

**Nidec**

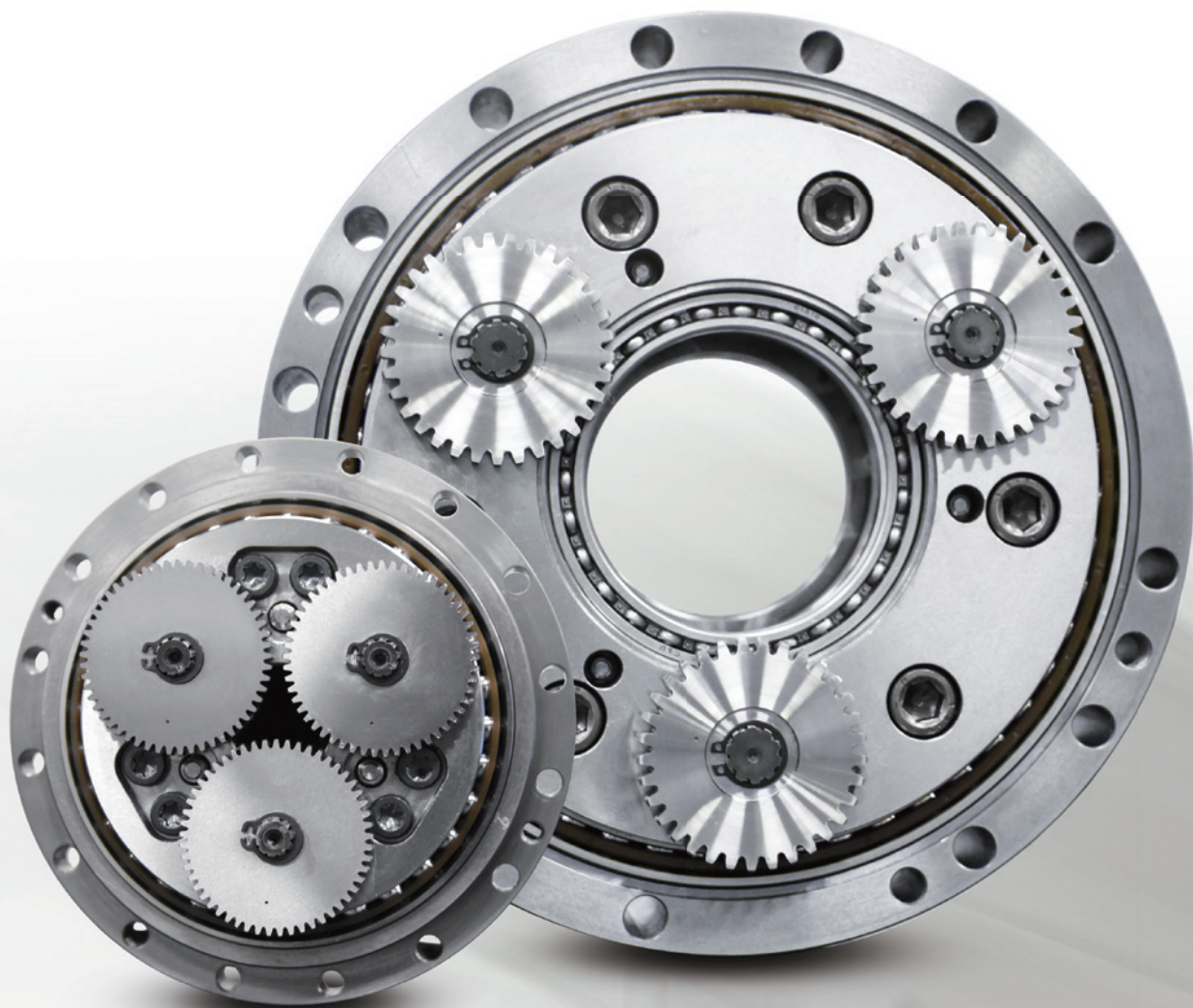
尼得科

All for dreams

K I N E X  
**KINEX**

大型高精度减速机

*High Precision Large Size Reducer*



**尼得科传动技术(浙江)有限公司**  
NIDEC DRIVE TECHNOLOGY (ZHEJIANG) CORPORATION

# 精密减速机的Professional Choice

Professional choice for precision reducers

# KINEX

## 产品阵容 *Product Lineup*

### **Nseries** 实心轴型

轻量、紧凑的实心轴型  
Solid shaft type: Lightweight and compact



### **Cseries** 中空轴型

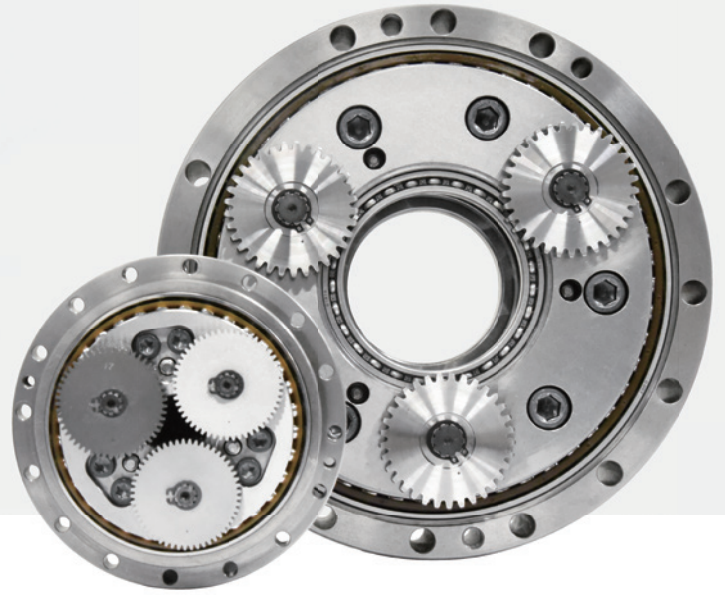
可通过电缆或软管的中空轴型  
Hollow shaft type: Cable or hose can be passed through





