USER MANUAL

ZCT130 5 Axis Electric Hollow Rotating Platform Indexing Rotary Table

For Robot Arm Integration • Fourth- and Fifth-Axis Rotary Positioning



Document purpose: Product overview, configuration guidance, installation, commissioning, operation, maintenance, and supplied technical drawings.

Important: The uploaded reference images show multiple KDR model sizes and both servo and stepper motor options. Confirm the exact model, motor interface, controller, wiring, and rated load with the supplier before installation. This manual does not replace the machine-specific drawings or controller instructions.

Document based on the product images and technical information supplied with this request. Revision 1.0

1. Important Safety Information

Read this manual and the applicable motor/drive documentation before installing or operating the rotary platform. The platform is a precision motion component intended to be integrated into a properly guarded CNC machine or robotic system.

WARNING – pinch and crush hazards: Keep hands, clothing, cables, and tools clear of the rotating table, hollow shaft, coupling, and mounting bracket. Never reach into the mechanism while energized or while the axes can move.

WARNING – electrical hazards: Wiring must be performed by qualified personnel with the drive power isolated and locked out. Do not connect or disconnect motor/encoder plugs while powered unless the drive manufacturer explicitly permits it.

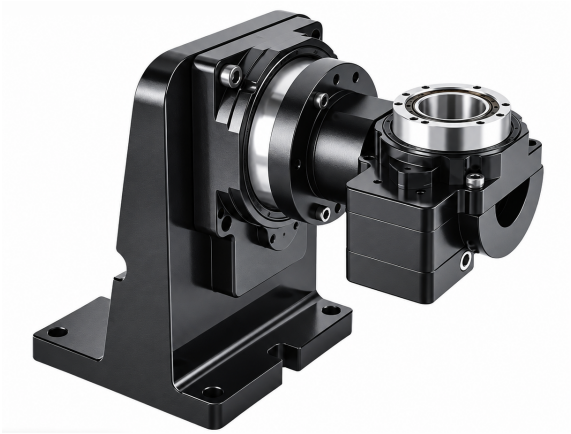
WARNING – load hazards: Secure the workpiece and fixtures mechanically. Do not exceed the rated load, torque, speed, or allowable moment for the exact model. The capacity figures in the supplied sheets are configuration-specific.

CAUTION: Do not use the rotary platform as a lifting point, personnel support, or an emergency stop device. Install guarding and machine-level interlocks as required by the host machine risk assessment.

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Appendix A. Supplied Drawings and Reference Images (in upload order)





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3. Product Description and Intended Use

The ZCT130 five-axis electric hollow rotating platform is presented as a combined fourth- and fifth-axis positioning assembly. The fourth axis is mounted in a support bracket, while the fifth axis is mounted on the fourth-axis output assembly. The hollow output arrangement can be used where a central passage is required for compatible tooling, cabling, or workholding arrangements.

The supplied product graphic identifies a cross-roller bearing arrangement and highlights high precision, high torque, and low noise. Actual performance depends on the selected KDR size, motor, drive, mounting rigidity, payload, acceleration, and installation conditions.

Typical integration uses include multi-face machining, indexing, positioning of components for robotic processes, and coordinated motion with a CNC or robot controller. The platform is not a standalone controller: a compatible motor drive and motion controller are required.

Main assemblies shown in the supplied illustration

- Fourth-axis rotary unit and support bracket
- Fifth-axis rotary unit
- Connecting shaft / coupling interface
- Motor mounting interfaces
- Hollow output passage(s)

4. Model and Motor Configuration Guide

The reference material includes several sizes. The model designation must be matched to the actual unit label and dimensional drawing; do not identify a unit by appearance alone.

Reference model	Fourth axis	Fifth axis	Motor interface shown
KDR85-60	KDR85	KDR60	Servo options; stepper option also shown in separate drawing
KDR85-85	KDR85	KDR85	60 mm flange servo motor
KDR130-85	KDR130	KDR85	60 mm flange servo motor shown
KDR200-130	KDR200	KDR130	80 mm flange servo on fourth axis; 60 mm flange servo on fifth axis shown

Motor options appearing in the supplied material

- Servo motor: select a servo with the specified flange, shaft, pilot/convex ring, bolt pattern, and compatible servo drive. The drawings show 40 mm, 60 mm, and 80 mm flange interfaces for different assemblies.
- Stepper motor: the supplied sheets show NEMA 17 (42 mm) and NEMA 23 (57 mm) motor options. A stepper drive/controller is required; closed-loop integrated stepper models have a built-in driver/encoder as identified in the motor chart.

Do not assume that a motor listed for one axis or model is suitable for another. Confirm shaft diameter, pilot diameter, bolt circle, flange size, motor torque, drive current, encoder type, and cable connector before ordering.

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5. Technical Data from Supplied Sheets

The following values are transcribed from the uploaded specification images. They are reference values only and must be checked against the nameplate and current manufacturer datasheet for the exact serial-numbered assembly.

Assembly	4th-axis speed	4th peak / rated torque	4th load	5th-axis speed	5th peak / rated torque	5th load
KDR85-60	0–200 rpm	35 or 60 / 15 Nm*	8 kg	0–100 rpm	35 or 60 / 5.2 Nm*	<5 kg
KDR85-85	0–100 rpm	35 / 15 Nm	8 kg	0–200 rpm	35 / 15 Nm	8 kg
KDR130-85	0–100 rpm	60 / 30 Nm	<15 kg	0–200 rpm	35 / 15 Nm	8 kg
KDR200-130	0–100 rpm	90 / 45 Nm	<40 kg	0–200 rpm	60 / 30 Nm	15 kg

*KDR85-60 source sheets are inconsistent: one table lists 60 Nm fourth-axis peak torque and 35 Nm fifth-axis peak torque; another lists 35 Nm and 60 Nm respectively. One sheet also lists the fourth-axis center height as 133 mm, while another drawing/table indicates 130 mm. Verify the exact configuration before using these values for machine design.

Other common values shown in the supplied tables

• Rotation range: 360° for each axis.
• Repetitive positioning accuracy: ≤ ±0.003° (as stated in the supplied tables).
• Output flange face circular runout: ≤ 0.015 mm.
• Output flange radial circular runout: ≤ 0.015 mm.
• Perpendicularity between output flange and machine mounting surface: ≤ 0.015 mm.
• The stated speeds are shown in the source as rpm/min; this manual expresses them as rpm for readability. Confirm the manufacturer’s intended unit.

Stepper motor data shown in the uploaded motor chart

Model	Type	Flange	Holding torque	Body length	Current	Output shaft
42HS4015A4	Open-loop stepper	NEMA 17 / 42 mm	0.42 Nm	40 mm	1.51 A	5 mm
57HS8030A4	Open-loop stepper	NEMA 23 / 57 mm	2 Nm	80 mm	3 A	8 mm
HBT4240C	Integrated closed-loop stepper + driver	NEMA 17 / 42 mm	0.4 Nm	60 mm	1.5 A	5 mm
HBT5776C	Integrated closed-loop stepper + driver	NEMA 23 / 57 mm	2 Nm	96 mm	3.5 A	8 mm

6. Installation and Mechanical Mounting

6.1 Before installation

1. Check the shipping package for impact damage, corrosion, loose fasteners, and missing accessories.
2. Confirm the model code and motor type on the product label.
3. Compare the mounting dimensions, shaft/pilot dimensions, bolt pattern, and hollow bore with the applicable supplied drawing.
4. Verify that the machine base is rigid, flat, clean, and capable of supporting the assembly, fixture, workpiece, and dynamic loads.
5. Confirm that the total payload and its center of gravity remain within the allowable limits for both axes.

6.2 Mounting procedure

1. Isolate electrical power and secure the assembly against unintended movement.
2. Lift only using suitable rated lifting equipment and approved lifting points, if provided. Do not lift by the motor, output flange, cables, or hollow shaft.
3. Position the base on the machine mounting surface and align the mounting holes.
4. Install the specified fasteners for the actual model. Fastener size, grade, tightening torque, and thread engagement must come from the machine drawing or supplier; they are not fully specified in the uploaded images.
5. Tighten fasteners progressively in a cross pattern. Check that the base seats evenly without distortion.
6. Mount fixtures and workpieces concentrically where possible. Minimize overhang and unbalanced loads.
7. Check the full motion envelope for collisions with the machine, robot, tooling, guards, and cable routing.

