



**APEX DYNAMICS, INC.**

# **AL / ALR Series**

*High Precision Planetary  
Gearboxes With Adapting  
Timing Belt Pulley*



**Stainless**

## 产品规格

## 减速机性能资料

| 规格                                  | 节数                     | 减速比 <sup>1</sup> | AL070 | AL095                | AL110  | AL150 | AL190   | AL230  | AL280  |        |
|-------------------------------------|------------------------|------------------|-------|----------------------|--------|-------|---------|--------|--------|--------|
| 额定输出力矩 T <sub>2N</sub>              | 1                      | 2                | 9     | 36                   | 90     | 195   | 342     | 588    | 1,140  |        |
|                                     |                        | 3                | 12    | 48                   | 120    | 260   | 520     | 1,040  | 1,680  |        |
|                                     |                        | 4                | 15    | 60                   | 150    | 325   | 650     | 1,200  | 2,000  |        |
|                                     |                        | 5                | 18    | 55                   | 150    | 310   | 600     | 1,100  | 1,900  |        |
|                                     |                        | 6                | 19    | 50                   | 140    | 300   | 550     | 1,100  | 1,800  |        |
|                                     |                        | 7                | 17    | 45                   | 120    | 260   | 500     | 1,000  | 1,600  |        |
|                                     |                        | 8                | 14    | 40                   | 100    | 230   | 450     | 900    | 1,500  |        |
|                                     |                        | 9                | 14    | 40                   | 100    | 230   | 450     | 900    | 1,500  |        |
|                                     |                        | 2                | 10    | 9                    | 36     | 90    | 195     | 342    | 588    | 1,140  |
|                                     | 15                     |                  | 12    | 48                   | 120    | 260   | 520     | 1,040  | 1,680  |        |
|                                     | 20                     |                  | 15    | 60                   | 150    | 325   | 650     | 1,200  | 2,000  |        |
|                                     | 25                     |                  | 18    | 55                   | 150    | 310   | 600     | 1,100  | 1,900  |        |
|                                     | 30                     |                  | 19    | 50                   | 140    | 300   | 550     | 1,100  | 1,800  |        |
|                                     | 35                     |                  | 17    | 45                   | 120    | 260   | 500     | 1,000  | 1,600  |        |
|                                     | 40                     |                  | 22    | 60                   | 100    | 230   | 650     | 1,200  | 2,000  |        |
|                                     | 45                     |                  | 14    | 40                   | 100    | 230   | 450     | 900    | 1,500  |        |
|                                     | 50                     |                  | 18    | 55                   | 150    | 310   | 600     | 1,100  | 1,900  |        |
|                                     | 最大输出力矩 T <sub>2B</sub> | Nm               | 60    | 19                   | 50     | 140   | 300     | 550    | 1,100  | 1,800  |
| 70                                  |                        |                  | 17    | 45                   | 120    | 260   | 500     | 1,000  | 1,600  |        |
| 80                                  |                        |                  | 14    | 40                   | 100    | 230   | 450     | 900    | 1,500  |        |
| 额定输入转速 n <sub>1N</sub>              | rpm                    | 1                | 2     | 3,000                | 3,000  | 2,600 | 2,600   | 2,000  | 2,000  | 1,350  |
|                                     |                        | 1,2              | 3~90  | 5,000                | 5,000  | 4,000 | 4,000   | 3,000  | 3,000  | 2,000  |
| 最大输入转速 n <sub>1B</sub>              | rpm                    | 1                | 2     | 6,000                | 6,000  | 5,200 | 5,200   | 4,000  | 4,000  | 2,700  |
|                                     |                        | 1,2              | 3~90  | 10,000               | 10,000 | 8,000 | 8,000   | 6,000  | 6,000  | 4,000  |
| 超精密背隙 P0                            | arcmin                 | 1                | 2~9   | -                    | -      | ≤1    | ≤1      | ≤1     | ≤1     | ≤1     |
|                                     |                        | 2                | 10~90 | -                    | -      | -     | ≤3      | ≤3     | ≤3     | ≤3     |
| 精密背隙 P1                             | arcmin                 | 1                | 2~9   | ≤3                   | ≤3     | ≤3    | ≤3      | ≤3     | ≤3     | ≤3     |
|                                     |                        | 2                | 10~90 | ≤5                   | ≤5     | ≤5    | ≤5      | ≤5     | ≤5     | ≤5     |
| 标准背隙 P2                             | arcmin                 | 1                | 2~9   | ≤5                   | ≤5     | ≤5    | ≤5      | ≤5     | ≤5     | ≤5     |
|                                     |                        | 2                | 10~90 | ≤7                   | ≤7     | ≤7    | ≤7      | ≤7     | ≤7     | ≤7     |
| 扭转刚性                                | Nm/arcmin              | 1,2              | 2~90  | 7                    | 13     | 31    | 82      | 151    | 440    | 1,006  |
| 容许径向力 F <sub>2rB</sub> <sup>2</sup> | N                      | 1,2              | 2~90  | 2,120                | 4,450  | 6,500 | 10,950  | 15,700 | 25,000 | 34,200 |
| 容许轴向力 F <sub>2aB</sub> <sup>2</sup> | N                      | 1,2              | 2~90  | 1,060                | 2,225  | 3,250 | 5,475   | 7,850  | 12,500 | 17,100 |
| 使用寿命                                | hr                     | 1,2              | 2~90  |                      |        |       | 30,000* |        |        |        |
| 效率 η                                | %                      | 1                | 2~9   |                      |        |       | ≥97%    |        |        |        |
|                                     |                        | 2                | 10~90 |                      |        |       | ≥94%    |        |        |        |
| 重量                                  | kg                     | 1                | 2~9   | 0.9                  | 2.3    | 4.1   | 9       | 17.5   | 36.3   | 57.1   |
|                                     |                        | 2                | 10~90 | 1.2                  | 2.4    | 4.3   | 10      | 20     | 36.9   | 63.3   |
| 使用温度                                | °C                     | 1,2              | 2~90  | -10°C~+90°C          |        |       |         |        |        |        |
| 润滑                                  |                        | 1,2              | 2~90  | 合成润滑油脂 (NYOGEL 792D) |        |       |         |        |        |        |
| 防护等级                                |                        | 1,2              | 2~90  | IP65                 |        |       |         |        |        |        |
| 安装方向                                |                        | 1,2              | 2~90  | 任意方向                 |        |       |         |        |        |        |
| 噪音值 (n <sub>i</sub> =3000rpm)       | dB                     | 1,2              | 2~90  | ≤56                  | ≤58    | ≤60   | ≤63     | ≤65    | ≤67    | ≤70    |

