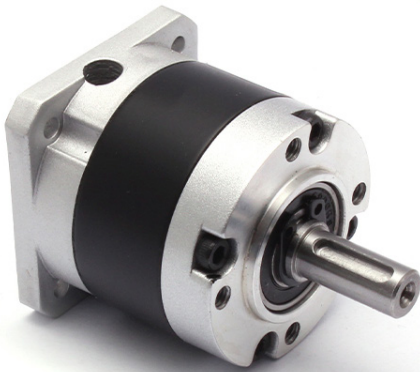




EG-Series



MG-Series



SG-Series

## Planetary Gears

- Planetary Gear MG-Series
- Precision Planetary Gear EG-Series
- Reduction Gear SG-Series

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### MG-Series



MG planetary gears are high-precision planetary gears that - unlike the EG-series - are equipped with powder-metallurgically manufactured gears instead of steel gears. They are an excellent choice for applications that require good accuracy at low cost.

These in-line planetary gearboxes are equipped with an input shaft coupling that fits a standard stepper motor with **5 or 8 mm shaft diameter** according to **NEMA 17 or 23**, a brushless DC motor or a brushed DC motor.



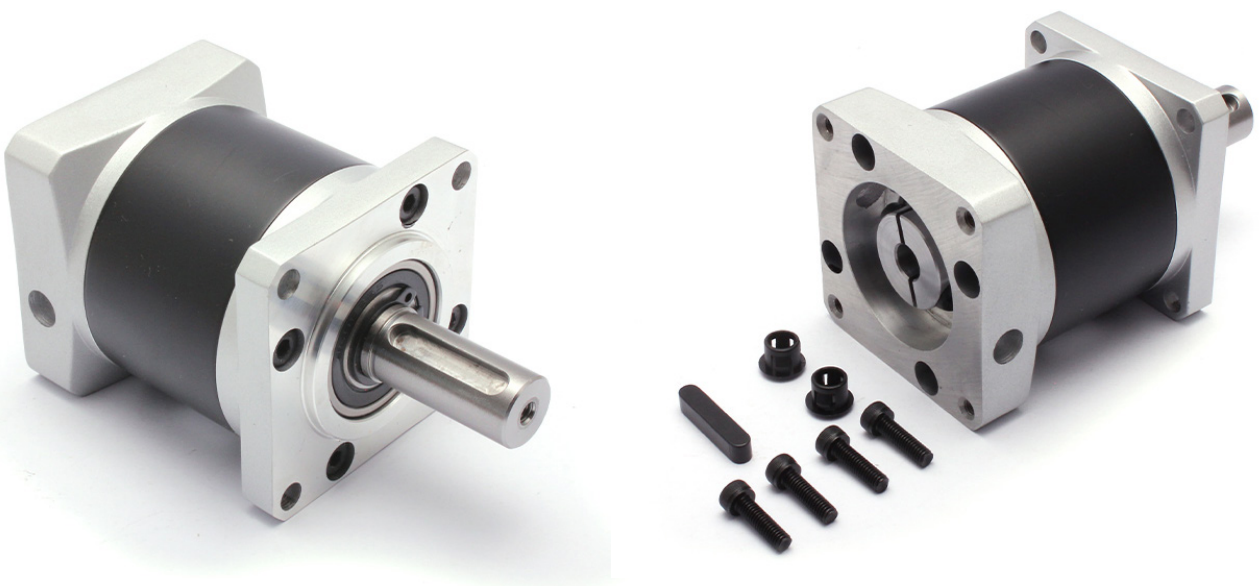
**Planetary gears of the MG17 series are only suitable for short shaft motors with a shaft length of 6.5 to 10.5 mm.**



**Planetary gears of the MG23 series are only suitable for short shaft motors with a shaft length of 8 to 14 mm.**

#### Key Data:

- Gear Ratios: From 10 : 1 to 100 : 1
- Efficiency: 90%
- Noise Level: ≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
- Flange Sizes: 42 x 42 mm / NEMA 17 stepper motor or 57 x 57 mm / NEMA 23 stepper motor (47,1 x 47,1 mm)
- Backlash at No-load: ≤ 30 or 50 arc-min
- Waterproof Rating: IP54
- Output Shaft Type: Key way / feather key



### S-MG17-G10, for NEMA 17, Gear Ratio 10:1, 30 arc-min



A high-precision planetary gearbox with a **gear ratio of 10:1** and a **maximum backlash of 30 arc-min**. Unlike the EG-series, it is equipped with powder-metallurgically manufactured gears instead of steel gears. An excellent choice for applications that require good accuracy at low cost.

This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard stepper motor with **5 mm shaft diameter** according to **NEMA 17**, a brushless DC motor or a brushed DC motor.



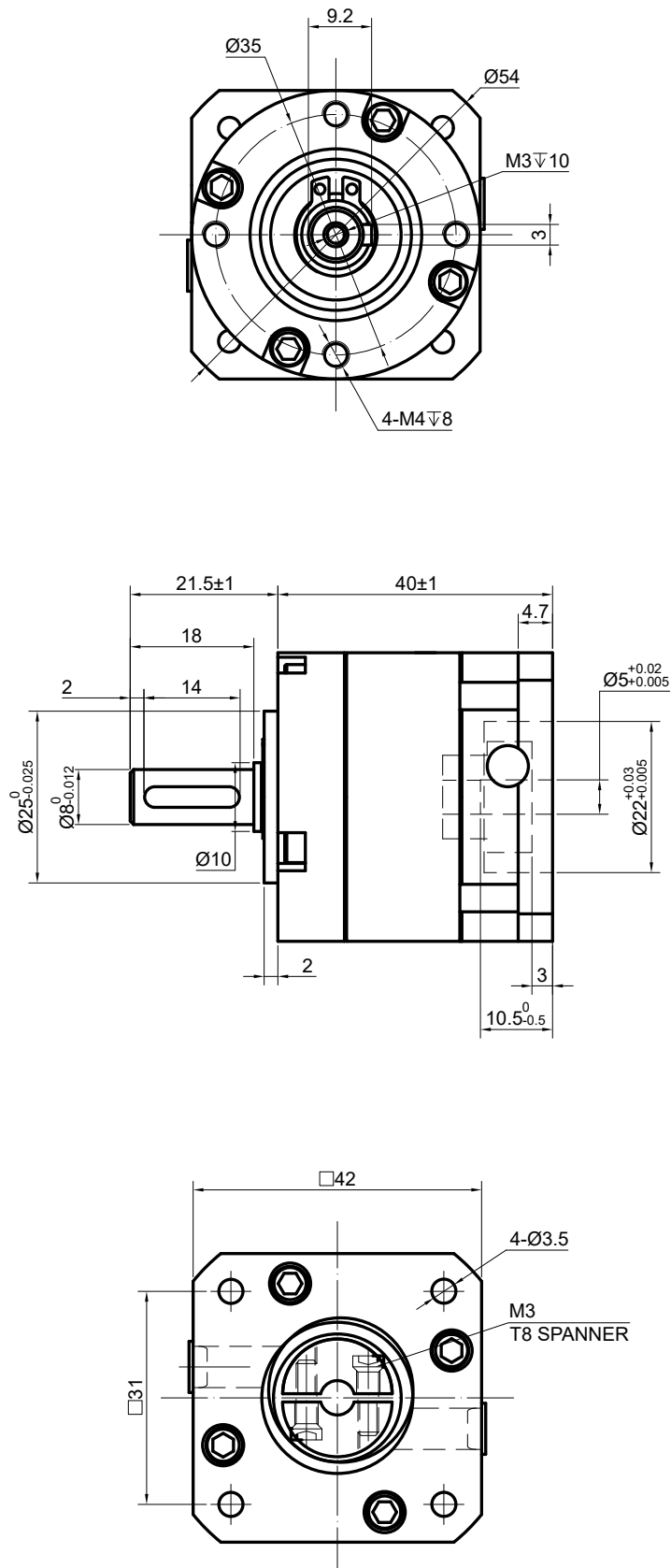
**Planetary gears of the MG17 series are only suitable for short shaft motors with a shaft length of 6.5 to 10.5 mm.**

#### Technical Data:

- Gear Ratio: 10 : 1
- Efficiency: 90%
- Moment of Inertia: 0.03 kg·m<sup>2</sup>
- Backlash at No-load: ≤ 30 arc-min
- Max. Permissible Torque: 5 Nm (44.25 lb-in)
- Noise Level: ≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
- Flange Size: 42 x 42 mm / NEMA 17 stepper motor
- Output Shaft Type: Key way / feather key
- Gearbox Length: 40 mm
- Output Shaft Diameter: Ø 8 mm
- Output Shaft Length: 21,5 mm
- Input Shaft Diameter: Ø 5 mm
- Input Shaft Length: 6.5 - 10.5 mm
- Waterproof Rating: IP54
- Weight: 310 g



## S-MG17-G10



### S-MG17-G20, for NEMA 17, Gear Ratio 20:1, 30 arc-min



A high-precision planetary gearbox with a **gear ratio of 20:1** and a **maximum backlash of 30 arc-min**. Unlike the EG-series, it is equipped with powder-metallurgically manufactured gears instead of steel gears. An excellent choice for applications that require good accuracy at low cost.

This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard stepper motor with **5 mm shaft diameter** according to **NEMA 17**, a brushless DC motor or a brushed DC motor.



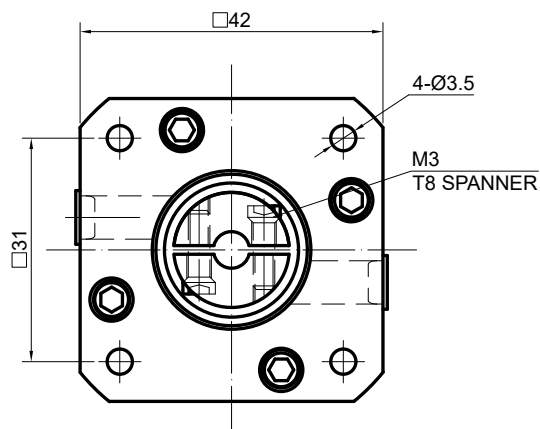
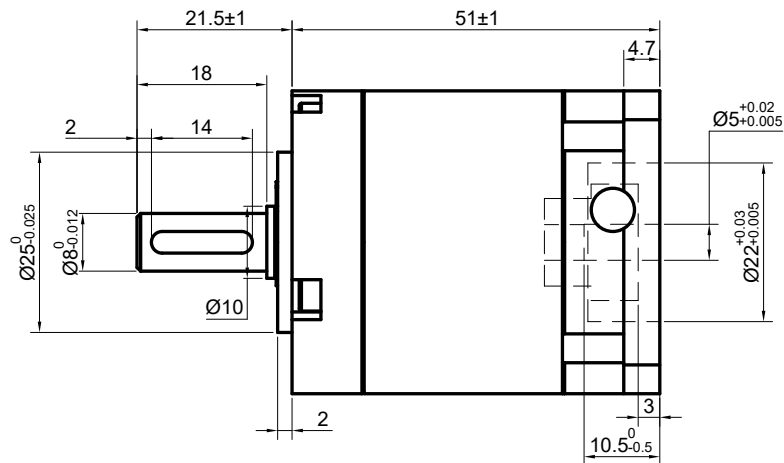
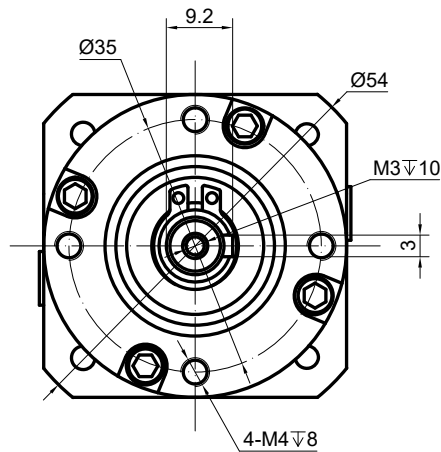
**Planetary gears of the MG17 series are only suitable for short shaft motors with a shaft length of 6.5 to 10.5 mm.**

#### Technical Data:

- Gear Ratio: 20 : 1
- Efficiency: 90%
- Moment of Inertia: 0.03 kg·m<sup>2</sup>
- Backlash at No-load: ≤ 30 arc-min
- Max. Permissible Torque: 10 Nm (88.51 lb-in)
- Noise Level: ≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
- Flange Size: 42 x 42 mm / NEMA 17 stepper motor (31 x 31 mm)
- Output Shaft Type: Key way / feather key
- Gearbox Length: 51 mm
- Output Shaft Diameter: Ø 8 mm
- Output Shaft Length: 21,5 mm
- Input Shaft Diameter: Ø 5 mm
- Input Shaft Length: 6.5 - 10.5 mm
- Waterproof Rating: IP54
- Weight: 320 g



## S-MG17-G20





### S-MG17-G50, for NEMA 17, Gear Ratio 50:1, 50 arc-min



A high-precision planetary gearbox with a **gear ratio of 50:1** and a **maximum backlash of 50 arc-min**. Unlike the EG-series, it is equipped with powder-metallurgically manufactured gears instead of steel gears. An excellent choice for applications that require good accuracy at low cost.

This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard stepper motor with **5 mm shaft diameter** according to **NEMA 17**, a brushless DC motor or a brushed DC motor.



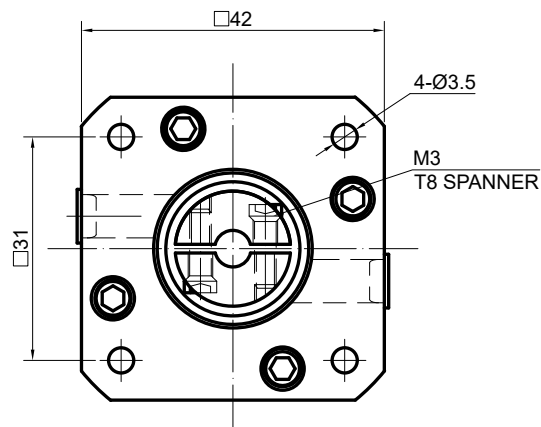
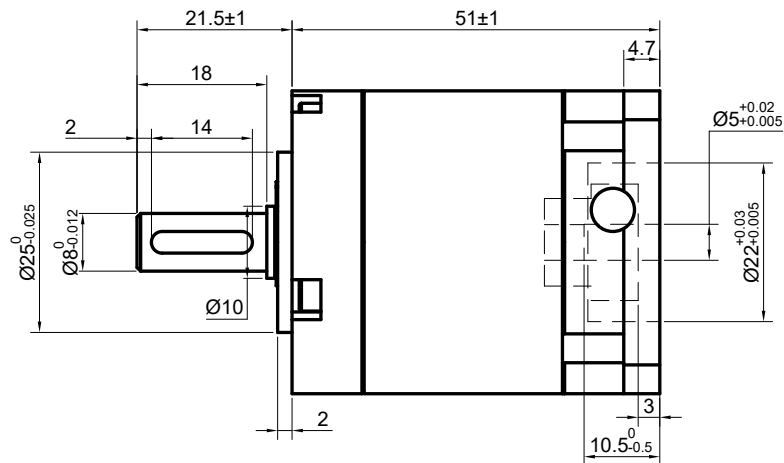
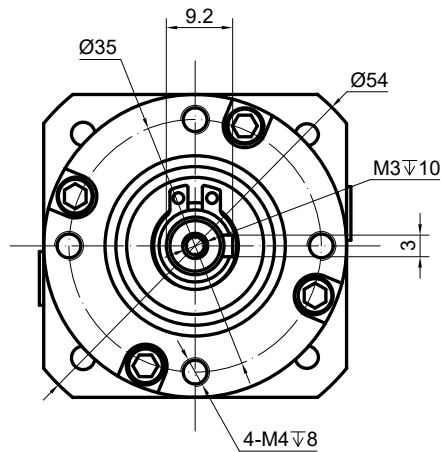
**Planetary gears of the MG17 series are only suitable for short shaft motors with a shaft length of 6.5 to 10.5 mm.**

#### Technical Data:

- Gear Ratio: 50 : 1
- Efficiency: 90%
- Moment of Inertia: 0.03 kg·m<sup>2</sup>
- Backlash at No-load: ≤ 50 arc-min
- Max. Permissible Torque: 10 Nm (88.51 lb-in)
- Noise Level: ≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
- Flange Size: 42 x 42 mm / NEMA 17 stepper motor (31 x 31 mm)
- Output Shaft Type: Key way / feather key
- Gearbox Length: 51 mm
- Output Shaft Diameter: Ø 8 mm
- Output Shaft Length: 21,5 mm
- Input Shaft Diameter: Ø 5 mm
- Input Shaft Length: 6.5 - 10.5 mm
- Waterproof Rating: IP54
- Weight: 390 g



## S-MG17-G50



### S-MG17-G100, for NEMA 17, Gear Ratio 100:1, 50 arc-min



A high-precision planetary gearbox with a **gear ratio of 100:1** and a **maximum backlash of 50 arc-min**. Unlike the EG-series, it is equipped with powder-metallurgically manufactured gears instead of steel gears. An excellent choice for applications that require good accuracy at low cost.

This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard stepper motor with **5 mm shaft diameter** according to **NEMA 17**, a brushless DC motor or a brushed DC motor.



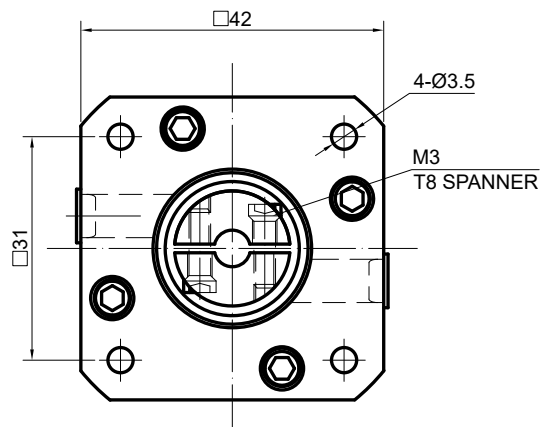
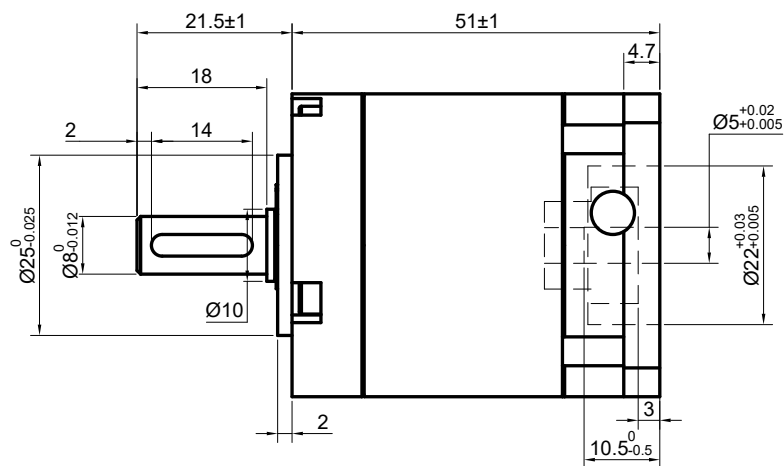
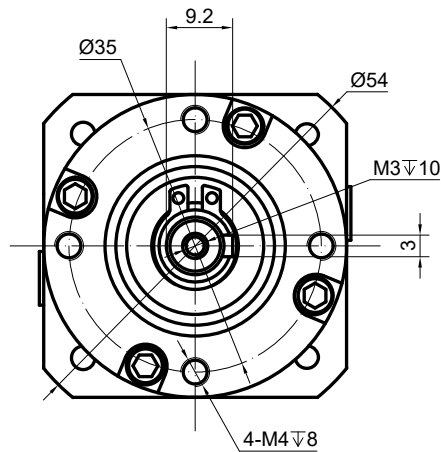
**Planetary gears of the MG17 series are only suitable for short shaft motors with a shaft length of 6.5 to 10.5 mm.**

#### Technical Data:

- Gear Ratio: 100 : 1
- Efficiency: 90%
- Moment of Inertia: 0.03 kg·m<sup>2</sup>
- Backlash at No-load: ≤ 50 arc-min
- Max. Permissible Torque 5 Nm (44.25 lb-in)
- Noise Level: ≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
- Flange Size: 42 x 42 mm / NEMA 17 stepper motor (31 x 31 mm)
- Output Shaft Type: Key way / feather key
- Gearbox Length: 51 mm
- Output Shaft Diameter: Ø 8 mm
- Output Shaft Length: 21,5 mm
- Input Shaft Diameter: Ø 5 mm
- Input Shaft Length: 6.5 - 10.5 mm
- Waterproof Rating: IP54
- Weight: 430 g



## S-MG17-G100



### S-MG23-G10-D8, for NEMA 23, Gear Ratio 10:1, 30 arc-min



A high-precision planetary gearbox with a **gear ratio of 10:1** and a **maximum backlash of 30 arc-min**. Unlike the EG-series, it is equipped with powder-metallurgically manufactured gears instead of steel gears. An excellent choice for applications that require good accuracy at low cost.

This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard stepper motor with **8 mm shaft diameter** according to **NEMA 23**, a brushless DC motor or a brushed DC motor.



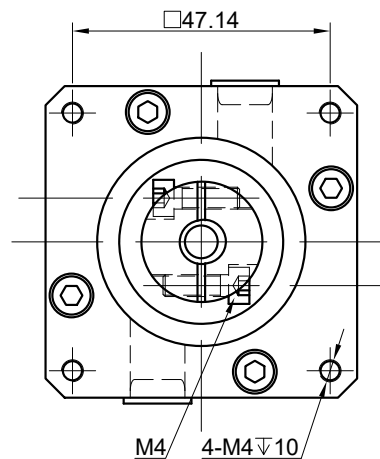
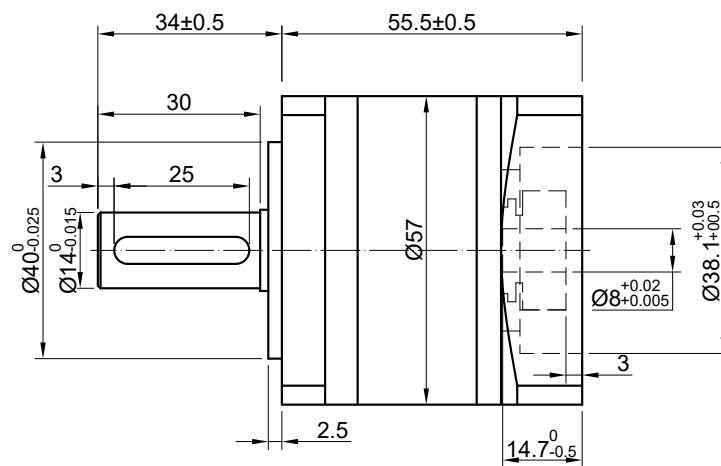
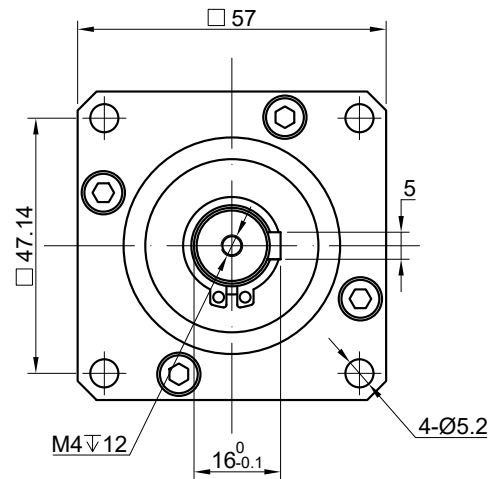
**Planetary gears of the MG23 series are only suitable for short shaft motors with a shaft length of 8 to 14 mm.**

#### Technical Data:

- Gear Ratio: 10 : 1
- Efficiency: 90%
- Moment of Inertia: 0.13 kg·m<sup>2</sup>
- Backlash at No-load: ≤ 30 arc-min
- Max. Permissible Torque: 10 Nm (88.51 lb-in)
- Noise Level: ≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
- Flange Size: 57 x 57 mm / NEMA 23 Stepper motor (47,1 x 47,1 mm)
- Output Shaft Type: Key way / feather key
- Gearbox Length: 55.5 mm
- Output Shaft Diameter: Ø 14 mm
- Output Shaft Length: 34 mm
- Input Shaft Diameter: Ø 8 mm
- Input Shaft Length: 8 - 14 mm
- Waterproof Rating: IP54
- Weight: 750 g



## S-MG23-G10-D8



### S-MG23-G20-D8, for NEMA 23, Gear Ratio 20:1, 50 arc-min



A high-precision planetary gearbox with a **gear ratio of 20:1** and a **maximum backlash of 50 arc-min**. Unlike the EG-series, it is equipped with powder-metallurgically manufactured gears instead of steel gears. An excellent choice for applications that require good accuracy at low cost.

