

HarmonicDrive®

High Precision SHA-CG Actuators

Compact, Hollow Shaft Design

Direct Drive Motor Performance

Significantly smaller and Lighter

80-90% less weight, 50% more compact

High torque for fast acceleration and positioning

The SHA-CG delivers high precision with improved positioning accuracy and surface runout. Ideal for high precision rotary applications such as indexing tables.



For detailed specifications, please refer to the catalog.



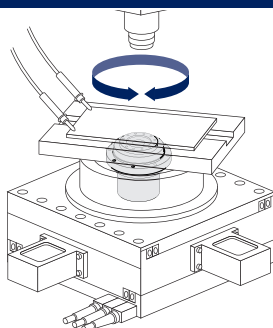
Application Examples

Measurement, Analytical
and Test Systems

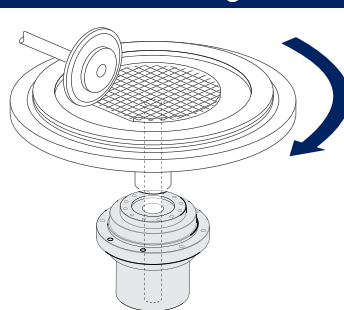
Optical Equipment

Machine Tools

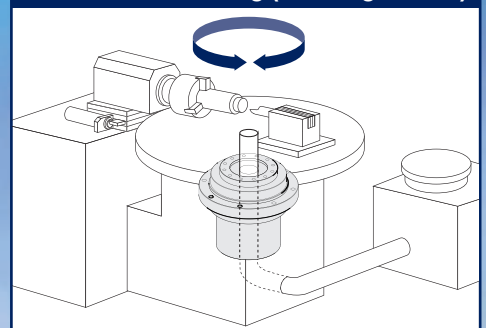
Theta Axis



Wafer Dicing



Precision Machining (Indexing Device)



Product Features

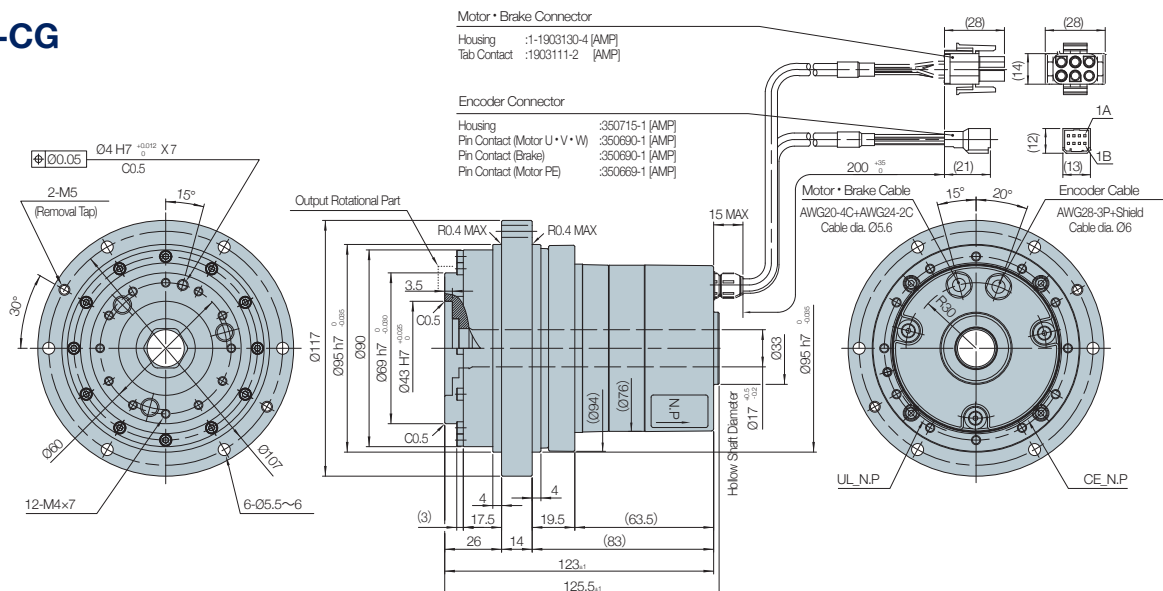
- **Improved output shaft runout accuracy (radial runout & axial runout: less than 0.010mm)**
Improved structure for high precision surface and shaft runout.
- **Output shaft resolution is evenly divisible**
Indexing at 0.01 ° / 0.001 ° / 0.0001 °
- **Optional mounting stand available**