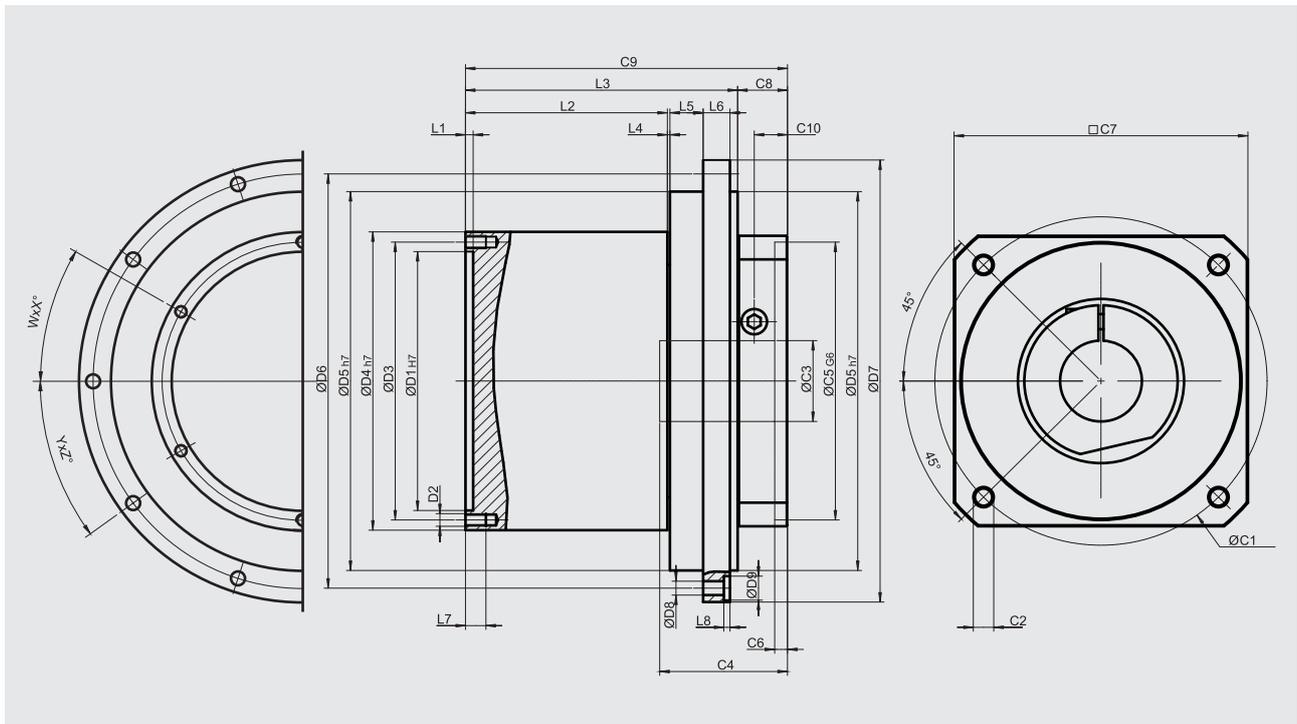
1. 减速比 (i=N<sub>in</sub> / N<sub>out</sub>).

\* 连续运转, 使用寿命为15,000hrs

2. 输出转速100 rpm时, 作用于输出法兰位置。

# AL 系列

## 尺寸 (单节, 减速比 $i=2\sim9$ )

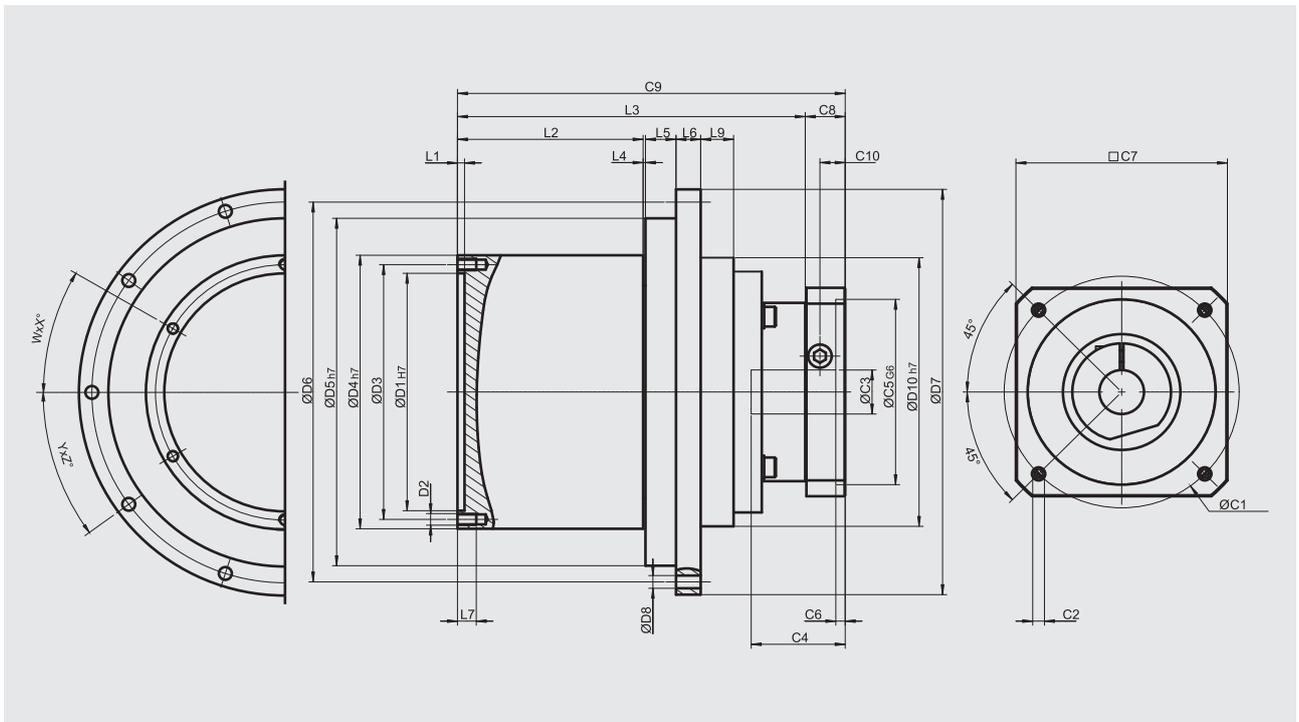


(单位: mm)