This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard stepper motor with **8 mm shaft diameter** according to **NEMA 23**, a brushless DC motor or a brushed DC motor.



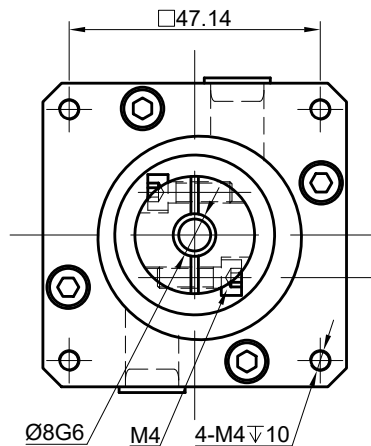
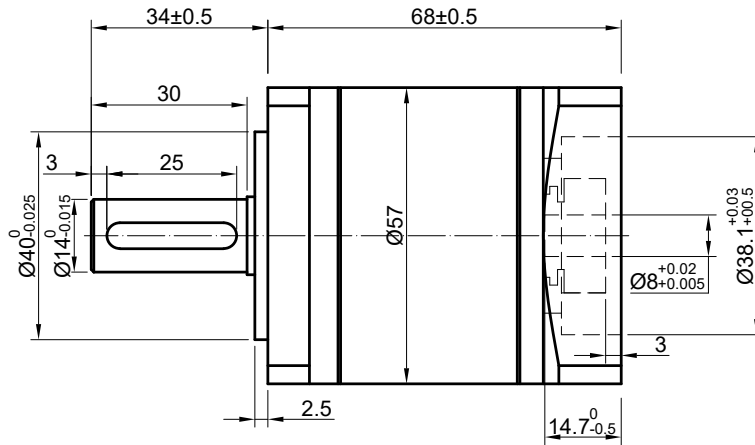
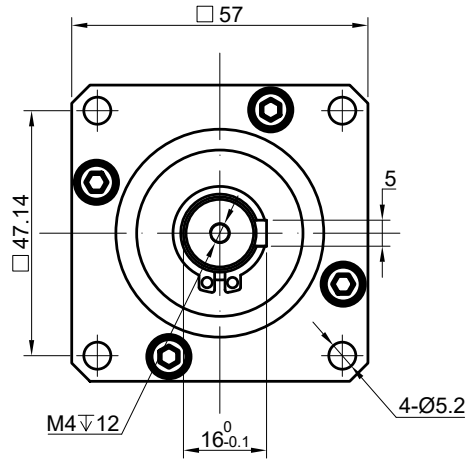
**Planetary gears of the MG23 series are only suitable for short shaft motors with a shaft length of 8 to 14 mm.**

#### Technical Data:

- Gear Ratio: 20 : 1
- Efficiency: 90%
- Moment of Inertia: 0.03 kg·m<sup>2</sup>
- Backlash at No-load: ≤ 50 arc-min
- Max. Permissible Torque: 25 Nm (221.27 lb-in)
- Noise Level: ≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
- Flange Size: 57 x 57 mm / NEMA 23 Stepper motor (47,1 x 47,1 mm)
- Output Shaft Type: Key way / feather key
- Gearbox Length: 68 mm
- Output Shaft Diameter: Ø 14 mm
- Output Shaft Length: 34 mm
- Input Shaft Diameter: Ø 8 mm
- Input Shaft Length: 8 - 14 mm
- Waterproof Rating: IP54
- Weight: 820 g



**S-MG23-G20-D8**





### S-MG23-G50-D8, for NEMA 23, Gear Ratio 50:1, 50 arc-min



A high-precision planetary gearbox with a **gear ratio of 50:1** and a **maximum backlash of 50 arc-min**. Unlike the EG-series, it is equipped with powder-metallurgically manufactured gears instead of steel gears. An excellent choice for applications that require good accuracy at low cost.

This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard stepper motor with **8 mm shaft diameter** according to **NEMA 23**, a brushless DC motor or a brushed DC motor.



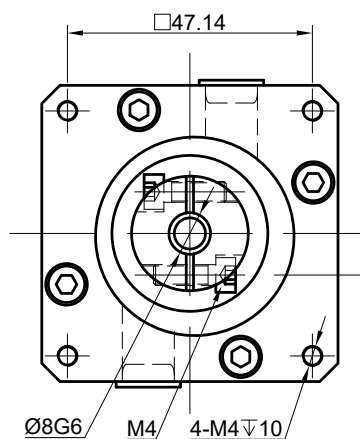
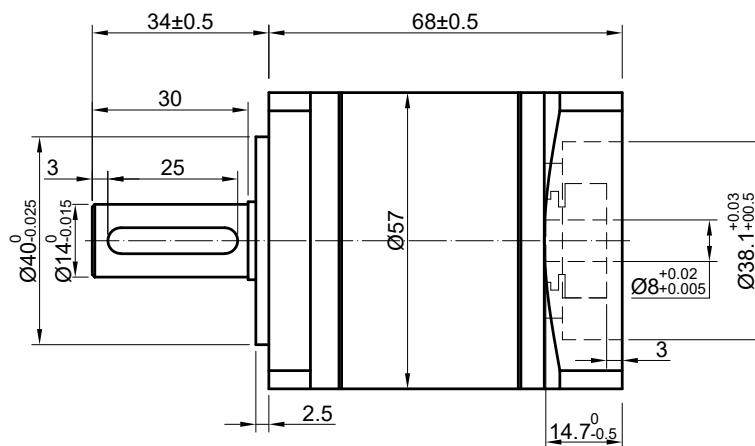
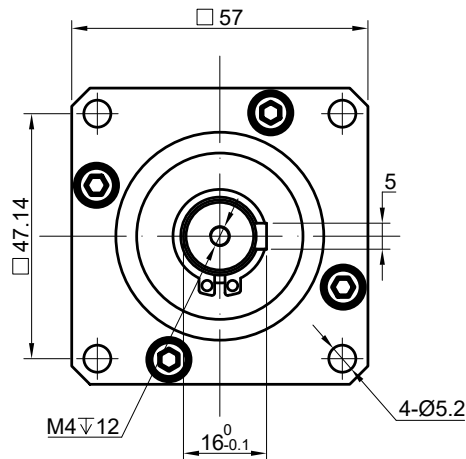
**Planetary gears of the MG23 series are only suitable for short shaft motors with a shaft length of 8 to 14 mm.**

#### Technical Data:

- Gear Ratio: 50 : 1
- Efficiency: 90%
- Moment of Inertia: 0.03 kg·m<sup>2</sup>
- Backlash at No-load: ≤ 50 arc-min
- Max. Permissible Torque: 20 Nm (177.01 lb-in)
- Noise Level: ≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
- Flange Size: 57 x 57 mm / NEMA 23 Stepper motor (47,1 x 47,1 mm)
- Output Shaft Type: Key way / feather key
- Gearbox Length: 68 mm
- Output Shaft Diameter: Ø 14 mm
- Output Shaft Length: 34 mm
- Input Shaft Diameter: Ø 8 mm
- Input Shaft Length: 8 - 14 mm
- Waterproof Rating: IP54
- Weight: 890 g



## S-MG23-G50-D8






### EG-Series



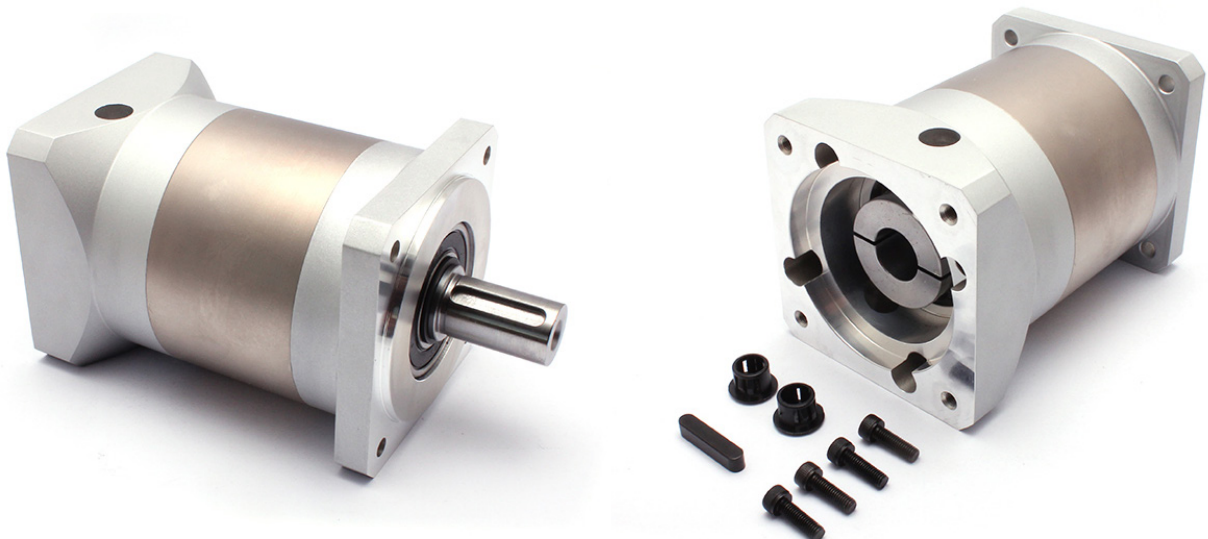
EG precision planetary gears are high precision planetary gearboxes that – unlike the MG-series – are equipped with steel gears instead of powder metallurgy gears. They are an excellent choice for applications that require high accuracy and reliability at an exceptional price.

This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard **NEMA 23, 24 or 34** stepper motor or a brushless DC motor.

- 
**Planetary gear units of the EG-series are suitable for shaft motors with a shaft length from 12 to 41 mm. Please pay attention to the respective information for each model.**
- 
**EG24 series planetary gears:**  
**Typically the mounting holes for NEMA24 motors are 50 mm apart, but some are 47.1 mm apart, so please note that our reducer is only suitable for NEMA24 motors with a hole spacing of 50 mm.**
- 
**EG34 series planetary gears:**  
**The output shaft diameter of the new version is fixed at 14 mm. The diameter of the old version is 19 mm and can be converted to 14 mm by adding a shaft sleeve.**

#### Key Data:

- Gear Ratios: from 5 : 1 to 50 : 1
- Efficiencies: from 94 to 96%
- Noise Level: ≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
- Flange Sizes: 60 x 60 mm / NEMA 23 Stepper motor (47,1 x 47,1 mm) oder  
60 x 60 mm / NEMA 24 Stepper motor (50 x 50 mm)  
90 x 90 mm / NEMA 34 Stepper motor
- Backlash at No-load: ≤ 15 or 20 arc-min
- Waterproof Rating: IP54
- Output Shaft Type: Key way / feather key



### S-EG23-G5-D6, for NEMA 23 (6,35 mm Ø), Gear Ratio 5:1, 15 arc-min



Precision planetary gearbox with a **gear ratio of 5:1** and a **maximum backlash of 15 arc-min**. Unlike the MG-series, it is equipped with steel gears instead of powder metallurgy gears. An excellent choice for applications that require high accuracy and reliability at an exceptional price.

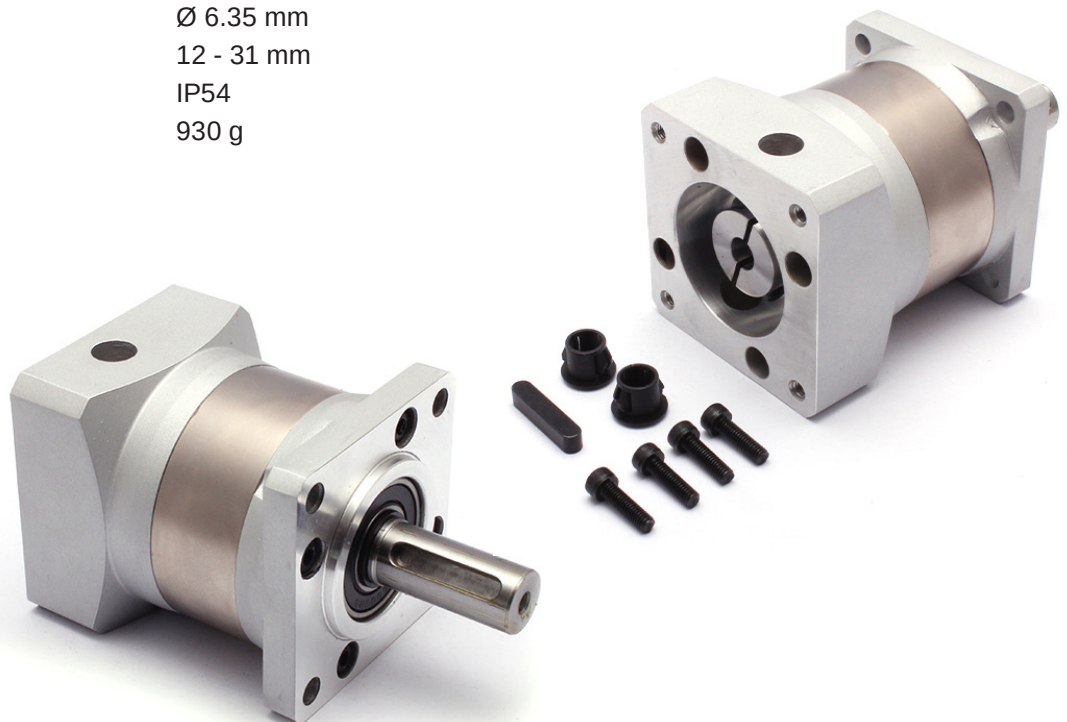
This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard stepper motor with **6,35 mm (¼ Inch) shaft diameter** according to **NEMA 23** or a brushless DC motor.



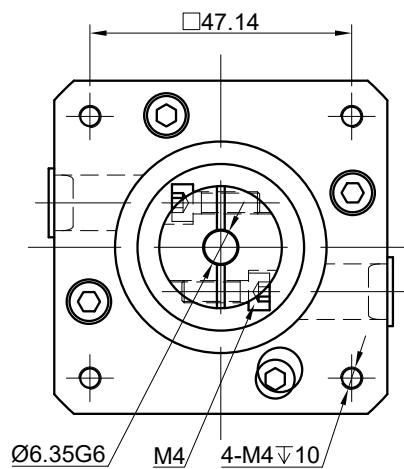
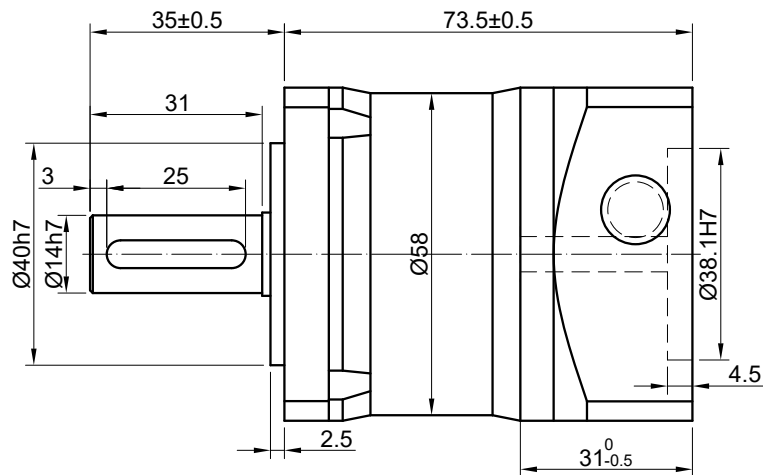
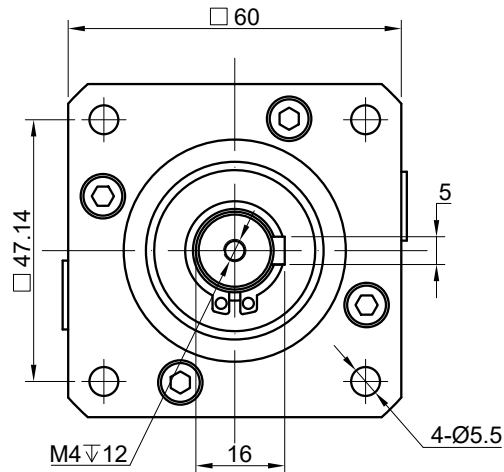
**Planetary gear units of the EG23 and EG24 series are only suitable for shaft motors with a shaft length of 12 to 31 mm.**

#### Technical Data:

• Gear Ratio:	5 : 1
• Efficiency:	96%
• Moment of Inertia:	0.13 kg·m <sup>2</sup>
• Backlash at No-load:	≤ 15 arc-min
• Max. Permissible Torque:	28 Nm (247.87 lb-in)
• Moment Permissible Torque:	56 Nm (495.64 lb-in)
• Noise Level:	≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
• Flange Size:	60 x 60 mm / NEMA 23 Stepper motor (47,1 x 47,1 mm)
• Output Shaft Type:	Key way / feather key
• Gearbox Length:	73.5 mm
• Output Shaft Diameter:	Ø 14 mm
• Output Shaft Length:	35 mm
• Input Shaft Diameter:	Ø 6.35 mm
• Input Shaft Length:	12 - 31 mm
• Waterproof Rating:	IP54
• Weight:	930 g



## S-EG23-G5-D6



### S-EG23-G5-D8, for NEMA 23 (8 mm Ø), Gear Ratio 5:1, 15 arc-min



Precision planetary gearbox with a **gear ratio of 5:1** and a **maximum backlash of 15 arc-min**. Unlike the MG-series, it is equipped with steel gears instead of powder metallurgy gears. An excellent choice for applications that require high accuracy and reliability at an exceptional price.

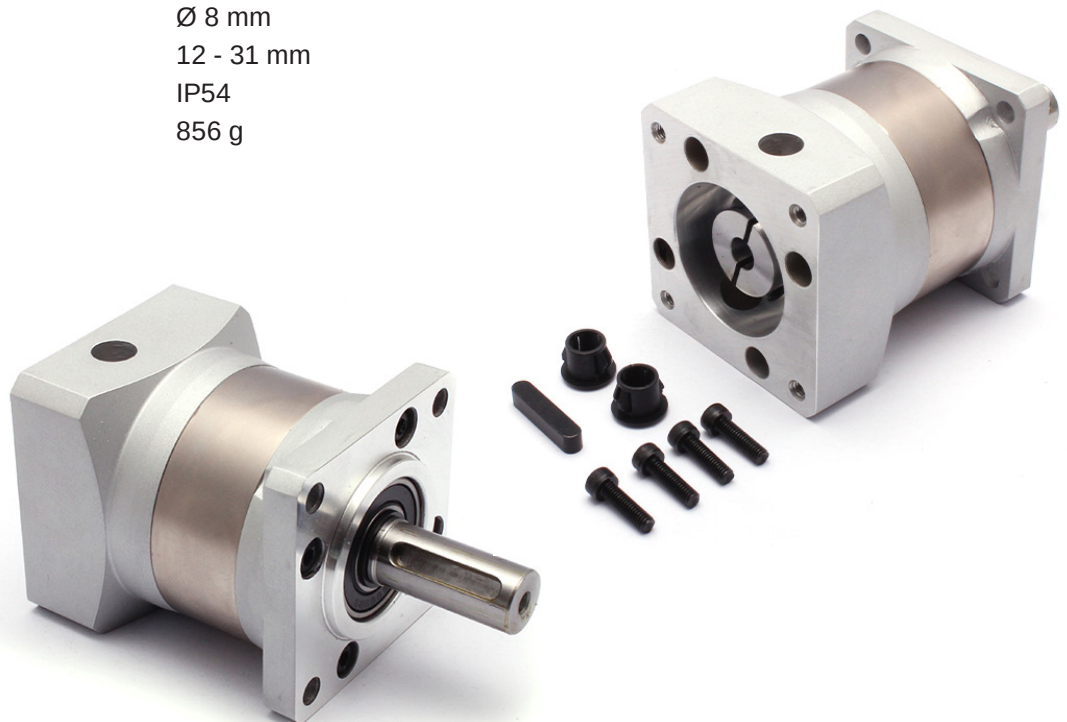
This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard stepper motor with **8 mm shaft diameter** according to **NEMA 23** or a brushless DC motor.



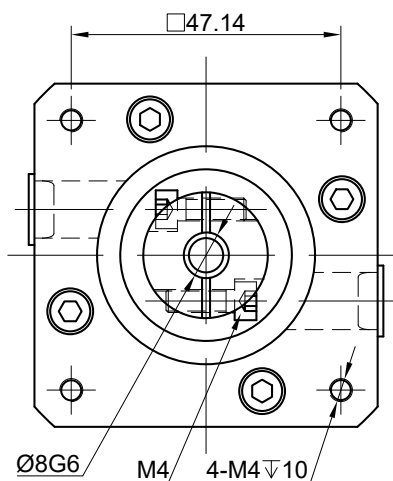
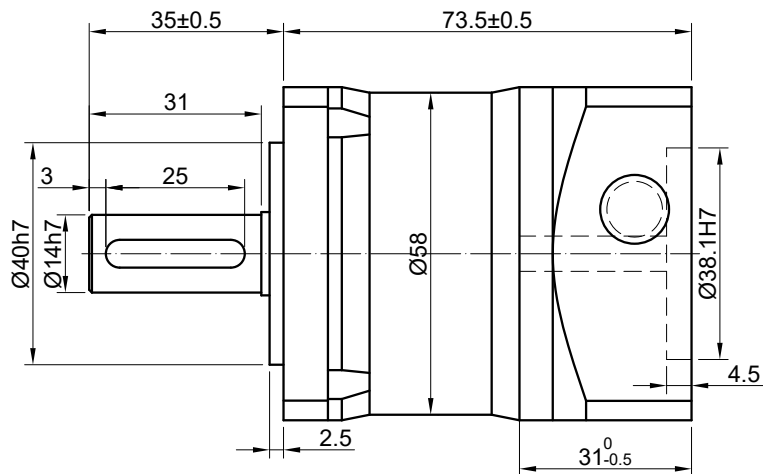
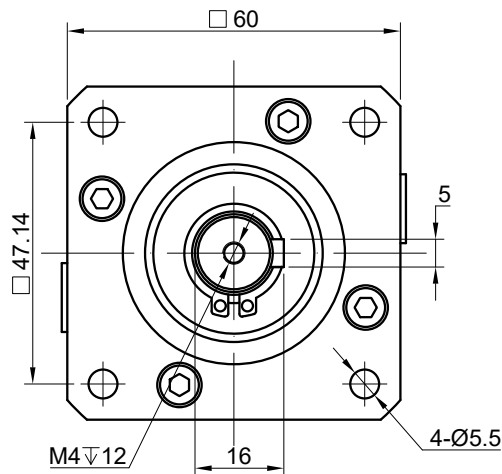
**Planetary gear units of the EG23 and EG24 series are only suitable for shaft motors with a shaft length of 12 to 31 mm.**

#### Technical Data:

• Gear Ratio:	5 : 1
• Efficiency:	94%
• Moment of Inertia:	0.13 kg·m <sup>2</sup>
• Backlash at No-load:	≤ 15 arc-min
• Max. Permissible Torque:	28 Nm (247.87 lb-in)
• Moment Permissible Torque:	56 Nm (495.64 lb-in)
• Noise Level:	≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
• Flange Size:	60 x 60 mm / NEMA 23 Stepper motor (47,1 x 47,1 mm)
• Output Shaft Type:	Key way / feather key
• Gearbox Length:	73.5 mm
• Output Shaft Diameter:	Ø 14 mm
• Output Shaft Length:	35 mm
• Input Shaft Diameter:	Ø 8 mm
• Input Shaft Length:	12 - 31 mm
• Waterproof Rating:	IP54
• Weight:	856 g



## S-EG23-G5-D8



### S-EG23-G10-D6, for NEMA 23 (6,35 mm Ø), Gear Ratio 10:1, 15 arc-min



Precision planetary gearbox with a **gear ratio of 10:1** and a **maximum backlash of 15 arc-min**. Unlike the MG-series, it is equipped with steel gears instead of powder metallurgy gears. An excellent choice for applications that require high accuracy and reliability at an exceptional price.

