

Prototype Water Brake Dyno Controller, Setting Pre-Programmed Limits on Actuator Movement

Controller Settings v1.46 Step 16 of 23 **Test Ramp**

Controller Settings

Controller On: Yes **Defaults**

Com Port: 4 **Find**

Type: Water Brake position Feedback

Higher Number Increases Load: No

Ramp Rate: 5

Proportional Setting: 500

Integral Setting: 10

Derivative Setting: 1000

PID Control Loop, mSec: 3

Display On (No): No

Pulses Per Rev for RPM: 1

Max RPM To Control: 6000

Notes:
Click the 'Defaults' button to load typical default values. Use 'Tune' Number Increases Load. 'Ramp, count/mSec' HIGHER the 'Ramp' the movement).

Click on Tune to start process

Keep Settings Help Cancel Print

Do you have control? At some step over 20 you will be asked...

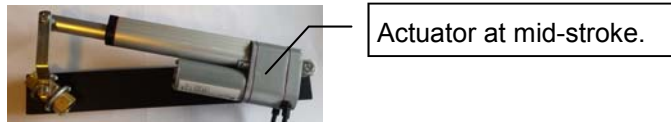
Control has been set back to manual mode, where you can adjust it with the knob.

Do you have control (can you move the actuator)?

Note: You may have to wait 10-20 seconds for the controller to respond to manual control.

DataMite Analyzer

Move the actuator to the middle of the stroke you will be using. Then click OK when it is at mid stroke. KEEP HANDS CLEAR.



Do you have control?

Do you know the lower limit value (number) you want the controller to limit travel at?

Select 'Yes' and you can enter the value, select 'No' and you can position the actuator to that limit.

Click on No if you have limits given by Performance Trends or you know limits from you setting them before.

Settings from Performance Trends:

Lower Limit

Upper Limit

Upper Limit of Travel

What is the upper limit value, typically a number from 497 (based on lower limit entry of 447) to 4095?

3492



Valve Motion Increased Load?

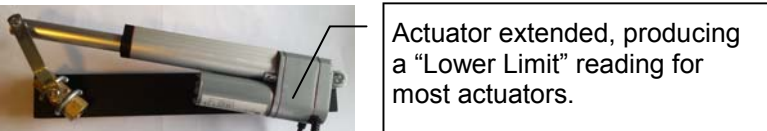
Did this motion (or the current actuator position) Open the valve (would increase load on engine)?

For most Water Brake dynos, you would answer "No". For smaller kart dynos with positive displacement pumps, you would choose "Yes".

Lower Limit of Travel

What is the lower limit value, typically a number from 0 to 2500?

447



DataMite Analyzer

KEEP HANDS CLEAR

To demonstrate the Ramp Rate, the program will first move the valve to the Open (high load) position.

DataMite Analyzer

KEEP HANDS CLEAR

The program will now demonstrate the 'Ramp, count/mSec' = 5

DataMite Analyzer

Settings saved and controller set back to Manual Mode, where you can control the valve with the manual Control Knob.

Prototype Water Brake Dyno Controller, Finding and Setting Limits on Actuator Movement

Controller Settings v1.46 Step 16 of 23 **Test Ramp**

Controller Settings

Controller On: Yes **Defaults**

Com Port: 4 **Find**

Type: Water Brake position Feedback

Higher Number Increases Load: No

Ramp Rate: 5

Proportional Setting: 500

Integral Setting: 10

Derivative Setting: 1000

PID Control Loop, mSec: 3

Display On (No): No

Pulses Per Rev for RPM: 1

Max RPM To Control: 6000

Notes:
Click the 'Defaults' button to load typical default values. Use 'Tune' Number Increases L 'Ramp, count/mSec HIGHER the 'Ramp the movement).

Click on Tune to start process

Keep Settings Help Cancel Print

Do you have control? At some step over 20 you will be asked...

Control has been set back to manual mode, where you can adjust it with the knob.

Do you have control (can you move the actuator)?

Note: You may have to wait 10-20 seconds for the controller to respond to manual control.

Yes No

DataMite Analyzer

Move the actuator to the middle of the stroke you will be using. Then click OK when it is at mid stroke. KEEP HANDS CLEAR.

OK



Do you have control?

Do you know the lower limit value (number) you want the controller to limit travel at?

Select 'Yes' and you can enter the value, select 'No' and you can position the actuator to that limit.

Yes No

DataMite Analyzer

Now move the actuator to the highest position you want to use. Then click OK when it is at this position.

OK



DataMite Analyzer

This Upper Limit is set to 3489

You may want to write this down if you want to duplicate this setting in the future.

OK

Valve Motion Increased Load?

Did this motion (or the current actuator position) Open the valve (would increase load on engine)?

Yes No

For most Water Brake dynos, you would answer "No". For smaller kart dynos with positive displacement pumps, you would choose "Yes".

DataMite Analyzer

Now move the actuator to the lowest position you want to use. Then click OK when it is at this position.

OK



Click on Yes if you will move the actuator to its upper and lower limits with the control knob.

DataMite Analyzer

This Lower Limit is set to 291

You may want to write this down if you want to duplicate this setting in the future.

OK

DataMite Analyzer

KEEP HANDS CLEAR

To demonstrate the Ramp Rate, the program will first move the valve to the Open (high load) position.

OK

DataMite Analyzer

KEEP HANDS CLEAR

The program will now demonstrate the 'Ramp, count/mSec' = 5

OK

DataMite Analyzer

Settings saved and controller set back to Manual Mode, where you can control the valve with the manual Control Knob.

OK