

Voice Coil Driven Linear Stage

The Voice Coil Driven Linear Actuator is used in positioning applications where high speed and high accuracy are required. The stage may be used in the following industries; Semiconductor, Disk Drive, Automotive, Medical, Industrial, Optical, Test and Manufacturing.



The non-commutated motor construction increases reliability. The direct coupling of the motor to the stage allows for fast acceleration / deceleration and high speed operation.

The Voice Coil Stages do not need commutation and using a position sensor, positioning resolutions of less than one micron or 0.00004 inches are achievable.

Customized solutions can be provided upon request.

Features

- Features
- Low Cost
- High Speed Positioning
- Compact Package
- Integrated Position Feedback Sensor
- High Force Generation
- Horizontal or Vertical Operation

Typical Applications

- Automatic Assembly
- Bonding Machine
- Chip Inserter
- Connector Pin Insertion
- Disk Drive Assembly
- Glass Cutting
- Glue Dispensing Machine
- Grease Dispensing Machine
- Height Gage
- Labeling Machine
- Laser Cutting
- Latch Inspection
- Lens Polishing
- Medical Assembly
- Pick and Place
- Robotics
- Screen Printing
- Screw Adjusting
- Spot Welding
- Stacking of Components
- Switch Assembly
- Switch Testing
- Tension Control
- Tire Trimming
- Wafer Transport
- Welding

motiCont

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Motor Specifications

VCDS-051-051-01

PARAMETER	VALUE	UNIT	VALUE	UNIT
INTERMITTENT FORCE @ 10% DUTY CYCLE	88.6	N	19.9	LB
CONTINUOUS FORCE	28.0	N	6.3	LB
FORCE CONSTANT	8.0	N / Amp	1.8	LB / Amp
BACK EMF CONSTANT	8.0	Volts / Meter / sec	0.20	Volts / inch / sec
STROKE	19.1	mm	0.75	inch
MOVING MASS	735	GR	25.9	OZ
COIL RESISTANCE	2.7		Ohm	
COIL INDUCTANCE @ 120 Hz	3.3		mH	
MAX CONTINUOUS POWER	33		Watt	

VCDS-051-064-01

PARAMETER	VALUE	UNIT	VALUE	UNIT
INTERMITTENT FORCE @ 10% DUTY CYCLE	92.9	N	20.9	LB
CONTINUOUS FORCE	29.4	N	6.6	LB
FORCE CONSTANT	9.6	N / Amp	2.2	LB / Amp
BACK EMF CONSTANT	9.6	Volts / Meter / sec	0.24	Volts / inch / sec
STROKE	31.8	mm	1.25	inch
MOVING MASS	760	GR	26.8	OZ
COIL RESISTANCE	3.9		Ohm	
COIL INDUCTANCE @ 120 Hz	4.6		mH	
MAX CONTINUOUS POWER	36		Watt	



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VCDS-051-089-01

PARAMETER	VALUE	UNIT	VALUE	UNIT
INTERMITTENT FORCE @ 10% DUTY CYCLE	82.7	N	18.6	LB
CONTINUOUS FORCE	26.2	N	5.9	LB
FORCE CONSTANT	10.1	N / Amp	2.3	LB / Amp
BACK EMF CONSTANT	10.1	Volts / Meter / sec	0.26	Volts / inch / sec
STROKE	57.2	mm	2.25	inch
MOVING MASS	810	GR	28.6	OZ
COIL RESISTANCE	6.0		Ohm	
COIL INDUCTANCE @ 120 Hz	6.8		mH	
MAX CONTINUOUS POWER	40		Watt	

VCDS-051-165-01

PARAMETER	VALUE	UNIT	VALUE	UNIT
INTERMITTENT FORCE @ 10% DUTY CYCLE	68.1	N	15.3	LB
CONTINUOUS FORCE	21.5	N	4.8	LB
FORCE CONSTANT	10.6	N / Amp	2.4	LB / Amp
BACK EMF CONSTANT	10.6	Volts / Meter / sec	0.27	Volts / inch / sec
STROKE	133.4	mm	5.25	inch
MOVING MASS	955	GR	33.7	OZ
COIL RESISTANCE	12.2		Ohm	
COIL INDUCTANCE @ 120 Hz	13.0		mH	
MAX CONTINUOUS POWER	50		Watt	

All Values at 25 °C.



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Optical Quadrature Encoder

Electrical Specifications

PARAMETER	Min.	Typ.	Max.	UNIT	Note
Supply Voltage	4.5	5.0	5.5	Volts	
Current Consumption (500 LPI)	-	55	57	mA	No load
Current Consumption (All Other Resolutions)	-	27	30	mA	No load
Output Voltage Sourcing to +5	2.4	3.4	-	Volts	@ -20mA
Output Voltage Sinking to Ground	-	0.4	0.8	Volts	@ 20mA

Connection

9 pin DB-9 Male Connector Pin Assignment and Description

PIN	DESCRIPTION
1	+5 VDC Power for Quadrature Optical Encoder
2	Return for Home Switch
3	Channel-A of Quadrature Optical Encoder
4	Channel-B of Quadrature Optical Encoder
5	Return for Quadrature Optical Encoder
6	Home Signal, Active High
7	+5 VDC Power for Home Switch
8	Motor Minus
9	Motor Plus

Applying a positive voltage to pin-9 relative to pin-8 will move the motor outward.



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