

# SureMotion® Linear Guides LV Series

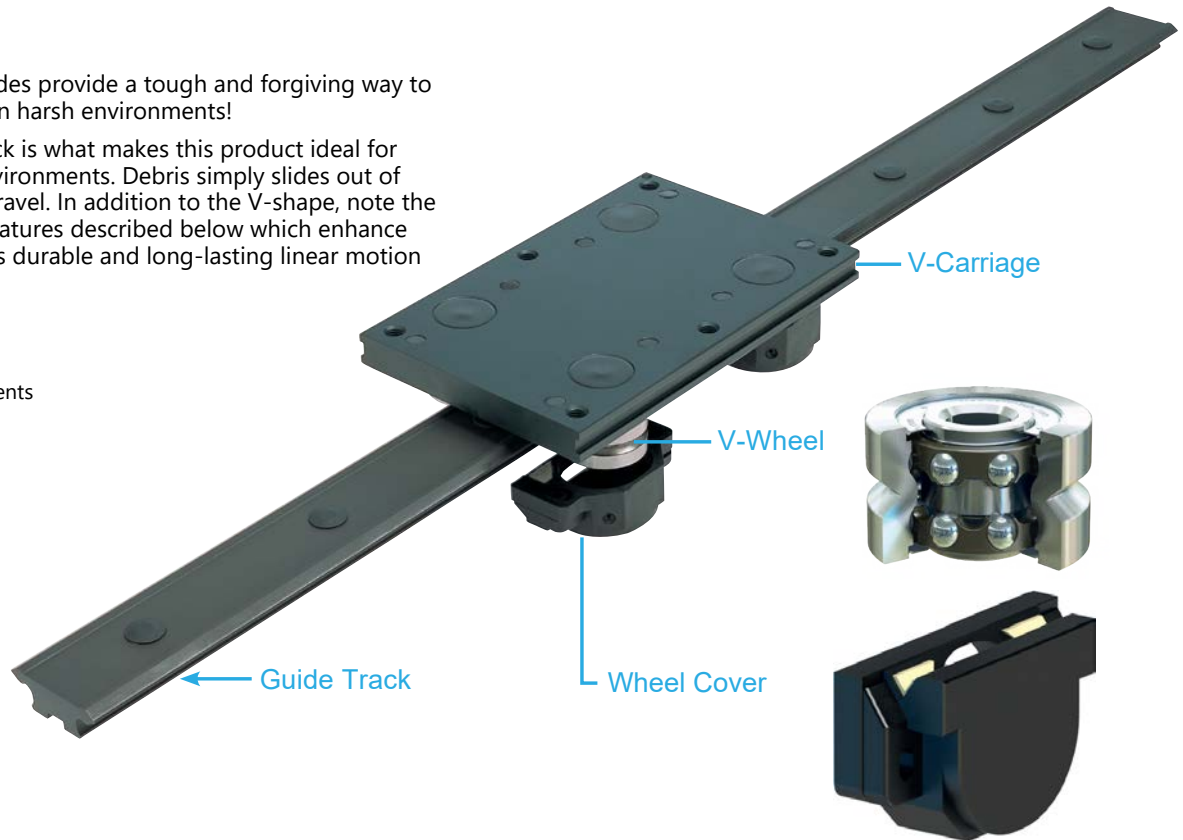
## Overview

SureMotion Linear Guides provide a tough and forgiving way to achieve linear motion in harsh environments!

The V-shape guide track is what makes this product ideal for use in heavy debris environments. Debris simply slides out of the way during linear travel. In addition to the V-shape, note the carefully engineered features described below which enhance the effectiveness of this durable and long-lasting linear motion solution.

## Applications

- Dirty, dusty environments



## V-Carriage

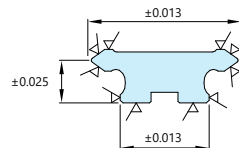
- Three sizes available
- Two concentric V-wheels
- Two adjustable eccentric V-wheels
- Four pre-lubricated wheel covers
- Speed rating: 8m/s
- Material: High-strength aluminum alloy
- Finish: Black anodized
- Plastic hole covers included

## V-Wheel

- 70° V groove
- Double-row ball bearings
- Sealed
- V groove & raceways: Carbon-chromium bearing steel AISI 52100, hardened and tempered.
- Balls: Carbon-chromium bearing steel AISI 52100, hardened and tempered.
- Cage: Plastic
- Shield: Nitrile rubber
- Mounting studs: High tensile steel with tensile strength = 695 N/mm<sup>2</sup>.
- Temperature Range: -200°C to +1200°C
- Lifetime lubricated!

