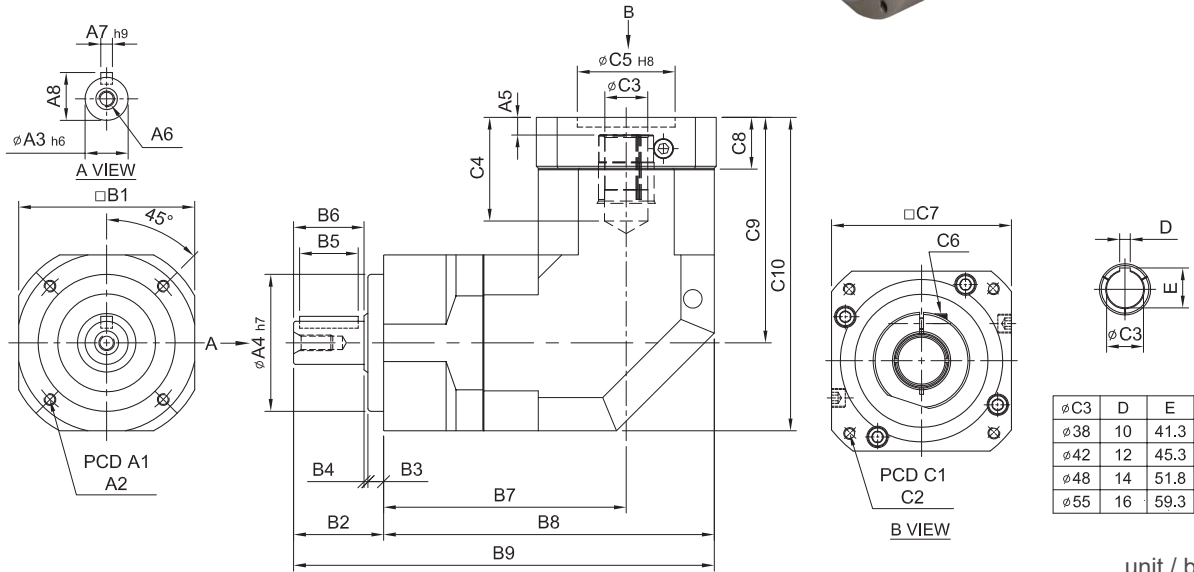


# SERVOBOX

## MODEL : SEL

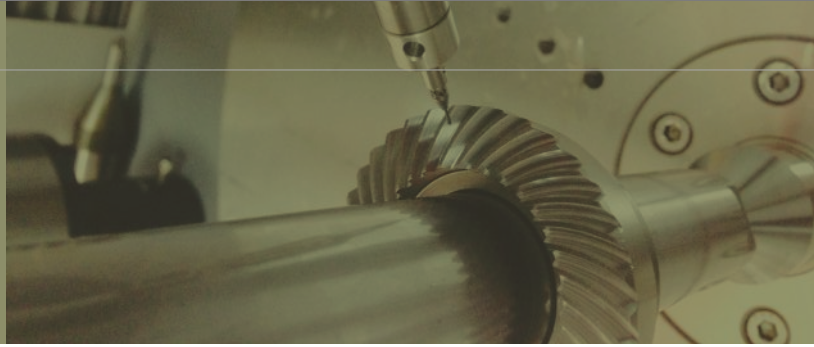
1-Stage / Kademe

RATIO / ÇEVİRİM : 3, 4, 5, 6, 7, 8, 9, 10, 12  
14, 16, 18, 20



unit / birim: 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         | 6            | 6            | 9 · 23.5             | 10 · 20         | 10              | 12.5 · 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         | 5            | 5            | 6                    | 10              | 12              | 16                | 20                |
| A8         | 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         | 76           | 84.5         | 122.1                | 148             | 165.5           | 223.6             | 231.6             |
| B8         | 98           | 115.5        | 167.1                | 208             | 236.5           | 313.6             | 341.6             |
| B9         | 124          | 151.5        | 215.1                | 273             | 328.5           | 419.6             | 480.6             |
| <b>C</b>   |              |              |                      |                 |                 |                   |                   |
| C1         | 46 · 60 · 63 | 70 · 75 · 90 | 90 · 110 · 115 · 145 | 115 · 145 · 165 | 145 · 165 · 200 | 200 · 215 · 265   | 200 · 265 · 300   |
| C2         | M3 · M4 · M5 | M4 · M5 · M6 | M5 · M6 · M8         | M6 · M8 · M10   | M8 · M10 · M12  | M10 · M12 · M16   | M12 · M16         |
| C3         | 8 · 9 · 11   | 14 · 19      | 19 · 22 · 24         | 24 · 28 · 32    | 28 · 32 · 35    | 38 · 42 · 48 · 55 | 42 · 48 · 55      |
| C4         | 27           | 33.5 · 41.5  | 53 · 67.5            | 67 · 77         | 85              | 117 · 119         | 117 · 119         |
| C5         | 30 · 40 · 50 | 50 · 60 · 70 | 70 · 80 · 95 · 110   | 95 · 110 · 130  | 110 · 130 · 180 | 114.3 · 180 · 230 | 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 · 180 · 190 | 182 · 200 · 250   | 222 · 250 · 265   |
| C8         | 16           | 21.5         | 26.5 · 41            | 35.5 · 45.5     | 35.5            | 45.5 · 47.5       | 45.5 · 47.5       |
| C9         | 61           | 77 · 85      | 115.3 · 129.8        | 141 · 151       | 174             | 235 · 237         | 235 · 237         |
| C10        | 83           | 108 · 116    | 160.3 · 174.8        | 201 · 211       | 245             | 325 · 327         | 345 · 347         |



