

# EVS SERIES Right-angle Planetary

## EVS 100 2-Stage Specifications

| Frame Size                                  | 100                  |      |             |       |       |       |       |       |       |       |
|---------------------------------------------|----------------------|------|-------------|-------|-------|-------|-------|-------|-------|-------|
| Ratio                                       | Unit                 | Note | 3           | 4     | 5     | 6     | 7     | 8     | 9     | 10    |
| Nominal Output Torque                       | [Nm]                 | *1   | 77          | 108   | 123   | 154   | 154   | 154   | 128   | 128   |
| Maximum Acceleration Torque                 | [Nm]                 | *2   | 172         | 227   | 272   | 340   | 340   | 340   | 240   | 240   |
| Maximum Torque                              | [Nm]                 | *3   | 205         | 271   | 325   | 401   | 401   | 401   | 288   | 288   |
| Emergency Stop Torque                       | [Nm]                 | *4   | 320         | 430   | 500   | 550   | 550   | 550   | 450   | 450   |
| Nominal Input Speed                         | [rpm]                | *5   | 3000        |       |       |       |       |       |       |       |
| Maximum Input Speed                         | [rpm]                | *6   | 6000        |       |       |       |       |       |       |       |
| No Load Running Torque                      | [Nm]                 | *7   | 1.88        |       |       |       |       |       |       |       |
| Maximum Radial Load                         | [N]                  | *8   | 7000        |       |       |       |       |       |       |       |
| Maximum Axial Load                          | [N]                  | *9   | 6300        |       |       |       |       |       |       |       |
| Moment of Inertia ( $\leq \varnothing 14$ ) | [kgcm <sup>2</sup> ] | --   | --          | --    | --    | --    | --    | --    | --    | --    |
| Moment of Inertia ( $\leq \varnothing 19$ ) | [kgcm <sup>2</sup> ] | --   | 6.61        | 5.41  | 4.97  | 4.73  | 4.62  | 4.53  | 4.47  | 4.45  |
| Moment of Inertia ( $\leq \varnothing 28$ ) | [kgcm <sup>2</sup> ] | --   | 8.21        | 7.01  | 6.57  | 6.33  | 6.22  | 6.12  | 6.07  | 6.04  |
| Moment of Inertia ( $\leq \varnothing 38$ ) | [kgcm <sup>2</sup> ] | --   | 15.28       | 14.08 | 13.64 | 13.40 | 13.29 | 13.20 | 13.14 | 13.11 |
| Efficiency                                  | [%]                  | *10  | 93          |       |       |       |       |       |       |       |
| Torsional Rigidity                          | [Nm/arc-min]         | *11  | 31          |       |       |       |       |       |       |       |
| Maximum Torsional Backlash                  | [arc-min]            | --   | $\leq 4$    |       |       |       |       |       |       |       |
| Noise Level                                 | dB [A]               | *12  | $\leq 85$   |       |       |       |       |       |       |       |
| Protection Class                            | --                   | *13  | IP54 (IP65) |       |       |       |       |       |       |       |
| Ambient Temperature                         | [°C]                 | --   | 0-40        |       |       |       |       |       |       |       |
| Permitted Housing Temperature               | [°C]                 | --   | 90          |       |       |       |       |       |       |       |
| Weight                                      | [kg]                 | *14  | 10.5        |       |       |       |       |       |       |       |

