



TJR APP -  
Android



TJR APP -  
iOS



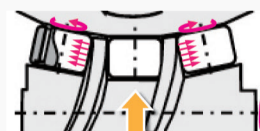
www.tjr.com.tw

## The Features of Roller Drive System



- 01 Zero backlash
- 02 Wear-free durability
- 03 High productivity  
due to lower speed reduction ratio
- 04 High torque capacity
- 05 Low Maintenance

- Over 90% of conduction efficiency.
- Reduce thermal displacement and non-performing rates, even at high speeds.



**Preload + Rolling contact**

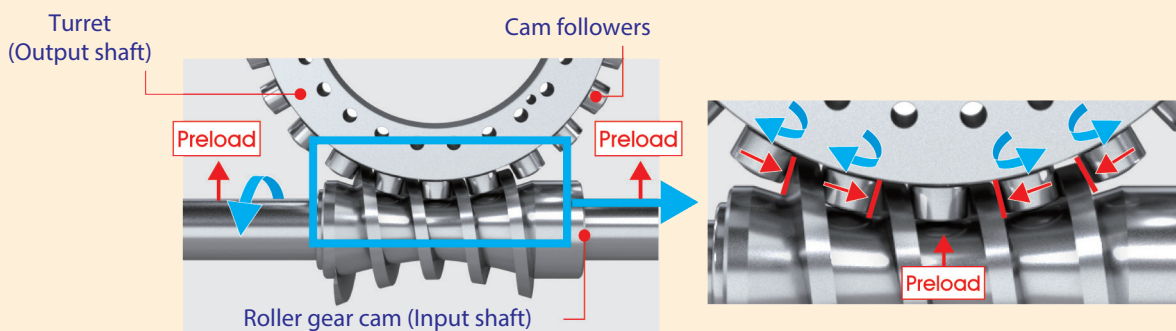
- Achieves Zero-backlash and long life



- Shock resistant and high performance cam followers.

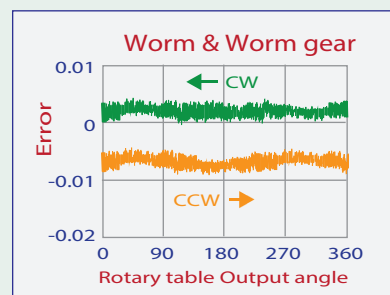
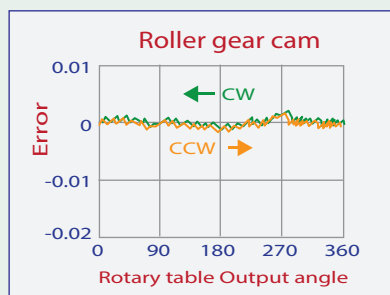
### ■ The Core of TJR RC Series Roller-Drive CNC Rotary Table Exclusive : Zero-Backlash Mechanism

By preloading the input and output shafts beforehand, the four cam followers can be always kept in contact with the cam surface, which eliminates backlash completely and provides high rigidity. TJR RC series roller gear cam rotary table with proprietary adjustment ensures the optimum preload. The cam followers planted in the turret employ internal roller bearings which can transmit the motor torque efficiently while rotating. Besides, the cam followers can be rotated at low torque for a long term. without wear and adjustment.



### ■ High accurate continuous cutting

Backlash can be eliminated with preloading the cam followers. Even machining with the turning direction in reverse will not adversely affect the machining surface.



# Roller Gear Cam RC Series

## Product lineup

### RC Heavy duty & versatile model (Left / Right)



#### Table face plate

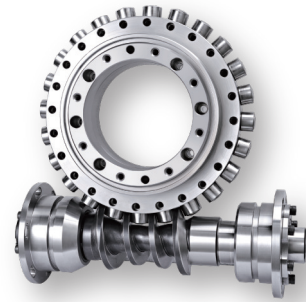
Ø170

Ø210

Ø255

Ø320

Ø400



## Select Accessories

**R**  
Right hand



Right Side Motor

**N**  
Right hand



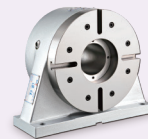
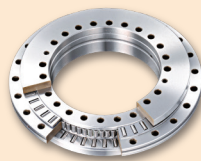
Right Side Motor  
with sheet metal  
cover reduction

**L**  
Left hand

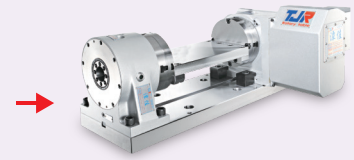


Left Side Motor

Use  
radial & axial bearings



Support Table



Trunnion application with RC-170R  
and a Support Table.



