



VSM17-Z Translation Stage

Ultra High Vacuum Modular Translation Stages

AML ultra high vacuum compatible vertical linear translation stages for z-axis translation of loads up to 30 kg.

They can be used standalone or as part of a complex motion system, as they are compatible with the range of VSM17 modular stages. The VSM17-Z is designed specifically for Z-axis translation with its high load capacity. They are manufactured with UHV compatible material and construction methods and utilise AML UHV stepper motors.



FEATURES

- Standard travels from 50 mm
- 1 μm resolution
- 0.26 μm repeatability
- Maximum speed of 5 mm/sec
- Suitable for use to 1×10^{-10} mBar
- Bakeable to 200 °C
- 30 kg centred load capacity
- Features AML D35.1 stepper motor
- Can optionally be fitted with limit switches or an optical encoder
- High resolution, radiation resistant and dry lubricated versions available
- Designed for Z-axis translation
- Compatible with all VSM17 modular stages
- May be customised for specific requirements

SPECIFICATIONS

Specification	VSM17-Z-050
Travel	50 mm
Resolution	1 μ m
Maximum Speed	5 mm/s
Repeatability	0.26 μ m
Centred Load Capacity	30 kg
Maximum Load Moment	80 Nm
Roll, Pitch and Yaw (Unloaded)	± 78 μ rad
Roll, Pitch and Yaw Compliance	± 54 μ rad/Nm
Straightness of Travel	3 μ m/100 mm
Stepper Motor	AML D35.1
Vacuum	1 x 10 ⁻¹⁰ mBar
Maximum Temperature	200 °C (reduces to 120 °C when an optional encoder is fitted)
Mass Including Motor	2.1 kg

NOTES

BACKLASH: Backlash in the gearbox of the VSM17-Z is controlled by special gearing and is negligible. Backlash between the nut and leadscrew is controlled by gravity.

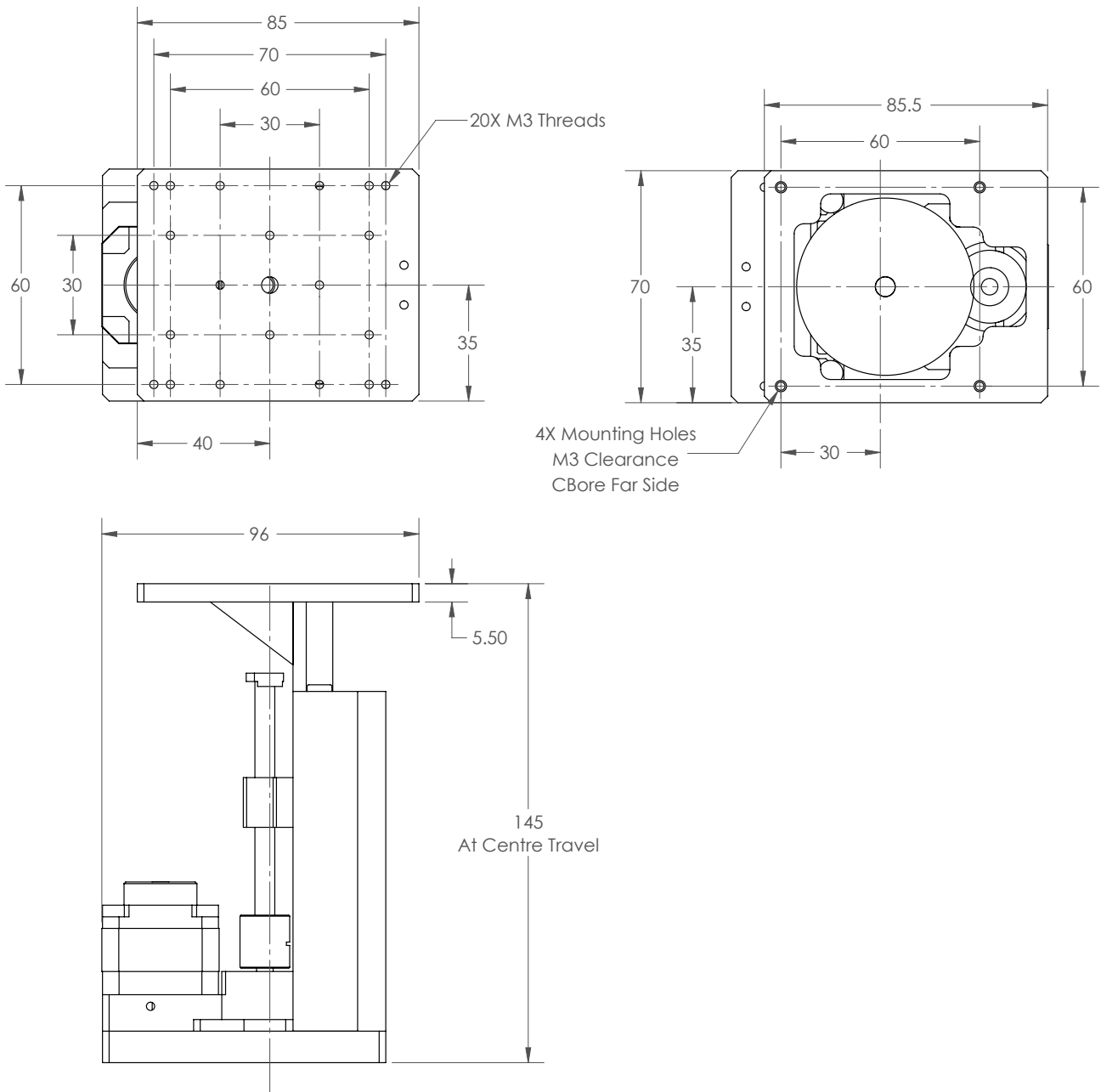
LUBRICATION: Running surfaces are dissimilar materials or dry lubricated with molybdenum disulfide. Leadscrews are lubricated with Nyetorr® 6300 UHV grease. Dry lubrication can be specified.