## EVS 100 3-Stage Specifications

| Frame Size                                  | 100                  |      |             |      |      |      |      |      |      |      |
|---------------------------------------------|----------------------|------|-------------|------|------|------|------|------|------|------|
| Ratio                                       | Unit                 | Note | 15          | 16   | 20   | 25   | 28   | 30   | 35   | 40   |
| Nominal Output Torque                       | [Nm]                 | *1   | 125         | 136  | 162  | 174  | 174  | 132  | 174  | 172  |
| Maximum Acceleration Torque                 | [Nm]                 | *2   | 229         | 295  | 340  | 340  | 340  | 229  | 340  | 340  |
| Maximum Torque                              | [Nm]                 | *3   | 229         | 295  | 340  | 340  | 340  | 229  | 340  | 340  |
| Emergency Stop Torque                       | [Nm]                 | *4   | 450         | 550  | 550  | 550  | 550  | 450  | 550  | 550  |
| Nominal Input Speed                         | [rpm]                | *5   | 3100        |      |      |      |      |      |      |      |
| Maximum Input Speed                         | [rpm]                | *6   | 6000        |      |      |      |      |      |      |      |
| No Load Running Torque                      | [Nm]                 | *7   | 1.11        |      |      |      |      |      |      |      |
| Maximum Radial Load                         | [N]                  | *8   | 7000        |      |      |      |      |      |      |      |
| Maximum Axial Load                          | [N]                  | *9   | 6300        |      |      |      |      |      |      |      |
| Moment of Inertia ( $\leq \varnothing 14$ ) | [kgcm <sup>2</sup> ] | --   | 2.24        | 2.45 | 2.19 | 2.18 | 2.40 | 1.87 | 2.16 | 1.86 |
| Moment of Inertia ( $\leq \varnothing 19$ ) | [kgcm <sup>2</sup> ] | --   | 2.57        | 2.78 | 2.52 | 2.51 | 2.73 | 2.20 | 2.49 | 2.19 |
| Moment of Inertia ( $\leq \varnothing 28$ ) | [kgcm <sup>2</sup> ] | --   | 4.70        | 4.91 | 4.65 | 4.63 | 4.86 | 4.33 | 4.62 | 4.32 |
| Moment of Inertia ( $\leq \varnothing 38$ ) | [kgcm <sup>2</sup> ] | --   | --          | --   | --   | --   | --   | --   | --   | --   |
| Efficiency                                  | [%]                  | *10  | 88          |      |      |      |      |      |      |      |
| Torsional Rigidity                          | [Nm/arc-min]         | *11  | 31          |      |      |      |      |      |      |      |
| Maximum Torsional Backlash                  | [arc-min]            | --   | $\leq 7$    |      |      |      |      |      |      |      |
| Noise Level                                 | dB [A]               | *12  | $\leq 85$   |      |      |      |      |      |      |      |
| Protection Class                            | --                   | *13  | IP54 (IP65) |      |      |      |      |      |      |      |
| Ambient Temperature                         | [°C]                 | --   | 0-40        |      |      |      |      |      |      |      |
| Permitted Housing Temperature               | [°C]                 | --   | 90          |      |      |      |      |      |      |      |
| Weight                                      | [kg]                 | *14  | 10.1        |      |      |      |      |      |      |      |