Tailstock



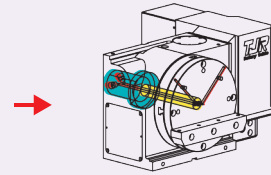
Scroll Chuck



Adapter



Rotary Joint

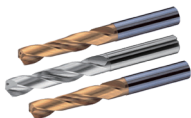


A rotary joint with at least 6 port is available for RC series.

## Applications



- ◆ **Automotive parts**  
High-speed positioning  
which reduces non-cutting  
time.



- ◆ **Cutting Tool Grinding**  
Precision improved by  
continuous zero back-  
lash machining.



- ◆ **Molding parts**  
High speed & accurate  
continuous cutting.

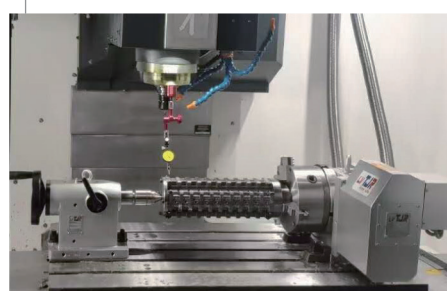


- ◆ **Turbine blade**  
Fast-accelerated  
driven machining.

## Example



▲ RC-170 + RTA-170



▲ RC-210 + TTJ-210

# Roller Gear Cam RC Series

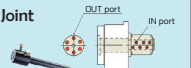
## ■ Specifications

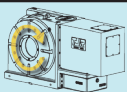
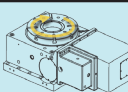
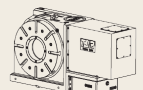
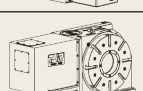


