

FOR A MORE STABLE ROTATING JOINT MODULE,  
CHOOSE HOBBER

# HAM/HAMF SERIES

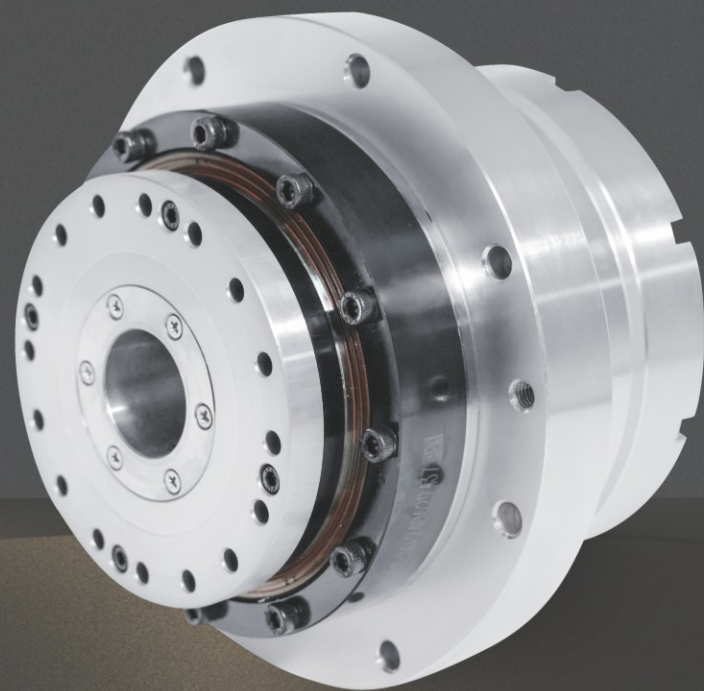
## Hollow Shaft Rotary Actuator With Enlarged Bore

### Application Area

Our products are widely used in a variety of fields, including electronic and semiconductor equipment, precision CNC machine tools, 3C equipment, precision laser processing equipment, LED equipment, testing equipment, medical devices, robots and specialized robotic arms, printing machinery, large-format printing equipment, glass processing equipment, and precision measuring instruments.

### Product characteristics

- Large-bore** The HAMF series features a larger aperture than the HAT series, allowing for the passage of more cables, air tubes, and other components.
- High performance** Based on high-torque frameless torque motors, it offers extremely low cogging torque fluctuations, excellent dynamic response, high torque, high precision, and high rigidity.
- Standardized** The reducer and motor are based on a standardized, modular design, making them easy to disassemble and assemble, and facilitating quick replacement of spare parts.
- Maintenance-free** No grease replacement is required during operation; no periodic maintenance is needed.
- High protection** The entire series features an IP65 protection rating (IP67 available as a custom option).
- Easy to use** Direct-drive integrated, fully sealed design for easy installation and plug-and-play operation.
- Long service life** Precision retention lifespan of over 15,000 hours at rated torque.



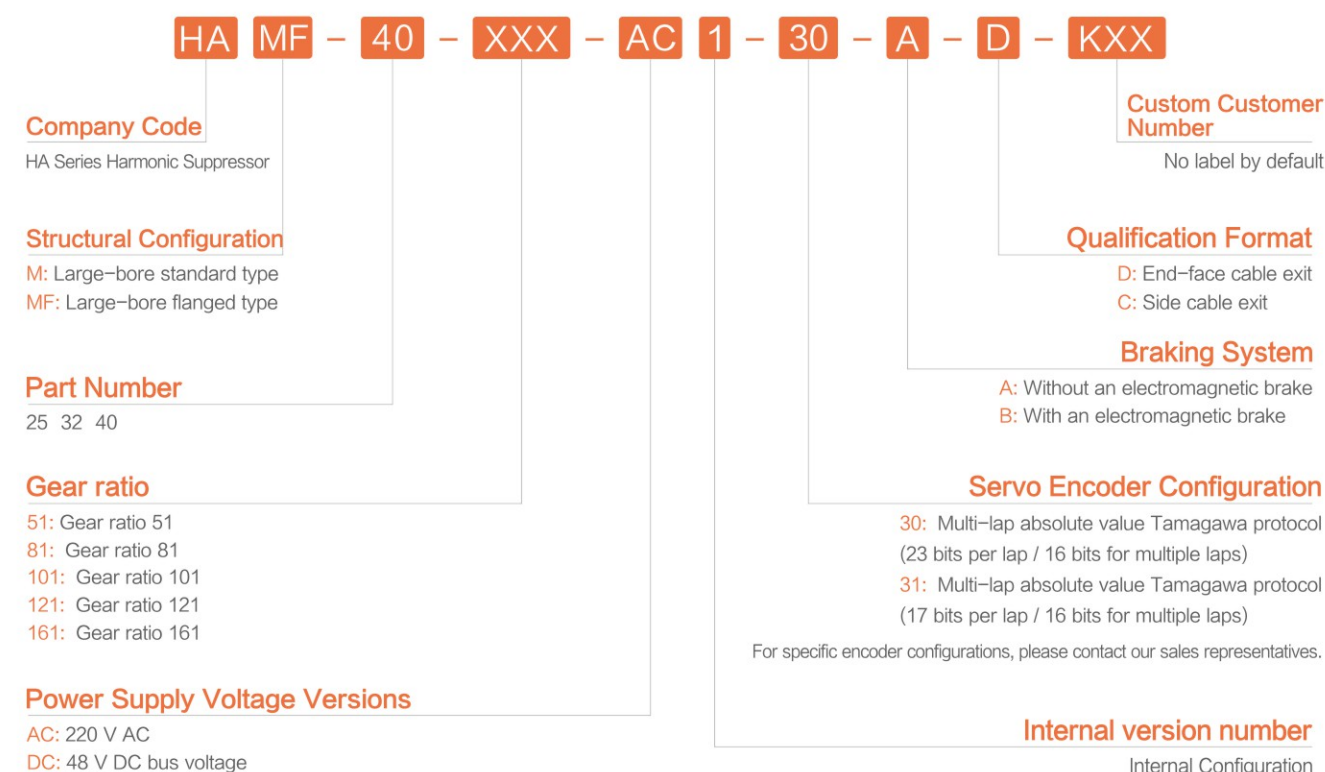
FOR A MORE STABLE ROTATING JOINT MODULE,  
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### Product Mix



**Note** Environmental Specifications: Protection Rating: Standard configuration is fully enclosed, self-cooled (Ip65); IP67 available upon request; CE certified; Operating temperature: 0 - 40° C; Storage temperature: - 20 - 60° C.

