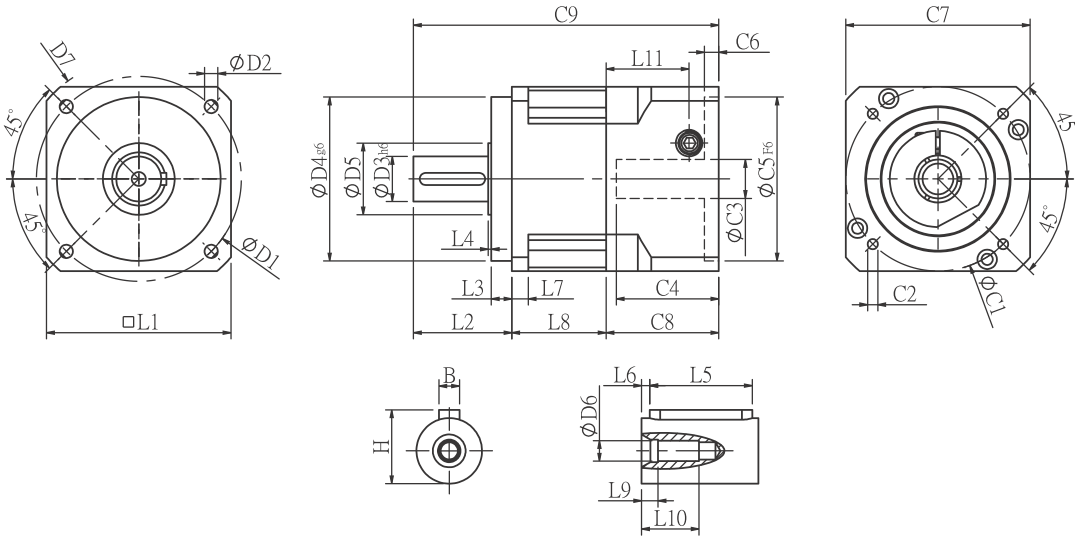


## PGH Single Stage Dimensions



Unit:mm

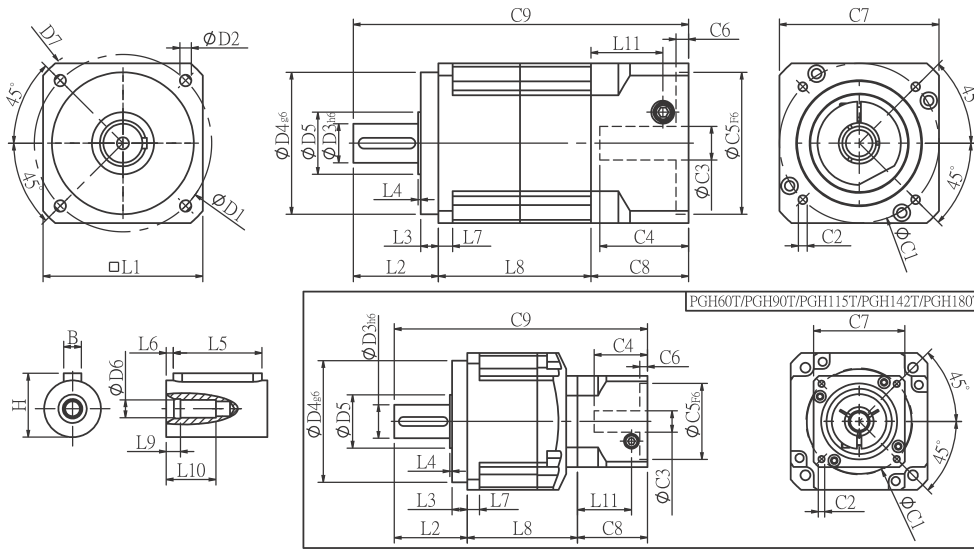
| Dimensions                    | PGH42   | PGH60   | PGH90    | PGH115    | PGH142   | PGH180    | PGH220    |
|-------------------------------|---------|---------|----------|-----------|----------|-----------|-----------|
| D1                            | 50      | 70      | 100      | 130       | 165      | 215       | 250       |
| D2                            | 3.4     | 5.5     | 6.5      | 8.5       | 10.5     | 13        | 17        |
| D3 <sub>h6</sub>              | 13      | 16      | 22       | 32        | 40       | 55        | 75        |
| D4 <sub>g6</sub>              | 35      | 50      | 80       | 110       | 130      | 160       | 180       |
| D5                            | 15      | 25      | 35       | 45        | 50       | 70        | 114.4     |
| D6                            | M4x0.7P | M5x0.8P | M8x1.25P | M12x1.75P | M16x2.0P | M20x2.5P  | M20x2.5P  |
| D7                            | 56      | 80      | 118      | 148       | 186      | 239       | 292       |
| L1                            | 42.6    | 60      | 90       | 115       | 142      | 182       | 220       |
| L2                            | 26      | 37      | 48       | 63        | 91.5     | 100.5     | 138       |
| L3                            | 5.5     | 7       | 10       | 10        | 10       | 16        | 30        |
| L4                            | 1       | 1.5     | 1.5      | 3.5       | 2.5      | 2.5       | 3         |
| L5                            | 15      | 25      | 32       | 40        | 60       | 70        | 90        |
| L6                            | 2       | 2       | 3        | 5         | 5        | 6         | 7         |
| L7                            | 4       | 6       | 8        | 11        | 16       | 18        | 20        |