| Model No.                                       |            | Unit/Birim | Ratio<br>Çevrim | 44  | 62    | 90    | 120   | 142   | 180    | 220    |
|---|------------|------------|-----------------|---|-------|-------|-------|-------|--------|--------|
| Nominal output torque / Nominal Çıkış Torku     | $T_{2N}$   | 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  |
|   |            |            | 12              | 15  | 45    | 151   | 311   | 583   | 1,118  | 1,911  |
|   |            |            | 14              | 15  | 45    | 149   | 309   | 573   | 1,108  | 1,870  |
|   |            |            | 16              | 14  | 43    | 143   | 298   | 553   | 1,070  | 1,824  |
|   |            |            | 18              | 13  | 44    | 145   | 278   | 516   | 993    | 1,694  |
| 20  | 14         | 43         | 141             | 294   | 549   | 1,059 | 1,779 |       |        |        |
| Max. Acceleration Torque / Max. İvmelenme Torku | $T_{2B}$   | Nm         | 3 ~ 20          | 1.8 Times of Rated Output Torque / 1,8 x Nominal Çıkış Torku  |       |       |       |       |        |        |
| Max. Output Torque / Max. Çıkış Torku           | $T_{2NOT}$ | Nm         | 3 ~ 20          | 3 Times of Rated Output Torque / 3 x Nominal Çıkış Torku  |       |       |       |       |        |        |
| Rated Input Speed / Nominal Giriş Devri         | $n_{1N}$   | rpm        | 3 ~ 20          | 3,000   | 3,000 | 3,000 | 3,000 | 3,000 | 3,000  | 2,000  |
| Max. Input Speed / Max. Giriş Devri             | $n_{1B}$   | rpm        | 3 ~ 20          | 6,000   | 6,000 | 6,000 | 5,000 | 5,000 | 4,000  | 3,000  |
| Backlash Ps / Min. Boşluk Oranı                 |            | arcmin     | 3 ~ 20          | -   | -     | ≤ 2   | ≤ 2   | ≤ 2   | ≤ 2    | ≤ 2    |
| Backlash P0 / Düşük Boşluk Oranı                |            | arcmin     | 3 ~ 20          | ≤ 4   | ≤ 4   | ≤ 4   | ≤ 4   | ≤ 4   | ≤ 4    | ≤ 4    |
| Backlash P1 / Azaltılmış Boşluk Oranı           |            | arcmin     | 3 ~ 20          | ≤ 6   | ≤ 6   | ≤ 6   | ≤ 6   | ≤ 6   | ≤ 6    | ≤ 6    |
| Backlash P2 / Standart Boşluk Oranı             |            | arcmin     | 3 ~ 20          | ≤ 8   | ≤ 8   | ≤ 8   | ≤ 8   | ≤ 8   | ≤ 8    | ≤ 8    |
| Torsional Rigidity / Burulma Direnci            |            | Nm/arcmin  | 3 ~ 20          | 3   | 6     | 14    | 27    | 60    | 140    | 240    |
| Max. Radial Force / Max. Radyal Yük             | $F_{2rB}$  | N          | 3 ~ 20          | 380   | 1,180 | 3,200 | 6,800 | 9,300 | 15,600 | 51,000 |
| Max. Axial Force / Max. Aksiyel Yük             | $F_{2aB}$  | N          | 3 ~ 20          | 190   | 590   | 1,600 | 3,400 | 4,650 | 7,800  | 25,500 |
| Service Life / Hizmet Ömrü                      | $L_H$      | hr         | 3 ~ 20          | S5 Döngüsel Çalışma: >30,000 (S1 Sürekli Çalışma: >15,000 saat)<br>S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs) |       |       |       |       |        |        |
| Efficiency / Verim                              | $\eta$     | %          | 3 ~ 20          | ≥ 95  |       |       |       |       |        |        |
| Operating Temperature / Çalışma Sıcaklığı       |            | °C         | 3 ~ 20          | - 25° C ~ + 90° C   |       |       |       |       |        |        |
| Lubrication / Yağlama                           |            |            | 3 ~ 20          | Synthetic Grease / Sentetik Gres  |       |       |       |       |        |        |
| Protection Class / Koruma Sınıfı                |            |            | 3 ~ 20          | IP65  |       |       |       |       |        |        |
| Mounting Position / Montaj Pozisyonu            |            |            | 3 ~ 20          | Any / Her Yönde   |       |       |       |       |        |        |
| Noise Level / Ses Seviyesi                      |            | dB         | 3 ~ 20          | ≤ 65  | ≤ 68  | ≤ 70  | ≤ 72  | ≤ 74  | ≤ 76   | ≤ 78   |
| Weight / Ağırlık ±3%                            |            | Kg         | 3 ~ 20          | 0.8   | 2.8   | 6.3   | 9.2   | 22.5  | 52.3   | 75     |