### Model definition



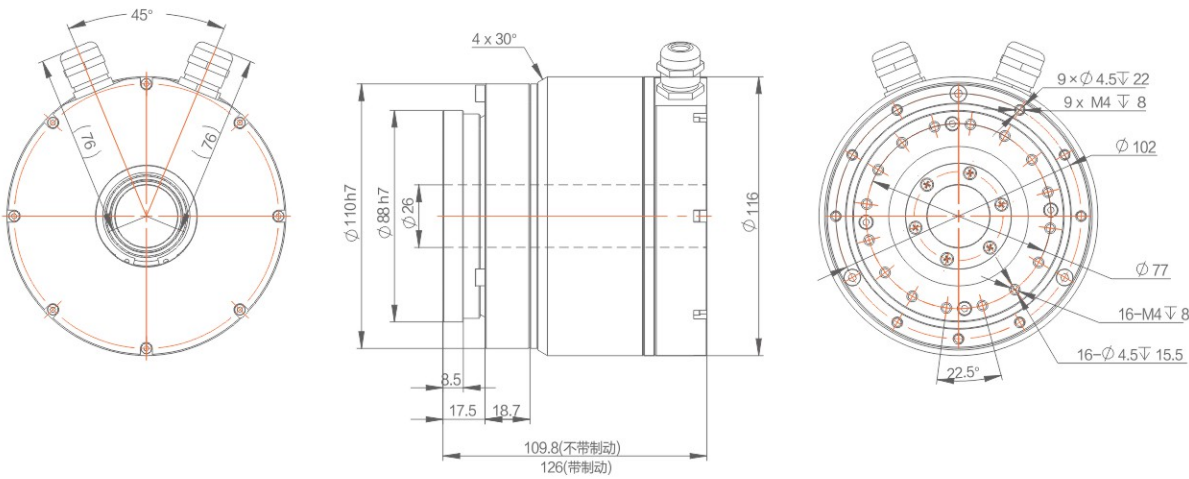


HAM/HAMF-25 SERIES

| Rotary Actuator Performance Specifications |                                     |                          |                                                                                                                                                                                                                                                                                                                                                                         |       |       |       |       |
|--------------------------------------------|-------------------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|-------|
| Model Selection HAM-                       |                                     |                          | 25                                                                                                                                                                                                                                                                                                                                                                      |       |       |       |       |
| Gear ratio                                 |                                     |                          | 51                                                                                                                                                                                                                                                                                                                                                                      | 81    | 101   | 121   | 161   |
| AC voltage<br>220V                         | Peak torque                         | N.m                      | 121                                                                                                                                                                                                                                                                                                                                                                     | 169   | 194   | 207   | 217   |
|                                            | Rated torque                        | N.m                      | 68.5                                                                                                                                                                                                                                                                                                                                                                    | 107   | 133   | 133   | 133   |
|                                            | Maximum speed                       | rpm                      | 94                                                                                                                                                                                                                                                                                                                                                                      | 59    | 48    | 40    | 30    |
|                                            | Rated speed                         | rpm                      | 49                                                                                                                                                                                                                                                                                                                                                                      | 31    | 25    | 21    | 16    |
|                                            | Maximum current                     | Arms                     | 6.90                                                                                                                                                                                                                                                                                                                                                                    | 6.07  | 5.58  | 4.97  | 3.92  |
|                                            | Rated current                       | Arms                     | 3.90                                                                                                                                                                                                                                                                                                                                                                    | 3.84  | 3.83  | 3.20  | 2.40  |
|                                            | Torque constant                     | N.m/Arms                 | 17.54                                                                                                                                                                                                                                                                                                                                                                   | 27.86 | 34.74 | 41.62 | 55.38 |
|                                            | Motor phase-to-phase resistance     | Ohms ( 20℃ )             | 3.55                                                                                                                                                                                                                                                                                                                                                                    |       |       |       |       |
|                                            | Motor phase-to-phase inductance     | mH                       | 10                                                                                                                                                                                                                                                                                                                                                                      |       |       |       |       |
|                                            | Motor back-EMF constant             | Vrms/krpm                | 40                                                                                                                                                                                                                                                                                                                                                                      |       |       |       |       |
| DC Bus Voltage<br>48 VDC                   | Peak torque                         | N.m                      | 121                                                                                                                                                                                                                                                                                                                                                                     | 169   | 194   | 207   | 217   |
|                                            | Rated torque                        | N.m                      | 64                                                                                                                                                                                                                                                                                                                                                                      | 100   | 125   | 133   | 133   |
|                                            | Maximum speed                       | rpm                      | 69                                                                                                                                                                                                                                                                                                                                                                      | 43    | 35    | 29    | 22    |
|                                            | Rated speed                         | rpm                      | 49                                                                                                                                                                                                                                                                                                                                                                      | 31    | 25    | 21    | 16    |
|                                            | Maximum current                     | Arms                     | 26.96                                                                                                                                                                                                                                                                                                                                                                   | 23.71 | 21.83 | 19.44 | 15.32 |
|                                            | Rated current                       | Arms                     | 14.26                                                                                                                                                                                                                                                                                                                                                                   | 14.03 | 14.06 | 12.49 | 9.39  |
|                                            | Torque constant                     | N.m/Arms                 | 4.49                                                                                                                                                                                                                                                                                                                                                                    | 7.13  | 8.89  | 10.65 | 14.17 |
|                                            | Motor phase-to-phase resistance     | Ohms ( 20℃ )             | 0.13                                                                                                                                                                                                                                                                                                                                                                    |       |       |       |       |
|                                            | Motor phase-to-phase inductance     | mH                       | 0.36                                                                                                                                                                                                                                                                                                                                                                    |       |       |       |       |
|                                            | Motor back-EMF constant             | Vrms/krpm                | 10.5                                                                                                                                                                                                                                                                                                                                                                    |       |       |       |       |
| Absolute encoder                           | Encoder Type                        |                          | Absolute encoder                                                                                                                                                                                                                                                                                                                                                        |       |       |       |       |
|                                            | Encoder Resolution (Per Revolution) | bit                      | 2 <sup>23</sup> ( 8,388,608 ) 或 2 <sup>17</sup> ( 131,072 )                                                                                                                                                                                                                                                                                                             |       |       |       |       |
|                                            | Encoder Multi-Revolution Counter    | bit                      | 2 <sup>16</sup> ( 65,536 )                                                                                                                                                                                                                                                                                                                                              |       |       |       |       |
| Unidirectional positioning accuracy        |                                     | Arcsec                   | ≤60                                                                                                                                                                                                                                                                                                                                                                     | ≤50   | ≤50   | ≤40   | ≤40   |
| Repeatability                              |                                     | Arcsec                   | ≤10                                                                                                                                                                                                                                                                                                                                                                     | ≤10   | ≤10   | ≤10   | ≤10   |
| Tipping stiffness                          |                                     | x10 <sup>4</sup> N.m/rad | 38                                                                                                                                                                                                                                                                                                                                                                      |       |       |       |       |
| Torsional stiffness                        |                                     | x10 <sup>4</sup> N.m/rad | 3.4                                                                                                                                                                                                                                                                                                                                                                     | 4.6   |       |       |       |
| Rotor moment of inertia                    | Without brakes                      | kg*m <sup>2</sup>        | 2.1*10 <sup>-4</sup>                                                                                                                                                                                                                                                                                                                                                    |       |       |       |       |
|                                            | With brakes                         | kg*m <sup>2</sup>        | 2.2*10 <sup>-4</sup>                                                                                                                                                                                                                                                                                                                                                    |       |       |       |       |
| Quality                                    | Without brakes                      | Kg                       | 3.6                                                                                                                                                                                                                                                                                                                                                                     |       |       |       |       |
|                                            | With brakes                         | Kg                       | 4.2                                                                                                                                                                                                                                                                                                                                                                     |       |       |       |       |
| Number of motor poles                      |                                     | Pole                     | 16                                                                                                                                                                                                                                                                                                                                                                      |       |       |       |       |
| Environmental conditions                   |                                     |                          | Operating temperature: 0-40° C / Storage temperature: -20-60° C<br>Operating humidity / Storage humidity: 20-80% RH (non-condensing)<br>Vibration resistance: 24.5 m/s <sup>2</sup> (frequency: 10-400 Hz)<br>Free from dust, metal particles, corrosive gases, flammable gases, oil mist, etc.<br>For indoor use only; avoid direct sunlight<br>Altitude below 1,000 m |       |       |       |       |
| Safety Specifications                      |                                     |                          | CE Certification                                                                                                                                                                                                                                                                                                                                                        |       |       |       |       |
| Motor Insulation                           |                                     |                          | Insulation resistance: 100 MΩ or higher (500 V DC)                                                                                                                                                                                                                                                                                                                      |       |       |       |       |
|                                            |                                     |                          | Insulation withstand voltage: 1500 V AC for 1 minute                                                                                                                                                                                                                                                                                                                    |       |       |       |       |
|                                            |                                     |                          | Insulation class: Class F                                                                                                                                                                                                                                                                                                                                               |       |       |       |       |
| Protection Rating                          |                                     |                          | Fully enclosed, self-cooled type (Ip54)                                                                                                                                                                                                                                                                                                                                 |       |       |       |       |