Size	Gear Ratio	Maximum Torque [Nm]	Continuous Torque [Nm]	Maximum Speed [rpm]	Output Resolution Pulse / Rev	Hollow Shaft Dia.	Recommended Drivers
20A Motor Voltage Rating: 200V	50:1	73	21	120	6,553,600	17	General Purpose I/O commands HA-800A-3D/E-200 MECHATROLINK: HA-800B-3D/E-200 CC-Link: HA-800C-3D/E-200
	80:1	96	35	75	10,485,760	17	
	100:1	107	43	60	13,107,200	17	
	120:1	113	48	50	15,728,640	17	
	160:1	120	48	37.5	20,971,520	17	
25A Motor Voltage Rating: 100V	50:1	127	34	96	6,553,600	27	General Purpose I/O commands HA-800A-6D/E-100 HA-800A-3D/E-200 MECHATROLINK: HA-800B-6D/E-100 HA-800B-3D/E-200 CC-Link: HA-800B-6D/E-100 HA-800C-3D/E-200
	80:1	178	57	60	10,485,760	27	
	100:1	204	72	48	13,107,200	27	
	120:1	217	81	40	15,728,640	27	
	160:1	229	81	30	20,971,520	27	
25A Motor Voltage Rating: 200V	50:1	127	40	112	6,553,600	27	
	80:1	178	66	70	10,485,760	27	
	100:1	204	81	56	13,107,200	27	
	120:1	217	81	46.7	15,728,640	27	
	160:1	229	81	35	20,971,520	27	
32A Motor Voltage Rating: 200V	50:1	281	90	96	6,553,600	35	General Purpose I/O commands HA-800A-6D/E-200 MECHATROLINK: HA-800B-6D/E-200 CC-Link: HA-800C-6D/E-200
	80:1	395	151	60	10,485,760	35	
	100:1	433	178	48	13,107,200	35	
	120:1	459	178	40	15,728,640	35	
	160:1	484	178	30	20,971,520	35	
40A (HA-800□-4D/E-200) Motor Voltage Rating: 200V	50:1	333	92	80	6,553,600	45	General Purpose I/O commands HA-800A-6D/E-200 (HA-800A-24D/E-200) MECHATROLINK: HA-800B-6D/E-200 (HA-800B-24D/E-200) CC-Link: HA-800C-6D/E-200 (HA-800C-24D/E-200)
	80:1	548	156	50	10,485,760	45	
	100:1	686	196	40	13,107,200	45	
	120:1	802	235	33.3	15,728,640	45	
	160:1	841	315	25	20,971,520	45	
40A (HA-800□-24D/E-200) Motor Voltage Rating: 200V	50:1	523	157	80	6,553,600	45	
	80:1	675	260	50	10,485,760	45	
	100:1	738	327	40	13,107,200	45	
	120:1	802	382	33.3	15,728,640	45	
	160:1	841	382	25	20,971,520	45	

* Value in parenthesis is with brake.
Output Encoder Resolution = Encoder Resolution × Reduction Ratio.

