Assembly procedure for KA_S series

January, 04, 2010

The following procedure is valid for KA060S and KA080S. However, only pictures of KA060S are shown as examples. The other is similar.

1. Examine specification

KA specification

KA	060	S		-20	C	E	-400	A	E	F0	E	U	S1	M	V

- 060: 080
- S: None = standard type; A = simple structure; P = plate type; E = other type; S = sealed type
- (blank): None = ballscrew; B = belt driven (N/A); D = double slider
- -20: Lead
- C: C = normal; P = precision
- E: None = standard ballscrew; E = special ballscrew
- -400: Effective stroke
- A: A=normal load; H=heavy load
- E: None = standard; E = special slider
- F0: F0 standard motor flange
- E: Motor flange; E = special flange for non-specified motors
- U: None = standard seal; U = without seal; B = bellows (N/A)
- S1: Sensors; S1=Omron SX671; S2=Omron SX674; S3=Sunx GL-12F; S4=Sunx GL-N12F-PX10; SE = customer specified
- M: None = no motor; M = supplied with motor
- V: None = normal use; V = vertical application

2. Examine the basics

(1) Check Drawings and Parts list.

NOTE: Always refer to the drawings for correct assembly.

(2) Measure the length of the base, seal strip, linear guideway and ballscrew.

(3) Confirm the ballscrew lead, diameter, and thread number.

3. Examine parts

Make sure quantity, dimensions, and quality of the following items are correct.

(1) Bearing housing and end plate.

(2) Sliding carriage, the roller set, and motor flange.

(3) Locking nut, bearing-locking ring and spacer for ballscrew (Fig. 3-1).

(4) Bearings for fixed end.

(5) Bearing for supported end.

(6) Retaining ring (Fig.3-2).

Fig. 3-1

Fig. 3-2

4. Prepare hand tools for assembly

(1) Torque screwdriver (Fig. 4-1, 4-2).

(2) Hex wrench, pliers, open-end wrench, Locking-nut wrench, and screwdrivers. (Fig. 4-3).

Fig. 4-1

Fig. 4-2

Fig. 4-3

5. Install the linear guideways

(1) Check the rail's length.

(2) Make sure the guideway operate smoothly.

(3) Install the guideway on the base (Fig. 5-1).

NOTE: The arrow mark faces the reference side (Fig. 5-2); screw tightening torque = 3.92 N-m for KA060S, =8.83 N-m for KA080S).

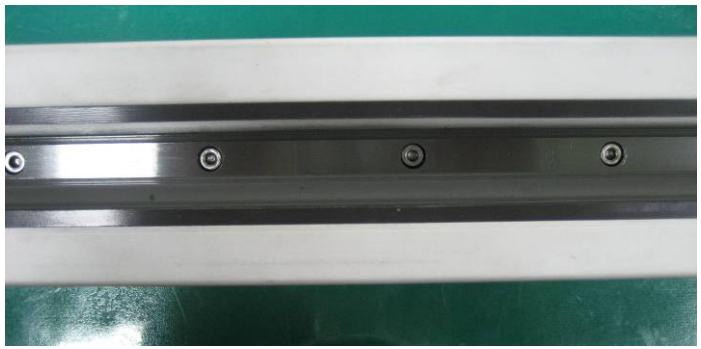

Fig. 5-1

Fig. 5-2

6. Install the ballscrew and sliding carriage

(1) Check all elements (Fig. 6-1).

(2) Install the bearing and retaining ring on the support-end (Fig. 6-2).

(3) Install the ballscrew nut into the nut housing (Fig. 6-3).

(4) Install the sliding carriage on the guideway blocks with nut flange facing the fixed-end bearings (Fig. 6-4).

Fig. 6-1

Fig. 6-2

Fig. 6-3

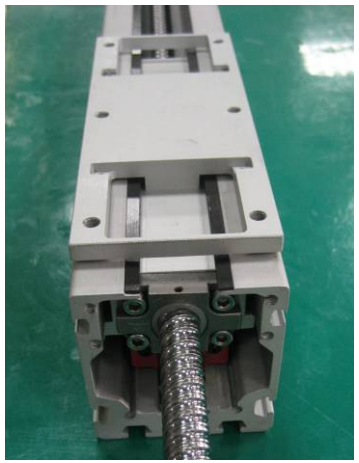

Fig. 6-4

7. Install fixed-end bearings, housing and the end plate

(1) Install the end plate (Fig. 7-1).