Air brake



Oil brake

| Item / Code No.                                                                                           |                                                                                                | Unit                      | RC-170R                                                                                                                                                                         | RC-210R/L                                                                                                                                                                       | RC-255R/N                                                                              | RC-320R/N/L                                                                             | RC-400R/N                                                                               |
|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|---------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| Table Diameter                                                                                            |                                                                                                | mm                        | Ø170                                                                                                                                                                            | Ø210                                                                                                                                                                            | Ø255                                                                                   | Ø320                                                                                    | Ø400                                                                                    |
| Inner Diameter of Mandrel Sleeve                                                                          |                                                                                                | mm                        | Ø40H7                                                                                                                                                                           | Ø40H7                                                                                                                                                                           | Ø80H7                                                                                  | Ø120H7x35 deep                                                                          | Ø120H7                                                                                  |
| Diameter of Center Through Hole                                                                           |                                                                                                | mm                        | Ø40                                                                                                                                                                             | Ø40                                                                                                                                                                             | Ø80 Big Bore                                                                           | Ø105 Big Bore                                                                           | Ø120 Big Bore                                                                           |
| Center Height (Vertical)                                                                                  |                                                                                                | mm                        | 135                                                                                                                                                                             | 160                                                                                                                                                                             | 160                                                                                    | 210                                                                                     | 255                                                                                     |
| Table Height (Horizontal)                                                                                 |                                                                                                | mm                        | 152                                                                                                                                                                             | 152                                                                                                                                                                             | 200                                                                                    | 235                                                                                     | 250                                                                                     |
| Table T-slot Width                                                                                        |                                                                                                | mm                        | 12H7                                                                                                                                                                            | 12H7                                                                                                                                                                            | 12H7                                                                                   | 14H7                                                                                    | 14H7                                                                                    |
| 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.                      | 30                                                                                                                                                                              | 30                                                                                                                                                                              | 20                                                                                     | 20                                                                                      | 20                                                                                      |
| Repeatability                                                                                             |                                                                                                | sec.                      | 6                                                                                                                                                                               | 6                                                                                                                                                                               | 6                                                                                      | 6                                                                                       | 6                                                                                       |
| Clamping System (Pneumatic / Hydraulic)                                                                   |                                                                                                | kgf/cm <sup>2</sup>       | Pne.6                                                                                                                                                                           | Pne.6 / Hyd.35                                                                                                                                                                  | Hyd.35                                                                                 | Hyd.35                                                                                  | Hyd.35                                                                                  |
| Clamping Torque                                                                                           |                                                                                                | kgf-m                     | 31  / 50      | 31  / 50      | 70  | 115  | 200  |
| Servo Motor Model                                                                                         | FANUC                                                                                          | Taper shaft               | αiF8 / βis8                                                                                                                                                                     | αiF8 / βis8                                                                                                                                                                     | αiF8 / βis12 (Taper)                                                                   | αiF12 / βis22 (Straight)                                                                | αiF12 / βis22 (Straight)                                                                |
|                                                                                                           | MITSUBISHI                                                                                     | Taper/Straight shaft      | HG/HF-54 / 104                                                                                                                                                                  | HG/HF-54 / 104                                                                                                                                                                  | HG/HF-154                                                                              | HG/HF-204                                                                               | HG/HF-204 (Straight)                                                                    |
|                                                                                                           | SIEMENS                                                                                        | Straight shaft            | 1FK7060                                                                                                                                                                         | 1FK7060                                                                                                                                                                         | 1FK7063                                                                                | 1FK7083                                                                                 | 1FK7083                                                                                 |
|                                                                                                           | HEIDENHAIN                                                                                     | Straight shaft            | QSY-116C                                                                                                                                                                        | QSY-116C                                                                                                                                                                        | QSY-130C                                                                               | QSY-155B                                                                                | QSY-155B                                                                                |
| Speed Reduction Ratio                                                                                     |                                                                                                | -                         | 1 : 36                                                                                                                                                                          | 1 : 36                                                                                                                                                                          | 1 : 60                                                                                 | 1 : 90                                                                                  | 1 : 90                                                                                  |
| Max. Rotation Rate of Table<br>(Calculate with FANUC αMotor)                                              |                                                                                                | min <sup>-1</sup>         | 83.3                                                                                                                                                                            | 83.3                                                                                                                                                                            | 50                                                                                     | 33.3                                                                                    | 33.3                                                                                    |
| Allowable Inertia Load Capacity (Horizontal)                                                              |                                                                                                | kg-cm-sec <sup>2</sup>    | 6.3                                                                                                                                                                             | 6.3                                                                                                                                                                             | 12                                                                                     | 31.5                                                                                    | 62.5                                                                                    |
| Allowable Workpiece Load<br>(dynamic)                                                                     | Vertical    | kg                        | 75                                                                                                                                                                              | 75                                                                                                                                                                              | 100                                                                                    | 150                                                                                     | 200                                                                                     |
|                                                                                                           | with Tailstock                                                                                 | kg                        | 150                                                                                                                                                                             | 150                                                                                                                                                                             | 250                                                                                    | 350                                                                                     | 500                                                                                     |
|                                                                                                           | Horizontal  | kg                        | 150                                                                                                                                                                             | 150                                                                                                                                                                             | 250                                                                                    | 350                                                                                     | 500                                                                                     |
| Allowable Load<br>(with clamping)                                                                         | F           | kgf                       | 1450                                                                                                                                                                            | 1450                                                                                                                                                                            | 2000                                                                                   | 3000                                                                                    | 4000                                                                                    |
|                                                                                                           | FxL         | kgf-m                     | 110                                                                                                                                                                             | 110                                                                                                                                                                             | 150                                                                                    | 300                                                                                     | 400                                                                                     |
|                                                                                                           | FxL         | kgf-m                     | 31  / 50  | 31  / 50  | 70                                                                                     | 115                                                                                     | 200                                                                                     |
| Driving Torque         |                                                                                                | kgf-m                     | 37                                                                                                                                                                              | 37                                                                                                                                                                              | 55                                                                                     | 107                                                                                     | 140                                                                                     |
| Net Weight (Servo motor excluded)                                                                         |                                                                                                | kg                        | 44                                                                                                                                                                              | 52                                                                                                                                                                              | 110                                                                                    | 187                                                                                     | -                                                                                       |
| Optional Rotary Joint  |                                                                                                | Available Number of Ports | 2,4                                                                                                                                                                             | 2,4                                                                                                                                                                             | 2,4,6,8                                                                                | 2,4,6,8,12                                                                              | 2,4,6,8,12                                                                              |