6.3 Coupling and alignment

Use a compatible, accurately aligned coupling or adapter. Avoid applying axial or radial force to the output shaft during assembly. Do not hammer the shaft or flange. Ensure the fixture is seated on the locating register and secured with the correct fasteners. Verify runout after installation using suitable metrology equipment.

7. Motor, Drive, and Electrical Integration

> The uploaded images do not provide a complete wiring diagram, connector pinout, voltage rating, brake circuit, encoder wiring, or drive parameter set. These must be obtained from the motor and drive manufacturers for the exact supplied motor.

7.1 Servo motor systems

Use a compatible servo drive and controller. Confirm motor flange and shaft compatibility, rated voltage/current, encoder protocol, feedback cable, power cable, grounding, and drive enable/safety circuits. Set motor parameters according to the motor nameplate and manufacturer file; do not copy parameters from a different motor.

7.2 Stepper motor systems

For open-loop stepper motors, select a drive compatible with the motor’s rated current, phase wiring, and supply voltage. For integrated closed-loop stepper models, follow the integrated driver’s own supply, signal, and encoder instructions. Set current and microstep/pulse parameters according to the motor/drive documentation.

7.3 Cable routing and grounding

Route motor and feedback cables away from sharp edges, hot surfaces, coolant, chips, and moving pinch points. Provide a suitable service loop for the full rotation range and prevent twisting or snagging. Bond the platform and machine frame to protective earth in accordance with applicable electrical codes. Use shielded cables and grounding practices specified by the drive manufacturer.

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8. Commissioning and Initial Test

Commissioning must be carried out by qualified machine-integration personnel with the work area clear and all guards/interlocks functional.

1. Confirm all mechanical fasteners, motor fasteners, fixture fasteners, and cable connectors are secure.
2. Verify that the payload is removed or safely restrained for the first motion test.
3. Check that the emergency stop and machine safety circuits stop motion as intended.
4. With drive power isolated, manually inspect the mechanism for obvious obstruction only if the design permits safe manual movement. Never force the axis.
5. Energize the drive using the manufacturer's prescribed sequence and check for alarms before commanding motion.
6. Jog each axis independently at the lowest practical speed and acceleration. Confirm the direction of motion and controller coordinate convention.
7. Check for abnormal noise, vibration, binding, overheating, cable tension, and interference.
8. Verify homing/reference procedure and soft limits using the machine controller documentation.
9. Increase speed and acceleration gradually while monitoring motor/drive load and positioning behavior.
10. Test with a representative secured payload only after no-load tests pass.

9. Operating Instructions

• Use the machine controller to command the fourth and fifth axes. The platform itself does not define the controller's coordinate system, homing method, or program syntax.
• Keep all personnel outside the guarded motion envelope during automatic operation.
• Confirm the workpiece and fixture are securely fastened before every cycle.
• Avoid abrupt acceleration/deceleration unless the motor, drive, fixture, and machine structure are designed for it.
• Do not exceed the model-specific speed, torque, load, or duty limits.
• Stop the machine immediately if there is unexpected movement, unusual noise, vibration, overheating, a collision, or a drive alarm.

10. Maintenance and Inspection

The uploaded material does not specify lubrication type, lubrication interval, bearing service interval, or internal adjustment procedure. Follow the manufacturer's maintenance schedule for the exact model. Do not open sealed gear or bearing assemblies unless authorized.

Suggested routine checks

Before each shift: inspect the fixture, fasteners, cables, guards, and work area; check for visible damage or leakage.
Periodically: verify mounting bolt tightness, output flange runout, backlash/positioning repeatability, cable condition, grounding, and motor/drive temperature under normal load.
After a collision or overload: stop operation, isolate power, inspect the platform and mounting structure, and have alignment and accuracy checked before returning to service.

Cleaning: remove chips and surface contamination using a method compatible with the seals and finish. Do not direct high-pressure coolant or compressed air into seals, bearings, motor connectors, or electrical enclosures.

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11. Troubleshooting

Symptom	Possible causes	Recommended checks
Axis does not move	Drive disabled; E-stop active; wiring fault; controller inhibit; drive alarm	Check safety chain, drive status, alarms, enable signal, connectors, and controller command.
Motor vibrates or loses steps	Incorrect phase wiring; current setting incorrect; acceleration too high; mechanical binding; overload	Verify wiring and current against motor data; reduce acceleration; inspect load and alignment.
Positioning is inaccurate	Loose fixture; incorrect homing; coupling slip; excessive load; backlash or collision damage	Check fasteners, reference procedure, coupling, load, and repeatability with suitable instruments.
Unusual noise or heat	Overload; misalignment; bearing/gear issue; excessive speed; inadequate drive tuning	Stop and isolate power; inspect mounting and load; compare operating conditions with rated limits; contact supplier if persistent.
Cable twists or snags	Insufficient service loop; poor routing; axis range exceeds cable arrangement	Re-route and secure cables; verify the full motion envelope and cable bend radius.

12. Storage, Transport, and Service

Store the platform in a clean, dry environment and protect machined surfaces from impact, moisture, and corrosion. During transport, restrain the assembly against movement and protect the output flanges, motor connectors, and locating surfaces. Keep the original packaging where practical.

For service, provide the supplier with the exact model code, serial number, motor model, drive model, alarm codes, operating conditions, payload, and a description of the fault. Do not modify the gear mechanism, bearing preload, encoder, or motor mount without written manufacturer guidance.

13. Information to Confirm Before Installation

- Exact model and serial number
- Correct fourth- and fifth-axis model pairing
- Motor type and flange size for each axis
- Motor/drive datasheets and wiring pinouts
- Supply voltage, current, grounding, and safety circuit requirements
- Fastener sizes, grades, and tightening torques
- Allowable payload, center of gravity, moment loads, duty cycle, and acceleration
- Lubrication and maintenance schedule
- Homing, limit, and controller configuration

Disclaimer: This document is a user-oriented guide compiled from the images supplied by the requester. It is not a manufacturer-certified document and does not replace the official drawings, risk assessment, electrical schematics, or model-specific instructions. Where the supplied images conflict, the exact product nameplate and written manufacturer confirmation take precedence.