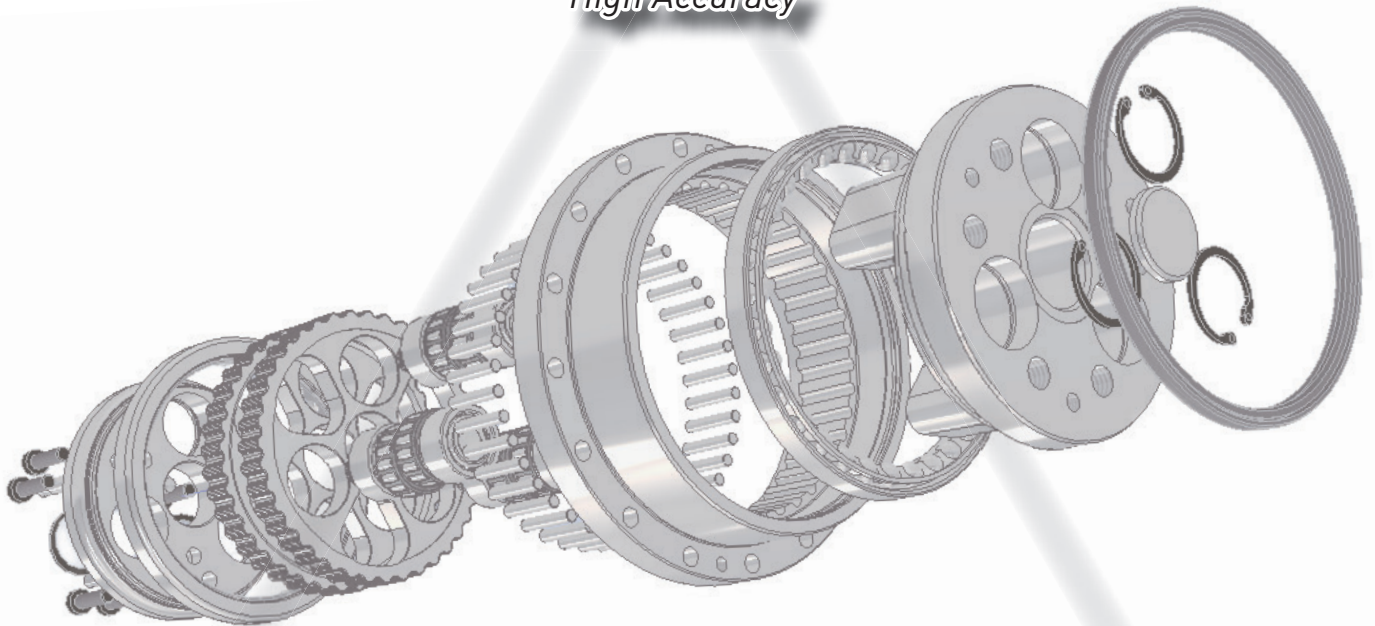
为您提供运用Nidec所拥有的  
技术生产的平滑、低噪音式大型精密减速机  
机器人、机床等各种应用领域的“卓越动力”

Smooth and quiet high precision large size reducer utilizing  
Nidec's technology.  
Provides "excellent movement" for various applications,  
such as robots and machine tools.



## 特点 *Features*

**高精度**  
*High Accuracy*



**高刚性**  
*High Rigidity*

**低噪音**  
*Low Noise*

## 应用 *Application*

为各种不同的应用领域提供最佳的规格。

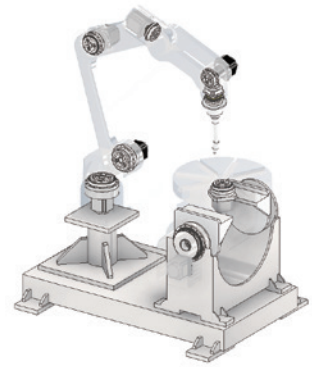
We are able to provide the most suitable specification for a variety of applications!



