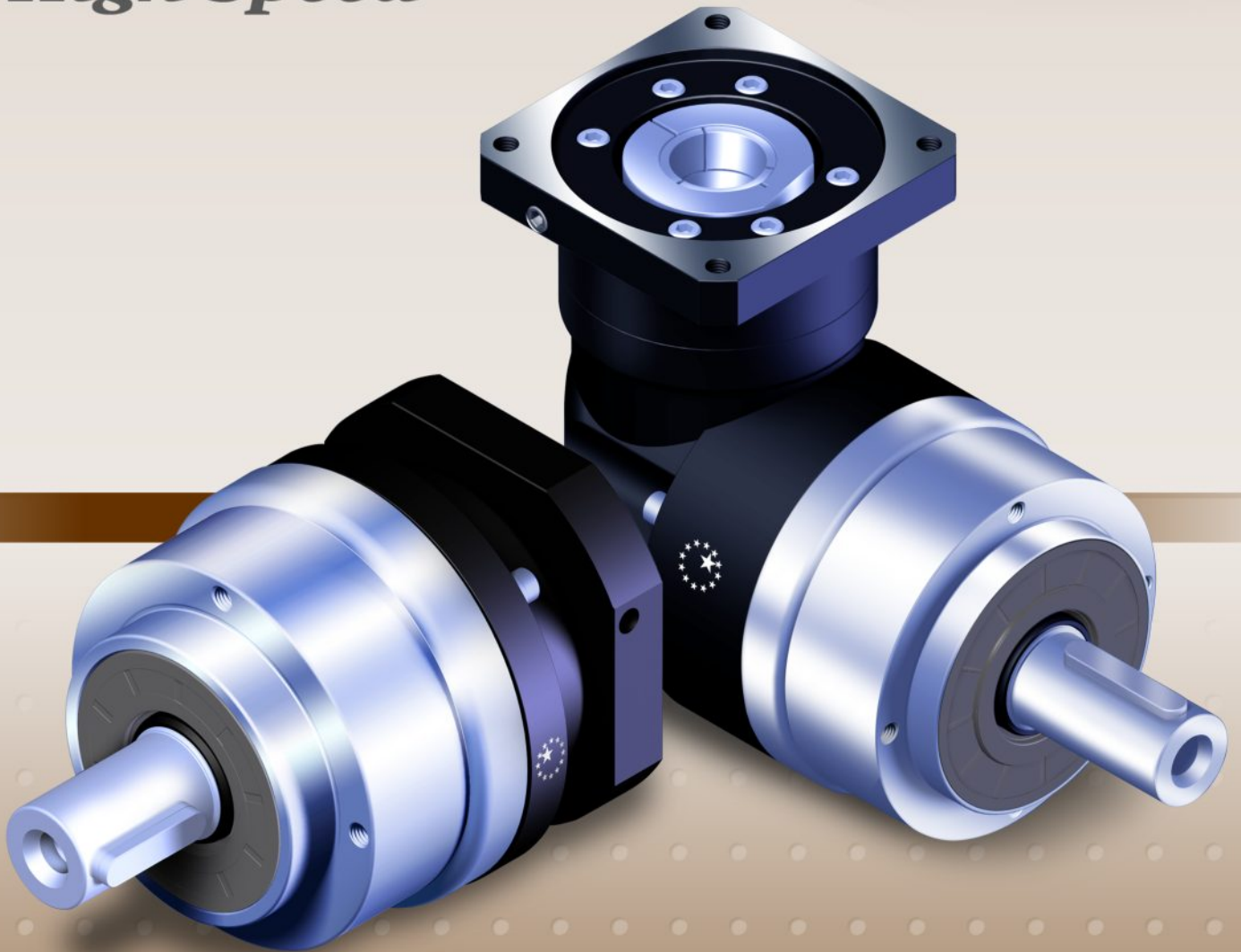




APEX DYNAMICS, INC.

AE / AER Series

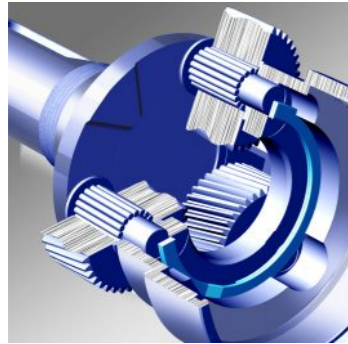
*Planetary Gearboxes
High Precision
High Speed*



Stainless

AE / AER Series

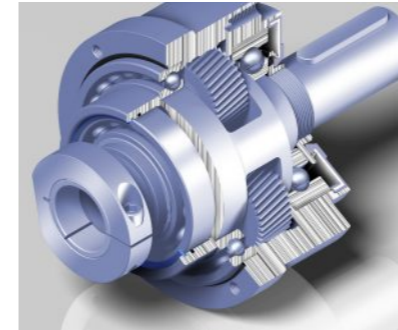
Characteristic Highlights



Equipped with **solid uncaged needle roller bearings**, provides maximum contact points to increase stiffness and transmit high output torque.



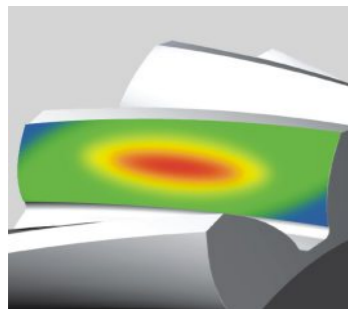
True helical gear design
Precision helical gearing increases tooth to tooth contact ratio by over 33% vs spur gearing. The helix angle produces smooth and quiet operation with decreased backlash (less than 8 arc-minutes and $\leq 56\text{dB}$).



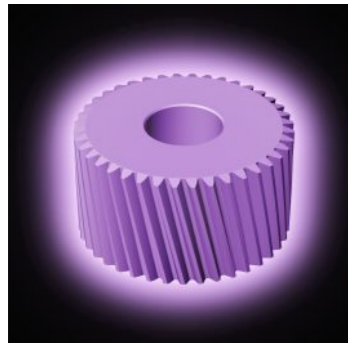
Patented planet carrier design puts the sun gear bearing directly into the planet carrier. It minimizes gear misalignment to gain higher accuracy.



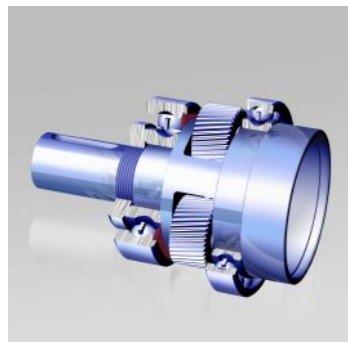
Triple split collet with dynamic balanced set collar clamping system provides backlash free power transmission and eliminates slippage. 100% concentricity allows for smooth rotation and higher input speed capability.