| Code No. | Motor Mounting Location                      | Diagram                                                                                                                                                                 | VERTICAL  | HORIZONTAL  |
|----------|----------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| <b>R</b> | Right Mount                                  |   | ✓                                                                                              | ✓                                                                                                |
| <b>L</b> | Left Mount                                   |   | ✓                                                                                              | ✓                                                                                                |
| <b>N</b> | Right Mount with sheet metal cover reduction |   | ✓                                                                                              | ✗                                                                                                |

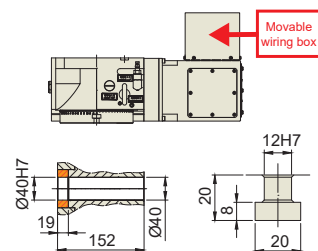
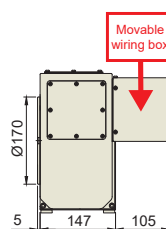
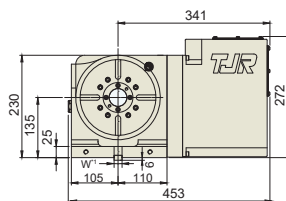
## ■ Model Name by brake mechanism

| Faceplate size                                                                                |  | Ø170mm  | Ø210mm  | Ø255mm | Ø320mm | Ø400mm |
|-----------------------------------------------------------------------------------------------|--|---------|---------|--------|--------|--------|
| Brake type                                                                                    |  |         |         |        |        |        |
| Air brake  |  | RC-170  | RC-210  | NA     | NA     | NA     |
| Oil brake  |  | RC-170H | RC-210H | RC-255 | RC-320 | RC-400 |

# Roller Gear Cam RC Series

**RC-170**

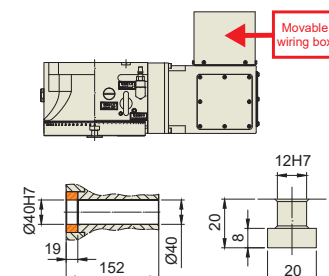
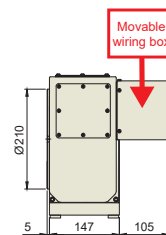
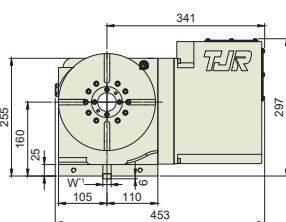
**R**  
Right hand



Drawing of Central Hole T-slot Dimension

**RC-210**

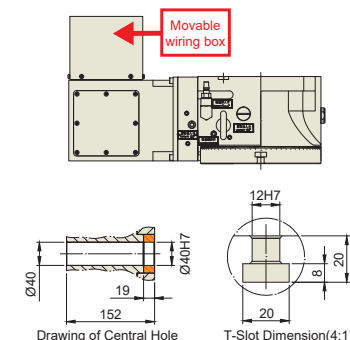
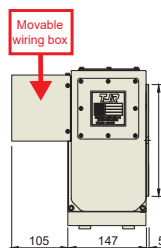
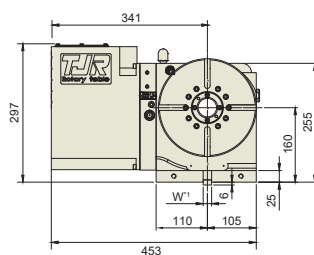
**R**  
Right hand