NOTE: DO NOT tighten the screws. Leave them loose for adjustment.

NOTE: Use spring washer for each screw.

(2) Check all elements (Fig. 7-2).

(3) Install bearings into the housing (Fig. 7-3).

(4) Lock the ballscrew's locking nut (Fig. 7-4); tightening torque = 4.5 N-m for both KA060S and KA080S .

(5) Install the bearing-locking ring (Fig. 7-5); screw tightening torque = 1.5 N-m for KA060S, = 2 N-m for KA080S.

NOTE: DO NOT tighten the screws of the housing. Leave them loose for adjustment.

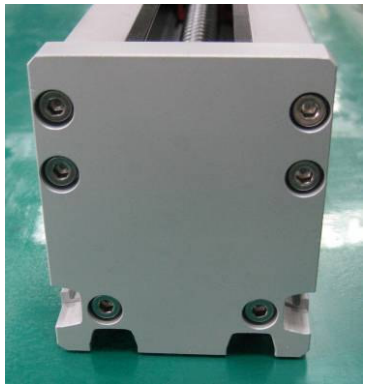
Fig. 7-1

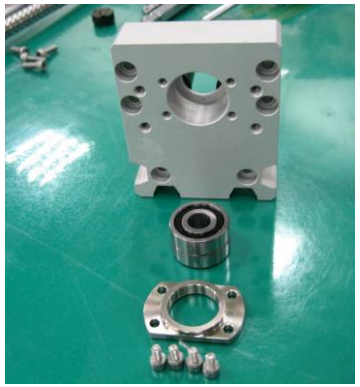
Fig. 7-2


Fig. 7-3

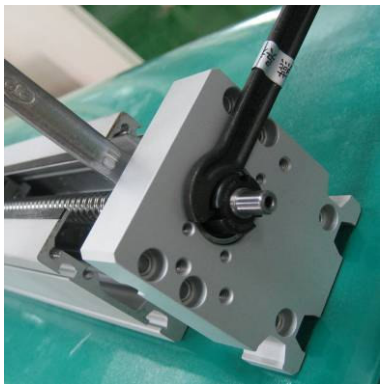
Fig. 7-4

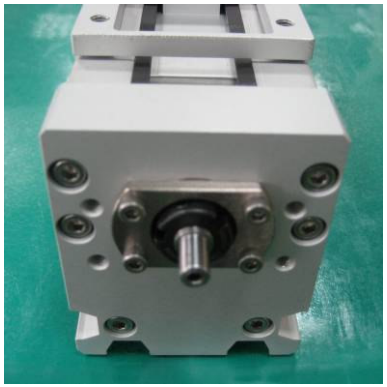
Fig. 7-5

8. Adjust for smoothness

The following steps may be repeated several times if necessary, until the whole KA set operates smoothly.

(1) Push the sliding carriage toward each end.

(2) Push the carriage back and forth and examine its motion smoothness (Fig. 8-1).

NOTE: If there is abnormality, loosen and tighten the screws on the housing and try again. If abnormality still happens, loosen and tighten the ballscrew nut and try again until smoothness is satisfactory.

(4) Push the carriage to the support-end and fix the screws on the end plate (Fig.8-2); screw tightening torque = 2 N-m for KA060S, = 4.5 N-m for KA080S.

(5) Push the carriage to the fixed-end and fix the screws on housing (Fig.8-3); screw tightening torque = same as above, (4).

(6) Finally examine the motion smoothness again. If there is any abnormality, loosen all screws and repeat the above steps.

