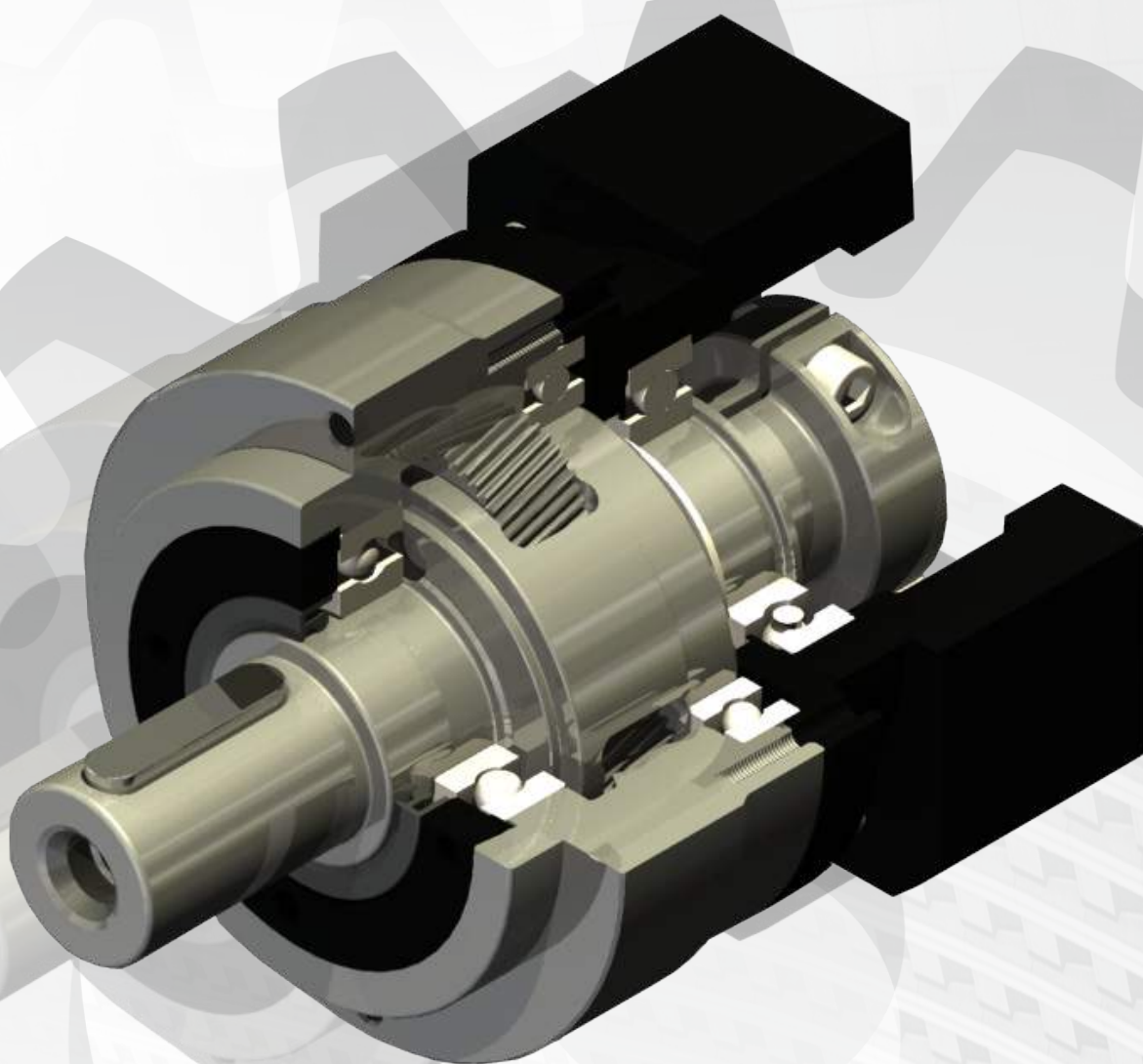




**DRIVE  
TECHNIQUE**

**DAE Series**

Precision Planetary Gearbox Helical Gear



# DAE Series

## Precision Planetary Helical Gear



- Low backlash
- Ultra-quiet
- High efficiency
- Long life

### ORDERING CODE

D AE 050 010 S1 P2  
1 2 3 4 5 6

1 Drive Technique mark

2 AE: Type of gearbox

3 Size: 050 070 090 120 155 205 235

*Note: size 235 in development, on request*

4 Ratio: 3.....100

5 Output shaft: S1 Smooth  
S2 Key

6 Backlash: P0 Precision  
P1 Reduced  
P2 Standard

### PRODUCT FEATURES

- Precision helical gearing, small, compact, high-precision, ensuring long life and ultra-low noise
- Fully sealed structure to ensure that grease does not leak, maintenance-free
- Products have passed the test system efficiency, transmission efficiency up to 97%

# DAE Series

## Precision Planetary Helical Gear

### PERFORMANCE TABLE

|                         | Unit      | Stages | Reduction ratio (i) | DAE050                    | DAE070 | DAE090 | DAE120 | DAE155 | DAE205 | DAE235 |
|-------------------------|-----------|--------|---------------------|---------------------------|--------|--------|--------|--------|--------|--------|
| Rated output torque     | Nm        | 1 (L1) | 3                   | 20                        | 55     | 130    | 208    | 342    | 588    | 1140   |
|                         |           |        | 4                   | 19                        | 50     | 140    | 290    | 542    | 1050   | 1700   |
|                         |           |        | 5                   | 22                        | 60     | 160    | 330    | 650    | 1200   | 2000   |
|                         |           |        | 6                   | 20                        | 55     | 150    | 310    | 600    | 1100   | 1900   |
|                         |           |        | 7                   | 19                        | 50     | 140    | 300    | 550    | 1100   | 1800   |
|                         |           |        | 8                   | 17                        | 45     | 120    | 260    | 500    | 1000   | 1600   |
|                         |           |        | 10                  | 14                        | 40     | 100    | 230    | 450    | 900    | 1500   |
|                         |           | 2 (L2) | 15                  | 20                        | 55     | 130    | 208    | 342    | 588    | 1140   |