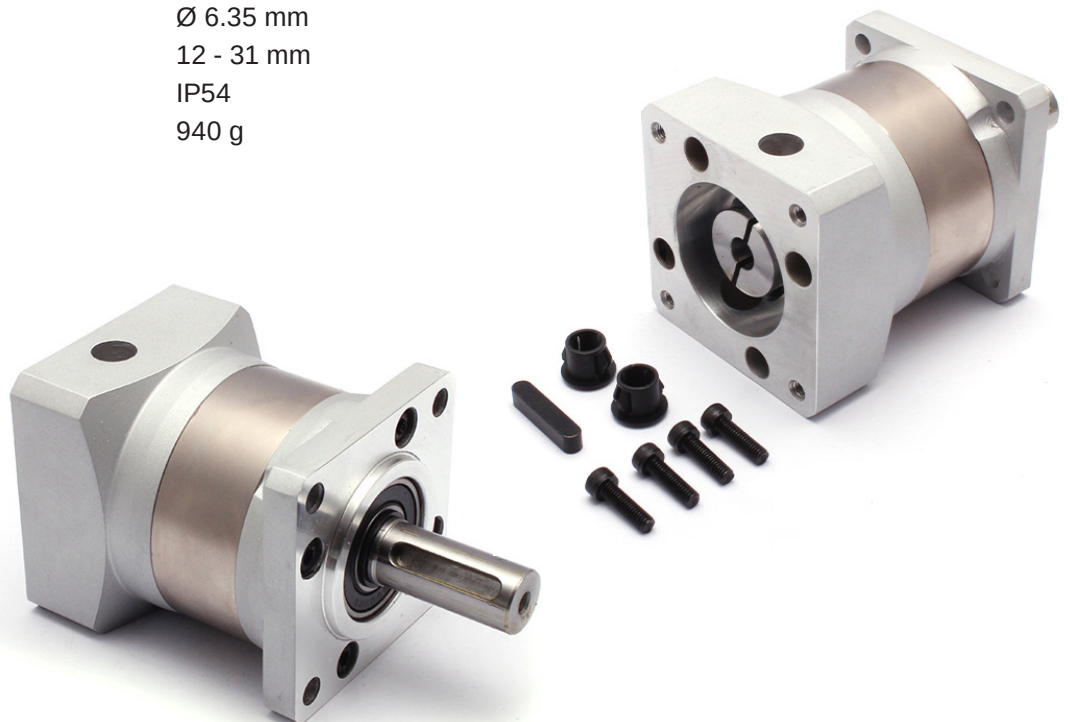
This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard stepper motor with **6,35 mm (¼ Inch) shaft diameter** according to **NEMA 23** or a brushless DC motor.



**Planetary gear units of the EG23 and EG24 series are only suitable for shaft motors with a shaft length of 12 to 31 mm.**

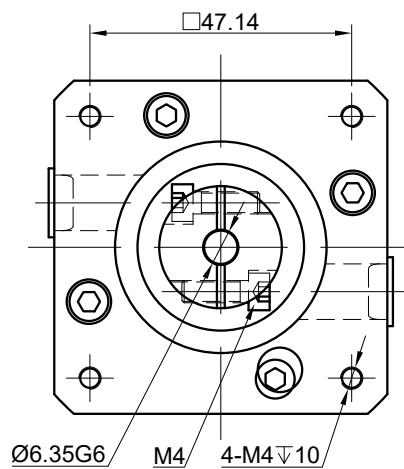
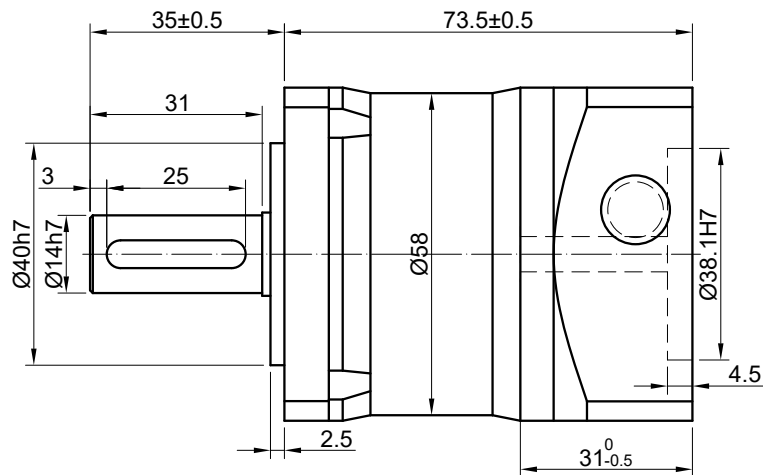
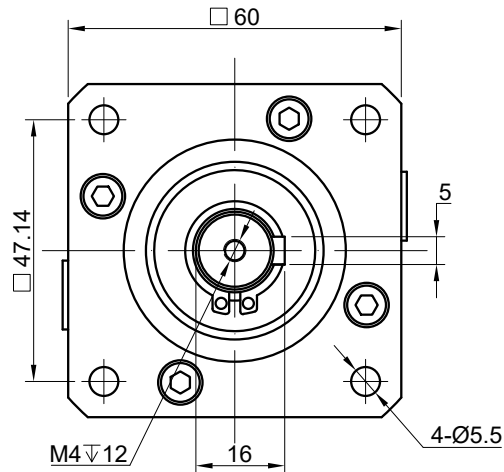
#### Technical Data:

• Gear Ratio:	10 : 1
• Efficiency:	96%
• Moment of Inertia:	0.13 kg·m <sup>2</sup>
• Backlash at No-load:	≤ 15 arc-min
• Max. Permissible Torque:	10 Nm (88.51 lb-in)
• Moment Permissible Torque:	20 Nm (177.01 lb-in)
• Noise Level:	≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
• Flange Size:	60 x 60 mm / NEMA 23 Stepper motor (47,1 x 47,1 mm)
• Output Shaft Type:	Key way / feather key
• Gearbox Length:	73.5 mm
• Output Shaft Diameter:	Ø 14 mm
• Output Shaft Length:	35 mm
• Input Shaft Diameter:	Ø 6.35 mm
• Input Shaft Length:	12 - 31 mm
• Waterproof Rating:	IP54
• Weight:	940 g





## S-EG23-G10-D6



### S-EG23-G10-D8, for NEMA 23 (8 mm Ø), Gear Ratio 10:1, 15 arc-min



Precision planetary gearbox with a **gear ratio of 10:1** and a **maximum backlash of 15 arc-min**. Unlike the MG-series, it is equipped with steel gears instead of powder metallurgy gears. An excellent choice for applications that require high accuracy and reliability at an exceptional price.

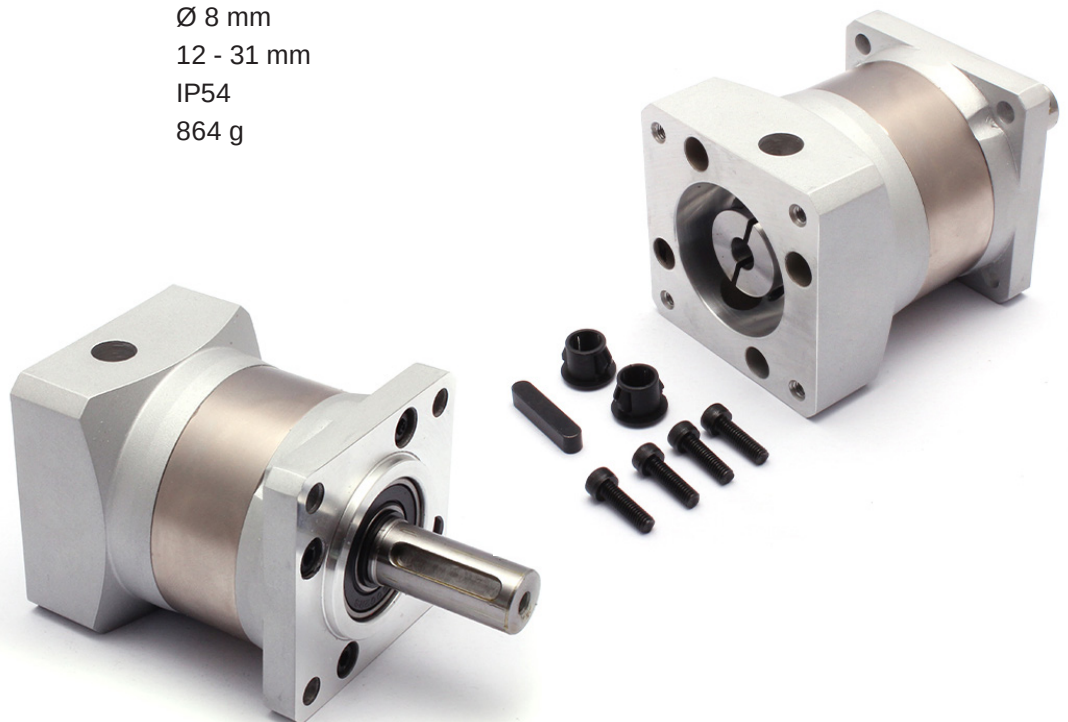
This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard stepper motor with **8 mm shaft diameter** according to **NEMA 23** or a brushless DC motor.



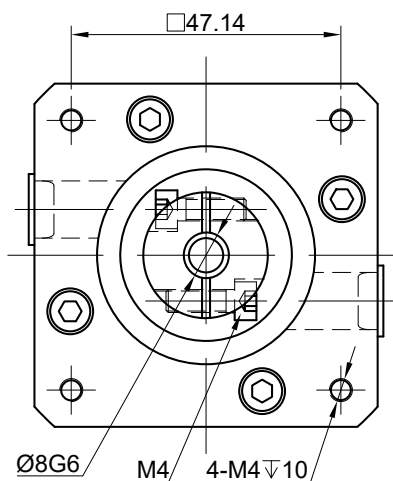
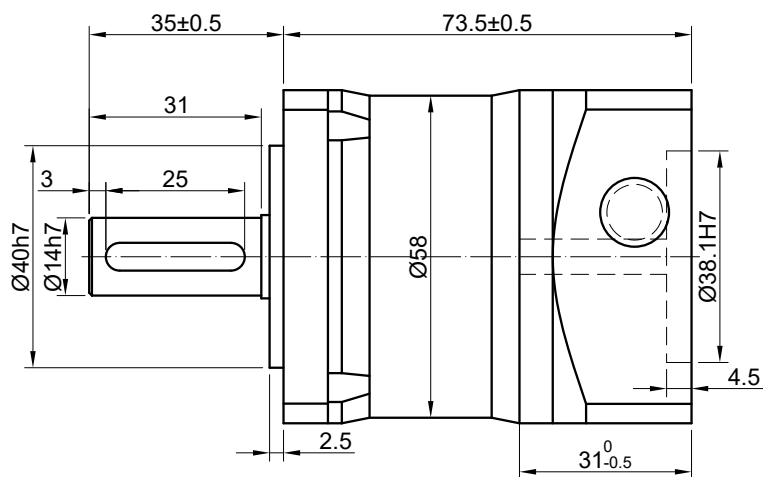
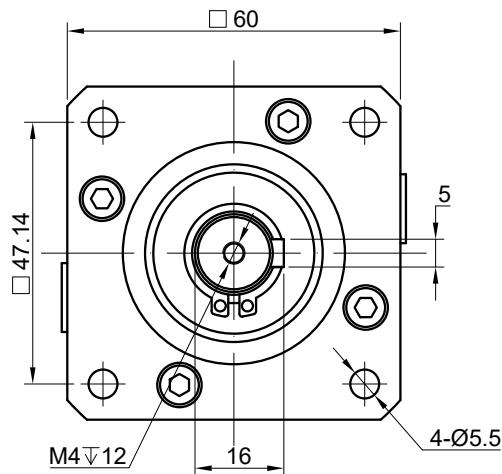
**Planetary gear units of the EG23 and EG24 series are only suitable for shaft motors with a shaft length of 12 to 31 mm.**

#### Technical Data:

• Gear Ratio:	10 : 1
• Efficiency:	94%
• Moment of Inertia:	0.13 kg·m <sup>2</sup>
• Backlash at No-load:	≤ 15 arc-min
• Max. Permissible Torque:	10 Nm (88.51 lb-in)
• Moment Permissible Torque:	20 Nm (177.01 lb-in)
• Noise Level:	≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
• Flange Size:	60 x 60 mm / NEMA 23 Stepper motor (47,1 x 47,1 mm)
• Output Shaft Type:	Key way / feather key
• Gearbox Length:	73.5 mm
• Output Shaft Diameter:	Ø 14 mm
• Output Shaft Length:	35 mm
• Input Shaft Diameter:	Ø 8 mm
• Input Shaft Length:	12 - 31 mm
• Waterproof Rating:	IP54
• Weight:	864 g



## S-EG23-G10-D8



### S-EG23-G20-D6, for NEMA 23 (6,35 mm Ø), Gear Ratio 20:1, 20 arc-min



Precision planetary gearbox with a **gear ratio of 20:1** and a **maximum backlash of 20 arc-min**. Unlike the MG-series, it is equipped with steel gears instead of powder metallurgy gears. An excellent choice for applications that require high accuracy and reliability at an exceptional price.

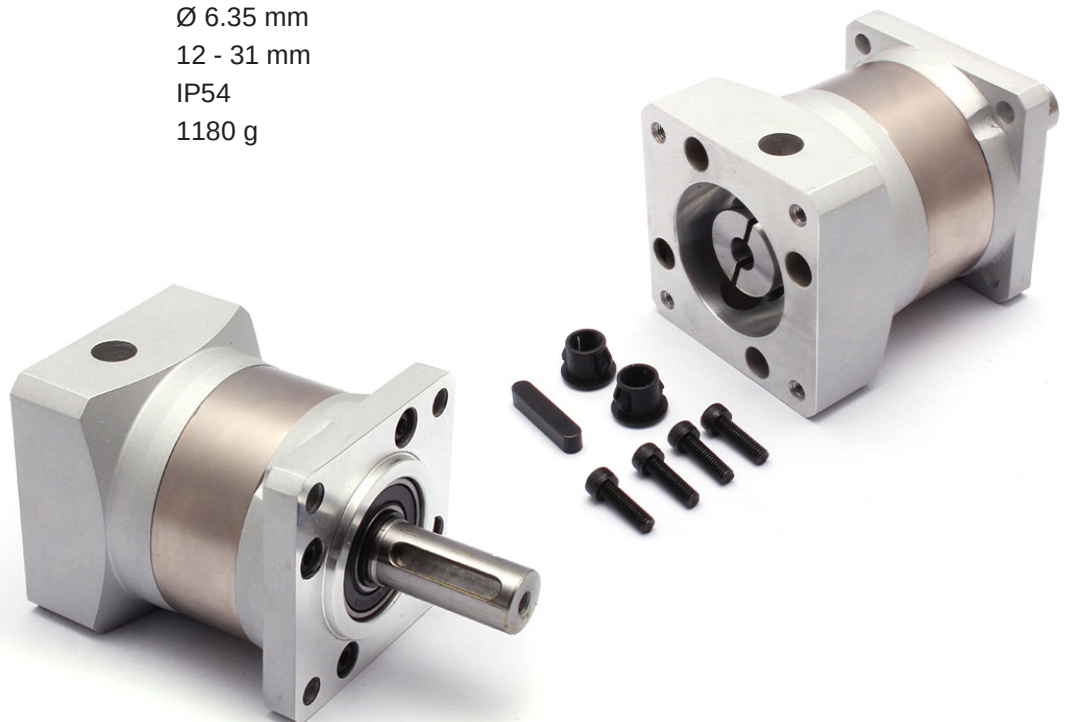
This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard stepper motor with **6,35 mm (¼ Inch) shaft diameter** according to **NEMA 23** or a brushless DC motor.



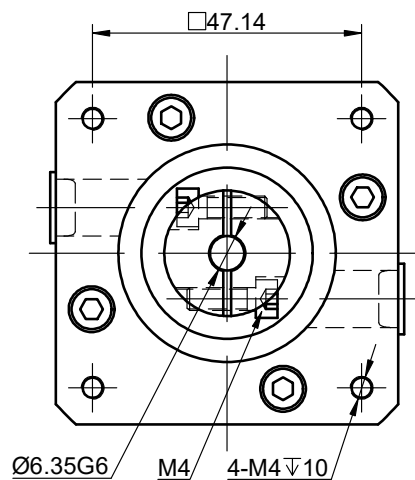
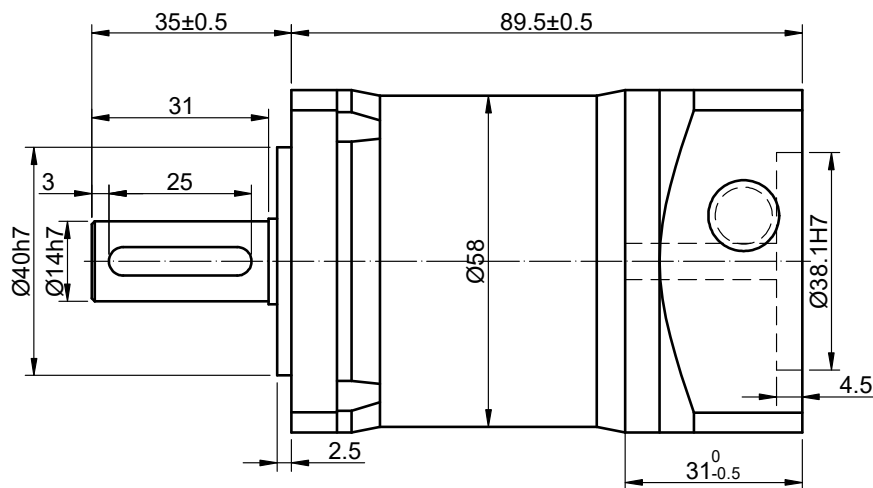
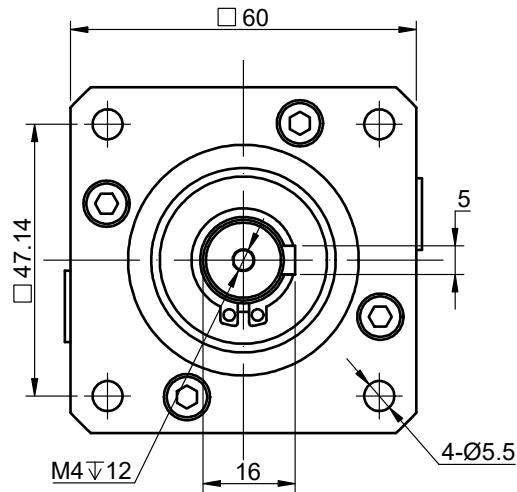
**Planetary gear units of the EG23 and EG24 series are only suitable for shaft motors with a shaft length of 12 to 31 mm.**

#### Technical Data:

• Gear Ratio:	20 : 1
• Efficiency:	94%
• Moment of Inertia:	0.03 kg·m <sup>2</sup>
• Backlash at No-load:	≤ 20 arc-min
• Max. Permissible Torque:	30 Nm (265.52 lb-in)
• Moment Permissible Torque:	60 Nm (531.04 lb-in)
• Noise Level:	≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
• Flange Size:	60 x 60 mm / NEMA 23 Stepper motor (47,1 x 47,1 mm)
• Output Shaft Type:	Key way / feather key
• Gearbox Length:	89.5 mm
• Output Shaft Diameter:	Ø 14 mm
• Output Shaft Length:	35 mm
• Input Shaft Diameter:	Ø 6.35 mm
• Input Shaft Length:	12 - 31 mm
• Waterproof Rating:	IP54
• Weight:	1180 g



## S-EG23-G20-D6



### S-EG23-G20-D8, for NEMA 23 (8 mm Ø), Gear Ratio 10:1, 20 arc-min



Precision planetary gearbox with a **gear ratio of 20:1** and a **maximum backlash of 20 arc-min**. Unlike the MG-series, it is equipped with steel gears instead of powder metallurgy gears. An excellent choice for applications that require high accuracy and reliability at an exceptional price.

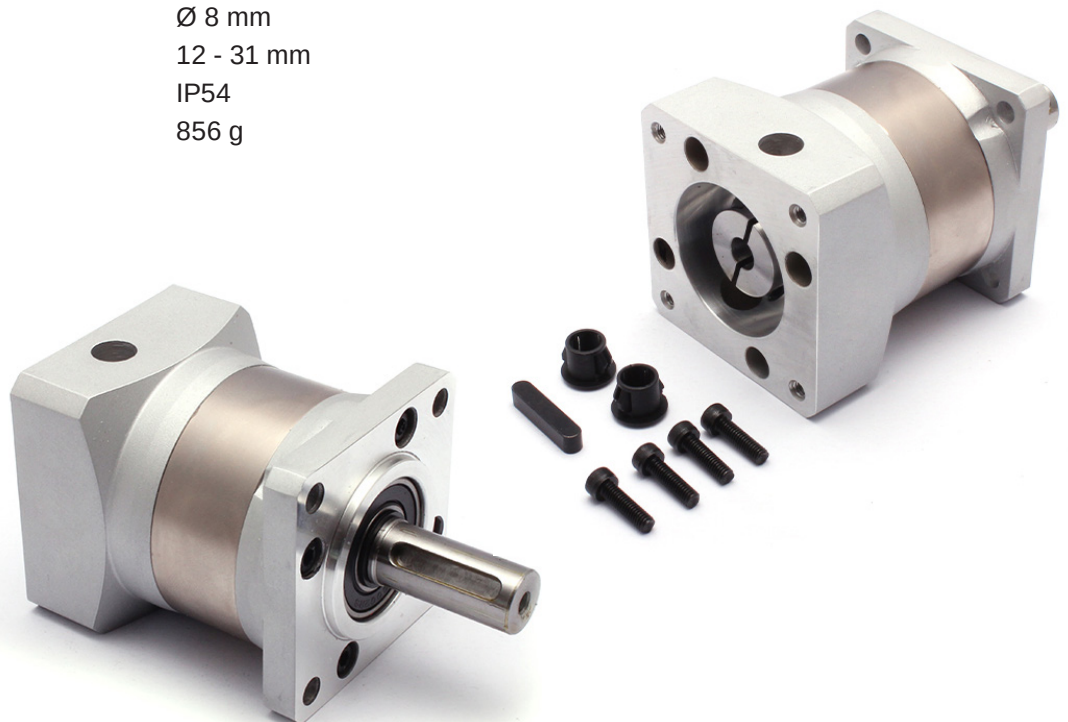
This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard stepper motor with **8 mm shaft diameter** according to **NEMA 23** or a brushless DC motor.



