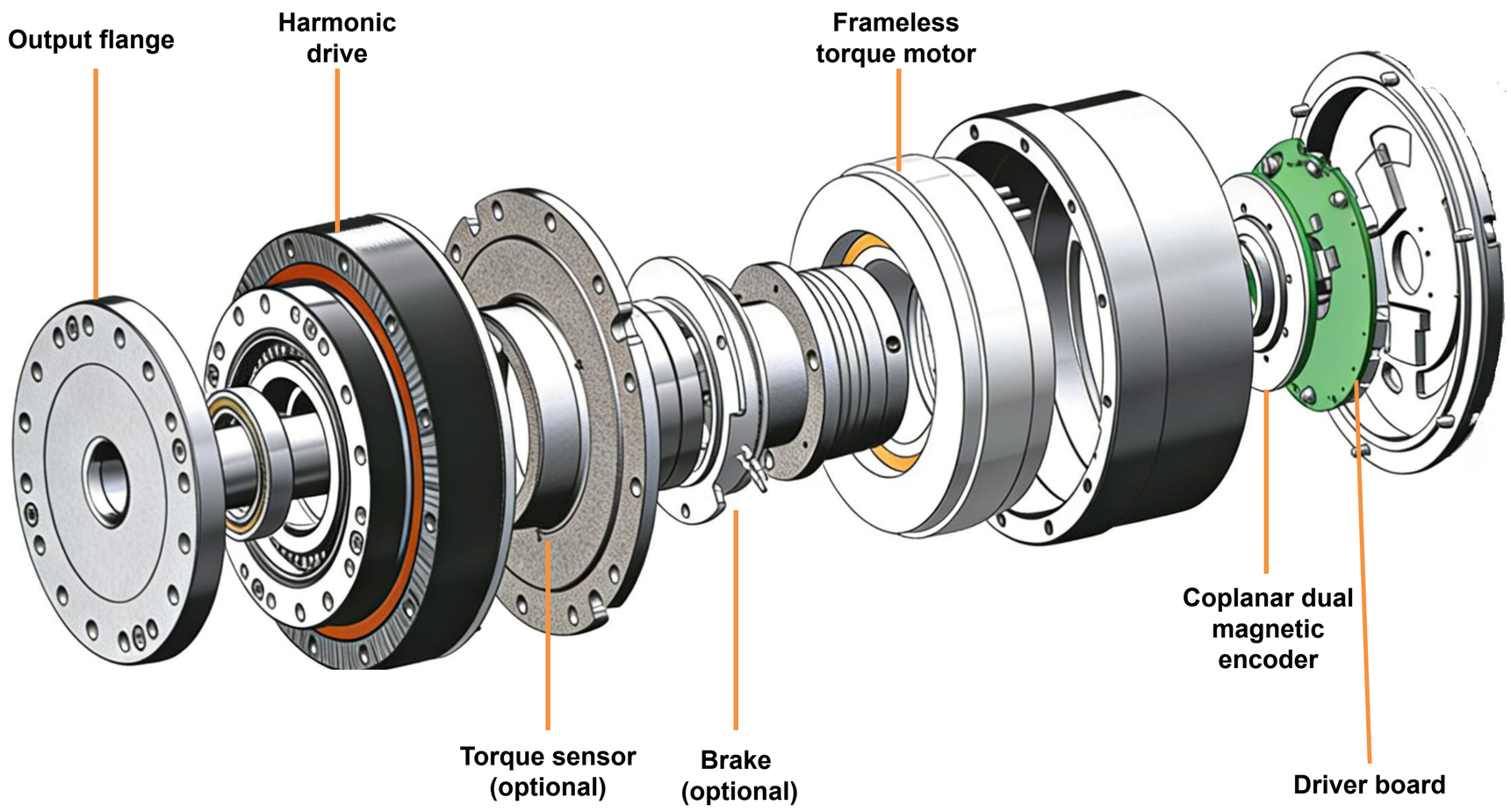
Integrated Joint Module with STO



苏州鸿磐精密工业有限公司

SUZHOU HONPINE PRECISION INDUSTRY CO., LTD.

PRODUCT CATALOG

Page 1. Product Catalog Description

Page 2. Model Number Definition

Page 3. HAG-11 Hollow Bore： ø 8----Torque range： 4.6-18N·m

Page 4. HAG-14 Hollow Bore： ø 12----Torque range： 10.5-35N·m

Page 5. HAG-17 Hollow Bore： ø 16.8----Torque range： 21-54N·m

Page 6. HAG-20 Hollow Bore： ø 16.8----Torque range： 24-100N·m

Page 7. HAG-25 Hollow Bore： ø 16.8----Torque range： 48-203N·m

Page 8. HAG-32 Hollow Bore： ø 28----Torque range： 124-430N·m

Page 9. HAG-40 Hollow Bore： ø 28----Torque range： 230-800N·m

P/N Interpretation

HAG- 11 T/N- XXX –DC1-02–A/B-C/E

Series	
HAG	Harmonic

Harmonic Drive Model
11
14
17
20
25
32
40

Torque sensor	
T	with torque sensor
N	without torque sensor

Communication protocol	
C	CANOPEN
E	Ethercat

Brake	
A	without brake
B	with brake

Voltage	
DC1-02	DC48V

Reduction ratio
51
81
101
121
161

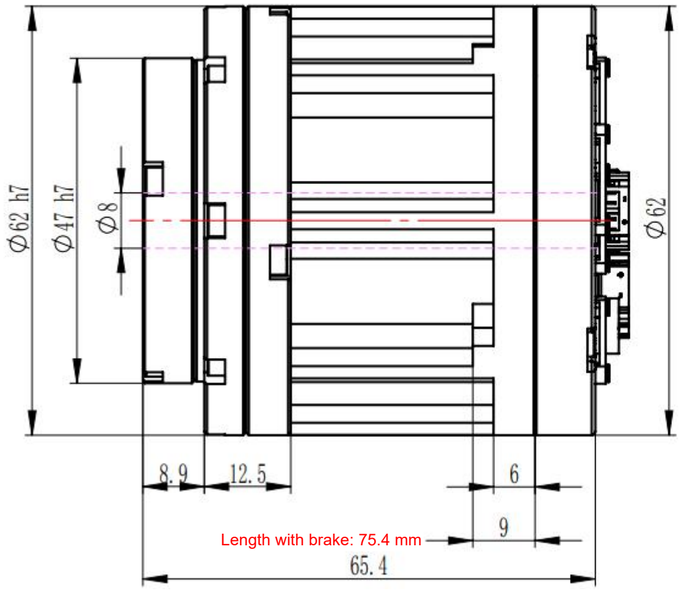
Important Precautions:

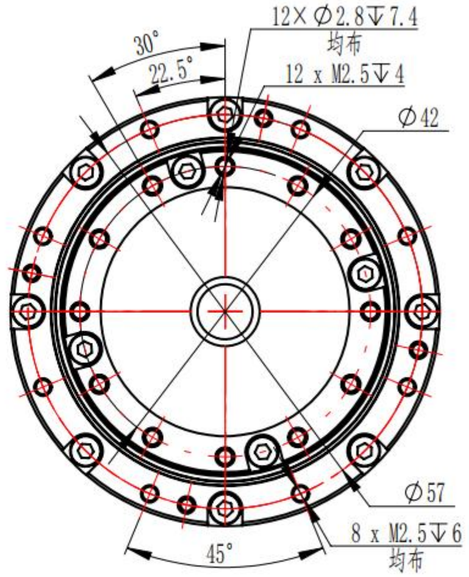
①Never operate with overvoltage or overload.
②Never disassemble the motor without authorization.
③Ensure installation within the effective thread depth.
④Avoid stalling or emergency braking at high speeds.
⑤Do not hot-plug the motor while it is powered.

The information provided in this product manual is intended solely as a general description and feature introduction. We reserve the right to make changes without prior notice due to product improvements or other reasons. We appreciate your understanding.

HAG-11

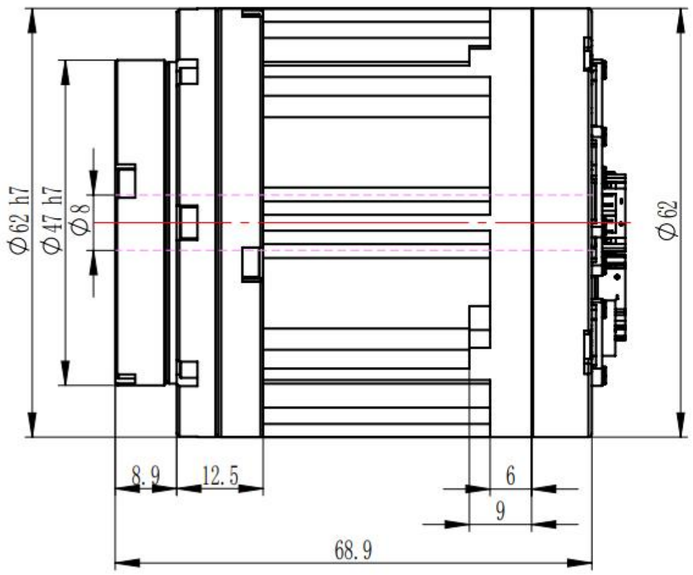
Dimension without torque sensor (without brake)

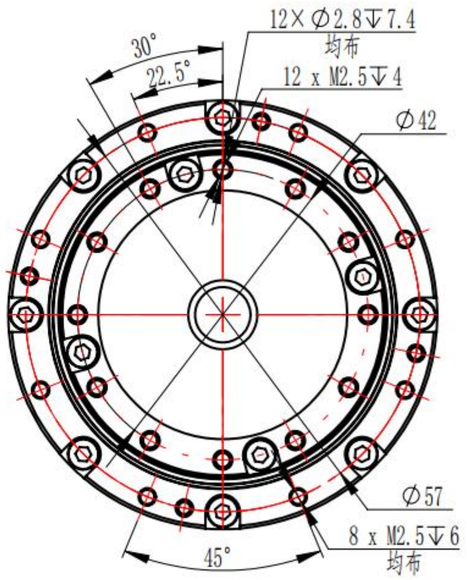




Dimension with torque sensor (with brake)

