TJR Rotary Table®

Extensive line-up of Ø210-255mm CNC Rotary Table to Match your own application.

TJR APP - Android | TJR APP - iOS | www.tjr.com.tw

Product Code

AR - 210 - H R - J - A

Table Diameter

Ø210mm

Ø255mm

Special Version (A, B, C,…) Specified by Customers

Worm & Gear material

Refer to page2 Table1

- J High Tensile Brass
- T Aluminum Bronze

Alternative Hydraulic Brake

Except for AR-255H

Refer to page2 Table3

Motor mounting location

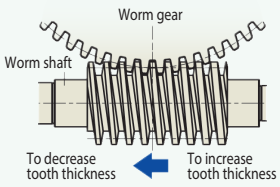
Refer to page2 Table2

- R Right Mount
- B Back Mount
- L Left Mount
- N Right Mount with sheet metal cover reduction

Model Code (by Transmission Mechanism)

AR HR Series

Worm & Worm Gear

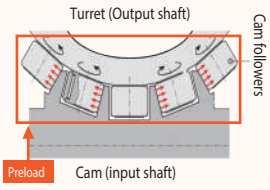


To lessen the backlash axially

Specially designed double-lead worm & gear with full-depth teeth. The worm gear with a large pitch diameter creates a large engagement area and less pressure on the contact surface, resulting in higher strength. By moving the worm shaft axially, the tooth engagement can be changed successively. As the backlash between worm and gear can be adjusted while keeping them in their proper positions, the ideal tooth engagement is maintained.

RC Series

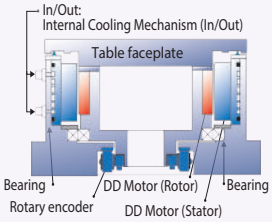
Roller Gear Cam



It consists of an input shaft and output turret with embedded roller followers. A cross-roller bearing supports the output turret with minimal run out and transmits power by rolling rather than sliding. Preloaded roller followers contact the input rib surfaces with a wedge-shaped cross section. It can be adjusted by moving the input axis, eliminating backlash completely. Clearly seen for CW and CCW rotation.

AD Series

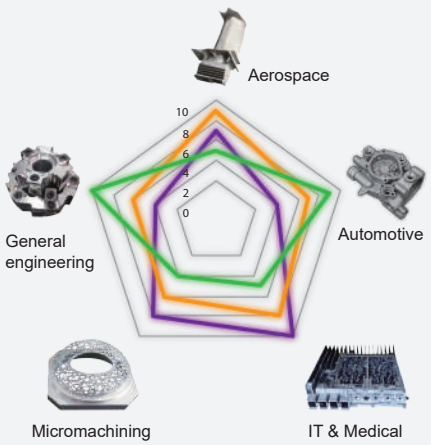
Direct Drive Motor



There is no mechanical transmission (reduction) mechanism such as worm gear or roller cam system in a rotary table equipped with a D.D. (Direct Drive) motor. The torque (Direct Drive) motor is built in the rotary table to drive directly. High rotation speed and high acceleration / deceleration can be achieved. Besides, a built-in rotary encoder is employed to secure high positioning and repeatability.

The sales of different models by major industry sector

Industry Sector



Transmission Mechanisms

- Worm & Worm Gear — AR HR
- Roller Gear Cam — RC
- Direct Drive Motor — AD

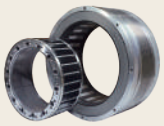
Product Features

TJR Rotary Table

Features of different Transmission Mechanisms

Table 1

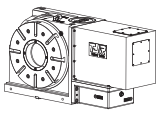
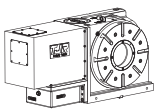
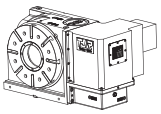
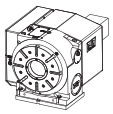
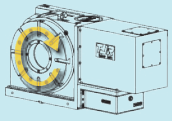
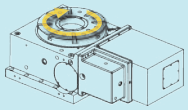
Model					
	Ø210mm	AR-210-T	AR-210-J	RC-210	–
	Ø255mm	HR-255-T	HR-255-J	RC-255	AD-261iB

