

VS-15 SERIES

VERTICAL LIFT STAGE

FEATURES

- ➔ Resolution: 0.03 μm
- ➔ Speed: 5 mm/sec
- ➔ Travel: 15 mm
- ➔ Built-in limit switches
- ➔ Size 17 stepper motor



VS-15 Design

Newmark's VS-15 Series Vertical Lift Stage offers precise vertical translation for elevating small payloads. The wedge design converts horizontal motion into vertical elevation of the platform. The use of linear guide bearings insures a stiff and stable platform across the entire range of travel.

The VS Series has 15mm of travel and comes standard with integrated limit switches and a size 17 stepper motor. Options include a 1000 line rotary encoder and an MDrive Intelligent stepper motor.

Vacuum compatible and **manually driven** versions of the VS Series are available.

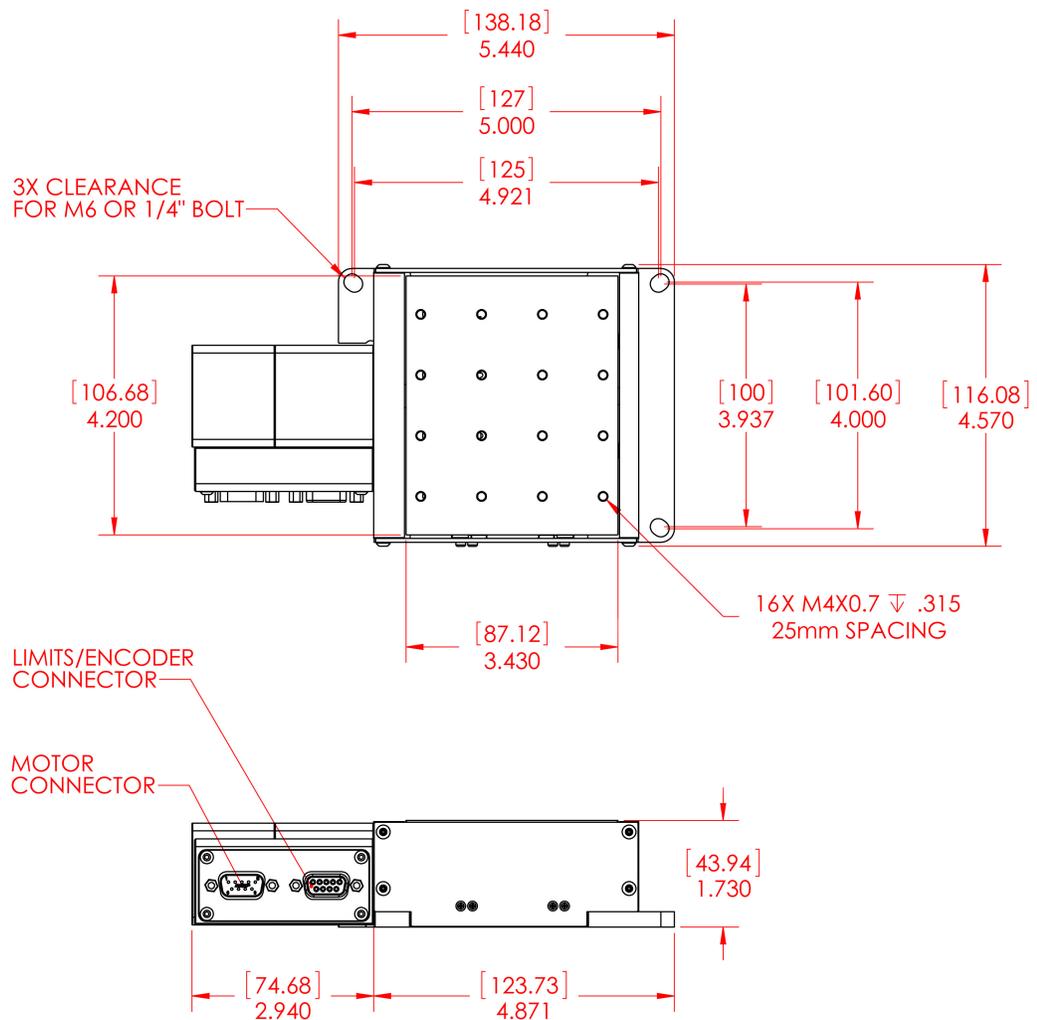


Manually Operated Version

VS-15 Series Specifications

Travel	15 mm
Motor Resolution	0.03 μm (1.5875 mm pitch lead screw @ 50000 motor steps/rev)
Encoder Resolution	0.4 μm (1.5875 mm pitch lead screw @ 4000 encoder counts/rev)
Accuracy	10 μm
Repeatability	$\pm 1 \mu\text{m}$
Minimum Step Size	0.5 μm
Maximum Load	7 kg (15.4 lb.)
Stage Weight	1.1 kg (2.5 lb.)
Material	Black Anodized Aluminum, 303 S.S Lead Screw

VS Series Dimensions



VS-15 Series Pin Assignment

Stepper Motor Version

Motor Connector

DB-9 Male	Description
1.	Phase A
2.	Phase A'
3.	Phase B
4.	Phase B'
5.	Phase A Center
6.	Phase B Center

Motor Specifications

Step Size: 1.8°/step

Amps/Phase: 0.95

Resistance: 5.0 Ohm/Phase

Inductance: 3.1 mH/Phase

Signals (Non-encoder)

DB-9 Female	Description
1.	Forward Limit
2.	Reverse Limit
3.	Ground

Signals (Encoder)

HD-15 Female	Description
1.	Forward Limit
2.	Reverse Limit
3.	Limit Ground
4.	Encoder Ground
5.	+5V Encoder Power
6.	Ch. A
7.	Ch. A-
8.	Ch. B
9.	Ch. B-
10.	Index +
11.	Index -

Limit switches are wired normally closed.

MDrive Stepper Motor Version

DB-9 Male	Description
1.	+24 VDC
2.	Power Ground

DB-9 Female	Description
1.	I/O 3
2.	I/O 4
3.	Ground
4.	Analog Input

The forward limit switch is connected to I/O 1.
The reverse limit switch is connected to I/O 2.
Limit switches are wired normally closed.

Ordering Information

Example Part Number:

VS-15-3

This is a VS Series stage with a 15mm travel and a MDrive motor.

Motor Options

- 1 NEMA 17 Stepper Motor
- 2 NEMA 17 Stepper Motor, 1000 Line Encoder
- 4 MDrive Intelligent Motor, 512 Line Encoder
- M Control knob for manual positioning, no motor

Motion Controllers

The following Newmark Systems, Inc. controllers are compatible with the VS Vertical Lift Stage.

[NCS-A1 Series](#) - [NSC-G Series](#)