| 尺寸                            | AL070     | AL095       | AL110     | AL150      | AL190      | AL230       | AL280       |
|-------------------------------|-----------|-------------|-----------|------------|------------|-------------|-------------|
| D1 <sub>H7</sub>              | 37.5      | 55.5        | 70.5      | 102.5      | 132.5      | 168.5       | 204.5       |
| D2                            | M3 x 0.5P | M3 x 0.5P   | M4 x 0.7P | M5 x 0.8P  | M5 x 0.8P  | M6 x 1P     | M6 x 1P     |
| D3                            | 42        | 61.5        | 78.5      | 110        | 142.5      | 179         | 216         |
| D4 <sub>H7</sub>              | 47.7      | 67.3        | 87.3      | 118.1      | 152.8      | 190         | 229.2       |
| D5 <sub>H7</sub>              | 70        | 95          | 110       | 150        | 190        | 230         | 280         |
| D6                            | 80        | 108         | 124       | 164        | 208        | 246         | 296         |
| D7                            | 90        | 120         | 135       | 175        | 225        | 262         | 312         |
| D8                            | 4.5       | 5.5         | 5.5       | 5.5        | 9          | 9           | 9           |
| D9                            | 8         | 9.5         | --        | 9.5        | 14         | --          | --          |
| L1                            | 3         | 3           | 3         | 3          | 4          | 3           | 3           |
| L2                            | 36        | 55.5        | 60.5      | 79         | 94         | 115         | 116         |
| L3                            | 50.5      | 72          | 84        | 106.5      | 124.5      | 162         | 169         |
| L4                            | 0.5       | 0.5         | 0.5       | 1          | 1          | 1.5         | 1.5         |
| L5                            | 6         | 7           | 10        | 13         | 15         | 18          | 22          |
| L6                            | 6         | 7           | 7.5       | 10.5       | 12         | 15          | 18          |
| L7                            | 6         | 6           | 8         | 9          | 9          | 11          | 11          |
| L8                            | 2.4       | 3.4         | --        | 2.4        | 6.1        | --          | --          |
| C1 <sup>3</sup>               | 46        | 70          | 100       | 130        | 165        | 215         | 235         |
| C2 <sup>3</sup>               | M4 x 0.7P | M5 x 0.8P   | M6 x 1P   | M8 x 1.25P | M10 x 1.5P | M12 x 1.75P | M12 x 1.75P |
| C3 <sup>3</sup>               | ≤11       | * ≤14 / ≤16 | ≤19 / ≤24 | ≤32        | ≤38        | ≤48         | ≤55         |
| C4 <sup>3</sup>               | 30        | 34          | 40        | 50         | 60         | 85          | 116         |
| C5 <sup>3</sup> <sub>G6</sub> | 30        | 50          | 80        | 110        | 130        | 180         | 200         |
| C6 <sup>3</sup>               | 3.5       | 8           | 4         | 5          | 6          | 6           | 6           |
| C7 <sup>3</sup>               | 48        | 60          | 90        | 115        | 142        | 190         | 220         |
| C8 <sup>3</sup>               | 19.5      | 19          | 17        | 19.5       | 22.5       | 29          | 63          |
| C9 <sup>3</sup>               | 70        | 91          | 101       | 126        | 147        | 191         | 232         |
| C10 <sup>3</sup>              | 13.25     | 13.5        | 10.75     | 13         | 15         | 20.75       | 53.5        |
| W                             | 6         | 8           | 8         | 8          | 12         | 12          | 12          |
| X                             | 60        | 45          | 45        | 45         | 30         | 30          | 30          |
| Y                             | 6         | 10          | 10        | 10         | 10         | 10          | 12          |
| Z                             | 60        | 36          | 36        | 36         | 36         | 36          | 30          |

3. C1~C10 是公制标准马达连接板之尺寸, 请上网点选“减速机选用”找出正确之尺寸。  
\*AL095 4, 9 减速比提供 C3 ≤ 16 可选。

## 尺寸（双节，减速比 $i=10\sim90$ ）



（单位：mm）

| 尺寸                            | AL070     | AL095       | AL110                 | AL150     | AL190      | AL230      | AL280       |
|-------------------------------|-----------|-------------|-----------------------|-----------|------------|------------|-------------|
| D1 <sub>H7</sub>              | 37.5      | 55.5        | 70.5                  | 102.5     | 132.5      | 168.5      | 204.5       |
| D2                            | M3 x 0.5P | M3 x 0.5P   | M4 x 0.7P             | M5 x 0.8P | M5 x 0.8P  | M6 x 1P    | M6 x 1P     |
| D3                            | 42        | 61.5        | 78.5                  | 110       | 142.5      | 179        | 216         |
| D4 <sub>h7</sub>              | 47.7      | 67.3        | 87.3                  | 118.1     | 152.8      | 190        | 229.2       |
| D5 <sub>h7</sub>              | 70        | 95          | 110                   | 150       | 190        | 230        | 280         |
| D6                            | 80        | 108         | 124                   | 164       | 208        | 246        | 296         |
| D7                            | 90        | 120         | 135                   | 175       | 225        | 262        | 312         |
| D8                            | 4.5       | 5.5         | 5.5                   | 5.5       | 9          | 9          | 9           |
| D10 <sub>H7</sub>             | 70        | 62          | 82                    | 116       | 145        | 178        | 224         |
| L1                            | 3         | 3           | 3                     | 3         | 4          | 3          | 3           |
| L2                            | 36        | 55.5        | 60.5                  | 79        | 94         | 115        | 116         |
| L3                            | 78.5      | 97.5        | 116.5                 | 148       | 181        | 219.5      | 253.5       |
| L4                            | 0.5       | 0.5         | 0.5                   | 1         | 1          | 1.5        | 1.5         |
| L5                            | 6         | 7           | 10                    | 13        | 15         | 18         | 22          |
| L6                            | 6         | 7           | 7.5                   | 10.5      | 12         | 15         | 18          |
| L7                            | 6         | 6           | 8                     | 9         | 9          | 11         | 11          |
| L9                            | 2         | 8           | 12                    | 14        | 18         | 22         | 26.5        |
| C1 <sup>4</sup>               | 46        | 46          | 70                    | 100       | 130        | 165        | 215         |
| C2 <sup>4</sup>               | M4 x 0.7P | M4 x 0.7P   | M5 x 0.8P             | M6 x 1P   | M8 x 1.25P | M10 x 1.5P | M12 x 1.75P |
| C3 <sup>4</sup>               | ≤11       | * ≤11 / ≤12 | * ≤14 / ≤15.875 / ≤16 | ≤19 / ≤24 | ≤32        | ≤38        | ≤48         |
| C4 <sup>4</sup>               | 30        | 30          | 34                    | 40        | 50         | 60         | 85          |
| C5 <sup>4</sup> <sub>G6</sub> | 30        | 30          | 50                    | 80        | 110        | 130        | 180         |
| C6 <sup>4</sup>               | 3.5       | 3.5         | 8                     | 4         | 5          | 6          | 6           |
| C7 <sup>4</sup>               | 48        | 48          | 60                    | 90        | 115        | 142        | 190         |
| C8 <sup>4</sup>               | 19.5      | 19.5        | 19                    | 17        | 19.5       | 22.5       | 29          |
| C9 <sup>4</sup>               | 98        | 117         | 135.5                 | 165       | 200.5      | 242        | 282.5       |
| C10 <sup>4</sup>              | 13.25     | 13.25       | 13.5                  | 10.75     | 13         | 15         | 20.75       |
| W                             | 6         | 8           | 8                     | 8         | 12         | 12         | 12          |
| X                             | 60        | 45          | 45                    | 45        | 30         | 30         | 30          |
| Y                             | 6         | 10          | 10                    | 10        | 10         | 10         | 12          |
| Z                             | 60        | 36          | 36                    | 36        | 36         | 36         | 30          |