Transmission Mechanism	Worm & Worm Gear		Roller Gear Cam	Direct Drive Motor
				
Material	Worm wheel : T Aluminum Bronze	Worm wheel : J Special high tensile brass	Turret, Roller Gear Cam, and Follower : **Case hardened alloy steel**	**FANUC** Specially Customized Synch-ronous Built-in torque motor
	Worm shaft : **Case hardened alloy steel**			
	The combination of iron and brass produces less friction. A more effective transfer of the motor torque is achieved.		The table runs on a series of rollers, mea-ning slick rolling sur-face operation with no backlash and wear.	A perfect match for Fanuc control. The risk of damage is minimized when an improper operation occurs.
Compact Footprint	–	–	–	–	★★★
Zero Backlash	–	–	–	★★★	★★★
Anti-Wear	★	★★	★★★	★★★	★★★
Maintenance	★	★	★	★★	★★★
Rotary Speed	★	★	★	★★	★★★
Indexing Precision / Repeatability	★★	★★	★★	★★	★★★
Loading capacity	★★★	★★★	★★★	★★★	★★
Driving Torque (without Brake)	★★★	★★★	★★	★★	★
Popularity	★★★	★★★	★★★	★★	★

★★★ Excellent ★★ Good ★ Neutral

Motor Mounting Location

Table2

Positioning \ Code	R Right Mount	L Left Mount	N Right Mount with sheet metal cover reduction	B Back Mount
Diagram				
VERTICAL 	✓	✓	✓	✓
HORIZONTAL 	✓	✓	✗	✗

Model Name by brake mechanism

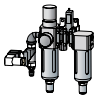
Table3

Brake type \ Faceplate size	Ø210mm		Ø255mm		
Air brake	AR-210	RC-210	AR-255H	NA	AD-261iB
Oil brake	AR-210H	RC-210H	HR-255	RC-255	NA

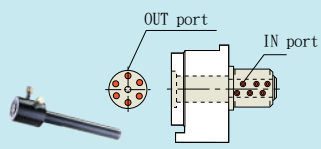
Ø210, 255mm Models

TJR Rotary Table

Specifications


Air brake


Oil brake

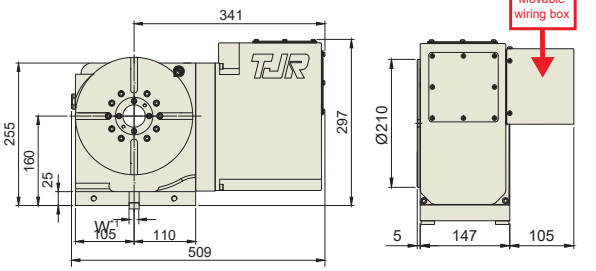
Transmission mechanism		Unit	Worm & Gear	Roller Gear Cam	Worm & Gear		Roller Gear Cam	Direct Drive Motor
Model		-	AR-210 *1	RC-210	AR-255H	HR-255	RC-255	AD-261iB
Faceplate diameter		mm	Ø210 *1	Ø210	Ø255		Ø255	Ø250
Inner Diameter of Mandrel Sleeve		mm	Ø40H7	Ø40H7	Ø80H7		Ø80H7	Ø46H7
Diameter of Center Through Hole		mm	Ø40	Ø40	Ø80		Ø80	Ø46
Center Height (Vertical)		mm	160	160	160		160	160
Table Height (Horizontal)		mm	152 160 *2 NA *3*4	152 185 *2	200		200	NA
Table T-slot Width		mm	12H7	12H7	12H7		12H7	12H7
Guide Block Width		mm	18h7	18h7	18h7		18h7	18h7
Min. Increment		deg.	0.001	0.001	0.001		0.001	0.001
Indexing Precision		sec.	20	30	15		20	20
Repeatability		sec.	6	6	6		6	4
Clamping System		kgf/cm²	Pne. 6 / Hyd. 35	Pne. 6 / Hyd. 35	Pne. 6	Hyd. 35	Hyd. 35	Pne. 6
Clamping Torque		kgf·m	31 / 55	31 / 50	70	70	70	45.9
Servo Motor Model	FANUC	-	αiF8 / βiS8	αiF8 / βiS8	αiF8/βiS12		αiF8/βiS12	FANUC DD Motor
	MITSUBISHI	Taper/Straight shaft	HG-54 / 104	HG-54 / 104	HG -154		HG -154	-
	SIEMENS	-	1FK7060	1FK7060	1FK7063		1FK7063	-
	HEIDENHAIN	-	QSY-116C	QSY-116C	QSY-116E		QSY-130C	-
Speed Reduction Ratio		-	1 : 90	1 : 36	1 : 120		1 : 60	Direct Drive
Max. Rotation Rate of Table (Calculate with Fanuc a Motor)		min-1	44.4	83.3	33.3		50	200 (Rated) 300 (Max.)
Allowable intertia load capacity (Horizontal)		kg-m²	0.63	0.63	1.2		1.2	1.2
Allowable Workpiece Load	Vertical	kg	75	75	100		100	100 *5
	With Tailstock	kg	150	150	250		250	100 *5
	Horizontal	kg	150 / NA *3*4	150	250		250	-
Allowable Thrust Load (with Rotary Table Clamping)	F	kgf	1450	1450	2000		2000	1020
	FxL	kgf·m	110	110	150		150	23.6
	FxL	kgf·m	31 / 55	31 / 50	70		70	45.9
Driving Torque		kgf·m	37	37	55		55	-
Net Weight (servo motor excluded)		Kg	55 58 *2 65 *3 72 *4	52 62 *2	118	109	110	90
Optional Rotary Joint 		Available Number of Ports	2,4	2,4	2,4,6,8		2,4,6,8	2,4

