

## X-VSR-SV1 Series Datasheet



- Vacuum compatible to  $10^{-3}$  Torr
- 20 mm or 40 mm travel
- Up to 48 mm/s speed and up to 200 N thrust
- 10 kg load capacity
- 55 or 85 mm retracted height
- Only 4 feedthrough wires required to control all units in the daisy-chain via serial port (with an X-PIB adaptor)
- Built-in controller; daisy-chains with other Zaber products

## X-VSR-SV1 Series Overview

For more information about the basics of a vacuum system and considerations to keep in mind when gathering requirements for your application, read our technical article, "Motion Device Design Considerations for Vacuum Applications".

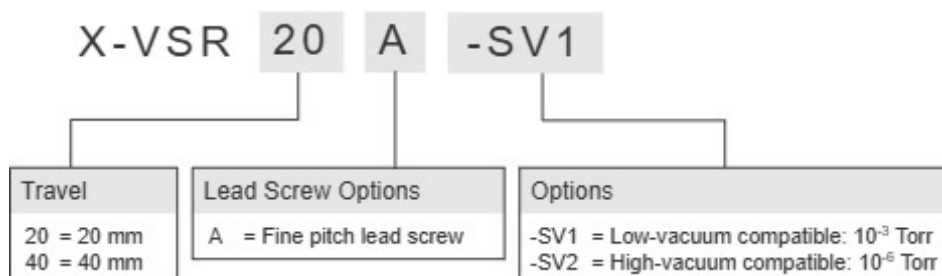
Zaber's X-VSR-SV1 Series devices are high-vacuum compatible, computer-controlled, motorized vertical lift stages capable of moving 10 kg loads. They are stand-alone units requiring only a standard 24 V or 48 V power supply.

These stages connect to the RS-232 port or USB port of any computer, and they can be daisy-chained with any other Zaber products. The daisy-chain also shares power, making it possible for multiple X-Series products to share a single power supply.

Like all of Zaber's products, the X-VSR-SV1 Series is designed to be 'plug and play' and very easy to set up and operate. If you are considering a multi-axis system, with Z-axis, these lift stages make an excellent platform.

For more information visit: <https://www.zaber.com/products/vacuum-compatible-stages/X-VSR-SV1>

## X-VSR-SV1 Series Part Numbering & Options



## X-VSR-SV1 Series Drawings

- [X-VSR-SV.png \(Dimension Drawing for the X-VSR-SV\)](#)

## X-VSR-SV1 Series Specifications

<b>Microstep Size (Default Resolution)</b>	<b>0.09525 <math>\mu\text{m}</math></b>
Built-in Controller	Yes
Repeatability	< 1 $\mu\text{m}$ (< 0.000039")
Loaded Backlash (10 N)	< 10 $\mu\text{m}$ (< 0.000394")
Maximum Speed	28 mm/s (1.102"/s)
Minimum Speed	0.000058 mm/s (0.000002"/s)
Speed Resolution	0.000058 mm/s (0.000002"/s)
Peak Thrust	200 N (44.9 lb)
Maximum Continuous Thrust	100 N (22.4 lb)
Communication Interface	RS-232
Communication Protocol	Zaber ASCII (Default), Zaber Binary
Data Cable Connection	Teflon flying leads with M8 4 pin M/F
Maximum Centered Load	100 N (22.4 lb)
Maximum Moment (Pitch)	300 N-cm (424.8 oz-in)
Maximum Moment (Roll)	300 N-cm (424.8 oz-in)
Maximum Moment (Yaw)	300 N-cm (424.8 oz-in)
Pitch	0.08° (1.396 mrad)
Roll	0.08° (1.396 mrad)
Yaw	0.08° (1.396 mrad)
Power Supply	24-48 VDC
Power Plug	None, use X-PIB
Maximum Current Draw	950 mA
Linear Motion Per Motor Rev	1.2192 mm (0.048")
Motor Steps Per Rev	200
Motor Type	Stepper (2 phase)
Motor Rated Current	700 mA/phase
Inductance	8.7 mH/phase
Default Resolution	1/64 of a step
Mechanical Drive System	Precision Lead Screw
Limit or Home Sensing	Magnetic home sensor
Manual Control	No