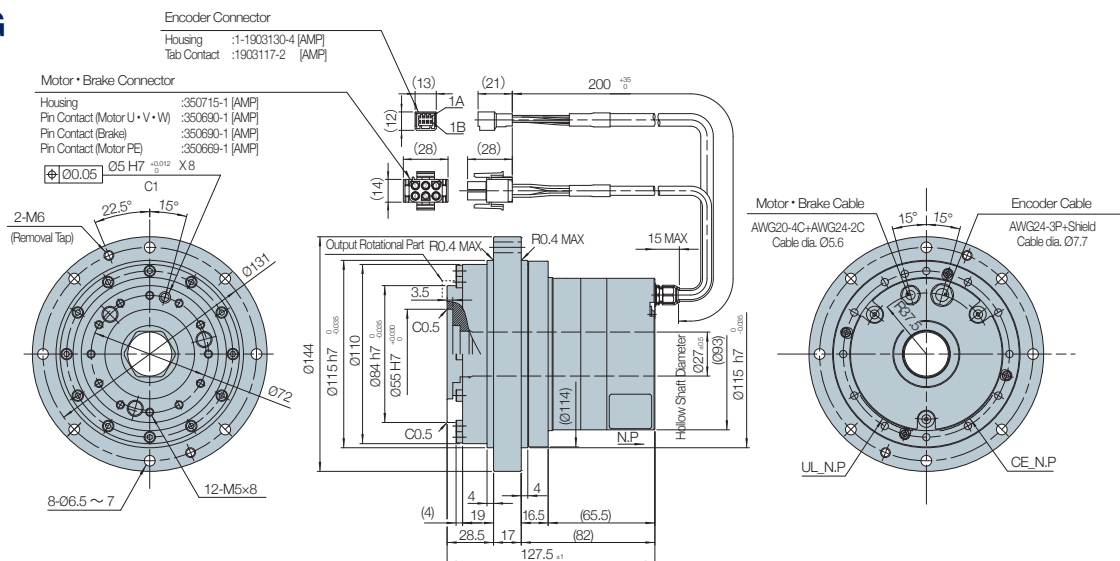
Outline Dimensions

SHA20A-CG



SHA25A-CG

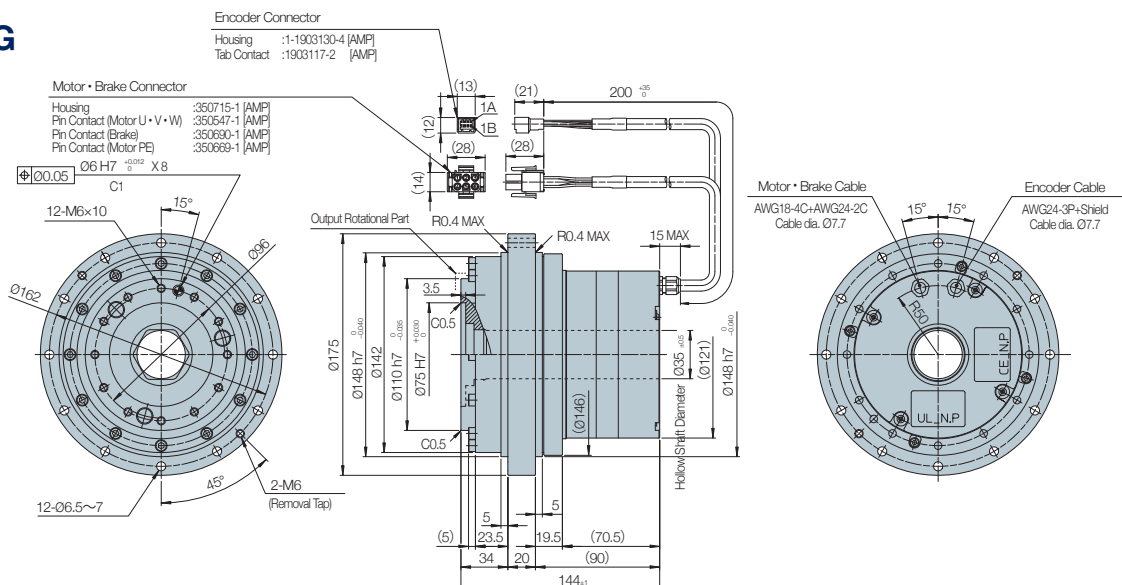
(Unit: mm)



(Note) The dimension tolerances that are not specified vary depending on the manufacturing method. Please check the confirmation drawing or contact us for dimension tolerances not shown.

