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NEMA17 ACME Lead Screw Linear Actuator Test Data

The test data below gives is an indication of the speeds and loads which can be expected from a NEMA17 ACME Lead Screw Linear Actuator. The numbers are only meant as an indication, and in no way should be expected, as different actuator configurations, controllers, and settings could have an impact on the data below.

Actuator Configuration: NEMA17 ACME Lead Screw Actuator – 250mm – 77oz Motor 1.68A

Driver Settings: 8x Microstepping, 1.25A Current, 199.10 Steps/mm

Testing Load: No Load

Position Test

Move forward and back to five setpoints, repeating 6 times.

Target distance	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6	Average	Average Deviation	Actual Deviation
20	19.95	20.11	19.95	20.12	19.95	20.1	20.030	0.080	0.080
40	39.96	40.1	39.98	40.1	39.97	40.1	40.035	0.065	0.065
60	59.98	60.14	59.98	60.14	59.98	60.12	60.057	0.077	0.077
80	79.97	80.14	79.98	80.13	79.98	80.13	80.055	0.078	0.078
100	99.97	100.12	99.96	100.12	99.96	100.1	100.038	0.075	0.075
								Repeatability	Accuracy
								0.075	0.075

Force Test

Vary pressure in air cylinder until actuator can no longer move a set distance. Speed set to 2000mm/min, acceleration set to 50 mm/s²

Result: Motor stalls at approximately 60N (6.1kg)