Command:BACKLASH (B)

Motorized Actuator

MS2000 or RM2000 syntax

Shortcut	B
Format	BACKLASH [axis] = [distance]...
Units	Millimeter
Remembered	Using SS Z

Tiger syntax

Shortcut	B
Format	BACKLASH [axis] = [distance]...
Units	Millimeter
Type	Axis-Specific
Remembered	Using [addr#]SS Z

This command sets (or displays) the amount of distance in millimeters of the anti-backlash move which absorbs the lash in the axis' gearing at the end of commanded moves[1)]. This behind-the-scenes move ensures that the controller approaches the final target from the same direction, which improves repeatability when using rotary encoders. A value of zero (0) disables the anti-backlash algorithm for that axis. The default value depends on motor build but is 0.04 for most common 4 TPI leadscrew pitch with rotary encoder, 0.01 for most common 16 TPI leadscrew pitch, and 0.02 for the x-axis of scan-optimized stages. For linear encoders a backlash move is not necessary and there is no reason to change the setting from the default value of zero (0). Moves with manual input devices (joystick or knobs) do not have any anti-backlash move.

Example:

```
B X=.05 Y=.05 Z=0
:A
B x?
:X=0.040000 A
```

The command in this example will make the controller move the X and Y axes to a location 50 microns away from the final target before moving to the final target, while the anti-backlash algorithm for the Z axis is disabled.

MicroMirror, Tiger Galvo (TGDAC4) and Rev B2 or older Tunable Lens Cards

Shortcut	B
Format	B [axis]=[0.1 to 15] ...
Units	Frequency in kHZ
Type	Axis-Specific
Remembered	Using [addr#]SS Z

This command is “recycled” for a different use in MicroMirror axes than for motor axes. In the context of a MicroMirror axis this command is used to set the cut off frequency of the 5th order Bessel filter. Units are in KHz. The lowest acceptable value is 0.1 (100Hz) and highest is 15 (15kHz). For a typical micro-mirror to avoid mechanical resonance this should be set no higher than 0.8 kHz.

Example:

```
B R=0.1 S=0.1
:A
```

Sets 100Hz filter cut off freq for R and S axes

```
B P? Q?
:P=0.4 B=0.4 A
```

Queries the filter cut off freq for P and Q axes

commands, tiger, ms2000, micromirror, tlens

[1)]

Includes using the MOVE or MOVREL commands, ARRAY module, ring buffer, TTL triggers with some exceptions, etc.