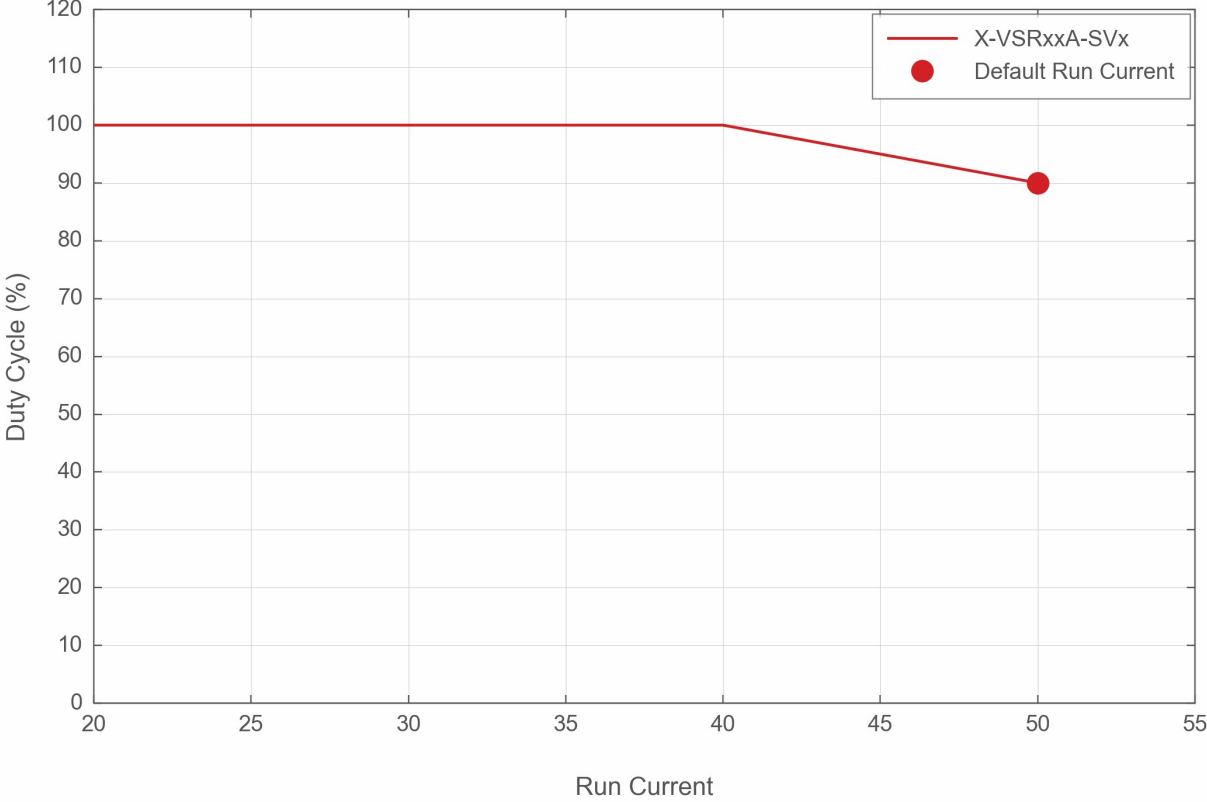
<b>Microstep Size (Default Resolution)</b>	<b>0.09525 <math>\mu\text{m}</math></b>
Axes of Motion	1
Mounting Interface	M6 and M3 threaded holes
Operating Temperature Range	0-50 °C
CE Compliant	Yes
Vacuum Compatible	Low vacuum (10 <sup>-3</sup> Torr)

Part Number	Travel Range	Accuracy (unidirectional)	Loaded Accuracy (10 N)	Backlash
X-VSR20A-SV1	20 mm (0.787")	50 $\mu\text{m}$ (0.001968")	35 $\mu\text{m}$ (0.001378")	< 35 $\mu\text{m}$ (< 0.001378")
X-VSR40A-SV1	40 mm (1.575")	35 $\mu\text{m}$ (0.001378")	20 $\mu\text{m}$ (0.000787")	< 120 $\mu\text{m}$ (< 0.004724")

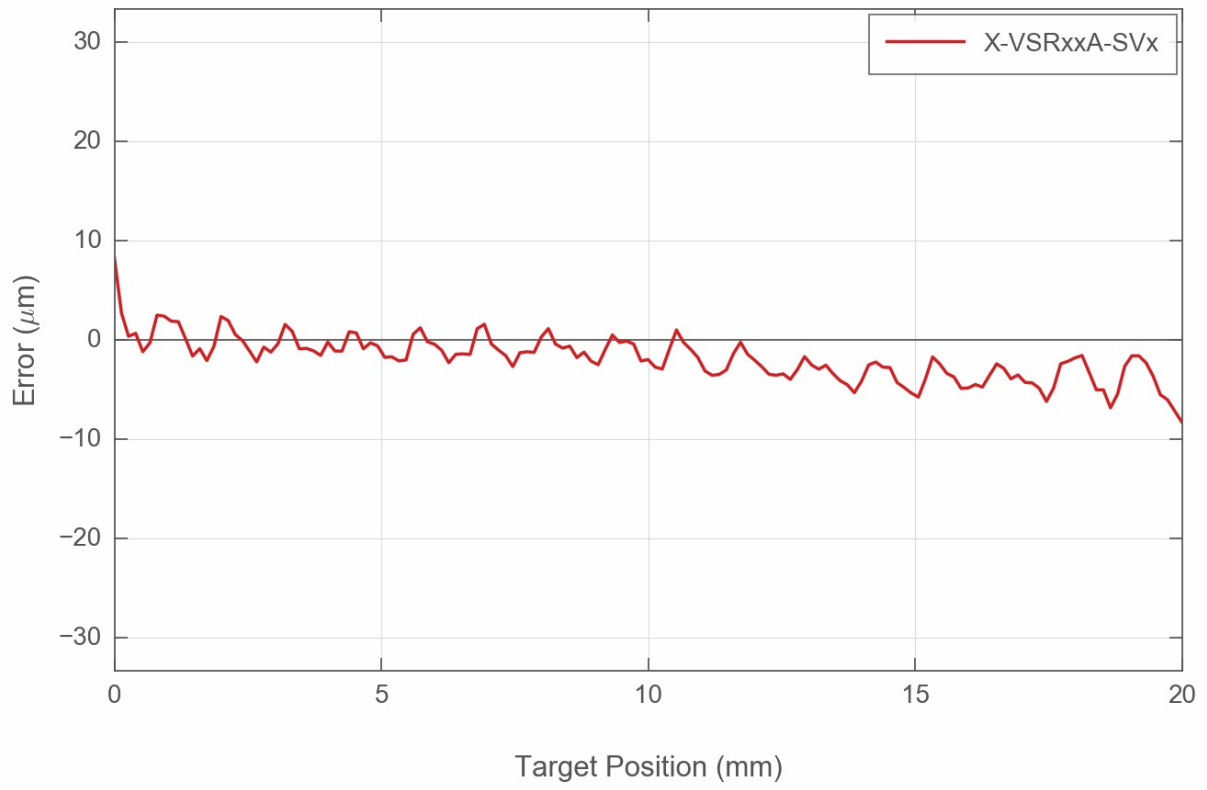
Part Number	Horizontal Runout	Guide Type	Weight
X-VSR20A-SV1	< 30 $\mu\text{m}$ (< 0.001181")	Ball Bearing	0.560 kg (1.235 lb)
X-VSR40A-SV1	< 35 $\mu\text{m}$ (< 0.001378")	Crossed-Roller Bearing	0.770 kg (1.698 lb)