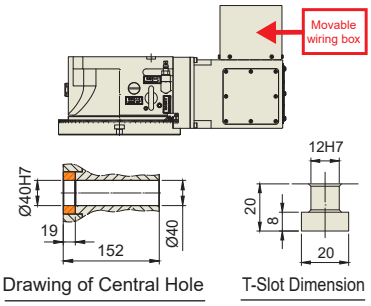
*1: The faceplate can be enlarged to Ø250 as an option.
*2: When the faceplate is enlarged to Ø250 and motor mount location is LEFT or RIGHT.
*3: When the faceplate is Ø210 and motor mount location is BACK.
*4: When the faceplate is enlarged to Ø250 and motor mount location is BACK.
*5: Valid when it is below the rated speed.

Ø210mm Model Dimensions

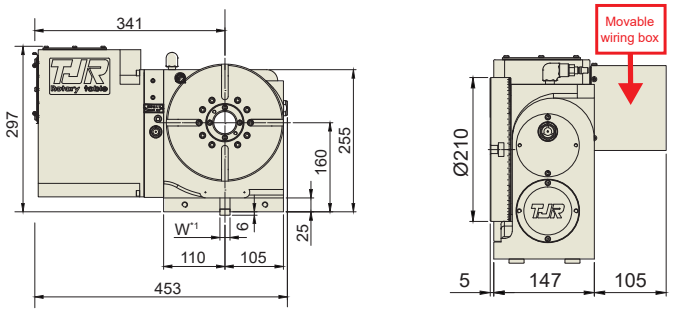
TJR Rotary Table

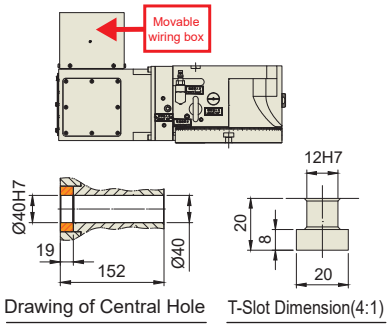
RC-210R



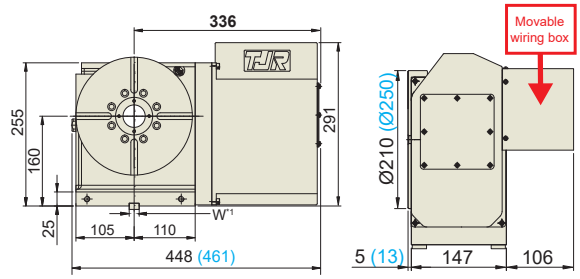


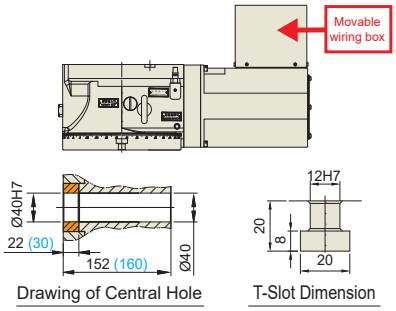
RC-210L





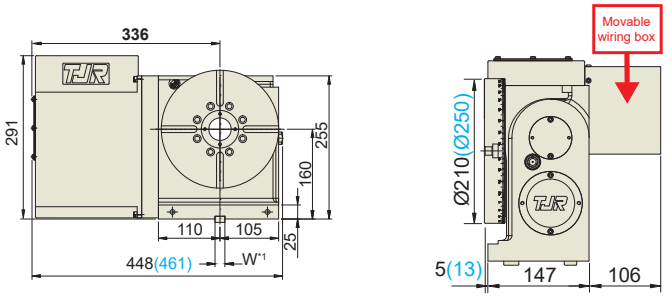
AR-210R

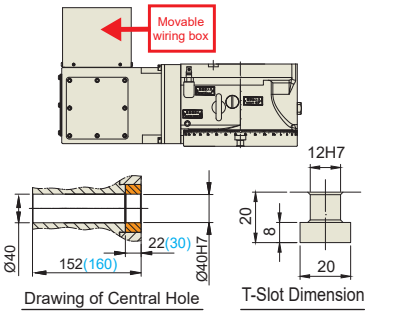




( ): When the faceplate is enlarged to Ø250mm.

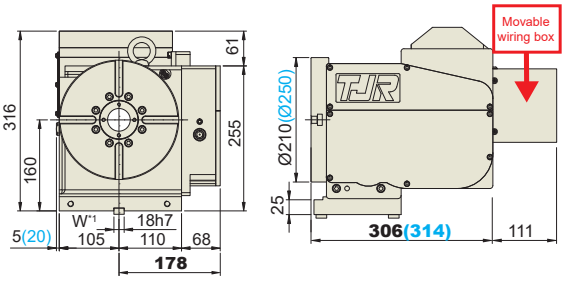
AR-210L

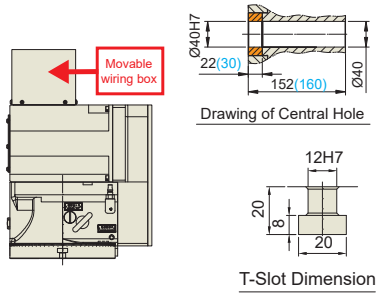




( ): When the faceplate is enlarged to Ø250mm.

AR-210B





( ): When the faceplate is enlarged to Ø250mm.

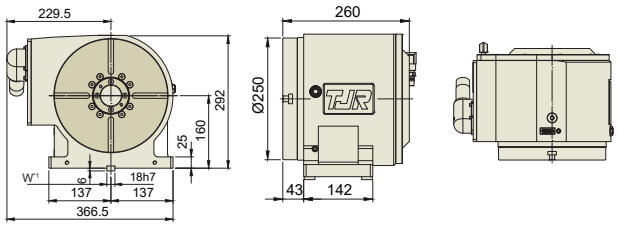
*1: The Guide Key size can be changed basd on the T-slot of work table.

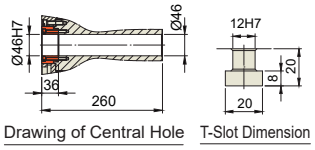
★ Air purge function is provided inside the motor cover as standard.

★ External dimensions depend on the type of the servo motor. Indicated dimensions are in case of FANUC. Please contact us for CAD files.

