HIWIN®

LMSP Initialization Procedure

2007.05.21.

Revision History

Release	Date	Applies to	Comments
1.0	2007.05.21.	LMDX firmware 050720	Initial publication

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This document illustrates how to initialize the motor before close loop control. This has only to be done once. If motor and driver are delivered together from HIWIN, it has already been initialized.

● Download Basic Parameter

   Basic parameter files can be found at

   http://www.hiwinmikro.com.tw/pdf/LM_Driver/LMDX/Manual/basic%20parameters.zip

   File name is 'Basic parameters. Zip '. Please use the file according to LMSP motor model：

   a. LMSPX1-050720.txt

   b. LMSPX2-050720.txt

   c. LMSPX3-050720.txt

   (Refer to section 3.1 of 'DspHost2 Operation Manual040916.pdf' about how to load motor parameter into LMDX driver)

   **If motor parameter has been downloaded into LMDX driver, go to next step.

● Initialize

1. Connect RS-232 cable between driver and PC. Open communication interface of pure text, for example, Hyperterminal of Windows, and don't turn on the power first.

2. Turn on the power, communication interface shows some messages. Now, press the 'Enter' key, then it shows '>'.

3. Key in "SD 0" → It will change from pulse mode to stand-alone mode. Now, it is possible to issue motion commands through RS232.

4. Key in "FA 100 1" →Setting velocity to 100mm/s and acceleration to 1m/s^2

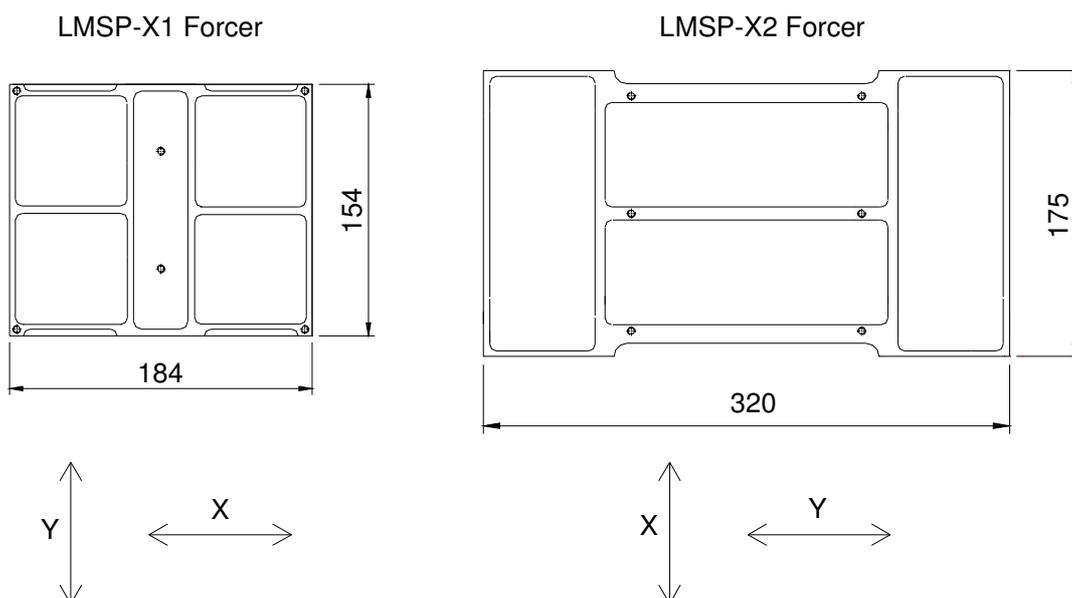5. Key in "FX 0" →Now, the motor can be moved freely by hand.

LMSP-X1 Forcer   LMSP-X2 Forcer

Fig. 1 Definition of axes in LMSP series motor

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6. Push the motor to home corner, key in "FX 2" →Motor becomes in open loop mode, and can't be moved easily by hand.

7. Key in "PR 10000" →Motor moves in the positive direction of X Axis. The motor may move toward the corner, so it can't move. In such case, it is necessary to change the setting of motor direction (Otherwise, go to next step directly). Key in "AS" + Enter, it will show "AS p1 p2", if p1=1,then change to -1. If p1=-1,then change to 1. For example, "AS 1 1", so key in "AS -1". Key in "PR 10000" again, and test whether the motion direction is as you want.

8. Key in "PR 0 10000" → Motor moves in the positive direction of Y Axis. The motor may move toward the corner, so it can't move. In such case, it is necessary to change the setting of motor direction (Otherwise, go to next step directly). Key in "AS" + Enter, it will show "AS p1 p2", if p2=1,then change to -1. If p2=-1,then change to 1. For example, "AS 1 1", so key in "AS 1 -1", p1 keeps its default value. Key in "PR 10000" again, and test whether the motion direction is as you want.

9. After above steps, key in "FX 0", first. Push the motor to home corner, again. Key in "FX 2", and key in "DR" + Enter. It will show "DR x1 x2 y1", they are actual feedback positions.

10. Key in "PR 10000 10000", which means motion of X and Y Axis, and then key in "DR" + Enter. It will show "DR x1 x2 y1", compare the values with those in the above step, and see whether the values of x1, x2 and y1 increase 10000 approximately (If the step is correct, go to step 14 directly).

11. If x1 decreases 10000 approximately, key in "PX" + Enter, first. And it will show "PX r1 r2 r3". If r1=1, then change to -1. If r1=-1, then change to 1. For example, "PX 1 1 1", so key in "PX –1".

12. If x2 decreases 10000 approximately, key in "PX" + Enter, first. And it will show "PX r1 r2 r3". If r2=1, then change to -1. If r2=-1, then change to 1. For example, "PX 1 1 1", so key in "PX 1 -1".

13. If y1 decreases 10000 approximately, key in "PX" + Enter, first. And it will show "PX r1 r2 r3". If r3=1, then change to -1. If r3=-1, then change to 1. For example, "PX 1 1 1", so key in "PX 1 1 -1".

14. Key in "WE" to save parameters. Now, key in "FX 2" again, then key in "DR" + Enter. It will show "DR x1 x2 y1", which is actual position now. Key in "PR 10000 10000", which means motion of X and Y Axis, and key in "DR" + Enter again. It will show "DR x1 x2 y1". Check whether the values of x1, x2 and y1 increase 10000 approximately.

15. If setting of above steps are completed, key "SL" + Enter. Now, motor makes

some small move. When it shows "SL..220", key in "FF" + Enter. It will show "FF e1 e2 e3", and then key in "NPS" + Enter, it will show "NPS t1 t2 t3". Compare e1 with t1, e2 with t2, and e3 with t3 respectively to see whether differences are within 18.

16. If the above is completed, key in "WE" to save parameters. Key in "FX 1" to make the LMSP get into closed loop. Key in "GS" +Enter to do homing.

17. Key in "SD 1" to change to pulse mode. Key in "WE" to save parameters again. Finally, key in "RES", motor will make alignment and homing. Now, it is in pulse mode.