## EVS 100 3-Stage Specifications

| Frame Size                                  | 100                  |      |             |      |      |      |      |      |      |  |  |
|---------------------------------------------|----------------------|------|-------------|------|------|------|------|------|------|--|--|
| Ratio                                       | Unit                 | Note | 45          | 50   | 60   | 70   | 80   | 90   | 100  |  |  |
| Nominal Output Torque                       | [Nm]                 | *1   | 132         | 174  | 174  | 174  | 174  | 132  | 132  |  |  |
| Maximum Acceleration Torque                 | [Nm]                 | *2   | 240         | 340  | 340  | 340  | 340  | 240  | 240  |  |  |
| Maximum Torque                              | [Nm]                 | *3   | 240         | 340  | 340  | 340  | 340  | 240  | 240  |  |  |
| Emergency Stop Torque                       | [Nm]                 | *4   | 450         | 550  | 550  | 550  | 550  | 450  | 450  |  |  |
| Nominal Input Speed                         | [rpm]                | *5   | 3100        |      |      |      |      |      |      |  |  |
| Maximum Input Speed                         | [rpm]                | *6   | 6000        |      |      |      |      |      |      |  |  |
| No Load Running Torque                      | [Nm]                 | *7   | 1.11        |      |      |      |      |      |      |  |  |
| Maximum Radial Load                         | [N]                  | *8   | 7000        |      |      |      |      |      |      |  |  |
| Maximum Axial Load                          | [N]                  | *9   | 6300        |      |      |      |      |      |      |  |  |
| Moment of Inertia ( $\leq \varnothing 14$ ) | [kgcm <sup>2</sup> ] | --   | 2.15        | 1.86 | 1.85 | 1.85 | 1.85 | 1.85 | 1.85 |  |  |
| Moment of Inertia ( $\leq \varnothing 19$ ) | [kgcm <sup>2</sup> ] | --   | 2.48        | 2.19 | 2.18 | 2.18 | 2.18 | 2.18 | 2.18 |  |  |
| Moment of Inertia ( $\leq \varnothing 28$ ) | [kgcm <sup>2</sup> ] | --   | 4.61        | 4.31 | 4.31 | 4.31 | 4.31 | 4.31 | 4.31 |  |  |
| Moment of Inertia ( $\leq \varnothing 38$ ) | [kgcm <sup>2</sup> ] | --   | --          | --   | --   | --   | --   | --   | --   |  |  |
| Efficiency                                  | [%]                  | *10  | 88          |      |      |      |      |      |      |  |  |
| Torsional Rigidity                          | [Nm/arc-min]         | *11  | 31          |      |      |      |      |      |      |  |  |
| Maximum Torsional Backlash                  | [arc-min]            | --   | $\leq 7$    |      |      |      |      |      |      |  |  |
| Noise Level                                 | dB [A]               | *12  | $\leq 85$   |      |      |      |      |      |      |  |  |
| Protection Class                            | --                   | *13  | IP54 (IP65) |      |      |      |      |      |      |  |  |
| Ambient Temperature                         | [°C]                 | --   | 0-40        |      |      |      |      |      |      |  |  |
| Permitted Housing Temperature               | [°C]                 | --   | 90          |      |      |      |      |      |      |  |  |
| Weight                                      | [kg]                 | *14  | 10.1        |      |      |      |      |      |      |  |  |

\*1) At nominal input speed, service life is 20,000 hours

\*2) The maximum torque when starting or stopping operation. Apply Cycle Factor  $f_0$ , found on page 468, for higher duty cycle applications

\*3) Permitted 10,000 times during service life. Based on 10% of maximum radial load and smooth output shaft

\*4) The maximum torque allowed under a stress situation. Permitted 1,000 times during service life

\*5) The average input speed at nominal input torque. Maintain housing temperature below permitted value

\*6) The maximum intermittent input speed

\*7) Torque at no load applied to the input shaft at nominal input speed

\*8) The maximum radial load that the gearbox can accept

\*9) The maximum axial load that the gearbox can accept

\*10) The efficiency at the nominal output torque rating

\*11) This does not include lost motion

\*12) Contact Nidec Drive Technology for the testing conditions and environment

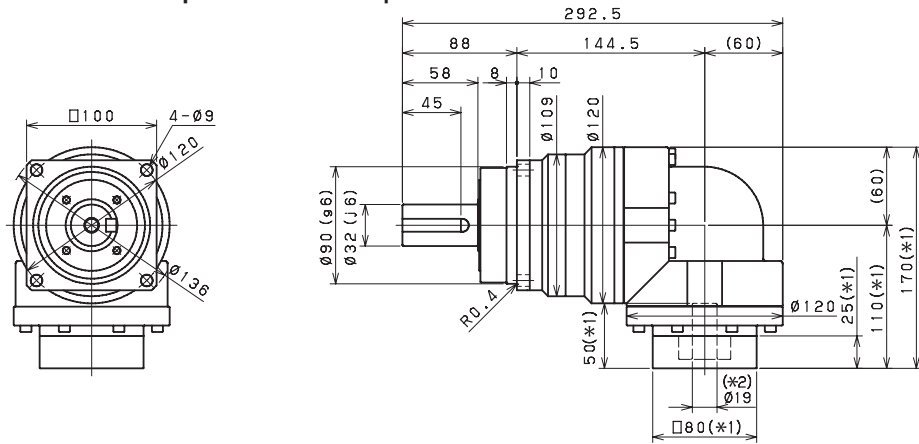
\*13) Various wash-down options are available. Contact Nidec Drive Technology for more details

