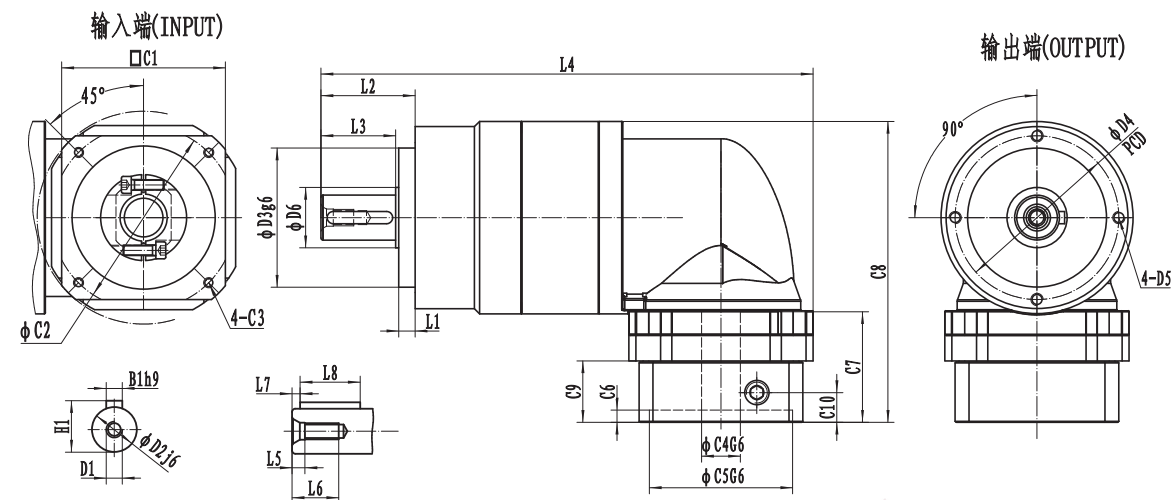




# DIMENSION

## DOUBLE SECTION

- 尺寸 ( 双节, 减速比  $i=15\sim200$  )  
Dimension(double stage,Ratio  $i=15\sim200$ )

| 尺寸/Dimension | MAER050 | MAER070 | MAER090 | MAER120 | MAER155 | MAER205 |
|--------------|---------|---------|---------|---------|---------|---------|
| D1           | -       | M5      | M8      | M12     | M16     | -       |
| D2           | -       | 16      | 22      | 32      | 40      | -       |
| D3           | -       | 52      | 68      | 90      | 120     | -       |
| D4           | -       | 62      | 80      | 108     | 140     | -       |
| D5           | -       | M5      | M6      | M8      | M10     | -       |
| D6           | -       | 17.5    | 29.5    | 39.5    | 49.5    | -       |
| L1           | -       | 6.5     | 8       | 17      | 15      | -       |
| L2           | -       | 36      | 46      | 70      | 97      | -       |
| L3           | -       | 28.5    | 36.5    | 51      | 79      | -       |
| L4           | -       | 181.5   | 240.5   | 290     | 431     | -       |
| L5           | -       | 4       | 6       | 10      | 16      | -       |
| L6           | -       | 13      | 20      | 18      | 36      | -       |
| L7           | -       | 3       | 3       | 5       | 5       | -       |
| L8           | -       | 25.3    | 32      | 40      | 63      | -       |
| C1           | -       | 60      | 80      | 130     | 180     | -       |
| C2           | -       | 70      | 90      | 145     | 200     | -       |
| C3           | -       | M4      | M5      | M8      | M12     | -       |
| C4G6         | -       | 14      | 19      | 24      | 35      | -       |
| C5G6         | -       | 50      | 70      | 110     | 114.3   | -       |
| C6           | -       | 3.5     | 6       | 11.5    | 19      | -       |
| C7           | -       | 35      | 54      | 67      | 81      | -       |
| C8           | -       | 105     | 147     | 178     | 253     | -       |
| C9           | -       | 24.2    | 29.5    | 42.5    | 57      | -       |
| C10          | -       | 9.5     | 14.5    | 27      | 32      | -       |
| B1           | -       | 5       | 6       | 10      | 12      | -       |
| H1           | -       | 18      | 24.5    | 35      | 43      | -       |