#### ■ Mass Moments of Inertia / Atalet Ağırlık Momenti (kg.cm<sup>2</sup>)

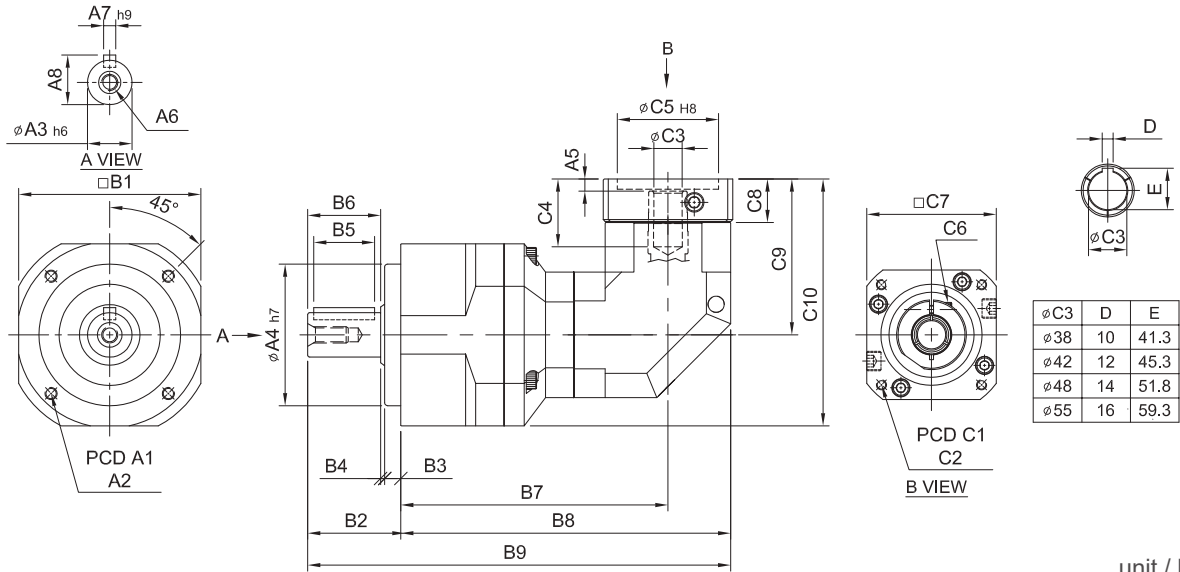
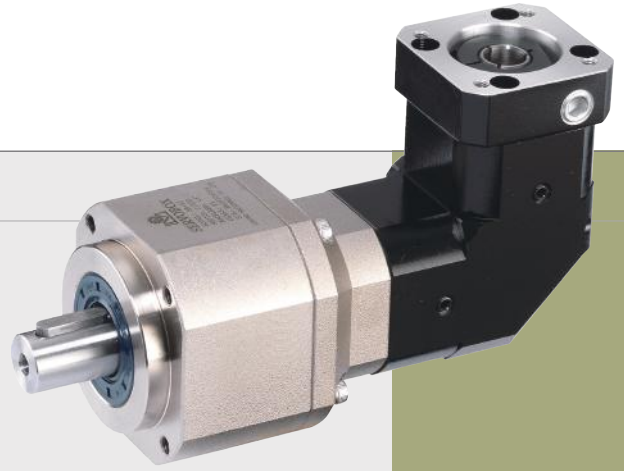
| Ratio / Çevrim | 44   | 62   | 90   | 120  | 142  | 180  | 220   |
|----------------|------|------|------|------|------|------|-------|
| 3              | 0.09 | 0.36 | 2.28 | 6.85 | 23.5 | 68.2 | 135   |
| 4              | 0.09 | 0.36 | 2.28 | 6.85 | 23.5 | 68.2 | 135   |
| 5              | 0.09 | 0.36 | 2.28 | 6.85 | 23.5 | 68.2 | 135   |
| 6              | 0.09 | 0.36 | 2.28 | 6.85 | 23.5 | 68.2 | 135   |
| 7              | 0.09 | 0.36 | 2.28 | 6.85 | 23.5 | 68.2 | 135   |
| 8              | 0.09 | 0.36 | 2.28 | 6.85 | 23.5 | 68.2 | 135   |
| 9              | 0.09 | 0.36 | 2.28 | 6.85 | 23.5 | 68.2 | 135   |
| 10             | 0.09 | 0.36 | 2.28 | 6.85 | 23.5 | 68.2 | 135   |
| 12             | 0.03 | 0.08 | 1.88 | 6.2  | 21.8 | 65.5 | 119.2 |
| 14             | 0.03 | 0.08 | 1.88 | 6.2  | 21.8 | 65.5 | 119.2 |
| 16             | 0.03 | 0.08 | 1.88 | 6.2  | 21.8 | 65.5 | 119.2 |
| 18             | 0.03 | 0.08 | 1.88 | 6.2  | 21.8 | 65.5 | 119.2 |
| 20             | 0.03 | 0.08 | 1.88 | 6.2  | 21.8 | 65.5 | 119.2 |