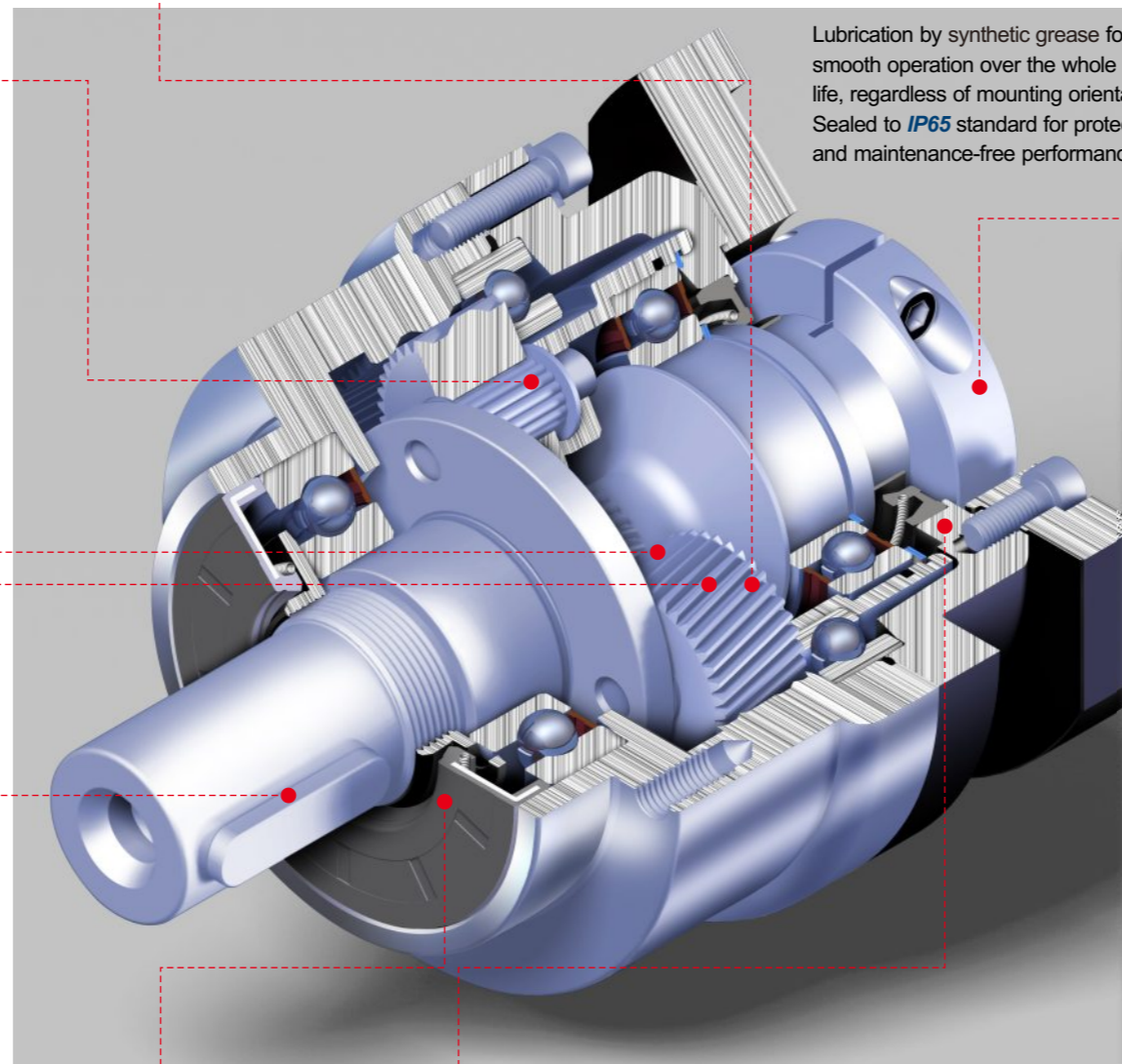
A high setting gear performance is achieved by using our **HeliTopo technology**. This **eases off the tooth profile** and **crowns the lead of each tooth**. This optimizes the gear mesh alignment and overlap to achieve maximum tooth surface contact.



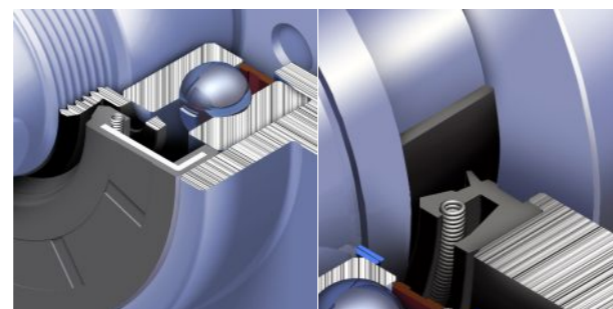
Our in-house plasma nitriding heat treatment process maintains the tooth surface hardness at **900Hv** for superior wear-resistance and a core hardness at **30 HRC** for toughness.



One piece planet carrier with extended bearing design provides maximum radial load capacity and increases system reliability and stiffness.

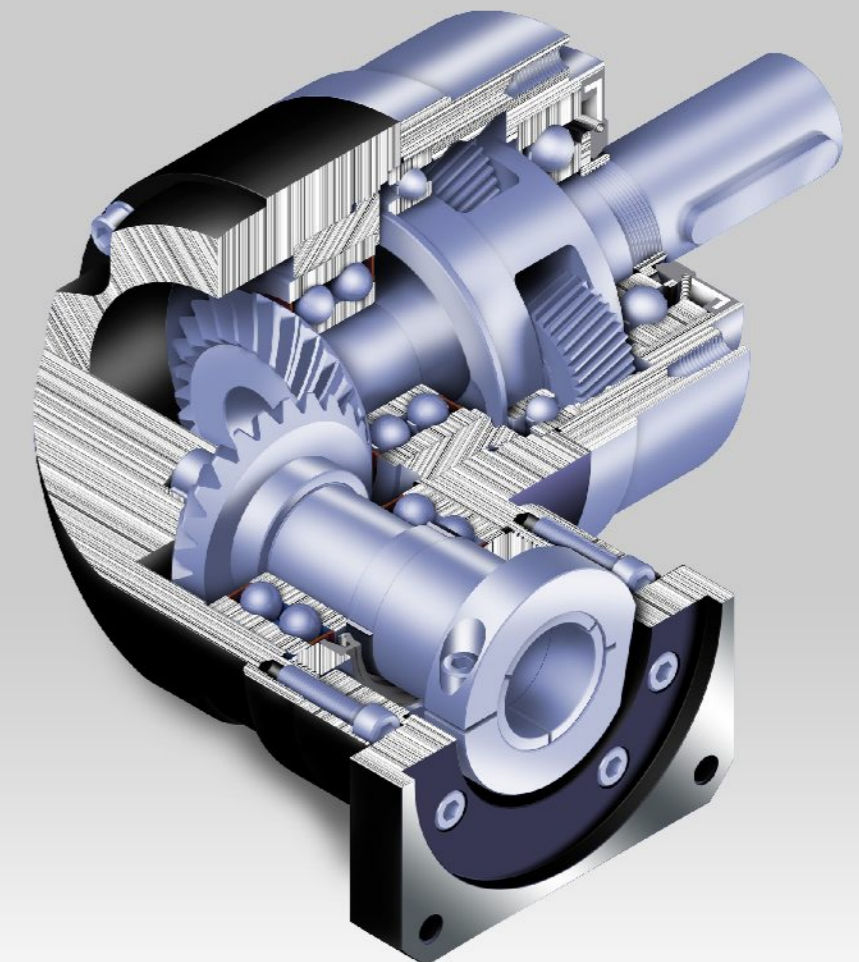


Lubrication by synthetic grease for smooth operation over the whole service life, regardless of mounting orientation. Sealed to **IP65** standard for protection and maintenance-free performance.



Patented sealing system, featuring with hi-performance seal and special surface treatment, preventing leakage, reducing wearing and high temperature caused by friction.

AER Series



AER version with 90° input via helical bevel gear. Featuring an extremely short, light yet rigid housing and full compatibility with standard motor adapters.

