

MINIATURE LINEAR MOTION STAGE

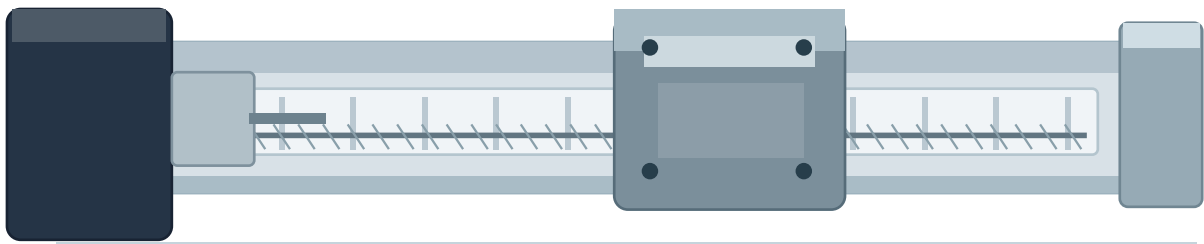
Open trapezoidal lead-screw axis with integrated NEMA 14 stepper motor.

LEAD SCREW

NEMA 14

SINGLE-AXIS MOTION

ASSEMBLY OVERVIEW



Schematic of a compact exposed-screw guide stage. The illustration is not a scale drawing or a dimensional control document.

50-500**STROKE RANGE**
mm**±0.05****POSITION ACCURACY**
mm (listed)**3.0****HORIZONTAL LOAD**
kg (max listed)**40****HORIZONTAL SPEED**
mm/s at max load

APPLICATION PROFILE

Small automation fixtures, measuring and inspection equipment, optical positioning, laboratory motion demonstrations, light-duty CNC mechanisms and multi-axis integration.

DESIGN NOTE

Confirm the selected stroke, motor and lead before installation.

01 / TECHNICAL SPECIFICATIONS

Specification at a glance

The figures below apply to the listed FSK30J NEMA 14 offering. They are selection references, not independent acceptance-test results.

CONSTRUCTION & INTERFACE		
Model	FSK30J	Single-axis linear module
Drive type	Trapezoidal lead screw	Do not assume a ball screw
Standard screw	Tr8 x 2	8 mm nominal / 2 mm lead
Optional leads	Tr8 x 4; Tr8 x 12	Special-order configurations
Stepper motor	NEMA 14	Exact motor winding data varies
Guide structure	Aluminium-alloy stage	Other material details unverified
Mounting	M4 threads	Side and base locations
Effective travel	50-500 mm	Check selected stroke

PERFORMANCE - SELLER-LISTED VALUES		
Positioning accuracy	±0.05 mm	Measurement method unspecified
Max. horizontal load	6.6 lb (~3.0 kg)	Orientation-dependent
Max. vertical load	2.2 lb (~1.0 kg)	Not a holding-force rating
Horizontal speed	40 mm/s	Listed at maximum load
Vertical speed	15 mm/s	Listed at maximum load
Operating noise	< 60 dB	Test conditions not provided
Length relation	S + 101 mm	Listed total-length formula

INTERPRETING THE DATA

Loads and speed describe a product-listing operating envelope. They do not define permitted overhung moment, dynamic acceleration, mounting rigidity, duty cycle or long-term accuracy.

02 / DIMENSIONS & TRAVEL CONFIGURATIONS

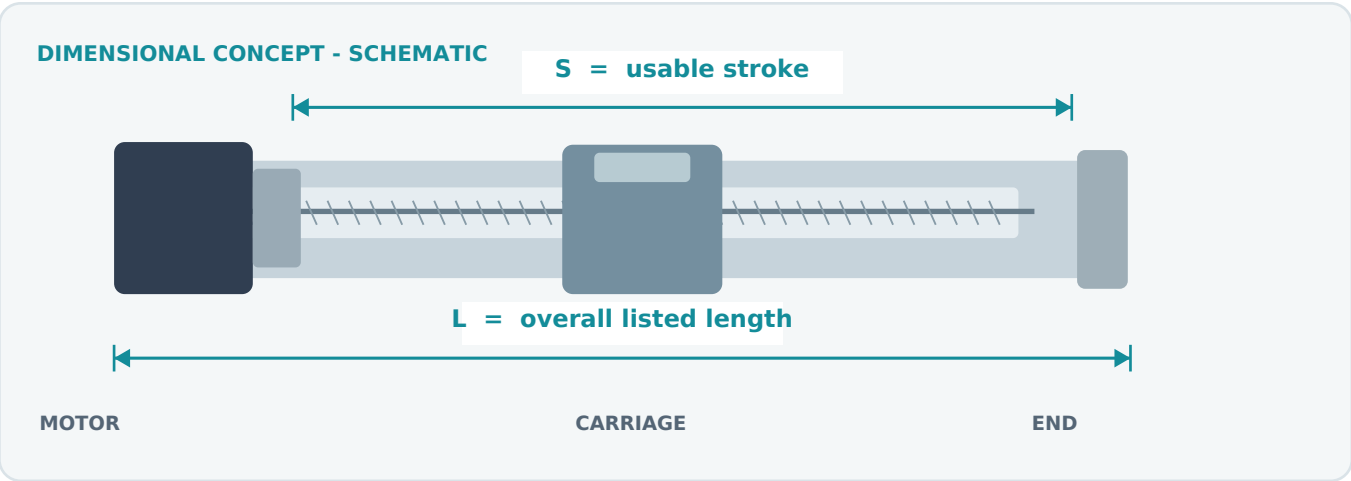
Length reference

All dimensions are in millimetres unless noted. The length formula is taken from the product listing and must be checked against the selected assembly drawing.

LISTED TOTAL-LENGTH RELATION

$L = S + 101\text{ mm}$

S = effective stroke



STROKE / TOTAL LENGTH

Derived directly from $L = S + 101$

STROKE S	LENGTH L	STROKE S	LENGTH L
50 mm	151 mm	300 mm	401 mm
100 mm	201 mm	350 mm	451 mm
150 mm	251 mm	400 mm	501 mm
200 mm	301 mm	450 mm	551 mm
250 mm	351 mm	500 mm	601 mm

Verify whether the stated overall length includes the installed motor and coupler. Mounting pitch, hole coordinates, rail height and end-clearance dimensions are not certified here.

03 / DRIVE & SYSTEM INTEGRATION

Integration guidance

The selected lead-screw option and the actual NEMA 14 motor model govern motion resolution, achievable thrust and driver selection.

STANDARD

Tr8 x 2

2 mm / rev

OPTIONAL

Tr8 x 4

4 mm / rev

OPTIONAL

Tr8 x 12

12 mm / rev

STEP-TO-LINEAR MOTION RELATIONSHIP

Linear travel per revolution = lead (mm/rev)

The actual step angle, current, torque, coil wiring and full-step count are not specified in the listing. Do not assume a motor rating from the NEMA flange size alone.

SYSTEM DESIGN CHECKLIST

01

Confirm mechanical variant

Specify stroke S, screw lead, motor orientation and a fully dimensioned installation drawing.

02

Obtain the motor part number

Request phase current, voltage, resistance, inductance, holding torque and winding diagram.

03

Size the stepper driver

Match driver current and supply voltage to the selected motor and intended acceleration.

04

Provide homing and end protection

Select limit switches, define the homing method, and include safe travel limits.

05

Validate vertical safety

Check holding capability, back-driving behavior and power-loss risk for suspended loads.

IMPORTANT CONFIGURATION NOTICE

Catalog family data for similar FSK30 stages may differ from this FSK30J listing. Validate critical specifications with the supplier before procurement.