Torque sensor range: 25 N·m, nonlinearity: 0.5%

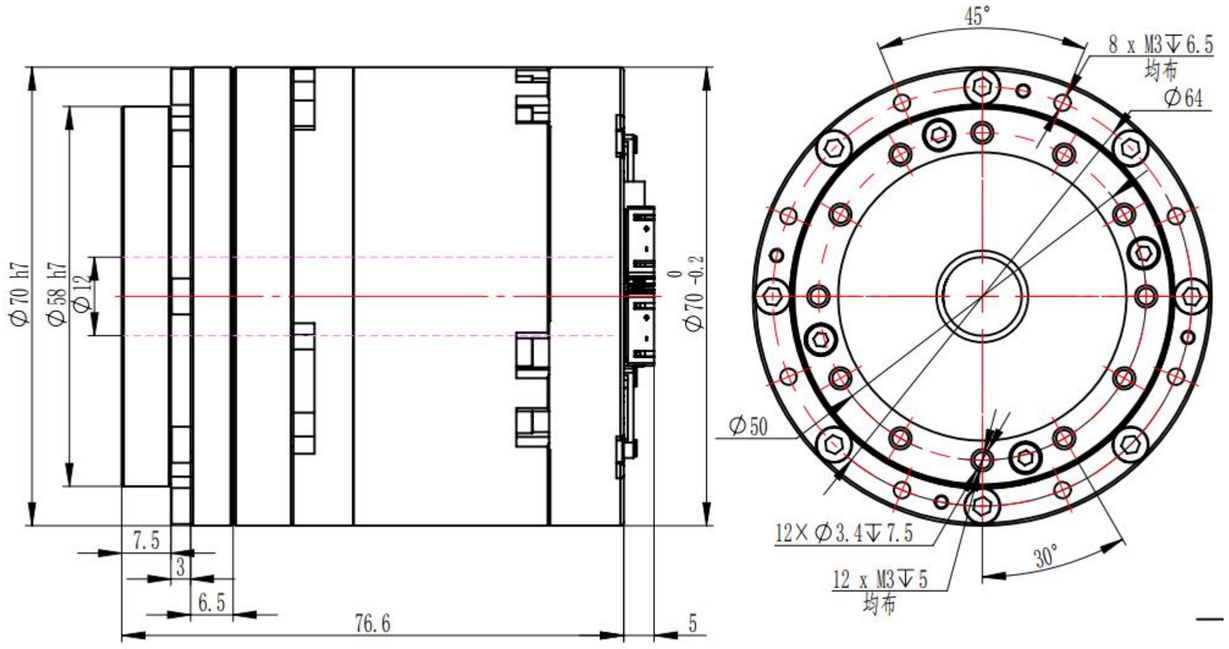




Item	Unit	Parameter		
Gear Ratio	-	51	81	101
Peak torque	N·m	11.4	15	18
Rated torque	N·m	4.6	6.2	7.3
Maximum speed	rpm	63	40	32
Rated speed	Rpm	59	37	30
Maximum current	Arms	3.35	2.75	2.67
Rated current	Arms	1.5	1.28	1.2
Torque constant	N·m/Arms	3.06	4.86	6.06
Motor phase resistance	Ohms（20℃）	2.56		
Motor phase inductance	mH	1.8		
Motor back EMF constant	Vrms/rpm	9.5		
Encoder type	Absolute	Absolute BiSS-C protocol		
Encoder resolution	Bit	Single-turn 20-bit (1,048,576), multi-turn 12-bit (4,096)		
Unidirectional positioning accuracy	Arcsec	≤60	≤50	≤50
Repeatability	Arcsec	≤15	≤10	≤10
Tilting stiffness	$X10^4$N·m/rad	8		
Torsional stiffness	$X10^4$N·m/rad	0.46	1.6	0.6
Rotor inertia	$Kg*m^2$	1.9*10^-5		
Rotor inertia	$Kg*m^2$	1.94*10^-5		
Mass	Kg	0.47		
Mass	Kg	0.52		
Number of motor poles	Pole	10		
Remarks	Maximum speed with rated torque, rated speed with peak torque.			

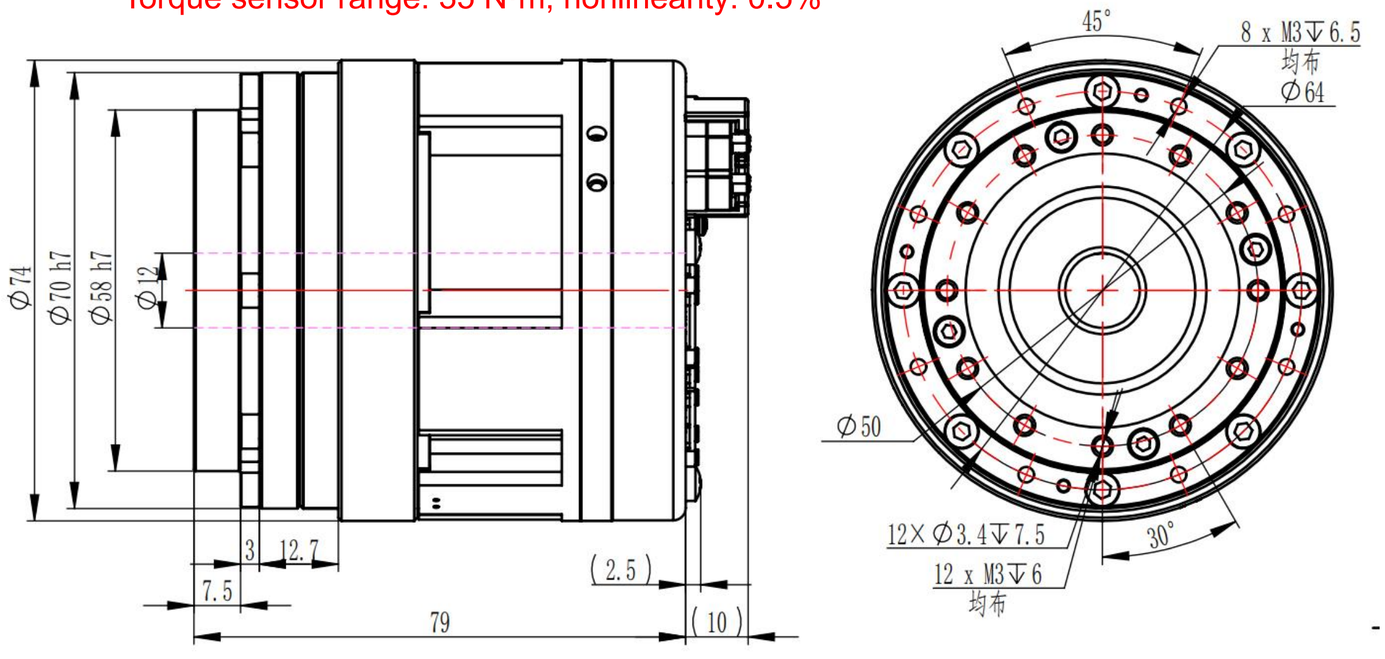
HAG-14

Dimension without torque sensor (brake does not affect dimensions)



Dimension with torque sensor (brake does not affect dimensions)

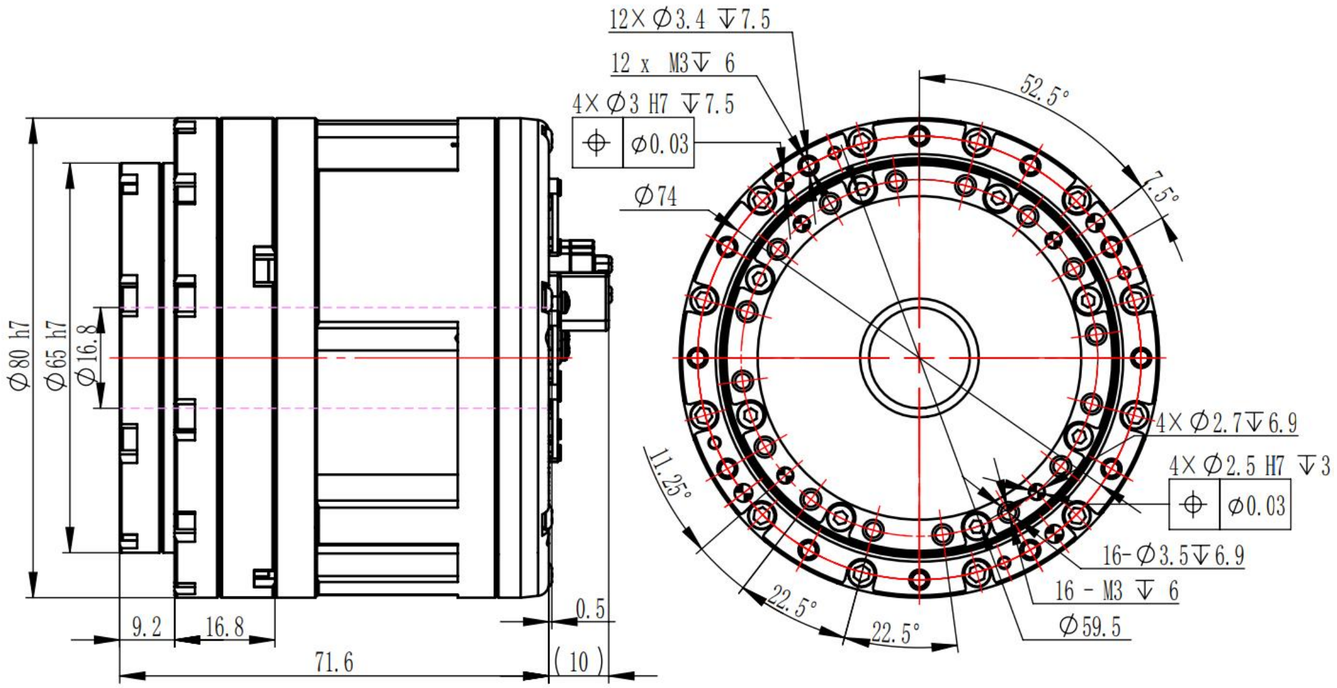
Torque sensor range: 35 N·m, nonlinearity: 0.5%