多关节机器人  
Articulated Robot



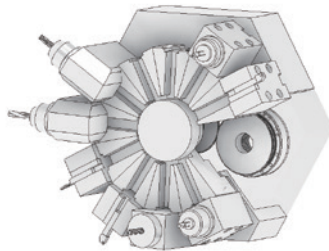
SCARA机器人  
SCARA Robot



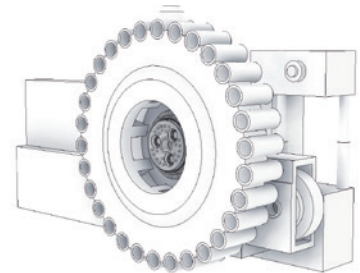
定位器  
Positioner



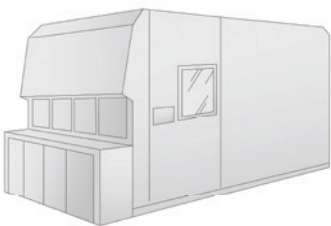
晶圆搬运机器人  
Wafer-transfer Robot



车床刀架  
Lathe Turret Head



ATC·刀库  
Automatic Tool Changer



半导体制造装置  
Semiconductor  
manufacturing  
equipment



分度工作台  
Index Table

# 工作原理 *Principle of Speed Reduction*

## 【第一减速部】

### ● 行星齿轮减速机构

在用框架部固定KINEX的状态下, 通过输入齿轮转动行星齿轮后, 与行星齿轮直接连接的偏心轴也随之旋转。

## 【第二减速部】

### ● 差动齿轮减速机构

利用偏心轴的旋转, 组装在偏心部的轮子进行偏心运动, 轮子一边与销子啮合一边旋转。

由于销子比轮子的齿数多1个, 当偏心轴转完一圈时, 轮子仅转了1齿。支撑偏心轴的输出法兰与轮子同步旋转。

## [1st stage]

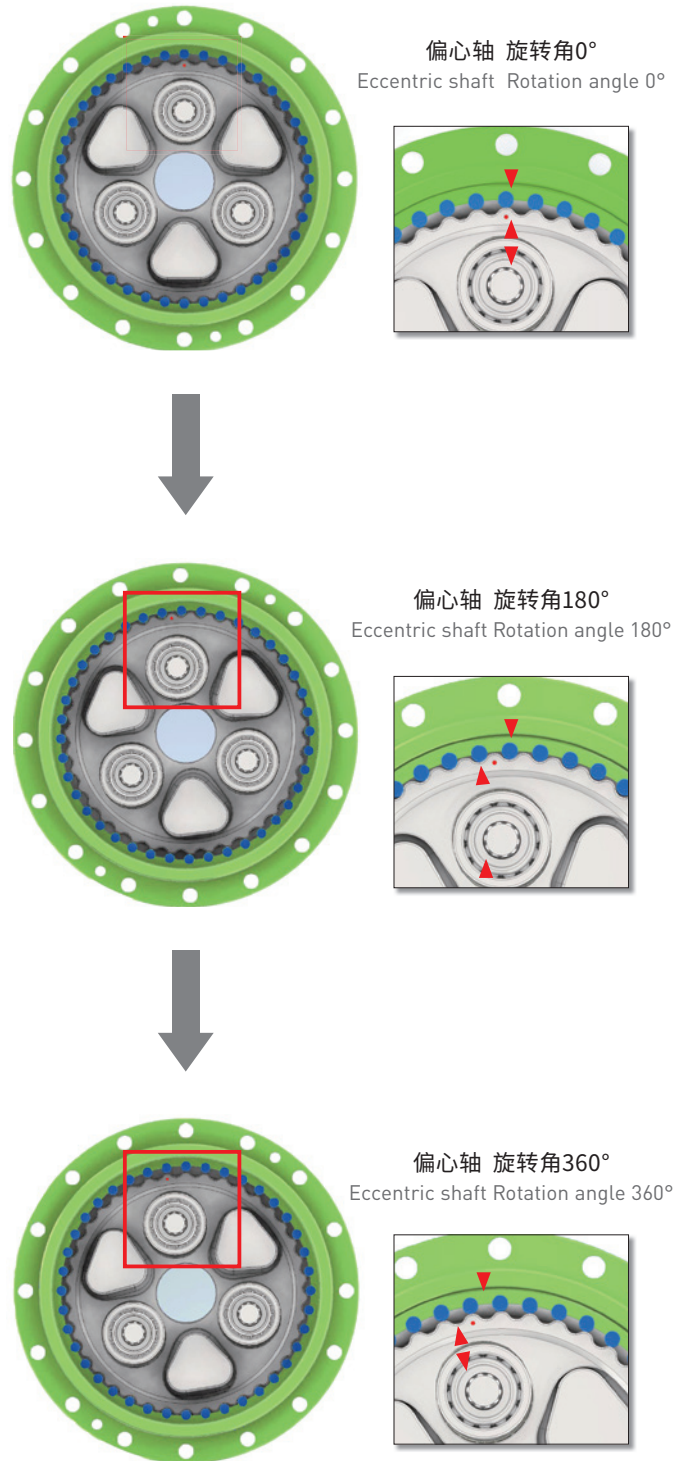
### • Planetary gear reduction mechanism

With the KINEX fixed on the frame, when the input gear rotates the planetary gear, the eccentric shaft directly connected to the planetary gear also rotates.

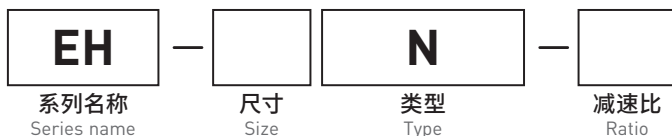
## [2nd stage ]

### • Epicyclic gear reduction

Due to the rotation of the eccentric shaft, the wheel incorporated in the eccentric part moves eccentrically, and the wheel rotates while meshing with the pins. Since there is one more pin than the number of teeth on the wheel, the wheel rotates by one tooth with each rotation of the eccentric shaft, and the output flange that supports the eccentric shaft rotates synchronously with the wheel.



# 减速机型号 Reducer Model Nomenclature



25  
42  
80  
125

N: 实心轴型  
solid shaft type

## 规格表 Specifications

| 型号<br>Product Model | 减速比<br>Ratio                     |                        | ※1                           |  |                                      |   |  |  |  |                                     | ※2   |                    |
|---------------------|----------------------------------|------------------------|------------------------------|--|--------------------------------------|---|--|--|--|-------------------------------------|--|--------------------|
|                     | 输出法兰旋转<br>Output flange rotation | 框架旋转<br>Frame Rotation | 额定扭矩<br>Rated torque<br>(Nm) | 额定输出<br>转速<br>Rated output<br>Speed<br>(rpm) | 额定寿命<br>Rated service<br>life<br>(h) | 启动停止<br>容许扭矩<br>Allowable<br>acceleration/<br>deceleration torque<br>(Nm) | 瞬时最大<br>容许扭矩<br>Momentary<br>maximum<br>allowable torque<br>(Nm) | 背隙 / 空转<br>Backlash/<br>Lost motion<br>(arc min) | 角度传递精度<br>Transmission<br>Angular<br>Accuracy<br>(arc sec) | 容许力矩<br>Allowable<br>moment<br>(Nm) | 瞬时最大<br>容许力矩<br>Momentary<br>allowable<br>moment(Max.)<br>(Nm) | 重量<br>Mass<br>(kg) |
| EH-25N              | 41                               | 40                     | 245                          | 15   | 6,000                                | 612   | 1,225  | 1.0/1.0  | 70   | 784                                 | 1,568  | 3.8                |
|                     | 81                               | 80                     |                              |  |                                      |   |  |  |  |                                     |  |                    |
|                     | 107.67                           | 106.67                 |                              |  |                                      |   |  |  |  |                                     |  |                    |
|                     | 126                              | 125                    |                              |  |                                      |   |  |  |  |                                     |  |                    |
|                     | 137                              | 136                    |                              |  |                                      |   |  |  |  |                                     |  |                    |
|                     | 164.07                           | 163.07                 |                              |  |                                      |   |  |  |  |                                     |  |                    |
| EH-42N              | 41                               | 40                     | 412                          | 15   | 6,000                                | 1,029   | 2,058  | 1.0/1.0  | 60   | 1,660                               | 3,320  | 6.3                |
|                     | 81                               | 80                     |                              |  |                                      |   |  |  |  |                                     |  |                    |
|                     | 105                              | 104                    |                              |  |                                      |   |  |  |  |                                     |  |                    |
|                     | 126                              | 125                    |                              |  |                                      |   |  |  |  |                                     |  |                    |
|                     | 141                              | 140                    |                              |  |                                      |   |  |  |  |                                     |  |                    |
|                     | 164.08                           | 163.08                 |                              |  |                                      |   |  |  |  |                                     |  |                    |
| EH-80N              | 41                               | 40                     | 784                          | 15   | 6,000                                | 1,960   | 3,920  | 1.0/1.0  | 50   | 2,150                               | 4,300  | 9.8                |
|                     | 81                               | 80                     |                              |  |                                      |   |  |  |  |                                     |  |                    |
|                     | 101                              | 100                    |                              |  |                                      |   |  |  |  |                                     |  |                    |
|                     | 129                              | 128                    |                              |  |                                      |   |  |  |  |                                     |  |                    |
|                     | 141                              | 140                    |                              |  |                                      |   |  |  |  |                                     |  |                    |
|                     | 171                              | 170                    |                              |  |                                      |   |  |  |  |                                     |  |                    |
| EH-125N             | 41                               | 40                     | 1,225                        | 15   | 6,000                                | 3,062   | 6,125  | 1.0/1.0  | 50   | 3,430                               | 6,860  | 15                 |
|                     | 81                               | 80                     |                              |  |                                      |   |  |  |  |                                     |  |                    |
|                     | 102.18                           | 101.18                 |                              |  |                                      |   |  |  |  |                                     |  |                    |
|                     | 121                              | 120                    |                              |  |                                      |   |  |  |  |                                     |  |                    |
|                     | 145.62                           | 144.62                 |                              |  |                                      |   |  |  |  |                                     |  |                    |
|                     | 161                              | 160                    |                              |  |                                      |   |  |  |  |                                     |  |                    |