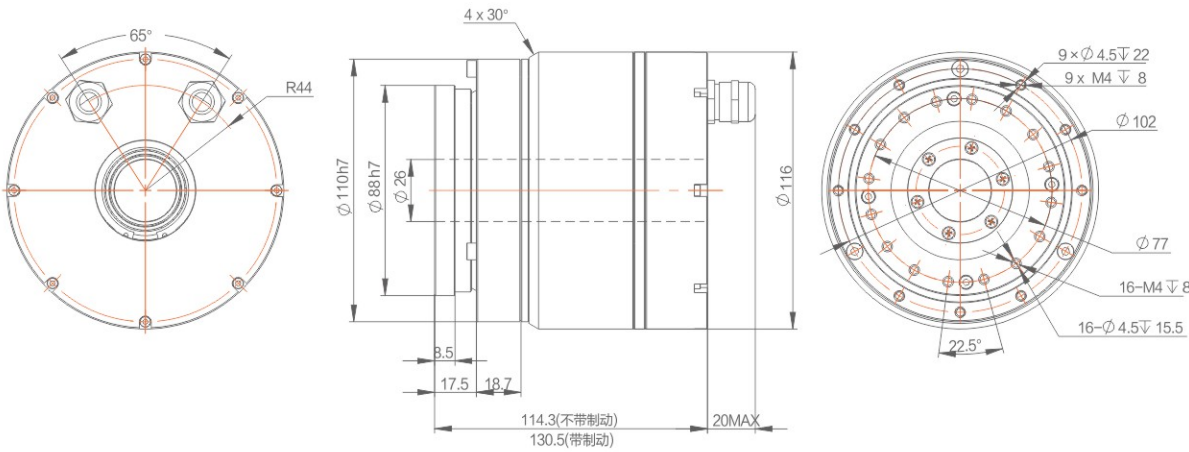
HAM-25

Side cable exit



HAM-25

End-face cable exit

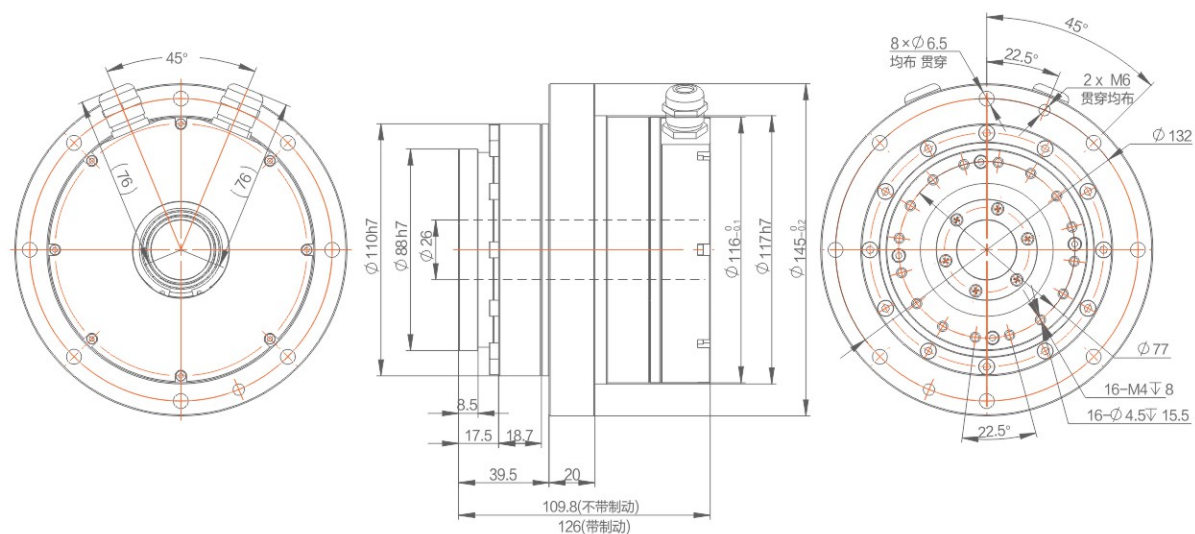


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## HAMF-25

### Side cable exit

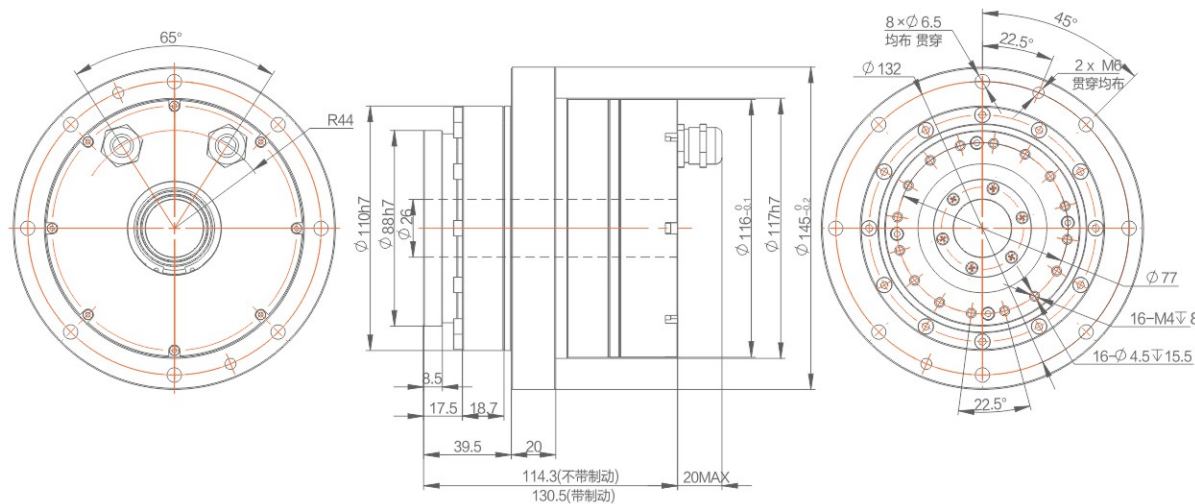


**Note** The drawings above do not include brake components.  
If you require brakes, please contact our sales department.