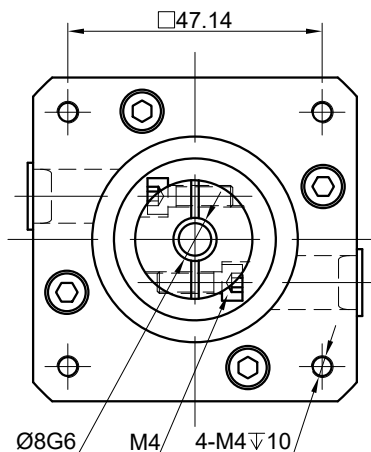
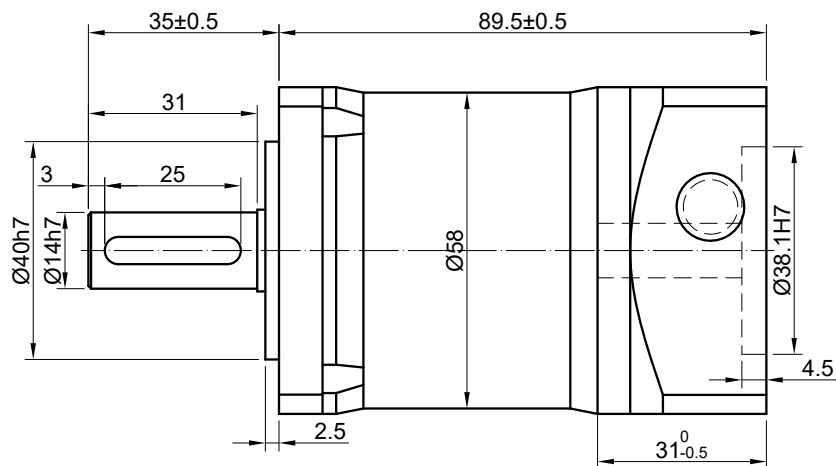
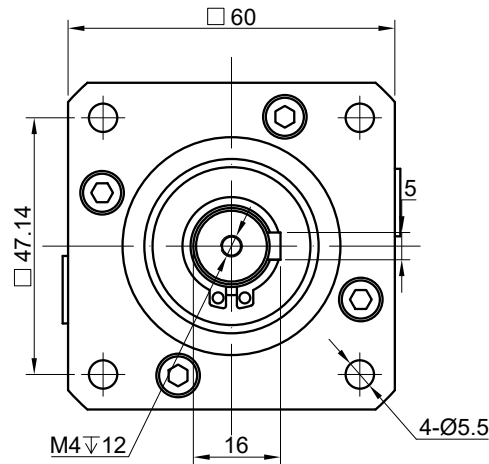
**Planetary gear units of the EG23 and EG24 series are only suitable for shaft motors with a shaft length of 12 to 31 mm.**

#### Technical Data:

• Gear Ratio:	20 : 1
• Efficiency:	94%
• Moment of Inertia:	0.03 kg·m <sup>2</sup>
• Backlash at No-load:	≤ 20 arc-min
• Max. Permissible Torque:	30 Nm (265.52 lb-in)
• Moment Permissible Torque:	60 Nm (531.04 lb-in)
• Noise Level:	≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
• Flange Size:	60 x 60 mm / NEMA 23 Stepper motor (47,1 x 47,1 mm)
• Output Shaft Type:	Key way / feather key
• Gearbox Length:	89.5 mm
• Output Shaft Diameter:	Ø 14 mm
• Output Shaft Length:	35 mm
• Input Shaft Diameter:	Ø 8 mm
• Input Shaft Length:	12 - 31 mm
• Waterproof Rating:	IP54
• Weight:	856 g



## S-EG23-G20-D8



### S-EG23-G50-D6, for NEMA 23 (6,35 mm Ø), Gear Ratio 50:1, 20 arc-min



Precision planetary gearbox with a **gear ratio of 50:1** and a **maximum backlash of 20 arc-min**. Unlike the MG-series, it is equipped with steel gears instead of powder metallurgy gears. An excellent choice for applications that require high accuracy and reliability at an exceptional price.

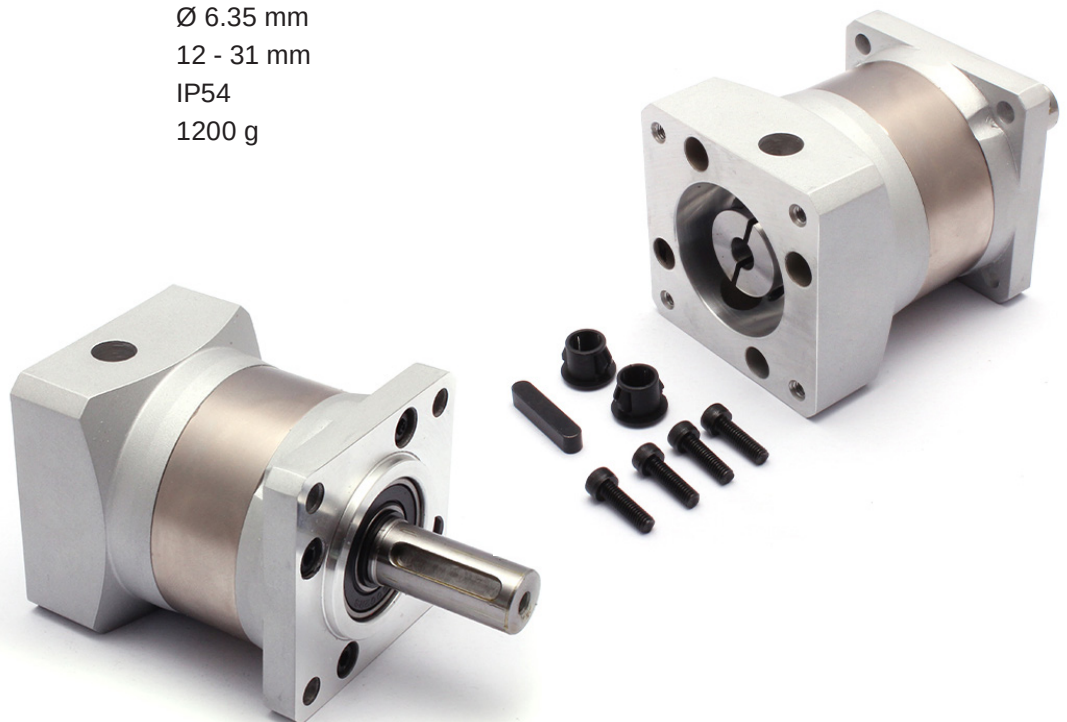
This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard stepper motor with **6,35 mm (¼ Inch) shaft diameter** according to **NEMA 23** or a brushless DC motor.



**Planetary gear units of the EG23 and EG24 series are only suitable for shaft motors with a shaft length of 12 to 31 mm.**

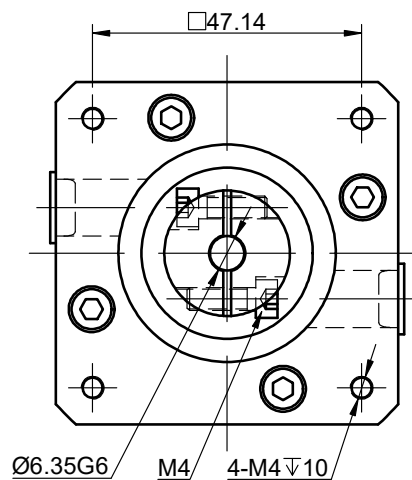
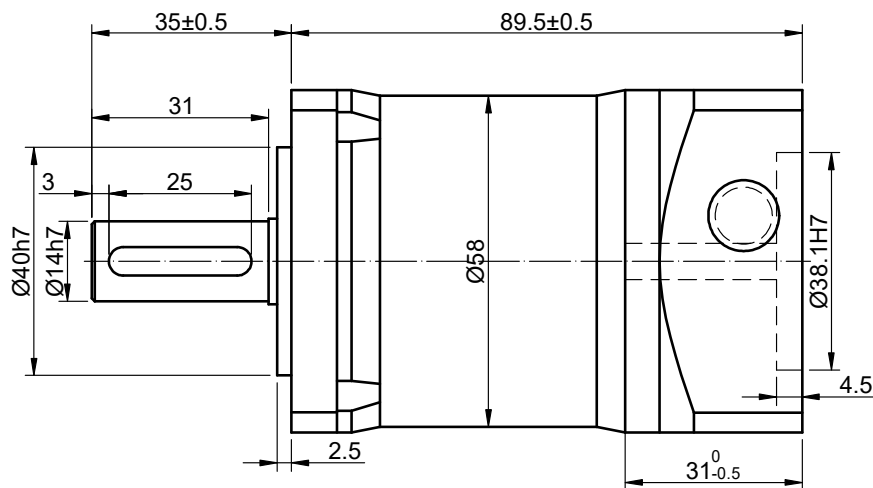
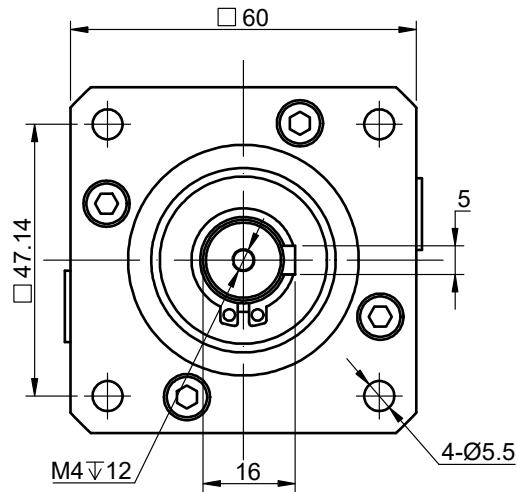
#### Technical Data:

• Gear Ratio:	50 : 1
• Efficiency:	94%
• Moment of Inertia:	0.03 kg·m <sup>2</sup>
• Backlash at No-load:	≤ 20 arc-min
• Max. Permissible Torque:	25 Nm (221.27 lb-in)
• Moment Permissible Torque:	50 Nm (442.54 lb-in)
• Noise Level:	≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
• Flange Size:	60 x 60 mm / NEMA 23 Stepper motor (47,1 x 47,1 mm)
• Output Shaft Type:	Key way / feather key
• Gearbox Length:	89.5 mm
• Output Shaft Diameter:	Ø 14 mm
• Output Shaft Length:	35 mm
• Input Shaft Diameter:	Ø 6.35 mm
• Input Shaft Length:	12 - 31 mm
• Waterproof Rating:	IP54
• Weight:	1200 g





## S-EG23-G50-D6



### S-EG23-G50-D8, for NEMA 23 (8 mm Ø), Gear Ratio 50:1, 20 arc-min



Precision planetary gearbox with a **gear ratio of 50:1** and a **maximum backlash of 20 arc-min**. Unlike the MG-series, it is equipped with steel gears instead of powder metallurgy gears. An excellent choice for applications that require high accuracy and reliability at an exceptional price.

This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard stepper motor with **8 mm shaft diameter** according to **NEMA 23** or a brushless DC motor.



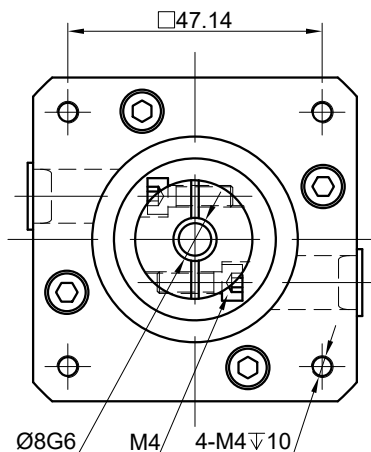
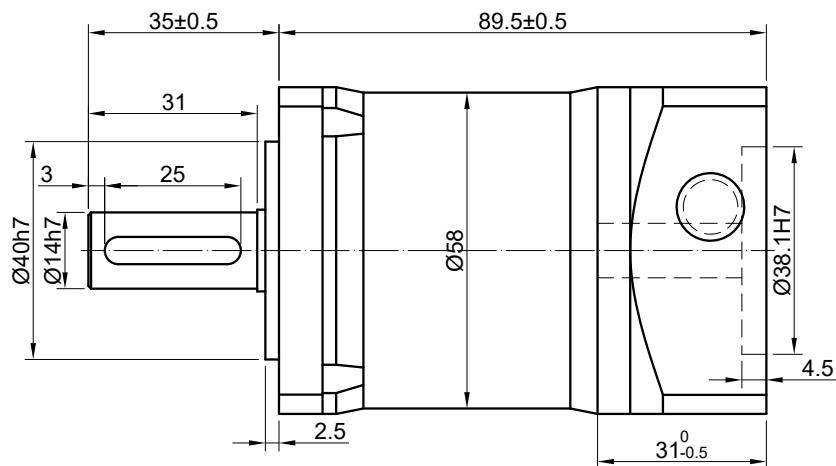
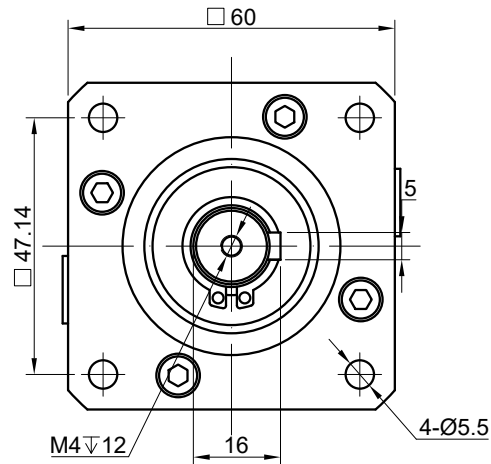
**Planetary gear units of the EG23 and EG24 series are only suitable for shaft motors with a shaft length of 12 to 31 mm.**

#### Technical Data:

• Gear Ratio:	50 : 1
• Efficiency:	94%
• Moment of Inertia:	0.03 kg·m <sup>2</sup>
• Backlash at No-load:	≤ 20 arc-min
• Max. Permissible Torque:	25 Nm (221.27 lb-in)
• Moment Permissible Torque:	50 Nm (442.54 lb-in)
• Noise Level:	≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
• Flange Size:	60 x 60 mm / NEMA 23 Stepper motor (47,1 x 47,1 mm)
• Output Shaft Type:	Key way / feather key
• Gearbox Length:	89.5 mm
• Output Shaft Diameter:	Ø 14 mm
• Output Shaft Length:	35 mm
• Input Shaft Diameter:	Ø 8 mm
• Input Shaft Length:	12 - 31 mm
• Waterproof Rating:	IP54
• Weight:	1200 g



## S-EG23-G50-D8



## S-EG24-G5, for NEMA 24, Gear Ratio 5:1, 15 arc-min



Precision planetary gearbox with a **gear ratio of 5:1** and a **maximum backlash of 15 arc-min**. Unlike the MG-series, it is equipped with steel gears instead of powder metallurgy gears. An excellent choice for applications that require high accuracy and reliability at an exceptional price.

This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard stepper motor with **10 mm shaft diameter** according to **NEMA 24** or a brushless DC motor.



Typically the mounting holes for NEMA24 motors are 50 mm apart, but some are 47.1 mm apart, so please note that our reducer is only suitable for NEMA24 motors with a hole spacing of 50 mm.



Planetary gear units of the EG23 and EG24 series are only suitable for shaft motors with a shaft length of 12 to 31 mm.

### Technical Data:

• Gear Ratio:	5 : 1
• Efficiency:	96%
• Moment of Inertia:	0.13 kg·m <sup>2</sup>
• Backlash at No-load:	≤ 15 arc-min
• Max. Permissible Torque:	28 Nm (247.82 lb-in)
• Moment Permissible Torque:	56 Nm (495.64 lb-in)
• Noise Level:	≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
• Flange Size:	60 x 60 mm / NEMA 24 Stepper motor (50 x 50 mm)
• Output Shaft Type:	Key way / feather key
• Gearbox Length:	73.5 mm
• Output Shaft Diameter:	Ø 14 mm
• Output Shaft Length:	35 mm
• Input Shaft Diameter:	Ø 10 mm
• Input Shaft Length:	12 - 31 mm
• Waterproof Rating:	IP54
• Weight:	920 g





## S-EG24-G10, for NEMA 24, Gear Ratio 10:1, 15 arc-min



Precision planetary gearbox with a **gear ratio of 10:1** and a **maximum backlash of 15 arc-min**. Unlike the MG-series, it is equipped with steel gears instead of powder metallurgy gears. An excellent choice for applications that require high accuracy and reliability at an exceptional price.

This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard stepper motor with **10 mm shaft diameter** according to **NEMA 24** or a brushless DC motor.



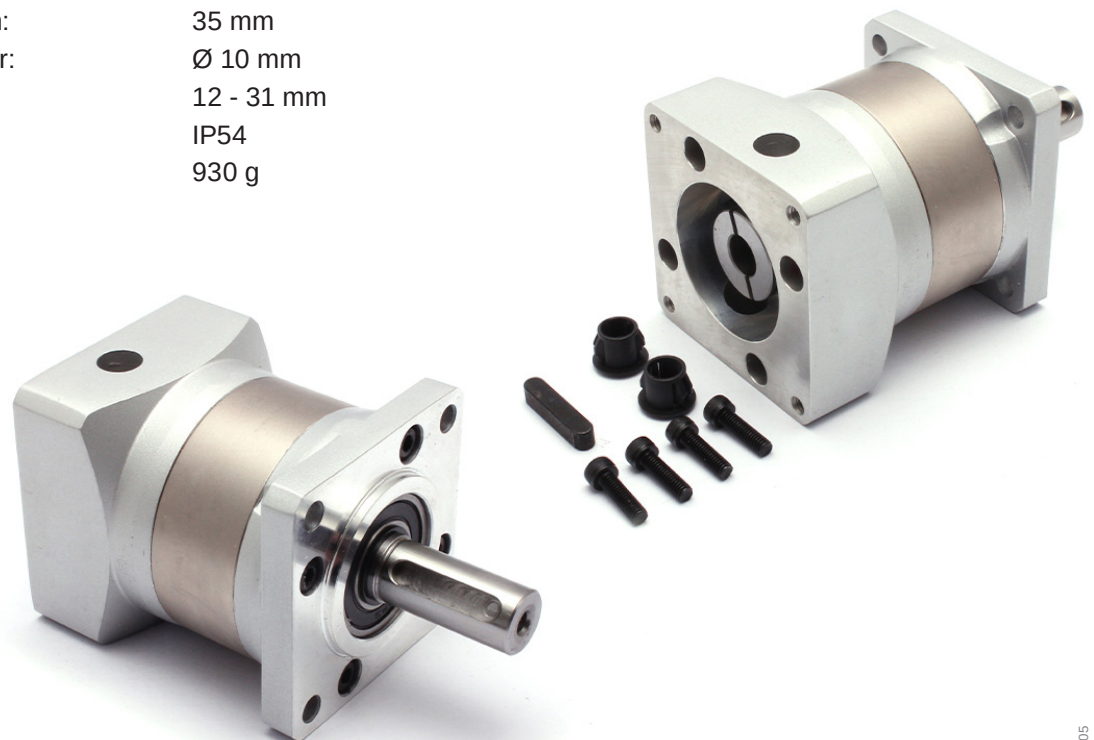
Typically the mounting holes for NEMA24 motors are 50 mm apart, but some are 47.1 mm apart, so please note that our reducer is only suitable for NEMA24 motors with a hole spacing of 50 mm.



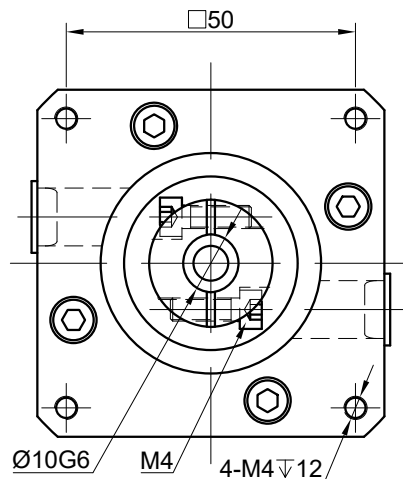
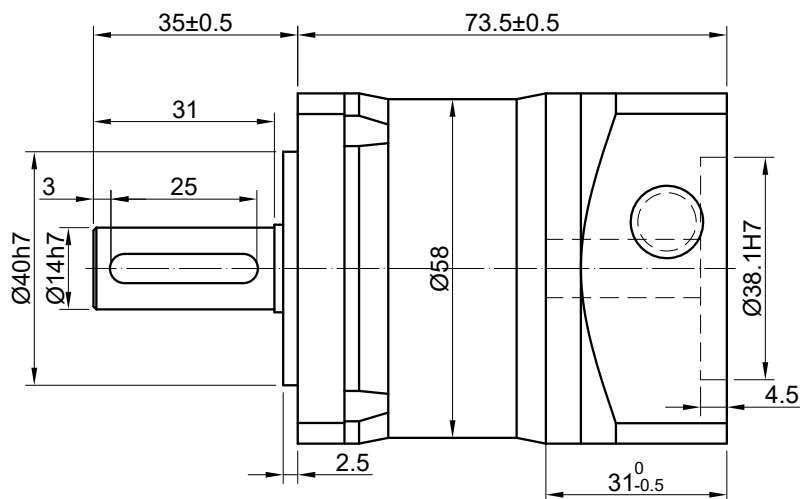
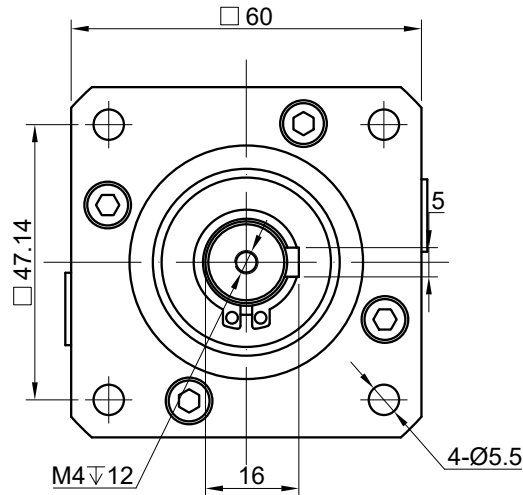
Planetary gear units of the EG23 and EG24 series are only suitable for shaft motors with a shaft length of 12 to 31 mm.

### Technical Data:

• Gear Ratio:	10 : 1
• Efficiency:	96%
• Moment of Inertia:	0.13 kg·m <sup>2</sup>
• Backlash at No-load:	≤ 15 arc-min
• Max. Permissible Torque:	10 Nm (88.51 lb-in)
• Moment Permissible Torque:	20 Nm (117.01 lb-in)
• Noise Level:	≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
• Flange Size:	60 x 60 mm / NEMA 24 Stepper motor (50 x 50 mm)
• Output Shaft Type:	Key way / feather key
• Gearbox Length:	73.5 mm
• Output Shaft Diameter:	Ø 14 mm
• Output Shaft Length:	35 mm
• Input Shaft Diameter:	Ø 10 mm
• Input Shaft Length:	12 - 31 mm
• Waterproof Rating:	IP54
• Weight:	930 g



## S-EG24-G10



### S-EG24-G20, for NEMA 24, Gear Ratio 20:1, 20 arc-min



Precision planetary gearbox with a **gear ratio of 20:1** and a **maximum backlash of 20 arc-min**. Unlike the MG-series, it is equipped with steel gears instead of powder metallurgy gears. An excellent choice for applications that require high accuracy and reliability at an exceptional price.

This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard stepper motor with **10 mm shaft diameter** according to **NEMA 24** or a brushless DC motor.



Typically the mounting holes for NEMA24 motors are 50 mm apart, but some are 47.1 mm apart, so please note that our reducer is only suitable for NEMA24 motors with a hole spacing of 50 mm.



Planetary gear units of the EG23 and EG24 series are only suitable for shaft motors with a shaft length of 12 to 31 mm.