Item	Unit	Parameter		
Gear Ratio	-	51	81	101
Peak torque	N·m	23	29	35
Rated torque	N·m	10.5	16.5	21
Maximum speed	rpm	98	62	50
Rated speed	Rpm	59	37	30
Maximum current	Arms	6.39	5.07	4.91
Rated current	Arms	2.92	2.89	2.95
Torque constant	N·m/Arms	3.60	5.71	7.13
Motor phase resistance	Ohms（20℃）	TBD		
Motor phase inductance	mH	TBD		
Motor back EMF constant	Vrms/rpm	7		
Encoder type	Absolute	Absolute BiSS-C protocol		
Encoder resolution	Bit	Single-turn 20-bit (1,048,576), multi-turn 12-bit (4,096)		
Unidirectional positioning accuracy	Arcsec	≤60	≤50	≤50
Repeatability	Arcsec	≤15	≤10	≤10
Tilting stiffness	X10⁴N·m/rad	8		
Torsional stiffness	X10⁴N·m/rad	0.46	0.6	0.6
Rotor inertia	Kg*m²	-		
Rotor inertia (with brake)	Kg*m²	3.76*10^-5		
Mass	Kg	-		
Mass(with brake)	Kg	0.97		
Number of motor poles	Pole	16		
Remarks	Maximum speed with rated torque, rated speed with peak torque.			

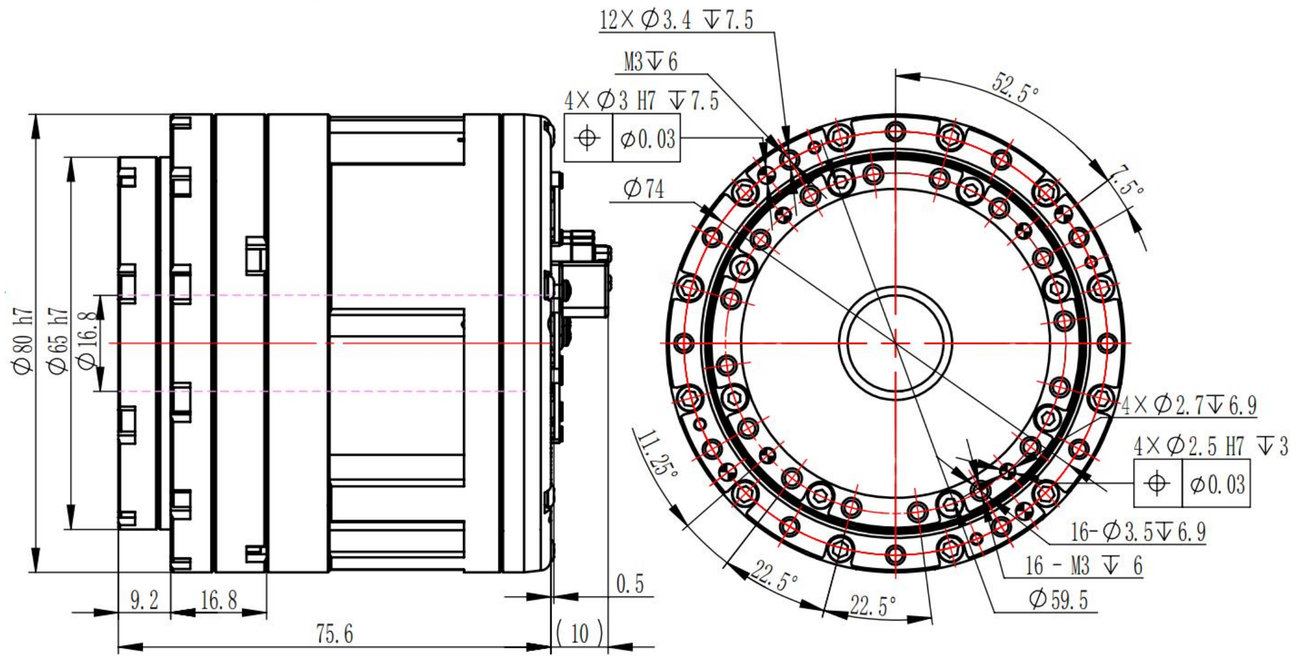
HAG-17

Dimension without torque sensor (brake does not affect dimensions)



Dimension with torque sensor (brake does not affect dimensions)

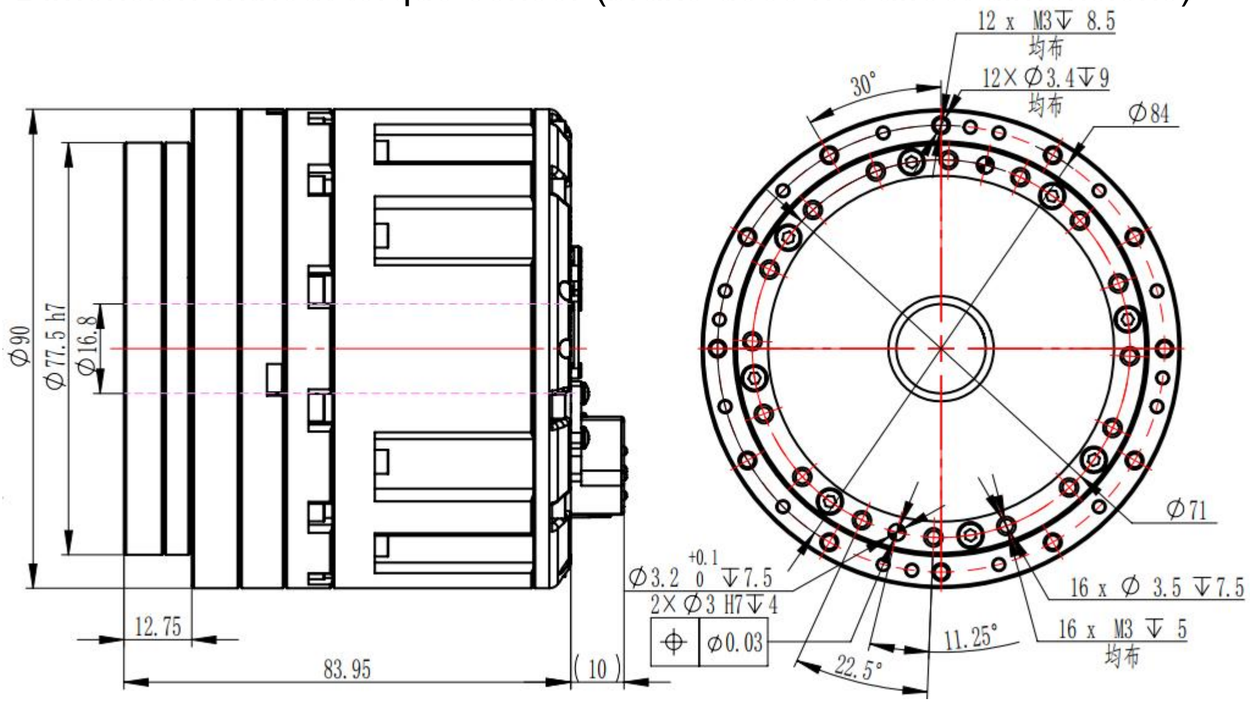
Torque sensor range: 75 N·m, nonlinearity: 0.5%



