



# autoVimation

building machine vision

## Product Overview

### New Product section 19:

### 19. Fine adjustment

#### Part 1. Linear positioning axis 150mm



Revision 1.03 September 2020

Technical information is subject to change!

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## Table of content

|  |    |
|--|----|
| 1 Variations of 150mm linear positioning axis.....               | 4  |
| 2 Positioning axis with ruler and indicator (analogue axis)..... | 8  |
| 3 Positioning axis with digital positioning system.....          | 9  |
| 3.1 Display mounting frame for remote display axis:.....         | 10 |
| 4 Application examples for linear positioning axis.....          | 13 |

## 1 Variations of 150mm linear positioning axis

6 different variations of the linear axis are available now (September 2020):

- ➔ Parallel or vertical adapter plate
- ➔ Without positioning system – ruler and indicator on one side
- ➔ With digital positioning system directly attached to the axis
- ➔ With digital positioning system remote display 1m cable

**Order Numbers Fine adjustment linear axis**

|  | Vertical dovetail sled | Parallel dovetail sled |
|--|------------------------|------------------------|
| No digital positioning system /<br>laser cut ruler and indicator | 110.040.090            | 110.040.000            |
| Digital positioning system<br>attached                           | 110.050.090            | 110.050.000            |
| Digital positioning system<br>remote display 1m                  | 110.060.090            | 110.060.000            |

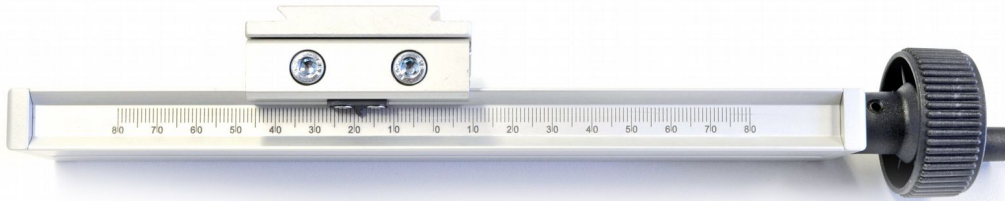
**Technical Highlights:**

- Fully compatible to autoVimation's dovetail system (enclosures, profiles, mounting brackets)
- Easy to combines to multi axis arrangements.
- Precise position adjustment with 1,5mm stroke at one full turn.
- Not only suited to laboratory use, but also for industrial applications, where it is important to fine-adjust a camera system!
- Very compact - cross-section of the linear rail is only 16x40mm – the same of a matchbox!





