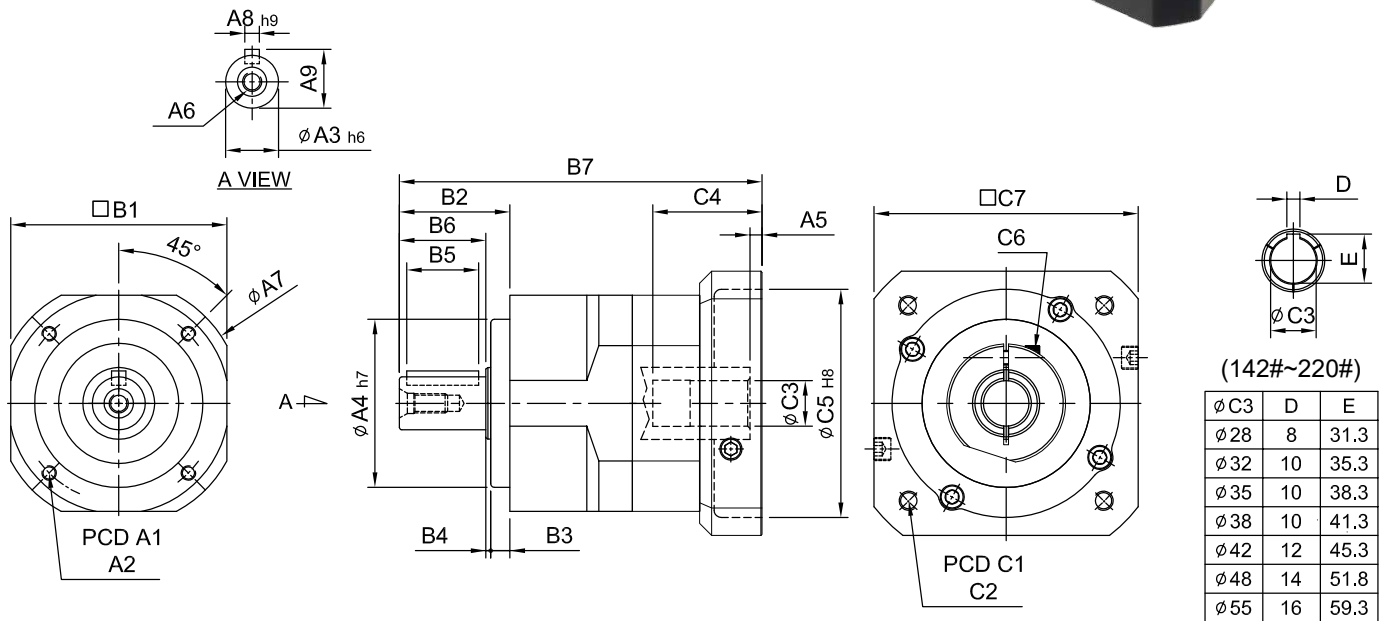


# SERVOBOX Planetary Reducers

## MODEL : SE

單段 1-Stage

RATIO : 3, 4, 5, 6, 7, 8, 9, 10



unit: mm

| Model Code  | 44                | 62                | 90                   | 120               | 142               | 180                     | 220               |
|-------------|-------------------|-------------------|----------------------|-------------------|-------------------|-------------------------|-------------------|
| <b>A</b> A1 | 44                | 62                | 82                   | 110               | 140               | 184                     | 218               |
| A2          | M4 x P0.7         | M5 x P0.8         | M6 x P1.0            | M8 x P1.25        | M10 x P1.5        | M12 x P1.75             | M16 x P2.0        |
| A3          | 13                | 16                | 22                   | 32                | 40                | 55                      | 75                |
| A4          | 35                | 50                | 70                   | 90                | 120               | 160                     | 180               |
| A5          | 5                 | 6                 | 9 · 23.5             | 10 · 20           | 10                | 11.5 · 14.5             | 12.5 · 14.5       |
| A6          | M4 x P0.7         | M5 x P0.8         | M8 x P1.25           | M10 x P1.5        | M12 x P1.75       | M14 x P2.0              | M16 x P2.0        |
| A7          | 50                | 70                | 102                  | 134               | 166               | 215                     | 252               |
| A8          | 5                 | 5                 | 6                    | 10                | 12                | 16                      | 20                |
| A9          | 15                | 18                | 24.5                 | 35                | 43                | 59                      | 79.5              |
| <b>B</b> B1 | 44                | 62                | 90                   | 120               | 142               | 180                     | 220               |