# SERVOBOX

## MODEL : SEL

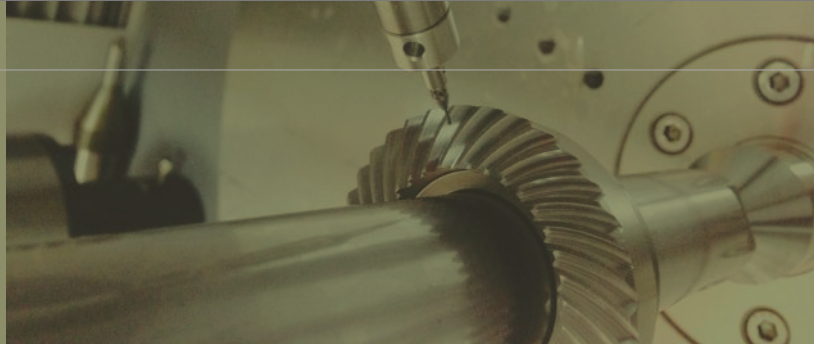
2-Stage / Kademe

RATIO / ÇEVİRİM : 15, 20, 25, 30, 35, 40, 50, 60, 70, 80  
90, 100, 120, 140, 160, 180, 200



unit / birim: mm

| Model Code  | 62           | 90           | 120                  | 142             | 180             | 220                           |
|-------------|--------------|--------------|----------------------|-----------------|-----------------|-------------------------------|
| <b>A</b> A1 | 62           | 82           | 110                  | 140             | 184             | 218                           |
| A2          | 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          | 16           | 22           | 32                   | 40              | 55              | 75                            |
| A4          | 50           | 70           | 90                   | 120             | 160             | 180                           |
| A5          | 6            | 6            | 9 · 23.5             | 10 · 20         | 10              | 12.5 · 14.5                   |
| A6          | 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          | 5            | 6            | 10                   | 12              | 16              | 20                            |
| A8          | 18           | 24.5         | 35                   | 43              | 59              | 79.5                          |
| <b>B</b> B1 | 62           | 90           | 120                  | 142             | 180             | 220                           |
| B2          | 36           | 46           | 65                   | 92              | 106             | 139                           |
| B3          | 7            | 8            | 12                   | 15              | 20              | 30                            |
| B4          | 1            | 2            | 3                    | 3               | 4               | 5                             |
| B5          | 20           | 30           | 40                   | 65              | 70              | 90                            |
| B6          | 28           | 36           | 50                   | 74              | 82              | 104                           |
| B7          | 110.5        | 132          | 181.6                | 214.5           | 249.5           | 313.6                         |
| B8          | 132.5        | 163          | 226.6                | 274.5           | 320.5           | 403.6                         |
| B9          | 168.5        | 209          | 291.6                | 366.5           | 426.5           | 542.6                         |
| <b>C</b> C1 | 46 · 60 · 63 | 70 · 75 · 90 | 90 · 110 · 115 · 145 | 115 · 145 · 165 | 145 · 165 · 200 | 200 · 215 · 265               |
| C2          | M3 · M4 · M5 | M4 · M5 · M6 | M5 · M6 · M8         | M6 · M8 · M10   | M8 · M10 · M12  | M12 · M16                     |
| C3          | 8 · 9 · 11   | 14 · 19      | 19 · 22 · 24         | 24 · 28 · 32    | 28 · 32 · 35    | 38 · 42 · 48 · 55             |
| C4          | 27           | 33.5 · 41.5  | 53 · 67.5            | 67 · 77         | 85              | 117 · 119                     |
| C5          | 30 · 40 · 50 | 50 · 60 · 70 | 70 · 80 · 95 · 110   | 95 · 110 · 130  | 110 · 130 · 180 | 114.3 · 180 · 200 · 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                    |
| C7          | 46 · 55      | 64 · 70 · 80 | 92 · 110 · 130       | 122 · 130 · 150 | 146 · 180 · 190 | 182 · 200 · 220 · 250 · 265   |
| C8          | 16           | 21.5         | 26.5 · 41            | 35.5 · 45.5     | 35.5            | 45.5 · 47.5                   |
| C9          | 61           | 77 · 85      | 115.3 · 129.8        | 141 · 151       | 174             | 235 · 237                     |
| C10         | 92           | 122 · 130    | 175.3 · 189.8        | 212 · 222       | 264             | 345 · 347                     |