|                         |           |        | 20                  | 19                        | 50     | 140    | 290    | 542    | 1050   | 1700   |
|                         |           |        | 25                  | 22                        | 60     | 160    | 330    | 650    | 1200   | 2000   |
|                         |           |        | 30                  | 20                        | 55     | 150    | 310    | 600    | 1100   | 1900   |
|                         |           |        | 35                  | 19                        | 50     | 140    | 300    | 550    | 1100   | 1800   |
|                         |           |        | 40                  | 17                        | 45     | 120    | 260    | 500    | 1000   | 1600   |
|                         |           |        | 50                  | 22                        | 60     | 160    | 330    | 650    | 1200   | 2000   |
|                         |           |        | 60                  | 20                        | 55     | 150    | 310    | 600    | 1100   | 1900   |
|                         |           |        | 70                  | 19                        | 50     | 140    | 300    | 550    | 1100   | 1800   |
|                         |           |        | 80                  | 17                        | 45     | 120    | 260    | 500    | 1000   | 1600   |
|                         |           |        | 100                 | 14                        | 40     | 100    | 230    | 450    | 900    | 1500   |
| Acceleration torque     | Nm        | 1,2    | 3 ~100              | 180% of the rated torque  |        |        |        |        |        |        |
| Emergency stop torque   | Nm        | 1,2    | 3 ~100              | 300% of the rated torque  |        |        |        |        |        |        |
| Rated input speed       | rpm       | 1,2    | 3 ~100              | 5000                      | 5000   | 4000   | 4000   | 3000   | 3000   | 2000   |
| Max input speed         | rpm       | 1,2    | 3 ~100              | 10000                     | 10000  | 8000   | 8000   | 6000   | 6000   | 4000   |
| Backlash P0 (precision) | arcmin    | 1      | 3 ~10               | —                         | ≤2     | ≤2     | ≤2     | ≤2     | ≤2     | ≤2     |