Ø255mm Model Dimensions

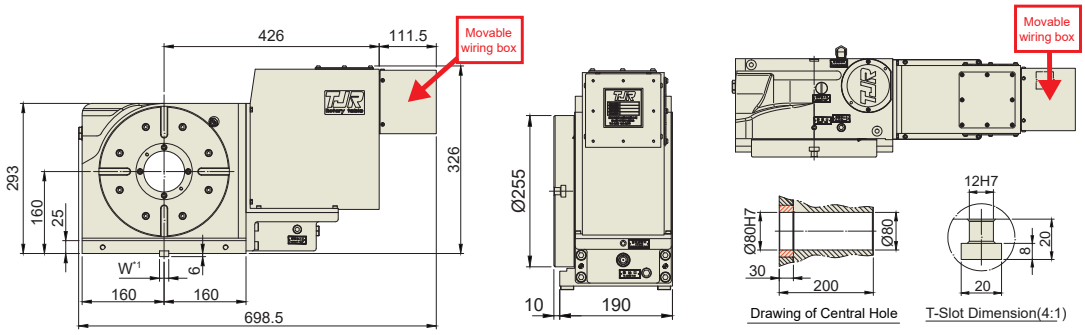
AD-261iB





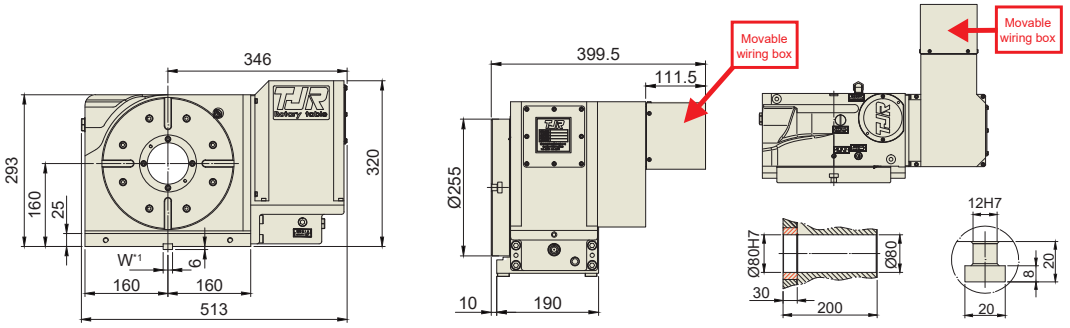
Drawing of Central Hole T-Slot Dimension

RC-255R



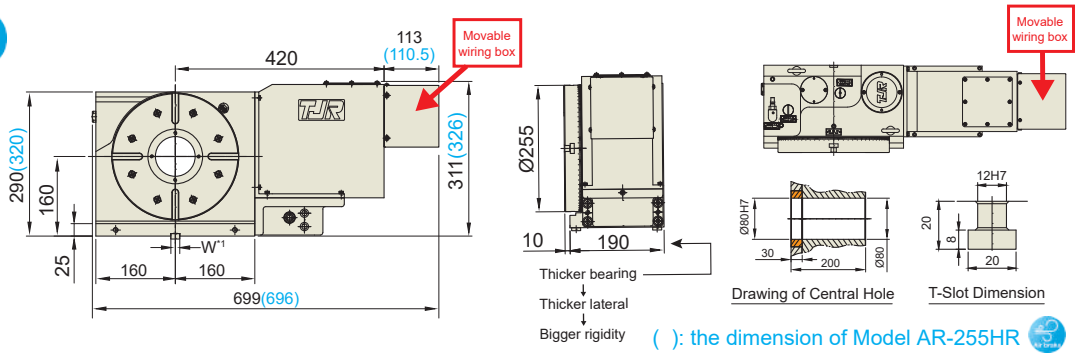
Drawing of Central Hole T-Slot Dimension(4:1)

RC-255N



Drawing of Central Hole T-Slot Dimension(4:1)

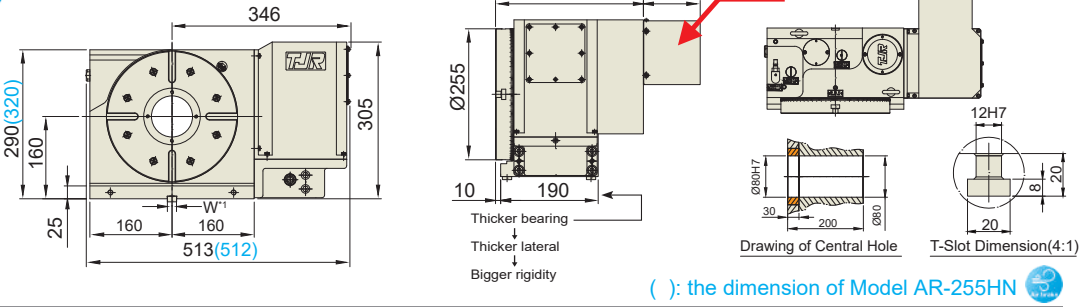
HR-255R



Drawing of Central Hole T-Slot Dimension

( ): the dimension of Model AR-255HR

HR-255N



Drawing of Central Hole T-Slot Dimension(4:1)

( ): the dimension of Model AR-255HN

*1: The Guide Key size can be changed basd on the T-slot of work table.

