

## ZABNA Series Actuators with external controllers

- *motorized actuators with external controllers*
- *use with our T-CD series controllers or your own equipment*
- *standard NEMA mounting pattern*
- *built-in magnetic home sensor*
- *up to 900N thrust*
- *up to 60mm travel*



These linear actuators, based on standard NEMA stepper motors, offer finer resolution, higher thrust, higher speed, and longer lifetime when compared with our T-LA series of linear actuators. The actuators include 30cm of cable wired to a mini-din 8 connector for use with our T-CD series Chopper Drive controller (shown above driving an NA11B-30 actuator) which must be purchased separately. The actuators have a built in magnetic home sensor. In addition to the listed actuators, we have larger NEMA size 17 and 23 actuators available in the same ranges of travel. Size 23 offers up to 200 lb force. We are in the process of adding these to our website. In the meantime, please contact us for more details if you are interested in higher thrust.

When used with our T-CD series Chopper Drive controller as shown at right, these actuators achieve resolutions down to 0.05  $\mu\text{m}$ , with travels up to 60 mm travel. Controllers can be daisy chained with any other Zaber T-series products, to a single serial or usb port.

To control actuator position, simply transmit the unit number of the actuator you want to move, a simple move command and the position desired. After the move, the controller will report its position. For a detailed list of commands see the user's manual.

A knob at the end of the controller permits smooth manual control. Knob position controls actuator velocity. During a manual move the actuator constantly transmits its position so the controlling computer may track it.

[www.gmp.ch](http://www.gmp.ch)

November 2005

Specification	Device	Value
Range	NAxxx16 NAxxx30 NAxxx60	16 mm 30 mm 60 mm
Motor Steps per Rev	All	200
Step Resolution	NA08Axx NA08Bxx NA11Bxx NA14Bxx	3.048 µm/step 6.096 µm/step 6.35 µm/step 6.096 µm/step
Finest Micro-step Resolution (with T-CD controller set to 128 micro-steps per step)	NA08Axx NA08Bxx NA11Bxx NA14Bxx	0.0234 µm 0.0476 µm 0.0496 µm 0.0476 µm
Repeatability	All	< 0.4 µm
Accuracy	NAxxx16 NAxxx30 NAxxx60	< 8 µm < 10 µm < 12 µm
Backlash	All	< 2 µm
Maximum Thrust <sup>1</sup>	NA08Axx NA08Bxx NA11Bxx NA14Bxx	45 N (10 lb) 30 N (6.7 lb) 80 N (18 lb) 225 N (50 lb)
Maximum Speed <sup>1</sup>	NA08Axx NA08Bxx NA11Bxx NA14Bxx	20 mm/s 40 mm/s 20 mm/s 10 mm/s
Mechanical drive system	All	precision ground leadscrew
Home sensor	All	magnetic "hall effect" sensor
Motor Type	NA08xxx NA11xxx NA14xxx	2 phase Nema 08, 2.5V, 0.4A/phase 2 phase Nema 11, 2.1V, 1.0A/phase 2 phase Nema 14, 2.33V, 1.25A/phase
Connector	All	Minidin 8 male
Mounting Interface	NA08xxx  NA11xxx  NA14xxx	4 tapped holes M2x0.4 on 15.4mm centers or 9mm dia smooth shank which can be clamped as a means of mounting.  4 tapped holes M2.5x0.45 on 23mm centers or 14mm dia smooth shank which can be clamped as a means of mounting.  4 tapped holes M3x0.5 on 26mm centers or 15mm dia smooth shank which can be clamped as a means of mounting.
Plunger Interface	NA08xxx NA11xxx NA14xxx	#4-40 UNC-2A threaded tip with nut. 6 mm of thread to shoulder. M3 x 0.5 threaded tip with nut. 5.7mm of thread to shoulder. M4 x 0.7 threaded tip with nut. 6.7mm of thread to shoulder.

**Notes:**

1. Thrust is a function of speed. The values given are maximums. These values cannot both be achieved simultaneously (ie at maximum speed, the unit will not produce maximum thrust).