|                         |           | 2      | 15 ~10              | —                         | —      | —      | —      | —      | —      | —      |
| Backlash P1 (reduced)   | arcmin    | 1      | 3 ~10               | —                         | ≤3     | ≤3     | ≤3     | ≤3     | ≤3     | ≤3     |
|                         |           | 2      | 15 ~100             | —                         | ≤5     | ≤5     | ≤5     | ≤5     | ≤5     | ≤5     |
| Backlash P2 (standard)  | arcmin    | 1      | 3 ~10               | ≤5                        | ≤5     | ≤5     | ≤5     | ≤5     | ≤5     | ≤5     |
|                         |           | 2      | 15 ~100             | ≤8                        | ≤8     | ≤8     | ≤8     | ≤8     | ≤8     | ≤8     |
| Torsional rigidity      | Nm/arcmin | 1,2    | 3 ~100              | 3                         | 7      | 14     | 25     | 50     | 145    | 225    |
| Radial load             | N         | 1,2    | 3 ~100              | 780                       | 1530   | 3250   | 6700   | 9400   | 14500  | 50000  |
| Axial load              | N         | 1,2    | 3 ~100              | 390                       | 765    | 1625   | 3350   | 4700   | 7250   | 25000  |
| Ef                      | %         | 1      | 3 ~10               | ≥97%                      |        |        |        |        |        |        |
|                         |           | 2      | 15 ~100             | ≥94%                      |        |        |        |        |        |        |
| Weight                  | kg        | 1      | 3 ~10               | 0.6                       | 1.4    | 3.7    | 8      | 16     | 36     | 53     |
|                         |           | 2      | 15 ~100             | 0.7                       | 1.6    | 4.2    | 8.9    | 17     | 37     | 54     |
| Temperature             | °C        | 1,2    | 3 ~100              | -10 °C ~ 90 °C            |        |        |        |        |        |        |
| Protection class        |           | 1,2    | 3 ~100              | IP65                      |        |        |        |        |        |        |
| Lubrication             |           | 1,2    | 3 ~100              | Full synthetic lubricants |        |        |        |        |        |        |
| Noise                   | dB(A)     | 1,2    | 3 ~100              | ≤56                       | ≤58    | ≤60    | ≤63    | ≤65    | ≤67    | ≤70    |