●在低温下使用减速机时，无负荷运转力矩增大。选择电机时请注意。

No-load running torque will increase when the reducer is used at low temperature. Please be careful when selecting a motor.

●如需求上述减速比之外的减速比，或对电机选定有不明之处，请咨询本公司营业负责人。

If you require a reduction ratio other than the above, or if you have any questions regarding motor selection, please contact our sales representative.

●上述规格基于本公司评价方法，请客户按照搭载实机的使用条件确认无误后，再使用本产品。

The above specifications are based on our evaluation method. The customer is requested to use the product only after confirming that there are no problems under the operating conditions of the actual equipment to be installed.

※1. 额定扭矩为以额定输出转速运行下的额定寿命扭矩值，并不表示负荷的上限。

The rated torque is the torque value that corresponds to the rated lifetime when operating at the rated output rotation speed, and does not indicate the upper limit of the load.

※2. 容许力矩因轴向负荷不同而异。

The allowable moment changes depending on the axial load.

## 减速比 Reduction Ratio

第1减速部和第2减速部的合并减速比*i*在输出法兰旋转和框架旋转时不同。

The reduction ratio *i*, which is the sum of the 1st and 2nd reduction parts, differs between output flange rotation and frame rotation.

输出法兰旋转时

For output flange rotation

$$R=1+\frac{Z_2}{Z_1} \cdot Z_4$$

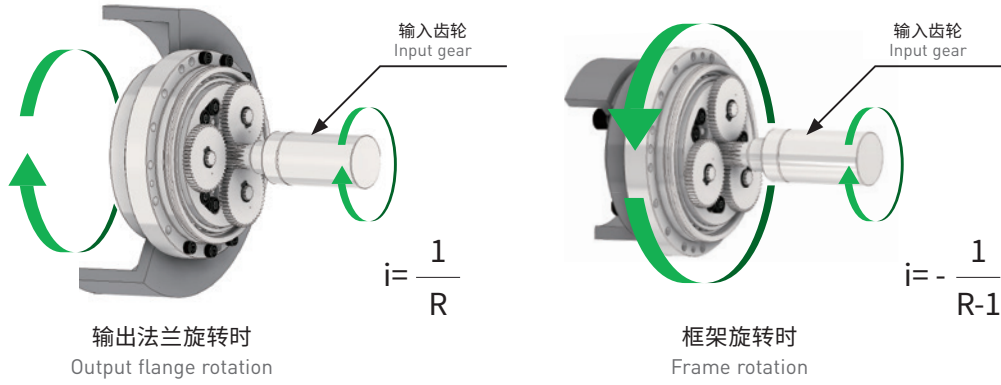
$$i=\frac{1}{R}$$

R : 减速比值  
Z<sub>1</sub> : 输入齿轮的齿数  
Z<sub>2</sub> : 行星齿轮的齿数  
Z<sub>3</sub> : 轮子的齿数  
Z<sub>4</sub> : 销子数  
i : 减速比

R : Speed ratio  
Z<sub>1</sub> : Number of teeth on input gear  
Z<sub>2</sub> : Number of teeth on planetary gear  
Z<sub>3</sub> : Number of teeth on wheel  
Z<sub>4</sub> : Number of pins  
i : Reduction ratio