4. C1-C10 是公制标准马达连接板之尺寸，请上网点选“减速机选用”找出正确之尺寸。

\*AL095 10~45 减速比提供 C3 ≤ 12 可选。 \*AL110 10~45 减速比提供 C3 ≤ 15.875 / ≤ 16 可选。

## 产品规格

### 减速机性能资料

| 规格                           | 节数              | 减速比 <sup>1</sup> | ALR070 | ALR095               | ALR110    | ALR150 | ALR190  | ALR230 | ALR280 |        |
|------------------------------|-----------------|------------------|--------|----------------------|-----------|--------|---------|--------|--------|--------|
| 额定输出力矩 $T_{2N}$              | 1               | 2                | 9      | 36                   | 90        | 195    | 342     | 588    | 1,140  |        |
|                              |                 | 3                | 12     | 48                   | 120       | 260    | 520     | 1,040  | 1,680  |        |
|                              |                 | 4                | 15     | 60                   | 150       | 325    | 650     | 1,200  | 2,000  |        |
|                              |                 | 5                | 18     | 55                   | 150       | 310    | 600     | 1,100  | 1,900  |        |
|                              |                 | 6                | 19     | 50                   | 140       | 300    | 550     | 1,100  | 1,800  |        |
|                              |                 | 7                | 17     | 45                   | 120       | 260    | 500     | 1,000  | 1,600  |        |
|                              |                 | 8                | 14     | 40                   | 100       | 230    | 450     | 900    | 1,500  |        |
|                              |                 | 9                | 14     | 40                   | 100       | 230    | 450     | 900    | 1,500  |        |
|                              |                 | 10               | -      | 55                   | 150       | 310    | 600     | 1,100  | 1,900  |        |
|                              |                 | 2                | 10     | 9                    | -         | -      | -       | -      | -      | -      |
|                              | 15              |                  | 12     | 48                   | 120       | 260    | 520     | 1,040  | 1,680  |        |
|                              | 20              |                  | 15     | 60                   | 150       | 325    | 650     | 1,200  | 2,000  |        |
|                              | 25              |                  | 18     | 55                   | 150       | 310    | 600     | 1,100  | 1,900  |        |
|                              | 30              |                  | 19     | 50                   | 140       | 300    | 550     | 1,100  | 1,800  |        |
|                              | 35              |                  | 17     | 45                   | 120       | 260    | 500     | 1,000  | 1,600  |        |
|                              | 40              |                  | 22     | 60                   | 100       | 230    | 650     | 1,200  | 2,000  |        |
|                              | 45              |                  | 14     | 40                   | 100       | 230    | 450     | 900    | 1,500  |        |
|                              | 50              |                  | 18     | 55                   | 150       | 310    | 600     | 1,100  | 1,900  |        |
|                              | 60              |                  | 19     | 50                   | 140       | 300    | 550     | 1,100  | 1,800  |        |
|                              | 70              |                  | 17     | 45                   | 120       | 260    | 500     | 1,000  | 1,600  |        |
|                              | 80              |                  | 14     | 40                   | 100       | 230    | 450     | 900    | 1,500  |        |
|                              | 90              |                  | 14     | 40                   | 100       | 230    | 450     | 900    | 1,500  |        |
|                              | 100             |                  | -      | -                    | 150       | 310    | 600     | 1,100  | 1,900  |        |
|                              | 120             |                  | -      | -                    | 140       | 300    | 550     | 1,100  | 1,800  |        |
|                              | 140             |                  | -      | -                    | 120       | 260    | 500     | 1,000  | 1,600  |        |
|                              | 160             |                  | -      | -                    | 100       | 230    | 450     | 900    | 1,500  |        |
|                              | 180             |                  | -      | -                    | 100       | 230    | 450     | 900    | 1,500  |        |
|                              | 最大输出力矩 $T_{2B}$ | Nm               | 1,2    | 2~180                | 3 倍额定输出力矩 |        |         |        |        |        |
| 额定输入转速 $n_{1N}$              | rpm             | 1                | 2      | 3,000                | 3,000     | 2,600  | 2,600   | 2,000  | 2,000  | 1,350  |
|                              |                 | 1,2              | 3~180  | 5,000                | 5,000     | 4,000  | 4,000   | 3,000  | 3,000  | 2,000  |
| 最大输入转速 $n_{1B}$              | rpm             | 1                | 2      | 6,000                | 6,000     | 5,200  | 5,200   | 4,000  | 4,000  | 2,700  |
|                              |                 | 1,2              | 3~180  | 10,000               | 10,000    | 8,000  | 8,000   | 6,000  | 6,000  | 4,000  |
| 超精密背隙 P0                     | arcmin          | 1                | 2~10   | -                    | -         | ≤2     | ≤2      | ≤2     | ≤2     | ≤2     |
|                              |                 | 2                | 15~180 | -                    | -         | ≤4     | ≤4      | ≤4     | ≤4     | ≤4     |
| 精密背隙 P1                      | arcmin          | 1                | 2~10   | ≤4                   | ≤4        | ≤4     | ≤4      | ≤4     | ≤4     | ≤4     |
|                              |                 | 2                | 15~180 | ≤7                   | ≤7        | ≤7     | ≤7      | ≤7     | ≤7     | ≤7     |
| 标准背隙 P2                      | arcmin          | 1                | 2~10   | ≤6                   | ≤6        | ≤6     | ≤6      | ≤6     | ≤6     | ≤6     |
|                              |                 | 2                | 15~180 | ≤9                   | ≤9        | ≤9     | ≤9      | ≤9     | ≤9     | ≤9     |
| 扭转刚性                         | Nm/arcmin       | 1,2              | 2~180  | 7                    | 13        | 31     | 82      | 151    | 440    | 1,006  |
| 容许径向力 $F_{2rB}^2$            | N               | 1,2              | 2~180  | 2,120                | 4,450     | 6,500  | 10,950  | 15,700 | 25,000 | 34,200 |
| 容许轴向力 $F_{2aB}^2$            | N               | 1,2              | 2~180  | 1,060                | 2,225     | 3,250  | 5,475   | 7,850  | 12,500 | 17,100 |
| 使用寿命                         | hr              | 1,2              | 2~180  |                      |           |        | 30,000* |        |        |        |
| 效率 $\eta$                    | %               | 1                | 2~10   |                      |           |        | ≥95%    |        |        |        |
|                              |                 | 2                | 15~180 | ≥92%                 |           |        |         |        |        |        |
| 重量                           | kg              | 1                | 2~10   | 1.4                  | 3.1       | 6.8    | 13.8    | 27.3   | 53.2   | 83.3   |
|                              |                 | 2                | 15~180 | 1.5                  | 2.8       | 5      | 12.5    | 24.3   | 45.4   | 78.8   |
| 使用温度                         | °C              | 1,2              | 2~180  | -10°C~+90°C          |           |        |         |        |        |        |
| 润滑                           |                 | 1,2              | 2~180  | 合成润滑油脂 (NYOGEL 792D) |           |        |         |        |        |        |
| 防护等级                         |                 | 1,2              | 2~180  | IP65                 |           |        |         |        |        |        |
| 安装方向                         |                 | 1,2              | 2~180  | 任意方向                 |           |        |         |        |        |        |
| 噪音值 ( $n_1=3000\text{rpm}$ ) | dB              | 1,2              | 2~180  | ≤61                  | ≤63       | ≤65    | ≤68     | ≤70    | ≤72    | ≤74    |