Unit mm

## HAMF-25

### End-face cable exit



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Unit mm

## HAM/HAMF-32 SERIES

### Rotary Actuator Performance Specifications

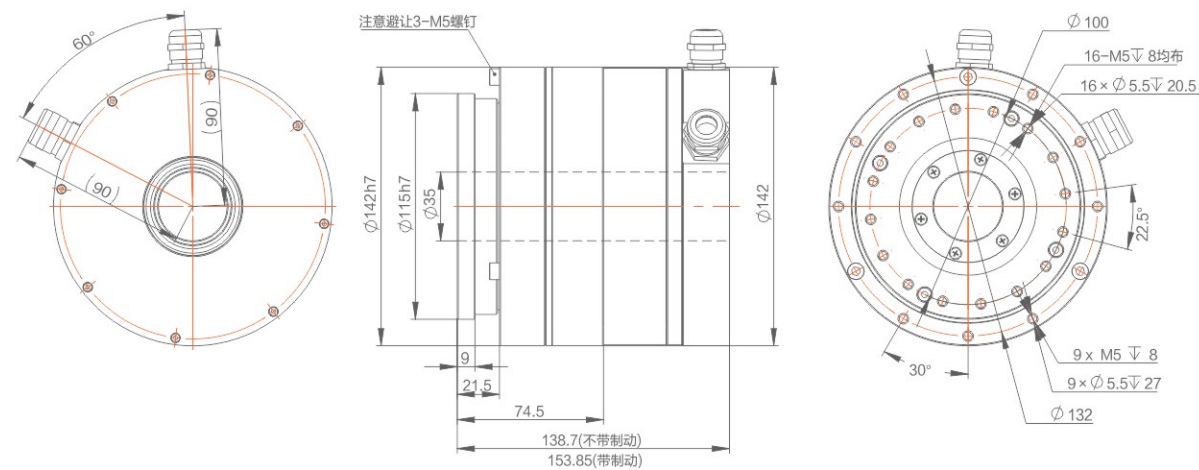
| Model Selection HAM-                |                                     |                          | 32                                                                                                                                                                                                                                                                                                                                                                      |       |       |       |       |
|-------------------------------------|-------------------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|-------|
| Gear ratio                          |                                     |                          | 51                                                                                                                                                                                                                                                                                                                                                                      | 81    | 101   | 121   | 161   |
| AC voltage<br>220V                  | Peak torque                         | N.m                      | 267                                                                                                                                                                                                                                                                                                                                                                     | 376   | 411   | 436   | 459   |
|                                     | Rated torque                        | N.m                      | 133                                                                                                                                                                                                                                                                                                                                                                     | 206   | 264   | 267   | 267   |
|                                     | Maximum speed                       | rpm                      | 90                                                                                                                                                                                                                                                                                                                                                                      | 57    | 46    | 38    | 29    |
|                                     | Rated speed                         | rpm                      | 45                                                                                                                                                                                                                                                                                                                                                                      | 28    | 23    | 19    | 14    |
|                                     | Maximum current                     | Arms                     | 11.69                                                                                                                                                                                                                                                                                                                                                                   | 10.36 | 9.08  | 8.04  | 6.36  |
|                                     | Rated current                       | Arms                     | 5.82                                                                                                                                                                                                                                                                                                                                                                    | 5.68  | 5.83  | 4.93  | 3.70  |
|                                     | Torque constant                     | N.m/Arms                 | 22.85                                                                                                                                                                                                                                                                                                                                                                   | 36.29 | 45.25 | 54.21 | 72.13 |
|                                     | Motor phase-to-phase resistance     | Ohms ( 20℃ )             | 0.88                                                                                                                                                                                                                                                                                                                                                                    |       |       |       |       |
|                                     | Motor phase-to-phase inductance     | mH                       | 6.1                                                                                                                                                                                                                                                                                                                                                                     |       |       |       |       |
|                                     | Motor back-EMF constant             | Vrms/krpm                | 40                                                                                                                                                                                                                                                                                                                                                                      |       |       |       |       |
| DC Bus Voltage<br>48 VDC            | Peak torque                         | N.m                      | 267                                                                                                                                                                                                                                                                                                                                                                     | 376   | 411   | 436   | 459   |
|                                     | Rated torque                        | N.m                      | 131                                                                                                                                                                                                                                                                                                                                                                     | 206   | 260   | 267   | 267   |
|                                     | Maximum speed                       | rpm                      | 59                                                                                                                                                                                                                                                                                                                                                                      | 37    | 30    | 25    | 19    |
|                                     | Rated speed                         | rpm                      | 39                                                                                                                                                                                                                                                                                                                                                                      | 25    | 20    | 17    | 12    |
|                                     | Maximum current                     | Arms                     | 40.90                                                                                                                                                                                                                                                                                                                                                                   | 36.27 | 31.79 | 28.15 | 22.27 |
|                                     | Rated current                       | Arms                     | 20.07                                                                                                                                                                                                                                                                                                                                                                   | 19.87 | 20.11 | 17.24 | 12.96 |
|                                     | Torque constant                     | N.m/Arms                 | 6.53                                                                                                                                                                                                                                                                                                                                                                    | 10.37 | 12.93 | 15.49 | 20.61 |
|                                     | Motor phase-to-phase resistance     | Ohms ( 20℃ )             | 0.088                                                                                                                                                                                                                                                                                                                                                                   |       |       |       |       |
|                                     | Motor phase-to-phase inductance     | mH                       | 0.39                                                                                                                                                                                                                                                                                                                                                                    |       |       |       |       |
|                                     | Motor back-EMF constant             | Vrms/krpm                | 10.5                                                                                                                                                                                                                                                                                                                                                                    |       |       |       |       |
| Absolute encoder                    | Encoder Type                        |                          | Absolute encoder                                                                                                                                                                                                                                                                                                                                                        |       |       |       |       |
|                                     | Encoder Resolution (Per Revolution) | bit                      | 2 <sup>23</sup> ( 8,388,608 ) 或 2 <sup>17</sup> ( 131,072 )                                                                                                                                                                                                                                                                                                             |       |       |       |       |
|                                     | Encoder Multi-Revolution Counter    | bit                      | 2 <sup>16</sup> ( 65,536 )                                                                                                                                                                                                                                                                                                                                              |       |       |       |       |
| Unidirectional positioning accuracy |                                     | Arcsec                   | ≤60                                                                                                                                                                                                                                                                                                                                                                     | ≤50   | ≤50   | ≤40   | ≤40   |
| Repeatability                       |                                     | Arcsec                   | ≤10                                                                                                                                                                                                                                                                                                                                                                     | ≤10   | ≤10   | ≤10   | ≤10   |
| Tipping stiffness                   |                                     | x10 <sup>4</sup> N.m/rad | 95                                                                                                                                                                                                                                                                                                                                                                      |       |       |       |       |
| Torsional stiffness                 |                                     | x10 <sup>4</sup> N.m/rad | 7.6                                                                                                                                                                                                                                                                                                                                                                     | 9.9   |       |       |       |
| Rotor moment of inertia             | Without brakes                      | kg*m <sup>2</sup>        | 1.0*10 <sup>-4</sup>                                                                                                                                                                                                                                                                                                                                                    |       |       |       |       |
|                                     | With brakes                         | kg*m <sup>2</sup>        | 1.19*10 <sup>-4</sup>                                                                                                                                                                                                                                                                                                                                                   |       |       |       |       |
| Quality                             | Without brakes                      | Kg                       | 6.8                                                                                                                                                                                                                                                                                                                                                                     |       |       |       |       |
|                                     | With brakes                         | Kg                       | 7.56                                                                                                                                                                                                                                                                                                                                                                    |       |       |       |       |
| Number of motor poles               |                                     | Pole                     | 16                                                                                                                                                                                                                                                                                                                                                                      |       |       |       |       |
| Environmental conditions            |                                     |                          | Operating temperature: 0-40° C / Storage temperature: -20-60° C<br>Operating humidity / Storage humidity: 20-80% RH (non-condensing)<br>Vibration resistance: 24.5 m/s <sup>2</sup> (frequency: 10-400 Hz)<br>Free from dust, metal particles, corrosive gases, flammable gases, oil mist, etc.<br>For indoor use only; avoid direct sunlight<br>Altitude below 1,000 m |       |       |       |       |
| Safety Specifications               |                                     |                          | CE Certification                                                                                                                                                                                                                                                                                                                                                        |       |       |       |       |
| Motor Insulation                    |                                     |                          | Insulation resistance: 100 MΩ or higher (500 V DC)                                                                                                                                                                                                                                                                                                                      |       |       |       |       |
|                                     |                                     |                          | Insulation withstand voltage: 1500 V AC for 1 minute                                                                                                                                                                                                                                                                                                                    |       |       |       |       |
|                                     |                                     |                          | Insulation class: Class F                                                                                                                                                                                                                                                                                                                                               |       |       |       |       |
| Protection Rating                   |                                     |                          | Fully enclosed, self-cooled type (Ip54)                                                                                                                                                                                                                                                                                                                                 |       |       |       |       |