| B2          | 26                | 36                | 46                   | 65                | 92                | 106                     | 139               |
| B3          | 5                 | 7                 | 8                    | 12                | 15                | 20                      | 30                |
| B4          | 1                 | 1                 | 2                    | 3                 | 3                 | 4                       | 5                 |
| B5          | 15                | 20                | 30                   | 40                | 65                | 70                      | 90                |
| B6          | 20                | 28                | 36                   | 50                | 74                | 82                      | 104               |
| B7          | 95                | 115 · 123         | 164.5 · 179          | 205 · 215         | 260.5             | 323.5 · 326.5           | 367.5             |
| <b>C</b> C1 | 46 · 60 · 63 · 90 | 70 · 75 · 90      | 90 · 100 · 115 · 145 | 115 · 145 · 165   | 145 · 165 · 215   | 200 · 215 · 265 · 300   | 200 · 265 · 300   |
| C2          | M3 · M4 · M5      | M4 · M5 · M6      | M5 · M6 · M8         | M6 · M8 · M10     | M8 · M10 · M12    | M10 · M12               | M12 · M16         |
| C3          | 8 · 9 · 11        | 11 · 14 · 16 · 19 | 16 · 19 · 22 · 24    | 22 · 24 · 28 · 32 | 28 · 32 · 35 · 38 | 35 · 38 · 42 · 48 · 55  | 38 · 42 · 48 · 55 |
| C4          | 26 · 30.5         | 33.5 · 41.5       | 59 · 73.5            | 67 · 77           | 84.5              | 114.5 · 117.5           | 117.5 · 119.5     |
| C5          | 30 · 40 · 50      | 50 · 60 · 70      | 70 · 80 · 95 · 110   | 95 · 110 · 130    | 110 · 130 · 180   | 114.3 · 180 · 230 · 250 | 114.3 · 230 · 250 |
| C6          | M4 x P0.7         | M5 x P0.8         | M6 x P1.0            | M8 x P1.25        | M10 x P1.5        | M10 x P1.5              | M10 x P1.5        |
| C7          | 46 · 55           | 64 · 70 · 80      | 92 · 110 · 130       | 122 · 130 · 150   | 146 · 150 · 190   | 182 · 200 · 250 · 265   | 222 · 250 · 265   |