Item	Unit	Parameter		
Gear Ratio	-	51	81	101
Peak torque	N·m	38	49	54
Rated torque	N·m	21	28	32
Maximum speed	rpm	71	44	36
Rated speed	Rpm	59	37	30
Maximum current	Arms	8.91	7.24	6.40
Rated current	Arms	4.93	4.13	3.79
Torque constant	N·m/Arms	4.26	6.77	8.44
Motor phase resistance	Ohms（20℃）	TBD		
Motor phase inductance	mH	TBD		
Motor back EMF constant	Vrms/rpm	8		
Encoder type	Absolute	Absolute BiSS-C protocol		
Encoder resolution	Bit	Single-turn 20-bit (1,048,576), multi-turn 12-bit (4,096)		
Unidirectional positioning accuracy	Arcsec	≤60	≤50	≤50
Repeatability	Arcsec	≤15	≤10	≤10
Tilting stiffness	X10⁴N·m/rad	15		
Torsional stiffness	X10⁴N·m/rad	1.07	13	13
Rotor inertia	Kg*m²	-		
Rotor inertia (with brake)	Kg*m²	6.8*10^-5		
Mass	Kg	-		
Mass(with brake)	Kg	1.16		
Number of motor poles	Pole	16		
Remarks	Maximum speed with rated torque, rated speed with peak torque.			

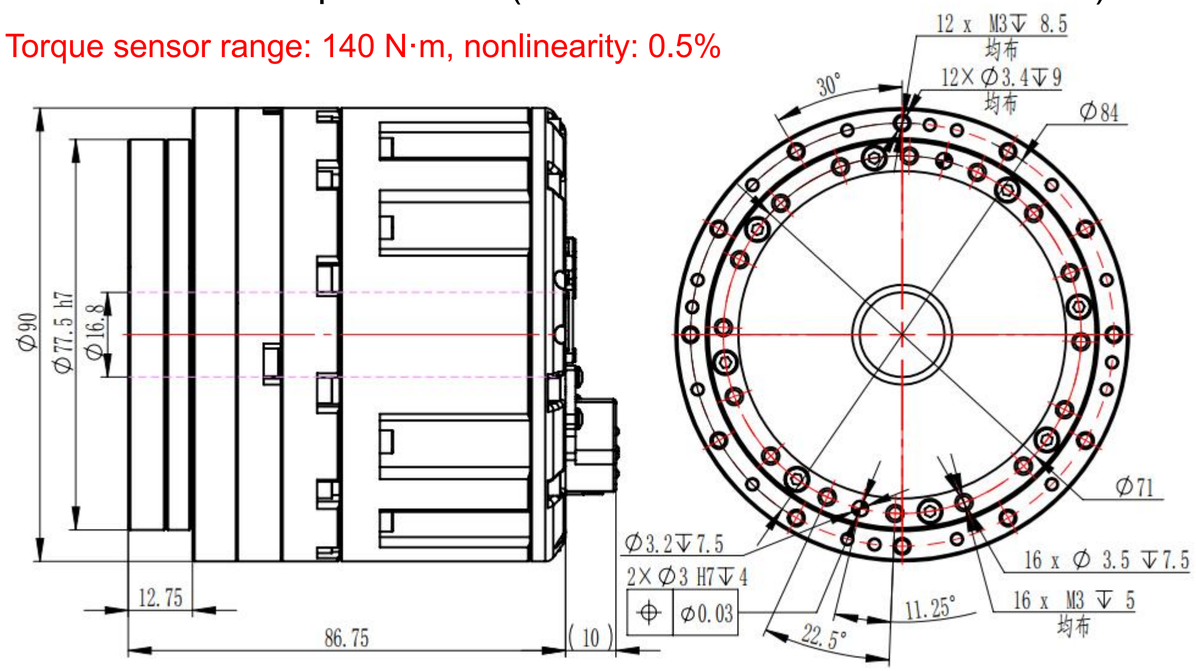
HAG-20

Dimension without torque sensor (brake does not affect dimensions)



Dimension with torque sensor (brake does not affect dimensions)

