1325D/1332D — Stepping Motor Driver DIP Switch Settings

RSD-SUNMAX Series

SUNMAX LASER

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1325D/1332D — Stepping Motor Driver DIP Switch Settings

This technical document explains the DIP switch settings of the stepping motor drivers used in the RSD-SUNMAX-GS1325D / GS1332D / RD1325D / RD1332D.

Under normal circumstances there is no need to change the DIP switch settings. However, the switch positions may change unintentionally when the laser machine is relocated, or as a result of vibration during shipping or a strong impact.

If the DIP switches are set incorrectly, the following symptoms may occur:

- A. The travel distance differs from the data (the X and Y scale does not match the data).
- B. The stepping motor's torque becomes weak and the motor quickly stalls (loses steps).
- C. The stepping motor overheats.

If any of the above problems occurs, check the DIP switch settings of the stepping motor drivers as described below.

Location

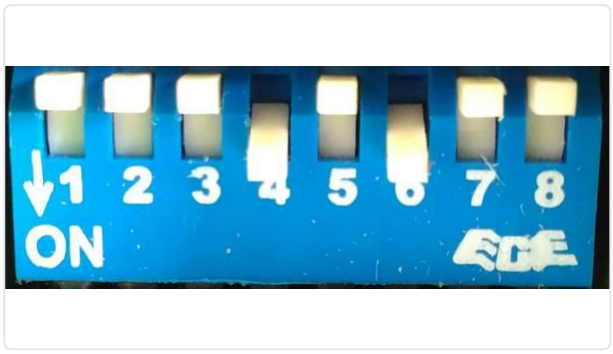
Open the door on the right-hand side of the front of the machine.

Two black boxes are located in the center behind the door. These are the stepping motor drivers for the X and Y axes.

Note that the mounting layout of the stepping motor drivers varies depending on the production lot of the machine. Labels indicating the X and Y axes are normally affixed to the drivers, so check those labels. If a label has peeled off, please contact us and we will identify the drivers for you.

Front right door of the machine

Typical layout example



DIP Switches

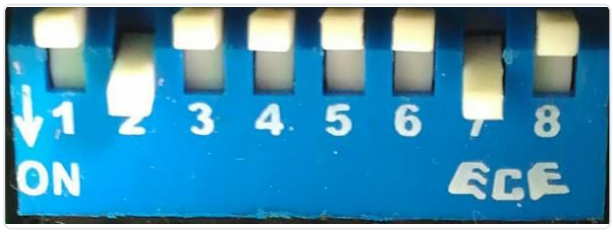
The DIP switches are shaped as shown in the figure below.

The DIP switch on each stepping motor driver is an 8-bit switch. Flipping a white switch toward the side marked with the numbers 1 to 8 turns that switch ON.

X-axis DIP switch / Y-axis DIP switch

Setting Examples

> **Caution:** The following are examples only; the actual machine may differ. If the machine is operating normally, do not change the settings.



X-Axis Stepping Motor Driver: 3DM580

sw	1	2	3	4	5	6	7	8
Setting	OFF	OFF	OFF	ON	-	ON	OFF	OFF

SW5 is not used. It may be set to either ON or OFF.

Y-Axis Stepping Motor Driver: DMA860H

sw	1	2	3	4	5	6	7	8
Setting	OFF	ON	OFF	OFF	-	OFF	ON	OFF

SW5 is not used. It may be set to either ON or OFF.

Setting Reference

X-Axis Settings

3DM580

SW1 to SW3 set the drive current applied to the stepping motor. In general, a higher current setting produces more torque, but it also increases vibration during acceleration and deceleration, which can degrade the finish quality of the work.

Peak current [A]	RMS current [A]	SW1	SW2	SW3	SW4
default		OFF	OFF	OFF	OFF
2.5	1.8	ON	OFF	OFF	OFF
2.9	2.1	OFF	ON	OFF	OFF
3.2	2.3	ON	ON	OFF	OFF
3.6	2.6	OFF	OFF	ON	OFF
4	2.9	ON	OFF	ON	OFF
4.5	3.2	OFF	ON	ON	OFF
4.9	3.5	ON	ON	ON	OFF
5.3	3.8	OFF	OFF	OFF	ON
5.7	4.1	ON	OFF	OFF	ON
6.2	4.4	OFF	ON	OFF	ON
6.4	4.6	ON	ON	OFF	ON
6.9	4.9	OFF	OFF	ON	ON
7.3	5.2	ON	OFF	ON	ON
7.7	5.5	OFF	ON	ON	ON
8	5.7	ON	ON	ON	ON

SW5 to SW8 set the resolution of the stepping motor (the number of pulses required for one full revolution of the motor shaft). If this value is not set correctly, the laser machine cannot plot data accurately.

Resolution (steps/rev)	SW6	SW7	SW8
default	ON	ON	ON
6400	OFF	ON	ON
500	ON	OFF	ON
1000	OFF	OFF	ON
2000	ON	ON	OFF
4000	OFF	ON	OFF
5000	ON	OFF	OFF
10000	OFF	OFF	OFF

Y-Axis Settings

DMA860H

SW1 to SW3 set the drive current applied to the stepping motor. In general, a higher current setting produces more torque, but it also increases vibration during acceleration and deceleration, which can degrade the finish quality of the work.

Peak current [A]	RMS current [A]	SW1	SW2	SW3
2.40	2.00	ON	ON	ON
3.08	2.57	OFF	ON	ON
3.77	3.14	ON	OFF	ON
4.45	3.71	OFF	OFF	ON
5.14	4.28	ON	ON	OFF
5.83	4.86	OFF	ON	OFF
6.52	5.43	ON	OFF	OFF
7.20	6.00	OFF	OFF	OFF

SW5 to SW8 set the resolution of the stepping motor (the number of pulses required for one full revolution of the motor shaft). If this value is not set correctly, the laser machine cannot plot data accurately.

Resolution (steps/rev)	SW5	SW6	SW7	SW8
400	ON	ON	ON	ON
800	OFF	ON	ON	ON
1600	ON	OFF	ON	ON
3200	OFF	OFF	ON	ON
6400	ON	ON	OFF	ON
12800	OFF	ON	OFF	ON
25600	ON	OFF	OFF	ON
51200	OFF	OFF	OFF	ON
1000	ON	ON	ON	OFF
2000	OFF	ON	ON	OFF
4000	ON	OFF	ON	OFF
5000	OFF	OFF	ON	OFF
8000	ON	ON	OFF	OFF
10000	OFF	ON	OFF	OFF
20000	ON	OFF	OFF	OFF
40000	OFF	OFF	OFF	OFF