	—	—
PC-4	2	—	30	18.45
PC-5	2	—	40	28.45
PC-6	2	—	50	38.45

Hydraulic Tailstocks

■Hydraulic : 3.5MPa
■Thrust : 5370N





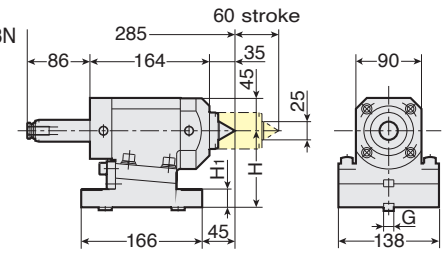
Code No.	H(Center Height)	H_1	G	Weight(kg)
H-170S	160～180	211	18	35
H-230S	220～240	271	18	45

★ The center height can be adjusted. Please refer to Center Height H on the table.
★ The rotary center is built-in.
＊ MAX. work piece diameter must be smaller than ϕ130mm, when the stroke of changing the work piece is more than 30mm marked.

Pneumatic / Hydraulic both usable Tailstocks

■Pneumatic : 0.5MPa, Hydraulic : 2MPa
■Thrust Pneumatic : 1176N, Hydraulic : 4733N





Code No.	H(Center Height)	H_1	G	Weight(kg)
PBA-135	135	55	14	20
PBA-170	170	90	18	24.5

★ The center height can be adjusted. (Adjustable range : 0.35mm)
★ The rotary center is built-in.
★ MT (Morse Taper) type quill is also available. Please contact with us.
★ The different length of the stroke is available. Please contact us.

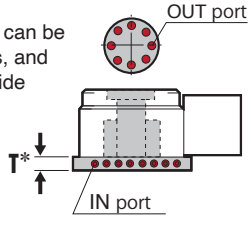
Rotary Joints

Table Model	Center Height	MAX. Number of Ports	T*	Rotary Joint Code. No.
REDB200★	Flange mount type	9+1	34	RN- RE200 SD-9+1-F
RED300	Flange mount type	10+1	29.5	RN- RE300 SD-10+1-F
RED400	Built-in type	10+1	–	RN- RE400 SD-10+1-B
RED500,500H	Built-in type	12+1	–	RN- RE500 SD-12+1-B
RED500T	Built-in type	13+1	16	RN- RE500 SD-13+1-B
5AX-REDB200-250★	Flange mount type	5+1	32	RN-AXRE2025 SD-5+1-A
5AX-REDB200-500L★	Flange mount type	9+1	34	RN-AXRE2050 SD-9+1-A

★Big Bore Specification

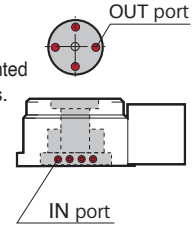
■Flange mount type

The IN port positions can be selected from 4 sides, and can be placed on a side without interference.



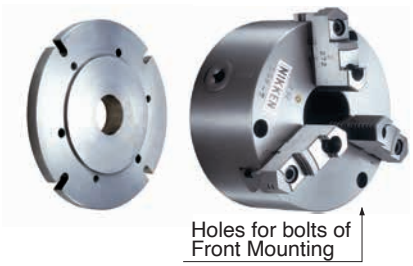
■Built-in type

The rotary joint can be mounted on the standard dimensions.



Scroll Chuck

Chuck Plate　　Scroll Chuck



Holes for bolts of Front Mounting

Scroll Chuck & Chuck Plate

Chuck Size	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	64～169
10″	10～229	72～208
12″	10～258	82～238

This is the actual gripping range not jow stroke.

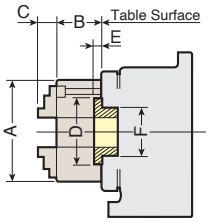


Fig.1

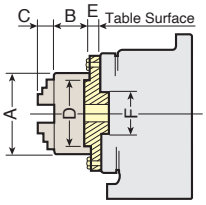


Fig.2

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

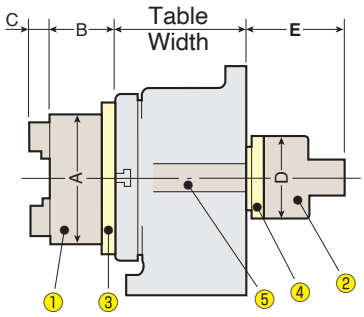
The chuck plates for the scroll chucks without * can be used for the scroll chuck based on JIS B6151 SC/TC standard.