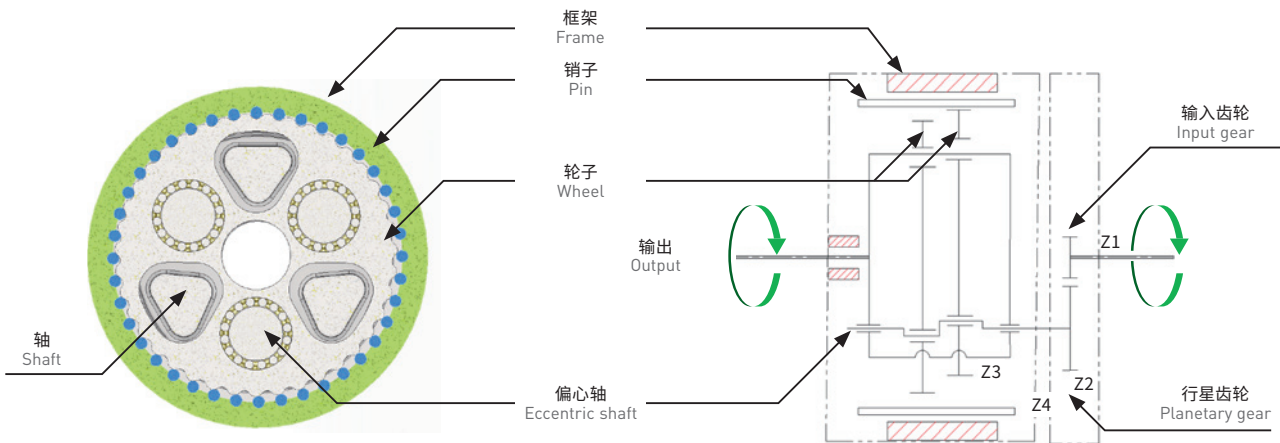


## 旋转方向和减速比 *Direction of Rotation and Reduction Ratio*

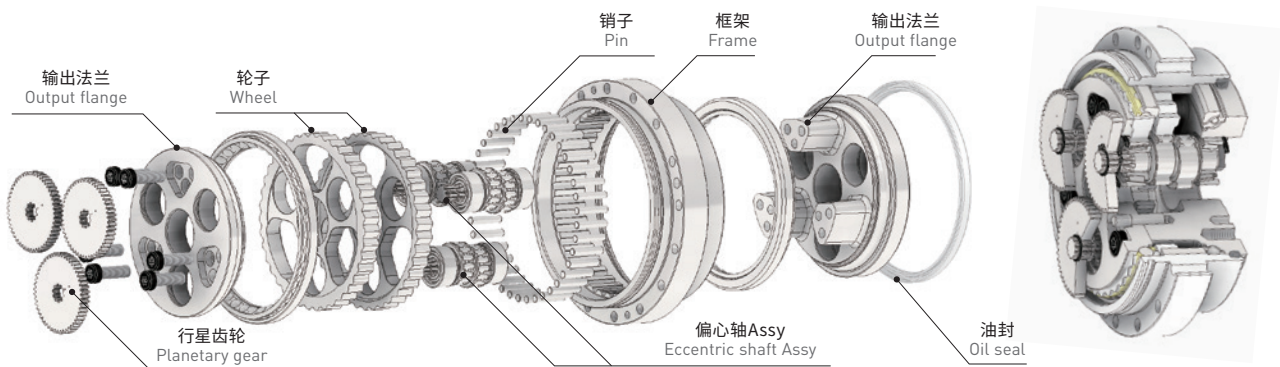


※ 输入齿轮请客户自行准备。  
※ Input gear should be prepared on the customer side.