# DAE Series

## Precision Planetary Helical Gear

**PERFORMANCE TABLE MASS MOMENT OF INERTIA**  
(related to input)

|               | Unit                 | Stages    | Reduction ratio (i) | DAE050 | DAE070 | DAE090 | DAE120 | DAE155 | DAE205 | DAE235 |
|---------------|----------------------|-----------|---------------------|--------|--------|--------|--------|--------|--------|--------|
| Inertia $J_1$ | kg * cm <sup>2</sup> | 1<br>(L1) | 3                   | 0.03   | 0.16   | 0.61   | 3.25   | 9.21   | 28.98  | 69.61  |
|               |                      |           | 4                   | 0.03   | 0.14   | 0.48   | 2.74   | 7.54   | 23.67  | 54.37  |
|               |                      |           | 5                   | 0.03   | 0.13   | 0.47   | 2.71   | 7.42   | 23.29  | 53.27  |
|               |                      |           | 6                   | 0.03   | 0.13   | 0.45   | 2.65   | 7.25   | 22.75  | 51.72  |
|               |                      |           | 7                   | 0.03   | 0.13   | 0.45   | 2.62   | 7.14   | 22.48  | 50.97  |
|               |                      |           | 8                   | 0.03   | 0.13   | 0.44   | 2.58   | 7.07   | 22.59  | 50.84  |
|               |                      |           | 10                  | 0.03   | 0.13   | 0.44   | 2.57   | 7.03   | 22.51  | 50.56  |
|               |                      | 2<br>(L2) | 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  |
|               |                      |           | 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  |
|               |                      |           | 100                 | 0.03   | 0.03   | 0.13   | 0.44   | 2.57   | 7.03   | 22.51  |