# MPFR

## Series Planetary Gearbox

### 系列行星减速机

## PRODUCT FEATURESS

### 产品特点

- ☆ 行星臂架与输出轴采用一体式结构设计，确保最大的扭转刚性。
- ☆ 行星轮采用满滚针设计，增加接触面积以提高结构刚性与输出扭矩。
- ☆ 齿轮采用低碳钢表面渗碳淬火到HRC62，以获得最佳的耐磨及冲击韧性。
- ☆ 齿形引用国外进口软件辅助设计，以获得最佳的齿形降低噪音。
- ☆ 输入端与马达轴连接采用双边抱紧方式，以获取最大的夹紧力和零背隙的动力传递。
- ☆ 采用蜗线伞齿轮设计，容许输出扭矩高、比直伞齿轮高30%以上。
- ☆ 高容许输入转速，比直伞齿轮输入高8倍以上。
- ☆ 蜗线伞齿轮的啮合齿印，经最佳优化设计，接触齿面负载均一，运转寿命长。
- ☆ 蜗线伞齿轮啮合，经最佳运动误差分析与严格的制程控制，以确保高精度的运转背隙。
- ☆ Planetary boom and output shaft are intergrated structure designed to ensure maximum torsional rigidity.
- ☆ Planetary wheel with full needle design,increase the contact area to improve the rigidity and output torque.
- ☆ The gears are carburized and quenched to the HRC62 with low carbon steel surface for optimum wear and impact toughness.
- ☆ Gears refer to foreign imported software-assisted design to obtain the best tooth shape to reduce noise.
- ☆ The input terminal is connected to the motor shaft in a double-tight manner to obtain the maximum clamping force and zero backlash power transmission.
- ☆ Adopt spiral bevel gear design, allow high output torque, more than 30% higher than straight bevel gear.
- ☆ High tolerance input speed, more than 8 times higher than straight bevel gear input.
- ☆ The meshing tooth imprint of spiral bevel gear has been optimized by optimum design, and the contact tooth surface load is uniform, and long running life.
- ☆ Cochlear bevel gears are meshed by optimum motion error analysis and strict process control to ensure high precision running back clearance.