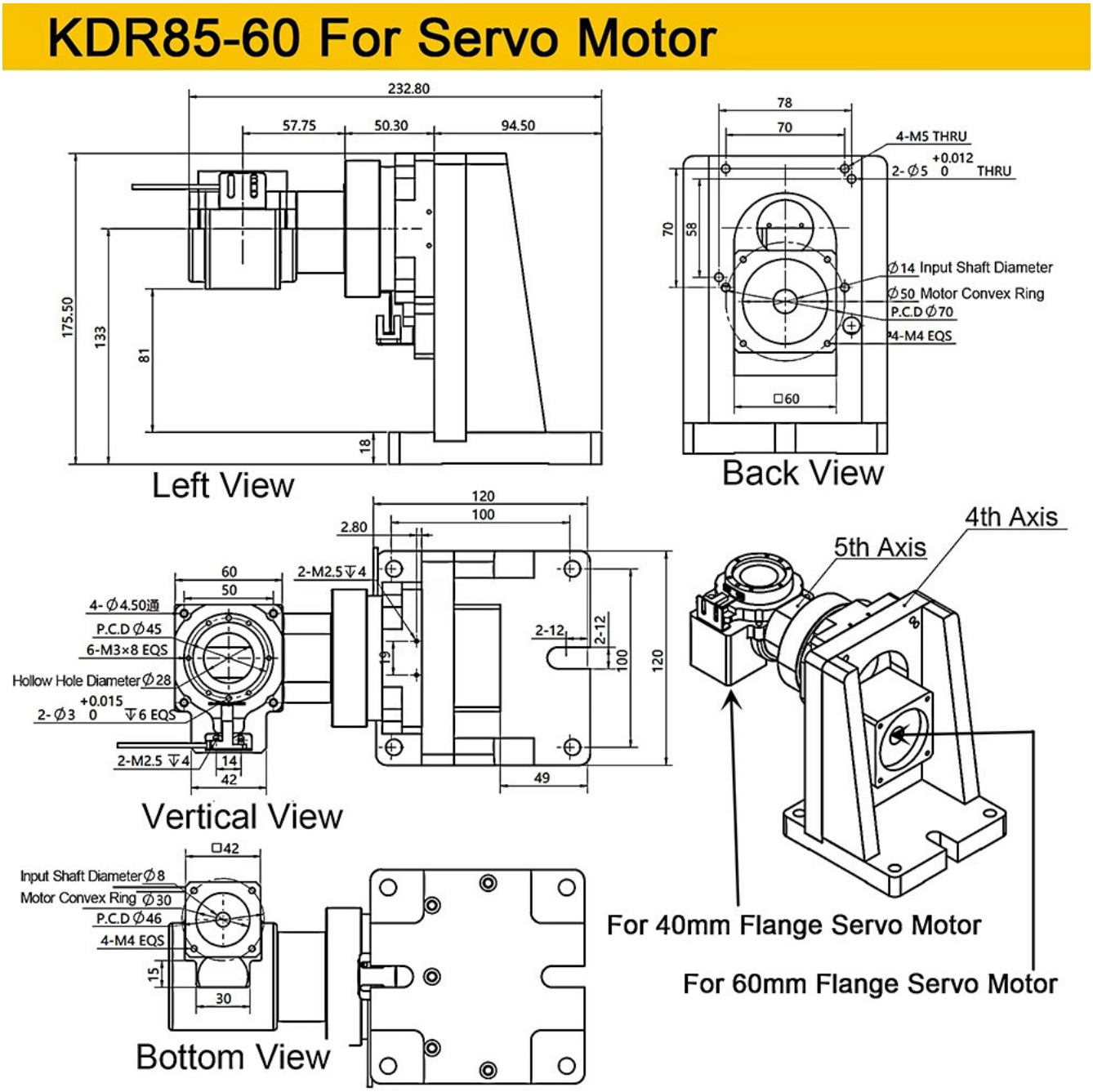
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A1. Product overview – five-axis hollow rotating platform



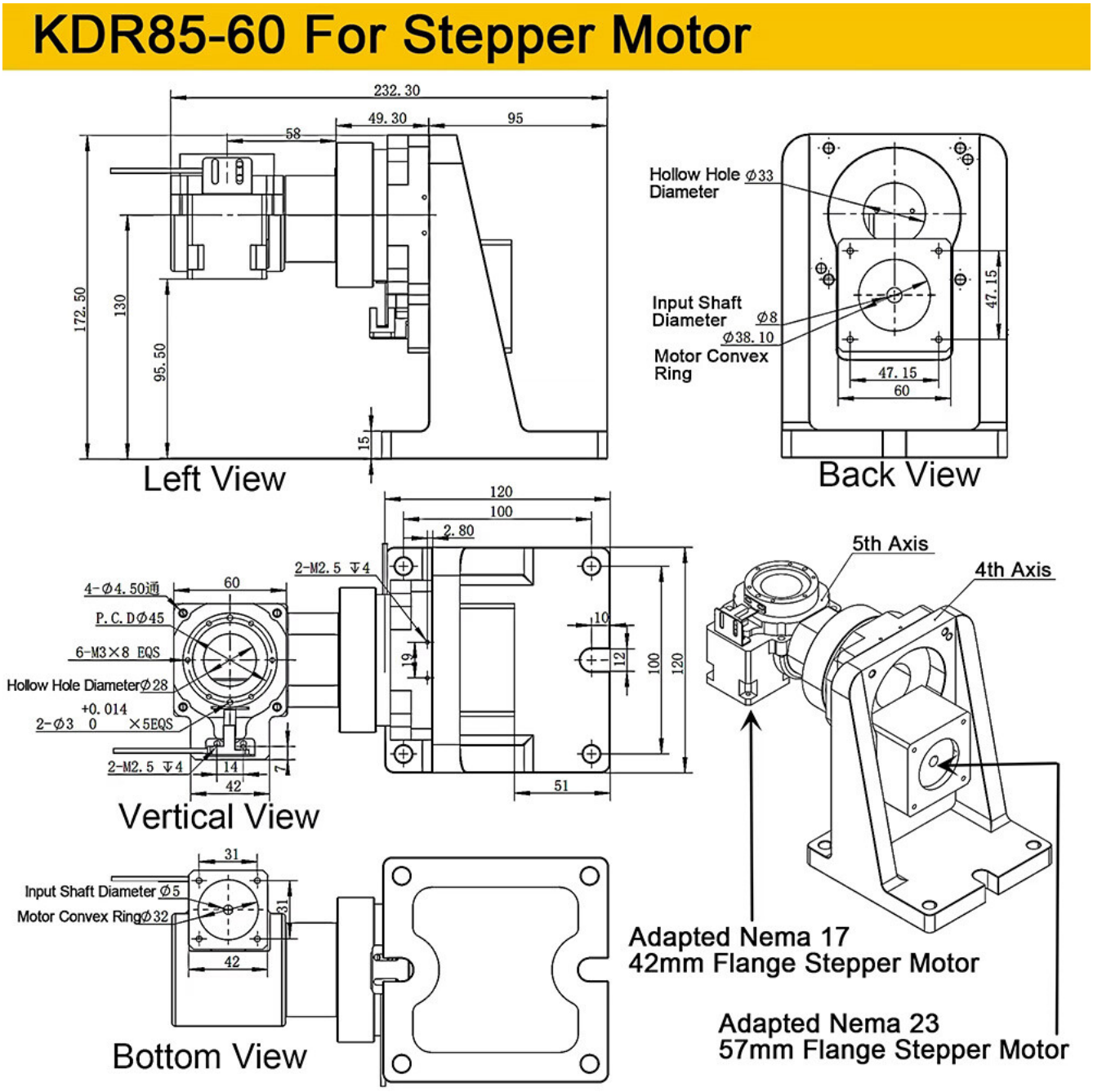
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A2. KDR85-60 configuration – servo motor drawing



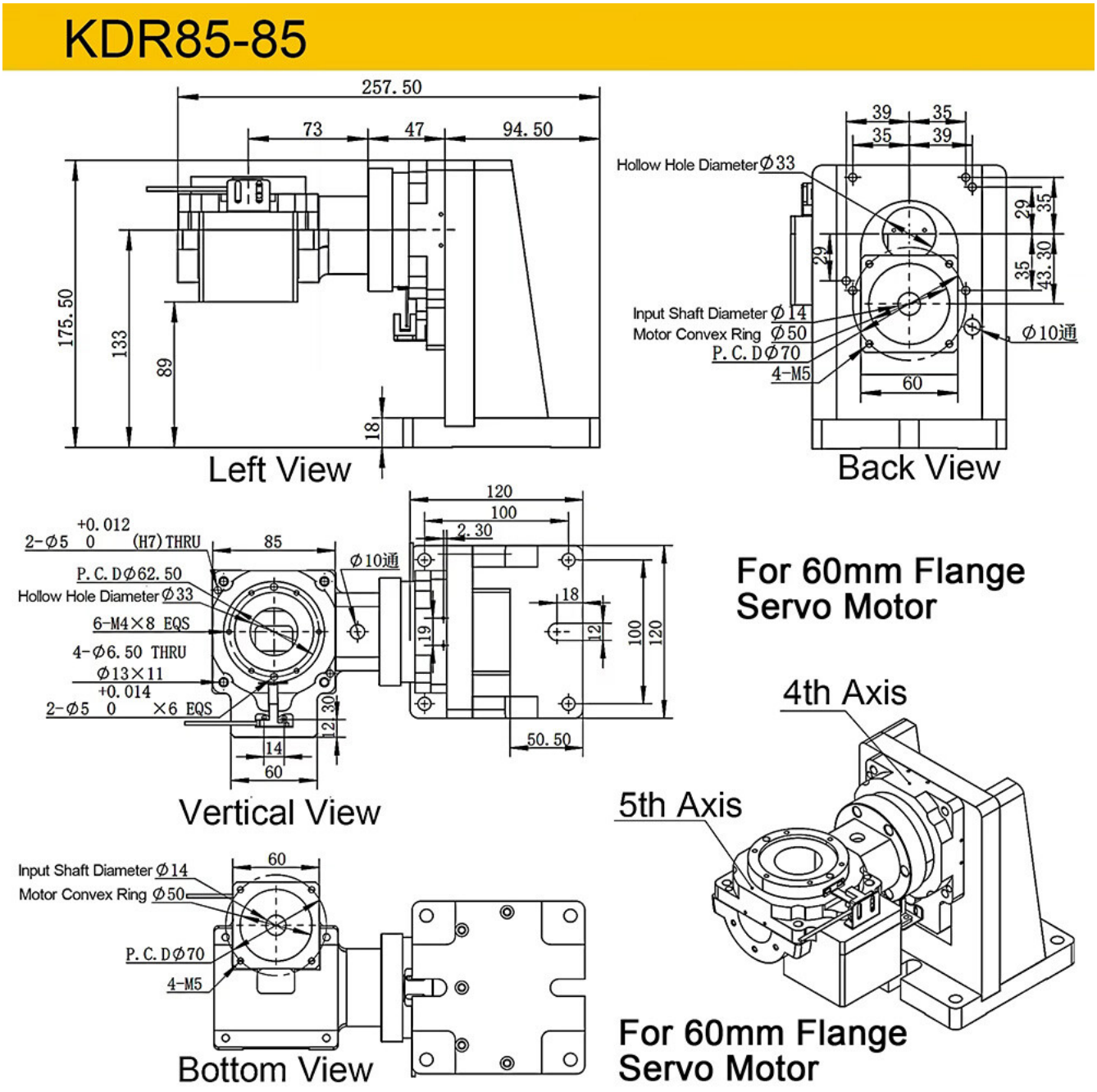
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A3. KDR85-60 configuration – stepper motor drawing