Drawing of Central Hole T-slot Dimension

**RC-210**

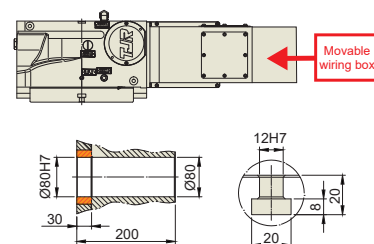
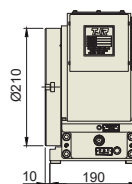
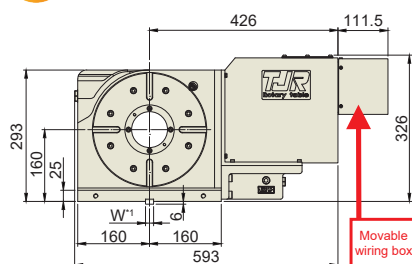
**L**  
Left hand



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

**RC-255**

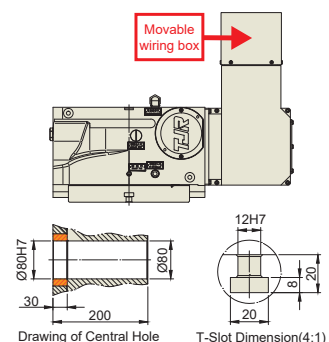
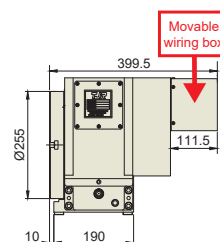
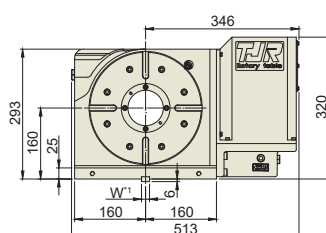
**R**  
Right hand



Drawing of Central Hole T-Slot Dimension

**RC-255**

**N**  
Right hand



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

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

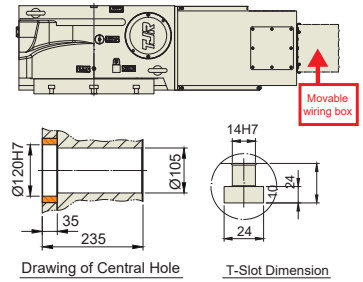
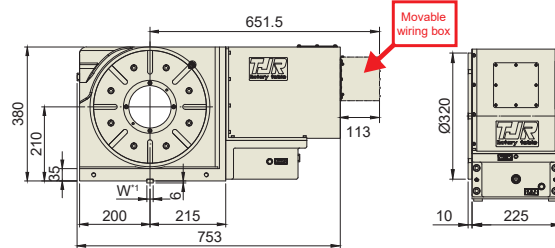
★ Air purge function is provided inside the motor cover as standard.

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

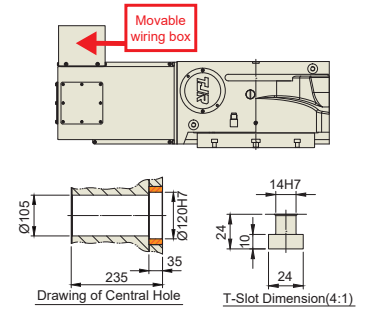
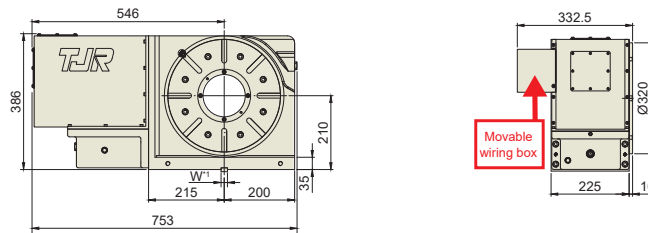
# Roller Gear Cam RC Series



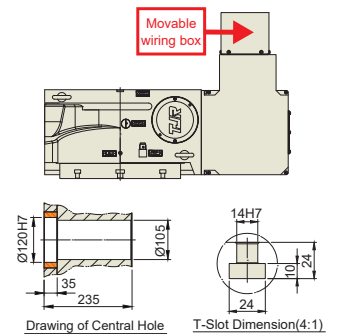
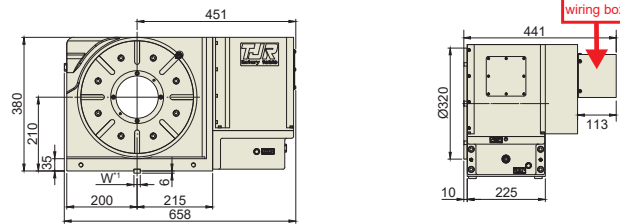
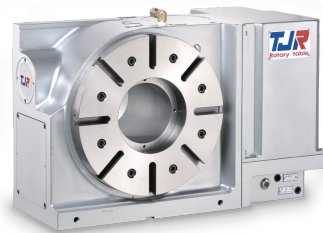
RC-320