| L8                            | 28.3    | 37      | 46       | 57        | 75.5     | 94        | 111       |
| L9                            | 4       | 4       | 4.5      | 6         | 6        | 8         | 15        |
| L10                           | 14      | 16.5    | 20.5     | 30        | 38       | 48        | 42        |
| L11                           | 29      | 35.5    | 40.5     | 42        | 63       | 69.5      | 96        |
| C1 <sup>2</sup>               | 46      | 70      | 90       | 115       | 145      | 200       | 235       |
| C2 <sup>2</sup>               | M4x0.7P | M5x0.8P | M6x1.0P  | M8x1.25P  | M8x1.25P | M12x1.75P | M12x1.75P |
| C3 <sup>2</sup>               | ≤8/≤11  | ≤14     | ≤19/≤24  | ≤24/≤32   | ≤35/≤38  | ≤50       | ≤55       |
| C4 <sup>2</sup>               | 27      | 37      | 47       | 56        | 66.5     | 82        | 112       |
| C5 <sup>2</sup> <sub>F6</sub> | 30      | 50      | 70       | 95        | 110      | 114.3     | 200       |
| C6 <sup>2</sup>               | 4       | 4       | 6        | 10        | 6        | 13        | 6         |
| C7 <sup>2</sup>               | 42.6    | 60      | 90       | 115       | 140      | 180       | 220       |
| C8 <sup>2</sup>               | 38.5    | 46      | 55       | 63        | 80       | 95        | 120       |
| C9 <sup>2</sup>               | 92.8    | 120     | 149      | 183       | 247      | 289.5     | 369       |
| B                             | 5       | 5       | 6        | 10        | 12       | 16        | 20        |
| H                             | 15      | 18      | 24.5     | 35        | 43       | 59        | 79.5      |

\* C1~C9 are motor specific dimensions(metric std shown ), Size may vary according to the motor flange chosen.

\* Specification subject to change without notice.