| Model No.                                       |            | Unit/Birim | Ratio<br>Çevrim | 62  | 90    | 120   | 142   | 180    | 220    |
|---|------------|------------|-----------------|---|-------|-------|-------|--------|--------|
| Nominal output torque / Nominal Çıkış Torku     | $T_{2N}$   | Nm         | 15              | 59  | 165   | 335   | 625   | 1,206  | 2,030  |
|   |            |            | 20              | 51  | 146   | 300   | 555   | 1,069  | 1,804  |
|   |            |            | 25              | 48  | 160   | 333   | 618   | 1,189  | 2,010  |
|   |            |            | 30              | 45  | 151   | 311   | 583   | 1,118  | 1,911  |
|   |            |            | 35              | 45  | 149   | 309   | 573   | 1,108  | 1,870  |
|   |            |            | 40              | 43  | 143   | 298   | 553   | 1,070  | 1,824  |
|   |            |            | 50              | 48  | 160   | 333   | 618   | 1,189  | 2,010  |
|   |            |            | 60              | 45  | 151   | 311   | 583   | 1,118  | 1,911  |
|   |            |            | 70              | 45  | 149   | 309   | 573   | 1,108  | 1,870  |
|   |            |            | 80              | 43  | 143   | 298   | 553   | 1,070  | 1,824  |
|   |            |            | 90              | 44  | 145   | 278   | 516   | 993    | 1,694  |
|   |            |            | 100             | 43  | 141   | 294   | 549   | 1,059  | 1,779  |
|   |            |            | 120             | 45  | 151   | 311   | 583   | 1,118  | 1,911  |
|   |            |            | 140             | 45  | 149   | 309   | 573   | 1,108  | 1,870  |
|   |            |            | 160             | 43  | 143   | 298   | 553   | 1,070  | 1,824  |
| 180   | 44         | 145        | 278             | 516   | 993   | 1,694 |       |        |        |
| 200   | 43         | 141        | 294             | 549   | 1,059 | 1,779 |       |        |        |
| Max. Acceleration Torque / Max. İvmelenme Torku | $T_{2B}$   | Nm         | 15 ~ 200        | 1.8 Times of Rated Output Torque / 1,8 x Nominal Çıkış Torku  |       |       |       |        |        |
| Max. Output Torque / Max. Çıkış Torku           | $T_{2NOT}$ | Nm         | 15 ~ 200        | 3 Times of Rated Output Torque / 3 x Nominal Çıkış Torku  |       |       |       |        |        |
| Rated Input Speed / Nominal Giriş Devri         | $n_{1N}$   | rpm        | 15 ~ 200        | 3,000   | 3,000 | 3,000 | 3,000 | 3,000  | 2,000  |
| Max. Input Speed / Max. Giriş Devri             | $n_{1B}$   | rpm        | 15 ~ 200        | 6,000   | 6,000 | 5,000 | 5,000 | 4,000  | 4,000  |
| Backlash Ps / Min. Boşluk Oranı                 |            | arcmin     | 15 ~ 200        | -   | ≤ 4   | ≤ 4   | ≤ 4   | ≤ 4    | ≤ 4    |
| Backlash P0 / Düşük Boşluk Oranı                |            | arcmin     | 15 ~ 200        | ≤ 7   | ≤ 7   | ≤ 7   | ≤ 7   | ≤ 7    | ≤ 7    |
| Backlash P1 / Azaltılmış Boşluk Oranı           |            | arcmin     | 15 ~ 200        | ≤ 9   | ≤ 9   | ≤ 9   | ≤ 9   | ≤ 9    | ≤ 9    |
| Backlash P2 / Standart Boşluk Oranı             |            | arcmin     | 15 ~ 200        | ≤ 12  | ≤ 12  | ≤ 12  | ≤ 12  | ≤ 12   | ≤ 12   |
| Torsional Rigidity / Burulma Direnci            |            | Nm/arcmin  | 15 ~ 200        | 6   | 14    | 27    | 60    | 140    | 240    |
| Max. Radial Force / Max. Radyal Yük             | $F_{2rB}$  | N          | 15 ~ 200        | 1,180   | 3,200 | 6,800 | 9,300 | 15,600 | 51,000 |
| Max. Axial Force / Max. Aksiyel Yük             | $F_{2aB}$  | N          | 15 ~ 200        | 590   | 1,600 | 3,400 | 4,650 | 7,800  | 25,500 |
| Service Life / Hizmet Ömrü                      | $L_{H}$    | hr         | 15 ~ 200        | S5 Döngüsel Çalışma: >30,000 (S1 Sürekli Çalışma: >15,000 saat)<br>S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs) |       |       |       |        |        |
| Efficiency / Verim                              | $\eta$     | %          | 15 ~ 200        | ≥ 92  |       |       |       |        |        |
| Operating Temperature / Çalışma Sıcaklığı       |            | °C         | 15 ~ 200        | - 25° C ~ + 90° C   |       |       |       |        |        |
| Lubrication / Yağlama                           |            |            | 15 ~ 200        | Synthetic Grease / Sentetik Gres  |       |       |       |        |        |
| Protection Class / Koruma Sınıfı                |            |            | 15 ~ 200        | IP65  |       |       |       |        |        |
| Mounting Position / Montaj Pozisyonu            |            |            | 15 ~ 200        | Any / Her Yönde   |       |       |       |        |        |
| Noise Level / Ses Seviyesi                      |            | dB         | 15 ~ 200        | ≤ 68  | ≤ 70  | ≤ 72  | ≤ 74  | ≤ 76   | ≤ 78   |
| Weight / Ağırlık ±3%                            |            | Kg         | 15 ~ 200        | 1.8   | 5.8   | 12    | 22.8  | 43.9   | 78.5   |