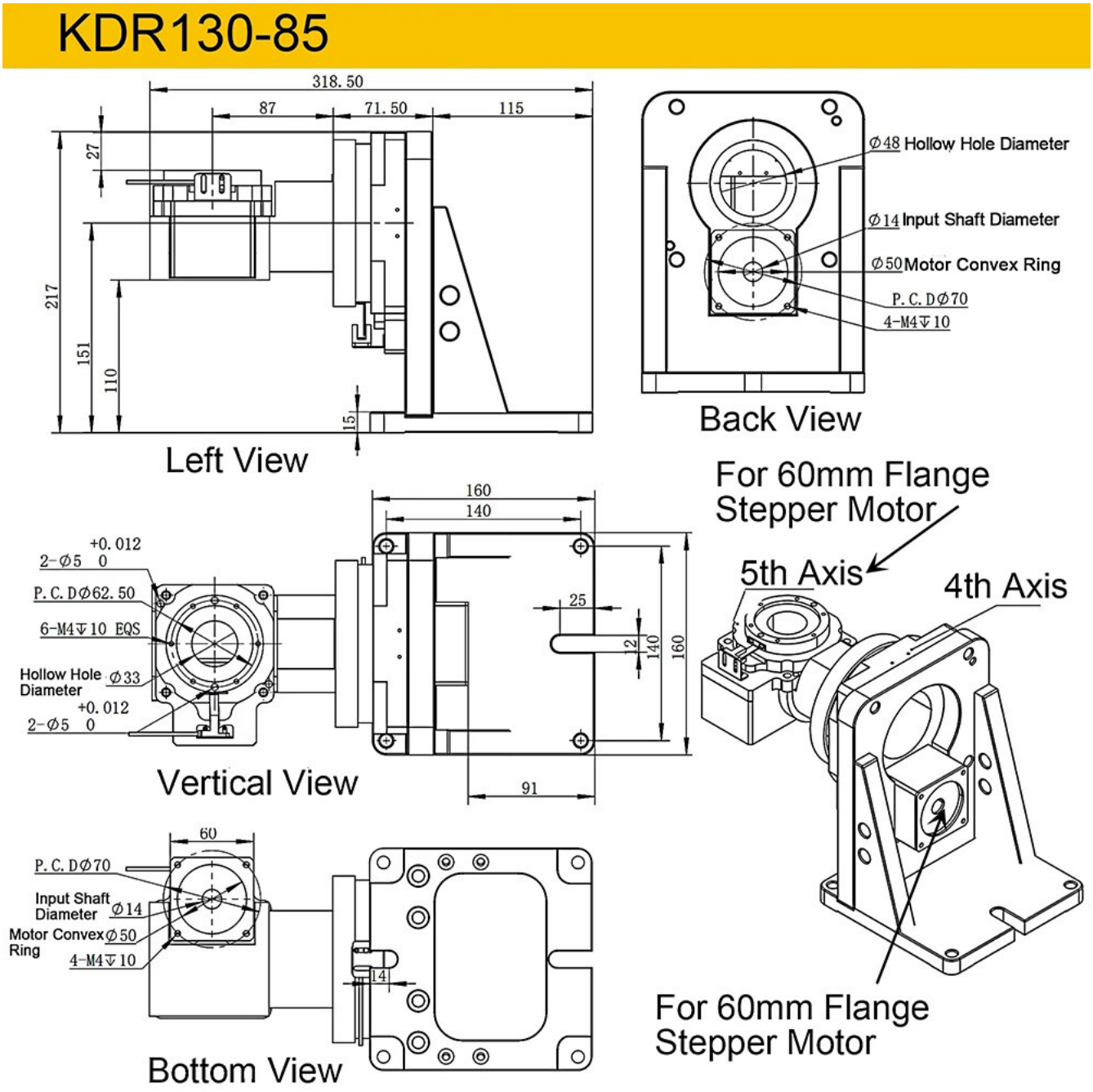
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A4. KDR85-85 configuration – 60 mm servo motor drawing



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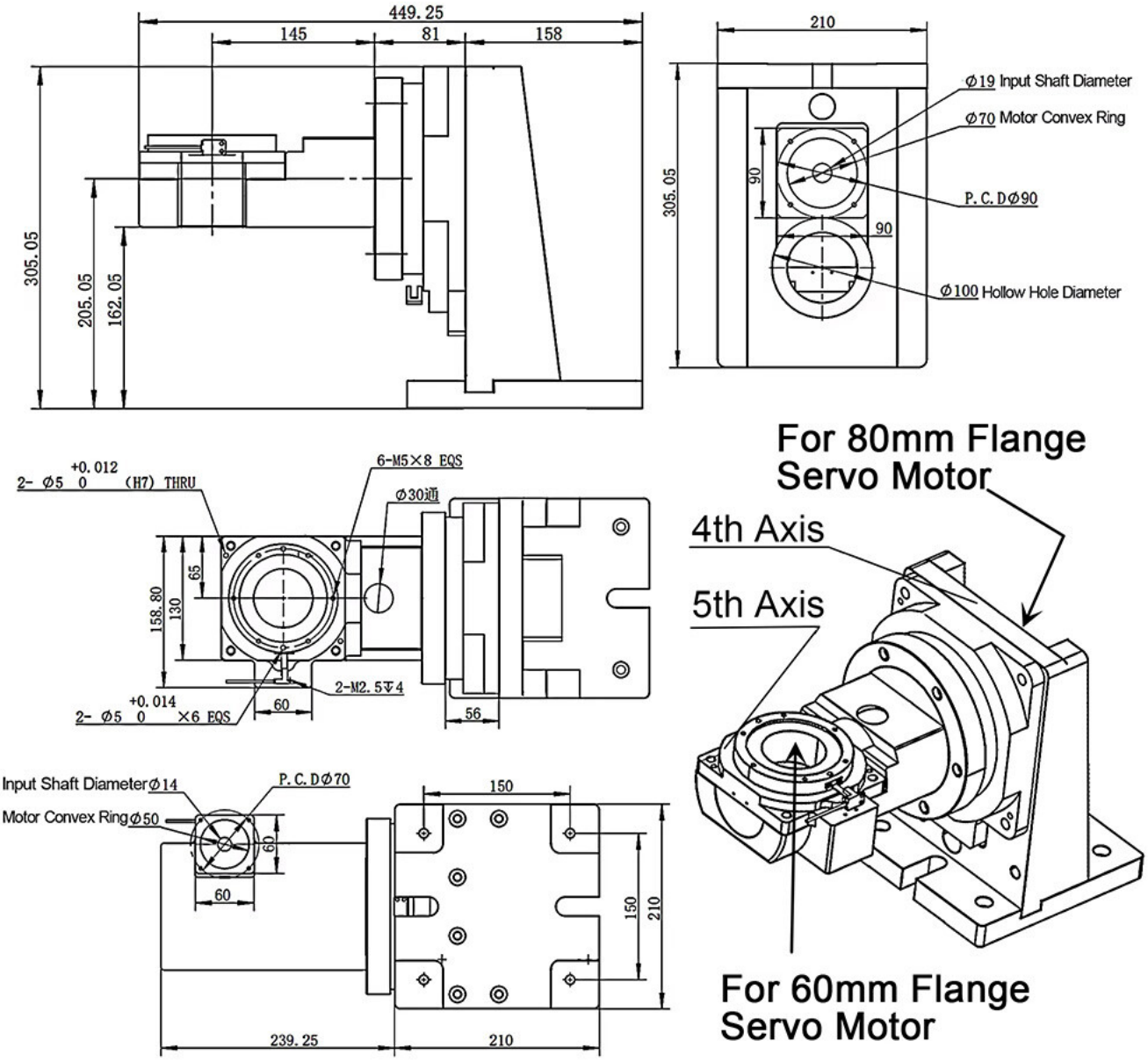
A5. KDR130-85 configuration drawing