\*14) Weight may vary slightly between models

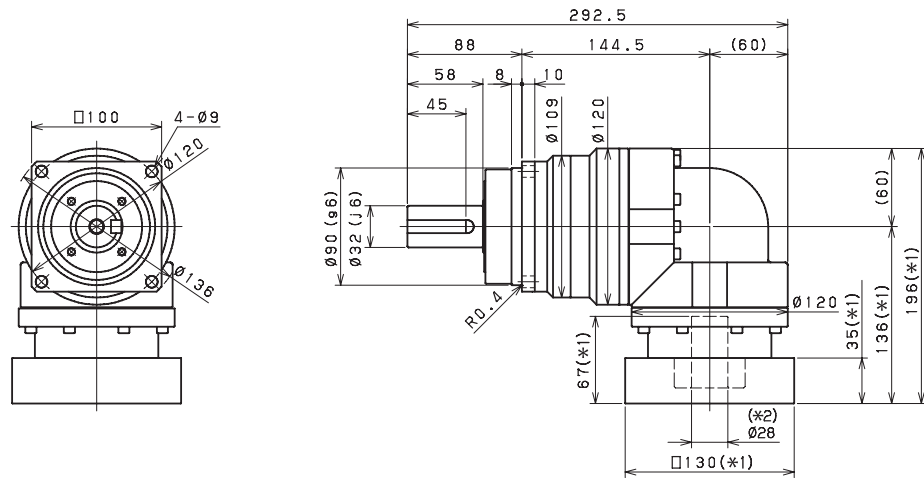
# EVS SERIES Right-angle Planetary

## EVS 100 2-Stage Dimensions

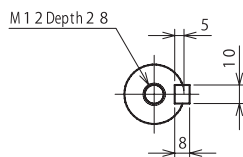
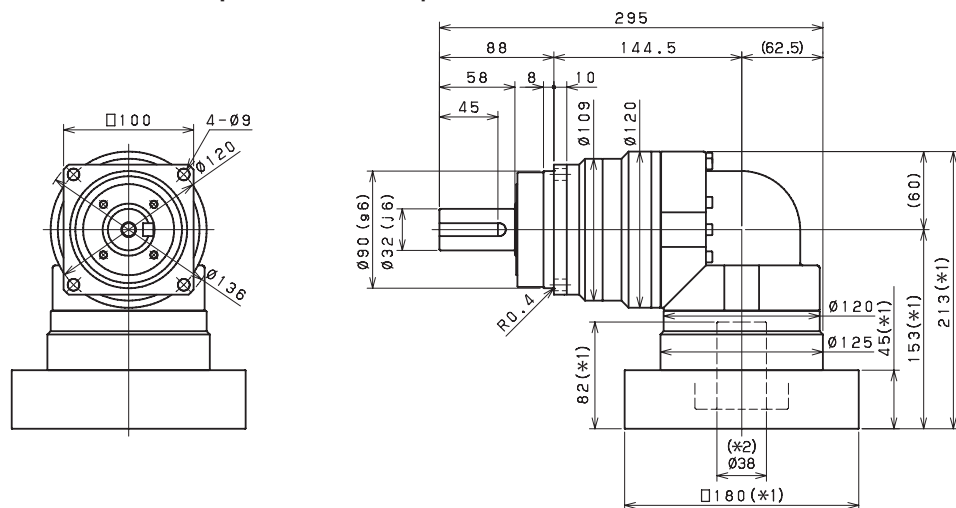
Input bore size  $\leq \phi 19$  mm



