Command:SI

This command has two distinct functions depending on whether the system uses linear encoders SEARCH INDEX or rotary encoders SEEK LIMITS.

This functionality is available by request from ASI. It is not included with standard firmware.

Linear Encoder and SEARCH INDEX

MS2000 or RM2000 syntax

Shortcut	SI
Format	SI [axis]=[position in 1/10 microns]…
Units	1/10 microns
Firmware Version Required	v8.4+

Tiger syntax

Shortcut	SI
Format	SI [axis]=[position in 1/10 microns]…
Units	1/10 microns
Type	Axis-Specific

This command searches for the physical centers of the stage and marks it with a user inputted value. Software limits are reset to default. Note, if the command is rerun again it will fail and print the "N-5" error. To avoid this, move the axis off-center, zero the position and then issue the command.

Reply
If there are no errors, a positive reply of ":A" is sent back.

Example

```
SI X=0
 :A
```

In the example, the controller searches for the center of X-axis and sets it to zero.

```
SI Y=20000
 :A
```

In the example, the controller searches for the center of Y-axis and sets it to 2mm.

```
SI Y=0
 :N-5
```

N-5, indicates center of axes could not be found. This could be because previous center value is same as the new value, or hardware and software issues.

```
SI X? Y?
:A X=0 Y=0
```

In this example the X and Y axes are being queried for the current setting of the axes centers. The response is what they have previously been set to (not necessarily 0).

Rotary Encoder and SEEK LIMITS

MS2000 or RM2000 syntax

Shortcut	SI
Format	SI [axis] = [1 or -1]...
Units	1 or -1 as direction
Firmware Version Required	v8.8e+

Tiger syntax

Shortcut	SI
Format	SI [axis] = [1 or -1]...
Units	-
Type	Axis-Specific

If 1, then the stage seeks the upper limit. If -1, then the stage seeks the lower limit.

The stage moves to the hardware limit, backs away 3 mm, then approaches the limit slowly enough to maximize repeatability of the result. The recommended procedure is as follows, with SI and HERE commands using one or more axis arguments:

- Send SI command.
- Poll with STATUS command until 'N' is received.
- Send HERE command with desired real world position.

Reply
If there are no errors, a positive reply of ":A" is sent back after issuing the command. If an error occurs during execution it will be reported then.

Example

```
SI X=1 Y=-1
:A
```

In this example the command is issued to seem the X axis positive limit and the Y axis negative limit.

```
SI X? Y?
:A X=0 Y=0
```

In the example the X and Y axes are being queried for the current setting for the direction to seek the limits.

Auto Homing For Clocked Devices like Sliders

As of firmware 9.2l (for MS2000) and 3.18 (for Tiger) Seek Limit routine performs an additional step for clocked devices. After finding the Limit it moves a set distance (distance is specified as Home Position Command:SETHOME) and zeros itself there. By default, the distance between Upper limit and Slot 1 is saved in Home position , so when Seek Limit is run , the controller is able to move the slider to position 1 by finding the limit and moving a set distance from it.

commands, tiger, ms2000

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