AE Series

Specifications

Gearbox Performance

| Model No. | Stage | Ratio ^A | AE050 | AE070 | AE090 | AE120 | AE155 | AE205 | AE235 | |
|---|------------------------------------|--------------------|--------|----------------------------------|--------|-------|-------|-------|--------|--------|
| Nominal output torque T_{2N} | 1 | 3 | 20 | 55 | 130 | 208 | 342 | 588 | 1,140 | |
| | | 4 | 19 | 50 | 140 | 290 | 542 | 1,050 | 1,700 | |
| | | 5 | 22 | 60 | 160 | 330 | 650 | 1,200 | 2,000 | |
| | | 6 | 20 | 55 | 150 | 310 | 600 | 1,100 | 1,900 | |
| | | 7 | 19 | 50 | 140 | 300 | 550 | 1,100 | 1,800 | |
| | | 8 | 17 | 45 | 120 | 260 | 500 | 1,000 | 1,600 | |
| | | 9 | 14 | 40 | 100 | 230 | 450 | 900 | 1,500 | |
| | | 10 | 14 | 40 | 100 | 230 | 450 | 900 | 1,500 | |
| | | 2 | 15 | 20 | 55 | 130 | 208 | 342 | 588 | 1,140 |
| | | | 20 | 19 | 50 | 140 | 290 | 542 | 1,050 | 1,700 |
| | 25 | | 22 | 60 | 160 | 330 | 650 | 1,200 | 2,000 | |
| | 30 | | 20 | 55 | 150 | 310 | 600 | 1,100 | 1,900 | |
| | 35 | | 19 | 50 | 140 | 300 | 550 | 1,100 | 1,800 | |
| | 40 | | 17 | 45 | 120 | 260 | 500 | 1,000 | 1,600 | |
| | 45 | | 14 | 40 | 100 | 230 | 450 | 900 | 1,500 | |
| | 50 | | 22 | 60 | 160 | 330 | 650 | 1,200 | 2,000 | |
| | 60 | | 20 | 55 | 150 | 310 | 600 | 1,100 | 1,900 | |
| | 70 | | 19 | 50 | 140 | 300 | 550 | 1,100 | 1,800 | |
| | Emergency Stop Torque T_{2NOT}^2 | Nm | 80 | 17 | 45 | 120 | 260 | 500 | 1,000 | 1,600 |
| | | | 90 | 14 | 40 | 100 | 230 | 450 | 900 | 1,500 |
| Emergency Stop Torque T_{2NOT}^B | Nm | 1,2 | 3~100 | 3 times of nominal output torque | | | | | | |
| Nominal input speed n_{1N} | rpm | 1,2 | 3~100 | 5,000 | 5,000 | 4,000 | 4,000 | 3,000 | 3,000 | 2,000 |
| Max. input speed n_{1B} | rpm | 1,2 | 3~100 | 10,000 | 10,000 | 8,000 | 8,000 | 6,000 | 6,000 | 4,000 |
| Backlash | arcmin | 1 | 3~10 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 | ≤8 |
| | | 2 | 15~100 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 | ≤12 |
| Torsional rigidity | Nm/arcmin | 1,2 | 3~100 | 3 | 7 | 14 | 25 | 50 | 145 | 225 |
| Max. Radial Load F_{2rB}^C | N | 1,2 | 3~100 | 702 | 1,377 | 2,985 | 6,100 | 8,460 | 13,050 | 8,700 |
| Max. Axial Load F_{2aB}^C | N | 1,2 | 3~100 | 390 | 765 | 1,625 | 3,350 | 4,700 | 7,250 | 18,000 |
| Service Life ^D | hr | 1,2 | 3~100 | 20,000 | | | | | | |
| Efficiency η | % | 1 | 3~10 | ≥97% | | | | | | |
| | | 2 | 15~100 | ≥94% | | | | | | |
| Weight | kg | 1 | 3~10 | 0.6 | 1.4 | 3.3 | 6.9 | 13 | 31 | 53 |
| | | 2 | 15~100 | 0.9 | 1.6 | 4.7 | 8.7 | 17 | 35 | 66 |
| Operating temp | °C | 1,2 | 3~100 | -10°C~90°C | | | | | | |
| Lubrication | | | | Synthetic lubrication oils | | | | | | |
| Degree of gearbox protection | | 1,2 | 3~100 | IP65 | | | | | | |
| Mounting position | | 1,2 | 3~100 | all directions | | | | | | |
| Noise ($n_1=3000\text{rpm}, i=10, \text{No load}$) ^E | dB(A) | 1,2 | 3~100 | ≤56 | ≤58 | ≤60 | ≤63 | ≤65 | ≤67 | ≤70 |

Gearbox Inertia

| Model No. | Stage | Ratio ^A | AE050 | AE070 | AE090 | AE120 | AE155 | AE205 | AE235 | |
|----------------------------|-------|--------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| Mass moments of inertia J, | 1 | 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 | |
| | | 9 | 0.03 | 0.13 | 0.44 | 2.57 | 7.04 | 22.53 | 50.63 | |
| | | 10 | 0.03 | 0.13 | 0.44 | 2.57 | 7.03 | 22.51 | 50.56 | |
| | | 2 | 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 | | |
| 100 | 0.03 | 0.03 | 0.13 | 0.44 | 2.57 | 7.03 | 22.51 | | | |

A. Ratio ($i=N_{in}/N_{out}$).

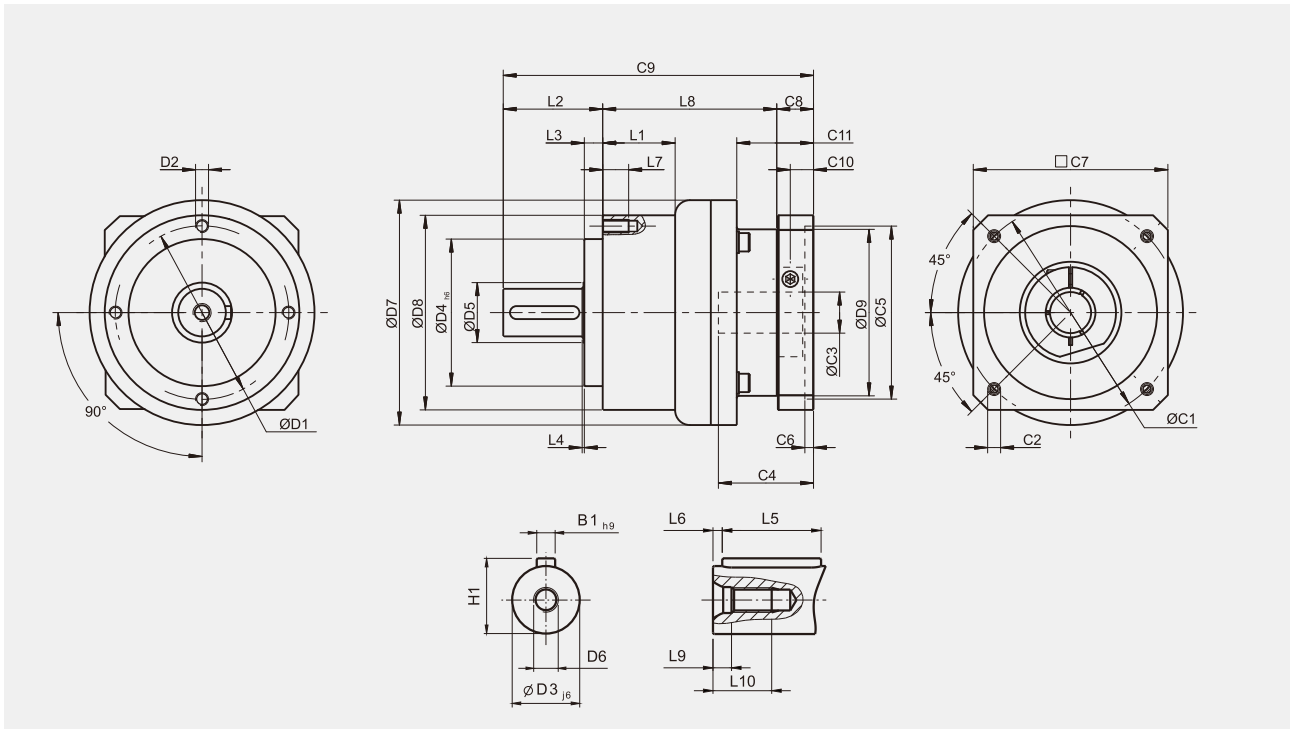
B. $T_{2B} = 60\%$ of T_{2NOT} .