#### Technical Data:

• Gear Ratio:	20 : 1
• Efficiency:	94%
• Moment of Inertia:	0.03 kg·m <sup>2</sup>
• Backlash at No-load:	≤ 20 arc-min
• Max. Permissible Torque:	30 Nm (265.52 lb-in)
• Moment Permissible Torque:	60 Nm (531.04 lb-in)
• Noise Level:	≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
• Flange Size:	60 x 60 mm / NEMA 24 Stepper motor (50 x 50 mm)
• Output Shaft Type:	Key way / feather key
• Gearbox Length:	89.5 mm
• Output Shaft Diameter:	Ø 14 mm
• Output Shaft Length:	35 mm
• Input Shaft Diameter:	Ø 10 mm
• Input Shaft Length:	12 - 31 mm
• Waterproof Rating:	IP54
• Weight:	1160 g



Subject to errors and technical changes

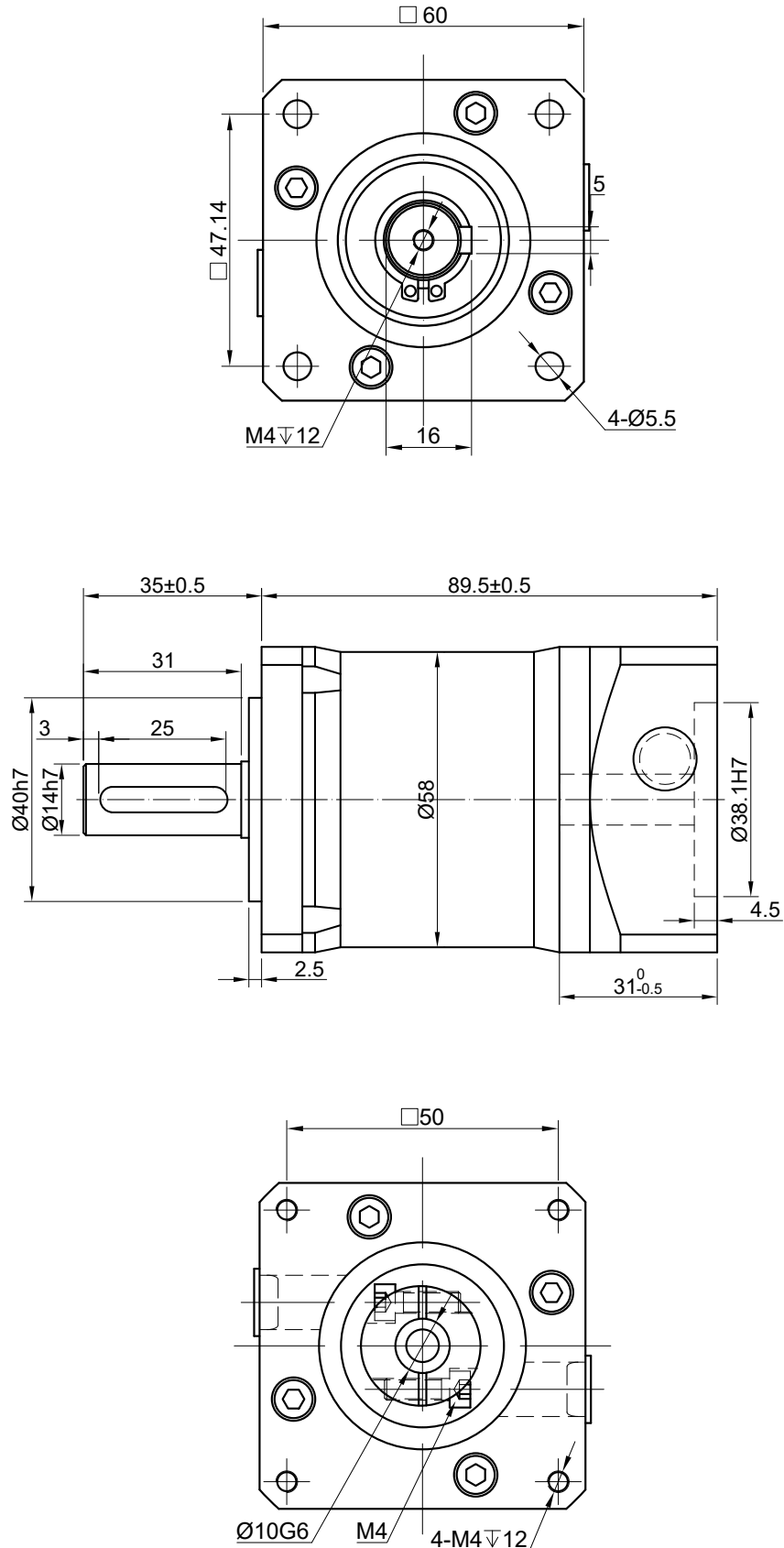
Current prices can be found in the  
DOLD Mechatronics web shop.

[info@dold-mechatronik.de](mailto:info@dold-mechatronik.de)  
[www.dold-mechatronik.de](http://www.dold-mechatronik.de)

Page 40  
DOLD Mechatronik GmbH  
Schleifmattstr. 2 – D-77716 Haslach  
Phone: +49 7832 / 946980



## S-EG24-G20



## S-EG24-G50, for NEMA 24, Gear Ratio 50:1, 20 arc-min



Precision planetary gearbox with a **gear ratio of 50:1** and a **maximum backlash of 20 arc-min**. Unlike the MG-series, it is equipped with steel gears instead of powder metallurgy gears. An excellent choice for applications that require high accuracy and reliability at an exceptional price.

This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard stepper motor with **10 mm shaft diameter** according to **NEMA 24** or a brushless DC motor.



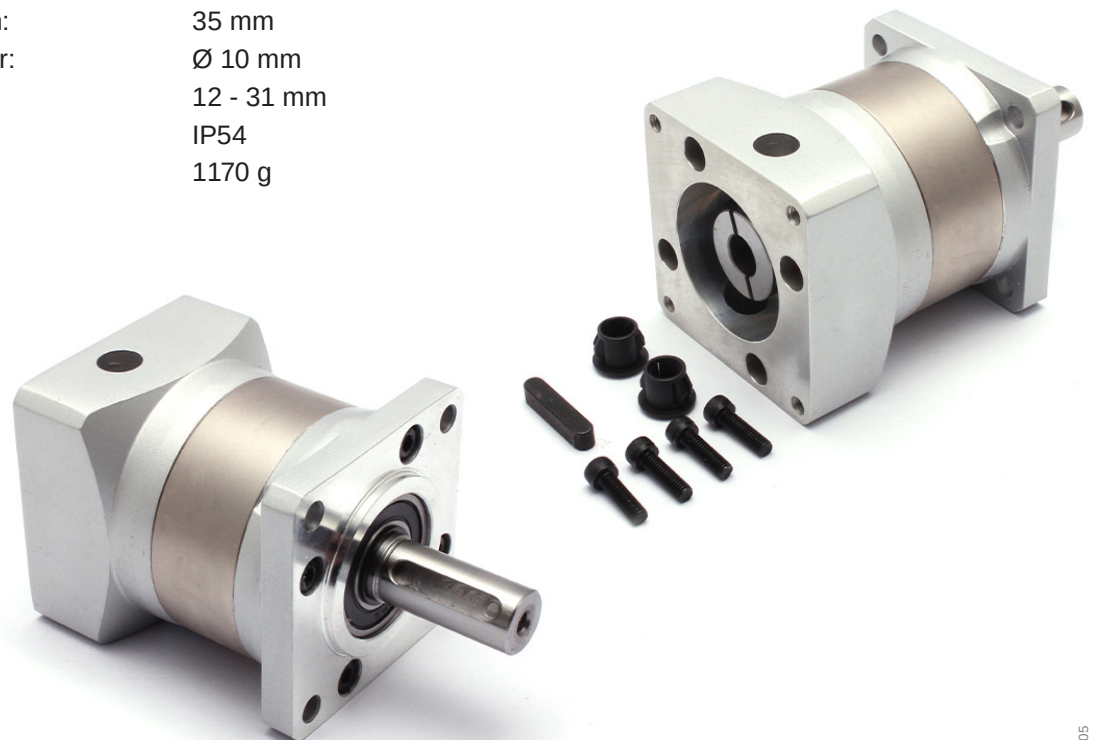
Typically the mounting holes for NEMA24 motors are 50 mm apart, but some are 47.1 mm apart, so please note that our reducer is only suitable for NEMA24 motors with a hole spacing of 50 mm.



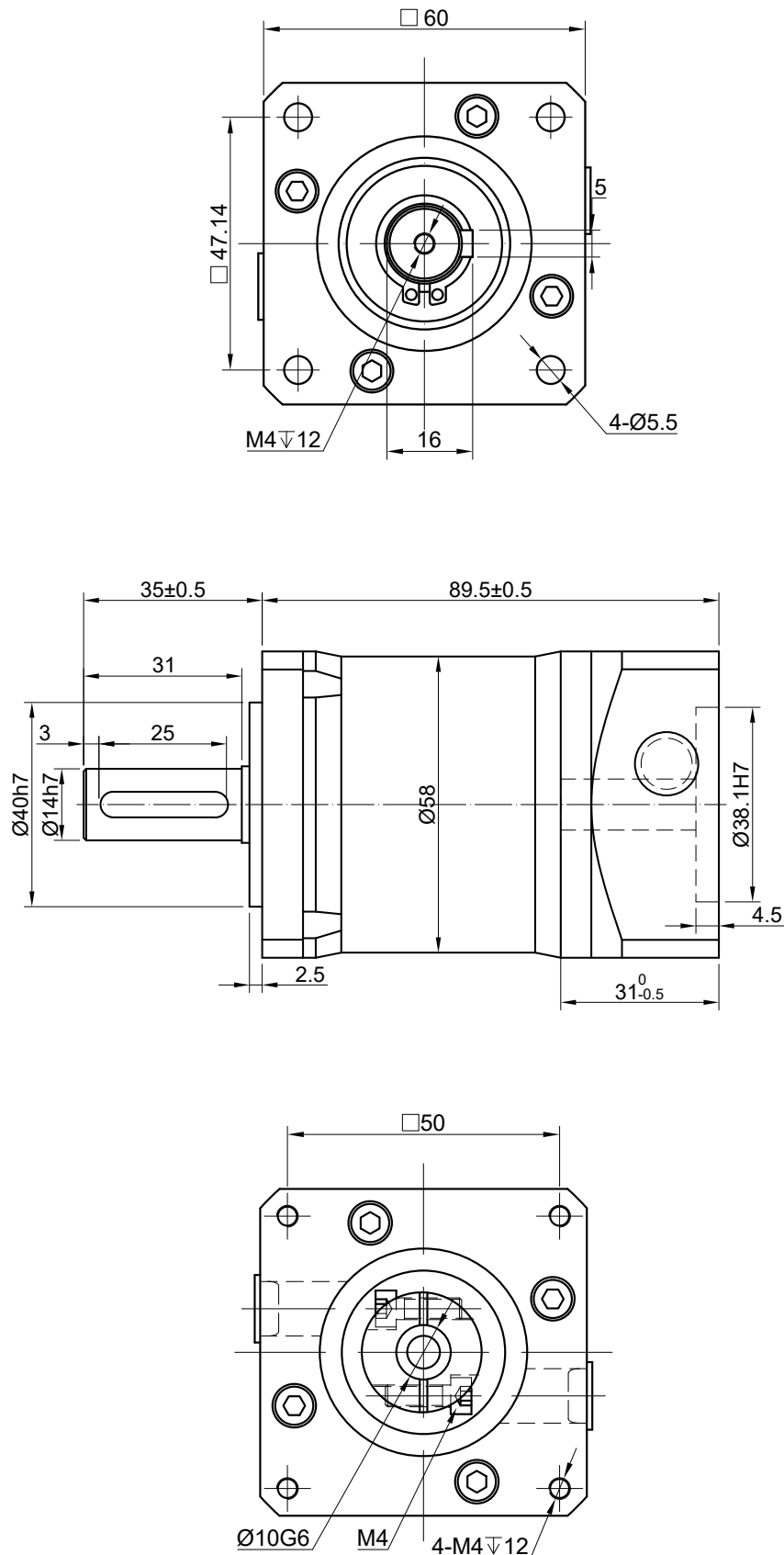
Planetary gear units of the EG23 and EG24 series are only suitable for shaft motors with a shaft length of 12 to 31 mm.

### Technical Data:

• Gear Ratio:	50 : 1
• Efficiency:	94%
• Moment of Inertia:	0.03 kg·m <sup>2</sup>
• Backlash at No-load:	≤ 20 arc-min
• Max. Permissible Torque:	25 Nm (221.27 lb-in)
• Moment Permissible Torque:	50 Nm (442.54 lb-in)
• Noise Level:	≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
• Flange Size:	60 x 60 mm / NEMA 24 Stepper motor (50 x 50 mm)
• Output Shaft Type:	Key way / feather key
• Gearbox Length:	89.5 mm
• Output Shaft Diameter:	Ø 14 mm
• Output Shaft Length:	35 mm
• Input Shaft Diameter:	Ø 10 mm
• Input Shaft Length:	12 - 31 mm
• Waterproof Rating:	IP54
• Weight:	1170 g



## S-EG24-G50



### S-EG34-G5, for NEMA 34, Gear Ratio 5:1, 15 arc-min



Precision planetary gearbox with a **gear ratio of 5:1** and a **maximum backlash of 15 arc-min**. Unlike the MG-series, it is equipped with steel gears instead of powder metallurgy gears. An excellent choice for applications that require high accuracy and reliability at an exceptional price.

This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard stepper motor with **14** or respectively **19 mm shaft diameter** according to **NEMA 34** or a brushless DC motor.



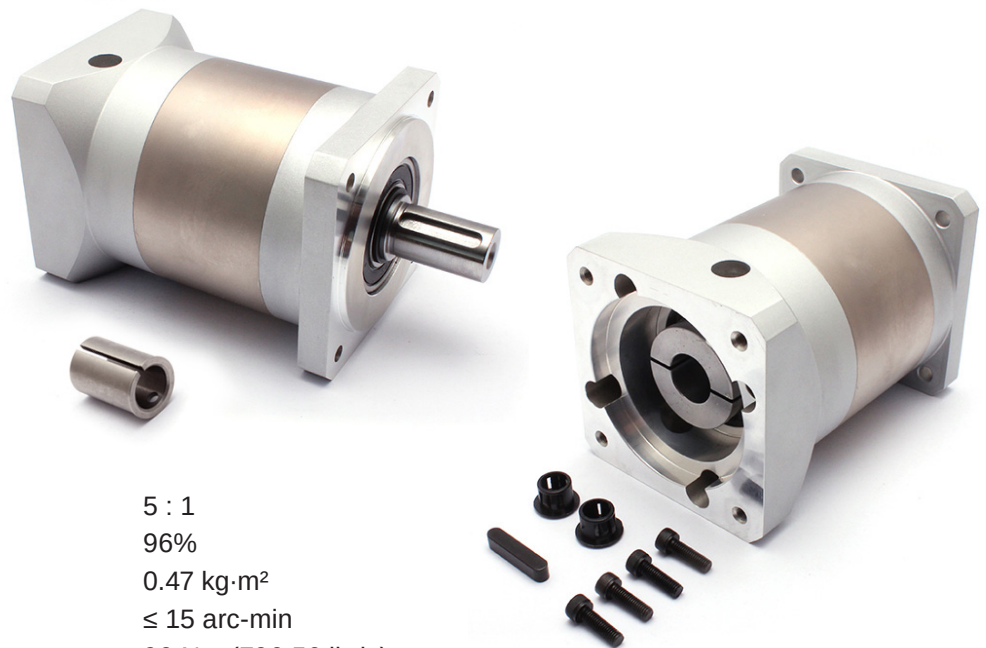
The output shaft diameter of the new version is fixed at 14 mm. The diameter of the old version is 19 mm and can be converted to 14 mm by adding a shaft sleeve. This can be purchased separately or in a bundle with the motor.



Alternatively, the old version with 19 mm input shaft diameter can also be converted to 12.7 mm (½ inch) with a reducing sleeve.



Planetary gear units of the EG34 series are only suitable for shaft motors with a shaft length of 22 to 41 mm.



#### Technical Data:

• Gear Ratio:	5 : 1
• Efficiency:	96%
• Moment of Inertia:	0.47 kg·m <sup>2</sup>
• Backlash at No-load:	≤ 15 arc-min
• Max. Permissible Torque:	90 Nm (796.56 lb-in)
• Moment Permissible Torque:	180 Nm (1593.13 lb-in)
• Noise Level:	≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
• Flange Size:	90 x 90 mm / NEMA 34 Stepper motor
• Output Shaft Type:	Key way / feather key
• Gearbox Length:	110 mm
• Output Shaft Diameter:	Ø 20 mm
• Output Shaft Length:	40 mm
• Input Shaft Diameter:	Ø 14 / 19 mm
• Input Shaft Length:	22 - 41 mm
• Waterproof Rating:	IP54
• Weight:	2800 g

Subject to errors and technical changes

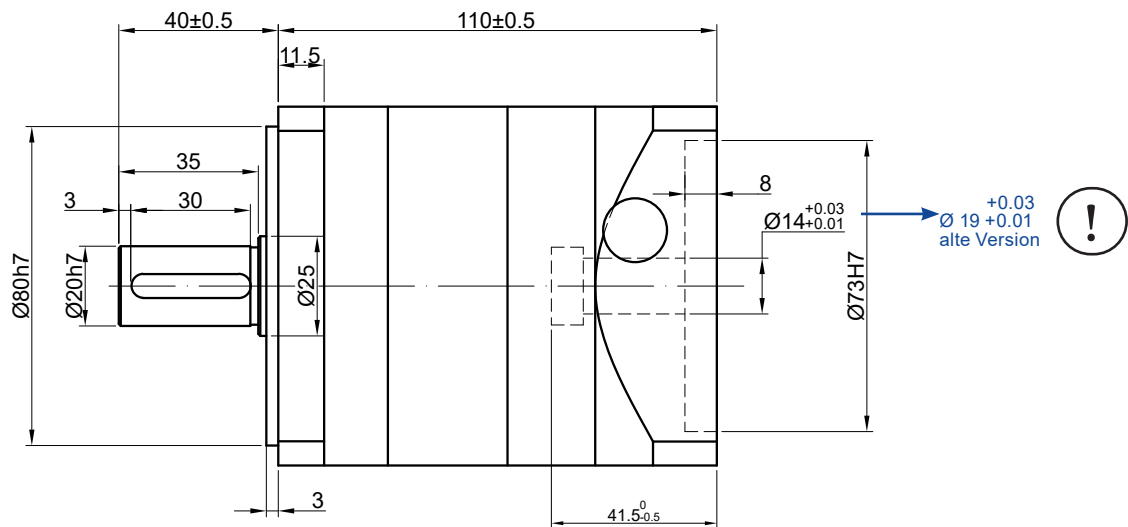
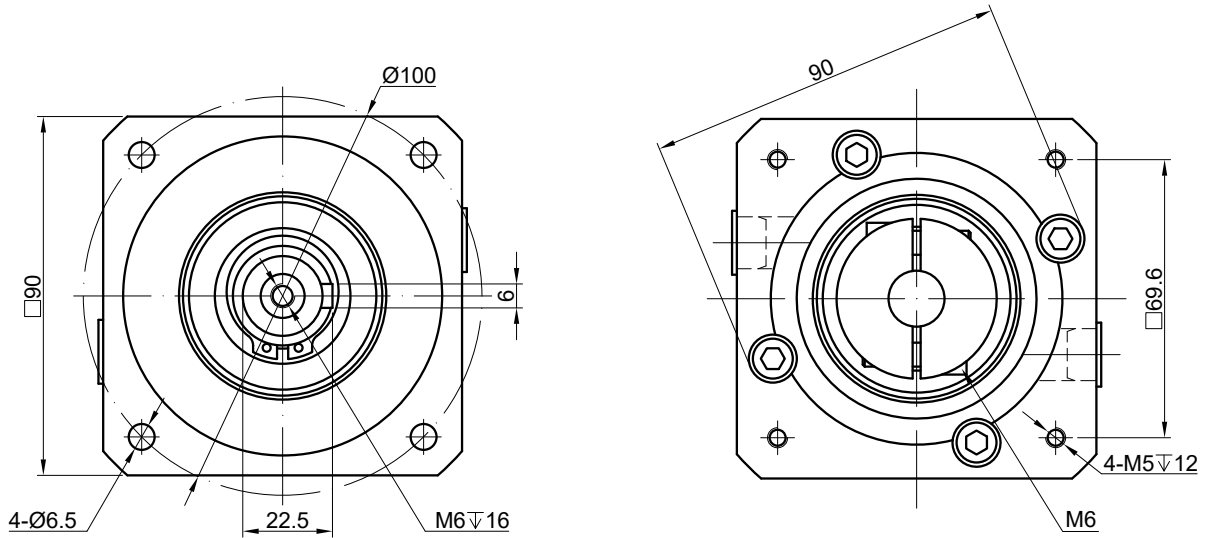
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# Precision Planetary Gears of EG-Series

## S-EG34-G5



Item-No.	Type / Description
S-EG34-G5 (new)	EG34 planetary gear with input shaft $\varnothing$ 14 mm
S-EG34-G5-14mm (old)	EG34 planetary gear with input shaft $\varnothing$ 19 mm incl. reducing sleeve to 14 mm $\varnothing$
S-SS-14 *	Reducing sleeve to 14 mm
S-SS-13 *	Reducing sleeve to 12.7 mm ( $\frac{1}{2}$ inch)

\* Only suitable for converting the old version with 19mm input shaft diameter.

### S-EG34-G10, for NEMA 34, Gear Ratio 10:1, 15 arc-min



Precision planetary gearbox with a **gear ratio of 10:1** and a **maximum backlash of 15 arc-min**. Unlike the MG-series, it is equipped with steel gears instead of powder metallurgy gears. An excellent choice for applications that require high accuracy and reliability at an exceptional price.

This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard stepper motor with **14** or respectively **19 mm shaft diameter** according to **NEMA 34** or a brushless DC motor.



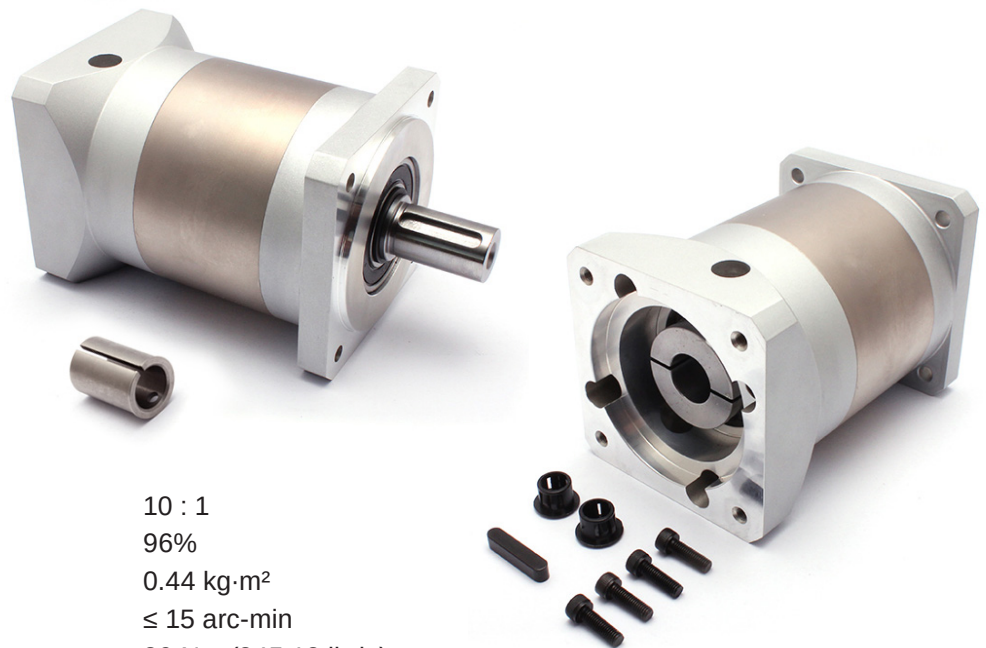
The output shaft diameter of the new version is fixed at 14 mm. The diameter of the old version is 19 mm and can be converted to 14 mm by adding a shaft sleeve. This can be purchased separately or in a bundle with the motor.