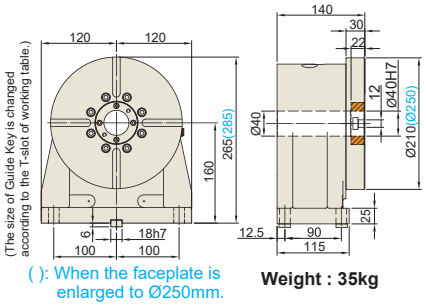
★Air purge function is provided inside the motor cover as standard.

★External dimensions depend on the type of the servo motor. Indicated dimensions are in case of FANUC. Please contact us for CAD files.

Support Table & Corresponding Accessories

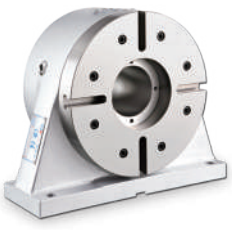
RTA-210

Air brake Oil brake



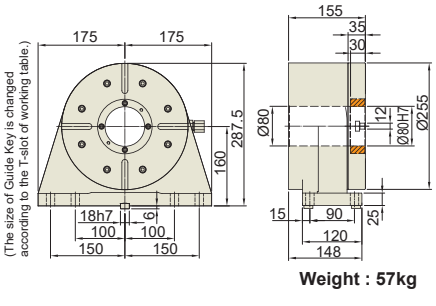
( ): When the faceplate is enlarged to Ø250mm.