## 机构图 *Mechanism Diagram*



## 零部件构成 *Component Structure*

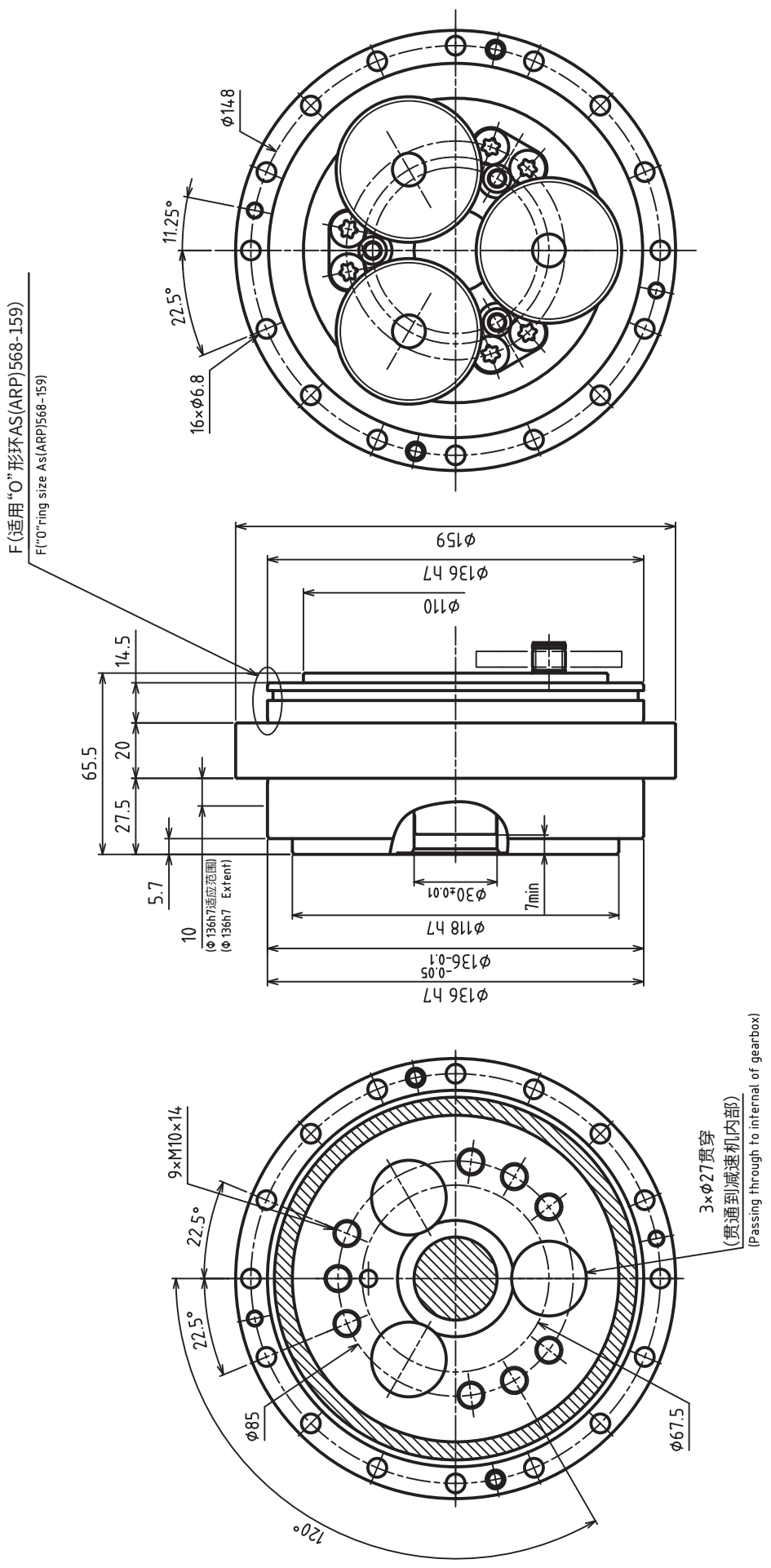






# 外形尺寸图 Dimensional Drawing

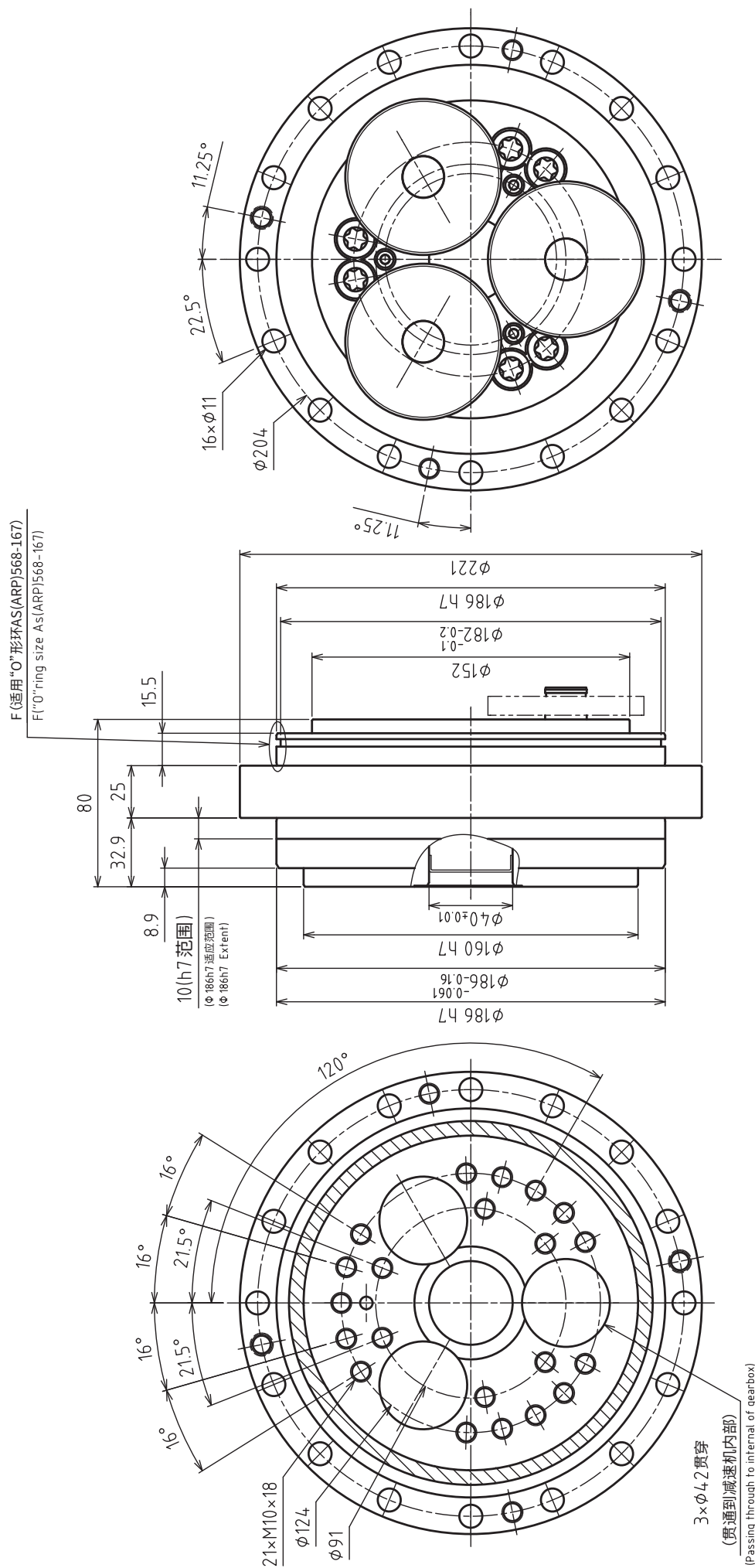
## EH-42N





# 外形尺寸图 Dimensional Drawing

## EH-125N



# 减速机型号 *Reducer Model Nomenclature*



## 规格表 *Specifications*

| 型号<br>Product Model | 减速比<br>Ratio                     |                        | ※1                           |  |                                      |   | ※2   |  |  |                                     |  | 重量<br>Mass |
|---------------------|----------------------------------|------------------------|------------------------------|--|--------------------------------------|---|--|--|--|-------------------------------------|--|------------|
|                     | 输出法兰旋转<br>Output flange rotation | 框架旋转<br>Frame Rotation | 额定扭矩<br>Rated torque<br>(Nm) | 额定输出<br>转速<br>Rated output<br>Speed<br>(rpm) | 额定寿命<br>Rated service<br>life<br>(h) | 启动停止<br>容许扭矩<br>Allowable<br>acceleration/<br>deceleration torque<br>(Nm) | 瞬时最大<br>容许扭矩<br>Momentary<br>maximum<br>allowable torque<br>(Nm) | 背隙 / 空转<br>Backlash/<br>Lost motion<br>(arc min) | 角度传递精度<br>Transmission<br>Angular<br>Accuracy<br>(arc sec) | 容许力矩<br>Allowable<br>moment<br>(Nm) | 瞬时最大<br>容许力矩<br>Momentary<br>allowable<br>moment(Max.)<br>(Nm) |            |
| EH-50C              | 32.54                            | 31.54                  | 490                          | 15   | 6,000                                | 1,225   | 螺栓紧固<br>[Bolt]<br>2,450  | 1.0/1.0  | 60   | 1,764                               | 3,528  | 16.4       |
| EH-120C             | 36.75                            | 35.75                  | 1,177                        | 15   | 6,000                                | 2,940   | 5,880  | 1.0/1.0  | 50   | 3,920                               | 7,350  | 21.2       |

- 在低温下使用减速机时，无负荷运转力矩增大。选择电机时请注意。  
No-load running torque will increase when the reducer is used at low temperature. Please be careful when selecting a motor.
- 如需求上述减速比之外的减速比，或对电机选定有不明之处，请咨询本公司营业负责人。  
If you require a reduction ratio other than the above, or if you have any questions regarding motor selection, please contact our sales representative.
- 上述规格基于本公司评价方法，请客户按照搭载实机的使用条件确认无误后，再使用本产品。  
The above specifications are based on our evaluation method. The customer is requested to use the product only after confirming that there are no problems under the operating conditions of the actual equipment to be installed.
- ※1. 额定扭矩为以额定输出转速运行下的额定寿命扭矩值，并不表示负荷的上限。  
The rated torque is the torque value that corresponds to the rated lifetime when operating at the rated output rotation speed, and does not indicate the upper limit of the load.
- ※2. 容许力矩因轴向负荷不同而异。  
The allowable moment changes depending on the axial load.