Alternatively, the old version with 19 mm input shaft diameter can also be converted to 12.7 mm (½ inch) with a reducing sleeve.



Planetary gear units of the EG34 series are only suitable for shaft motors with a shaft length of 22 to 41 mm.



#### Technical Data:

• Gear Ratio:	10 : 1
• Efficiency:	96%
• Moment of Inertia:	0.44 kg·m <sup>2</sup>
• Backlash at No-load:	≤ 15 arc-min
• Max. Permissible Torque:	39 Nm (345.18 lb-in)
• Moment Permissible Torque:	78 Nm (690.36 lb-in)
• Noise Level:	≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
• Flange Size:	90 x 90 mm / NEMA 34 Stepper motor
• Output Shaft Type:	Key way / feather key
• Gearbox Length:	110 mm
• Output Shaft Diameter:	Ø 20 mm
• Output Shaft Length:	40 mm
• Input Shaft Diameter:	Ø 14 / 19 mm
• Input Shaft Length:	22 - 41 mm
• Waterproof Rating:	IP54
• Weight:	2800 g

Subject to errors and technical changes

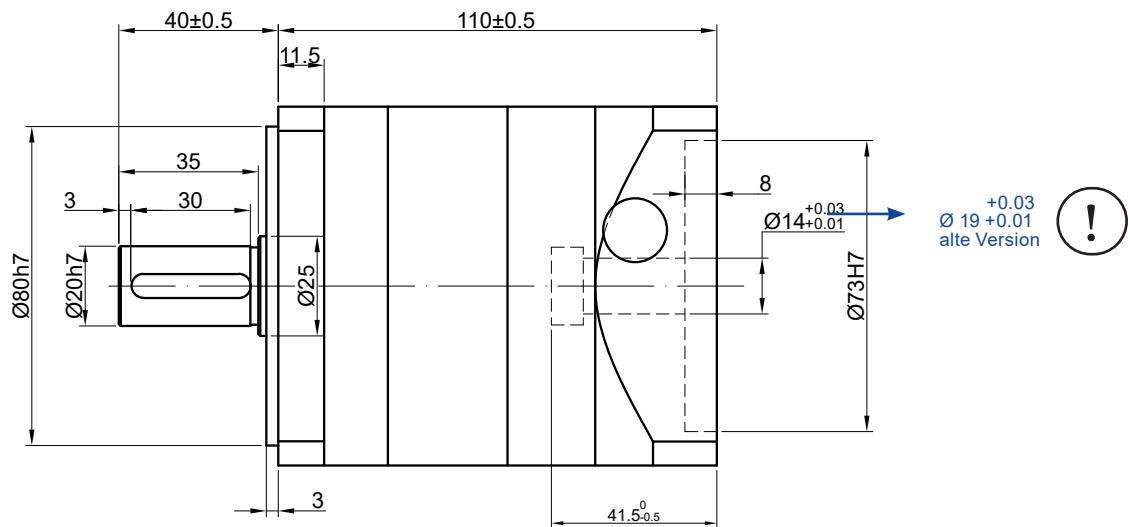
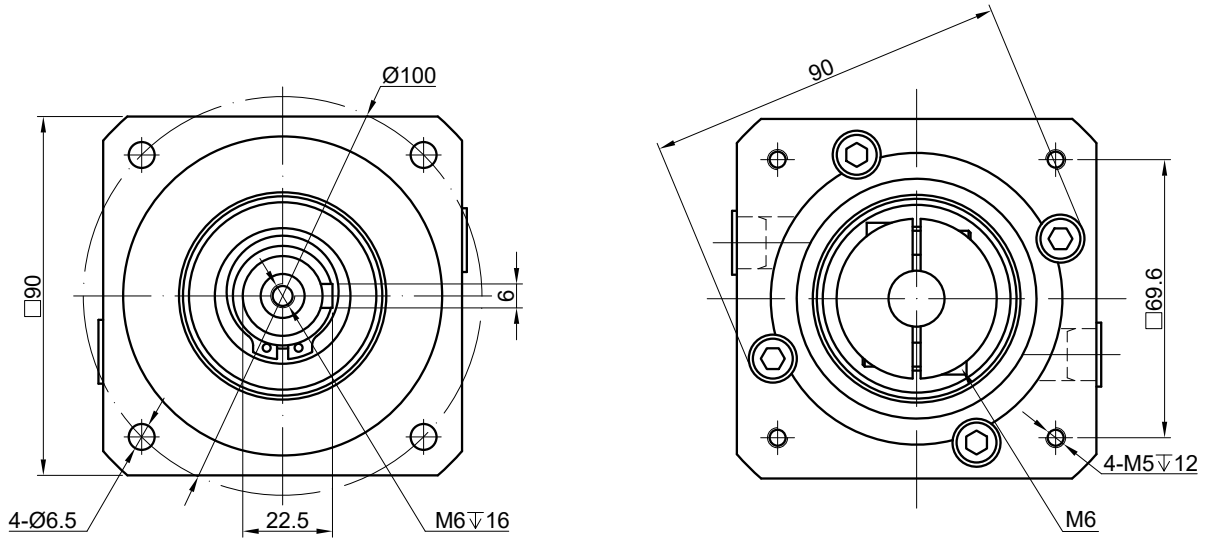
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## Precision Planetary Gears of EG-Series

### S-EG34-G10



Item-No.	Type / Description
S-EG34-G10 (new)	EG34 planetary gear with input shaft Ø 14 mm
S-EG34-G10-14mm (old)	EG34 planetary gear with input shaft Ø 19 mm incl. reducing sleeve to 14 mm Ø
S-SS-14 *	Reducing sleeve to 14 mm
S-SS-13 *	Reducing sleeve to 12.7 mm (½ inch)

\* Only suitable for converting the old version with 19mm input shaft diameter.

### S-EG34-G20, for NEMA 34, Gear Ratio 20:1, 20 arc-min



Precision planetary gearbox with a **gear ratio of 20:1** and a **maximum backlash of 20 arc-min**. Unlike the MG-series, it is equipped with steel gears instead of powder metallurgy gears. An excellent choice for applications that require high accuracy and reliability at an exceptional price.

This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard stepper motor with **14** or respectively **19 mm shaft diameter** according to **NEMA 34** or a brushless DC motor.



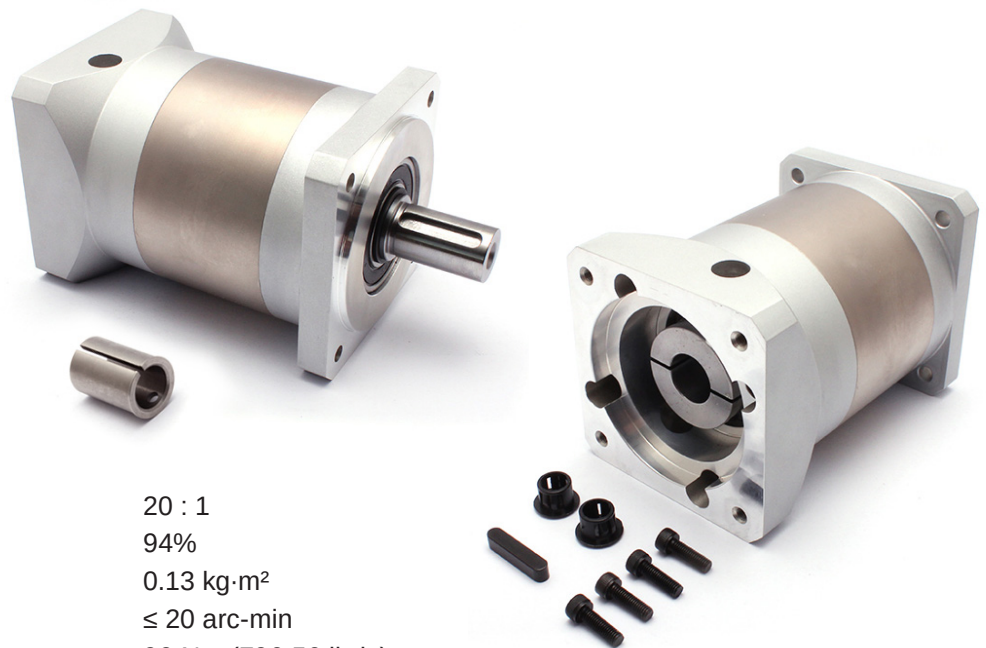
The output shaft diameter of the new version is fixed at 14 mm. The diameter of the old version is 19 mm and can be converted to 14 mm by adding a shaft sleeve. This can be purchased separately or in a bundle with the motor.



Alternatively, the old version with 19 mm input shaft diameter can also be converted to 12.7 mm (½ inch) with a reducing sleeve.



Planetary gear units of the EG34 series are only suitable for shaft motors with a shaft length of 22 to 41 mm.



#### Technical Data:

• Gear Ratio:	20 : 1
• Efficiency:	94%
• Moment of Inertia:	0.13 kg·m <sup>2</sup>
• Backlash at No-load:	≤ 20 arc-min
• Max. Permissible Torque:	90 Nm (796.56 lb-in)
• Moment Permissible Torque:	180 Nm (1593.13 lb-in)
• Noise Level:	≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
• Flange Size:	90 x 90 mm / NEMA 34 Stepper motor
• Output Shaft Type:	Key way / feather key
• Gearbox Length:	132 mm
• Output Shaft Diameter:	Ø 20 mm
• Output Shaft Length:	40 mm
• Input Shaft Diameter:	Ø 14 / 19 mm
• Input Shaft Length:	22 - 41 mm
• Waterproof Rating:	IP54
• Weight:	3810 g

Subject to errors and technical changes

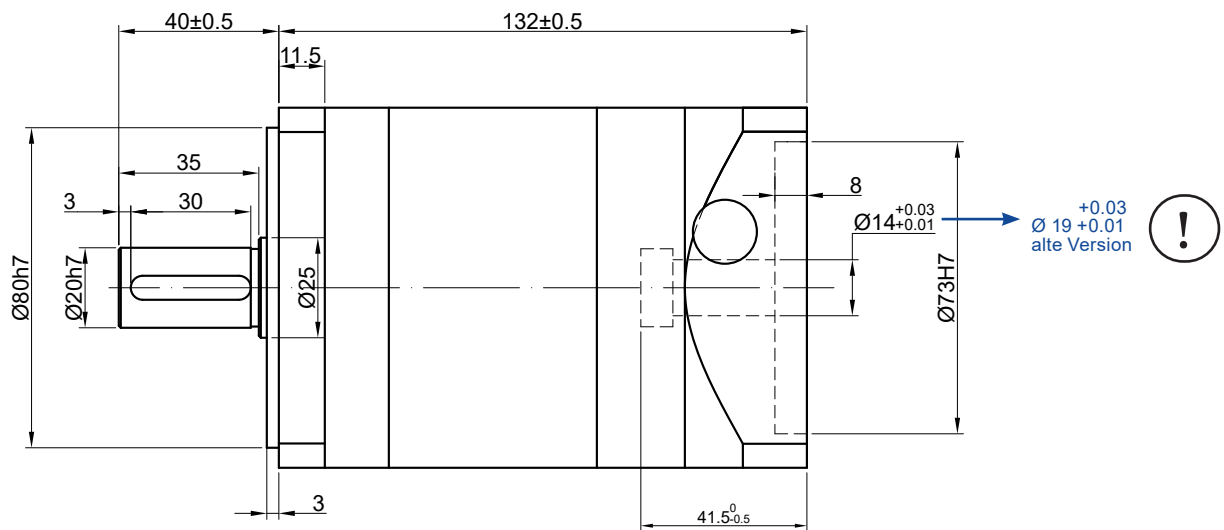
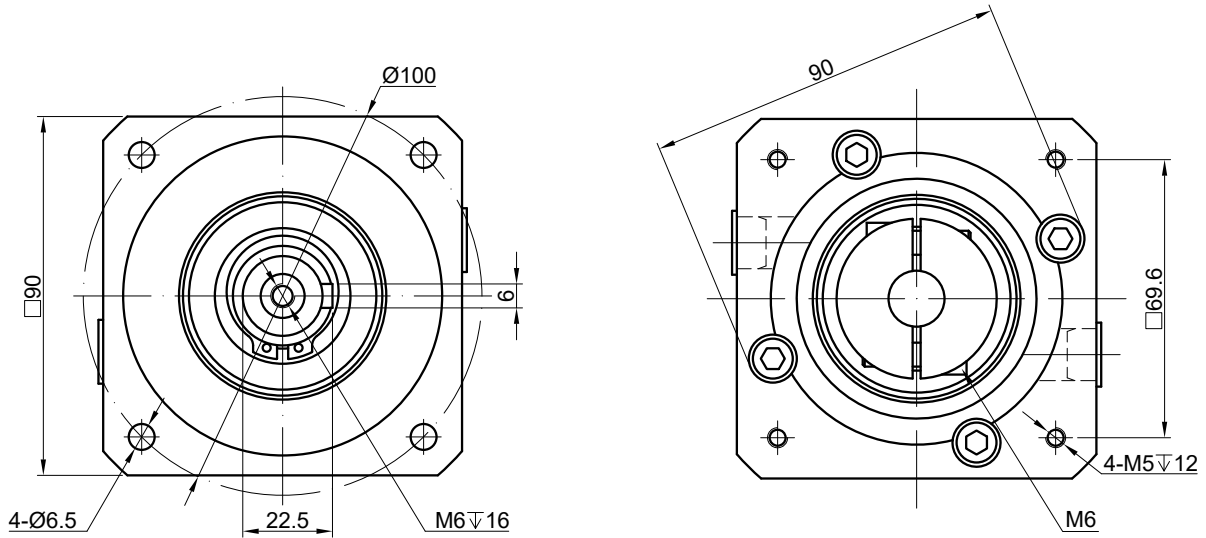
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## S-EG34-G20



Item-No.	Type / Description
S-EG34-G20 (new)	EG34 planetary gear with input shaft $\varnothing$ 14 mm
S-EG34-G20-14mm (old)	EG34 planetary gear with input shaft $\varnothing$ 19 mm incl. reducing sleeve to 14 mm $\varnothing$
S-SS-14 *	Reducing sleeve to 14 mm
S-SS-13 *	Reducing sleeve to 12.7 mm ( $\frac{1}{2}$ inch)

\* Only suitable for converting the old version with 19mm input shaft diameter.

### S-EG34-G50, for NEMA 34, Gear Ratio 50:1, 20 arc-min



Precision planetary gearbox with a **gear ratio of 50:1** and a **maximum backlash of 20 arc-min**. Unlike the MG-series, it is equipped with steel gears instead of powder metallurgy gears. An excellent choice for applications that require high accuracy and reliability at an exceptional price.

This in-line planetary gearbox is equipped with an input shaft coupling that fits a standard stepper motor with **14** or respectively **19 mm shaft diameter** according to **NEMA 34** or a brushless DC motor.



The output shaft diameter of the new version is fixed at 14 mm. The diameter of the old version is 19 mm and can be converted to 14 mm by adding a shaft sleeve. This can be purchased separately or in a bundle with the motor.



Alternatively, the old version with 19 mm input shaft diameter can also be converted to 12.7 mm (½ inch) with a reducing sleeve.



Planetary gear units of the EG34 series are only suitable for shaft motors with a shaft length of 22 to 41 mm.



#### Technical Data:

• Gear Ratio:	50 : 1
• Efficiency:	94%
• Moment of Inertia:	0.13 kg·m <sup>2</sup>
• Backlash at No-load:	≤ 20 arc-min
• Max. Permissible Torque:	100 Nm (885.07 lb-in)
• Moment Permissible Torque:	200 Nm (1770.15 lb-in)
• Noise Level:	≤55 dB (1.000 rpm) / 65 dB (3.000 rpm)
• Flange Size:	90 x 90 mm / NEMA 34 Stepper motor
• Output Shaft Type:	Key way / feather key
• Gearbox Length:	132 mm
• Output Shaft Diameter:	Ø 20 mm
• Output Shaft Length:	40 mm
• Input Shaft Diameter:	Ø 14 / 19 mm
• Input Shaft Length:	22 - 41 mm
• Waterproof Rating:	IP54
• Weight:	3720 g

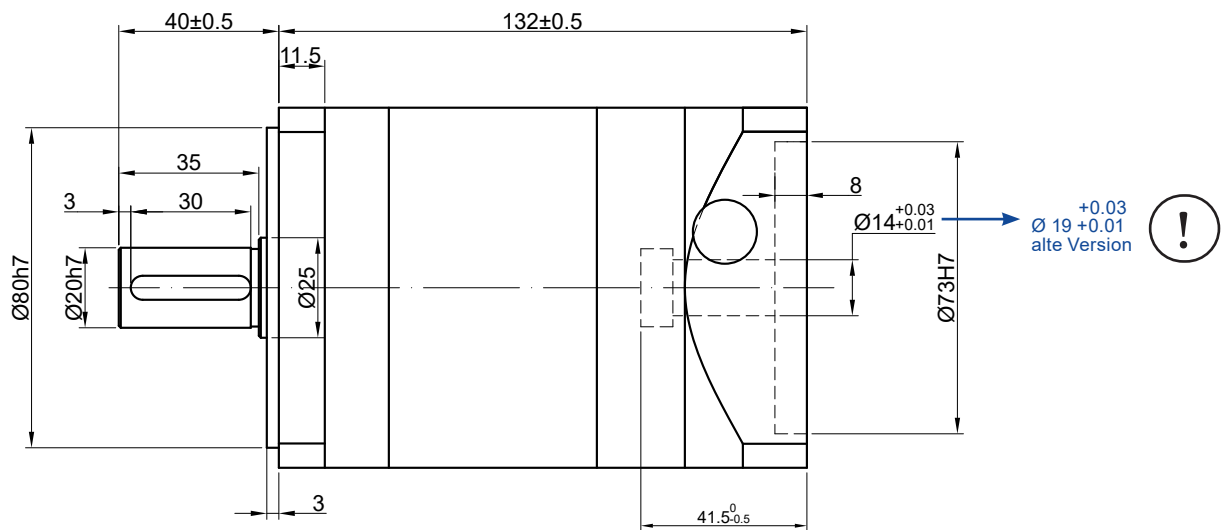
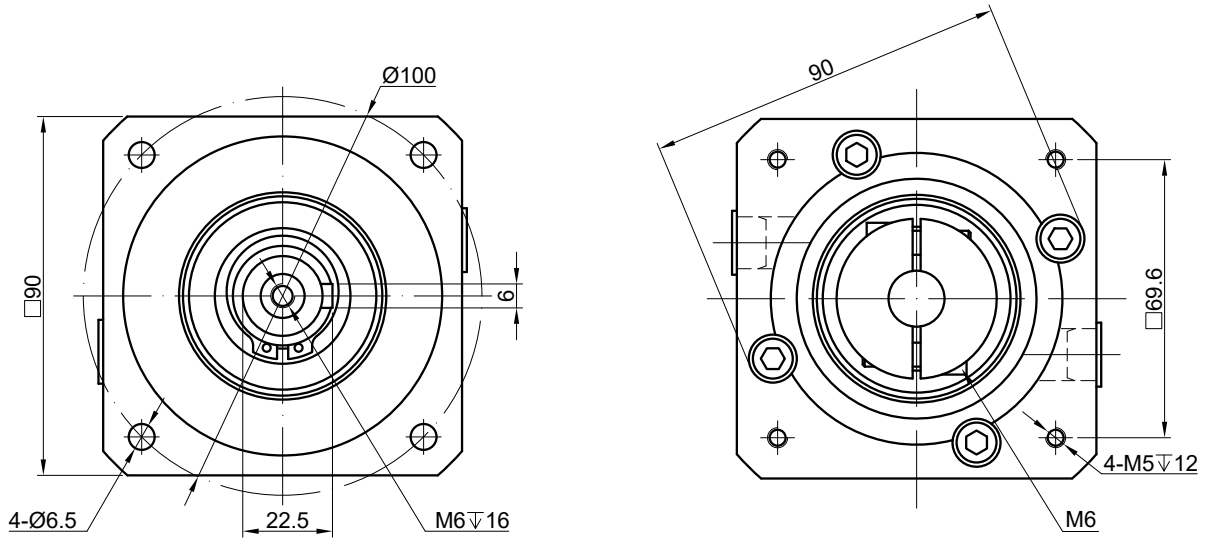
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## S-EG34-G50



Item-No.	Type / Description
S-EG34-G50 (new)	EG34 planetary gear with input shaft $\varnothing$ 14 mm
S-EG34-G50-14mm (old)	EG34 planetary gear with input shaft $\varnothing$ 19 mm incl. reducing sleeve to 14 mm $\varnothing$
S-SS-14 *	Reducing sleeve to 14 mm
S-SS-13 *	Reducing sleeve to 12.7 mm ( $\frac{1}{2}$ inch)

\* Only suitable for converting the old version with 19mm input shaft diameter.

### SG-Series



SG reduction gears combine high performance with optimal reliability. They are the perfect plug-and-go solution with (NEMA) stepper motors and SANYO DENKI servo systems.

SG reduction gears are characterized by:

- excellent radial and axial load carrying capacity
- low noise
- high precision
- high nominal and acceleration torque

**Planetary gear units of the SG-series are only suitable for shaft motors with a shaft length of 25 to 40 mm. Please pay attention to the respective information for each model.**

#### Key Data:

- Gear Ratio i: from 03 to 10
- Efficiency: 97%
- Flange Sizes:
  - for NEMA 23 Stepper motor
  - 60 x 60 mm
  - 85 x 85 mm
- Backlash at No-load:  $\leq 12$  arc-min
- Waterproof Rating: IP64
- Output Shaft Type: Key way / feather key



### SG-P11-050-003-12-HH-712X, for NEMA 23, i = 03, 12 arc-min



SG reduction gears combine high performance with optimal reliability. They are the perfect plug-and-go solution with NEMA23 stepper motors and SANYO DENKI servo systems.