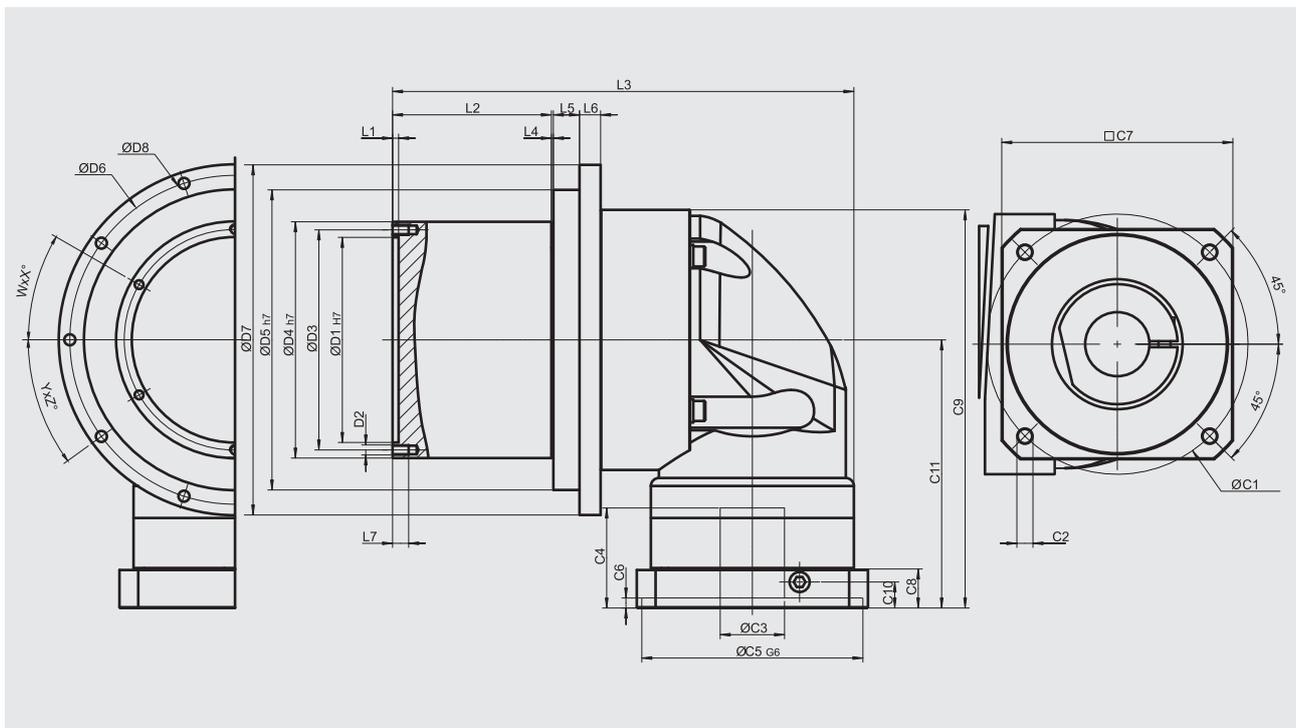
1. 减速比 ( $i=N_{in}/N_{out}$ )