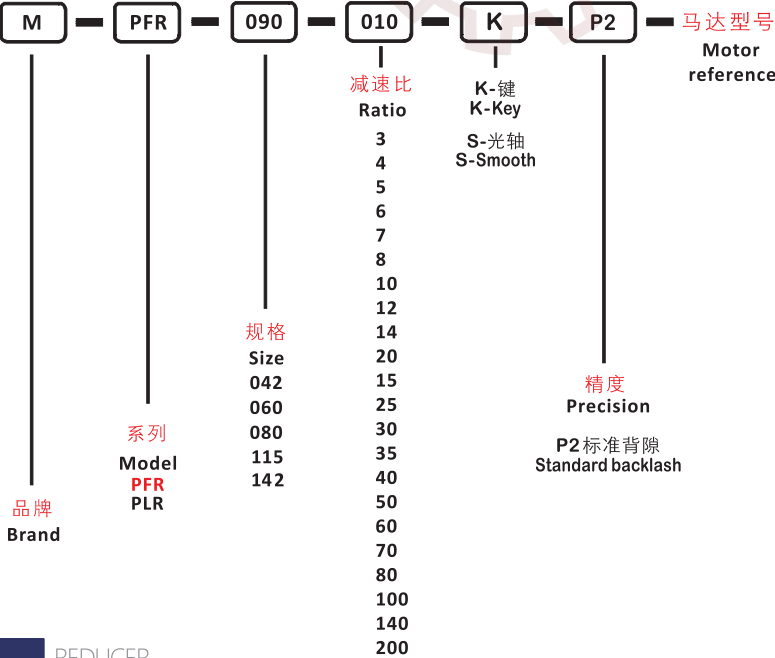
PLANETARY GEARBOX

减速机性能资料/Performance

| 规格<br>Specification                                              | 单位<br>Unit | 节数<br>Stage | 减速比<br>Ratio | MPFR042                             | MPFR060 | MPFR080 | MPFR115 | MPFR142 |
|------------------------------------------------------------------|------------|-------------|--------------|-------------------------------------|---------|---------|---------|---------|
| 额定输出力矩<br>Rated output torque T <sub>2N</sub>                    | Nm         | 1           | 3            | 8                                   | 18      | 40      | 125     | 290     |
|                                                                  |            |             | 4            | 18                                  | 36      | 90      | 230     | 460     |
|                                                                  |            |             | 5            | 16                                  | 40      | 110     | 260     | 550     |
|                                                                  |            |             | 6            | 8                                   | 20      | 40      | 90      | 340     |
|                                                                  |            |             | 7            | 8                                   | 20      | 40      | 90      | 340     |
|                                                                  |            |             | 8            | 5                                   | 36      | 90      | 230     | 460     |
|                                                                  |            |             | 10           | 5                                   | 40      | 110     | 260     | 550     |
|                                                                  |            |             | 12           | 8                                   | 20      | 40      | 90      | 340     |
|                                                                  |            |             | 14           | 8                                   | 20      | 40      | 90      | 340     |
|                                                                  |            |             | 20           | 18                                  | 12      | 22      | 70      | 210     |
|                                                                  |            | 2           | 15           | 16                                  | 40      | 110     | 260     | 550     |
|                                                                  |            |             | 25           | 16                                  | 40      | 110     | 260     | 550     |
|                                                                  |            |             | 30           | 16                                  | 18      | 40      | 125     | 290     |
|                                                                  |            |             | 35           | 16                                  | 40      | 110     | 260     | 550     |
|                                                                  |            |             | 40           | 16                                  | 36      | 90      | 230     | 460     |
|                                                                  |            |             | 50           | 16                                  | 40      | 110     | 260     | 550     |
|                                                                  |            |             | 60           | 16                                  | 20      | 40      | 90      | 340     |
|                                                                  |            |             | 70           | 16                                  | 20      | 40      | 90      | 340     |
|                                                                  |            |             | 80           | 16                                  | 36      | 90      | 230     | 460     |
|                                                                  |            |             | 100          | 16                                  | 40      | 110     | 260     | 550     |
|                                                                  |            |             | 140          | 8                                   | 20      | 40      | 90      | 340     |
|                                                                  |            |             | 200          | 5                                   | 12      | 22      | 70      | 210     |
| 急停扭矩/Emergency stop torque T <sub>2NOT</sub>                     | Nm         | 1,2         | 3~200        | 二倍额定输出力矩/Double rated output torque |         |         |         |         |
| 额定输入转速/Rated input speed n <sub>1N</sub>                         | rpm        | 1,2         | 3~200        | 4500                                | 4000    | 3500    | 3500    | 3000    |
| 最大输入转速/Maximum input speed n <sub>1B</sub>                       | rpm        | 1,2         | 3~200        | 10000                               | 8000    | 6000    | 6000    | 4500    |
| 标准背隙/Standard backlash P2                                        | arcmin     | 1           | 3~20         | ≤22                                 | ≤16     | ≤10     | ≤10     | ≤10     |
|                                                                  |            | 2           | 15~200       | ≤26                                 | ≤18     | ≤12     | ≤12     | ≤12     |
| 扭转刚性/Torsional rigidity                                          | Nm/arcmin  | 1,2         | 3~200        | 0.65                                | 1.8     | 4.7     | 11      | 35      |
| 容许径向力/Allowable radial force F <sub>2aB</sub>                    | N          | 1,2         | 3~200        | 165                                 | 240     | 400     | 1240    | 3700    |
| 容许轴向力/Allowable axial force F <sub>2aB</sub>                     | N          | 1,2         | 3~200        | 135                                 | 220     | 420     | 1000    | 3500    |
| 使用寿命/Lifespan                                                    | hr         | 1,2         | 3~200        | 20000 *                             |         |         |         |         |
| 效率/Efficiency                                                    | %          | 1           | 3~20         | 96%                                 |         |         |         |         |
|                                                                  |            | 2           | 25~200       | 94%                                 |         |         |         |         |
| 重量/Weight                                                        | kg         | 1           | 3~20         | 0.3                                 | 0.85    | 2       | 6       | 11      |
|                                                                  |            | 2           | 25~200       | 0.4                                 | 0.9     | 2.3     | 7.5     | 13      |
| 使用温度/Working temperature                                         | ℃          | 1,2         | 3~200        | (-10° C +90° C )                    |         |         |         |         |
| 润滑/Lubricating                                                   |            |             |              | 合成润滑脂/Synthetic lubricating grease  |         |         |         |         |
| 防护等级/IP Grade                                                    |            | 1,2         | 3~200        | IP65                                |         |         |         |         |
| 安装方向/Installation direction                                      |            | 1,2         | 3~200        | 任意方向/In any direction               |         |         |         |         |
| 噪音值(n <sub>1</sub> =3000, 无负载)<br>Noise level ( 1=3000 off load) | dB(A)      | 1,2         | 3~200        | ≤60                                 | ≤60     | ≤63     | ≤68     | ≤75     |