#### ■ Mass Moments of Inertia / Atalet Ağırlık Momenti (kg.cm<sup>2</sup>)

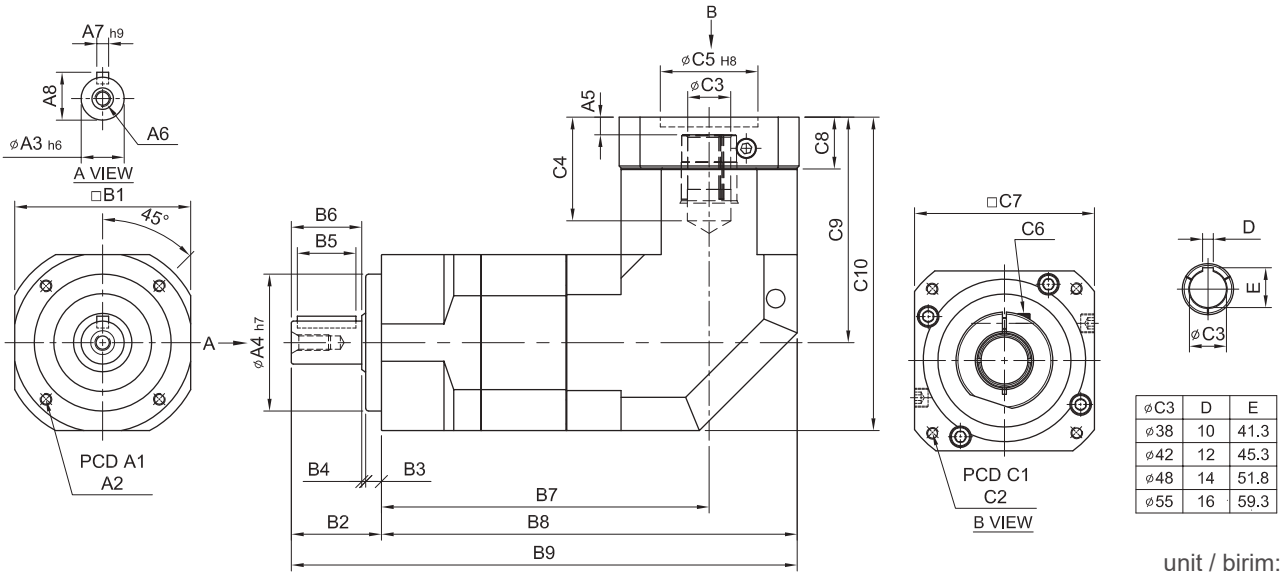
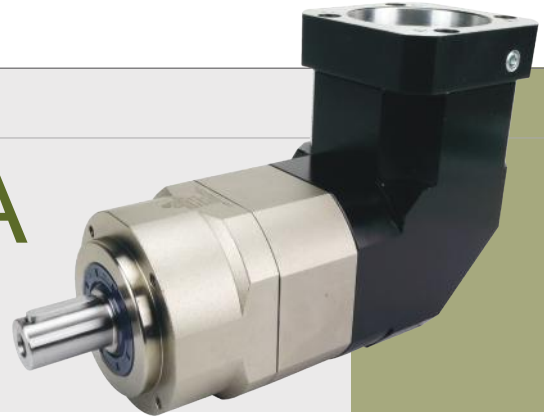
| Ratio / Çevrim | 62   | 90   | 120  | 142  | 180  | 220  |
|----------------|------|------|------|------|------|------|
| 15             | 0.09 | 0.36 | 6.28 | 6.85 | 26.2 | 70.1 |
| 20             | 0.09 | 0.36 | 6.28 | 6.85 | 26.2 | 70.1 |
| 25             | 0.09 | 0.36 | 2.28 | 6.85 | 23.1 | 68.2 |
| 30             | 0.09 | 0.36 | 2.28 | 6.85 | 23.1 | 68.2 |
| 35             | 0.09 | 0.36 | 2.28 | 6.85 | 23.1 | 68.2 |
| 40             | 0.09 | 0.36 | 2.28 | 6.85 | 23.1 | 68.2 |
| 50             | 0.09 | 0.36 | 2.28 | 6.85 | 23.1 | 68.2 |
| 60             | 0.09 | 0.36 | 2.28 | 6.85 | 23.1 | 68.2 |
| 70             | 0.09 | 0.36 | 2.28 | 6.85 | 23.1 | 68.2 |
| 80             | 0.09 | 0.36 | 2.28 | 6.85 | 23.1 | 68.2 |
| 90             | 0.09 | 0.36 | 2.28 | 6.85 | 23.1 | 68.2 |
| 100            | 0.09 | 0.36 | 2.28 | 6.85 | 23.1 | 68.2 |
| 120            | 0.03 | 0.1  | 1.88 | 6.2  | 21.2 | 65.1 |
| 140            | 0.03 | 0.1  | 1.88 | 6.2  | 21.2 | 65.1 |
| 160            | 0.03 | 0.1  | 1.88 | 6.2  | 21.2 | 65.1 |
| 180            | 0.03 | 0.1  | 1.88 | 6.2  | 21.2 | 65.1 |
| 200            | 0.03 | 0.1  | 1.88 | 6.2  | 21.2 | 65.1 |

