

This Installation Guide provides installation information of motor and planetary gearbox. We recommend that you read this installation sheet before operation, to ensure proper performance.

## 1 Safety precautions

### Meaning of warning and caution inscription

	<b>WARNING</b>	WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.
	<b>CAUTION</b>	CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

### WARNING

- ① DO NOT install or uninstall while the power is applied to the motor.

### CAUTION

- ① DO NOT subject the product to severe impacts.
- ② When carrying or handling, be carefully not to drop the product.
- ③ DO NOT disassemble, fix or modify the product.
- ④ Use the planetary gearbox in an environment that meets the specifications contained in this Installation Guide.
- ⑤ Be sure that external load does not exceed the rating of output.
- ⑥ When disposing of planetary gearbox, treat it as industrial waste.

## 2 Environment of use

### To install, observe the following conditions.

Item	Specification	Standard
Ambient temperature	-10°C~90°C	-
Protection class	IP65	-

## 3 Installation instruction



- ① Check to see if the gearbox is the proper one for the motor you have. Clean the combining surface.



- ② Remove the plug from the gearbox adapter's clamp hole. Loosen the shaft collar bolt through clamp hole on Gearbox adapter.



- ③ Mount the motor to the gearbox.



- ④ Tighten the bolts with torque wrench to the torque specified in the 'Motor installation bolt' table.



- ⑤ Tighten the shaft collar bolt with torque wrench to the torque specified in the 'Shaft collar bolt' table.



- ⑥ Install the plug into the gearbox adapter's clamp hole.

## 4 Tightening torques standard

### Motor installation bolt

Bolt standard	Strength 8.8	Strength 10.9	Strength 12.9
M3 x 0.5P	1.3N·m	1.8N·m	2.1N·m
M4 x 0.7P	2N·m	4.1N·m	4.9N·m
M5 x 0.8P	6.1N·m	8.2N·m	9.8N·m
M6 x 1.0P	11N·m	14N·m	17N·m
M8 x 1.25P	25N·m	34N·m	41N·m

Gearbox frame size	Stage	Motor shaft diameter	Bolt standard	Strength 12.9
40, 45, 47, 50	1A	≤ 8mm	M4 x 0.7P	4.9N·m
	2A	≤ 8mm	M4 x 0.7P	4.9N·m
	1M, 2M	≤ 14mm	M5 x 0.8P	9.8N·m
60, 64, 70	1A, 2A	≤ 14mm	M5 x 0.8P	9.8N·m
	2B	≤ 8mm	M4 x 0.7P	4.9N·m
	1M, 2M	≤ 19mm	M6 x 1.0P	17N·m
75, 80, 90	1A, 2A	≤ 19mm	M6 x 1.0P	17N·m
	2B	≤ 14mm	M5 x 0.8P	9.8N·m
	1M, 2M	≤ 24mm	M8 x 1.25P	41N·m
100, 110, 115, 120	1A, 2A	≤ 24mm	M8 x 1.25P	41N·m
	2B	≤ 19mm	M6 x 1.0P	17N·m
	1M, 2M	≤ 35mm	M8 x 1.25P	41N·m
140, 142, 155, 160	1A, 2A	≤ 35mm	M8 x 1.25P	41N·m
	2B	≤ 24mm	M8 x 1.25P	41N·m
	1M, 2M	≤ 42mm	M8 x 1.25P	41N·m
180, 200, 205	1A, 2A	≤ 42mm	M8 x 1.25P	41N·m
	2B	≤ 35mm	M8 x 1.25P	41N·m
	1M, 2M	≤ 55mm	M8 x 1.25P	41N·m
220, 235, 255	1A, 2A	≤ 55mm	M12x1.75P	139N·m
	2B	≤ 42mm	M8x1.25P	41N·m

M10 x 1.5P	49N·m	67N·m	80N·m
M12 x 1.75P	85N·m	116N·m	139N·m
M14 x 2P	137N·m	186N·m	223N·m
M16 x 2P	210N·m	286N·m	343N·m

### Shaft collar bolt

※When installing of motor and planetary gearbox, be sure to use the standard bolt of **Tighten torques standard** table.

※The torque of **Tighten torques standard** table is the recommended minimum tighten torque. The bolt should only be tightened up to 120% of the recommended torque.

## 5 Product name

SSS	045	1A	-	003	K	S	-	A1110103C04
(1)	(2)	(3)		(4)	(5)	(6)		(7)

NO.	Category	Description
(1)	Gearbox sort	Series SSS, SSO, SSR, SSD, SAS, SAO, SAR, SAD HSS, HSR, HSW, HSD, HAS, HAR, HAW, HAD MSS, MSO, MSR, MAS, MAO, MAR
(2)		Frame size 040, 045, 047, 050, 060, 064, 070, 075, 080, 090, 100, 110, 115, 120, 140, 142, 155, 160, 180, 200, 205, 220, 235, 255
(3)		Stage 1A, 2A, 2B, 1M, 2M
(4)	Gearbox feature	Ratio 003, 004, 005, 007, 009, 010, 014, 020, 015, 020, 025, 030, 035, 045, 050, 063, 070, 090, 100, 126, 140, 180, 200
(5)		Shaft key N, K
(6)		Precision S, P, A
(7)	Adapter name	A1110103C04, A2110102C05, ... ,G4110103C55

※For further details, refer to the product catalogue.

## 6 Warranty

### Warranty period

The warranty expires after 18 months of production or 12 months of buying.

### Scope of warranty

Warranty is available except:

- 1) The troubles caused by improper condition, environment or treatment except the instructions of LSIS
- 2) The troubles caused by external devices
- 3) The troubles caused by remodeling or repairing based on the user's own discretion
- 4) The troubles caused by improper usage of the product
- 5) The troubles caused by the reason which exceeded the expectation from science and technology level when LSIS manufactured the product
- 6) The troubles caused by natural disaster

### Change in specifications

Product specifications are subject to change without notice due to continuous product development and improvement.

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