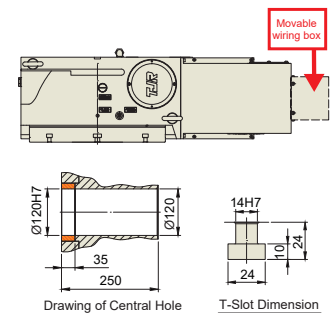
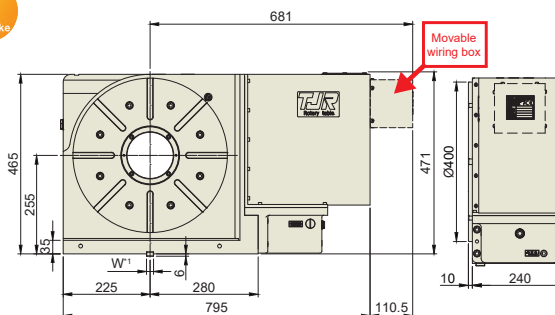
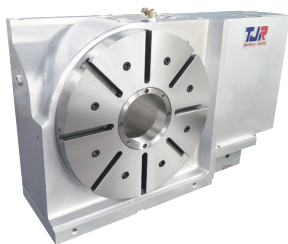
RC-320



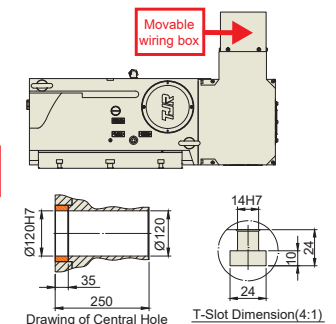
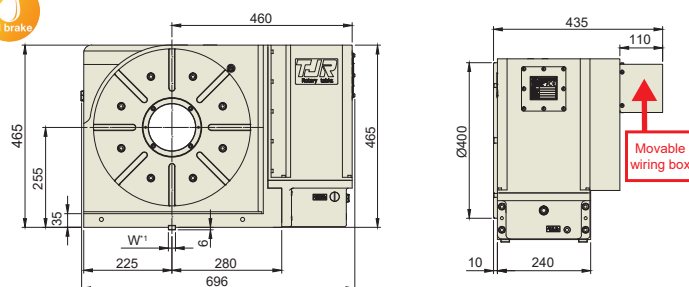
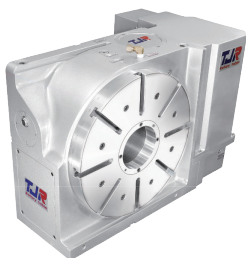
RC-320



RC-400



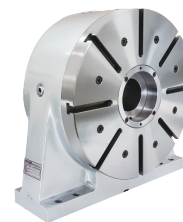
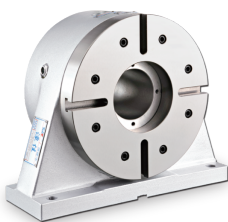
RC-400



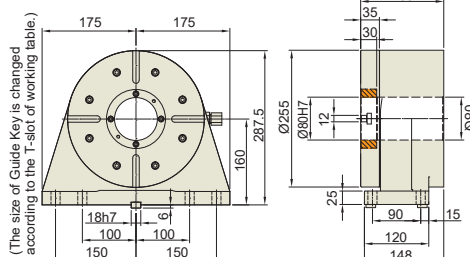
\*1 : The Guide Key size can be changed based on the T-slot of work table.

★ 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.

 Oil brake Oil burner

 Oil brake



(The size of Guide Key is changed according to the 1-slot of working table.)

Technical drawing of the Guide Key (1) showing front and side views with dimensions in mm.