## 减速比 *Reduction Ratio*

第1减速部和第2减速部的合并减速比*i*在输出法兰旋转和框架旋转时不同。  
The reduction ratio *i*, which is the sum of the 1st and 2nd reduction parts, differs between output flange rotation and frame rotation.

输出法兰旋转时  
For output flange rotation

$$R = R_1 \times \frac{Z_2}{Z_1}$$

$$i = -\frac{1}{R}$$

$$(R_1 = 1 + \frac{Z_4}{Z_3} \cdot Z_6)$$

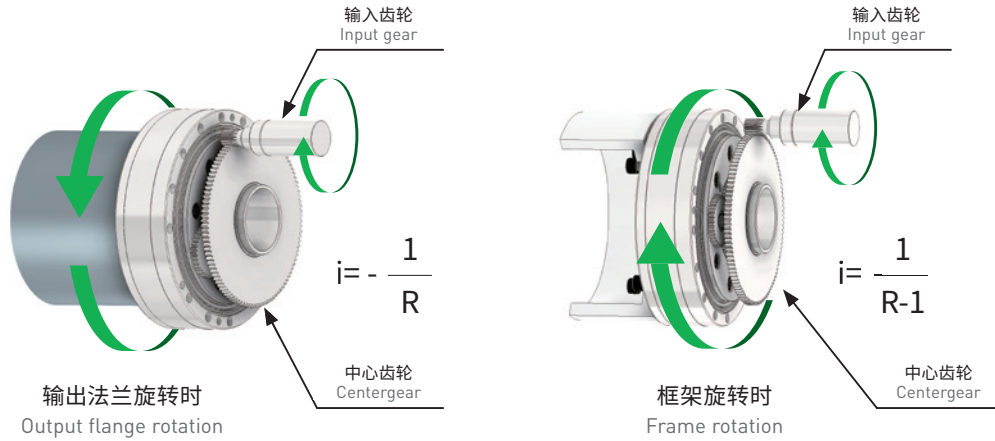
- R : 总减速比值
- R<sub>1</sub> : 减速机单体的减速比值
- Z<sub>1</sub> : 输入齿轮的齿数
- Z<sub>2</sub> : 中心齿轮大齿轮的齿数
- Z<sub>3</sub> : 中心齿轮小齿轮的齿数
- Z<sub>4</sub> : 行星齿轮的齿数
- Z<sub>5</sub> : 轮子的齿数
- Z<sub>6</sub> : 销子数
- i : 减速比

- R : Overall speed ratio
- R<sub>1</sub> : Speed ratio of a discrete reduction gear
- Z<sub>1</sub> : Number of teeth on input gear
- Z<sub>2</sub> : Number of teeth on large center gear
- Z<sub>3</sub> : Number of teeth on small center gear
- Z<sub>4</sub> : Number of teeth on planetary gear
- Z<sub>5</sub> : Number of teeth on wheel
- Z<sub>6</sub> : Number of pins
- i : Reduction ratio