SHA32A-CG

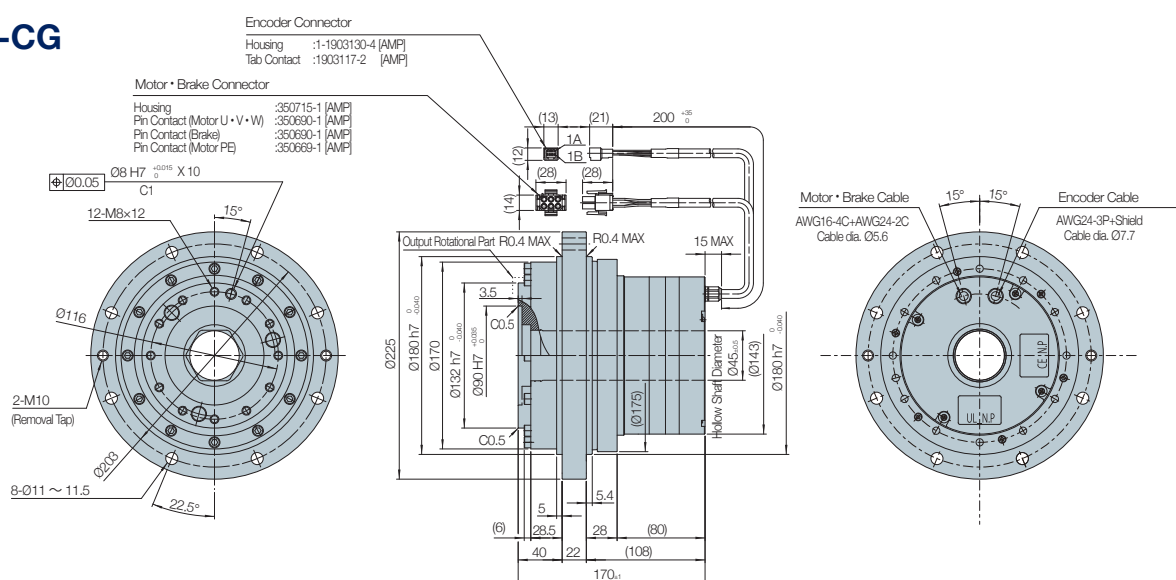
(Unit: mm)



(Note) The dimension tolerances that are not specified vary depending on the manufacturing method. Please check the confirmation drawing or contact us for dimension tolerances not shown.

SHA40A-CG

(Unit: mm)



(Note) The dimension tolerances that are not specified vary depending on the manufacturing method. Please check the confirmation drawing or contact us for dimension tolerances not shown.

The SHA-CG Series actuators is compact, delivers high torque and features a hollow shaft that allows design versatility in demanding applications.

SHA-CG Series

Model Options

■ Gearhead

Standard Harmonic Drive® Gear - CSG Series 50:1 ~ 160:1

■ Cable Orientation

Standard Rear exit
Option Side exit

■ Encoder

Standard Magnetic Absolute Encoder (17 bit)
Multi-Turn (16 bit)
(Nikon -A Format)
Option Incremental Encoder

■ Brake

Standard No Brake
Option Motor Brake (Integrated without dimension change)

■ Servomotor

Standard 200V AC
Option 100V AC
72V DC, 48V DC

■ Environmental

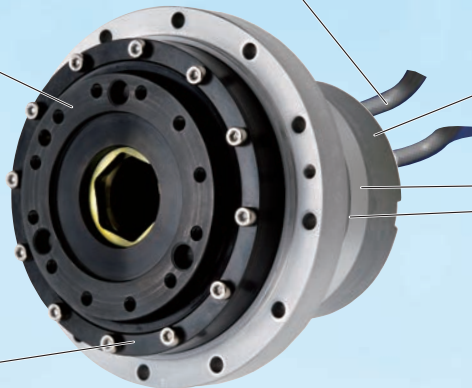
Standard IP 54
Temperature Range 0°C - 40°C
UL, CE marking, RoHS
Option IP 65

■ Output Bearing

Standard Cross Roller Bearing
Option Larger size bearing for higher load capacities

■ Option

Origin & End Limit Sensor
Mounting Stand



Recommended Drivers

HA-800

HA-800A General Purpose I/O Commands

MECHATROLINK^{*1}
MECHATROLINK-II Commands

HA-800B

CC-Link^{*2}
CC-Link Commands

HA-800C



*1: MECHATROLINK is a registered trademark of MECHATROLINK association.

*2: CC-Link is a registered trademark of CC-Link association.



Please contact our sales office with any questions.



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HarmonicDrive® is a registered trademark of Harmonic Drive Systems Inc.
Trademark is registered in Japan.

<http://www.hds.co.jp/>

HarmonicDrive® HarmonicPlanetary® HarmonicGrease®
HarmonicGearhead® HarmonicLinear® BEAM SERVO® Harmonicsyn®

Registered trademark in Japan.

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