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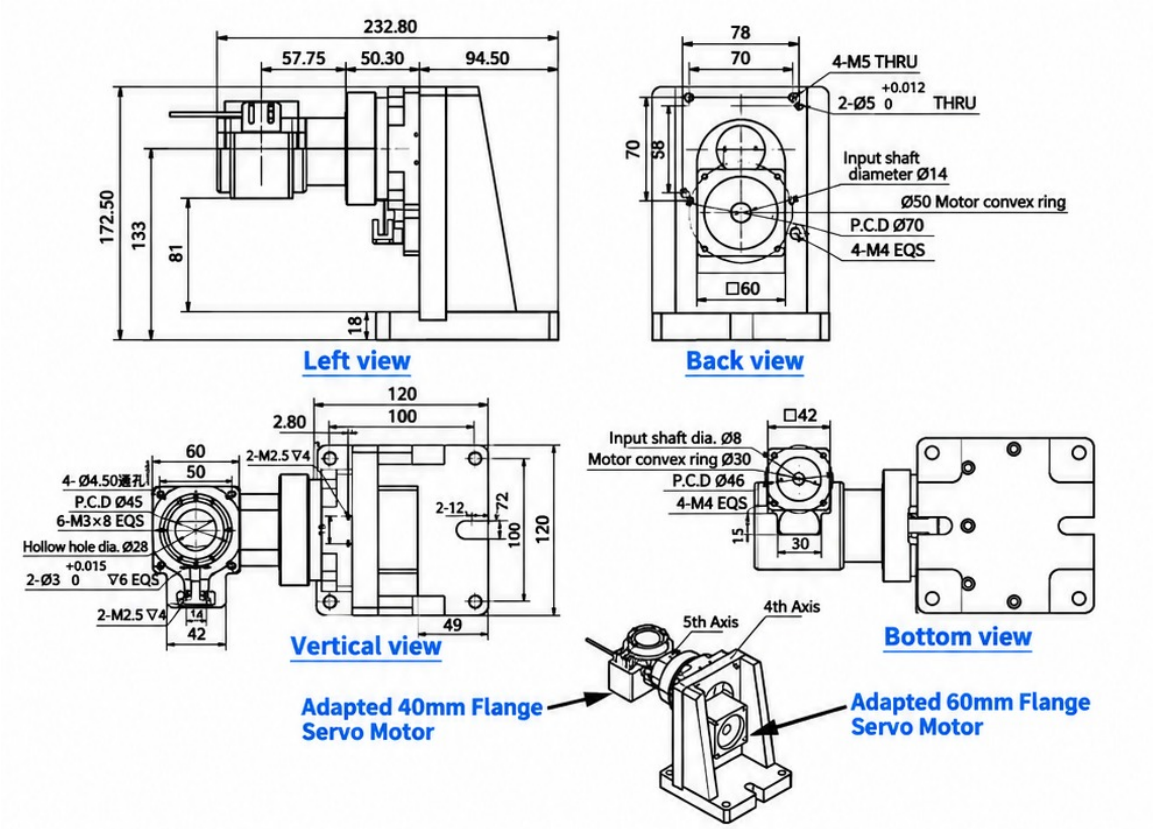
A6. KDR200-130 configuration – servo motor drawing

KDR200-130



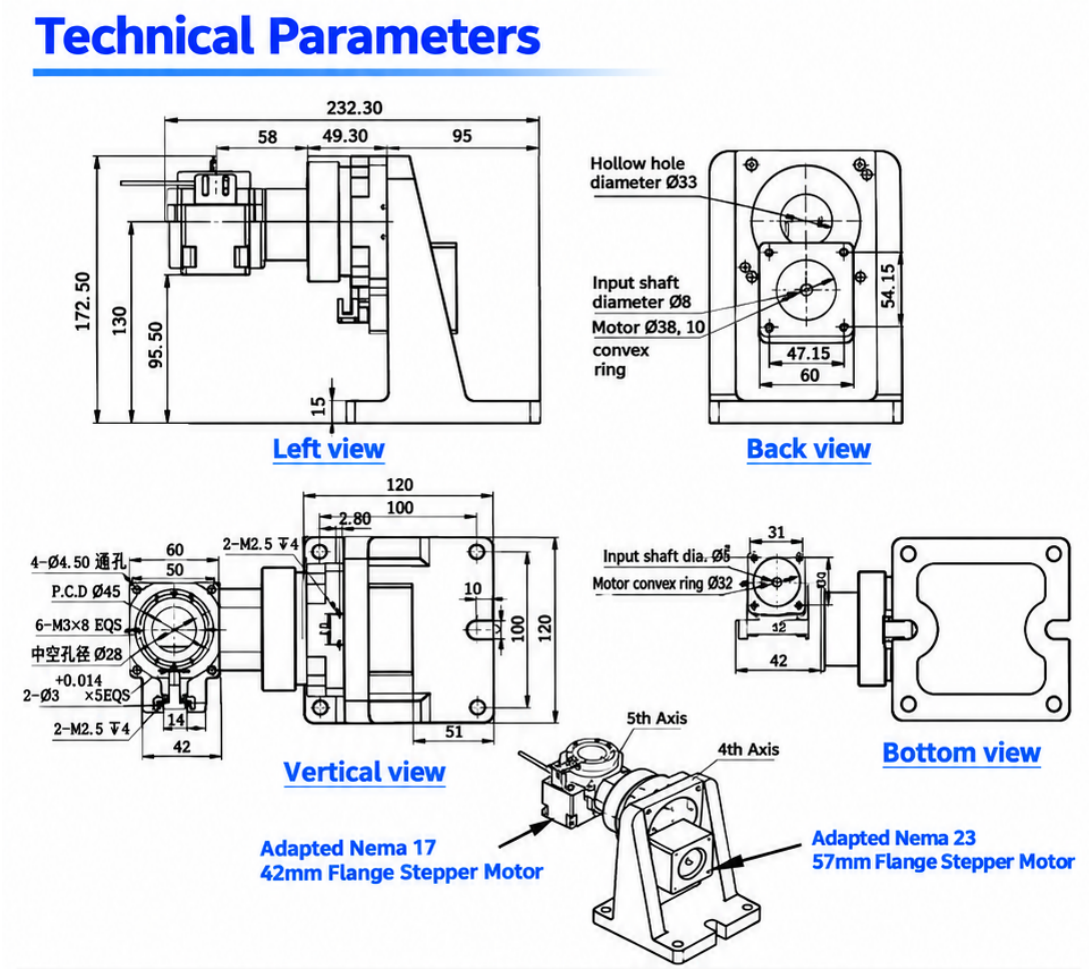
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A7. KDR85-60 – detailed dimensional drawing