Front End Dimensions with Scroll Chuck & Chuck Plate

Table Model	Chuck Size	Chuck Plate	A	B	C	D	E	F	Fig. No.
RED200	R-6	X-6H*	167	66	44.25	130	4	60	1
	R-7	X-7H*	192	75	46.25	155	4	60	1
RED300	R-7	X-7J*	192	75	46.25	155	4	90	1
	R-9	X-9L	233	82	55.25	190	18	90	2
RED400	R-10	X-10D	274	86	53.25	230	20	105	2
	R-12	X-12G	310	92	59.25	260	20	105	2
RED500	R-10	X-10	274	86	53.25	230	20	130	2
	R-12	X-12B	310	92	59.25	260	20	130	2
5AX-RED200-250 5AX-RED200-500L	R-6	X-6H*	167	66	44.25	130	4	60	1
	R-7	X-7H*	192	75	46.25	155	4	60	1

Power Chuck

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



● Power chuck Code No.

HO1MA □ □

- Serration pitch S : 1.5
- □ : 3
- Chuck size

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

Power Chuck & Rotary Cylinder

Table Model	Power Chuck Code No.	Pneu. Rotary Cylinder / Hyd. Rotary Cylinder	A	B	C	D	E
RED200	HO1MA-4	HO5CH-100	110	70	27	115	225
		HH4C-80				130	220
	HO1MA-5	HO5CH-150	135	70	27	115	235
		HH4C-80				130	220
	HO1MA-6(S)	HO5CH-175	165	94	43	135	265
		HH4C-100				210	240
RED300	HO1MA-6(S)	HO5CH-175	165	94	43	135	265
		HH4C-100				210	240
	HO1MA-8(S)	HO5CH-250	210	110	43	160	315
		HH4C-125				290	265

Table Model	Power Chuck Code No.	Pneu. Rotary Cylinder / Hyd. Rotary Cylinder	A	B	C	D	E
RED400	HO1MA-8(S)	HO5CH-250	210	110	43	160	300
		HH4C-125				290	251
	HO1MA-10(S)	HO5CH-300	254	120	43	180	327
		HH4C-125				340	251
	HO1MA-12(S)	HO5CH-300	304	140	53	180	327
		HH4C-140				340	270
RED500	HO1MA-10(S)	HO5CH-300	254	120	43	160	250
		HH4C-125				340	310
	HO1MA-12(S)	HO5CH-300	304	140	53	180	260
		HH4C-140				340	310
5AX-RED200-250H 5AX-RED200-500HL	HO1MA-4	NIKKEN	110	70	27	—	—
	HO1MA-5	Pneumatic/Hydraulic	135	70	27	—	—
	HO1MA-6(S)	Cylinder	165	94	43	—	—

Recommended lubricating Oil and Amount

Required oil Amount for CNC rotary table

Table Model	Main Body(cc)	Gear Box(cc)
RED200	700	Grease
RED300	1,800	190
RED400	3,200	300
RED500	4,400	350
RED500H	3,400	500
RED200T	1,100	—
RED300T	2,600	—
RED400T	4,400	—
RED500T	10,200	—

Recommended oil

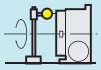
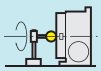
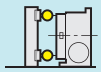
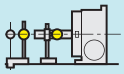
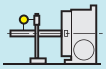
Oil Maker	Code No.
Idemistu Kosan	Super Multi Oil 100
JX Nippon Oil & Energy	SUPER MULPUS DX 100
Cosmo Oil Lubricants	Cosmo New Mighty Super 100
Showa Shell Sekiyu	Shell Morlina S2 BA100
EMG Marketing	Mobil DTE Heavy

Required oil Amount for 5AX rotary table

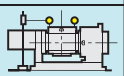
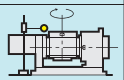
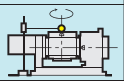
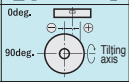
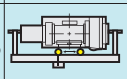
Table Model	Axis	Main Body(cc)	Gear Box(cc)
5AX-RED200-250	Rotary	400	Grease
	Tilting	700	Grease
5AX-RED200-500L	Rotary	700	Grease
	Tilting	700	Grease