C. Applied to the output shaft center @ 100 rpm.

D. S1 service life 10,000 hrs (Consult us).

E. The noise level could be variant by different ratios.

Dimensions (1-stage, Ratio i=3~10)



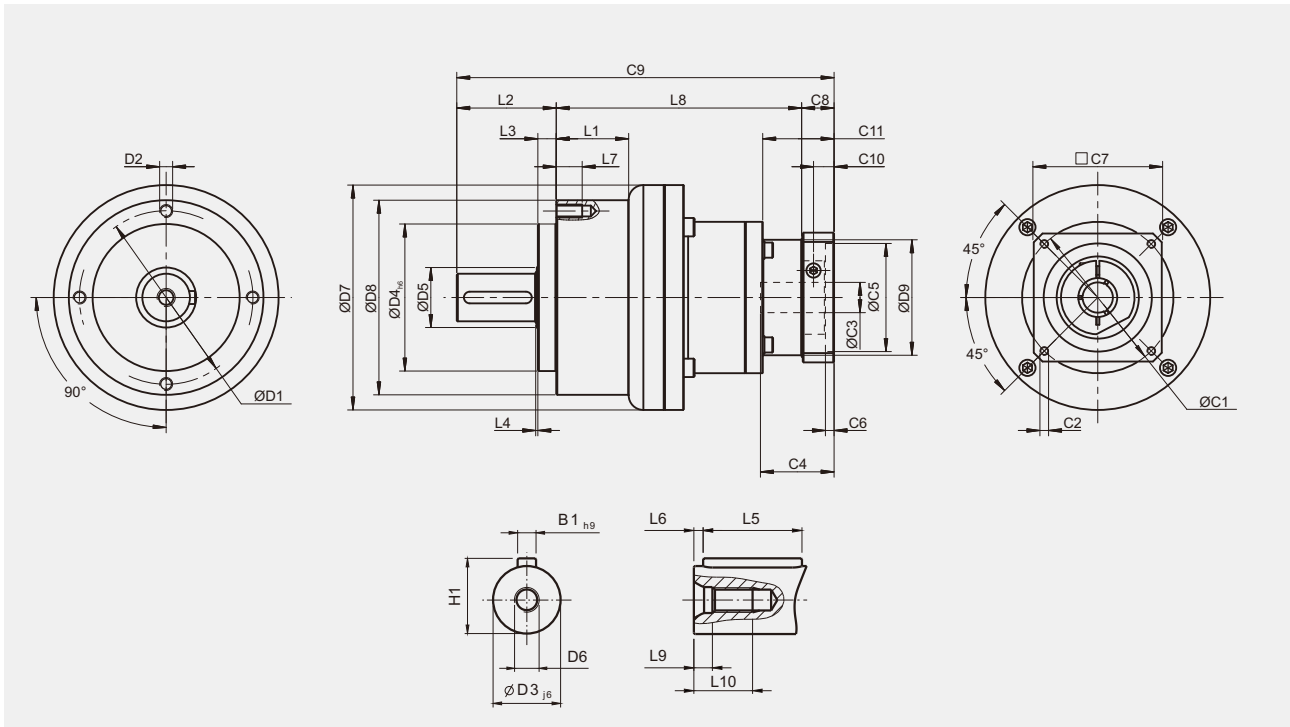
[unit: mm]

| Dimension | AE050 | AE070 | AE090 | AE120 | AE155 | AE205 | AE235 |
|------------------|------------------------|------------------------|------------|-------------|------------|-------------|-------------|
| D1 | 44 | 62 | 80 | 108 | 140 | 184 | 210 |
| D2 | M4 x 0.7P | M5 x 0.8P | M6 x 1P | M8 x 1.25P | M10 x 1.5P | M12 x 1.75P | M16 x 2P |
| D3 _{j6} | 12 | 16 | 22 | 32 | 40 | 55 | 75 |
| D4 _{h6} | 35 | 52 | 68 | 90 | 120 | 160 | 180 |
| D5 | 22 | 22 | 30 | 40 | 75 | 95 | 115 |
| D6 | M4 x 0.7P | M5 x 0.8P | M8 x 1.25P | M12 x 1.75P | M16 x 2P | M20 x 2.5P | M20 x 2.5P |
| D7 | 53 | 70 | 104 | 130 | 162 | 205 | 260 |
| D8 | 50 | 70 | 90 | 120 | 155 | 205 | 235 |
| D9 | 45.5 | 53.4 | 77 | 102 | 125 | 160 | 205 |
| L1 | -- | -- | 33.5 | 38 | 50 | -- | 70 |
| 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 | 47 | 62 | 80.5 | 97 | 119.5 | 159 | 175.5 |
| L9 | 4.5 | 4.8 | 7.2 | 10 | 12 | 15 | 15 |
| L10 | 10 | 12.5 | 19 | 28 | 36 | 42 | 42 |
| C1 ¹ | 46 | 70 | 100 | 130 | 165 | 215 | 235 |
| C2 ¹ | 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 ¹ | ≤11 / ≤12 ² | ≤14 / ≤16 ² | ≤19 / ≤24 | ≤32 | ≤38 | ≤48 | ≤55 |
| C4 ¹ | 30 | 34 | 40 | 50 | 60 | 85 | 116 |
| C5 ¹ | 30 | 50 | 80 | 110 | 130 | 180 | 200 |
| C6 ¹ | 3.5 | 8 | 4 | 5 | 6 | 6 | 6 |
| C7 ¹ | 48 | 60 | 90 | 115 | 142 | 190 | 220 |
| C8 ¹ | 19.5 | 19 | 17 | 19.5 | 22.5 | 29 | 63 |
| C9 ¹ | 91 | 117 | 143.5 | 186.5 | 239 | 288 | 364.5 |
| C10 ¹ | 13.25 | 13.5 | 10.75 | 13 | 15 | 20.75 | 53.5 |
| C11 ¹ | 19.5 | 37 | 35.5 | 46 | 53.5 | 79.5 | 106.5 |
| B1 _{h9} | 4 | 5 | 6 | 10 | 12 | 16 | 20 |
| H1 | 14 | 18 | 24.5 | 35 | 43 | 59 | 79.5 |

1. C1~C10 are motor specific dimensions (metric std shown). Refer to www.apexdyna.com and Design Tool to view your specific motor mounting system.
 2. AF042 ratio 5, 10 offers C3 ≤ 12 option; AF062 ratio 5, 10 offers C3 ≤ 16 option.

AE Series

Dimensions (2-stage, Ratio $i=15\sim 100$)



[unit: mm]

| Dimension | AE050 | AE070 | AE090 | AE120 | AE155 | AE205 | AE235 |
|------------------|---------------------|---------------------|-----------------------------------|---------------------|------------|-------------|-------------|
| D1 | 44 | 62 | 80 | 108 | 140 | 184 | 210 |
| D2 | M4 x 0.7P | M5 x 0.8P | M6 x 1P | M8 x 1.25P | M10 x 1.5P | M12 x 1.75P | M16 x 2P |
| D3 $_{j6}$ | 12 | 16 | 22 | 32 | 40 | 55 | 75 |
| D4 $_{h6}$ | 35 | 52 | 68 | 90 | 120 | 160 | 180 |
| D5 | 22 | 22 | 30 | 40 | 75 | 95 | 115 |
| D6 | M4 x 0.7P | M5 x 0.8P | M8 x 1.25P | M12 x 1.75P | M16 x 2P | M20 x 2.5P | M20 x 2.5P |
| D7 | 53 | 70 | 104 | 130 | 162 | 205 | 260 |
| D8 | 50 | 70 | 90 | 120 | 155 | 205 | 235 |
| D9 | 45.5 | 45.5 | 53.4 | 77 | 102 | 125 | 160 |
| L1 | -- | -- | 33.5 | 38 | 50 | -- | 70 |
| 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 | 74 | 87.5 | 113.5 | 138.5 | 176 | 214.5 | 260 |
| L9 | 4.5 | 4.8 | 7.2 | 10 | 12 | 15 | 15 |
| L10 | 10 | 12.5 | 19 | 28 | 36 | 42 | 42 |
| C1 ³ | 46 | 46 | 70 | 100 | 130 | 165 | 215 |
| C2 ³ | 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 ³ | $\leq 11 / \leq 12$ | $\leq 11 / \leq 12$ | $\leq 14 / \leq 15.875 / \leq 16$ | $\leq 19 / \leq 24$ | ≤ 32 | ≤ 38 | ≤ 48 |
| C4 ³ | 30 | 30 | 34 | 40 | 50 | 60 | 85 |
| C5 ³ | 30 | 30 | 50 | 80 | 110 | 130 | 180 |
| C6 ³ | 3.5 | 3.5 | 8 | 4 | 5 | 6 | 6 |
| C7 ³ | 48 | 48 | 60 | 90 | 115 | 142 | 190 |
| C8 ³ | 19.5 | 19.5 | 19 | 17 | 19.5 | 22.5 | 29 |
| C9 ³ | 118 | 143 | 178.5 | 225.5 | 292.5 | 337 | 415 |
| C10 ³ | 13.25 | 13.25 | 13.5 | 10.75 | 13 | 15 | 20.75 |
| C11 ³ | 19.5 | 19.5 | 37 | 35.5 | 46 | 53.5 | 79.5 |
| B1 $_{h9}$ | 4 | 5 | 6 | 10 | 12 | 16 | 20 |
| H1 | 14 | 18 | 24.5 | 35 | 43 | 59 | 79.5 |