## PGH Double Stage Dimensions



Unit:mm

| Dimensions         | PGH42   | PGH60   | PGH60T  | PGH90    | PGH90T  | PGH115T   | PGH142T  | PGH180T  | PGH220T   |
|--------------------|---------|---------|---------|----------|---------|-----------|----------|----------|-----------|
| D1                 | 50      | 70      |         | 100      |         | 130       | 165      | 215      | 250       |
| D2                 | 3.4     | 5.5     |         | 6.5      |         | 8.5       | 10.5     | 13       | 17        |
| D3 h6              | 13      | 16      |         | 22       |         | 32        | 40       | 55       | 75        |
| D4 g6              | 35      | 50      |         | 80       |         | 110       | 130      | 160      | 180       |
| D5                 | 15      | 25      |         | 35       |         | 45        | 50       | 70       | 114.4     |
| D6                 | M4x0.7P | M5x0.8P |         | M8x1.25P |         | M12x1.75P | M16x2.0P | M20x2.5P | M20x1.5P  |
| D7                 | 56      | 80      |         | 118      |         | 148       | 186      | 239      | 292       |
| L1                 | 42.6    | 60      |         | 90       |         | 115       | 142      | 182      | 220       |
| L2                 | 26      | 37      |         | 48       |         | 63        | 91.5     | 100.5    | 138       |
| L3                 | 5.5     | 7       |         | 10       |         | 10        | 10       | 16       | 30        |
| L4                 | 1       | 1.5     |         | 1.5      |         | 3.5       | 2.5      | 2.5      | 3         |
| L5                 | 15      | 25      |         | 32       |         | 40        | 60       | 70       | 90        |
| L6                 | 2       | 2       |         | 3        |         | 5         | 5        | 6        | 7         |
| L7                 | 4       | 6       |         | 8        |         | 11        | 16       | 18       | 20        |
| L8                 | 55.3    | 70      | 65.5    | 86       | 78.5    | 99.5      | 127.5    | 166      | 202       |
| L9                 | 4       | 4       |         | 4.5      |         | 6         | 6        | 8        | 15        |
| L10                | 14      | 16.5    |         | 20.5     |         | 30        | 38       | 48       | 42        |
| L11                | 29      | 35.5    | 29      | 40.5     | 35.5    | 40.5      | 42       | 63       | 74        |
| C1 <sup>2</sup>    | 46      | 70      | 46      | 90       | 70      | 90        | 115      | 145      | 200       |
| C2 <sup>2</sup>    | M4x0.7P | M5x0.8P | M4x0.7P | M6x1.0P  | M5x0.8P | M6x1.0P   | M8x1.25P | M8x1.25P | M12x1.75P |
| C3 <sup>2</sup>    | ≤8/≤11  | ≤14     | ≤8/≤11  | ≤19/≤24  | ≤14     | ≤19/≤24   | ≤24/≤32  | ≤35/≤38  | ≤50       |
| C4 <sup>2</sup>    | 27      | 37      | 27      | 47       | 37      | 47        | 56       | 66.5     | 81        |
| C5 <sup>2</sup> F6 | 30      | 50      | 30      | 70       | 50      | 70        | 95       | 110      | 114.3     |
| C6 <sup>2</sup>    | 4       | 4       | 4       | 6        | 4       | 6         | 10       | 6        | 6         |
| C7 <sup>2</sup>    | 42.6    | 60      | 42.6    | 90       | 60      | 90        | 115      | 140      | 180       |
| C8 <sup>2</sup>    | 38.5    | 46      | 38.5    | 55       | 46      | 55        | 63       | 80       | 93        |
| C9 <sup>2</sup>    | 119.8   | 153     | 141     | 189      | 172.5   | 217.5     | 282      | 346.5    | 433       |
| B                  | 5       | 5       |         | 6        |         | 10        | 12       | 16       | 20        |
| H                  | 15      | 18      |         | 24.5     |         | 35        | 43       | 59       | 79.5      |

\* C1~C9 are motor specific dimensions(metric std shown ), Size may vary according to the motor flange chosen.

\* Specification subject to change without notice.