\* 连续运转, 使用寿命为15,000 hrs

2. 输出转速100 rpm时, 作用于输出法兰位置。

# ALR 系列

## 尺寸（单节，减速比 $i=2\sim 10$ ）



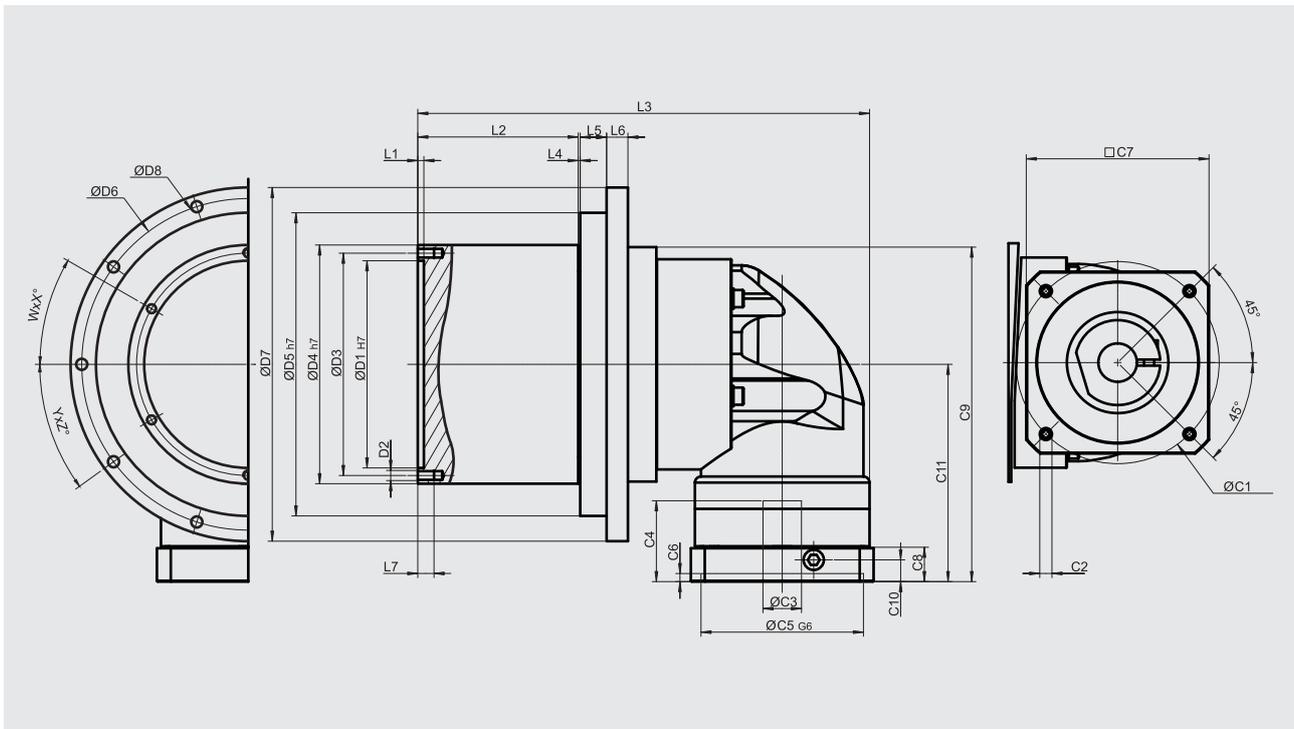
（单位：mm）

| 尺寸                 | ALR070    | ALR095    | ALR110    | ALR150     | ALR190     | ALR230      | ALR280      |
|--------------------|-----------|-----------|-----------|------------|------------|-------------|-------------|
| D1 <sub>h7</sub>   | 37.5      | 55.5      | 70.5      | 102.5      | 132.5      | 168.5       | 204.5       |
| D2                 | M3 x 0.5P | M3 x 0.5P | M4 x 0.7P | M5 x 0.8P  | M5 x 0.8P  | M6 x 1P     | M6 x 1P     |
| D3                 | 42        | 61.5      | 78.5      | 110        | 142.5      | 179         | 216         |
| D4 <sub>h7</sub>   | 47.7      | 67.3      | 87.3      | 118.1      | 152.8      | 190         | 229.2       |
| D5 <sub>h7</sub>   | 70        | 95        | 110       | 150        | 190        | 230         | 280         |
| D6                 | 80        | 108       | 124       | 164        | 208        | 246         | 296         |
| D7                 | 90        | 120       | 135       | 175        | 225        | 262         | 312         |
| D8                 | 4.5       | 5.5       | 5.5       | 5.5        | 9          | 9           | 9           |
| L1                 | 3         | 3         | 3         | 3          | 4          | 3           | 3           |
| L2                 | 36        | 55.5      | 60.5      | 79         | 94         | 115         | 116         |
| L3                 | 106.5     | 144       | 183.5     | 229.5      | 278        | 339.5       | 382.5       |
| L4                 | 0.5       | 0.5       | 0.5       | 1          | 1          | 1.5         | 1.5         |
| L5                 | 6         | 7         | 10        | 13         | 15         | 18          | 22          |
| L6                 | 6         | 7         | 7.5       | 10.5       | 12         | 15          | 18          |
| L7                 | 6         | 6         | 8         | 9          | 9          | 11          | 11          |
| C1 <sup>3</sup>    | 46        | 70        | 100       | 130        | 165        | 215         | 235         |
| C2 <sup>3</sup>    | M4 x 0.7P | M5 x 0.8P | M6 x 1P   | M8 x 1.25P | M10 x 1.5P | M12 x 1.75P | M12 x 1.75P |
| C3 <sup>3</sup>    | ≤11       | ≤14 / ≤16 | ≤19 / ≤24 | ≤32        | ≤38        | ≤48         | ≤55         |
| C4 <sup>3</sup>    | 30        | 34        | 40        | 50         | 60         | 85          | 116         |
| C5 <sup>3 G6</sup> | 30        | 50        | 80        | 110        | 130        | 180         | 200         |
| C6 <sup>3</sup>    | 3.5       | 8         | 4         | 5          | 6          | 6           | 6           |
| C7 <sup>3</sup>    | 48        | 60        | 90        | 115        | 142        | 190         | 220         |
| C8 <sup>3</sup>    | 19.5      | 19        | 17        | 19.5       | 22.5       | 29          | 63          |
| C9 <sup>3</sup>    | 100.5     | 116.5     | 159.5     | 199        | 245.5      | 316         | 398.5       |
| C10 <sup>3</sup>   | 13.25     | 13.5      | 10.75     | 13         | 15         | 20.75       | 53.5        |
| C11 <sup>3</sup>   | 74        | 81.5      | 107.5     | 134        | 164.5      | 213.5       | 268.5       |
| W                  | 6         | 8         | 8         | 8          | 12         | 12          | 12          |
| X                  | 60        | 45        | 45        | 45         | 30         | 30          | 30          |
| Y                  | 6         | 10        | 10        | 10         | 10         | 10          | 12          |
| Z                  | 60        | 36        | 36        | 36         | 36         | 36          | 30          |