3. C1~C10 are motor specific dimensions (metric std shown). Refer to www.apexdyna.com and Design Tool to view your specific motor mounting system.

AER Series

Specifications

Gearbox Performance

| Model No. | | Stage | Ratio | AER050 | AER070 | AER090 | AER120 | AER155 | AER205 | AER235 | |
|---|-----------|-------|--------|----------------------------------|--------|--------|--------|--------|--------|--------|---|
| Nominal output torque T_{2N} | Nm | 1 | 3 | 9 | 36 | 90 | 195 | 342 | 588 | 1,140 | |
| | | | 4 | 12 | 48 | 120 | 260 | 520 | 1,040 | 1,680 | |
| | | | 5 | 15 | 60 | 150 | 325 | 650 | 1,200 | 2,000 | |
| | | | 6 | 18 | 55 | 150 | 310 | 600 | 1,100 | 1,900 | |
| | | | 7 | 19 | 50 | 140 | 300 | 550 | 1,100 | 1,800 | |
| | | | 8 | 17 | 45 | 120 | 260 | 500 | 1,000 | 1,600 | |
| | | | 9 | 14 | 40 | 100 | 230 | 450 | 900 | 1,500 | |
| | | | 10 | 14 | 60 | 150 | 325 | 650 | 1,200 | 2,000 | |
| | | | 14 | - | 42 | 140 | 300 | 550 | 1,100 | 1,800 | |
| | | 20 | - | 40 | 100 | 230 | 450 | 900 | 1,500 | | |
| | | 2 | 15 | 14 | - | - | - | - | - | - | - |
| | | | 20 | 14 | - | - | - | - | - | - | - |
| | | | 25 | 15 | 60 | 150 | 325 | 650 | 1,200 | 2,000 | |
| | | | 30 | 20 | 55 | 150 | 310 | 600 | 1,100 | 1,900 | |
| | | | 35 | 19 | 50 | 140 | 300 | 550 | 1,100 | 1,800 | |
| | | | 40 | 17 | 45 | 120 | 260 | 500 | 1,000 | 1,600 | |
| | | | 45 | 14 | 40 | 100 | 230 | 450 | 900 | 1,500 | |
| | | | 50 | 14 | 60 | 100 | 230 | 650 | 1,200 | 2,000 | |
| | | | 60 | 20 | 55 | 150 | 310 | 600 | 1,100 | 1,900 | |
| | | | 70 | 19 | 50 | 140 | 300 | 550 | 1,100 | 1,800 | |
| | | | 80 | 17 | 45 | 120 | 260 | 500 | 1,000 | 1,600 | |
| | | | 90 | 14 | 40 | 100 | 230 | 450 | 900 | 1,500 | |
| | | | 100 | 14 | 40 | 100 | 230 | 450 | 900 | 1,500 | |
| | | | 120 | - | - | 150 | 310 | 600 | 1,100 | 1,900 | |
| 140 | - | | - | 140 | 300 | 550 | 1,100 | 1,800 | | | |
| 160 | - | - | 120 | 260 | 550 | 1,000 | 1,600 | | | | |
| 180 | - | - | 100 | 230 | 450 | 900 | 1,500 | | | | |
| 200 | - | - | 100 | 230 | 450 | 900 | 1,500 | | | | |
| Emergency Stop Torque T_{2NOT}^B | Nm | 1,2 | 3~200 | 3 times of nominal output torque | | | | | | | |
| Nominal Input Speed n_{1N} | rpm | 1,2 | 3~200 | 5,000 | 5,000 | 4,000 | 4,000 | 3,000 | 3,000 | 2,000 | |
| Max. Input Speed n_{1B} | rpm | 1,2 | 3~200 | 10,000 | 10,000 | 8,000 | 8,000 | 6,000 | 6,000 | 4,000 | |
| Backlash | arcmin | 1 | 3~20 | ≤10 | ≤10 | ≤10 | ≤10 | ≤10 | ≤10 | ≤10 | |
| | | 2 | 25~200 | ≤14 | ≤14 | ≤14 | ≤14 | ≤14 | ≤14 | ≤14 | |
| Torsional Rigidity | Nm/arcmin | 1,2 | 3~200 | 3 | 7 | 14 | 25 | 50 | 145 | 225 | |
| Max. Radial Load F_{2r}^C | N | 1,2 | 3~200 | 702 | 1,377 | 2,985 | 6,100 | 8,460 | 13,050 | 8,700 | |
| Max. Axial Load F_{2a}^C | N | 1,2 | 3~200 | 390 | 765 | 1,625 | 3,350 | 4,700 | 7,250 | 18,000 | |
| Service Life ^D | hr | 1,2 | 3~200 | 20,000* | | | | | | | |
| Efficiency η | % | 1 | 3~20 | ≥95% | | | | | | | |
| | | 2 | 25~200 | ≥92% | | | | | | | |
| Weight | kg | 1 | 3~20 | 1.0 | 2.1 | 5.8 | 11.2 | 22.4 | 46.8 | 78.0 | |
| | | 2 | 25~200 | 1.3 | 2.0 | 4.6 | 11.1 | 21.8 | 43.7 | 81.9 | |
| Operating temp | °C | 1,2 | 3~200 | -10°C~90°C | | | | | | | |
| Lubrication | | | | Synthetic lubrication oils | | | | | | | |
| Degree of gearbox protection | | 1,2 | 3~200 | IP65 | | | | | | | |
| Mounting position | | 1,2 | 3~200 | all directions | | | | | | | |
| Noise ($n_1=3000\text{rpm}, i=10, \text{No load}$) ^E | dB(A) | 1,2 | 3~200 | ≤61 | ≤63 | ≤65 | ≤68 | ≤70 | ≤72 | ≤74 | |

Gearbox Inertia

| Model No. | | Stage | Ratio | AER050 | AER070 | AER090 | AER120 | AER155 | AER205 | AER235 |
|-------------------------------|----------------------|-------|--------|--------|--------|--------|--------|--------|--------|--------|
| Mass Moments of Inertia J_1 | kg · cm ² | 1 | 3~10 | 0.09 | 0.35 | 2.25 | 6.84 | 23.4 | 68.9 | 135.4 |
| | | | 14 | - | 0.07 | 1.87 | 6.25 | 21.8 | 65.6 | 119.8 |
| | | | 20 | - | 0.07 | 1.87 | 6.25 | 21.8 | 65.6 | 119.8 |
| | | 2 | 15 | 0.09 | - | - | - | - | - | - |
| | | | 20 | 0.09 | - | - | - | - | - | - |
| | | | 25~100 | 0.09 | 0.09 | 0.35 | 2.25 | 6.84 | 23.4 | 68.9 |
| 120~200 | - | - | 0.31 | 1.87 | 6.25 | 21.8 | 65.6 | | | |