## PGH Specifications Table

| Specifications                   |                       | Stage   | Ratio  | PGH-42              | PGH-60     | PGH-90     | PGH-115   | PGH-142  | PGH-180  | PGH-220  |          |
|----------------------------------|-----------------------|---|--------|---------------------|------------|------------|-----------|----------|----------|----------|----------|
| Nominal Output Torque $T_{2N}$   | N • m                 | 1   | 3      | 19                  | 53         | 145        | 290       | 520      | 950      | 1100     |          |
|                                  |                       |   | 4      | 20                  | 55         | 150        | 300       | 550      | 1000     | 1700     |          |
|                                  |                       |   | 5      | 17                  | 54         | 140        | 290       | 530      | 1050     | 2000     |          |
|                                  |                       |   | 6      | 15                  | 46         | 135        | 280       | 490      | 1000     | 1850     |          |
|                                  |                       |   | 7      | 14                  | 44         | 125        | 270       | 450      | 960      | 1750     |          |
|                                  |                       |   | 8      | 12                  | 41         | 110        | 240       | 390      | 900      | 1550     |          |
|                                  |                       |   | 9      | 11                  | 37         | 95         | 220       | 360      | 800      | 1500     |          |
|                                  |                       |   | 10     | 11                  | 37         | 95         | 220       | 360      | 800      | 1450     |          |
|                                  |                       |   | Stage  | Ratio               | PGH-42     | PGH-60 (T) | PGH-90(T) | PGH-115T | PGH-142T | PGH-180T | PGH-220T |
|                                  |                       |   | 15     | 19                  | 53         | 145        | 290       | 520      | 950      | 2000     |          |
|                                  |                       | 20  | 20     | 55                  | 150        | 300        | 550       | 1000     | 2000     |          |          |
|                                  |                       | 25  | 17     | 54                  | 140        | 290        | 530       | 1050     | 2000     |          |          |
|                                  |                       | 30  | 17     | 54                  | 140        | 290        | 530       | 1050     | 2000     |          |          |
|                                  |                       | 35  | 17     | 54                  | 140        | 290        | 530       | 1050     | 2000     |          |          |
|                                  |                       | 40  | 17     | 54                  | 140        | 290        | 530       | 1050     | 2000     |          |          |
|                                  |                       | 45  | 17     | 54                  | 140        | 290        | 530       | 1050     | 2000     |          |          |
|                                  |                       | 50  | 17     | 54                  | 140        | 290        | 530       | 1050     | 2000     |          |          |
|                                  |                       | 60  | 15     | 46                  | 135        | 280        | 490       | 1000     | 1850     |          |          |
|                                  |                       | 70  | 14     | 44                  | 125        | 270        | 450       | 960      | 1750     |          |          |
|                                  |                       | 80  | 12     | 41                  | 110        | 240        | 390       | 900      | 1550     |          |          |
| 90                               | 11                    | 37  | 95     | 220                 | 360        | 800        | 1500      |          |          |          |          |
| 100                              | 11                    | 37  | 95     | 220                 | 360        | 800        | 1450      |          |          |          |          |
| Emergency Stop Torque $T_{2NOT}$ | N • m                 | 3.0 times of Nominal Output Torque<br>(*Max. Output Torque $T_{2B}$ = 60% of Emergency Stop Torque) |        |                     |            |            |           |          |          |          |          |
| Nominal Input Speed $n_{1N}$     | rpm                   | 1,2   | 3-100  | 5000                | 5000       | 4000       | 4000      | 3000     | 3000     | 2000     |          |
| Max. Input Speed $n_{1max}$      | rpm                   | 1,2   | 3-100  | 10000               | 10000      | 8000       | 8000      | 6000     | 6000     | 4000     |          |
| Micro Backlash P0                | arcmin                | 1   | 3-10   | ≤ 2                 | ≤ 2        | ≤ 2        | ≤ 1       | ≤ 1      | ≤ 1      | ≤ 1      |          |
|                                  |                       | 2   | 12-100 | ≤ 4                 | ≤ 4        | ≤ 4        | ≤ 3       | ≤ 3      | ≤ 3      | ≤ 3      |          |