FOR A MORE STABLE ROTATING JOINT MODULE,  
CHOOSE HOBBER

## HAM-32

### Side cable exit

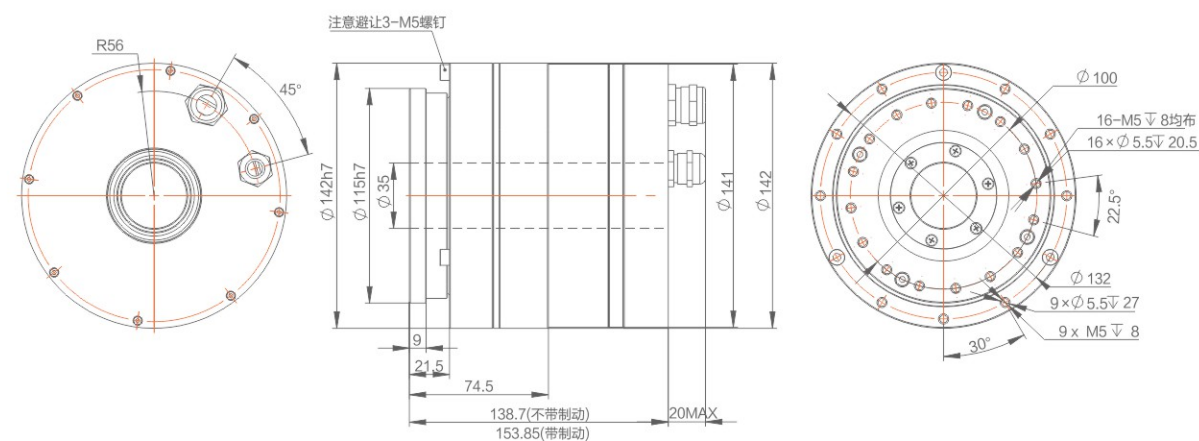


**Note** The drawings above do not include brake components.  
If you require brakes, please contact our sales department.

Unit mm

## HAM-32

### End-face cable exit



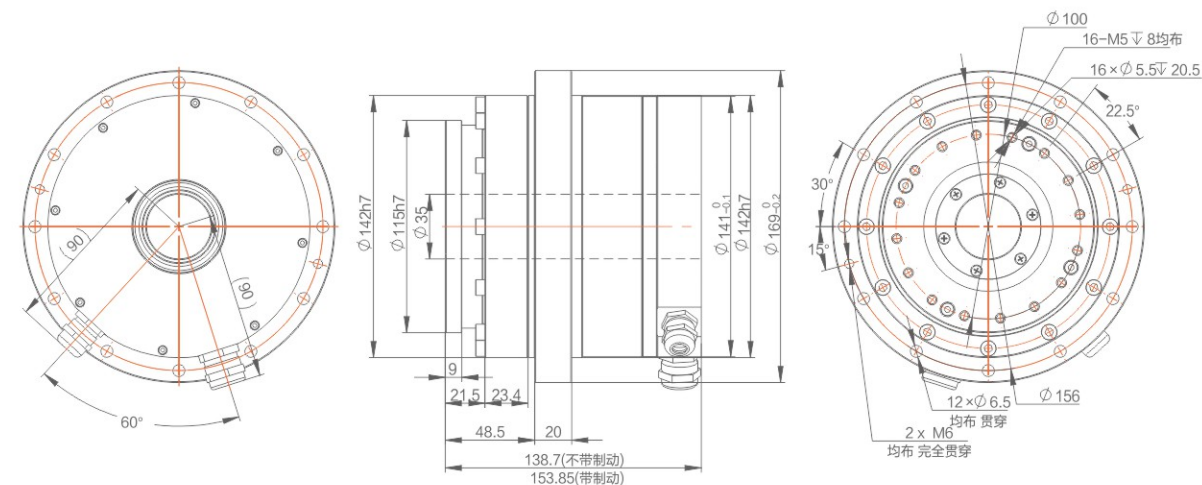
**Note** The drawings above do not include brake components.  
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Unit mm

