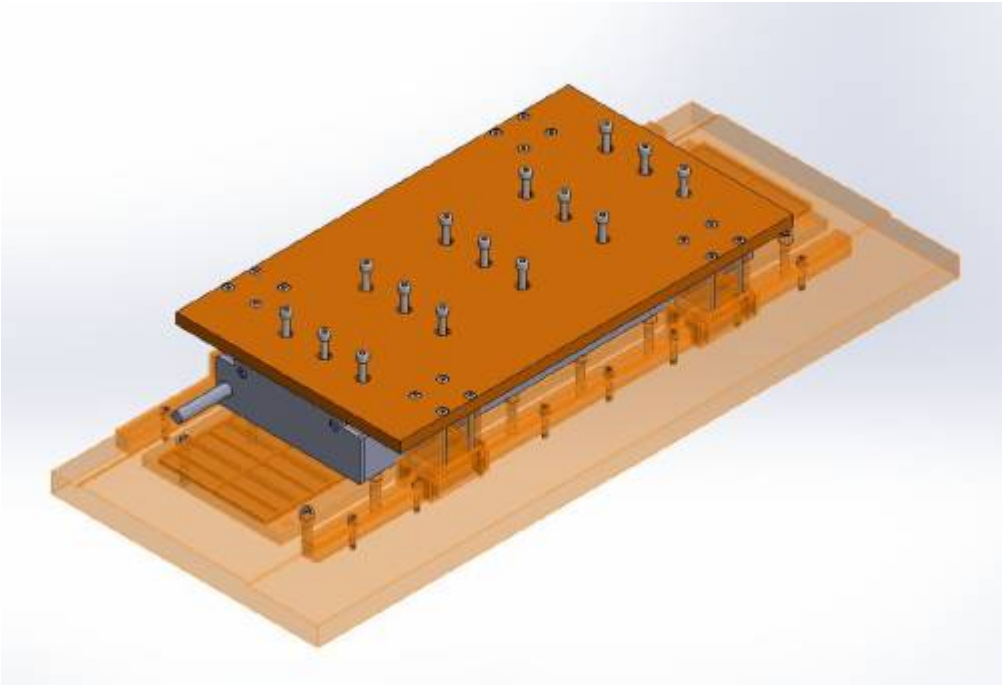
Installation tolerances

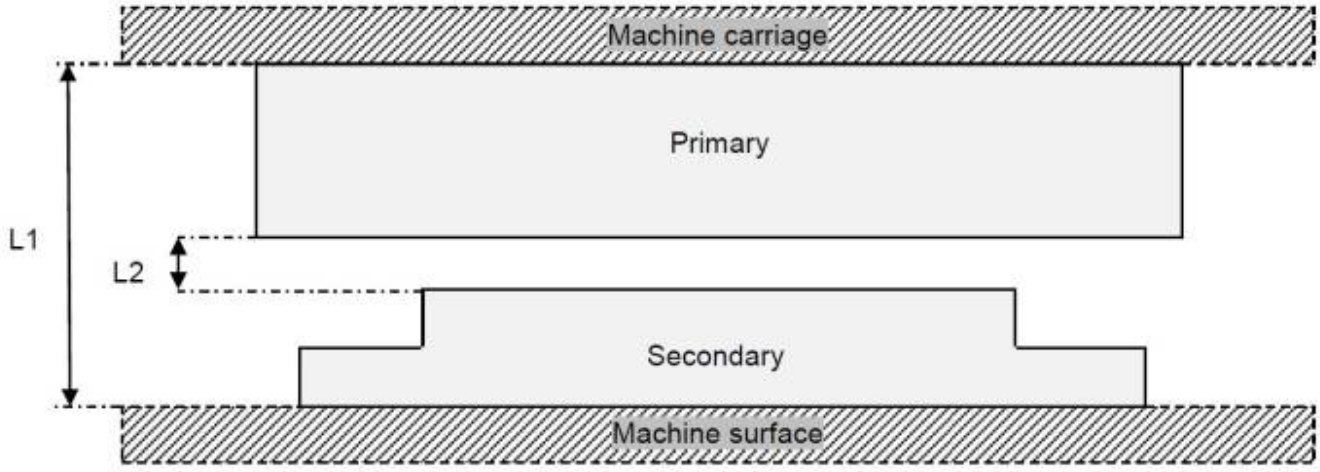


In order to ensure a constant force along the entire travel length, a defined air gap height must be guaranteed. For this purpose, the individual parts of the motor (primary and secondary) are tolerated accordingly. The distance of the mounting surface, the parallelism and the symmetry of the primary and secondary of the linear motor in the machine must be within a certain tolerance above the entire travel length. Any deformations that result from weight, attractive forces and process forces must be taken into account. A deviation of the specified nominal air gap may lead

• to a reduction or modification of the specified performance data,

• to a contact between the primary and the secondary and thus to damaged and destroyed motor components.

For the installation of the motors into the machine structure, NiLAB GmbH specifies a defined installation height including tolerances. Thus, the specified size and tolerances of the air gap are maintained automatically – even if individual motor components are replaced.



$L2 = 0.5 \, ^{+0.1}_{-0.2}$ mm

$L1 = 58.4 \, ^{+0.1}_{-0.2}$ mm

Used mounting screws, their tightening torque as well as material of the counterpart and length of thread must be designed with respect to the acting forces.
Also, mechanical guiding must be designed to withstand:
• Static and dynamic load of the drive
• Attraction force between primary and secondary part
Please note that attraction force may vary from catalogue values depending on the quality of used magnets. In case of ambiguity, consult the manufacturer.
Ensure heat dissipation from the motor:
• For primary parts, thermal resistance must be ensured in accordance with the catalogue or datasheet.
• For secondary components, the maximum operating temperature must not exceed 40° C.
Note that insufficient heat dissipation has a negative effect on the motor parameters.
Follow the instructions and recommendations of the guiding system supplier.
The size of the air gap has a significant effect on the parameters of the machine. Unless otherwise stated, the catalogue parameters apply to the (mechanical) air gap of 0.5 mm. In case of using other than catalogue air gap, consult the manufacturer.