A. Ratio ($i=N_{in}/N_{out}$).

B. $T_{2B} = 60\%$ of T_{2NOT} .

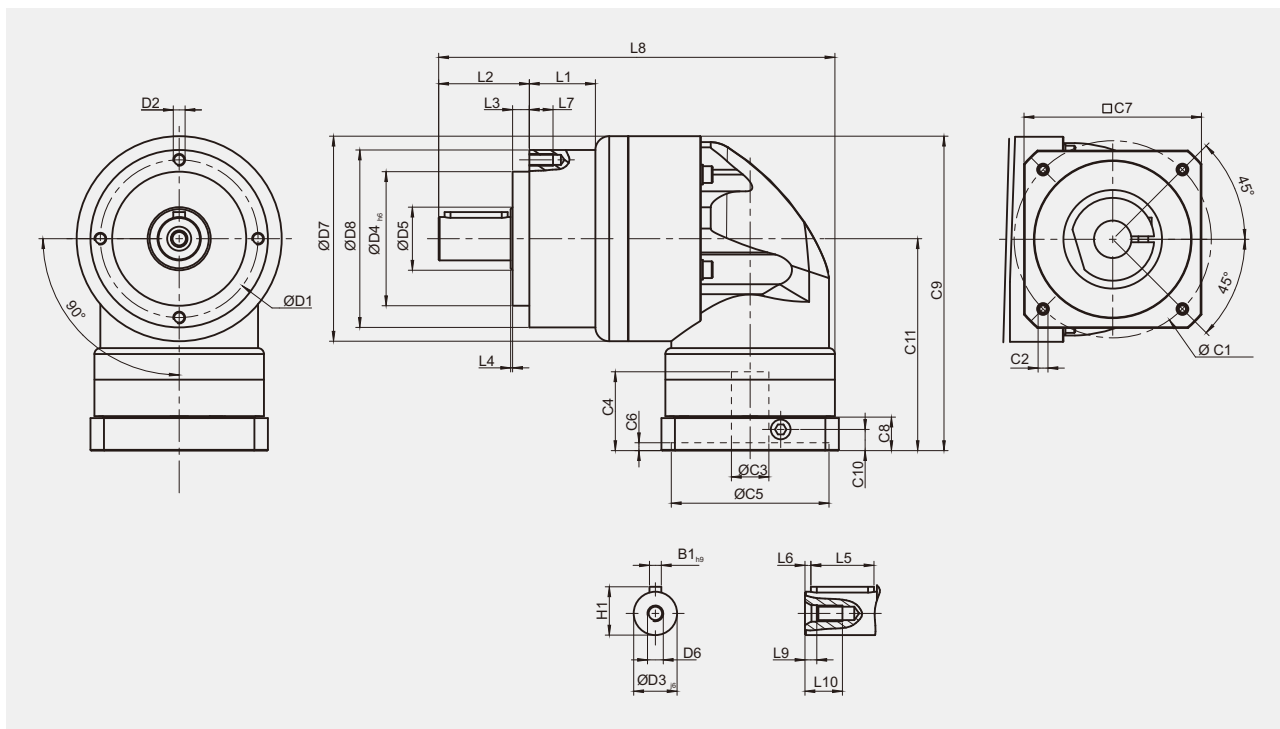
C. Applied to the output shaft center @ 100 rpm.

D. S1 service life 15,000 hrs (Consult us).

E. The noise level could be variant by different ratios.

AER Series

Dimensions (1-stage, Ratio $i=3\sim 20$)

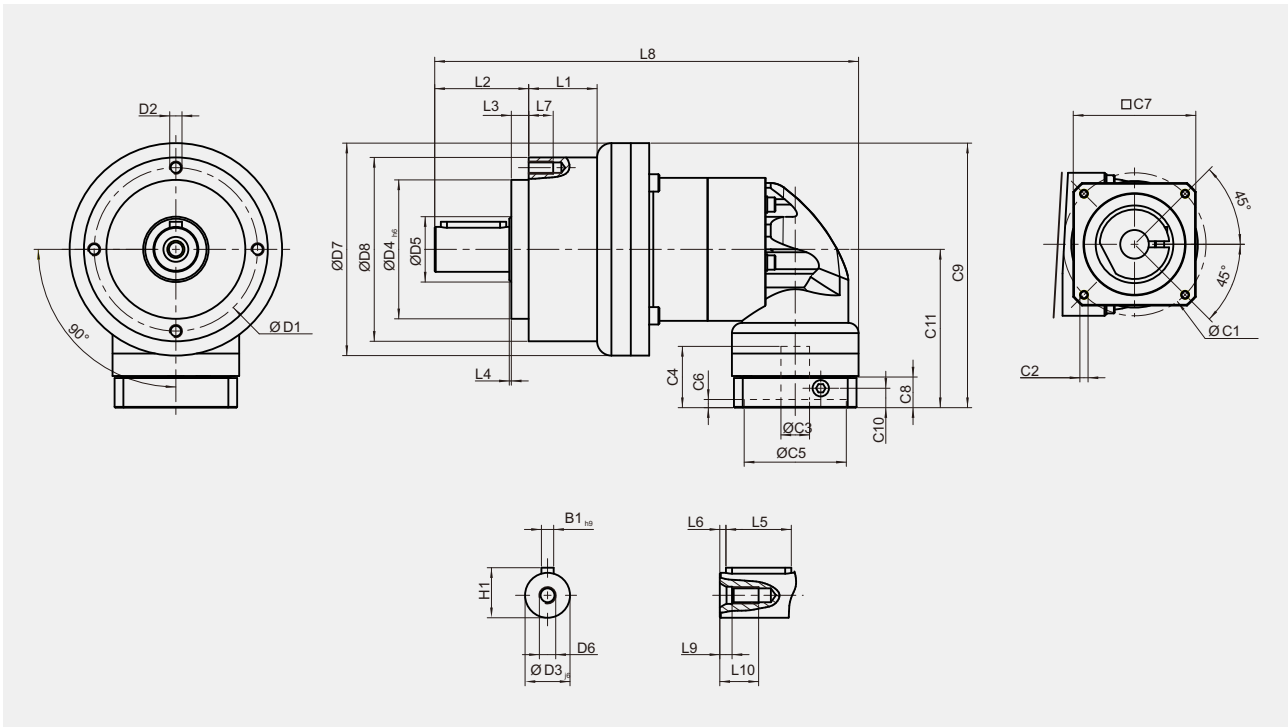


[unit: mm]

| Dimension | AER050 | AER070 | AER090 | AER120 | AER155 | AER205 | AER235 |
|------------------|-----------|-----------|------------|-------------|------------|-------------|-------------|
| D1 | 44 | 62 | 80 | 108 | 140 | 184 | 210 |
| D2 | M4 x 0.7P | M5 x 0.8P | M6 x 1P | M8 x 1.25P | M10 x 1.5P | M12 x 1.75P | M16 x 2P |
| D3 _{j6} | 12 | 16 | 22 | 32 | 40 | 55 | 75 |
| D4 _{h6} | 35 | 52 | 68 | 90 | 120 | 160 | 180 |
| D5 | 22 | 22 | 30 | 40 | 75 | 95 | 115 |
| D6 | M4 x 0.7P | M5 x 0.8P | M8 x 1.25P | M12 x 1.75P | M16 x 2P | M20 x 2.5P | M20 x 2.5P |
| D7 | 53 | 70 | 104 | 130 | 162 | 205 | 260 |
| D8 | 50 | 70 | 90 | 120 | 155 | 205 | 235 |
| L1 | -- | -- | 33.5 | 38 | 50 | -- | 70 |
| 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 | 115.5 | 146 | 201 | 252 | 324.5 | 379.5 | 461.5 |
| L9 | 4.5 | 4.8 | 7.2 | 10 | 12 | 15 | 15 |
| L10 | 10 | 12.5 | 19 | 28 | 36 | 42 | 42 |
| C1 ¹ | 46 | 70 | 100 | 130 | 165 | 215 | 235 |
| C2 ¹ | 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 ¹ | ≤11 / ≤12 | ≤14 / ≤16 | ≤19 / ≤24 | ≤32 | ≤38 | ≤48 | ≤55 |
| C4 ¹ | 30 | 34 | 40 | 50 | 60 | 85 | 116 |
| C5 ¹ | 30 | 50 | 80 | 110 | 130 | 180 | 200 |
| C6 ¹ | 3.5 | 8 | 4 | 5 | 6 | 6 | 6 |
| C7 ¹ | 48 | 60 | 90 | 115 | 142 | 190 | 220 |
| C8 ¹ | 19.5 | 19 | 17 | 19.5 | 22.5 | 29 | 63 |
| C9 ¹ | 100.5 | 116.5 | 159.5 | 199 | 245.5 | 316 | 398.5 |
| C10 ¹ | 13.25 | 13.5 | 10.75 | 13 | 15 | 20.75 | 53.5 |
| C11 ¹ | 74 | 81.5 | 107.5 | 134 | 164.5 | 213.5 | 268.5 |
| B1 _{h9} | 4 | 5 | 6 | 10 | 12 | 16 | 20 |
| H1 | 14 | 18 | 24.5 | 35 | 43 | 59 | 79.5 |