**Front View Dimensions:**

- Overall Diameter: 200(240)
- Central Hole Diameter: 125(150)
- Mounting Hole Diameter: 150(175)
- Radial Slot Width: 18h7
- Mounting Hole Spacing: 125(150)
- Overall Height: 370(455)
- Base Height: 210(255)

**Side View Dimensions:**

- Overall Width: 160(200)
- Inlet Diameter: 40(45)
- Central Hole Diameter: 120(145)
- Base Height: 35
- Mounting Hole Spacing: 12(50)
- Overall Length: 148(150)

**Hydraulic Inlet:** 35kPa/cm<sup>2</sup>

\*():The dimension of Model RTH400      **Weight :83kg(165kg)**

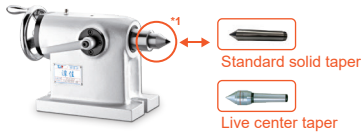
Technical drawings of the TSK Military Vehicle. The top drawing is a side elevation showing dimensions A, H, and L. The bottom drawing is a front elevation showing dimensions G, F, E, D, C, S, P, J, O, K, B, and Q. An 'X Vector View' is shown to the right of the front elevation, with dimensions R' and R''.

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

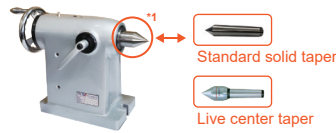


▲ RC-320 + RTH-320

# Manual Tailstock & Corresponding Accessories



TTJ-170/210/255



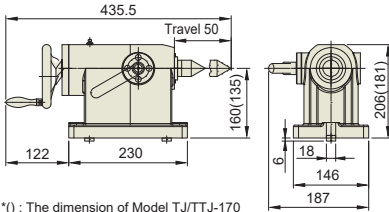
TTJ-320/400



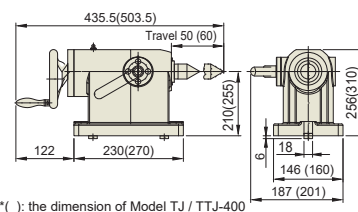
ATTJ-170/210  
HTTJ-210/255  
(With Pneumatic switching valve)



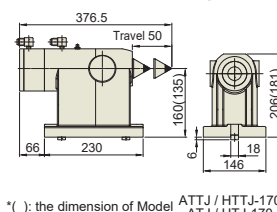
HTTJ-320/400  
(With Hydraulic switching valve)



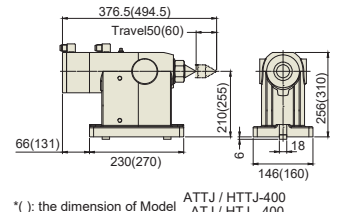
\*) : The dimension of Model TJ/TTJ-170  
Weight : 25kg(23kg)



\*) : the dimension of Model TJ / TTJ-400  
Weight : 29kg(48kg)



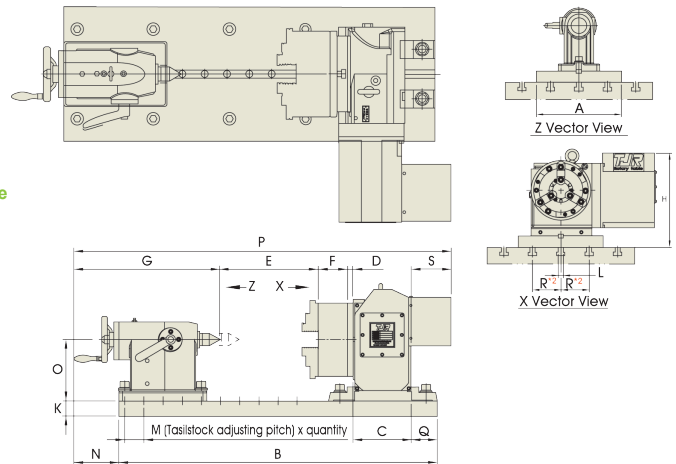
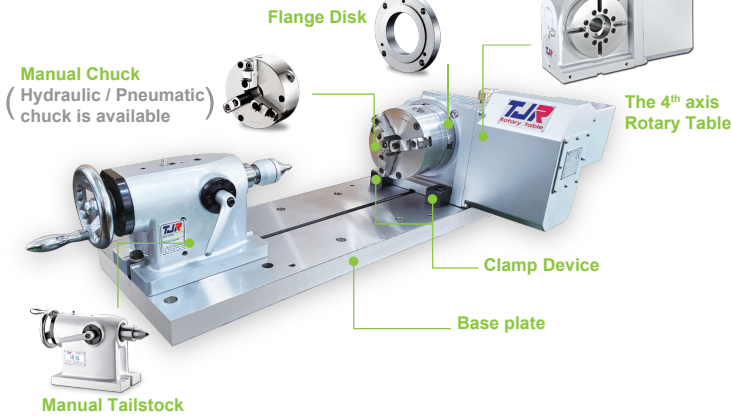
\*) : the dimension of Model ATTJ / HTTJ-170  
ATTJ / HTTJ-170  
Weight : 25kg(23kg)