# SERVOBOX

## MODEL : SEL-A

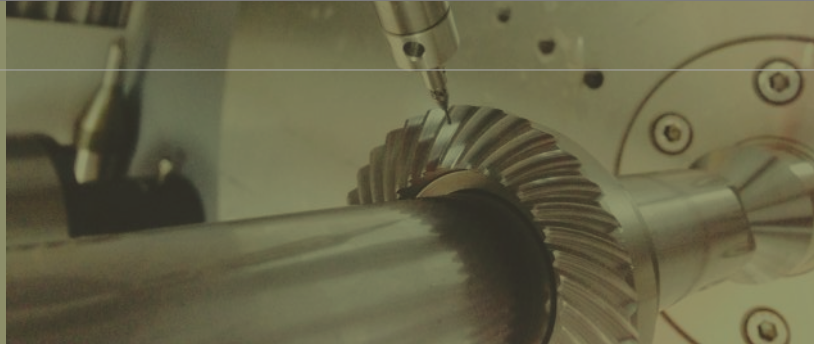
2-Stage / Kademe

RATIO / ÇEVİRİM : 15, 20, 25, 30, 35, 40, 50, 60, 70, 80  
90, 100, 120, 140, 160, 180, 200



unit / birim: mm

| Model Code | 44A          | 62A          | 90A                  | 120A            | 142A            | 180A              | 220A              |
|------------|--------------|--------------|----------------------|-----------------|-----------------|-------------------|-------------------|
| 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         | 6            | 6            | 9 · 23.5             | 10 · 20         | 10              | 12.5 · 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         | 5            | 5            | 6                    | 10              | 12              | 16                | 20                |
| A8         | 15           | 18           | 24.5                 | 35              | 43              | 59                | 79.5              |
| 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         | 102          | 118.3        | 167.6                | 204             | 232             | 304.6             | 324.6             |
| B8         | 124          | 149.3        | 212.6                | 264             | 303             | 394.6             | 434.6             |
| B9         | 150          | 185.3        | 258.6                | 329             | 395             | 500.6             | 573.6             |
| C1         | 46 · 60 · 63 | 70 · 75 · 90 | 90 · 100 · 115 · 145 | 115 · 145 · 165 | 145 · 165 · 200 | 200 · 215 · 265   | 200 · 265 · 300   |
| C2         | M3 · M4 · M5 | M4 · M5 · M6 | M5 · M6 · M8         | M6 · M8 · M10   | M8 · M10 · M12  | M10 · M12 · M16   | M12 · M16         |
| C3         | 8 · 9 · 11   | 14 · 19      | 19 · 22 · 24         | 24 · 28 · 32    | 28 · 32 · 35    | 38 · 42 · 48 · 55 | 42 · 48 · 55      |
| C4         | 27           | 33.5 · 41.5  | 53 · 67.5            | 67 · 77         | 85              | 117 · 119         | 117 · 119         |
| C5         | 30 · 40 · 50 | 50 · 60 · 70 | 70 · 80 · 95 · 110   | 95 · 110 · 130  | 110 · 130 · 180 | 114.3 · 180 · 230 | 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   | 220 · 250 · 265   |
| C8         | 16           | 21.5         | 26.5 · 41            | 35.5 · 45.5     | 35.5            | 45.5 · 47.5       | 45.5 · 47.5       |
| C9         | 61           | 77 · 85      | 115.3 · 129.8        | 141 · 151       | 174             | 235 · 237         | 235 · 237         |
| C10        | 83           | 108 · 116    | 160.3 · 174.8        | 201 · 211       | 245             | 325 · 327         | 345 · 347         |



| Model No.                                       |            | Unit/Birim | Ratio<br>Çevrim | 44A   | 62A   | 90A   | 120A  | 142A  | 180A   | 220A   |
|---|------------|------------|-----------------|---|-------|-------|-------|-------|--------|--------|
| Nominal output torque / Nominal Çıkış Torku     | $T_{2N}$   | Nm         | 15              | 19  | 59    | 165   | 335   | 625   | 1,206  | 2,030  |
|   |            |            | 20              | 16  | 51    | 146   | 300   | 555   | 1,069  | 1,804  |
|   |            |            | 25              | 16  | 48    | 160   | 333   | 618   | 1,189  | 2,010  |
|   |            |            | 30              | 15  | 45    | 151   | 311   | 583   | 1,118  | 1,911  |
|   |            |            | 35              | 15  | 45    | 149   | 309   | 573   | 1,108  | 1,870  |
|   |            |            | 40              | 14  | 43    | 143   | 298   | 553   | 1,070  | 1,824  |
|   |            |            | 50              | 16  | 48    | 160   | 333   | 618   | 1,189  | 2,010  |
|   |            |            | 60              | 15  | 45    | 151   | 311   | 583   | 1,118  | 1,911  |
|   |            |            | 70              | 15  | 45    | 149   | 309   | 573   | 1,108  | 1,870  |
|   |            |            | 80              | 14  | 43    | 143   | 298   | 553   | 1,070  | 1,824  |
|   |            |            | 90              | 13  | 44    | 145   | 278   | 516   | 993    | 1,694  |
|   |            |            | 100             | 14  | 43    | 141   | 294   | 549   | 1,059  | 1,779  |
|   |            |            | 120             | 15  | 45    | 151   | 311   | 583   | 1,118  | 1,911  |
|   |            |            | 140             | 15  | 45    | 149   | 309   | 573   | 1,108  | 1,870  |
|   |            |            | 160             | 14  | 43    | 143   | 298   | 553   | 1,070  | 1,824  |
| 180   | 13         | 44         | 145             | 278   | 516   | 993   | 1,694 |       |        |        |
| 200   | 14         | 43         | 141             | 294   | 549   | 1,059 | 1,779 |       |        |        |
| Max. Acceleration Torque / Max. İvmelenme Torku | $T_{2B}$   | Nm         | 15 ~ 200        | 1.8 Times of Rated Output Torque / 1,8 x Nominal Çıkış Torku  |       |       |       |       |        |        |
| Max. Output Torque / Max. Çıkış Torku           | $T_{2NOT}$ | Nm         | 15 ~ 200        | 3 Times of Rated Output Torque / 3 x Nominal Çıkış Torku  |       |       |       |       |        |        |
| Rated Input Speed / Nominal Giriş Devri         | $n_{1N}$   | rpm        | 15 ~ 200        | 3,000   | 3,000 | 3,000 | 3,000 | 3,000 | 3,000  | 2,000  |
| Max. Input Speed / Max. Giriş Devri             | $n_{1B}$   | rpm        | 15 ~ 200        | 6,000   | 6,000 | 6,000 | 5,000 | 5,000 | 4,000  | 3,000  |
| Backlash Ps / Min. Boşluk Oranı                 |            | arcmin     | 15 ~ 200        | -   | -     | ≤ 4   | ≤ 4   | ≤ 4   | ≤ 4    | ≤ 4    |
| Backlash P0 / Düşük Boşluk Oranı                |            | arcmin     | 15 ~ 200        | ≤ 7   | ≤ 7   | ≤ 7   | ≤ 7   | ≤ 7   | ≤ 7    | ≤ 7    |
| Backlash P1 / Azaltılmış Boşluk Oranı           |            | arcmin     | 15 ~ 200        | ≤ 9   | ≤ 9   | ≤ 9   | ≤ 9   | ≤ 9   | ≤ 9    | ≤ 9    |
| Backlash P2 / Standart Boşluk Oranı             |            | arcmin     | 15 ~ 200        | ≤ 12  | ≤ 12  | ≤ 12  | ≤ 12  | ≤ 12  | ≤ 12   | ≤ 12   |
| Torsional Rigidity / Burulma Direnci            |            | Nm/arcmin  | 15 ~ 200        | 3   | 6     | 14    | 27    | 60    | 140    | 240    |
| Max. Radial Force / Max. Radyal Yük             | $F_{2rB}$  | N          | 15 ~ 200        | 380   | 1,180 | 3,200 | 6,800 | 9,300 | 15,600 | 51,000 |
| Max. Axial Force / Max. Aksiyel Yük             | $F_{2aB}$  | N          | 15 ~ 200        | 190   | 590   | 1,600 | 3,400 | 4,650 | 7,800  | 25,500 |
| Service Life / Hizmet Ömrü                      | $L_{H1}$   | hr         | 15 ~ 200        | S5 Döngüsel Çalışma: >30,000 (S1 Sürekli Çalışma: >15,000 saat)<br>S5 Cycle Operation: >30,000 (S1 Continuous Operation: >15,000 hrs) |       |       |       |       |        |        |
| Efficiency / Verim                              | $\eta$     | %          | 15 ~ 200        | ≥ 92  |       |       |       |       |        |        |
| Operating Temperature / Çalışma Sıcaklığı       |            | °C         | 15 ~ 200        | -25° C ~ +90° C   |       |       |       |       |        |        |
| Lubrication / Yağlama                           |            |            | 15 ~ 200        | Synthetic Grease / Sentetik Gres  |       |       |       |       |        |        |
| Protection Class / Koruma Sınıfı                |            |            | 15 ~ 200        | IP65  |       |       |       |       |        |        |
| Mounting Position / Montaj Pozisyonu            |            |            | 15 ~ 200        | Any / Her Yönde   |       |       |       |       |        |        |
| Noise Level / Ses Seviyesi                      |            | dB         | 15 ~ 200        | ≤ 65  | ≤ 68  | ≤ 70  | ≤ 72  | ≤ 74  | ≤ 76   | ≤ 78   |
| Weight / Ağırlık ±3%                            |            | Kg         | 15 ~ 200        |   | 2.9   | 8     | 12    | 22.6  | 51.7   | 94.5   |