**linear axis 150mm, 40mm dovetail, parallel, Art. No: 110.040.000**



**linear axis 150mm, 40mm dovetail, vertical, Art. No: 110.040.090**

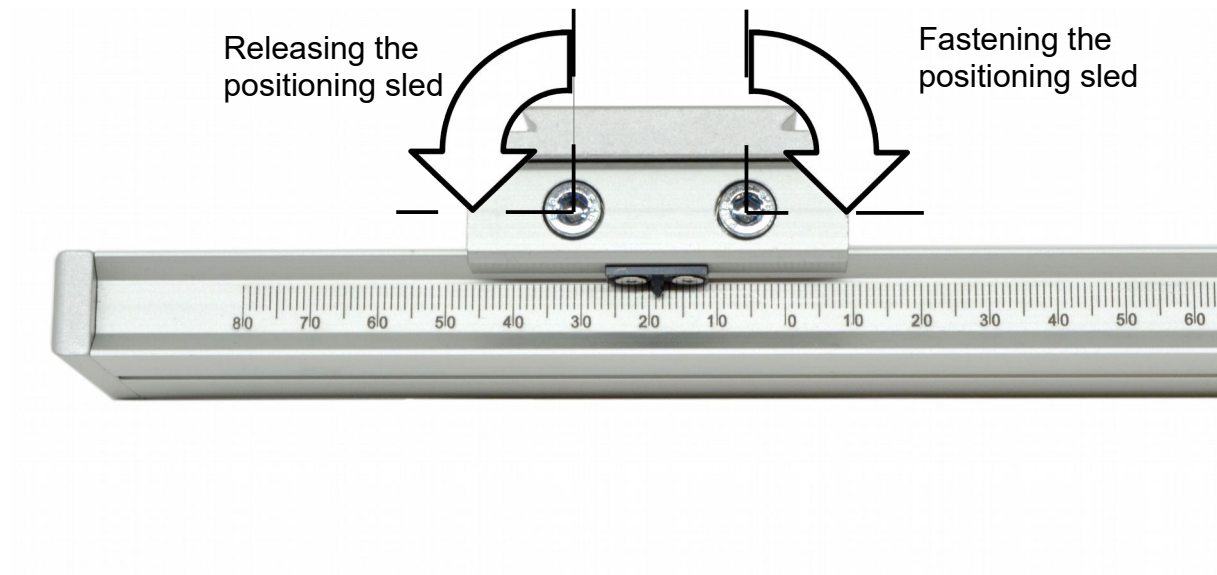


**Linear axis 150mm, 40mm dovetail, vertical, digital positioning system display attached,  
Art. No.: 110.050.090**



**Linear axis 150mm, 40mm dovetail, vertical, digital positioning system remote display 1m,  
Art. No.: 110.060.000**

## Operation:



1. Loosening bracket screws by  $\frac{1}{4}$  turn anti-clockwise. With high off centre loads remove any clearance by tightening a little bit more. With combined axis only release and move one axis at a time.
2. Rotating crank handle until sled is in the right position
3. Tightening the bracket screws again – sled is fixed in position now and resists a displacement force of up to 2000N!



## 2 Positioning axis with ruler and indicator (analogue axis)



The parallel mounting sled at the bottom: optical axis of the camera enclosure mounts parallel to the direction of travel. The vertical mounting sled at the top allows adjustment sideways to the optical axis of the camera (-enclosure).



**Easy to read laser engraved ruler with adjustable indicator ( $\pm 1\text{mm}$ ).**



### 3 Positioning axis with digital positioning system

- **At the top of the image:** digital axis with remote display option allows to mount the display up to 1m away from the axis. This is useful if 2 or more axis are combined and for confined spaces!

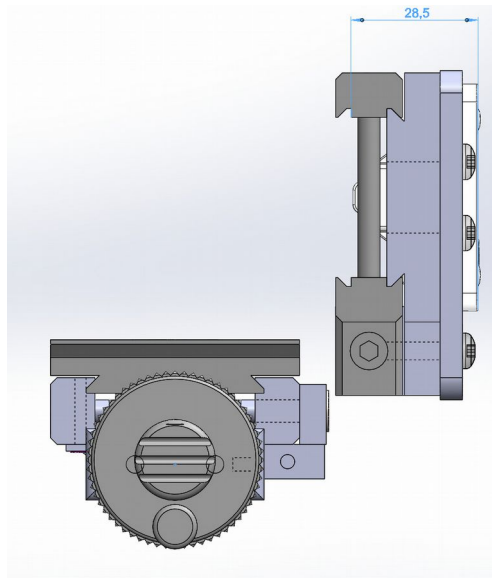
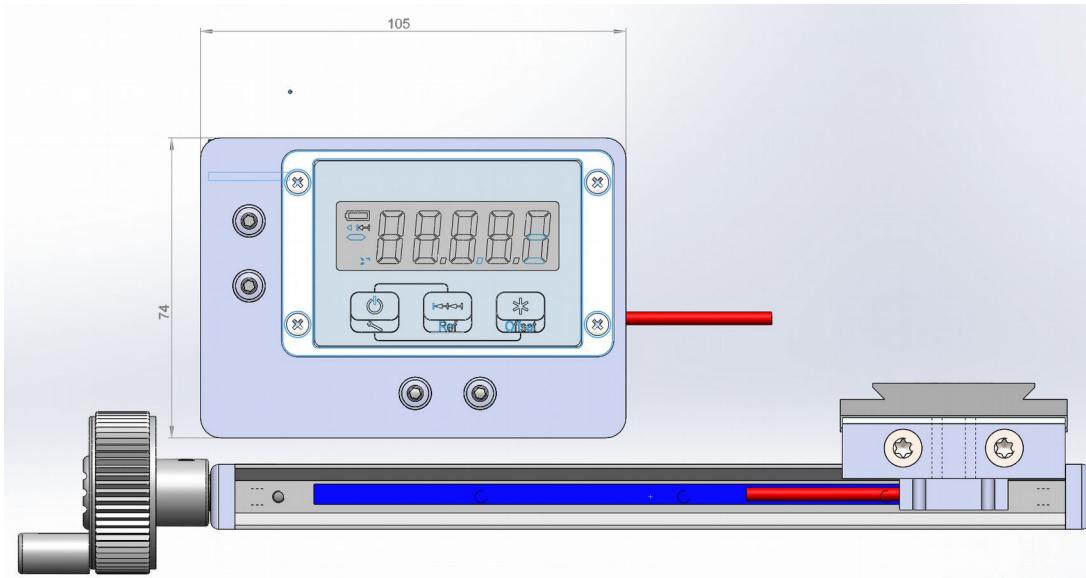