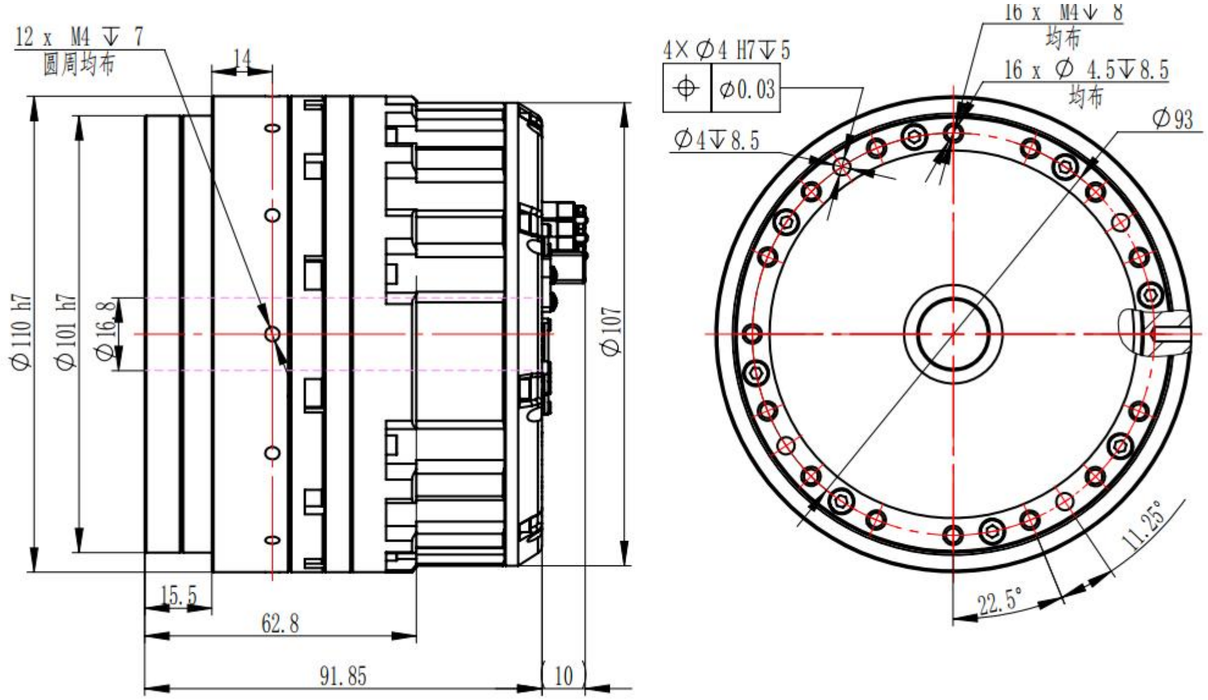
Torque sensor range: 140 N·m, nonlinearity: 0.5%



Item	Unit	Parameter			
Gear Ratio	-	51	81	101	121
Peak torque	N·m	43	66	82	100
Rated torque	N·m	24	38	47.5	57
Maximum speed	rpm	78	49	40	33
Rated speed	Rpm	51	32	26	21
Maximum current	Arms	15.48	14.86	14.91	15.18
Rated current	Arms	8.64	8.62	8.64	8.65
Torque constant	N·m/Arms	2.78	4.41	5.50	6.59
Motor phase resistance	Ohms（20℃）	0.18			
Motor phase inductance	mH	0.45			
Motor back EMF constant	Vrms/rpm	7.7			
Encoder type	Absolute	Absolute BiSS-C protocol			
Encoder resolution	Bit	Single-turn 20-bit (1,048,576), multi-turn 12-bit (4,096)			
Unidirectional positioning accuracy	Arcsec	≤60	≤50	≤50	≤50
Repeatability	Arcsec	≤10	≤10	≤10	≤10
Tilting stiffness	X10⁴N·m/rad	24			
Torsional stiffness	X10⁴N·m/rad	1.8	2.3	2.3	2.3
Rotor inertia	Kg*m²	-			
Rotor inertia (with brake)	Kg*m²	9.47*10^-5			
Mass	Kg	-			
Mass(with brake)	Kg	1.63			
Number of motor poles	Pole	16			
Remarks	Maximum speed with rated torque, rated speed with peak torque.				

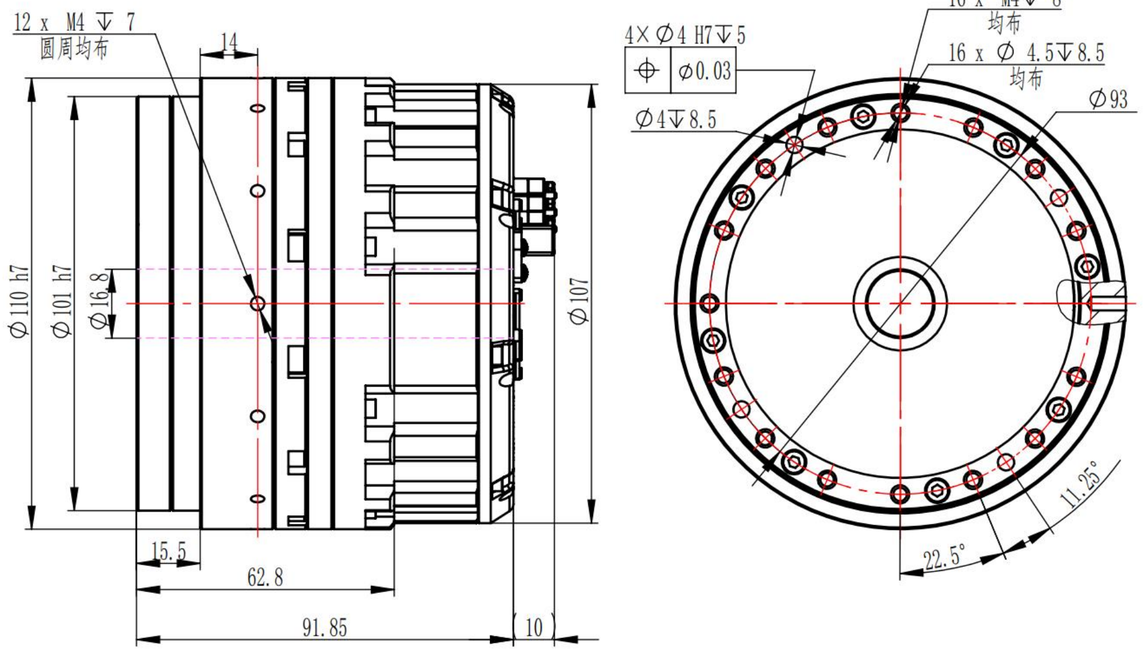
HAG-25

Dimension without torque sensor (brake does not affect dimensions)



Dimension with torque sensor (brake does not affect dimensions)