## High Precision Planetary Reducer

| 規格<br>Parameter   | 代號         | 單位<br>Unit | 速比<br>Ratio | 44  | 62    | 90    | 120   | 142   | 180    | 220    |
|---|------------|------------|-------------|---|-------|-------|-------|-------|--------|--------|
| 額定輸出扭矩 Rated Output Torque<br>(Nominal output torque)   | $T_{2N}$   | Nm         | 3           | 19  | 59    | 165   | 335   | 625   | 1,206  | 2,030  |
|   |            |            | 4           | 16  | 51    | 146   | 300   | 555   | 1,069  | 1,804  |
|   |            |            | 5           | 16  | 48    | 160   | 333   | 618   | 1,189  | 2,010  |
|   |            |            | 6           | 15  | 45    | 151   | 311   | 583   | 1,118  | 1,911  |
|   |            |            | 7           | 15  | 45    | 149   | 309   | 573   | 1,108  | 1,870  |
|   |            |            | 8           | 14  | 43    | 143   | 298   | 553   | 1,070  | 1,824  |
|   |            |            | 9           | 13  | 44    | 145   | 278   | 516   | 993    | 1,694  |
|   |            |            | 10          | 14  | 43    | 141   | 294   | 549   | 1,059  | 1,779  |
| 最大加速扭矩 Max. Acceleration Torque                         | $T_{2B}$   | Nm         | 3 ~ 10      | 1.8 倍額定輸出力矩 1.8 Times of Rated Output Torque  |       |       |       |       |        |        |
| 最大輸出扭矩 Max. Output Torque<br>急停扭矩 Emergency Stop Torque | $T_{2NOT}$ | Nm         | 3 ~ 10      | 3 倍額定輸出力矩 3 Times of Rated Output Torque  |       |       |       |       |        |        |
| 額定輸入轉速 Rated Input Speed                                | $n_{IN}$   | rpm        | 3 ~ 10      | 3,000   | 3,000 | 3,000 | 3,000 | 3,000 | 3,000  | 2,000  |
| 最大輸入轉速 Max. Input Speed                                 | $n_{IB}$   | rpm        | 3 ~ 10      | 6,000   | 6,000 | 6,000 | 5,000 | 5,000 | 4,000  | 3,000  |
| 背隙 Backlash Ps  |            | arcmin     | 3 ~ 10      | -   | -     | ≤ 1   | ≤ 1   | ≤ 1   | ≤ 1    | ≤ 1    |
| 背隙 Backlash P0  |            | arcmin     | 3 ~ 10      | ≤ 3   | ≤ 3   | ≤ 3   | ≤ 3   | ≤ 3   | ≤ 3    | ≤ 3    |
| 背隙 Backlash P1  |            | arcmin     | 3 ~ 10      | ≤ 5   | ≤ 5   | ≤ 5   | ≤ 5   | ≤ 5   | ≤ 5    | ≤ 5    |
| 背隙 Backlash P2  |            | arcmin     | 3 ~ 10      | ≤ 7   | ≤ 7   | ≤ 7   | ≤ 7   | ≤ 7   | ≤ 7    | ≤ 7    |
| 扭轉剛性 Torsional Rigidity                                 |            | Nm/arcmin  | 3 ~ 10      | 3   | 6     | 14    | 27    | 60    | 140    | 240    |
| 容許徑向力 Max. Radial Force                                 | $F_{2rB}$  | N          | 3 ~ 10      | 380   | 1,180 | 3,200 | 6,800 | 9,300 | 15,600 | 51,000 |
| 容許軸向力 Max. Axial Force                                  | $F_{2aB}$  | N          | 3 ~ 10      | 190   | 590   | 1,600 | 3,400 | 4,650 | 7,800  | 25,500 |
| 使用壽命 Service Life                                       | $L_H$      | hr         | 3 ~ 10      | S5 周期運轉 : >30,000 (S1 連續運轉 : >15,000 hrs)<br>S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs) |       |       |       |       |        |        |
| 效率 Efficiency   | $\eta$     | %          | 3 ~ 10      | ≥ 97%   |       |       |       |       |        |        |
| 使用溫度 Operating Temperature                              |            | °C         | 3 ~ 10      | - 25° C ~ + 90° C   |       |       |       |       |        |        |
| 潤滑 Lubrication  |            |            | 3 ~ 10      | 全合成潤滑油脂 Synthetic Grease  |       |       |       |       |        |        |
| 防護等級 Protection Class                                   |            |            | 3 ~ 10      | IP65  |       |       |       |       |        |        |
| 安裝方向 Mounting Position                                  |            |            | 3 ~ 10      | 任意方向 Any  |       |       |       |       |        |        |
| 噪音值 Noise Level   |            | dB         | 3 ~ 10      | ≤ 56  | ≤ 58  | ≤ 60  | ≤ 63  | ≤ 65  | ≤ 67   | ≤ 70   |
| 重量 Weight ±3%   |            | Kg         | 3 ~ 10      | 0.58  | 1.32  | 3.4   | 7.88  | 14    | 29.16  | 39     |

### ■ 轉動慣量 Mass Moments of Inertia (kg.cm<sup>2</sup>)

| Ratio | 44   | 62   | 90   | 120  | 142  | 180   | 220   |
|-------|------|------|------|------|------|-------|-------|
| 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 |