3. C1-C11 是公制标准马达连接板之尺寸，请上网点选“减速机选用”找出正确之尺寸。

# ALR 系列

## 尺寸（双节，减速比 $i=15\sim 180$ ）

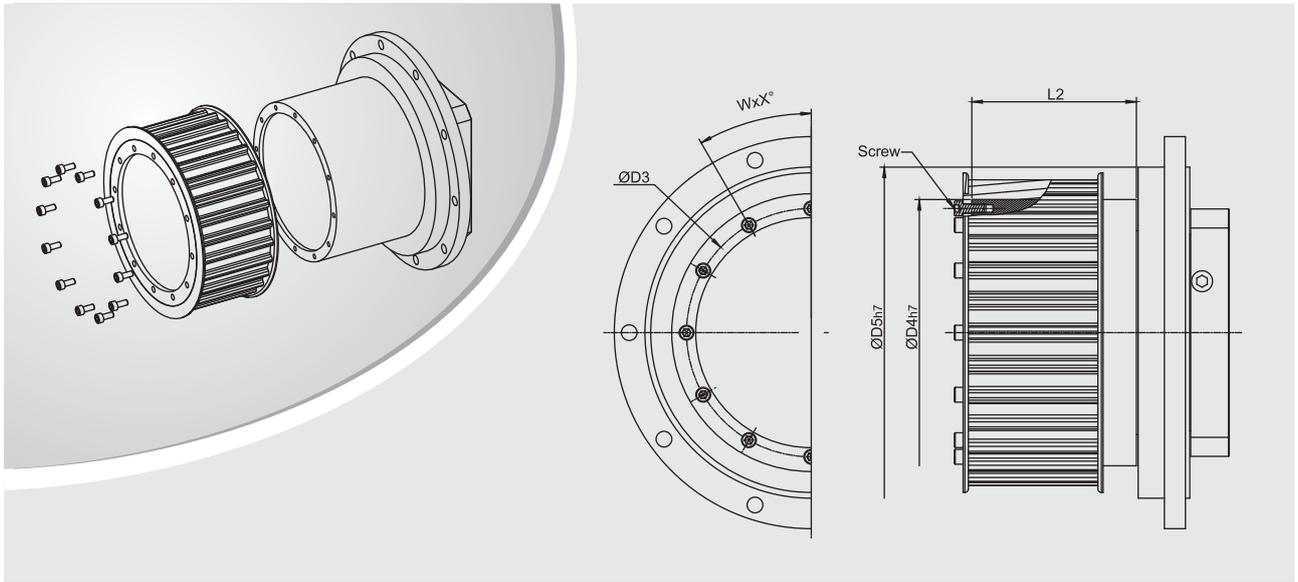


（单位：mm）

| 尺寸                 | ALR070    | ALR095    | ALR110              | ALR150    | ALR190     | ALR230     | ALR280      |
|--------------------|-----------|-----------|---------------------|-----------|------------|------------|-------------|
| D1 <sup>H7</sup>   | 37.5      | 55.5      | 70.5                | 102.5     | 132.5      | 168.5      | 204.5       |
| D2                 | M3 x 0.5P | M3 x 0.5P | M4 x 0.7P           | M5 x 0.8P | M5 x 0.8P  | M6 x 1P    | M6 x 1P     |
| D3                 | 42        | 61.5      | 78.5                | 110       | 142.5      | 179        | 216         |
| D4 <sup>h7</sup>   | 47.7      | 67.3      | 87.3                | 118.1     | 152.8      | 190        | 229.2       |
| D5 <sup>h7</sup>   | 70        | 95        | 110                 | 150       | 190        | 230        | 280         |
| D6                 | 80        | 108       | 124                 | 164       | 208        | 246        | 296         |
| D7                 | 90        | 120       | 135                 | 175       | 225        | 262        | 312         |
| D8                 | 4.5       | 5.5       | 5.5                 | 5.5       | 9          | 9          | 9           |
| L1                 | 3         | 3         | 3                   | 3         | 4          | 3          | 3           |
| L2                 | 36        | 55.5      | 60.5                | 79        | 94         | 115        | 116         |
| L3                 | 122.5     | 141.5     | 164.5               | 222.5     | 266        | 327.5      | 374         |
| L4                 | 0.5       | 0.5       | 0.5                 | 1         | 1          | 1.5        | 1.5         |
| L5                 | 6         | 7         | 10                  | 13        | 15         | 18         | 22          |
| L6                 | 6         | 7         | 7.5                 | 10.5      | 12         | 15         | 18          |
| L7                 | 6         | 6         | 8                   | 9         | 9          | 11         | 11          |
| C1 <sup>4</sup>    | 46        | 46        | 70                  | 100       | 130        | 165        | 215         |
| C2 <sup>4</sup>    | M4 x 0.7P | M4 x 0.7P | M5 x 0.8P           | M6 x 1P   | M8 x 1.25P | M10 x 1.5P | M12 x 1.75P |
| C3 <sup>4</sup>    | ≤11       | ≤11 / ≤12 | ≤14 / ≤15.875 / ≤16 | ≤19 / ≤24 | ≤32        | ≤38        | ≤48         |
| C4 <sup>4</sup>    | 30        | 30        | 34                  | 40        | 50         | 60         | 85          |
| C5 <sup>4</sup> G6 | 30        | 30        | 50                  | 80        | 110        | 130        | 180         |
| C6 <sup>4</sup>    | 3.5       | 3.5       | 8                   | 4         | 5          | 6          | 6           |
| C7 <sup>4</sup>    | 48        | 48        | 60                  | 90        | 115        | 142        | 190         |
| C8 <sup>4</sup>    | 19.5      | 19.5      | 19                  | 17        | 19.5       | 22.5       | 29          |
| C9 <sup>4</sup>    | 100.5     | 105       | 122.5               | 165.5     | 206.5      | 253.5      | 325.5       |
| C10 <sup>4</sup>   | 13.25     | 13.25     | 13.5                | 10.75     | 13         | 15         | 20.75       |
| C11 <sup>4</sup>   | 74        | 74        | 81.5                | 107.5     | 134        | 164.5      | 213.5       |
| W                  | 6         | 8         | 8                   | 8         | 12         | 12         | 12          |
| X                  | 60        | 45        | 45                  | 45        | 30         | 30         | 30          |
| Y                  | 6         | 10        | 10                  | 10        | 10         | 10         | 12          |
| Z                  | 60        | 36        | 36                  | 36        | 36         | 36         | 30          |