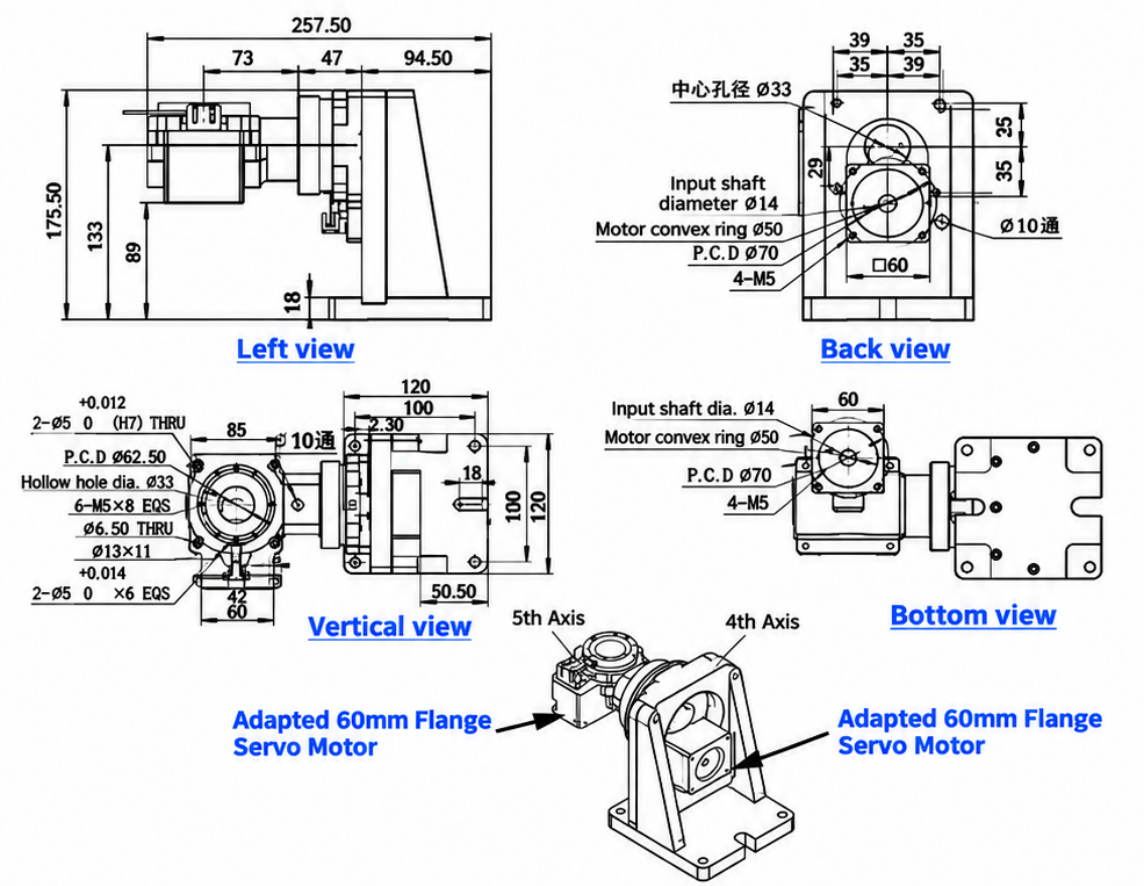
KDR85-60 Five Axis Hollow Rotating Platform			
Fourth Axis	KDR85	**Fifth Axis**	KDR60
Workbench speed	0~200rpm/min	**Workbench speed**	0~100rpm/min
Range of workbench movement angle	360°	**Range of workbench movement angle**	360°
Permissible peak torque during start stop	60Nm	**Permissible peak torque during start stop**	35Nm
Rated torque	15Nm	**Rated torque**	5.2Nm
Maximum load capacity	8kg	**Maximum load capacity**	<5kg
Center height	133mm	**Center height**	/
Circular runout of output flange end face	≤0.015mm	**Circular runout of output flange end face**	≤0.015mm
Radial circular runout of output flange	≤0.015mm	**Radial circular runout of output flange**	≤0.015mm
Perpendicularity between output flange and machine mounting surface	≤0.015mm	**Perpendicularity between output flange and machine mounting surface**	≤0.015mm
Repetitive positioning accuracy	≤ ± 0.003°	**Repetitive positioning accuracy**	≤ ± 0.003°
Adapted motor	60mm Servo Motor	**Adapted motor**	40mm Servo Motor
Input diameter	14mm	**Input diameter**	8mm

A8. KDR85-60 – stepper motor dimensional drawing



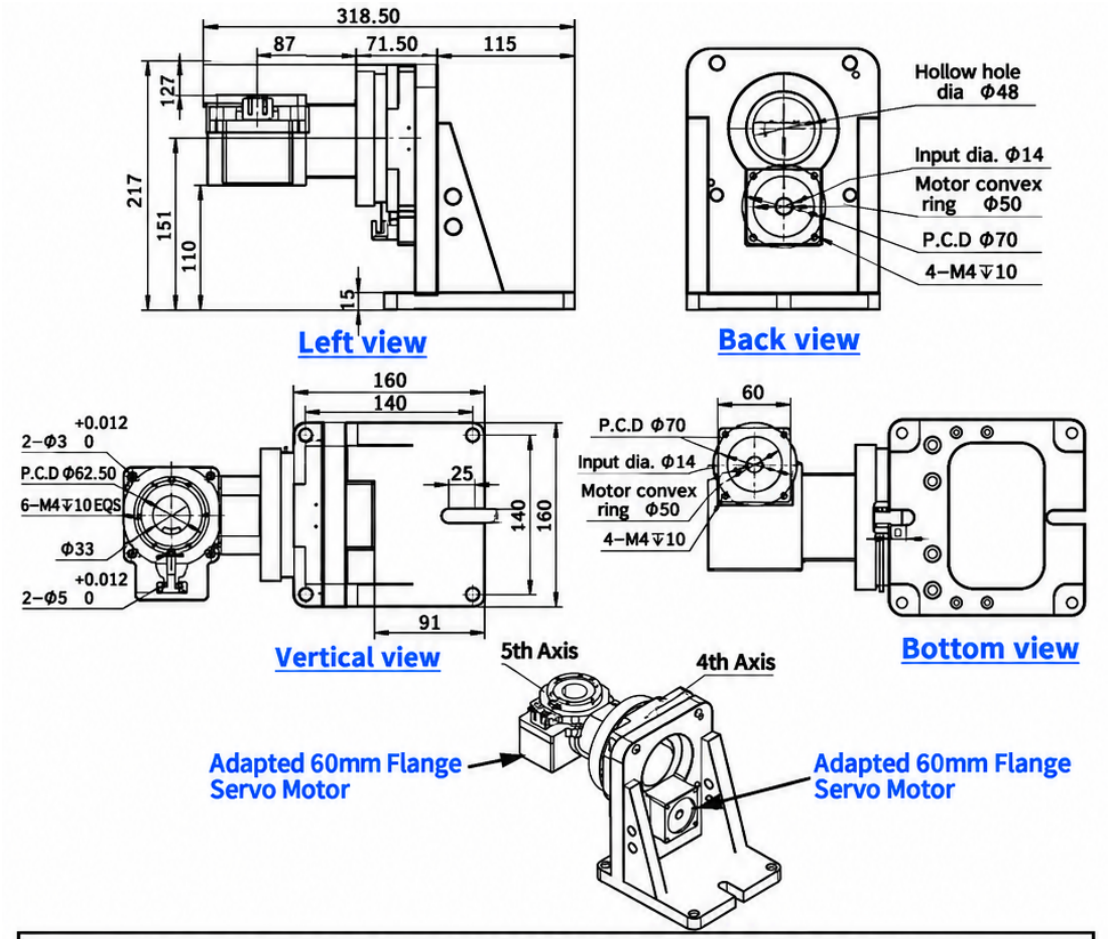
KDR85-60 Five Axis Hollow Rotating Platform			
Fourth Axis	KDR85	**Fifth Axis**	KDR60
Workbench speed	0~200rpm/min	**Workbench speed**	0~100rpm/min
Range of workbench movement angle	360°	**Range of workbench movement angle**	360°
Permissible peak torque during start stop	35Nm	**Permissible peak torque during start stop**	60Nm
Rated torque	15Nm	**Rated torque**	5.2Nm
Maximum load capacity	8kg	**Maximum load capacity**	<5kg
Center height	130mm	**Center height**	/
Circular runout of output flange end face	≤0.015mm	**Circular runout of output flange end face**	≤0.015mm
Radial circular runout of output flange	≤0.015mm	**Radial circular runout of output flange**	≤0.015mm
Perpendicularity between output flange and machine mounting surface	≤0.015mm	**Perpendicularity between output flange and machine mounting surface**	≤0.015mm
Repetitive positioning accuracy	≤±0.003°	**Repetitive positioning accuracy**	≤±0.003°
Adapted motor	Nema 23 57mm Stepper Motor	**Adapted motor**	Nema 17 42mm Stepper Motor
Input diameter	8mm	**Input diameter**	5mm