## Guide Track

- Three sizes available matching the three V-Carriages offered
- Lengths up to 1256mm
- Double 70° V groove
- Precision Ground surfaces
- Material: High-carbon bearing steel AISI 52100
- Hardness: V-surface case hardened to 58-62 Rockwell C scale
- Finish: Chemical black
- Plastic hole covers included



▽ Indicates precision ground surfaces

## Wheel Cover

- Provides constant lubrication to the guide track
- End Seals: Felt
- Housing: Thermoplastic elastomer
- Temperature Range: -200°C to +600°C
- Lubrication: Preloaded with NLGI #2 grease

# SureMotion® Linear Guides

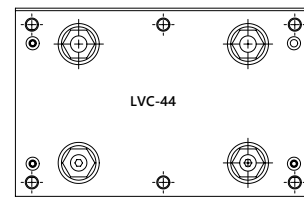
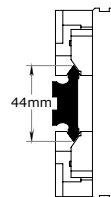
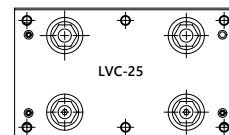
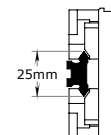
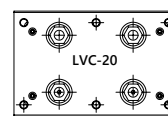
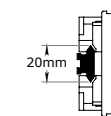
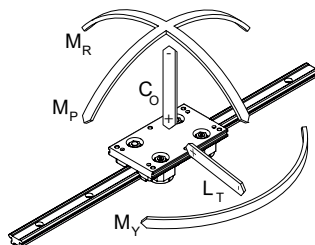
## LV Series

LVC Series V-Carriage										
Part Number	Price	Size	Static (Co)	Lateral (Lt)	Pitch Moment (Mp)	Yaw Moment (My)	Roll Moment (Mr)	Required Adjustment Tool	Price	Drawing Link
<a href="#">LVC-20</a>	\$296.00	20	435 N	685 N	12 N·m	19 N·m	4 N·m	LVCACC-1	\$19.00	<a href="#">PDF</a>
<a href="#">LVC-25</a>	\$405.00	25	800 N	1500 N	30 N·m	56 N·m	9 N·m	LVCACC-2	\$32.00	<a href="#">PDF</a>
<a href="#">LVC-44</a>	\$463.00	44	2800 N	4700 N	146 N·m	243 N·m	57 N·m	LVCACC-3	\$42.00	<a href="#">PDF</a>

Note: Eight (8) small and four (4) large plastic caps included.

### NOTES:

1. Load ratings are base on lubricated V-contact surfaces.
2. V-Carriages are supplied with LOOSE Eccentric wheels and must be adjusted to design conditions prior to operation. Adjustment Tool LVCACC-x is required for this adjustment



Coefficient of rolling friction = 0.02

Additional friction force from wheel cover wipers:

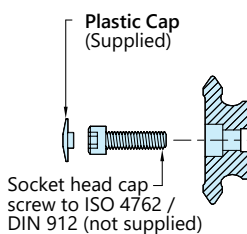
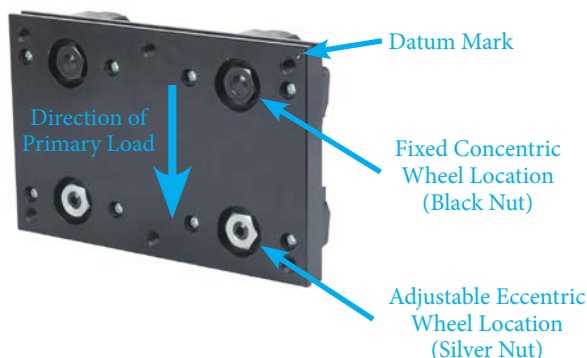
LVC-20 = 4N