SG reduction gears are characterized by:

- excellent radial and axial load carrying capacity
- low noise
- high precision
- high nominal and acceleration torque



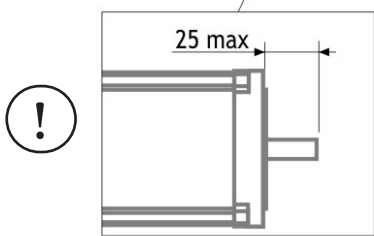
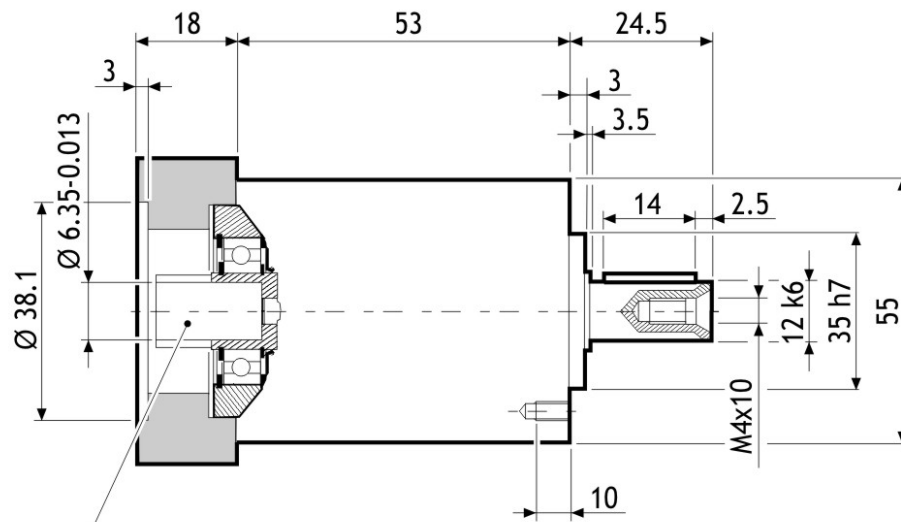
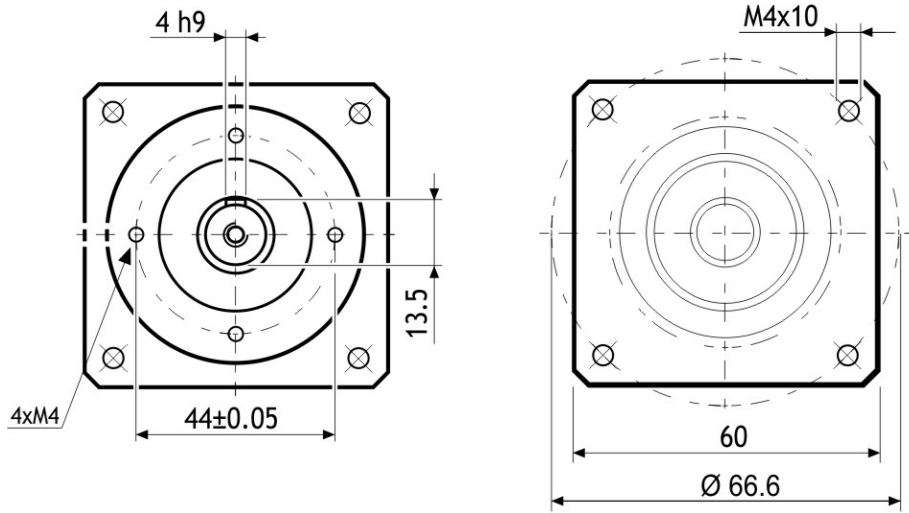
**This planetary gear units of the SG-series are only suitable for shaft motors with a maximum shaft length of 25 mm.**

#### Technical Data:

Gear Ratio i:	03	Gear Moment of Inertia:	$0.07 \times 10^{-4}$
Efficiency:	97%	Flange Size:	60 x 60 mm
Backlash at No-load:	$\leq 12$ arc-min	Output Shaft Type:	Key way / feather key
Rated Output Torque:	10 Nm	Gearbox Length:	71 mm
Max. Acceleration Output Torque:	16 Nm	Output Shaft Diameter:	$\varnothing 12$ mm (k6)
Emergency Stop Output Torque:	28 Nm	Output Shaft Length:	24.5 mm
Nominal Input Speed:	$3300 \text{ min}^{-1}$	Input Shaft Diameter:	$\varnothing 6.35$ mm (-0.013)
Max. momentary Input Speed:	$4000 \text{ min}^{-1}$		( $\frac{1}{4}$ Inch)
Max. Radial Force Applying on Output Shaft:	500 N	Input Shaft Length:	max. 25 mm
Max. axial Force Applying on Output Shaft:	600 N	Waterproof Rating:	IP64
Torsional Stiffness:	0.9 Nm/arc-min	Weight:	1.1 kg



# SG-P11-050-003-12-HH-712X



Suitable for use in combination with the following stepper motors

103-H7123-0440 (on request)
103-H7123-5040 (Item-No. 76535) 
103-H7123-0740 (on request)
103-H7123-1749 (on request)
103-H7126-0140 (on request)
103-H7126-0740 (Item-No. 76658) 
103-H7126-1740 (Item-No. 76542) 
103-H7126-6640 (on request)

### SG-P11-050-005-12-HH-712X, for NEMA 23, i = 05, 12 arc-min



SG reduction gears combine high performance with optimal reliability. They are the perfect plug-and-go solution with NEMA23 stepper motors and SANYO DENKI servo systems.

SG reduction gears are characterized by:

- excellent radial and axial load carrying capacity
- low noise
- high precision
- high nominal and acceleration torque



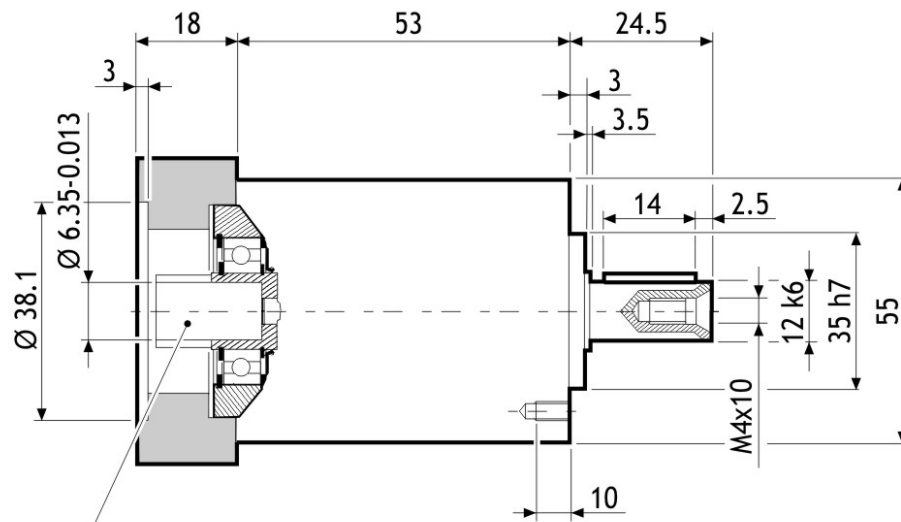
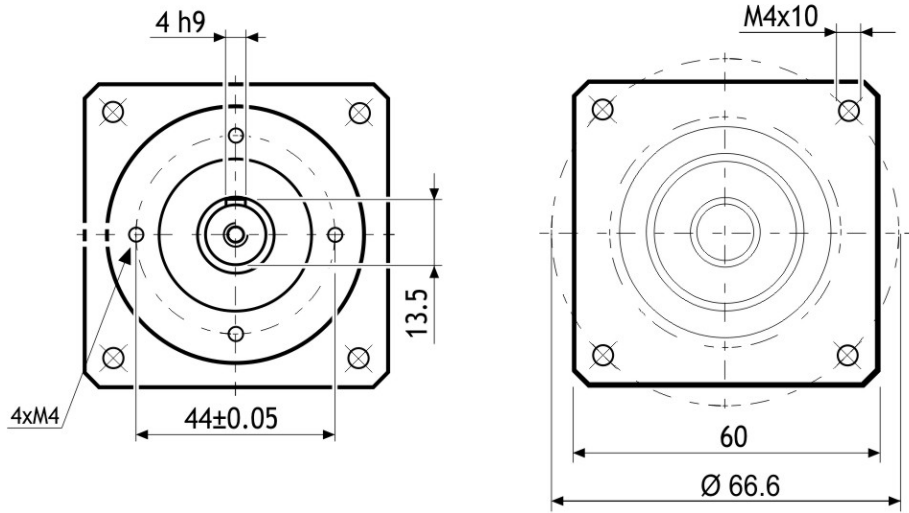
**This planetary gear units of the SG-series are only suitable for shaft motors with a maximum shaft length of 25 mm.**

#### Technical Data:

Gear Ratio i:	05	Gear Moment of Inertia:	0.05 x 10 <sup>-4</sup>
Efficiency:	97%	Flange Size:	60 x 60 mm
Backlash at No-load:	≤ 12 arc-min	Output Shaft Type:	Key way / feather
Rated Output Torque:	12 Nm	key	
Max. Acceleration Output Torque:	20 Nm	Gearbox Length:	71 mm
Emergency Stop Output Torque:	30 Nm	Output Shaft Diameter:	Ø 12 mm (k6)
Nominal Input Speed:	3500 min <sup>-1</sup>	Output Shaft Length:	24.5 mm
Max. momentary Input Speed:	5000 min <sup>-1</sup>	Input Shaft Diameter:	Ø 6.35 mm
Max. Radial Force Applying on Output Shaft:	500 N	(-0.013)	(¼ Inch)
Max. axial Force Applying on Output Shaft:	600 N	Input Shaft Length:	max. 25 mm
Torsional Stiffness:	0.9 Nm/ arc-min	Waterproof Rating:	IP64
		Weight:	1.1 kg



# SG-P11-050-005-12-HH-712X



**Suitable for use in combination with the following stepper motors**

103-H7123-0440 (on request)
103-H7123-5040 (Item-No. 76535)
103-H7123-0740 (on request)
103-H7123-1749 (on request)
103-H7126-0140 (on request)
103-H7126-0740 (Item-No. 76658)
103-H7126-1740 (Item-No. 76542)
103-H7126-6640 (on request)



### SG-P11-050-009-12-HH-712X, for NEMA 23, i = 09, 12 arc-min



SG reduction gears combine high performance with optimal reliability. They are the perfect plug-and-go solution with NEMA23 stepper motors and SANYO DENKI servo systems.

SG reduction gears are characterized by:

- excellent radial and axial load carrying capacity
- low noise
- high precision
- high nominal and acceleration torque



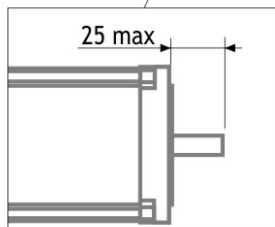
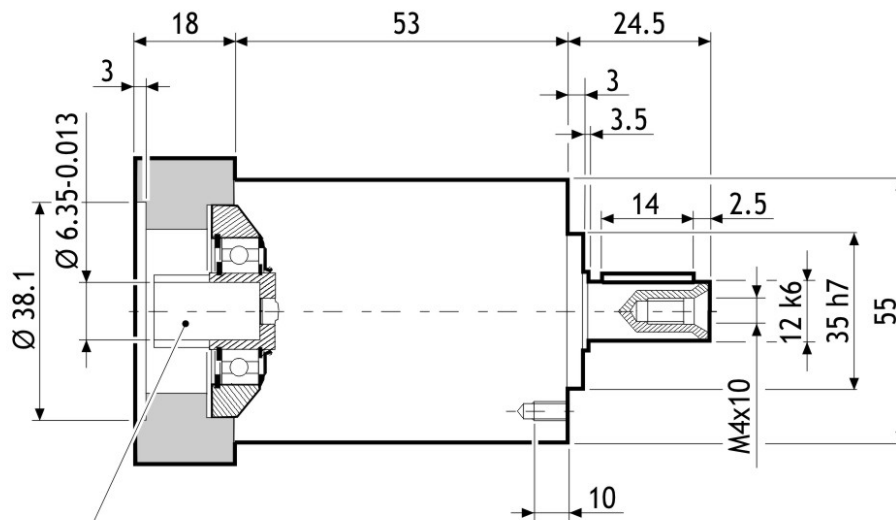
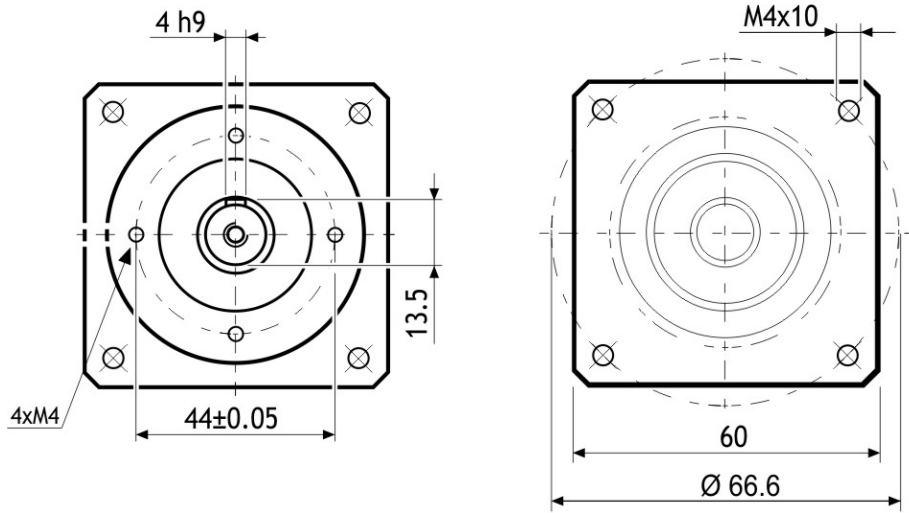
**This planetary gear units of the SG-series are only suitable for shaft motors with a maximum shaft length of 25 mm.**

#### Technical Data:

Gear Ratio i:	09	Gear Moment of Inertia:	$0.04 \times 10^{-4}$
Efficiency:	97%	Flange Size:	60 x 60 mm
Backlash at No-load:	$\leq 12$ arc-min	Output Shaft Type:	Key way / feather key
Rated Output Torque:	10 Nm	Gearbox Length:	71 mm
Max. Acceleration Output Torque:	16 Nm	Output Shaft Diameter:	$\varnothing 12$ mm (k6)
Emergency Stop Output Torque:	28 Nm	Output Shaft Length:	24.5 mm
Nominal Input Speed:	$4000 \text{ min}^{-1}$	Input Shaft Diameter:	$\varnothing 6.35$ mm (-0.013)
Max. momentary Input Speed:	$6000 \text{ min}^{-1}$		( $\frac{1}{4}$ Inch)
Max. Radial Force Applying on Output Shaft:	500 N	Input Shaft Length:	max. 25 mm
Max. axial Force Applying on Output Shaft:	600 N	Waterproof Rating:	IP64
Torsional Stiffness:	0.9 Nm/ arc-min	Weight:	1.1 kg



# SG-P11-050-005-12-HH-712X



Suitable for use in combination with the following stepper motors

103-H7123-0440 (on request)
103-H7123-5040 (Item-No. 76535) 
103-H7123-0740 (on request)
103-H7123-1749 (on request)
103-H7126-0140 (on request)
103-H7126-0740 (Item-No. 76658) 
103-H7126-1740 (Item-No. 76542) 
103-H7126-6640 (on request)

### SG-P11-050-003-12-HH-782X, 60x60 Flansch, i = 03, 12 arc-min



SG reduction gears combine high performance with optimal reliability. They are the perfect plug-and-go solution with stepper motors and SANYO DENKI servo systems.

SG reduction gears are characterized by:

- excellent radial and axial load carrying capacity
- low noise
- high precision
- high nominal and acceleration torque



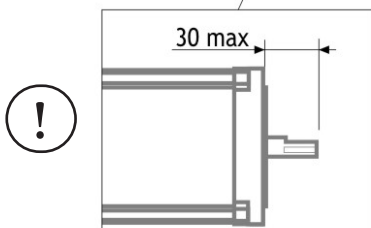
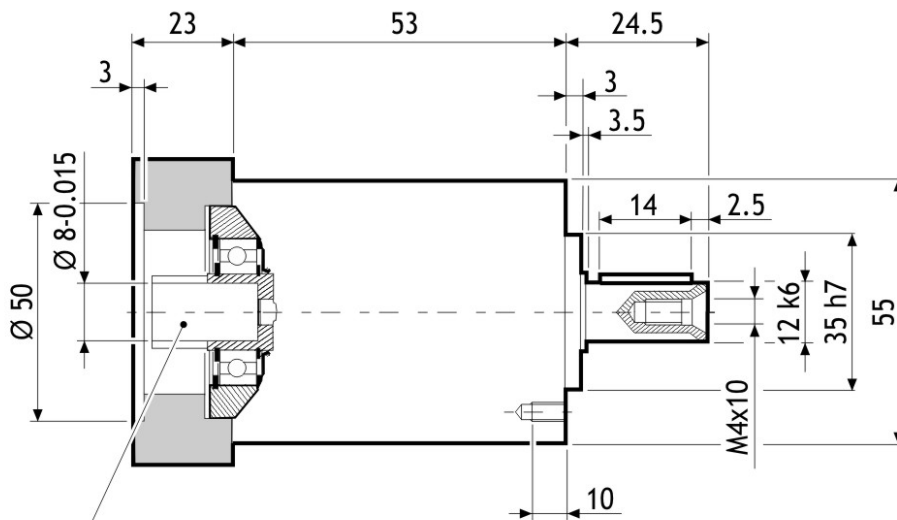
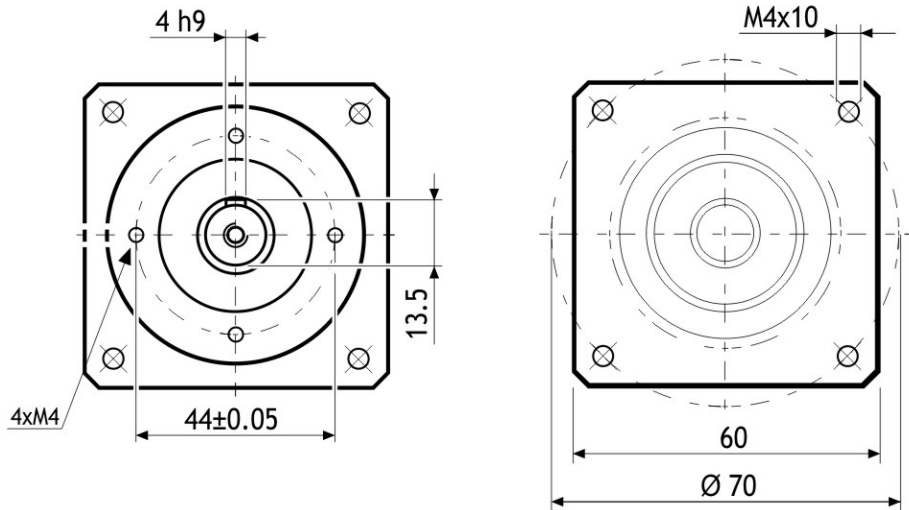
**This planetary gear units of the SG-series are only suitable for shaft motors with a maximum shaft length of 30 mm.**

#### Technical Data:


Gear Ratio i:	03	Gear Moment of Inertia:	$0.07 \times 10^{-4}$
Efficiency:	97%	Flange Size:	60 x 60 mm
Backlash at No-load:	$\leq 12$ arc-min	Output Shaft Type:	Key way / feather key
Rated Output Torque:	10 Nm	Gearbox Length:	76 mm
Max. Acceleration Output Torque:	16 Nm	Output Shaft Diameter:	$\varnothing 12$ mm (k6)
Emergency Stop Output Torque:	28 Nm	Output Shaft Length:	24.5 mm
Nominal Input Speed:	3300 min <sup>-1</sup>	Input Shaft Diameter:	$\varnothing 8$ mm (-0.015)
Max. momentary Input Speed:	4000 min <sup>-1</sup>	Input Shaft Length:	max. 30 mm
Max. Radial Force Applying on Output Shaft:	500 N	Waterproof Rating:	IP64
Max. axial Force Applying on Output Shaft:	600 N	Weight:	1.1 kg
Torsional Stiffness:	0.9 Nm/ arc-min		



# SG-P11-050-003-12-HH-782X



Suitable for use in combination with the following stepper motors

103-H7823-0740 (Item-No. 76559) 

103-H7823-1740 (Item-No. 76566) 

### SG-P11-050-005-12-HH-782X, 60x60 Flange, i = 05, 12 arc-min



SG reduction gears combine high performance with optimal reliability. They are the perfect plug-and-go solution with stepper motors and SANYO DENKI servo systems.

SG reduction gears are characterized by:

- excellent radial and axial load carrying capacity
- low noise
- high precision
- high nominal and acceleration torque



**This planetary gear units of the SG-series are only suitable for shaft motors with a maximum shaft length of 30 mm.**

#### Technical Data:

Gear Ratio i:	05	Gear Moment of Inertia:	$0.05 \times 10^{-4}$
Efficiency:	97%	Flange Size:	60 x 60 mm
Backlash at No-load:	$\leq 12$ arc-min	Output Shaft Type:	Key way / feather key
Rated Output Torque:	12 Nm	Gearbox Length:	76 mm
Max. Acceleration Output Torque:	20 Nm	Output Shaft Diameter:	$\varnothing 12$ mm (k6)
Emergency Stop Output Torque:	30 Nm	Output Shaft Length:	24.5 mm
Nominal Input Speed:	$3000 \text{ min}^{-1}$	Input Shaft Diameter:	$\varnothing 8$ mm (-0.015)
Max. momentary Input Speed:	$5000 \text{ min}^{-1}$	Input Shaft Length:	max. 30 mm
Max. Radial Force Applying on Output Shaft:	500 N	Waterproof Rating:	IP64
Max. axial Force Applying on Output Shaft:	600 N	Weight:	1.1 kg
Torsional Stiffness:	0.9 Nm/ arc-min		





### SG-P11-070-010-12-HH-782X, 60x60 Flange, i = 10, 12 arc-min



SG reduction gears combine high performance with optimal reliability. They are the perfect plug-and-go solution with stepper motors and SANYO DENKI servo systems.

SG reduction gears are characterized by:

- excellent radial and axial load carrying capacity
- low noise
- high precision
- high nominal and acceleration torque



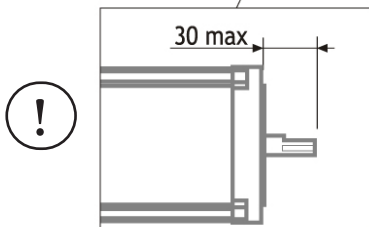
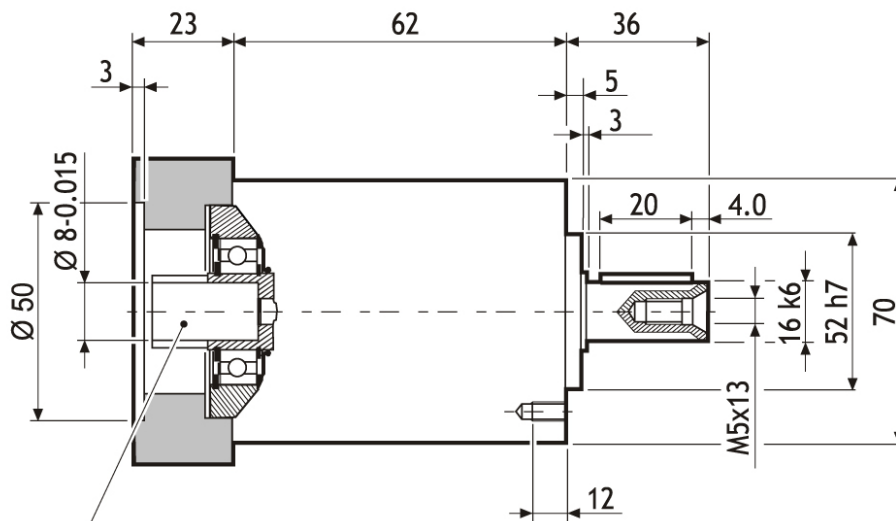
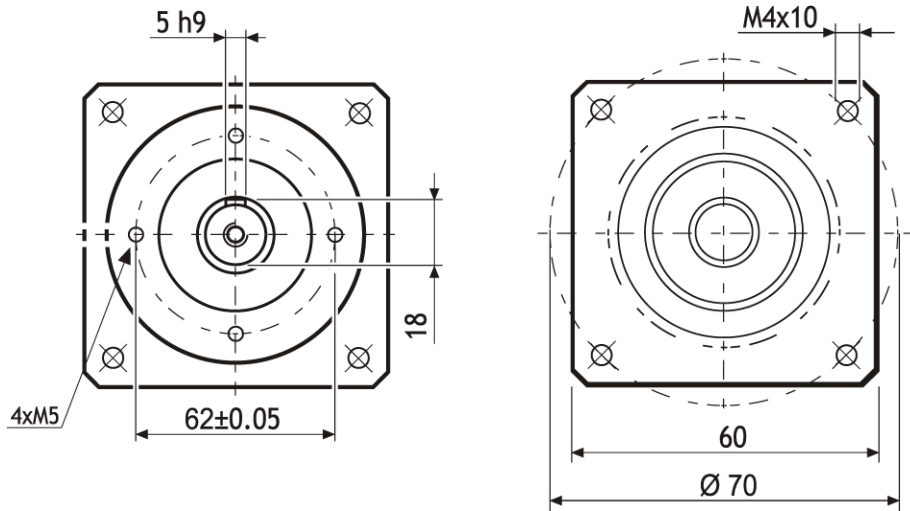
**This planetary gear units of the SG-series are only suitable for shaft motors with a maximum shaft length of 30 mm.**

#### Technical Data:

Gear Ratio i:	10	Gear Moment of Inertia:	$0.06 \times 10^{-4}$
Efficiency:	97%	Flange Size:	60 x 60 mm
Backlash at No-load:	$\leq 12$ arc-min	Output Shaft Type:	Key way / feather key
Rated Output Torque:	18 Nm	Gearbox Length:	85 mm
Max. Acceleration Output Torque:	30 Nm	Output Shaft Diameter:	$\varnothing 16$ mm (k6)
Emergency Stop Output Torque:	60 Nm	Output Shaft Length:	36 mm
Nominal Input Speed:	$4000 \text{ min}^{-1}$	Input Shaft Diameter:	$\varnothing 8$ mm (-0.015)
Max. momentary Input Speed:	$6000 \text{ min}^{-1}$	Input Shaft Length:	max. 30 mm
Max. Radial Force Applying on Output Shaft:	1300 N	Waterproof Rating:	IP64
Max. axial Force Applying on Output Shaft:	1400 N	Weight:	2.0 kg
Torsional Stiffness:	3 Nm/ arc-min		



# SG-P11-050-005-12-HH-782X



Suitable for use in combination with the following stepper motors

103-H7823-0740 (Item-No. 76559)

103-H7823-1740 (Item-No. 76566)



### SG-P11-070-003-12-SM-286X, 85x85 Flange, i = 03, 12 arc-min, 18 Nm



SG reduction gears combine high performance with optimal reliability. They are the perfect plug-and-go solution with stepper motors and SANYO DENKI servo systems.