Weight : 35kg



RTH-255

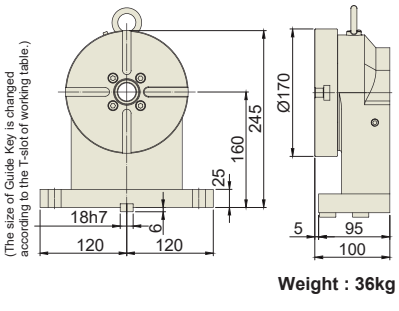
Oil brake



Weight : 57kg

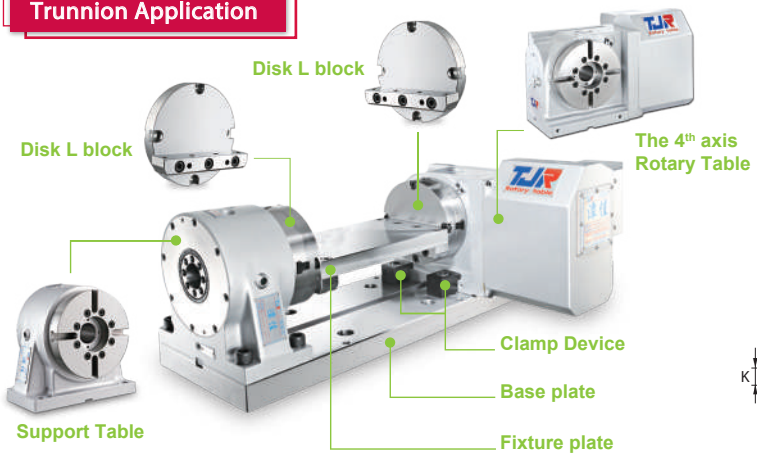
RT-210F

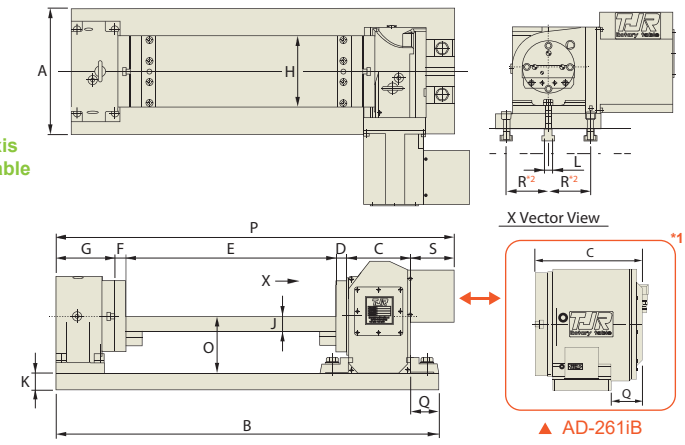
No Brake



Weight : 36kg

Trunnion Application



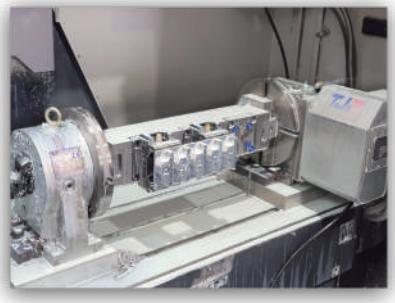


▲ AD-261iB

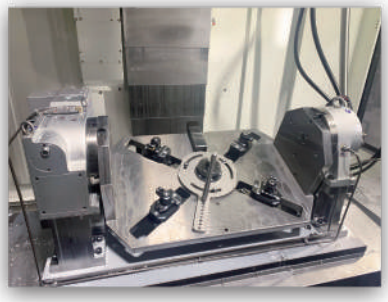
Rotary Table Model	Support Table Model	A	B	C	D	E	F	G	H	J	K	L	O	P	Q	S
AR-210 RC-210	RTA-210	300	1011	152	25	600	25	140	200	40	40	18	135	1047	69	105
HR-255 RC-255	RTH-255	350	1148	200	25	700	25	155	250	45	40	18	160	1306	69	201
AD-261iB*1	RTA-210	300	976	260	25	600	25	140	200	40	40	18	160	1065	NA*1	NA*1