LVC-25 = 7N

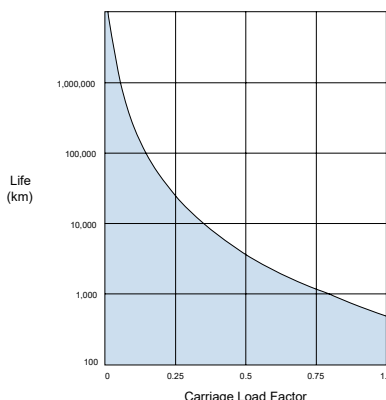
LVC-44 = 15N

LVR Series Guide Track				
Part Number	Price	Size	Length (mm)	Drawing Links
<a href="#">LVR-20-266</a>	\$64.00	20	266	<a href="#">PDF</a>
<a href="#">LVR-20-536</a>	\$131.00		536	<a href="#">PDF</a>
<a href="#">LVR-20-716</a>	\$173.00		716	<a href="#">PDF</a>
<a href="#">LVR-20-1076</a>	\$258.00		1076	<a href="#">PDF</a>
<a href="#">LVR-25-536</a>	\$144.00	25	536	<a href="#">PDF</a>
<a href="#">LVR-25-716</a>	\$191.00		716	<a href="#">PDF</a>
<a href="#">LVR-25-1076</a>	\$287.00		1076	<a href="#">PDF</a>
<a href="#">LVR-25-1256</a>	\$329.00		1256	<a href="#">PDF</a>
<a href="#">LVR-44-536</a>	\$164.00	44	536	<a href="#">PDF</a>
<a href="#">LVR-44-716</a>	\$218.00		716	<a href="#">PDF</a>
<a href="#">LVR-44-1076</a>	\$329.00		1076	<a href="#">PDF</a>
<a href="#">LVR-44-1256</a>	\$383.00		1256	<a href="#">PDF</a>

Note: Mounting screws not included, plastic caps for mounting holes are included.



$$\text{Carriage Load Factor} = \frac{\text{Applied Load}}{\text{Carriage Rating}} = \frac{\text{Applied } C_o}{C_o} + \frac{\text{Applied } L_t}{L_t} + \frac{\text{Applied } M_x}{M_x} + \frac{\text{Applied } M_y}{M_y} + \frac{\text{Applied } M_z}{M_z}$$

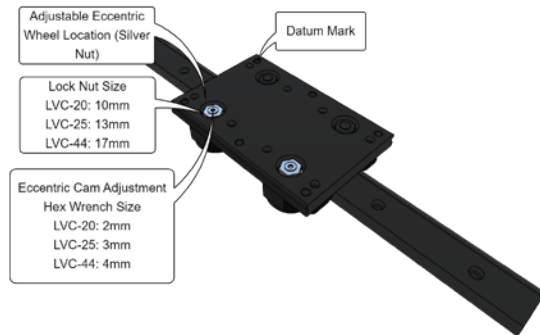


# SureMotion® Linear Guides LV Series

## Preloading and Adjustment

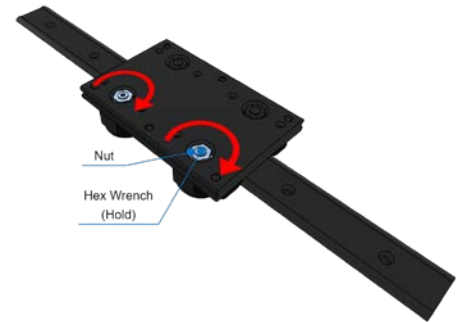
### Step 1

Remove the two wheel covers. Using a socket wrench, loosen the two eccentric wheel lock nuts counterclockwise.



### Step 4

Hold the adjustment tool in place while rotating the lock nut clockwise until it is snug. Repeat for the second eccentric wheel assembly.



### Step 2

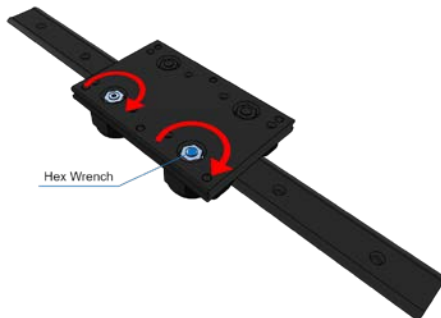
Using the adjustment tool, rotate the two eccentric cam assemblies counterclockwise so the guide track will easily slide in. Then slide the carriage onto the guide track.

### Step 5

Manually slide the carriage along the entire length of the guide track to determine if there are any noticeable rolling resistance variations or undesired carriage wiggle. If so, repeat steps 2-5.

### Step 3

Using the adjustment tool, slowly rotate the eccentric cam assembly clockwise until a slight resistance is felt. This indicates that the v wheel is contacting the guide track.



### Step 6

Hold the eccentric wheel in position with the adjustment tool while fully tightening the lock nut. Do both eccentric wheels. Remove the carriage from the rail. Reinstall the wheel covers. Reinstall the carriage to the rail.