SG reduction gears are characterized by:

- excellent radial and axial load carrying capacity
- low noise
- high precision
- high nominal and acceleration torque



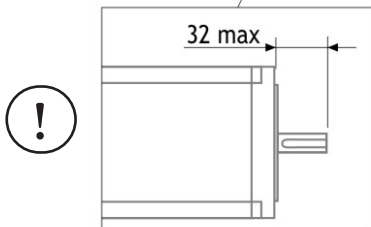
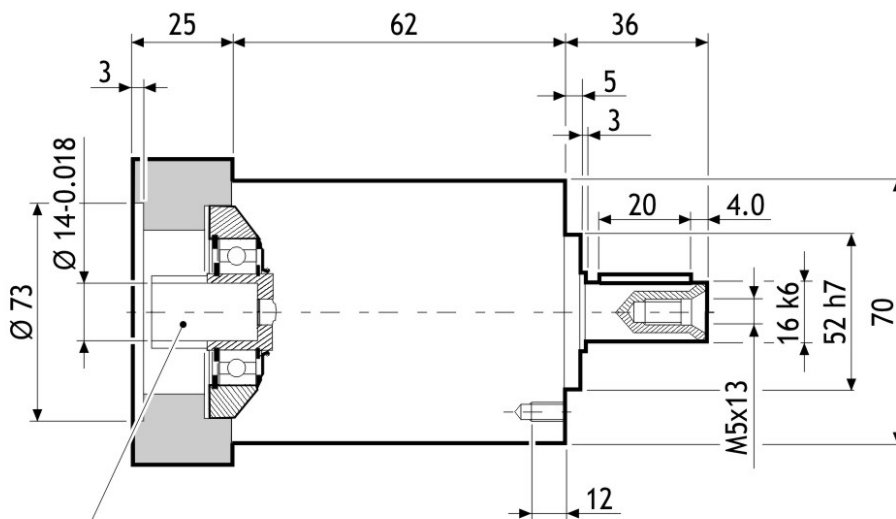
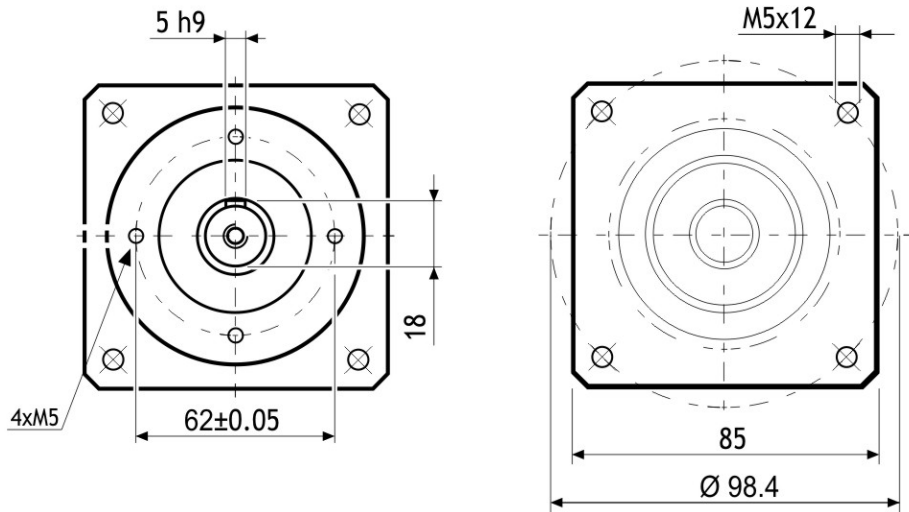
**This planetary gear units of the SG-series are only suitable for shaft motors with a maximum shaft length of 32 mm.**

#### Technical Data:

Gear Ratio i:	03	Gear Moment of Inertia:	0.14 x 10 <sup>-4</sup>
Efficiency:	97%	Flange Size:	85 x 85 mm
Backlash at No-load:	≤ 12 arc-min	Output Shaft Type:	Key way / feather key
Rated Output Torque:	18 Nm	Gearbox Length:	87 mm
Max. Acceleration Output Torque:	30 Nm	Output Shaft Diameter:	Ø 16 mm (k6)
Emergency Stop Output Torque:	60 Nm	Output Shaft Length:	36 mm
Nominal Input Speed:	3300 min <sup>-1</sup>	Input Shaft Diameter:	Ø 14 mm (-0.018)
Max. momentary Input Speed:	4000 min <sup>-1</sup>	Input Shaft Length:	max. 32 mm
Max. Radial Force Applying on Output Shaft:	1300 N	Waterproof Rating:	IP64
Max. axial Force Applying on Output Shaft:	1400 N	Weight:	2.0 kg
Torsional Stiffness:	3 Nm/ arc-min		



# SG-P11-070-003-12-SM-286X



Suitable for use in combination with the following stepper motors

SM2862-5055 (on request)
SM2862-5155
SM2862-5156 (on request)
SM2862-5255 (Item-No. 76603)
SM2863-5155 (on request)
SM2863-5255 (Item-No. 76610)

### SG-P11-050-005-12-SM-2861, 85x85 Flange, i = 05, 12 arc-min, 12 Nm



SG reduction gears combine high performance with optimal reliability. They are the perfect plug-and-go solution with stepper motors and SANYO DENKI servo systems.

SG reduction gears are characterized by:

- excellent radial and axial load carrying capacity
- low noise
- high precision
- high nominal and acceleration torque



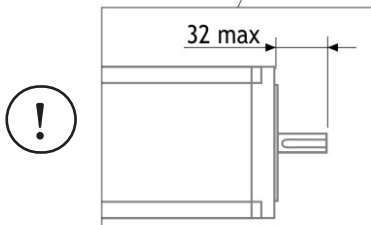
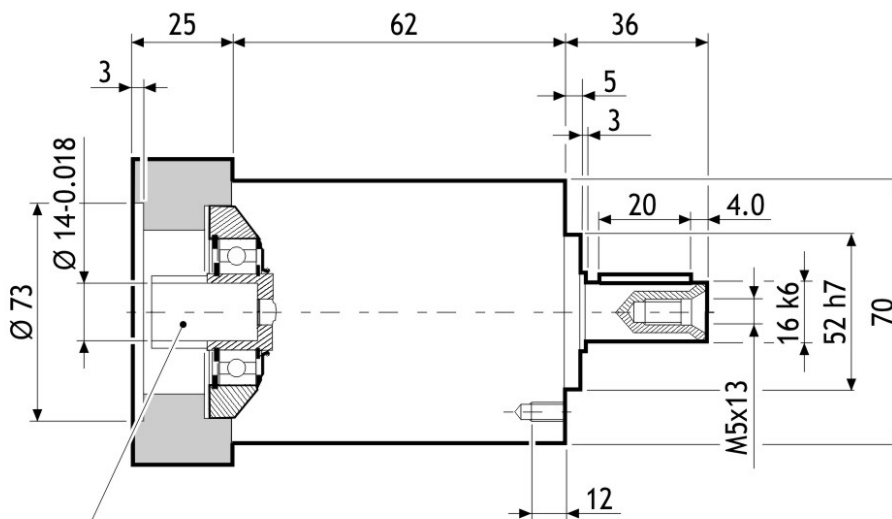
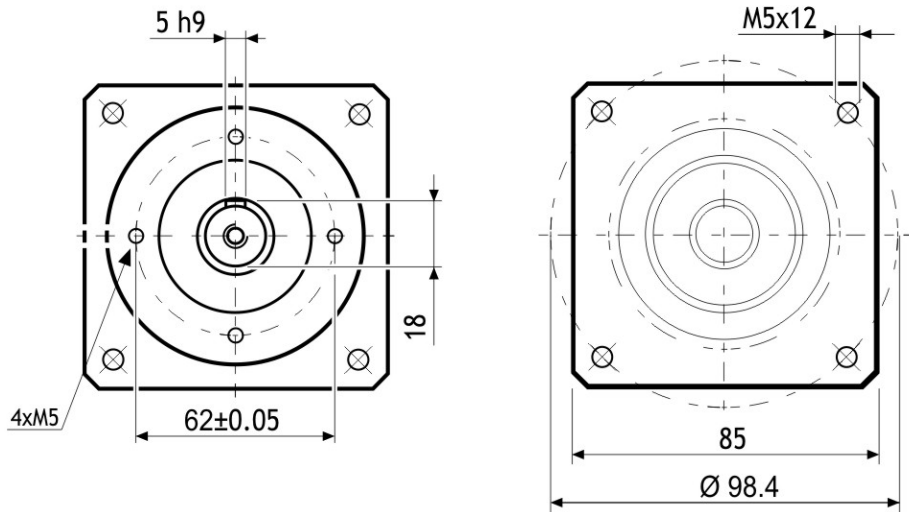
**This planetary gear units of the SG-series are only suitable for shaft motors with a maximum shaft length of 32 mm.**

#### Technical Data:


Gear Ratio i:	05	Gear Moment of Inertia:	$0.07 \times 10^{-4}$
Efficiency:	97%	Flange Size:	85 x 85 mm
Backlash at No-load:	$\leq 12$ arc-min	Output Shaft Type:	Key way / feather key
Rated Output Torque:	12 Nm	Gearbox Length:	87 mm
Max. Acceleration Output Torque:	20 Nm	Output Shaft Diameter:	$\varnothing 16$ mm (k6)
Emergency Stop Output Torque:	30 Nm	Output Shaft Length:	36 mm
Nominal Input Speed:	$3500 \text{ min}^{-1}$	Input Shaft Diameter:	$\varnothing 14$ mm (-0.018)
Max. momentary Input Speed:	$5000 \text{ min}^{-1}$	Input Shaft Length:	max. 32 mm
Max. Radial Force Applying on Output Shaft:	500 N	Waterproof Rating:	IP64
Max. axial Force Applying on Output Shaft:	600 N	Weight:	1.1 kg
Torsional Stiffness:	0.9 Nm/ arc-min		



# SG-P11-050-005-12-SM-2861



Suitable for use in combination with the following stepper motors

SM2861-5055 (on request)
SM 2861-5255 (Item-No. 76597) 

### SG-P11-070-005-12-SM-286X, 85x85 Flange, i = 05, 12 arc-min, 25 Nm



SG reduction gears combine high performance with optimal reliability. They are the perfect plug-and-go solution with stepper motors and SANYO DENKI servo systems.

SG reduction gears are characterized by:

- excellent radial and axial load carrying capacity
- low noise
- high precision
- high nominal and acceleration torque



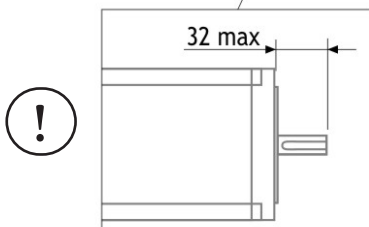
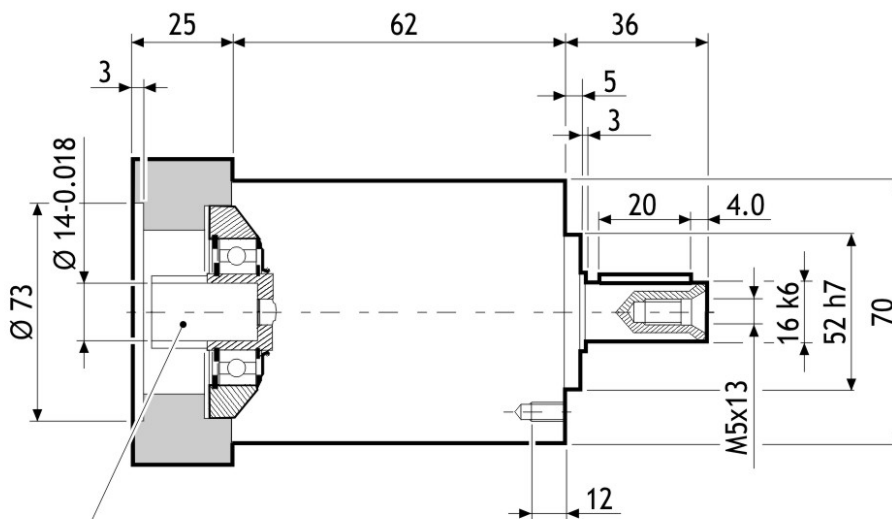
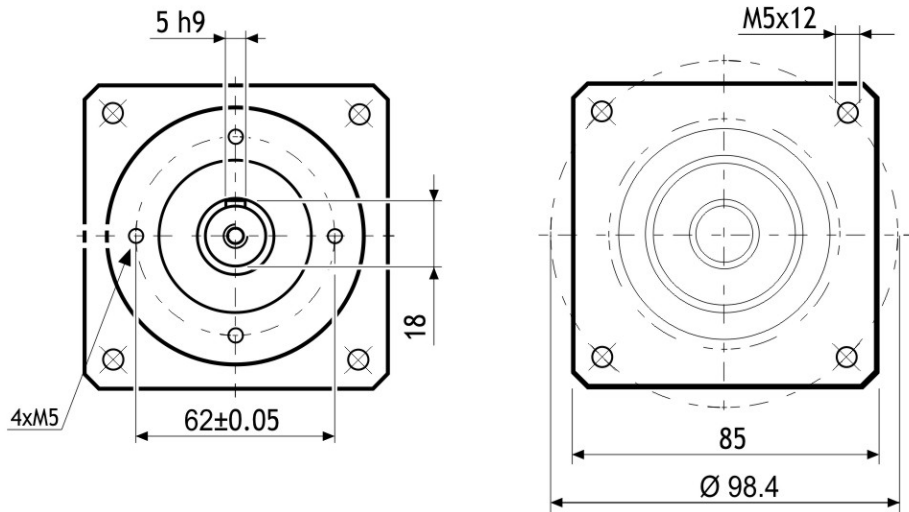
**This planetary gear units of the SG-series are only suitable for shaft motors with a maximum shaft length of 32 mm.**

#### Technical Data:

Gear Ratio i:	05	Gear Moment of Inertia:	$0.09 \times 10^{-4}$
Efficiency:	97%	Flange Size:	85 x 85 mm
Backlash at No-load:	$\leq 12$ arc-min	Output Shaft Type:	Key way / feather key
Rated Output Torque:	25 Nm	Gearbox Length:	87 mm
Max. Acceleration Output Torque:	35 Nm	Output Shaft Diameter:	$\varnothing 16$ mm (k6)
Emergency Stop Output Torque:	70 Nm	Output Shaft Length:	36 mm
Nominal Input Speed:	$3500 \text{ min}^{-1}$	Input Shaft Diameter:	$\varnothing 14$ mm (-0.018)
Max. momentary Input Speed:	$5000 \text{ min}^{-1}$	Input Shaft Length:	max. 32 mm
Max. Radial Force Applying on Output Shaft:	1300 N	Waterproof Rating:	IP64
Max. axial Force Applying on Output Shaft:	1400 N	Weight:	2.0 kg
Torsional Stiffness:	3 Nm/ arc-min		



# SG-P11-070-005-12-SM-286X



Suitable for use in combination with the following stepper motors

SM2862-5055 (on request)
SM2862-5155 
SM2862-5156 (on request)
SM2862-5255 (Item-No. 76603) 
SM2863-5155 (on request)
SM2863-5255 (Item-No. 76610) 

### SG-P11-070-010-12-SM-2861, 85x85 Flange, i = 10, 12 arc-min, 18 Nm



SG reduction gears combine high performance with optimal reliability. They are the perfect plug-and-go solution with stepper motors and SANYO DENKI servo systems.

SG reduction gears are characterized by:

- excellent radial and axial load carrying capacity
- low noise
- high precision
- high nominal and acceleration torque



**This planetary gear units of the SG-series are only suitable for shaft motors with a maximum shaft length of 32 mm.**

#### Technical Data:

Gear Ratio i:	10	Gear Moment of Inertia:	$0.04 \times 10^{-4}$
Efficiency:	97%	Flange Size:	85 x 85 mm
Backlash at No-load:	$\leq 12$ arc-min	Output Shaft Type:	Key way / feather key
Rated Output Torque:	18 Nm	Gearbox Length:	87 mm
Max. Acceleration Output Torque:	30 Nm	Output Shaft Diameter:	$\varnothing 16$ mm (k6)
Emergency Stop Output Torque:	60 Nm	Output Shaft Length:	36 mm
Nominal Input Speed:	$4000 \text{ min}^{-1}$	Input Shaft Diameter:	$\varnothing 14$ mm (-0.018)
Max. momentary Input Speed:	$6000 \text{ min}^{-1}$	Input Shaft Length:	max. 32 mm
Max. Radial Force Applying on Output Shaft:	1300 N	Waterproof Rating:	IP64
Max. axial Force Applying on Output Shaft:	1400 N	Weight:	2.0 kg
Torsional Stiffness:	3 Nm/ arc-min		







### SG-P11-090-010-12-SM-286X, 85x85 Flange, $i = 10$ , 12 arc-min, 37 Nm



SG reduction gears combine high performance with optimal reliability. They are the perfect plug-and-go solution with stepper motors and SANYO DENKI servo systems.

SG reduction gears are characterized by:

- excellent radial and axial load carrying capacity
- low noise
- high precision
- high nominal and acceleration torque



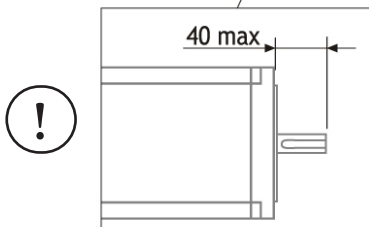
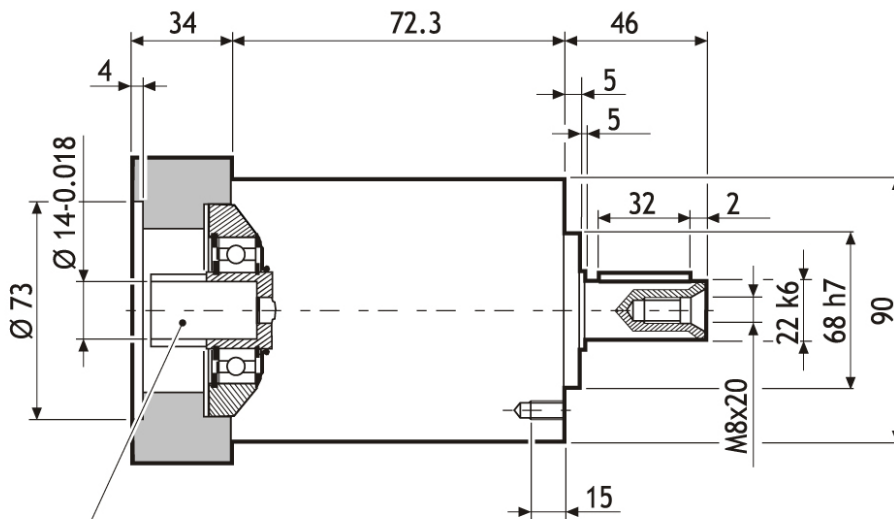
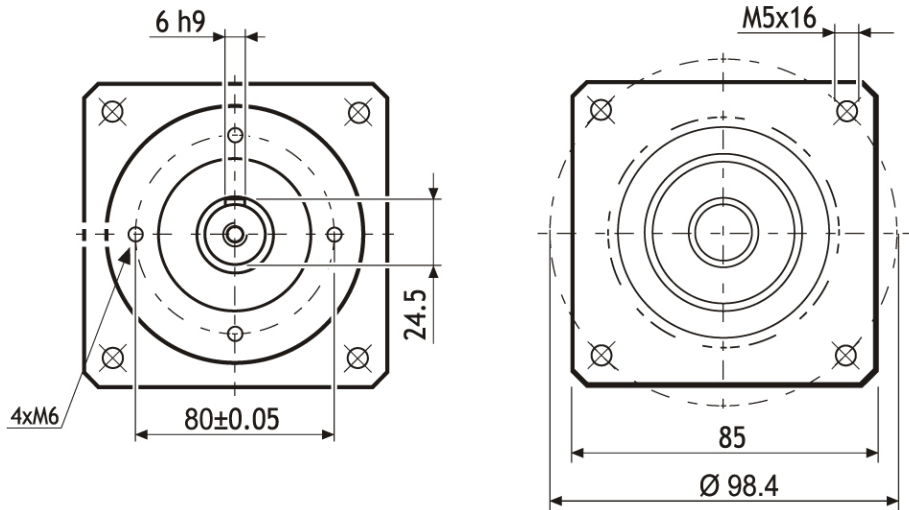
**This planetary gear units of the SG-series are only suitable for shaft motors with a maximum shaft length of 40 mm.**

#### Technical Data:

Gear Ratio $i$ :	10	Gear Moment of Inertia:	$0.35 \times 10^{-4}$
Efficiency:	97%	Flange Size:	85 x 85 mm
Backlash at No-load:	$\leq 12$ arc-min	Output Shaft Type:	Key way / feather key
Rated Output Torque:	37 Nm	Gearbox Length:	106,3 mm
Max. Acceleration Output Torque:	70 Nm	Output Shaft Diameter:	$\varnothing 22$ mm (k6)
Emergency Stop Output Torque:	150 Nm	Output Shaft Length:	46 mm
Nominal Input Speed:	4000 $\text{min}^{-1}$	Input Shaft Diameter:	$\varnothing 14$ mm (-0.018)
Max. momentary Input Speed:	6000 $\text{min}^{-1}$	Input Shaft Length:	max. 40 mm
Max. Radial Force Applying on Output Shaft:	2200 N	Waterproof Rating:	IP64
Max. axial Force Applying on Output Shaft:	1900 N	Weight:	4.2 kg
Torsional Stiffness:	9 Nm/ arc-min		



# SG-P11-070-005-12-SM-286X



Suitable for use in combination with the following stepper motors

SM2862-5055 (on request)
SM2862-5155
SM2862-5156 (on request)
SM2862-5255 (Item-No. 76603)
SM2863-5155 (on request)
SM2863-5255 (Item-No. 76610)