VERNIER STOP: These stages may be driven to the vernier stops at the limits of their travel and stalled without damage.

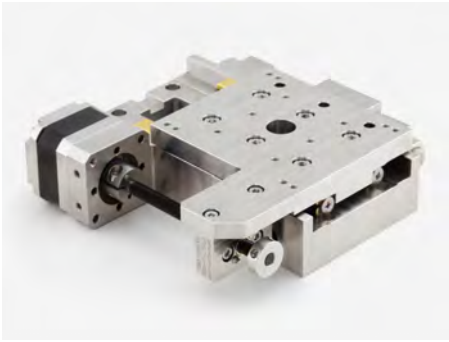
STACKED MECHANISMS: For 3-axis motion mount the stage moving the load vertically on top of the others to avoid adding their weight to its load.

DIMENSIONS

VSM17-Z-050



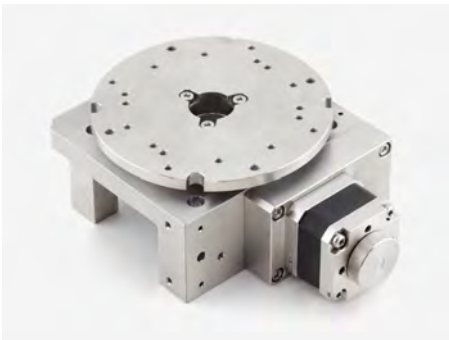
RELATED PRODUCTS



VSM17-X

High Performance, Modular UHV Compatible Stage.

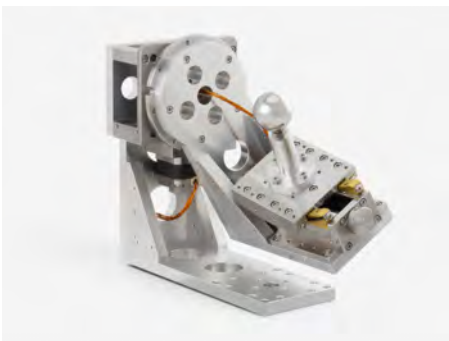
Linear translation stage suitable for use in UHV. Can support loads of up to several kilograms and travel from 25 to 200 mm. 5 µm resolution allows for precise in-vacuum motion.



VSM17-R

High Performance, Modular UHV Rotation Stage.

Rotation stage suitable for use in UHV. Can support loads of up to 100 kilograms. Resolutions from 0.1° to 0.005° with 360° of continuous rotation.



VSM17-G

High Performance, Modular UHV Goniometer Stage.

Goniometer stage suitable for use in UHV. It is possible to build a Euler goniometer with a common centre of rotation.

ORDERING INFORMATION

Order Code	
VSM17-Z-xxx	1 µm resolution (xxx=travel in mm)
VSM17-Z-xxx-LS	1 µm resolution with 2 x limit switches
VSM17-Z-xxx-EA	1 µm resolution with encoder (absolute)
VSM17-Z-xxx-R	1 µm resolution, radiation resistant



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AML pursues a policy of continuous improvement and reserves the right to make detail changes to specifications without consultation. E and OE.