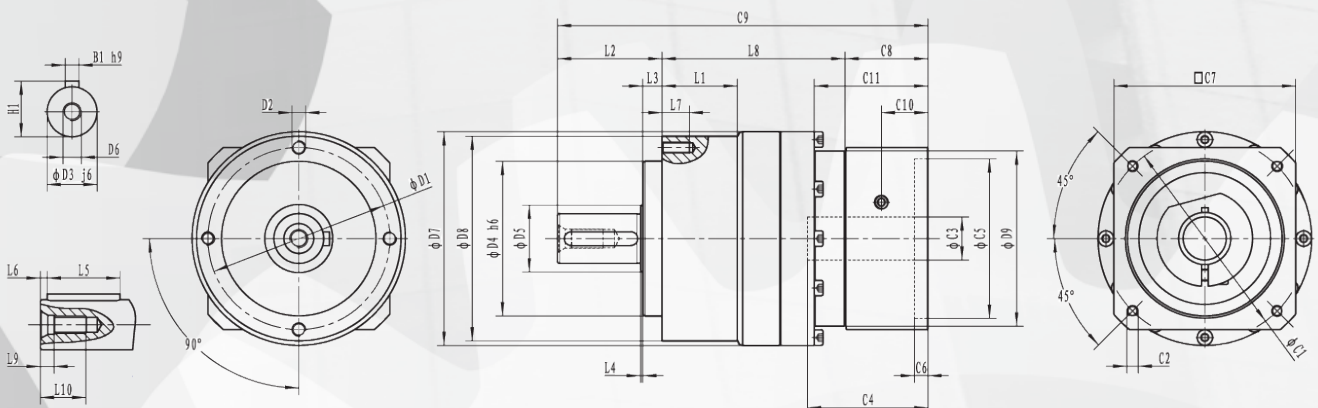
# DAE Series

## Precision Planetary Helical Gear

### DIMENSIONS: 1 – STAGE (L1)

| Size  | DAE050  | DAE070  | DAE090   | DAE120    | DAE155    | DAE205    | DAE235    |
|-------|---------|---------|----------|-----------|-----------|-----------|-----------|
| D1    | 44      | 62      | 80       | 108       | 140       | 184       | 210       |
| D2    | M4*0.7P | M5*0.8P | M6*1.0P  | M8*1.25P  | M10*1.5P  | M12*1.75P | M16*2.0P  |
| D3 j6 | 12      | 16      | 22       | 32        | 40        | 55        | 75        |
| D4 g6 | 35      | 52      | 68       | 90        | 120       | 160       | 180       |
| D5    | 14.5    | 18      | 30       | 40        | 50        | 70        | 85        |
| D6    | M4*0.7P | M5*0.8P | M8*1.25P | M12*1.75P | M16*2.0P  | M20*2.5P  | M20*2.5P  |
| D7    | 53      | 64      | 94       | 125       | 150       | 200       | 225       |
| D8    | 50      | 70      | 90       | 120       | 155       | 205       | 235       |
| D9    | 40      | 51      | 77       | 98        | 125       | 160       | 190       |
| L1    | 13.5    | 20.5    | 33.5     | 38        | 50        | 52        | 63        |
| L2    | 24.5    | 36      | 46       | 70        | 97        | 100       | 126       |
| L3    | 4       | 6.5     | 8.5      | 17.5      | 15        | 15        | 18        |
| L4    | 1       | 1       | 1        | 1.5       | 3         | 3         | 3         |
| L5    | 14      | 25      | 32       | 40        | 63        | 70        | 90        |
| L6    | 2       | 2       | 3        | 5         | 5         | 6         | 7         |
| L7    | 8       | 10      | 12       | 16        | 20        | 22        | 28        |
| L8    | 46      | 63.5    | 80.5     | 97        | 124.5     | 136.5     | 164.5     |
| L9    | 2.1     | 4.8     | 7.2      | 10        | 12        | 15        | 15        |
| L10   | 10      | 12.5    | 19       | 28        | 36        | 42        | 42        |
| C1*   | 46      | 70      | 90       | 145       | 200       | 200       | 235       |
| C2*   | M4*0.7P | M5*0.8P | M5*0.8P  | M8*1.25P  | M12*1.75P | M12*1.75P | M12*1.75P |
| C3*   | ≤5/≤8   | ≤14/≤16 | ≤19/≤24  | ≤28       | ≤35/≤42   | ≤42       | ≤42/≤55   |
| C4*   | 26      | 35      | 46.5     | 67        | 81        | 114       | 117       |
| C5*   | 30      | 50      | 70       | 110       | 114.3     | 114.3     | 200       |
| C6*   | 3.5     | 3.5     | 6        | 14        | 19        | 30        | 20        |
| C7*   | 48      | 60      | 80       | 130       | 180       | 180       | 220       |
| C8*   | 16      | 46      | 30       | 45.5      | 57.5      | 81.5      | 87.5      |
| C9*   | 86      | 122.5   | 156.5    | 212.5     | 279       | 318       | 377       |
| C10*  | 10.7    | 10.5    | 14.5     | 25.5      | 32        | 43.5      | 49.5      |
| C11*  | 25.5    | 36.5    | 43.5     | 65.5      | 83        | 111       | 116.5     |
| B1 h9 | 4       | 5       | 6        | 10        | 12        | 16        | 20        |
| H1    | 13.5    | 18      | 24.5     | 35        | 43        | 59        | 79.5      |