1. C1~C10 are motor specific dimensions (metric std shown). Refer to www.apexdyna.com and Design Tool to view your specific motor mounting system.

Dimensions (2-stage, Ratio $i=25\sim 200$)

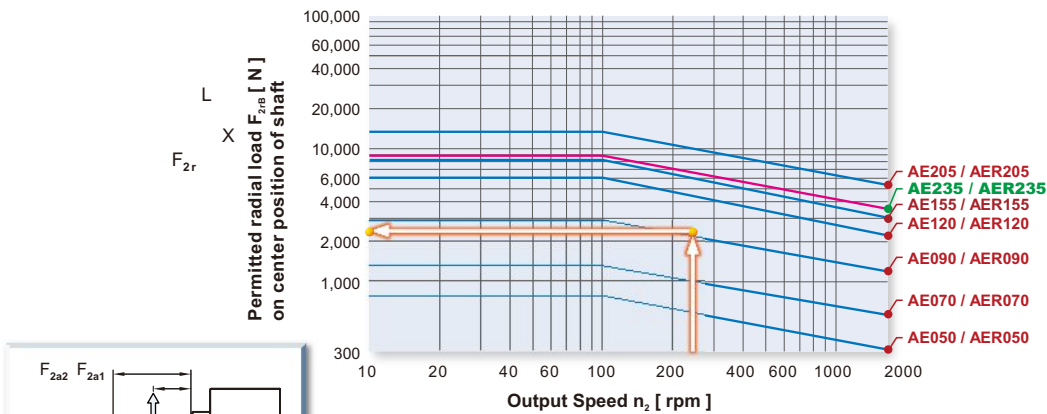


[unit: mm]

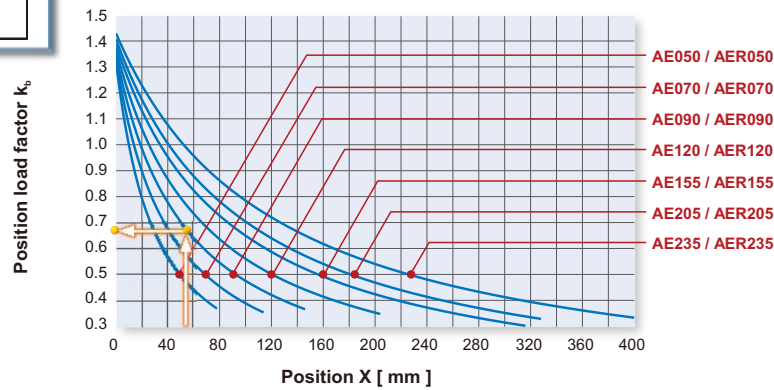
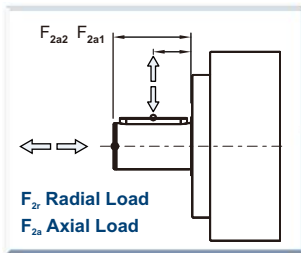
| Dimension | AER050 | AER070 | AER090 | AER120 | AER155 | AER205 | AER235 |
|------------------|-----------|-----------|---------------------|-------------|------------|-------------|-------------|
| D1 | 44 | 62 | 80 | 108 | 140 | 184 | 210 |
| D2 | M4 x 0.7P | M5 x 0.8P | M6 x 1P | M8 x 1.25P | M10 x 1.5P | M12 x 1.75P | M16 x 2P |
| D3 _{j6} | 12 | 16 | 22 | 32 | 40 | 55 | 75 |
| D4 _{h6} | 35 | 52 | 68 | 90 | 120 | 160 | 180 |
| D5 | 22 | 22 | 30 | 40 | 75 | 95 | 115 |
| D6 | M4 x 0.7P | M5 x 0.8P | M8 x 1.25P | M12 x 1.75P | M16 x 2P | M20 x 2.5P | M20 x 2.5P |
| D7 | 53 | 70 | 104 | 130 | 162 | 205 | 260 |
| D8 | 50 | 70 | 90 | 120 | 155 | 205 | 235 |
| L1 | -- | -- | 33.5 | 38 | 50 | -- | 70 |
| 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 | 142.5 | 167.5 | 207.5 | 283 | 358 | 422.5 | 506.5 |
| L9 | 4.5 | 4.8 | 7.2 | 10 | 12 | 15 | 15 |
| L10 | 10 | 12.5 | 19 | 28 | 36 | 42 | 42 |
| C1 ² | 46 | 46 | 70 | 100 | 130 | 165 | 215 |
| C2 ² | 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 ² | ≤11 / ≤12 | ≤11 / ≤12 | ≤14 / ≤15.875 / ≤16 | ≤19 / ≤24 | ≤32 | ≤38 | ≤48 |
| C4 ² | 30 | 30 | 34 | 40 | 50 | 60 | 85 |
| C5 ² | 30 | 30 | 50 | 80 | 110 | 130 | 180 |
| C6 ² | 3.5 | 3.5 | 8 | 4 | 5 | 6 | 6 |
| C7 ² | 48 | 48 | 60 | 90 | 115 | 142 | 190 |
| C8 ² | 19.5 | 19.5 | 19 | 17 | 19.5 | 22.5 | 29 |
| C9 ² | 100.5 | 109 | 133.5 | 172.5 | 215 | 267 | 343.5 |
| C10 ² | 13.25 | 13.25 | 13.5 | 10.75 | 13 | 15 | 20.75 |
| C11 ² | 74 | 74 | 81.5 | 107.5 | 134 | 164.5 | 213.5 |
| B1 _{h9} | 4 | 5 | 6 | 10 | 12 | 16 | 20 |
| H1 | 14 | 18 | 24.5 | 35 | 43 | 59 | 79.5 |

2. C1~C10 are motor specific dimensions (metric std shown). Refer to www.apexdyna.com and Design Tool to view your specific motor mounting system.

Output Dimensions



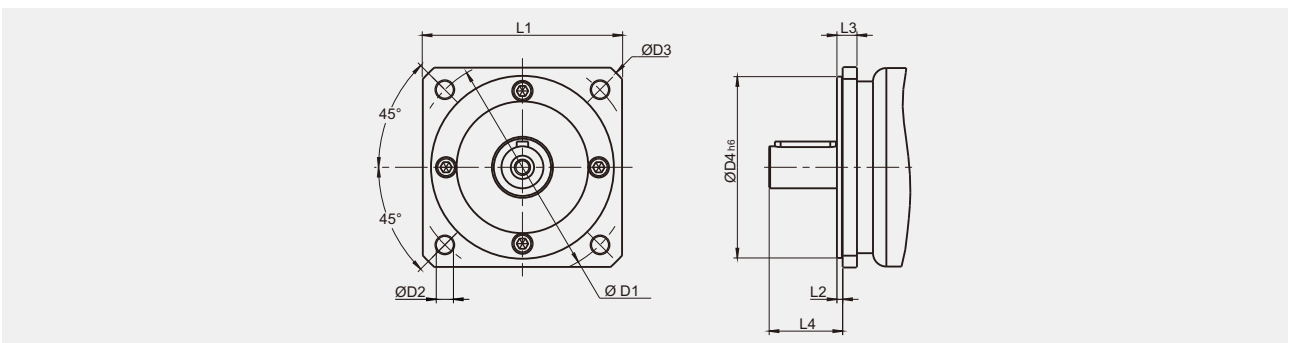
If radial force F_{2r} exert on the center of the output shaft $X=1/2 \times L$. Under various operating condition the lifetime is over 20,000* hours. The permitted radial load is given on left diagram.