- **At the bottom:** Digital positioning system directly attached to the moving positioning sled. No cabling! Power supply via high performance Lithium-ion battery inside the display.

#### Technical highlights:

- Digital positioning systems repeatability of 10µm, absolute positioning accuracy 50µm. System is “semi-absolute” stores the position like a digital vernier. High capacity lithium-ion battery that lasts up to 10 years. Battery life ~ 4,5 years if switched on 50% of the time. Display automatically switches off after 12 Minutes.
- Displays are of robust industrial quality (aluminium die cast) and programmable (reset function (referencing), incremental measurements, power saving features....).
- **Note:** The digital axis have the analogue ruler and indicator on the other side as well!

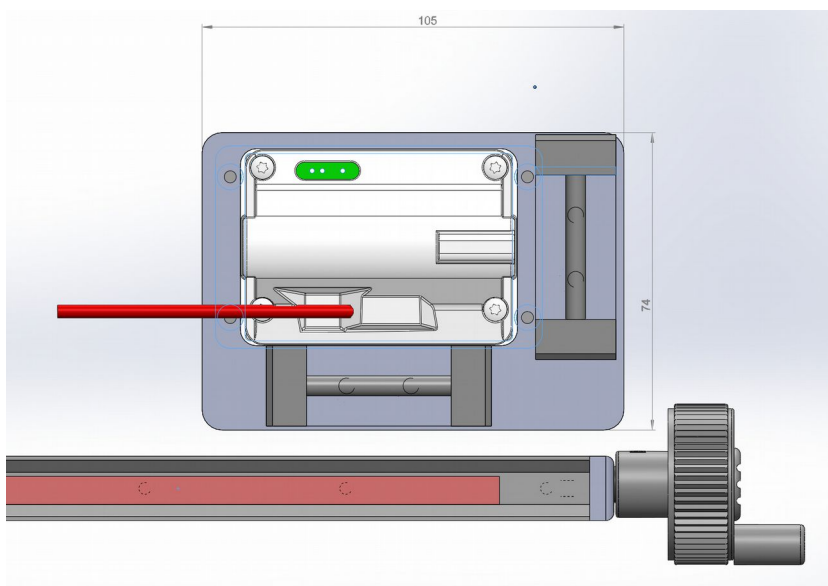
### 3.1 Display mounting frame for remote display axis:



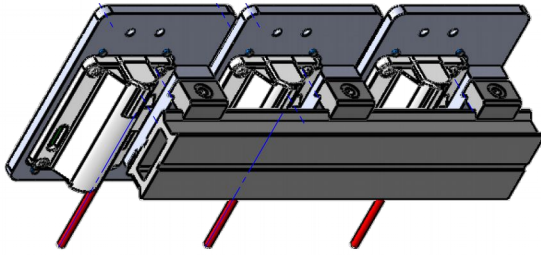
The display mounting frame mounts the display either to a vertical or horizontal dovetail profile – for instance a “Parallel adapter plate 64mm”.

Several display frames can be mounted side by side for showing the position of multiple axis.