\*) : the dimension of Model ATTJ / HTTJ-400  
ATTJ / HTTJ - 400  
Weight : 29kg(50kg)

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

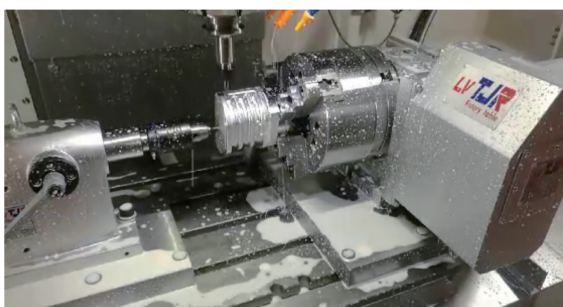
## Chuck and Tailstock Application



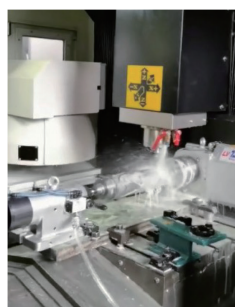
| Rotary Table Model | Tailstock Model | Chuck Model | A   | B    | C   | D  | E     | F    | G     | K  | N   | O   | P    | Q  | S   |
|--------------------|-----------------|-------------|-----|------|-----|----|-------|------|-------|----|-----|-----|------|----|-----|
| RC-170             | TTJ-170         | SK-6        | 300 | 911  | 152 | 16 | 346.5 | 67   | 382.5 | 40 | 122 | 135 | 1069 | 69 | 105 |
|                    |                 | SK-7        | 300 | 911  | 152 | 16 | 337   | 76.5 | 382.5 | 40 | 122 | 135 | 917  | 69 | 105 |
|                    |                 | SK-8        | 300 | 911  | 152 | 16 | 337   | 76.5 | 382.5 | 40 | 122 | 135 | 917  | 69 | 105 |
| 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 |
| 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 |
| RC-320             | TTJ-320         | SK-9        | 400 | 1297 | 235 | 25 | 623.5 | 84   | 382.5 | 40 | 122 | 210 | 1556 | 69 | 206 |
|                    |                 | SK-10       | 400 | 1297 | 235 | 25 | 620.5 | 87   | 382.5 | 40 | 122 | 210 | 1321 | 69 | 206 |
| RC-400             | TTJ-400         | SK-12       | 450 | 1455 | 250 | 25 | 711.5 | 96   | 436.5 | 40 | 133 | 255 | 1707 | 69 | 188 |
|                    |                 | SK-16       | 450 | 1455 | 250 | 28 | 682.5 | 122  | 436.5 | 40 | 133 | 255 | 1457 | 69 | 188 |

\*2: "R" depends on the size of machine worktable.

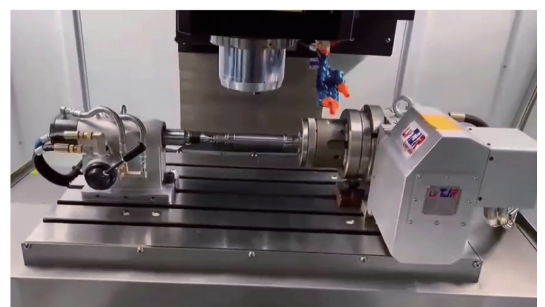
★A suitable raiser for either rotary table or manual tailstock can be customized to increase the center height.



▲ RC-170 + TTJ-170



▲ RC-210 + ATTJ-210



▲ RC-210 + HTTJ-210