If radial force F_{2r} not exert on the center of the output shaft $X < 1/2 \times L$ or $X > 1/2 \times L$. The permitted radial and axial load can be calculated by the position load factor k_b on the left diagram.

* Continuous running reduces service life by 50%

Front plate option



[unit: mm]

| Dimension | D1 | D2 | D3 | D4 ^{h6} | L1 | L2 | L3 | L4 |
|---------------------------|---------|-----|------|------------------|------|-----|------|------|
| AE050(AER050)-NEMA 23 | 66.675 | 6 | 77 | 38.1 | 57.2 | 2 | 8 | 18.5 |
| AE050(AER050)-PX60 | 70 | 5.6 | 80.5 | 50 | 60 | 2.5 | 8.5 | 18.5 |
| AE070(AER070)-Metric | 90 | 6.6 | 106 | 50 | 80 | 3 | 11 | 28 |
| AE070(AER070)-NEMA 34 | 98.425 | 5.6 | 115 | 73.08 | 86 | 2.5 | 8 | 30.5 |
| AE070(AER070)-DT90 / PX90 | 100 | 6.6 | 120 | 80 | 90 | 3 | 8 | 31 |
| AE090(AER090)-IEC 63D5 B5 | 115 | 9 | 140 | 95 | 105 | 3 | 10.5 | 38.5 |
| AE090(AER090)-NEMA 34 | 98.425 | 5.5 | 122 | 73.025 | 92 | 2.5 | 12.5 | 36 |
| AE090(AER090)-DT90 / PX90 | 100 | 6.5 | 122 | 80 | 92 | 2.5 | 12.5 | 36 |
| AE090(AER090)-NEMA 42 | 125.73 | 7 | 144 | 55.58 | 107 | 4 | 14.5 | 35.5 |
| AE120(AER120)-NEMA 42 | 125.73 | 7.1 | 170 | 55.499 | 127 | 1.5 | 21.5 | 50 |
| AE120(AER120)-NEMA 56 | 149.225 | 6.6 | 170 | 114.3 | 127 | 3 | 17.5 | 55.5 |
| AE155(AER155)-B5 | 175 | 11 | 196 | 130 | 160 | 5 | 20 | 82 |
| AE205(AER205)-B5 | 230 | 13 | 277 | 180 | 210 | 5 | 23 | 82 |
| AE235(AER235)-B5 | 275 | 17 | 317 | 235 | 240 | 5 | 23 | 108 |

Ordering Code

AE Series

AE090

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010

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MOTOR

Gearbox Size:

AE050, AE070, AE090
AE120, AE155, AE205, AE235

Motor Designation:

Manufacturer Type
And Model

Ratio:

1 Stage: 3, 4, 5, 6, 7, 8, 9, 10
2 Stage: 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80, 90, 100

Ordering Example: AE090-010 / SIEMENS 1FT6 041-4AF71

AER Series

AER050

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010

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MOTOR

Gearbox Size:

AER050, AER070, AER090
AER120, AER155, AER205, AER235

Motor Designation:

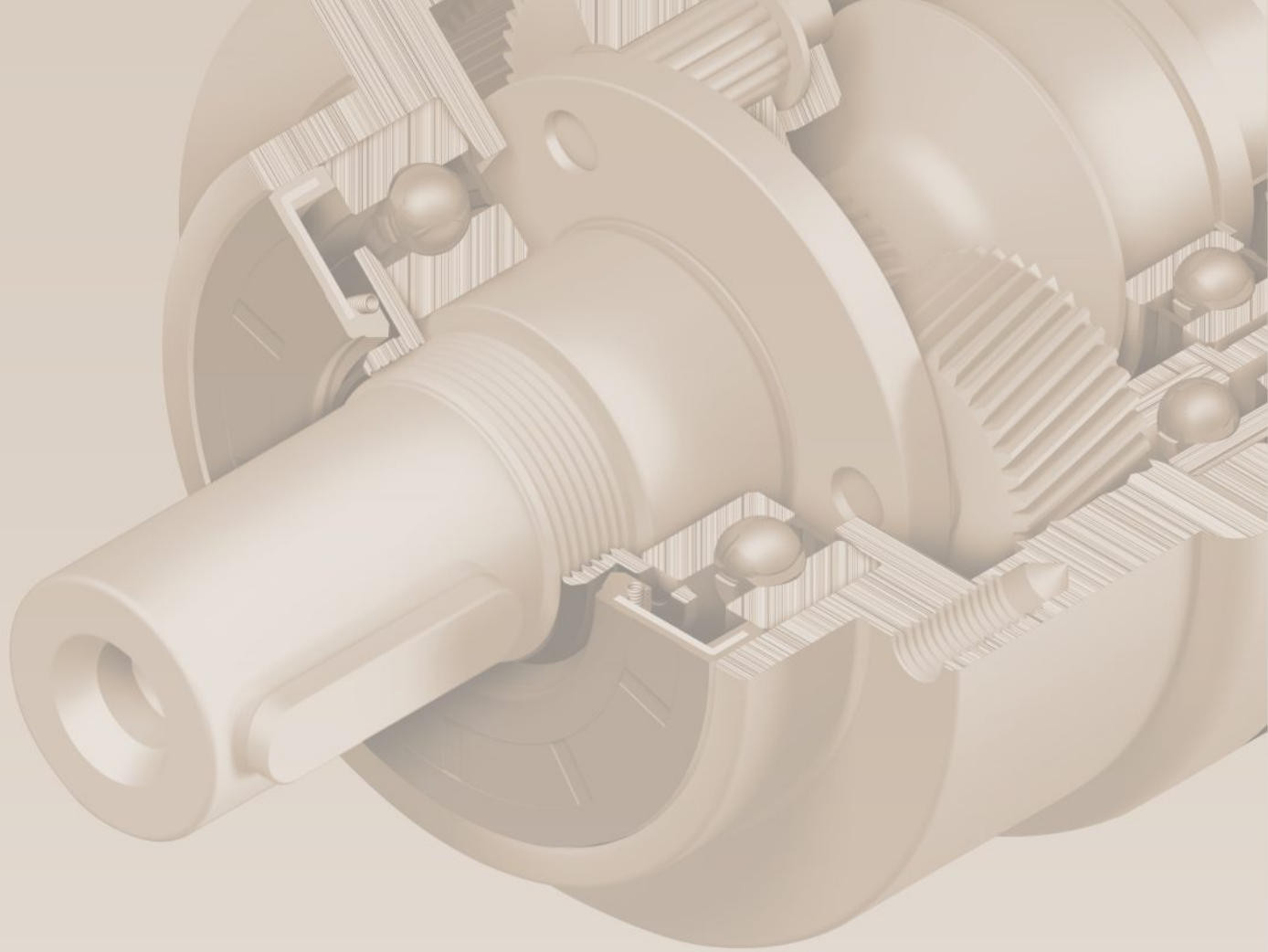
Manufacturer Type
And Model

Ratio:

1 Stage: 3, 4, 5, 6, 7, 8, 9, 10, 14, 20
2 Stage: 15, 20, 25, 30, 35, 40, 45, 50, 60, 70,
80, 90, 100, 120, 140, 160, 180, 200

Ordering Example: AER050-010 / SIEMENS 1FT5 034-OAK71

■ Please visit our website for newest update data.



AE / AER Series

www.apexdyna.com



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