**Art. No.: 110.060.080**

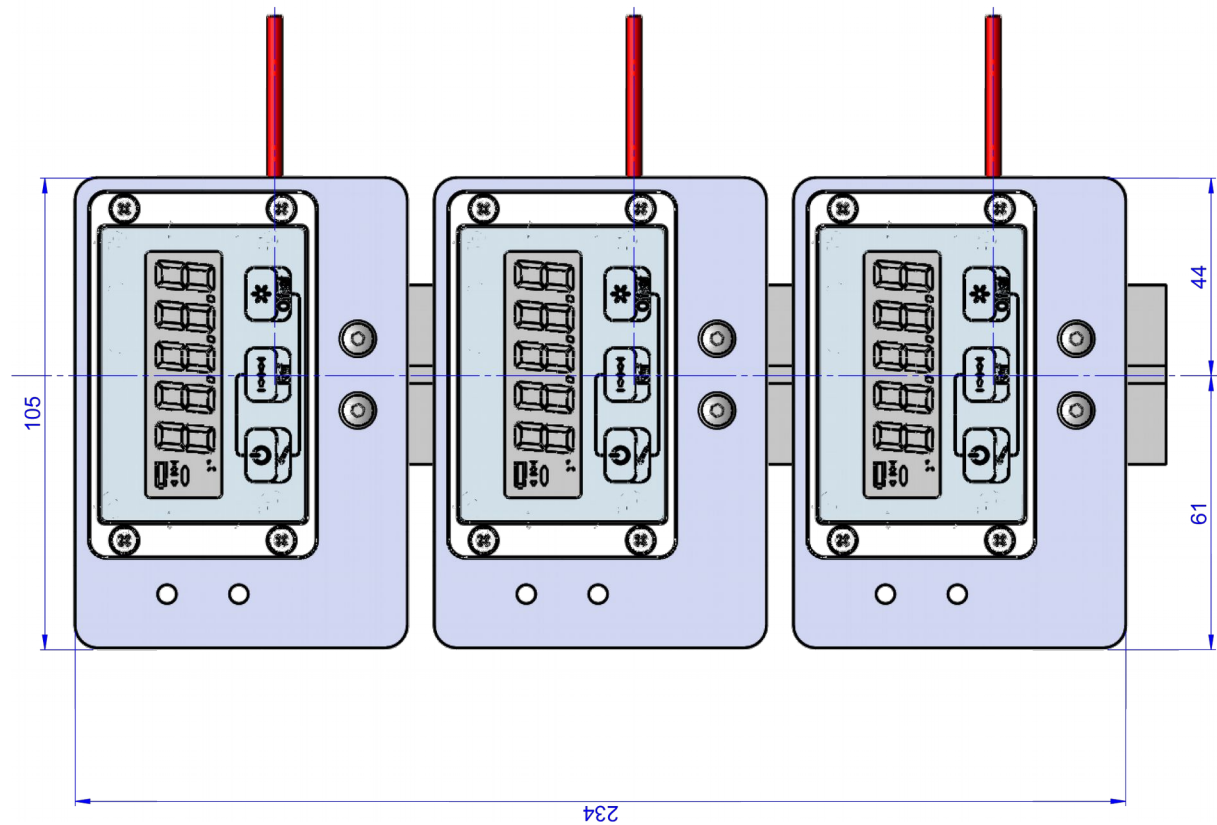
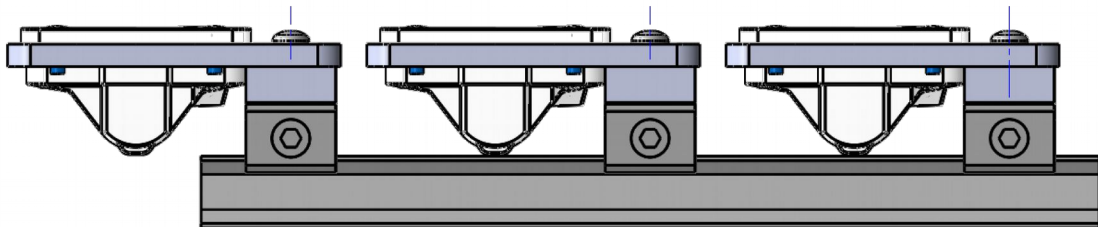


