

# Command:AFOCUS (AF)

## MS2000 and RM2000 Syntax

<b>Shortcut</b>	AF
<b>Format</b>	AFOCUS X= [% of speed] Y= [travel distance in mm] Z= [Hill Detect enable] F= [Hill Offset]
<b>Remembered</b>	Using SS Z

## Tiger Syntax

<b>Shortcut</b>	AF
<b>Format</b>	[Addr#] AFOCUS X= [% of speed] Y= [travel distance in mm] Z= [Hill Detect enable] F= [Hill Offset]
<b>Type</b>	Card-Addressed
<b>Remembered</b>	Using [Addr#]SS Z

The AFOCUS command will invoke an auto-focus routine using the *speed* and *travel* range specified by the previously set **X** and **Y** parameter settings. This routine can also be activated by pressing “@” button on most controllers. Entering AF without arguments will initiate the auto-focus routine itself, whereas issuing an AF with arguments will only set the parameters. An auto-focus scan can be canceled with HALT command or by issuing the \ shortcut. When an AF command is issued, the controller only replies after the operation is complete. It returns a :A[###] if the operation was successful, or N-5 if there was an error.

**X=** Speed. Range is 0 to 100 denoting the percentage of the focus drive’s maximum possible speed to travel during an auto-focus scan. This speed is also used by the [AFCALIB \(or AFC\) command](#).

**Y=** Total scan range in millimeters. The focus controller moves down one-half this travel distance, and then scans up the full travel distance. This range is also used by [AFCALIB \(or AFC\) command](#).

**Z=** Search type; either 0 or 1. A value of 0 enables *Normal* mode, while a 1 enables Hill Detect mode. (Z values 2 and 3 are reserved for future use.)

**F=** Hill Offset. Range is 0 to 100 denoting a percentage of a hill. If the Search Type is Hill Detect, then this setting determines when the scan will end. Once a hill peak is detected, the scan will terminate when past the peak by the *Hill Offset* percentage value.

## Response

:A or Error Reply.

## Example

```
AF
:A<CR><LF>
```

```
AF X=5 Y=0.1 Z=0  
:A
```

```
AF X=10 Y=0.3 Z=1 F=10  
:A
```

```
AF X=200 Z=2  
:N-4
```

(Error indicates arguments out of range)

```
AF X?  
:X=10 A
```

AF

Returns :A [quality#] after operation is complete, an :N-5 if the operation failed, or an :N-50 if the focus drive's clutch is disengaged (if applicable).

When all of the arguments are omitted, the A is transmitted after the focusing scan has completed. The number in brackets is the difference between *focus value* when in-focus compared to when out-of-focus. It indicates the quality of focus obtained.

**Caution:** To protect the optical assembly and sample, ensure that the sample is at least 200  $\mu\text{m}$  away from the optics and that the current position is zeroed, that is, the LCD display shows Z: 0.00000 > 0.00000 before sending the AF command to the controller (where Z is the focus axis).

[commands](#), [autofocus](#), [ms2000](#)

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