INDICATION FOR MODEL  
SELECTION

机种型号表示



GENERAL NOTICES

订货须知

- 机种、型号、扭矩
- 减速比或出力轴转速
- 工况及连接方式
- 数量及安装的机械名称
- 入力方式和入力转速
- 马达厂牌型号或法兰及马达轴尺寸
- Type, model and torque
- Ratio or output speed
- Working conditions and connection methods
- Quantity and installed machine name
- Input mode and input speed
- Motor brand model or flange and motor shaft size

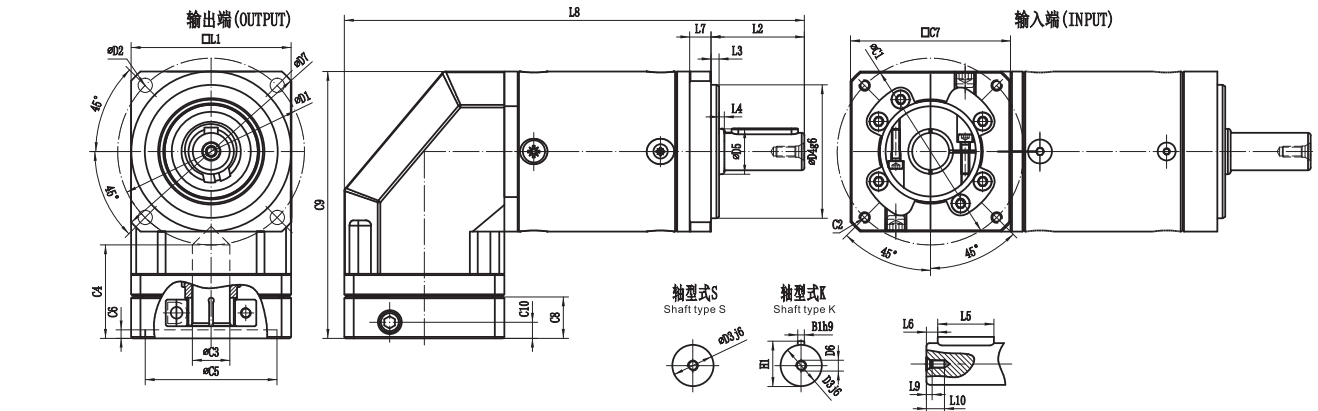
● 减速机转动惯量/Rotational inertia

| 规格<br>Specification             | 单位<br>Unit | 节数<br>Stage | 减速比<br>Ratio | MPFR042 | MPFR060 | MPFR080 | MPFR115 | MPFR142 |
|---------------------------------|------------|-------------|--------------|---------|---------|---------|---------|---------|
| 转动惯量J1<br>Rotational inertia J1 | kg.cm²     | 1           | 3~10         | 0.03    | 0.135   | 0.75    | 2.5     | 5.8     |
|                                 |            |             | 12、14        | 0.03    | 0.09    | 0.45    | 1.3     | 1.9     |
|                                 |            |             | 20           | 0.03    | 0.09    | 0.39    | 1.2     | 2.73    |
|                                 |            | 2           | 15           | 0.015   | 0.09    | 0.45    | 2.4     | 3.3     |
|                                 |            |             | 25~100       | 0.01    | 0.035   | 0.2     | 1.4     | 2.3     |
|                                 |            |             | 120~200      | 0.005   | 0.035   | 0.18    | 1.3     | 2.1     |