*1: Due to the different structure of rotary table, the above dimensional drawing can not be fully applicable to AD-261iB. However, the figures of AD-261iB in the above sheet can be still referenceable. Please contact TJR for a precise drawing of AD-261iB when it's needed.
*2: "R" depends on the size of machine worktable.

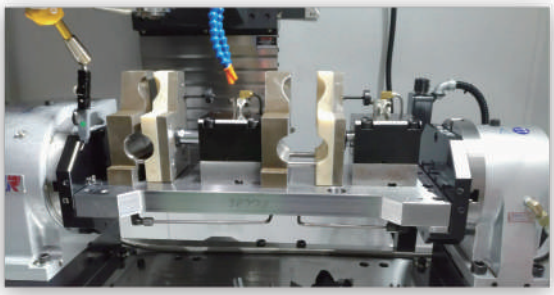
★A suitable raiser for either rotary table or manual tailstock can be customized to increase the center height.



▲ AR-250 + RTA-250



▲ RC-255 + RTH-255



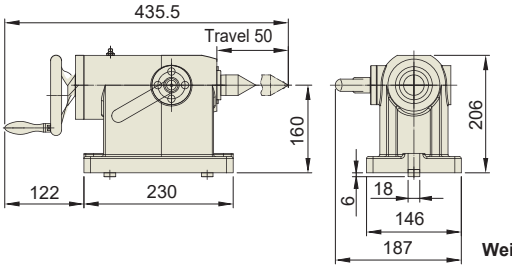
▲ AD-261iB + RTA-210

Manual Tailstock & Corresponding Accessories

Standard solid taper

Live center taper

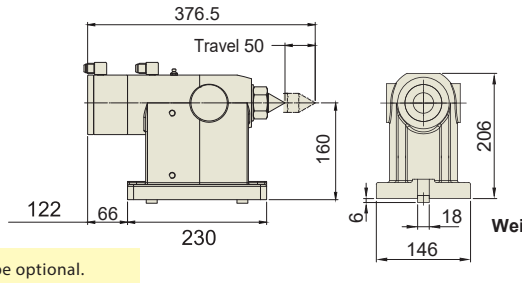
TTJ-210/255



Weight : 25kg

ATTJ-210/255
(With Pneumatic switching valve)