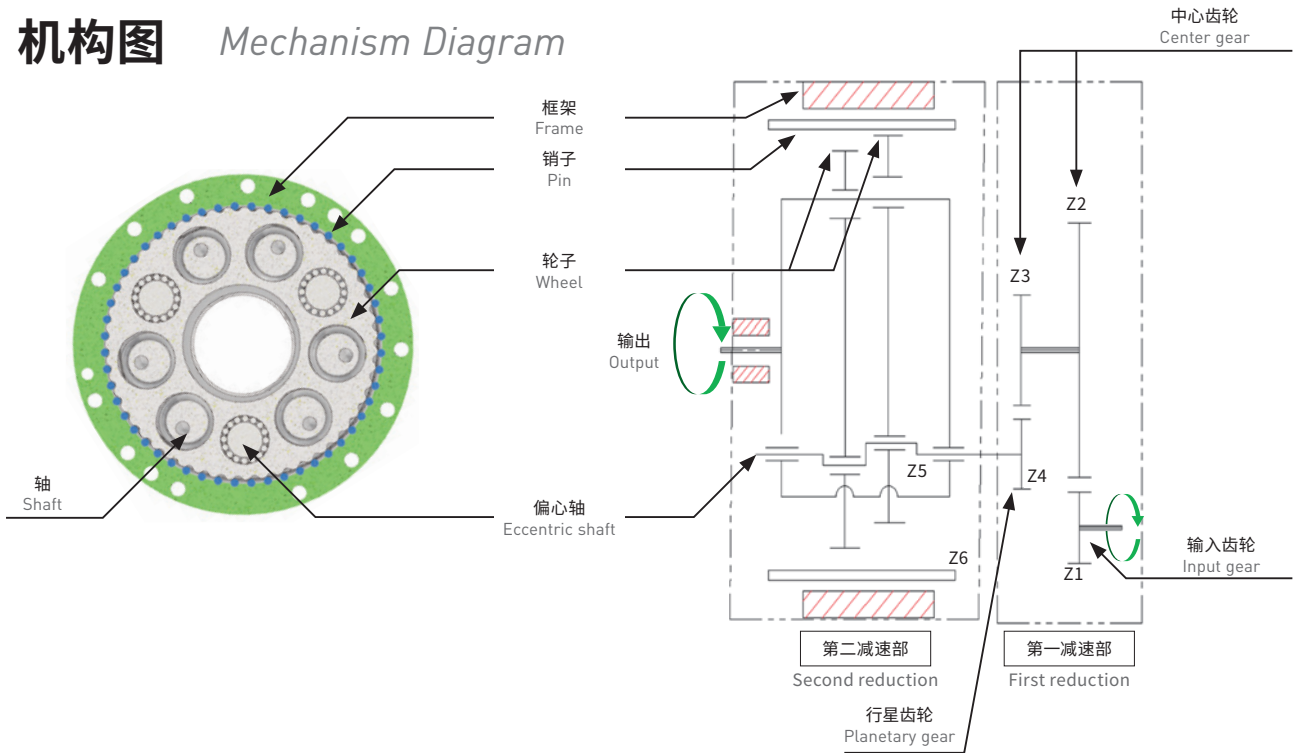
## 旋转方向和减速比

Direction of Rotation and Reduction Ratio

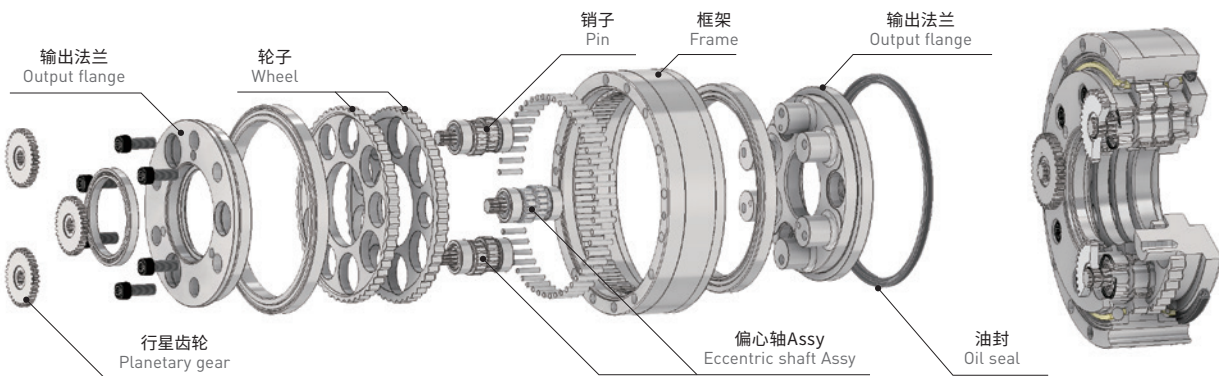


※ 输入齿轮、中心齿轮请客户自行准备。  
※ Input gear and center gear should be prepared on the customer side.

## 机构图 Mechanism Diagram

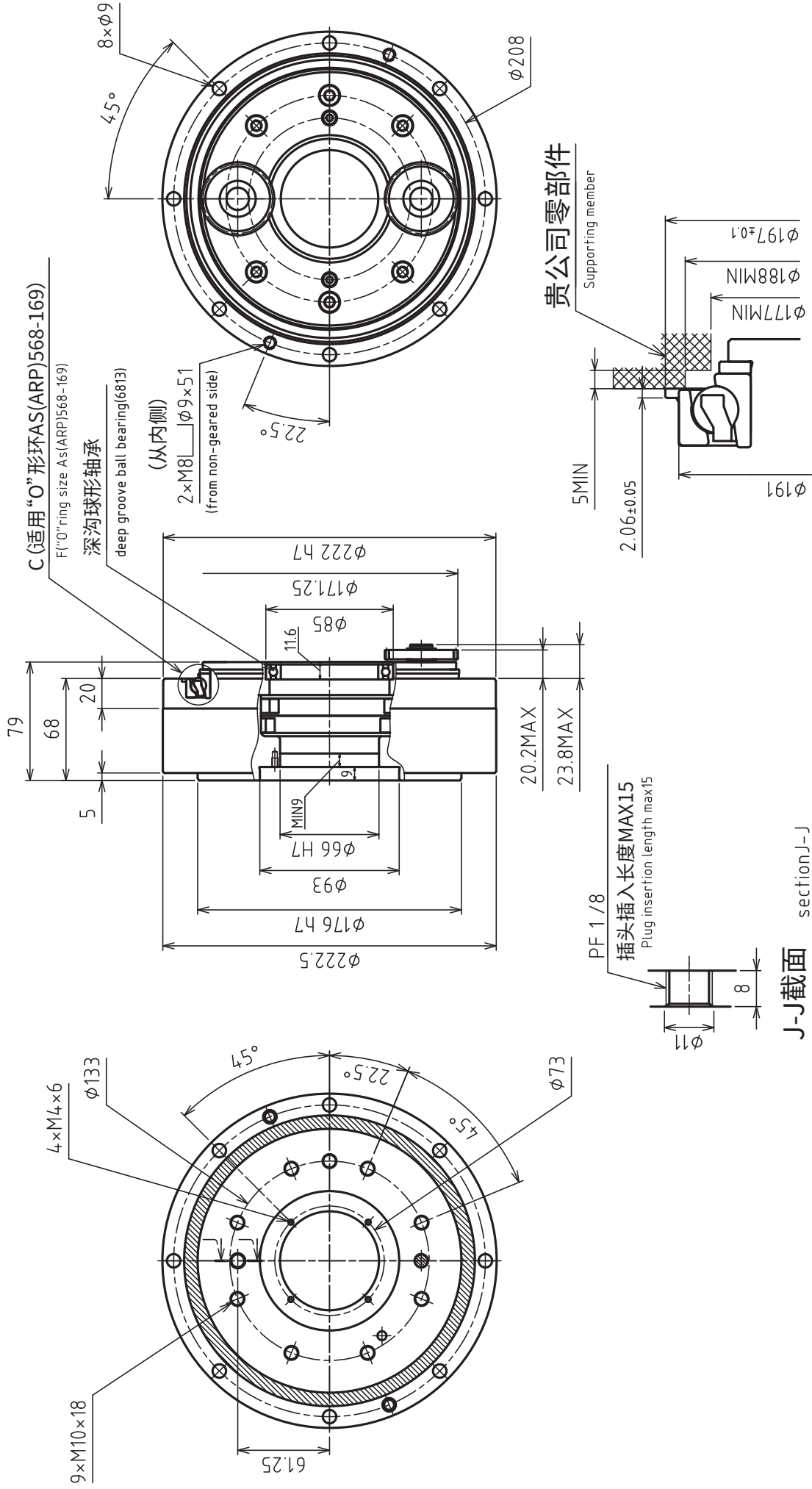


## 零部件构成 Component Structure



# 外形尺寸图 Dimensional Drawing

## EH-50C



C部详图 Detail C

J-J截面 section J-J



**Nidec**

**尼得科**

**All for dreams**

**尼得科传动技术（浙江）有限公司**

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