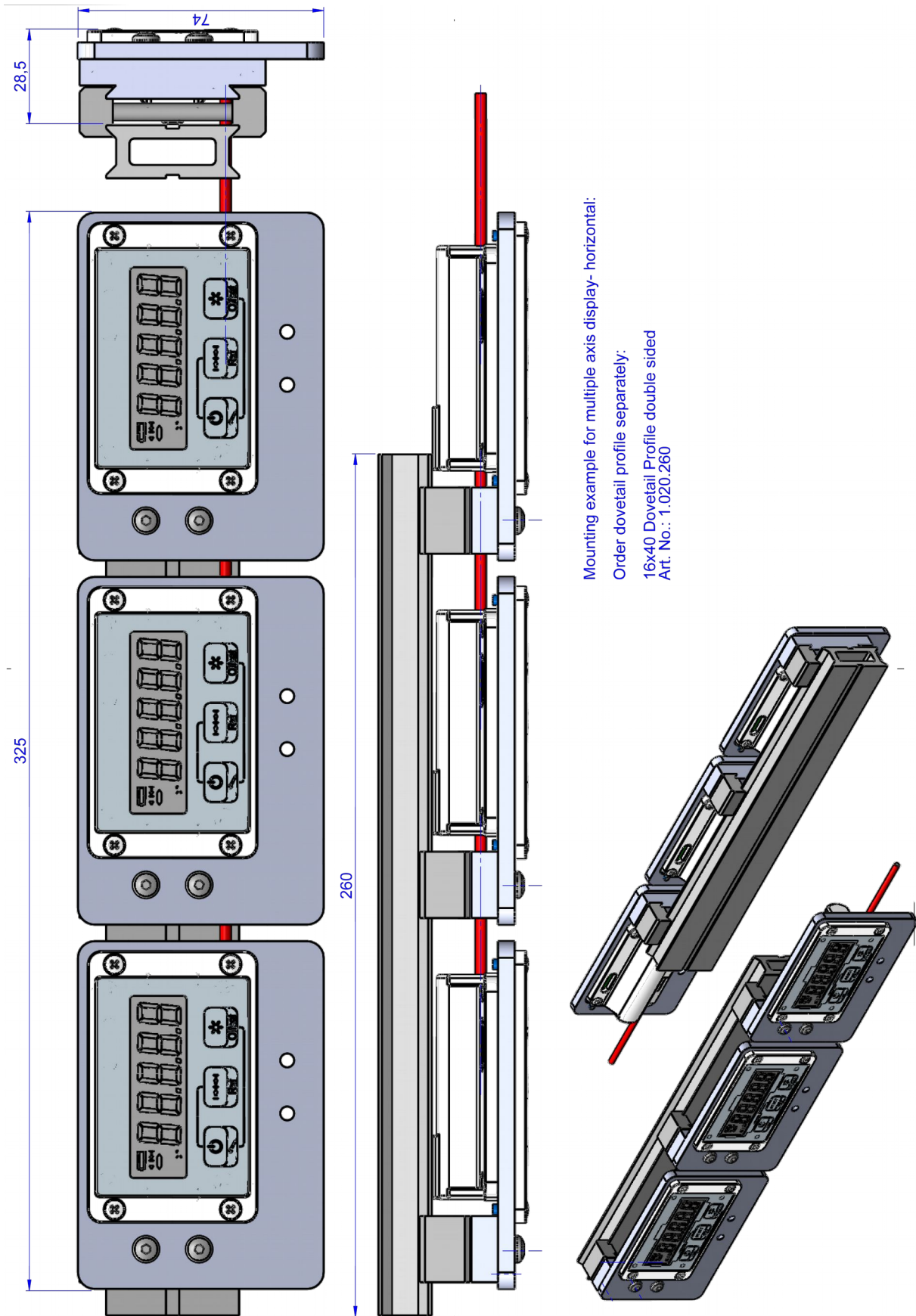
## Mounting Example for 3 displays in vertical arrangement



Mounting Example for multiple axis display

Order dovetail profile separately:  
16x40 Dovetail Profile double sided  
Art. No.: 1.020.200



**Mounting Example for 3 displays in horizontal arrangement**


## 4 Application examples for linear positioning axis



Adjusting camera and laser enclosures sideways to their optical axis. Camera adjustment without enclosure possible with dedicated dovetail adapter plates from autoVimation.



Combination of linear axis: off-centre loads up to 2kg weight possible











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