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CHOOSE HOBBER

## HAMF-32

### Side cable exit

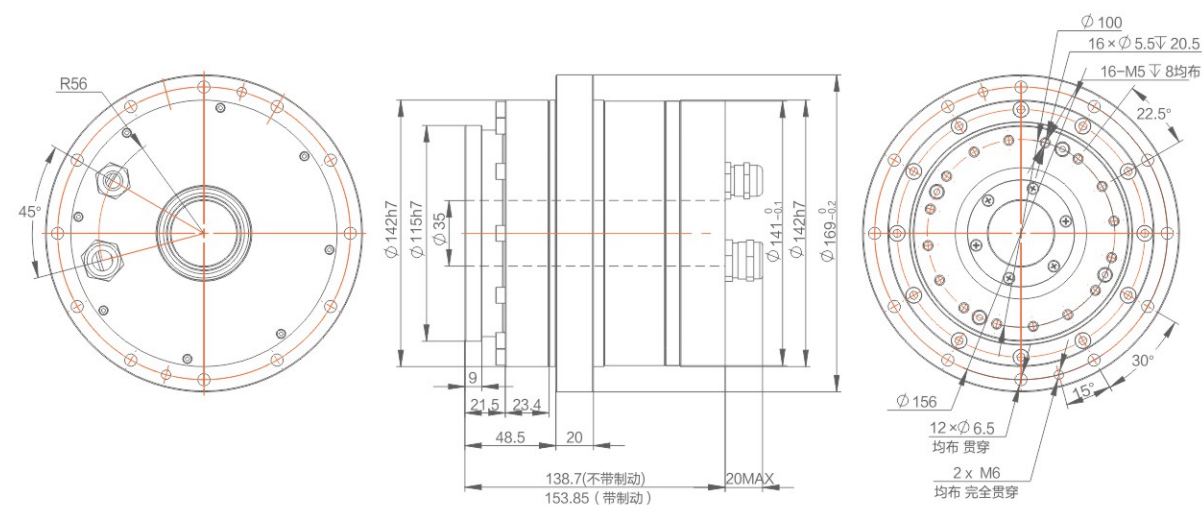


**Note** The drawings above do not include brake components.  
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Unit mm

## HAMF-32

### End-face cable exit



**Note** The drawings above do not include brake components.  
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Unit mm