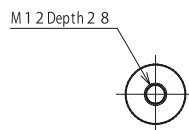
Input bore size  $\leq \phi 28$  mm



Input bore size  $\leq \phi 38$  mm



Keyed shaft



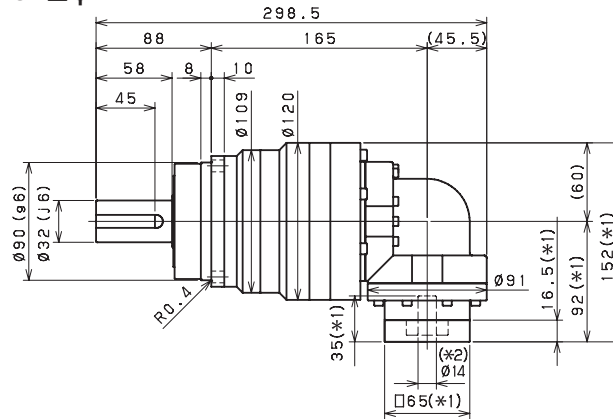
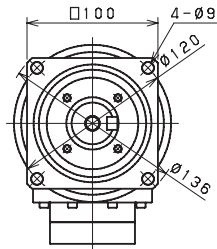
Smooth shaft

\*1) Length will vary depending on motor

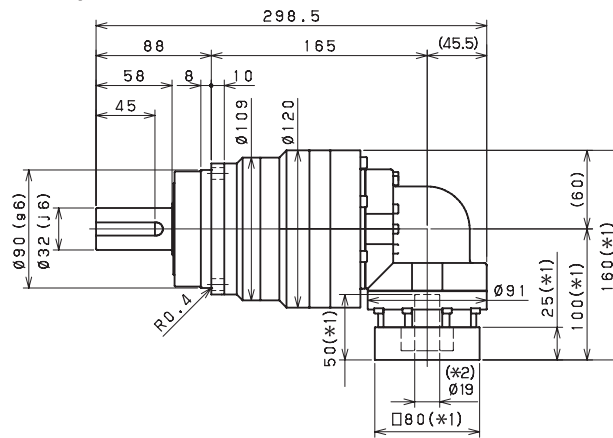
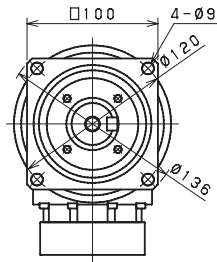
\*2) Bushing will be inserted to adapt to motor shaft

## EVS 100 3-Stage Dimensions

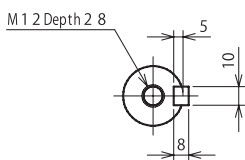
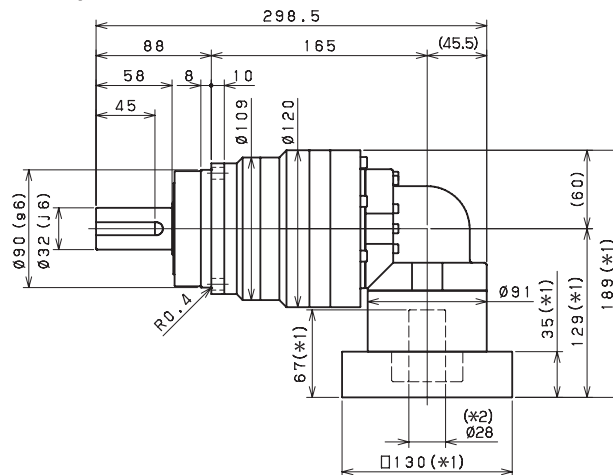
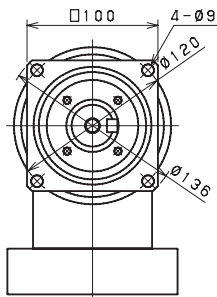
Input bore size  $\cong \varnothing 14$  mm



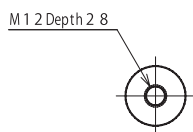
Input bore size  $\cong \varnothing 19$  mm



Input bore size  $\cong \varnothing 28$  mm



Keyed shaft



Smooth shaft

\*1) Length will vary depending on motor

\*2) Bushing will be inserted to adapt to motor shaft