4. C1~C11 是公制标准马达连接板之尺寸，请上网点选“减速机选用”找出正确之尺寸。

# 输出皮带轮尺寸



皮带轮设计关键尺寸

(单位: mm)

| 尺寸               | AL070     | AL095     | AL110     | AL150     | AL190     | AL230   | AL280   |
|------------------|-----------|-----------|-----------|-----------|-----------|---------|---------|
|                  | ALR070    | ALR095    | ALR110    | ALR150    | ALR190    | ALR230  | ALR280  |
| L2               | 36        | 55.5      | 60.5      | 79        | 94        | 115     | 116     |
| D3               | 42        | 61.5      | 78.5      | 110       | 142.5     | 179     | 216     |
| D4 <sub>h7</sub> | 47.7      | 67.3      | 87.3      | 118.1     | 152.8     | 190     | 229.2   |
| D5 <sub>h7</sub> | 70        | 95        | 110       | 150       | 190       | 230     | 280     |
| Screw            | M3 x 0.5P | M3 x 0.5P | M4 x 0.7P | M5 x 0.8P | M5 x 0.8P | M6 x 1P | M6 x 1P |
| W                | 6         | 8         | 8         | 8         | 12        | 12      | 12      |
| X                | 60        | 45        | 45        | 45        | 30        | 30      | 30      |

AL系列减速机转动惯量

| 规格                  |                      | 节数   | 减速比  | AL070 | AL095 | AL110 | AL150 | AL190 | AL230 | AL280 |
|---------------------|----------------------|------|------|-------|-------|-------|-------|-------|-------|-------|
| 转动惯量 J <sub>1</sub> | kg · cm <sup>2</sup> | 1    | 2    | 0.03  | 0.16  | 0.61  | 3.25  | 9.21  | 28.98 | 69.61 |
|                     |                      |      | 3    | 0.03  | 0.14  | 0.48  | 2.74  | 7.54  | 23.67 | 54.37 |
|                     |                      |      | 4    | 0.03  | 0.13  | 0.47  | 2.71  | 7.42  | 23.29 | 53.27 |
|                     |                      |      | 5    | 0.03  | 0.13  | 0.45  | 2.65  | 7.25  | 22.75 | 51.72 |
|                     |                      |      | 6    | 0.03  | 0.13  | 0.45  | 2.62  | 7.14  | 22.48 | 50.97 |
|                     |                      |      | 7    | 0.03  | 0.13  | 0.44  | 2.58  | 7.07  | 22.59 | 50.84 |
|                     |                      |      | 8    | 0.03  | 0.13  | 0.44  | 2.57  | 7.04  | 22.53 | 50.63 |
|                     |                      |      | 9    | 0.03  | 0.13  | 0.44  | 2.57  | 7.03  | 22.51 | 50.56 |
|                     |                      |      | 2    | 10    | 0.03  | 0.03  | 0.13  | 0.47  | 2.71  | 7.42  |
|                     |                      | 15   |      | 0.03  | 0.03  | 0.13  | 0.47  | 2.71  | 7.42  | 23.29 |
|                     |                      | 20   |      | 0.03  | 0.03  | 0.13  | 0.47  | 2.71  | 7.42  | 23.29 |
|                     |                      | 25   |      | 0.03  | 0.03  | 0.13  | 0.47  | 2.71  | 7.42  | 23.29 |
|                     |                      | 30   |      | 0.03  | 0.03  | 0.13  | 0.47  | 2.71  | 7.42  | 23.29 |
|                     |                      | 35   |      | 0.03  | 0.03  | 0.13  | 0.47  | 2.71  | 7.42  | 23.29 |
|                     |                      | 40   |      | 0.03  | 0.03  | 0.13  | 0.47  | 2.71  | 7.42  | 23.29 |
|                     |                      | 45   |      | 0.03  | 0.03  | 0.13  | 0.47  | 2.71  | 7.42  | 23.29 |
|                     |                      | 50   |      | 0.03  | 0.03  | 0.13  | 0.44  | 2.57  | 7.03  | 22.51 |
|                     |                      | 60   | 0.03 | 0.03  | 0.13  | 0.44  | 2.57  | 7.03  | 22.51 |       |
| 70                  | 0.03                 | 0.03 | 0.13 | 0.44  | 2.57  | 7.03  | 22.51 |       |       |       |
| 80                  | 0.03                 | 0.03 | 0.13 | 0.44  | 2.57  | 7.03  | 22.51 |       |       |       |
| 90                  | 0.03                 | 0.03 | 0.13 | 0.44  | 2.57  | 7.03  | 22.51 |       |       |       |

ALR系列减速机转动惯量

| 规格                  |                      | 节数 | 减速比    | ALR070 | ALR095 | ALR110 | ALR150 | ALR190 | ALR230 | ALR280 |
|---------------------|----------------------|----|--------|--------|--------|--------|--------|--------|--------|--------|
| 转动惯量 J <sub>1</sub> | kg · cm <sup>2</sup> | 1  | 2~9    | 0.09   | 0.35   | 2.25   | 6.84   | 23.4   | 68.9   | 135.4  |
|                     |                      |    | 10     | -      | 0.07   | 1.87   | 6.25   | 21.8   | 65.6   | 119.8  |
|                     |                      | 2  | 10     | 0.09   | -      | -      | -      | -      | -      | -      |
|                     |                      |    | 15~90  | 0.09   | 0.09   | 0.35   | 2.25   | 6.84   | 23.4   | 68.9   |
|                     |                      |    | 90~180 | -      | -      | 0.31   | 1.87   | 6.25   | 21.8   | 65.6   |

# 减速机订购

## AL 系列

AL070

-

010

-

P1

/

马达

减速机型式:

AL070, AL095, AL110, AL150,  
AL190, AL230, AL280

背隙:

P0: 超精密背隙  
P1: 精密背隙  
P2: 标准背隙

减速比:

单节: 2, 3, 4, 5, 6, 7, 8, 9

双节: 10, 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90

马达型号:

马达制造商及型号

选用范例: **AL070-010-P1 / SIEMENS 1FT6 041-4AF71**

## ALR 系列

ALR070

-

010

-

P1

/

马达

减速机型式:

ALR070, ALR095, ALR110, ALR150,  
ALR190, ALR230, ALR280

背隙:

P0: 超精密背隙  
P1: 精密背隙  
P2: 标准背隙

减速比:

1 Stage: 2, 3, 4, 5, 6, 7, 8, 9, 10

2 Stage: 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90,  
100, 120, 140, 160, 180

马达型号:

马达制造商及型号

选用范例: **ALR070-010-P1 / SIEMENS 1FT5 034-OAK71**

■ 最新数据资料, 请浏览公司网站。



**济南元田精密机械有限公司**  
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