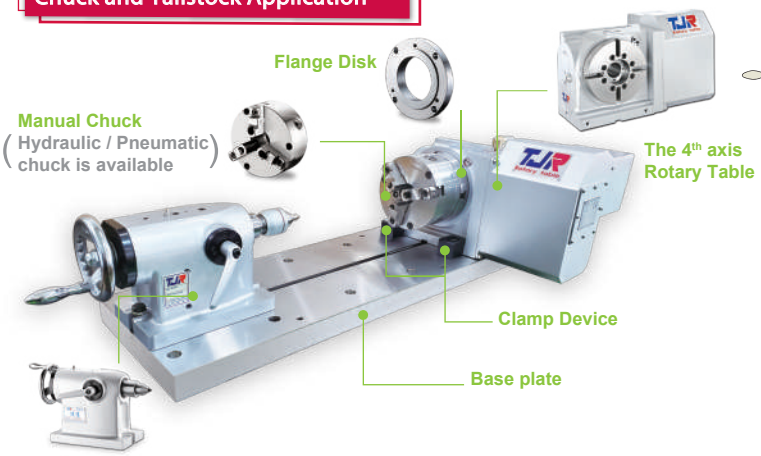
HTTJ-210/255
(With Hydraulic switching valve)

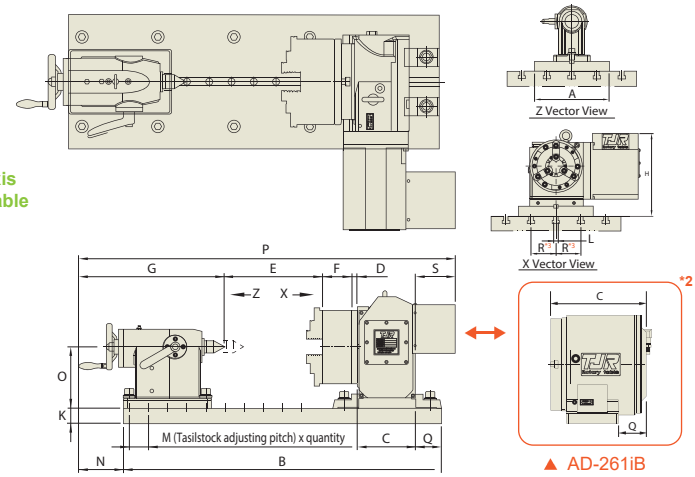


Weight : 25kg

*1: The taper is replaceable. The standard one is a solid taper. Moreover, the live center taper can be optional.

Chuck and Tailstock Application

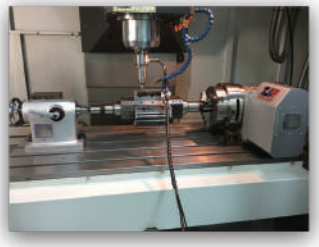




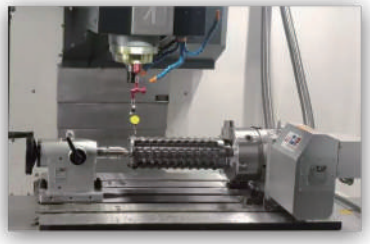
▲ AD-261iB

Rotary Table Model	Tailstock Model	Manual Chuck Model	A	B	C	D	E	F	G	K	N	O	P	Q	S
AR-210 RC-210	TTJ-210	SK-7	300	1011	152	16	437	76.5	382.5	40	122	160	1265	69	201
		SK-8	300	1011	152	16	437	76.5	382.5	40	122	160	1017	69	201
AR-255H HR-255 RC-255	TTJ-255	SK-7	350	1148	200	20	522	76.5	382.5	40	122	160	1402	69	201
		SK-8	350	1148	200	20	522	76.5	382.5	40	122	160	1202	69	201
		SK-9	350	1148	200	20	514.5	84	382.5	40	122	160	1202	69	201
		SK-10	350	1148	200	20	511.5	87	382.5	40	122	160	1202	69	201
AD-261iB*2	TTJ-255	SK-7	300	976	260	20	431	76.5	381	40	NA*2	160	1168	NA*2	NA*2
		SK-8					431	76.5							
		SK-9					423.5	84							

*2: Due to the different structure of rotary table, the above dimensional drawing can not be fully applicable to AD-261iB. However, the figures of AD-261iB in the above sheet can be still referenceable. Please contact TJR for a precise drawing of AD-261iB when it's needed.
*3: "R" depends on the size of machine worktable.
★A suitable raiser for either rotary table or manual tailstock can be customized to increase the center height.



▲ AR-210 + TTJ-210



▲ RC-210 + TTJ-210

▲ AD-261iB + ATTJ-255