

ENGINEERING CHECKLIST / REV. 2026-08

CNC Rotary Table Servo Sizing Checklist

For rotary table manufacturers, CNC retrofit integrators and machine-tool accessory distributors.

Select the rotary table and its servo package as one system.

Collect the mechanics, reduction ratio, load, motion, brake and CNC interface before choosing a controller, servo drive or motor.

This checklist supports evaluated indexed 3+1 and 3+2 applications. Continuous simultaneous machining requires a separate control-architecture review.



Use this document in three steps

01	Complete the project and rotary-table data before requesting a servo recommendation.
02	Confirm indexed motion, speed, load, brake and CNC communication requirements.
03	Send the checklist with drawings, nameplates and cabinet photos to Yidai.

Important boundary

An external rotary-axis controller is primarily intended for indexed positioning and multi-face machining. Do not assume that every configuration supports simultaneous interpolation, advanced CNC kinematics or TCP/RTCP.

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1. Project and supply scope

Project item	Information
Company / contact	_____
Country / region	_____
Project role	_____ Rotary-table OEM / integrator / distributor / end user
Required supply scope	_____ Control package only / complete package including rotary table
Target quantity	_____ Prototype, batch or annual estimate
Required delivery timing	_____

Supply-scope check

- Servo controller only
- Controller plus matched servo drive and motor
- Complete indexed retrofit package including rotary table
- OEM package for a rotary-table product line

2. Rotary table data

Rotary-table item	Project input
Manufacturer and model	_____
Table diameter / center height	_____
Installation orientation	_____ Horizontal / vertical / dual-position
Reduction mechanism and ratio	_____
Rated / peak output torque	_____
Maximum input / output speed	_____
Brake or clamp	_____ Method, voltage and release sequence
Existing motor interface	_____ Flange, shaft, coupling and encoder

3. Workpiece, fixture and load

Load item	Project input
Workpiece dimensions	_____
Workpiece weight	_____
Fixture weight	_____
Center-of-gravity offset	_____
Material and machining process	_____
Expected cutting disturbance	_____
Required index positions	_____

Why diameter is not enough

Servo sizing must consider workpiece and fixture inertia, overhang, reduction ratio, acceleration, friction, cutting disturbance, duty and brake holding requirement.

4. Motion requirement

Motion item	Project input
Motion mode	_____ Indexed positioning / 3+1 / 3+2 / other
Required table speed	_____ rpm or indexing time
Acceleration / deceleration	_____
Positioning target	_____ Required angle and allowed error
Duty	_____ Cycles per minute and hours per day
Simultaneous motion required?	_____ If yes, describe the axes and process

Quick engineering relationship

Table output speed is determined by motor speed and total reduction ratio. Reflected load inertia decreases by the square of the reduction ratio, but the complete torque and thermal duty still require project-specific calculation.

5. CNC and machine interface

Interface item	Project input
Machine builder and model	_____
CNC brand and exact model	_____
CNC software version	_____
Available communication	_____ TCP/IP / RS232 / digital I/O / M-code
Required handshake	_____ Command, ready, in-position, brake and alarm
Handwheel requirement	_____ Original CNC handwheel / additional electronic handwheel
Cabinet power supply	_____
Cabinet space and cooling	_____

Attach clear photos of the CNC nameplate, controller screen, electrical cabinet, available signal terminals and rotary-table installation area.

6. Mechanical and electrical fit

■ Motor flange and shaft adaptation	■ Coupling, belt or gearbox connection
■ Encoder type and feedback	■ Brake voltage and control sequence
■ Motor / encoder / brake cable lengths	■ Cabinet grounding and shielding
■ Emergency stop and safety interlock	■ Alarm and in-position feedback

7. Controller architecture

Option	Architecture	Typical evaluation
YD-1	Axis-card controller plus matched servo drive and servo motor.	Flexible external rotary-axis packages and OEM integration.
CSD700	Integrated rotary-axis controller and servo drive, matched with a servo motor from 400 W to 1 kW.	Compact control-drive architecture for supported indexed applications.

Selection rule

Do not choose YD-1 or CSD700 from the controller name alone. Confirm the rotary table, load, speed, brake, cabinet space and CNC communication method first.

8. RFQ attachment package

■ Rotary-table drawing and nameplate	■ Transmission and reduction-ratio data
■ Workpiece and fixture drawing	■ Weight and center-of-gravity data
■ Required angles, speed and cycle	■ Positioning requirement
■ Machine and CNC model	■ Electrical-cabinet photos
■ Available interface and signals	■ Destination country and supply scope

Engineering notes

1.

2.

3.

Send this checklist for a project-specific compatibility review

Assessment: www.yidaicncparts.com/pages/cnc-retrofit-assessment

OEM systems: www.yidaicncparts.com/pages/oem-rotary-table-control-systems

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Final compatibility, motor size, controller architecture and supply scope are confirmed project by project. This checklist is an information-gathering aid, not a substitute for an engineering calculation or machine safety review.