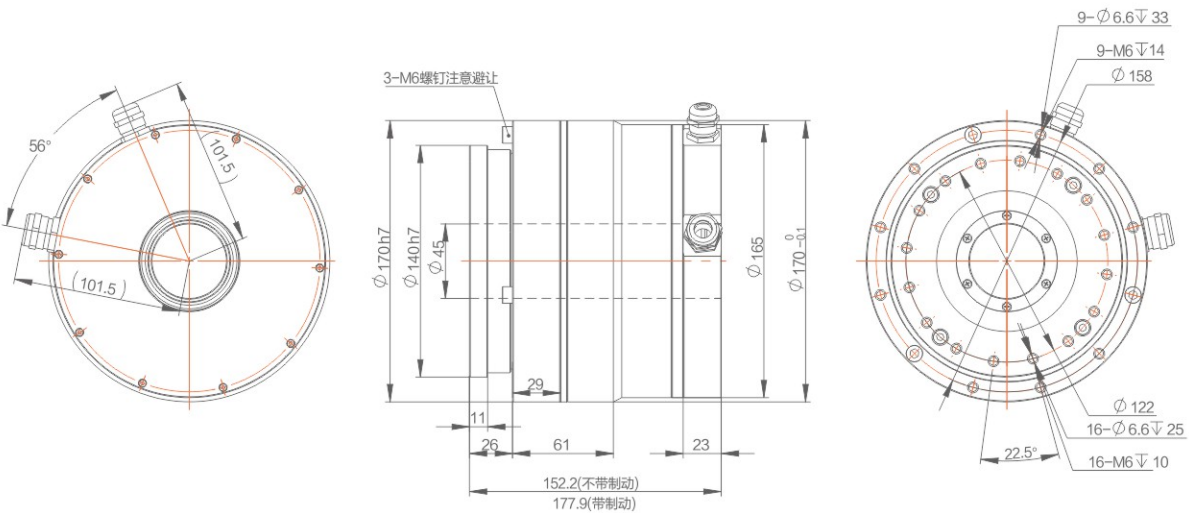
HAM/HAMF-40

SERIES

| Rotary Actuator Performance Specifications |                                     |                          |                                                                                                                                                                                                                                                                                                                                                                         |       |       |       |       |
|--------------------------------------------|-------------------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|-------|-------|-------|
| Model Selection HAM-                       |                                     |                          | 40                                                                                                                                                                                                                                                                                                                                                                      |       |       |       |       |
| Gear ratio                                 |                                     |                          | 51                                                                                                                                                                                                                                                                                                                                                                      | 81    | 101   | 121   | 161   |
| AC voltage<br>220V                         | Peak torque                         | N.m                      | 497                                                                                                                                                                                                                                                                                                                                                                     | 641   | 702   | 762   | 800   |
|                                            | Rated torque                        | N.m                      | 242                                                                                                                                                                                                                                                                                                                                                                     | 351   | 460   | 557   | 557   |
|                                            | Maximum speed                       | rpm                      | 80                                                                                                                                                                                                                                                                                                                                                                      | 51    | 41    | 34    | 25    |
|                                            | Rated speed                         | rpm                      | 39                                                                                                                                                                                                                                                                                                                                                                      | 25    | 20    | 17    | 12    |
|                                            | Maximum current                     | Arms                     | 17.91                                                                                                                                                                                                                                                                                                                                                                   | 14.55 | 12.78 | 11.58 | 9.13  |
|                                            | Rated current                       | Arms                     | 8.72                                                                                                                                                                                                                                                                                                                                                                    | 7.97  | 8.37  | 8.46  | 6.36  |
|                                            | Torque constant                     | N.m/Arms                 | 27.74                                                                                                                                                                                                                                                                                                                                                                   | 44.06 | 54.94 | 65.82 | 87.58 |
|                                            | Motor phase-to-phase resistance     | Ohms ( 20℃ )             | 0.8                                                                                                                                                                                                                                                                                                                                                                     |       |       |       |       |
|                                            | Motor phase-to-phase inductance     | mH                       | 8                                                                                                                                                                                                                                                                                                                                                                       |       |       |       |       |
|                                            | Motor back-EMF constant             | Vrms/krpm                | 44                                                                                                                                                                                                                                                                                                                                                                      |       |       |       |       |
| DC Bus Voltage<br>48 VDC                   | Peak torque                         | N.m                      | 280                                                                                                                                                                                                                                                                                                                                                                     | 440   | 550   | 660   | 800   |
|                                            | Rated torque                        | N.m                      | 140                                                                                                                                                                                                                                                                                                                                                                     | 230   | 280   | 340   | 450   |
|                                            | Maximum speed                       | rpm                      | 43                                                                                                                                                                                                                                                                                                                                                                      | 27    | 22    | 18    | 14    |
|                                            | Rated speed                         | rpm                      | 31                                                                                                                                                                                                                                                                                                                                                                      | 20    | 16    | 13    | 10    |
|                                            | Maximum current                     | Arms                     | 42.89                                                                                                                                                                                                                                                                                                                                                                   | 42.44 | 42.54 | 42.61 | 38.82 |
|                                            | Rated current                       | Arms                     | 21.45                                                                                                                                                                                                                                                                                                                                                                   | 22.18 | 21.66 | 21.95 | 21.84 |
|                                            | Torque constant                     | N.m/Arms                 | 6.53                                                                                                                                                                                                                                                                                                                                                                    | 10.37 | 12.93 | 15.49 | 20.61 |