# X-VSR-SV1 Series Charts

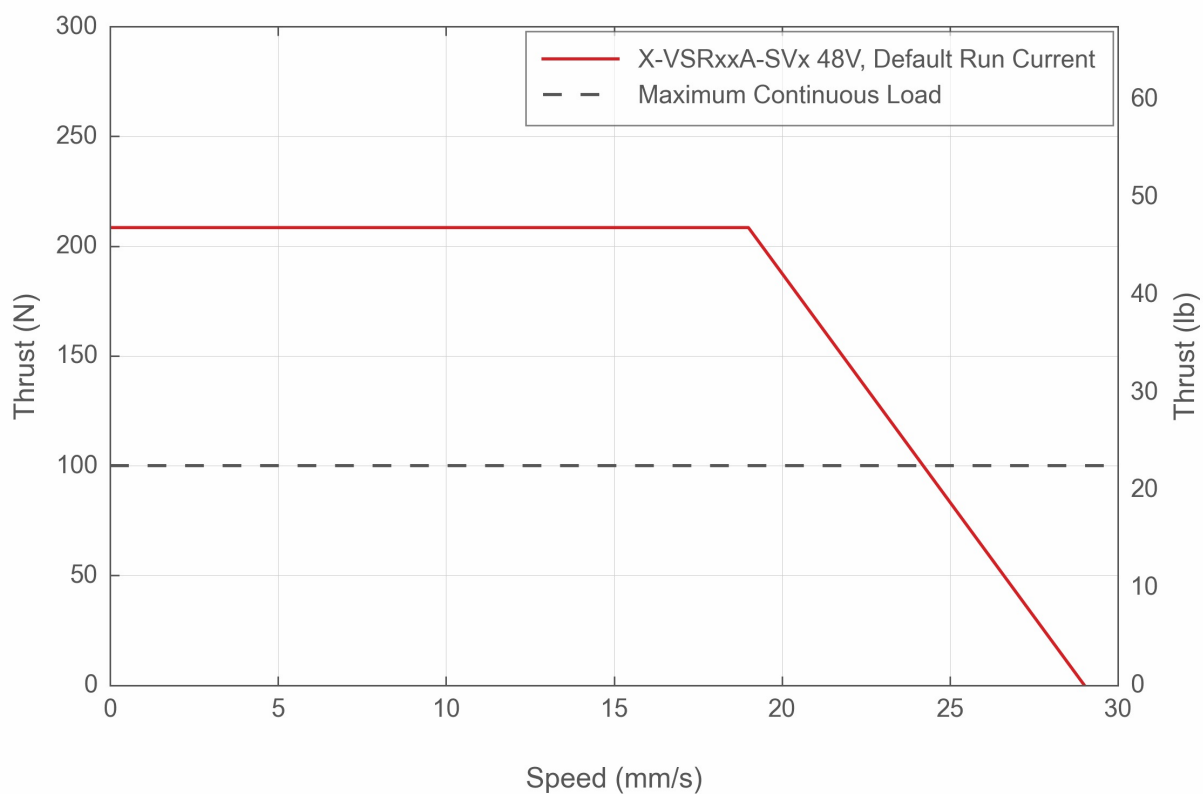
## Recommended Duty Cycle



## Typical Accuracy



## Thrust Speed



## Contact

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