DIMENSION  
SINGLE SECTION

● 尺寸 (单节, 减速比*i*=3~20) Dimension(single stage,Ratio *i*=3~20)

| 尺寸/Dimension | MPFR042 | MPFR060 | MPFR080 | MPFR115 | MPFR142 |
|--------------|---------|---------|---------|---------|---------|
| D1           | -       | 70      | 100     | 130     | 185     |
| D2           | -       | 5.5     | 6.5     | 8.8     | 11      |
| D3           | -       | 14      | 20      | 25      | 40      |
| D4           | -       | 50      | 80      | 110     | 130     |
| D5           | -       | 17      | 25      | 35      | 55      |
| D6           | -       | M5      | M6      | M10     | M12     |
| D7           | -       | 80      | 120     | 160     | 230     |
| L1           | -       | 60      | 90      | 120     | 176     |
| L2           | -       | 35      | 40      | 55      | 87      |
| L3           | -       | 3       | 3       | 4       | 5       |
| L4           | -       | 2       | 1       | 1       | 2       |
| L5           | -       | 25      | 25      | 40      | 65      |
| L6           | -       | 2.5     | 5       | 5       | 5       |
| L7           | -       | 8       | 10      | 14      | 15      |
| L8           | -       | 153.5   | 204     | 288     | 340.5   |
| L9           | -       | 4.8     | 5       | 7.5     | 9.5     |
| L10          | -       | 12      | 18      | 23      | 25      |
| C1           | -       | 70      | 90      | 145     | 200     |
| C2           | -       | M4      | M5      | M8      | M12     |
| C3           | -       | 6~14    | 14~19   | 16~24   | 22~35   |
| C4           | -       | 35      | 54      | 81      | 81      |
| C5           | -       | 50      | 70      | 110     | 114.3   |
| C6           | -       | 3.5     | 6       | 14      | 19      |
| C7           | -       | 60      | 80      | 130     | 180     |
| C8           | -       | 16      | 30      | 45.5    | 57.5    |
| C9           | -       | 100     | 137     | 192     | 246.5   |
| C10          | -       | 9.5     | 14.5    | 27      | 32      |
| B1h9         | -       | 5       | 6       | 8       | 12      |
| H1           | -       | 16      | 22.5    | 28      | 43      |



DIMENSION  
DOUBLE SECTION

● 尺寸 (双节, 减速比*i*=15~200)  
Dimension(double stage,Ratio *i*=15~200)

| 尺寸/Dimension | MPFR042 | MPFR060 | MPFR080 | MPFR115 | MPFR142 |
|--------------|---------|---------|---------|---------|---------|
| D1           | -       | 70      | 100     | 130     | 185     |
| D2           | -       | 5.5     | 6.5     | 8.8     | 11      |
| D3           | -       | 14      | 20      | 25      | 32      |
| D4           | -       | 50      | 80      | 110     | 130     |
| D5           | -       | 17      | 25      | 35      | 40      |
| D6           | -       | M5      | M6      | M10     | M12     |
| D7           | -       | 80      | 120     | 160     | 230     |
| L1           | -       | 60      | 90      | 120     | 176     |
| L2           | -       | 35      | 40      | 55      | 87      |
| L3           | -       | 3       | 3       | 4       | 5       |
| L4           | -       | 2       | 1       | 1       | 2       |
| L5           | -       | 25      | 25      | 40      | 65      |
| L6           | -       | 2.5     | 4       | 5       | 5       |
| L7           | -       | 8       | 10      | 14      | 15      |
| L8           | -       | 172.5   | 228.5   | 288     | 388.5   |
| L9           | -       | 4.8     | 5       | 7.5     | 9.5     |
| L10          | -       | 12      | 18      | 23      | 25      |
| C1           | -       | 70      | 90      | 145     | 200     |
| C2           | -       | M4      | M5      | M8      | M12     |
| C3           | -       | 6~14    | 14~19   | 16~24   | 22~35   |
| C4           | -       | 35      | 54      | 81      | 81      |
| C5           | -       | 50      | 70      | 110     | 114.3   |
| C6           | -       | 3.5     | 6       | 14      | 19      |
| C7           | -       | 60      | 80      | 130     | 180     |
| C8           | -       | 16      | 30      | 45.5    | 57.5    |
| C9           | -       | 100     | 137     | 192     | 246.5   |
| C10          | -       | 9.5     | 14.5    | 27      | 32      |
| B1h9         | -       | 5       | 6       | 8       | 12      |
| H1           | -       | 16      | 22.5    | 28      | 43      |