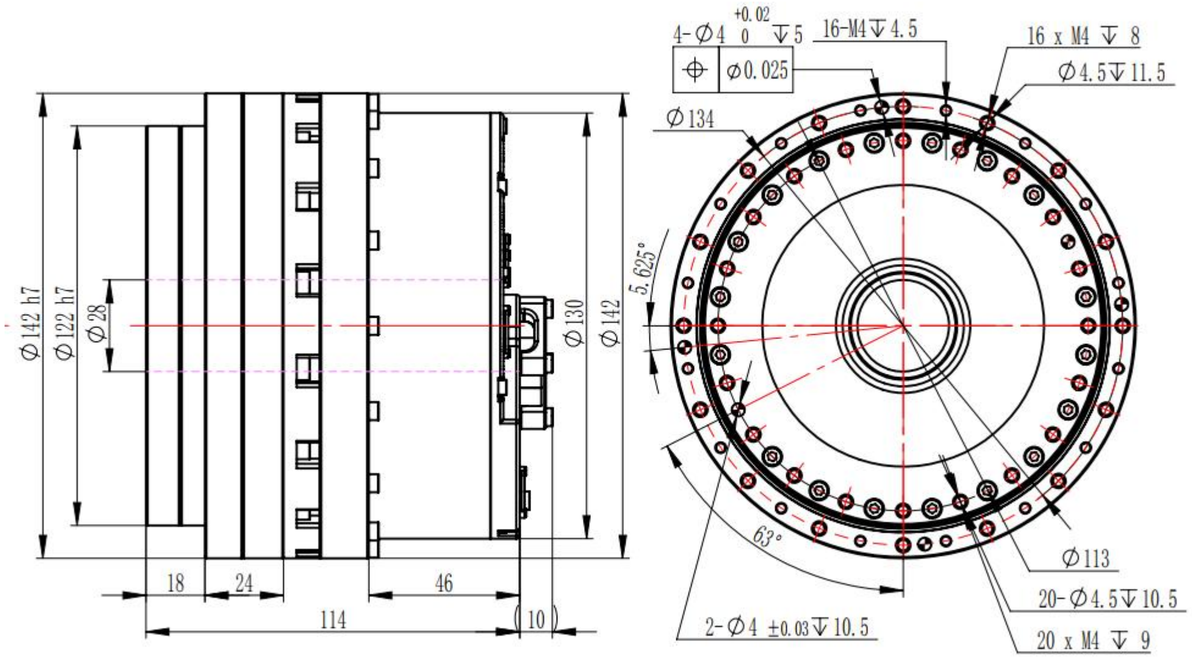
Torque sensor range: 250 N·m, nonlinearity: 0.5%



Item	Unit	Parameter			
Gear Ratio	-	51	81	101	121
Peak torque	N·m	86	135	165	203
Rated torque	N·m	48	75	96	115
Maximum speed	rpm	69	43	35	29
Rated speed	Rpm	49	31	25	21
Maximum current	Arms	28.18	27.85	27.30	28.03
Rated current	Arms	14.63	14.39	14.77	14.77
Torque constant	N·m/Arms	3.28	5.21	6.50	7.79
Motor phase resistance	Ohms（20℃）	TBD			
Motor phase inductance	mH	TBD			
Motor back EMF constant	Vrms/rpm	8			
Encoder type	Absolute	Absolute BiSS-C protocol			
Encoder resolution	Bit	Single-turn 20-bit (1,048,576), multi-turn 12-bit (4,096)			
Unidirectional positioning accuracy	Arcsec	≤60	≤50	≤50	≤50
Repeatability	Arcsec	≤10	≤10	≤10	≤10
Tilting stiffness	X10⁴N·m/rad	38			
Torsional stiffness	X10⁴N·m/rad	3.4	4.6	4.6	4.5
Rotor inertia	Kg*m²	-			
Rotor inertia (with brake)	Kg*m²	1.45*10^-4			
Mass	Kg	-			
Mass(with brake)	Kg	2.53			
Number of motor poles	Pole	16			
Remarks	Maximum speed with rated torque, rated speed with peak torque.				

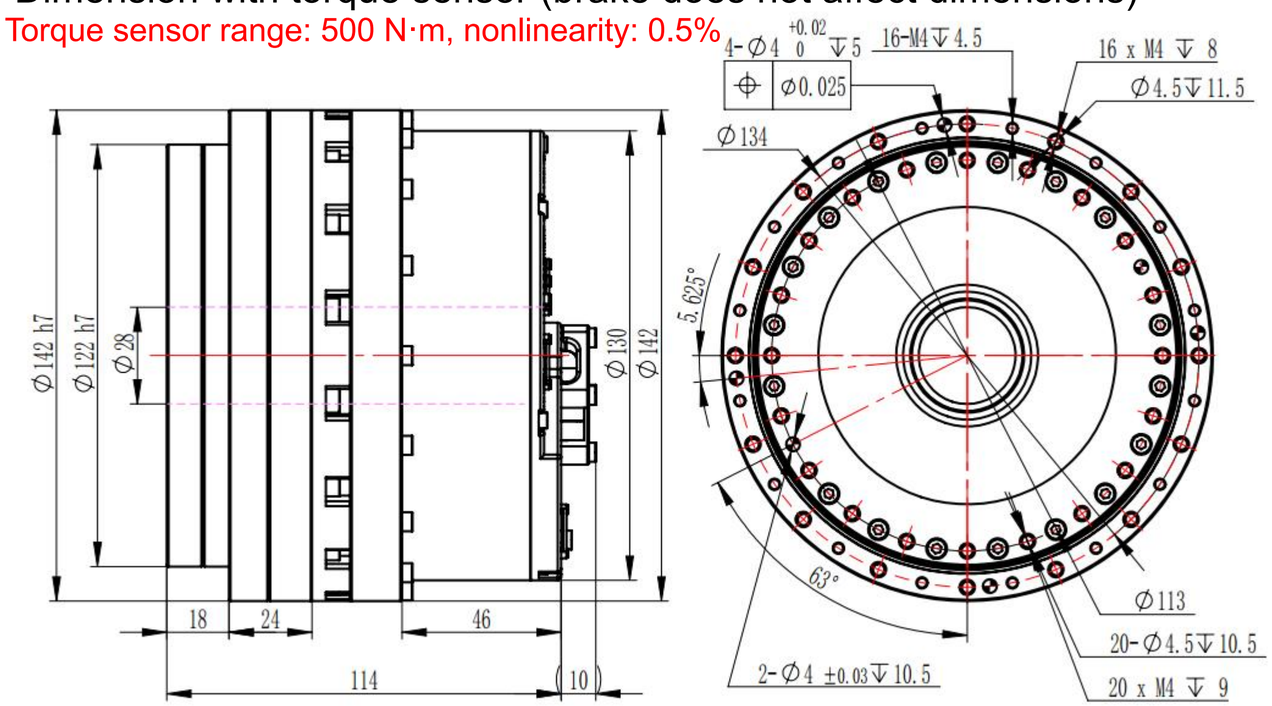
HAG-32

Dimension without torque sensor (brake does not affect dimensions)



Dimension with torque sensor (brake does not affect dimensions)