| Precision Backlash P1            | arcmin                | 1   | 3-10   | ≤ 4                 | ≤ 4        | ≤ 4        | ≤ 3       | ≤ 3      | ≤ 3      | ≤ 3      |          |
|                                  |                       | 2   | 12-100 | ≤ 6                 | ≤ 6        | ≤ 6        | ≤ 5       | ≤ 5      | ≤ 5      | ≤ 5      |          |
| Standard Backlash P2             | arcmin                | 1   | 3-10   | ≤ 6                 | ≤ 6        | ≤ 6        | ≤ 5       | ≤ 5      | ≤ 5      | ≤ 5      |          |
|                                  |                       | 2   | 12-100 | ≤ 8                 | ≤ 8        | ≤ 8        | ≤ 7       | ≤ 7      | ≤ 7      | ≤ 7      |          |
| Torsional Rigidity               | N • m / arcmin        | 1,2   | 3-100  | 2.5                 | 6          | 12         | 23        | 45       | 75       | 130      |          |
| Max. Radial Load $F_{2rB}^{-1}$  | N                     | 1,2   | 3-100  | 760                 | 1570       | 2780       | 5340      | 8400     | 13000    | 13810    |          |
| Max. Axial Load $F_{2aB}^{-1}$   | N                     | 1,2   | 3-100  | 410                 | 750        | 1870       | 3310      | 4670     | 6460     | 18530    |          |
| Operating Temp.                  | °C                    | -10 °C ~ +90 °C   |        |                     |            |            |           |          |          |          |          |
| Service Life                     | hr                    | 3-100 20,000 (10,000/ Continuous operation)   |        |                     |            |            |           |          |          |          |          |
| Efficiency                       | %                     | 1   | 3-10   | ≥ 97%               |            |            |           |          |          |          |          |
|                                  |                       | 2   | 12-100 | ≥ 94%               |            |            |           |          |          |          |          |
| Weight                           | kg                    | 1   | 3-10   | 0.6                 | 1.3        | 3.5        | 7.8       | 16.1     | 27       | 55       |          |
|                                  |                       | 2   | 12-100 | 0.9                 | 2.0/1.6    | 5.6/3.9    | 9.5       | 19       | 34       | 68.5     |          |
| Mounting Position                | -                     | 1,2   | 3-100  | Any direction       |            |            |           |          |          |          |          |
| Noise Level <sup>2</sup>         | dBA/1m                | 1,2   | 3-100  | 56                  | 58         | 60         | 63        | 65       | 67       | 70       |          |
| Protection Class                 | -                     | 1,2   | 3-100  | IP65                |            |            |           |          |          |          |          |
| Lubrication                      | -                     | 1,2   | 3-100  | Synthetic Lubricant |            |            |           |          |          |          |          |
| Inertia(J1)                      |                       |   |        |                     |            |            |           |          |          |          |          |
| Stage                            | Ratio                 | unit  |        | PGH-42              | PGH-60     | PGH-90     | PGH-115   | PGH-142  | PGH-180  | PGH-220  |          |
| 1                                | 3                     | Kg • cm <sup>2</sup>  |        | 0.03                | 0.23       | 0.97       | 2.35      | 10.00    | 30.50    | 79.50    |          |
|                                  | 4                     |   |        | 0.02                | 0.18       | 0.67       | 1.66      | 7.17     | 25.86    | 58.21    |          |
|                                  | 5                     |   |        | 0.02                | 0.17       | 0.65       | 1.50      | 6.52     | 23.63    | 54.36    |          |
|                                  | 6/7/8                 |   |        | 0.02                | 0.14       | 0.60       | 1.45      | 6.17     | 22.92    | 54.12    |          |
|                                  | 9/10                  |   |        | 0.02                | 0.14       | 0.58       | 1.41      | 6.10     | 22.73    | 53.98    |          |
| Stage                            | Ratio                 |   |        | PGH-42              | PGH-60(T)  | PGH-90(T)  | PGH-115T  | PGH-142T | PGH-180T | PGH-220T |          |
| 2                                | 15/20/25              |   |        | 0.02                | 0.17(0.02) | 0.65(0.17) | 0.65      | 1.50     | 6.52     | 23.63    |          |
|                                  | 30/35/40              |   |        | 0.02                | 0.14(0.02) | 0.60(0.14) | 0.60      | 1.45     | 6.17     | 22.92    |          |
|                                  | 45/50/60/70/80/90/100 |   |        | 0.02                | 0.14(0.02) | 0.58(0.14) | 0.58      | 1.41     | 6.10     | 22.73    |          |

\* 1. Applied to the output shaft center @100rpm.

\* 2. Measured at 3000rpm with no load

※ The above figures/specifications are subject to change without prior notice.

Products due to human error, natural disasters or other factors lead to poor or damaged, will not be covered under warranty.



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