Accuracy Standard

CNC Rotary Table for both of Vertival and Horizontal Use

Measuring Item	Measuring Method	RED200	RED300	RED400	RED500
Parallelism between table surface and frame bottom surface (Concave)		0.015mm	0.02mm	0.02mm	0.02mm
Runout of table surface		0.01mm	0.015mm	0.015mm	0.02mm
Concentricity of center bore		0.01mm	0.01mm	0.01mm	0.01mm
Squareness of table surface (Minus deviation at upper part is not permitted.)		At the full length 0.02mm	0.02mm	0.02mm	0.03mm
Parallelism between center line of test bar and key way		At 150mm 0.02mm	0.02mm	0.02mm	0.02mm
Parallelism between frame bottom surface and table center line		At 150mm 0.02mm	0.02mm	0.02mm	0.03mm
Indexing accuracy	–	±20″	20	15	15
Repeatability	–	4″	4″	4″	4″

Tilting Rotary Table

Measuring Item	Measuring Method	5AX-RED200 -250	5AX-RED200 -500L
Parallelism between table surface and frame bottom at tilting angle 0° (Concave)		0.015mm	0.015mm
Deviation of table surface at tilting angle 0°		0.01mm	0.01mm
Deviation of table center hole at tilting angle 0°		0.01mm	0.01mm
Displacement of center when moving from 0° to 90° at tilting angle 90°		0.015mm	0.015mm
Parallelism between table surface and center line of guide key at tilting angle 90°		At the full length 0.015mm	At the full length 0.030mm
Indexing accuracy of rotary axis	–	±20″	±20″
Repeatability of rotary axis	–	4″	4″
Indexing accuracy of tilting axis (Cumulative)	–	60″	60″
Repeatability of tilting axis	–	±6″	±6″

CNC Rotary Table only for Horizontal Use

Measuring Item	Measuring Method	RED500H
Parallelism between table surface and frame bottom surface (Concave)		0.02mm
Runout of table surface at horizontal position		0.015mm

Measuring Item	Measuring Method	RED500H
Concentricity of center bore		0.01mm
Indexing accuracy	–	15
Repeatability	–	4″

List of recommended servo motors (for additional axis specifications)

■S series (3000r/min) is standard for Fanuc motor
■Motors other than those listed below can also be installed

		5AX-RED200-500L Rotary axis 5AX-RED200-250 Rotary/Tilting axis	RED200	RED300 5AX-RED200-500L Tilting axis	RED400	RED500 RED500H
Stall Torque		4N•m		8N•m	22N•m	40N•m
Rotation Speed		3000r/min		3000r/min	3000r/min	3000r/min
Maker	Code.					
FANUC	F	αiS4/5000-B		αiS8/4000-B	αiS22/4000-B	αiS40/4000-B
MELDAS	M	HG105BT-D	HG104BT-D	HG154BT-D	HG354BS-D	HG453BS-D
YASNAC	Y	SGM7G-05A7A2E	SGM7G-09A7A2E	SGM7G-13A7A6E	SGM7G-44A7A2E	SGM7G-75A7A2E
OSP	OSP	BL-ME24M-50SB	BL-MT40M-40TB	BL-MT80M-40TB	BL-MT200M-40SB	BL-MT400M-40SB
Brother SANYO	SA-BR3	R2AAB8100HCRC8		R2AA13180HCR00	–	–
SIEMENS	Z	1FK-7042		1FK-7062	1FK-7084	1FK-7105

★Basically, you need to select either a motor without brake or a motor with brake when selecting a motor for the RED rotary table. If the brake of a motor cannot be controlled, select a motor without brake. However, RED rotary table may rotate depending on the balancing of the jig fixture and workpiece in the event of a power failure.
★For light machining application, the servo can be turned ON to hold the position without mechanical brake. However, RED rotary table may rotate when the power is turned off or when a servo alarm occurs, depending on the balancing of the jig fixture or workpiece.
★As a general, keep the servo ON even when the mechanical brake is engaged. If the unbalanced load is significant large and the motor current exceeds 70% of its rated value while the mechanical brake is engaged, the servo should be turned OFF.
★When selecting a motor without brake, select for horizontal specifications or when the unbalancing is small. For large unbalancing or cradle specifications, a motor with brake is highly recommended.

For information on controlling motors with brakes and mechanical brakes, please refer to the instruction manuals and precautions.