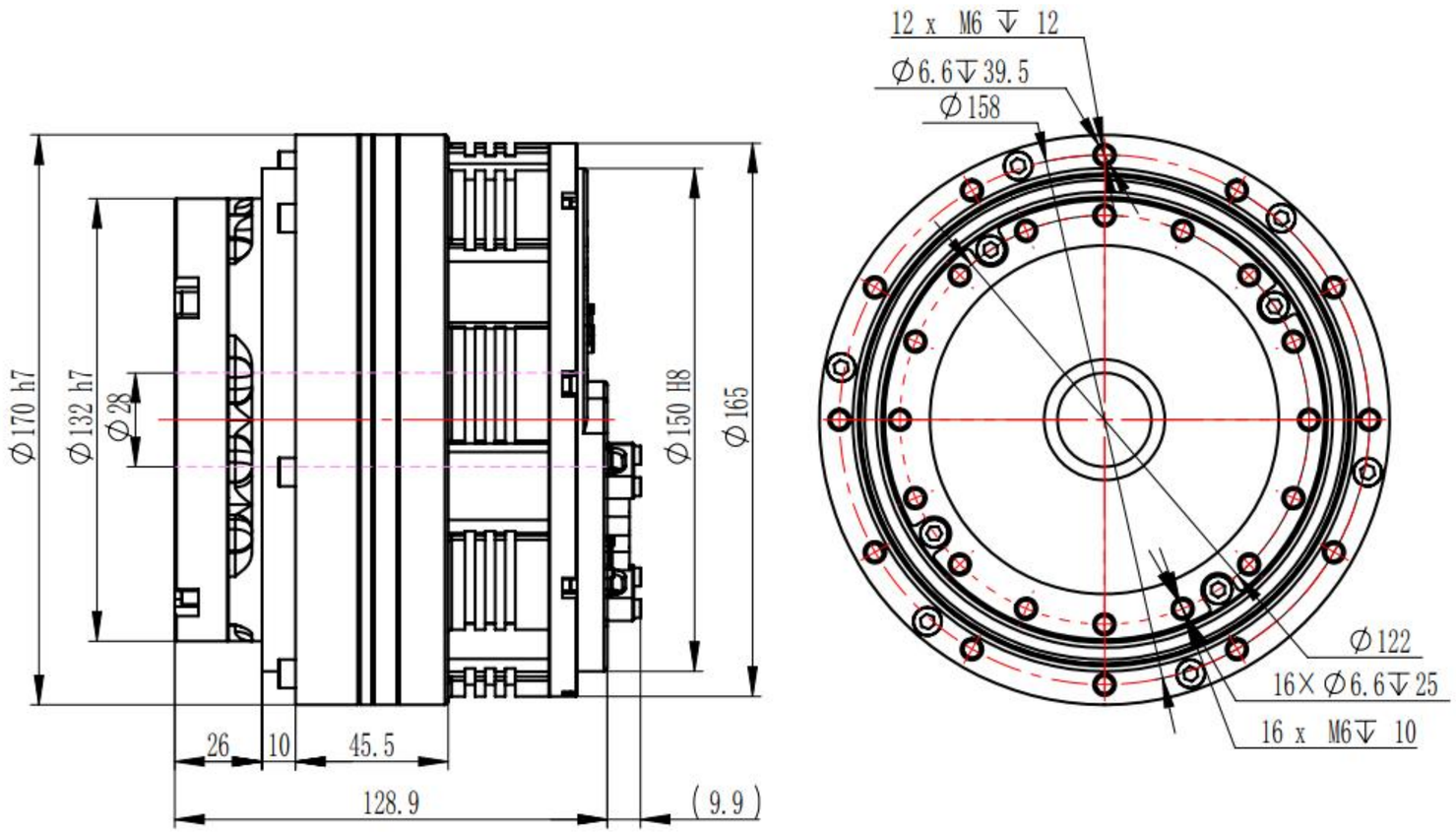
Torque sensor range: 500 N·m, nonlinearity: 0.5%



Item	Unit	Parameter		
Gear Ratio	-	51	101	161
Peak torque	N·m	218	380	430
Rated torque	N·m	124	247	300
Maximum speed	rpm	53	27	17
Rated speed	Rpm	43	22	14
Maximum current	Arms	45.82	40.33	28.63
Rated current	Arms	23.98	24.12	18.38
Torque constant	N·m/Arms	5.17	10.24	16.33
Motor phase resistance	Ohms（20℃）	TBD		
Motor phase inductance	mH	TBD		
Motor back EMF constant	Vrms/rpm	10		
Encoder type	Absolute	Absolute BiSS-C protocol		
Encoder resolution	Bit	Single-turn 20-bit (1,048,576), multi-turn 12-bit (4,096)		
Unidirectional positioning accuracy	Arcsec	≤60	≤50	≤50
Repeatability	Arcsec	≤15	≤10	≤10
Tilting stiffness	X10⁴N·m/rad	95		
Torsional stiffness	X10⁴N·m/rad	7.6	9.9	9.9
Rotor inertia	Kg*m²	-		
Rotor inertia (with brake)	Kg*m²	9.24*10^-5		
Mass	Kg	-		
Mass(with brake)	Kg	5		
Number of motor poles	Pole	16		
Remarks	Maximum speed with rated torque, rated speed with peak torque.			

HAG-40

Dimension without torque sensor (brake does not affect dimensions)



Item	Unit	Parameter				
Gear Ratio	-	51	81	101	121	161
Peak torque	N·m	405	641	702	762	800
Rated torque	N·m	230	351	460	557	557
Maximum speed	rpm	29	19	15	12	9
Rated speed	Rpm	24	15	12	10	7
Maximum current	Arms	59.62	59.41	52.18	47.28	37.30
Rated current	Arms	33.86	32.53	34.19	34.56	25.97
Torque constant	N·m/Arms	6.79	1079	13.45	16.12	21.45
Motor phase resistance	Ohms（20℃）	TBD				
Motor phase inductance	mH	TBD				
Motor back EMF constant	Vrms/rpm	13.5				
Encoder type	Absolute	Absolute BiSS-C protocol				
Encoder resolution	Bit	Single-turn 20-bit (1,048,576), multi-turn 12-bit (4,096)				
Unidirectional positioning accuracy	Arcsec	≤60	≤60	≤50	≤45	≤45
Repeatability	Arcsec	≤10	≤10	≤10	≤10	≤10
Tilting stiffness	$X10^4$N·m/rad	175				
Torsional stiffness	$X10^4$N·m/rad	14	18.6	18.6	18.6	18.6
Rotor inertia	$Kg*m^2$	-				
Rotor inertia (with brake)	$Kg*m^2$	1.67*10^-3				
Mass	Kg	-				
Mass(with brake)	Kg	7.1				
Number of motor poles	Pole	16				
Remarks	Maximum speed with rated torque, rated speed with peak torque.					