|                                            | Motor phase-to-phase resistance     | Ohms ( 20℃ )             | 0.074                                                                                                                                                                                                                                                                                                                                                                   |       |       |       |       |
|                                            | Motor phase-to-phase inductance     | mH                       | 0.3                                                                                                                                                                                                                                                                                                                                                                     |       |       |       |       |
|                                            | Motor back-EMF constant             | Vrms/krpm                | 15                                                                                                                                                                                                                                                                                                                                                                      |       |       |       |       |
| Absolute encoder                           | Encoder Type                        |                          | Absolute encoder                                                                                                                                                                                                                                                                                                                                                        |       |       |       |       |
|                                            | Encoder Resolution (Per Revolution) | bit                      | 2 <sup>23</sup> ( 8,388,608 )                                                                                                                                                                                                                                                                                                                                           |       |       |       |       |
|                                            | Encoder Multi-Revolution Counter    | bit                      | 2 <sup>16</sup> ( 65,536 )                                                                                                                                                                                                                                                                                                                                              |       |       |       |       |
| Unidirectional positioning accuracy        |                                     | Arcsec                   | ≤60                                                                                                                                                                                                                                                                                                                                                                     | ≤50   | ≤50   | ≤40   | ≤40   |
| Repeatability                              |                                     | Arcsec                   | ≤10                                                                                                                                                                                                                                                                                                                                                                     | ≤10   | ≤10   | ≤10   | ≤10   |
| Tipping stiffness                          |                                     | x10 <sup>4</sup> N.m/rad | 175                                                                                                                                                                                                                                                                                                                                                                     |       |       |       |       |
| Torsional stiffness                        |                                     | x10 <sup>4</sup> N.m/rad | 14                                                                                                                                                                                                                                                                                                                                                                      | 18.6  |       |       |       |
| Rotor moment of inertia                    | Without brakes                      | kg*m <sup>2</sup>        | 1.72*10 <sup>-3</sup>                                                                                                                                                                                                                                                                                                                                                   |       |       |       |       |
| Quality                                    | Without brakes                      | Kg                       | 12.2                                                                                                                                                                                                                                                                                                                                                                    |       |       |       |       |
| Number of motor poles                      |                                     | Pole                     | 16                                                                                                                                                                                                                                                                                                                                                                      |       |       |       |       |
| Environmental conditions                   |                                     |                          | Operating temperature: 0-40° C / Storage temperature: -20-60° C<br>Operating humidity / Storage humidity: 20-80% RH (non-condensing)<br>Vibration resistance: 24.5 m/s <sup>2</sup> (frequency: 10-400 Hz)<br>Free from dust, metal particles, corrosive gases, flammable gases, oil mist, etc.<br>For indoor use only; avoid direct sunlight<br>Altitude below 1,000 m |       |       |       |       |
| Safety Specifications                      |                                     |                          | CE Certification                                                                                                                                                                                                                                                                                                                                                        |       |       |       |       |
| Motor Insulation                           |                                     |                          | Insulation resistance: 100 MΩ or higher (500 V DC)                                                                                                                                                                                                                                                                                                                      |       |       |       |       |
|                                            |                                     |                          | Insulation withstand voltage: 1500 V AC for 1 minute                                                                                                                                                                                                                                                                                                                    |       |       |       |       |
| Protection Rating                          |                                     |                          | Insulation class: Class F                                                                                                                                                                                                                                                                                                                                               |       |       |       |       |
|                                            |                                     |                          | Fully enclosed, self-cooled type (Ip54)                                                                                                                                                                                                                                                                                                                                 |       |       |       |       |

HAM-40

Side cable exit

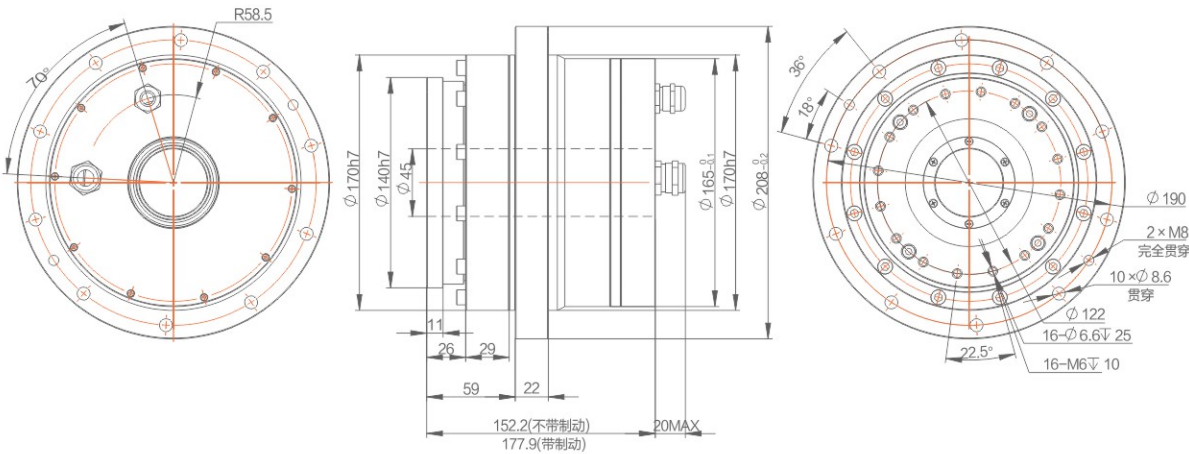


Note The drawings above do not include brake components.  
If you require brakes, please contact our sales department.

Unit mm

HAMF-40

End-face cable exit



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Unit mm