A9. KDR85-85 – dimensional drawing



KDR85-85 Five Axis Hollow Rotating Platform			
Fourth Axis	KDR85	**Fifth Axis**	KDR85
Workbench speed	0~100rpm/min	**Workbench speed**	0~200rpm/min
Range of workbench movement angle	360°	**Range of workbench movement angle**	360°
Permissible peak torque during start stop	35Nm	**Permissible peak torque during start stop**	35Nm
Rated torque	15Nm	**Rated torque**	15Nm
Maximum load capacity	8kg	**Maximum load capacity**	8kg
Center height	133mm	**Center height**	/
Circular runout of output flange end face	≤0.015mm	**Circular runout of output flange end face**	≤0.015mm
Radial circular runout of output flange	≤0.015mm	**Radial circular runout of output flange**	≤0.015mm
Perpendicularity between output flange and machine mounting surface	≤0.015mm	**Perpendicularity between output flange and machine mounting surface**	≤0.015mm
Repetitive positioning accuracy	≤±0.003°	**Repetitive positioning accuracy**	≤±0.003°
Adapted motor	60mm Servo Motor	**Adapted motor**	60mm Servo Motor
Input diameter	14mm	**Input diameter**	14mm

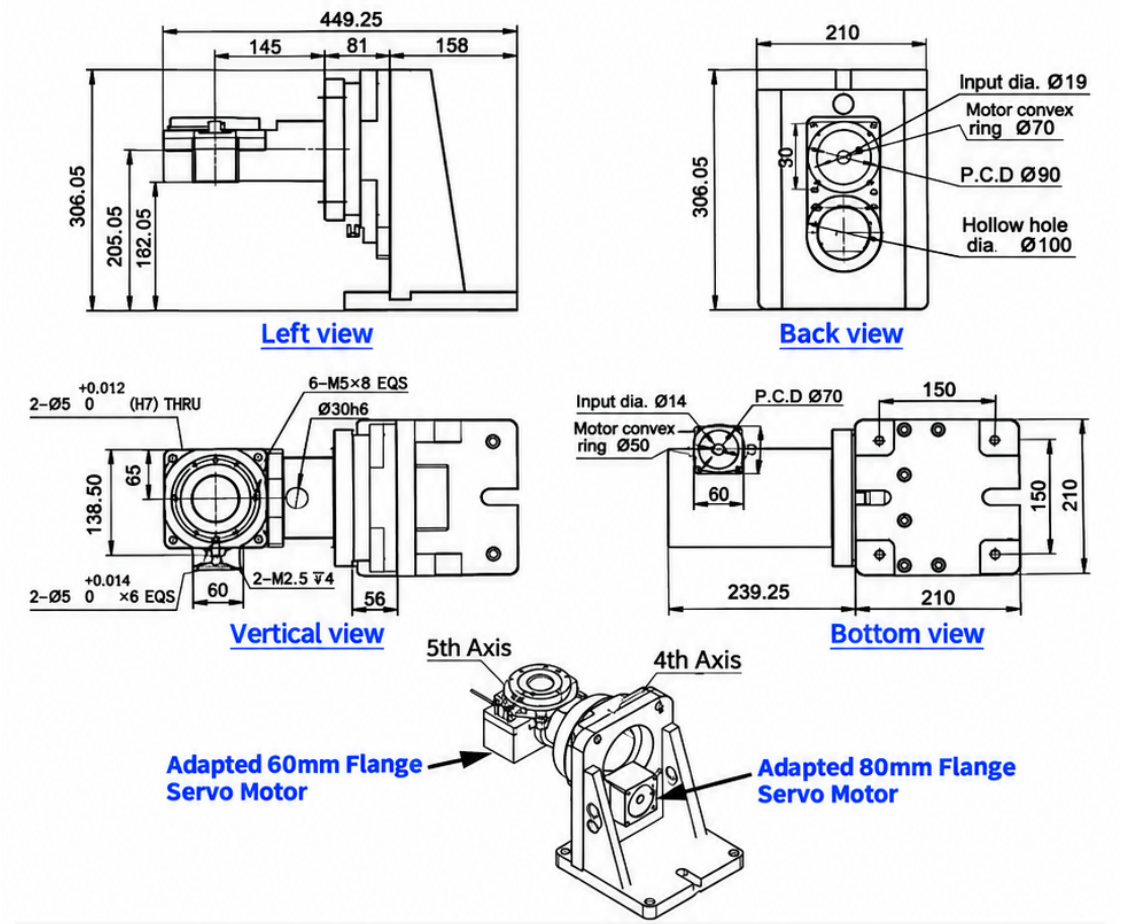
A10. KDR130-85 – dimensional drawing



KDR130-85 Five Axis Hollow Rotating Platform			
Fourth Axis	KDR130	**Fifth Axis**	KDR85
Workbench speed	0~100rpm/min	**Workbench speed**	0~200rpm/min
Range of workbench movement angle	360°	**Range of workbench movement angle**	360°
Permissible peak torque during start stop	60Nm	**Permissible peak torque during start stop**	35Nm
Rated torque	30Nm	**Rated torque**	15Nm
Maximum load capacity	<15kg	**Maximum load capacity**	8kg
Center height	151mm	**Center height**	/
Circular runout of output flange end face	≤0.015mm	**Circular runout of output flange end face**	≤0.015mm
Radial circular runout of output flange	≤0.015mm	**Radial circular runout of output flange**	≤0.015mm
Perpendicularity between output flange and machine mounting surface	≤0.015mm	**Perpendicularity between output flange and machine mounting surface**	≤0.015mm
Repetitive positioning accuracy	≤±0.003°	**Repetitive positioning accuracy**	≤±0.003°
Adapted motor	60mm Servo Motor	**Adapted motor**	60mm Servo Motor
Input diameter	14mm	**Input diameter**	14mm