#### ■ Mass Moments of Inertia / Atalet Ağırlık Momenti (kg.cm<sup>2</sup>)

| Ratio / Çevrim | 44A  | 62A  | 90A  | 120A | 142A  | 180A | 220A |
|----------------|------|------|------|------|-------|------|------|
| 15             | 0.09 | 0.36 | 2.28 | 6.85 | 23.45 | 55.2 | 80.2 |
| 20             | 0.09 | 0.36 | 2.28 | 6.85 | 23.45 | 55.2 | 80.2 |
| 25             | 0.09 | 0.36 | 2.28 | 6.85 | 23.45 | 50.4 | 76.5 |
| 30             | 0.09 | 0.36 | 2.28 | 6.85 | 23.5  | 50.4 | 76.5 |
| 35             | 0.09 | 0.36 | 2.28 | 6.85 | 23.5  | 50.4 | 76.5 |
| 40             | 0.09 | 0.36 | 2.28 | 6.85 | 23.5  | 50.4 | 76.5 |
| 50             | 0.09 | 0.36 | 2.28 | 6.85 | 23.5  | 50.4 | 76.5 |
| 60             | 0.09 | 0.36 | 2.28 | 6.85 | 23.5  | 50.4 | 76.5 |
| 70             | 0.09 | 0.36 | 2.28 | 6.85 | 23.5  | 50.4 | 76.5 |
| 80             | 0.09 | 0.36 | 2.28 | 6.85 | 23.5  | 50.4 | 76.5 |
| 90             | 0.09 | 0.36 | 2.28 | 6.85 | 23.5  | 50.4 | 76.5 |
| 100            | 0.09 | 0.36 | 2.28 | 6.85 | 23.5  | 50.4 | 76.5 |
| 120            | 0.03 | 0.08 | 1.88 | 6.2  | 21.8  | 48.7 | 74.2 |
| 140            | 0.03 | 0.08 | 1.88 | 6.2  | 21.8  | 48.7 | 74.2 |
| 160            | 0.03 | 0.08 | 1.88 | 6.2  | 21.8  | 48.7 | 74.2 |
| 180            | 0.03 | 0.08 | 1.88 | 6.2  | 21.8  | 48.7 | 74.2 |
| 200            | 0.03 | 0.08 | 1.88 | 6.2  | 21.8  | 48.7 | 74.2 |