\*Motor specific dimensions. Mounting of different motors possible – please contact us.



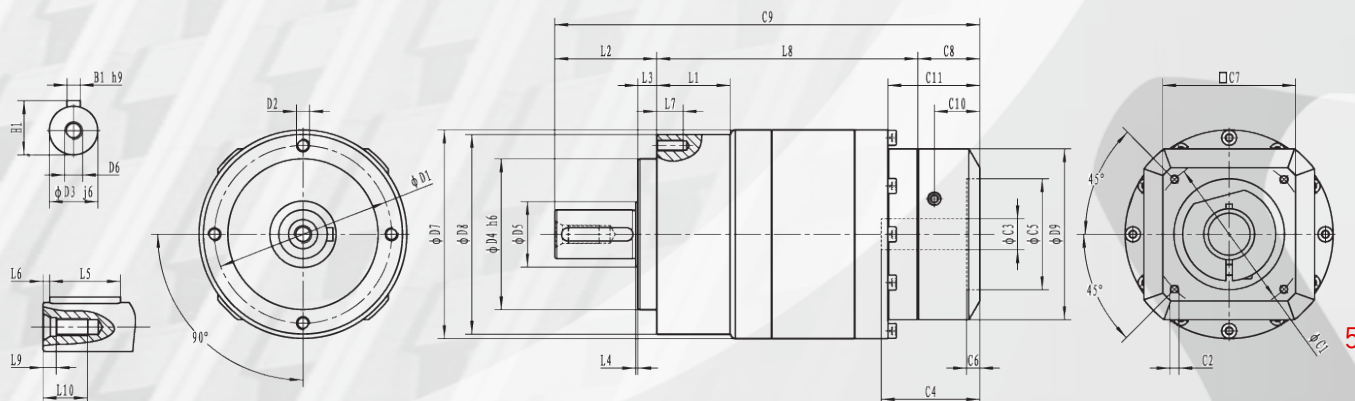
# DAE Series

## Precision Planetary Helical Gear

### DIMENSIONS: 2 – STAGE (L2)

| Size  | DAE050  | DAE070   | DAE090   | DAE120    | DAE155    | DAE205    | DAE235    |
|-------|---------|----------|----------|-----------|-----------|-----------|-----------|
| D1    | 44      | 62       | 80       | 108       | 140       | 184       | 210       |
| D2    | M4*0.7P | M5*0.8P  | M6*1.0P  | M8*1.25P  | M10*1.5P  | M12*1.75P | M16*2.0P  |
| D3 j6 | 12      | 16       | 22       | 32        | 40        | 55        | 75        |
| D4 g6 | 35      | 52       | 68       | 90        | 120       | 160       | 180       |
| D5    | 14.5    | 18       | 30       | 40        | 50        | 70        | 85        |
| D6    | M4*0.7P | M5*0.8P  | M8*1.25P | M12*1.75P | M16*2.0P  | M20*2.5P  | M20*2.5P  |
| D7    | 53      | 64       | 94       | 125       | 150       | 200       | 225       |
| D8    | 50      | 70       | 90       | 120       | 155       | 205       | 235       |
| D9    | 40      | 51       | 77       | 98        | 125       | 160       | 190       |
| L1    | 13.5    | 20.5     | 33.5     | 38        | 50        | 52        | 63        |
| L2    | 24.5    | 36       | 46       | 70        | 97        | 100       | 126       |
| L3    | 4       | 6.5      | 8.5      | 17.5      | 15        | 15        | 18        |
| L4    | 1       | 1        | 1        | 1.5       | 3         | 3         | 3         |
| L5    | 14      | 25       | 32       | 40        | 63        | 70        | 90        |
| L6    | 2       | 2        | 3        | 5         | 5         | 6         | 7         |
| L7    | 8       | 10       | 12       | 16        | 20        | 22        | 28        |
| L8    | 67      | 95.5     | 118      | 142       | 185.5     | 205       | 240.5     |
| L9    | 2.1     | 4.8      | 7.2      | 10        | 12        | 15        | 15        |
| L10   | 10      | 12.5     | 19       | 28        | 36        | 42        | 42        |
| C1*   | 46      | 70       | 90       | 145       | 145       | 200       | 200       |
| C2*   | M4*0.7P | M5*0.8P  | M5*0.8P  | M8*1.25P  | M12*1.75P | M12*1.75P | M12*1.75P |
| C3*   | ≤5/ ≤8  | ≤14/ ≤16 | ≤16/ ≤19 | ≤19/ ≤24  | ≤24/ ≤28  | ≤35       | ≤42       |
| C4*   | 26      | 35       | 46.5     | 67        | 66        | 80        | 114       |
| C5*   | 30      | 50       | 70       | 110       | 110       | 114.3     | 114.3     |
| C6*   | 3.5     | 3.5      | 6        | 14        | 10        | 9         | 24        |
| C7*   | 48      | 60       | 80       | 130       | 130       | 180       | 180       |
| C8*   | 16      | 48       | 30       | 45.5      | 42.5      | 47.5      | 81.5      |
| C9*   | 107     | 154.5    | 194      | 257.5     | 325       | 352.5     | 441.5     |
| C10*  | 10.7    | 10.5     | 14.5     | 25.5      | 27        | 22.5      | 43.5      |
| C11*  | 25.5    | 36.5     | 41.5     | 65.5      | 68        | 77        | 111       |
| B1 h9 | 4       | 5        | 6        | 10        | 12        | 16        | 20        |
| H1    | 13.5    | 18       | 24.5     | 35        | 43        | 59        | 79.5      |

\*Motor specific dimensions. Mounting of different motors possible – please contact us.



# Drive Technique

Delivery program

|                                                                                     |                                                                                      |                                                                                       |
|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| DVRB                                                                                | DAE                                                                                  | DAB                                                                                   |
|    |     |    |
| DVRBR                                                                               | DAER                                                                                 | DABR                                                                                  |
|    |    |    |
| DAD                                                                                 | DPF                                                                                  | DPL                                                                                   |
|   |   |   |
| DADR                                                                                | DPFR                                                                                 | DPLR                                                                                  |
|  |  |  |



**DRIVE  
TECHNIQUE**

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