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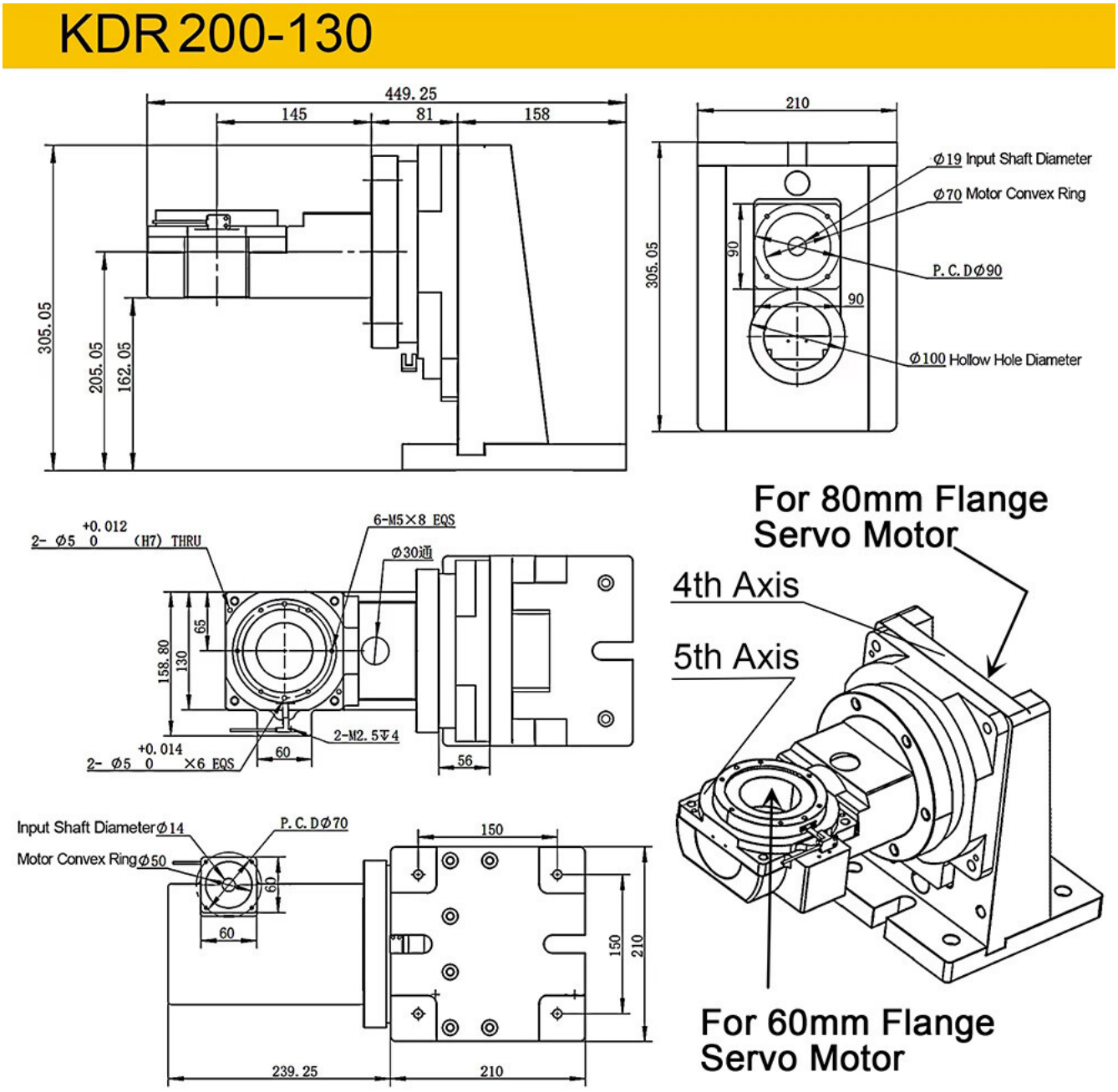
A11. KDR200-130 – dimensional drawing



KDR200-130 Five Axis Hollow Rotating Platform			
Fourth Axis	KDR200	**Fifth Axis**	KDR130
Workbench speed	0~100rpm/min	**Workbench speed**	0~200rpm/min
Range of workbench movement angle	360°	**Range of workbench movement angle**	360°
Permissible peak torque during start stop	90Nm	**Permissible peak torque during start stop**	60Nm
Rated torque	45Nm	**Rated torque**	30Nm
Maximum load capacity	<40kg	**Maximum load capacity**	15kg
Center height	205.05mm	**Center height**	/
Circular runout of output flange end face	≤0.015mm	**Circular runout of output flange end face**	≤0.015mm
Radial circular runout of output flange	≤0.015mm	**Radial circular runout of output flange**	≤0.015mm
Perpendicularity between output flange and machine mounting surface	≤0.015mm	**Perpendicularity between output flange and machine mounting surface**	≤0.015mm
Repetitive positioning accuracy	≤±0.003°	**Repetitive positioning accuracy**	≤±0.003°
Adapted motor	80mm Servo Motor	**Adapted motor**	60mm Servo Motor
Input diameter	19mm	**Input diameter**	14mm

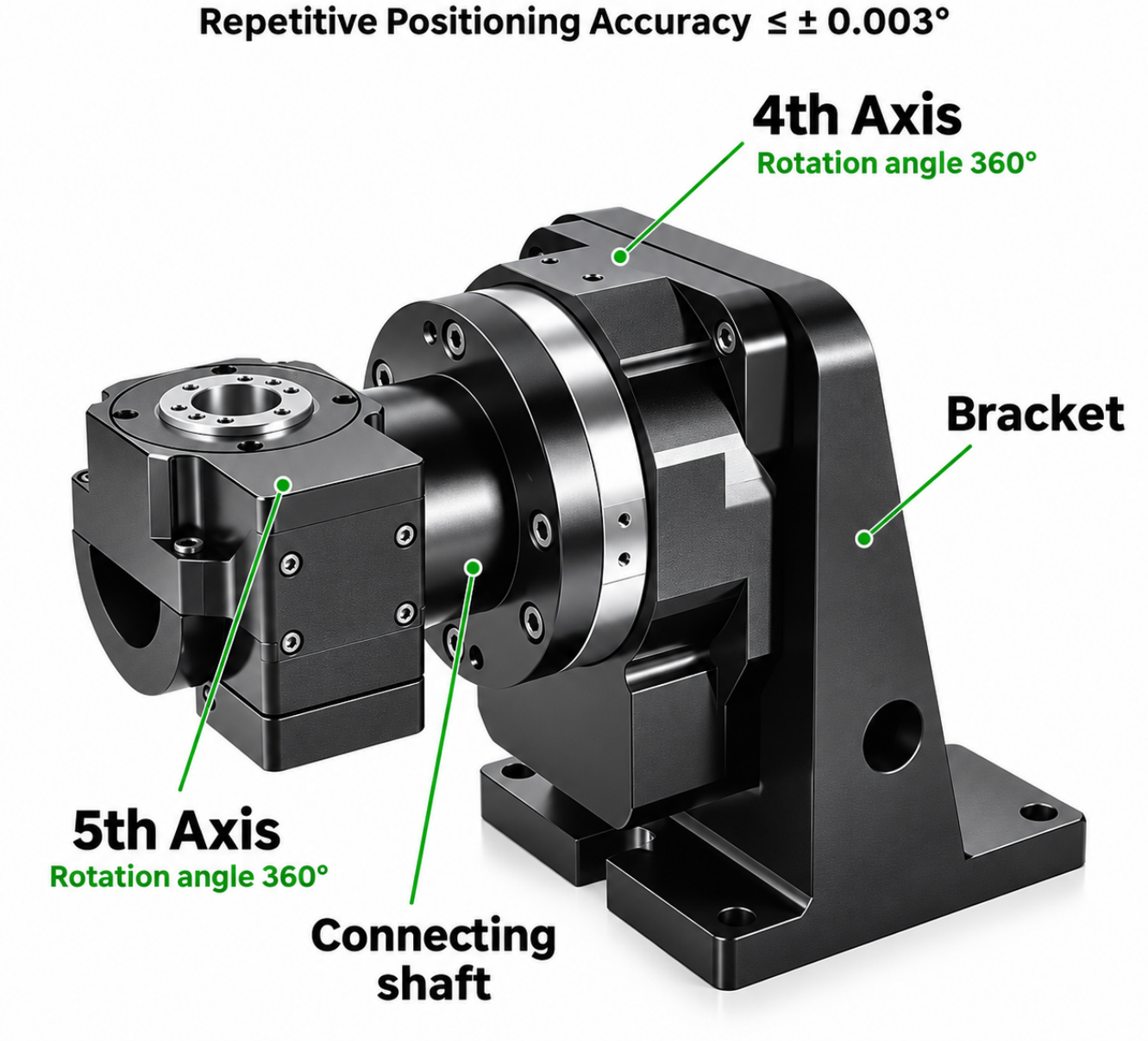
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A12. KDR200-130 – alternate servo motor drawing



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A13. Positioning accuracy and major components



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A14. Stepper motor technical parameters

Stepper Motor Technical Parameters								
Model	Motor type	With/ without encoder	Flange Size (mm)	Holding torque (N·m)	Body length (mm)	Current (A)	Moment of inertia (g·cm²)	Output diameter (mm)
42HS4015A4	open-loop stepper motor	without	Nema 17 42mm	0.42	40	1.51	57	5
57HS8030A4			Nema 23 57mm	2	80	3	580	8
HBT4240C	Integrated closed-loop stepper motor driver	with	Nema 17 42mm	0.4	60	1.5	57	5
HBT5776C			Nema 23 57mm	2	96	3.5	450	8

Features: *Integrated motor is a perfect combination of drive and stepper motor, which integrates stepper motor and drive technology into one. It not only saves installation space, but also simplifies wiring, saving you design and production costs. It is your first choice when using stepper system solutions.*