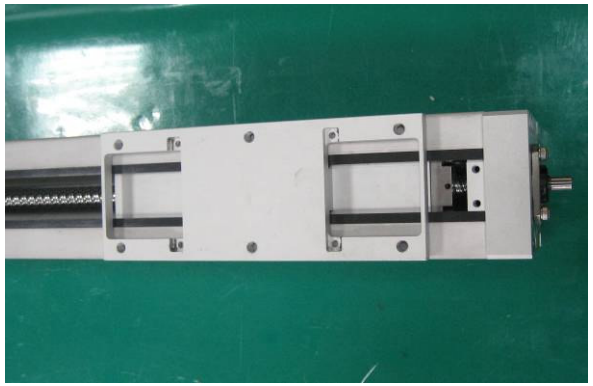
Fig. 8-1

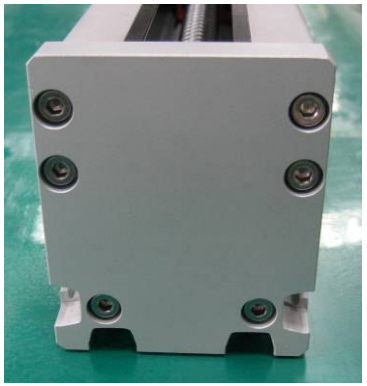
Fig. 8-2

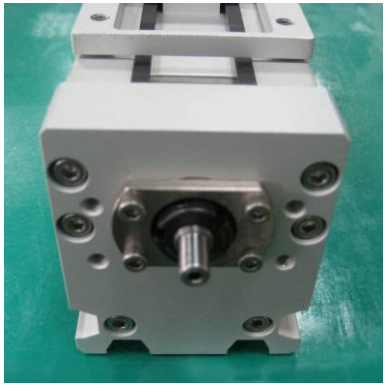
Fig. 8-3

9. Install the seal strip

(1) Install the supporting frame on the carriage (Fig. 9-1).

(2) Place the seal strip into the supporting frame (Fig. 9-2).

(3) Place the spring on the cover (Fig. 9-3).

(4) Install the cover on the carriage; make sure that the springs fit on the holding screws correctly.

(5) Fix the screws on the fixing-slab of the seal at ends (Fig. 9-4).

(6) Finished (Fig. 9-5).

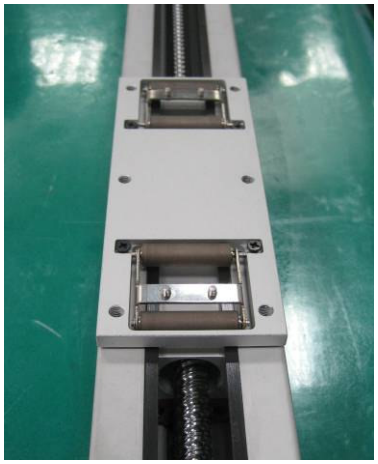

Fig. 9-1

Fig. 9-2

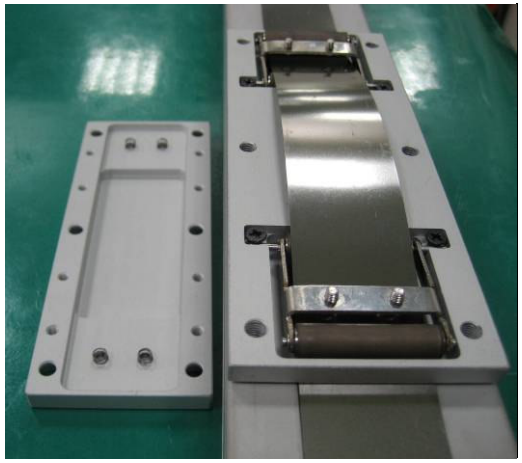

Fig. 9-3

Fig. 9-4

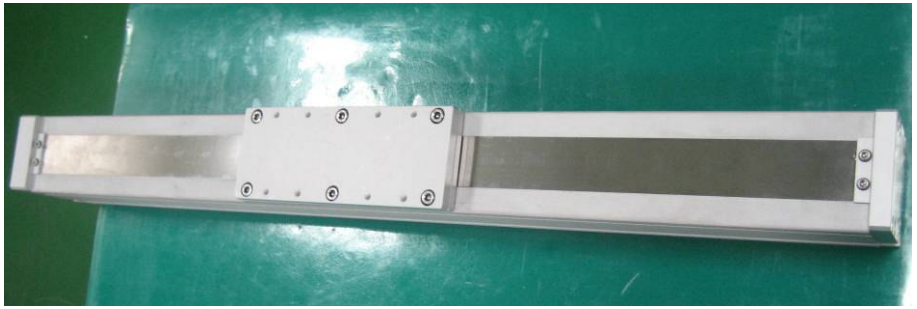

Fig. 9-5